DHF

DESIGN . HONESTY . FUTURE

HIGH SPEED &
HIGH HARD CUTTING

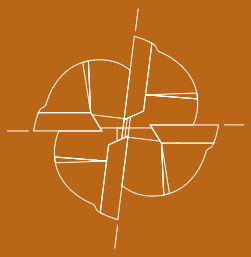
MICRO DIAMETER
& LONG NECK SERIES





EXCHANGEABLE HEAD
ENDMILL

HIGH PERFORMANCE
CUTTING



UNEQUAL FLUTE SPACING
&
VARIABLE HELIX SERIES

20th
20 ANNIVERSARY

DHF

STANDARD

標準系列



圖示說明
Guide Lines to Icons

鎢鋼種類 Carbide

超微粒。
Mirco grain.

極超微粒。
Super Mirco grain.

顆粒大小 Grain Size

粉末顆粒是0.4μm
Grain size is 0.4μm.

粉末顆粒是0.6μm
Grain size is 0.6μm.

齒形 Roughing

中粗齒
Middle Roughing.

細粗齒
Small Roughing.

被切削材硬度 Work Material Hardness

被切削工件硬度可達HRc55、60、65。
Work material hardness is up to HRc55、60、65.

鍍層 Coating

適用於難切削材和含碳量高之材料(例:S45C//1.1210)，油霧、溼式切削。
Good at difficult material and high carbon content (e.g., S45C//1.1210), for MQL & Wet cutting.

適用於各式切削，使用壽命長。
Genetally used on all kind of machining with benefit of long tool life

適用於高速加工，乾式切削。
Good at high speed cutting. For Dry cutting.

圓隅角 Corner R

圓隅角。
Corner Radius.

刃數 Flute

螺旋角 Helix Angle

螺旋角度25°、30°、35°、45°、50°
Helix Angle is 25°、30°、35°、45°、50°

切削性能 Cutting Performance

優
Excellent

良
Good

尚可
Acceptable

禁止
No

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BTA2T

超微粒圓頭立銑刀 Ball Nose End Mills

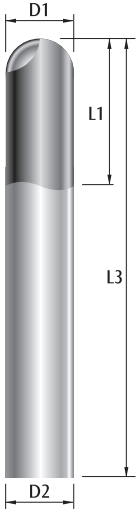


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
BTA0102	R0.5	2	50	4
BTA0152	R0.75	3	50	4
BTA0202	R1	4	50	4
BTA0252	R1.25	5	50	4
BTA0302	R1.5	6	50	4
BTA0402	R2	8	50	4
BTA0502	R2.5	10	50	6
BTA0602	R3	12	50	6
BTA0802	R4	16	60	8
BTA1002	R5	20	75	10
BTA1202	R6	24	75	12
BTA1602	R8	32	100	16
BTA2002	R10	40	100	20

Unit : mm



直徑 D1	球頭公差值 R Tolerance
R0.5	±0.01
R0.75	±0.01
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02
R10	±0.02

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	$^{0}_{-0.008}$
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$
Ø20	$^{0}_{-0.013}$

Unit : mm

BTA2T 的切削條件詳見P.60~P.62 Please find the milling condition on P.60~P.62

BTA4T

超微粒圓頭立銑刀 Ball Nose End Mills

MG | 0.6 µm | 30° | 4 Flutes | HRc ▶55 | T1

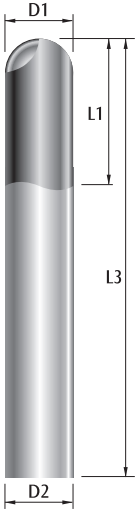


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
BTA0104	R0.5	2	50	4
BTA0154	R0.75	3	50	4
BTA0204	R1	4	50	4
BTA0304	R1.5	6	50	4
BTA0404	R2	8	50	4
BTA0504	R2.5	10	50	6
BTA0604	R3	12	50	6
BTA0804	R4	16	60	8
BTA1004	R5	20	75	10
BTA1204	R6	24	75	12
BTA1604	R8	32	100	16

Unit : mm



直徑 D1	球頭公差值 R Tolerance
R0.5	±0.01
R0.75	±0.01
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	$^{0}_{-0.008}$
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$

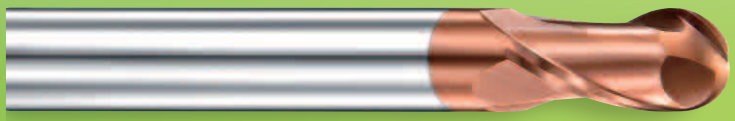
Unit : mm

BTA4T 的切削條件詳見 P.63~P.64 Please find the milling condition on P.63~P.64

BTD2T

超微粒圓頭立銑刀 Ball Nose End Mills

MG | 0.6 μm | 30° | 2 Flutes | HRc >55 | G10

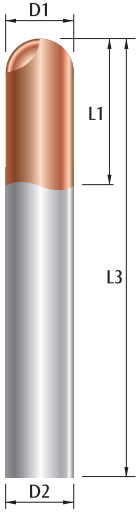


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
BTD0102	R0.5	2	50	4
BTD0152	R0.75	3	50	4
BTD0202	R1	4	50	4
BTD0252	R1.25	5	50	4
BTD0302	R1.5	6	50	4
BTD0402	R2	8	50	4
BTD0502	R2.5	10	57	6
BTD0602	R3	12	57	6
BTD0802	R4	16	63	8
BTD1002	R5	20	72	10
BTD1202	R6	24	83	12
BTD1602	R8	32	100	16
BTD2002	R10	40	100	20

Unit : mm



直徑 D1	球頭公差值 R Tolerance
R0.5	±0.01
R0.75	±0.01
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02
R10	±0.02

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	$^{0}_{-0.008}$
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$
Ø20	$^{0}_{-0.013}$

Unit : mm

BTD2T 的切削條件詳見P.60~P.62 Please find the milling condition on P.60~P.62

BTD4T

超微粒圓頭立銑刀 Ball Nose End Mills

MG | 0.6 μm | 30° | 4 Flutes | HRc ▶55 | G10

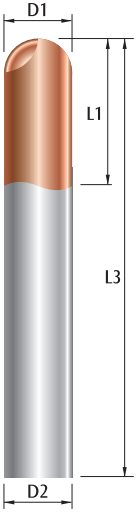


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
BTD0104	R0.5	2	50	4
BTD0154	R0.75	3	50	4
BTD0204	R1	4	50	4
BTD0304	R1.5	6	50	4
BTD0404	R2	8	50	4
BTD0504	R2.5	10	57	6
BTD0604	R3	12	57	6
BTD0804	R4	16	63	8
BTD1004	R5	20	72	10
BTD1204	R6	24	83	12
BTD1604	R8	32	100	16

Unit : mm



直徑 D1	球頭公差值 R Tolerance
R0.5	±0.01
R0.75	±0.01
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

Unit : mm

BTD4T 的切削條件詳見 P.63~P.64 Please find the milling condition on P.63~P.64

BTB2T

超微粒圓頭立銑刀 Ball Nose End Mills

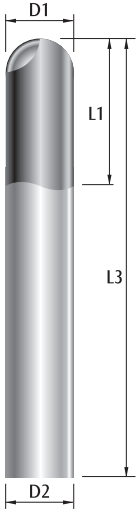


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
BTB0102	R0.5	2	50	6
BTB0152	R0.75	3	50	6
BTB0202	R1	4	50	6
BTB0252	R1.25	5	50	6
BTB0302	R1.5	6	50	6
BTB0402	R2	8	50	6
BTB0502	R2.5	10	50	6
BTB0602	R3	12	50	6
BTB0802	R4	16	60	8
BTB1002	R5	20	75	10
BTB1202	R6	24	75	12
BTB1602	R8	32	100	16
BTB2002	R10	40	100	20

Unit : mm



直徑 D1	球頭公差值 R Tolerance
R0.5	±0.01
R0.75	±0.01
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02
R10	±0.02

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

BTB2T 的切削條件詳見 P.65~P.68 Please find the milling condition on P.65~P.68

BTB4T

超微粒圓頭立銑刀 Ball Nose End Mills

MG | 0.6 μm | 30° | 4 Flutes | HRc ▸60 | T2

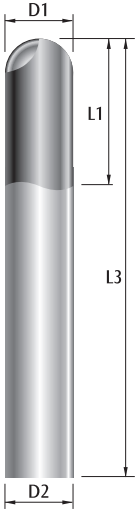


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
BTB0204	R1	4	50	6
BTB0304	R1.5	6	50	6
BTB0404	R2	8	50	6
BTB0504	R2.5	10	50	6
BTB0604	R3	12	50	6
BTB0804	R4	16	60	8
BTB1004	R5	20	75	10
BTB1204	R6	24	75	12
BTB1604	R8	32	100	16

Unit : mm



直徑 D1	球頭公差值 R Tolerance
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$

Unit : mm

BTB4T 的切削條件詳見 P.69~P.71　Please find the milling condition on P.69~P.71

BTH2T

超微粒圓頭立銑刀 Ball Nose End Mills

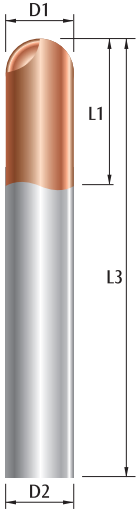


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
BTH0102	R0.5	2	50	6
BTH0152	R0.75	3	50	6
BTH0202	R1	4	50	6
BTH0252	R1.25	5	50	6
BTH0302	R1.5	6	50	6
BTH0402	R2	8	50	6
BTH0502	R2.5	10	50	6
BTH0602	R3	12	50	6
BTH0802	R4	16	60	8
BTH1002	R5	20	75	10
BTH1202	R6	24	75	12
BTH1602	R8	32	100	16
BTH2002	R10	40	100	20

Unit : mm



直徑 D1	球頭公差值 R Tolerance
R0.5	±0.01
R0.75	±0.01
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02
R10	±0.02

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	$^{0}_{-0.008}$
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$
Ø20	$^{0}_{-0.013}$

Unit : mm

BTH2T 的切削條件詳見 P.65~P.68 Please find the milling condition on P.65~P.68

BTH4T

超微粒圓頭立銑刀 Ball Nose End Mills

MG | 0.6 μm | 30° | 4 Flutes | HRc ▶60 | G10

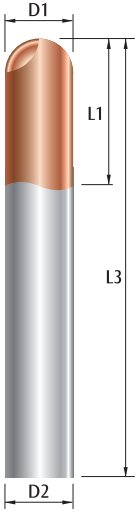


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
BTH0204	R1	4	50	6
BTH0304	R1.5	6	50	6
BTH0404	R2	8	50	6
BTH0504	R2.5	10	50	6
BTH0604	R3	12	50	6
BTH0804	R4	16	60	8
BTH1004	R5	20	75	10
BTH1204	R6	24	75	12
BTH1604	R8	32	100	16

Unit : mm



直徑 D1	球頭公差值 R Tolerance
R1	±0.01
R1.5	±0.01
R2	±0.01
R2	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

Unit : mm

BTH4T 的切削條件詳見 P.69~P.71　Please find the milling condition on P.69~P.71

HBA IBA JBA

超微粒長柄圓頭立銑刀 Ball Nose End Mills

Long Shank

MG | 0.6 μm | 30° | 2 Flutes | HRc >55 | T1

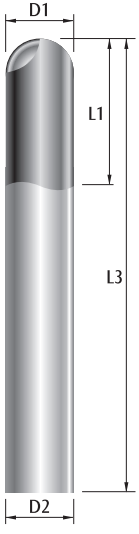
精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining



產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
HBA0202	R1	4	75	6
HBA0252	R1.25	5	75	6
HBA0302	R1.5	6	75	6
HBA0402	R2	8	75	6
HBA0502	R2.5	10	75	6
HBA0602	R3	12	75	6
HBA0802	R4	16	75	8
IBA0202	R1	4	100	6
IBA0302	R1.5	6	100	6
IBA0402	R2	8	100	6
IBA0602	R3	12	100	6
IBA0802	R4	16	100	8
IBA1002	R5	20	100	10
IBA1202	R6	24	100	12
JBA0602	R3	12	150	6
JBA0802	R4	16	150	8
JBA1002	R5	20	150	10
JBA1202	R6	24	150	12
JBA1602	R8	32	150	16

Unit : mm



直徑 D1	球頭公差值 R Tolerance
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

Unit : mm

HBA IBA JBA 的切削條件詳見P.72~P.73 Please find the milling condition on P.72~P.73

HBH IBH JBH

超微粒長柄圓頭立銑刀 Ball Nose End Mills

Long Shank

MG | 0.6 μm | 30° | 2 Flutes | HRc ▶55 | G10

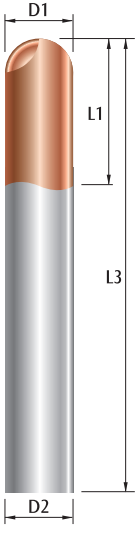


- 精銑 Finishing
- 中銑 Semi-finishing
- 粗銑 Roughing
- 乾式切削 Dry Machining
- 油霧切削 MQL (Mist)
- 水溶性切削 Emulsion Machining
- 油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
HBH0202	R1	4	75	6
HBH0252	R1.25	5	75	6
HBH0302	R1.5	6	75	6
HBH0402	R2	8	75	6
HBH0502	R2.5	10	75	6
HBH0602	R3	12	75	6
HBH0802	R4	16	75	8
IBH0202	R1	4	100	6
IBH0302	R1.5	6	100	6
IBH0402	R2	8	100	6
IBH0602	R3	12	100	6
IBH0802	R4	16	100	8
IBH1002	R5	20	100	10
IBH1202	R6	24	100	12
JBH0602	R3	12	150	6
JBH0802	R4	16	150	8
JBH1002	R5	20	150	10
JBH1202	R6	24	150	12
JBH1602	R8	32	150	16

Unit : mm



直徑 D1	球頭公差值 R Tolerance
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

Unit : mm

HBH IBH JBH 的切削條件詳見P.72~P.73 Please find the milling condition on P.72~P.73

ETA2T

超微粒立銑刀 End Mills

MG | 0.6 μm | 35° | 2 Flutes | HRc >55 | T1

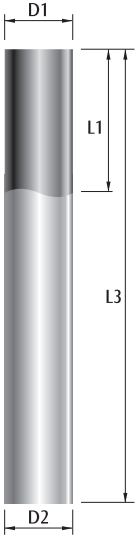


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ETA0102	1.0	3	50	4
ETA0152	1.5	4	50	4
ETA0202	2.0	6	50	4
ETA0252	2.5	8	50	4
ETA0302S	3.0	8	50	3
ETA0302	3.0	8	50	4
ETA0402	4.0	11	50	4
ETA0502S	5.0	13	50	5
ETA0502	5.0	13	50	6
ETA0602	6.0	16	50	6
ETA0802	8.0	20	60	8
ETA1002	10.0	25	75	10
ETA1202	12.0	30	75	12
ETA1602	16.0	40	100	16
ETA2002	20.0	45	100	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
2.5	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

ETA2T 的切削條件詳見P.74~P.81 Please find the milling condition on P.74~P.81

ETA4T

超微粒立銑刀 End Mills

MG | 0.6 µm | 35° | 4 Flutes | HRc ▶55 | T1

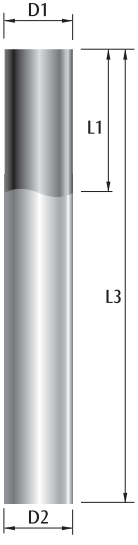


- 精銑 Finishing
- 中銑 Semi-finishing
- 粗銑 Roughing
- 乾式切削 Dry Machining
- 油霧切削 MQL (Mist)
- 水溶性切削 Emulsion Machining
- 油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ETA0104	1.0	3	50	4
ETA0154	1.5	4	50	4
ETA0204	2.0	6	50	4
ETA0254	2.5	8	50	4
ETA0304S	3.0	8	50	3
ETA0304	3.0	8	50	4
ETA0404	4.0	11	50	4
ETA0504S	5.0	13	50	5
ETA0504	5.0	13	50	6
ETA0604	6.0	16	50	6
ETA0804	8.0	20	60	8
ETA1004	10.0	25	75	10
ETA1204	12.0	30	75	12
ETA1604	16.0	40	100	16
ETA2004	20.0	45	100	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
2.5	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

ETA4T 的切削條件詳見 P.82~P.90　Please find the milling condition on P.82~P.90

ETD2T

超微粒立銑刀 End Mills

MG | 0.6 μm | 35° | 2 Flutes | HRc >55 | G10

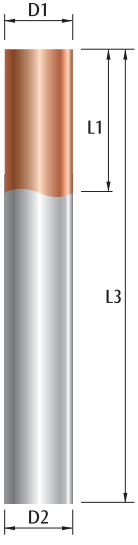


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ETD0102	1.0	3	50	4
ETD0152	1.5	4	50	4
ETD0202	2.0	6	50	4
ETD0252	2.5	8	50	4
ETD0302S	3.0	8	50	3
ETD0302	3.0	8	50	4
ETD0402	4.0	11	50	4
ETD0502S	5.0	13	50	5
ETD0502	5.0	13	57	6
ETD0602	6.0	16	57	6
ETD0802	8.0	20	63	8
ETD1002	10.0	25	72	10
ETD1202	12.0	30	83	12
ETD1602	16.0	40	100	16
ETD2002	20.0	45	100	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
2.5	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

ETD2T 的切削條件詳見 P.74~P.81 Please find the milling condition on P.74~P.81

ETD4T

超微粒立銑刀 End Mills

MG | 0.6 μm | 35° | 4 Flutes | HRc ▶55 | G10

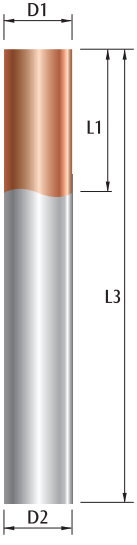


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ETD0104	1.0	3	50	4
ETD0154	1.5	4	50	4
ETD0204	2.0	6	50	4
ETD0254	2.5	8	50	4
ETD0304S	3.0	8	50	3
ETD0304	3.0	8	50	4
ETD0404	4.0	11	50	4
ETD0504S	5.0	13	50	5
ETD0504	5.0	13	57	6
ETD0604	6.0	16	57	6
ETD0804	8.0	20	63	8
ETD1004	10.0	25	72	10
ETD1204	12.0	30	83	12
ETD1604	16.0	40	100	16
ETD2004	20.0	45	100	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
2.5	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

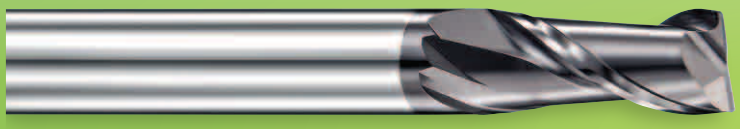
Unit : mm

ETD4T 的切削條件詳見 P.82~P.90　Please find the milling condition on P.82~P.90

ETB2T

極超微粒立銑刀 End Mills

Super MG | 0.4 μm | 35° | 2 Flutes | HRc ▶60 | T2

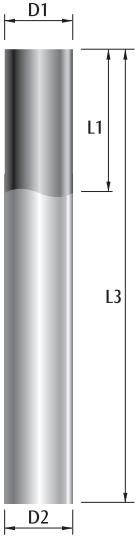


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ETB0102	1.0	3	50	6
ETB0152	1.5	4	50	6
ETB0202	2.0	6	50	6
ETB0252	2.5	8	50	6
ETB0302	3.0	8	50	6
ETB0402	4.0	11	50	6
ETB0502	5.0	13	50	6
ETB0602	6.0	16	50	6
ETB0802	8.0	20	60	8
ETB1002	10.0	30	75	10
ETB1202	12.0	30	75	12
ETB1602	16.0	40	100	16
ETB2002	20.0	45	100	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
2.5	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

ETB2T 的切削條件詳見 P.91~P.106 Please find the milling condition on P.91~P.106

ETB4T

極超微粒立銑刀 End Mills

Super MG | 0.4 µm | 45° | 4 Flutes | HRc ▶60 | T2

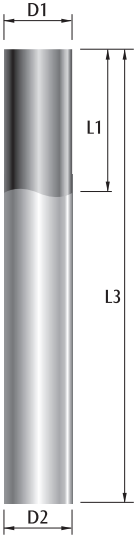


- 精銑 Finishing
- 中銑 Semi-finishing
- 粗銑 Roughing
- 乾式切削 Dry Machining
- 油霧切削 MQL (Mist)
- 水溶性切削 Emulsion Machining
- 油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ETB0104	1.0	3	50	4
ETB0154	1.5	4	50	4
ETB0204S	2.0	6	50	4
ETB0204	2.0	6	50	6
ETB0254S	2.5	8	50	4
ETB0254	2.5	8	50	6
ETB0304S	3.0	8	50	4
ETB0304	3.0	8	50	6
ETB0354	3.5	10	50	6
ETB0404S	4.0	11	50	4
ETB0404	4.0	11	50	6
ETB0454	4.5	11	50	6
ETB0504	5.0	13	50	6
ETB0604	6.0	16	50	6
ETB0804	8.0	20	60	8
ETB1004Z	10.0	25	75	10
ETB1004	10.0	30	75	10
ETB1204	12.0	30	75	12
ETB1604	16.0	40	100	16
ETB2004	20.0	45	100	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
2.5	0 -0.02
3.0	0 -0.02
3.5	0 -0.02
4.0	0 -0.02
4.5	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

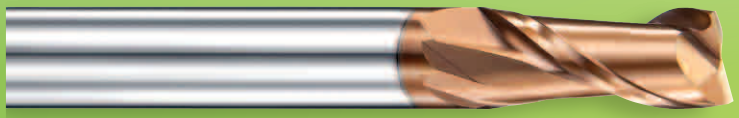
Unit : mm

ETB4T 的切削條件詳見P.107~P.134 Please find the milling condition on P.107~P.134

ETH2T

極超微粒立銑刀 End Mills

Super MG | 0.4 μm | 35° | 2 Flutes | HRc ▶60 | G10

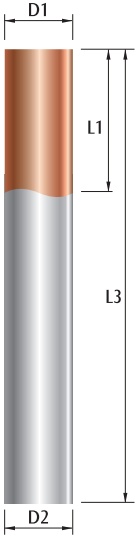


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ETH0102	1.0	3	50	6
ETH0152	1.5	4	50	6
ETH0202	2.0	6	50	6
ETH0252	2.5	8	50	6
ETH0302	3.0	8	50	6
ETH0352	3.5	10	50	6
ETH0402	4.0	11	50	6
ETH0452	4.5	13	50	6
ETH0502	5.0	13	50	6
ETH0552	5.5	13	50	6
ETH0602	6.0	16	50	6
ETH0652	6.5	16	60	8
ETH0702	7.0	16	60	8
ETH0752	7.5	19	60	8
ETH0802	8.0	20	60	8
ETH0852	8.5	20	75	10
ETH0902	9.0	22	75	10
ETH0952	9.5	25	75	10
ETH1002	10.0	30	75	10
ETH1052	10.5	25	75	12

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
2.5	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

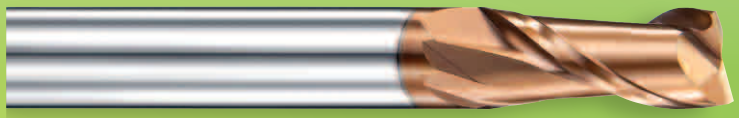
Unit : mm

ETH2T 的切削條件詳見P.91~P106 Please find the milling condition on P.91~P106

ETH2T

極超微粒立銑刀 End Mills

Super MG | 0.4 µm | 35° | 2 Flutes | HRc ▸60 | G10

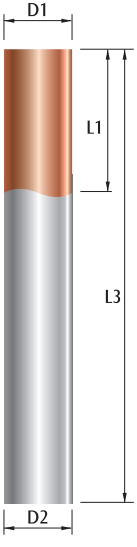


- 精銑 Finishing
- 中銑 Semi-finishing
- 粗銑 Roughing
- 乾式切削 Dry Machining
- 油霧切削 MQL (Mist)
- 水溶性切削 Emulsion Machining
- 油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ETH1102	11.0	28	75	12
ETH1152	11.5	30	75	12
ETH1202	12.0	30	75	12
ETH1252	12.5	30	80	14
ETH1302	13.0	35	80	14
ETH1352	13.5	35	80	14
ETH1402	14.0	40	80	14
ETH1502	15.0	40	100	16
ETH1602	16.0	40	100	16
ETH1702	17.0	45	100	18
ETH1802	18.0	45	100	18
ETH2002	20.0	45	100	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
2.5	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

ETH2T 的切削條件詳見 P.91~P106 Please find the milling condition on P.91~P106

ETH4T

極超微粒立銑刀 End Mills

Super MG | 0.4 μm | 45° | 4 Flutes | HRc ▶60 | G10

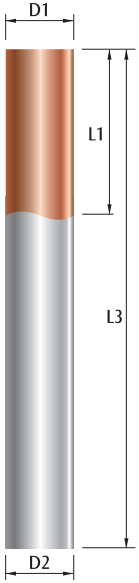


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ETH0104	1.0	3	50	4
ETH0154	1.5	4	50	4
ETH0204	2.0	6	50	4
ETH0254	2.5	8	50	4
ETH0304S	3.0	8	50	3
ETH0304	3.0	8	50	4
ETH0354	3.5	10	50	4
ETH0404	4.0	11	50	4
ETH0454	4.5	13	50	6
ETH0504S	5.0	13	50	5
ETH0504	5.0	13	50	6
ETH0554	5.5	13	50	6
ETH0604	6.0	16	50	6
ETH0654	6.5	16	60	8
ETH0704	7.0	16	60	8
ETH0754	7.5	19	60	8
ETH0804	8.0	20	60	8
ETH0854	8.5	20	75	10
ETH0904	9.0	22	75	10
ETH0954	9.5	25	75	10

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
2.5	0 -0.02
3.0	0 -0.02
3.5	0 -0.02
4.0	0 -0.02
4.5	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

ETH4T 的切削條件詳見 P.107~P.134 Please find the milling condition on P.107~P.134

ETH4T

極超微粒立銑刀 End Mills

Super MG | 0.4 μm | 45° | 4 Flutes | HRc ▶60 | G10

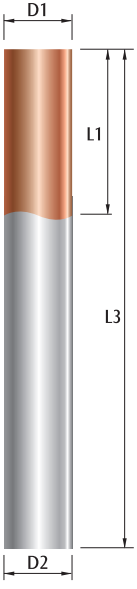


- 精銑 Finishing
- 中銑 Semi-finishing
- 粗銑 Roughing
- 乾式切削 Dry Machining
- 油霧切削 MQL (Mist)
- 水溶性切削 Emulsion Machining
- 油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ETH1004	10.0	30	75	10
ETH1054	10.5	25	75	12
ETH1104	11.0	28	75	12
ETH1154	11.5	30	75	12
ETH1204	12.0	30	75	12
ETH1254	12.5	30	80	14
ETH1304	13.0	35	80	14
ETH1354	13.5	35	80	14
ETH1404	14.0	40	80	14
ETH1504	15.0	40	100	16
ETH1604	16.0	40	100	16
ETH1704	17.0	45	100	18
ETH1804	18.0	45	100	18
ETH2004	20.0	45	100	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
2.5	0 -0.02
3.0	0 -0.02
3.5	0 -0.02
4.0	0 -0.02
4.5	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

ETH4T 的切削條件詳見 P.107~P.134　　Please find the milling condition on P.107~P.134

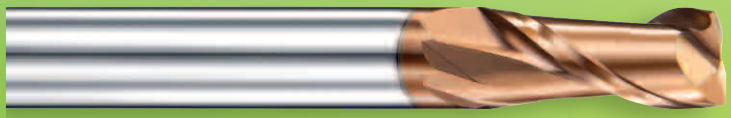
ETG2T

超微粒立銑刀 End Mills

▲塗層升級 Coating Upgraded

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

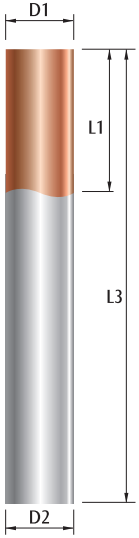
MG | 0.6 μm | 35° | 2 Flutes | HRc >55 | G10



產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ETG0102	1.0	3	50	4
ETG0152	1.5	4	50	4
ETG0202	2.0	6	50	4
ETG0252	2.5	8	50	4
ETG0302	3.0	8	50	4
ETG0402	4.0	11	50	4
ETG0502	5.0	13	50	6
ETG0602	6.0	16	50	6
ETG0802	8.0	20	60	8
ETG1002	10.0	25	75	10
ETG1202	12.0	30	75	12

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
2.5	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

Unit : mm

ETG2T 的切削條件詳見 P.135~P.139 Please find the milling condition on P.135~P.139

ETG4T

超微粒立銑刀 End Mills

▲塗層升級 Coating Upgraded

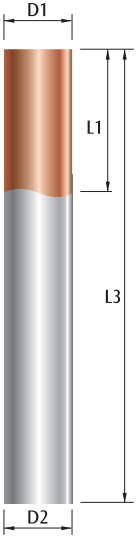


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ETG0104	1.0	3	50	4
ETG0154	1.5	4	50	4
ETG0204	2.0	6	50	4
ETG0254	2.5	8	50	4
ETG0304	3.0	8	50	4
ETG0404	4.0	11	50	4
ETG0504	5.0	13	50	6
ETG0604	6.0	16	50	6
ETG0804	8.0	20	60	8
ETG1004	10.0	25	75	10
ETG1204	12.0	30	75	12
ETG1604	16.0	40	100	16

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
2.5	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

Unit : mm

ETG4T 的切削條件詳見 P.140~P.143　Please find the milling condition on P.140~P.143

HEA IEA JEA^{2T}

超微粒長柄立銑刀 End Mills

Long Shank

MG | 0.6 μm | 35° | 2 Flutes | HRc >55 | T1

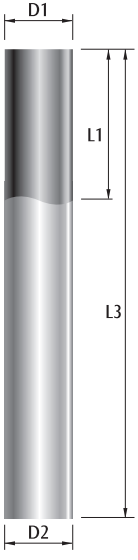


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
HEA0302	3.0	8	75	3
HEA0402	4.0	11	75	4
HEA0502	5.0	13	75	6
HEA0602	6.0	16	75	6
HEA0802	8.0	20	75	8
IEA0302	3.0	8	100	3
IEA0402	4.0	11	100	4
IEA0502	5.0	13	100	6
IEA0602	6.0	16	100	6
IEA0802	8.0	20	100	8
IEA1002	10.0	25	100	10
IEA1202	12.0	30	100	12
JEA0602	6.0	16	150	6
JEA0802	8.0	20	150	8
JEA1002	10.0	25	150	10
JEA1202	12.0	30	150	12

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035

柄徑 D2	柄徑公差值 D2 Tolerance
Ø3	0 -0.006
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

Unit : mm

HEA IEA JEA4T

超微粒長柄立銑刀 End Mills

Long Shank

MG | 0.6 µm | 35° | 4 Flutes | HRc ▶55 | T1

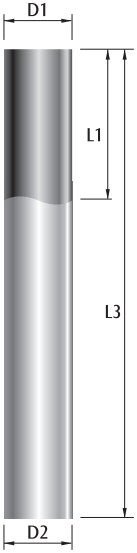


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
HEA0304	3.0	8	75	3
HEA0404	4.0	11	75	4
HEA0504	5.0	13	75	6
HEA0604	6.0	16	75	6
HEA0804	8.0	20	75	8
IEA0404	4.0	11	100	4
IEA0604	6.0	16	100	6
IEA0804	8.0	20	100	8
IEA1004	10.0	25	100	10
IEA1204	12.0	30	100	12
JEA0604	6.0	16	150	6
JEA0804	8.0	20	150	8
JEA1004	10.0	25	150	10
JEA1204	12.0	30	150	12
JEA1604	16.0	45	150	16
JEA2004	20.0	50	150	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø3	0 -0.006
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.011

Unit : mm

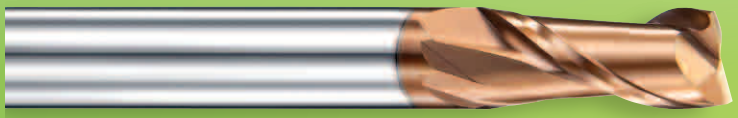
HEA IEA JEA4T 的切削條件詳見 P.147~P.152　Please find the milling condition on P.147~P.152

HEH IEH JEH^{2T}

超微粒長柄立銑刀 End Mills

Long Shank

MG | 0.6 μm | 35° | 2 Flutes | HRc >55 | G10

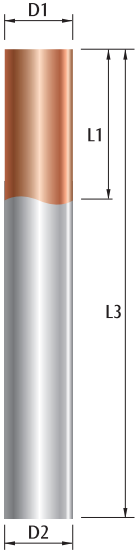


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
HEH0302	3.0	8	75	3
HEH0402	4.0	11	75	4
HEH0502	5.0	13	75	6
HEH0602	6.0	16	75	6
HEH0802	8.0	20	75	8
IEH0302	3.0	8	100	3
IEH0402	4.0	11	100	4
IEH0502	5.0	13	100	6
IEH0602	6.0	16	100	6
IEH0802	8.0	20	100	8
IEH1002	10.0	25	100	10
IEH1202	12.0	30	100	12
JEH0602	6.0	16	150	6
JEH0802	8.0	20	150	8
JEH1002	10.0	25	150	10
JEH1202	12.0	30	150	12

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035

柄徑 D2	柄徑公差值 D2 Tolerance
Ø3	0 -0.006
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

Unit : mm

HEH IEH JEH^{2T} 的切削條件詳見P.144~P.146 Please find the milling condition on P.144~P.146

HEH IEH JEH4T

超微粒長柄立銑刀 End Mills

Long Shank

MG | 0.6 μm | 35° | 4 Flutes | HRc ▶55 | G10

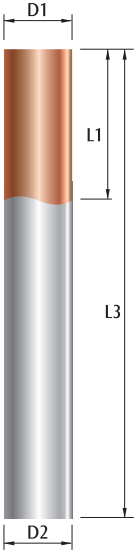


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
HEH0304	3.0	8	75	3
HEH0404	4.0	11	75	4
HEH0504	5.0	13	75	6
HEH0604	6.0	16	75	6
HEH0804	8.0	20	75	8
IEH0404	4.0	11	100	4
IEH0604	6.0	16	100	6
IEH0804	8.0	20	100	8
IEH1004	10.0	25	100	10
IEH1204	12.0	30	100	12
JEH0604	6.0	16	150	6
JEH0804	8.0	20	150	8
JEH1004	10.0	25	150	10
JEH1204	12.0	30	150	12
JEH1604	16.0	45	150	16
JEH2004	20.0	50	150	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø3	0 -0.006
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

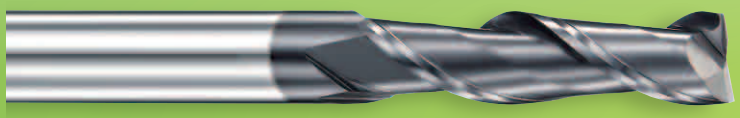
HEH IEH JEH4T 的切削條件詳見 P.147~P.152 Please find the milling condition on P.147~P.152

LFTA2T

超微粒長刃立銑刀 End Mills

Long Flute

MG | 0.6 μm | 35° | 2 Flutes | HRc >55 | T2

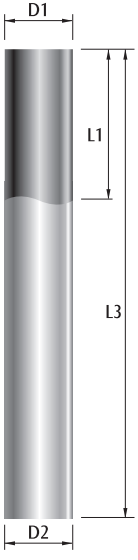


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
LFTA0202	2.0	12	50	4
LFTA0302	3.0	20	50	4
LFTA0302B	3.0	15	50	6
LFTA0402	4.0	25	75	4
LFTA0402B	4.0	20	75	6
LFTA0502	5.0	30	75	6
LFTA0602	6.0	30	75	6
LFTA0802	8.0	40	100	8
LFTA1002	10.0	40	100	10
LFTA1202	12.0	45	100	12

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
2.0	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.35

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

Unit : mm

LFTA2T 的切削條件詳見 P.153~P.154 Please find the milling condition on P.153~P.154

LFTA4T

超微粒長刃立銑刀 End Mills

Long Flute

MG | 0.6 µm | 45° | 4 Flutes | HRc ▶55 | T2

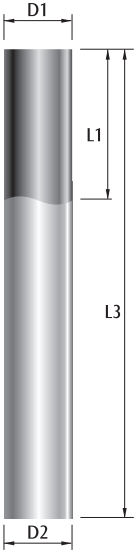


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
LFTA0204	2.0	15	50	4
LFTA0304	3.0	20	50	4
LFTA0304B	3.0	15	50	6
LFTA0404	4.0	25	75	4
LFTA0404B	4.0	20	75	6
LFTA0504	5.0	30	75	6
LFTA0604	6.0	30	75	6
LFTA0804	8.0	40	100	8
LFTA1004	10.0	40	100	10
LFTA1004L	10.0	50	100	10
LFTA1204	12.0	45	100	12
LFTA1204L	12.0	50	100	12
LFTA1604	16.0	60	150	16
LFTA1604L	16.0	70	150	16
LFTA2004	20.0	60	150	20
LFTA2004L	20.0	75	150	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
2.0	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

LFTA4T 的切削條件詳見 P.155~P.159 Please find the milling condition on P.155~P.159

LFTH2T

超微粒長刃立銑刀 End Mills

Long Flute

MG | 0.6 μm | 35° | 2 Flutes | HRc >55 | G10

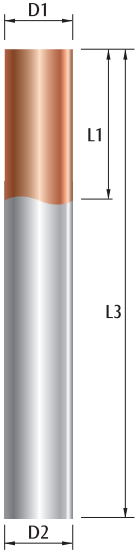
精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining



產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
LFTH0202	2.0	12	50	4
LFTH0302	3.0	20	50	4
LFTH0402	4.0	25	75	4
LFTH0502	5.0	30	75	6
LFTH0602	6.0	30	75	6
LFTH0802	8.0	40	100	8
LFTH1002	10.0	40	100	10
LFTH1202	12.0	45	100	12

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
2.0	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

Unit : mm

LFTH2T 的切削條件詳見 P.153~P.154 Please find the milling condition on P.153~P.154

LFTH4T

超微粒長刃立銑刀 End Mills

Long Flute

MG | 0.6 μm | 45° | 4 Flutes | HRc ▶55 | G10

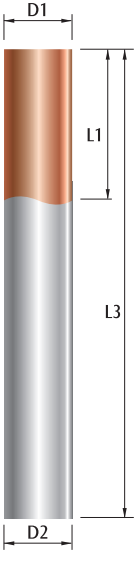


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
LFTH0204	2.0	15	50	4
LFTH0304	3.0	20	50	4
LFTH0404	4.0	25	75	4
LFTH0504	5.0	30	75	6
LFTH0604	6.0	30	75	6
LFTH0804	8.0	40	100	8
LFTH1004	10.0	40	100	10
LFTH1204	12.0	45	100	12
LFTH1604	16.0	60	150	16
LFTH2004	20.0	60	150	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
2.0	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

LFTH4T 的切削條件詳見 P.155~P.159 Please find the milling condition on P.155~P.159

RTG

極超微粒圓鼻角立銑刀 End Mills

Corner Radius

Super MG | 0.4 μm | 35° | R | 2 Flutes | HRc 55 | G10

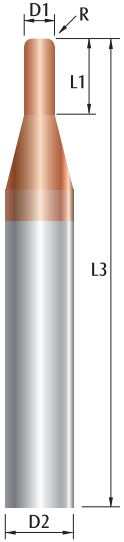


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
RTG0102	1.0	0.2	3	50	4
RTG0152	1.5	0.2	4	50	4
RTG0202	2.0	0.2	6	50	4
RTG0205	2.0	0.5	6	50	4
RTG0252	2.5	0.2	8	50	4
RTG0255	2.5	0.5	8	50	4
RTG0302	3.0	0.2	8	50	4
RTG0303	3.0	0.3	8	50	4
RTG0305	3.0	0.5	8	50	4
RTG0402	4.0	0.2	11	50	4
RTG0403	4.0	0.3	11	50	4
RTG0405	4.0	0.5	11	50	4
RTG0503	5.0	0.3	13	50	6
RTG0505	5.0	0.5	13	50	6
RTG0602	6.0	0.2	16	50	6
RTG0603	6.0	0.3	16	50	6
RTG0605	6.0	0.5	16	50	6
RTG0610	6.0	1.0	16	50	6

Unit : mm



直徑 D1	R 徑公差值 R Tolerance	直徑公差值 D1 Tolerance
1.0	+0.02 0	0 -0.02
1.5	+0.02 0	0 -0.02
2.0	+0.02 0	0 -0.02
2.5	+0.02 0	0 -0.02
3.0	+0.02 0	0 -0.02
4.0	+0.02 0	0 -0.02
5.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.025
10.0	+0.02 0	0 -0.03
12.0	+0.02 0	0 -0.035

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

Unit : mm

RTG 的切削條件詳見P.160~P.181 Please find the milling condition on P.160~P.181

RTG

極超微粒圓鼻角立銑刀 End Mills

Corner Radius

Super MG | 0.4 μm | 35° | R | 2 Flutes | HRc ▸55 | G10

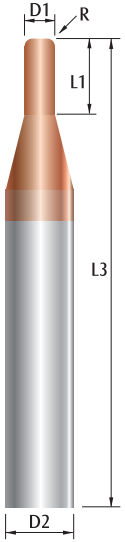


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
RTG0803	8.0	0.3	20	60	8
RTG0805	8.0	0.5	20	60	8
RTG1002	10.0	0.2	25	75	10
RTG1003	10.0	0.3	25	75	10
RTG1005	10.0	0.5	25	75	10
RTG1010	10.0	1.0	25	75	10
RTG1203	12.0	0.3	30	75	12
RTG1205	12.0	0.5	30	75	12
RTG1210	12.0	1.0	30	75	12
RTG1215	12.0	1.5	30	75	12
RTG1220	12.0	2.0	30	75	12

Unit : mm



直徑 D1	R 徑公差值 R Tolerance	直徑公差值 D1 Tolerance
1.0	+0.02 0	0 -0.02
1.5	+0.02 0	0 -0.02
2.0	+0.02 0	0 -0.02
2.5	+0.02 0	0 -0.02
3.0	+0.02 0	0 -0.02
4.0	+0.02 0	0 -0.02
5.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.025
10.0	+0.02 0	0 -0.03
12.0	+0.02 0	0 -0.035

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

Unit : mm

RTG 的切削條件詳見 P.160~P.181 Please find the milling condition on P.160~P.181

RTA

超微粒圓鼻角立銑刀 End Mills

▲塗層升級 Coating Upgraded

Corner Radius

MG | 0.6 μm | 35° | R | 2 Flutes | HRC 55 | G10



精銑 Finishing

中銑 Semi-finishing

粗銑 Roughing

乾式切削 Dry Machining

油霧切削 MQL (Mist)

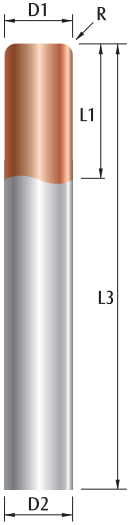
水溶性切削 Emulsion Machining

油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
RTA0205	2.0	0.5	6	50	4
RTA0305	3.0	0.5	8	50	3
RTA0405	4.0	0.5	10	50	4
RTA0410	4.0	1.0	10	50	4
RTA0505	5.0	0.5	13	50	6
RTA0510	5.0	1.0	13	50	6
RTA0605	6.0	0.5	16	50	6
RTA0610	6.0	1.0	16	50	6
RTA0805	8.0	0.5	19	60	8
RTA0810	8.0	1.0	19	60	8
RTA1005	10.0	0.5	25	75	10
RTA1010	10.0	1.0	25	75	10
RTA1015	10.0	1.5	25	75	10
RTA1020	10.0	2.0	25	75	10
RTA1210	12.0	1.0	30	75	12
RTA1220	12.0	2.0	30	75	12

Unit : mm



直徑 D1	R 徑公差值 R Tolerance	直徑公差值 D1 Tolerance
2.0	+0.02 0	0 -0.02
3.0	+0.02 0	0 -0.02
4.0	+0.02 0	0 -0.02
5.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.025
10.0	+0.02 0	0 -0.03
12.0	+0.02 0	0 -0.035

柄徑 D2	柄徑公差值 D2 Tolerance
Ø3	0 -0.008
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

Unit : mm

RTA 的切削條件詳見 P.182~P192 Please find the milling condition on P.182~P192

RTD

超微粒圓鼻角立銑刀 End Mills

▲塗層升級 Coating Upgraded | Corner Radius

MG | 0.6 μm | 35° | R | 4 Flutes | HRc ▶55 | G10

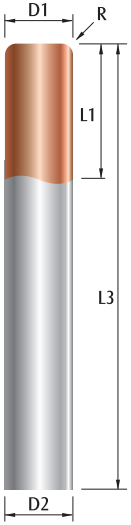


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
RTD0202	2.0	0.2	6	50	4
RTD0205	2.0	0.5	6	50	4
RTD0305	3.0	0.5	8	50	3
RTD0405	4.0	0.5	10	50	4
RTD0505	5.0	0.5	13	50	6
RTD0510	5.0	1.0	13	50	6
RTD0605	6.0	0.5	16	50	6
RTD0610	6.0	1.0	16	50	6
RTD0805	8.0	0.5	20	60	8
RTD0810	8.0	1.0	20	60	8
RTD1005Z	10.0	0.5	25	75	10
RTD1005	10.0	0.5	30	75	10
RTD1010Z	10.0	1.0	25	75	10
RTD1010	10.0	1.0	30	75	10
RTD1020Z	10.0	2.0	25	75	10
RTD1020	10.0	2.0	30	75	10
RTD1030Z	10.0	3.0	25	75	10
RTD1030	10.0	3.0	30	75	10
RTD1210	12.0	1.0	30	75	12
RTD1220	12.0	2.0	30	75	12
RTD1230	12.0	3.0	30	75	12

Unit : mm



直徑 D1	R 徑公差值 R Tolerance	直徑公差值 D1 Tolerance
2.0	+0.02 0	0 -0.02
3.0	+0.02 0	0 -0.02
4.0	+0.02 0	0 -0.02
5.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.025
10.0	+0.02 0	0 -0.03
12.0	+0.02 0	0 -0.035

柄徑 D2	柄徑公差值 D2 Tolerance
Ø3	0 -0.006
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

Unit : mm

RTD 的切削條件詳見P.193~P.207 Please find the milling condition on P.193~P.207

LRTA

超微粒長柄圓鼻角立銑刀 End Mills ▲塗層升級 Coating Upgraded

Long Shank Corner Radius

MG | 0.6 μm | 35° | R | 2 Flutes | HRc >55 | G10

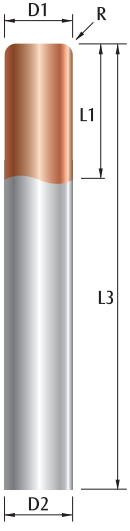


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
LRTA0405	4.0	0.5	11	75	4
LRTA0410	4.0	1.0	11	75	4
LRTA0602	6.0	0.2	16	75	6
LRTA0603	6.0	0.3	16	75	6
LRTA0605	6.0	0.5	16	75	6
LRTA0610	6.0	1.0	16	75	6
LRTA0803	8.0	0.3	19	100	8
LRTA0805	8.0	0.5	19	100	8
LRTA0810	8.0	1.0	19	100	8
LRTA1002	10.0	0.2	25	100	10
LRTA1003	10.0	0.3	25	100	10
LRTA1005	10.0	0.5	25	100	10
LRTA1010	10.0	1.0	25	100	10
LRTA1020	10.0	2.0	25	100	10
LRTA1205	12.0	0.5	30	100	12
LRTA1210	12.0	1.0	30	100	12
LRTA1220	12.0	2.0	30	100	12

Unit : mm



直徑 D1	R 徑公差值 R Tolerance	直徑公差值 D1 Tolerance
4.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.025
10.0	+0.02 0	0 -0.03
12.0	+0.02 0	0 -0.035

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

Unit : mm

LRTA 的切削條件詳見 P.208~P.215 Please find the milling condition on P.208~P.215

LRTD

超微粒長柄圓鼻角立銑刀 End Mills

▲塗層升級 Coating Upgraded

Long Shank Corner Radius

MG | 0.6 μm | 35° | R | 4 Flutes | HRc ▸55 | G10



精銑 Finishing

中銑 Semi-finishing

粗銑 Roughing

乾式切削 Dry Machining

油霧切削 MQL (Mist)

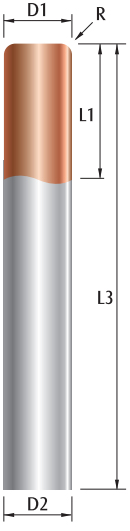
水溶性切削 Emulsion Machining

油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
LRTD0405	4.0	0.5	11	75	4
LRTD0410	4.0	1.0	11	75	4
LRTD0602	6.0	0.2	16	75	6
LRTD0603	6.0	0.3	16	75	6
LRTD0605	6.0	0.5	16	75	6
LRTD0610	6.0	1.0	16	75	6
LRTD0803	8.0	0.3	19	100	8
LRTD0805	8.0	0.5	19	100	8
LRTD0810	8.0	1.0	19	100	8
LRTD1002	10.0	0.2	25	100	10
LRTD1003	10.0	0.3	25	100	10
LRTD1005	10.0	0.5	25	100	10
LRTD1010	10.0	1.0	25	100	10
LRTD1020	10.0	2.0	25	100	10
LRTD1205	12.0	0.5	30	100	12
LRTD1210	12.0	1.0	30	100	12
LRTD1220	12.0	2.0	30	100	12
LRTD1610	16.0	1.0	45	150	16
LRTD1620	16.0	2.0	45	150	16

Unit : mm



直徑 D1	R 徑公差值 R Tolerance	直徑公差值 D1 Tolerance
4.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.025
10.0	+0.02 0	0 -0.03
12.0	+0.02 0	0 -0.035
16.0	+0.02 0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

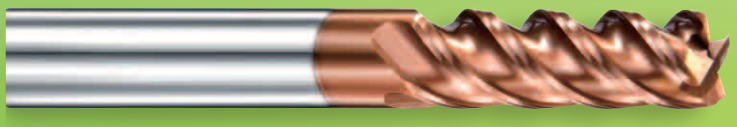
Unit : mm

LRTD 的切削條件詳見P.216~P.226 Please find the milling condition on P.216~P.226

RTB

極超微粒圓鼻角立銑刀 End Mills ▲塗層升級 Coating Upgraded | Corner Radius

Super MG | 0.4 μm | 45° | R | 4 Flutes | HRc ▶60 | G10

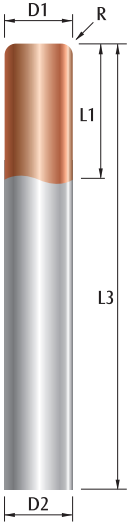


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
RTB0305	3.0	0.5	8	50	3
RTB0405	4.0	0.5	10	50	4
RTB0505	5.0	0.5	13	50	6
RTB0510	5.0	1.0	13	50	6
RTB0605	6.0	0.5	16	50	6
RTB0610	6.0	1.0	16	50	6
RTB0805	8.0	0.5	20	60	8
RTB0810	8.0	1.0	20	60	8
RTB1005Z	10.0	0.5	25	75	10
RTB1005	10.0	0.5	30	75	10
RTB1010Z	10.0	1.0	25	75	10
RTB1010	10.0	1.0	30	75	10
RTB1020Z	10.0	2.0	25	75	10
RTB1020	10.0	2.0	30	75	10
RTB1030Z	10.0	3.0	25	75	10
RTB1030	10.0	3.0	30	75	10
RTB1210	12.0	1.0	30	75	12
RTB1220	12.0	2.0	30	75	12
RTB1230	12.0	3.0	30	75	12

Unit : mm



直徑 D1	R 徑公差值 R Tolerance	直徑公差值 D1 Tolerance
3.0	+0.02 0	0 -0.02
4.0	+0.02 0	0 -0.02
5.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.025
10.0	+0.02 0	0 -0.03
12.0	+0.02 0	0 -0.035

柄徑 D2	柄徑公差值 D2 Tolerance
Ø3	0 -0.006
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

Unit : mm

RTB 的切削條件詳見 P.227~P.239 Please find the milling condition on P.227~P.239

PET

超微粒強力型立銑刀 End Mills

Short Flute

MG | 0.6 μm | 45° | 3 Flutes | HRc ▶60 | G10

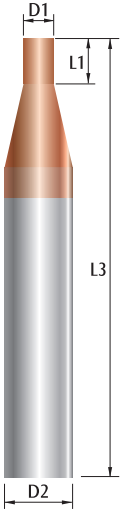


- 精銑 Finishing
- 中銑 Semi-finishing
- 粗銑 Roughing
- 乾式切削 Dry Machining
- 油霧切削 MQL (Mist)
- 水溶性切削 Emulsion Machining
- 油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
PET0303	3.0	3	50	6
PET0403	4.0	4	50	6
PET0503	5.0	5	50	6
PET0603	6.0	6	50	8
PET0803	8.0	8	60	10
PET1003	10.0	10	60	12

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

Unit : mm

HTA

超微粒高螺旋立銑刀 End Mills

High Helix

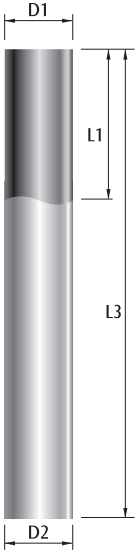


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
HTA0203	2.0	6	50	4
HTA0303	3.0	8	50	4
HTA0403	4.0	11	50	4
HTA0503	5.0	13	50	6
HTA0603	6.0	16	50	6
HTA0803	8.0	20	50	8
HTA1003	10.0	25	75	10
HTA1203	12.0	30	75	12
HTA1603	16.0	40	100	16
HTA2003	20.0	45	100	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
2.0	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

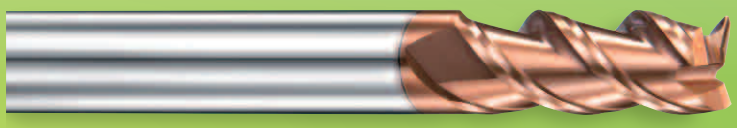
HTA 的切削條件詳見P.240~P.242 Please find the milling condition on P.240~P.242

HTD

超微粒高螺旋立銑刀 End Mills

High Helix

MG | 0.6 μm | 45° | 3 Flutes | HRc ▸60 | G10

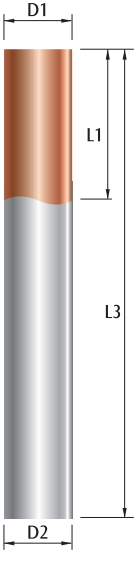


- 精銑 Finishing
- 中銑 Semi-finishing
- 粗銑 Roughing
- 乾式切削 Dry Machining
- 油霧切削 MQL (Mist)
- 水溶性切削 Emulsion Machining
- 油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
HTD0203	2.0	6	50	4
HTD0303	3.0	8	50	4
HTD0403	4.0	11	50	4
HTD0503	5.0	13	50	6
HTD0603	6.0	16	50	6
HTD0803	8.0	20	60	8
HTD1003	10.0	25	75	10
HTD1203	12.0	30	75	12
HTD1603	16.0	40	100	16
HTD2003	20.0	45	100	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
2.0	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

HTD 的切削條件詳見P.240~P.242 Please find the milling condition on P.240~P.242

ITA

極超微粒高螺旋立銑刀 End Mills

High Helix

Super MG | 0.4 μm | 50° | 3 Flutes | HRc ▶60 | T2

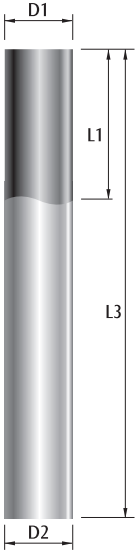


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ITA0303	3.0	8	50	6
ITA0403	4.0	12	50	6
ITA0603	6.0	16	50	6
ITA0803	8.0	20	60	8
ITA1003	10.0	25	75	10
ITA1203	12.0	30	75	12
ITA1603	16.0	45	100	16
ITA2003	20.0	45	100	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
3.0	0 -0.02
4.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

ITA 的切削條件詳見 P.243~P.245 Please find the milling condition on P.243~P.245

ITH

極超微粒高螺旋立銑刀 End Mills

High Helix

Super MG | 0.4 µm | 50° | 3 Flutes | HRc ▶60 | G10

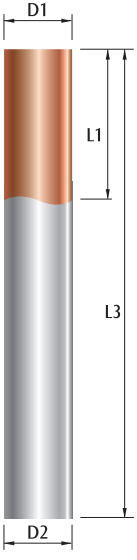


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ITH0303	3.0	8	50	6
ITH0403	4.0	12	50	6
ITH0603	6.0	16	50	6
ITH0803	8.0	20	60	8
ITH1003	10.0	25	75	10
ITH1203	12.0	30	75	12
ITH1603	16.0	45	100	16
ITH2003	20.0	45	100	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
3.0	0 -0.02
4.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

ITH 的切削條件詳見 P.243~P.245 Please find the milling condition on P.243~P.245

VTA

高硬度用立銑刀 End Mills

High Hardness

Super MG | 0.4 µm | 45° | 6 Flutes | HRc ▶65 | T2

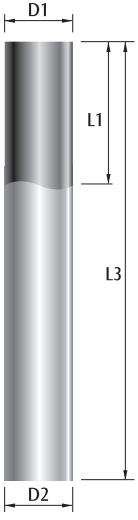


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
VTA0606	6.0	16	50	6
VTA0806	8.0	20	60	8
VTA1006	10.0	25	75	10
VTA1206	12.0	30	75	12
VTA1606	16.0	40	100	16

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

Unit : mm

VTA 的切削條件詳見 P.246~P.247 Please find the milling condition on P.246~P.247

VTB

難切削材用立銑刀 End Mills

Difficult-to-cut

Super MG | 0.4 µm | 45° | 6 Flutes | HRc ▸60 | G10

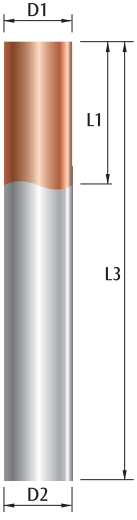


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
VTB0606	6.0	16	50	6
VTB0806	8.0	20	60	8
VTB1006	10.0	25	75	10
VTB1206	12.0	30	75	12
VTB1606	16.0	40	100	16

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

Unit : mm

VTB 的切削條件詳見 P.248~P.250 Please find the milling condition on P.248~P.250

WUA3T

超微粒粗齒中目立銑刀 End Mills

Roughing

MG | 0.6 μm | Roughing | 25° | 3 Flutes | HRc ▶55 | T2

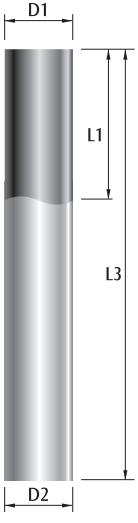


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
WUA0603	6.0	16	50	6
WUA0803	8.0	20	60	8
WUA1003	10.0	25	75	10
WUA1203	12.0	30	75	12
WUA1403	14.0	35	100	16
WUA1603	16.0	40	100	16
WUA1803	18.0	40	100	20
WUA2003	20.0	45	100	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
6.0	0 -0.04
8.0	0 -0.04
10.0	0 -0.045
12.0	0 -0.045
14.0	0 -0.05
16.0	0 -0.05
18.0	0 -0.05
20.0	0 -0.05

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

WUA3T 的切削條件詳見 P.251~P.254 Please find the milling condition on P.251~P.254

WUA4T

超微粒粗齒中目立銑刀 End Mills

Roughing

MG | 0.6 μm | Roughing | 30° | 4 Flutes | HRc ▸55 | T2

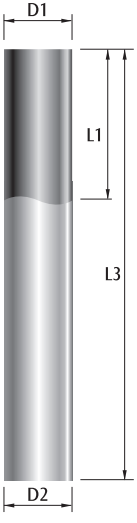


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
WUA0604	6.0	16	50	6
WUA0804	8.0	20	60	8
WUA1004	10.0	25	75	10
WUA1204	12.0	30	75	12
WUA1404	14.0	35	100	16
WUA1604	16.0	40	100	16
WUA1804	18.0	40	100	20
WUA2004	20.0	45	100	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
6.0	0 -0.04
8.0	0 -0.04
10.0	0 -0.045
12.0	0 -0.045
14.0	0 -0.05
16.0	0 -0.05
18.0	0 -0.05
20.0	0 -0.05

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

WUA4T 的切削條件詳見 P.255~P.260 Please find the milling condition on P.255~P.260

WWA3T

超微粒粗齒細目立銑刀 End Mills

Roughing

MG | 0.6 μm | Roughing | 25° | 3 Flutes | HRc >55 | T2

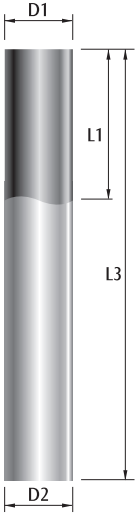


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
WWA0603	6.0	16	50	6
WWA0803	8.0	20	60	8
WWA1003	10.0	25	75	10
WWA1203	12.0	30	75	12
WWA1403	14.0	35	100	16
WWA1603	16.0	40	100	16
WWA1803	18.0	40	100	20
WWA2003	20.0	45	100	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
6.0	0 -0.04
8.0	0 -0.04
10.0	0 -0.045
12.0	0 -0.045
14.0	0 -0.05
16.0	0 -0.05
18.0	0 -0.05
20.0	0 -0.05

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

WWA3T 的切削條件詳見 P.261~P.264 Please find the milling condition on P.261~P.264

WWA4T

超微粒粗齒細目立銑刀 End Mills

Roughing

MG | 0.6 μm | Roughing | 30° | 4 Flutes | HRc ▸55 | T2

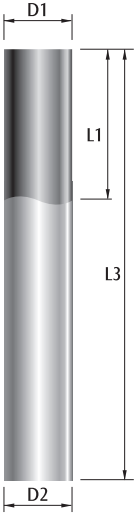


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
WWA0604	6.0	16	50	6
WWA0804	8.0	20	60	8
WWA1004	10.0	25	75	10
WWA1204	12.0	30	75	12
WWA1404	14.0	35	100	16
WWA1604	16.0	40	100	16
WWA1804	18.0	40	100	20
WWA2004	20.0	45	100	20

Unit : mm



直徑 D1	直徑公差值 D1 Tolerance
6.0	0 -0.04
8.0	0 -0.04
10.0	0 -0.045
12.0	0 -0.045
14.0	0 -0.05
16.0	0 -0.05
18.0	0 -0.05
20.0	0 -0.05

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

Unit : mm

WWA4T 的切削條件詳見 P.265~P.270 Please find the milling condition on P.265~P.270

TA

極超微粒斜度立銑刀 End Mills

Taper

Super MG | 0.4 μm | 35° | 2 Flutes | HRc ▶60 | G10

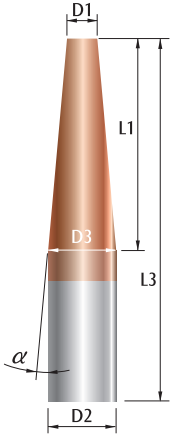


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 先端徑 Small Mill Dia.	L1 刃長 Flute Length	α 斜角 Taper Angle	D3 粗端徑 Large Mill Dia.	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
TA005005	0.5	2	30´	0.53	50	4
TA005010	0.5	2	1°	0.57	50	4
TA005015	0.5	2	1° 30´	0.60	50	4
TA005020	0.5	2	2°	0.64	50	4
TA005025	0.5	2	2° 30´	0.67	50	4
TA005030	0.5	2	3°	0.71	50	4
TA005050	0.5	2	5°	0.85	50	4
TA005070	0.5	2	7°	0.99	50	4
TA005100	0.5	2	10°	1.21	50	4
TA010005	1.0	4	30´	1.07	50	4
TA010010	1.0	4	1°	1.14	50	4
TA010015	1.0	4	1° 30´	1.21	50	4
TA010020	1.0	4	2°	1.28	50	4
TA010025	1.0	4	2° 30´	1.35	50	4
TA010030	1.0	4	3°	1.42	50	4
TA010050	1.0	4	5°	1.70	50	4
TA010070	1.0	4	7°	1.98	50	4
TA010100	1.0	4	10°	2.41	50	4

Unit : mm



柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

斜角公差值 α Tolerance	直徑公差值 D1 Tolerance
±6´	D1<1.0 0~-0.02
	1.0≦D1 0~-0.03

Unit : mm

TA

極超微粒斜度立銑刀 End Mills

Taper

Super MG | 0.4 µm | 35° | 2 Flutes | HRc ▶60 | G10

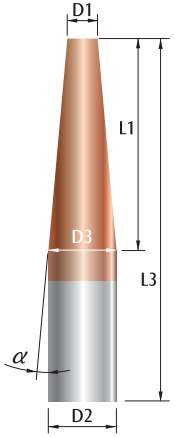


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 先端徑 Small Mill Dia.	L1 刃長 Flute Length	α 斜角 Taper Angle	D3 粗端徑 Large Mill Dia.	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
TA015005	1.5	5	30′	1.59	50	4
TA015010	1.5	5	1°	1.67	50	4
TA015015	1.5	5	1° 30′	1.76	50	4
TA015020	1.5	5	2°	1.85	50	4
TA015025	1.5	5	2° 30′	1.94	50	4
TA015030	1.5	5	3°	2.02	50	4
TA015050	1.5	5	5°	2.37	50	4
TA015070	1.5	5	7°	2.73	50	4
TA015100	1.5	5	10°	3.26	50	4
TA020005	2.0	96	30′	2.10	50	4
TA020010	2.0	6	1°	2.21	50	4
TA020015	2.0	6	1° 30′	2.31	50	4
TA020020	2.0	6	2°	2.42	50	4
TA020025	2.0	6	2° 30′	2.52	50	4
TA020030	2.0	6	3°	2.63	50	4
TA020050	2.0	6	5°	3.05	50	4
TA020070	2.0	6	7°	3.47	50	4
TA020100	2.0	5	10°	3.76	50	4

Unit : mm



柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

斜角公差值 α Tolerance	直徑公差值 D1 Tolerance
±6′	D1<1.0 0~-0.02
	1.0≦D1 0~-0.03

Unit : mm

TA

極超微粒斜度立銑刀 End Mills

Taper

Super MG | 0.4 μm | 35° | 2 Flutes | HRc ▶60 | G10

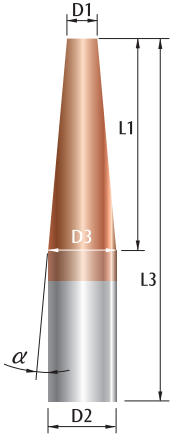


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 先端徑 Small Mill Dia.	L1 刃長 Flute Length	α 斜角 Taper Angle	D3 粗端徑 Large Mill Dia.	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
TA025005	2.5	8	30´	2.64	50	4
TA025010	2.5	8	1°	2.78	50	4
TA025015	2.5	8	1° 30´	2.92	50	4
TA025020	2.5	8	2°	3.06	50	4
TA025025	2.5	8	2° 30´	3.20	50	4
TA025030	2.5	8	3°	3.34	50	4
TA025050	2.5	8	5°	3.90	50	4
TA025070	2.5	8	7°	4.46	50	6
TA025100	2.5	8	10°	5.32	50	6
TA030005	3.0	10	30´	3.17	50	6
TA030010	3.0	10	1°	3.35	50	6
TA030015	3.0	10	1° 30´	3.52	50	6
TA030020	3.0	10	2°	3.70	50	6
TA030025	3.0	10	2° 30´	3.87	50	6
TA030030	3.0	10	3°	4.05	50	6
TA030050	3.0	10	5°	4.75	50	6
TA030070	3.0	10	7°	5.46	50	6
TA030100	3.0	8	10°	5.82	50	6

Unit : mm



柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

斜角公差值 α Tolerance	直徑公差值 D1 Tolerance
±6´	D1<1.0 0~-0.02
	1.0≦D1 0~-0.03

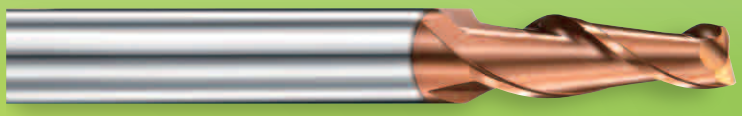
Unit : mm

TA

極超微粒斜度立銑刀 End Mills

Taper

Super MG | 0.4 µm | 35° | 2 Flutes | HRc ▸60 | G10

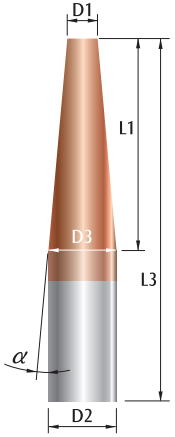


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 先端徑 Small Mill Dia.	L1 刃長 Flute Length	α 斜角 Taper Angle	D3 粗端徑 Large Mill Dia.	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
TA040005	4.0	15	30′	4.26	50	6
TA040010	4.0	15	1°	4.52	50	6
TA040015	4.0	15	1° 30′	4.79	50	6
TA040020	4.0	15	2°	5.05	50	6
TA040025	4.0	15	2° 30′	5.31	50	6
TA040030	4.0	15	3°	5.57	50	6
TA040050	4.0	15	5°	6.62	60	8
TA040070	4.0	15	7°	7.68	60	8
TA050005	5.0	20	30′	5.35	60	6
TA050010	5.0	20	1°	5.70	60	6
TA050015	5.0	18	1° 30′	5.94	60	6
TA050020	5.0	20	2°	6.40	60	8
TA050025	5.0	20	2° 30′	6.75	60	8
TA050030	5.0	20	3°	7.10	60	8
TA050050	5.0	20	5°	8.50	75	10
TA050070	5.0	20	7°	9.91	75	10
TA060005	6.0	20	30′	6.35	60	8
TA060010	6.0	20	1°	6.70	60	8
TA060015	6.0	20	1° 30′	7.05	60	8
TA060020	6.0	20	2°	7.40	60	8
TA060025	6.0	20	2° 30′	7.75	60	8
TA060030	6.0	18	3°	7.89	60	8
TA060050	6.0	20	5°	9.50	75	10

Unit : mm



柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

斜角公差值 α Tolerance	直徑公差值 D1 Tolerance
±6′	D1<1.0 0~-0.02
	1.0≦D1 0~-0.03

Unit : mm

TA

極超微粒斜度立銑刀 End Mills

Taper

Super MG | 0.4 μm | 35° | 2 Flutes | HRc ▶60 | G10

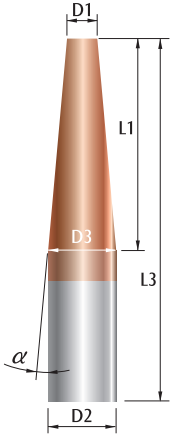


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 先端徑 Small Mill Dia.	L1 刃長 Flute Length	α 斜角 Taper Angle	D3 粗端徑 Large Mill Dia.	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
TA080005	8.0	25	30′	8.44	75	10
TA080010	8.0	25	1°	8.87	75	10
TA080015	8.0	25	1° 30′	9.31	75	10
TA080020	8.0	25	2°	9.75	75	10
TA080025	8.0	22	2° 30′	9.92	75	10
TA080030	8.0	25	3°	10.62	75	12
TA080050	8.0	22	5°	11.85	75	12
TA100005	10.0	35	30′	10.61	100	12
TA100010	10.0	35	1°	11.22	100	12
TA100015	10.0	35	1° 30′	11.83	100	12
TA100020	10.0	28	2°	11.96	100	12
TA100025	10.0	35	2° 30′	13.06	100	16
TA100030	10.0	35	3°	13.67	100	16
TA100050	10.0	33	5°	15.77	100	16

Unit : mm



柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

斜角公差值 α Tolerance	直徑公差值 D1 Tolerance
±6′	D1<1.0 0~-0.02
	1.0≦D1 0~-0.03

Unit : mm

TTA

極超微粒長刃斜度立銑刀 End Mills

Long Flute Taper

Super MG | 0.4 µm | 35° | 2 Flutes | HRc ▶60 | G10

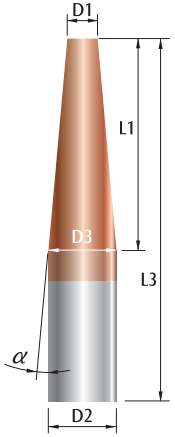


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 先端徑 Small Mill Dia.	L1 刃長 Flute Length	α 斜角 Taper Angle	D3 粗端徑 Large Mill Dia.	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
TTA01005	1.0	10	30´	1.17	50	4
TTA01010	1.0	10	1°	1.35	50	4
TTA01015	1.0	10	1° 30´	1.52	50	4
TTA01020	1.0	10	2°	1.70	50	4
TTA01025	1.0	10	2° 30´	1.87	50	4
TTA01030	1.0	10	3°	2.05	50	4
TTA01050	1.0	10	5°	2.75	50	4
TTA01070	1.0	10	7°	3.46	50	4
TTA01505	1.5	10	30´	1.67	50	4
TTA01510	1.5	10	1°	1.85	50	4
TTA01515	1.5	10	1° 30´	2.02	50	4
TTA01520	1.5	10	2°	2.20	50	4
TTA01525	1.5	10	2° 30´	2.37	50	4
TTA01530	1.5	10	3°	2.55	50	4
TTA02005	2.0	13	30´	2.23	50	4
TTA02010	2.0	13	1°	2.45	50	4
TTA02015	2.0	13	1° 30´	2.68	50	4
TTA02020	2.0	13	2°	2.91	50	4
TTA02025	2.0	13	2° 30´	3.14	50	4
TTA02030	2.0	13	3°	3.36	50	4
TTA02050	2.0	10	5°	3.75	50	4

Unit : mm



柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009

斜角公差值 α Tolerance	直徑公差值 D1 Tolerance
±6´	1.0≦D1 0~-0.03

Unit : mm

TTA

極超微粒長刃斜度立銑刀 End Mills

Long Flute Taper

Super MG | 0.4 μm | 35° | 2 Flutes | HRc ▶60 | G10

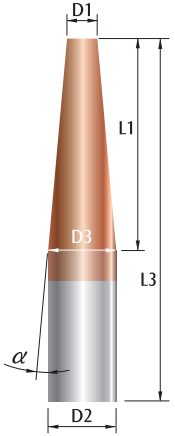


精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

產品規格 / SPECIFICATIONS

型號 Type NO.	D1 先端徑 Small Mill Dia.	L1 刃長 Flute Length	α 斜角 Taper Angle	D3 粗端徑 Large Mill Dia.	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
TTA02505	2.5	15	30´	2.76	50	4
TTA02510	2.5	15	1°	3.02	50	4
TTA02515	2.5	15	1° 30´	3.29	50	4
TTA02520	2.5	15	2°	3.55	50	4
TTA02525	2.5	15	2° 30´	3.81	50	4
TTA02530	2.5	13	3°	3.86	50	4
TTA02550	2.5	15	5°	5.12	50	6
TTA03005	3.0	20	30´	3.35	60	6
TTA03010	3.0	20	1°	3.70	60	6
TTA03015	3.0	20	1° 30´	4.05	60	6
TTA03020	3.0	20	2°	4.40	60	6
TTA03025	3.0	20	2° 30´	4.75	60	6
TTA03030	3.0	20	3°	5.10	60	6
TTA03050	3.0	16	5°	5.80	60	6
TTA04005	4.0	25	30´	4.44	60	6
TTA04010	4.0	25	1°	4.87	60	6
TTA04015	4.0	25	1° 30´	5.31	60	6
TTA04020	4.0	25	2°	5.75	60	6
TTA04025	4.0	25	2° 30´	6.18	60	8
TTA04030	4.0	25	3°	6.62	60	8
TTA04050	4.0	22	5°	7.85	60	8

Unit : mm



柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009

斜角公差值 α Tolerance	直徑公差值 D1 Tolerance
±6´	1.0≦D1 0~-0.03

Unit : mm

BTA^{2T} / BTD^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
BTA^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
BTD^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
BTA BTD 0102	10	60	18000~20000	600~800	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
0102	10	60	18000~20000	800~1100	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
0102	10	60	18000~20000	1000~1400	0.02~0.04	0.04~0.08	3D銑 (3D MILLING)
BTA BTD 0152	10	90	18000~20000	600~800	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
0152	10	90	18000~20000	800~1100	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0152	10	90	18000~20000	1000~1400	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTA BTD 0202	12	120	18000~20000	600~800	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
0202	12	120	18000~20000	800~1100	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0202	12	120	18000~20000	1000~1400	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTA BTD 0252	12	135	17000~18000	600~800	0.12~0.14	0.24~0.28	3D銑 (3D MILLING)
0252	12	135	17000~18000	800~1100	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
0252	12	135	17000~18000	1000~1400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
BTA BTD 0302	13	150	16000~17000	600~800	0.15~0.18	0.3~0.36	3D銑 (3D MILLING)
0302	13	150	16000~17000	800~1100	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
0302	13	150	16000~17000	1000~1400	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
BTA BTD 0402	15	190	15000~16000	600~800	0.18~0.22	0.36~0.44	3D銑 (3D MILLING)
0402	15	190	15000~16000	800~1200	0.11~0.13	0.22~0.26	3D銑 (3D MILLING)
0402	15	190	15000~16000	1200~1600	0.05~0.08	0.14~0.22	3D銑 (3D MILLING)
BTA BTD 0502	18	220	14000~15000	600~800	0.23~0.26	0.46~0.52	3D銑 (3D MILLING)
0502	18	220	14000~15000	700~1100	0.13~0.16	0.26~0.32	3D銑 (3D MILLING)
0502	18	220	14000~15000	1600~2000	0.05~0.09	0.14~0.18	3D銑 (3D MILLING)
BTA BTD 0602	20	230	12000~13000	600~1000	0.28~0.33	0.56~0.66	3D銑 (3D MILLING)
0602	20	245	13000~14000	1000~1400	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
0602	20	245	13000~14000	1600~2000	0.05~0.11	0.14~0.22	3D銑 (3D MILLING)
BTA BTD 0802	30	255	10000~11000	1000~1200	0.35~0.4	0.7~0.8	3D銑 (3D MILLING)
0802	30	255	10000~11000	1500~1900	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
0802	30	255	10000~11000	1800~2200	0.05~0.13	0.16~0.26	3D銑 (3D MILLING)
BTA BTD 1002	35	285	8700~9200	1000~1400	0.35~0.45	0.7~0.9	3D銑 (3D MILLING)
1002	35	285	8700~9200	1700~2100	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
1002	35	285	8700~9200	1800~2200	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
BTA BTD 1202	40	265	7000~8000	800~1200	0.4~0.5	0.8~1	3D銑 (3D MILLING)
1202	40	265	7000~8000	1300~1700	0.27~0.32	0.54~0.64	3D銑 (3D MILLING)
1202	40	265	7000~8000	1400~1800	0.1~0.2	0.3~0.4	3D銑 (3D MILLING)
BTA BTD 1602	50	255	5000~6000	600~800	0.6~0.65	1.2~1.3	3D銑 (3D MILLING)
1602	50	255	5000~6000	800~1200	0.35~0.4	0.7~0.8	3D銑 (3D MILLING)
1602	50	255	5000~6000	1300~1600	0.1~0.23	0.36~0.46	3D銑 (3D MILLING)
BTA BTD 2002	60	280	4000~5000	600~800	0.7~0.8	1.4~1.6	3D銑 (3D MILLING)
2002	60	280	4000~5000	1000~1400	0.4~0.45	0.8~0.9	3D銑 (3D MILLING)
2002	60	280	4000~5000	1700~2100	0.1~0.25	0.4~0.5	3D銑 (3D MILLING)

BTA^{2T} / BTD^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
BTA^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
BTD^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
BTA BTD 0102	10	60	18000~20000	700~1000	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
0102	10	60	18000~20000	1000~1300	0.02~0.04	0.04~0.08	3D銑 (3D MILLING)
BTA BTD 0152	10	90	18000~20000	700~1000	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0152	10	90	18000~20000	1000~1300	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTA BTD 0202	12	120	18000~20000	700~1000	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0202	12	120	18000~20000	1000~1300	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTA BTD 0252	12	135	17000~18000	700~1000	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0252	12	135	17000~18000	1000~1300	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTA BTD 0302	13	150	16000~17000	700~1000	0.09~0.11	0.18~0.22	3D銑 (3D MILLING)
0302	13	150	16000~17000	1000~1300	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
BTA BTD 0402	15	175	14000~15000	700~1000	0.11~0.13	0.22~0.26	3D銑 (3D MILLING)
0402	15	175	14000~15000	1100~1400	0.05~0.08	0.14~0.22	3D銑 (3D MILLING)
BTA BTD 0502	18	205	13000~14000	600~900	0.11~0.13	0.22~0.26	3D銑 (3D MILLING)
0502	18	205	13000~14000	1200~1500	0.05~0.08	0.14~0.22	3D銑 (3D MILLING)
BTA BTD 0602	20	230	12000~13000	700~1000	0.13~0.16	0.26~0.32	3D銑 (3D MILLING)
0602	20	230	12000~13000	1300~1700	0.05~0.11	0.14~0.22	3D銑 (3D MILLING)
BTA BTD 0802	30	255	10000~11000	1200~1600	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
0802	30	255	10000~11000	1300~1600	0.05~0.12	0.16~0.24	3D銑 (3D MILLING)
BTA BTD 1002	35	285	8700~9200	1200~1600	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
1002	35	285	8700~9200	1600~2000	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
BTA BTD 1202	40	260	6500~7500	1000~1300	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
1202	40	260	6500~7500	1200~1600	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
BTA BTD 1602	50	275	5000~6000	800~1100	0.27~0.32	0.54~0.64	3D銑 (3D MILLING)
1602	50	275	5000~6000	1200~1500	0.1~0.2	0.3~0.4	3D銑 (3D MILLING)
BTA BTD 2002	60	280	4000~5000	800~1100	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
2002	60	280	4000~5000	1200~1500	0.1~0.23	0.36~0.46	3D銑 (3D MILLING)

BTA^{2T} / BTD^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
BTA^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
BTD^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
BTA BTD 0102	10	60	18000~20000	700~900	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
0102	10	60	18000~20000	1000~1200	0.02~0.04	0.04~0.08	3D銑 (3D MILLING)
BTA BTD 0152	10	90	18000~20000	700~900	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0152	10	90	18000~20000	1000~1200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTA BTD 0202	12	120	18000~20000	700~900	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0202	12	120	18000~20000	1000~1200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTA BTD 0252	12	135	17000~18000	700~900	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0252	12	135	17000~18000	1000~1200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTA BTD 0302	13	150	16000~17000	700~900	0.09~0.11	0.18~0.22	3D銑 (3D MILLING)
0302	13	150	16000~17000	1000~1200	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
BTA BTD 0402	15	175	14000~15000	700~900	0.11~0.13	0.22~0.26	3D銑 (3D MILLING)
0402	15	175	14000~15000	1000~1300	0.05~0.08	0.14~0.22	3D銑 (3D MILLING)
BTA BTD 0502	18	205	13000~14000	600~800	0.11~0.13	0.22~0.26	3D銑 (3D MILLING)
0502	18	205	13000~14000	1100~1300	0.05~0.08	0.14~0.22	3D銑 (3D MILLING)
BTA BTD 0602	20	230	12000~13000	700~900	0.13~0.16	0.26~0.32	3D銑 (3D MILLING)
0602	20	230	12000~13000	1200~1600	0.05~0.11	0.14~0.22	3D銑 (3D MILLING)
BTA BTD 0802	30	255	10000~11000	1100~1500	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
0802	30	255	10000~11000	1200~1500	0.05~0.12	0.16~0.24	3D銑 (3D MILLING)
BTA BTD 1002	35	285	8700~9200	1100~1500	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
1002	35	285	8700~9200	1400~1800	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
BTA BTD 1202	40	260	6500~7500	1000~1200	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
1202	40	260	6500~7500	1200~1600	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
BTA BTD 1602	50	275	5000~6000	800~1000	0.27~0.32	0.54~0.64	3D銑 (3D MILLING)
1602	50	275	5000~6000	1200~1400	0.1~0.2	0.3~0.4	3D銑 (3D MILLING)
BTA BTD 2002	60	280	4000~5000	800~1000	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
2002	60	280	4000~5000	1200~1400	0.1~0.23	0.36~0.46	3D銑 (3D MILLING)

BTA^{4T} / BTD^{4T}

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵 : *Carbon Seels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
BTA^{4T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
BTD^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
BTA BTD 0104	10	60	18000~20000	1000~1400	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
0104	10	60	18000~20000	1400~1800	0.02~0.04	0.04~0.08	3D銑 (3D MILLING)
BTA BTD 0154	10	90	18000~20000	1000~1400	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0154	10	90	18000~20000	1400~1800	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTA BTD 0204	12	120	18000~20000	1000~1400	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0204	12	120	18000~20000	1400~1800	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTA BTD 0304	13	150	16000~17000	800~1200	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
0304	13	150	16000~17000	1400~1800	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
BTA BTD 0404	15	190	15000~16000	1000~1400	0.11~0.13	0.22~0.26	3D銑 (3D MILLING)
0404	15	190	15000~16000	1600~2000	0.05~0.08	0.14~0.22	3D銑 (3D MILLING)
BTA BTD 0504	18	220	14000~15000	1000~1400	0.13~0.16	0.26~0.32	3D銑 (3D MILLING)
0504	18	220	14000~15000	2000~2400	0.05~0.09	0.14~0.18	3D銑 (3D MILLING)
BTA BTD 0604	20	245	13000~14000	1200~1600	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
0604	20	245	13000~14000	2000~2400	0.05~0.11	0.14~0.22	3D銑 (3D MILLING)
BTA BTD 0804	25	305	12000~13000	1800~2200	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
0804	25	305	12000~13000	2700~3100	0.05~0.13	0.16~0.26	3D銑 (3D MILLING)
BTA BTD 1004	35	285	8700~9200	2000~2400	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
1004	35	285	8700~9200	2800~3200	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
BTA BTD 1204	40	265	7000~8000	1600~2000	0.27~0.32	0.54~0.64	3D銑 (3D MILLING)
1204	40	265	7000~8000	2200~2600	0.1~0.2	0.3~0.4	3D銑 (3D MILLING)
BTA BTD 1604	50	255	5000~6000	1000~1400	0.35~0.4	0.7~0.8	3D銑 (3D MILLING)
1604	50	255	5000~6000	1800~2200	0.1~0.23	0.36~0.46	3D銑 (3D MILLING)

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
BTA^{4T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
BTD^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
BTA BTD 0104	10	60	18000~20000	700~1100	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
0104	10	60	18000~20000	1000~1400	0.02~0.04	0.04~0.08	3D銑 (3D MILLING)
BTA BTD 0154	10	90	18000~20000	700~1100	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0154	10	90	18000~20000	1000~1400	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTA BTD 0204	12	110	16000~18000	700~1100	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0204	12	110	16000~18000	1000~1400	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTA BTD 0304	13	145	15000~16000	700~1100	0.1~0.12	0.18~0.22	3D銑 (3D MILLING)
0304	13	145	15000~16000	1000~1400	0.05~0.07	0.08~0.12	3D銑 (3D MILLING)
BTA BTD 0404	15	175	14000~15000	900~1300	0.11~0.13	0.22~0.26	3D銑 (3D MILLING)
0404	15	175	14000~15000	1400~1800	0.05~0.08	0.14~0.22	3D銑 (3D MILLING)
BTA BTD 0504	18	205	13000~14000	900~1300	0.13~0.16	0.22~0.26	3D銑 (3D MILLING)

BTA^{4T} / BTD^{4T}

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)

BTA^{4T} 冷卻方式 Coolant Type	乾式切削 Dry coolant	BTD^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
BTA BTD 0504	18	205	13000~14000	1700~2100	0.05~0.09	0.14~0.22	3D銑 (3D MILLING)
BTA BTD 0604	20	230	12000~13000	1000~1400	0.15~0.2	0.3~0.36	3D銑 (3D MILLING)
0604	20	230	12000~13000	1800~2200	0.05~0.11	0.14~0.22	3D銑 (3D MILLING)
BTA BTD 0804	25	255	10000~11000	1600~2000	0.18~0.23	0.3~0.4	3D銑 (3D MILLING)
0804	25	255	10000~11000	2400~2800	0.05~0.13	0.16~0.24	3D銑 (3D MILLING)
BTA BTD 1004	35	285	8700~9200	1600~2000	0.23~0.28	0.4~0.5	3D銑 (3D MILLING)
1004	35	285	8700~9200	2500~2900	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
BTA BTD 1204	40	190	5000~6000	1200~1600	0.27~0.32	0.54~0.64	3D銑 (3D MILLING)
1204	40	190	5000~6000	1800~2200	0.1~0.2	0.3~0.4	3D銑 (3D MILLING)
BTA BTD 1604	50	255	4500~5500	800~1200	0.35~0.4	0.6~0.7	3D銑 (3D MILLING)
1604	50	255	4500~5500	1500~1900	0.1~0.23	0.36~0.46	3D銑 (3D MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)

BTA^{4T} 冷卻方式 Coolant Type	乾式切削 Dry coolant	BTD^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
BTA BTD 0104	10	60	18000~20000	600~900	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
0104	10	60	18000~20000	900~1200	0.02~0.04	0.04~0.08	3D銑 (3D MILLING)
BTA BTD 0154	10	90	18000~20000	600~900	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0154	10	90	18000~20000	900~1200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTA BTD 0204	12	110	16000~18000	600~900	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0204	12	110	16000~18000	900~1200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTA BTD 0304	13	145	15000~16000	600~900	0.1~0.12	0.18~0.22	3D銑 (3D MILLING)
0304	13	145	15000~16000	900~1200	0.05~0.07	0.08~0.12	3D銑 (3D MILLING)
BTA BTD 0404	15	175	14000~15000	800~1200	0.11~0.13	0.22~0.26	3D銑 (3D MILLING)
0404	15	175	14000~15000	1300~1700	0.05~0.08	0.14~0.22	3D銑 (3D MILLING)
BTA BTD 0504	18	205	13000~14000	800~1200	0.13~0.16	0.22~0.26	3D銑 (3D MILLING)
0504	18	205	13000~14000	1500~1900	0.05~0.09	0.14~0.22	3D銑 (3D MILLING)
BTA BTD 0604	20	230	12000~13000	800~1200	0.15~0.2	0.3~0.36	3D銑 (3D MILLING)
0604	20	230	12000~13000	1600~2000	0.05~0.11	0.14~0.22	3D銑 (3D MILLING)
BTA BTD 0804	25	255	10000~11000	1400~1800	0.18~0.23	0.3~0.4	3D銑 (3D MILLING)
0804	25	255	10000~11000	2200~2600	0.05~0.13	0.16~0.24	3D銑 (3D MILLING)
BTA BTD 1004	35	285	8700~9200	1400~1800	0.23~0.28	0.4~0.5	3D銑 (3D MILLING)
1004	35	285	8700~9200	2000~2400	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
BTA BTD 1204	40	190	5000~6000	1100~1400	0.27~0.32	0.54~0.64	3D銑 (3D MILLING)
1204	40	190	5000~6000	1600~2000	0.1~0.2	0.3~0.4	3D銑 (3D MILLING)
BTA BTD 1604	50	255	4500~5500	800~1000	0.35~0.4	0.6~0.7	3D銑 (3D MILLING)
1604	50	255	4500~5500	1300~1600	0.1~0.23	0.36~0.46	3D銑 (3D MILLING)

BTB^{2T} / BTH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
BTB^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
BTH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
BTB BTH 0102	10	60	18000~20000	800~1000	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
0102	10	60	18000~20000	1000~1400	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
0102	10	60	18000~20000	1400~1800	0.02~0.04	0.04~0.08	3D銑 (3D MILLING)
BTB BTH 0152	12	90	18000~20000	800~1000	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
0152	12	90	18000~20000	1000~1400	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0152	12	90	18000~20000	1600~2000	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTB BTH 0202	14	120	18000~20000	800~1000	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
0202	14	120	18000~20000	1000~1400	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0202	14	120	18000~20000	1600~2000	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTB BTH 0252	16	135	17000~18000	800~1000	0.12~0.14	0.24~0.28	3D銑 (3D MILLING)
0252	16	135	17000~18000	1000~1400	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
0252	16	135	17000~18000	1600~2000	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
BTB BTH 0302	18	150	16000~17000	800~1000	0.15~0.18	0.3~0.36	3D銑 (3D MILLING)
0302	18	150	16000~17000	1000~1400	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
0302	18	150	16000~17000	1600~2000	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
BTB BTH 0402	20	190	15000~16000	800~1000	0.18~0.22	0.36~0.44	3D銑 (3D MILLING)
0402	20	190	15000~16000	1100~1500	0.11~0.13	0.22~0.26	3D銑 (3D MILLING)
0402	20	190	15000~16000	1600~2000	0.05~0.08	0.14~0.22	3D銑 (3D MILLING)
BTB BTH 0502	20	220	14000~15000	800~1200	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
0502	20	220	14000~15000	1100~1500	0.13~0.16	0.26~0.32	3D銑 (3D MILLING)
0502	20	220	14000~15000	1600~2000	0.05~0.09	0.14~0.18	3D銑 (3D MILLING)
BTB BTH 0602	20	230	12000~13000	800~1200	0.28~0.33	0.56~0.66	3D銑 (3D MILLING)
0602	20	245	13000~14000	1300~1700	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
0602	20	245	13000~14000	1800~2200	0.05~0.11	0.14~0.22	3D銑 (3D MILLING)
BTB BTH 0802	30	255	10000~11000	800~1200	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
0802	30	305	12000~13000	1900~2300	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
0802	30	305	12000~13000	1800~2200	0.05~0.13	0.2~0.26	3D銑 (3D MILLING)
BTB BTH 1002	35	285	8700~9200	1200~1600	0.35~0.45	0.7~0.9	3D銑 (3D MILLING)
1002	35	285	8700~9200	2100~2500	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
1002	35	285	8700~9200	2000~2400	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
BTB BTH 1202	40	265	7000~8000	1000~1400	0.4~0.5	0.8~1	3D銑 (3D MILLING)
1202	40	265	7000~8000	1700~2100	0.27~0.32	0.54~0.64	3D銑 (3D MILLING)
1202	40	265	7000~8000	2000~2400	0.1~0.2	0.3~0.4	3D銑 (3D MILLING)
BTB BTH 1602	50	275	5000~6000	800~1000	0.6~0.65	1.2~1.3	3D銑 (3D MILLING)
1602	50	275	5000~6000	1200~1600	0.35~0.4	0.7~0.8	3D銑 (3D MILLING)
1602	50	275	5000~6000	2000~2400	0.1~0.23	0.36~0.46	3D銑 (3D MILLING)
BTB BTH 2002	60	280	4000~5000	800~1200	0.7~0.8	1.4~1.6	3D銑 (3D MILLING)
2002	60	280	4000~5000	1400~1800	0.4~0.45	0.8~0.9	3D銑 (3D MILLING)
2002	60	280	4000~5000	1400~1800	0.1~0.25	0.4~0.5	3D銑 (3D MILLING)

BTB^{2T} / BTH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
BTB^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
BTH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
BTB BTH 0102	10	60	18000~20000	900~1300	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
0102	10	60	18000~20000	1200~1600	0.02~0.04	0.04~0.08	3D銑 (3D MILLING)
BTB BTH 0152	12	90	18000~20000	900~1300	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0152	12	90	18000~20000	1200~1600	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTB BTH 0202	14	110	16000~18000	800~1200	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0202	14	110	16000~18000	1200~1600	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTB BTH 0252	16	120	15000~16000	800~1200	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0252	16	120	15000~16000	1200~1600	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTB BTH 0302	18	145	15000~16000	800~1200	0.09~0.11	0.18~0.22	3D銑 (3D MILLING)
0302	18	145	15000~16000	1200~1600	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
BTB BTH 0402	20	175	14000~15000	900~1300	0.11~0.13	0.22~0.26	3D銑 (3D MILLING)
0402	20	175	14000~15000	1400~1800	0.05~0.08	0.14~0.22	3D銑 (3D MILLING)
BTB BTH 0502	20	205	13000~14000	900~1300	0.13~0.16	0.26~0.32	3D銑 (3D MILLING)
0502	20	205	13000~14000	1400~1800	0.05~0.09	0.14~0.18	3D銑 (3D MILLING)
BTB BTH 0602	20	230	12000~13000	900~1300	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
0602	20	230	12000~13000	1600~2000	0.05~0.11	0.14~0.22	3D銑 (3D MILLING)
BTB BTH 0802	30	255	10000~11000	600~1000	0.25~0.3	0.5~0.6	3D銑 (3D MILLING)
0802	30	255	10000~11000	1700~2100	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
0802	30	305	12000~13000	1600~2000	0.05~0.13	0.16~0.26	3D銑 (3D MILLING)
BTB BTH 1002	35	285	8700~9200	800~1200	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
1002	35	285	8700~9200	1800~2200	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
1002	35	285	8700~9200	1600~2000	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
BTB BTH 1202	40	260	6500~7500	800~1100	0.35~0.4	0.7~0.8	3D銑 (3D MILLING)
1202	40	260	6500~7500	1500~1900	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
1202	40	260	6500~7500	1600~2000	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
BTB BTH 1602	50	275	5000~6000	700~900	0.5~0.55	1~1.1	3D銑 (3D MILLING)
1602	50	275	5000~6000	1000~1400	0.27~0.32	0.54~0.64	3D銑 (3D MILLING)
1602	50	275	5000~6000	1600~2000	0.1~0.2	0.3~0.4	3D銑 (3D MILLING)
BTB BTH 2002	60	280	4000~5000	600~1000	0.6~0.65	1.2~1.3	3D銑 (3D MILLING)
2002	60	280	4000~5000	1000~1400	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
2002	60	280	4000~5000	1300~1700	0.1~0.23	0.36~0.46	3D銑 (3D MILLING)

BTB^{2T} / BTH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
BTB^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
BTH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
BTB BTH 0102	10	60	18000~20000	900~1300	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
0102	10	60	18000~20000	1100~1400	0.02~0.04	0.04~0.08	3D銑 (3D MILLING)
BTB BTH 0152	12	90	18000~20000	900~1300	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0152	12	90	18000~20000	1100~1400	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTB BTH 0202	14	110	16000~18000	800~1200	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0202	14	110	16000~18000	1100~1400	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTB BTH 0252	16	120	15000~16000	800~1200	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0252	16	120	15000~16000	1100~1400	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTB BTH 0302	18	145	15000~16000	800~1200	0.09~0.11	0.18~0.22	3D銑 (3D MILLING)
0302	18	145	15000~16000	1100~1400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
BTB BTH 0402	20	175	14000~15000	900~1300	0.11~0.13	0.22~0.26	3D銑 (3D MILLING)
0402	20	175	14000~15000	1200~1600	0.05~0.08	0.14~0.22	3D銑 (3D MILLING)
BTB BTH 0502	20	205	13000~14000	900~1300	0.13~0.16	0.26~0.32	3D銑 (3D MILLING)
0502	20	205	13000~14000	1200~1600	0.05~0.09	0.14~0.18	3D銑 (3D MILLING)
BTB BTH 0602	20	230	12000~13000	900~1300	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
0602	20	230	12000~13000	1400~1800	0.05~0.11	0.14~0.22	3D銑 (3D MILLING)
BTB BTH 0802	30	255	10000~11000	600~1000	0.25~0.3	0.5~0.6	3D銑 (3D MILLING)
0802	30	255	10000~11000	1700~2100	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
0802	30	305	12000~13000	1400~1800	0.05~0.13	0.16~0.26	3D銑 (3D MILLING)
BTB BTH 1002	35	285	8700~9200	800~1200	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
1002	35	285	8700~9200	1800~2200	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
1002	35	285	8700~9200	1400~1800	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
BTB BTH 1202	40	260	6500~7500	800~1100	0.35~0.4	0.7~0.8	3D銑 (3D MILLING)
1202	40	260	6500~7500	1500~1900	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
1202	40	260	6500~7500	1400~1800	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
BTB BTH 1602	50	275	5000~6000	700~900	0.5~0.55	1~1.1	3D銑 (3D MILLING)
1602	50	275	5000~6000	1000~1400	0.27~0.32	0.54~0.64	3D銑 (3D MILLING)
1602	50	275	5000~6000	1400~1800	0.1~0.2	0.3~0.4	3D銑 (3D MILLING)
BTB BTH 2002	60	280	4000~5000	600~1000	0.6~0.65	1.2~1.3	3D銑 (3D MILLING)
2002	60	280	4000~5000	1000~1400	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
2002	60	280	4000~5000	1200~1600	0.1~0.23	0.36~0.46	3D銑 (3D MILLING)

BTB^{2T} / BTH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material

沃斯田鐵系不銹鋼：*Stainless Steels*
SUS304 : 1.4301 : AISI 304 (HRc28~32)

BTB^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant	BTH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
BTB BTH 0102	10	60	18000~20000	900~1300	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
0102	10	60	18000~20000	1100~1400	0.02~0.04	0.04~0.08	3D銑 (3D MILLING)
BTB BTH 0152	12	90	18000~20000	900~1300	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0152	12	90	18000~20000	1100~1400	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTB BTH 0202	14	110	16000~18000	800~1200	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0202	14	110	16000~18000	1100~1400	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTB BTH 0252	16	120	15000~16000	800~1200	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
0252	16	120	15000~16000	1100~1400	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
BTB BTH 0302	18	145	15000~16000	800~1200	0.09~0.11	0.18~0.22	3D銑 (3D MILLING)
0302	18	145	15000~16000	1100~1400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
BTB BTH 0402	20	175	14000~15000	900~1300	0.11~0.13	0.22~0.26	3D銑 (3D MILLING)
0402	20	175	14000~15000	1200~1600	0.05~0.08	0.14~0.22	3D銑 (3D MILLING)
BTB BTH 0502	20	205	13000~14000	900~1300	0.13~0.16	0.26~0.32	3D銑 (3D MILLING)
0502	20	205	13000~14000	1200~1600	0.05~0.09	0.14~0.18	3D銑 (3D MILLING)
BTB BTH 0602	20	230	12000~13000	900~1300	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
0602	20	230	12000~13000	1400~1800	0.05~0.11	0.14~0.22	3D銑 (3D MILLING)
BTB BTH 0802	30	255	10000~11000	600~1000	0.25~0.3	0.5~0.6	3D銑 (3D MILLING)
0802	30	255	10000~11000	1700~2100	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
0802	30	305	12000~13000	1400~1800	0.05~0.13	0.16~0.26	3D銑 (3D MILLING)
BTB BTH 1002	35	285	8700~9200	800~1200	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
1002	35	285	8700~9200	1800~2200	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
1002	35	285	8700~9200	1400~1800	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
BTB BTH 1202	40	260	6500~7500	800~1100	0.35~0.4	0.7~0.8	3D銑 (3D MILLING)
1202	40	260	6500~7500	1500~1900	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
1202	40	260	6500~7500	1400~1800	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
BTB BTH 1602	50	275	5000~6000	700~900	0.5~0.55	1~1.1	3D銑 (3D MILLING)
1602	50	275	5000~6000	1000~1400	0.27~0.32	0.54~0.64	3D銑 (3D MILLING)
1602	50	275	5000~6000	1400~1800	0.1~0.2	0.3~0.4	3D銑 (3D MILLING)
BTB BTH 2002	60	280	4000~5000	600~1000	0.6~0.65	1.2~1.3	3D銑 (3D MILLING)
2002	60	280	4000~5000	1000~1400	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
2002	60	280	4000~5000	1200~1600	0.1~0.23	0.36~0.46	3D銑 (3D MILLING)

BTB4T / BTH4T

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵 : *Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
BTB4T 冷卻方式 Coolant Type	乾式切削 Dry coolant
BTH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min-1)	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
BTB BTH 0204	14	120	18000~20000	1200~1600	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
0204	14	120	18000~20000	1800~2200	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
BTB BTH 0304	14	150	16000~17000	1200~1600	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
0304	14	150	16000~17000	1800~2200	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
BTB BTH 0404	20	190	15000~16000	1400~1800	0.11~0.13	0.22~0.26	3D銑 (3D MILLING)
0404	20	190	15000~16000	2200~2600	0.05~0.08	0.14~0.22	3D銑 (3D MILLING)
BTB BTH 0504	20	220	14000~15000	1400~1800	0.13~0.16	0.26~0.32	3D銑 (3D MILLING)
0504	20	220	14000~15000	2400~2800	0.05~0.09	0.14~0.18	3D銑 (3D MILLING)
BTB BTH 0604	20	245	13000~14000	1600~2000	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
0604	20	245	13000~14000	2600~3000	0.05~0.11	0.14~0.22	3D銑 (3D MILLING)
BTB BTH 0804	30	305	12000~13000	2200~2600	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
0804	30	305	12000~13000	3000~3400	0.05~0.13	0.2~0.26	3D銑 (3D MILLING)
BTB BTH 1004	35	285	8700~9200	2400~2800	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
1004	35	285	8700~9200	3000~3400	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
BTB BTH 1204	40	265	7000~8000	2000~2400	0.27~0.32	0.54~0.64	3D銑 (3D MILLING)
1204	40	265	7000~8000	2800~3200	0.1~0.2	0.3~0.4	3D銑 (3D MILLING)
BTB BTH 1604	50	255	5000~6000	1400~1800	0.35~0.4	0.7~0.8	3D銑 (3D MILLING)
1604	50	255	5000~6000	2400~2800	0.1~0.23	0.36~0.46	3D銑 (3D MILLING)

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
BTA4T 冷卻方式 Coolant Type	乾式切削 Dry coolant
BTD4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min-1)	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
BTB BTH 0204	14	110	16000~18000	1000~1200	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
0204	14	110	16000~18000	1600~2000	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
BTB BTH 0304	14	145	15000~16000	1000~1400	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
0304	14	145	15000~16000	1600~2000	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
BTB BTH 0404	20	175	14000~15000	1200~1600	0.11~0.13	0.22~0.26	3D銑 (3D MILLING)
0404	20	175	14000~15000	2000~2400	0.05~0.08	0.14~0.22	3D銑 (3D MILLING)
BTB BTH 0504	20	205	13000~14000	1200~1600	0.13~0.16	0.26~0.32	3D銑 (3D MILLING)
0504	20	205	13000~14000	2200~2600	0.05~0.09	0.14~0.18	3D銑 (3D MILLING)
BTB BTH 0604	20	230	12000~13000	1200~1600	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
0604	20	230	12000~13000	2400~2800	0.05~0.11	0.14~0.22	3D銑 (3D MILLING)
BTB BTH 0804	30	255	10000~11000	2000~2400	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
0804	30	305	12000~13000	2800~3200	0.05~0.13	0.16~0.26	3D銑 (3D MILLING)
BTB BTH 1004	35	285	8700~9200	2200~2600	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
1004	35	285	8700~9200	2800~3200	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)

BTB^{4T} / BTH^{4T}

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)

BTB^{4T} 冷卻方式 Coolant Type	乾式切削 Dry coolant	BTH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
BTB BTH 1204	40	225	5500~6500	1800~2200	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
1204	40	225	5500~6500	2600~3000	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
BTB BTH 1604	50	200	4000~5000	1000~1400	0.27~0.32	0.54~0.64	3D銑 (3D MILLING)
1604	50	200	4000~5000	2000~2400	0.1~0.2	0.3~0.4	3D銑 (3D MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)

BTB^{4T} 冷卻方式 Coolant Type	乾式切削 Dry coolant	BTH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
BTB BTH 0204	14	110	16000~18000	900~1100	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
0204	14	110	16000~18000	1400~1800	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
BTB BTH 0304	14	145	15000~16000	900~1200	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
0304	14	145	15000~16000	1400~1800	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
BTB BTH 0404	20	175	14000~15000	1200~1400	0.11~0.13	0.22~0.26	3D銑 (3D MILLING)
0404	20	175	14000~15000	1800~2200	0.05~0.08	0.14~0.22	3D銑 (3D MILLING)
BTB BTH 0504	20	205	13000~14000	1200~1400	0.13~0.16	0.26~0.32	3D銑 (3D MILLING)
0504	20	205	13000~14000	2000~2400	0.05~0.09	0.14~0.18	3D銑 (3D MILLING)
BTB BTH 0604	20	230	12000~13000	1200~1400	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
0604	20	230	12000~13000	2200~2600	0.05~0.11	0.14~0.22	3D銑 (3D MILLING)
BTB BTH 0804	30	255	10000~11000	1800~2200	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
0804	30	305	12000~13000	2600~3000	0.05~0.13	0.16~0.26	3D銑 (3D MILLING)
BTB BTH 1004	35	285	8700~9200	2000~2400	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
1004	35	285	8700~9200	2400~2800	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
BTB BTH 1204	40	225	5500~6500	1600~2000	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
1204	40	225	5500~6500	2000~2400	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
BTB BTH 1604	50	200	4000~5000	900~1200	0.27~0.32	0.54~0.64	3D銑 (3D MILLING)
1604	50	200	4000~5000	1600~2000	0.1~0.2	0.3~0.4	3D銑 (3D MILLING)

BTB^{4T} / BTH^{4T}

切削條件表 Milling Conditions

被切削材 Work Material	沃斯田鐵系不銹鋼：*Stainless Steels* **SUS304 : 1.4301 : AISI 304 (HRc28~32)**
BTB^{4T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
BTH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
BTB BTH 0204	14	110	16000~18000	900~1100	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
0204	14	110	16000~18000	1400~1800	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
BTB BTH 0304	14	145	15000~16000	900~1200	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
0304	14	145	15000~16000	1400~1800	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
BTB BTH 0404	20	175	14000~15000	1200~1400	0.11~0.13	0.22~0.26	3D銑 (3D MILLING)
0404	20	175	14000~15000	1800~2200	0.05~0.08	0.14~0.22	3D銑 (3D MILLING)
BTB BTH 0504	20	205	13000~14000	1200~1400	0.13~0.16	0.26~0.32	3D銑 (3D MILLING)
0504	20	205	13000~14000	2000~2400	0.05~0.09	0.14~0.18	3D銑 (3D MILLING)
BTB BTH 0604	20	230	12000~13000	1200~1400	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
0604	20	230	12000~13000	2200~2600	0.05~0.11	0.14~0.22	3D銑 (3D MILLING)
BTB BTH 0804	30	255	10000~11000	1800~2200	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
0804	30	305	12000~13000	2600~3000	0.05~0.13	0.16~0.26	3D銑 (3D MILLING)
BTB BTH 1004	35	285	8700~9200	2000~2400	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
1004	35	285	8700~9200	2400~2800	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
BTB BTH 1204	40	225	5500~6500	1600~2000	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
1204	40	225	5500~6500	2000~2400	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
BTB BTH 1604	50	200	4000~5000	900~1200	0.27~0.32	0.54~0.64	3D銑 (3D MILLING)
1604	50	200	4000~5000	1600~2000	0.1~0.2	0.3~0.4	3D銑 (3D MILLING)

HBA IBA / HBH IBH 切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
HBA IBA 冷卻方式 Coolant Type	乾式切削 Dry coolant
HBH IBH 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
HBA HBH 0202	40	105	15500~16500	1600~2000	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
HBA HBH 0252	40	115	15500~16500	1600~2000	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
HBA HBH 0302	40	135	13000~14000	1800~2200	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)
HBA HBH 0402	40	160	11500~12500	1800~2200	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
HBA HBH 0502	40	175	10000~11000	1800~2200	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
HBA HBH 0602	40	175	8800~9300	1600~2000	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
HBA HBH 0802	40	265	9500~10500	1600~2000	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
IBA IBH 0202	60	80	12000~13000	1200~1600	0.03~0.05	0.08~0.12	3D銑 (3D MILLING)
IBA IBH 0302	60	120	12000~13000	1300~1700	0.03~0.06	0.08~0.12	3D銑 (3D MILLING)
IBA IBH 0402	60	150	11000~12000	1400~1800	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
IBA IBH 0602	60	200	10000~11000	1600~2000	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
IBA IBH 0802	60	225	8300~8800	1400~1800	0.06~0.1	0.16~0.2	3D銑 (3D MILLING)
IBA IBH 1002	60	290	8700~9200	1400~1800	0.05~0.14	0.18~0.28	3D銑 (3D MILLING)
IBA IBH 1202	60	325	8200~8600	1400~1800	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)

被切削材 Work Material	合金工具鋼 / 碳工具鋼：*Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
HBA IBA 冷卻方式 Coolant Type	乾式切削 Dry coolant
HBH IBH 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
HBA HBH 0202	40	105	15500~16500	1400~1800	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
HBA HBH 0252	40	115	15500~16500	1400~1800	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
HBA HBH 0302	40	135	13000~14000	1600~2000	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)
HBA HBH 0402	40	160	11500~12500	1600~2000	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
HBA HBH 0502	40	175	10000~11000	1600~2000	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
HBA HBH 0602	40	175	8800~9300	1400~1800	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
HBA HBH 0802	40	265	9500~10500	1400~1800	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
IBA IBH 0202	60	75	11000~12000	1200~1600	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
IBA IBH 0302	60	110	11000~12000	1200~1600	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
IBA IBH 0402	60	130	10000~11000	1200~1600	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
IBA IBH 0602	60	180	9000~10000	1400~1800	0.05~0.08	0.12~0.16	3D銑 (3D MILLING)
IBA IBH 0802	60	210	8000~8500	1200~1600	0.05~0.1	0.16~0.2	3D銑 (3D MILLING)
IBA IBH 1002	60	260	8000~8500	1200~1600	0.05~0.14	0.18~0.28	3D銑 (3D MILLING)
IBA IBH 1202	60	270	7000~7500	1200~1600	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)

HBA IBA / HBH IBH 切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)						
HBA IBA 冷卻方式 Coolant Type	乾式切削 Dry coolant			HBH IBH 冷卻方式 Coolant Type	濕式切削 Wet coolant		
型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
HBA HBH 0202	40	105	15500~16500	1200~1600	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
HBA HBH 0252	40	115	15500~16500	1200~1600	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
HBA HBH 0302	40	135	13000~14000	1400~1800	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)
HBA HBH 0402	40	160	11500~12500	1400~1800	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
HBA HBH 0502	40	175	10000~11000	1400~1800	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
HBA HBH 0602	40	175	8800~9300	1300~1700	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
HBA HBH 0802	40	265	9500~10500	1300~1700	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
IBA IBH 0202	60	75	11000~12000	1000~1400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
IBA IBH 0302	60	110	11000~12000	1000~1400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
IBA IBH 0402	60	130	10000~11000	1000~1400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
IBA IBH 0602	60	180	9000~10000	1200~1600	0.05~0.08	0.12~0.16	3D銑 (3D MILLING)
IBA IBH 0802	60	200	7500~8000	1000~1400	0.05~0.1	0.16~0.2	3D銑 (3D MILLING)
IBA IBH 1002	60	230	7000~7500	1000~1400	0.05~0.14	0.18~0.28	3D銑 (3D MILLING)
IBA IBH 1202	60	250	6500~7000	1000~1400	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)

ETA^{2T} / ETD^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
ETA^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
ETD^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.		刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETA ETD	0102	12	30	9000~10000	700~1000	0.03~0.05	1	溝銑 (SLOTTING)
	0102	12	30	9000~10000	800~1200	0.06~0.08	1	溝銑 (SLOTTING)
	0102	12	30	9000~10000	700~900	1	0.03~0.05	側銑 (SIDE MILLING)
	0102	12	30	9000~10000	700~1000	1	0.06~0.08	側銑 (SIDE MILLING)
ETA ETD	0152	14	45	9000~10000	700~1000	0.03~0.05	1.5	溝銑 (SLOTTING)
	0152	14	45	9000~10000	800~1200	0.06~0.09	1.5	溝銑 (SLOTTING)
	0152	14	45	9000~10000	800~1000	1.5	0.03~0.05	側銑 (SIDE MILLING)
	0152	14	45	9000~10000	700~1000	1.5	0.06~0.09	側銑 (SIDE MILLING)
ETA ETD	0202	16	55	8700~9200	700~1000	0.04~0.06	2	溝銑 (SLOTTING)
	0202	16	55	8700~9200	1000~1400	0.07~0.13	2	溝銑 (SLOTTING)
	0202	16	55	8700~9200	800~1000	4	0.04~0.06	側銑 (SIDE MILLING)
	0202	16	55	8700~9200	700~1100	4	0.07~0.13	側銑 (SIDE MILLING)
ETA ETD	0252	16	65	8000~8500	700~1000	0.04~0.06	2.5	溝銑 (SLOTTING)
	0252	16	65	8000~8500	1000~1400	0.07~0.13	2.5	溝銑 (SLOTTING)
	0252	16	65	8000~8500	800~1000	5	0.04~0.06	側銑 (SIDE MILLING)
	0252	16	65	8000~8500	700~1100	5	0.07~0.13	側銑 (SIDE MILLING)
ETA ETD	0302S	18	75	7500~8000	700~1000	0.04~0.08	3	溝銑 (SLOTTING)
	0302S	18	75	7500~8000	1000~1400	0.09~0.15	3	溝銑 (SLOTTING)
	0302S	18	75	7500~8000	700~1000	6	0.04~0.08	側銑 (SIDE MILLING)
	0302S	18	75	7500~8000	800~1100	6	0.09~0.15	側銑 (SIDE MILLING)
ETA ETD	0302	18	75	7500~8000	700~1000	0.04~0.08	3	溝銑 (SLOTTING)
	0302	18	75	7500~8000	1200~1600	0.09~0.15	3	溝銑 (SLOTTING)
	0302	18	75	7500~8000	700~1000	6	0.04~0.08	側銑 (SIDE MILLING)
	0302	18	75	7500~8000	800~1200	6	0.09~0.15	側銑 (SIDE MILLING)
ETA ETD	0402	20	75	5700~6200	700~1000	0.05~0.1	4	溝銑 (SLOTTING)
	0402	20	75	5700~6200	1200~1600	0.11~0.18	4	溝銑 (SLOTTING)
	0402	20	75	5700~6200	700~1000	8	0.05~0.1	側銑 (SIDE MILLING)
	0402	20	75	5700~6200	1000~1400	8	0.11~0.18	側銑 (SIDE MILLING)
ETA ETD	0502S	20	80	4800~5300	700~1000	0.05~0.1	5	溝銑 (SLOTTING)
	0502S	20	80	4800~5300	1200~1600	0.15~0.25	5	溝銑 (SLOTTING)
	0502S	20	80	4800~5300	700~1000	10	0.05~0.1	側銑 (SIDE MILLING)
	0502S	20	80	4800~5300	1000~1400	10	0.15~0.25	側銑 (SIDE MILLING)
ETA ETD	0502	20	80	4800~5300	700~1000	0.05~0.1	5	溝銑 (SLOTTING)
	0502	20	80	4800~5300	1200~1600	0.15~0.25	5	溝銑 (SLOTTING)
	0502	20	80	4800~5300	700~1000	10	0.05~0.1	側銑 (SIDE MILLING)
	0502	20	80	4800~5300	1000~1400	10	0.15~0.25	側銑 (SIDE MILLING)
ETA ETD	0602	23	80	4000~4500	700~1000	0.05~0.1	6	溝銑 (SLOTTING)
	0602	23	80	4000~4500	800~1200	0.3~0.4	6	溝銑 (SLOTTING)
	0602	23	80	4000~4500	700~1000	12	0.05~0.1	側銑 (SIDE MILLING)
	0602	23	80	4000~4500	1400~1800	12	0.3~0.4	側銑 (SIDE MILLING)

ETA^{2T} / ETD^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
ETA^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
ETD^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.		刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETA ETD	0802	30	90	2700~3200	700~1000	0.05~0.1	8	溝銑 (SLOTTING)
	0802	30	90	2700~3200	700~1000	0.4~0.6	8	溝銑 (SLOTTING)
	0802	30	90	2700~3200	500~800	16	0.05~0.1	側銑 (SIDE MILLING)
	0802	30	90	2700~3200	1200~1600	16	0.4~0.6	側銑 (SIDE MILLING)
ETA ETD	1002	35	85	2500~3000	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
	1002	35	85	2500~3000	700~1100	0.5~0.7	10	溝銑 (SLOTTING)
	1002	35	70	2000~2500	400~700	20	0.05~0.1	側銑 (SIDE MILLING)
	1002	35	70	2000~2500	800~1200	20	0.5~0.7	側銑 (SIDE MILLING)
ETA ETD	1202	37	105	2500~3000	700~1000	0.05~0.1	12	溝銑 (SLOTTING)
	1202	37	85	2000~2500	500~800	0.6~0.9	12	溝銑 (SLOTTING)
	1202	37	115	2800~3300	500~800	24	0.05~0.1	側銑 (SIDE MILLING)
	1202	37	115	2800~3300	1000~1400	24	0.4~0.5	側銑 (SIDE MILLING)
ETA ETD	1602	50	100	1800~2300	500~800	0.05~0.1	16	溝銑 (SLOTTING)
	1602	50	85	1500~2000	400~700	0.8~1.2	16	溝銑 (SLOTTING)
	1602	50	115	2000~2500	500~800	16	0.8~1.2	側銑 (SIDE MILLING)
	1602	50	115	2000~2500	400~700	32	0.05~0.1	側銑 (SIDE MILLING)
	1602	50	115	2000~2500	700~1000	32	0.4~0.5	側銑 (SIDE MILLING)
ETA ETD	2002	55	95	1300~1800	400~700	0.05~0.15	20	溝銑 (SLOTTING)
	2002	55	80	1000~1500	300~600	0.8~1.2	20	溝銑 (SLOTTING)
	2002	55	110	1500~2000	400~700	20	0.8~1.2	側銑 (SIDE MILLING)
	2002	55	110	1500~2000	300~600	40	0.05~0.15	側銑 (SIDE MILLING)
	2002	55	110	1500~2000	500~800	40	0.4~0.5	側銑 (SIDE MILLING)

ETA^{2T} / ETD^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	鉻鉬合金鋼：*Chromium Molybdenum Alloy Steels* SCM440 : 1.7225 : 4140 : 42CrMoA (HRc25~28)
ETA^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
ETD^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.		刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETA ETD	0102	14	30	9000~10000	700~1000	0.03~0.05	1	溝銑 (SLOTTING)
	0102	14	30	9000~10000	800~1200	0.06~0.08	1	溝銑 (SLOTTING)
	0102	14	30	9000~10000	600~800	1	0.03~0.05	側銑 (SIDE MILLING)
	0102	14	30	9000~10000	500~800	1	0.06~0.08	側銑 (SIDE MILLING)
ETA ETD	0152	14	45	9000~10000	700~1000	0.03~0.05	1.5	溝銑 (SLOTTING)
	0152	14	45	9000~10000	800~1200	0.06~0.09	1.5	溝銑 (SLOTTING)
	0152	14	45	9000~10000	700~900	1.5	0.03~0.05	側銑 (SIDE MILLING)
	0152	14	45	9000~10000	500~800	1.5	0.06~0.09	側銑 (SIDE MILLING)
ETA ETD	0202	16	55	8700~9200	700~1000	0.04~0.06	2	溝銑 (SLOTTING)
	0202	16	55	8700~9200	1000~1400	0.07~0.13	2	溝銑 (SLOTTING)
	0202	16	55	8700~9200	800~1000	4	0.04~0.06	側銑 (SIDE MILLING)
	0202	16	55	8700~9200	700~1000	4	0.07~0.13	側銑 (SIDE MILLING)
ETA ETD	0252	16	65	8000~8500	700~1000	0.04~0.06	2.5	溝銑 (SLOTTING)
	0252	16	65	8000~8500	1000~1400	0.07~0.13	2.5	溝銑 (SLOTTING)
	0252	16	65	8000~8500	700~900	5	0.04~0.06	側銑 (SIDE MILLING)
	0252	16	65	8000~8500	700~1000	5	0.07~0.13	側銑 (SIDE MILLING)
ETA ETD	0302S	18	75	7500~8000	700~1000	0.04~0.08	3	溝銑 (SLOTTING)
	0302S	18	75	7500~8000	900~1300	0.09~0.15	3	溝銑 (SLOTTING)
	0302S	18	75	7500~8000	700~1000	6	0.04~0.08	側銑 (SIDE MILLING)
	0302S	18	75	7500~8000	800~1100	6	0.09~0.15	側銑 (SIDE MILLING)
ETA ETD	0302	18	75	7500~8000	700~1000	0.04~0.08	3	溝銑 (SLOTTING)
	0302	18	75	7500~8000	1000~1400	0.09~0.15	3	溝銑 (SLOTTING)
	0302	18	75	7500~8000	700~1000	6	0.04~0.08	側銑 (SIDE MILLING)
	0302	18	75	7500~8000	800~1200	6	0.09~0.15	側銑 (SIDE MILLING)
ETA ETD	0402	20	75	5700~6200	700~1000	0.05~0.1	4	溝銑 (SLOTTING)
	0402	20	75	5700~6200	1000~1400	0.11~0.18	4	溝銑 (SLOTTING)
	0402	20	75	5700~6200	700~1000	8	0.05~0.1	側銑 (SIDE MILLING)
	0402	20	75	5700~6200	1000~1400	8	0.11~0.18	側銑 (SIDE MILLING)
ETA ETD	0502S	20	80	4800~5300	700~1000	0.05~0.1	5	溝銑 (SLOTTING)
	0502S	20	80	4800~5300	1000~1400	0.15~0.25	5	溝銑 (SLOTTING)
	0502S	20	80	4800~5300	700~1000	10	0.05~0.1	側銑 (SIDE MILLING)
	0502S	20	80	4800~5300	1000~1400	10	0.15~0.25	側銑 (SIDE MILLING)
ETA ETD	0502	20	80	4800~5300	700~1000	0.05~0.1	5	溝銑 (SLOTTING)
	0502	20	80	4800~5300	1000~1400	0.15~0.25	5	溝銑 (SLOTTING)
	0502	20	80	4800~5300	700~1000	10	0.05~0.1	側銑 (SIDE MILLING)
	0502	20	80	4800~5300	1000~1400	10	0.15~0.25	側銑 (SIDE MILLING)
ETA ETD	0602	23	80	4000~4500	700~1000	0.05~0.1	6	溝銑 (SLOTTING)
	0602	23	80	4000~4500	800~1200	0.3~0.4	6	溝銑 (SLOTTING)
	0602	23	80	4000~4500	500~800	12	0.05~0.1	側銑 (SIDE MILLING)
	0602	23	80	4000~4500	1200~1600	12	0.3~0.4	側銑 (SIDE MILLING)

ETA^{2T} / ETD^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	鉻鉬合金鋼：*Chromium Molybdenum Alloy Steels* SCM440 : 1.7225 : 4140 : 42CrMoA (HRc25~28)
ETA^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
ETD^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.		刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETA ETD	0802	30	75	2700~3200	700~1000	0.05~0.1	8	溝銑 (SLOTTING)
	0802	30	75	2700~3200	700~1000	0.4~0.6	8	溝銑 (SLOTTING)
	0802	30	75	2700~3200	500~800	16	0.05~0.1	側銑 (SIDE MILLING)
	0802	30	75	2700~3200	1200~1600	16	0.4~0.6	側銑 (SIDE MILLING)
ETA ETD	1002	35	100	3000~3500	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
	1002	35	75	2200~2700	700~1000	0.5~0.7	10	溝銑 (SLOTTING)
	1002	35	100	3000~3500	400~700	20	0.05~0.1	側銑 (SIDE MILLING)
	1002	35	70	2000~2500	800~1200	20	0.5~0.7	側銑 (SIDE MILLING)
ETA ETD	1202	37	105	2500~3000	700~1000	0.05~0.1	12	溝銑 (SLOTTING)
	1202	37	85	2000~2500	500~800	0.6~0.9	12	溝銑 (SLOTTING)
	1202	37	115	2800~3300	500~800	24	0.05~0.1	側銑 (SIDE MILLING)
	1202	37	115	2800~3300	1000~1400	24	0.4~0.5	側銑 (SIDE MILLING)
ETA ETD	1602	50	100	1800~2300	500~800	0.05~0.1	16	溝銑 (SLOTTING)
	1602	50	85	1500~2000	400~700	0.8~1.2	16	溝銑 (SLOTTING)
	1602	50	115	2000~2500	500~800	16	0.8~1.2	側銑 (SIDE MILLING)
	1602	50	115	2000~2500	400~700	32	0.05~0.1	側銑 (SIDE MILLING)
	1602	50	115	2000~2500	700~1000	32	0.4~0.5	側銑 (SIDE MILLING)
ETA ETD	2002	55	95	1300~1800	400~700	0.05~0.15	20	溝銑 (SLOTTING)
	2002	55	80	1000~1500	300~600	0.8~1.2	20	溝銑 (SLOTTING)
	2002	55	110	1500~2000	400~700	20	0.8~1.2	側銑 (SIDE MILLING)
	2002	55	110	1500~2000	300~600	40	0.05~0.15	側銑 (SIDE MILLING)
	2002	55	110	1500~2000	500~800	40	0.4~0.5	側銑 (SIDE MILLING)

ETA^{2T} / ETD^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
ETA^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
ETD^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.		刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETA ETD	0102	14	30	9000~10000	700~1000	0.03~0.05	1	溝銑 (SLOTTING)
	0102	14	30	9000~10000	700~1000	0.06~0.08	1	溝銑 (SLOTTING)
	0102	14	30	9000~10000	500~700	1	0.03~0.05	側銑 (SIDE MILLING)
	0102	14	30	9000~10000	400~700	1	0.06~0.08	側銑 (SIDE MILLING)
ETA ETD	0152	14	45	9000~10000	700~1000	0.03~0.05	1.5	溝銑 (SLOTTING)
	0152	14	45	9000~10000	700~1000	0.06~0.09	1.5	溝銑 (SLOTTING)
	0152	14	45	9000~10000	600~800	1.5	0.03~0.05	側銑 (SIDE MILLING)
	0152	14	45	9000~10000	400~700	1.5	0.06~0.09	側銑 (SIDE MILLING)
ETA ETD	0202	16	55	8700~9200	700~1000	0.04~0.06	2	溝銑 (SLOTTING)
	0202	16	55	8700~9200	800~1200	0.07~0.13	2	溝銑 (SLOTTING)
	0202	16	55	8700~9200	700~900	4	0.04~0.06	側銑 (SIDE MILLING)
	0202	16	55	8700~9200	500~800	4	0.07~0.13	側銑 (SIDE MILLING)
ETA ETD	0252	16	65	8000~8500	700~1000	0.04~0.06	2.5	溝銑 (SLOTTING)
	0252	16	65	8000~8500	800~1200	0.07~0.13	2.5	溝銑 (SLOTTING)
	0252	16	65	8000~8500	700~900	5	0.04~0.06	側銑 (SIDE MILLING)
	0252	16	65	8000~8500	500~800	5	0.07~0.13	側銑 (SIDE MILLING)
ETA ETD	0302S	18	75	7500~8000	700~1000	0.04~0.08	3	溝銑 (SLOTTING)
	0302S	18	75	7500~8000	800~1100	0.09~0.15	3	溝銑 (SLOTTING)
	0302S	18	75	7500~8000	700~900	6	0.04~0.08	側銑 (SIDE MILLING)
	0302S	18	75	7500~8000	700~1000	6	0.09~0.15	側銑 (SIDE MILLING)
ETA ETD	0302	18	75	7500~8000	700~1000	0.04~0.08	3	溝銑 (SLOTTING)
	0302	18	75	7500~8000	800~1200	0.09~0.15	3	溝銑 (SLOTTING)
	0302	18	75	7500~8000	700~900	6	0.04~0.08	側銑 (SIDE MILLING)
	0302	18	75	7500~8000	700~1000	6	0.09~0.15	側銑 (SIDE MILLING)
ETA ETD	0402	20	75	5700~6200	700~1000	0.05~0.1	4	溝銑 (SLOTTING)
	0402	20	75	5700~6200	800~1200	0.11~0.18	4	溝銑 (SLOTTING)
	0402	20	75	5700~6200	700~1000	8	0.05~0.1	側銑 (SIDE MILLING)
	0402	20	75	5700~6200	800~1200	8	0.11~0.18	側銑 (SIDE MILLING)
ETA ETD	0502S	20	80	4800~5300	700~1000	0.05~0.1	5	溝銑 (SLOTTING)
	0502S	20	80	4800~5300	800~1200	0.15~0.25	5	溝銑 (SLOTTING)
	0502S	20	80	4800~5300	700~1000	10	0.05~0.1	側銑 (SIDE MILLING)
	0502S	20	80	4800~5300	800~1200	10	0.15~0.25	側銑 (SIDE MILLING)
ETA ETD	0502	20	80	4800~5300	700~1000	0.05~0.1	5	溝銑 (SLOTTING)
	0502	20	80	4800~5300	800~1200	0.15~0.25	5	溝銑 (SLOTTING)
	0502	20	80	4800~5300	700~1000	10	0.05~0.1	側銑 (SIDE MILLING)
	0502	20	80	4800~5300	800~1200	10	0.15~0.25	側銑 (SIDE MILLING)
ETA ETD	0602	23	80	4000~4500	700~1000	0.05~0.1	6	溝銑 (SLOTTING)
	0602	23	80	4000~4500	700~1000	0.3~0.4	6	溝銑 (SLOTTING)
	0602	23	80	4000~4500	500~800	12	0.05~0.1	側銑 (SIDE MILLING)
	0602	23	80	4000~4500	1000~1400	12	0.3~0.4	側銑 (SIDE MILLING)

ETA^{2T} / ETD^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)

ETA^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant	ETD^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.		刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETA ETD	0802	30	75	2700~3200	700~1000	0.05~0.1	8	溝銑 (SLOTTING)
	0802	30	75	2700~3200	500~800	0.4~0.6	8	溝銑 (SLOTTING)
	0802	30	75	2700~3200	500~800	16	0.05~0.1	側銑 (SIDE MILLING)
	0802	30	75	2700~3200	1000~1400	16	0.4~0.6	側銑 (SIDE MILLING)
ETA ETD	1002	35	100	3000~3500	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
	1002	35	75	2200~2700	500~800	0.5~0.7	10	溝銑 (SLOTTING)
	1002	35	100	3000~3500	400~700	20	0.05~0.1	側銑 (SIDE MILLING)
	1002	35	70	2000~2500	700~1100	20	0.5~0.7	側銑 (SIDE MILLING)
ETA ETD	1202	37	105	2500~3000	700~1000	0.05~0.1	12	溝銑 (SLOTTING)
	1202	37	85	2000~2500	400~700	0.6~0.9	12	溝銑 (SLOTTING)
	1202	37	115	2800~3300	400~700	24	0.05~0.1	側銑 (SIDE MILLING)
	1202	37	115	2800~3300	800~1200	24	0.4~0.5	側銑 (SIDE MILLING)
ETA ETD	1602	50	100	1800~2300	500~800	0.05~0.1	16	溝銑 (SLOTTING)
	1602	50	85	1500~2000	300~600	0.8~1.2	16	溝銑 (SLOTTING)
	1602	50	115	2000~2500	300~600	16	0.8~1.2	側銑 (SIDE MILLING)
	1602	50	115	2000~2500	300~600	32	0.05~0.1	側銑 (SIDE MILLING)
	1602	50	115	2000~2500	500~800	32	0.4~0.5	側銑 (SIDE MILLING)
ETA ETD	2002	55	95	1300~1800	400~700	0.05~0.15	20	溝銑 (SLOTTING)
	2002	55	80	1000~1500	300~500	0.8~1.2	20	溝銑 (SLOTTING)
	2002	55	110	1500~2000	300~500	20	0.8~1.2	側銑 (SIDE MILLING)
	2002	55	110	1500~2000	300~600	40	0.05~0.15	側銑 (SIDE MILLING)
	2002	55	110	1500~2000	300~600	40	0.4~0.5	側銑 (SIDE MILLING)

ETA^{2T} / ETD^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)

ETA^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant	ETD^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.		刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETA ETD	0102	14	30	9000~10000	700~1000	0.03~0.05	1	溝銑 (SLOTTING)
	0102	14	30	9000~10000	700~1000	0.06~0.08	1	溝銑 (SLOTTING)
	0102	14	30	9000~10000	500~700	1	0.03~0.05	側銑 (SIDE MILLING)
	0102	14	30	9000~10000	400~700	1	0.06~0.08	側銑 (SIDE MILLING)
ETA ETD	0152	14	45	9000~10000	700~1000	0.03~0.05	1.5	溝銑 (SLOTTING)
	0152	14	45	9000~10000	700~1000	0.06~0.09	1.5	溝銑 (SLOTTING)
	0152	14	45	9000~10000	500~800	1.5	0.03~0.05	側銑 (SIDE MILLING)
	0152	14	45	9000~10000	400~700	1.5	0.06~0.09	側銑 (SIDE MILLING)
ETA ETD	0202	16	55	8700~9200	700~1000	0.04~0.06	2	溝銑 (SLOTTING)
	0202	16	55	8700~9200	800~1200	0.07~0.13	2	溝銑 (SLOTTING)
	0202	16	55	8700~9200	600~800	4	0.04~0.06	側銑 (SIDE MILLING)
	0202	16	55	8700~9200	500~800	4	0.07~0.13	側銑 (SIDE MILLING)
ETA ETD	0252	16	65	8000~8500	700~1000	0.04~0.06	2.5	溝銑 (SLOTTING)
	0252	16	65	8000~8500	800~1200	0.07~0.13	2.5	溝銑 (SLOTTING)
	0252	16	65	8000~8500	600~800	5	0.04~0.06	側銑 (SIDE MILLING)
	0252	16	65	8000~8500	500~800	5	0.07~0.13	側銑 (SIDE MILLING)
ETA ETD	0302S	18	75	7500~8000	700~1000	0.04~0.08	3	溝銑 (SLOTTING)
	0302S	18	75	7500~8000	800~1100	0.09~0.15	3	溝銑 (SLOTTING)
	0302S	18	75	7500~8000	600~800	6	0.04~0.08	側銑 (SIDE MILLING)
	0302S	18	75	7500~8000	700~1000	6	0.09~0.15	側銑 (SIDE MILLING)
ETA ETD	0302	18	75	7500~8000	700~1000	0.04~0.08	3	溝銑 (SLOTTING)
	0302	18	75	7500~8000	800~1200	0.09~0.15	3	溝銑 (SLOTTING)
	0302	18	75	7500~8000	600~800	6	0.04~0.08	側銑 (SIDE MILLING)
	0302	18	75	7500~8000	700~1000	6	0.09~0.15	側銑 (SIDE MILLING)
ETA ETD	0402	20	75	5700~6200	700~1000	0.05~0.1	4	溝銑 (SLOTTING)
	0402	20	75	5700~6200	800~1200	0.11~0.18	4	溝銑 (SLOTTING)
	0402	20	75	5700~6200	700~900	8	0.05~0.1	側銑 (SIDE MILLING)
	0402	20	75	5700~6200	800~1200	8	0.11~0.18	側銑 (SIDE MILLING)
ETA ETD	0502S	20	80	4800~5300	700~1000	0.05~0.1	5	溝銑 (SLOTTING)
	0502S	20	80	4800~5300	800~1200	0.15~0.25	5	溝銑 (SLOTTING)
	0502S	20	80	4800~5300	700~1000	10	0.05~0.1	側銑 (SIDE MILLING)
	0502S	20	80	4800~5300	800~1200	10	0.15~0.25	側銑 (SIDE MILLING)
ETA ETD	0502	20	80	4800~5300	700~1000	0.05~0.1	5	溝銑 (SLOTTING)
	0502	20	80	4800~5300	800~1200	0.15~0.25	5	溝銑 (SLOTTING)
	0502	20	80	4800~5300	700~1000	10	0.05~0.1	側銑 (SIDE MILLING)
	0502	20	80	4800~5300	800~1200	10	0.15~0.25	側銑 (SIDE MILLING)
ETA ETD	0602	23	80	4000~4500	700~1000	0.05~0.1	6	溝銑 (SLOTTING)
	0602	23	80	4000~4500	700~1000	0.3~0.4	6	溝銑 (SLOTTING)
	0602	23	80	4000~4500	500~700	12	0.05~0.1	側銑 (SIDE MILLING)
	0602	23	80	4000~4500	1000~1400	12	0.3~0.4	側銑 (SIDE MILLING)

ETA^{2T} / ETD^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
ETA^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
ETD^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.		刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETA ETD	0802	30	75	2700~3200	700~1000	0.05~0.1	8	溝銑 (SLOTTING)
	0802	30	75	2700~3200	500~800	0.4~0.6	8	溝銑 (SLOTTING)
	0802	30	75	2700~3200	500~700	16	0.05~0.1	側銑 (SIDE MILLING)
	0802	30	75	2700~3200	1000~1400	16	0.4~0.6	側銑 (SIDE MILLING)
ETA ETD	1002	35	100	3000~3500	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
	1002	35	75	2200~2700	500~800	0.5~0.7	10	溝銑 (SLOTTING)
	1002	35	100	3000~3500	400~600	20	0.05~0.1	側銑 (SIDE MILLING)
	1002	35	70	2000~2500	700~1100	20	0.5~0.7	側銑 (SIDE MILLING)
ETA ETD	1202	37	105	2500~3000	700~1000	0.05~0.1	12	溝銑 (SLOTTING)
	1202	37	85	2000~2500	400~700	0.6~0.9	12	溝銑 (SLOTTING)
	1202	37	115	2800~3300	400~600	24	0.05~0.1	側銑 (SIDE MILLING)
	1202	37	115	2800~3300	800~1200	24	0.4~0.5	側銑 (SIDE MILLING)
ETA ETD	1602	50	100	1800~2300	500~800	0.05~0.1	16	溝銑 (SLOTTING)
	1602	50	85	1500~2000	300~600	0.8~1.2	16	溝銑 (SLOTTING)
	1602	50	115	2000~2500	300~600	16	0.8~1.2	側銑 (SIDE MILLING)
	1602	50	115	2000~2500	300~500	32	0.05~0.1	側銑 (SIDE MILLING)
	1602	50	115	2000~2500	500~800	32	0.4~0.5	側銑 (SIDE MILLING)
ETA ETD	2002	55	95	1300~1800	400~700	0.05~0.15	20	溝銑 (SLOTTING)
	2002	55	80	1000~1500	300~500	0.8~1.2	20	溝銑 (SLOTTING)
	2002	55	110	1500~2000	300~500	20	0.8~1.2	側銑 (SIDE MILLING)
	2002	55	110	1500~2000	300~600	40	0.05~0.15	側銑 (SIDE MILLING)
	2002	55	110	1500~2000	300~600	40	0.4~0.5	側銑 (SIDE MILLING)

ETA^{4T} / ETD^{4T}

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
ETA^{4T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
ETD^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.		刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETA ETD	0104	9	65	19000~20000	1100~1300	0.03~0.05	0.7~1	溝銑 (SLOTTING)
	0104	9	65	19000~20000	600~900	0.05~0.08	1	溝銑 (SLOTTING)
	0104	9	65	19000~20000	450~650	0.09~0.12	1	溝銑 (SLOTTING)
	0104	9	65	19000~20000	800~1100	1~2	0.03~0.05	側銑 (SIDE MILLING)
	0104	9	65	19000~20000	600~900	1~2	0.05~0.08	側銑 (SIDE MILLING)
	0104	9	65	19000~20000	450~650	1~2	0.09~0.12	側銑 (SIDE MILLING)
ETA ETD	0154	9	80	16000~17000	1100~1300	0.03~0.05	1~1.5	溝銑 (SLOTTING)
	0154	9	80	16000~17000	600~900	0.06~0.1	1.5	溝銑 (SLOTTING)
	0154	9	80	16000~17000	450~650	0.1~0.2	1.5	溝銑 (SLOTTING)
	0154	9	80	16000~17000	800~1100	1.5~3	0.03~0.05	側銑 (SIDE MILLING)
	0154	9	80	16000~17000	600~900	1.5~3	0.06~0.1	側銑 (SIDE MILLING)
	0154	9	80	16000~17000	450~650	1.5~3	0.1~0.2	側銑 (SIDE MILLING)
ETA ETD	0204	11	95	14000~15000	1100~1300	0.04~0.06	1.5~2	溝銑 (SLOTTING)
	0204	11	95	14000~15000	600~900	0.1~0.18	2	溝銑 (SLOTTING)
	0204	11	95	14000~15000	500~700	0.2~0.3	2	溝銑 (SLOTTING)
	0204	11	95	14000~15000	800~1100	2~4	0.04~0.06	側銑 (SIDE MILLING)
	0204	11	95	14000~15000	600~900	2~4	0.1~0.18	側銑 (SIDE MILLING)
	0204	11	95	14000~15000	500~700	2~4	0.2~0.3	側銑 (SIDE MILLING)
ETA ETD	0254	12	100	12000~13000	1100~1300	0.04~0.06	2~2.5	溝銑 (SLOTTING)
	0254	12	100	12000~13000	600~900	0.1~0.18	2.5	溝銑 (SLOTTING)
	0254	12	100	12000~13000	500~700	0.2~0.3	2.5	溝銑 (SLOTTING)
	0254	12	100	12000~13000	800~1100	2.5~5	0.04~0.06	側銑 (SIDE MILLING)
	0254	12	100	12000~13000	600~900	2.5~5	0.1~0.18	側銑 (SIDE MILLING)
	0254	12	100	12000~13000	500~700	2.5~5	0.2~0.3	側銑 (SIDE MILLING)
ETA ETD	0304S	13	110	11500~12500	1100~1300	0.04~0.07	2.5~3	溝銑 (SLOTTING)
	0304S	13	110	11500~12500	700~1000	0.1~0.2	3	溝銑 (SLOTTING)
	0304S	13	110	11500~12500	600~800	0.3~0.4	3	溝銑 (SLOTTING)
	0304S	13	110	11500~12500	800~1100	3~6	0.04~0.07	側銑 (SIDE MILLING)
	0304S	13	110	11500~12500	700~1000	3~6	0.1~0.2	側銑 (SIDE MILLING)
	0304S	13	110	11500~12500	600~800	3~6	0.3~0.4	側銑 (SIDE MILLING)
ETA ETD	0304	15	110	11500~12500	1100~1300	0.04~0.07	2.5~3	溝銑 (SLOTTING)
	0304	15	110	11500~12500	800~1100	0.15~0.25	3	溝銑 (SLOTTING)
	0304	15	110	11500~12500	700~900	0.3~0.45	3	溝銑 (SLOTTING)
	0304	15	110	11500~12500	800~1100	3~6	0.04~0.07	側銑 (SIDE MILLING)
	0304	15	110	11500~12500	800~1100	3~6	0.15~0.25	側銑 (SIDE MILLING)
	0304	15	110	11500~12500	700~900	3~6	0.3~0.45	側銑 (SIDE MILLING)

ETA4T / ETD4T

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)

ETA4T 冷卻方式 Coolant Type	乾式切削 Dry coolant	ETD4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.		刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min-1)	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETA ETD	0404	16	120	9000~10000	1100~1300	0.04~0.07	3~4	溝銑 (SLOTTING)
	0404	16	120	9000~10000	800~1100	0.3~0.4	4	溝銑 (SLOTTING)
	0404	16	120	9000~10000	700~900	0.5~0.6	4	溝銑 (SLOTTING)
	0404	16	120	9000~10000	800~1100	4~8	0.04~0.07	側銑 (SIDE MILLING)
	0404	16	120	9000~10000	900~1200	4~8	0.3~0.4	側銑 (SIDE MILLING)
	0404	16	120	9000~10000	700~900	4~8	0.5~0.6	側銑 (SIDE MILLING)
ETA ETD	0504S	18	125	7500~8500	1100~1300	0.05~0.08	4~5	溝銑 (SLOTTING)
	0504S	18	125	7500~8500	700~1000	0.5~0.7	5	溝銑 (SLOTTING)
	0504S	18	125	7500~8500	600~800	0.8~1	5	溝銑 (SLOTTING)
	0504S	18	125	7500~8500	800~1100	5~10	0.05~0.08	側銑 (SIDE MILLING)
	0504S	18	125	7500~8500	1100~1400	5~10	0.5~0.7	側銑 (SIDE MILLING)
	0504S	18	125	7500~8500	600~800	5~10	0.8~1	側銑 (SIDE MILLING)
ETA ETD	0504	19	125	7500~8500	1100~1300	0.05~0.08	4~5	溝銑 (SLOTTING)
	0504	19	125	7500~8500	800~1100	0.5~0.7	5	溝銑 (SLOTTING)
	0504	19	125	7500~8500	700~900	0.8~1	5	溝銑 (SLOTTING)
	0504	19	125	7500~8500	800~1100	5~10	0.05~0.08	側銑 (SIDE MILLING)
	0504	19	125	7500~8500	1200~1500	5~10	0.5~0.7	側銑 (SIDE MILLING)
	0504	19	125	7500~8500	700~900	5~10	0.8~1	側銑 (SIDE MILLING)
ETA ETD	0604	21	110	5500~6000	1100~1300	0.05~0.1	5~6	溝銑 (SLOTTING)
	0604	21	110	5500~6000	800~1100	0.6~0.8	6	溝銑 (SLOTTING)
	0604	21	110	5500~6000	700~900	1~1.5	6	溝銑 (SLOTTING)
	0604	21	110	5500~6000	800~1100	6~12	0.05~0.15	側銑 (SIDE MILLING)
	0604	21	110	5500~6000	1300~1500	6~12	0.6~0.8	側銑 (SIDE MILLING)
	0604	21	110	5500~6000	700~900	6~12	1~1.5	側銑 (SIDE MILLING)
ETA ETD	0804	27	120	4500~5000	1000~1200	0.05~0.12	7~8	溝銑 (SLOTTING)
	0804	27	110	4200~4700	900~1200	1.4~2	8	溝銑 (SLOTTING)
	0804	27	110	4200~4700	700~900	2~3	8	溝銑 (SLOTTING)
	0804	27	110	4200~4700	800~1100	8~16	0.05~0.12	側銑 (SIDE MILLING)
	0804	27	110	4200~4700	1400~1600	8~16	1.4~2	側銑 (SIDE MILLING)
	0804	27	110	4200~4700	700~900	8~16	2~3	側銑 (SIDE MILLING)
ETA ETD	1004	34	125	3800~4300	1000~1200	0.05~0.15	9~10	溝銑 (SLOTTING)
	1004	34	100	3000~3500	900~1200	1~1.5	10	溝銑 (SLOTTING)
	1004	34	100	3000~3500	700~900	2.5~3.5	10	溝銑 (SLOTTING)
	1004	34	100	3000~3500	800~1100	10	0.05~0.15	側銑 (SIDE MILLING)
	1004	34	100	3000~3500	900~1200	20	0.05~0.15	側銑 (SIDE MILLING)
	1004	34	100	3000~3500	1400~1600	10	1~1.5	側銑 (SIDE MILLING)
	1004	34	100	3000~3500	700~900	10	2.5~3.5	側銑 (SIDE MILLING)

ETA4T / ETD4T

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
ETA4T 冷卻方式 Coolant Type	乾式切削 Dry coolant
ETD4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.		刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min-1)	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETA ETD	1204	37	125	3000~3500	900~1100	0.05~0.15	11~12	溝銑 (SLOTTING)
	1204	37	100	2500~3000	500~700	1~2	12	溝銑 (SLOTTING)
	1204	37	100	2500~3000	300~400	3~4	12	溝銑 (SLOTTING)
	1204	37	100	2500~3000	600~900	12~24	0.05~0.15	側銑 (SIDE MILLING)
	1204	37	100	2500~3000	500~700	12	1~2	側銑 (SIDE MILLING)
	1204	37	100	2500~3000	300~400	12	3~4	側銑 (SIDE MILLING)
ETA ETD	1604	50	125	2300~2800	500~800	0.05~0.2	15~16	溝銑 (SLOTTING)
	1604	50	100	1800~2200	800~1000	0.5~1	16	溝銑 (SLOTTING)
	1604	50	100	1800~2200	400~550	1~2	16	溝銑 (SLOTTING)
	1604	50	100	1800~2200	200~400	2~3	16	溝銑 (SLOTTING)
	1604	50	100	1800~2200	350~550	16~32	0.05~0.2	側銑 (SIDE MILLING)
	1604	50	100	1800~2200	700~900	16	0.5~1	側銑 (SIDE MILLING)
	1604	50	100	1800~2200	500~700	16	1~2	側銑 (SIDE MILLING)
	1604	50	100	1800~2200	200~400	16	2~3	側銑 (SIDE MILLING)
ETA ETD	2004	50	125	1700~2200	400~700	0.05~0.2	18~20	溝銑 (SLOTTING)
	2004	50	100	1300~1800	600~800	0.5~1	20	溝銑 (SLOTTING)
	2004	50	100	1300~1800	350~500	1~2	20	溝銑 (SLOTTING)
	2004	50	100	1300~1800	150~350	2~3	20	溝銑 (SLOTTING)
	2004	50	100	1300~1800	250~450	20~40	0.05~0.2	側銑 (SIDE MILLING)
	2004	50	100	1300~1800	600~800	20	0.5~1	側銑 (SIDE MILLING)
	2004	50	100	1300~1800	350~500	20	1~2	側銑 (SIDE MILLING)
	2004	50	100	1300~1800	150~350	20	2~3	側銑 (SIDE MILLING)

ETA^{4T} / ETD^{4T}

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
ETA^{4T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
ETD^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.		刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETA ETD	0104	9	65	19000~20000	1100~1300	0.03~0.05	0.7~1	溝銑 (SLOTTING)
	0104	9	65	19000~20000	600~900	0.05~0.08	1	溝銑 (SLOTTING)
	0104	9	65	19000~20000	400~600	0.09~0.12	1	溝銑 (SLOTTING)
	0104	9	65	19000~20000	800~1100	1~2	0.03~0.05	側銑 (SIDE MILLING)
	0104	9	65	19000~20000	600~900	1~2	0.05~0.08	側銑 (SIDE MILLING)
	0104	9	65	19000~20000	350~550	1~2	0.09~0.12	側銑 (SIDE MILLING)
ETA ETD	0154	9	80	16000~17000	1100~1300	0.03~0.05	1~1.5	溝銑 (SLOTTING)
	0154	9	80	16000~17000	600~900	0.06~0.1	1.5	溝銑 (SLOTTING)
	0154	9	80	16000~17000	400~600	0.1~0.2	1.5	溝銑 (SLOTTING)
	0154	9	80	16000~17000	800~1100	1.5~3	0.03~0.05	側銑 (SIDE MILLING)
	0154	9	80	16000~17000	600~900	1.5~3	0.06~0.1	側銑 (SIDE MILLING)
	0154	9	80	16000~17000	400~600	1.5~3	0.1~0.2	側銑 (SIDE MILLING)
ETA ETD	0204	11	90	13500~14500	1100~1300	0.04~0.06	1.5~2	溝銑 (SLOTTING)
	0204	11	90	13500~14500	600~900	0.1~0.18	2	溝銑 (SLOTTING)
	0204	11	90	13500~14500	400~600	0.2~0.3	2	溝銑 (SLOTTING)
	0204	11	90	13500~14500	800~1100	2~4	0.04~0.06	側銑 (SIDE MILLING)
	0204	11	90	13500~14500	600~900	2~4	0.1~0.18	側銑 (SIDE MILLING)
	0204	11	90	13500~14500	400~600	2~4	0.2~0.3	側銑 (SIDE MILLING)
ETA ETD	0254	12	95	11500~12500	1100~1300	0.04~0.06	2~2.5	溝銑 (SLOTTING)
	0254	12	95	11500~12500	600~900	0.1~0.18	2.5	溝銑 (SLOTTING)
	0254	12	95	11500~12500	500~700	0.2~0.3	2.5	溝銑 (SLOTTING)
	0254	12	95	11500~12500	800~1100	2.5~5	0.04~0.06	側銑 (SIDE MILLING)
	0254	12	95	11500~12500	600~900	2.5~5	0.1~0.18	側銑 (SIDE MILLING)
	0254	12	95	11500~12500	500~700	2.5~5	0.2~0.3	側銑 (SIDE MILLING)
ETA ETD	0304S	13	105	11000~12000	1100~1300	0.04~0.07	2.5~3	溝銑 (SLOTTING)
	0304S	13	105	11000~12000	700~1000	0.1~0.2	3	溝銑 (SLOTTING)
	0304S	13	105	11000~12000	600~800	0.3~0.4	3	溝銑 (SLOTTING)
	0304S	13	105	11000~12000	800~1100	3~6	0.04~0.07	側銑 (SIDE MILLING)
	0304S	13	105	11000~12000	700~1000	3~6	0.1~0.2	側銑 (SIDE MILLING)
	0304S	13	105	11000~12000	600~800	3~6	0.3~0.4	側銑 (SIDE MILLING)
ETA ETD	0304	15	105	11000~12000	1100~1300	0.04~0.07	2.5~3	溝銑 (SLOTTING)
	0304	15	105	11000~12000	800~1100	0.15~0.25	3	溝銑 (SLOTTING)
	0304	15	105	11000~12000	700~900	0.3~0.45	3	溝銑 (SLOTTING)
	0304	15	105	11000~12000	800~1100	3~6	0.04~0.07	側銑 (SIDE MILLING)
	0304	15	105	11000~12000	800~1100	3~6	0.15~0.25	側銑 (SIDE MILLING)
	0304	15	105	11000~12000	700~900	3~6	0.3~0.45	側銑 (SIDE MILLING)

ETA4T / ETD4T

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
ETA4T 冷卻方式 Coolant Type	乾式切削 Dry coolant
ETD4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.		刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min-1)	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETA ETD	0404	16	110	8500~9500	1100~1300	0.04~0.07	3~4	溝銑 (SLOTTING)
	0404	16	110	8500~9500	800~1100	0.3~0.4	4	溝銑 (SLOTTING)
	0404	16	110	8500~9500	700~900	0.5~0.6	4	溝銑 (SLOTTING)
	0404	16	110	8500~9500	800~1100	4~8	0.04~0.07	側銑 (SIDE MILLING)
	0404	16	110	8500~9500	900~1200	4~8	0.3~0.4	側銑 (SIDE MILLING)
	0404	16	110	8500~9500	700~900	4~8	0.5~0.6	側銑 (SIDE MILLING)
ETA ETD	0504S	18	115	7000~8000	1100~1300	0.05~0.08	4~5	溝銑 (SLOTTING)
	0504S	18	115	7000~8000	700~1000	0.5~0.7	5	溝銑 (SLOTTING)
	0504S	18	115	7000~8000	600~800	0.8~1	5	溝銑 (SLOTTING)
	0504S	18	115	7000~8000	800~1100	5~10	0.05~0.08	側銑 (SIDE MILLING)
	0504S	18	115	7000~8000	1100~1400	5~10	0.5~0.7	側銑 (SIDE MILLING)
	0504S	18	115	7000~8000	600~800	5~10	0.8~1	側銑 (SIDE MILLING)
ETA ETD	0504	19	115	7000~8000	1100~1300	0.05~0.08	4~5	溝銑 (SLOTTING)
	0504	19	115	7000~8000	800~1100	0.5~0.7	5	溝銑 (SLOTTING)
	0504	19	115	7000~8000	700~900	0.8~1	5	溝銑 (SLOTTING)
	0504	19	115	7000~8000	800~1100	5~10	0.05~0.08	側銑 (SIDE MILLING)
	0504	19	115	7000~8000	1200~1500	5~10	0.5~0.7	側銑 (SIDE MILLING)
	0504	19	115	7000~8000	700~900	5~10	0.8~1	側銑 (SIDE MILLING)
ETA ETD	0604	21	100	5000~5500	1100~1300	0.05~0.1	5~6	溝銑 (SLOTTING)
	0604	21	100	5000~5500	800~1100	0.6~0.8	6	溝銑 (SLOTTING)
	0604	21	100	5000~5500	700~900	1~1.5	6	溝銑 (SLOTTING)
	0604	21	100	5000~5500	600~800	6~12	0.05~0.15	側銑 (SIDE MILLING)
	0604	21	100	5000~5500	1100~1300	6~12	0.6~0.8	側銑 (SIDE MILLING)
	0604	21	100	5000~5500	700~900	6~12	1~1.5	側銑 (SIDE MILLING)
ETA ETD	0804	27	120	4500~5000	1000~1200	0.05~0.12	7~8	溝銑 (SLOTTING)
	0804	27	105	4000~4500	900~1200	1.4~2	8	溝銑 (SLOTTING)
	0804	27	105	4000~4500	700~900	2~3	8	溝銑 (SLOTTING)
	0804	27	105	4000~4500	600~800	8~16	0.05~0.12	側銑 (SIDE MILLING)
	0804	27	105	4000~4500	1200~1400	8~16	1.4~2	側銑 (SIDE MILLING)
	0804	27	105	4000~4500	700~900	8~16	2~3	側銑 (SIDE MILLING)
ETA ETD	1004	34	125	3800~4300	1000~1200	0.05~0.15	9~10	溝銑 (SLOTTING)
	1004	34	100	3000~3500	800~1000	1~1.5	10	溝銑 (SLOTTING)
	1004	34	100	3000~3500	600~800	2.5~3.5	10	溝銑 (SLOTTING)
	1004	34	100	3000~3500	600~800	10	0.05~0.15	側銑 (SIDE MILLING)
	1004	34	100	3000~3500	600~800	20	0.05~0.15	側銑 (SIDE MILLING)
	1004	34	100	3000~3500	700~1000	10	1~1.5	側銑 (SIDE MILLING)
	1004	34	100	3000~3500	600~900	10	2.5~3.5	側銑 (SIDE MILLING)

ETA4T / ETD4T

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
ETA4T 冷卻方式 Coolant Type	乾式切削 Dry coolant
ETD4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.		刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETA ETD	1204	37	125	3000~3500	900~1100	0.05~0.15	11~12	溝銑 (SLOTTING)
	1204	37	100	2500~3000	500~700	1~2	12	溝銑 (SLOTTING)
	1204	37	100	2500~3000	300~400	3~4	12	溝銑 (SLOTTING)
	1204	37	100	2500~3000	600~900	12~24	0.05~0.15	側銑 (SIDE MILLING)
	1204	37	100	2500~3000	500~700	12	1~2	側銑 (SIDE MILLING)
	1204	37	100	2500~3000	300~400	12	3~4	側銑 (SIDE MILLING)
ETA ETD	1604	50	125	2300~2800	500~800	0.05~0.2	15~16	溝銑 (SLOTTING)
	1604	50	95	1700~2100	800~1000	0.5~1	16	溝銑 (SLOTTING)
	1604	50	95	1700~2100	400~600	1~2	16	溝銑 (SLOTTING)
	1604	50	95	1700~2100	200~400	2~3	16	溝銑 (SLOTTING)
	1604	50	95	1700~2100	350~550	16~32	0.05~0.2	側銑 (SIDE MILLING)
	1604	50	95	1700~2100	700~900	16	0.5~1	側銑 (SIDE MILLING)
	1604	50	95	1700~2100	500~700	16	1~2	側銑 (SIDE MILLING)
	1604	50	95	1700~2100	200~400	16	2~3	側銑 (SIDE MILLING)
ETA ETD	2004	50	125	1700~2200	400~700	0.05~0.2	18~20	溝銑 (SLOTTING)
	2004	50	100	1300~1800	550~750	0.5~1	20	溝銑 (SLOTTING)
	2004	50	100	1300~1800	300~450	1~2	20	溝銑 (SLOTTING)
	2004	50	100	1300~1800	150~350	2~3	20	溝銑 (SLOTTING)
	2004	50	100	1300~1800	250~450	20~40	0.05~0.2	側銑 (SIDE MILLING)
	2004	50	100	1300~1800	550~750	20	0.5~1	側銑 (SIDE MILLING)
	2004	50	100	1300~1800	300~450	20	1~2	側銑 (SIDE MILLING)
	2004	50	100	1300~1800	150~350	20	2~3	側銑 (SIDE MILLING)

ETA4T / ETD4T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
ETA4T 冷卻方式 Coolant Type	乾式切削 Dry coolant
ETD4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.		刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min-1)	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETA ETD	0104	9	60	18000~19000	1100~1300	0.03~0.05	0.7~1	溝銑 (SLOTTING)
	0104	9	60	18000~19000	600~900	0.05~0.08	1	溝銑 (SLOTTING)
	0104	9	60	18000~19000	350~550	0.09~0.12	1	溝銑 (SLOTTING)
	0104	9	60	18000~19000	800~1100	1~2	0.03~0.05	側銑 (SIDE MILLING)
	0104	9	60	18000~19000	600~900	1~2	0.05~0.08	側銑 (SIDE MILLING)
	0104	9	60	18000~19000	350~550	1~2	0.09~0.12	側銑 (SIDE MILLING)
ETA ETD	0154	9	80	16000~17000	1100~1300	0.03~0.05	1~1.5	溝銑 (SLOTTING)
	0154	9	75	15000~16000	600~900	0.06~0.1	1.5	溝銑 (SLOTTING)
	0154	9	75	15000~16000	350~550	0.1~0.2	1.5	溝銑 (SLOTTING)
	0154	9	80	16000~17000	800~1100	1.5~3	0.03~0.05	側銑 (SIDE MILLING)
	0154	9	75	15000~16000	600~900	1.5~3	0.06~0.1	側銑 (SIDE MILLING)
	0154	9	75	15000~16000	350~550	1.5~3	0.1~0.2	側銑 (SIDE MILLING)
ETA ETD	0204	11	80	13000~14000	1100~1300	0.04~0.06	1.5~2	溝銑 (SLOTTING)
	0204	11	80	13000~14000	600~900	0.1~0.18	2	溝銑 (SLOTTING)
	0204	11	80	13000~14000	350~550	0.2~0.3	2	溝銑 (SLOTTING)
	0204	11	80	13000~14000	800~1100	2~4	0.04~0.06	側銑 (SIDE MILLING)
	0204	11	80	13000~14000	600~900	2~4	0.1~0.18	側銑 (SIDE MILLING)
	0204	11	80	13000~14000	350~550	2~4	0.2~0.3	側銑 (SIDE MILLING)
ETA ETD	0254	12	90	11000~12000	1100~1300	0.04~0.06	2~2.5	溝銑 (SLOTTING)
	0254	12	90	11000~12000	600~900	0.1~0.18	2.5	溝銑 (SLOTTING)
	0254	12	90	11000~12000	400~600	0.2~0.3	2.5	溝銑 (SLOTTING)
	0254	12	90	11000~12000	800~1100	2.5~5	0.04~0.06	側銑 (SIDE MILLING)
	0254	12	90	11000~12000	600~900	2.5~5	0.1~0.18	側銑 (SIDE MILLING)
	0254	12	90	11000~12000	400~600	2.5~5	0.2~0.3	側銑 (SIDE MILLING)
ETA ETD	0304S	13	100	10500~11500	1100~1300	0.04~0.07	2.5~3	溝銑 (SLOTTING)
	0304S	13	100	10500~11500	600~900	0.1~0.2	3	溝銑 (SLOTTING)
	0304S	13	100	10500~11500	500~700	0.3~0.4	3	溝銑 (SLOTTING)
	0304S	13	100	10500~11500	800~1100	3~6	0.04~0.07	側銑 (SIDE MILLING)
	0304S	13	100	10500~11500	600~900	3~6	0.1~0.2	側銑 (SIDE MILLING)
	0304S	13	100	10500~11500	500~700	3~6	0.3~0.4	側銑 (SIDE MILLING)
ETA ETD	0304	15	100	10500~11500	1100~1300	0.04~0.07	2.5~3	溝銑 (SLOTTING)
	0304	15	100	10500~11500	700~1000	0.15~0.25	3	溝銑 (SLOTTING)
	0304	15	100	10500~11500	600~800	0.3~0.45	3	溝銑 (SLOTTING)
	0304	15	100	10500~11500	800~1100	3~6	0.04~0.07	側銑 (SIDE MILLING)
	0304	15	100	10500~11500	700~1000	3~6	0.15~0.25	側銑 (SIDE MILLING)
	0304	15	100	10500~11500	600~800	3~6	0.3~0.45	側銑 (SIDE MILLING)

ETA4T / ETD4T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
ETA4T 冷卻方式 Coolant Type	乾式切削 Dry coolant
ETD4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.		刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min-1)	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETA ETD	0404	16	100	7500~8500	1000~1200	0.04~0.07	3~4	溝銑 (SLOTTING)
	0404	16	100	7500~8500	700~900	0.3~0.4	4	溝銑 (SLOTTING)
	0404	16	100	7500~8500	500~700	0.5~0.6	4	溝銑 (SLOTTING)
	0404	16	100	7500~8500	600~800	4~8	0.04~0.07	側銑 (SIDE MILLING)
	0404	16	100	7500~8500	700~900	4~8	0.3~0.4	側銑 (SIDE MILLING)
	0404	16	100	7500~8500	500~700	4~8	0.5~0.6	側銑 (SIDE MILLING)
ETA ETD	0504S	18	105	6500~7500	1000~1200	0.05~0.08	4~5	溝銑 (SLOTTING)
	0504S	18	105	6500~7500	700~900	0.5~0.7	5	溝銑 (SLOTTING)
	0504S	18	105	6500~7500	500~700	0.8~1	5	溝銑 (SLOTTING)
	0504S	18	105	6500~7500	600~800	5~10	0.05~0.08	側銑 (SIDE MILLING)
	0504S	18	105	6500~7500	700~900	5~10	0.5~0.7	側銑 (SIDE MILLING)
	0504S	18	105	6500~7500	500~700	5~10	0.8~1	側銑 (SIDE MILLING)
ETA ETD	0504	19	110	6500~7500	1000~1200	0.05~0.08	4~5	溝銑 (SLOTTING)
	0504	19	110	6500~7500	700~900	0.5~0.7	5	溝銑 (SLOTTING)
	0504	19	110	6500~7500	500~700	0.8~1	5	溝銑 (SLOTTING)
	0504	19	110	6500~7500	600~800	5~10	0.05~0.08	側銑 (SIDE MILLING)
	0504	19	110	6500~7500	700~900	5~10	0.5~0.7	側銑 (SIDE MILLING)
	0504	19	110	6500~7500	500~700	5~10	0.8~1	側銑 (SIDE MILLING)
ETA ETD	0604	21	100	5000~5500	1000~1200	0.05~0.1	5~6	溝銑 (SLOTTING)
	0604	21	100	5000~5500	700~900	0.6~0.8	6	溝銑 (SLOTTING)
	0604	21	100	5000~5500	500~700	1~1.5	6	溝銑 (SLOTTING)
	0604	21	100	5000~5500	600~800	6~12	0.05~0.15	側銑 (SIDE MILLING)
	0604	21	100	5000~5500	700~900	6~12	0.6~0.8	側銑 (SIDE MILLING)
	0604	21	100	5000~5500	500~700	6~12	1~1.5	側銑 (SIDE MILLING)
ETA ETD	0804	27	120	4500~5000	1000~1200	0.05~0.12	7~8	溝銑 (SLOTTING)
	0804	27	105	4000~4500	500~700	1.4~2	8	溝銑 (SLOTTING)
	0804	27	105	4000~4500	400~600	2~3	8	溝銑 (SLOTTING)
	0804	27	105	4000~4500	600~800	8~16	0.05~0.12	側銑 (SIDE MILLING)
	0804	27	105	4000~4500	500~700	8~16	1.4~2	側銑 (SIDE MILLING)
	0804	27	105	4000~4500	400~600	8~16	2~3	側銑 (SIDE MILLING)
ETA ETD	1004	34	120	3500~4000	1000~1200	0.05~0.15	9~10	溝銑 (SLOTTING)
	1004	34	100	3000~3500	600~800	1~1.5	10	溝銑 (SLOTTING)
	1004	34	100	3000~3500	400~600	2.5~3.5	10	溝銑 (SLOTTING)
	1004	34	100	3000~3500	600~800	10	0.05~0.15	側銑 (SIDE MILLING)
	1004	34	100	3000~3500	600~800	20	0.05~0.15	側銑 (SIDE MILLING)
	1004	34	100	3000~3500	600~800	10	1~1.5	側銑 (SIDE MILLING)
	1004	34	100	3000~3500	400~600	10	2.5~3.5	側銑 (SIDE MILLING)

ETA4T / ETD4T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
ETA4T 冷卻方式 Coolant Type	乾式切削 Dry coolant
ETD4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.		刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETA ETD	1204	37	110	2800~3300	800~1000	0.05~0.15	11~12	溝銑 (SLOTTING)
	1204	37	80	2200~2600	300~500	1~2	12	溝銑 (SLOTTING)
	1204	37	80	2200~2600	250~450	3~4	12	溝銑 (SLOTTING)
	1204	37	80	2200~2600	500~800	12~24	0.05~0.15	側銑 (SIDE MILLING)
	1204	37	80	2200~2600	300~500	12	1~2	側銑 (SIDE MILLING)
	1204	37	80	2200~2600	250~450	12	3~4	側銑 (SIDE MILLING)
ETA ETD	1604	50	110	2000~2500	400~600	0.05~0.2	15~16	溝銑 (SLOTTING)
	1604	50	85	1500~1900	700~850	0.5~1	16	溝銑 (SLOTTING)
	1604	50	85	1500~1900	400~600	1~2	16	溝銑 (SLOTTING)
	1604	50	85	1500~1900	200~300	2~3	16	溝銑 (SLOTTING)
	1604	50	85	1500~1900	300~500	16~32	0.05~0.2	側銑 (SIDE MILLING)
	1604	50	85	1500~1900	700~850	16	0.5~1	側銑 (SIDE MILLING)
	1604	50	85	1500~1900	400~600	16	1~2	側銑 (SIDE MILLING)
	1604	50	85	1500~1900	200~300	16	2~3	側銑 (SIDE MILLING)
ETA ETD	2004	50	110	1400~1900	350~550	0.05~0.2	18~20	溝銑 (SLOTTING)
	2004	50	85	1100~1600	450~650	0.5~1	20	溝銑 (SLOTTING)
	2004	50	85	1100~1600	250~400	1~2	20	溝銑 (SLOTTING)
	2004	50	85	1100~1600	150~300	2~3	20	溝銑 (SLOTTING)
	2004	50	85	1100~1600	200~400	20~40	0.05~0.2	側銑 (SIDE MILLING)
	2004	50	85	1100~1600	450~650	20	0.5~1	側銑 (SIDE MILLING)
	2004	50	85	1100~1600	250~400	20	1~2	側銑 (SIDE MILLING)
	2004	50	85	1100~1600	150~300	20	2~3	側銑 (SIDE MILLING)

ETB^{2T} / ETH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
ETB^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
ETH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0102	12	30	9000~10000	700~1000	0.03~0.05	1	溝銑 (SLOTTING)
0102	12	30	9000~10000	800~1200	0.06~0.08	1	溝銑 (SLOTTING)
0102	12	30	9000~10000	700~900	1	0.03~0.05	側銑 (SIDE MILLING)
0102	12	30	9000~10000	700~1000	1	0.06~0.08	側銑 (SIDE MILLING)
ETB ETH 0152	14	45	9000~10000	700~1000	0.03~0.05	1.5	溝銑 (SLOTTING)
0152	14	45	9000~10000	800~1200	0.06~0.09	1.5	溝銑 (SLOTTING)
0152	14	45	9000~10000	800~1000	1.5	0.03~0.05	側銑 (SIDE MILLING)
0152	14	45	9000~10000	700~1000	1.5	0.06~0.09	側銑 (SIDE MILLING)
ETB ETH 0202	16	55	8700~9200	700~1000	0.04~0.06	2	溝銑 (SLOTTING)
0202	16	55	8700~9200	1000~1400	0.08~0.13	2	溝銑 (SLOTTING)
0202	16	55	8700~9200	700~900	2	0.04~0.06	側銑 (SIDE MILLING)
0202	16	55	8700~9200	800~1200	2	0.08~0.13	側銑 (SIDE MILLING)
ETB ETH 0252	16	65	8000~8500	700~1000	0.04~0.06	2.5	溝銑 (SLOTTING)
0252	16	65	8000~8500	1000~1400	0.08~0.13	2.5	溝銑 (SLOTTING)
0252	16	65	8000~8500	800~1000	5	0.04~0.06	側銑 (SIDE MILLING)
0252	16	65	8000~8500	700~1100	5	0.08~0.13	側銑 (SIDE MILLING)
ETB ETH 0302	18	75	7500~8000	700~1000	0.05~0.09	3	溝銑 (SLOTTING)
0302	18	75	7500~8000	1200~1600	0.12~0.18	3	溝銑 (SLOTTING)
0302	18	75	7500~8000	700~1000	6	0.05~0.09	側銑 (SIDE MILLING)
0302	18	75	7500~8000	800~1200	6	0.12~0.18	側銑 (SIDE MILLING)
ETH 0352	18	75	7500~8000	700~1000	0.05~0.1	3.5	溝銑 (SLOTTING)
0352	18	75	7500~8000	1200~1600	0.12~0.2	3.5	溝銑 (SLOTTING)
0352	18	75	7500~8000	700~1000	7	0.05~0.1	側銑 (SIDE MILLING)
0352	18	75	7500~8000	800~1200	7	0.12~0.2	側銑 (SIDE MILLING)
ETB ETH 0402	20	75	5700~6200	700~1000	0.05~0.1	4	溝銑 (SLOTTING)
0402	20	75	5700~6200	1200~1600	0.15~0.25	4	溝銑 (SLOTTING)
0402	20	75	5700~6200	700~1000	8	0.05~0.1	側銑 (SIDE MILLING)
0402	20	75	5700~6200	1000~1400	8	0.15~0.25	側銑 (SIDE MILLING)
ETH 0452	20	75	5700~6200	700~1000	0.05~0.1	4.5	溝銑 (SLOTTING)
0452	20	75	5700~6200	1200~1600	0.2~0.3	4.5	溝銑 (SLOTTING)
0452	20	75	5700~6200	700~1000	9	0.05~0.1	側銑 (SIDE MILLING)
0452	20	75	5700~6200	1000~1400	9	0.2~0.3	側銑 (SIDE MILLING)
ETB ETH 0502	20	80	4800~5300	700~1000	0.05~0.1	5	溝銑 (SLOTTING)
0502	20	80	4800~5300	1200~1600	0.3~0.4	5	溝銑 (SLOTTING)
0502	20	80	4800~5300	700~1000	10	0.05~0.1	側銑 (SIDE MILLING)
0502	20	80	4800~5300	1000~1400	10	0.3~0.4	側銑 (SIDE MILLING)
ETH 0552	20	80	4800~5300	700~1000	0.05~0.1	5.5	溝銑 (SLOTTING)
0552	20	80	4800~5300	1200~1600	0.3~0.4	5.5	溝銑 (SLOTTING)
0552	20	80	4800~5300	700~1000	11	0.05~0.1	側銑 (SIDE MILLING)
0552	20	80	4800~5300	1000~1400	11	0.3~0.4	側銑 (SIDE MILLING)

ETB^{2T} / ETH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
ETB^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
ETH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0602	23	80	4000~4500	700~1000	0.05~0.1	6	溝銑 (SLOTTING)
0602	23	80	4000~4500	800~1200	0.5~1	6	溝銑 (SLOTTING)
0602	23	80	4000~4500	800~1200	6	0.5~1	側銑 (SIDE MILLING)
0602	23	80	4000~4500	700~1000	12	0.05~0.1	側銑 (SIDE MILLING)
0602	23	80	4000~4500	1400~1800	12	0.3~0.4	側銑 (SIDE MILLING)
ETH 0652	23	80	4000~4500	700~1000	0.05~0.1	6.5	溝銑 (SLOTTING)
0652	23	80	4000~4500	800~1200	0.5~1	6.5	溝銑 (SLOTTING)
0652	23	80	4000~4500	800~1200	6.5	0.5~1	側銑 (SIDE MILLING)
0652	23	80	4000~4500	700~1000	13	0.05~0.1	側銑 (SIDE MILLING)
0652	23	80	4000~4500	1400~1800	13	0.3~0.4	側銑 (SIDE MILLING)
ETH 0702	23	80	4000~4500	700~1000	0.05~0.1	7	溝銑 (SLOTTING)
0702	23	80	4000~4500	800~1200	0.5~1	7	溝銑 (SLOTTING)
0702	23	80	4000~4500	800~1200	7	0.5~1	側銑 (SIDE MILLING)
0702	23	80	4000~4500	700~1000	14	0.05~0.1	側銑 (SIDE MILLING)
0702	23	80	4000~4500	1400~1800	14	0.3~0.4	側銑 (SIDE MILLING)
ETH 0752	30	90	2700~3200	700~1000	0.05~0.1	7.5	溝銑 (SLOTTING)
0752	30	90	2700~3200	700~1000	0.5~1	7.5	溝銑 (SLOTTING)
0752	30	90	2700~3200	700~1100	7.5	0.5~1	側銑 (SIDE MILLING)
0752	30	90	2700~3200	500~800	15	0.05~0.1	側銑 (SIDE MILLING)
0752	30	90	2700~3200	1200~1600	15	0.4~0.5	側銑 (SIDE MILLING)
ETB ETH 0802	30	90	2700~3200	700~1000	0.05~0.1	8	溝銑 (SLOTTING)
0802	30	90	2700~3200	700~1000	0.7~1.2	8	溝銑 (SLOTTING)
0802	30	90	2700~3200	700~1100	8	0.7~1.2	側銑 (SIDE MILLING)
0802	30	90	2700~3200	500~800	16	0.05~0.1	側銑 (SIDE MILLING)
0802	30	90	2700~3200	1200~1600	16	0.4~0.5	側銑 (SIDE MILLING)
ETH 0852	30	90	2700~3200	700~1000	0.05~0.1	8.5	溝銑 (SLOTTING)
0852	30	90	2700~3200	700~1000	0.7~1.2	8.5	溝銑 (SLOTTING)
0852	30	90	2700~3200	700~1100	8.5	0.7~1.2	側銑 (SIDE MILLING)
0852	30	90	2700~3200	500~800	17	0.05~0.1	側銑 (SIDE MILLING)
0852	30	90	2700~3200	1200~1600	17	0.4~0.5	側銑 (SIDE MILLING)
ETH 0902	30	90	2700~3200	700~1000	0.05~0.1	9	溝銑 (SLOTTING)
0902	30	90	2700~3200	700~1000	0.7~1.2	9	溝銑 (SLOTTING)
0902	30	90	2700~3200	700~1100	9	0.7~1.2	側銑 (SIDE MILLING)
0902	30	90	2700~3200	500~800	18	0.05~0.1	側銑 (SIDE MILLING)
0902	30	90	2700~3200	1200~1600	18	0.4~0.5	側銑 (SIDE MILLING)
ETH 0952	35	85	2500~3000	700~1000	0.05~0.1	9.5	溝銑 (SLOTTING)
0952	35	85	2500~3000	700~1100	0.7~1.2	9.5	溝銑 (SLOTTING)
0952	35	70	2000~2500	700~1000	9.5	0.7~1.2	側銑 (SIDE MILLING)
0952	35	70	2000~2500	400~700	19	0.05~0.1	側銑 (SIDE MILLING)
0952	35	70	2000~2500	800~1200	19	0.4~0.5	側銑 (SIDE MILLING)

ETB^{2T} / ETH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
ETB^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
ETH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 1002	35	85	2500~3000	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
1002	35	85	2500~3000	700~1100	0.7~1.2	10	溝銑 (SLOTTING)
1002	35	70	2000~2500	700~1000	10	0.7~1.2	側銑 (SIDE MILLING)
1002	35	70	2000~2500	400~700	20	0.05~0.1	側銑 (SIDE MILLING)
1002	35	70	2000~2500	800~1200	20	0.4~0.5	側銑 (SIDE MILLING)
ETH 1052	35	85	2500~3000	700~1000	0.05~0.12	10.5	溝銑 (SLOTTING)
1052	35	85	2500~3000	700~1100	0.7~1.2	10.5	溝銑 (SLOTTING)
1052	35	70	2000~2500	700~1000	10.5	0.7~1.2	側銑 (SIDE MILLING)
1052	35	70	2000~2500	400~700	21	0.05~0.12	側銑 (SIDE MILLING)
1052	35	70	2000~2500	800~1200	21	0.4~0.5	側銑 (SIDE MILLING)
ETH 1102	35	85	2500~3000	700~1000	0.05~0.12	11	溝銑 (SLOTTING)
1102	35	85	2500~3000	700~1100	0.7~1.2	11	溝銑 (SLOTTING)
1102	35	70	2000~2500	700~1000	11	0.7~1.2	側銑 (SIDE MILLING)
1102	35	70	2000~2500	400~700	22	0.05~0.12	側銑 (SIDE MILLING)
1102	35	70	2000~2500	800~1200	22	0.4~0.5	側銑 (SIDE MILLING)
ETH 1152	35	85	2500~3000	700~1000	0.05~0.12	11.5	溝銑 (SLOTTING)
1152	35	85	2500~3000	700~1100	0.7~1.2	11.5	溝銑 (SLOTTING)
1152	35	70	2000~2500	700~1000	11.5	0.7~1.2	側銑 (SIDE MILLING)
1152	35	70	2000~2500	400~700	23	0.05~0.12	側銑 (SIDE MILLING)
1152	35	70	2000~2500	800~1200	23	0.4~0.5	側銑 (SIDE MILLING)
ETB ETH 1202	37	105	2500~3000	700~1000	0.05~0.12	12	溝銑 (SLOTTING)
1202	37	85	2000~2500	500~800	0.7~1.2	12	溝銑 (SLOTTING)
1202	37	115	2800~3300	700~1000	12	0.7~1.2	側銑 (SIDE MILLING)
1202	37	115	2800~3300	500~800	24	0.05~0.12	側銑 (SIDE MILLING)
1202	37	115	2800~3300	1000~1400	24	0.4~0.5	側銑 (SIDE MILLING)
ETH 1252	37	105	2500~3000	700~1000	0.05~0.15	12.5	溝銑 (SLOTTING)
1252	37	85	2000~2500	500~800	0.7~1.2	12.5	溝銑 (SLOTTING)
1252	37	115	2800~3300	700~1000	12.5	0.7~1.2	側銑 (SIDE MILLING)
1252	37	115	2800~3300	500~800	25	0.05~0.15	側銑 (SIDE MILLING)
1252	37	115	2800~3300	1000~1400	25	0.4~0.5	側銑 (SIDE MILLING)
ETH 1302	37	105	2500~3000	700~1000	0.05~0.15	13	溝銑 (SLOTTING)
1302	37	85	2000~2500	500~800	0.7~1.2	13	溝銑 (SLOTTING)
1302	37	115	2800~3300	700~1000	13	0.7~1.2	側銑 (SIDE MILLING)
1302	37	115	2800~3300	500~800	26	0.05~0.15	側銑 (SIDE MILLING)
1302	37	115	2800~3300	1000~1400	26	0.4~0.5	側銑 (SIDE MILLING)
ETH 1352	37	105	2500~3000	700~1000	0.05~0.15	13.5	溝銑 (SLOTTING)
1352	37	85	2000~2500	500~800	0.7~1.2	13.5	溝銑 (SLOTTING)
1352	37	115	2800~3300	700~1000	13.5	0.7~1.2	側銑 (SIDE MILLING)
1352	37	115	2800~3300	500~800	27	0.05~0.15	側銑 (SIDE MILLING)
1352	37	115	2800~3300	1000~1400	27	0.4~0.5	側銑 (SIDE MILLING)

ETB^{2T} / ETH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
ETB^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
ETH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 1402	37	105	2500~3000	700~1000	0.05~0.15	14	溝銑 (SLOTTING)
1402	37	85	2000~2500	500~800	0.7~1.2	14	溝銑 (SLOTTING)
1402	37	115	2800~3300	700~1000	14	0.7~1.2	側銑 (SIDE MILLING)
1402	37	115	2800~3300	500~800	28	0.05~0.15	側銑 (SIDE MILLING)
1402	37	115	2800~3300	1000~1400	28	0.4~0.5	側銑 (SIDE MILLING)
ETH 1502	50	100	1800~2300	500~800	0.05~0.15	15	溝銑 (SLOTTING)
1502	50	85	1500~2000	400~700	0.7~1.2	15	溝銑 (SLOTTING)
1502	50	115	2000~2500	500~800	15	0.7~1.2	側銑 (SIDE MILLING)
1502	50	115	2000~2500	400~700	30	0.05~0.15	側銑 (SIDE MILLING)
1502	50	115	2000~2500	700~1000	30	0.4~0.5	側銑 (SIDE MILLING)
ETB ETH 1602	50	100	1800~2300	500~800	0.05~0.15	16	溝銑 (SLOTTING)
1602	50	85	1500~2000	400~700	0.7~1.2	16	溝銑 (SLOTTING)
1602	50	115	2000~2500	500~800	16	0.7~1.2	側銑 (SIDE MILLING)
1602	50	115	2000~2500	400~700	32	0.05~0.15	側銑 (SIDE MILLING)
1602	50	115	2000~2500	700~1000	32	0.4~0.5	側銑 (SIDE MILLING)
ETH 1702	50	100	1800~2300	500~800	0.05~0.15	17	溝銑 (SLOTTING)
1702	50	85	1500~2000	400~700	0.7~1.2	17	溝銑 (SLOTTING)
1702	50	115	2000~2500	500~800	17	0.7~1.2	側銑 (SIDE MILLING)
1702	50	115	2000~2500	400~700	34	0.05~0.15	側銑 (SIDE MILLING)
1702	50	115	2000~2500	700~1000	34	0.4~0.5	側銑 (SIDE MILLING)
ETH 1802	55	95	1300~1800	400~700	0.05~0.15	18	溝銑 (SLOTTING)
1802	55	80	1000~1500	300~600	0.7~1.2	18	溝銑 (SLOTTING)
1802	55	110	1500~2000	400~700	18	0.7~1.2	側銑 (SIDE MILLING)
1802	55	110	1500~2000	300~600	36	0.05~0.15	側銑 (SIDE MILLING)
1802	55	110	1500~2000	500~800	36	0.4~0.5	側銑 (SIDE MILLING)
ETB ETH 2002	55	95	1300~1800	400~700	0.05~0.15	20	溝銑 (SLOTTING)
2002	55	80	1000~1500	300~600	0.7~1.2	20	溝銑 (SLOTTING)
2002	55	110	1500~2000	400~700	20	0.7~1.2	側銑 (SIDE MILLING)
2002	55	110	1500~2000	300~600	40	0.05~0.15	側銑 (SIDE MILLING)
2002	55	110	1500~2000	500~800	40	0.4~0.5	側銑 (SIDE MILLING)

ETB^{2T} / ETH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	鉻鉬合金鋼：*Chromium Molybdenum Alloy Steels* SCM440 : 1.7225 : 4140 : 42CrMoA (HRc25~28)
ETB^{2T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0102	14	30	9000~10000	700~1000	0.03~0.05	1	溝銑 (SLOTTING)
0102	14	30	9000~10000	800~1200	0.06~0.08	1	溝銑 (SLOTTING)
0102	14	30	9000~10000	600~800	1	0.03~0.05	側銑 (SIDE MILLING)
0102	14	30	9000~10000	500~800	1	0.06~0.08	側銑 (SIDE MILLING)
ETB ETH 0152	14	45	9000~10000	700~1000	0.03~0.05	1.5	溝銑 (SLOTTING)
0152	14	45	9000~10000	800~1200	0.06~0.09	1.5	溝銑 (SLOTTING)
0152	14	45	9000~10000	700~900	1.5	0.03~0.05	側銑 (SIDE MILLING)
0152	14	45	9000~10000	500~800	1.5	0.06~0.09	側銑 (SIDE MILLING)
ETB ETH 0202	16	55	8700~9200	700~1000	0.04~0.06	2	溝銑 (SLOTTING)
0202	16	55	8700~9200	1000~1400	0.08~0.13	2	溝銑 (SLOTTING)
0202	16	55	8700~9200	700~900	2	0.04~0.06	側銑 (SIDE MILLING)
0202	16	55	8700~9200	700~1100	2	0.08~0.13	側銑 (SIDE MILLING)
ETB ETH 0252	16	65	8000~8500	700~1000	0.04~0.06	2.5	溝銑 (SLOTTING)
0252	16	65	8000~8500	1000~1400	0.08~0.13	2.5	溝銑 (SLOTTING)
0252	16	65	8000~8500	700~900	5	0.04~0.06	側銑 (SIDE MILLING)
0252	16	65	8000~8500	700~1000	5	0.08~0.13	側銑 (SIDE MILLING)
ETB ETH 0302	18	75	7500~8000	700~1000	0.05~0.09	3	溝銑 (SLOTTING)
0302	18	75	7500~8000	1000~1400	0.12~0.18	3	溝銑 (SLOTTING)
0302	18	75	7500~8000	700~1000	6	0.05~0.09	側銑 (SIDE MILLING)
0302	18	75	7500~8000	800~1200	6	0.12~0.18	側銑 (SIDE MILLING)
ETH 0352	18	75	7500~8000	700~1000	0.05~0.1	3.5	溝銑 (SLOTTING)
0352	18	75	7500~8000	1000~1400	0.12~0.2	3.5	溝銑 (SLOTTING)
0352	18	75	7500~8000	700~1000	7	0.05~0.1	側銑 (SIDE MILLING)
0352	18	75	7500~8000	800~1200	7	0.12~0.2	側銑 (SIDE MILLING)
ETB ETH 0402	20	75	5700~6200	700~1000	0.05~0.1	4	溝銑 (SLOTTING)
0402	20	75	5700~6200	1000~1400	0.15~0.25	4	溝銑 (SLOTTING)
0402	20	75	5700~6200	700~1000	8	0.05~0.1	側銑 (SIDE MILLING)
0402	20	75	5700~6200	1000~1400	8	0.15~0.25	側銑 (SIDE MILLING)
ETH 0452	20	75	5700~6200	700~1000	0.05~0.1	4.5	溝銑 (SLOTTING)
0452	20	75	5700~6200	1000~1400	0.2~0.3	4.5	溝銑 (SLOTTING)
0452	20	75	5700~6200	700~1000	9	0.05~0.1	側銑 (SIDE MILLING)
0452	20	75	5700~6200	1000~1400	9	0.2~0.3	側銑 (SIDE MILLING)
ETB ETH 0502	20	80	4800~5300	700~1000	0.05~0.1	5	溝銑 (SLOTTING)
0502	20	80	4800~5300	1000~1400	0.3~0.4	5	溝銑 (SLOTTING)
0502	20	80	4800~5300	700~1000	10	0.05~0.1	側銑 (SIDE MILLING)
0502	20	80	4800~5300	1000~1400	10	0.3~0.4	側銑 (SIDE MILLING)
ETH 0552	20	80	4800~5300	700~1000	0.05~0.1	5.5	溝銑 (SLOTTING)
0552	20	80	4800~5300	1000~1400	0.3~0.4	5.5	溝銑 (SLOTTING)
0552	20	80	4800~5300	700~1000	11	0.05~0.1	側銑 (SIDE MILLING)
0552	20	80	4800~5300	1000~1400	11	0.3~0.4	側銑 (SIDE MILLING)

ETB^{2T} / ETH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	鉻鉬合金鋼：*Chromium Molybdenum Alloy Steels* SCM440 : 1.7225 : 4140 : 42CrMoA (HRc25~28)
ETB^{2T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0602	23	80	4000~4500	700~1000	0.05~0.1	6	溝銑 (SLOTTING)
0602	23	80	4000~4500	800~1200	0.5~1	6	溝銑 (SLOTTING)
0602	23	80	4000~4500	700~1100	6	0.5~1	側銑 (SIDE MILLING)
0602	23	80	4000~4500	500~800	12	0.05~0.1	側銑 (SIDE MILLING)
0602	23	80	4000~4500	1200~1600	12	0.3~0.4	側銑 (SIDE MILLING)
ETH 0652	23	80	4000~4500	700~1000	0.05~0.1	6.5	溝銑 (SLOTTING)
0652	23	80	4000~4500	800~1200	0.5~1	6.5	溝銑 (SLOTTING)
0652	23	80	4000~4500	700~1100	6.5	0.5~1	側銑 (SIDE MILLING)
0652	23	80	4000~4500	500~800	13	0.05~0.1	側銑 (SIDE MILLING)
0652	23	80	4000~4500	1200~1600	13	0.3~0.4	側銑 (SIDE MILLING)
ETH 0702	23	80	4000~4500	700~1000	0.05~0.1	7	溝銑 (SLOTTING)
0702	23	80	4000~4500	800~1200	0.5~1	7	溝銑 (SLOTTING)
0702	23	80	4000~4500	700~1100	7	0.5~1	側銑 (SIDE MILLING)
0702	23	80	4000~4500	500~800	14	0.05~0.1	側銑 (SIDE MILLING)
0702	23	80	4000~4500	1200~1600	14	0.3~0.4	側銑 (SIDE MILLING)
ETH 0752	30	75	2700~3200	700~1000	0.05~0.1	7.5	溝銑 (SLOTTING)
0752	30	75	2700~3200	700~1000	0.5~1	7.5	溝銑 (SLOTTING)
0752	30	75	2700~3200	700~1000	7.5	0.5~1	側銑 (SIDE MILLING)
0752	30	75	2700~3200	500~800	15	0.05~0.1	側銑 (SIDE MILLING)
0752	30	75	2700~3200	1200~1600	15	0.4~0.5	側銑 (SIDE MILLING)
ETB ETH 0802	30	75	2700~3200	700~1000	0.05~0.1	8	溝銑 (SLOTTING)
0802	30	75	2700~3200	700~1000	0.7~1.2	8	溝銑 (SLOTTING)
0802	30	75	2700~3200	700~1000	8	0.7~1.2	側銑 (SIDE MILLING)
0802	30	75	2700~3200	500~800	16	0.05~0.1	側銑 (SIDE MILLING)
0802	30	75	2700~3200	1200~1600	16	0.4~0.5	側銑 (SIDE MILLING)
ETH 0852	30	75	2700~3200	700~1000	0.05~0.1	8.5	溝銑 (SLOTTING)
0852	30	75	2700~3200	700~1000	0.7~1.2	8.5	溝銑 (SLOTTING)
0852	30	75	2700~3200	700~1000	8.5	0.7~1.2	側銑 (SIDE MILLING)
0852	30	75	2700~3200	500~800	17	0.05~0.1	側銑 (SIDE MILLING)
0852	30	75	2700~3200	1200~1600	17	0.4~0.5	側銑 (SIDE MILLING)
ETH 0902	30	75	2700~3200	700~1000	0.05~0.1	9	溝銑 (SLOTTING)
0902	30	75	2700~3200	700~1000	0.7~1.2	9	溝銑 (SLOTTING)
0902	30	75	2700~3200	700~1000	9	0.7~1.2	側銑 (SIDE MILLING)
0902	30	75	2700~3200	500~800	18	0.05~0.1	側銑 (SIDE MILLING)
0902	30	75	2700~3200	1200~1600	18	0.4~0.5	側銑 (SIDE MILLING)
ETH 0952	35	100	3000~3500	700~1000	0.05~0.1	9.5	溝銑 (SLOTTING)
0952	35	75	2200~2700	700~1000	0.7~1.2	9.5	溝銑 (SLOTTING)
0952	35	70	2000~2500	700~1000	9.5	0.7~1.2	側銑 (SIDE MILLING)
0952	35	100	3000~3500	400~700	19	0.05~0.1	側銑 (SIDE MILLING)
0952	35	70	2000~2500	800~1200	19	0.4~0.5	側銑 (SIDE MILLING)

ETB^{2T} / ETH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	鉻鉬合金鋼：*Chromium Molybdenum Alloy Steels* SCM440 : 1.7225 : 4140 : 42CrMoA (HRc25~28)
ETB^{2T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 1002	35	100	3000~3500	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
1002	35	75	2200~2700	700~1000	0.7~1.2	10	溝銑 (SLOTTING)
1002	35	70	2000~2500	700~1000	10	0.7~1.2	側銑 (SIDE MILLING)
1002	35	100	3000~3500	400~700	20	0.05~0.1	側銑 (SIDE MILLING)
1002	35	70	2000~2500	800~1200	20	0.4~0.5	側銑 (SIDE MILLING)
ETH 1052	35	100	3000~3500	700~1000	0.05~0.12	10.5	溝銑 (SLOTTING)
1052	35	75	2200~2700	700~1000	0.7~1.2	10.5	溝銑 (SLOTTING)
1052	35	70	2000~2500	700~1000	10.5	0.7~1.2	側銑 (SIDE MILLING)
1052	35	100	3000~3500	400~700	21	0.05~0.12	側銑 (SIDE MILLING)
1052	35	70	2000~2500	800~1200	21	0.4~0.5	側銑 (SIDE MILLING)
ETH 1102	35	100	3000~3500	700~1000	0.05~0.12	11	溝銑 (SLOTTING)
1102	35	75	2200~2700	700~1000	0.7~1.2	11	溝銑 (SLOTTING)
1102	35	70	2000~2500	700~1000	11	0.7~1.2	側銑 (SIDE MILLING)
1102	35	100	3000~3500	400~700	22	0.05~0.12	側銑 (SIDE MILLING)
1102	35	70	2000~2500	800~1200	22	0.4~0.5	側銑 (SIDE MILLING)
ETH 1152	35	100	3000~3500	700~1000	0.05~0.12	11.5	溝銑 (SLOTTING)
1152	35	75	2200~2700	700~1000	0.7~1.2	11.5	溝銑 (SLOTTING)
1152	35	70	2000~2500	700~1000	11.5	0.7~1.2	側銑 (SIDE MILLING)
1152	35	100	3000~3500	400~700	23	0.05~0.12	側銑 (SIDE MILLING)
1152	35	70	2000~2500	800~1200	23	0.4~0.5	側銑 (SIDE MILLING)
ETB ETH 1202	37	105	2500~3000	700~1000	0.05~0.12	12	溝銑 (SLOTTING)
1202	37	85	2000~2500	500~800	0.7~1.2	12	溝銑 (SLOTTING)
1202	37	90	2200~2700	700~1000	12	0.7~1.2	側銑 (SIDE MILLING)
1202	37	115	2800~3300	500~800	24	0.05~0.12	側銑 (SIDE MILLING)
1202	37	115	2800~3300	1000~1400	24	0.4~0.5	側銑 (SIDE MILLING)
ETH 1252	37	105	2500~3000	700~1000	0.05~0.15	12.5	溝銑 (SLOTTING)
1252	37	85	2000~2500	500~800	0.7~1.2	12.5	溝銑 (SLOTTING)
1252	37	90	2200~2700	700~1000	12.5	0.7~1.2	側銑 (SIDE MILLING)
1252	37	115	2800~3300	500~800	25	0.05~0.15	側銑 (SIDE MILLING)
1252	37	115	2800~3300	1000~1400	25	0.4~0.5	側銑 (SIDE MILLING)
ETH 1302	37	105	2500~3000	700~1000	0.05~0.15	13	溝銑 (SLOTTING)
1302	37	85	2000~2500	500~800	0.7~1.2	13	溝銑 (SLOTTING)
1302	37	90	2200~2700	700~1000	13	0.7~1.2	側銑 (SIDE MILLING)
1302	37	115	2800~3300	500~800	26	0.05~0.15	側銑 (SIDE MILLING)
1302	37	115	2800~3300	1000~1400	26	0.4~0.5	側銑 (SIDE MILLING)
ETH 1352	37	105	2500~3000	700~1000	0.05~0.15	13.5	溝銑 (SLOTTING)
1352	37	85	2000~2500	500~800	0.7~1.2	13.5	溝銑 (SLOTTING)
1352	37	90	2200~2700	700~1000	13.5	0.7~1.2	側銑 (SIDE MILLING)
1352	37	115	2800~3300	500~800	27	0.05~0.15	側銑 (SIDE MILLING)
1352	37	115	2800~3300	1000~1400	27	0.4~0.5	側銑 (SIDE MILLING)

ETB^{2T} / ETH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	鉻鉬合金鋼：*Chromium Molybdenum Alloy Steels* **SCM440 : 1.7225 : 4140 : 42CrMoA (HRc25~28)**
ETB^{2T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 1402	37	105	2500~3000	700~1000	0.05~0.15	14	溝銑 (SLOTTING)
1402	37	85	2000~2500	500~800	0.7~1.2	14	溝銑 (SLOTTING)
1402	37	90	2200~2700	700~1000	14	0.7~1.2	側銑 (SIDE MILLING)
1402	37	115	2800~3300	500~800	28	0.05~0.15	側銑 (SIDE MILLING)
1402	37	115	2800~3300	1000~1400	28	0.4~0.5	側銑 (SIDE MILLING)
ETH 1502	50	100	1800~2300	500~800	0.05~0.15	15	溝銑 (SLOTTING)
1502	50	85	1500~2000	400~700	0.7~1.2	15	溝銑 (SLOTTING)
1502	50	115	2000~2500	500~800	15	0.7~1.2	側銑 (SIDE MILLING)
1502	50	115	2000~2500	400~700	30	0.05~0.15	側銑 (SIDE MILLING)
1502	50	115	2000~2500	700~1000	30	0.4~0.5	側銑 (SIDE MILLING)
ETB ETH 1602	50	100	1800~2300	500~800	0.05~0.15	16	溝銑 (SLOTTING)
1602	50	85	1500~2000	400~700	0.7~1.2	16	溝銑 (SLOTTING)
1602	50	115	2000~2500	500~800	16	0.7~1.2	側銑 (SIDE MILLING)
1602	50	115	2000~2500	400~700	32	0.05~0.15	側銑 (SIDE MILLING)
1602	50	115	2000~2500	700~1000	32	0.4~0.5	側銑 (SIDE MILLING)
ETH 1702	50	100	1800~2300	500~800	0.05~0.15	17	溝銑 (SLOTTING)
1702	50	85	1500~2000	400~700	0.7~1.2	17	溝銑 (SLOTTING)
1702	50	115	2000~2500	500~800	17	0.7~1.2	側銑 (SIDE MILLING)
1702	50	115	2000~2500	400~700	34	0.05~0.15	側銑 (SIDE MILLING)
1702	50	115	2000~2500	700~1000	34	0.4~0.5	側銑 (SIDE MILLING)
ETH 1802	55	95	1300~1800	400~700	0.05~0.15	18	溝銑 (SLOTTING)
1802	55	80	1000~1500	300~600	0.7~1.2	18	溝銑 (SLOTTING)
1802	55	110	1500~2000	400~700	18	0.7~1.2	側銑 (SIDE MILLING)
1802	55	110	1500~2000	300~600	36	0.05~0.15	側銑 (SIDE MILLING)
1802	55	110	1500~2000	500~800	36	0.4~0.5	側銑 (SIDE MILLING)
ETB ETH 2002	55	95	1300~1800	400~700	0.05~0.15	20	溝銑 (SLOTTING)
2002	55	80	1000~1500	300~600	0.7~1.2	20	溝銑 (SLOTTING)
2002	55	110	1500~2000	400~700	20	0.7~1.2	側銑 (SIDE MILLING)
2002	55	110	1500~2000	300~600	40	0.05~0.15	側銑 (SIDE MILLING)
2002	55	110	1500~2000	500~800	40	0.4~0.5	側銑 (SIDE MILLING)

ETB^{2T} / ETH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
ETB^{2T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0102	14	30	9000~10000	700~1000	0.03~0.05	1	溝銑 (SLOTTING)
0102	14	30	9000~10000	700~1000	0.06~0.08	1	溝銑 (SLOTTING)
0102	14	30	9000~10000	500~700	1	0.03~0.05	側銑 (SIDE MILLING)
0102	14	30	9000~10000	400~700	1	0.06~0.08	側銑 (SIDE MILLING)
ETB ETH 0152	14	45	9000~10000	700~1000	0.03~0.05	1.5	溝銑 (SLOTTING)
0152	14	45	9000~10000	700~1000	0.06~0.09	1.5	溝銑 (SLOTTING)
0152	14	45	9000~10000	600~800	1.5	0.03~0.05	側銑 (SIDE MILLING)
0152	14	45	9000~10000	400~700	1.5	0.06~0.09	側銑 (SIDE MILLING)
ETB ETH 0202	16	55	8700~9200	700~1000	0.04~0.06	2	溝銑 (SLOTTING)
0202	16	55	8700~9200	800~1200	0.08~0.13	2	溝銑 (SLOTTING)
0202	16	55	8700~9200	600~800	2	0.04~0.06	側銑 (SIDE MILLING)
0202	16	55	8700~9200	700~1000	2	0.08~0.13	側銑 (SIDE MILLING)
ETB ETH 0252	16	65	8000~8500	700~1000	0.04~0.06	2.5	溝銑 (SLOTTING)
0252	16	65	8000~8500	800~1200	0.08~0.13	2.5	溝銑 (SLOTTING)
0252	16	65	8000~8500	700~900	5	0.04~0.06	側銑 (SIDE MILLING)
0252	16	65	8000~8500	500~800	5	0.08~0.13	側銑 (SIDE MILLING)
ETB ETH 0302	18	75	7500~8000	700~1000	0.05~0.09	3	溝銑 (SLOTTING)
0302	18	75	7500~8000	800~1200	0.12~0.18	3	溝銑 (SLOTTING)
0302	18	75	7500~8000	700~900	6	0.05~0.09	側銑 (SIDE MILLING)
0302	18	75	7500~8000	700~1000	6	0.12~0.18	側銑 (SIDE MILLING)
ETH 0352	18	75	7500~8000	700~1000	0.05~0.1	3.5	溝銑 (SLOTTING)
0352	18	75	7500~8000	800~1200	0.12~0.2	3.5	溝銑 (SLOTTING)
0352	18	75	7500~8000	700~900	7	0.05~0.1	側銑 (SIDE MILLING)
0352	18	75	7500~8000	700~1000	7	0.12~0.2	側銑 (SIDE MILLING)
ETB ETH 0402	20	75	5700~6200	700~1000	0.05~0.1	4	溝銑 (SLOTTING)
0402	20	75	5700~6200	800~1200	0.15~0.25	4	溝銑 (SLOTTING)
0402	20	75	5700~6200	700~1000	8	0.05~0.1	側銑 (SIDE MILLING)
0402	20	75	5700~6200	800~1200	8	0.15~0.25	側銑 (SIDE MILLING)
ETH 0452	20	75	5700~6200	700~1000	0.05~0.1	4.5	溝銑 (SLOTTING)
0452	20	75	5700~6200	800~1200	0.2~0.3	4.5	溝銑 (SLOTTING)
0452	20	75	5700~6200	700~1000	9	0.05~0.1	側銑 (SIDE MILLING)
0452	20	75	5700~6200	800~1200	9	0.2~0.3	側銑 (SIDE MILLING)
ETB ETH 0502	20	80	4800~5300	700~1000	0.05~0.1	5	溝銑 (SLOTTING)
0502	20	80	4800~5300	800~1200	0.3~0.4	5	溝銑 (SLOTTING)
0502	20	80	4800~5300	700~1000	10	0.05~0.1	側銑 (SIDE MILLING)
0502	20	80	4800~5300	800~1200	10	0.3~0.4	側銑 (SIDE MILLING)
ETH 0552	20	80	4800~5300	700~1000	0.05~0.1	5.5	溝銑 (SLOTTING)
0552	20	80	4800~5300	800~1200	0.3~0.4	5.5	溝銑 (SLOTTING)
0552	20	80	4800~5300	700~1000	11	0.05~0.1	側銑 (SIDE MILLING)
0552	20	80	4800~5300	800~1200	11	0.3~0.4	側銑 (SIDE MILLING)

ETB^{2T} / ETH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
ETB^{2T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0602	23	80	4000~4500	700~1000	0.05~0.1	6	溝銑 (SLOTTING)
0602	23	80	4000~4500	700~1000	0.5~1	6	溝銑 (SLOTTING)
0602	23	80	4000~4500	500~800	6	0.5~1	側銑 (SIDE MILLING)
0602	23	80	4000~4500	500~800	12	0.05~0.1	側銑 (SIDE MILLING)
0602	23	80	4000~4500	1000~1400	12	0.3~0.4	側銑 (SIDE MILLING)
ETH 0652	23	80	4000~4500	700~1000	0.05~0.1	6.5	溝銑 (SLOTTING)
0652	23	80	4000~4500	700~1000	0.5~1	6.5	溝銑 (SLOTTING)
0652	23	80	4000~4500	500~800	6.5	0.5~1	側銑 (SIDE MILLING)
0652	23	80	4000~4500	500~800	13	0.05~0.1	側銑 (SIDE MILLING)
0652	23	80	4000~4500	1000~1400	13	0.3~0.4	側銑 (SIDE MILLING)
ETH 0702	23	80	4000~4500	700~1000	0.05~0.1	7	溝銑 (SLOTTING)
0702	23	80	4000~4500	700~1000	0.5~1	7	溝銑 (SLOTTING)
0702	23	80	4000~4500	500~800	7	0.5~1	側銑 (SIDE MILLING)
0702	23	80	4000~4500	500~800	14	0.05~0.1	側銑 (SIDE MILLING)
0702	23	80	4000~4500	1000~1400	14	0.3~0.4	側銑 (SIDE MILLING)
ETH 0752	30	75	2700~3200	700~1000	0.05~0.1	7.5	溝銑 (SLOTTING)
0752	30	75	2700~3200	500~800	0.5~1	7.5	溝銑 (SLOTTING)
0752	30	75	2700~3200	500~800	7.5	0.5~1	側銑 (SIDE MILLING)
0752	30	75	2700~3200	500~800	15	0.05~0.1	側銑 (SIDE MILLING)
0752	30	75	2700~3200	1000~1400	15	0.4~0.5	側銑 (SIDE MILLING)
ETB ETH 0802	30	75	2700~3200	700~1000	0.05~0.1	8	溝銑 (SLOTTING)
0802	30	75	2700~3200	500~800	0.7~1.2	8	溝銑 (SLOTTING)
0802	30	75	2700~3200	500~800	8	0.7~1.2	側銑 (SIDE MILLING)
0802	30	75	2700~3200	500~800	16	0.05~0.1	側銑 (SIDE MILLING)
0802	30	75	2700~3200	1000~1400	16	0.4~0.5	側銑 (SIDE MILLING)
ETH 0852	30	75	2700~3200	700~1000	0.05~0.1	8.5	溝銑 (SLOTTING)
0852	30	75	2700~3200	500~800	0.7~1.2	8.5	溝銑 (SLOTTING)
0852	30	75	2700~3200	500~800	8.5	0.7~1.2	側銑 (SIDE MILLING)
0852	30	75	2700~3200	500~800	17	0.05~0.1	側銑 (SIDE MILLING)
0852	30	75	2700~3200	1000~1400	17	0.4~0.5	側銑 (SIDE MILLING)
ETH 0902	30	75	2700~3200	700~1000	0.05~0.1	9	溝銑 (SLOTTING)
0902	30	75	2700~3200	500~800	0.7~1.2	9	溝銑 (SLOTTING)
0902	30	75	2700~3200	500~800	9	0.7~1.2	側銑 (SIDE MILLING)
0902	30	75	2700~3200	500~800	18	0.05~0.1	側銑 (SIDE MILLING)
0902	30	75	2700~3200	1000~1400	18	0.4~0.5	側銑 (SIDE MILLING)
ETH 0952	35	100	3000~3500	700~1000	0.05~0.1	9.5	溝銑 (SLOTTING)
0952	35	75	2200~2700	500~800	0.7~1.2	9.5	溝銑 (SLOTTING)
0952	35	70	2000~2500	700~1000	9.5	0.7~1.2	側銑 (SIDE MILLING)
0952	35	100	3000~3500	400~700	19	0.05~0.1	側銑 (SIDE MILLING)
0952	35	70	2000~2500	700~1100	19	0.4~0.5	側銑 (SIDE MILLING)

ETB^{2T} / ETH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
ETB^{2T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 1002	35	100	3000~3500	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
1002	35	75	2200~2700	500~800	0.7~1.2	10	溝銑 (SLOTTING)
1002	35	70	2000~2500	700~1000	10	0.7~1.2	側銑 (SIDE MILLING)
1002	35	100	3000~3500	400~700	20	0.05~0.1	側銑 (SIDE MILLING)
1002	35	70	2000~2500	700~1100	20	0.4~0.5	側銑 (SIDE MILLING)
ETH 1052	35	100	3000~3500	700~1000	0.05~0.12	10.5	溝銑 (SLOTTING)
1052	35	75	2200~2700	500~800	0.7~1.2	10.5	溝銑 (SLOTTING)
1052	35	70	2000~2500	700~1000	10.5	0.7~1.2	側銑 (SIDE MILLING)
1052	35	100	3000~3500	400~700	21	0.05~0.12	側銑 (SIDE MILLING)
1052	35	70	2000~2500	700~1100	21	0.4~0.5	側銑 (SIDE MILLING)
ETH 1102	35	100	3000~3500	700~1000	0.05~0.12	11	溝銑 (SLOTTING)
1102	35	75	2200~2700	500~800	0.7~1.2	11	溝銑 (SLOTTING)
1102	35	70	2000~2500	700~1000	11	0.7~1.2	側銑 (SIDE MILLING)
1102	35	100	3000~3500	400~700	22	0.05~0.12	側銑 (SIDE MILLING)
1102	35	70	2000~2500	700~1100	22	0.4~0.5	側銑 (SIDE MILLING)
ETH 1152	35	100	3000~3500	700~1000	0.05~0.12	11.5	溝銑 (SLOTTING)
1152	35	75	2200~2700	500~800	0.7~1.2	11.5	溝銑 (SLOTTING)
1152	35	70	2000~2500	700~1000	11.5	0.7~1.2	側銑 (SIDE MILLING)
1152	35	100	3000~3500	400~700	23	0.05~0.12	側銑 (SIDE MILLING)
1152	35	70	2000~2500	700~1100	23	0.4~0.5	側銑 (SIDE MILLING)
ETB ETH 1202	37	105	2500~3000	700~1000	0.05~0.12	12	溝銑 (SLOTTING)
1202	37	85	2000~2500	400~700	0.7~1.2	12	溝銑 (SLOTTING)
1202	37	90	2200~2700	500~800	12	0.7~1.2	側銑 (SIDE MILLING)
1202	37	115	2800~3300	400~700	24	0.05~0.12	側銑 (SIDE MILLING)
1202	37	115	2800~3300	800~1200	24	0.4~0.5	側銑 (SIDE MILLING)
ETH 1252	37	105	2500~3000	700~1000	0.05~0.15	12.5	溝銑 (SLOTTING)
1252	37	85	2000~2500	400~700	0.7~1.2	12.5	溝銑 (SLOTTING)
1252	37	90	2200~2700	500~800	12.5	0.7~1.2	側銑 (SIDE MILLING)
1252	37	115	2800~3300	400~700	25	0.05~0.15	側銑 (SIDE MILLING)
1252	37	115	2800~3300	800~1200	25	0.4~0.5	側銑 (SIDE MILLING)
ETH 1302	37	105	2500~3000	700~1000	0.05~0.15	13	溝銑 (SLOTTING)
1302	37	85	2000~2500	400~700	0.7~1.2	13	溝銑 (SLOTTING)
1302	37	90	2200~2700	500~800	13	0.7~1.2	側銑 (SIDE MILLING)
1302	37	115	2800~3300	400~700	26	0.05~0.15	側銑 (SIDE MILLING)
1302	37	115	2800~3300	800~1200	26	0.4~0.5	側銑 (SIDE MILLING)
ETH 1352	37	105	2500~3000	700~1000	0.05~0.15	13.5	溝銑 (SLOTTING)
1352	37	85	2000~2500	400~700	0.7~1.2	13.5	溝銑 (SLOTTING)
1352	37	90	2200~2700	500~800	13.5	0.7~1.2	側銑 (SIDE MILLING)
1352	37	115	2800~3300	400~700	27	0.05~0.15	側銑 (SIDE MILLING)
1352	37	115	2800~3300	800~1200	27	0.4~0.5	側銑 (SIDE MILLING)

ETB^{2T} / ETH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
ETB^{2T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 1402	37	105	2500~3000	700~1000	0.05~0.15	14	溝銑 (SLOTTING)
1402	37	85	2000~2500	400~700	0.7~1.2	14	溝銑 (SLOTTING)
1402	37	90	2200~2700	500~800	14	0.7~1.2	側銑 (SIDE MILLING)
1402	37	115	2800~3300	400~700	28	0.05~0.15	側銑 (SIDE MILLING)
1402	37	115	2800~3300	800~1200	28	0.4~0.5	側銑 (SIDE MILLING)
ETH 1502	50	100	1800~2300	500~800	0.05~0.15	15	溝銑 (SLOTTING)
1502	50	85	1500~2000	300~600	0.7~1.2	15	溝銑 (SLOTTING)
1502	50	115	2000~2500	300~600	15	0.7~1.2	側銑 (SIDE MILLING)
1502	50	115	2000~2500	300~600	30	0.05~0.15	側銑 (SIDE MILLING)
1502	50	115	2000~2500	500~800	30	0.4~0.5	側銑 (SIDE MILLING)
ETB ETH 1602	50	100	1800~2300	500~800	0.05~0.15	16	溝銑 (SLOTTING)
1602	50	85	1500~2000	300~600	0.7~1.2	16	溝銑 (SLOTTING)
1602	50	115	2000~2500	300~600	16	0.7~1.2	側銑 (SIDE MILLING)
1602	50	115	2000~2500	300~600	32	0.05~0.15	側銑 (SIDE MILLING)
1602	50	115	2000~2500	500~800	32	0.4~0.5	側銑 (SIDE MILLING)
ETH 1702	50	100	1800~2300	500~800	0.05~0.15	17	溝銑 (SLOTTING)
1702	50	85	1500~2000	300~600	0.7~1.2	17	溝銑 (SLOTTING)
1702	50	115	2000~2500	300~600	17	0.7~1.2	側銑 (SIDE MILLING)
1702	50	115	2000~2500	300~600	34	0.05~0.15	側銑 (SIDE MILLING)
1702	50	115	2000~2500	500~800	34	0.4~0.5	側銑 (SIDE MILLING)
ETH 1802	55	95	1300~1800	400~700	0.05~0.15	18	溝銑 (SLOTTING)
1802	55	80	1000~1500	300~500	0.7~1.2	18	溝銑 (SLOTTING)
1802	55	110	1500~2000	300~500	18	0.7~1.2	側銑 (SIDE MILLING)
1802	55	110	1500~2000	300~600	36	0.05~0.15	側銑 (SIDE MILLING)
1802	55	110	1500~2000	300~600	36	0.4~0.5	側銑 (SIDE MILLING)
ETB ETH 2002	55	95	1300~1800	400~700	0.05~0.15	20	溝銑 (SLOTTING)
2002	55	80	1000~1500	300~500	0.7~1.2	20	溝銑 (SLOTTING)
2002	55	110	1500~2000	300~500	20	0.7~1.2	側銑 (SIDE MILLING)
2002	55	110	1500~2000	300~600	40	0.05~0.15	側銑 (SIDE MILLING)
2002	55	110	1500~2000	300~600	40	0.4~0.5	側銑 (SIDE MILLING)

ETB^{2T} / ETH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
ETB^{2T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0102	14	30	9000~10000	700~1000	0.03~0.05	1	溝銑 (SLOTTING)
0102	14	30	9000~10000	700~1000	0.06~0.08	1	溝銑 (SLOTTING)
0102	14	30	9000~10000	500~700	1	0.03~0.05	側銑 (SIDE MILLING)
0102	14	30	9000~10000	400~700	1	0.06~0.08	側銑 (SIDE MILLING)
ETB ETH 0152	14	45	9000~10000	700~1000	0.03~0.05	1.5	溝銑 (SLOTTING)
0152	14	45	9000~10000	700~1000	0.06~0.09	1.5	溝銑 (SLOTTING)
0152	14	45	9000~10000	500~800	1.5	0.03~0.05	側銑 (SIDE MILLING)
0152	14	45	9000~10000	400~700	1.5	0.06~0.09	側銑 (SIDE MILLING)
ETB ETH 0202	16	55	8700~9200	700~1000	0.04~0.06	2	溝銑 (SLOTTING)
0202	16	55	8700~9200	800~1200	0.08~0.13	2	溝銑 (SLOTTING)
0202	16	55	8700~9200	500~700	2	0.04~0.06	側銑 (SIDE MILLING)
0202	16	55	8700~9200	700~1000	2	0.08~0.13	側銑 (SIDE MILLING)
ETB ETH 0252	16	65	8000~8500	700~1000	0.04~0.06	2.5	溝銑 (SLOTTING)
0252	16	65	8000~8500	800~1200	0.08~0.13	2.5	溝銑 (SLOTTING)
0252	16	65	8000~8500	600~800	5	0.04~0.06	側銑 (SIDE MILLING)
0252	16	65	8000~8500	500~800	5	0.08~0.13	側銑 (SIDE MILLING)
ETB ETH 0302	18	75	7500~8000	700~1000	0.05~0.09	3	溝銑 (SLOTTING)
0302	18	75	7500~8000	800~1200	0.12~0.18	3	溝銑 (SLOTTING)
0302	18	75	7500~8000	600~800	6	0.05~0.09	側銑 (SIDE MILLING)
0302	18	75	7500~8000	700~1000	6	0.12~0.18	側銑 (SIDE MILLING)
ETH 0352	18	75	7500~8000	700~1000	0.05~0.1	3.5	溝銑 (SLOTTING)
0352	18	75	7500~8000	800~1200	0.12~0.2	3.5	溝銑 (SLOTTING)
0352	18	75	7500~8000	600~800	7	0.05~0.1	側銑 (SIDE MILLING)
0352	18	75	7500~8000	700~1000	7	0.12~0.2	側銑 (SIDE MILLING)
ETB ETH 0402	20	75	5700~6200	700~1000	0.05~0.1	4	溝銑 (SLOTTING)
0402	20	75	5700~6200	800~1200	0.15~0.25	4	溝銑 (SLOTTING)
0402	20	75	5700~6200	700~900	8	0.05~0.1	側銑 (SIDE MILLING)
0402	20	75	5700~6200	800~1200	8	0.15~0.25	側銑 (SIDE MILLING)
ETH 0452	20	75	5700~6200	700~1000	0.05~0.1	4.5	溝銑 (SLOTTING)
0452	20	75	5700~6200	800~1200	0.2~0.3	4.5	溝銑 (SLOTTING)
0452	20	75	5700~6200	700~900	9	0.05~0.1	側銑 (SIDE MILLING)
0452	20	75	5700~6200	800~1200	9	0.2~0.3	側銑 (SIDE MILLING)
ETB ETH 0502	20	80	4800~5300	700~1000	0.05~0.1	5	溝銑 (SLOTTING)
0502	20	80	4800~5300	800~1200	0.3~0.4	5	溝銑 (SLOTTING)
0502	20	80	4800~5300	700~1000	10	0.05~0.1	側銑 (SIDE MILLING)
0502	20	80	4800~5300	800~1200	10	0.3~0.4	側銑 (SIDE MILLING)
ETH 0552	20	80	4800~5300	700~1000	0.05~0.1	5.5	溝銑 (SLOTTING)
0552	20	80	4800~5300	800~1200	0.3~0.4	5.5	溝銑 (SLOTTING)
0552	20	80	4800~5300	700~1000	11	0.05~0.1	側銑 (SIDE MILLING)
0552	20	80	4800~5300	800~1200	11	0.3~0.4	側銑 (SIDE MILLING)

ETB^{2T} / ETH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
ETB^{2T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0602	23	80	4000~4500	700~1000	0.05~0.1	6	溝銑 (SLOTTING)
0602	23	80	4000~4500	700~1000	0.5~1	6	溝銑 (SLOTTING)
0602	23	80	4000~4500	500~800	6	0.5~1	側銑 (SIDE MILLING)
0602	23	80	4000~4500	500~700	12	0.05~0.1	側銑 (SIDE MILLING)
0602	23	80	4000~4500	1000~1400	12	0.3~0.4	側銑 (SIDE MILLING)
ETH 0652	23	80	4000~4500	700~1000	0.05~0.1	6.5	溝銑 (SLOTTING)
0652	23	80	4000~4500	700~1000	0.5~1	6.5	溝銑 (SLOTTING)
0652	23	80	4000~4500	500~800	6.5	0.5~1	側銑 (SIDE MILLING)
0652	23	80	4000~4500	500~700	13	0.05~0.1	側銑 (SIDE MILLING)
0652	23	80	4000~4500	1000~1400	13	0.3~0.4	側銑 (SIDE MILLING)
ETH 0702	23	80	4000~4500	700~1000	0.05~0.1	7	溝銑 (SLOTTING)
0702	23	80	4000~4500	700~1000	0.5~1	7	溝銑 (SLOTTING)
0702	23	80	4000~4500	500~800	7	0.5~1	側銑 (SIDE MILLING)
0702	23	80	4000~4500	500~700	14	0.05~0.1	側銑 (SIDE MILLING)
0702	23	80	4000~4500	1000~1400	14	0.3~0.4	側銑 (SIDE MILLING)
ETH 0752	30	75	2700~3200	700~1000	0.05~0.1	7.5	溝銑 (SLOTTING)
0752	30	75	2700~3200	500~800	0.5~1	7.5	溝銑 (SLOTTING)
0752	30	75	2700~3200	500~800	7.5	0.5~1	側銑 (SIDE MILLING)
0752	30	75	2700~3200	500~700	15	0.05~0.1	側銑 (SIDE MILLING)
0752	30	75	2700~3200	1000~1400	15	0.4~0.5	側銑 (SIDE MILLING)
ETB ETH 0802	30	75	2700~3200	700~1000	0.05~0.1	8	溝銑 (SLOTTING)
0802	30	75	2700~3200	500~800	0.7~1.2	8	溝銑 (SLOTTING)
0802	30	75	2700~3200	500~800	8	0.7~1.2	側銑 (SIDE MILLING)
0802	30	75	2700~3200	500~700	16	0.05~0.1	側銑 (SIDE MILLING)
0802	30	75	2700~3200	1000~1400	16	0.4~0.5	側銑 (SIDE MILLING)
ETH 0852	30	75	2700~3200	700~1000	0.05~0.1	8.5	溝銑 (SLOTTING)
0852	30	75	2700~3200	500~800	0.7~1.2	8.5	溝銑 (SLOTTING)
0852	30	75	2700~3200	500~800	8.5	0.7~1.2	側銑 (SIDE MILLING)
0852	30	75	2700~3200	500~700	17	0.05~0.1	側銑 (SIDE MILLING)
0852	30	75	2700~3200	1000~1400	17	0.4~0.5	側銑 (SIDE MILLING)
ETH 0902	30	75	2700~3200	700~1000	0.05~0.1	9	溝銑 (SLOTTING)
0902	30	75	2700~3200	500~800	0.7~1.2	9	溝銑 (SLOTTING)
0902	30	75	2700~3200	500~800	9	0.7~1.2	側銑 (SIDE MILLING)
0902	30	75	2700~3200	500~700	18	0.05~0.1	側銑 (SIDE MILLING)
0902	30	75	2700~3200	1000~1400	18	0.4~0.5	側銑 (SIDE MILLING)
ETH 0952	35	100	3000~3500	700~1000	0.05~0.1	9.5	溝銑 (SLOTTING)
0952	35	75	2200~2700	500~800	0.7~1.2	9.5	溝銑 (SLOTTING)
0952	35	70	2000~2500	700~1000	9.5	0.7~1.2	側銑 (SIDE MILLING)
0952	35	100	3000~3500	400~600	19	0.05~0.1	側銑 (SIDE MILLING)
0952	35	70	2000~2500	700~1100	19	0.4~0.5	側銑 (SIDE MILLING)

ETB^{2T} / ETH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
ETB^{2T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 1002	35	100	3000~3500	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
1002	35	75	2200~2700	500~800	0.7~1.2	10	溝銑 (SLOTTING)
1002	35	70	2000~2500	700~1000	10	0.7~1.2	側銑 (SIDE MILLING)
1002	35	100	3000~3500	400~600	20	0.05~0.1	側銑 (SIDE MILLING)
1002	35	70	2000~2500	700~1100	20	0.4~0.5	側銑 (SIDE MILLING)
ETH 1052	35	100	3000~3500	700~1000	0.05~0.12	10.5	溝銑 (SLOTTING)
1052	35	75	2200~2700	500~800	0.7~1.2	10.5	溝銑 (SLOTTING)
1052	35	70	2000~2500	700~1000	10.5	0.7~1.2	側銑 (SIDE MILLING)
1052	35	100	3000~3500	400~600	21	0.05~0.12	側銑 (SIDE MILLING)
1052	35	70	2000~2500	700~1100	21	0.4~0.5	側銑 (SIDE MILLING)
ETH 1102	35	100	3000~3500	700~1000	0.05~0.12	11	溝銑 (SLOTTING)
1102	35	75	2200~2700	500~800	0.7~1.2	11	溝銑 (SLOTTING)
1102	35	70	2000~2500	700~1000	11	0.7~1.2	側銑 (SIDE MILLING)
1102	35	100	3000~3500	400~600	22	0.05~0.12	側銑 (SIDE MILLING)
1102	35	70	2000~2500	700~1100	22	0.4~0.5	側銑 (SIDE MILLING)
ETH 1152	35	100	3000~3500	700~1000	0.05~0.12	11.5	溝銑 (SLOTTING)
1152	35	75	2200~2700	500~800	0.7~1.2	11.5	溝銑 (SLOTTING)
1152	35	70	2000~2500	700~1000	11.5	0.7~1.2	側銑 (SIDE MILLING)
1152	35	100	3000~3500	400~600	23	0.05~0.12	側銑 (SIDE MILLING)
1152	35	70	2000~2500	700~1100	23	0.4~0.5	側銑 (SIDE MILLING)
ETB ETH 1202	37	105	2500~3000	700~1000	0.05~0.12	12	溝銑 (SLOTTING)
1202	37	85	2000~2500	400~700	0.7~1.2	12	溝銑 (SLOTTING)
1202	37	90	2200~2700	500~800	12	0.7~1.2	側銑 (SIDE MILLING)
1202	37	115	2800~3300	400~600	24	0.05~0.12	側銑 (SIDE MILLING)
1202	37	115	2800~3300	800~1200	24	0.4~0.5	側銑 (SIDE MILLING)
ETH 1252	37	105	2500~3000	700~1000	0.05~0.15	12.5	溝銑 (SLOTTING)
1252	37	85	2000~2500	400~700	0.7~1.2	12.5	溝銑 (SLOTTING)
1252	37	90	2200~2700	500~800	12.5	0.7~1.2	側銑 (SIDE MILLING)
1252	37	115	2800~3300	400~600	25	0.05~0.15	側銑 (SIDE MILLING)
1252	37	115	2800~3300	800~1200	25	0.4~0.5	側銑 (SIDE MILLING)
ETH 1302	37	105	2500~3000	700~1000	0.05~0.15	13	溝銑 (SLOTTING)
1302	37	85	2000~2500	400~700	0.7~1.2	13	溝銑 (SLOTTING)
1302	37	90	2200~2700	500~800	13	0.7~1.2	側銑 (SIDE MILLING)
1302	37	115	2800~3300	400~600	26	0.05~0.15	側銑 (SIDE MILLING)
1302	37	115	2800~3300	800~1200	26	0.4~0.5	側銑 (SIDE MILLING)
ETH 1352	37	105	2500~3000	700~1000	0.05~0.15	13.5	溝銑 (SLOTTING)
1352	37	85	2000~2500	400~700	0.7~1.2	13.5	溝銑 (SLOTTING)
1352	37	90	2200~2700	500~800	13.5	0.7~1.2	側銑 (SIDE MILLING)
1352	37	115	2800~3300	400~600	27	0.05~0.15	側銑 (SIDE MILLING)
1352	37	115	2800~3300	800~1200	27	0.4~0.5	側銑 (SIDE MILLING)

ETB^{2T} / ETH^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
ETB^{2T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 1402	37	105	2500~3000	700~1000	0.05~0.15	14	溝銑 (SLOTTING)
1402	37	85	2000~2500	400~700	0.7~1.2	14	溝銑 (SLOTTING)
1402	37	90	2200~2700	500~800	14	0.7~1.2	側銑 (SIDE MILLING)
1402	37	115	2800~3300	400~600	28	0.05~0.15	側銑 (SIDE MILLING)
1402	37	115	2800~3300	800~1200	28	0.4~0.5	側銑 (SIDE MILLING)
ETH 1502	50	100	1800~2300	500~800	0.05~0.15	15	溝銑 (SLOTTING)
1502	50	85	1500~2000	300~600	0.7~1.2	15	溝銑 (SLOTTING)
1502	50	115	2000~2500	300~600	15	0.7~1.2	側銑 (SIDE MILLING)
1502	50	115	2000~2500	300~500	30	0.05~0.15	側銑 (SIDE MILLING)
1502	50	115	2000~2500	500~800	30	0.4~0.5	側銑 (SIDE MILLING)
ETB ETH 1602	50	100	1800~2300	500~800	0.05~0.15	16	溝銑 (SLOTTING)
1602	50	85	1500~2000	300~600	0.7~1.2	16	溝銑 (SLOTTING)
1602	50	115	2000~2500	300~600	16	0.7~1.2	側銑 (SIDE MILLING)
1602	50	115	2000~2500	300~500	32	0.05~0.15	側銑 (SIDE MILLING)
1602	50	115	2000~2500	500~800	32	0.4~0.5	側銑 (SIDE MILLING)
ETH 1702	50	100	1800~2300	500~800	0.05~0.15	17	溝銑 (SLOTTING)
1702	50	85	1500~2000	300~600	0.7~1.2	17	溝銑 (SLOTTING)
1702	50	115	2000~2500	300~600	17	0.7~1.2	側銑 (SIDE MILLING)
1702	50	115	2000~2500	300~500	34	0.05~0.15	側銑 (SIDE MILLING)
1702	50	115	2000~2500	500~800	34	0.4~0.5	側銑 (SIDE MILLING)
ETH 1802	55	95	1300~1800	400~700	0.05~0.15	18	溝銑 (SLOTTING)
1802	55	80	1000~1500	300~500	0.7~1.2	18	溝銑 (SLOTTING)
1802	55	110	1500~2000	300~500	18	0.7~1.2	側銑 (SIDE MILLING)
1802	55	110	1500~2000	300~600	36	0.05~0.15	側銑 (SIDE MILLING)
1802	55	110	1500~2000	300~600	36	0.4~0.5	側銑 (SIDE MILLING)
ETB ETH 2002	55	95	1300~1800	400~700	0.05~0.15	20	溝銑 (SLOTTING)
2002	55	80	1000~1500	300~500	0.7~1.2	20	溝銑 (SLOTTING)
2002	55	110	1500~2000	300~500	20	0.7~1.2	側銑 (SIDE MILLING)
2002	55	110	1500~2000	300~600	40	0.05~0.15	側銑 (SIDE MILLING)
2002	55	110	1500~2000	300~600	40	0.4~0.5	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0104	9	60	18000~20000	1300~1600	0.03~0.05	1	溝銑 (SLOTTING)
0104	9	60	18000~20000	1200~1400	0.06~0.08	1	溝銑 (SLOTTING)
0104	9	60	18000~20000	700~900	0.09~0.12	1	溝銑 (SLOTTING)
0104	9	60	18000~20000	1100~1300	1~2	0.03~0.05	側銑 (SIDE MILLING)
0104	9	60	18000~20000	1000~1200	1~2	0.06~0.08	側銑 (SIDE MILLING)
0104	9	60	18000~20000	700~900	1~2	0.09~0.12	側銑 (SIDE MILLING)
ETB ETH 0154	9	90	18000~20000	1300~1600	0.03~0.05	1.5	溝銑 (SLOTTING)
0154	9	90	18000~20000	1200~1400	0.06~0.09	1.5	溝銑 (SLOTTING)
0154	9	90	18000~20000	700~900	0.1~0.15	1.5	溝銑 (SLOTTING)
0154	9	90	18000~20000	1100~1300	1.5~3	0.03~0.05	側銑 (SIDE MILLING)
0154	9	90	18000~20000	1000~1200	1.5~3	0.06~0.09	側銑 (SIDE MILLING)
0154	9	90	18000~20000	800~1000	1.5~3	0.1~0.15	側銑 (SIDE MILLING)
ETB ETH 0204(S)	11	125	18000~20000	1300~1600	0.03~0.06	2	溝銑 (SLOTTING)
0204(S)	11	125	18000~20000	1200~1400	0.07~0.11	2	溝銑 (SLOTTING)
0204(S)	11	125	18000~20000	700~900	0.12~0.16	2	溝銑 (SLOTTING)
0204(S)	11	125	18000~20000	1100~1300	2~4	0.03~0.06	側銑 (SIDE MILLING)
0204(S)	11	125	18000~20000	1000~1200	2~4	0.07~0.11	側銑 (SIDE MILLING)
0204(S)	11	105	16000~17000	700~900	2~4	0.12~0.16	側銑 (SIDE MILLING)
ETB ETH 0254(S)	12	125	15000~16000	1300~1600	0.04~0.07	2.5	溝銑 (SLOTTING)
0254(S)	12	125	15000~16000	1200~1400	0.08~0.15	2.5	溝銑 (SLOTTING)
0254(S)	12	125	15000~16000	700~900	0.2~0.3	2.5	溝銑 (SLOTTING)
0254(S)	12	125	15000~16000	1100~1300	2.5~5	0.04~0.07	側銑 (SIDE MILLING)
0254(S)	12	125	15000~16000	1100~1300	2.5~5	0.08~0.15	側銑 (SIDE MILLING)
0254(S)	12	105	13000~14000	800~1000	2.5~5	0.2~0.3	側銑 (SIDE MILLING)
ETB ETH 0304S	13	125	13000~13500	1300~1600	0.05~0.08	3	溝銑 (SLOTTING)
0304S	13	125	13000~13500	1000~1200	0.1~0.2	3	溝銑 (SLOTTING)
0304S	13	125	13000~13500	600~800	0.25~0.35	3	溝銑 (SLOTTING)
0304S	13	125	13000~13500	1100~1300	3~6	0.05~0.08	側銑 (SIDE MILLING)
0304S	13	125	13000~13500	1000~1200	3~6	0.1~0.2	側銑 (SIDE MILLING)
0304S	13	105	11000~11500	700~900	3~6	0.25~0.35	側銑 (SIDE MILLING)
ETB ETH 0304	13	125	13000~13500	1300~1600	0.05~0.08	3	溝銑 (SLOTTING)
0304	13	125	13000~13500	1100~1300	0.1~0.2	3	溝銑 (SLOTTING)
0304	13	125	13000~13500	700~900	0.25~0.35	3	溝銑 (SLOTTING)
0304	13	125	13000~13500	1100~1300	3~6	0.05~0.08	側銑 (SIDE MILLING)
0304	13	125	13000~13500	1100~1300	3~6	0.1~0.2	側銑 (SIDE MILLING)
0304	13	105	11000~11500	800~1000	3~6	0.25~0.35	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min-1)	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0354	16	125	9500~10000	1100~1400	0.05~0.08	3.5	溝銑 (SLOTTING)
0354	16	125	9500~10000	1300~1500	0.15~0.25	3.5	溝銑 (SLOTTING)
0354	16	125	9500~10000	900~1100	0.3~0.4	3.5	溝銑 (SLOTTING)
0354	16	125	9500~10000	1000~1200	3.5~7	0.05~0.08	側銑 (SIDE MILLING)
0354	16	125	9500~10000	1300~1500	3.5~7	0.15~0.25	側銑 (SIDE MILLING)
0354	16	105	8000~8500	700~900	3.5~7	0.3~0.4	側銑 (SIDE MILLING)
ETB ETH 0404	16	125	9500~10000	1100~1400	0.05~0.09	4	溝銑 (SLOTTING)
0404	16	125	9500~10000	1300~1500	0.3~0.4	4	溝銑 (SLOTTING)
0404	16	125	9500~10000	700~900	0.5~0.8	4	溝銑 (SLOTTING)
0404	16	125	9500~10000	1000~1200	4~8	0.05~0.09	側銑 (SIDE MILLING)
0404	16	125	9500~10000	1300~1500	4~8	0.3~0.4	側銑 (SIDE MILLING)
0404	16	105	8000~8500	700~900	4~8	0.5~0.8	側銑 (SIDE MILLING)
ETB ETH 0454	16	125	8500~9000	1100~1400	0.05~0.09	4	溝銑 (SLOTTING)
0454	16	125	8500~9000	1300~1500	0.3~0.4	4	溝銑 (SLOTTING)
0454	16	125	8500~9000	700~900	0.6~1	4	溝銑 (SLOTTING)
0454	16	125	8500~9000	1000~1200	4.5~9	0.05~0.09	側銑 (SIDE MILLING)
0454	16	125	8500~9000	1300~1500	4.5~9	0.3~0.4	側銑 (SIDE MILLING)
0454	16	110	7500~8000	700~900	4.5~9	0.6~1	側銑 (SIDE MILLING)
ETH 0504S	19	125	7800~8200	1100~1400	0.05~0.13	5	溝銑 (SLOTTING)
0504S	19	125	7800~8200	1300~1500	0.7~1.2	5	溝銑 (SLOTTING)
0504S	19	125	7800~8200	900~1100	1.5~2	5	溝銑 (SLOTTING)
0504S	19	125	7800~8200	900~1100	5~10	0.05~0.13	側銑 (SIDE MILLING)
0504S	19	125	7800~8200	1300~1500	5~10	0.5~1	側銑 (SIDE MILLING)
0504S	19	105	6700~7000	700~900	5	1.5~2	側銑 (SIDE MILLING)
ETB ETH 0504	19	125	7800~8200	1100~1400	0.05~0.13	5	溝銑 (SLOTTING)
0504	19	125	7800~8200	1300~1500	0.7~1.2	5	溝銑 (SLOTTING)
0504	19	125	7800~8200	900~1100	1.5~2	5	溝銑 (SLOTTING)
0504	19	125	7800~8200	600~800	2~2.5	5	溝銑 (SLOTTING)
0504	19	125	7800~8200	900~1100	5~10	0.05~0.13	側銑 (SIDE MILLING)
0504	19	125	7800~8200	1300~1500	5~10	0~1	側銑 (SIDE MILLING)
0504	19	105	6700~7000	700~900	5	1.5~2	側銑 (SIDE MILLING)
0504	19	105	6700~7000	600~800	5	2~2.5	側銑 (SIDE MILLING)
ETH 0554	19	125	7800~8200	1100~1400	0.05~0.13	5.5	溝銑 (SLOTTING)
0554	19	125	7800~8200	1300~1500	0.7~1.2	5.5	溝銑 (SLOTTING)
0554	19	125	7800~8200	900~1100	1.5~2	5.5	溝銑 (SLOTTING)
0554	19	125	7800~8200	600~800	2~2.5	5.5	溝銑 (SLOTTING)
0554	19	125	7800~8200	900~1100	5.5~11	0.05~0.13	側銑 (SIDE MILLING)
0554	19	125	7800~8200	1300~1500	5.5~11	0~1	側銑 (SIDE MILLING)
0554	19	105	6700~7000	700~900	5.5	1.5~2	側銑 (SIDE MILLING)
0554	19	105	6700~7000	600~800	5.5	2~2.5	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0604	20	125	6600~6800	1100~1400	0.05~0.15	6	溝銑 (SLOTTING)
0604	20	125	6600~6800	1300~1500	1~1.5	6	溝銑 (SLOTTING)
0604	20	125	6600~6800	900~1100	1.5~2	6	溝銑 (SLOTTING)
0604	20	125	6600~6800	600~800	2~3	6	溝銑 (SLOTTING)
0604	20	125	6600~6800	800~1000	6~12	0.05~0.15	側銑 (SIDE MILLING)
0604	20	125	6600~6800	1300~1500	6~12	0~1	側銑 (SIDE MILLING)
0604	20	105	5500~5800	700~900	6	1.5~2	側銑 (SIDE MILLING)
0604	20	105	5500~5800	600~800	6	2~3	側銑 (SIDE MILLING)
ETH 0654	20	125	6600~6800	1100~1400	0.05~0.15	6.5	溝銑 (SLOTTING)
0654	20	125	6600~6800	1300~1500	1~1.5	6.5	溝銑 (SLOTTING)
0654	20	125	6600~6800	900~1100	1.5~2	6.5	溝銑 (SLOTTING)
0654	20	125	6600~6800	600~800	2~3	6.5	溝銑 (SLOTTING)
0654	20	125	6600~6800	800~1000	6.5~13	0.05~0.15	側銑 (SIDE MILLING)
0654	20	125	6600~6800	1300~1500	6.5~13	0~1	側銑 (SIDE MILLING)
0654	20	105	5500~5800	700~900	6.5	1.5~2	側銑 (SIDE MILLING)
0654	20	105	5500~5800	600~800	6.5	2~3	側銑 (SIDE MILLING)
ETH 0704	20	125	6600~6800	1100~1400	0.05~0.15	7	溝銑 (SLOTTING)
0704	20	125	6600~6800	1300~1500	1~1.5	7	溝銑 (SLOTTING)
0704	20	125	6600~6800	900~1100	1.5~2	7	溝銑 (SLOTTING)
0704	20	125	6600~6800	600~800	2~3	7	溝銑 (SLOTTING)
0704	20	125	6600~6800	800~1000	7~14	0.05~0.15	側銑 (SIDE MILLING)
0704	20	125	6600~6800	1300~1500	7~14	0~1	側銑 (SIDE MILLING)
0704	20	105	5500~5800	700~900	7	1.5~2	側銑 (SIDE MILLING)
0704	20	105	5500~5800	600~800	7	2~3	側銑 (SIDE MILLING)
ETH 0754	25	125	5000~5200	1000~1200	0.05~0.15	7.5	溝銑 (SLOTTING)
0754	25	105	4100~4300	1300~1500	1~2	7.5	溝銑 (SLOTTING)
0754	25	105	4100~4300	900~1100	2~3	7.5	溝銑 (SLOTTING)
0754	25	125	5000~5200	700~900	7.5~15	0.05~0.15	側銑 (SIDE MILLING)
0754	25	105	4100~4300	1300~1500	7.5~15	0.5~1	側銑 (SIDE MILLING)
0754	25	105	4100~4300	700~900	7.5	2~3	側銑 (SIDE MILLING)
0754	25	105	4100~4300	600~800	7.5	3~4	側銑 (SIDE MILLING)
ETB ETH 0804	25	125	5000~5200	1000~1200	0.05~0.15	8	溝銑 (SLOTTING)
0804	25	105	4100~4300	1300~1500	1~2	8	溝銑 (SLOTTING)
0804	25	105	4100~4300	900~1100	2~3	8	溝銑 (SLOTTING)
0804	25	125	5000~5200	700~900	8~16	0.05~0.15	側銑 (SIDE MILLING)
0804	25	105	4100~4300	1300~1500	8~16	0.5~1	側銑 (SIDE MILLING)
0804	25	105	4100~4300	700~900	8	2~3	側銑 (SIDE MILLING)
0804	25	105	4100~4300	600~800	8	3~4	側銑 (SIDE MILLING)

ETB^{4T} / ETH^{4T}

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
ETB^{4T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 0854	30	125	5000~5200	1000~1200	0.05~0.15	8.5	溝銑 (SLOTTING)
0854	30	105	4100~4300	1300~1500	1~2	8.5	溝銑 (SLOTTING)
0854	30	105	4100~4300	900~1100	2~3	8.5	溝銑 (SLOTTING)
0854	30	125	5000~5200	700~900	8.5~17	0.05~0.15	側銑 (SIDE MILLING)
0854	30	105	4100~4300	1300~1500	8.5~17	0.5~1	側銑 (SIDE MILLING)
0854	30	105	4100~4300	700~900	8.5	2~3	側銑 (SIDE MILLING)
0854	30	105	4100~4300	600~800	8.5	3~4	側銑 (SIDE MILLING)
ETH 0904	30	125	5000~5200	1000~1200	0.05~0.15	9	溝銑 (SLOTTING)
0904	30	105	4100~4300	1300~1500	1~2	9	溝銑 (SLOTTING)
0904	30	105	4100~4300	900~1100	2~3	9	溝銑 (SLOTTING)
0904	30	125	5000~5200	700~900	9~18	0.05~0.15	側銑 (SIDE MILLING)
0904	30	105	4100~4300	1300~1500	9~18	0.5~1	側銑 (SIDE MILLING)
0904	30	105	4100~4300	700~900	9	2~3	側銑 (SIDE MILLING)
ETH 0954	30	125	3900~4100	1000~1200	0.05~0.15	9.5	溝銑 (SLOTTING)
0954	30	105	3300~3500	1300~1500	0.8~1.2	9.5	溝銑 (SLOTTING)
0954	30	105	3300~3500	900~1100	1.5~2	9.5	溝銑 (SLOTTING)
0954	30	105	3300~3500	500~700	2.5~3	9.5	溝銑 (SLOTTING)
0954	30	125	3900~4100	600~800	9.5~19	0.05~0.2	側銑 (SIDE MILLING)
0954	30	105	3300~3500	1000~1200	19	0.5~1	側銑 (SIDE MILLING)
0954	30	105	3300~3500	1000~1200	9.5	1~1.5	側銑 (SIDE MILLING)
0954	30	105	3300~3500	500~700	9.5	2.5~3	側銑 (SIDE MILLING)
ETB ETH 1004(Z)	35	125	3900~4100	1000~1200	0.05~0.15	10	溝銑 (SLOTTING)
1004(Z)	35	105	3300~3500	1200~1400	1~1.5	10	溝銑 (SLOTTING)
1004(Z)	35	105	3300~3500	800~1000	1.5~3	10	溝銑 (SLOTTING)
1004(Z)	35	105	3300~3500	400~600	4~5	10	溝銑 (SLOTTING)
1004(Z)	35	125	3900~4100	600~800	10~30	0.05~0.2	側銑 (SIDE MILLING)
1004(Z)	35	105	3300~3500	1200~1400	20	0.3~0.5	側銑 (SIDE MILLING)
1004(Z)	35	105	3300~3500	1000~1200	20	0.5~1	側銑 (SIDE MILLING)
1004(Z)	35	105	3300~3500	1000~1200	10	1~1.5	側銑 (SIDE MILLING)
1004(Z)	35	105	3300~3500	500~700	10	3~4	側銑 (SIDE MILLING)
1004(Z)	35	85	2600~2800	300~400	10	4~5	側銑 (SIDE MILLING)
ETH 1054	33	125	3900~4100	1000~1200	0.05~0.15	10.5	溝銑 (SLOTTING)
1054	33	105	3300~3500	1200~1400	1~1.5	10.5	溝銑 (SLOTTING)
1054	33	105	3300~3500	800~1000	1.5~3	10.5	溝銑 (SLOTTING)
1054	33	105	3300~3500	400~600	4~5	10.5	溝銑 (SLOTTING)
1054	33	125	3900~4100	600~800	10.5~24	0.05~0.2	側銑 (SIDE MILLING)
1054	33	105	3300~3500	1200~1400	21	0.3~0.5	側銑 (SIDE MILLING)
1054	33	105	3300~3500	1000~1200	21	0.5~1	側銑 (SIDE MILLING)
1054	33	105	3300~3500	1000~1200	10.5	1~1.5	側銑 (SIDE MILLING)
1054	33	105	3300~3500	500~700	10.5	3~4	側銑 (SIDE MILLING)
1054	33	85	2600~2800	300~400	10.5	4~5	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 1104	33	125	3900~4100	1000~1200	0.05~0.15	11	溝銑 (SLOTTING)
1104	33	105	3300~3500	1200~1400	1~1.5	11	溝銑 (SLOTTING)
1104	33	105	3300~3500	800~1000	1.5~3	11	溝銑 (SLOTTING)
1104	33	105	3300~3500	400~600	4~5	11	溝銑 (SLOTTING)
1104	33	125	3900~4100	600~800	11~22	0.05~0.2	側銑 (SIDE MILLING)
1104	33	105	3300~3500	1200~1400	22	0.3~0.5	側銑 (SIDE MILLING)
1104	33	105	3300~3500	1000~1200	22	0.5~1	側銑 (SIDE MILLING)
1104	33	105	3300~3500	1000~1200	11	1~1.5	側銑 (SIDE MILLING)
1104	33	105	3300~3500	500~700	11	3~4	側銑 (SIDE MILLING)
1104	33	85	2600~2800	300~400	11	4~5	側銑 (SIDE MILLING)
ETH 1154	36	125	3200~3500	1000~1200	0.05~0.15	11.5	溝銑 (SLOTTING)
1154	36	125	3200~3500	900~1100	1~1.5	11.5	溝銑 (SLOTTING)
1154	36	125	3200~3500	600~800	3~4	11.5	溝銑 (SLOTTING)
1154	36	105	2700~2900	400~600	4~5	11.5	溝銑 (SLOTTING)
1154	36	125	3300~3500	300~500	11.5~23	0.05~0.15	側銑 (SIDE MILLING)
1154	36	125	3300~3500	1000~1200	11.5	0.5~1	側銑 (SIDE MILLING)
1154	36	125	3300~3500	500~700	11.5	2~4	側銑 (SIDE MILLING)
1154	36	125	3300~3500	300~500	11.5	4~5	側銑 (SIDE MILLING)
ETB ETH 1204	36	125	3200~3500	1000~1200	0.05~0.15	12	溝銑 (SLOTTING)
1204	36	125	3200~3500	900~1100	1~1.5	12	溝銑 (SLOTTING)
1204	36	125	3200~3500	600~800	3~4	12	溝銑 (SLOTTING)
1204	36	105	2700~2900	400~600	4~6	12	溝銑 (SLOTTING)
1204	36	125	3300~3500	300~500	12~24	0.05~0.15	側銑 (SIDE MILLING)
1204	36	125	3300~3500	1000~1200	12	0.5~1	側銑 (SIDE MILLING)
1204	36	125	3300~3500	500~700	12	2~4	側銑 (SIDE MILLING)
1204	36	125	3300~3500	300~500	12	4~6	側銑 (SIDE MILLING)
ETH 1254	36	125	3200~3500	1000~1200	0.05~0.15	12.5	溝銑 (SLOTTING)
1254	36	125	3200~3500	900~1100	1~1.5	12.5	溝銑 (SLOTTING)
1254	36	125	3200~3500	600~800	3~4	12.5	溝銑 (SLOTTING)
1254	36	105	2700~2900	400~600	4~6	12.5	溝銑 (SLOTTING)
1254	36	125	3300~3500	300~500	12.5~25	0.05~0.15	側銑 (SIDE MILLING)
1254	36	125	3300~3500	1000~1200	12.5	0.5~1	側銑 (SIDE MILLING)
1254	36	125	3300~3500	500~700	12.5	2~4	側銑 (SIDE MILLING)
1254	36	125	3300~3500	300~500	12.5	4~6	側銑 (SIDE MILLING)

ETB^{4T} / ETH^{4T}

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
ETB^{4T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 1304	40	125	3000~3300	1000~1200	0.05~0.15	13	溝銑 (SLOTTING)
1304	40	125	3000~3300	900~1100	1~1.5	13	溝銑 (SLOTTING)
1304	40	125	3000~3300	600~800	3~4	13	溝銑 (SLOTTING)
1304	40	105	2500~2700	400~600	4~6	13	溝銑 (SLOTTING)
1304	40	125	3000~3300	300~500	13~26	0.05~0.15	側銑 (SIDE MILLING)
1304	40	125	3000~3300	1000~1200	13	0.5~1	側銑 (SIDE MILLING)
1304	40	125	3000~3300	500~700	13	2~4	側銑 (SIDE MILLING)
1304	40	125	3000~3300	300~500	13	4~6	側銑 (SIDE MILLING)
ETH 1354	40	125	3000~3300	1000~1200	0.05~0.15	13.5	溝銑 (SLOTTING)
1354	40	125	3000~3300	900~1100	1~1.5	13.5	溝銑 (SLOTTING)
1354	40	125	3000~3300	600~800	3~4	13.5	溝銑 (SLOTTING)
1354	40	105	2500~2700	400~600	4~6	13.5	溝銑 (SLOTTING)
1354	40	125	3000~3300	300~500	13.5~27	0.05~0.15	側銑 (SIDE MILLING)
1354	40	125	3000~3300	1000~1200	13.5	0.5~1	側銑 (SIDE MILLING)
1354	40	125	3000~3300	500~700	13.5	2~4	側銑 (SIDE MILLING)
1354	40	125	3000~3300	300~500	13.5	4~6	側銑 (SIDE MILLING)
ETH 1404	45	125	2500~2800	700~900	0.05~0.2	14	溝銑 (SLOTTING)
1404	45	105	2200~2400	700~900	0.5~1	14	溝銑 (SLOTTING)
1404	45	105	2200~2400	500~700	1~2	14	溝銑 (SLOTTING)
1404	45	105	2200~2400	300~500	2~3	14	溝銑 (SLOTTING)
1404	45	105	2200~2400	250~450	14~28	0.05~0.2	側銑 (SIDE MILLING)
1404	45	105	2200~2400	700~900	14~28	0.5~1	側銑 (SIDE MILLING)
1404	45	105	2200~2400	500~700	14	1~2	側銑 (SIDE MILLING)
1404	45	105	2200~2400	300~500	14	2~3	側銑 (SIDE MILLING)
ETH 1504	45	125	2500~2800	700~900	0.05~0.2	15	溝銑 (SLOTTING)
1504	45	105	2200~2400	700~900	0.5~1	15	溝銑 (SLOTTING)
1504	45	105	2200~2400	500~700	1~2	15	溝銑 (SLOTTING)
1504	45	105	2200~2400	300~500	2~3	15	溝銑 (SLOTTING)
1504	45	105	2200~2400	250~450	15~30	0.05~0.2	側銑 (SIDE MILLING)
1504	45	105	2200~2400	700~900	15~30	0.5~1	側銑 (SIDE MILLING)
1504	45	105	2200~2400	500~700	15	1~2	側銑 (SIDE MILLING)
1504	45	105	2200~2400	300~500	15	2~3	側銑 (SIDE MILLING)
ETB ETH 1604	50	125	2300~2600	700~900	0.05~0.2	16	溝銑 (SLOTTING)
1604	50	105	2000~2200	700~900	0.5~1	16	溝銑 (SLOTTING)
1604	50	105	2000~2200	500~700	1~2	16	溝銑 (SLOTTING)
1604	50	105	2000~2200	300~500	2~3	16	溝銑 (SLOTTING)
1604	50	105	2000~2200	250~450	16~32	0.05~0.2	側銑 (SIDE MILLING)
1604	50	105	2000~2200	700~900	16~32	0.5~1	側銑 (SIDE MILLING)
1604	50	105	2000~2200	500~700	16	1~2	側銑 (SIDE MILLING)
1604	50	105	2000~2200	300~500	16	2~3	側銑 (SIDE MILLING)

ETB^{4T} / ETH^{4T}

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
ETB^{4T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 1704	50	125	2300~2600	700~900	0.05~0.2	17	溝銑 (SLOTTING)
1704	50	105	2000~2200	700~900	0.5~1	17	溝銑 (SLOTTING)
1704	50	105	2000~2200	500~700	1~2	17	溝銑 (SLOTTING)
1704	50	105	2000~2200	300~500	2~3	17	溝銑 (SLOTTING)
1704	50	105	2000~2200	250~450	17~34	0.05~0.2	側銑 (SIDE MILLING)
1704	50	105	2000~2200	700~900	17~34	0.5~1	側銑 (SIDE MILLING)
1704	50	105	2000~2200	500~700	17	1~2	側銑 (SIDE MILLING)
1704	50	105	2000~2200	300~500	17	2~3	側銑 (SIDE MILLING)
ETH 1804	50	125	1900~2100	700~900	0.05~0.25	18	溝銑 (SLOTTING)
1804	50	90	1400~1600	700~900	0.5~1	18	溝銑 (SLOTTING)
1804	50	90	1400~1600	400~600	1~2	18	溝銑 (SLOTTING)
1804	50	90	1400~1600	300~400	2~3	18	溝銑 (SLOTTING)
1804	50	90	1400~1600	250~450	18~36	0.05~0.25	側銑 (SIDE MILLING)
1804	50	90	1400~1600	600~800	18~36	0.5~1	側銑 (SIDE MILLING)
1804	50	90	1400~1600	400~600	18	1~2	側銑 (SIDE MILLING)
1804	50	90	1400~1600	300~500	18	2~3	側銑 (SIDE MILLING)
ETB ETH 2004	50	125	1900~2100	700~900	0.05~0.25	20	溝銑 (SLOTTING)
2004	50	90	1400~1600	700~900	0.5~1	20	溝銑 (SLOTTING)
2004	50	90	1400~1600	400~600	1~2	20	溝銑 (SLOTTING)
2004	50	90	1400~1600	300~400	2~3	20	溝銑 (SLOTTING)
2004	50	90	1400~1600	250~450	20~40	0.05~0.25	側銑 (SIDE MILLING)
2004	50	90	1400~1600	600~800	20~40	0.5~1	側銑 (SIDE MILLING)
2004	50	90	1400~1600	400~600	20	1~2	側銑 (SIDE MILLING)
2004	50	90	1400~1600	300~500	20	2~3	側銑 (SIDE MILLING)

ETB^{4T} / ETH^{4T}

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
ETB^{4T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0104	9	60	18000~20000	1200~1500	0.03~0.05	1	溝銑 (SLOTTING)
0104	9	60	18000~20000	1000~1200	0.06~0.08	1	溝銑 (SLOTTING)
0104	9	60	18000~20000	700~900	0.09~0.12	1	溝銑 (SLOTTING)
0104	9	60	18000~20000	1100~1300	1~2	0.03~0.05	側銑 (SIDE MILLING)
0104	9	60	18000~20000	1000~1200	1~2	0.06~0.08	側銑 (SIDE MILLING)
0104	9	60	18000~20000	700~900	1~2	0.09~0.12	側銑 (SIDE MILLING)
ETB ETH 0154	9	90	18000~20000	1200~1400	0.03~0.05	1.5	溝銑 (SLOTTING)
0154	9	90	18000~20000	1000~1200	0.06~0.09	1.5	溝銑 (SLOTTING)
0154	9	90	18000~20000	700~900	0.1~0.15	1.5	溝銑 (SLOTTING)
0154	9	90	18000~20000	1000~1200	1.5~3	0.03~0.05	側銑 (SIDE MILLING)
0154	9	90	18000~20000	900~1100	1.5~3	0.06~0.09	側銑 (SIDE MILLING)
0154	9	90	18000~20000	700~900	1.5~3	0.1~0.15	側銑 (SIDE MILLING)
ETB ETH 0204(S)	11	125	18000~20000	1300~1600	0.03~0.06	2	溝銑 (SLOTTING)
0204(S)	11	105	16000~17000	1000~1200	0.07~0.11	2	溝銑 (SLOTTING)
0204(S)	11	105	16000~17000	600~800	0.12~0.16	2	溝銑 (SLOTTING)
0204(S)	11	125	18000~20000	1100~1300	2~4	0.03~0.06	側銑 (SIDE MILLING)
0204(S)	11	90	14000~15000	1000~1200	2~4	0.07~0.11	側銑 (SIDE MILLING)
0204(S)	11	90	14000~15000	600~800	2~4	0.12~0.16	側銑 (SIDE MILLING)
ETB ETH 0254(S)	12	125	15000~16000	1300~1600	0.04~0.07	2.5	溝銑 (SLOTTING)
0254(S)	12	105	13000~14000	1200~1400	0.08~0.15	2.5	溝銑 (SLOTTING)
0254(S)	12	105	13000~14000	700~900	0.2~0.3	2.5	溝銑 (SLOTTING)
0254(S)	12	125	15000~16000	1100~1300	2.5~5	0.04~0.07	側銑 (SIDE MILLING)
0254(S)	12	105	13000~14000	1000~1200	2.5~5	0.08~0.15	側銑 (SIDE MILLING)
0254(S)	12	105	13000~14000	700~900	2.5~5	0.2~0.3	側銑 (SIDE MILLING)
ETB ETH 0304S	13	125	13000~13500	1300~1600	0.05~0.08	3	溝銑 (SLOTTING)
0304S	13	105	11000~11500	900~1100	0.1~0.2	3	溝銑 (SLOTTING)
0304S	13	105	11000~11500	500~700	0.25~0.35	3	溝銑 (SLOTTING)
0304S	13	125	13000~13500	1100~1200	3~6	0.05~0.08	側銑 (SIDE MILLING)
0304S	13	90	9500~10000	900~1100	3~6	0.1~0.2	側銑 (SIDE MILLING)
0304S	13	90	9500~10000	600~800	3~6	0.25~0.35	側銑 (SIDE MILLING)
ETB ETH 0304	13	125	13000~13500	1300~1600	0.05~0.08	3	溝銑 (SLOTTING)
0304	13	105	11000~11500	1000~1200	0.1~0.2	3	溝銑 (SLOTTING)
0304	13	105	11000~11500	600~800	0.25~0.35	3	溝銑 (SLOTTING)
0304	13	125	13000~13500	1100~1200	3~6	0.05~0.08	側銑 (SIDE MILLING)
0304	13	90	9500~10000	1000~1200	3~6	0.1~0.2	側銑 (SIDE MILLING)
0304	13	90	9500~10000	700~900	3~6	0.25~0.35	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0354	16	125	9500~10000	1100~1400	0.05~0.08	3.5	溝銑 (SLOTTING)
0354	16	100	9000~9500	1000~1200	0.15~0.25	3.5	溝銑 (SLOTTING)
0354	16	100	9000~9500	800~1000	0.3~0.4	3.5	溝銑 (SLOTTING)
0354	16	125	9500~10000	1000~1200	3.5~7	0.05~0.08	側銑 (SIDE MILLING)
0354	16	90	7000~7500	900~1200	3.5~7	0.15~0.25	側銑 (SIDE MILLING)
0354	16	90	7000~7500	700~900	3.5~7	0.3~0.4	側銑 (SIDE MILLING)
ETB ETH 0404	16	125	9500~10000	1100~1400	0.05~0.09	4	溝銑 (SLOTTING)
0404	16	105	8000~8500	1000~1200	0.3~0.4	4	溝銑 (SLOTTING)
0404	16	105	8000~8500	700~900	0.5~0.8	4	溝銑 (SLOTTING)
0404	16	125	9500~10000	1000~1200	4~8	0.05~0.09	側銑 (SIDE MILLING)
0404	16	90	7000~7500	900~1200	4~8	0.3~0.4	側銑 (SIDE MILLING)
0404	16	90	7000~7500	700~900	4~8	0.5~0.8	側銑 (SIDE MILLING)
ETB ETH 0454	16	125	8500~9000	1100~1400	0.05~0.09	4	溝銑 (SLOTTING)
0454	16	110	7500~8000	1000~1200	0.3~0.4	4	溝銑 (SLOTTING)
0454	16	110	7500~8000	700~900	0.6~1	4	溝銑 (SLOTTING)
0454	16	110	7500~8000	900~1100	4.5~9	0.05~0.09	側銑 (SIDE MILLING)
0454	16	110	7500~8000	900~1200	4.5~9	0.3~0.4	側銑 (SIDE MILLING)
0454	16	110	7500~8000	700~900	4.5~9	0.6~1	側銑 (SIDE MILLING)
ETH 0504S	19	125	7800~8200	1100~1400	0.05~0.13	5	溝銑 (SLOTTING)
0504S	19	105	6700~7000	1000~1200	0.7~1.2	5	溝銑 (SLOTTING)
0504S	19	105	6700~7000	800~1000	1.5~2	5	溝銑 (SLOTTING)
0504S	19	125	7800~8200	800~1000	5~10	0.05~0.13	側銑 (SIDE MILLING)
0504S	19	90	5700~6000	900~1200	5~10	0.5~1	側銑 (SIDE MILLING)
0504S	19	90	5700~6000	700~900	5	1.5~2	側銑 (SIDE MILLING)
ETB ETH 0504	19	125	7800~8200	1100~1400	0.05~0.13	5	溝銑 (SLOTTING)
0504	19	105	6700~7000	1000~1200	0.7~1.2	5	溝銑 (SLOTTING)
0504	19	105	6700~7000	800~1000	1.5~2	5	溝銑 (SLOTTING)
0504	19	105	6700~7000	500~700	2~2.5	5	溝銑 (SLOTTING)
0504	19	125	7800~8200	800~1000	5~10	0.05~0.13	側銑 (SIDE MILLING)
0504	19	90	5700~6000	900~1200	5~10	0~1	側銑 (SIDE MILLING)
0504	19	90	5700~6000	700~900	5	1.5~2	側銑 (SIDE MILLING)
0504	19	90	5700~6000	600~800	5	2~2.5	側銑 (SIDE MILLING)
ETH 0554	19	125	7800~8200	1100~1400	0.05~0.13	5.5	溝銑 (SLOTTING)
0554	19	105	6700~7000	1000~1200	0.7~1.2	5.5	溝銑 (SLOTTING)
0554	19	105	6700~7000	800~1000	1.5~2	5.5	溝銑 (SLOTTING)
0554	19	105	6700~7000	500~700	2~2.5	5.5	溝銑 (SLOTTING)
0554	19	125	7800~8200	800~1000	5.5~11	0.05~0.13	側銑 (SIDE MILLING)
0554	19	90	5700~6000	900~1200	5.5~11	0~1	側銑 (SIDE MILLING)
0554	19	90	5700~6000	700~900	5.5	1.5~2	側銑 (SIDE MILLING)
0554	19	90	5700~6000	600~800	5.5	2~2.5	側銑 (SIDE MILLING)

ETB^{4T} / ETH^{4T}

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
ETB^{4T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0604	20	125	6600~6800	1100~1400	0.05~0.15	6	溝銑 (SLOTTING)
0604	20	105	5500~5800	1000~1200	1~1.5	6	溝銑 (SLOTTING)
0604	20	105	5500~5800	800~1000	1.5~2	6	溝銑 (SLOTTING)
0604	20	105	5500~5800	500~700	2~3	6	溝銑 (SLOTTING)
0604	20	125	6600~6800	700~900	6~12	0.05~0.15	側銑 (SIDE MILLING)
0604	20	90	4700~5000	900~1200	6~12	0~1	側銑 (SIDE MILLING)
0604	20	90	4700~5000	700~900	6	1.5~2	側銑 (SIDE MILLING)
0604	20	90	4700~5000	600~800	6	2~3	側銑 (SIDE MILLING)
ETH 0654	20	125	6600~6800	1100~1400	0.05~0.15	6.5	溝銑 (SLOTTING)
0654	20	105	5500~5800	1000~1200	1~1.5	6.5	溝銑 (SLOTTING)
0654	20	105	5500~5800	800~1000	1.5~2	6.5	溝銑 (SLOTTING)
0654	20	105	5500~5800	500~700	2~3	6.5	溝銑 (SLOTTING)
0654	20	125	6600~6800	700~900	6.5~13	0.05~0.15	側銑 (SIDE MILLING)
0654	20	90	4700~5000	900~1200	6.5~13	0~1	側銑 (SIDE MILLING)
0654	20	90	4700~5000	700~900	6.5	1.5~2	側銑 (SIDE MILLING)
0654	20	90	4700~5000	600~800	6.5	2~3	側銑 (SIDE MILLING)
ETH 0704	20	125	6600~6800	1100~1400	0.05~0.15	7	溝銑 (SLOTTING)
0704	20	105	5500~5800	1000~1200	1~1.5	7	溝銑 (SLOTTING)
0704	20	105	5500~5800	800~1000	1.5~2	7	溝銑 (SLOTTING)
0704	20	105	5500~5800	500~700	2~3	7	溝銑 (SLOTTING)
0704	20	125	6600~6800	700~900	7~14	0.05~0.15	側銑 (SIDE MILLING)
0704	20	90	4700~5000	900~1200	7~14	0~1	側銑 (SIDE MILLING)
0704	20	90	4700~5000	700~900	7	1.5~2	側銑 (SIDE MILLING)
0704	20	90	4700~5000	600~800	7	2~3	側銑 (SIDE MILLING)
ETH 0754	25	125	5000~5200	1000~1200	0.05~0.15	7.5	溝銑 (SLOTTING)
0754	25	105	4100~4300	1000~1200	1~2	7.5	溝銑 (SLOTTING)
0754	25	105	4100~4300	800~1000	2~3	7.5	溝銑 (SLOTTING)
0754	25	125	5000~5200	600~800	7.5~15	0.05~0.15	側銑 (SIDE MILLING)
0754	25	90	3500~3700	800~1100	7.5~15	0.5~1	側銑 (SIDE MILLING)
0754	25	90	3500~3700	700~900	7.5	2~3	側銑 (SIDE MILLING)
0754	25	90	3500~3700	600~800	7.5	3~4	側銑 (SIDE MILLING)
ETB ETH 0804	25	125	5000~5200	1000~1200	0.05~0.15	8	溝銑 (SLOTTING)
0804	25	105	4100~4300	1000~1200	1~2	8	溝銑 (SLOTTING)
0804	25	105	4100~4300	800~1000	2~3	8	溝銑 (SLOTTING)
0804	25	125	5000~5200	600~800	8~16	0.05~0.15	側銑 (SIDE MILLING)
0804	25	90	3500~3700	800~1100	8~16	0.5~1	側銑 (SIDE MILLING)
0804	25	90	3500~3700	700~900	8	2~3	側銑 (SIDE MILLING)
0804	25	90	3500~3700	600~800	8	3~4	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 0854	30	125	5000~5200	1000~1200	0.05~0.15	8.5	溝銑 (SLOTTING)
0854	30	105	4100~4300	1000~1200	1~2	8.5	溝銑 (SLOTTING)
0854	30	105	4100~4300	800~1000	2~3	8.5	溝銑 (SLOTTING)
0854	30	125	5000~5200	600~800	8.5~17	0.05~0.15	側銑 (SIDE MILLING)
0854	30	90	3500~3700	800~1100	8.5~17	0.5~1	側銑 (SIDE MILLING)
0854	30	90	3500~3700	700~900	8.5	2~3	側銑 (SIDE MILLING)
0854	30	90	3500~3700	600~800	8.5	3~4	側銑 (SIDE MILLING)
ETH 0904	30	125	5000~5200	1000~1200	0.05~0.15	9	溝銑 (SLOTTING)
0904	30	105	4100~4300	1000~1200	1~2	9	溝銑 (SLOTTING)
0904	30	105	4100~4300	800~1000	2~3	9	溝銑 (SLOTTING)
0904	30	125	5000~5200	600~800	9~18	0.05~0.15	側銑 (SIDE MILLING)
0904	30	90	3500~3700	800~1100	9~18	0.5~1	側銑 (SIDE MILLING)
0904	30	90	3500~3700	700~900	9	2~3	側銑 (SIDE MILLING)
ETH 0954	30	125	3900~4100	1000~1200	0.05~0.15	9.5	溝銑 (SLOTTING)
0954	30	105	3300~3500	1000~1200	0.8~1.2	9.5	溝銑 (SLOTTING)
0954	30	105	3300~3500	900~1100	1.5~2	9.5	溝銑 (SLOTTING)
0954	30	105	3300~3500	400~600	2.5~3	9.5	溝銑 (SLOTTING)
0954	30	125	3900~4100	500~700	9.5~19	0.05~0.2	側銑 (SIDE MILLING)
0954	30	90	2800~3000	800~1000	19	0.5~1	側銑 (SIDE MILLING)
0954	30	90	2800~3000	800~1000	9.5	1~1.5	側銑 (SIDE MILLING)
0954	30	90	2800~3000	450~600	9.5	2.5~3	側銑 (SIDE MILLING)
ETB ETH 1004(Z)	35	125	3900~4100	1000~1200	0.05~0.15	10	溝銑 (SLOTTING)
1004(Z)	35	105	3300~3500	1000~1200	1~1.5	10	溝銑 (SLOTTING)
1004(Z)	35	105	3300~3500	800~1000	1.5~3	10	溝銑 (SLOTTING)
1004(Z)	35	105	3300~3500	350~550	4~5	10	溝銑 (SLOTTING)
1004(Z)	35	125	3900~4100	500~700	10~30	0.05~0.2	側銑 (SIDE MILLING)
1004(Z)	35	90	2800~3000	1100~1300	20	0.3~0.5	側銑 (SIDE MILLING)
1004(Z)	35	90	2800~3000	700~900	20	0.5~1	側銑 (SIDE MILLING)
1004(Z)	35	90	2800~3000	900~1100	10	1~1.5	側銑 (SIDE MILLING)
1004(Z)	35	90	2800~3000	400~600	10	3~4	側銑 (SIDE MILLING)
1004(Z)	35	85	2600~2800	300~400	10	4~5	側銑 (SIDE MILLING)
ETH 1054	33	125	3900~4100	1000~1200	0.05~0.15	10.5	溝銑 (SLOTTING)
1054	33	105	3300~3500	1000~1200	1~1.5	10.5	溝銑 (SLOTTING)
1054	33	105	3300~3500	800~1000	1.5~3	10.5	溝銑 (SLOTTING)
1054	33	105	3300~3500	350~550	4~5	10.5	溝銑 (SLOTTING)
1054	33	125	3900~4100	500~700	10.5~24	0.05~0.2	側銑 (SIDE MILLING)
1054	33	90	2800~3000	1100~1300	21	0.3~0.5	側銑 (SIDE MILLING)
1054	33	90	2800~3000	700~900	21	0.5~1	側銑 (SIDE MILLING)
1054	33	90	2800~3000	900~1100	10.5	1~1.5	側銑 (SIDE MILLING)
1054	33	90	2800~3000	400~600	10.5	3~4	側銑 (SIDE MILLING)
1054	33	85	2600~2800	300~400	10.5	4~5	側銑 (SIDE MILLING)

ETB^{4T} / ETH^{4T}

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
ETB^{4T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 1104	33	125	3900~4100	1000~1200	0.05~0.15	11	溝銑 (SLOTTING)
1104	33	105	3300~3500	1000~1200	1~1.5	11	溝銑 (SLOTTING)
1104	33	105	3300~3500	800~1000	1.5~3	11	溝銑 (SLOTTING)
1104	33	105	3300~3500	350~550	4~5	11	溝銑 (SLOTTING)
1104	33	125	3900~4100	500~700	11~22	0.05~0.2	側銑 (SIDE MILLING)
1104	33	90	2800~3000	1100~1300	22	0.3~0.5	側銑 (SIDE MILLING)
1104	33	90	2800~3000	700~900	22	0.5~1	側銑 (SIDE MILLING)
1104	33	90	2800~3000	900~1100	11	1~1.5	側銑 (SIDE MILLING)
1104	33	90	2800~3000	400~600	11	3~4	側銑 (SIDE MILLING)
1104	33	85	2600~2800	300~400	11	4~5	側銑 (SIDE MILLING)
ETH 1154	36	125	3200~3500	1000~1200	0.05~0.15	11.5	溝銑 (SLOTTING)
1154	36	125	3200~3500	800~1000	1~1.5	11.5	溝銑 (SLOTTING)
1154	36	125	3200~3500	500~700	3~4	11.5	溝銑 (SLOTTING)
1154	36	125	3200~3500	400~600	4~5	11.5	溝銑 (SLOTTING)
1154	36	125	3300~3500	300~500	11.5~23	0.05~0.15	側銑 (SIDE MILLING)
1154	36	105	2700~3000	700~900	11.5	0.5~1	側銑 (SIDE MILLING)
1154	36	105	2700~3000	400~600	11.5	2~4	側銑 (SIDE MILLING)
1154	36	125	3300~3500	300~400	11.5	4~5	側銑 (SIDE MILLING)
ETB ETH 1204	36	125	3200~3500	1000~1200	0.05~0.15	12	溝銑 (SLOTTING)
1204	36	125	3200~3500	800~1000	1~1.5	12	溝銑 (SLOTTING)
1204	36	125	3200~3500	500~700	3~4	12	溝銑 (SLOTTING)
1204	36	125	3200~3500	400~600	4~6	12	溝銑 (SLOTTING)
1204	36	125	3300~3500	300~500	12~24	0.05~0.15	側銑 (SIDE MILLING)
1204	36	105	2700~3000	700~900	12	0.5~1	側銑 (SIDE MILLING)
1204	36	105	2700~3000	400~600	12	2~4	側銑 (SIDE MILLING)
1204	36	125	3300~3500	300~400	12	4~6	側銑 (SIDE MILLING)
ETH 1254	36	125	3200~3500	1000~1200	0.05~0.15	12.5	溝銑 (SLOTTING)
1254	36	125	3200~3500	800~1000	1~1.5	12.5	溝銑 (SLOTTING)
1254	36	125	3200~3500	500~700	3~4	12.5	溝銑 (SLOTTING)
1254	36	125	3200~3500	400~600	4~6	12.5	溝銑 (SLOTTING)
1254	36	125	3300~3500	300~500	12.5~25	0.05~0.15	側銑 (SIDE MILLING)
1254	36	105	2700~3000	700~900	12.5	0.5~1	側銑 (SIDE MILLING)
1254	36	105	2700~3000	400~600	12.5	2~4	側銑 (SIDE MILLING)
1254	36	125	3300~3500	300~400	12.5	4~6	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 1304	40	125	3000~3300	1000~1200	0.05~0.15	13	溝銑 (SLOTTING)
1304	40	125	3000~3300	800~1000	1~1.5	13	溝銑 (SLOTTING)
1304	40	125	3000~3300	500~700	3~4	13	溝銑 (SLOTTING)
1304	40	125	3000~3300	400~600	4~6	13	溝銑 (SLOTTING)
1304	40	125	3000~3300	300~500	13~26	0.05~0.15	側銑 (SIDE MILLING)
1304	40	105	2500~2700	700~900	13	0.5~1	側銑 (SIDE MILLING)
1304	40	105	2500~2700	400~600	13	2~4	側銑 (SIDE MILLING)
1304	40	125	3000~3300	300~400	13	4~6	側銑 (SIDE MILLING)
ETH 1354	40	125	3000~3300	1000~1200	0.05~0.15	13.5	溝銑 (SLOTTING)
1354	40	125	3000~3300	800~1000	1~1.5	13.5	溝銑 (SLOTTING)
1354	40	125	3000~3300	500~700	3~4	13.5	溝銑 (SLOTTING)
1354	40	125	3000~3300	400~600	4~6	13.5	溝銑 (SLOTTING)
1354	40	125	3000~3300	300~500	13.5~27	0.05~0.15	側銑 (SIDE MILLING)
1354	40	105	2500~2700	700~900	13.5	0.5~1	側銑 (SIDE MILLING)
1354	40	105	2500~2700	400~600	13.5	2~4	側銑 (SIDE MILLING)
1354	40	125	3000~3300	300~400	13.5	4~6	側銑 (SIDE MILLING)
ETH 1404	45	125	2500~2800	700~900	0.05~0.2	14	溝銑 (SLOTTING)
1404	45	105	2200~2400	600~800	0.5~1	14	溝銑 (SLOTTING)
1404	45	105	2200~2400	400~600	1~2	14	溝銑 (SLOTTING)
1404	45	105	2200~2400	300~400	2~3	14	溝銑 (SLOTTING)
1404	45	105	2200~2400	250~450	14~28	0.05~0.2	側銑 (SIDE MILLING)
1404	45	105	2200~2400	600~800	14~28	0.5~1	側銑 (SIDE MILLING)
1404	45	105	2200~2400	400~600	14	1~2	側銑 (SIDE MILLING)
1404	45	105	2200~2400	300~400	14	2~3	側銑 (SIDE MILLING)
ETH 1504	45	125	2500~2800	700~900	0.05~0.2	15	溝銑 (SLOTTING)
1504	45	105	2200~2400	600~800	0.5~1	15	溝銑 (SLOTTING)
1504	45	105	2200~2400	400~600	1~2	15	溝銑 (SLOTTING)
1504	45	105	2200~2400	300~400	2~3	15	溝銑 (SLOTTING)
1504	45	105	2200~2400	250~450	15~30	0.05~0.2	側銑 (SIDE MILLING)
1504	45	105	2200~2400	600~800	15~30	0.5~1	側銑 (SIDE MILLING)
1504	45	105	2200~2400	400~600	15	1~2	側銑 (SIDE MILLING)
1504	45	105	2200~2400	300~400	15	2~3	側銑 (SIDE MILLING)
ETB ETH 1604	50	125	2300~2600	700~900	0.05~0.2	16	溝銑 (SLOTTING)
1604	50	105	2000~2200	600~800	0.5~1	16	溝銑 (SLOTTING)
1604	50	105	2000~2200	400~600	1~2	16	溝銑 (SLOTTING)
1604	50	105	2000~2200	300~400	2~3	16	溝銑 (SLOTTING)
1604	50	105	2000~2200	250~450	16~32	0.05~0.2	側銑 (SIDE MILLING)
1604	50	105	2000~2200	600~800	16~32	0.5~1	側銑 (SIDE MILLING)
1604	50	105	2000~2200	400~600	16	1~2	側銑 (SIDE MILLING)
1604	50	105	2000~2200	300~400	16	2~3	側銑 (SIDE MILLING)

ETB^{4T} / ETH^{4T}

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
ETB^{4T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 1704	50	125	2300~2600	700~900	0.05~0.2	17	溝銑 (SLOTTING)
1704	50	105	2000~2200	600~800	0.5~1	17	溝銑 (SLOTTING)
1704	50	105	2000~2200	400~600	1~2	17	溝銑 (SLOTTING)
1704	50	105	2000~2200	300~400	2~3	17	溝銑 (SLOTTING)
1704	50	105	2000~2200	250~450	17~34	0.05~0.2	側銑 (SIDE MILLING)
1704	50	105	2000~2200	600~800	17~34	0.5~1	側銑 (SIDE MILLING)
1704	50	105	2000~2200	400~600	17	1~2	側銑 (SIDE MILLING)
1704	50	105	2000~2200	300~400	17	2~3	側銑 (SIDE MILLING)
ETH 1804	50	125	1900~2100	700~900	0.05~0.25	18	溝銑 (SLOTTING)
1804	50	90	1400~1600	600~800	0.5~1	18	溝銑 (SLOTTING)
1804	50	90	1400~1600	300~500	1~2	18	溝銑 (SLOTTING)
1804	50	90	1400~1600	250~350	2~3	18	溝銑 (SLOTTING)
1804	50	90	1400~1600	250~450	18~36	0.05~0.25	側銑 (SIDE MILLING)
1804	50	90	1400~1600	500~700	18~36	0.5~1	側銑 (SIDE MILLING)
1804	50	90	1400~1600	300~500	18	1~2	側銑 (SIDE MILLING)
1804	50	90	1400~1600	250~400	18	2~3	側銑 (SIDE MILLING)
ETB ETH 2004	50	125	1900~2100	700~900	0.05~0.25	20	溝銑 (SLOTTING)
2004	50	90	1400~1600	600~800	0.5~1	20	溝銑 (SLOTTING)
2004	50	90	1400~1600	300~500	1~2	20	溝銑 (SLOTTING)
2004	50	90	1400~1600	250~350	2~3	20	溝銑 (SLOTTING)
2004	50	90	1400~1600	250~450	20~40	0.05~0.25	側銑 (SIDE MILLING)
2004	50	90	1400~1600	500~700	20~40	0.5~1	側銑 (SIDE MILLING)
2004	50	90	1400~1600	300~500	20	1~2	側銑 (SIDE MILLING)
2004	50	90	1400~1600	250~400	20	2~3	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0104	9	60	18000~20000	1100~1300	0.03~0.05	1	溝銑 (SLOTTING)
0104	9	60	18000~20000	700~900	0.06~0.08	1	溝銑 (SLOTTING)
0104	9	60	18000~20000	500~700	0.09~0.12	1	溝銑 (SLOTTING)
0104	9	60	18000~20000	900~1100	1~2	0.03~0.05	側銑 (SIDE MILLING)
0104	9	60	18000~20000	700~900	1~2	0.06~0.08	側銑 (SIDE MILLING)
0104	9	60	18000~20000	500~700	1~2	0.09~0.12	側銑 (SIDE MILLING)
ETB ETH 0154	9	90	18000~20000	1100~1300	0.03~0.05	1.5	溝銑 (SLOTTING)
0154	9	90	18000~20000	700~900	0.06~0.09	1.5	溝銑 (SLOTTING)
0154	9	90	18000~20000	500~700	0.1~0.15	1.5	溝銑 (SLOTTING)
0154	9	90	18000~20000	900~1100	1.5~3	0.03~0.05	側銑 (SIDE MILLING)
0154	9	90	18000~20000	700~900	1.5~3	0.06~0.09	側銑 (SIDE MILLING)
0154	9	90	18000~20000	500~700	1.5~3	0.1~0.15	側銑 (SIDE MILLING)
ETB ETH 0204	11	105	16000~17000	1200~1500	0.03~0.06	2	溝銑 (SLOTTING)
0204	11	105	16000~17000	800~1000	0.07~0.11	2	溝銑 (SLOTTING)
0204	11	105	16000~17000	500~700	0.12~0.16	2	溝銑 (SLOTTING)
0204	11	105	16000~17000	1000~1200	2~4	0.03~0.06	側銑 (SIDE MILLING)
0204	11	105	16000~17000	800~1000	2~4	0.07~0.11	側銑 (SIDE MILLING)
0204	11	105	16000~17000	500~700	2~4	0.12~0.16	側銑 (SIDE MILLING)
ETB ETH 0254(S)	12	105	13000~14000	1200~1400	0.04~0.07	2.5	溝銑 (SLOTTING)
0254(S)	12	105	13000~14000	1100~1300	0.08~0.15	2.5	溝銑 (SLOTTING)
0254(S)	12	105	13000~14000	600~800	0.2~0.3	2.5	溝銑 (SLOTTING)
0254(S)	12	105	13000~14000	1000~1200	2.5~5	0.04~0.07	側銑 (SIDE MILLING)
0254(S)	12	105	13000~14000	900~1100	2.5~5	0.08~0.15	側銑 (SIDE MILLING)
0254(S)	12	105	13000~14000	600~800	2.5~5	0.2~0.3	側銑 (SIDE MILLING)
ETB ETH 0304S	13	105	11000~11500	1200~1600	0.05~0.08	3	溝銑 (SLOTTING)
0304S	13	105	11000~11500	700~900	0.1~0.2	3	溝銑 (SLOTTING)
0304S	13	105	11000~11500	350~550	0.25~0.35	3	溝銑 (SLOTTING)
0304S	13	105	11000~11500	1000~1200	3~6	0.05~0.08	側銑 (SIDE MILLING)
0304S	13	105	11000~11500	700~800	3~6	0.1~0.2	側銑 (SIDE MILLING)
0304S	13	105	11000~11500	400~600	3~6	0.25~0.35	側銑 (SIDE MILLING)
ETB ETH 0304	13	105	11000~11500	1200~1600	0.05~0.08	3	溝銑 (SLOTTING)
0304	13	105	11000~11500	700~900	0.1~0.2	3	溝銑 (SLOTTING)
0304	13	105	11000~11500	400~600	0.25~0.35	3	溝銑 (SLOTTING)
0304	13	105	11000~11500	1000~1200	3~6	0.05~0.08	側銑 (SIDE MILLING)
0304	13	105	11000~11500	700~900	3~6	0.1~0.2	側銑 (SIDE MILLING)
0304	13	105	11000~11500	500~600	3~6	0.25~0.35	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min-1)	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0354	15	100	9000~9500	1000~1300	0.05~0.08	3.5	溝銑 (SLOTTING)
0354	15	100	9000~9500	800~1000	0.15~0.25	3.5	溝銑 (SLOTTING)
0354	15	100	9000~9500	600~800	0.3~0.4	3.5	溝銑 (SLOTTING)
0354	15	100	9000~9500	1000~1200	3.5~7	0.05~0.08	側銑 (SIDE MILLING)
0354	15	100	9000~9500	800~1000	3.5~7	0.15~0.25	側銑 (SIDE MILLING)
0354	15	100	9000~9500	700~900	3.5~7	0.3~0.4	側銑 (SIDE MILLING)
ETB ETH 0404(S)	16	100	7700~8200	1100~1400	0.05~0.09	4	溝銑 (SLOTTING)
0404(S)	16	100	7700~8200	800~1000	0.3~0.4	4	溝銑 (SLOTTING)
0404(S)	16	100	7700~8200	600~800	0.5~0.8	4	溝銑 (SLOTTING)
0404(S)	16	100	7700~8200	900~1100	4~8	0.05~0.09	側銑 (SIDE MILLING)
0404(S)	16	100	7700~8200	800~1000	4~8	0.3~0.4	側銑 (SIDE MILLING)
0404(S)	16	90	7000~7500	700~900	4~8	0.5~0.8	側銑 (SIDE MILLING)
ETH 0454	16	100	6800~7300	1100~1400	0.05~0.09	4	溝銑 (SLOTTING)
0454	16	100	6800~7300	800~1000	0.3~0.4	4	溝銑 (SLOTTING)
0454	16	100	6800~7300	600~800	0.6~1	4	溝銑 (SLOTTING)
0454	16	100	6800~7300	900~1100	4.5~9	0.05~0.09	側銑 (SIDE MILLING)
0454	16	100	6800~7300	800~1000	4.5~9	0.3~0.4	側銑 (SIDE MILLING)
0454	16	100	6800~7300	700~900	4.5~9	0.6~1	側銑 (SIDE MILLING)
ETH 0504S	19	105	6400~6900	1400~1800	0.05~0.1	5	溝銑 (SLOTTING)
0504S	19	105	6400~6900	1000~1200	0.8~1	5	溝銑 (SLOTTING)
0504S	19	105	6400~6900	750~950	1.1~1.4	5	溝銑 (SLOTTING)
0504S	19	105	6400~6900	400~600	1.5~1.8	5	溝銑 (SLOTTING)
0504S	19	105	6400~6900	900~1100	5~10	0.05~0.1	側銑 (SIDE MILLING)
0504S	19	95	5800~6200	700~900	5~10	0.8~1	側銑 (SIDE MILLING)
0504S	19	95	5800~6200	500~700	5	1.3~1.6	側銑 (SIDE MILLING)
0504S	19	105	6400~6900	800~1000	5	1.8~2	側銑 (SIDE MILLING)
ETB ETH 0504	19	105	6400~6900	1400~1800	0.05~0.1	5	溝銑 (SLOTTING)
0504	19	105	6400~6900	1000~1200	0.8~1	5	溝銑 (SLOTTING)
0504	19	105	6400~6900	750~950	1.1~1.4	5	溝銑 (SLOTTING)
0504	19	105	6400~6900	400~600	1.5~1.8	5	溝銑 (SLOTTING)
0504	19	105	6400~6900	900~1100	5~10	0.05~0.1	側銑 (SIDE MILLING)
0504	19	95	5800~6200	700~900	5~10	0.8~1	側銑 (SIDE MILLING)
0504	19	95	5800~6200	500~700	5	1.3~1.6	側銑 (SIDE MILLING)
0504	19	105	6400~6900	800~1000	5	1.8~2	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 0554	19	105	6400~6900	1400~1800	0.05~0.1	5.5	溝銑 (SLOTTING)
0554	19	105	6400~6900	1000~1200	0.8~1	5.5	溝銑 (SLOTTING)
0554	19	105	6400~6900	750~950	1.1~1.4	5.5	溝銑 (SLOTTING)
0554	19	105	6400~6900	400~600	1.5~1.8	5.5	溝銑 (SLOTTING)
0554	19	105	6400~6900	900~1100	5.5~11	0.05~0.1	側銑 (SIDE MILLING)
0554	19	95	5800~6200	700~900	5.5~11	0.8~1	側銑 (SIDE MILLING)
0554	19	95	5800~6200	500~700	5.5	1.3~1.6	側銑 (SIDE MILLING)
0554	19	105	6400~6900	800~1000	5.5	1.8~2	側銑 (SIDE MILLING)
ETB ETH 0604	21	105	5400~5800	1100~1300	0.05~0.12	6	溝銑 (SLOTTING)
0604	21	105	5400~5800	1000~1200	0.5~1	6	溝銑 (SLOTTING)
0604	21	105	5400~5800	600~800	1.1~1.3	6	溝銑 (SLOTTING)
0604	21	105	5400~5800	1200~1400	6~12	0~0.5	溝銑 (SLOTTING)
0604	21	105	5400~5800	700~900	6~12	0.05~0.12	側銑 (SIDE MILLING)
0604	21	105	5400~5800	900~1100	6~12	1	側銑 (SIDE MILLING)
0604	21	90	4500~5000	700~900	6~12	2	側銑 (SIDE MILLING)
0604	21	90	4500~5000	550~750	6~12	3	側銑 (SIDE MILLING)
ETH 0654	21	105	5400~5800	1100~1300	0.05~0.12	6.5	溝銑 (SLOTTING)
0654	21	105	5400~5800	1000~1200	0.5~1	6.5	溝銑 (SLOTTING)
0654	21	105	5400~5800	600~800	1.1~1.3	6.5	溝銑 (SLOTTING)
0654	21	105	5400~5800	1200~1400	6.5~13	0~0.5	側銑 (SIDE MILLING)
0654	21	105	5400~5800	700~900	6.5~13	0.05~0.12	側銑 (SIDE MILLING)
0654	21	105	5400~5800	900~1100	6.5~13	1	側銑 (SIDE MILLING)
0654	21	90	4500~5000	700~900	6.5~13	2	側銑 (SIDE MILLING)
0654	21	90	4500~5000	550~750	6.5~13	3	側銑 (SIDE MILLING)
ETH 0704	21	105	5400~5800	1100~1300	0.05~0.12	7	溝銑 (SLOTTING)
0704	21	105	5400~5800	1000~1200	0.5~1	7	溝銑 (SLOTTING)
0704	21	105	5400~5800	600~800	1.1~1.3	7	溝銑 (SLOTTING)
0704	21	105	5400~5800	1200~1400	7~14	0~0.5	側銑 (SIDE MILLING)
0704	21	105	5400~5800	700~900	7~14	0.05~0.12	側銑 (SIDE MILLING)
0704	21	105	5400~5800	900~1100	7~14	1	側銑 (SIDE MILLING)
0704	21	90	4500~5000	700~900	7~14	2	側銑 (SIDE MILLING)
0704	21	90	4500~5000	550~750	7~14	3	側銑 (SIDE MILLING)
ETH 0754	27	105	4000~4500	1000~1200	0.05~0.15	7.5	溝銑 (SLOTTING)
0754	27	105	4000~4500	800~1000	0.7~1	7.5	溝銑 (SLOTTING)
0754	27	105	4000~4500	600~800	2~3	7.5	溝銑 (SLOTTING)
0754	27	105	4000~4500	600~800	16	0.05~0.15	側銑 (SIDE MILLING)
0754	27	105	4000~4500	1000~1200	7.5~15	0.3~0.5	側銑 (SIDE MILLING)
0754	27	70	2500~3000	600~800	7.5~15	1	側銑 (SIDE MILLING)
0754	27	70	2500~3000	300~500	7.5~15	2	側銑 (SIDE MILLING)
0754	27	70	2500~3000	300~500	7.5~15	2~4	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.		刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min-1)	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH	0804	27	105	4000~4500	1000~1200	0.05~0.15	8	溝銑 (SLOTTING)
	0804	27	105	4000~4500	800~1000	0.7~1	8	溝銑 (SLOTTING)
	0804	27	105	4000~4500	600~800	2~3	8	溝銑 (SLOTTING)
	0804	27	105	4000~4500	600~800	16	0.05~0.15	側銑 (SIDE MILLING)
	0804	27	105	4000~4500	1000~1200	8~16	0.3~0.5	側銑 (SIDE MILLING)
	0804	27	70	2500~3000	600~800	8~16	1	側銑 (SIDE MILLING)
	0804	27	70	2500~3000	300~500	8~16	2	側銑 (SIDE MILLING)
	0804	27	70	2500~3000	300~500	8	2~4	側銑 (SIDE MILLING)
ETH	0854	27	105	4000~4500	1000~1200	0.05~0.15	8.5	溝銑 (SLOTTING)
	0854	27	105	4000~4500	800~1000	0.7~1	8.5	溝銑 (SLOTTING)
	0854	27	105	4000~4500	600~800	2~3	8.5	溝銑 (SLOTTING)
	0854	27	105	4000~4500	600~800	16	0.05~0.15	側銑 (SIDE MILLING)
	0854	27	105	4000~4500	1000~1200	8.5~17	0.3~0.5	側銑 (SIDE MILLING)
	0854	27	70	2500~3000	600~800	8.5~17	1	側銑 (SIDE MILLING)
	0854	27	70	2500~3000	300~500	8.5~17	2	側銑 (SIDE MILLING)
	0854	27	70	2500~3000	300~500	8.5~17	2~4	側銑 (SIDE MILLING)
ETH	0904	27	105	4000~4500	1000~1200	0.05~0.15	9	溝銑 (SLOTTING)
	0904	27	105	4000~4500	800~1000	0.7~1	9	溝銑 (SLOTTING)
	0904	27	105	4000~4500	600~800	2~3	9	溝銑 (SLOTTING)
	0904	27	105	4000~4500	600~800	16	0.05~0.15	側銑 (SIDE MILLING)
	0904	27	105	4000~4500	1000~1200	9~18	0.3~0.5	側銑 (SIDE MILLING)
	0904	27	70	2500~3000	600~800	9~18	1	側銑 (SIDE MILLING)
	0904	27	70	2500~3000	300~500	9~18	2	側銑 (SIDE MILLING)
	0904	27	70	2500~3000	300~500	9~18	2~4	側銑 (SIDE MILLING)
ETB ETH	0954	30	115	3300~3800	1000~1200	0.05~0.15	9.5	溝銑 (SLOTTING)
	0954	30	115	3300~3800	650~850	1.5~2	9.5	溝銑 (SLOTTING)
	0954	30	115	3300~3800	500~700	3~4	9.5	溝銑 (SLOTTING)
	0954	30	105	3100~3500	500~700	25	0.05~0.15	側銑 (SIDE MILLING)
	0954	30	105	3100~3500	1200~1500	9.5~24	0~0.6	側銑 (SIDE MILLING)
	0954	30	105	3100~3500	600~800	19	1	側銑 (SIDE MILLING)
	0954	30	65	2000or2700	250~400	19	2~3	側銑 (SIDE MILLING)
	0954	30	65	2000	200~350	19	3~4	側銑 (SIDE MILLING)
ETB ETH	1004(Z)	35	105	3000~3500	1000~1200	0.05~0.15	10	溝銑 (SLOTTING)
	1004(Z)	35	105	3000~3500	600~800	2~3	10	溝銑 (SLOTTING)
	1004(Z)	35	105	3000~3500	400~600	3~4	10	溝銑 (SLOTTING)
	1004(Z)	35	105	3000~3500	400~600	10~30	0.05~0.15	側銑 (SIDE MILLING)
	1004(Z)	35	105	3000~3500	1100~1400	10~30	0.4~0.6	側銑 (SIDE MILLING)
	1004(Z)	35	105	3000~3500	600~800	20	1	側銑 (SIDE MILLING)
	1004(Z)	35	65	2000	250~400	20	2~3	側銑 (SIDE MILLING)
	1004(Z)	35	65	2000	200~350	20	3~4	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 1054	30	105	3000~3500	1000~1200	0.05~0.15	10.5	溝銑 (SLOTTING)
1054	30	105	3000~3500	600~800	2~3	10.5	溝銑 (SLOTTING)
1054	30	105	3000~3500	400~600	3~4	10.5	溝銑 (SLOTTING)
1054	30	105	3000~3500	400~600	10~25	0.05~0.15	側銑 (SIDE MILLING)
1054	30	105	3000~3500	1100~1400	10~25	0.4~0.6	側銑 (SIDE MILLING)
1054	30	105	3000~3500	600~800	21	1	側銑 (SIDE MILLING)
1054	30	65	2000	250~400	21	2~3	側銑 (SIDE MILLING)
1054	30	65	2000	200~350	21	3~4	側銑 (SIDE MILLING)
ETH 1104	33	105	3000~3500	1000~1200	0.05~0.15	11	溝銑 (SLOTTING)
1104	33	105	3000~3500	600~800	2~3	11	溝銑 (SLOTTING)
1104	33	105	3000~3500	400~600	3~4	11	溝銑 (SLOTTING)
1104	33	105	3000~3500	400~600	10~25	0.05~0.15	側銑 (SIDE MILLING)
1104	33	105	3000~3500	1100~1400	10~25	0.4~0.6	側銑 (SIDE MILLING)
1104	33	105	3000~3500	600~800	22	1	側銑 (SIDE MILLING)
1104	33	65	2000	250~400	22	2~3	側銑 (SIDE MILLING)
1104	33	65	2000	200~350	22	3~4	側銑 (SIDE MILLING)
ETH 1154	36	105	2600~3000	1000~1200	0.05~0.15	11.5	溝銑 (SLOTTING)
1154	36	85	2000~2500	500~700	0.7~1	11.5	溝銑 (SLOTTING)
1154	36	75	1800~2200	300~400	2~3	11.5	溝銑 (SLOTTING)
1154	36	105	2600~3000	300~500	11.5~23	0.05~0.15	側銑 (SIDE MILLING)
1154	36	105	2600~3000	800~1000	11.5~23	0.4~0.6	側銑 (SIDE MILLING)
1154	36	80	1900~2300	500~700	11.5~23	1~1.3	側銑 (SIDE MILLING)
1154	36	65	1500~1900	250~400	23	1.5~2	側銑 (SIDE MILLING)
1154	36	65	1500~1900	200~300	23	3~4	側銑 (SIDE MILLING)
ETB ETH 1204	36	105	2600~3000	1000~1200	0.05~0.15	12	溝銑 (SLOTTING)
1204	36	85	2000~2500	500~700	0.7~1	12	溝銑 (SLOTTING)
1204	36	75	1800~2200	300~400	2~3	12	溝銑 (SLOTTING)
1204	36	105	2600~3000	300~500	12~24	0.05~0.15	側銑 (SIDE MILLING)
1204	36	105	2600~3000	800~1000	12~24	0.4~0.6	側銑 (SIDE MILLING)
1204	36	80	1900~2300	500~700	12~24	1~1.3	側銑 (SIDE MILLING)
1204	36	65	1500~1900	250~400	24	1.5~2	側銑 (SIDE MILLING)
1204	36	65	1500~1900	200~300	24	3~4	側銑 (SIDE MILLING)
ETH 1254	36	105	2600~3000	1000~1200	0.05~0.15	12.5	溝銑 (SLOTTING)
1254	36	85	2000~2500	500~700	0.7~1	12.5	溝銑 (SLOTTING)
1254	36	75	1800~2200	300~400	2~3	12.5	溝銑 (SLOTTING)
1254	36	105	2600~3000	300~500	12.5~25	0.05~0.15	側銑 (SIDE MILLING)
1254	36	105	2600~3000	800~1000	12.5~25	0.4~0.6	側銑 (SIDE MILLING)
1254	36	80	1900~2300	500~700	12.5~25	1~1.3	側銑 (SIDE MILLING)
1254	36	65	1500~1900	250~400	25	1.5~2	側銑 (SIDE MILLING)
1254	36	65	1500~1900	200~300	25	3~4	側銑 (SIDE MILLING)

ETB^{4T} / ETH^{4T}

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
ETB^{4T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 1304	40	105	2600~3000	1000~1200	0.05~0.15	13	溝銑 (SLOTTING)
1304	40	85	2000~2500	500~700	0.7~1	13	溝銑 (SLOTTING)
1304	40	75	1800~2200	300~400	2~3	13	溝銑 (SLOTTING)
1304	40	105	2600~3000	300~500	13~26	0.05~0.15	側銑 (SIDE MILLING)
1304	40	105	2600~3000	800~1000	13~26	0.4~0.6	側銑 (SIDE MILLING)
1304	40	80	1900~2300	500~700	13~26	1~1.3	側銑 (SIDE MILLING)
1304	40	65	1500~1900	250~400	26	1.5~2	側銑 (SIDE MILLING)
1304	40	65	1500~1900	200~300	26	3~4	側銑 (SIDE MILLING)
ETH 1354	40	105	2400~2800	1000~1200	0.05~0.15	13.5	溝銑 (SLOTTING)
1354	40	85	1900~2300	500~700	0.7~1	13.5	溝銑 (SLOTTING)
1354	40	75	1800~2200	300~400	2~3	13.5	溝銑 (SLOTTING)
1354	40	105	2400~2800	300~500	13.5~27	0.05~0.15	側銑 (SIDE MILLING)
1354	40	105	2400~2800	800~1000	13.5~27	0.4~0.6	側銑 (SIDE MILLING)
1354	40	80	1900~2300	500~700	13.5~27	1~1.3	側銑 (SIDE MILLING)
1354	40	65	1500~1900	250~400	27	1.5~2	側銑 (SIDE MILLING)
1354	40	65	1500~1900	200~300	27	3~4	側銑 (SIDE MILLING)
ETH 1404	45	105	2200~2600	1000~1200	0.05~0.15	14	溝銑 (SLOTTING)
1404	45	85	1800~2200	500~700	0.7~1	14	溝銑 (SLOTTING)
1404	45	85	1800~2200	300~400	2~3	14	溝銑 (SLOTTING)
1404	45	105	2200~2600	300~500	14~28	0.05~0.15	側銑 (SIDE MILLING)
1404	45	105	2200~2600	800~1000	14~28	0.4~0.6	側銑 (SIDE MILLING)
1404	45	85	1800~2200	500~700	14~28	1~1.3	側銑 (SIDE MILLING)
1404	45	65	1300~1700	250~400	28	1.5~2	側銑 (SIDE MILLING)
1404	45	65	1300~1700	200~300	28	3~4	側銑 (SIDE MILLING)
ETH 1504	50	140	2600~3000	800~1000	0.05~0.15	15	溝銑 (SLOTTING)
1504	50	105	1900~2300	800~1000	0.5~0.7	15	溝銑 (SLOTTING)
1504	50	85	1500~1900	300~500	1~2	15	溝銑 (SLOTTING)
1504	50	75	1300~1700	200~300	3~4	15	溝銑 (SLOTTING)
1504	50	105	1900~2300	250~450	15~30	0.05~0.2	側銑 (SIDE MILLING)
1504	50	105	1900~2300	600~800	15~30	0.5~0.7	側銑 (SIDE MILLING)
1504	50	80	1400~1800	300~500	15~30	2~3	側銑 (SIDE MILLING)
ETB ETH 1604	50	140	2600~3000	800~1000	0.05~0.15	16	溝銑 (SLOTTING)
1604	50	105	1900~2300	800~1000	0.5~0.7	16	溝銑 (SLOTTING)
1604	50	85	1500~1900	300~500	1~2	16	溝銑 (SLOTTING)
1604	50	75	1300~1700	200~300	3~4	16	溝銑 (SLOTTING)
1604	50	105	1900~2300	250~450	16~32	0.05~0.2	側銑 (SIDE MILLING)
1604	50	105	1900~2300	600~800	16~32	0.5~0.7	側銑 (SIDE MILLING)
1604	50	80	1400~1800	300~500	16~32	2~3	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 1704	50	140	2600~3000	800~1000	0.05~0.15	17	溝銑 (SLOTTING)
1704	50	105	1900~2300	800~1000	0.5~0.7	17	溝銑 (SLOTTING)
1704	50	85	1500~1900	300~500	1~2	17	溝銑 (SLOTTING)
1704	50	75	1300~1700	200~300	3~4	17	溝銑 (SLOTTING)
1704	50	105	1900~2300	250~450	17~34	0.05~0.2	側銑 (SIDE MILLING)
1704	50	105	1900~2300	600~800	17~34	0.5~0.7	側銑 (SIDE MILLING)
1704	50	80	1400~1800	300~500	17~34	2~3	側銑 (SIDE MILLING)
ETH 1804	50	150	2400~2800	600~800	0.05~0.15	18	溝銑 (SLOTTING)
1804	50	105	1600~2000	600~800	0.5~0.7	18	溝銑 (SLOTTING)
1804	50	85	1300~1700	200~400	1.5~2	18	溝銑 (SLOTTING)
1804	50	75	1200~1600	150~250	3~4	18	溝銑 (SLOTTING)
1804	50	105	1600~2000	200~400	18~36	0.05~0.2	側銑 (SIDE MILLING)
1804	50	105	1600~2000	500~700	18~36	0.5~0.7	側銑 (SIDE MILLING)
1804	50	75	1200~1600	300~400	18~36	3~4	側銑 (SIDE MILLING)
ETB ETH 2004	50	150	2200~2600	600~800	0.05~0.15	20	溝銑 (SLOTTING)
2004	50	105	1400~1800	600~800	0.5~0.7	20	溝銑 (SLOTTING)
2004	50	85	1100~1500	200~400	1.5~2	20	溝銑 (SLOTTING)
2004	50	75	1000~1400	150~250	3~4	20	溝銑 (SLOTTING)
2004	50	105	1400~1800	200~400	20~40	0.05~0.2	側銑 (SIDE MILLING)
2004	50	105	1400~1800	500~700	20~40	0.5~0.7	側銑 (SIDE MILLING)
2004	50	75	1000~1400	300~400	20~40	3~4	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	沃斯田鐵系不銹鋼：*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)

ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant	ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0104	9	60	18000~20000	1100~1400	0.03~0.05	1	溝銑 (SLOTTING)
0104	9	60	18000~20000	800~1000	0.06~0.08	1	溝銑 (SLOTTING)
0104	9	60	18000~20000	600~800	0.09~0.12	1	溝銑 (SLOTTING)
0104	9	60	18000~20000	900~1100	1~2	0.03~0.05	側銑 (SIDE MILLING)
0104	9	60	18000~20000	800~1000	1~2	0.06~0.08	側銑 (SIDE MILLING)
0104	9	60	18000~20000	600~800	1~2	0.09~0.12	側銑 (SIDE MILLING)
ETB ETH 0154	9	90	18000~20000	1100~1300	0.03~0.05	1.5	溝銑 (SLOTTING)
0154	9	90	18000~20000	800~1000	0.06~0.09	1.5	溝銑 (SLOTTING)
0154	9	90	18000~20000	600~800	0.1~0.15	1.5	溝銑 (SLOTTING)
0154	9	90	18000~20000	900~1100	1.5~3	0.03~0.05	側銑 (SIDE MILLING)
0154	9	90	18000~20000	800~1000	1.5~3	0.06~0.09	側銑 (SIDE MILLING)
0154	9	90	18000~20000	600~800	1.5~3	0.1~0.15	側銑 (SIDE MILLING)
ETB ETH 0204	11	105	16000~17000	1200~1500	0.03~0.06	2	溝銑 (SLOTTING)
0204	11	105	16000~17000	900~1100	0.07~0.11	2	溝銑 (SLOTTING)
0204	11	105	16000~17000	500~700	0.12~0.16	2	溝銑 (SLOTTING)
0204	11	105	16000~17000	1000~1200	2~4	0.03~0.06	側銑 (SIDE MILLING)
0204	11	105	16000~17000	800~1000	2~4	0.07~0.11	側銑 (SIDE MILLING)
0204	11	105	16000~17000	500~700	2~4	0.12~0.16	側銑 (SIDE MILLING)
ETB ETH 0254(S)	12	105	13000~14000	1200~1400	0.04~0.07	2.5	溝銑 (SLOTTING)
0254(S)	12	105	13000~14000	1100~1300	0.08~0.15	2.5	溝銑 (SLOTTING)
0254(S)	12	105	13000~14000	600~800	0.2~0.3	2.5	溝銑 (SLOTTING)
0254(S)	12	105	13000~14000	1000~1200	2.5~5	0.04~0.07	側銑 (SIDE MILLING)
0254(S)	12	105	13000~14000	900~1100	2.5~5	0.08~0.15	側銑 (SIDE MILLING)
0254(S)	12	105	13000~14000	600~800	2.5~5	0.2~0.3	側銑 (SIDE MILLING)
ETB ETH 0304S	13	105	11000~11500	1200~1600	0.05~0.08	3	溝銑 (SLOTTING)
0304S	13	105	11000~11500	700~900	0.1~0.2	3	溝銑 (SLOTTING)
0304S	13	105	11000~11500	350~550	0.25~0.35	3	溝銑 (SLOTTING)
0304S	13	105	11000~11500	1000~1200	3~6	0.05~0.08	側銑 (SIDE MILLING)
0304S	13	105	11000~11500	700~800	3~6	0.1~0.2	側銑 (SIDE MILLING)
0304S	13	105	11000~11500	400~600	3~6	0.25~0.35	側銑 (SIDE MILLING)
ETB ETH 0304	13	105	11000~11500	1200~1600	0.05~0.08	3	溝銑 (SLOTTING)
0304	13	105	11000~11500	700~900	0.1~0.2	3	溝銑 (SLOTTING)
0304	13	105	11000~11500	400~600	0.25~0.35	3	溝銑 (SLOTTING)
0304	13	105	11000~11500	1000~1200	3~6	0.05~0.08	側銑 (SIDE MILLING)
0304	13	105	11000~11500	700~900	3~6	0.1~0.2	側銑 (SIDE MILLING)
0304	13	105	11000~11500	500~600	3~6	0.25~0.35	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	沃斯田鐵系不銹鋼：*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)
ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0354	15	100	9000~9500	1000~1300	0.05~0.08	3.5	溝銑 (SLOTTING)
0354	15	100	9000~9500	800~1000	0.15~0.25	3.5	溝銑 (SLOTTING)
0354	15	100	9000~9500	600~800	0.3~0.4	3.5	溝銑 (SLOTTING)
0354	15	100	9000~9500	1000~1200	3.5~7	0.05~0.08	側銑 (SIDE MILLING)
0354	15	100	9000~9500	800~1000	3.5~7	0.15~0.25	側銑 (SIDE MILLING)
0354	15	100	9000~9500	700~900	3.5~7	0.3~0.4	側銑 (SIDE MILLING)
ETB ETH 0404(S)	16	100	7700~8200	1100~1400	0.05~0.09	4	溝銑 (SLOTTING)
0404(S)	16	100	7700~8200	800~1000	0.3~0.4	4	溝銑 (SLOTTING)
0404(S)	16	100	7700~8200	600~800	0.5~0.8	4	溝銑 (SLOTTING)
0404(S)	16	100	7700~8200	1000~1200	4~8	0.05~0.09	側銑 (SIDE MILLING)
0404(S)	16	100	7700~8200	800~1000	4~8	0.3~0.4	側銑 (SIDE MILLING)
0404(S)	16	90	7000~7500	700~900	4~8	0.5~0.8	側銑 (SIDE MILLING)
ETH 0454	16	100	6800~7300	1100~1400	0.05~0.09	4	溝銑 (SLOTTING)
0454	16	100	6800~7300	800~1000	0.3~0.4	4	溝銑 (SLOTTING)
0454	16	100	6800~7300	600~800	0.6~1	4	溝銑 (SLOTTING)
0454	16	100	6800~7300	1000~1200	4.5~9	0.05~0.09	側銑 (SIDE MILLING)
0454	16	100	6800~7300	800~1000	4.5~9	0.3~0.4	側銑 (SIDE MILLING)
0454	16	100	6800~7300	700~900	4.5~9	0.6~1	側銑 (SIDE MILLING)
ETH 0504S	19	105	6400~6900	1400~1800	0.05~0.1	5	溝銑 (SLOTTING)
0504S	19	105	6400~6900	1000~1200	0.8~1	5	溝銑 (SLOTTING)
0504S	19	105	6400~6900	750~950	1.1~1.4	5	溝銑 (SLOTTING)
0504S	19	105	6400~6900	400~600	1.5~1.8	5	溝銑 (SLOTTING)
0504S	19	105	6400~6900	900~1100	5~10	0.05~0.1	側銑 (SIDE MILLING)
0504S	19	95	5800~6200	700~900	5~10	0.8~1	側銑 (SIDE MILLING)
0504S	19	95	5800~6200	500~700	5	1.3~1.6	側銑 (SIDE MILLING)
0504S	19	105	6400~6900	800~1000	5	1.8~2	側銑 (SIDE MILLING)
ETB ETH 0504	19	105	6400~6900	1400~1800	0.05~0.1	5	溝銑 (SLOTTING)
0504	19	105	6400~6900	1000~1200	0.8~1	5	溝銑 (SLOTTING)
0504	19	105	6400~6900	750~950	1.1~1.4	5	溝銑 (SLOTTING)
0504	19	105	6400~6900	400~600	1.5~1.8	5	溝銑 (SLOTTING)
0504	19	105	6400~6900	900~1100	5~10	0.05~0.1	側銑 (SIDE MILLING)
0504	19	95	5800~6200	700~900	5~10	0.8~1	側銑 (SIDE MILLING)
0504	19	95	5800~6200	500~700	5	1.3~1.6	側銑 (SIDE MILLING)
0504	19	105	6400~6900	800~1000	5	1.8~2	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	沃斯田鐵系不銹鋼：*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)
ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 0554	19	105	6400~6900	1400~1800	0.05~0.1	5.5	溝銑 (SLOTTING)
0554	19	105	6400~6900	1000~1200	0.8~1	5.5	溝銑 (SLOTTING)
0554	19	105	6400~6900	750~950	1.1~1.4	5.5	溝銑 (SLOTTING)
0554	19	105	6400~6900	400~600	1.5~1.8	5.5	溝銑 (SLOTTING)
0554	19	105	6400~6900	900~1100	5.5~11	0.05~0.1	側銑 (SIDE MILLING)
0554	19	95	5800~6200	700~900	5.5~11	0.8~1	側銑 (SIDE MILLING)
0554	19	95	5800~6200	500~700	5.5	1.3~1.6	側銑 (SIDE MILLING)
0554	19	105	6400~6900	800~1000	5.5	1.8~2	側銑 (SIDE MILLING)
ETB ETH 0604	21	105	5400~5800	1100~1300	0.05~0.12	6	溝銑 (SLOTTING)
0604	21	105	5400~5800	1000~1200	0.5~1	6	溝銑 (SLOTTING)
0604	21	105	5400~5800	800~1000	1.5~2	6	溝銑 (SLOTTING)
0604	21	105	5400~5800	1200~1400	6~12	0~0.5	溝銑 (SLOTTING)
0604	21	105	5400~5800	700~900	6~12	0.05~0.12	側銑 (SIDE MILLING)
0604	21	105	5400~5800	900~1100	6~12	1	側銑 (SIDE MILLING)
0604	21	90	4500~5000	700~900	6~12	2	側銑 (SIDE MILLING)
0604	21	90	4500~5000	550~750	6~12	3	側銑 (SIDE MILLING)
ETH 0654	21	105	5400~5800	1100~1300	0.05~0.12	6.5	溝銑 (SLOTTING)
0654	21	105	5400~5800	1000~1200	0.5~1	6.5	溝銑 (SLOTTING)
0654	21	105	5400~5800	800~1000	1.5~2	6.5	溝銑 (SLOTTING)
0654	21	105	5400~5800	1200~1400	6.5~13	0~0.5	側銑 (SIDE MILLING)
0654	21	105	5400~5800	700~900	6.5~13	0.05~0.12	側銑 (SIDE MILLING)
0654	21	105	5400~5800	900~1100	6.5~13	1	側銑 (SIDE MILLING)
0654	21	90	4500~5000	700~900	6.5~13	2	側銑 (SIDE MILLING)
0654	21	90	4500~5000	550~750	6.5~13	3	側銑 (SIDE MILLING)
ETH 0704	21	105	5400~5800	1100~1300	0.05~0.12	7	溝銑 (SLOTTING)
0704	21	105	5400~5800	1000~1200	0.5~1	7	溝銑 (SLOTTING)
0704	21	105	5400~5800	800~1000	1.5~2	7	溝銑 (SLOTTING)
0704	21	105	5400~5800	1200~1400	7~14	0~0.5	側銑 (SIDE MILLING)
0704	21	105	5400~5800	700~900	7~14	0.05~0.12	側銑 (SIDE MILLING)
0704	21	105	5400~5800	900~1100	7~14	1	側銑 (SIDE MILLING)
0704	21	90	4500~5000	700~900	7~14	2	側銑 (SIDE MILLING)
0704	21	90	4500~5000	550~750	7~14	3	側銑 (SIDE MILLING)
ETH 0754	27	105	4000~4500	1000~1200	0.05~0.15	7.5	溝銑 (SLOTTING)
0754	27	105	4000~4500	800~1000	0.7~1	7.5	溝銑 (SLOTTING)
0754	27	105	4000~4500	600~800	3~4	7.5	溝銑 (SLOTTING)
0754	27	105	4000~4500	600~800	16	0.05~0.15	側銑 (SIDE MILLING)
0754	27	105	4000~4500	1000~1200	7.5~15	0.3~0.5	側銑 (SIDE MILLING)
0754	27	70	2500~3000	600~800	7.5~15	1	側銑 (SIDE MILLING)
0754	27	70	2500~3000	300~500	7.5~15	2	側銑 (SIDE MILLING)
0754	27	70	2500~3000	300~500	7.5~15	2~4	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	沃斯田鐵系不銹鋼：*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)
ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB ETH 0804	27	105	4000~4500	1000~1200	0.05~0.15	8	溝銑 (SLOTTING)
0804	27	105	4000~4500	800~1000	0.7~1	8	溝銑 (SLOTTING)
0804	27	105	4000~4500	600~800	3~4	8	溝銑 (SLOTTING)
0804	27	105	4000~4500	600~800	16	0.05~0.15	側銑 (SIDE MILLING)
0804	27	105	4000~4500	1000~1200	8~16	0.3~0.5	側銑 (SIDE MILLING)
0804	27	70	2500~3000	600~800	8~16	1	側銑 (SIDE MILLING)
0804	27	70	2500~3000	300~500	8~16	2	側銑 (SIDE MILLING)
0804	27	70	2500~3000	300~500	8	2~4	側銑 (SIDE MILLING)
ETH 0854	27	105	4000~4500	1000~1200	0.05~0.15	8.5	溝銑 (SLOTTING)
0854	27	105	4000~4500	800~1000	0.7~1	8.5	溝銑 (SLOTTING)
0854	27	105	4000~4500	600~800	3~4	8.5	溝銑 (SLOTTING)
0854	27	105	4000~4500	600~800	16	0.05~0.15	側銑 (SIDE MILLING)
0854	27	105	4000~4500	1000~1200	8.5~17	0.3~0.5	側銑 (SIDE MILLING)
0854	27	70	2500~3000	600~800	8.5~17	1	側銑 (SIDE MILLING)
0854	27	70	2500~3000	300~500	8.5~17	2	側銑 (SIDE MILLING)
0854	27	70	2500~3000	300~500	8.5~17	2~4	側銑 (SIDE MILLING)
ETH 0904	27	105	4000~4500	1000~1200	0.05~0.15	9	溝銑 (SLOTTING)
0904	27	105	4000~4500	800~1000	0.7~1	9	溝銑 (SLOTTING)
0904	27	105	4000~4500	600~800	3~4	9	溝銑 (SLOTTING)
0904	27	105	4000~4500	600~800	16	0.05~0.15	側銑 (SIDE MILLING)
0904	27	105	4000~4500	1000~1200	9~18	0.3~0.5	側銑 (SIDE MILLING)
0904	27	70	2500~3000	600~800	9~18	1	側銑 (SIDE MILLING)
0904	27	70	2500~3000	300~500	9~18	2	側銑 (SIDE MILLING)
0904	27	70	2500~3000	300~500	9~18	2~4	側銑 (SIDE MILLING)
ETB ETH 0954	30	115	3300~3800	1000~1200	0.05~0.15	9.5	溝銑 (SLOTTING)
0954	30	115	3300~3800	650~850	1.5~2	9.5	溝銑 (SLOTTING)
0954	30	115	3300~3800	500~700	3~5	9.5	溝銑 (SLOTTING)
0954	30	105	3100~3500	400~600	25	0.05~0.15	側銑 (SIDE MILLING)
0954	30	105	3100~3500	1200~1500	9.5~24	0~0.6	側銑 (SIDE MILLING)
0954	30	105	3100~3500	600~800	19	1	側銑 (SIDE MILLING)
0954	30	65	2000or2700	250~400	19	2~4	側銑 (SIDE MILLING)
0954	30	65	2000	200~350	19	4~5	側銑 (SIDE MILLING)
ETB ETH 1004(Z)	35	105	3000~3500	1000~1200	0.05~0.15	10	溝銑 (SLOTTING)
1004(Z)	35	105	3000~3500	600~800	2~3	10	溝銑 (SLOTTING)
1004(Z)	35	105	3000~3500	400~600	3~5	10	溝銑 (SLOTTING)
1004(Z)	35	105	3000~3500	400~600	10~30	0.05~0.15	側銑 (SIDE MILLING)
1004(Z)	35	105	3000~3500	1100~1400	10~30	0.4~0.6	側銑 (SIDE MILLING)
1004(Z)	35	105	3000~3500	600~800	20	1	側銑 (SIDE MILLING)
1004(Z)	35	65	2000	250~400	20	2~4	側銑 (SIDE MILLING)
1004(Z)	35	65	2000	200~350	20	4~5	側銑 (SIDE MILLING)

ETB^{4T} / ETH^{4T}

切削條件表 Milling Conditions

被切削材 Work Material	沃斯田鐵系不銹鋼：*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)
ETB^{4T} 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 1054	30	105	3000~3500	1000~1200	0.05~0.15	10.5	溝銑 (SLOTTING)
1054	30	105	3000~3500	600~800	2~3	10.5	溝銑 (SLOTTING)
1054	30	105	3000~3500	400~600	3~5	10.5	溝銑 (SLOTTING)
1054	30	105	3000~3500	400~600	10~25	0.05~0.15	側銑 (SIDE MILLING)
1054	30	105	3000~3500	1100~1400	10~25	0.4~0.6	側銑 (SIDE MILLING)
1054	30	105	3000~3500	600~800	21	1	側銑 (SIDE MILLING)
1054	30	65	2000	250~400	21	2~4	側銑 (SIDE MILLING)
1054	30	65	2000	200~350	21	4~5	側銑 (SIDE MILLING)
ETH 1104	33	105	3000~3500	1000~1200	0.05~0.15	11	溝銑 (SLOTTING)
1104	33	105	3000~3500	600~800	2~3	11	溝銑 (SLOTTING)
1104	33	105	3000~3500	400~600	3~5	11	溝銑 (SLOTTING)
1104	33	105	3000~3500	400~600	10~25	0.05~0.15	側銑 (SIDE MILLING)
1104	33	105	3000~3500	1100~1400	10~25	0.4~0.6	側銑 (SIDE MILLING)
1104	33	105	3000~3500	600~800	22	1	側銑 (SIDE MILLING)
1104	33	65	2000	250~400	22	2~4	側銑 (SIDE MILLING)
1104	33	65	2000	200~350	22	4~5	側銑 (SIDE MILLING)
ETH 1154	36	105	2600~3000	1000~1200	0.05~0.15	11.5	溝銑 (SLOTTING)
1154	36	85	2000~2500	500~700	0.7~1	11.5	溝銑 (SLOTTING)
1154	36	75	1800~2200	300~400	3~4	11.5	溝銑 (SLOTTING)
1154	36	105	2600~3000	300~500	11.5~23	0.05~0.15	側銑 (SIDE MILLING)
1154	36	105	2600~3000	800~1000	11.5~23	0.4~0.6	側銑 (SIDE MILLING)
1154	36	80	1900~2300	500~700	11.5~23	1~1.3	側銑 (SIDE MILLING)
1154	36	65	1500~1900	250~400	23	1.5~2	側銑 (SIDE MILLING)
1154	36	65	1500~1900	200~300	23	3~4	側銑 (SIDE MILLING)
ETB ETH 1204	36	105	2600~3000	1000~1200	0.05~0.15	12	溝銑 (SLOTTING)
1204	36	85	2000~2500	500~700	0.7~1	12	溝銑 (SLOTTING)
1204	36	75	1800~2200	300~400	3~4	12	溝銑 (SLOTTING)
1204	36	105	2600~3000	300~500	12~24	0.05~0.15	側銑 (SIDE MILLING)
1204	36	105	2600~3000	800~1000	12~24	0.4~0.6	側銑 (SIDE MILLING)
1204	36	80	1900~2300	500~700	12~24	1~1.3	側銑 (SIDE MILLING)
1204	36	65	1500~1900	250~400	24	1.5~2	側銑 (SIDE MILLING)
1204	36	65	1500~1900	200~300	24	3~4	側銑 (SIDE MILLING)
ETH 1254	36	105	2600~3000	1000~1200	0.05~0.15	12.5	溝銑 (SLOTTING)
1254	36	85	2000~2500	500~700	0.7~1	12.5	溝銑 (SLOTTING)
1254	36	75	1800~2200	300~400	3~4	12.5	溝銑 (SLOTTING)
1254	36	105	2600~3000	300~500	12.5~25	0.05~0.15	側銑 (SIDE MILLING)
1254	36	105	2600~3000	800~1000	12.5~25	0.4~0.6	側銑 (SIDE MILLING)
1254	36	80	1900~2300	500~700	12.5~25	1~1.3	側銑 (SIDE MILLING)
1254	36	65	1500~1900	250~400	25	1.5~2	側銑 (SIDE MILLING)
1254	36	65	1500~1900	200~300	25	3~4	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	沃斯田鐵系不銹鋼：*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)
ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant
ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 1304	40	105	2600~3000	1000~1200	0.05~0.15	13	溝銑 (SLOTTING)
1304	40	85	2000~2500	500~700	0.7~1	13	溝銑 (SLOTTING)
1304	40	75	1800~2200	300~400	3~4	13	溝銑 (SLOTTING)
1304	40	105	2600~3000	300~500	13~26	0.05~0.15	側銑 (SIDE MILLING)
1304	40	105	2600~3000	800~1000	13~26	0.4~0.6	側銑 (SIDE MILLING)
1304	40	80	1900~2300	500~700	13~26	1~1.3	側銑 (SIDE MILLING)
1304	40	65	1500~1900	250~400	26	1.5~2	側銑 (SIDE MILLING)
1304	40	65	1500~1900	200~300	26	3~4	側銑 (SIDE MILLING)
ETH 1354	40	105	2400~2800	1000~1200	0.05~0.15	13.5	溝銑 (SLOTTING)
1354	40	85	2000~2500	500~700	0.7~1	13.5	溝銑 (SLOTTING)
1354	40	75	1800~2200	300~400	3~4	13.5	溝銑 (SLOTTING)
1354	40	105	2400~2800	300~500	13.5~27	0.05~0.15	側銑 (SIDE MILLING)
1354	40	105	2400~2800	800~1000	13.5~27	0.4~0.6	側銑 (SIDE MILLING)
1354	40	80	1900~2300	500~700	13.5~27	1~1.3	側銑 (SIDE MILLING)
1354	40	65	1500~1900	250~400	27	1.5~2	側銑 (SIDE MILLING)
1354	40	65	1500~1900	200~300	27	3~4	側銑 (SIDE MILLING)
ETH 1404	45	105	2200~2600	1000~1200	0.05~0.15	14	溝銑 (SLOTTING)
1404	45	85	1800~2200	500~700	0.7~1	14	溝銑 (SLOTTING)
1404	45	85	1800~2200	300~400	3~4	14	溝銑 (SLOTTING)
1404	45	105	2200~2600	300~500	14~28	0.05~0.15	側銑 (SIDE MILLING)
1404	45	105	2200~2600	800~1000	14~28	0.4~0.6	側銑 (SIDE MILLING)
1404	45	85	1800~2200	500~700	14~28	1~1.3	側銑 (SIDE MILLING)
1404	45	65	1300~1700	250~400	28	1.5~2	側銑 (SIDE MILLING)
1404	45	65	1300~1700	200~300	28	3~4	側銑 (SIDE MILLING)
ETH 1504	50	140	2600~3000	800~1000	0.05~0.15	15	溝銑 (SLOTTING)
1504	50	105	1900~2300	800~1000	0.5~0.7	15	溝銑 (SLOTTING)
1504	50	85	1500~1900	300~500	1~2	15	溝銑 (SLOTTING)
1504	50	75	1300~1700	200~300	3~4	15	溝銑 (SLOTTING)
1504	50	105	1900~2300	250~450	15~30	0.05~0.2	側銑 (SIDE MILLING)
1504	50	105	1900~2300	600~800	15~30	0.5~0.7	側銑 (SIDE MILLING)
1504	50	80	1400~1800	300~500	15~30	2~3	側銑 (SIDE MILLING)
ETB ETH 1604	50	140	2600~3000	800~1000	0.05~0.15	16	溝銑 (SLOTTING)
1604	50	105	1900~2300	800~1000	0.5~0.7	16	溝銑 (SLOTTING)
1604	50	85	1500~1900	300~500	1~2	16	溝銑 (SLOTTING)
1604	50	75	1300~1700	200~300	3~4	16	溝銑 (SLOTTING)
1604	50	105	1900~2300	250~450	16~32	0.05~0.2	側銑 (SIDE MILLING)
1604	50	105	1900~2300	600~800	16~32	0.5~0.7	側銑 (SIDE MILLING)
1604	50	80	1400~1800	300~500	16~32	2~3	側銑 (SIDE MILLING)

ETB4T / ETH4T

切削條件表 Milling Conditions

被切削材 Work Material	沃斯田鐵系不銹鋼：*Stainless Steels* **SUS304 : 1.4301 : AISI 304 (HRc28~32)**

ETB4T 冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant	ETH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min-1)	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH 1704	50	140	2600~3000	800~1000	0.05~0.15	17	溝銑 (SLOTTING)
1704	50	105	1900~2300	800~1000	0.5~0.7	17	溝銑 (SLOTTING)
1704	50	85	1500~1900	300~500	1~2	17	溝銑 (SLOTTING)
1704	50	75	1300~1700	200~300	3~4	17	溝銑 (SLOTTING)
1704	50	105	1900~2300	250~450	17~34	0.05~0.2	側銑 (SIDE MILLING)
1704	50	105	1900~2300	600~800	17~34	0.5~0.7	側銑 (SIDE MILLING)
1704	50	80	1400~1800	300~500	17~34	2~3	側銑 (SIDE MILLING)
ETH 1804	50	150	2400~2800	600~800	0.05~0.15	18	溝銑 (SLOTTING)
1804	50	105	1600~2000	600~800	0.5~0.7	18	溝銑 (SLOTTING)
1804	50	85	1300~1700	200~400	1.5~2	18	溝銑 (SLOTTING)
1804	50	75	1200~1600	150~250	3~4	18	溝銑 (SLOTTING)
1804	50	105	1600~2000	200~400	18~36	0.05~0.2	側銑 (SIDE MILLING)
1804	50	105	1600~2000	500~700	18~36	0.5~0.7	側銑 (SIDE MILLING)
1804	50	75	1200~1600	300~400	18~36	3~4	側銑 (SIDE MILLING)
ETB ETH 2004	50	150	2200~2600	600~800	0.05~0.15	20	溝銑 (SLOTTING)
2004	50	105	1400~1800	600~800	0.5~0.7	20	溝銑 (SLOTTING)
2004	50	85	1100~1500	200~400	1.5~2	20	溝銑 (SLOTTING)
2004	50	75	1000~1400	150~250	3~4	20	溝銑 (SLOTTING)
2004	50	105	1400~1800	200~400	20~40	0.05~0.2	側銑 (SIDE MILLING)
2004	50	105	1400~1800	500~700	20~40	0.5~0.7	側銑 (SIDE MILLING)
2004	50	75	1000~1400	300~400	20~40	3~4	側銑 (SIDE MILLING)

ETG 2T

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETG0102	12	30	9000~10000	700~1000	0.03~0.05	1	溝銑 (SLOTTING)
ETG0102	12	30	9000~10000	800~1200	0.06~0.08	1	溝銑 (SLOTTING)
ETG0102	12	30	9000~10000	700~900	1	0.03~0.05	側銑 (SIDE MILLING)
ETG0102	12	30	9000~10000	700~1000	1	0.06~0.08	側銑 (SIDE MILLING)
ETG0152	14	45	9000~10000	700~1000	0.03~0.05	1.5	溝銑 (SLOTTING)
ETG0152	14	45	9000~10000	800~1200	0.06~0.09	1.5	溝銑 (SLOTTING)
ETG0152	14	45	9000~10000	800~1000	1.5	0.03~0.05	側銑 (SIDE MILLING)
ETG0152	14	45	9000~10000	800~1000	1.5	0.06~0.09	側銑 (SIDE MILLING)
ETG0202	16	55	8700~9200	700~1000	0.04~0.06	2	溝銑 (SLOTTING)
ETG0202	16	55	8700~9200	1000~1400	0.07~0.12	2	溝銑 (SLOTTING)
ETG0202	16	55	8700~9200	800~1000	2	0.04~0.06	側銑 (SIDE MILLING)
ETG0202	16	55	8700~9200	800~1200	4	0.07~0.12	側銑 (SIDE MILLING)
ETG0252	16	65	8000~8500	700~1000	0.04~0.06	2.5	溝銑 (SLOTTING)
ETG0252	16	65	8000~8500	1000~1400	0.07~0.12	2.5	溝銑 (SLOTTING)
ETG0252	16	65	8000~8500	800~1200	2.5	0.04~0.06	側銑 (SIDE MILLING)
ETG0252	16	65	8000~8500	1000~1400	5	0.07~0.12	側銑 (SIDE MILLING)
ETG0302	18	75	7500~8000	700~1000	0.05~0.1	3	溝銑 (SLOTTING)
ETG0302	18	75	7500~8000	1200~1600	0.11~0.16	3	溝銑 (SLOTTING)
ETG0302	18	75	7500~8000	700~1000	6	0.05~0.1	側銑 (SIDE MILLING)
ETG0302	18	75	7500~8000	800~1200	6	0.11~0.16	側銑 (SIDE MILLING)
ETG0402	20	75	5700~6200	700~1000	0.05~0.1	4	溝銑 (SLOTTING)
ETG0402	20	75	5700~6200	1200~1600	0.11~0.18	4	溝銑 (SLOTTING)
ETG0402	20	75	5700~6200	700~1000	8	0.05~0.1	側銑 (SIDE MILLING)
ETG0402	20	75	5700~6200	1000~1400	8	0.11~0.18	側銑 (SIDE MILLING)
ETG0502	20	80	4800~5300	700~1000	0.05~0.1	5	溝銑 (SLOTTING)
ETG0502	20	80	4800~5300	1200~1600	0.12~0.2	5	溝銑 (SLOTTING)
ETG0502	20	80	4800~5300	700~1000	10	0.05~0.1	側銑 (SIDE MILLING)
ETG0502	20	80	4800~5300	1000~1400	10	0.12~0.2	側銑 (SIDE MILLING)
ETG0602	23	80	4000~4500	700~1000	0.05~0.1	6	溝銑 (SLOTTING)
ETG0602	23	80	4000~4500	800~1200	0.3~0.5	6	溝銑 (SLOTTING)
ETG0602	23	80	4000~4500	700~1000	12	0.05~0.1	側銑 (SIDE MILLING)
ETG0602	23	80	4000~4500	800~1200	12	0.3~0.4	側銑 (SIDE MILLING)
ETG0802	30	90	2700~3200	700~1000	0.05~0.1	8	溝銑 (SLOTTING)
ETG0802	30	90	2700~3200	700~1000	0.4~0.6	8	溝銑 (SLOTTING)
ETG0802	30	90	2700~3200	500~800	16	0.05~0.1	側銑 (SIDE MILLING)
ETG0802	30	90	2700~3200	1200~1600	16	0.4~0.5	側銑 (SIDE MILLING)
ETG1002	35	85	2500~3000	700~1000	0.05~0.12	10	溝銑 (SLOTTING)
ETG1002	35	85	2500~3000	700~1100	0.5~0.7	10	溝銑 (SLOTTING)
ETG1002	35	70	2000~2500	400~700	20	0.05~0.12	側銑 (SIDE MILLING)
ETG1002	35	70	2000~2500	800~1200	20	0.4~0.5	側銑 (SIDE MILLING)

ETG 2T

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETG1202	37	105	2500~3000	700~1000	0.05~0.12	12	溝銑 (SLOTTING)
ETG1202	37	85	2000~2500	500~800	0.5~0.7	12	溝銑 (SLOTTING)
ETG1202	37	115	2800~3300	500~800	24	0.05~0.12	側銑 (SIDE MILLING)
ETG1202	37	115	2800~3300	1000~1400	24	0.5~0.7	側銑 (SIDE MILLING)

被切削材 Work Material	鉻鉬合金鋼：*Chromium Molybdenum Alloy Steels* SCM440 : 1.7225 : 4140 : 42CrMoA (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETG0102	14	30	9000~10000	700~1000	0.03~0.05	1	溝銑 (SLOTTING)
ETG0102	14	30	9000~10000	800~1200	0.06~0.08	1	溝銑 (SLOTTING)
ETG0102	14	30	9000~10000	600~800	1	0.03~0.05	側銑 (SIDE MILLING)
ETG0102	14	30	9000~10000	500~800	1	0.06~0.08	側銑 (SIDE MILLING)
ETG0152	14	45	9000~10000	700~1000	0.03~0.05	1.5	溝銑 (SLOTTING)
ETG0152	14	45	9000~10000	800~1200	0.06~0.09	1.5	溝銑 (SLOTTING)
ETG0152	14	45	9000~10000	700~900	1.5	0.03~0.05	側銑 (SIDE MILLING)
ETG0152	14	45	9000~10000	700~900	1.5	0.06~0.09	側銑 (SIDE MILLING)
ETG0202	16	55	8700~9200	700~1000	0.04~0.06	2	溝銑 (SLOTTING)
ETG0202	16	55	8700~9200	1000~1400	0.07~0.12	2	溝銑 (SLOTTING)
ETG0202	16	55	8700~9200	700~1100	2	0.04~0.06	側銑 (SIDE MILLING)
ETG0202	16	55	8700~9200	800~1000	4	0.07~0.12	側銑 (SIDE MILLING)
ETG0252	16	65	8000~8500	700~1000	0.04~0.06	2.5	溝銑 (SLOTTING)
ETG0252	16	65	8000~8500	1000~1400	0.07~0.12	2.5	溝銑 (SLOTTING)
ETG0252	16	65	8000~8500	700~1100	2.5	0.04~0.06	側銑 (SIDE MILLING)
ETG0252	16	65	8000~8500	900~1100	5	0.07~0.12	側銑 (SIDE MILLING)
ETG0302	18	75	7500~8000	700~1000	0.05~0.1	3	溝銑 (SLOTTING)
ETG0302	18	75	7500~8000	1000~1400	0.11~0.16	3	溝銑 (SLOTTING)
ETG0302	18	75	7500~8000	700~1000	6	0.05~0.1	側銑 (SIDE MILLING)
ETG0302	18	75	7500~8000	800~1200	6	0.11~0.16	側銑 (SIDE MILLING)
ETG0402	20	75	5700~6200	700~1000	0.05~0.1	4	溝銑 (SLOTTING)
ETG0402	20	75	5700~6200	1000~1400	0.11~0.18	4	溝銑 (SLOTTING)
ETG0402	20	75	5700~6200	700~1000	8	0.05~0.1	側銑 (SIDE MILLING)
ETG0402	20	75	5700~6200	1000~1400	8	0.11~0.18	側銑 (SIDE MILLING)
ETG0502	20	80	4800~5300	700~1000	0.05~0.1	5	溝銑 (SLOTTING)
ETG0502	20	80	4800~5300	1000~1400	0.12~0.2	5	溝銑 (SLOTTING)
ETG0502	20	80	4800~5300	700~1000	10	0.05~0.1	側銑 (SIDE MILLING)
ETG0502	20	80	4800~5300	1000~1400	10	0.12~0.2	側銑 (SIDE MILLING)

ETG 2T

切削條件表 Milling Conditions

被切削材 Work Material	鉻鉬合金鋼 : *Chromium Molybdenum Alloy Steels* SCM440 : 1.7225 : 4140 : 42CrMoA (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETG0602	23	80	4000~4500	700~1000	0.05~0.1	6	溝銑 (SLOTTING)
ETG0602	23	80	4000~4500	800~1200	0.3~0.5	6	溝銑 (SLOTTING)
ETG0602	23	80	4000~4500	500~800	12	0.05~0.1	側銑 (SIDE MILLING)
ETG0602	23	80	4000~4500	800~1200	12	0.3~0.4	側銑 (SIDE MILLING)
ETG0802	30	75	2700~3200	700~1000	0.05~0.1	8	溝銑 (SLOTTING)
ETG0802	30	75	2700~3200	700~1000	0.4~0.6	8	溝銑 (SLOTTING)
ETG0802	30	75	2700~3200	500~800	16	0.05~0.1	側銑 (SIDE MILLING)
ETG0802	30	75	2700~3200	1200~1600	16	0.4~0.5	側銑 (SIDE MILLING)
ETG1002	35	100	3000~3500	700~1000	0.05~0.12	10	溝銑 (SLOTTING)
ETG1002	35	75	2200~2700	700~1000	0.5~0.7	10	溝銑 (SLOTTING)
ETG1002	35	100	3000~3500	400~700	20	0.05~0.12	側銑 (SIDE MILLING)
ETG1002	35	70	2000~2500	800~1200	20	0.4~0.5	側銑 (SIDE MILLING)
ETG1202	37	105	2500~3000	700~1000	0.05~0.12	12	溝銑 (SLOTTING)
ETG1202	37	85	2000~2500	500~800	0.5~0.7	12	溝銑 (SLOTTING)
ETG1202	37	115	2800~3300	500~800	24	0.05~0.12	側銑 (SIDE MILLING)
ETG1202	37	115	2800~3300	1000~1400	24	0.5~0.7	側銑 (SIDE MILLING)

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETG0102	14	30	9000~10000	700~1000	0.03~0.05	1	溝銑 (SLOTTING)
ETG0102	14	30	9000~10000	700~1000	0.06~0.08	1	溝銑 (SLOTTING)
ETG0102	14	30	9000~10000	500~700	1	0.03~0.05	側銑 (SIDE MILLING)
ETG0102	14	30	9000~10000	400~700	1	0.06~0.08	側銑 (SIDE MILLING)
ETG0152	14	45	9000~10000	700~1000	0.03~0.05	1.5	溝銑 (SLOTTING)
ETG0152	14	45	9000~10000	700~1000	0.06~0.09	1.5	溝銑 (SLOTTING)
ETG0152	14	45	9000~10000	600~800	1.5	0.03~0.05	側銑 (SIDE MILLING)
ETG0152	14	45	9000~10000	600~800	1.5	0.06~0.09	側銑 (SIDE MILLING)
ETG0202	16	55	8700~9200	700~1000	0.04~0.06	2	溝銑 (SLOTTING)
ETG0202	16	55	8700~9200	800~1200	0.07~0.12	2	溝銑 (SLOTTING)
ETG0202	16	55	8700~9200	700~1000	2	0.04~0.06	側銑 (SIDE MILLING)
ETG0202	16	55	8700~9200	700~900	4	0.07~0.12	側銑 (SIDE MILLING)
ETG0252	16	65	8000~8500	700~1000	0.04~0.06	2.5	溝銑 (SLOTTING)
ETG0252	16	65	8000~8500	800~1200	0.07~0.12	2.5	溝銑 (SLOTTING)
ETG0252	16	65	8000~8500	700~1000	2.5	0.04~0.06	側銑 (SIDE MILLING)
ETG0252	16	65	8000~8500	900~1100	5	0.07~0.12	側銑 (SIDE MILLING)

ETG2T

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETG0302	18	75	7500~8000	700~1000	0.05~0.1	3	溝銑 (SLOTTING)
ETG0302	18	75	7500~8000	800~1200	0.11~0.16	3	溝銑 (SLOTTING)
ETG0302	18	75	7500~8000	700~900	6	0.05~0.1	側銑 (SIDE MILLING)
ETG0302	18	75	7500~8000	700~1000	6	0.11~0.16	側銑 (SIDE MILLING)
ETG0402	20	75	5700~6200	700~1000	0.05~0.1	4	溝銑 (SLOTTING)
ETG0402	20	75	5700~6200	800~1200	0.11~0.18	4	溝銑 (SLOTTING)
ETG0402	20	75	5700~6200	700~1000	8	0.05~0.1	側銑 (SIDE MILLING)
ETG0402	20	75	5700~6200	800~1200	8	0.11~0.18	側銑 (SIDE MILLING)
ETG0502	20	80	4800~5300	700~1000	0.05~0.1	5	溝銑 (SLOTTING)
ETG0502	20	80	4800~5300	800~1200	0.12~0.2	5	溝銑 (SLOTTING)
ETG0502	20	80	4800~5300	700~1000	10	0.05~0.1	側銑 (SIDE MILLING)
ETG0502	20	80	4800~5300	800~1200	10	0.12~0.2	側銑 (SIDE MILLING)
ETG0602	23	80	4000~4500	700~1000	0.05~0.1	6	溝銑 (SLOTTING)
ETG0602	23	80	4000~4500	700~1000	0.3~0.5	6	溝銑 (SLOTTING)
ETG0602	23	80	4000~4500	500~800	12	0.05~0.1	側銑 (SIDE MILLING)
ETG0602	23	80	4000~4500	700~1000	12	0.3~0.4	側銑 (SIDE MILLING)
ETG0802	30	75	2700~3200	700~1000	0.05~0.1	8	溝銑 (SLOTTING)
ETG0802	30	75	2700~3200	500~800	0.4~0.6	8	溝銑 (SLOTTING)
ETG0802	30	75	2700~3200	500~800	16	0.05~0.1	側銑 (SIDE MILLING)
ETG0802	30	75	2700~3200	1000~1400	16	0.4~0.5	側銑 (SIDE MILLING)
ETG1002	35	100	3000~3500	700~1000	0.05~0.12	10	溝銑 (SLOTTING)
ETG1002	35	75	2200~2700	500~800	0.5~0.7	10	溝銑 (SLOTTING)
ETG1002	35	100	3000~3500	400~700	20	0.05~0.12	側銑 (SIDE MILLING)
ETG1002	35	70	2000~2500	700~1100	20	0.4~0.5	側銑 (SIDE MILLING)
ETG1202	37	105	2500~3000	700~1000	0.05~0.12	12	溝銑 (SLOTTING)
ETG1202	37	85	2000~2500	400~700	0.5~0.7	12	溝銑 (SLOTTING)
ETG1202	37	115	2800~3300	400~700	24	0.05~0.12	側銑 (SIDE MILLING)
ETG1202	37	115	2800~3300	800~1200	24	0.5~0.7	側銑 (SIDE MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETG0102	14	30	9000~10000	700~1000	0.03~0.05	1	溝銑 (SLOTTING)
ETG0102	14	30	9000~10000	700~1000	0.06~0.08	1	溝銑 (SLOTTING)
ETG0102	14	30	9000~10000	500~700	1	0.03~0.05	側銑 (SIDE MILLING)
ETG0102	14	30	9000~10000	400~700	1	0.06~0.08	側銑 (SIDE MILLING)

ETG2T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETG0152	14	45	9000~10000	700~1000	0.03~0.05	1.5	溝銑 (SLOTTING)
ETG0152	14	45	9000~10000	700~1000	0.06~0.09	1.5	溝銑 (SLOTTING)
ETG0152	14	45	9000~10000	500~800	1.5	0.03~0.05	側銑 (SIDE MILLING)
ETG0152	14	45	9000~10000	500~800	1.5	0.06~0.09	側銑 (SIDE MILLING)
ETG0202	16	55	8700~9200	700~1000	0.04~0.06	2	溝銑 (SLOTTING)
ETG0202	16	55	8700~9200	800~1200	0.07~0.12	2	溝銑 (SLOTTING)
ETG0202	16	55	8700~9200	700~1000	2	0.04~0.06	側銑 (SIDE MILLING)
ETG0202	16	55	8700~9200	600~800	4	0.07~0.12	側銑 (SIDE MILLING)
ETG0252	16	65	8000~8500	700~1000	0.04~0.06	2.5	溝銑 (SLOTTING)
ETG0252	16	65	8000~8500	800~1200	0.07~0.12	2.5	溝銑 (SLOTTING)
ETG0252	16	65	8000~8500	700~1000	2.5	0.04~0.06	側銑 (SIDE MILLING)
ETG0252	16	65	8000~8500	800~1000	5	0.07~0.12	側銑 (SIDE MILLING)
ETG0302	18	75	7500~8000	700~1000	0.05~0.1	3	溝銑 (SLOTTING)
ETG0302	18	75	7500~8000	800~1200	0.11~0.16	3	溝銑 (SLOTTING)
ETG0302	18	75	7500~8000	600~800	6	0.05~0.1	側銑 (SIDE MILLING)
ETG0302	18	75	7500~8000	700~1000	6	0.11~0.16	側銑 (SIDE MILLING)
ETG0402	20	75	5700~6200	700~1000	0.05~0.1	4	溝銑 (SLOTTING)
ETG0402	20	75	5700~6200	800~1200	0.11~0.18	4	溝銑 (SLOTTING)
ETG0402	20	75	5700~6200	700~900	8	0.05~0.1	側銑 (SIDE MILLING)
ETG0402	20	75	5700~6200	800~1200	8	0.11~0.18	側銑 (SIDE MILLING)
ETG0502	20	80	4800~5300	700~1000	0.05~0.1	5	溝銑 (SLOTTING)
ETG0502	20	80	4800~5300	800~1200	0.12~0.2	5	溝銑 (SLOTTING)
ETG0502	20	80	4800~5300	700~1000	10	0.05~0.1	側銑 (SIDE MILLING)
ETG0502	20	80	4800~5300	800~1200	10	0.12~0.2	側銑 (SIDE MILLING)
ETG0602	23	80	4000~4500	700~1000	0.05~0.1	6	溝銑 (SLOTTING)
ETG0602	23	80	4000~4500	700~1000	0.3~0.5	6	溝銑 (SLOTTING)
ETG0602	23	80	4000~4500	500~700	12	0.05~0.1	側銑 (SIDE MILLING)
ETG0602	23	80	4000~4500	700~1000	12	0.3~0.4	側銑 (SIDE MILLING)
ETG0802	30	75	2700~3200	700~1000	0.05~0.1	8	溝銑 (SLOTTING)
ETG0802	30	75	2700~3200	500~800	0.4~0.6	8	溝銑 (SLOTTING)
ETG0802	30	75	2700~3200	500~700	16	0.05~0.1	側銑 (SIDE MILLING)
ETG0802	30	75	2700~3200	1000~1400	16	0.4~0.5	側銑 (SIDE MILLING)
ETG1002	35	100	3000~3500	700~1000	0.05~0.12	10	溝銑 (SLOTTING)
ETG1002	35	75	2200~2700	500~800	0.5~0.7	10	溝銑 (SLOTTING)
ETG1002	35	100	3000~3500	400~600	20	0.05~0.12	側銑 (SIDE MILLING)
ETG1002	35	70	2000~2500	700~1100	20	0.4~0.5	側銑 (SIDE MILLING)
ETG1202	37	105	2500~3000	700~1000	0.05~0.12	12	溝銑 (SLOTTING)
ETG1202	37	85	2000~2500	400~700	0.5~0.7	12	溝銑 (SLOTTING)
ETG1202	37	115	2800~3300	400~600	24	0.05~0.12	側銑 (SIDE MILLING)
ETG1202	37	115	2800~3300	800~1200	24	0.5~0.7	側銑 (SIDE MILLING)

ETG 4T

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETG0104	9	65	19000~20000	1100~1300	0.03~0.04	0.7~1	溝銑 (SLOTTING)
ETG0104	9	65	19000~20000	600~900	0.05~0.08	1	溝銑 (SLOTTING)
ETG0104	9	65	19000~20000	800~1100	1~2	0.03~0.04	側銑 (SIDE MILLING)
ETG0104	9	65	19000~20000	600~900	1~2	0.05~0.08	側銑 (SIDE MILLING)
ETG0154	9	80	16000~17000	1100~1300	0.03~0.05	1~1.5	溝銑 (SLOTTING)
ETG0154	9	80	16000~17000	600~900	0.06~0.09	1.5	溝銑 (SLOTTING)
ETG0154	9	80	16000~17000	800~1100	1.5~3	0.03~0.05	側銑 (SIDE MILLING)
ETG0154	9	80	16000~17000	600~900	1.5~3	0.06~0.09	側銑 (SIDE MILLING)
ETG0204	11	95	14000~15000	1100~1300	0.04~0.06	1.5~2	溝銑 (SLOTTING)
ETG0204	11	95	14000~15000	600~900	0.08~0.13	2	溝銑 (SLOTTING)
ETG0204	11	95	14000~15000	800~1100	2~4	0.04~0.06	側銑 (SIDE MILLING)
ETG0204	11	95	14000~15000	600~900	2~4	0.08~0.13	側銑 (SIDE MILLING)
ETG0254	12	100	12000~13000	1100~1300	0.04~0.06	2~2.5	溝銑 (SLOTTING)
ETG0254	12	100	12000~13000	600~900	0.08~0.13	2.5	溝銑 (SLOTTING)
ETG0254	12	100	12000~13000	800~1100	2.5~5	0.04~0.06	側銑 (SIDE MILLING)
ETG0254	12	100	12000~13000	600~900	2.5~5	0.08~0.13	側銑 (SIDE MILLING)
ETG0304	15	110	11500~12500	1100~1300	0.04~0.07	2.5~3	溝銑 (SLOTTING)
ETG0304	15	110	11500~12500	800~1100	0.1~0.18	3	溝銑 (SLOTTING)
ETG0304	15	110	11500~12500	800~1100	3~6	0.04~0.07	側銑 (SIDE MILLING)
ETG0304	15	110	11500~12500	800~1100	3~6	0.1~0.18	側銑 (SIDE MILLING)
ETG0404	16	120	9000~10000	1100~1300	0.04~0.07	3~4	溝銑 (SLOTTING)
ETG0404	16	120	9000~10000	800~1100	0.12~0.2	4	溝銑 (SLOTTING)
ETG0404	16	120	9000~10000	800~1100	4~8	0.04~0.07	側銑 (SIDE MILLING)
ETG0404	16	120	9000~10000	900~1200	4~8	0.12~0.2	側銑 (SIDE MILLING)
ETG0504	19	125	7500~8500	1100~1300	0.05~0.08	4~5	溝銑 (SLOTTING)
ETG0504	19	125	7500~8500	800~1100	0.2~0.3	5	溝銑 (SLOTTING)
ETG0504	19	125	7500~8500	800~1100	5~10	0.05~0.08	側銑 (SIDE MILLING)
ETG0504	19	125	7500~8500	1200~1500	5~10	0.2~0.3	側銑 (SIDE MILLING)
ETG0604	21	110	5500~6000	1100~1300	0.05~0.1	5~6	溝銑 (SLOTTING)
ETG0604	21	110	5500~6000	800~1100	0.3~0.5	6	溝銑 (SLOTTING)
ETG0604	21	110	5500~6000	800~1100	6~12	0.05~0.15	側銑 (SIDE MILLING)
ETG0604	21	110	5500~6000	1300~1500	6~12	0.3~0.5	側銑 (SIDE MILLING)
ETG0804	27	120	4500~5000	1000~1200	0.05~0.1	7~8	溝銑 (SLOTTING)
ETG0804	27	110	4200~4700	900~1200	0.4~0.6	8	溝銑 (SLOTTING)
ETG0804	27	110	4200~4700	800~1100	8~16	0.05~0.1	側銑 (SIDE MILLING)
ETG0804	27	110	4200~4700	1200~1400	8~16	0.4~0.6	側銑 (SIDE MILLING)
ETG1004	34	125	3800~4300	1000~1200	0.05~0.12	9~10	溝銑 (SLOTTING)
ETG1004	34	100	3000~3500	900~1200	0.5~0.7	10	溝銑 (SLOTTING)
ETG1004	34	100	3000~3500	900~1200	20	0.05~0.12	側銑 (SIDE MILLING)
ETG1004	34	100	3000~3500	900~1200	10	0.5~0.7	側銑 (SIDE MILLING)

ETG 4T

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵 : *Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETG1204	37	125	3000~3500	900~1100	0.05~0.15	11~12	溝銑 (SLOTTING)
ETG1204	37	100	2500~3000	500~700	0.7~1	12	溝銑 (SLOTTING)
ETG1204	37	100	2500~3000	600~900	12~24	0.05~0.15	側銑 (SIDE MILLING)
ETG1204	37	100	2500~3000	500~700	12	0.7~1	側銑 (SIDE MILLING)
ETG1604	50	125	2300~2800	500~800	0.05~0.15	15~16	溝銑 (SLOTTING)
ETG1604	50	100	1800~2200	500~700	0.5~1	16	溝銑 (SLOTTING)
ETG1604	50	100	1800~2200	350~550	16~32	0.05~0.15	側銑 (SIDE MILLING)
ETG1604	50	100	1800~2200	500~700	16	0.5~1	側銑 (SIDE MILLING)

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETG0104	9	65	19000~20000	1100~1300	0.03~0.04	0.7~1	溝銑 (SLOTTING)
ETG0104	9	65	19000~20000	600~900	0.05~0.08	1	溝銑 (SLOTTING)
ETG0104	9	65	19000~20000	800~1100	1~2	0.03~0.04	側銑 (SIDE MILLING)
ETG0104	9	65	19000~20000	600~900	1~2	0.05~0.08	側銑 (SIDE MILLING)
ETG0154	9	80	16000~17000	1100~1300	0.03~0.05	1~1.5	溝銑 (SLOTTING)
ETG0154	9	80	16000~17000	600~900	0.06~0.09	1.5	溝銑 (SLOTTING)
ETG0154	9	80	16000~17000	800~1100	1.5~3	0.03~0.05	側銑 (SIDE MILLING)
ETG0154	9	80	16000~17000	600~900	1.5~3	0.06~0.09	側銑 (SIDE MILLING)
ETG0204	11	90	13500~14500	1100~1300	0.04~0.06	1.5~2	溝銑 (SLOTTING)
ETG0204	11	90	13500~14500	600~900	0.08~0.13	2	溝銑 (SLOTTING)
ETG0204	11	90	13500~14500	800~1100	2~4	0.04~0.06	側銑 (SIDE MILLING)
ETG0204	11	90	13500~14500	600~900	2~4	0.08~0.13	側銑 (SIDE MILLING)
ETG0254	12	95	11500~12500	1100~1300	0.04~0.06	2~2.5	溝銑 (SLOTTING)
ETG0254	12	95	11500~12500	600~900	0.08~0.13	2.5	溝銑 (SLOTTING)
ETG0254	12	95	11500~12500	800~1100	2.5~5	0.04~0.06	側銑 (SIDE MILLING)
ETG0254	12	95	11500~12500	600~900	2.5~5	0.08~0.13	側銑 (SIDE MILLING)
ETG0304	15	105	11000~12000	1100~1300	0.04~0.07	2.5~3	溝銑 (SLOTTING)
ETG0304	15	105	11000~12000	800~1100	0.1~0.18	3	溝銑 (SLOTTING)
ETG0304	15	105	11000~12000	800~1100	3~6	0.04~0.07	側銑 (SIDE MILLING)
ETG0304	15	105	11000~12000	800~1100	3~6	0.1~0.18	側銑 (SIDE MILLING)
ETG0404	16	110	8500~9500	1100~1300	0.04~0.07	3~4	溝銑 (SLOTTING)
ETG0404	16	110	8500~9500	800~1100	0.12~0.2	4	溝銑 (SLOTTING)
ETG0404	16	110	8500~9500	800~1100	4~8	0.04~0.07	側銑 (SIDE MILLING)
ETG0404	16	110	8500~9500	900~1200	4~8	0.12~0.2	側銑 (SIDE MILLING)

ETG 4T

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETG0504	19	115	7000~8000	1100~1300	0.05~0.08	4~5	溝銑 (SLOTTING)
ETG0504	19	115	7000~8000	800~1100	0.2~0.3	5	溝銑 (SLOTTING)
ETG0504	19	115	7000~8000	800~1100	5~10	0.05~0.08	側銑 (SIDE MILLING)
ETG0504	19	115	7000~8000	1200~1500	5~10	0.2~0.3	側銑 (SIDE MILLING)
ETG0604	21	100	5000~5500	1100~1300	0.05~0.1	5~6	溝銑 (SLOTTING)
ETG0604	21	100	5000~5500	800~1100	0.3~0.5	6	溝銑 (SLOTTING)
ETG0604	21	100	5000~5500	600~800	6~12	0.05~0.15	側銑 (SIDE MILLING)
ETG0604	21	100	5000~5500	1100~1300	6~12	0.3~0.5	側銑 (SIDE MILLING)
ETG0804	27	120	4500~5000	1000~1200	0.05~0.1	7~8	溝銑 (SLOTTING)
ETG0804	27	105	4000~4500	900~1200	0.4~0.6	8	溝銑 (SLOTTING)
ETG0804	27	105	4000~4500	600~800	8~16	0.05~0.1	側銑 (SIDE MILLING)
ETG0804	27	105	4000~4500	1000~1200	8~16	0.4~0.6	側銑 (SIDE MILLING)
ETG1004	34	125	3800~4300	1000~1200	0.05~0.12	9~10	溝銑 (SLOTTING)
ETG1004	34	100	3000~3500	800~1000	0.5~0.7	10	溝銑 (SLOTTING)
ETG1004	34	100	3000~3500	600~800	20	0.05~0.12	側銑 (SIDE MILLING)
ETG1004	34	100	3000~3500	700~1000	10	0.5~0.7	側銑 (SIDE MILLING)
ETG1204	37	125	3000~3500	900~1100	0.05~0.15	11~12	溝銑 (SLOTTING)
ETG1204	37	100	2500~3000	500~700	0.7~1	12	溝銑 (SLOTTING)
ETG1204	37	100	2500~3000	600~900	12~24	0.05~0.15	側銑 (SIDE MILLING)
ETG1204	37	100	2500~3000	500~700	12	0.7~1	側銑 (SIDE MILLING)
ETG1604	50	125	2300~2800	500~800	0.05~0.15	15~16	溝銑 (SLOTTING)
ETG1604	50	95	1700~2100	400~600	0.5~1	16	溝銑 (SLOTTING)
ETG1604	50	95	1700~2100	350~550	16~32	0.05~0.15	側銑 (SIDE MILLING)
ETG1604	50	95	1700~2100	400~600	16	0.5~1	側銑 (SIDE MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETG0104	9	60	18000~19000	1100~1300	0.03~0.04	0.7~1	溝銑 (SLOTTING)
ETG0104	9	60	18000~19000	600~900	0.05~0.08	1	溝銑 (SLOTTING)
ETG0104	9	60	18000~19000	800~1100	1~2	0.03~0.04	側銑 (SIDE MILLING)
ETG0104	9	60	18000~19000	600~900	1~2	0.05~0.08	側銑 (SIDE MILLING)
ETG0154	9	80	16000~17000	1100~1300	0.03~0.05	1~1.5	溝銑 (SLOTTING)
ETG0154	9	75	15000~16000	600~900	0.06~0.09	1.5	溝銑 (SLOTTING)
ETG0154	9	80	16000~17000	800~1100	1.5~3	0.03~0.05	側銑 (SIDE MILLING)
ETG0154	9	75	15000~16000	600~900	1.5~3	0.06~0.09	側銑 (SIDE MILLING)

ETG4T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETG0204	11	80	13000~14000	1100~1300	0.04~0.06	1.5~2	溝銑 (SLOTTING)
ETG0204	11	80	13000~14000	600~900	0.08~0.13	2	溝銑 (SLOTTING)
ETG0204	11	80	13000~14000	800~1100	2~4	0.04~0.06	側銑 (SIDE MILLING)
ETG0204	11	80	13000~14000	600~900	2~4	0.08~0.13	側銑 (SIDE MILLING)
ETG0254	12	90	11000~12000	1100~1300	0.04~0.06	2~2.5	溝銑 (SLOTTING)
ETG0254	12	90	11000~12000	600~900	0.08~0.13	2.5	溝銑 (SLOTTING)
ETG0254	12	90	11000~12000	800~1100	2.5~5	0.04~0.06	側銑 (SIDE MILLING)
ETG0254	12	90	11000~12000	600~900	2.5~5	0.08~0.13	側銑 (SIDE MILLING)
ETG0304	15	100	10500~11500	1100~1300	0.04~0.07	2.5~3	溝銑 (SLOTTING)
ETG0304	15	100	10500~11500	700~1000	0.1~0.18	3	溝銑 (SLOTTING)
ETG0304	15	100	10500~11500	800~1100	3~6	0.04~0.07	側銑 (SIDE MILLING)
ETG0304	15	100	10500~11500	700~1000	3~6	0.1~0.18	側銑 (SIDE MILLING)
ETG0404	16	100	7500~8500	1000~1200	0.04~0.07	3~4	溝銑 (SLOTTING)
ETG0404	16	100	7500~8500	700~900	0.12~0.2	4	溝銑 (SLOTTING)
ETG0404	16	100	7500~8500	600~800	4~8	0.04~0.07	側銑 (SIDE MILLING)
ETG0404	16	100	7500~8500	700~900	4~8	0.12~0.2	側銑 (SIDE MILLING)
ETG0504	19	110	6500~7500	1000~1200	0.05~0.08	4~5	溝銑 (SLOTTING)
ETG0504	19	110	6500~7500	700~900	0.2~0.3	5	溝銑 (SLOTTING)
ETG0504	19	110	6500~7500	600~800	5~10	0.05~0.08	側銑 (SIDE MILLING)
ETG0504	19	110	6500~7500	700~900	5~10	0.2~0.3	側銑 (SIDE MILLING)
ETG0604	21	100	5000~5500	1000~1200	0.05~0.1	5~6	溝銑 (SLOTTING)
ETG0604	21	100	5000~5500	700~900	0.3~0.5	6	溝銑 (SLOTTING)
ETG0604	21	100	5000~5500	600~800	6~12	0.05~0.15	側銑 (SIDE MILLING)
ETG0604	21	100	5000~5500	700~900	6~12	0.3~0.5	側銑 (SIDE MILLING)
ETG0804	27	120	4500~5000	1000~1200	0.05~0.1	7~8	溝銑 (SLOTTING)
ETG0804	27	105	4000~4500	500~700	0.4~0.6	8	溝銑 (SLOTTING)
ETG0804	27	105	4000~4500	600~800	8~16	0.05~0.1	側銑 (SIDE MILLING)
ETG0804	27	105	4000~4500	700~900	8~16	0.4~0.6	側銑 (SIDE MILLING)
ETG1004	34	120	3500~4000	1000~1200	0.05~0.12	9~10	溝銑 (SLOTTING)
ETG1004	34	100	3000~3500	600~800	0.5~0.7	10	溝銑 (SLOTTING)
ETG1004	34	100	3000~3500	600~800	20	0.05~0.12	側銑 (SIDE MILLING)
ETG1004	34	100	3000~3500	600~800	10	0.5~0.7	側銑 (SIDE MILLING)
ETG1204	37	110	2800~3300	800~1000	0.05~0.15	11~12	溝銑 (SLOTTING)
ETG1204	37	80	2200~2600	300~500	0.7~1	12	溝銑 (SLOTTING)
ETG1204	37	80	2200~2600	500~800	12~24	0.05~0.15	側銑 (SIDE MILLING)
ETG1204	37	80	2200~2600	300~500	12	0.7~1	側銑 (SIDE MILLING)
ETG1604	50	110	2000~2500	400~600	0.05~0.15	15~16	溝銑 (SLOTTING)
ETG1604	50	85	1500~1900	300~500	0.5~1	16	溝銑 (SLOTTING)
ETG1604	50	85	1500~1900	300~500	16~32	0.05~0.15	側銑 (SIDE MILLING)
ETG1604	50	85	1500~1900	300~500	16	0.5~1	側銑 (SIDE MILLING)

HEA IEA^{2T} / HEH IEH^{2T} 切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
HEA IEA^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
HEH IEH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
HEA HEH 0302	30	50	5000~5500	500~700	0.03~0.04	3	溝銑 (SLOTTING)
0302	30	50	5000~5500	600~800	0.05~0.08	3	溝銑 (SLOTTING)
0302	30	45	4500~5000	250~450	3~6	0.02~0.03	側銑 (SIDE MILLING)
0302	30	45	4500~5000	400~600	3~6	0.04~0.07	側銑 (SIDE MILLING)
HEA HEH 0402	40	40	3000~3500	500~700	0.03~0.05	4	溝銑 (SLOTTING)
0402	40	40	3000~3500	600~800	0.06~0.09	4	溝銑 (SLOTTING)
0402	40	35	2600~3000	250~450	4~8	0.03~0.05	側銑 (SIDE MILLING)
0402	40	35	2600~3000	400~600	4~8	0.06~0.09	側銑 (SIDE MILLING)
HEA HEH 0502	35	80	5000~5500	500~700	0.04~0.06	4	溝銑 (SLOTTING)
0502	35	65	4000~4500	600~800	0.1~0.15	5	溝銑 (SLOTTING)
0502	35	60	3500~4000	250~450	5~10	0.04~0.06	側銑 (SIDE MILLING)
0502	35	60	3500~4000	400~600	5~10	0.1~0.15	側銑 (SIDE MILLING)
HEA HEH 0602	35	90	4500~5000	800~1000	0.04~0.07	5	溝銑 (SLOTTING)
0602	35	75	3800~4300	800~1000	0.1~0.2	6	溝銑 (SLOTTING)
0602	35	75	3800~4300	450~650	6~12	0.04~0.07	側銑 (SIDE MILLING)
0602	35	75	3800~4300	600~800	6~12	0.1~0.2	側銑 (SIDE MILLING)
HEA HEH 0802	42	70	2500~3000	700~900	0.05~0.08	7	溝銑 (SLOTTING)
0802	42	65	2400~2800	600~800	0.15~0.25	8	溝銑 (SLOTTING)
0802	42	65	2400~2800	500~700	8~16	0.05~0.08	側銑 (SIDE MILLING)
0802	42	65	2400~2800	600~800	8~16	0.15~0.25	側銑 (SIDE MILLING)
IEA IEH 0302	50	40	4000~4500	500~700	0.02~0.04	3	溝銑 (SLOTTING)
0302	50	35	3500~4000	250~450	3~6	0.02~0.04	溝銑 (SLOTTING)
IEA IEH 0402	50	40	3200~3600	500~700	0.03~0.04	4	側銑 (SIDE MILLING)
0402	50	35	2800~3200	250~450	4~8	0.02~0.04	側銑 (SIDE MILLING)
IEA IEH 0602	50	55	2600~3000	600~800	0.03~0.05	6	溝銑 (SLOTTING)
0602	50	45	2200~2600	400~600	6~12	0.03~0.05	溝銑 (SLOTTING)
IEA IEH 0802	60	70	2600~3000	700~900	0.04~006	8	側銑 (SIDE MILLING)
0802	60	55	1800~2200	400~600	8~16	0.04~006	側銑 (SIDE MILLING)
IEA IEH 1002	60	90	2600~3000	500~700	0.04~0.08	10	溝銑 (SLOTTING)
1002	60	65	1800~2200	350~550	10~20	0.04~0.08	溝銑 (SLOTTING)
IEA IEH 1202	60	90	2200~2600	600~800	0.05~0.1	12	側銑 (SIDE MILLING)
1202	60	65	1500~1900	300~500	12~24	0.05~0.1	側銑 (SIDE MILLING)

HEA IEA^{2T} / HEH IEH^{2T} 切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
HEA IEA^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
HEH IEH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
HEA HEH 0302	30	40	4000~4500	500~700	0.03~0.04	3	溝銑 (SLOTTING)
0302	30	40	4000~4500	500~700	0.05~0.08	3	溝銑 (SLOTTING)
0302	30	35	3500~4000	250~400	3~6	0.02~0.03	側銑 (SIDE MILLING)
0302	30	35	3500~4000	400~500	3~6	0.04~0.07	側銑 (SIDE MILLING)
HEA HEH 0402	40	35	2800~3300	500~700	0.03~0.05	4	溝銑 (SLOTTING)
0402	40	35	2800~3300	500~700	0.06~0.09	4	溝銑 (SLOTTING)
0402	40	30	2500~2800	250~400	4~8	0.03~0.05	側銑 (SIDE MILLING)
0402	40	30	2500~2800	400~500	4~8	0.06~0.09	側銑 (SIDE MILLING)
HEA HEH 0502	35	80	5000~5500	500~700	0.04~0.06	4	溝銑 (SLOTTING)
0502	35	65	4000~4500	500~700	0.1~0.15	5	溝銑 (SLOTTING)
0502	35	60	3500~4000	250~400	5~10	0.04~0.06	側銑 (SIDE MILLING)
0502	35	60	3500~4000	400~500	5~10	0.1~0.15	側銑 (SIDE MILLING)
HEA HEH 0602	35	90	4500~5000	700~900	0.04~0.07	5	溝銑 (SLOTTING)
0602	35	70	3500~4000	700~900	0.1~0.2	6	溝銑 (SLOTTING)
0602	35	70	3500~4000	400~600	6~12	0.04~0.07	側銑 (SIDE MILLING)
0602	35	70	3500~4000	500~700	6~12	0.1~0.2	側銑 (SIDE MILLING)
HEA HEH 0802	42	70	2500~3000	600~800	0.05~0.08	7	溝銑 (SLOTTING)
0802	42	60	2200~2600	500~700	0.15~0.25	8	溝銑 (SLOTTING)
0802	42	60	2200~2600	400~600	8~16	0.05~0.08	側銑 (SIDE MILLING)
0802	42	60	2200~2600	500~700	8~16	0.15~0.25	側銑 (SIDE MILLING)
IEA IEH 0302	50	35	3500~4000	300~500	0.02~0.04	3	溝銑 (SLOTTING)
0302	50	30	3000~3500	200~400	3~6	0.02~0.04	溝銑 (SLOTTING)
IEA IEH 0402	50	35	2800~3200	300~500	0.03~0.04	4	側銑 (SIDE MILLING)
0402	50	30	2600~3000	200~400	4~8	0.02~0.04	側銑 (SIDE MILLING)
IEA IEH 0602	50	50	2500~2900	400~600	0.03~0.05	6	溝銑 (SLOTTING)
0602	50	45	2200~2600	250~400	6~12	0.03~0.05	溝銑 (SLOTTING)
IEA IEH 0802	60	70	2600~3000	550~750	0.04~006	8	側銑 (SIDE MILLING)
0802	60	50	1700~2100	300~450	8~16	0.04~006	側銑 (SIDE MILLING)
IEA IEH 1002	60	80	2400~2800	450~650	0.04~0.08	10	溝銑 (SLOTTING)
1002	60	55	1600~2000	300~500	10~20	0.04~0.08	溝銑 (SLOTTING)
IEA IEH 1202	60	85	2100~2500	600~800	0.05~0.1	12	側銑 (SIDE MILLING)
1202	60	60	1400~1800	250~450	12~24	0.05~0.1	側銑 (SIDE MILLING)

HEA IEA^{2T} / HEH IEH^{2T} 切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)

HEA IEA^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant	HEH IEH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
HEA HEH 0302	30	40	4000~4500	500~700	0.03~0.04	3	溝銑 (SLOTTING)
0302	30	35	3500~4000	500~700	0.05~0.08	3	溝銑 (SLOTTING)
0302	30	35	3500~4000	250~400	3~6	0.02~0.03	側銑 (SIDE MILLING)
0302	30	35	3500~4000	400~500	3~6	0.04~0.07	側銑 (SIDE MILLING)
HEA HEH 0402	40	35	2800~3300	500~700	0.03~0.05	4	溝銑 (SLOTTING)
0402	40	35	2800~3300	500~700	0.06~0.09	4	溝銑 (SLOTTING)
0402	40	30	2500~2800	250~400	4~8	0.03~0.05	側銑 (SIDE MILLING)
0402	40	30	2500~2800	400~500	4~8	0.06~0.09	側銑 (SIDE MILLING)
HEA HEH 0502	35	80	5000~5500	500~700	0.04~0.06	4	溝銑 (SLOTTING)
0502	35	60	3500~4000	500~700	0.1~0.15	5	溝銑 (SLOTTING)
0502	35	50	3000~3500	250~400	5~10	0.04~0.06	側銑 (SIDE MILLING)
0502	35	55	3300~3700	400~500	5~10	0.1~0.15	側銑 (SIDE MILLING)
HEA HEH 0602	35	90	4500~5000	700~900	0.04~0.07	5	溝銑 (SLOTTING)
0602	35	70	3500~4000	700~900	0.1~0.2	6	溝銑 (SLOTTING)
0602	35	65	3200~3600	400~600	6~12	0.04~0.07	側銑 (SIDE MILLING)
0602	35	65	3200~3600	500~700	6~12	0.1~0.2	側銑 (SIDE MILLING)
HEA HEH 0802	42	60	2200~2600	600~800	0.05~0.08	7	溝銑 (SLOTTING)
0802	42	50	1800~2300	500~700	0.15~0.25	8	溝銑 (SLOTTING)
0802	42	50	1800~2300	400~600	8~16	0.05~0.08	側銑 (SIDE MILLING)
0802	42	50	1800~2300	500~700	8~16	0.15~0.25	側銑 (SIDE MILLING)
IEA IEH 0302	50	35	3500~4000	300~500	0.02~0.04	3	溝銑 (SLOTTING)
0302	50	30	3000~3500	200~400	3~6	0.02~0.04	溝銑 (SLOTTING)
IEA IEH 0402	50	35	2800~3200	300~500	0.03~0.04	4	側銑 (SIDE MILLING)
0402	50	30	2600~3000	200~400	4~8	0.02~0.04	側銑 (SIDE MILLING)
IEA IEH 0602	50	45	2300~2700	400~600	0.03~0.05	6	溝銑 (SLOTTING)
0602	50	40	2000~2400	250~400	6~12	0.03~0.05	溝銑 (SLOTTING)
IEA IEH 0802	60	60	1800~2200	550~750	0.04~006	8	側銑 (SIDE MILLING)
0802	60	50	1700~2100	300~450	8~16	0.04~006	側銑 (SIDE MILLING)
IEA IEH 1002	60	70	2200~2600	450~650	0.04~0.08	10	溝銑 (SLOTTING)
1002	60	50	1400~1800	300~500	10~20	0.04~0.08	溝銑 (SLOTTING)
IEA IEH 1202	60	80	1900~2300	600~800	0.05~0.1	12	側銑 (SIDE MILLING)
1202	60	60	1400~1800	250~450	12~24	0.05~0.1	側銑 (SIDE MILLING)

HEA IEA^{4T} / HEH IEH^{4T} 切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
HEA IEA^{4T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
HEH IEH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
HEA HEH 0304	15	115	12000~13000	1100~1300	0.04~0.08	2.5	溝銑 (SLOTTING)
0304	15	90	9000~10000	800~1100	0.1~0.2	3	溝銑 (SLOTTING)
0304	15	115	12000~13000	800~1100	3~6	0.04~0.08	側銑 (SIDE MILLING)
0304	15	90	9000~10000	800~1100	3	0.1~0.2	側銑 (SIDE MILLING)
0304	30	50	5000~5500	500~700	0.02~0.04	2	溝銑 (SLOTTING)
0304	30	50	5000~5500	800~1000	0.05~0.08	3	溝銑 (SLOTTING)
0304	30	45	4500~5000	250~450	3~6	0.02~0.04	側銑 (SIDE MILLING)
0304	30	45	4500~5000	500~700	3	0.05~0.08	側銑 (SIDE MILLING)
HEA HEH 0404	16	120	9000~10000	1100~1300	0.03~0.06	3~4	溝銑 (SLOTTING)
0404	16	120	9000~10000	800~1100	0.2~0.3	4	溝銑 (SLOTTING)
0404	16	120	9000~10000	800~1100	4~8	0.03~0.06	側銑 (SIDE MILLING)
0404	16	120	9000~10000	900~1200	4~8	0.2~0.3	側銑 (SIDE MILLING)
0404	40	40	3000~3500	500~700	0.03~0.05	3	溝銑 (SLOTTING)
0404	40	40	3000~3500	800~1000	0.06~0.1	4	溝銑 (SLOTTING)
0404	40	35	2600~3000	250~450	4~8	0.03~0.05	側銑 (SIDE MILLING)
0404	40	35	2600~3000	500~700	4	0.06~0.1	側銑 (SIDE MILLING)
HEA HEH 0504	19	125	7500~8500	1100~1300	0.04~0.07	4~5	溝銑 (SLOTTING)
0504	19	125	7500~8500	800~1100	0.3~0.4	5	溝銑 (SLOTTING)
0504	19	125	7500~8500	800~1100	5~10	0.04~0.07	側銑 (SIDE MILLING)
0504	19	125	7500~8500	1200~1500	5~10	0.3~0.4	側銑 (SIDE MILLING)
0504	35	80	5000~5500	500~700	0.04~0.06	4	溝銑 (SLOTTING)
0504	35	65	4000~4500	800~1000	0.07~0.13	5	溝銑 (SLOTTING)
0504	35	60	3500~4000	250~450	5~10	0.04~0.06	側銑 (SIDE MILLING)
0504	35	60	3500~4000	600~800	5	0.07~0.13	側銑 (SIDE MILLING)
HEA HEH 0604	21	110	5500~6000	1100~1300	0.05~0.1	5~6	溝銑 (SLOTTING)
0604	21	110	5500~6000	800~1100	0.4~0.5	6	溝銑 (SLOTTING)
0604	21	110	5500~6000	800~1100	6~12	0.05~0.1	側銑 (SIDE MILLING)
0604	21	110	5500~6000	1300~1500	6~12	0.4~0.5	側銑 (SIDE MILLING)
0604	35	90	4500~5000	800~1000	0.05~0.08	5	溝銑 (SLOTTING)
0604	35	75	3800~4300	1300~1500	0.1~0.2	6	溝銑 (SLOTTING)
0604	35	75	3800~4300	450~650	6~12	0.05~0.08	側銑 (SIDE MILLING)
0604	35	75	3800~4300	700~900	6	0.1~0.2	側銑 (SIDE MILLING)
HEA HEH 0804	27	120	4500~5000	1000~1200	0.05~0.1	7~8	溝銑 (SLOTTING)
0804	27	110	4200~4700	900~1200	0.5~0.6	8	溝銑 (SLOTTING)
0804	27	110	4200~4700	800~1100	8~16	0.05~0.1	側銑 (SIDE MILLING)
0804	27	110	4200~4700	1400~1600	8~16	0.5~0.6	側銑 (SIDE MILLING)
0804	42	70	2500~3000	700~900	0.05~0.1	7	溝銑 (SLOTTING)
0804	42	65	2400~2800	700~900	0.2~0.3	8	溝銑 (SLOTTING)
0804	42	65	2400~2800	500~700	8~16	0.05~0.1	側銑 (SIDE MILLING)
0804	42	65	2400~2800	700~900	8	0.2~0.3	側銑 (SIDE MILLING)

HEA IEA^{4T} / HEH IEH^{4T} 切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
HEA IEA^{4T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
HEH IEH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
IEA IEH 0404	50	40	3200~3600	500~700	0.03~0.05	3	溝銑 (SLOTTING)
0404	50	40	3200~3600	700~900	0.06~0.08	4	溝銑 (SLOTTING)
0404	50	35	2800~3200	250~450	4~8	0.03~0.05	側銑 (SIDE MILLING)
0404	50	35	2800~3200	400~600	4~8	0.06~0.08	側銑 (SIDE MILLING)
IEA IEH 0604	50	55	2600~3000	600~800	0.04~0.06	5	溝銑 (SLOTTING)
0604	50	55	2600~3000	1000~1200	0.07~0.13	6	溝銑 (SLOTTING)
0604	50	45	2200~2600	400~600	6~12	0.04~0.06	側銑 (SIDE MILLING)
0604	50	45	2200~2600	500~700	6~12	0.07~0.13	側銑 (SIDE MILLING)
IEA IEH 0804	60	70	2600~3000	700~900	0.05~0.1	7	溝銑 (SLOTTING)
0804	60	70	2600~3000	800~1000	0.1~0.2	8	溝銑 (SLOTTING)
0804	60	55	1800~2200	400~600	8~16	0.05~0.1	側銑 (SIDE MILLING)
0804	60	55	1800~2200	600~800	8	0.1~0.2	側銑 (SIDE MILLING)
IEA IEH 1004	60	90	2600~3000	500~700	0.05~0.1	9	溝銑 (SLOTTING)
1004	60	80	2400~2800	700~900	0.15~0.25	10	溝銑 (SLOTTING)
1004	60	65	1800~2200	350~550	10	0.05~0.1	側銑 (SIDE MILLING)
1004	60	65	1800~2200	700~900	10	0.15~0.25	側銑 (SIDE MILLING)
IEA IEH 1204	60	90	2200~2600	600~800	0.05~0.12	11	溝銑 (SLOTTING)
1204	60	85	2100~2500	700~900	0.2~0.3	12	溝銑 (SLOTTING)
1204	60	65	1500~1900	300~500	12~24	0.05~0.12	側銑 (SIDE MILLING)
1204	60	65	1500~1900	600~800	12~24	0.2~0.3	側銑 (SIDE MILLING)

HEA IEA^{4T} / HEH IEH^{4T} 切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
HEA IEA^{4T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
HEH IEH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
HEA HEH 0304	15	115	12000~13000	1100~1300	0.04~0.08	2.5	溝銑 (SLOTTING)
0304	15	90	9000~10000	800~1100	0.1~0.2	3	溝銑 (SLOTTING)
0304	15	105	11000~12000	800~1100	3~6	0.04~0.08	側銑 (SIDE MILLING)
0304	15	90	9000~10000	800~1100	3	0.1~0.2	側銑 (SIDE MILLING)
0304	30	40	4000~4500	500~700	0.02~0.04	2	溝銑 (SLOTTING)
0304	30	40	4000~4500	800~1000	0.05~0.08	3	溝銑 (SLOTTING)
0304	30	35	3500~4000	250~450	3~6	0.02~0.04	側銑 (SIDE MILLING)
0304	30	35	3500~4000	400~600	3	0.05~0.08	側銑 (SIDE MILLING)
HEA HEH 0404	16	110	8500~9500	1100~1300	0.03~0.06	3~4	溝銑 (SLOTTING)
0404	16	110	8500~9500	800~1100	0.2~0.3	4	溝銑 (SLOTTING)
0404	16	110	8500~9500	800~1100	4~8	0.03~0.06	側銑 (SIDE MILLING)
0404	16	110	8500~9500	900~1200	4~8	0.2~0.3	側銑 (SIDE MILLING)
0404	40	35	2800~3300	300~500	0.03~0.05	3	溝銑 (SLOTTING)
0404	40	35	2800~3300	500~700	0.06~0.1	4	溝銑 (SLOTTING)
0404	40	30	2500~2800	200~400	4~8	0.03~0.05	側銑 (SIDE MILLING)
0404	40	30	2500~2800	400~600	4	0.06~0.1	側銑 (SIDE MILLING)
HEA HEH 0504	19	115	7000~8000	1100~1300	0.04~0.07	4~5	溝銑 (SLOTTING)
0504	19	115	7000~8000	800~1100	0.3~0.4	5	溝銑 (SLOTTING)
0504	19	115	7000~8000	800~1100	5~10	0.04~0.07	側銑 (SIDE MILLING)
0504	19	115	7000~8000	1200~1500	5~10	0.3~0.4	側銑 (SIDE MILLING)
0504	35	80	5000~5500	500~700	0.04~0.06	4	溝銑 (SLOTTING)
0504	35	65	4000~4500	700~900	0.07~0.13	5	溝銑 (SLOTTING)
0504	35	60	3500~4000	250~450	5~10	0.04~0.06	側銑 (SIDE MILLING)
0504	35	60	3500~4000	500~700	5	0.07~0.13	側銑 (SIDE MILLING)
HEA HEH 0604	21	100	5000~5500	1100~1300	0.05~0.1	5~6	溝銑 (SLOTTING)
0604	21	100	5000~5500	800~1100	0.4~0.5	6	溝銑 (SLOTTING)
0604	21	100	5000~5500	600~800	6~12	0.05~0.1	側銑 (SIDE MILLING)
0604	21	100	5000~5500	1100~1300	6~12	0.4~0.5	側銑 (SIDE MILLING)
0604	35	90	4500~5000	800~1000	0.05~0.08	5	溝銑 (SLOTTING)
0604	35	70	3500~4000	1200~1400	0.1~0.2	6	溝銑 (SLOTTING)
0604	35	70	3500~4000	450~650	6~12	0.05~0.08	側銑 (SIDE MILLING)
0604	35	70	3500~4000	600~800	6	0.1~0.2	側銑 (SIDE MILLING)
HEA HEH 0804	27	120	4500~5000	1000~1200	0.05~0.1	7~8	溝銑 (SLOTTING)
0804	27	105	4000~4500	900~1200	0.5~0.6	8	溝銑 (SLOTTING)
0804	27	105	4000~4500	600~800	8~16	0.05~0.1	側銑 (SIDE MILLING)
0804	27	105	4000~4500	1200~1400	8~16	0.5~0.6	側銑 (SIDE MILLING)
0804	42	70	2500~3000	600~800	0.05~0.1	7	溝銑 (SLOTTING)
0804	42	60	2200~2600	600~800	0.2~0.3	8	溝銑 (SLOTTING)
0804	42	60	2200~2600	400~600	8~16	0.05~0.1	側銑 (SIDE MILLING)
0804	42	60	2200~2600	600~800	8	0.2~0.3	側銑 (SIDE MILLING)

HEA IEA^{4T} / HEH IEH^{4T} 切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
HEA IEA^{4T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
HEH IEH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
IEA IEH 0404	50	35	2800~3200	300~500	0.03~0.05	3	溝銑 (SLOTTING)
0404	50	35	2800~3200	500~700	0.06~0.08	4	溝銑 (SLOTTING)
0404	50	30	2600~3000	200~400	4~8	0.03~0.05	側銑 (SIDE MILLING)
0404	50	30	2600~3000	300~500	4~8	0.06~0.08	側銑 (SIDE MILLING)
IEA IEH 0604	50	50	2500~2900	400~600	0.04~0.06	5	溝銑 (SLOTTING)
0604	50	50	2500~2900	700~900	0.07~0.13	6	溝銑 (SLOTTING)
0604	50	45	2200~2600	250~400	6~12	0.04~0.06	側銑 (SIDE MILLING)
0604	50	45	2200~2600	400~600	6~12	0.07~0.13	側銑 (SIDE MILLING)
IEA IEH 0804	60	70	2600~3000	550~750	0.05~0.1	7	溝銑 (SLOTTING)
0804	60	70	2600~3000	700~900	0.1~0.2	8	溝銑 (SLOTTING)
0804	60	50	1700~2100	300~450	8~16	0.05~0.1	側銑 (SIDE MILLING)
0804	60	50	1700~2100	700~900	8	0.1~0.2	側銑 (SIDE MILLING)
IEA IEH 1004	60	80	2400~2800	450~650	0.05~0.1	9	溝銑 (SLOTTING)
1004	60	70	2200~2600	600~800	0.15~0.25	10	溝銑 (SLOTTING)
1004	60	55	1600~2000	300~500	10	0.05~0.1	側銑 (SIDE MILLING)
1004	60	55	1600~2000	500~700	10	0.15~0.25	側銑 (SIDE MILLING)
IEA IEH 1204	60	85	2100~2500	600~800	0.05~0.12	11	溝銑 (SLOTTING)
1204	60	85	2100~2500	600~800	0.2~0.3	12	溝銑 (SLOTTING)
1204	60	60	1400~1800	250~450	12~24	0.05~0.12	側銑 (SIDE MILLING)
1204	60	60	1400~1800	500~700	12~24	0.2~0.3	側銑 (SIDE MILLING)

HEA IEA^{4T} / HEH IEH^{4T} 切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
HEA IEA^{4T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
HEH IEH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
HEA HEH 0304	15	105	11000~12000	1100~1300	0.04~0.08	2.5	溝銑 (SLOTTING)
0304	15	80	8000~9000	700~1000	0.1~0.2	3	溝銑 (SLOTTING)
0304	15	95	9500~10500	800~1100	3~6	0.04~0.08	側銑 (SIDE MILLING)
0304	15	80	8000~9000	700~1000	3	0.1~0.2	側銑 (SIDE MILLING)
0304	30	40	4000~4500	500~700	0.02~0.04	2	溝銑 (SLOTTING)
0304	30	35	3500~4000	700~900	0.05~0.08	3	溝銑 (SLOTTING)
0304	30	35	3500~4000	250~450	3~6	0.02~0.04	側銑 (SIDE MILLING)
0304	30	35	3500~4000	400~500	3	0.05~0.08	側銑 (SIDE MILLING)
HEA HEH 0404	16	100	7500~8500	1000~1200	0.03~0.06	3~4	溝銑 (SLOTTING)
0404	16	100	7500~8500	700~900	0.2~0.3	4	溝銑 (SLOTTING)
0404	16	100	7500~8500	600~800	4~8	0.03~0.06	側銑 (SIDE MILLING)
0404	16	100	7500~8500	700~900	4~8	0.2~0.3	側銑 (SIDE MILLING)
0404	40	35	2800~3300	300~500	0.03~0.05	3	溝銑 (SLOTTING)
0404	40	35	2800~3300	400~600	0.06~0.1	4	溝銑 (SLOTTING)
0404	40	30	2500~2800	200~400	4~8	0.03~0.05	側銑 (SIDE MILLING)
0404	40	30	2500~2800	300~500	4	0.06~0.1	側銑 (SIDE MILLING)
HEA HEH 0504	19	110	6500~7500	1000~1200	0.04~0.07	4~5	溝銑 (SLOTTING)
0504	19	110	6500~7500	700~900	0.3~0.4	5	溝銑 (SLOTTING)
0504	19	110	6500~7500	600~800	5~10	0.04~0.07	側銑 (SIDE MILLING)
0504	19	110	6500~7500	700~900	5~10	0.3~0.4	側銑 (SIDE MILLING)
0504	35	80	5000~5500	500~700	0.04~0.06	4	溝銑 (SLOTTING)
0504	35	60	3500~4000	700~900	0.07~0.13	5	溝銑 (SLOTTING)
0504	35	50	3000~3500	250~450	5~10	0.04~0.06	側銑 (SIDE MILLING)
0504	35	55	3300~3700	400~600	5	0.07~0.13	側銑 (SIDE MILLING)
HEA HEH 0604	21	100	5000~5500	1000~1200	0.05~0.1	5~6	溝銑 (SLOTTING)
0604	21	100	5000~5500	700~900	0.4~0.5	6	溝銑 (SLOTTING)
0604	21	100	5000~5500	600~800	6~12	0.05~0.1	側銑 (SIDE MILLING)
0604	21	100	5000~5500	700~900	6~12	0.4~0.5	側銑 (SIDE MILLING)
0604	35	90	4500~5000	800~1000	0.05~0.08	5	溝銑 (SLOTTING)
0604	35	70	3500~4000	1100~1300	0.1~0.2	6	溝銑 (SLOTTING)
0604	35	65	3200~3600	450~650	6~12	0.05~0.08	側銑 (SIDE MILLING)
0604	35	65	3200~3600	500~700	6	0.1~0.2	側銑 (SIDE MILLING)
HEA HEH 0804	27	120	4500~5000	1000~1200	0.05~0.1	7~8	溝銑 (SLOTTING)
0804	27	105	4000~4500	500~700	0.5~0.6	8	溝銑 (SLOTTING)
0804	27	105	4000~4500	600~800	8~16	0.05~0.1	側銑 (SIDE MILLING)
0804	27	105	4000~4500	500~700	8~16	0.5~0.6	側銑 (SIDE MILLING)
0804	42	60	2200~2600	600~800	0.05~0.1	7	溝銑 (SLOTTING)
0804	42	50	1800~2300	600~800	0.2~0.3	8	溝銑 (SLOTTING)
0804	42	50	1800~2300	400~600	8~16	0.05~0.1	側銑 (SIDE MILLING)
0804	42	50	1800~2300	500~700	8	0.2~0.3	側銑 (SIDE MILLING)

HEA IEA^{4T} / HEH IEH^{4T} 切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
HEA IEA^{4T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
HEH IEH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
IEA IEH 0404	50	35	2800~3200	300~500	0.03~0.05	3	溝銑 (SLOTTING)
0404	50	35	2800~3200	400~600	0.06~0.08	4	溝銑 (SLOTTING)
0404	50	30	2600~3000	200~400	4~8	0.03~0.05	側銑 (SIDE MILLING)
0404	50	30	2600~3000	300~400	4~8	0.06~0.08	側銑 (SIDE MILLING)
IEA IEH 0604	50	45	2300~2700	400~600	0.04~0.06	5	溝銑 (SLOTTING)
0604	50	45	2300~2700	600~800	0.07~0.13	6	溝銑 (SLOTTING)
0604	50	40	2000~2400	250~400	6~12	0.04~0.06	側銑 (SIDE MILLING)
0604	50	40	2000~2400	300~500	6~12	0.07~0.13	側銑 (SIDE MILLING)
IEA IEH 0804	60	60	1800~2200	550~750	0.05~0.1	7	溝銑 (SLOTTING)
0804	60	60	1800~2200	600~800	0.1~0.2	8	溝銑 (SLOTTING)
0804	60	50	1700~2100	300~450	8~16	0.05~0.1	側銑 (SIDE MILLING)
0804	60	50	1700~2100	700~800	8	0.1~0.2	側銑 (SIDE MILLING)
IEA IEH 1004	60	70	2200~2600	450~650	0.05~0.1	9	溝銑 (SLOTTING)
1004	60	70	2200~2600	500~700	0.1~0.2	10	溝銑 (SLOTTING)
1004	60	50	1400~1800	300~500	10~20	0.05~0.1	側銑 (SIDE MILLING)
1004	60	50	1400~1800	450~650	10~20	0.1~0.2	側銑 (SIDE MILLING)
IEA IEH 1204	60	80	1900~2300	600~800	0.05~0.1	11	溝銑 (SLOTTING)
1204	60	75	1800~2200	500~700	0.1~0.2	12	溝銑 (SLOTTING)
1204	60	60	1400~1800	250~450	12~24	0.05~0.1	側銑 (SIDE MILLING)
1204	60	60	1400~1800	500~600	12~24	0.1~0.2	側銑 (SIDE MILLING)

LFTA^{2T} / LFTH^{2T} 切削條件表 Milling Conditions

被切削材 Work Material: 碳素鋼 / 鑄鐵 : *Carbon Steels / Cast Iron*
S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)

LFTA^{2T} 冷卻方式 Coolant Type: 乾式切削 Dry coolant | LFTH^{2T} 冷卻方式 Coolant Type: 濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LFTA LFTH 0202	20	50	7700~8200	500~700	6~12	0.02~0.03	側銑 (SIDE MILLING)
0202	20	50	7700~8200	500~700	6~12	0.05~0.08	側銑 (SIDE MILLING)
LFTA LFTH 0302	25	50	5000~5500	500~700	10~20	0.03~0.04	側銑 (SIDE MILLING)
0302	25	50	5000~5500	600~800	10~20	0.06~0.1	側銑 (SIDE MILLING)
LFTA 0302B	20	50	5000~5500	500~700	10~15	0.03~0.05	側銑 (SIDE MILLING)
0302B	20	50	5000~5500	700~900	10~15	0.06~0.1	側銑 (SIDE MILLING)
LFTA LFTH 0402	30	50	3700~4200	350~550	15~25	0.03~0.05	側銑 (SIDE MILLING)
0402	30	50	3700~4200	600~800	15~25	0.06~0.11	側銑 (SIDE MILLING)
LFTA 0402B	26	50	3700~4200	400~600	10~20	0.05~0.05	側銑 (SIDE MILLING)
0402B	26	50	3700~4200	700~900	10~20	0.06~0.11	側銑 (SIDE MILLING)
LFTA LFTH 0502	35	45	2700~3200	300~500	20~30	0.05~0.07	側銑 (SIDE MILLING)
0502	35	45	2700~3200	400~600	20~30	0.08~0.15	側銑 (SIDE MILLING)
LFTA LFTH 0602	35	45	2000~2500	300~500	20~30	0.05~0.08	側銑 (SIDE MILLING)
0602	35	45	2000~2500	400~600	20~30	0.1~0.2	側銑 (SIDE MILLING)
LFTA LFTH 0802	50	50	1800~2300	300~500	25~40	0.05~0.1	側銑 (SIDE MILLING)
0802	50	50	1800~2300	400~600	25~40	0.15~0.3	側銑 (SIDE MILLING)
LFTA LFTH 1002	50	60	1700~2200	300~450	25~40	0.05~0.1	側銑 (SIDE MILLING)
1002	50	60	1700~2200	400~600	25~40	0.2~0.35	側銑 (SIDE MILLING)
LFTA LFTH 1202	50	60	1300~1800	250~400	30~45	0.05~0.1	側銑 (SIDE MILLING)
1202	50	60	1300~1800	350~550	30~45	0.2~0.4	側銑 (SIDE MILLING)

被切削材 Work Material: 合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels*
P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)

LFTA^{2T} 冷卻方式 Coolant Type: 乾式切削 Dry coolant | LFTH^{2T} 冷卻方式 Coolant Type: 濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LFTA LFTH 0202	20	50	7700~8200	400~600	5~15	0.02~0.03	側銑 (SIDE MILLING)
0202	20	50	7700~8200	400~600	5~15	0.04~0.06	側銑 (SIDE MILLING)
LFTA LFTH 0302	25	50	5000~5500	450~650	10~20	0.03~0.04	側銑 (SIDE MILLING)
0302	25	50	5000~5500	300~500	10~20	0.06~0.1	側銑 (SIDE MILLING)
LFTA 0302B	20	50	5000~5500	450~650	10~15	0.03~0.05	側銑 (SIDE MILLING)
0302B	20	50	5000~5500	450~650	10~15	0.06~0.1	側銑 (SIDE MILLING)
LFTA LFTH 0402	30	50	3700~4200	350~550	15~25	0.03~0.05	側銑 (SIDE MILLING)
0402	30	50	3700~4200	500~700	15~25	0.06~0.11	側銑 (SIDE MILLING)
LFTA 0402B	26	50	3700~4200	400~600	10~20	0.05~0.05	側銑 (SIDE MILLING)
0402B	26	50	3700~4200	600~800	10~20	0.06~0.11	側銑 (SIDE MILLING)
LFTA LFTH 0502	35	45	2700~3200	300~500	20~30	0.05~0.07	側銑 (SIDE MILLING)
0502	35	45	2700~3200	400~500	20~30	0.08~0.15	側銑 (SIDE MILLING)

LFTA^{2T} / LFTH^{2T} 切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)

LFTA^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant	LFTH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LFTA LFTH 0602	35	45	2000~2500	300~450	20~30	0.05~0.08	側銑 (SIDE MILLING)
0602	35	45	2000~2500	400~600	20~30	0.1~0.2	側銑 (SIDE MILLING)
LFTA LFTH 0802	50	50	1800~2300	300~400	25~40	0.05~0.1	側銑 (SIDE MILLING)
0802	50	50	1800~2300	400~600	25~40	0.15~0.25	側銑 (SIDE MILLING)
LFTA LFTH 1002	50	60	1700~2200	300~450	25~40	0.05~0.1	側銑 (SIDE MILLING)
1002	50	60	1700~2200	400~600	25~40	0.2~0.3	側銑 (SIDE MILLING)
LFTA LFTH 1202	50	60	1300~1800	250~400	30~45	0.05~0.1	側銑 (SIDE MILLING)
1202	50	60	1300~1800	300~500	30~45	0.2~0.35	側銑 (SIDE MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)

LFTA^{2T} 冷卻方式 Coolant Type	乾式切削 Dry coolant	LFTH^{2T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LFTA LFTH 0202	20	50	7700~8200	400~550	5~15	0.02~0.03	側銑 (SIDE MILLING)
0202	20	50	7700~8200	400~550	5~15	0.04~0.06	側銑 (SIDE MILLING)
LFTA LFTH 0302	25	50	5000~5500	450~600	10~20	0.03~0.04	側銑 (SIDE MILLING)
0302	25	50	5000~5500	300~450	10~20	0.06~0.1	側銑 (SIDE MILLING)
LFTA 0302B	20	50	5000~5500	400~600	10~15	0.03~0.05	側銑 (SIDE MILLING)
0302B	20	50	5000~5500	400~600	10~15	0.06~0.1	側銑 (SIDE MILLING)
LFTA LFTH 0402	30	50	3700~4200	350~550	15~25	0.03~0.05	側銑 (SIDE MILLING)
0402	30	50	3700~4200	450~650	15~25	0.06~0.11	側銑 (SIDE MILLING)
LFTA 0402B	26	50	3700~4200	400~600	10~20	0.05~0.05	側銑 (SIDE MILLING)
0402B	26	50	3700~4200	550~750	10~20	0.06~0.11	側銑 (SIDE MILLING)
LFTA LFTH 0502	35	45	2700~3200	300~450	20~30	0.05~0.07	側銑 (SIDE MILLING)
0502	35	45	2700~3200	350~450	20~30	0.08~0.15	側銑 (SIDE MILLING)
LFTA LFTH 0602	35	45	2000~2500	300~450	20~30	0.05~0.08	側銑 (SIDE MILLING)
0602	35	45	2000~2500	400~550	20~30	0.1~0.2	側銑 (SIDE MILLING)
LFTA LFTH 0802	50	50	1800~2300	300~400	25~40	0.05~0.1	側銑 (SIDE MILLING)
0802	50	50	1800~2300	400~550	25~40	0.15~0.25	側銑 (SIDE MILLING)
LFTA LFTH 1002	50	60	1700~2200	300~450	25~40	0.05~0.1	側銑 (SIDE MILLING)
1002	50	60	1700~2200	400~550	25~40	0.2~0.3	側銑 (SIDE MILLING)
LFTA LFTH 1202	50	60	1300~1800	250~400	30~45	0.05~0.1	側銑 (SIDE MILLING)
1202	50	60	1300~1800	300~450	30~45	0.2~0.35	側銑 (SIDE MILLING)

LFTA^{4T} / LFTH^{4T}

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
LFTA^{4T} 冷卻方式 Coolant Type	乾式切削 Dry coolant
LFTH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LFTA LFTH 0204	20	65	10000~11000	700~900	5~15	0.03~0.04	側銑 (SIDE MILLING)
0204	20	65	10000~11000	600~800	5~15	0.05~0.08	側銑 (SIDE MILLING)
LFTA LFTH 0304	25	65	6800~7300	600~800	10~20	0.03~0.05	側銑 (SIDE MILLING)
0304	25	65	6800~7300	600~800	10~20	0.06~0.1	側銑 (SIDE MILLING)
LFTA 0304B	25	65	6800~7300	600~800	10~15	0.03~0.05	側銑 (SIDE MILLING)
0304B	25	65	6800~7300	700~900	10~15	0.06~0.12	側銑 (SIDE MILLING)
LFTA LFTH 0404	30	65	5100~5400	500~700	15~25	0.04~0.06	側銑 (SIDE MILLING)
0404	30	65	5100~5400	600~800	15~25	0.07~0.13	側銑 (SIDE MILLING)
LFTA 0404B	30	65	5100~5400	500~700	10~20	0.04~0.06	側銑 (SIDE MILLING)
0404B	30	65	5100~5400	700~900	10~20	0.07~0.13	側銑 (SIDE MILLING)
LFTA LFTH 0504	33	65	4000~4300	500~700	20~30	0.04~0.07	側銑 (SIDE MILLING)
0504	33	65	4000~4300	700~900	20~30	0.15~0.25	側銑 (SIDE MILLING)
LFTA LFTH 0604	33	65	3100~3400	400~600	20~30	0.04~0.08	側銑 (SIDE MILLING)
0604	33	65	3100~3400	700~900	20~30	0.2~0.3	側銑 (SIDE MILLING)
LFTA LFTH 0804	45	60	2300~2500	300~500	25~40	0.05~0.1	側銑 (SIDE MILLING)
0804	45	60	2300~2500	700~900	25~40	0.3~0.4	側銑 (SIDE MILLING)
LFTA LFTH 1004	47	80	2400~2700	300~500	25~40	0.05~0.1	側銑 (SIDE MILLING)
1004	47	80	2400~2700	700~900	25~40	0.3~0.5	側銑 (SIDE MILLING)
LFTA 1004L	55	80	2400~2700	300~500	25~50	0.05~0.1	側銑 (SIDE MILLING)
1004L	55	80	2400~2700	600~800	25~50	0.3~0.5	側銑 (SIDE MILLING)
LFTA LFTH 1204	50	90	2300~2600	300~500	30~45	0.05~0.12	側銑 (SIDE MILLING)
1204	50	85	2200~2400	600~800	30~45	0.3~0.5	側銑 (SIDE MILLING)
LFTA 1204L	50	90	2300~2600	300~500	30~50	0.05~0.12	側銑 (SIDE MILLING)
1204L	50	85	2200~2400	500~700	30~50	0.3~0.5	側銑 (SIDE MILLING)
LFTA LFTH 1604	75	85	1600~1800	300~450	40~60	0.05~0.12	側銑 (SIDE MILLING)
1604	75	85	1600~1800	500~700	40~60	0.4~0.6	側銑 (SIDE MILLING)
LFTA 1604L	85	85	1600~1800	250~400	40~60	0.05~0.12	側銑 (SIDE MILLING)
1604L	85	85	1600~1800	500~700	40~60	0.4~0.6	側銑 (SIDE MILLING)
LFTA LFTH 2004	70	85	1400~1600	250~400	40~60	0.05~0.12	側銑 (SIDE MILLING)
2004	70	85	1250~1500	500~700	40~60	0.4~0.6	側銑 (SIDE MILLING)
LFTA 2004L	85	85	1400~1600	200~350	40~60	0.05~0.12	側銑 (SIDE MILLING)
2004L	85	85	1250~1500	400~600	40~60	0.4~0.6	側銑 (SIDE MILLING)

LFTA^{4T} / LFTH^{4T} 切削條件表 Milling Conditions

被切削材 Work Material

合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels*
P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)

LFTA^{4T} 冷卻方式 Coolant Type 乾式切削 Dry coolant

LFTH^{4T} 冷卻方式 Coolant Type 濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LFTA LFTH 0204	20	60	9500~10000	700~900	5~15	0.03~0.04	側銑 (SIDE MILLING)
0204	20	60	9500~10000	500~700	5~15	0.05~0.08	側銑 (SIDE MILLING)
LFTA LFTH 0304	25	60	6300~6600	600~800	10~20	0.03~0.05	側銑 (SIDE MILLING)
0304	25	60	6300~6600	500~700	10~20	0.06~0.1	側銑 (SIDE MILLING)
LFTA 0304B	25	60	6300~6600	600~800	10~15	0.03~0.05	側銑 (SIDE MILLING)
0304B	25	60	6300~6600	500~700	10~15	0.06~0.12	側銑 (SIDE MILLING)
LFTA LFTH 0404	30	60	4700~5100	400~600	15~25	0.04~0.06	側銑 (SIDE MILLING)
0404	30	60	4700~5100	500~700	15~25	0.07~0.13	側銑 (SIDE MILLING)
LFTA 0404B	30	60	4700~5100	400~600	10~20	0.04~0.06	側銑 (SIDE MILLING)
0404B	30	60	4700~5100	600~800	10~20	0.07~0.13	側銑 (SIDE MILLING)
LFTA LFTH 0504	33	60	3700~4000	400~600	20~30	0.04~0.07	側銑 (SIDE MILLING)
0504	33	60	3700~4000	600~800	20~30	0.15~0.25	側銑 (SIDE MILLING)
LFTA LFTH 0604	33	55	2800~3100	300~500	20~30	0.04~0.08	側銑 (SIDE MILLING)
0604	33	60	3000~3300	600~800	20~30	0.2~0.3	側銑 (SIDE MILLING)
LFTA LFTH 0804	45	50	1700~2000	300~400	25~40	0.05~0.1	側銑 (SIDE MILLING)
0804	45	60	2300~2500	600~800	25~40	0.3~0.4	側銑 (SIDE MILLING)
LFTA LFTH 1004	47	80	2400~2700	300~500	25~40	0.05~0.1	側銑 (SIDE MILLING)
1004	47	75	2200~2400	600~800	25~40	0.3~0.5	側銑 (SIDE MILLING)
LFTA 1004L	55	80	2400~2700	300~500	25~50	0.05~0.1	側銑 (SIDE MILLING)
1004L	55	75	2200~2400	500~700	25~50	0.3~0.5	側銑 (SIDE MILLING)
LFTA LFTH 1204	50	90	2300~2600	300~500	30~45	0.05~0.12	側銑 (SIDE MILLING)
1204	50	85	2200~2400	500~700	30~45	0.3~0.5	側銑 (SIDE MILLING)
LFTA 1204L	50	90	2300~2600	300~500	30~50	0.05~0.12	側銑 (SIDE MILLING)
1204L	50	85	2200~2400	400~600	30~50	0.3~0.5	側銑 (SIDE MILLING)
LFTA LFTH 1604	75	85	1600~1800	300~450	40~60	0.05~0.12	側銑 (SIDE MILLING)
1604	75	85	1600~1800	400~600	40~60	0.4~0.6	側銑 (SIDE MILLING)
LFTA 1604L	85	85	1600~1800	250~400	40~60	0.05~0.12	側銑 (SIDE MILLING)
1604L	85	85	1600~1800	400~600	40~60	0.4~0.6	側銑 (SIDE MILLING)
LFTA LFTH 2004	70	85	1400~1600	250~400	40~60	0.05~0.12	側銑 (SIDE MILLING)
2004	70	85	1250~1500	400~600	40~60	0.4~0.6	側銑 (SIDE MILLING)
LFTA 2004L	85	85	1400~1600	200~350	40~60	0.05~0.12	側銑 (SIDE MILLING)
2004L	85	85	1250~1500	400~600	40~60	0.4~0.6	側銑 (SIDE MILLING)

LFTA4T / LFTH4T 切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
LFTA4T 冷卻方式 Coolant Type	乾式切削 Dry coolant
LFTH4T 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LFTA LFTH 0204	20	60	9500~10000	600~800	5~15	0.03~0.04	側銑 (SIDE MILLING)
0204	20	60	9500~10000	500~600	5~15	0.05~0.08	側銑 (SIDE MILLING)
LFTA LFTH 0304	25	60	6300~6600	400~600	10~20	0.03~0.05	側銑 (SIDE MILLING)
0304	25	60	6300~6600	500~600	10~20	0.06~0.1	側銑 (SIDE MILLING)
LFTA 0304B	25	60	6300~6600	500~700	10~15	0.03~0.05	側銑 (SIDE MILLING)
0304B	25	60	6300~6600	500~600	10~15	0.06~0.12	側銑 (SIDE MILLING)
LFTA LFTH 0404	30	60	4700~5100	300~500	15~25	0.04~0.06	側銑 (SIDE MILLING)
0404	30	60	4700~5100	500~600	15~25	0.07~0.13	側銑 (SIDE MILLING)
LFTA 0404B	30	60	4700~5100	400~600	10~20	0.04~0.06	側銑 (SIDE MILLING)
0404B	30	60	4700~5100	600~700	10~20	0.07~0.13	側銑 (SIDE MILLING)
LFTA LFTH 0504	33	60	3700~4000	300~500	20~30	0.04~0.07	側銑 (SIDE MILLING)
0504	33	60	3700~4000	600~700	20~30	0.15~0.25	側銑 (SIDE MILLING)
LFTA LFTH 0604	33	50	2400~2700	350~450	20~30	0.04~0.08	側銑 (SIDE MILLING)
0604	33	60	3000~3300	600~700	20~30	0.2~0.3	側銑 (SIDE MILLING)
LFTA LFTH 0804	45	50	1700~2000	300~400	25~40	0.05~0.1	側銑 (SIDE MILLING)
0804	45	60	2300~2500	600~700	25~40	0.3~0.4	側銑 (SIDE MILLING)
LFTA LFTH 1004	47	80	2400~2700	300~500	25~40	0.05~0.1	側銑 (SIDE MILLING)
1004	47	80	2400~2700	600~700	25~40	0.3~0.5	側銑 (SIDE MILLING)
LFTA 1004L	55	80	2400~2700	300~500	25~50	0.05~0.1	側銑 (SIDE MILLING)
1004L	55	80	2400~2700	500~600	25~50	0.3~0.4	側銑 (SIDE MILLING)
LFTA LFTH 1204	50	90	2300~2600	300~500	30~45	0.05~0.12	側銑 (SIDE MILLING)
1204	50	90	2300~2600	500~600	30~45	0.3~0.5	側銑 (SIDE MILLING)
LFTA 1204L	50	90	2300~2600	300~500	30~50	0.05~0.12	側銑 (SIDE MILLING)
1204L	50	90	2300~2600	400~500	30~50	0.3~0.4	側銑 (SIDE MILLING)
LFTA LFTH 1604	75	85	1600~1800	300~450	40~60	0.05~0.12	側銑 (SIDE MILLING)
1604	75	85	1600~1800	400~500	40~60	0.4~0.6	側銑 (SIDE MILLING)
LFTA 1604L	85	85	1600~1800	250~400	40~60	0.05~0.12	側銑 (SIDE MILLING)
1604L	85	85	1600~1800	400~500	40~60	0.4~0.5	側銑 (SIDE MILLING)
LFTA LFTH 2004	70	85	1400~1600	250~400	40~60	0.05~0.12	側銑 (SIDE MILLING)
2004	70	85	1250~1500	400~500	40~60	0.4~0.6	側銑 (SIDE MILLING)
LFTA 2004L	85	85	1400~1600	200~350	40~60	0.05~0.12	側銑 (SIDE MILLING)
2004L	85	85	1250~1500	400~500	40~60	0.4~0.6	側銑 (SIDE MILLING)

LFTA^{4T} / LFTH^{4T} 切削條件表 Milling Conditions

被切削材 Work Material

沃斯田鐵系不銹鋼：*Stainless Steels*
SUS304 : 1.4301 : AISI 304 (HRc28~32)

LFTA^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant	LFTH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LFTA LFTH 0204	20	60	9500~10000	600~800	5~15	0.03~0.04	側銑 (SIDE MILLING)
0204	20	60	9500~10000	500~600	5~15	0.05~0.08	側銑 (SIDE MILLING)
LFTA LFTH 0304	25	60	6300~6600	400~600	10~20	0.03~0.05	側銑 (SIDE MILLING)
0304	25	60	6300~6600	500~600	10~20	0.06~0.1	側銑 (SIDE MILLING)
LFTA 0304B	25	60	6300~6600	500~700	10~15	0.03~0.05	側銑 (SIDE MILLING)
0304B	25	60	6300~6600	500~600	10~15	0.06~0.12	側銑 (SIDE MILLING)
LFTA LFTH 0404	30	60	4700~5100	300~500	15~25	0.04~0.06	側銑 (SIDE MILLING)
0404	30	60	4700~5100	500~600	15~25	0.07~0.13	側銑 (SIDE MILLING)
LFTA 0404B	30	60	4700~5100	400~600	10~20	0.04~0.06	側銑 (SIDE MILLING)
0404B	30	60	4700~5100	600~700	10~20	0.07~0.13	側銑 (SIDE MILLING)
LFTA LFTH 0504	33	60	3700~4000	300~500	20~30	0.04~0.07	側銑 (SIDE MILLING)
0504	33	60	3700~4000	600~700	20~30	0.15~0.25	側銑 (SIDE MILLING)
LFTA LFTH 0604	33	50	2400~2700	350~450	20~30	0.04~0.08	側銑 (SIDE MILLING)
0604	33	60	3000~3300	600~700	20~30	0.2~0.3	側銑 (SIDE MILLING)
LFTA LFTH 0804	45	50	1700~2000	300~400	25~40	0.05~0.1	側銑 (SIDE MILLING)
0804	45	60	2300~2500	600~700	25~40	0.3~0.4	側銑 (SIDE MILLING)
LFTA LFTH 1004	47	80	2400~2700	300~500	25~40	0.05~0.1	側銑 (SIDE MILLING)
1004	47	80	2400~2700	600~700	25~40	0.3~0.5	側銑 (SIDE MILLING)
LFTA 1004L	55	80	2400~2700	300~500	25~50	0.05~0.1	側銑 (SIDE MILLING)
1004L	55	80	2400~2700	500~600	25~50	0.3~0.4	側銑 (SIDE MILLING)
LFTA LFTH 1204	50	90	2300~2600	300~500	30~45	0.05~0.12	側銑 (SIDE MILLING)
1204	50	90	2300~2600	500~600	30~45	0.3~0.5	側銑 (SIDE MILLING)
LFTA 1204L	50	90	2300~2600	300~500	30~50	0.05~0.12	側銑 (SIDE MILLING)
1204L	50	90	2300~2600	400~500	30~50	0.3~0.4	側銑 (SIDE MILLING)
LFTA LFTH 1604	75	85	1600~1800	300~450	40~60	0.05~0.12	側銑 (SIDE MILLING)
1604	75	85	1600~1800	400~500	40~60	0.4~0.6	側銑 (SIDE MILLING)
LFTA 1604L	85	85	1600~1800	250~400	40~60	0.05~0.12	側銑 (SIDE MILLING)
1604L	85	85	1600~1800	400~500	40~60	0.4~0.5	側銑 (SIDE MILLING)
LFTA LFTH 2004	70	85	1400~1600	250~400	40~60	0.05~0.12	側銑 (SIDE MILLING)
2004	70	85	1250~1500	400~500	40~60	0.4~0.6	側銑 (SIDE MILLING)
LFTA 2004L	85	85	1400~1600	200~350	40~60	0.05~0.12	側銑 (SIDE MILLING)
2004L	85	85	1250~1500	400~500	40~60	0.4~0.6	側銑 (SIDE MILLING)

LFTA^{4T} / LFTH^{4T} 切削條件表 Milling Conditions

被切削材 Work Material	紅銅：*Copper* C1100 / 2.0090 /B152C11000						
LFTA^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant			LFTH^{4T} 冷卻方式 Coolant Type	濕式切削 Wet coolant		

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LFTA LFTH 0204	20	110	17000~18000	1300~1600	5~15	0.04~0.06	側銑 (SIDE MILLING)
0204	20	110	17000~18000	1200~1600	5~15	0.07~0.1	側銑 (SIDE MILLING)
LFTA LFTH 0304	25	120	12000~13000	1000~1300	10~20	0.05~0.08	側銑 (SIDE MILLING)
0304	25	120	12000~13000	1200~1600	10~20	0.1~0.15	側銑 (SIDE MILLING)
LFTA 0304B	25	120	12000~13000	1000~1300	10~15	0.05~0.08	側銑 (SIDE MILLING)
0304B	25	120	12000~13000	1400~1800	10~15	0.1~0.15	側銑 (SIDE MILLING)
LFTA LFTH 0404	30	120	9500~10000	900~1200	15~25	0.05~0.08	側銑 (SIDE MILLING)
0404	30	120	9500~10000	1200~1600	15~25	0.1~0.2	側銑 (SIDE MILLING)
LFTA 0404B	30	120	9500~10000	900~1200	10~20	0.05~0.08	側銑 (SIDE MILLING)
0404B	30	120	9500~10000	1400~1800	10~20	0.1~0.2	側銑 (SIDE MILLING)
LFTA LFTH 0504	33	130	8200~8500	800~1000	20~30	0.05~0.1	側銑 (SIDE MILLING)
0504	33	130	8200~8500	1400~1800	20~30	0.2~0.3	側銑 (SIDE MILLING)
LFTA LFTH 0604	33	135	6800~7200	800~1000	20~30	0.05~0.1	側銑 (SIDE MILLING)
0604	33	135	6800~7200	1400~1800	20~30	0.2~0.35	側銑 (SIDE MILLING)
LFTA LFTH 0804	45	150	5800~6200	700~900	25~40	0.05~0.1	側銑 (SIDE MILLING)
0804	45	150	5800~6200	1400~1800	25~40	0.4~0.5	側銑 (SIDE MILLING)
LFTA LFTH 1004	47	180	5500~6000	700~900	25~40	0.05~0.1	側銑 (SIDE MILLING)
1004	47	195	6000~6500	1400~1800	25~40	0.6~0.7	側銑 (SIDE MILLING)
LFTA 1004L	55	180	5500~6000	500~700	25~50	0.05~0.1	側銑 (SIDE MILLING)
1004L	55	195	6000~6500	1000~1400	25~50	0.6~0.7	側銑 (SIDE MILLING)
LFTA LFTH 1204	50	180	4500~5000	600~800	30~45	0.05~0.12	側銑 (SIDE MILLING)
1204	50	185	4700~5200	1400~1800	30~45	0.7~0.8	側銑 (SIDE MILLING)
LFTA 1204L	50	180	4500~5000	600~800	30~50	0.05~0.12	側銑 (SIDE MILLING)
1204L	50	185	4700~5200	1000~1400	30~50	0.7~0.8	側銑 (SIDE MILLING)
LFTA LFTH 1604	75	180	3500~3800	500~700	40~60	0.05~0.12	側銑 (SIDE MILLING)
1604	75	180	3500~3800	1100~1400	40~60	0.8~0.9	側銑 (SIDE MILLING)
LFTA 1604L	85	160	2800~3300	400~600	40~60	0.05~0.12	側銑 (SIDE MILLING)
1604L	85	160	2800~3300	800~1100	40~60	0.8~0.9	側銑 (SIDE MILLING)
LFTA LFTH 2004	70	180	2700~3000	400~600	40~60	0.05~0.12	側銑 (SIDE MILLING)
2004	70	180	2700~3000	1100~1400	40~60	0.8~1	側銑 (SIDE MILLING)
LFTA 2004L	85	160	2300~2700	300~500	40~60	0.05~0.12	側銑 (SIDE MILLING)
2004L	85	160	2300~2700	700~900	40~60	0.8~1	側銑 (SIDE MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG0102	12	30	9000~10000	700~1100	0.05~0.1	1	溝銑 (SLOTTING)
RTG0102	12	30	9000~10000	500~800	0.2	1	溝銑 (SLOTTING)
RTG0102	12	30	9000~10000	700~1100	1~2	0.05~0.1	側銑 (SIDE MILLING)
RTG0102	12	30	9000~10000	500~800	1~2	0.2	側銑 (SIDE MILLING)
RTG0102	12	30	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0102	12	30	9000~10000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0102	12	60	18000~20000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0102	12	60	18000~20000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0152	12	45	9000~10000	700~1100	0.05~0.1	1.5	溝銑 (SLOTTING)
RTG0152	12	45	9000~10000	500~800	0.2	1.5	溝銑 (SLOTTING)
RTG0152	12	45	9000~10000	700~1100	1.5~3	0.05~0.1	側銑 (SIDE MILLING)
RTG0152	12	45	9000~10000	500~800	1.5~3	0.2	側銑 (SIDE MILLING)
RTG0152	12	45	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0152	12	45	9000~10000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0152	12	90	18000~20000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0152	12	90	18000~20000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0202	12	60	9000~9500	700~1100	0.05~0.1	2	溝銑 (SLOTTING)
RTG0202	12	60	9000~9500	700~1100	0.2	2	溝銑 (SLOTTING)
RTG0202	12	60	9000~9500	700~1100	2~4	0.05~0.1	側銑 (SIDE MILLING)
RTG0202	12	60	9000~9500	700~1100	2~4	0.2	側銑 (SIDE MILLING)
RTG0202	12	60	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0202	12	60	9000~10000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0202	12	105	16000~18000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0202	12	105	16000~18000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0205	12	60	9000~9500	700~1100	0.05~0.1	2	溝銑 (SLOTTING)
RTG0205	12	60	9000~9500	700~1100	0.2	2	溝銑 (SLOTTING)
RTG0205	12	60	9000~9500	700~1100	2~4	0.05~0.1	側銑 (SIDE MILLING)
RTG0205	12	60	9000~9500	700~1100	2~4	0.2	側銑 (SIDE MILLING)
RTG0205	12	60	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0205	12	60	9000~10000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0205	12	105	16000~18000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0205	12	105	16000~18000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0252	12	70	9000~9500	700~1100	0.05~0.1	2.5	溝銑 (SLOTTING)
RTG0252	12	70	9000~9500	700~1100	0.2	2.5	溝銑 (SLOTTING)
RTG0252	12	70	9000~9500	700~1100	2.5~5	0.05~0.1	側銑 (SIDE MILLING)
RTG0252	12	70	9000~9500	700~1100	2.5~5	0.2	側銑 (SIDE MILLING)
RTG0252	12	75	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0252	12	75	9000~10000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0252	12	135	16000~18000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0252	12	135	16000~18000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG0255	12	70	9000~9500	700~1100	0.05~0.1	2.5	溝銑 (SLOTTING)
RTG0255	12	70	9000~9500	700~1100	0.2	2.5	溝銑 (SLOTTING)
RTG0255	12	70	9000~9500	700~1100	2.5~5	0.05~0.1	側銑 (SIDE MILLING)
RTG0255	12	70	9000~9500	700~1100	2.5~5	0.2	側銑 (SIDE MILLING)
RTG0255	12	75	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0255	12	75	9000~10000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0255	12	135	16000~18000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0255	12	135	16000~18000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0302	12	80	8500~9000	800~1200	0.05~0.1	3	溝銑 (SLOTTING)
RTG0302	12	80	8500~9000	1000~1400	0.2	3	溝銑 (SLOTTING)
RTG0302	12	80	8500~9000	800~1200	3~6	0.05~0.1	側銑 (SIDE MILLING)
RTG0302	12	80	8500~9000	1000~1400	3~6	0.2	側銑 (SIDE MILLING)
RTG0302	12	90	9000~10000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0302	12	90	9000~10000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0302	12	160	16000~18000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0302	12	160	16000~18000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0303	12	80	8500~9000	800~1200	0.05~0.1	3	溝銑 (SLOTTING)
RTG0303	12	80	8500~9000	1000~1400	0.2	3	溝銑 (SLOTTING)
RTG0303	12	80	8500~9000	800~1200	3~6	0.05~0.1	側銑 (SIDE MILLING)
RTG0303	12	80	8500~9000	1000~1400	3~6	0.2	側銑 (SIDE MILLING)
RTG0303	12	90	9000~10000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0303	12	90	9000~10000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0303	12	160	16000~18000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0303	12	160	16000~18000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0305	12	80	8500~9000	800~1200	0.05~0.1	3	溝銑 (SLOTTING)
RTG0305	12	80	8500~9000	1000~1400	0.2	3	溝銑 (SLOTTING)
RTG0305	12	80	8500~9000	800~1200	3~6	0.05~0.1	側銑 (SIDE MILLING)
RTG0305	12	80	8500~9000	1000~1400	3~6	0.2	側銑 (SIDE MILLING)
RTG0305	12	90	9000~10000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0305	12	90	9000~10000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0305	12	160	16000~18000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0305	12	160	16000~18000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0402	15	90	7000~7500	700~1100	0.05~0.1	4	溝銑 (SLOTTING)
RTG0402	15	90	7000~7500	800~1200	0.2~0.3	4	溝銑 (SLOTTING)
RTG0402	15	90	7000~7500	700~1000	4~8	0.05~0.1	側銑 (SIDE MILLING)
RTG0402	15	90	7000~7500	1000~1400	4~8	0.2~0.3	側銑 (SIDE MILLING)
RTG0402	15	120	9000~10000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0402	15	120	9000~10000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0402	15	180	14000~15000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0402	15	180	14000~15000	1600~2000	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG0403	15	90	7000~7500	700~1100	0.05~0.1	4	溝銑 (SLOTTING)
RTG0403	15	90	7000~7500	800~1200	0.2~0.3	4	溝銑 (SLOTTING)
RTG0403	15	90	7000~7500	700~1000	4~8	0.05~0.1	側銑 (SIDE MILLING)
RTG0403	15	90	7000~7500	1000~1400	4~8	0.2~0.3	側銑 (SIDE MILLING)
RTG0403	15	120	9000~10000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0403	15	120	9000~10000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0403	15	180	14000~15000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0403	15	180	14000~15000	1600~2000	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0405	15	90	7000~7500	700~1100	0.05~0.1	4	溝銑 (SLOTTING)
RTG0405	15	90	7000~7500	800~1200	0.2~0.3	4	溝銑 (SLOTTING)
RTG0405	15	90	7000~7500	700~1000	4~8	0.05~0.1	側銑 (SIDE MILLING)
RTG0405	15	90	7000~7500	1000~1400	4~8	0.2~0.3	側銑 (SIDE MILLING)
RTG0405	15	120	9000~10000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0405	15	120	9000~10000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0405	15	180	14000~15000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0405	15	180	14000~15000	1600~2000	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0503	17	95	5700~6200	700~1100	0.05~0.1	5	溝銑 (SLOTTING)
RTG0503	17	95	5700~6200	800~1200	0.2~0.3	5	溝銑 (SLOTTING)
RTG0503	17	95	5700~6200	700~1000	5~10	0.05~0.1	側銑 (SIDE MILLING)
RTG0503	17	95	5700~6200	1000~1400	5~10	0.2~0.3	側銑 (SIDE MILLING)
RTG0503	17	150	9000~10000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0503	17	150	9000~10000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0503	17	180	11000~12000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0503	17	180	11000~12000	1600~2000	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0505	17	95	5700~6200	700~1100	0.05~0.1	5	溝銑 (SLOTTING)
RTG0505	17	95	5700~6200	800~1200	0.2~0.3	5	溝銑 (SLOTTING)
RTG0505	17	95	5700~6200	700~1000	5~10	0.05~0.1	側銑 (SIDE MILLING)
RTG0505	17	95	5700~6200	1000~1400	5~10	0.2~0.3	側銑 (SIDE MILLING)
RTG0505	17	150	9000~10000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0505	17	150	9000~10000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0505	17	180	11000~12000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0505	17	180	11000~12000	1600~2000	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0602	20	95	4700~5200	700~1100	0.05~0.1	6	溝銑 (SLOTTING)
RTG0602	20	95	4700~5200	800~1200	0.2~0.3	6	溝銑 (SLOTTING)
RTG0602	20	95	4700~5200	700~1000	6~12	0.05~0.1	側銑 (SIDE MILLING)
RTG0602	20	95	4700~5200	1000~1400	6~12	0.2~0.3	側銑 (SIDE MILLING)
RTG0602	20	180	9000~10000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0602	20	180	9000~10000	1800~2200	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG0603	20	95	4700~5200	700~1100	0.05~0.1	6	溝銑 (SLOTTING)
RTG0603	20	95	4700~5200	800~1200	0.2~0.3	6	溝銑 (SLOTTING)
RTG0603	20	95	4700~5200	700~1000	6~12	0.05~0.1	側銑 (SIDE MILLING)
RTG0603	20	95	4700~5200	1000~1400	6~12	0.2~0.3	側銑 (SIDE MILLING)
RTG0603	20	180	9000~10000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0603	20	180	9000~10000	1800~2200	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTG0605	20	95	4700~5200	700~1100	0.05~0.1	6	溝銑 (SLOTTING)
RTG0605	20	95	4700~5200	800~1200	0.2~0.3	6	溝銑 (SLOTTING)
RTG0605	20	95	4700~5200	700~1000	6~12	0.05~0.1	側銑 (SIDE MILLING)
RTG0605	20	95	4700~5200	1000~1400	6~12	0.2~0.3	側銑 (SIDE MILLING)
RTG0605	20	180	9000~10000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0605	20	180	9000~10000	1800~2200	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTG0610	20	95	4700~5200	700~1100	0.05~0.1	6	溝銑 (SLOTTING)
RTG0610	20	95	4700~5200	800~1200	0.2~0.3	6	溝銑 (SLOTTING)
RTG0610	20	95	4700~5200	700~1000	6~12	0.05~0.1	側銑 (SIDE MILLING)
RTG0610	20	95	4700~5200	1000~1400	6~12	0.2~0.3	側銑 (SIDE MILLING)
RTG0610	20	180	9000~10000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0610	20	180	9000~10000	1800~2200	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTG0803	30	100	3800~4300	700~1000	0.05~0.1	8	溝銑 (SLOTTING)
RTG0803	30	100	3800~4300	800~1200	0.25~0.35	8	溝銑 (SLOTTING)
RTG0803	30	100	3800~4300	700~1000	8~16	0.05~0.1	側銑 (SIDE MILLING)
RTG0803	30	100	3800~4300	1000~1400	8~16	0.25~0.35	側銑 (SIDE MILLING)
RTG0803	30	185	7200~7700	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0803	30	185	7200~7700	2000~2400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG0805	30	100	3800~4300	700~1000	0.05~0.1	8	溝銑 (SLOTTING)
RTG0805	30	100	3800~4300	800~1200	0.25~0.35	8	溝銑 (SLOTTING)
RTG0805	30	100	3800~4300	700~1000	8~16	0.05~0.1	側銑 (SIDE MILLING)
RTG0805	30	100	3800~4300	1000~1400	8~16	0.25~0.35	側銑 (SIDE MILLING)
RTG0805	30	185	7200~7700	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0805	30	185	7200~7700	2000~2400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1002	30	95	2800~3300	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTG1002	30	95	2800~3300	1000~1400	0.25~0.35	10	溝銑 (SLOTTING)
RTG1002	30	95	2800~3300	700~1000	10~20	0.05~0.1	側銑 (SIDE MILLING)
RTG1002	30	95	2800~3300	1200~1600	10~20	0.25~0.35	側銑 (SIDE MILLING)
RTG1002	30	190	5800~6300	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1002	30	190	5800~6300	1800~2200	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG1003	30	95	2800~3300	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTG1003	30	95	2800~3300	1000~1400	0.25~0.35	10	溝銑 (SLOTTING)
RTG1003	30	95	2800~3300	700~1000	10~20	0.05~0.1	側銑 (SIDE MILLING)
RTG1003	30	95	2800~3300	1200~1600	10~20	0.25~0.35	側銑 (SIDE MILLING)
RTG1003	30	190	5800~6300	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1003	30	190	5800~6300	1800~2200	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1005	30	95	2800~3300	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTG1005	30	95	2800~3300	1000~1400	0.25~0.35	10	溝銑 (SLOTTING)
RTG1005	30	95	2800~3300	700~1000	10~20	0.05~0.1	側銑 (SIDE MILLING)
RTG1005	30	95	2800~3300	1200~1600	10~20	0.25~0.35	側銑 (SIDE MILLING)
RTG1005	30	190	5800~6300	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1005	30	190	5800~6300	1800~2200	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1010	30	95	2800~3300	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTG1010	30	95	2800~3300	1000~1400	0.25~0.35	10	溝銑 (SLOTTING)
RTG1010	30	95	2800~3300	700~1000	10~20	0.05~0.1	側銑 (SIDE MILLING)
RTG1010	30	95	2800~3300	1200~1600	10~20	0.25~0.35	側銑 (SIDE MILLING)
RTG1010	30	190	5800~6300	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1010	30	190	5800~6300	1800~2200	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1203	35	90	2200~2700	700~1000	0.05~0.1	12	溝銑 (SLOTTING)
RTG1203	35	90	2200~2700	800~1200	0.25~0.35	12	溝銑 (SLOTTING)
RTG1203	35	90	2200~2700	700~1000	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1203	35	90	2200~2700	1000~1400	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1203	35	190	4800~5300	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1203	35	190	4800~5300	1800~2200	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1205	35	90	2200~2700	700~1000	0.05~0.1	12	溝銑 (SLOTTING)
RTG1205	35	90	2200~2700	800~1200	0.25~0.35	12	溝銑 (SLOTTING)
RTG1205	35	90	2200~2700	700~1000	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1205	35	90	2200~2700	1000~1400	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1205	35	190	4800~5300	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1205	35	190	4800~5300	1800~2200	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1210	35	90	2200~2700	700~1000	0.05~0.1	12	溝銑 (SLOTTING)
RTG1210	35	90	2200~2700	800~1200	0.25~0.35	12	溝銑 (SLOTTING)
RTG1210	35	90	2200~2700	700~1000	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1210	35	90	2200~2700	1000~1400	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1210	35	190	4800~5300	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1210	35	190	4800~5300	1800~2200	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG1215	35	90	2200~2700	700~1000	0.05~0.1	12	溝銑 (SLOTTING)
RTG1215	35	90	2200~2700	800~1200	0.25~0.35	12	溝銑 (SLOTTING)
RTG1215	35	90	2200~2700	700~1000	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1215	35	90	2200~2700	1000~1400	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1215	35	190	4800~5300	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1215	35	190	4800~5300	1800~2200	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1220	35	90	2200~2700	700~1000	0.05~0.1	12	溝銑 (SLOTTING)
RTG1220	35	90	2200~2700	800~1200	0.25~0.35	12	溝銑 (SLOTTING)
RTG1220	35	90	2200~2700	700~1000	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1220	35	90	2200~2700	1000~1400	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1220	35	190	4800~5300	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1220	35	190	4800~5300	1800~2200	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)

被切削材 Work Material	鉻鉬合金鋼：*Chromium Molybdenum Alloy Steels* SCM440 : 1.7225 : 4140 : 42CrMoA (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG0102	12	30	9000~10000	700~1100	0.05~0.1	1	溝銑 (SLOTTING)
RTG0102	12	30	9000~10000	500~800	0.2	1	溝銑 (SLOTTING)
RTG0102	12	30	9000~10000	700~1100	1~2	0.05~0.1	側銑 (SIDE MILLING)
RTG0102	12	30	9000~10000	500~800	1~2	0.2	側銑 (SIDE MILLING)
RTG0102	12	30	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0102	12	30	9000~10000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0102	12	60	18000~20000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0102	12	60	18000~20000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0152	12	45	9000~10000	700~1100	0.05~0.1	1.5	溝銑 (SLOTTING)
RTG0152	12	45	9000~10000	500~800	0.2	1.5	溝銑 (SLOTTING)
RTG0152	12	45	9000~10000	700~1100	1.5~3	0.05~0.1	側銑 (SIDE MILLING)
RTG0152	12	45	9000~10000	500~800	1.5~3	0.2	側銑 (SIDE MILLING)
RTG0152	12	45	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0152	12	45	9000~10000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0152	12	90	18000~20000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0152	12	90	18000~20000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	鉻鉬合金鋼：*Chromium Molybdenum Alloy Steels* SCM440 : 1.7225 : 4140 : 42CrMoA (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG0202	12	60	9000~9500	700~1100	0.05~0.1	2	溝銑 (SLOTTING)
RTG0202	12	60	9000~9500	700~1100	0.2	2	溝銑 (SLOTTING)
RTG0202	12	60	9000~9500	700~1100	2~4	0.05~0.1	側銑 (SIDE MILLING)
RTG0202	12	60	9000~9500	700~1100	2~4	0.2	側銑 (SIDE MILLING)
RTG0202	12	60	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0202	12	60	9000~10000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0202	12	105	16000~18000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0202	12	105	16000~18000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0205	12	60	9000~9500	700~1100	0.05~0.1	2	溝銑 (SLOTTING)
RTG0205	12	60	9000~9500	700~1100	0.2	2	溝銑 (SLOTTING)
RTG0205	12	60	9000~9500	700~1100	2~4	0.05~0.1	側銑 (SIDE MILLING)
RTG0205	12	60	9000~9500	700~1100	2~4	0.2	側銑 (SIDE MILLING)
RTG0205	12	60	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0205	12	60	9000~10000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0205	12	105	16000~18000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0205	12	105	16000~18000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0252	12	70	9000~9500	700~1100	0.05~0.1	2.5	溝銑 (SLOTTING)
RTG0252	12	70	9000~9500	700~1100	0.2	2.5	溝銑 (SLOTTING)
RTG0252	12	70	9000~9500	700~1100	2.5~5	0.05~0.1	側銑 (SIDE MILLING)
RTG0252	12	70	9000~9500	700~1100	2.5~5	0.2	側銑 (SIDE MILLING)
RTG0252	12	75	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0252	12	75	9000~10000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0252	12	135	16000~18000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0252	12	135	16000~18000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0255	12	70	9000~9500	700~1100	0.05~0.1	2.5	溝銑 (SLOTTING)
RTG0255	12	70	9000~9500	700~1100	0.2	2.5	溝銑 (SLOTTING)
RTG0255	12	70	9000~9500	700~1100	2.5~5	0.05~0.1	側銑 (SIDE MILLING)
RTG0255	12	70	9000~9500	700~1100	2.5~5	0.2	側銑 (SIDE MILLING)
RTG0255	12	75	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0255	12	75	9000~10000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0255	12	135	16000~18000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0255	12	135	16000~18000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0302	12	80	8500~9000	700~1000	0.05~0.1	3	溝銑 (SLOTTING)
RTG0302	12	80	8500~9000	800~1200	0.2	3	溝銑 (SLOTTING)
RTG0302	12	80	8500~9000	700~1100	3~6	0.05~0.1	側銑 (SIDE MILLING)
RTG0302	12	80	8500~9000	1000~1400	3~6	0.2	側銑 (SIDE MILLING)
RTG0302	12	90	9000~10000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0302	12	90	9000~10000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0302	12	160	16000~18000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0302	12	160	16000~18000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	鉻鉬合金鋼：*Chromium Molybdenum Alloy Steels* SCM440 : 1.7225 : 4140 : 42CrMoA (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG0303	12	80	8500~9000	700~1000	0.05~0.1	3	溝銑 (SLOTTING)
RTG0303	12	80	8500~9000	800~1200	0.2	3	溝銑 (SLOTTING)
RTG0303	12	80	8500~9000	700~1100	3~6	0.05~0.1	側銑 (SIDE MILLING)
RTG0303	12	80	8500~9000	1000~1400	3~6	0.2	側銑 (SIDE MILLING)
RTG0303	12	90	9000~10000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0303	12	90	9000~10000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0303	12	160	16000~18000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0303	12	160	16000~18000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0305	12	80	8500~9000	700~1000	0.05~0.1	3	溝銑 (SLOTTING)
RTG0305	12	80	8500~9000	800~1200	0.2	3	溝銑 (SLOTTING)
RTG0305	12	80	8500~9000	700~1100	3~6	0.05~0.1	側銑 (SIDE MILLING)
RTG0305	12	80	8500~9000	1000~1400	3~6	0.2	側銑 (SIDE MILLING)
RTG0305	12	90	9000~10000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0305	12	90	9000~10000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0305	12	160	16000~18000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0305	12	160	16000~18000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0402	15	90	7000~7500	700~1000	0.05~0.1	4	溝銑 (SLOTTING)
RTG0402	15	90	7000~7500	800~1200	0.2~0.3	4	溝銑 (SLOTTING)
RTG0402	15	90	7000~7500	700~1000	4~8	0.05~0.1	側銑 (SIDE MILLING)
RTG0402	15	90	7000~7500	1000~1400	4~8	0.2~0.3	側銑 (SIDE MILLING)
RTG0402	15	120	9000~10000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0402	15	120	9000~10000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0402	15	180	14000~15000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0402	15	180	14000~15000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0403	15	90	7000~7500	700~1000	0.05~0.1	4	溝銑 (SLOTTING)
RTG0403	15	90	7000~7500	800~1200	0.2~0.3	4	溝銑 (SLOTTING)
RTG0403	15	90	7000~7500	700~1000	4~8	0.05~0.1	側銑 (SIDE MILLING)
RTG0403	15	90	7000~7500	1000~1400	4~8	0.2~0.3	側銑 (SIDE MILLING)
RTG0403	15	120	9000~10000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0403	15	120	9000~10000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0403	15	180	14000~15000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0403	15	180	14000~15000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0405	15	90	7000~7500	700~1000	0.05~0.1	4	溝銑 (SLOTTING)
RTG0405	15	90	7000~7500	800~1200	0.2~0.3	4	溝銑 (SLOTTING)
RTG0405	15	90	7000~7500	700~1000	4~8	0.05~0.1	側銑 (SIDE MILLING)
RTG0405	15	90	7000~7500	1000~1400	4~8	0.2~0.3	側銑 (SIDE MILLING)
RTG0405	15	120	9000~10000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0405	15	120	9000~10000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0405	15	180	14000~15000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0405	15	180	14000~15000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	鉻鉬合金鋼：*Chromium Molybdenum Alloy Steels* SCM440 : 1.7225 : 4140 : 42CrMoA (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG0503	17	95	5700~6200	700~1100	0.05~0.1	5	溝銑 (SLOTTING)
RTG0503	17	95	5700~6200	800~1200	0.2~0.3	5	溝銑 (SLOTTING)
RTG0503	17	95	5700~6200	700~1000	5~10	0.05~0.1	側銑 (SIDE MILLING)
RTG0503	17	95	5700~6200	1000~1400	5~10	0.2~0.3	側銑 (SIDE MILLING)
RTG0503	17	150	9000~10000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0503	17	150	9000~10000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0503	17	180	11000~12000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0503	17	180	11000~12000	1600~2000	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0505	17	95	5700~6200	700~1100	0.05~0.1	5	溝銑 (SLOTTING)
RTG0505	17	95	5700~6200	800~1200	0.2~0.3	5	溝銑 (SLOTTING)
RTG0505	17	95	5700~6200	700~1000	5~10	0.05~0.1	側銑 (SIDE MILLING)
RTG0505	17	95	5700~6200	1000~1400	5~10	0.2~0.3	側銑 (SIDE MILLING)
RTG0505	17	150	9000~10000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0505	17	150	9000~10000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0505	17	180	11000~12000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0505	17	180	11000~12000	1600~2000	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0602	20	95	4700~5200	700~1100	0.05~0.1	6	溝銑 (SLOTTING)
RTG0602	20	95	4700~5200	800~1200	0.2~0.3	6	溝銑 (SLOTTING)
RTG0602	20	95	4700~5200	700~1000	6~12	0.05~0.1	側銑 (SIDE MILLING)
RTG0602	20	95	4700~5200	1000~1400	6~12	0.2~0.3	側銑 (SIDE MILLING)
RTG0602	20	180	9000~10000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0602	20	180	9000~10000	1600~2000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTG0603	20	95	4700~5200	700~1100	0.05~0.1	6	溝銑 (SLOTTING)
RTG0603	20	95	4700~5200	800~1200	0.2~0.3	6	溝銑 (SLOTTING)
RTG0603	20	95	4700~5200	700~1000	6~12	0.05~0.1	側銑 (SIDE MILLING)
RTG0603	20	95	4700~5200	1000~1400	6~12	0.2~0.3	側銑 (SIDE MILLING)
RTG0603	20	180	9000~10000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0603	20	180	9000~10000	1600~2000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTG0605	20	95	4700~5200	700~1100	0.05~0.1	6	溝銑 (SLOTTING)
RTG0605	20	95	4700~5200	800~1200	0.2~0.3	6	溝銑 (SLOTTING)
RTG0605	20	95	4700~5200	700~1000	6~12	0.05~0.1	側銑 (SIDE MILLING)
RTG0605	20	95	4700~5200	1000~1400	6~12	0.2~0.3	側銑 (SIDE MILLING)
RTG0605	20	180	9000~10000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0605	20	180	9000~10000	1600~2000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTG0610	20	95	4700~5200	700~1100	0.05~0.1	6	溝銑 (SLOTTING)
RTG0610	20	95	4700~5200	800~1200	0.2~0.3	6	溝銑 (SLOTTING)
RTG0610	20	95	4700~5200	700~1000	6~12	0.05~0.1	側銑 (SIDE MILLING)
RTG0610	20	95	4700~5200	1000~1400	6~12	0.2~0.3	側銑 (SIDE MILLING)
RTG0610	20	180	9000~10000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0610	20	180	9000~10000	1600~2000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	鉻鉬合金鋼：*Chromium Molybdenum Alloy Steels* **SCM440 : 1.7225 : 4140 : 42CrMoA (HRc25~28)**
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG0803	30	100	3800~4300	700~1000	0.05~0.1	8	溝銑 (SLOTTING)
RTG0803	30	100	3800~4300	800~1200	0.25~0.35	8	溝銑 (SLOTTING)
RTG0803	30	100	3800~4300	700~1000	8~16	0.05~0.1	側銑 (SIDE MILLING)
RTG0803	30	100	3800~4300	1000~1400	8~16	0.25~0.35	側銑 (SIDE MILLING)
RTG0803	30	190	7200~7700	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0803	30	190	7200~7700	1800~2200	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG0805	30	100	3800~4300	700~1000	0.05~0.1	8	溝銑 (SLOTTING)
RTG0805	30	100	3800~4300	800~1200	0.25~0.35	8	溝銑 (SLOTTING)
RTG0805	30	100	3800~4300	700~1000	8~16	0.05~0.1	側銑 (SIDE MILLING)
RTG0805	30	100	3800~4300	1000~1400	8~16	0.25~0.35	側銑 (SIDE MILLING)
RTG0805	30	190	7200~7700	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0805	30	190	7200~7700	1800~2200	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1002	30	95	2800~3300	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTG1002	30	95	2800~3300	1000~1400	0.25~0.35	10	溝銑 (SLOTTING)
RTG1002	30	95	2800~3300	700~1000	10~20	0.05~0.1	側銑 (SIDE MILLING)
RTG1002	30	95	2800~3300	1000~1400	10~20	0.25~0.35	側銑 (SIDE MILLING)
RTG1002	30	190	5800~6300	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1002	30	190	5800~6300	1400~1800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1003	30	95	2800~3300	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTG1003	30	95	2800~3300	1000~1400	0.25~0.35	10	溝銑 (SLOTTING)
RTG1003	30	95	2800~3300	700~1000	10~20	0.05~0.1	側銑 (SIDE MILLING)
RTG1003	30	95	2800~3300	1000~1400	10~20	0.25~0.35	側銑 (SIDE MILLING)
RTG1003	30	190	5800~6300	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1003	30	190	5800~6300	1400~1800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1005	30	95	2800~3300	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTG1005	30	95	2800~3300	1000~1400	0.25~0.35	10	溝銑 (SLOTTING)
RTG1005	30	95	2800~3300	700~1000	10~20	0.05~0.1	側銑 (SIDE MILLING)
RTG1005	30	95	2800~3300	1000~1400	10~20	0.25~0.35	側銑 (SIDE MILLING)
RTG1005	30	190	5800~6300	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1005	30	190	5800~6300	1400~1800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1010	30	95	2800~3300	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTG1010	30	95	2800~3300	1000~1400	0.25~0.35	10	溝銑 (SLOTTING)
RTG1010	30	95	2800~3300	700~1000	10~20	0.05~0.1	側銑 (SIDE MILLING)
RTG1010	30	95	2800~3300	1000~1400	10~20	0.25~0.35	側銑 (SIDE MILLING)
RTG1010	30	190	5800~6300	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1010	30	190	5800~6300	1400~1800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	鉻鉬合金鋼：*Chromium Molybdenum Alloy Steels* **SCM440 : 1.7225 : 4140 : 42CrMoA (HRc25~28)**
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG1203	35	90	2200~2700	700~1000	0.05~0.1	12	溝銑 (SLOTTING)
RTG1203	35	90	2200~2700	800~1200	0.25~0.35	12	溝銑 (SLOTTING)
RTG1203	35	90	2200~2700	700~1000	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1203	35	90	2200~2700	800~1200	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1203	35	190	4800~5300	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1203	35	190	4800~5300	1400~1800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1205	35	90	2200~2700	700~1000	0.05~0.1	12	溝銑 (SLOTTING)
RTG1205	35	90	2200~2700	800~1200	0.25~0.35	12	溝銑 (SLOTTING)
RTG1205	35	90	2200~2700	700~1000	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1205	35	90	2200~2700	800~1200	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1205	35	190	4800~5300	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1205	35	190	4800~5300	1400~1800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1210	35	90	2200~2700	700~1000	0.05~0.1	12	溝銑 (SLOTTING)
RTG1210	35	90	2200~2700	800~1200	0.25~0.35	12	溝銑 (SLOTTING)
RTG1210	35	90	2200~2700	700~1000	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1210	35	90	2200~2700	800~1200	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1210	35	190	4800~5300	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1210	35	190	4800~5300	1400~1800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1215	35	90	2200~2700	700~1000	0.05~0.1	12	溝銑 (SLOTTING)
RTG1215	35	90	2200~2700	800~1200	0.25~0.35	12	溝銑 (SLOTTING)
RTG1215	35	90	2200~2700	700~1000	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1215	35	90	2200~2700	800~1200	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1215	35	190	4800~5300	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1215	35	190	4800~5300	1400~1800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1220	35	90	2200~2700	700~1000	0.05~0.1	12	溝銑 (SLOTTING)
RTG1220	35	90	2200~2700	800~1200	0.25~0.35	12	溝銑 (SLOTTING)
RTG1220	35	90	2200~2700	700~1000	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1220	35	90	2200~2700	800~1200	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1220	35	190	4800~5300	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1220	35	190	4800~5300	1400~1800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG0102	12	30	9000~10000	400~700	0.05~0.1	1	溝銑 (SLOTTING)
RTG0102	12	30	9000~10000	400~700	0.2	1	溝銑 (SLOTTING)
RTG0102	12	30	9000~10000	400~700	1~2	0.05~0.1	側銑 (SIDE MILLING)
RTG0102	12	30	9000~10000	400~700	1~2	0.2	側銑 (SIDE MILLING)
RTG0102	12	30	9000~10000	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0102	12	30	9000~10000	700~1100	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0102	12	60	18000~20000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0102	12	60	18000~20000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0152	12	45	9000~10000	400~700	0.05~0.1	1.5	溝銑 (SLOTTING)
RTG0152	12	45	9000~10000	400~700	0.2	1.5	溝銑 (SLOTTING)
RTG0152	12	45	9000~10000	400~700	1.5~3	0.05~0.1	側銑 (SIDE MILLING)
RTG0152	12	45	9000~10000	400~700	1.5~3	0.2	側銑 (SIDE MILLING)
RTG0152	12	45	9000~10000	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0152	12	45	9000~10000	700~1100	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0152	12	90	18000~20000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0152	12	90	18000~20000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0202	12	60	9000~9500	500~800	0.05~0.1	2	溝銑 (SLOTTING)
RTG0202	12	60	9000~9500	700~1000	0.2	2	溝銑 (SLOTTING)
RTG0202	12	60	9000~9500	500~800	2~4	0.05~0.1	側銑 (SIDE MILLING)
RTG0202	12	60	9000~9500	700~1000	2~4	0.2	側銑 (SIDE MILLING)
RTG0202	12	60	9000~10000	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0202	12	60	9000~10000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0202	12	105	16000~18000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0202	12	105	16000~18000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0205	12	60	9000~9500	500~800	0.05~0.1	2	溝銑 (SLOTTING)
RTG0205	12	60	9000~9500	700~1000	0.2	2	溝銑 (SLOTTING)
RTG0205	12	60	9000~9500	500~800	2~4	0.05~0.1	側銑 (SIDE MILLING)
RTG0205	12	60	9000~9500	700~1000	2~4	0.2	側銑 (SIDE MILLING)
RTG0205	12	60	9000~10000	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0205	12	60	9000~10000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0205	12	105	16000~18000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0205	12	105	16000~18000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0252	12	70	9000~9500	500~800	0.05~0.1	2.5	溝銑 (SLOTTING)
RTG0252	12	70	9000~9500	700~1100	0.2	2.5	溝銑 (SLOTTING)
RTG0252	12	70	9000~9500	700~1000	2.5~5	0.05~0.1	側銑 (SIDE MILLING)
RTG0252	12	70	9000~9500	800~1200	2.5~5	0.2	側銑 (SIDE MILLING)
RTG0252	12	75	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0252	12	75	9000~10000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0252	12	135	16000~18000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0252	12	135	16000~18000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG0255	12	70	9000~9500	500~800	0.05~0.1	2.5	溝銑 (SLOTTING)
RTG0255	12	70	9000~9500	700~1100	0.2	2.5	溝銑 (SLOTTING)
RTG0255	12	70	9000~9500	700~1000	2.5~5	0.05~0.1	側銑 (SIDE MILLING)
RTG0255	12	70	9000~9500	800~1200	2.5~5	0.2	側銑 (SIDE MILLING)
RTG0255	12	75	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0255	12	75	9000~10000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0255	12	135	16000~18000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0255	12	135	16000~18000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0302	12	80	8500~9000	500~800	0.05~0.1	3	溝銑 (SLOTTING)
RTG0302	12	80	8500~9000	700~1100	0.2	3	溝銑 (SLOTTING)
RTG0302	12	80	8500~9000	700~1000	3~6	0.05~0.1	側銑 (SIDE MILLING)
RTG0302	12	80	8500~9000	800~1200	3~6	0.2	側銑 (SIDE MILLING)
RTG0302	12	90	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0302	12	90	9000~10000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0302	12	160	16000~18000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0302	12	160	16000~18000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0303	12	80	8500~9000	500~800	0.05~0.1	3	溝銑 (SLOTTING)
RTG0303	12	80	8500~9000	700~1100	0.2	3	溝銑 (SLOTTING)
RTG0303	12	80	8500~9000	700~1000	3~6	0.05~0.1	側銑 (SIDE MILLING)
RTG0303	12	80	8500~9000	800~1200	3~6	0.2	側銑 (SIDE MILLING)
RTG0303	12	90	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0303	12	90	9000~10000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0303	12	160	16000~18000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0303	12	160	16000~18000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0305	12	80	8500~9000	500~800	0.05~0.1	3	溝銑 (SLOTTING)
RTG0305	12	80	8500~9000	700~1100	0.2	3	溝銑 (SLOTTING)
RTG0305	12	80	8500~9000	700~1000	3~6	0.05~0.1	側銑 (SIDE MILLING)
RTG0305	12	80	8500~9000	800~1200	3~6	0.2	側銑 (SIDE MILLING)
RTG0305	12	90	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0305	12	90	9000~10000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0305	12	160	16000~18000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0305	12	160	16000~18000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0402	15	90	7000~7500	500~800	0.05~0.1	4	溝銑 (SLOTTING)
RTG0402	15	90	7000~7500	700~1000	0.2~0.3	4	溝銑 (SLOTTING)
RTG0402	15	90	7000~7500	500~800	4~8	0.05~0.1	側銑 (SIDE MILLING)
RTG0402	15	90	7000~7500	800~1200	4~8	0.2~0.3	側銑 (SIDE MILLING)
RTG0402	15	120	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0402	15	120	9000~10000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0402	15	180	14000~15000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0402	15	180	14000~15000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG0403	15	90	7000~7500	500~800	0.05~0.1	4	溝銑 (SLOTTING)
RTG0403	15	90	7000~7500	700~1000	0.2~0.3	4	溝銑 (SLOTTING)
RTG0403	15	90	7000~7500	500~800	4~8	0.05~0.1	側銑 (SIDE MILLING)
RTG0403	15	90	7000~7500	800~1200	4~8	0.2~0.3	側銑 (SIDE MILLING)
RTG0403	15	120	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0403	15	120	9000~10000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0403	15	180	14000~15000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0403	15	180	14000~15000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0405	15	90	7000~7500	500~800	0.05~0.1	4	溝銑 (SLOTTING)
RTG0405	15	90	7000~7500	700~1000	0.2~0.3	4	溝銑 (SLOTTING)
RTG0405	15	90	7000~7500	500~800	4~8	0.05~0.1	側銑 (SIDE MILLING)
RTG0405	15	90	7000~7500	800~1200	4~8	0.2~0.3	側銑 (SIDE MILLING)
RTG0405	15	120	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0405	15	120	9000~10000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0405	15	180	14000~15000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0405	15	180	14000~15000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0503	17	95	5700~6200	500~800	0.05~0.1	5	溝銑 (SLOTTING)
RTG0503	17	95	5700~6200	700~1000	0.2~0.3	5	溝銑 (SLOTTING)
RTG0503	17	95	5700~6200	500~800	5~10	0.05~0.1	側銑 (SIDE MILLING)
RTG0503	17	95	5700~6200	800~1200	5~10	0.2~0.3	側銑 (SIDE MILLING)
RTG0503	17	150	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0503	17	150	9000~10000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0503	17	180	11000~12000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0503	17	180	11000~12000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0505	17	95	5700~6200	500~800	0.05~0.1	5	溝銑 (SLOTTING)
RTG0505	17	95	5700~6200	700~1000	0.2~0.3	5	溝銑 (SLOTTING)
RTG0505	17	95	5700~6200	500~800	5~10	0.05~0.1	側銑 (SIDE MILLING)
RTG0505	17	95	5700~6200	800~1200	5~10	0.2~0.3	側銑 (SIDE MILLING)
RTG0505	17	150	9000~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0505	17	150	9000~10000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0505	17	180	11000~12000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0505	17	180	11000~12000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0602	20	95	4700~5200	500~800	0.05~0.1	6	溝銑 (SLOTTING)
RTG0602	20	95	4700~5200	700~1000	0.2~0.3	6	溝銑 (SLOTTING)
RTG0602	20	95	4700~5200	500~800	6~12	0.05~0.1	側銑 (SIDE MILLING)
RTG0602	20	95	4700~5200	800~1200	6~12	0.2~0.3	側銑 (SIDE MILLING)
RTG0602	20	180	9000~10000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0602	20	180	9000~10000	1400~1800	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG0603	20	95	4700~5200	500~800	0.05~0.1	6	溝銑 (SLOTTING)
RTG0603	20	95	4700~5200	700~1000	0.2~0.3	6	溝銑 (SLOTTING)
RTG0603	20	95	4700~5200	500~800	6~12	0.05~0.1	側銑 (SIDE MILLING)
RTG0603	20	95	4700~5200	800~1200	6~12	0.2~0.3	側銑 (SIDE MILLING)
RTG0603	20	180	9000~10000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0603	20	180	9000~10000	1400~1800	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTG0605	20	95	4700~5200	500~800	0.05~0.1	6	溝銑 (SLOTTING)
RTG0605	20	95	4700~5200	700~1000	0.2~0.3	6	溝銑 (SLOTTING)
RTG0605	20	95	4700~5200	500~800	6~12	0.05~0.1	側銑 (SIDE MILLING)
RTG0605	20	95	4700~5200	800~1200	6~12	0.2~0.3	側銑 (SIDE MILLING)
RTG0605	20	180	9000~10000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0605	20	180	9000~10000	1400~1800	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTG0610	20	95	4700~5200	500~800	0.05~0.1	6	溝銑 (SLOTTING)
RTG0610	20	95	4700~5200	700~1000	0.2~0.3	6	溝銑 (SLOTTING)
RTG0610	20	95	4700~5200	500~800	6~12	0.05~0.1	側銑 (SIDE MILLING)
RTG0610	20	95	4700~5200	800~1200	6~12	0.2~0.3	側銑 (SIDE MILLING)
RTG0610	20	180	9000~10000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0610	20	180	9000~10000	1400~1800	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTG0803	30	100	3800~4300	500~800	0.05~0.1	8	溝銑 (SLOTTING)
RTG0803	30	100	3800~4300	700~1000	0.25~0.35	8	溝銑 (SLOTTING)
RTG0803	30	100	3800~4300	500~800	8~16	0.05~0.1	側銑 (SIDE MILLING)
RTG0803	30	100	3800~4300	800~1200	8~16	0.25~0.35	側銑 (SIDE MILLING)
RTG0803	30	190	7200~7700	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0803	30	190	7200~7700	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG0805	30	100	3800~4300	500~800	0.05~0.1	8	溝銑 (SLOTTING)
RTG0805	30	100	3800~4300	700~1000	0.25~0.35	8	溝銑 (SLOTTING)
RTG0805	30	100	3800~4300	500~800	8~16	0.05~0.1	側銑 (SIDE MILLING)
RTG0805	30	100	3800~4300	800~1200	8~16	0.25~0.35	側銑 (SIDE MILLING)
RTG0805	30	190	7200~7700	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0805	30	190	7200~7700	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1002	30	95	2800~3300	500~800	0.05~0.1	10	溝銑 (SLOTTING)
RTG1002	30	95	2800~3300	800~1200	0.25~0.35	10	溝銑 (SLOTTING)
RTG1002	30	75	2200~2700	500~800	10~20	0.05~0.1	側銑 (SIDE MILLING)
RTG1002	30	75	2200~2700	800~1200	10~20	0.25~0.35	側銑 (SIDE MILLING)
RTG1002	30	190	5800~6300	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1002	30	190	5800~6300	1200~1600	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG1003	30	95	2800~3300	500~800	0.05~0.1	10	溝銑 (SLOTTING)
RTG1003	30	95	2800~3300	800~1200	0.25~0.35	10	溝銑 (SLOTTING)
RTG1003	30	75	2200~2700	500~800	10~20	0.05~0.1	側銑 (SIDE MILLING)
RTG1003	30	75	2200~2700	800~1200	10~20	0.25~0.35	側銑 (SIDE MILLING)
RTG1003	30	190	5800~6300	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1003	30	190	5800~6300	1200~1600	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1005	30	95	2800~3300	500~800	0.05~0.1	10	溝銑 (SLOTTING)
RTG1005	30	95	2800~3300	800~1200	0.25~0.35	10	溝銑 (SLOTTING)
RTG1005	30	75	2200~2700	500~800	10~20	0.05~0.1	側銑 (SIDE MILLING)
RTG1005	30	75	2200~2700	800~1200	10~20	0.25~0.35	側銑 (SIDE MILLING)
RTG1005	30	190	5800~6300	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1005	30	190	5800~6300	1200~1600	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1010	30	95	2800~3300	500~800	0.05~0.1	10	溝銑 (SLOTTING)
RTG1010	30	95	2800~3300	800~1200	0.25~0.35	10	溝銑 (SLOTTING)
RTG1010	30	75	2200~2700	500~800	10~20	0.05~0.1	側銑 (SIDE MILLING)
RTG1010	30	75	2200~2700	800~1200	10~20	0.25~0.35	側銑 (SIDE MILLING)
RTG1010	30	190	5800~6300	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1010	30	190	5800~6300	1200~1600	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1203	35	90	2200~2700	500~800	0.05~0.1	12	溝銑 (SLOTTING)
RTG1203	35	90	2200~2700	700~1000	0.25~0.35	12	溝銑 (SLOTTING)
RTG1203	35	75	1800~2300	500~800	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1203	35	75	1800~2300	700~1000	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1203	35	190	4800~5300	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1203	35	190	4800~5300	1000~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1205	35	90	2200~2700	500~800	0.05~0.1	12	溝銑 (SLOTTING)
RTG1205	35	90	2200~2700	700~1000	0.25~0.35	12	溝銑 (SLOTTING)
RTG1205	35	75	1800~2300	500~800	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1205	35	75	1800~2300	700~1000	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1205	35	190	4800~5300	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1205	35	190	4800~5300	1000~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1210	35	90	2200~2700	500~800	0.05~0.1	12	溝銑 (SLOTTING)
RTG1210	35	90	2200~2700	700~1000	0.25~0.35	12	溝銑 (SLOTTING)
RTG1210	35	75	1800~2300	500~800	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1210	35	75	1800~2300	700~1000	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1210	35	190	4800~5300	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1210	35	190	4800~5300	1000~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG1215	35	90	2200~2700	500~800	0.05~0.1	12	溝銑 (SLOTTING)
RTG1215	35	90	2200~2700	700~1000	0.25~0.35	12	溝銑 (SLOTTING)
RTG1215	35	75	1800~2300	500~800	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1215	35	75	1800~2300	700~1000	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1215	35	190	4800~5300	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1215	35	190	4800~5300	1000~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1220	35	90	2200~2700	500~800	0.05~0.1	12	溝銑 (SLOTTING)
RTG1220	35	90	2200~2700	700~1000	0.25~0.35	12	溝銑 (SLOTTING)
RTG1220	35	75	1800~2300	500~800	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1220	35	75	1800~2300	700~1000	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1220	35	190	4800~5300	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1220	35	190	4800~5300	1000~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG0102	12	30	9000~10000	400~700	0.05~0.1	1	溝銑 (SLOTTING)
RTG0102	12	30	9000~10000	400~600	0.2	1	溝銑 (SLOTTING)
RTG0102	12	30	9000~10000	400~600	1~2	0.05~0.1	側銑 (SIDE MILLING)
RTG0102	12	30	9000~10000	400~600	1~2	0.2	側銑 (SIDE MILLING)
RTG0102	12	30	9000~10000	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0102	12	30	9000~10000	700~1000	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0102	12	60	18000~20000	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0102	12	60	18000~20000	800~1100	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0152	12	45	9000~10000	400~700	0.05~0.1	1.5	溝銑 (SLOTTING)
RTG0152	12	45	9000~10000	400~600	0.2	1.5	溝銑 (SLOTTING)
RTG0152	12	45	9000~10000	400~600	1.5~3	0.05~0.1	側銑 (SIDE MILLING)
RTG0152	12	45	9000~10000	400~600	1.5~3	0.2	側銑 (SIDE MILLING)
RTG0152	12	45	9000~10000	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0152	12	45	9000~10000	700~1000	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0152	12	90	18000~20000	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0152	12	90	18000~20000	800~1100	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG0202	12	60	9000~9500	500~800	0.05~0.1	2	溝銑 (SLOTTING)
RTG0202	12	60	9000~9500	700~900	0.2	2	溝銑 (SLOTTING)
RTG0202	12	60	9000~9500	500~700	2~4	0.05~0.1	側銑 (SIDE MILLING)
RTG0202	12	60	9000~9500	700~900	2~4	0.2	側銑 (SIDE MILLING)
RTG0202	12	60	9000~10000	700~900	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0202	12	60	9000~10000	800~1200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0202	12	105	16000~18000	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0202	12	105	16000~18000	1000~1300	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0205	12	60	9000~9500	500~800	0.05~0.1	2	溝銑 (SLOTTING)
RTG0205	12	60	9000~9500	700~900	0.2	2	溝銑 (SLOTTING)
RTG0205	12	60	9000~9500	500~700	2~4	0.05~0.1	側銑 (SIDE MILLING)
RTG0205	12	60	9000~9500	700~900	2~4	0.2	側銑 (SIDE MILLING)
RTG0205	12	60	9000~10000	700~900	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0205	12	60	9000~10000	800~1100	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0205	12	105	16000~18000	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0205	12	105	16000~18000	1000~1300	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0252	12	70	9000~9500	500~800	0.05~0.1	2.5	溝銑 (SLOTTING)
RTG0252	12	70	9000~9500	700~1000	0.2	2.5	溝銑 (SLOTTING)
RTG0252	12	70	9000~9500	700~900	2.5~5	0.05~0.1	側銑 (SIDE MILLING)
RTG0252	12	70	9000~9500	800~1100	2.5~5	0.2	側銑 (SIDE MILLING)
RTG0252	12	75	9000~10000	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0252	12	75	9000~10000	800~1100	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0252	12	135	16000~18000	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0252	12	135	16000~18000	1200~1500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0255	12	70	9000~9500	500~800	0.05~0.1	2.5	溝銑 (SLOTTING)
RTG0255	12	70	9000~9500	700~1000	0.2	2.5	溝銑 (SLOTTING)
RTG0255	12	70	9000~9500	700~900	2.5~5	0.05~0.1	側銑 (SIDE MILLING)
RTG0255	12	70	9000~9500	800~1100	2.5~5	0.2	側銑 (SIDE MILLING)
RTG0255	12	75	9000~10000	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0255	12	75	9000~10000	800~1100	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0255	12	135	16000~18000	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0255	12	135	16000~18000	1200~1500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0302	12	80	8500~9000	500~800	0.05~0.1	3	溝銑 (SLOTTING)
RTG0302	12	80	8500~9000	700~1000	0.2	3	溝銑 (SLOTTING)
RTG0302	12	80	8500~9000	700~900	3~6	0.05~0.1	側銑 (SIDE MILLING)
RTG0302	12	80	8500~9000	800~1100	3~6	0.2	側銑 (SIDE MILLING)
RTG0302	12	90	9000~10000	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0302	12	90	9000~10000	800~1100	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0302	12	160	16000~18000	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0302	12	160	16000~18000	1200~1500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG0303	12	80	8500~9000	500~800	0.05~0.1	3	溝銑 (SLOTTING)
RTG0303	12	80	8500~9000	700~1000	0.2	3	溝銑 (SLOTTING)
RTG0303	12	80	8500~9000	700~900	3~6	0.05~0.1	側銑 (SIDE MILLING)
RTG0303	12	80	8500~9000	800~1100	3~6	0.2	側銑 (SIDE MILLING)
RTG0303	12	90	9000~10000	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0303	12	90	9000~10000	800~1100	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0303	12	160	16000~18000	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0303	12	160	16000~18000	1200~1500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0305	12	80	8500~9000	500~800	0.05~0.1	3	溝銑 (SLOTTING)
RTG0305	12	80	8500~9000	700~1000	0.2	3	溝銑 (SLOTTING)
RTG0305	12	80	8500~9000	700~900	3~6	0.05~0.1	側銑 (SIDE MILLING)
RTG0305	12	80	8500~9000	800~1100	3~6	0.2	側銑 (SIDE MILLING)
RTG0305	12	90	9000~10000	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0305	12	90	9000~10000	800~1100	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0305	12	160	16000~18000	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0305	12	160	16000~18000	1200~1500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0402	15	90	7000~7500	500~800	0.05~0.1	4	溝銑 (SLOTTING)
RTG0402	15	90	7000~7500	700~1000	0.2~0.3	4	溝銑 (SLOTTING)
RTG0402	15	90	7000~7500	700~900	4~8	0.05~0.1	側銑 (SIDE MILLING)
RTG0402	15	90	7000~7500	800~1100	4~8	0.2~0.3	側銑 (SIDE MILLING)
RTG0402	15	120	9000~10000	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0402	15	120	9000~10000	800~1100	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0402	15	180	14000~15000	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0402	15	180	14000~15000	1200~1500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0403	15	90	7000~7500	500~800	0.05~0.1	4	溝銑 (SLOTTING)
RTG0403	15	90	7000~7500	700~1000	0.2~0.3	4	溝銑 (SLOTTING)
RTG0403	15	90	7000~7500	700~900	4~8	0.05~0.1	側銑 (SIDE MILLING)
RTG0403	15	90	7000~7500	800~1100	4~8	0.2~0.3	側銑 (SIDE MILLING)
RTG0403	15	120	9000~10000	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0403	15	120	9000~10000	800~1100	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0403	15	180	14000~15000	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0403	15	180	14000~15000	1200~1500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0405	15	90	7000~7500	500~800	0.05~0.1	4	溝銑 (SLOTTING)
RTG0405	15	90	7000~7500	700~1000	0.2~0.3	4	溝銑 (SLOTTING)
RTG0405	15	90	7000~7500	700~900	4~8	0.05~0.1	側銑 (SIDE MILLING)
RTG0405	15	90	7000~7500	800~1100	4~8	0.2~0.3	側銑 (SIDE MILLING)
RTG0405	15	120	9000~10000	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0405	15	120	9000~10000	800~1100	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0405	15	180	14000~15000	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0405	15	180	14000~15000	1200~1500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG0503	17	95	5700~6200	500~800	0.05~0.1	5	溝銑 (SLOTTING)
RTG0503	17	95	5700~6200	700~1000	0.2~0.3	5	溝銑 (SLOTTING)
RTG0503	17	95	5700~6200	700~900	5~10	0.05~0.1	側銑 (SIDE MILLING)
RTG0503	17	95	5700~6200	800~1100	5~10	0.2~0.3	側銑 (SIDE MILLING)
RTG0503	17	150	9000~10000	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0503	17	150	9000~10000	800~1100	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0503	17	180	11000~12000	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0503	17	180	11000~12000	1200~1500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0505	17	95	5700~6200	500~800	0.05~0.1	5	溝銑 (SLOTTING)
RTG0505	17	95	5700~6200	700~1000	0.2~0.3	5	溝銑 (SLOTTING)
RTG0505	17	95	5700~6200	700~900	5~10	0.05~0.1	側銑 (SIDE MILLING)
RTG0505	17	95	5700~6200	800~1100	5~10	0.2~0.3	側銑 (SIDE MILLING)
RTG0505	17	150	9000~10000	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0505	17	150	9000~10000	800~1100	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0505	17	180	11000~12000	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0505	17	180	11000~12000	1200~1500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTG0602	20	95	4700~5200	500~800	0.05~0.1	6	溝銑 (SLOTTING)
RTG0602	20	95	4700~5200	700~1000	0.2~0.3	6	溝銑 (SLOTTING)
RTG0602	20	95	4700~5200	500~800	6~12	0.05~0.1	側銑 (SIDE MILLING)
RTG0602	20	95	4700~5200	800~1200	6~12	0.2~0.3	側銑 (SIDE MILLING)
RTG0602	20	180	9000~10000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0602	20	180	9000~10000	1400~1800	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTG0603	20	95	4700~5200	500~800	0.05~0.1	6	溝銑 (SLOTTING)
RTG0603	20	95	4700~5200	700~1000	0.2~0.3	6	溝銑 (SLOTTING)
RTG0603	20	95	4700~5200	500~800	6~12	0.05~0.1	側銑 (SIDE MILLING)
RTG0603	20	95	4700~5200	800~1200	6~12	0.2~0.3	側銑 (SIDE MILLING)
RTG0603	20	180	9000~10000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0603	20	180	9000~10000	1400~1800	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTG0605	20	95	4700~5200	500~800	0.05~0.1	6	溝銑 (SLOTTING)
RTG0605	20	95	4700~5200	700~900	0.2~0.3	6	溝銑 (SLOTTING)
RTG0605	20	95	4700~5200	500~700	6~12	0.05~0.1	側銑 (SIDE MILLING)
RTG0605	20	95	4700~5200	800~1100	6~12	0.2~0.3	側銑 (SIDE MILLING)
RTG0605	20	180	9000~10000	1200~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0605	20	180	9000~10000	1400~1600	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTG0610	20	95	4700~5200	500~800	0.05~0.1	6	溝銑 (SLOTTING)
RTG0610	20	95	4700~5200	700~900	0.2~0.3	6	溝銑 (SLOTTING)
RTG0610	20	95	4700~5200	500~700	6~12	0.05~0.1	側銑 (SIDE MILLING)
RTG0610	20	95	4700~5200	800~1100	6~12	0.2~0.3	側銑 (SIDE MILLING)
RTG0610	20	180	9000~10000	1200~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0610	20	180	9000~10000	1400~1600	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG0803	30	100	3800~4300	500~800	0.05~0.1	8	溝銑 (SLOTTING)
RTG0803	30	100	3800~4300	700~900	0.25~0.35	8	溝銑 (SLOTTING)
RTG0803	30	100	3800~4300	500~800	8~16	0.05~0.1	側銑 (SIDE MILLING)
RTG0803	30	100	3800~4300	800~1100	8~16	0.25~0.35	側銑 (SIDE MILLING)
RTG0803	30	190	7200~7700	1200~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0803	30	190	7200~7700	1600~1800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG0805	30	100	3800~4300	500~800	0.05~0.1	8	溝銑 (SLOTTING)
RTG0805	30	100	3800~4300	700~900	0.25~0.35	8	溝銑 (SLOTTING)
RTG0805	30	100	3800~4300	500~800	8~16	0.05~0.1	側銑 (SIDE MILLING)
RTG0805	30	100	3800~4300	800~1100	8~16	0.25~0.35	側銑 (SIDE MILLING)
RTG0805	30	190	7200~7700	1200~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG0805	30	190	7200~7700	1600~1800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1002	30	95	2800~3300	500~800	0.05~0.1	10	溝銑 (SLOTTING)
RTG1002	30	95	2800~3300	800~1200	0.25~0.35	10	溝銑 (SLOTTING)
RTG1002	30	75	2200~2700	500~800	10~20	0.05~0.1	側銑 (SIDE MILLING)
RTG1002	30	75	2200~2700	800~1200	10~20	0.25~0.35	側銑 (SIDE MILLING)
RTG1002	30	190	5800~6300	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1002	30	190	5800~6300	1200~1600	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1003	30	95	2800~3300	500~800	0.05~0.1	10	溝銑 (SLOTTING)
RTG1003	30	95	2800~3300	800~1200	0.25~0.35	10	溝銑 (SLOTTING)
RTG1003	30	75	2200~2700	500~800	10~20	0.05~0.1	側銑 (SIDE MILLING)
RTG1003	30	75	2200~2700	800~1200	10~20	0.25~0.35	側銑 (SIDE MILLING)
RTG1003	30	190	5800~6300	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1003	30	190	5800~6300	1200~1600	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1005	30	95	2800~3300	500~800	0.05~0.1	10	溝銑 (SLOTTING)
RTG1005	30	95	2800~3300	800~1200	0.25~0.35	10	溝銑 (SLOTTING)
RTG1005	30	75	2200~2700	500~800	10~20	0.05~0.1	側銑 (SIDE MILLING)
RTG1005	30	75	2200~2700	800~1200	10~20	0.25~0.35	側銑 (SIDE MILLING)
RTG1005	30	190	5800~6300	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1005	30	190	5800~6300	1200~1600	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1010	30	95	2800~3300	500~800	0.05~0.1	10	溝銑 (SLOTTING)
RTG1010	30	95	2800~3300	800~1200	0.25~0.35	10	溝銑 (SLOTTING)
RTG1010	30	75	2200~2700	500~800	10~20	0.05~0.1	側銑 (SIDE MILLING)
RTG1010	30	75	2200~2700	800~1200	10~20	0.25~0.35	側銑 (SIDE MILLING)
RTG1010	30	190	5800~6300	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1010	30	190	5800~6300	1200~1600	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)

RTG

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTG1203	35	90	2200~2700	500~800	0.05~0.1	12	溝銑 (SLOTTING)
RTG1203	35	90	2200~2700	700~1000	0.25~0.35	12	溝銑 (SLOTTING)
RTG1203	35	75	1800~2300	500~800	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1203	35	75	1800~2300	700~1000	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1203	35	190	4800~5300	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1203	35	190	4800~5300	1000~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1205	35	90	2200~2700	500~800	0.05~0.1	12	溝銑 (SLOTTING)
RTG1205	35	90	2200~2700	700~1000	0.25~0.35	12	溝銑 (SLOTTING)
RTG1205	35	75	1800~2300	500~800	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1205	35	75	1800~2300	700~1000	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1205	35	190	4800~5300	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1205	35	190	4800~5300	1000~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1210	35	90	2200~2700	500~800	0.05~0.1	12	溝銑 (SLOTTING)
RTG1210	35	90	2200~2700	700~1000	0.25~0.35	12	溝銑 (SLOTTING)
RTG1210	35	75	1800~2300	500~800	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1210	35	75	1800~2300	700~1000	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1210	35	190	4800~5300	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1210	35	190	4800~5300	1000~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1215	35	90	2200~2700	500~800	0.05~0.1	12	溝銑 (SLOTTING)
RTG1215	35	90	2200~2700	700~1000	0.25~0.35	12	溝銑 (SLOTTING)
RTG1215	35	75	1800~2300	500~800	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1215	35	75	1800~2300	700~1000	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1215	35	190	4800~5300	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1215	35	190	4800~5300	1000~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTG1220	35	90	2200~2700	500~800	0.05~0.1	12	溝銑 (SLOTTING)
RTG1220	35	90	2200~2700	700~1000	0.25~0.35	12	溝銑 (SLOTTING)
RTG1220	35	75	1800~2300	500~800	12~24	0.05~0.1	側銑 (SIDE MILLING)
RTG1220	35	75	1800~2300	700~1000	12~24	0.25~0.35	側銑 (SIDE MILLING)
RTG1220	35	190	4800~5300	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTG1220	35	190	4800~5300	1000~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)

RTA

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTA0205	12	60	9000~9500	800~1000	0.11~0.14	1~2	溝銑 (SLOTTING)
RTA0205	12	60	9000~9500	800~1000	0.05~0.07	1~2	溝銑 (SLOTTING)
RTA0205	12	100	15500~16500	1200~1400	0.11~0.14	1~2	溝銑 (SLOTTING)
RTA0205	12	100	15500~16500	900~1100	0.05~0.07	1~2	溝銑 (SLOTTING)
RTA0205	12	60	9000~9500	1000~1200	2~4	0.12~0.15	側銑 (SIDE MILLING)
RTA0205	12	60	9000~9500	700~900	2~4	0.05~0.07	側銑 (SIDE MILLING)
RTA0205	12	85	13500~14000	1100~1300	2~4	0.12~0.15	側銑 (SIDE MILLING)
RTA0205	12	85	13500~14000	800~1000	2~4	0.05~0.07	側銑 (SIDE MILLING)
RTA0205	12	60	9000~9500	1200~1400	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0205	12	60	9000~9500	1100~1300	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
RTA0205	12	150	23000~24000	1800~2200	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0205	12	150	23000~24000	1800~2200	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
RTA0305	12	85	8800~9300	800~1000	0.12~0.15	1~3	溝銑 (SLOTTING)
RTA0305	12	85	8800~9300	800~1000	0.06~0.08	1~3	溝銑 (SLOTTING)
RTA0305	12	100	10500~11000	1000~1200	0.12~0.15	1~3	溝銑 (SLOTTING)
RTA0305	12	100	10500~11000	900~1100	0.06~0.08	1~3	溝銑 (SLOTTING)
RTA0305	12	85	8800~9300	1000~1200	3~6	0.12~0.15	側銑 (SIDE MILLING)
RTA0305	12	85	8800~9300	800~1000	3~6	0.06~0.08	側銑 (SIDE MILLING)
RTA0305	12	85	8800~9300	1000~1200	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0305	12	85	8800~9300	1000~1200	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0305	12	165	17000~18000	1800~2200	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0305	12	165	17000~18000	1800~2200	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0405	14	100	8000~8400	600~800	0.12~0.15	2~4	溝銑 (SLOTTING)
RTA0405	14	100	8000~8400	800~1000	0.06~0.08	2~4	溝銑 (SLOTTING)
RTA0405	14	85	6500~7000	800~1000	4~8	0.12~0.15	側銑 (SIDE MILLING)
RTA0405	14	85	6500~7000	600~800	4~8	0.06~0.08	側銑 (SIDE MILLING)
RTA0405	14	110	8700~9200	800~1000	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0405	14	110	8700~9200	600~800	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0405	14	150	12000~13000	1200~1600	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0405	14	165	13000~14000	1600~2000	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0410	14	100	8000~8400	700~900	0.12~0.15	1~4	溝銑 (SLOTTING)
RTA0410	14	100	8000~8400	800~1000	0.06~0.08	1~4	溝銑 (SLOTTING)
RTA0410	14	85	6500~7000	800~1000	4~8	0.12~0.15	側銑 (SIDE MILLING)
RTA0410	14	85	6500~7000	600~800	4~8	0.06~0.08	側銑 (SIDE MILLING)
RTA0410	14	110	8700~9200	900~1100	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0410	14	110	8700~9200	1100~1400	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0410	14	150	12000~13000	1200~1600	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0410	14	165	13000~14000	1600~2000	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)

RTA

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTA0505	17	95	5800~6300	900~1100	0.15~0.18	3~5	溝銑 (SLOTTING)
RTA0505	17	120	7300~7800	800~1200	0.06~0.08	3~5	溝銑 (SLOTTING)
RTA0505	17	95	5800~6300	800~1000	5~10	0.15~0.18	側銑 (SIDE MILLING)
RTA0505	17	95	5800~6300	600~800	5~10	0.06~0.08	側銑 (SIDE MILLING)
RTA0505	17	135	8300~8800	1400~1800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTA0505	17	135	8300~8800	1300~1700	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0505	17	165	10500~11000	1700~2100	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTA0505	17	165	10500~11000	1600~2000	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0510	17	95	5800~6300	900~1100	0.15~0.18	2~5	溝銑 (SLOTTING)
RTA0510	17	120	7300~7800	800~1200	0.06~0.08	2~5	溝銑 (SLOTTING)
RTA0510	17	95	5800~6300	800~1000	5~10	0.15~0.18	側銑 (SIDE MILLING)
RTA0510	17	95	5800~6300	600~800	5~10	0.06~0.08	側銑 (SIDE MILLING)
RTA0510	17	135	8300~8800	1400~1800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTA0510	17	135	8300~8800	1300~1700	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0510	17	165	10500~11000	1700~2100	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTA0510	17	165	10500~11000	1600~2000	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0605	20	95	4800~5200	900~1100	0.15~0.18	4~6	溝銑 (SLOTTING)
RTA0605	20	120	6200~6600	800~1200	0.06~0.08	4~6	溝銑 (SLOTTING)
RTA0605	20	95	4800~5200	800~1000	6~12	0.15~0.18	側銑 (SIDE MILLING)
RTA0605	20	95	4800~5200	600~800	6~12	0.06~0.08	側銑 (SIDE MILLING)
RTA0605	20	135	7200~7600	1400~1800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTA0605	20	135	7200~7600	1300~1700	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0610	20	80	4200~4600	900~1100	0.15~0.18	3~6	溝銑 (SLOTTING)
RTA0610	20	130	6800~7200	800~1200	0.06~0.08	3~6	溝銑 (SLOTTING)
RTA0610	20	95	5000~5500	800~1000	6~12	0.15~0.18	側銑 (SIDE MILLING)
RTA0610	20	95	5000~5500	600~800	6~12	0.06~0.08	側銑 (SIDE MILLING)
RTA0610	20	135	7200~7600	1400~1800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTA0610	20	135	7200~7600	1300~1700	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0805	30	125	5000~5600	900~1100	0.18~0.23	6~8	溝銑 (SLOTTING)
RTA0805	30	135	5200~5600	600~800	0.07~0.1	6~8	溝銑 (SLOTTING)
RTA0805	30	90	3500~4000	700~1000	8~16	0.18~0.23	側銑 (SIDE MILLING)
RTA0805	30	90	3500~4000	600~800	8~16	0.07~0.1	側銑 (SIDE MILLING)
RTA0805	30	150	6000~6600	1600~2000	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
RTA0805	30	190	7500~8000	1100~1500	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTA0810	30	125	5000~5600	900~1100	0.18~0.23	5~8	溝銑 (SLOTTING)
RTA0810	30	135	5200~5600	600~800	0.07~0.1	5~8	溝銑 (SLOTTING)
RTA0810	30	90	3500~4000	600~1000	8~16	0.18~0.23	側銑 (SIDE MILLING)
RTA0810	30	90	3500~4000	600~800	8~16	0.07~0.1	側銑 (SIDE MILLING)
RTA0810	30	150	6000~6600	1600~2000	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
RTA0810	30	190	7500~8000	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)

RTA

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵 : *Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTA1005	35	125	4000~4500	800~1200	0.2~0.25	8~10	溝銑 (SLOTTING)
RTA1005	35	135	4200~4600	600~800	0.07~0.1	8~10	溝銑 (SLOTTING)
RTA1005	35	90	2800~3200	600~900	10~20	0.2~0.25	側銑 (SIDE MILLING)
RTA1005	35	90	2800~3200	600~800	10~20	0.07~0.1	側銑 (SIDE MILLING)
RTA1005	35	150	4800~5400	1600~2000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTA1005	35	190	6000~6500	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTA1010	35	125	4000~4500	800~1200	0.2~0.25	7~10	溝銑 (SLOTTING)
RTA1010	35	135	4200~4600	600~800	0.07~0.1	7~10	溝銑 (SLOTTING)
RTA1010	35	90	2800~3200	600~900	10~20	0.2~0.25	側銑 (SIDE MILLING)
RTA1010	35	90	2800~3200	600~800	10~20	0.07~0.1	側銑 (SIDE MILLING)
RTA1010	35	150	4800~5400	1600~2000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTA1010	35	190	6000~6500	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTA1015	35	125	4000~4500	800~1200	0.2~0.25	6~10	溝銑 (SLOTTING)
RTA1015	35	135	4200~4600	600~800	0.07~0.1	6~10	溝銑 (SLOTTING)
RTA1015	35	90	2800~3200	600~900	10~20	0.2~0.25	側銑 (SIDE MILLING)
RTA1015	35	90	2800~3200	600~800	10~20	0.07~0.1	側銑 (SIDE MILLING)
RTA1015	35	150	4800~5400	1600~2000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTA1015	35	190	6000~6500	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTA1020	35	125	4000~4500	800~1200	0.2~0.25	5~10	溝銑 (SLOTTING)
RTA1020	35	135	4200~4600	600~800	0.07~0.1	5~10	溝銑 (SLOTTING)
RTA1020	35	90	2800~3200	600~900	10~20	0.2~0.25	側銑 (SIDE MILLING)
RTA1020	35	90	2800~3200	600~800	10~20	0.07~0.1	側銑 (SIDE MILLING)
RTA1020	35	150	4800~5400	1600~2000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTA1020	35	190	6000~6500	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTA1210	40	75	2000~2500	800~1100	0.2~0.25	9~12	溝銑 (SLOTTING)
RTA1210	40	150	4000~4500	800~1000	0.07~0.12	9~12	溝銑 (SLOTTING)
RTA1210	40	105	2800~3200	600~800	12~24	0.2~0.25	側銑 (SIDE MILLING)
RTA1210	40	105	2800~3200	400~600	12~24	0.07~0.12	側銑 (SIDE MILLING)
RTA1210	40	150	4000~4500	1400~1600	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTA1210	40	170	4500~5000	1300~1600	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)
RTA1220	40	75	2000~2500	800~1100	0.2~0.25	7~12	溝銑 (SLOTTING)
RTA1220	40	150	4000~4500	800~1000	0.07~0.12	7~12	溝銑 (SLOTTING)
RTA1220	40	105	2800~3200	600~800	12~24	0.2~0.25	側銑 (SIDE MILLING)
RTA1220	40	105	2800~3200	400~600	12~24	0.07~0.12	側銑 (SIDE MILLING)
RTA1220	40	150	4000~4500	1400~1600	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTA1220	40	170	4500~5000	1300~1600	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)

RTA

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTA0205	12	60	9000~9500	700~900	0.11~0.14	1~2	溝銑 (SLOTTING)
RTA0205	12	60	9000~9500	700~900	0.05~0.07	1~2	溝銑 (SLOTTING)
RTA0205	12	90	14000~15000	1000~1200	0.11~0.14	1~2	溝銑 (SLOTTING)
RTA0205	12	90	14000~15000	900~1100	0.05~0.07	1~2	溝銑 (SLOTTING)
RTA0205	12	60	9000~9500	900~1100	2~4	0.12~0.15	側銑 (SIDE MILLING)
RTA0205	12	60	9000~9500	700~900	2~4	0.05~0.07	側銑 (SIDE MILLING)
RTA0205	12	85	13500~14000	1100~1300	2~4	0.12~0.15	側銑 (SIDE MILLING)
RTA0205	12	85	13500~14000	800~1000	2~4	0.05~0.07	側銑 (SIDE MILLING)
RTA0205	12	60	9000~9500	1000~1200	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0205	12	60	9000~9500	1000~1200	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
RTA0205	12	140	22000~23000	1600~2000	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0205	12	140	22000~23000	1600~2000	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
RTA0305	12	85	8800~9300	600~800	0.12~0.15	1~3	溝銑 (SLOTTING)
RTA0305	12	85	8800~9300	700~900	0.06~0.08	1~3	溝銑 (SLOTTING)
RTA0305	12	100	10500~11000	1000~1200	0.12~0.15	1~3	溝銑 (SLOTTING)
RTA0305	12	100	10500~11000	900~1100	0.06~0.08	1~3	溝銑 (SLOTTING)
RTA0305	12	85	8800~9300	800~1000	3~6	0.12~0.15	側銑 (SIDE MILLING)
RTA0305	12	85	8800~9300	700~900	3~6	0.06~0.08	側銑 (SIDE MILLING)
RTA0305	12	85	8800~9300	1000~1200	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0305	12	85	8800~9300	1000~1200	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0305	12	145	15000~16000	1700~2000	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0305	12	155	16000~17000	1600~2000	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0405	14	95	7800~8200	600~800	0.12~0.15	2~4	溝銑 (SLOTTING)
RTA0405	14	100	8000~8400	600~900	0.06~0.08	2~4	溝銑 (SLOTTING)
RTA0405	14	85	6500~7000	700~900	4~8	0.12~0.15	側銑 (SIDE MILLING)
RTA0405	14	85	6500~7000	400~600	4~8	0.06~0.08	側銑 (SIDE MILLING)
RTA0405	14	110	8700~9200	800~1100	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0405	14	110	8700~9200	1000~1300	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0405	14	145	11000~12000	1200~1400	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0405	14	155	12000~13000	1300~1700	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0410	14	95	7800~8200	600~800	0.12~0.15	1~4	溝銑 (SLOTTING)
RTA0410	14	100	8000~8400	600~900	0.06~0.08	1~4	溝銑 (SLOTTING)
RTA0410	14	85	6500~7000	700~900	4~8	0.12~0.15	側銑 (SIDE MILLING)
RTA0410	14	85	6500~7000	400~600	4~8	0.06~0.08	側銑 (SIDE MILLING)
RTA0410	14	110	8700~9200	800~1100	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0410	14	110	8700~9200	1000~1300	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0410	14	145	11000~12000	1200~1400	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0410	14	155	12000~13000	1300~1700	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)

RTA

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTA0505	17	85	5200~5700	900~1100	0.15~0.18	3~5	溝銑 (SLOTTING)
RTA0505	17	120	7300~7800	800~1200	0.06~0.08	3~5	溝銑 (SLOTTING)
RTA0505	17	85	5200~5700	800~1000	5~10	0.15~0.18	側銑 (SIDE MILLING)
RTA0505	17	95	5800~6300	600~800	5~10	0.06~0.08	側銑 (SIDE MILLING)
RTA0505	17	135	8300~8800	1300~1700	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTA0505	17	135	8300~8800	1200~1600	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0505	17	160	10000~10500	1600~1900	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTA0505	17	160	10000~10500	1500~1800	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0510	17	85	5200~5700	900~1100	0.15~0.18	2~5	溝銑 (SLOTTING)
RTA0510	17	120	7300~7800	800~1200	0.06~0.08	2~5	溝銑 (SLOTTING)
RTA0510	17	85	5200~5700	800~1000	5~10	0.15~0.18	側銑 (SIDE MILLING)
RTA0510	17	95	5800~6300	600~800	5~10	0.06~0.08	側銑 (SIDE MILLING)
RTA0510	17	135	8300~8800	1300~1700	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTA0510	17	135	8300~8800	1200~1600	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0510	17	160	10000~10500	1600~1900	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTA0510	17	160	10000~10500	1500~1800	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0605	20	85	4200~4700	800~1000	0.15~0.18	4~6	溝銑 (SLOTTING)
RTA0605	20	115	5700~6200	800~1200	0.06~0.08	4~6	溝銑 (SLOTTING)
RTA0605	20	85	4200~4600	700~900	6~12	0.15~0.18	側銑 (SIDE MILLING)
RTA0605	20	90	4400~4800	500~700	6~12	0.06~0.08	側銑 (SIDE MILLING)
RTA0605	20	135	7200~7600	1200~1600	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTA0605	20	135	7200~7600	1200~1600	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0610	20	85	4200~4700	800~1000	0.15~0.18	3~6	溝銑 (SLOTTING)
RTA0610	20	115	5700~6200	800~1200	0.06~0.08	3~6	溝銑 (SLOTTING)
RTA0610	20	85	4200~4600	700~900	6~12	0.15~0.18	側銑 (SIDE MILLING)
RTA0610	20	90	4400~4800	500~700	6~12	0.06~0.08	側銑 (SIDE MILLING)
RTA0610	20	135	7200~7600	1200~1600	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTA0610	20	135	7200~7600	1200~1600	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0805	30	100	3800~4300	800~1000	0.18~0.23	6~8	溝銑 (SLOTTING)
RTA0805	30	135	5200~5600	600~800	0.07~0.1	6~8	溝銑 (SLOTTING)
RTA0805	30	80	3000~3500	600~900	8~16	0.18~0.23	側銑 (SIDE MILLING)
RTA0805	30	90	3400~3800	600~800	8~16	0.07~0.1	側銑 (SIDE MILLING)
RTA0805	30	105	4000~4500	1600~1800	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
RTA0805	30	185	7200~7700	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTA0810	30	100	3800~4300	800~1000	0.18~0.23	5~8	溝銑 (SLOTTING)
RTA0810	30	135	5200~5600	600~800	0.07~0.1	5~8	溝銑 (SLOTTING)
RTA0810	30	80	3000~3500	600~900	8~16	0.18~0.23	側銑 (SIDE MILLING)
RTA0810	30	90	3400~3800	600~800	8~16	0.07~0.1	側銑 (SIDE MILLING)
RTA0810	30	105	4000~4500	1600~1800	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
RTA0810	30	185	7200~7700	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)

RTA

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTA1005	35	100	3000~3400	700~1000	0.2~0.25	8~10	溝銑 (SLOTTING)
RTA1005	35	135	4200~4600	600~800	0.07~0.1	8~10	溝銑 (SLOTTING)
RTA1005	35	80	2400~2800	500~700	10~20	0.15~0.2	側銑 (SIDE MILLING)
RTA1005	35	90	2800~3200	450~650	10~20	0.07~0.1	側銑 (SIDE MILLING)
RTA1005	35	105	3200~3600	1200~1600	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTA1005	35	185	5800~6200	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTA1010	35	100	3000~3400	700~1000	0.2~0.25	7~10	溝銑 (SLOTTING)
RTA1010	35	135	4200~4600	600~800	0.07~0.1	7~10	溝銑 (SLOTTING)
RTA1010	35	80	2400~2800	500~700	10~20	0.15~0.2	側銑 (SIDE MILLING)
RTA1010	35	90	2800~3200	450~650	10~20	0.07~0.1	側銑 (SIDE MILLING)
RTA1010	35	105	3200~3600	1200~1600	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTA1010	35	185	5800~6200	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTA1015	35	100	3000~3400	700~1000	0.2~0.25	6~10	溝銑 (SLOTTING)
RTA1015	35	135	4200~4600	600~800	0.07~0.1	6~10	溝銑 (SLOTTING)
RTA1015	35	80	2400~2800	500~700	10~20	0.15~0.2	側銑 (SIDE MILLING)
RTA1015	35	90	2800~3200	450~650	10~20	0.07~0.1	側銑 (SIDE MILLING)
RTA1015	35	105	3200~3600	1200~1600	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTA1015	35	185	5800~6200	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTA1020	35	100	3000~3400	700~1000	0.2~0.25	5~10	溝銑 (SLOTTING)
RTA1020	35	135	4200~4600	600~800	0.07~0.1	5~10	溝銑 (SLOTTING)
RTA1020	35	80	2400~2800	500~700	10~20	0.15~0.2	側銑 (SIDE MILLING)
RTA1020	35	90	2800~3200	450~650	10~20	0.07~0.1	側銑 (SIDE MILLING)
RTA1020	35	105	3200~3600	1200~1600	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTA1020	35	185	5800~6200	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTA1210	40	75	2000~2400	600~900	0.2~0.25	9~12	溝銑 (SLOTTING)
RTA1210	40	145	3800~4200	800~1000	0.07~0.12	9~12	溝銑 (SLOTTING)
RTA1210	40	70	1800~2200	600~800	12~24	0.15~0.2	側銑 (SIDE MILLING)
RTA1210	40	70	1800~2200	300~500	12~24	0.07~0.12	側銑 (SIDE MILLING)
RTA1210	40	140	3600~4000	1000~1200	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTA1210	40	150	4500~5000	1200~1500	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)
RTA1220	40	75	2000~2400	600~900	0.2~0.25	7~12	溝銑 (SLOTTING)
RTA1220	40	145	3800~4200	800~1000	0.07~0.12	7~12	溝銑 (SLOTTING)
RTA1220	40	70	1800~2200	600~800	12~24	0.15~0.2	側銑 (SIDE MILLING)
RTA1220	40	70	1800~2200	300~500	12~24	0.07~0.12	側銑 (SIDE MILLING)
RTA1220	40	140	3600~4000	1000~1200	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTA1220	40	150	4500~5000	1200~1500	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)

RTA

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTA0205	12	60	9000~9500	700~900	0.11~0.14	1~2	溝銑 (SLOTTING)
RTA0205	12	60	9000~9500	700~900	0.05~0.07	1~2	溝銑 (SLOTTING)
RTA0205	12	90	14000~15000	1000~1200	0.11~0.14	1~2	溝銑 (SLOTTING)
RTA0205	12	90	14000~15000	900~1100	0.05~0.07	1~2	溝銑 (SLOTTING)
RTA0205	12	60	9000~9500	900~1100	2~4	0.12~0.15	側銑 (SIDE MILLING)
RTA0205	12	60	9000~9500	700~900	2~4	0.05~0.07	側銑 (SIDE MILLING)
RTA0205	12	85	13500~14000	1100~1300	2~4	0.12~0.15	側銑 (SIDE MILLING)
RTA0205	12	85	13500~14000	800~1000	2~4	0.05~0.07	側銑 (SIDE MILLING)
RTA0205	12	60	9000~9500	1000~1200	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0205	12	60	9000~9500	1000~1200	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
RTA0205	12	140	22000~23000	1600~2000	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0205	12	140	22000~23000	1600~2000	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
RTA0305	12	85	8800~9300	600~800	0.12~0.15	1~3	溝銑 (SLOTTING)
RTA0305	12	85	8800~9300	700~900	0.06~0.08	1~3	溝銑 (SLOTTING)
RTA0305	12	100	10500~11000	1000~1200	0.12~0.15	1~3	溝銑 (SLOTTING)
RTA0305	12	100	10500~11000	900~1100	0.06~0.08	1~3	溝銑 (SLOTTING)
RTA0305	12	85	8800~9300	800~1000	3~6	0.12~0.15	側銑 (SIDE MILLING)
RTA0305	12	85	8800~9300	700~900	3~6	0.06~0.08	側銑 (SIDE MILLING)
RTA0305	12	85	8800~9300	1000~1200	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0305	12	85	8800~9300	1000~1200	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0305	12	145	15000~16000	1700~2000	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0305	12	155	16000~17000	1600~2000	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0405	14	95	7800~8200	600~800	0.12~0.15	2~4	溝銑 (SLOTTING)
RTA0405	14	100	8000~8400	600~900	0.06~0.08	2~4	溝銑 (SLOTTING)
RTA0405	14	85	6500~7000	700~900	4~8	0.12~0.15	側銑 (SIDE MILLING)
RTA0405	14	85	6500~7000	400~600	4~8	0.06~0.08	側銑 (SIDE MILLING)
RTA0405	14	110	8700~9200	800~1100	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0405	14	110	8700~9200	1000~1300	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0405	14	145	11000~12000	1200~1400	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0405	14	155	12000~13000	1300~1700	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0410	14	95	7800~8200	600~800	0.12~0.15	1~4	溝銑 (SLOTTING)
RTA0410	14	100	8000~8400	600~900	0.06~0.08	1~4	溝銑 (SLOTTING)
RTA0410	14	85	6500~7000	700~900	4~8	0.12~0.15	側銑 (SIDE MILLING)
RTA0410	14	85	6500~7000	400~600	4~8	0.06~0.08	側銑 (SIDE MILLING)
RTA0410	14	110	8700~9200	800~1100	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0410	14	110	8700~9200	1000~1300	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0410	14	145	11000~12000	1200~1400	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTA0410	14	155	12000~13000	1300~1700	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)

RTA

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTA0505	17	85	5200~5700	900~1100	0.15~0.18	3~5	溝銑 (SLOTTING)
RTA0505	17	120	7300~7800	800~1200	0.06~0.08	3~5	溝銑 (SLOTTING)
RTA0505	17	85	5200~5700	800~1000	5~10	0.15~0.18	側銑 (SIDE MILLING)
RTA0505	17	95	5800~6300	600~800	5~10	0.06~0.08	側銑 (SIDE MILLING)
RTA0505	17	135	8300~8800	1300~1700	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTA0505	17	135	8300~8800	1200~1600	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0505	17	160	10000~10500	1600~1900	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTA0505	17	160	10000~10500	1500~1800	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0510	17	85	5200~5700	900~1100	0.15~0.18	2~5	溝銑 (SLOTTING)
RTA0510	17	120	7300~7800	800~1200	0.06~0.08	2~5	溝銑 (SLOTTING)
RTA0510	17	85	5200~5700	800~1000	5~10	0.15~0.18	側銑 (SIDE MILLING)
RTA0510	17	95	5800~6300	600~800	5~10	0.06~0.08	側銑 (SIDE MILLING)
RTA0510	17	135	8300~8800	1300~1700	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTA0510	17	135	8300~8800	1200~1600	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0510	17	160	10000~10500	1600~1900	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTA0510	17	160	10000~10500	1500~1800	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0605	20	85	4200~4700	800~1000	0.15~0.18	4~6	溝銑 (SLOTTING)
RTA0605	20	115	5700~6200	800~1200	0.06~0.08	4~6	溝銑 (SLOTTING)
RTA0605	20	85	4200~4600	700~900	6~12	0.15~0.18	側銑 (SIDE MILLING)
RTA0605	20	90	4400~4800	500~700	6~12	0.06~0.08	側銑 (SIDE MILLING)
RTA0605	20	135	7200~7600	1200~1600	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTA0605	20	135	7200~7600	1200~1600	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0610	20	85	4200~4700	800~1000	0.15~0.18	3~6	溝銑 (SLOTTING)
RTA0610	20	115	5700~6200	800~1200	0.06~0.08	3~6	溝銑 (SLOTTING)
RTA0610	20	85	4200~4600	700~900	6~12	0.15~0.18	側銑 (SIDE MILLING)
RTA0610	20	90	4400~4800	500~700	6~12	0.06~0.08	側銑 (SIDE MILLING)
RTA0610	20	135	7200~7600	1200~1600	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTA0610	20	135	7200~7600	1200~1600	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0805	30	100	3800~4300	800~1000	0.18~0.23	6~8	溝銑 (SLOTTING)
RTA0805	30	135	5200~5600	600~800	0.07~0.1	6~8	溝銑 (SLOTTING)
RTA0805	30	80	3000~3500	600~900	8~16	0.18~0.23	側銑 (SIDE MILLING)
RTA0805	30	90	3400~3800	600~800	8~16	0.07~0.1	側銑 (SIDE MILLING)
RTA0805	30	105	4000~4500	1600~1800	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
RTA0805	30	185	7200~7700	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTA0810	30	100	3800~4300	800~1000	0.18~0.23	5~8	溝銑 (SLOTTING)
RTA0810	30	135	5200~5600	600~800	0.07~0.1	5~8	溝銑 (SLOTTING)
RTA0810	30	80	3000~3500	600~900	8~16	0.18~0.23	側銑 (SIDE MILLING)
RTA0810	30	90	3400~3800	600~800	8~16	0.07~0.1	側銑 (SIDE MILLING)
RTA0810	30	105	4000~4500	1600~1800	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
RTA0810	30	185	7200~7700	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)

RTA

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTA1005	35	100	3000~3400	700~1000	0.2~0.25	8~10	溝銑 (SLOTTING)
RTA1005	35	135	4200~4600	600~800	0.07~0.1	8~10	溝銑 (SLOTTING)
RTA1005	35	80	2400~2800	500~700	10~20	0.15~0.2	側銑 (SIDE MILLING)
RTA1005	35	90	2800~3200	450~650	10~20	0.07~0.1	側銑 (SIDE MILLING)
RTA1005	35	105	3200~3600	1200~1600	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTA1005	35	185	5800~6200	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTA1010	35	100	3000~3400	700~1000	0.2~0.25	7~10	溝銑 (SLOTTING)
RTA1010	35	135	4200~4600	600~800	0.07~0.1	7~10	溝銑 (SLOTTING)
RTA1010	35	80	2400~2800	500~700	10~20	0.15~0.2	側銑 (SIDE MILLING)
RTA1010	35	90	2800~3200	450~650	10~20	0.07~0.1	側銑 (SIDE MILLING)
RTA1010	35	105	3200~3600	1200~1600	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTA1010	35	185	5800~6200	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTA1015	35	100	3000~3400	700~1000	0.2~0.25	6~10	溝銑 (SLOTTING)
RTA1015	35	135	4200~4600	600~800	0.07~0.1	6~10	溝銑 (SLOTTING)
RTA1015	35	80	2400~2800	500~700	10~20	0.15~0.2	側銑 (SIDE MILLING)
RTA1015	35	90	2800~3200	450~650	10~20	0.07~0.1	側銑 (SIDE MILLING)
RTA1015	35	105	3200~3600	1200~1600	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTA1015	35	185	5800~6200	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTA1020	35	100	3000~3400	700~1000	0.2~0.25	5~10	溝銑 (SLOTTING)
RTA1020	35	135	4200~4600	600~800	0.07~0.1	5~10	溝銑 (SLOTTING)
RTA1020	35	80	2400~2800	500~700	10~20	0.15~0.2	側銑 (SIDE MILLING)
RTA1020	35	90	2800~3200	450~650	10~20	0.07~0.1	側銑 (SIDE MILLING)
RTA1020	35	105	3200~3600	1200~1600	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTA1020	35	185	5800~6200	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTA1210	40	75	2000~2400	600~900	0.2~0.25	9~12	溝銑 (SLOTTING)
RTA1210	40	145	3800~4200	800~1000	0.07~0.12	9~12	溝銑 (SLOTTING)
RTA1210	40	70	1800~2200	600~800	12~24	0.15~0.2	側銑 (SIDE MILLING)
RTA1210	40	70	1800~2200	300~500	12~24	0.07~0.12	側銑 (SIDE MILLING)
RTA1210	40	140	3600~4000	1000~1200	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTA1210	40	150	4500~5000	1200~1500	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)
RTA1220	40	75	2000~2400	600~900	0.2~0.25	7~12	溝銑 (SLOTTING)
RTA1220	40	145	3800~4200	800~1000	0.07~0.12	7~12	溝銑 (SLOTTING)
RTA1220	40	70	1800~2200	600~800	12~24	0.15~0.2	側銑 (SIDE MILLING)
RTA1220	40	70	1800~2200	300~500	12~24	0.07~0.12	側銑 (SIDE MILLING)
RTA1220	40	140	3600~4000	1000~1200	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTA1220	40	150	4500~5000	1200~1500	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)

RTA

切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼：*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTA0205	12	60	9000~9500	600~800	0.03~0.05	1~2	溝銑 (SLOTTING)
RTA0205	12	60	9000~9500	300~500	2~4	0.03~0.05	側銑 (SIDE MILLING)
RTA0205	12	60	9000~9500	600~800	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
RTA0205	12	140	22000~23000	1400~1600	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
RTA0305	12	85	8800~9300	600~800	0.04~0.06	1~3	溝銑 (SLOTTING)
RTA0305	12	75	8000~8500	300~500	3~6	0.04~0.06	側銑 (SIDE MILLING)
RTA0305	12	85	8800~9300	600~800	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
RTA0305	12	145	15000~16000	1400~1600	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
RTA0405	14	90	7200~7600	600~800	0.04~0.06	2~4	溝銑 (SLOTTING)
RTA0405	14	75	6000~6400	300~500	4~8	0.04~0.06	側銑 (SIDE MILLING)
RTA0405	14	110	8700~9200	600~800	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
RTA0405	14	140	11000~12000	1000~1200	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
RTA0410	14	90	7200~7600	600~800	0.04~0.06	1~4	溝銑 (SLOTTING)
RTA0410	14	75	6000~6400	300~500	4~8	0.04~0.06	側銑 (SIDE MILLING)
RTA0410	14	110	8700~9200	600~800	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
RTA0410	14	140	11000~12000	1000~1200	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
RTA0505	17	95	6000~6600	800~1000	0.05~0.07	3~5	溝銑 (SLOTTING)
RTA0505	17	75	4800~5200	400~600	5~10	0.05~0.07	側銑 (SIDE MILLING)
RTA0505	17	135	8600~9000	800~1000	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
RTA0505	17	145	9000~10000	1200~1400	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
RTA0510	17	95	6000~6600	800~1000	0.05~0.07	2~5	溝銑 (SLOTTING)
RTA0510	17	75	4800~5200	400~600	5~10	0.05~0.07	側銑 (SIDE MILLING)
RTA0510	17	135	8600~9000	800~1000	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
RTA0510	17	145	9000~10000	1200~1400	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
RTA0605	20	95	5000~5500	800~1000	0.05~0.07	4.5	溝銑 (SLOTTING)
RTA0605	20	75	4000~4400	400~600	6~12	0.05~0.07	側銑 (SIDE MILLING)
RTA0605	20	135	7200~7600	1000~1200	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
RTA0610	20	95	5000~5500	800~1000	0.05~0.07	3~6	溝銑 (SLOTTING)
RTA0610	20	75	4000~4400	400~600	6~12	0.05~0.07	側銑 (SIDE MILLING)
RTA0610	20	135	7200~7600	1000~1200	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
RTA0805	30	135	5200~5700	600~800	0.06~0.08	6~8	溝銑 (SLOTTING)
RTA0805	30	85	3200~3700	400~600	8~16	0.06~0.08	側銑 (SIDE MILLING)
RTA0805	30	150	6000~6500	800~1000	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA0810	30	135	5200~5700	600~800	0.06~0.08	5~8	溝銑 (SLOTTING)
RTA0810	30	85	3200~3700	400~600	8~16	0.06~0.08	側銑 (SIDE MILLING)
RTA0810	30	150	6000~6500	800~1000	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTA1005	35	135	4200~4600	600~800	0.07~0.1	8.5	溝銑 (SLOTTING)
RTA1005	35	85	2600~3000	400~600	10~20	0.07~0.1	側銑 (SIDE MILLING)
RTA1005	35	150	4800~5200	800~1000	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)

RTA

切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼：*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTA1010	35	135	4200~4600	600~800	0.07~0.1	7~10	溝銑 (SLOTTING)
RTA1010	35	85	2600~3000	400~600	10~20	0.07~0.1	側銑 (SIDE MILLING)
RTA1010	35	150	4800~5200	800~1000	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTA1015	35	135	4200~4600	600~800	0.07~0.1	6~10	溝銑 (SLOTTING)
RTA1015	35	85	2600~3000	400~600	10~20	0.07~0.1	側銑 (SIDE MILLING)
RTA1015	35	150	4800~5200	800~1000	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTA1020	35	135	4200~4600	600~800	0.07~0.1	5~10	溝銑 (SLOTTING)
RTA1020	35	85	2600~3000	400~600	10~20	0.07~0.1	側銑 (SIDE MILLING)
RTA1020	35	150	4800~5200	800~1000	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTA1210	40	100	2600~3000	600~800	0.07~0.12	9~12	溝銑 (SLOTTING)
RTA1210	40	60	1600~2000	300~400	12~24	0.07~0.12	側銑 (SIDE MILLING)
RTA1210	40	130	3400~3800	600~800	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)
RTA1220	40	100	2600~3000	600~800	0.07~0.12	7~12	溝銑 (SLOTTING)
RTA1220	40	60	1600~2000	300~400	12~24	0.07~0.12	側銑 (SIDE MILLING)
RTA1220	40	130	3400~3800	600~800	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)

RTD

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTD0202	12	60	9000~10000	900~1100	0.1~0.12	1~2	溝銑 (SLOTTING)
RTD0202	12	60	9000~10000	800~1000	0.04~0.06	1~2	溝銑 (SLOTTING)
RTD0202	12	100	16000~17000	1100~1300	0.1~0.12	1~2	溝銑 (SLOTTING)
RTD0202	12	100	16000~17000	1000~1200	0.04~0.06	1~2	溝銑 (SLOTTING)
RTD0202	12	60	9000~10000	1100~1300	2~4	0.1~0.12	側銑 (SIDE MILLING)
RTD0202	12	60	9000~10000	800~1000	2~4	0.04~0.06	側銑 (SIDE MILLING)
RTD0202	12	85	13500~15000	1200~1400	2~4	0.1~0.12	側銑 (SIDE MILLING)
RTD0202	12	85	13500~15000	900~1100	2~4	0.04~0.06	側銑 (SIDE MILLING)
RTD0202	12	60	9000~10000	1100~1400	0.1~0.12	0.1~0.12	3D銑 (3D MILLING)
RTD0202	12	60	9000~10000	1100~1400	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
RTD0202	12	145	23000~24000	1400~1800	0.1~0.12	0.1~0.12	3D銑 (3D MILLING)
RTD0202	12	145	23000~24000	1400~1800	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
RTD0205	12	60	9000~10000	900~1100	0.1~0.12	0.5~2	溝銑 (SLOTTING)
RTD0205	12	60	9000~10000	800~1000	0.04~0.06	0.5~2	溝銑 (SLOTTING)
RTD0205	12	100	16000~17000	1100~1300	0.1~0.12	0.5~2	溝銑 (SLOTTING)
RTD0205	12	100	16000~17000	1000~1200	0.04~0.06	0.5~2	溝銑 (SLOTTING)
RTD0205	12	60	9000~10000	1100~1300	2~4	0.1~0.12	側銑 (SIDE MILLING)
RTD0205	12	60	9000~10000	800~1000	2~4	0.04~0.06	側銑 (SIDE MILLING)
RTD0205	12	85	13500~15000	1200~1400	2~4	0.1~0.12	側銑 (SIDE MILLING)
RTD0205	12	85	13500~15000	900~1100	2~4	0.04~0.06	側銑 (SIDE MILLING)
RTD0205	12	60	9000~10000	1100~1400	0.1~0.12	0.1~0.12	3D銑 (3D MILLING)
RTD0205	12	60	9000~10000	1100~1400	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
RTD0205	12	145	23000~24000	1400~1800	0.1~0.12	0.1~0.12	3D銑 (3D MILLING)
RTD0205	12	145	23000~24000	1400~1800	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
RTD0305	12	85	9000~10000	900~1100	0.12~0.15	1~3	溝銑 (SLOTTING)
RTD0305	12	85	9000~10000	800~1000	0.06~0.08	1~3	溝銑 (SLOTTING)
RTD0305	12	100	10500~11000	1100~1300	0.12~0.15	1~3	溝銑 (SLOTTING)
RTD0305	12	100	10500~11000	1000~1200	0.06~0.08	1~3	溝銑 (SLOTTING)
RTD0305	12	80	8500~9000	1100~1300	3~6	0.12~0.15	側銑 (SIDE MILLING)
RTD0305	12	80	8500~9000	800~1000	3~6	0.06~0.08	側銑 (SIDE MILLING)
RTD0305	12	85	9000~10000	1200~1400	3~6	0.12~0.15	側銑 (SIDE MILLING)
RTD0305	12	85	9000~10000	900~1100	3~6	0.06~0.08	側銑 (SIDE MILLING)
RTD0305	12	85	9000~10000	1100~1400	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTD0305	12	85	9000~10000	1100~1400	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTD0305	12	145	15000~16000	1400~1800	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTD0305	12	150	16000~17000	1400~1800	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)

RTR

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵 : *Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTD0405	14	100	8000~8400	1000~1200	0.15~0.18	2~4	溝銑 (SLOTTING)
RTD0405	14	100	8000~8400	1000~1200	0.07~0.1	2~4	溝銑 (SLOTTING)
RTD0405	14	85	6800~7200	1000~1200	4~8	0.15~0.18	側銑 (SIDE MILLING)
RTD0405	14	85	6500~7500	800~1000	4~8	0.07~0.1	側銑 (SIDE MILLING)
RTD0405	14	110	8700~9200	1000~1200	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTD0405	14	110	8700~9200	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0405	14	150	12000~13000	1600~2000	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTD0405	14	165	13000~14000	1600~2000	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0505	17	90	5800~6400	1200~1400	0.15~0.18	3~5	溝銑 (SLOTTING)
RTD0505	17	130	8000~8500	1000~1400	0.07~0.1	3~5	溝銑 (SLOTTING)
RTD0505	17	95	6000~7000	1000~1200	5~10	0.15~0.18	側銑 (SIDE MILLING)
RTD0505	17	95	6000~7000	800~1000	5~10	0.07~0.1	側銑 (SIDE MILLING)
RTD0505	17	135	8500~9000	1400~1800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTD0505	17	135	8500~9000	1300~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0505	17	160	10000~11000	1600~2000	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTD0505	17	160	10000~11000	1400~1800	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0510	17	90	5800~6400	1200~1400	0.15~0.18	2~5	溝銑 (SLOTTING)
RTD0510	17	130	8000~8500	1000~1400	0.07~0.1	2~5	溝銑 (SLOTTING)
RTD0510	17	95	6000~7000	1000~1200	5~10	0.15~0.18	側銑 (SIDE MILLING)
RTD0510	17	95	6000~7000	800~1000	5~10	0.07~0.1	側銑 (SIDE MILLING)
RTD0510	17	135	8500~9000	1400~1800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTD0510	17	135	8500~9000	1300~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0510	17	160	10000~11000	1600~2000	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTD0510	17	160	10000~11000	1400~1800	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0605	20	90	4800~5400	1400~1600	0.15~0.2	4~6	溝銑 (SLOTTING)
RTD0605	20	130	6800~7200	1400~1600	0.07~0.1	4~6	溝銑 (SLOTTING)
RTD0605	20	95	5000~6000	1000~1200	6~12	0.15~0.2	側銑 (SIDE MILLING)
RTD0605	20	95	5000~6000	800~1000	6~12	0.07~0.1	側銑 (SIDE MILLING)
RTD0605	20	160	8500~9000	1800~2200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTD0605	20	160	8500~9000	1600~2000	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0610	20	90	4800~5400	1400~1600	0.15~0.2	3~6	溝銑 (SLOTTING)
RTD0610	20	130	6800~7200	1400~1600	0.07~0.1	3~6	溝銑 (SLOTTING)
RTD0610	20	95	5000~6000	1000~1200	6~12	0.15~0.2	側銑 (SIDE MILLING)
RTD0610	20	95	5000~6000	800~1000	6~12	0.07~0.1	側銑 (SIDE MILLING)
RTD0610	20	160	8500~9000	1800~2200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTD0610	20	160	8500~9000	1600~2000	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)

RTD

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTD0805	30	135	5200~5800	1000~1400	0.2~0.25	6~8	溝銑 (SLOTTING)
RTD0805	30	145	5800~6200	1000~1200	0.07~0.11	6~8	溝銑 (SLOTTING)
RTD0805	30	90	3500~4000	1000~1200	8~16	0.2~0.25	側銑 (SIDE MILLING)
RTD0805	30	90	3500~4000	700~1000	8~16	0.07~0.11	側銑 (SIDE MILLING)
RTD0805	30	190	7500~8500	2000~2400	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTD0805	30	190	7500~8500	1400~1800	0.07~0.11	0.07~0.11	3D銑 (3D MILLING)
RTD0810	30	135	5200~5800	1000~1400	0.2~0.25	5~8	溝銑 (SLOTTING)
RTD0810	30	145	5800~6200	1000~1200	0.07~0.11	5~8	溝銑 (SLOTTING)
RTD0810	30	90	3500~4000	1000~1200	8~16	0.2~0.25	側銑 (SIDE MILLING)
RTD0810	30	90	3500~4000	700~1000	8~16	0.07~0.11	側銑 (SIDE MILLING)
RTD0810	30	190	7500~8500	2000~2400	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTD0810	30	190	7500~8500	1400~1800	0.07~0.11	0.07~0.11	3D銑 (3D MILLING)
RTD1005Z	30	135	4200~4700	1200~1600	0.25~0.3	8~10	溝銑 (SLOTTING)
RTD1005Z	30	145	4500~5000	800~1000	0.08~0.13	8~10	溝銑 (SLOTTING)
RTD1005Z	30	90	2800~3200	800~1200	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1005Z	30	90	2800~3200	700~900	10~20	0.1~0.15	側銑 (SIDE MILLING)
RTD1005Z	30	190	6000~7000	2400~2800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1005Z	30	190	6000~7000	1400~1800	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1005	35	135	4200~4700	1200~1600	0.25~0.3	8~10	溝銑 (SLOTTING)
RTD1005	35	145	4500~5000	800~1000	0.08~0.13	8~10	溝銑 (SLOTTING)
RTD1005	35	90	2800~3200	800~1200	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1005	35	90	2800~3200	700~900	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTD1005	35	190	6000~7000	2100~2500	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1005	35	190	6000~7000	1400~1800	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1010Z	30	135	4200~4700	1200~1600	0.25~0.3	7~10	溝銑 (SLOTTING)
RTD1010Z	30	145	4500~5000	800~1000	0.08~0.13	7~10	溝銑 (SLOTTING)
RTD1010Z	30	90	2800~3200	800~1200	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1010Z	30	90	2800~3200	700~900	10~20	0.1~0.15	側銑 (SIDE MILLING)
RTD1010Z	30	190	6000~7000	2400~2800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1010Z	30	190	6000~7000	1400~1800	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1010	35	135	4200~4700	1200~1600	0.25~0.3	7~10	溝銑 (SLOTTING)
RTD1010	35	145	4500~5000	800~1000	0.08~0.13	7~10	溝銑 (SLOTTING)
RTD1010	35	90	2800~3200	800~1200	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1010	35	90	2800~3200	700~900	10~20	0.1~0.15	側銑 (SIDE MILLING)
RTD1010	35	190	6000~7000	2100~2500	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1010	35	190	6000~7000	1400~1800	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)

RTR

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵 : *Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTD1020Z	30	135	4200~4700	1200~1600	0.25~0.3	5~10	溝銑 (SLOTTING)
RTD1020Z	30	145	4500~5000	800~1000	0.08~0.13	5~10	溝銑 (SLOTTING)
RTD1020Z	30	90	2800~3200	800~1200	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1020Z	30	90	2800~3200	700~900	10~20	0.1~0.15	側銑 (SIDE MILLING)
RTD1020Z	30	190	6000~7000	2400~2800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1020Z	30	190	6000~7000	1400~1800	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1020	35	135	4200~4700	1200~1600	0.25~0.3	5~10	溝銑 (SLOTTING)
RTD1020	35	145	4500~5000	800~1000	0.08~0.13	5~10	溝銑 (SLOTTING)
RTD1020	35	90	2800~3200	800~1200	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1020	35	90	2800~3200	700~900	10~20	0.1~0.15	側銑 (SIDE MILLING)
RTD1020	35	190	6000~7000	2100~2500	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1020	35	190	6000~7000	1400~1800	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1030Z	30	135	4200~4700	1200~1600	0.25~0.3	3~10	溝銑 (SLOTTING)
RTD1030Z	30	145	4500~5000	800~1000	0.08~0.13	3~10	溝銑 (SLOTTING)
RTD1030Z	30	90	2800~3200	800~1200	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1030Z	30	90	2800~3200	700~900	10~20	0.1~0.15	側銑 (SIDE MILLING)
RTD1030Z	30	190	6000~7000	2400~2800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1030Z	30	190	6000~7000	1400~1800	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1030	35	135	4200~4700	1200~1600	0.25~0.3	3~10	溝銑 (SLOTTING)
RTD1030	35	145	4500~5000	800~1000	0.08~0.13	3~10	溝銑 (SLOTTING)
RTD1030	35	90	2800~3200	800~1200	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1030	35	90	2800~3200	700~900	10~20	0.1~0.15	側銑 (SIDE MILLING)
RTD1030	35	190	6000~7000	2100~2500	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1030	35	190	6000~7000	1400~1800	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1210	40	145	3800~4200	1200~1600	0.25~0.3	9~12	溝銑 (SLOTTING)
RTD1210	40	150	4000~4500	1400~1600	0.1~0.15	9~12	溝銑 (SLOTTING)
RTD1210	40	105	2800~3200	1000~1200	12~24	0.25~0.3	側銑 (SIDE MILLING)
RTD1210	40	105	2800~3200	600~800	12~24	0.1~0.15	側銑 (SIDE MILLING)
RTD1210	40	170	4500~5000	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1210	40	190	5000~5500	1600~2000	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
RTD1220	40	145	3800~4200	1200~1600	0.25~0.3	7~12	溝銑 (SLOTTING)
RTD1220	40	150	4000~4500	1400~1600	0.1~0.15	7~12	溝銑 (SLOTTING)
RTD1220	40	105	2800~3200	1000~1200	12~24	0.25~0.3	側銑 (SIDE MILLING)
RTD1220	40	105	2800~3200	600~800	12~24	0.1~0.15	側銑 (SIDE MILLING)
RTD1220	40	170	4500~5000	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1220	40	190	5000~5500	1600~2000	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)

RTD

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵 : *Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTD1230	40	145	3800~4200	1200~1600	0.25~0.3	5~12	溝銑 (SLOTTING)
RTD1230	40	150	4000~4500	1400~1600	0.1~0.15	5~12	溝銑 (SLOTTING)
RTD1230	40	105	2800~3200	1000~1200	12~24	0.25~0.3	側銑 (SIDE MILLING)
RTD1230	40	105	2800~3200	600~800	12~24	0.1~0.15	側銑 (SIDE MILLING)
RTD1230	40	170	4500~5000	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1230	40	190	5000~5500	1600~2000	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTD0202	12	60	9000~10000	800~1000	0.1~0.12	1~2	溝銑 (SLOTTING)
RTD0202	12	60	9000~10000	800~1000	0.04~0.06	1~2	溝銑 (SLOTTING)
RTD0202	12	100	16000~17000	1000~1200	0.1~0.12	1~2	溝銑 (SLOTTING)
RTD0202	12	100	16000~17000	1000~1200	0.04~0.06	1~2	溝銑 (SLOTTING)
RTD0202	12	60	9000~10000	1000~1200	2~4	0.1~0.12	側銑 (SIDE MILLING)
RTD0202	12	60	9000~10000	700~900	2~4	0.04~0.06	側銑 (SIDE MILLING)
RTD0202	12	60	9000~10000	1000~1200	0.1~0.12	0.1~0.12	3D銑 (3D MILLING)
RTD0202	12	60	9000~10000	1000~1200	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
RTD0202	12	140	22000~23000	1200~1600	0.1~0.12	0.1~0.12	3D銑 (3D MILLING)
RTD0202	12	145	23000~24000	1200~1600	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
RTD0205	12	60	9000~10000	800~1000	0.1~0.12	0.5~2	溝銑 (SLOTTING)
RTD0205	12	60	9000~10000	800~1000	0.04~0.06	0.5~2	溝銑 (SLOTTING)
RTD0205	12	100	16000~17000	1000~1200	0.1~0.12	0.5~2	溝銑 (SLOTTING)
RTD0205	12	100	16000~17000	1000~1200	0.04~0.06	0.5~2	溝銑 (SLOTTING)
RTD0205	12	60	9000~10000	1000~1200	2~4	0.1~0.12	側銑 (SIDE MILLING)
RTD0205	12	60	9000~10000	700~900	2~4	0.04~0.06	側銑 (SIDE MILLING)
RTD0205	12	60	9000~10000	1000~1200	0.1~0.12	0.1~0.12	3D銑 (3D MILLING)
RTD0205	12	60	9000~10000	1000~1200	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
RTD0205	12	140	22000~23000	1200~1600	0.1~0.12	0.1~0.12	3D銑 (3D MILLING)
RTD0205	12	145	23000~24000	1200~1600	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)

RTR

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTD0305	12	85	9000~10000	800~1000	0.12~0.15	1~3	溝銑 (SLOTTING)
RTD0305	12	85	9000~10000	800~1000	0.06~0.08	1~3	溝銑 (SLOTTING)
RTD0305	12	100	10500~11000	1100~1300	0.12~0.15	1~3	溝銑 (SLOTTING)
RTD0305	12	100	10500~11000	1000~1200	0.06~0.08	1~3	溝銑 (SLOTTING)
RTD0305	12	80	8500~9000	1000~1200	3~6	0.12~0.15	側銑 (SIDE MILLING)
RTD0305	12	80	8500~9000	700~900	3~6	0.06~0.08	側銑 (SIDE MILLING)
RTD0305	12	85	9000~10000	1000~1200	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTD0305	12	85	9000~10000	1000~1200	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTD0305	12	140	14000~15000	1400~1800	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTD0305	12	150	16000~17000	1400~1800	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTD0405	14	100	8000~8400	800~1000	0.15~0.18	2~4	溝銑 (SLOTTING)
RTD0405	14	100	8000~8400	800~1000	0.07~0.1	2~4	溝銑 (SLOTTING)
RTD0405	14	85	6800~7200	800~1000	4~8	0.15~0.18	側銑 (SIDE MILLING)
RTD0405	14	85	6500~7000	500~700	4~8	0.07~0.1	側銑 (SIDE MILLING)
RTD0405	14	110	8700~9200	800~1000	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTD0405	14	110	8700~9200	1000~1200	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0405	14	140	11000~12000	1400~1800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTD0405	14	150	12000~13000	1400~1800	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0505	17	90	5800~6400	800~1000	0.15~0.18	3~5	溝銑 (SLOTTING)
RTD0505	17	115	7200~7600	1000~1200	0.07~0.1	3~5	溝銑 (SLOTTING)
RTD0505	17	85	5400~6000	800~1000	5~10	0.15~0.18	側銑 (SIDE MILLING)
RTD0505	17	90	5800~6400	600~800	5~10	0.07~0.1	側銑 (SIDE MILLING)
RTD0505	17	95	6000~7000	1000~1200	5~10	0.15~0.18	側銑 (SIDE MILLING)
RTD0505	17	95	6000~7000	800~1000	5~10	0.07~0.1	側銑 (SIDE MILLING)
RTD0505	17	130	8000~8500	800~1200	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTD0505	17	130	8000~8500	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0505	17	160	10000~11000	1600~1800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTD0505	17	160	10000~11000	1300~1700	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0510	17	90	5800~6400	800~1000	0.15~0.18	2~5	溝銑 (SLOTTING)
RTD0510	17	115	7200~7600	1000~1200	0.07~0.1	2~5	溝銑 (SLOTTING)
RTD0510	17	85	5400~6000	800~1000	5~10	0.15~0.18	側銑 (SIDE MILLING)
RTD0510	17	90	5800~6400	600~800	5~10	0.07~0.1	側銑 (SIDE MILLING)
RTD0510	17	95	6000~7000	1000~1200	5~10	0.15~0.18	側銑 (SIDE MILLING)
RTD0510	17	95	6000~7000	800~1000	5~10	0.07~0.1	側銑 (SIDE MILLING)
RTD0510	17	130	8000~8500	800~1200	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTD0510	17	130	8000~8500	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0510	17	160	10000~11000	1600~1800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTD0510	17	160	10000~11000	1300~1700	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)

RTD

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTD0605	20	90	4800~5400	1000~1400	0.15~0.2	4~6	溝銑 (SLOTTING)
RTD0605	20	115	6000~6400	1200~1400	0.07~0.1	4~6	溝銑 (SLOTTING)
RTD0605	20	85	4500~5000	800~1000	6~12	0.15~0.2	側銑 (SIDE MILLING)
RTD0605	20	90	4800~5200	600~800	6~12	0.07~0.1	側銑 (SIDE MILLING)
RTD0605	20	160	8500~9000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTD0605	20	160	8500~9000	1400~1800	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0610	20	90	4800~5400	1000~1400	0.15~0.2	3~6	溝銑 (SLOTTING)
RTD0610	20	115	6000~6400	1200~1400	0.07~0.1	3~6	溝銑 (SLOTTING)
RTD0610	20	85	4500~5000	800~1000	6~12	0.15~0.2	側銑 (SIDE MILLING)
RTD0610	20	90	4800~5200	600~800	6~12	0.07~0.1	側銑 (SIDE MILLING)
RTD0610	20	160	8500~9000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTD0610	20	160	8500~9000	1400~1800	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0805	30	100	4000~4500	700~1000	0.2~0.25	6~8	溝銑 (SLOTTING)
RTD0805	30	140	5500~6000	800~1000	0.07~0.11	6~8	溝銑 (SLOTTING)
RTD0805	30	90	3500~4000	700~900	8~16	0.2~0.25	側銑 (SIDE MILLING)
RTD0805	30	90	3500~4000	600~800	8~16	0.07~0.11	側銑 (SIDE MILLING)
RTD0805	30	100	4000~4500	1400~1800	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTD0805	30	185	7200~7700	1200~1600	0.07~0.11	0.07~0.11	3D銑 (3D MILLING)
RTD0810	30	100	4000~4500	700~1000	0.2~0.25	5~8	溝銑 (SLOTTING)
RTD0810	30	140	5500~6000	800~1000	0.07~0.11	5~8	溝銑 (SLOTTING)
RTD0810	30	90	3500~4000	700~900	8~16	0.2~0.25	側銑 (SIDE MILLING)
RTD0810	30	90	3500~4000	600~800	8~16	0.07~0.11	側銑 (SIDE MILLING)
RTD0810	30	100	4000~4500	1400~1800	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTD0810	30	185	7200~7700	1200~1600	0.07~0.11	0.07~0.11	3D銑 (3D MILLING)
RTD1005Z	30	100	3200~3600	800~1100	0.25~0.3	8~10	溝銑 (SLOTTING)
RTD1005Z	30	140	4400~4800	800~1000	0.08~0.13	8~10	溝銑 (SLOTTING)
RTD1005Z	30	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1005Z	30	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTD1005Z	30	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1005Z	30	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1005	35	100	3200~3600	800~1100	0.25~0.3	8~10	溝銑 (SLOTTING)
RTD1005	35	140	4400~4800	800~1000	0.08~0.13	8~10	溝銑 (SLOTTING)
RTD1005	35	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1005	35	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTD1005	35	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1005	35	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)

RTR

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTD1010Z	30	100	3200~3600	800~1100	0.25~0.3	7~10	溝銑 (SLOTTING)
RTD1010Z	30	140	4400~4800	800~1000	0.08~0.13	7~10	溝銑 (SLOTTING)
RTD1010Z	30	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1010Z	30	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTD1010Z	30	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1010Z	30	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1010	35	100	3200~3600	800~1100	0.25~0.3	7~10	溝銑 (SLOTTING)
RTD1010	35	140	4400~4800	800~1000	0.08~0.13	7~10	溝銑 (SLOTTING)
RTD1010	35	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1010	35	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTD1010	35	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1010	35	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1020Z	30	100	3200~3600	800~1100	0.25~0.3	5~10	溝銑 (SLOTTING)
RTD1020Z	30	140	4400~4800	800~1000	0.08~0.13	5~10	溝銑 (SLOTTING)
RTD1020Z	30	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1020Z	30	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTD1020Z	30	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1020Z	30	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1020	35	100	3200~3600	800~1100	0.25~0.3	5~10	溝銑 (SLOTTING)
RTD1020	35	140	4400~4800	800~1000	0.08~0.13	5~10	溝銑 (SLOTTING)
RTD1020	35	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1020	35	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTD1020	35	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1020	35	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1030Z	30	100	3200~3600	800~1100	0.25~0.3	3~10	溝銑 (SLOTTING)
RTD1030Z	30	140	4400~4800	800~1000	0.08~0.13	3~10	溝銑 (SLOTTING)
RTD1030Z	30	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1030Z	30	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTD1030Z	30	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1030Z	30	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1030	35	100	3200~3600	800~1100	0.25~0.3	3~10	溝銑 (SLOTTING)
RTD1030	35	140	4400~4800	800~1000	0.08~0.13	3~10	溝銑 (SLOTTING)
RTD1030	35	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1030	35	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTD1030	35	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1030	35	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)

RTD

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTD1210	40	90	2400~2800	800~1000	0.25~0.3	9~12	溝銑 (SLOTTING)
RTD1210	40	145	3800~4200	1200~1400	0.1~0.15	9~12	溝銑 (SLOTTING)
RTD1210	40	70	1800~2200	600~800	12~24	0.25~0.3	側銑 (SIDE MILLING)
RTD1210	40	75	1900~2300	400~600	12~24	0.1~0.15	側銑 (SIDE MILLING)
RTD1210	40	150	4000~4400	1200~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1210	40	180	4700~5200	1400~1800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
RTD1220	40	90	2400~2800	800~1000	0.25~0.3	7~12	溝銑 (SLOTTING)
RTD1220	40	145	3800~4200	1200~1400	0.1~0.15	7~12	溝銑 (SLOTTING)
RTD1220	40	70	1800~2200	600~800	12~24	0.25~0.3	側銑 (SIDE MILLING)
RTD1220	40	75	1900~2300	400~600	12~24	0.1~0.15	側銑 (SIDE MILLING)
RTD1220	40	150	4000~4400	1200~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1220	40	180	4700~5200	1400~1800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
RTD1230	40	90	2400~2800	800~1000	0.25~0.3	5~12	溝銑 (SLOTTING)
RTD1230	40	145	3800~4200	1200~1400	0.1~0.15	5~12	溝銑 (SLOTTING)
RTD1230	40	70	1800~2200	600~800	12~24	0.25~0.3	側銑 (SIDE MILLING)
RTD1230	40	75	1900~2300	400~600	12~24	0.1~0.15	側銑 (SIDE MILLING)
RTD1230	40	150	4000~4400	1200~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1230	40	180	4700~5200	1400~1800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTD0202	12	60	9000~10000	800~1000	0.1~0.12	1~2	溝銑 (SLOTTING)
RTD0202	12	60	9000~10000	800~1000	0.04~0.06	1~2	溝銑 (SLOTTING)
RTD0202	12	100	16000~17000	1000~1200	0.1~0.12	1~2	溝銑 (SLOTTING)
RTD0202	12	100	16000~17000	1000~1200	0.04~0.06	1~2	溝銑 (SLOTTING)
RTD0202	12	60	9000~10000	1000~1200	2~4	0.1~0.12	側銑 (SIDE MILLING)
RTD0202	12	60	9000~10000	700~900	2~4	0.04~0.06	側銑 (SIDE MILLING)
RTD0202	12	60	9000~10000	1000~1200	0.1~0.12	0.1~0.12	3D銑 (3D MILLING)
RTD0202	12	60	9000~10000	1000~1200	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
RTD0202	12	140	22000~23000	1200~1600	0.1~0.12	0.1~0.12	3D銑 (3D MILLING)
RTD0202	12	145	23000~24000	1200~1600	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)

RTR

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTD0205	12	60	9000~10000	800~1000	0.1~0.12	0.5~2	溝銑 (SLOTTING)
RTD0205	12	60	9000~10000	800~1000	0.04~0.06	0.5~2	溝銑 (SLOTTING)
RTD0205	12	100	16000~17000	1000~1200	0.1~0.12	0.5~2	溝銑 (SLOTTING)
RTD0205	12	100	16000~17000	1000~1200	0.04~0.06	0.5~2	溝銑 (SLOTTING)
RTD0205	12	60	9000~10000	1000~1200	2~4	0.1~0.12	側銑 (SIDE MILLING)
RTD0205	12	60	9000~10000	700~900	2~4	0.04~0.06	側銑 (SIDE MILLING)
RTD0205	12	60	9000~10000	1000~1200	0.1~0.12	0.1~0.12	3D銑 (3D MILLING)
RTD0205	12	60	9000~10000	1000~1200	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
RTD0205	12	140	22000~23000	1200~1600	0.1~0.12	0.1~0.12	3D銑 (3D MILLING)
RTD0205	12	145	23000~24000	1200~1600	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
RTD0305	12	85	9000~10000	800~1000	0.12~0.15	1~3	溝銑 (SLOTTING)
RTD0305	12	85	9000~10000	800~1000	0.06~0.08	1~3	溝銑 (SLOTTING)
RTD0305	12	100	10500~11000	1100~1300	0.12~0.15	1~3	溝銑 (SLOTTING)
RTD0305	12	100	10500~11000	1000~1200	0.06~0.08	1~3	溝銑 (SLOTTING)
RTD0305	12	80	8500~9000	1000~1200	3~6	0.12~0.15	側銑 (SIDE MILLING)
RTD0305	12	80	8500~9000	700~900	3~6	0.06~0.08	側銑 (SIDE MILLING)
RTD0305	12	85	9000~10000	1000~1200	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTD0305	12	85	9000~10000	1000~1200	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTD0305	12	140	14000~15000	1400~1800	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTD0305	12	150	16000~17000	1400~1800	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTD0405	14	100	8000~8400	800~1000	0.15~0.18	2~4	溝銑 (SLOTTING)
RTD0405	14	100	8000~8400	800~1000	0.07~0.1	2~4	溝銑 (SLOTTING)
RTD0405	14	85	6800~7200	800~1000	4~8	0.15~0.18	側銑 (SIDE MILLING)
RTD0405	14	85	6500~7000	500~700	4~8	0.07~0.1	側銑 (SIDE MILLING)
RTD0405	14	110	8700~9200	800~1000	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTD0405	14	110	8700~9200	1000~1200	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0405	14	140	11000~12000	1400~1800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTD0405	14	150	12000~13000	1400~1800	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0505	17	90	5800~6400	800~1000	0.15~0.18	3~5	溝銑 (SLOTTING)
RTD0505	17	115	7200~7600	1000~1200	0.07~0.1	3~5	溝銑 (SLOTTING)
RTD0505	17	85	5400~6000	800~1000	5~10	0.15~0.18	側銑 (SIDE MILLING)
RTD0505	17	90	5800~6400	600~800	5~10	0.07~0.1	側銑 (SIDE MILLING)
RTD0505	17	95	6000~7000	1000~1200	5~10	0.15~0.18	側銑 (SIDE MILLING)
RTD0505	17	95	6000~7000	800~1000	5~10	0.07~0.1	側銑 (SIDE MILLING)
RTD0505	17	130	8000~8500	800~1200	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTD0505	17	130	8000~8500	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0505	17	160	10000~11000	1600~1800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTD0505	17	160	10000~11000	1300~1700	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)

RTD

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTD0510	17	90	5800~6400	800~1000	0.15~0.18	2~5	溝銑 (SLOTTING)
RTD0510	17	115	7200~7600	1000~1200	0.07~0.1	2~5	溝銑 (SLOTTING)
RTD0510	17	85	5400~6000	800~1000	5~10	0.15~0.18	側銑 (SIDE MILLING)
RTD0510	17	90	5800~6400	600~800	5~10	0.07~0.1	側銑 (SIDE MILLING)
RTD0510	17	95	6000~7000	1000~1200	5~10	0.15~0.18	側銑 (SIDE MILLING)
RTD0510	17	95	6000~7000	800~1000	5~10	0.07~0.1	側銑 (SIDE MILLING)
RTD0510	17	130	8000~8500	800~1200	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTD0510	17	130	8000~8500	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0510	17	160	10000~11000	1600~1800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTD0510	17	160	10000~11000	1300~1700	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0605	20	90	4800~5400	1000~1400	0.15~0.2	4~6	溝銑 (SLOTTING)
RTD0605	20	115	6000~6400	1200~1400	0.07~0.1	4~6	溝銑 (SLOTTING)
RTD0605	20	85	4500~5000	800~1000	6~12	0.15~0.2	側銑 (SIDE MILLING)
RTD0605	20	90	4800~5200	600~800	6~12	0.07~0.1	側銑 (SIDE MILLING)
RTD0605	20	160	8500~9000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTD0605	20	160	8500~9000	1400~1800	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0610	20	90	4800~5400	1000~1400	0.15~0.2	3~6	溝銑 (SLOTTING)
RTD0610	20	115	6000~6400	1200~1400	0.07~0.1	3~6	溝銑 (SLOTTING)
RTD0610	20	85	4500~5000	800~1000	6~12	0.15~0.2	側銑 (SIDE MILLING)
RTD0610	20	90	4800~5200	600~800	6~12	0.07~0.1	側銑 (SIDE MILLING)
RTD0610	20	160	8500~9000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTD0610	20	160	8500~9000	1400~1800	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTD0805	30	100	4000~4500	700~1000	0.2~0.25	6~8	溝銑 (SLOTTING)
RTD0805	30	140	5500~6000	800~1000	0.07~0.11	6~8	溝銑 (SLOTTING)
RTD0805	30	90	3500~4000	700~900	8~16	0.2~0.25	側銑 (SIDE MILLING)
RTD0805	30	90	3500~4000	600~800	8~16	0.07~0.11	側銑 (SIDE MILLING)
RTD0805	30	100	4000~4500	1400~1800	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTD0805	30	185	7200~7700	1200~1600	0.07~0.11	0.07~0.11	3D銑 (3D MILLING)
RTD0810	30	100	4000~4500	700~1000	0.2~0.25	5~8	溝銑 (SLOTTING)
RTD0810	30	140	5500~6000	800~1000	0.07~0.11	5~8	溝銑 (SLOTTING)
RTD0810	30	90	3500~4000	700~900	8~16	0.2~0.25	側銑 (SIDE MILLING)
RTD0810	30	90	3500~4000	600~800	8~16	0.07~0.11	側銑 (SIDE MILLING)
RTD0810	30	100	4000~4500	1400~1800	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTD0810	30	185	7200~7700	1200~1600	0.07~0.11	0.07~0.11	3D銑 (3D MILLING)
RTD1005Z	30	100	3200~3600	800~1100	0.25~0.3	8~10	溝銑 (SLOTTING)
RTD1005Z	30	140	4400~4800	800~1000	0.08~0.13	8~10	溝銑 (SLOTTING)
RTD1005Z	30	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1005Z	30	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTD1005Z	30	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1005Z	30	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)

RTR

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTD1005	35	100	3200~3600	800~1100	0.25~0.3	8~10	溝銑 (SLOTTING)
RTD1005	35	140	4400~4800	800~1000	0.08~0.13	8~10	溝銑 (SLOTTING)
RTD1005	35	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1005	35	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTD1005	35	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1005	35	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1010Z	30	100	3200~3600	800~1100	0.25~0.3	7~10	溝銑 (SLOTTING)
RTD1010Z	30	140	4400~4800	800~1000	0.08~0.13	7~10	溝銑 (SLOTTING)
RTD1010Z	30	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1010Z	30	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTD1010Z	30	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1010Z	30	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1010	35	100	3200~3600	800~1100	0.25~0.3	7~10	溝銑 (SLOTTING)
RTD1010	35	140	4400~4800	800~1000	0.08~0.13	7~10	溝銑 (SLOTTING)
RTD1010	35	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1010	35	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTD1010	35	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1010	35	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1020Z	30	100	3200~3600	800~1100	0.25~0.3	5~10	溝銑 (SLOTTING)
RTD1020Z	30	140	4400~4800	800~1000	0.08~0.13	5~10	溝銑 (SLOTTING)
RTD1020Z	30	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1020Z	30	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTD1020Z	30	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1020Z	30	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1020	35	100	3200~3600	800~1100	0.25~0.3	5~10	溝銑 (SLOTTING)
RTD1020	35	140	4400~4800	800~1000	0.08~0.13	5~10	溝銑 (SLOTTING)
RTD1020	35	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1020	35	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTD1020	35	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1020	35	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1030Z	30	100	3200~3600	800~1100	0.25~0.3	3~10	溝銑 (SLOTTING)
RTD1030Z	30	140	4400~4800	800~1000	0.08~0.13	3~10	溝銑 (SLOTTING)
RTD1030Z	30	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1030Z	30	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTD1030Z	30	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1030Z	30	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)

RTD

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTD1030	35	100	3200~3600	800~1100	0.25~0.3	3~10	溝銑 (SLOTTING)
RTD1030	35	140	4400~4800	800~1000	0.08~0.13	3~10	溝銑 (SLOTTING)
RTD1030	35	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTD1030	35	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTD1030	35	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1030	35	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTD1210	40	90	2400~2800	800~1000	0.25~0.3	9~12	溝銑 (SLOTTING)
RTD1210	40	145	3800~4200	1200~1400	0.1~0.15	9~12	溝銑 (SLOTTING)
RTD1210	40	70	1800~2200	600~800	12~24	0.25~0.3	側銑 (SIDE MILLING)
RTD1210	40	75	1900~2300	400~600	12~24	0.1~0.15	側銑 (SIDE MILLING)
RTD1210	40	150	4000~4400	1200~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1210	40	180	4700~5200	1400~1800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
RTD1220	40	90	2400~2800	800~1000	0.25~0.3	7~12	溝銑 (SLOTTING)
RTD1220	40	145	3800~4200	1200~1400	0.1~0.15	7~12	溝銑 (SLOTTING)
RTD1220	40	70	1800~2200	600~800	12~24	0.25~0.3	側銑 (SIDE MILLING)
RTD1220	40	75	1900~2300	400~600	12~24	0.1~0.15	側銑 (SIDE MILLING)
RTD1220	40	150	4000~4400	1200~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1220	40	180	4700~5200	1400~1800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
RTD1230	40	90	2400~2800	800~1000	0.25~0.3	5~12	溝銑 (SLOTTING)
RTD1230	40	145	3800~4200	1200~1400	0.1~0.15	5~12	溝銑 (SLOTTING)
RTD1230	40	70	1800~2200	600~800	12~24	0.25~0.3	側銑 (SIDE MILLING)
RTD1230	40	75	1900~2300	400~600	12~24	0.1~0.15	側銑 (SIDE MILLING)
RTD1230	40	150	4000~4400	1200~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTD1230	40	180	4700~5200	1400~1800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)

RTR

切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼：*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTD0202	12	60	9000~10000	800~1000	0.03~0.05	1~2	溝銑 (SLOTTING)
RTD0202	12	100	16000~17000	1000~1200	0.03~0.05	1~2	溝銑 (SLOTTING)
RTD0202	12	60	9000~10000	700~900	2~4	0.03~0.05	側銑 (SIDE MILLING)
RTD0202	12	60	9000~10000	1000~1200	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
RTD0202	12	145	23000~24000	1200~1600	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
RTD0205	12	60	9000~10000	800~1000	0.03~0.05	0.5~2	溝銑 (SLOTTING)
RTD0205	12	100	16000~17000	1000~1200	0.03~0.05	0.5~2	溝銑 (SLOTTING)
RTD0205	12	60	9000~10000	700~900	2~4	0.03~0.05	側銑 (SIDE MILLING)
RTD0205	12	60	9000~10000	1000~1200	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
RTD0205	12	145	23000~24000	1200~1600	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
RTD0305	12	85	9000~10000	800~1000	0.04~0.06	1~3	溝銑 (SLOTTING)
RTD0305	12	100	10500~11000	1000~1200	0.04~0.06	1~3	溝銑 (SLOTTING)
RTD0305	12	80	8500~9000	700~900	3~6	0.04~0.06	側銑 (SIDE MILLING)
RTD0305	12	85	9000~10000	800~1000	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
RTD0305	12	150	16000~17000	1000~1200	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
RTD0405	14	100	8000~8400	800~1000	0.05~0.07	2~4	溝銑 (SLOTTING)
RTD0405	14	75	6000~6400	400~600	4~8	0.05~0.07	側銑 (SIDE MILLING)
RTD0405	14	110	8700~9200	800~1000	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
RTD0405	14	140	11000~12000	1200~1600	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
RTD0505	17	105	6600~7200	1000~1200	0.06~0.08	3~5	溝銑 (SLOTTING)
RTD0505	17	80	5000~5500	600~800	5~10	0.06~0.08	側銑 (SIDE MILLING)
RTD0505	17	150	9200~9700	1200~1400	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTD0505	17	160	10000~11000	1300~1500	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTD0510	17	105	6600~7200	1000~1200	0.06~0.08	2~5	溝銑 (SLOTTING)
RTD0510	17	80	5000~5500	600~800	5~10	0.06~0.08	側銑 (SIDE MILLING)
RTD0510	17	150	9200~9700	1200~1400	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTD0510	17	160	10000~11000	1300~1500	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTD0605	20	105	5500~6000	1000~1200	0.06~0.08	4~6	溝銑 (SLOTTING)
RTD0605	20	80	4200~4600	600~800	6~12	0.06~0.08	側銑 (SIDE MILLING)
RTD0605	20	150	7800~8300	1200~1400	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTD0610	20	105	5500~6000	1000~1200	0.06~0.08	3~6	溝銑 (SLOTTING)
RTD0610	20	80	4200~4600	600~800	6~12	0.06~0.08	側銑 (SIDE MILLING)
RTD0610	20	150	7800~8300	1200~1400	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTD0805	30	140	5500~6000	600~800	0.08~0.1	6~8	溝銑 (SLOTTING)
RTD0805	30	90	3500~4000	600~800	8~16	0.08~0.1	側銑 (SIDE MILLING)
RTD0805	30	150	6000~6500	1000~1200	0.08~0.1	0.08~0.1	3D銑 (3D MILLING)
RTD0810	30	140	5500~6000	600~800	0.08~0.1	5~8	溝銑 (SLOTTING)
RTD0810	30	90	3500~4000	600~800	8~16	0.08~0.1	側銑 (SIDE MILLING)
RTD0810	30	150	6000~6500	1000~1200	0.08~0.1	0.08~0.1	3D銑 (3D MILLING)

RTD

切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼：*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTD1005Z	30	140	4400~4800	600~800	0.08~0.12	8~10	溝銑 (SLOTTING)
RTD1005Z	30	90	2800~3200	600~800	10~20	0.08~0.12	側銑 (SIDE MILLING)
RTD1005Z	30	150	4800~5200	1000~1200	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
RTD1005	35	140	4400~4800	600~800	0.08~0.12	8~10	溝銑 (SLOTTING)
RTD1005	35	90	2800~3200	600~800	10~20	0.08~0.12	側銑 (SIDE MILLING)
RTD1005	35	150	4800~5200	1000~1200	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
RTD1010Z	30	140	4400~4800	600~800	0.08~0.12	7~10	溝銑 (SLOTTING)
RTD1010Z	30	90	2800~3200	600~800	10~20	0.08~0.12	側銑 (SIDE MILLING)
RTD1010Z	30	150	4800~5200	1000~1200	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
RTD1010	35	140	4400~4800	600~800	0.08~0.12	7~10	溝銑 (SLOTTING)
RTD1010	35	90	2800~3200	600~800	10~20	0.08~0.12	側銑 (SIDE MILLING)
RTD1010	35	150	4800~5200	1000~1200	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
RTD1020Z	30	140	4400~4800	600~800	0.08~0.12	5~10	溝銑 (SLOTTING)
RTD1020Z	30	90	2800~3200	600~800	10~20	0.08~0.12	側銑 (SIDE MILLING)
RTD1020Z	30	150	4800~5200	1000~1200	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
RTD1020	35	140	4400~4800	600~800	0.08~0.12	5~10	溝銑 (SLOTTING)
RTD1020	35	90	2800~3200	600~800	10~20	0.08~0.12	側銑 (SIDE MILLING)
RTD1020	35	150	4800~5200	1000~1200	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
RTD1030Z	30	140	4400~4800	600~800	0.08~0.12	3~10	溝銑 (SLOTTING)
RTD1030Z	30	90	2800~3200	600~800	10~20	0.08~0.12	側銑 (SIDE MILLING)
RTD1030Z	30	150	4800~5200	1000~1200	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
RTD1030	35	140	4400~4800	600~800	0.08~0.12	3~10	溝銑 (SLOTTING)
RTD1030	35	90	2800~3200	600~800	10~20	0.08~0.12	側銑 (SIDE MILLING)
RTD1030	35	150	4800~5200	1000~1200	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
RTD1210	40	105	2800~3300	800~1000	0.1~0.15	9~12	溝銑 (SLOTTING)
RTD1210	40	60	1600~2000	300~500	12~24	0.1~0.15	側銑 (SIDE MILLING)
RTD1210	40	130	3400~3800	800~1200	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
RTD1220	40	105	2800~3300	800~1000	0.1~0.15	7~12	溝銑 (SLOTTING)
RTD1220	40	60	1600~2000	300~500	12~24	0.1~0.15	側銑 (SIDE MILLING)
RTD1220	40	130	3400~3800	800~1200	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
RTD1230	40	105	2800~3300	800~1000	0.1~0.15	5~12	溝銑 (SLOTTING)
RTD1230	40	60	1600~2000	300~500	12~24	0.1~0.15	側銑 (SIDE MILLING)
RTD1230	40	130	3400~3800	800~1200	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)

LRTA

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTA0405	40	70	5400~5800	700~900	0.06~0.08	1~4	溝銑 (SLOTTING)
LRTA0405	40	90	7000~7400	1100~1300	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTA0410	40	70	5400~5800	700~900	0.06~0.08	1~4	溝銑 (SLOTTING)
LRTA0410	40	90	7000~7400	1100~1300	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTA0603	40	80	4000~4400	600~800	0.15~0.18	4~6	溝銑 (SLOTTING)
LRTA0603	40	75	3800~4200	400~600	0.06~0.08	4~6	溝銑 (SLOTTING)
LRTA0603	40	45	2000~2400	600~800	6~12	0.15~0.18	側銑 (SIDE MILLING)
LRTA0603	40	65	3200~3600	400~700	6~12	0.06~0.08	側銑 (SIDE MILLING)
LRTA0603	40	90	4500~5000	1300~1500	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
LRTA0603	40	120	6300~6800	1200~1400	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTA0605	40	80	4000~4400	600~800	0.15~0.18	4~6	溝銑 (SLOTTING)
LRTA0605	40	75	3800~4200	400~600	0.06~0.08	4~6	溝銑 (SLOTTING)
LRTA0605	40	45	2000~2400	600~800	6~12	0.15~0.18	側銑 (SIDE MILLING)
LRTA0605	40	65	3200~3600	400~700	6~12	0.06~0.08	側銑 (SIDE MILLING)
LRTA0605	40	90	4500~5000	1300~1500	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
LRTA0605	40	120	6300~6800	1200~1400	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTA0610	40	80	4000~4400	600~800	0.15~0.18	4~6	溝銑 (SLOTTING)
LRTA0610	40	75	3800~4200	400~600	0.06~0.08	4~6	溝銑 (SLOTTING)
LRTA0610	40	45	2000~2400	600~800	6~12	0.15~0.18	側銑 (SIDE MILLING)
LRTA0610	40	65	3200~3600	400~700	6~12	0.06~0.08	側銑 (SIDE MILLING)
LRTA0610	40	90	4500~5000	1300~1500	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
LRTA0610	40	120	6300~6800	1200~1400	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTA0803	50	65	2400~2900	500~700	0.2~0.25	6~8	溝銑 (SLOTTING)
LRTA0803	50	65	2400~2900	400~600	0.07~0.1	6~8	溝銑 (SLOTTING)
LRTA0803	50	65	2400~2900	500~700	8~16	0.2~0.25	側銑 (SIDE MILLING)
LRTA0803	50	65	2400~2900	400~600	8~16	0.07~0.1	側銑 (SIDE MILLING)
LRTA0803	50	120	4500~5000	1200~1400	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA0803	50	120	4500~5000	1100~1300	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA0805	50	65	2400~2900	500~700	0.2~0.25	6~8	溝銑 (SLOTTING)
LRTA0805	50	65	2400~2900	400~600	0.07~0.1	6~8	溝銑 (SLOTTING)
LRTA0805	50	65	2400~2900	500~700	8~16	0.2~0.25	側銑 (SIDE MILLING)
LRTA0805	50	65	2400~2900	400~600	8~16	0.07~0.1	側銑 (SIDE MILLING)
LRTA0805	50	120	4500~5000	1200~1400	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA0805	50	120	4500~5000	1100~1300	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA0810	50	65	2400~2900	500~700	0.2~0.25	5~8	溝銑 (SLOTTING)
LRTA0810	50	65	2400~2900	400~600	0.07~0.1	5~8	溝銑 (SLOTTING)
LRTA0810	50	65	2400~2900	500~700	8~16	0.2~0.25	側銑 (SIDE MILLING)
LRTA0810	50	65	2400~2900	400~600	8~16	0.07~0.1	側銑 (SIDE MILLING)
LRTA0810	50	120	4500~5000	1200~1400	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA0810	50	120	4500~5000	1100~1300	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)

LRTA

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTA1002	60	65	1800~2200	400~600	0.2~0.25	8~10	溝銑 (SLOTTING)
LRTA1002	60	65	1800~2300	400~600	0.07~0.1	8~10	溝銑 (SLOTTING)
LRTA1002	60	65	1800~2200	400~600	10~20	0.2~0.25	側銑 (SIDE MILLING)
LRTA1002	60	65	1800~2200	400~600	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1002	60	95	2700~3200	1000~1200	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1002	60	120	3600~4000	900~1100	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1003	60	65	1800~2200	400~600	0.2~0.25	8~10	溝銑 (SLOTTING)
LRTA1003	60	65	1800~2300	400~600	0.07~0.1	8~10	溝銑 (SLOTTING)
LRTA1003	60	65	1800~2200	400~600	10~20	0.2~0.25	側銑 (SIDE MILLING)
LRTA1003	60	65	1800~2200	400~600	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1003	60	95	2700~3200	1000~1200	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1003	60	120	3600~4000	900~1100	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1005	60	65	1800~2200	400~600	0.2~0.25	8~10	溝銑 (SLOTTING)
LRTA1005	60	65	1800~2300	400~600	0.07~0.1	8~10	溝銑 (SLOTTING)
LRTA1005	60	65	1800~2200	400~600	10~20	0.2~0.25	側銑 (SIDE MILLING)
LRTA1005	60	65	1800~2200	400~600	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1005	60	95	2700~3200	1000~1200	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1005	60	120	3600~4000	900~1100	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1010	60	65	1800~2200	400~600	0.2~0.25	7~10	溝銑 (SLOTTING)
LRTA1010	60	65	1800~2300	400~600	0.07~0.1	7~10	溝銑 (SLOTTING)
LRTA1010	60	65	1800~2200	400~600	10~20	0.2~0.25	側銑 (SIDE MILLING)
LRTA1010	60	65	1800~2200	400~600	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1010	60	95	2700~3200	1000~1200	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1010	60	120	3600~4000	900~1100	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1020	60	65	1800~2200	400~600	0.2~0.25	6~10	溝銑 (SLOTTING)
LRTA1020	60	65	1800~2300	400~600	0.07~0.1	6~10	溝銑 (SLOTTING)
LRTA1020	60	65	1800~2200	400~600	10~20	0.2~0.25	側銑 (SIDE MILLING)
LRTA1020	60	65	1800~2200	400~600	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1020	60	95	2700~3200	1000~1200	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1020	60	120	3600~4000	900~1100	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1205	60	80	1900~2200	800~1000	0.2~0.25	10~12	溝銑 (SLOTTING)
LRTA1205	60	85	2000~2400	600~800	0.07~0.12	10~12	溝銑 (SLOTTING)
LRTA1205	60	80	1800~2200	400~600	12~24	0.2~0.25	側銑 (SIDE MILLING)
LRTA1205	60	95	2200~2700	400~600	12~24	0.07~0.12	側銑 (SIDE MILLING)
LRTA1205	60	160	4000~4500	1000~1200	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1205	60	160	4000~4500	900~1100	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)

LRTA

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵 : *Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTA1210	60	80	1900~2200	800~1000	0.2~0.25	9~12	溝銑 (SLOTTING)
LRTA1210	60	85	2000~2400	600~800	0.07~0.12	9~12	溝銑 (SLOTTING)
LRTA1210	60	80	1800~2200	400~600	12~24	0.2~0.25	側銑 (SIDE MILLING)
LRTA1210	60	95	2200~2700	400~600	12~24	0.07~0.12	側銑 (SIDE MILLING)
LRTA1210	60	160	4000~4500	1000~1200	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1210	60	160	4000~4500	900~1100	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)
LRTA1220	60	80	1900~2200	800~1000	0.2~0.25	7~12	溝銑 (SLOTTING)
LRTA1220	60	85	2000~2400	600~800	0.07~0.12	7~12	溝銑 (SLOTTING)
LRTA1220	60	80	1800~2200	400~600	12~24	0.2~0.25	側銑 (SIDE MILLING)
LRTA1220	60	95	2200~2700	400~600	12~24	0.07~0.12	側銑 (SIDE MILLING)
LRTA1220	60	160	4000~4500	1000~1200	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1220	60	160	4000~4500	900~1100	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTA0405	40	55	4200~4600	600~800	0.06~0.08	1~4	溝銑 (SLOTTING)
LRTA0405	40	90	7000~7400	1000~1200	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTA0410	40	55	4200~4600	600~800	0.06~0.08	1~4	溝銑 (SLOTTING)
LRTA0410	40	90	7000~7400	1000~1200	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTA0603	40	60	3000~3400	500~700	0.15~0.18	4~6	溝銑 (SLOTTING)
LRTA0603	40	75	3800~4200	600~800	0.06~0.08	4~6	溝銑 (SLOTTING)
LRTA0603	40	50	2400~2800	300~500	6~12	0.06~0.08	側銑 (SIDE MILLING)
LRTA0603	40	80	4000~4500	1100~1300	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
LRTA0603	40	115	6000~5000	1000~1200	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTA0605	40	60	3000~3400	500~700	0.15~0.18	4~6	溝銑 (SLOTTING)
LRTA0605	40	75	3800~4200	600~800	0.06~0.08	4~6	溝銑 (SLOTTING)
LRTA0605	40	50	2400~2800	300~500	6~12	0.06~0.08	側銑 (SIDE MILLING)
LRTA0605	40	80	4000~4500	1100~1300	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
LRTA0605	40	115	6000~5000	1000~1200	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTA0610	40	60	3000~3400	500~700	0.15~0.18	4~6	溝銑 (SLOTTING)
LRTA0610	40	75	3800~4200	600~800	0.06~0.08	4~6	溝銑 (SLOTTING)
LRTA0610	40	50	2400~2800	300~500	6~12	0.06~0.08	側銑 (SIDE MILLING)
LRTA0610	40	80	4000~4500	1100~1300	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
LRTA0610	40	115	6000~5000	1000~1200	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)

LRTA

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTA0803	50	60	2200~2700	500~700	0.2~0.25	6~8	溝銑 (SLOTTING)
LRTA0803	50	60	2200~2700	400~600	0.07~0.1	6~8	溝銑 (SLOTTING)
LRTA0803	50	60	2200~2700	400~600	8~16	0.07~0.1	側銑 (SIDE MILLING)
LRTA0803	50	110	4200~4700	1100~1300	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA0803	50	110	4200~4700	1000~1200	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA0805	50	60	2200~2700	500~700	0.2~0.25	6~8	溝銑 (SLOTTING)
LRTA0805	50	60	2200~2700	400~600	0.07~0.1	6~8	溝銑 (SLOTTING)
LRTA0805	50	60	2200~2700	400~600	8~16	0.07~0.1	側銑 (SIDE MILLING)
LRTA0805	50	110	4200~4700	1100~1300	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA0805	50	110	4200~4700	1000~1200	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA0810	50	60	2200~2700	500~700	0.2~0.25	5~8	溝銑 (SLOTTING)
LRTA0810	50	60	2200~2700	400~600	0.07~0.1	5~8	溝銑 (SLOTTING)
LRTA0810	50	60	2200~2700	400~600	8~16	0.07~0.1	側銑 (SIDE MILLING)
LRTA0810	50	110	4200~4700	1100~1300	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA0810	50	110	4200~4700	1000~1200	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1002	60	70	2000~2400	500~700	0.2~0.25	8~10	溝銑 (SLOTTING)
LRTA1002	60	90	2600~3000	400~600	0.07~0.1	8~10	溝銑 (SLOTTING)
LRTA1002	60	45	1200~1600	350~500	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1002	60	105	3200~3600	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1002	60	110	3400~3800	800~1000	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1003	60	70	2000~2400	500~700	0.2~0.25	8~10	溝銑 (SLOTTING)
LRTA1003	60	90	2600~3000	400~600	0.07~0.1	8~10	溝銑 (SLOTTING)
LRTA1003	60	45	1200~1600	350~500	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1003	60	105	3200~3600	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1003	60	110	3400~3800	800~1000	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1005	60	70	2000~2400	500~700	0.2~0.25	8~10	溝銑 (SLOTTING)
LRTA1005	60	90	2600~3000	400~600	0.07~0.1	8~10	溝銑 (SLOTTING)
LRTA1005	60	45	1200~1600	350~500	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1005	60	105	3200~3600	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1005	60	110	3400~3800	800~1000	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1010	60	70	2000~2400	500~700	0.2~0.25	7~10	溝銑 (SLOTTING)
LRTA1010	60	90	2600~3000	400~600	0.07~0.1	7~10	溝銑 (SLOTTING)
LRTA1010	60	45	1200~1600	350~500	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1010	60	105	3200~3600	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1010	60	110	3400~3800	800~1000	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1020	60	70	2000~2400	500~700	0.2~0.25	5~10	溝銑 (SLOTTING)
LRTA1020	60	90	2600~3000	400~600	0.07~0.1	5~10	溝銑 (SLOTTING)
LRTA1020	60	45	1200~1600	350~500	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1020	60	105	3200~3600	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1020	60	110	3400~3800	800~1000	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)

LRTA

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTA1205	60	80	1800~2200	600~800	0.2~0.25	10~12	溝銑 (SLOTTING)
LRTA1205	60	95	2300~2700	500~700	0.07~0.12	10~12	溝銑 (SLOTTING)
LRTA1205	60	45	1000~1300	250~400	12~24	0.07~0.12	側銑 (SIDE MILLING)
LRTA1205	60	150	3700~4200	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1205	60	150	3700~4200	800~1000	0.07~0.12	0.07~0.12	3D 銑 (3D MILLING)
LRTA1210	60	80	1800~2200	600~800	0.2~0.25	9~12	溝銑 (SLOTTING)
LRTA1210	60	95	2300~2700	500~700	0.07~0.12	9~12	溝銑 (SLOTTING)
LRTA1210	60	45	1000~1300	250~400	12~24	0.07~0.12	側銑 (SIDE MILLING)
LRTA1210	60	150	3700~4200	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1210	60	150	3700~4200	800~1000	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)
LRTA1220	60	80	1800~2200	600~800	0.2~0.25	7~12	溝銑 (SLOTTING)
LRTA1220	60	95	2300~2700	500~700	0.07~0.12	7~12	溝銑 (SLOTTING)
LRTA1220	60	45	1000~1300	250~400	12~24	0.07~0.12	側銑 (SIDE MILLING)
LRTA1220	60	150	3700~4200	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1220	60	150	3700~4200	800~1000	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTA0405	40	55	4200~4600	600~800	0.06~0.08	1~4	溝銑 (SLOTTING)
LRTA0405	40	90	7000~7400	1000~1200	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTA0410	40	55	4200~4600	600~800	0.06~0.08	1~4	溝銑 (SLOTTING)
LRTA0410	40	90	7000~7400	1000~1200	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTA0603	40	60	3000~3400	500~700	0.15~0.18	4~6	溝銑 (SLOTTING)
LRTA0603	40	75	3800~4200	600~800	0.06~0.08	4~6	溝銑 (SLOTTING)
LRTA0603	40	50	2400~2800	300~500	6~12	0.06~0.08	側銑 (SIDE MILLING)
LRTA0603	40	80	4000~4500	1100~1300	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
LRTA0603	40	115	6000~5000	1000~1200	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTA0605	40	60	3000~3400	500~700	0.15~0.18	4~6	溝銑 (SLOTTING)
LRTA0605	40	75	3800~4200	600~800	0.06~0.08	4~6	溝銑 (SLOTTING)
LRTA0605	40	50	2400~2800	300~500	6~12	0.06~0.08	側銑 (SIDE MILLING)
LRTA0605	40	80	4000~4500	1100~1300	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
LRTA0605	40	115	6000~5000	1000~1200	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)

LRTA

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTA0610	40	60	3000~3400	500~700	0.15~0.18	4~6	溝銑 (SLOTTING)
LRTA0610	40	75	3800~4200	600~800	0.06~0.08	4~6	溝銑 (SLOTTING)
LRTA0610	40	50	2400~2800	300~500	6~12	0.06~0.08	側銑 (SIDE MILLING)
LRTA0610	40	80	4000~4500	1100~1300	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
LRTA0610	40	115	6000~5000	1000~1200	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTA0803	50	60	2200~2700	500~700	0.2~0.25	6~8	溝銑 (SLOTTING)
LRTA0803	50	60	2200~2700	400~600	0.07~0.1	6~8	溝銑 (SLOTTING)
LRTA0803	50	60	2200~2700	400~600	8~16	0.07~0.1	側銑 (SIDE MILLING)
LRTA0803	50	110	4200~4700	1100~1300	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA0803	50	110	4200~4700	1000~1200	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA0805	50	60	2200~2700	500~700	0.2~0.25	6~8	溝銑 (SLOTTING)
LRTA0805	50	60	2200~2700	400~600	0.07~0.1	6~8	溝銑 (SLOTTING)
LRTA0805	50	60	2200~2700	400~600	8~16	0.07~0.1	側銑 (SIDE MILLING)
LRTA0805	50	110	4200~4700	1100~1300	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA0805	50	110	4200~4700	1000~1200	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA0810	50	60	2200~2700	500~700	0.2~0.25	5~8	溝銑 (SLOTTING)
LRTA0810	50	60	2200~2700	400~600	0.07~0.1	5~8	溝銑 (SLOTTING)
LRTA0810	50	60	2200~2700	400~600	8~16	0.07~0.1	側銑 (SIDE MILLING)
LRTA0810	50	110	4200~4700	1100~1300	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA0810	50	110	4200~4700	1000~1200	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1002	60	70	2000~2400	500~700	0.2~0.25	8~10	溝銑 (SLOTTING)
LRTA1002	60	90	2600~3000	400~600	0.07~0.1	8~10	溝銑 (SLOTTING)
LRTA1002	60	45	1200~1600	350~500	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1002	60	105	3200~3600	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1002	60	110	3400~3800	800~1000	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1003	60	70	2000~2400	500~700	0.2~0.25	8~10	溝銑 (SLOTTING)
LRTA1003	60	90	2600~3000	400~600	0.07~0.1	8~10	溝銑 (SLOTTING)
LRTA1003	60	45	1200~1600	350~500	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1003	60	105	3200~3600	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1003	60	110	3400~3800	800~1000	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1005	60	70	2000~2400	500~700	0.2~0.25	8~10	溝銑 (SLOTTING)
LRTA1005	60	90	2600~3000	400~600	0.07~0.1	8~10	溝銑 (SLOTTING)
LRTA1005	60	45	1200~1600	350~500	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1005	60	105	3200~3600	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1005	60	110	3400~3800	800~1000	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1010	60	70	2000~2400	500~700	0.2~0.25	7~10	溝銑 (SLOTTING)
LRTA1010	60	90	2600~3000	400~600	0.07~0.1	7~10	溝銑 (SLOTTING)
LRTA1010	60	45	1200~1600	350~500	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1010	60	105	3200~3600	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1010	60	110	3400~3800	800~1000	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)

LRTA

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTA1020	60	70	2000~2400	500~700	0.2~0.25	5~10	溝銑 (SLOTTING)
LRTA1020	60	90	2600~3000	400~600	0.07~0.1	5~10	溝銑 (SLOTTING)
LRTA1020	60	45	1200~1600	350~500	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1020	60	105	3200~3600	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1020	60	110	3400~3800	800~1000	0.07~0.1	0.07~0.1	3D 銑 (3D MILLING)
LRTA1205	60	80	1800~2200	600~800	0.2~0.25	10~12	溝銑 (SLOTTING)
LRTA1205	60	95	2300~2700	500~700	0.07~0.12	10~12	溝銑 (SLOTTING)
LRTA1205	60	45	1000~1300	250~400	12~24	0.07~0.12	側銑 (SIDE MILLING)
LRTA1205	60	150	3700~4200	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1205	60	150	3700~4200	800~1000	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)
LRTA1210	60	80	1800~2200	600~800	0.2~0.25	9~12	溝銑 (SLOTTING)
LRTA1210	60	95	2300~2700	500~700	0.07~0.12	9~12	溝銑 (SLOTTING)
LRTA1210	60	45	1000~1300	250~400	12~24	0.07~0.12	側銑 (SIDE MILLING)
LRTA1210	60	150	3700~4200	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1210	60	150	3700~4200	800~1000	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)
LRTA1220	60	80	1800~2200	600~800	0.2~0.25	7~12	溝銑 (SLOTTING)
LRTA1220	60	95	2300~2700	500~700	0.07~0.12	7~12	溝銑 (SLOTTING)
LRTA1220	60	45	1000~1300	250~400	12~24	0.07~0.12	側銑 (SIDE MILLING)
LRTA1220	60	150	3700~4200	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTA1220	60	150	3700~4200	800~1000	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTA0405	40	55	4200~4600	400~600	0.04~0.06	1~4	溝銑 (SLOTTING)
LRTA0405	40	90	7000~7400	400~600	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
LRTA0410	40	55	4200~4600	400~600	0.04~0.06	1.5	溝銑 (SLOTTING)
LRTA0410	40	90	7000~7400	400~600	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
LRTA0603	40	75	3800~4200	300~500	0.05~0.07	4.5	溝銑 (SLOTTING)
LRTA0603	40	45	2400~2800	300~500	6~12	0.05~0.07	側銑 (SIDE MILLING)
LRTA0603	40	90	4800~5200	600~800	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
LRTA0605	40	75	3800~4200	300~500	0.05~0.07	4~6	溝銑 (SLOTTING)
LRTA0605	40	45	2400~2800	300~500	6~12	0.05~0.07	側銑 (SIDE MILLING)
LRTA0605	40	90	4800~5200	600~800	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)

LRTA

切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼：*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTA0610	40	75	3800~4200	300~500	0.05~0.07	4~6	溝銑 (SLOTTING)
LRTA0610	40	45	2400~2800	300~500	6~12	0.05~0.07	側銑 (SIDE MILLING)
LRTA0610	40	90	4800~5200	600~800	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
LRTA0803	50	60	2200~2700	300~500	0.06~0.08	6~8	溝銑 (SLOTTING)
LRTA0803	50	50	2000~2500	300~500	8~16	0.06~0.08	側銑 (SIDE MILLING)
LRTA0803	50	110	4200~4700	600~800	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTA0805	50	60	2200~2700	300~500	0.06~0.08	6~8	溝銑 (SLOTTING)
LRTA0805	50	50	2000~2500	300~500	8~16	0.06~0.08	側銑 (SIDE MILLING)
LRTA0805	50	110	4200~4700	600~800	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTA0810	50	60	2200~2700	300~500	0.06~0.08	5~8	溝銑 (SLOTTING)
LRTA0810	50	50	2000~2500	300~500	8~16	0.06~0.08	側銑 (SIDE MILLING)
LRTA0810	50	110	4200~4700	600~800	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTA1002	60	75	2400~2800	300~500	0.07~0.1	8~10	溝銑 (SLOTTING)
LRTA1002	60	50	1600~2000	300~500	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1002	60	110	3400~3800	600~800	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1003	60	75	2400~2800	300~500	0.07~0.1	8~10	溝銑 (SLOTTING)
LRTA1003	60	50	1600~2000	300~500	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1003	60	110	3400~3800	600~800	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1005	60	75	2400~2800	300~500	0.07~0.1	8.5	溝銑 (SLOTTING)
LRTA1005	60	50	1600~2000	300~500	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1005	60	110	3400~3800	600~800	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1010	60	75	2400~2800	300~500	0.07~0.1	7~10	溝銑 (SLOTTING)
LRTA1010	60	50	1600~2000	300~500	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1010	60	110	3400~3800	600~800	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1020	60	75	2400~2800	300~500	0.07~0.1	5~10	溝銑 (SLOTTING)
LRTA1020	60	50	1600~2000	300~500	10~20	0.07~0.1	側銑 (SIDE MILLING)
LRTA1020	60	110	3400~3800	600~800	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTA1205	60	70	1800~2200	300~500	0.07~0.12	9.5	溝銑 (SLOTTING)
LRTA1205	60	70	1800~2200	200~400	12~24	0.07~0.12	側銑 (SIDE MILLING)
LRTA1205	60	105	2700~3200	500~700	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)
LRTA1210	60	70	1800~2200	300~500	0.07~0.12	9~12	溝銑 (SLOTTING)
LRTA1210	60	70	1800~2200	200~400	12~24	0.07~0.12	側銑 (SIDE MILLING)
LRTA1210	60	105	2700~3200	500~700	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)
LRTA1220	60	70	1800~2200	300~500	0.07~0.12	7~12	溝銑 (SLOTTING)
LRTA1220	60	70	1800~2200	200~400	12~24	0.07~0.12	側銑 (SIDE MILLING)
LRTA1220	60	105	2700~3200	500~700	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)

LRTR

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTD0405	40	70	5400~5800	1000~1200	0.07~0.1	2~4	溝銑 (SLOTTING)
LRTD0405	40	115	9000~10000	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTD0410	40	70	5400~5800	1000~1200	0.07~0.1	1~4	溝銑 (SLOTTING)
LRTD0410	40	115	9000~10000	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTD0602	40	75	4000~4600	600~800	0.15~0.2	5~6	溝銑 (SLOTTING)
LRTD0602	40	95	5000~5500	1200~1400	0.07~0.1	5~6	溝銑 (SLOTTING)
LRTD0602	40	60	3200~3600	1000~1200	6~12	0.15~0.2	側銑 (SIDE MILLING)
LRTD0602	40	60	3200~3600	600~800	6~12	0.07~0.1	側銑 (SIDE MILLING)
LRTD0602	40	90	4800~5400	1800~2200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
LRTD0602	40	135	7200~7600	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTD0603	40	75	4000~4600	600~800	0.15~0.2	5~6	溝銑 (SLOTTING)
LRTD0603	40	95	5000~5500	1200~1400	0.07~0.1	5~6	溝銑 (SLOTTING)
LRTD0603	40	60	3200~3600	1000~1200	6~12	0.15~0.2	側銑 (SIDE MILLING)
LRTD0603	40	60	3200~3600	600~800	6~12	0.07~0.1	側銑 (SIDE MILLING)
LRTD0603	40	90	4800~5400	1800~2200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
LRTD0603	40	135	7200~7600	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTD0605	40	75	4000~4600	600~800	0.15~0.2	4~6	溝銑 (SLOTTING)
LRTD0605	40	95	5000~5500	1200~1400	0.07~0.1	4~6	溝銑 (SLOTTING)
LRTD0605	40	60	3200~3600	1000~1200	6~12	0.15~0.2	側銑 (SIDE MILLING)
LRTD0605	40	60	3200~3600	600~800	6~12	0.07~0.1	側銑 (SIDE MILLING)
LRTD0605	40	90	4800~5400	1800~2200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
LRTD0605	40	135	7200~7600	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTD0610	40	75	4000~4600	600~800	0.15~0.2	3~6	溝銑 (SLOTTING)
LRTD0610	40	95	5000~5500	1200~1400	0.07~0.1	3~6	溝銑 (SLOTTING)
LRTD0610	40	60	3200~3600	1000~1200	6~12	0.15~0.2	側銑 (SIDE MILLING)
LRTD0610	40	60	3200~3600	600~800	6~12	0.07~0.1	側銑 (SIDE MILLING)
LRTD0610	40	90	4800~5400	1800~2200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
LRTD0610	40	135	7200~7600	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTD0803	50	65	2500~3000	800~1000	0.2~0.25	7~8	溝銑 (SLOTTING)
LRTD0803	50	75	3000~3500	600~800	0.08~0.12	7~8	溝銑 (SLOTTING)
LRTD0803	50	90	3500~4000	500~800	8~16	0.2~0.25	側銑 (SIDE MILLING)
LRTD0803	50	65	2500~3000	500~800	8~16	0.08~0.12	側銑 (SIDE MILLING)
LRTD0803	50	115	4500~5200	1000~1400	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTD0803	50	165	6500~7000	1000~1400	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
LRTD0805	50	65	2500~3000	800~1000	0.2~0.25	6~8	溝銑 (SLOTTING)
LRTD0805	50	75	3000~3500	600~800	0.08~0.12	6~8	溝銑 (SLOTTING)
LRTD0805	50	90	3500~4000	500~800	8~16	0.2~0.25	側銑 (SIDE MILLING)
LRTD0805	50	65	2500~3000	500~800	8~16	0.08~0.12	側銑 (SIDE MILLING)
LRTD0805	50	115	4500~5200	1000~1400	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTD0805	50	165	6500~7000	1000~1400	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)

LRTD

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTD0810	50	65	2500~3000	800~1000	0.2~0.25	5~8	溝銑 (SLOTTING)
LRTD0810	50	75	3000~3500	600~800	0.08~0.12	5~8	溝銑 (SLOTTING)
LRTD0810	50	90	3500~4000	500~800	8~16	0.2~0.25	側銑 (SIDE MILLING)
LRTD0810	50	65	2500~3000	500~800	8~16	0.08~0.12	側銑 (SIDE MILLING)
LRTD0810	50	115	4500~5200	1000~1400	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTD0810	50	165	6500~7000	1000~1400	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
LRTD1002	60	65	2000~2400	800~1000	0.25~0.3	9~10	溝銑 (SLOTTING)
LRTD1002	60	75	2400~2800	500~800	0.08~0.13	9~10	溝銑 (SLOTTING)
LRTD1002	60	90	2800~3200	500~800	10~20	0.25~0.3	側銑 (SIDE MILLING)
LRTD1002	60	65	2000~2400	500~800	10~20	0.1~0.15	側銑 (SIDE MILLING)
LRTD1002	60	115	3600~4200	1000~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1002	60	165	5200~5600	1000~1400	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
LRTD1003	60	65	2000~2400	800~1000	0.25~0.3	9~10	溝銑 (SLOTTING)
LRTD1003	60	75	2400~2800	500~800	0.08~0.13	9~10	溝銑 (SLOTTING)
LRTD1003	60	90	2800~3200	500~800	10~20	0.25~0.3	側銑 (SIDE MILLING)
LRTD1003	60	65	2000~2400	500~800	10~20	0.1~0.15	側銑 (SIDE MILLING)
LRTD1003	60	115	3600~4200	1000~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1003	60	165	5200~5600	1000~1400	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
LRTD1005	60	65	2000~2400	800~1000	0.25~0.3	10~20	溝銑 (SLOTTING)
LRTD1005	60	75	2400~2800	500~800	0.08~0.13	10~20	溝銑 (SLOTTING)
LRTD1005	60	90	2800~3200	500~800	10~20	0.25~0.3	側銑 (SIDE MILLING)
LRTD1005	60	65	2000~2400	500~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
LRTD1005	60	115	3600~4200	1000~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1005	60	165	5200~5600	1000~1400	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
LRTD1010	60	65	2000~2400	800~1000	0.25~0.3	7~10	溝銑 (SLOTTING)
LRTD1010	60	75	2400~2800	500~800	0.08~0.13	7~10	溝銑 (SLOTTING)
LRTD1010	60	90	2800~3200	500~800	10~20	0.25~0.3	側銑 (SIDE MILLING)
LRTD1010	60	65	2000~2400	500~800	10~20	0.1~0.15	側銑 (SIDE MILLING)
LRTD1010	60	115	3600~4200	1000~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1010	60	165	5200~5600	1000~1400	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
LRTD1020	60	65	2000~2400	800~1000	0.25~0.3	5~10	溝銑 (SLOTTING)
LRTD1020	60	75	2400~2800	500~800	0.08~0.13	5~10	溝銑 (SLOTTING)
LRTD1020	60	90	2800~3200	500~800	10~20	0.25~0.3	側銑 (SIDE MILLING)
LRTD1020	60	65	2000~2400	500~800	10~20	0.1~0.15	側銑 (SIDE MILLING)
LRTD1020	60	115	3600~4200	1000~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1020	60	165	5200~5600	1000~1400	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)

LRTR

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTD1205	60	75	2000~2400	800~1200	0.25~0.3	10~12	溝銑 (SLOTTING)
LRTD1205	60	105	2800~3200	800~1000	0.1~0.15	10~12	溝銑 (SLOTTING)
LRTD1205	60	80	1900~2300	800~1000	12~24	0.2~0.3	側銑 (SIDE MILLING)
LRTD1205	60	80	1900~2300	400~600	12~24	0.1~0.15	側銑 (SIDE MILLING)
LRTD1205	60	150	4000~4500	1400~1800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1205	60	170	4500~5000	1200~1600	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
LRTD1210	60	75	2000~2400	800~1200	0.25~0.3	9~12	溝銑 (SLOTTING)
LRTD1210	60	105	2800~3200	800~1000	0.1~0.15	9~12	溝銑 (SLOTTING)
LRTD1210	60	80	1900~2300	800~1000	12~24	0.25~0.3	側銑 (SIDE MILLING)
LRTD1210	60	80	1900~2300	400~600	12~24	0.1~0.15	側銑 (SIDE MILLING)
LRTD1210	60	150	4000~4500	1400~1800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1210	60	170	4500~5000	1200~1600	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
LRTD1220	60	75	2000~2400	800~1200	0.25~0.3	7~12	溝銑 (SLOTTING)
LRTD1220	60	105	2800~3200	800~1000	0.1~0.15	7~12	溝銑 (SLOTTING)
LRTD1220	60	80	1900~2300	800~1000	12~24	0.25~0.3	側銑 (SIDE MILLING)
LRTD1220	60	80	1900~2300	400~600	12~24	0.1~0.15	側銑 (SIDE MILLING)
LRTD1220	60	150	4000~4500	1400~1800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1220	60	170	4500~5000	1200~1600	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
LRTD1610	100	75	1500~1800	700~1100	0.3~0.35	13~16	溝銑 (SLOTTING)
LRTD1610	100	90	1800~2100	400~600	0.12~0.17	13~16	溝銑 (SLOTTING)
LRTD1610	100	75	1500~1800	600~800	16~32	0.3~0.35	側銑 (SIDE MILLING)
LRTD1610	100	75	1500~1800	400~600	16~32	0.12~0.17	側銑 (SIDE MILLING)
LRTD1610	100	150	3000~3400	1400~1800	0.3~0.35	0.3~0.35	3D銑 (3D MILLING)
LRTD1610	100	170	3400~3800	800~1200	0.12~0.17	0.12~0.17	3D銑 (3D MILLING)
LRTD1620	100	75	1500~1800	700~1100	0.3~0.35	11~16	溝銑 (SLOTTING)
LRTD1620	100	90	1800~2100	400~600	0.12~0.17	11~16	溝銑 (SLOTTING)
LRTD1620	100	75	1500~1800	600~800	16~32	0.3~0.35	側銑 (SIDE MILLING)
LRTD1620	100	75	1500~1800	400~600	16~32	0.12~0.17	側銑 (SIDE MILLING)
LRTD1620	100	150	3000~3400	1400~1800	0.3~0.35	0.3~0.35	3D銑 (3D MILLING)
LRTD1620	100	170	3400~3800	800~1200	0.12~0.17	0.12~0.17	3D銑 (3D MILLING)

LRTD

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTD0405	40	65	5000~5500	800~1000	0.07~0.1	1~4	溝銑 (SLOTTING)
LRTD0405	40	115	9000~10000	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTD0410	40	65	5000~5500	800~1000	0.07~0.1	1~4	溝銑 (SLOTTING)
LRTD0410	40	115	9000~10000	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTD0602	40	70	3600~4000	600~800	0.15~0.2	5~6	溝銑 (SLOTTING)
LRTD0602	40	85	4500~5000	1000~1200	0.07~0.1	5~6	溝銑 (SLOTTING)
LRTD0602	40	30	1600~2000	200~400	6~12	0.15~0.2	側銑 (SIDE MILLING)
LRTD0602	40	50	2700~3200	400~600	6~12	0.07~0.1	側銑 (SIDE MILLING)
LRTD0602	40	90	4800~5400	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
LRTD0602	40	130	6800~7200	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTD0603	40	70	3600~4000	600~800	0.15~0.2	5~6	溝銑 (SLOTTING)
LRTD0603	40	85	4500~5000	1000~1200	0.07~0.1	5~6	溝銑 (SLOTTING)
LRTD0603	40	30	1600~2000	200~400	6~12	0.15~0.2	側銑 (SIDE MILLING)
LRTD0603	40	50	2700~3200	400~600	6~12	0.07~0.1	側銑 (SIDE MILLING)
LRTD0603	40	90	4800~5400	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
LRTD0603	40	130	6800~7200	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTD0605	40	70	3600~4000	600~800	0.15~0.2	4~6	溝銑 (SLOTTING)
LRTD0605	40	85	4500~5000	1000~1200	0.07~0.1	4~6	溝銑 (SLOTTING)
LRTD0605	40	30	1600~2000	200~400	6~12	0.15~0.2	側銑 (SIDE MILLING)
LRTD0605	40	50	2700~3200	400~600	6~12	0.07~0.1	側銑 (SIDE MILLING)
LRTD0605	40	90	4800~5400	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
LRTD0605	40	130	6800~7200	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTD0610	40	70	3600~4000	600~800	0.15~0.2	3~6	溝銑 (SLOTTING)
LRTD0610	40	85	4500~5000	1000~1200	0.07~0.1	3~6	溝銑 (SLOTTING)
LRTD0610	40	30	1600~2000	200~400	6~12	0.15~0.2	側銑 (SIDE MILLING)
LRTD0610	40	50	2700~3200	400~600	6~12	0.07~0.1	側銑 (SIDE MILLING)
LRTD0610	40	90	4800~5400	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
LRTD0610	40	130	6800~7200	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTD0803	50	65	2400~2800	600~800	0.2~0.25	7~8	溝銑 (SLOTTING)
LRTD0803	50	90	3500~4000	500~700	0.08~0.12	7~8	溝銑 (SLOTTING)
LRTD0803	50	35	1200~1600	250~350	8~16	0.2~0.25	側銑 (SIDE MILLING)
LRTD0803	50	50	1800~2200	400~600	8~16	0.08~0.12	側銑 (SIDE MILLING)
LRTD0803	50	115	4500~5200	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTD0803	50	150	5700~6300	800~1200	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
LRTD0805	50	65	2400~2800	600~800	0.2~0.25	6~8	溝銑 (SLOTTING)
LRTD0805	50	90	3500~4000	500~700	0.08~0.12	6~8	溝銑 (SLOTTING)
LRTD0805	50	35	1200~1600	250~350	8~16	0.2~0.25	側銑 (SIDE MILLING)
LRTD0805	50	50	1800~2200	400~600	8~16	0.08~0.12	側銑 (SIDE MILLING)
LRTD0805	50	115	4500~5200	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTD0805	50	150	5700~6300	800~1200	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)

LRTR

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTD0810	50	65	2400~2800	600~800	0.2~0.25	5~8	溝銑 (SLOTTING)
LRTD0810	50	90	3500~4000	500~700	0.08~0.12	5~8	溝銑 (SLOTTING)
LRTD0810	50	35	1200~1600	250~350	8~16	0.2~0.25	側銑 (SIDE MILLING)
LRTD0810	50	50	1800~2200	400~600	8~16	0.08~0.12	側銑 (SIDE MILLING)
LRTD0810	50	115	4500~5200	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTD0810	50	150	5700~6300	800~1200	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
LRTD1002	60	65	2000~2400	600~800	0.25~0.3	9~10	溝銑 (SLOTTING)
LRTD1002	60	90	2800~3200	500~700	0.08~0.13	9~10	溝銑 (SLOTTING)
LRTD1002	60	35	1000~1300	200~300	10~20	0.2~0.25	側銑 (SIDE MILLING)
LRTD1002	60	40	1200~1600	400~600	10~20	0.08~0.13	側銑 (SIDE MILLING)
LRTD1002	60	115	3600~4000	800~1000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1002	60	150	4800~5200	800~1200	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
LRTD1003	60	65	2000~2400	600~800	0.25~0.3	8~10	溝銑 (SLOTTING)
LRTD1003	60	90	2800~3200	500~700	0.08~0.13	8~10	溝銑 (SLOTTING)
LRTD1003	60	35	1000~1300	200~300	10~20	0.2~0.25	側銑 (SIDE MILLING)
LRTD1003	60	40	1200~1600	400~600	10~20	0.08~0.13	側銑 (SIDE MILLING)
LRTD1003	60	115	3600~4000	800~1000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1003	60	150	4800~5200	800~1200	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
LRTD1005	60	65	2000~2400	600~800	0.25~0.3	8~10	溝銑 (SLOTTING)
LRTD1005	60	90	2800~3200	500~700	0.08~0.13	8~10	溝銑 (SLOTTING)
LRTD1005	60	35	1000~1300	200~300	10~20	0.2~0.25	側銑 (SIDE MILLING)
LRTD1005	60	40	1200~1600	400~600	10~20	0.08~0.13	側銑 (SIDE MILLING)
LRTD1005	60	115	3600~4000	800~1000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1005	60	150	4800~5200	800~1200	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
LRTD1010	60	65	2000~2400	600~800	0.25~0.3	7~10	溝銑 (SLOTTING)
LRTD1010	60	90	2800~3200	500~700	0.08~0.13	7~10	溝銑 (SLOTTING)
LRTD1010	60	35	1000~1300	200~300	10~20	0.2~0.25	側銑 (SIDE MILLING)
LRTD1010	60	40	1200~1600	400~600	10~20	0.08~0.13	側銑 (SIDE MILLING)
LRTD1010	60	115	3600~4000	800~1000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1010	60	150	4800~5200	800~1200	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
LRTD1020	60	65	2000~2400	600~800	0.25~0.3	5~10	溝銑 (SLOTTING)
LRTD1020	60	90	2800~3200	500~700	0.08~0.13	5~10	溝銑 (SLOTTING)
LRTD1020	60	35	1000~1300	200~300	10~20	0.2~0.25	側銑 (SIDE MILLING)
LRTD1020	60	40	1200~1600	400~600	10~20	0.08~0.13	側銑 (SIDE MILLING)
LRTD1020	60	115	3600~4000	800~1000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1020	60	150	4800~5200	800~1200	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)

LRTD

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTD1205	60	70	1800~2200	800~1000	0.25~0.3	10~12	溝銑 (SLOTTING)
LRTD1205	60	95	2500~2800	600~800	0.1~0.15	10~12	溝銑 (SLOTTING)
LRTD1205	60	30	700~1000	200~300	12~24	0.15~0.25	側銑 (SIDE MILLING)
LRTD1205	60	45	1100~1400	300~450	12~24	0.1~0.15	側銑 (SIDE MILLING)
LRTD1205	60	150	4000~4500	800~1000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1205	60	150	4000~4500	1000~1400	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
LRTD1210	60	70	1800~2200	800~1000	0.25~0.3	9~12	溝銑 (SLOTTING)
LRTD1210	60	95	2500~2800	600~800	0.1~0.15	9~12	溝銑 (SLOTTING)
LRTD1210	60	30	700~1000	200~300	12~24	0.15~0.25	側銑 (SIDE MILLING)
LRTD1210	60	45	1100~1400	300~450	12~24	0.1~0.15	側銑 (SIDE MILLING)
LRTD1210	60	150	4000~4500	800~1000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1210	60	150	4000~4500	1000~1400	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
LRTD1220	60	70	1800~2200	800~1000	0.25~0.3	7~12	溝銑 (SLOTTING)
LRTD1220	60	95	2500~2800	600~800	0.1~0.15	7~12	溝銑 (SLOTTING)
LRTD1220	60	30	700~1000	200~300	12~24	0.15~0.25	側銑 (SIDE MILLING)
LRTD1220	60	45	1100~1400	300~450	12~24	0.1~0.15	側銑 (SIDE MILLING)
LRTD1220	60	150	4000~4500	800~1000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1220	60	150	4000~4500	1000~1400	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
LRTD1610	100	70	1200~1600	600~900	0.3~0.35	13~16	溝銑 (SLOTTING)
LRTD1610	100	85	1500~1800	300~500	0.12~0.17	13~16	溝銑 (SLOTTING)
LRTD1610	100	30	500~800	200~350	16~32	0.3~0.35	側銑 (SIDE MILLING)
LRTD1610	100	45	800~1100	200~350	16~32	0.12~0.17	側銑 (SIDE MILLING)
LRTD1610	100	150	3000~3400	1200~1600	0.3~0.35	0.3~0.35	3D銑 (3D MILLING)
LRTD1610	100	150	3000~3400	700~1000	0.12~0.17	0.12~0.17	3D銑 (3D MILLING)
LRTD1620	100	70	1200~1600	600~900	0.3~0.35	11~16	溝銑 (SLOTTING)
LRTD1620	100	85	1500~1800	300~500	0.12~0.17	11~16	溝銑 (SLOTTING)
LRTD1620	100	30	500~800	200~350	16~32	0.3~0.35	側銑 (SIDE MILLING)
LRTD1620	100	45	800~1100	200~350	16~32	0.12~0.17	側銑 (SIDE MILLING)
LRTD1620	100	150	3000~3400	1200~1600	0.3~0.35	0.3~0.35	3D銑 (3D MILLING)
LRTD1620	100	150	3000~3400	700~1000	0.12~0.17	0.12~0.17	3D銑 (3D MILLING)

LRTR

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTD0405	40	65	5000~5500	800~1000	0.07~0.1	1~4	溝銑 (SLOTTING)
LRTD0405	40	115	9000~10000	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTD0410	40	65	5000~5500	800~1000	0.07~0.1	1~4	溝銑 (SLOTTING)
LRTD0410	40	115	9000~10000	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTD0602	40	70	3600~4000	600~800	0.15~0.2	5~6	溝銑 (SLOTTING)
LRTD0602	40	85	4500~5000	1000~1200	0.07~0.1	5~6	溝銑 (SLOTTING)
LRTD0602	40	30	1600~2000	200~400	6~12	0.15~0.2	側銑 (SIDE MILLING)
LRTD0602	40	50	2700~3200	400~600	6~12	0.07~0.1	側銑 (SIDE MILLING)
LRTD0602	40	90	4800~5400	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
LRTD0602	40	130	6800~7200	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTD0603	40	70	3600~4000	600~800	0.15~0.2	5~6	溝銑 (SLOTTING)
LRTD0603	40	85	4500~5000	1000~1200	0.07~0.1	5~6	溝銑 (SLOTTING)
LRTD0603	40	30	1600~2000	200~400	6~12	0.15~0.2	側銑 (SIDE MILLING)
LRTD0603	40	50	2700~3200	400~600	6~12	0.07~0.1	側銑 (SIDE MILLING)
LRTD0603	40	90	4800~5400	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
LRTD0603	40	130	6800~7200	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTD0605	40	70	3600~4000	600~800	0.15~0.2	4~6	溝銑 (SLOTTING)
LRTD0605	40	85	4500~5000	1000~1200	0.07~0.1	4~6	溝銑 (SLOTTING)
LRTD0605	40	30	1600~2000	200~400	6~12	0.15~0.2	側銑 (SIDE MILLING)
LRTD0605	40	50	2700~3200	400~600	6~12	0.07~0.1	側銑 (SIDE MILLING)
LRTD0605	40	90	4800~5400	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
LRTD0605	40	130	6800~7200	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTD0610	40	70	3600~4000	600~800	0.15~0.2	3~6	溝銑 (SLOTTING)
LRTD0610	40	85	4500~5000	1000~1200	0.07~0.1	3~6	溝銑 (SLOTTING)
LRTD0610	40	30	1600~2000	200~400	6~12	0.15~0.2	側銑 (SIDE MILLING)
LRTD0610	40	50	2700~3200	400~600	6~12	0.07~0.1	側銑 (SIDE MILLING)
LRTD0610	40	90	4800~5400	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
LRTD0610	40	130	6800~7200	1200~1600	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
LRTD0803	50	65	2400~2800	600~800	0.2~0.25	7~8	溝銑 (SLOTTING)
LRTD0803	50	90	3500~4000	500~700	0.08~0.12	7~8	溝銑 (SLOTTING)
LRTD0803	50	35	1200~1600	250~350	8~16	0.2~0.25	側銑 (SIDE MILLING)
LRTD0803	50	50	1800~2200	400~600	8~16	0.08~0.12	側銑 (SIDE MILLING)
LRTD0803	50	115	4500~5200	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTD0803	50	150	5700~6300	800~1200	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
LRTD0805	50	65	2400~2800	600~800	0.2~0.25	6~8	溝銑 (SLOTTING)
LRTD0805	50	90	3500~4000	500~700	0.08~0.12	6~8	溝銑 (SLOTTING)
LRTD0805	50	35	1200~1600	250~350	8~16	0.2~0.25	側銑 (SIDE MILLING)
LRTD0805	50	50	1800~2200	400~600	8~16	0.08~0.12	側銑 (SIDE MILLING)
LRTD0805	50	115	4500~5200	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTD0805	50	150	5700~6300	800~1200	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)

LRTD

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTD0810	50	65	2400~2800	600~800	0.2~0.25	5~8	溝銑 (SLOTTING)
LRTD0810	50	90	3500~4000	500~700	0.08~0.12	5~8	溝銑 (SLOTTING)
LRTD0810	50	35	1200~1600	250~350	8~16	0.2~0.25	側銑 (SIDE MILLING)
LRTD0810	50	50	1800~2200	400~600	8~16	0.08~0.12	側銑 (SIDE MILLING)
LRTD0810	50	115	4500~5200	800~1000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
LRTD0810	50	150	5700~6300	800~1200	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
LRTD1002	60	65	2000~2400	600~800	0.25~0.3	9~10	溝銑 (SLOTTING)
LRTD1002	60	90	2800~3200	500~700	0.08~0.13	9~10	溝銑 (SLOTTING)
LRTD1002	60	35	1000~1300	200~300	10~20	0.2~0.25	側銑 (SIDE MILLING)
LRTD1002	60	40	1200~1600	400~600	10~20	0.08~0.13	側銑 (SIDE MILLING)
LRTD1002	60	115	3600~4000	800~1000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1002	60	150	4800~5200	800~1200	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
LRTD1003	60	65	2000~2400	600~800	0.25~0.3	8~10	溝銑 (SLOTTING)
LRTD1003	60	90	2800~3200	500~700	0.08~0.13	8~10	溝銑 (SLOTTING)
LRTD1003	60	35	1000~1300	200~300	10~20	0.2~0.25	側銑 (SIDE MILLING)
LRTD1003	60	40	1200~1600	400~600	10~20	0.08~0.13	側銑 (SIDE MILLING)
LRTD1003	60	115	3600~4000	800~1000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1003	60	150	4800~5200	800~1200	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
LRTD1005	60	65	2000~2400	600~800	0.25~0.3	8~10	溝銑 (SLOTTING)
LRTD1005	60	90	2800~3200	500~700	0.08~0.13	8~10	溝銑 (SLOTTING)
LRTD1005	60	35	1000~1300	200~300	10~20	0.2~0.25	側銑 (SIDE MILLING)
LRTD1005	60	40	1200~1600	400~600	10~20	0.08~0.13	側銑 (SIDE MILLING)
LRTD1005	60	115	3600~4000	800~1000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1005	60	150	4800~5200	800~1200	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
LRTD1010	60	65	2000~2400	600~800	0.25~0.3	7~10	溝銑 (SLOTTING)
LRTD1010	60	90	2800~3200	500~700	0.08~0.13	7~10	溝銑 (SLOTTING)
LRTD1010	60	35	1000~1300	200~300	10~20	0.2~0.25	側銑 (SIDE MILLING)
LRTD1010	60	40	1200~1600	400~600	10~20	0.08~0.13	側銑 (SIDE MILLING)
LRTD1010	60	115	3600~4000	800~1000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1010	60	150	4800~5200	800~1200	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
LRTD1020	60	65	2000~2400	600~800	0.25~0.3	5~10	溝銑 (SLOTTING)
LRTD1020	60	90	2800~3200	500~700	0.08~0.13	5~10	溝銑 (SLOTTING)
LRTD1020	60	35	1000~1300	200~300	10~20	0.2~0.25	側銑 (SIDE MILLING)
LRTD1020	60	40	1200~1600	400~600	10~20	0.08~0.13	側銑 (SIDE MILLING)
LRTD1020	60	115	3600~4000	800~1000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1020	60	150	4800~5200	800~1200	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)

LRTR

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTD1205	60	70	1800~2200	800~1000	0.25~0.3	10~12	溝銑 (SLOTTING)
LRTD1205	60	95	2500~2800	600~800	0.1~0.15	10~12	溝銑 (SLOTTING)
LRTD1205	60	30	700~1000	200~300	12~24	0.15~0.25	側銑 (SIDE MILLING)
LRTD1205	60	45	1100~1400	300~450	12~24	0.1~0.15	側銑 (SIDE MILLING)
LRTD1205	60	150	4000~4500	800~1000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1205	60	150	4000~4500	1000~1400	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
LRTD1210	60	70	1800~2200	800~1000	0.25~0.3	9~12	溝銑 (SLOTTING)
LRTD1210	60	95	2500~2800	600~800	0.1~0.15	9~12	溝銑 (SLOTTING)
LRTD1210	60	30	700~1000	200~300	12~24	0.15~0.25	側銑 (SIDE MILLING)
LRTD1210	60	45	1100~1400	300~450	12~24	0.1~0.15	側銑 (SIDE MILLING)
LRTD1210	60	150	4000~4500	800~1000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1210	60	150	4000~4500	1000~1400	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
LRTD1220	60	70	1800~2200	800~1000	0.25~0.3	7~12	溝銑 (SLOTTING)
LRTD1220	60	95	2500~2800	600~800	0.1~0.15	7~12	溝銑 (SLOTTING)
LRTD1220	60	30	700~1000	200~300	12~24	0.15~0.25	側銑 (SIDE MILLING)
LRTD1220	60	45	1100~1400	300~450	12~24	0.1~0.15	側銑 (SIDE MILLING)
LRTD1220	60	150	4000~4500	800~1000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
LRTD1220	60	150	4000~4500	1000~1400	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
LRTD1610	100	70	1200~1600	600~900	0.3~0.35	13~16	溝銑 (SLOTTING)
LRTD1610	100	85	1500~1800	300~500	0.12~0.17	13~16	溝銑 (SLOTTING)
LRTD1610	100	30	500~800	200~350	16~32	0.3~0.35	側銑 (SIDE MILLING)
LRTD1610	100	45	800~1100	200~350	16~32	0.12~0.17	側銑 (SIDE MILLING)
LRTD1610	100	150	3000~3400	1200~1600	0.3~0.35	0.3~0.35	3D銑 (3D MILLING)
LRTD1610	100	150	3000~3400	700~1000	0.12~0.17	0.12~0.17	3D銑 (3D MILLING)
LRTD1620	100	70	1200~1600	600~900	0.3~0.35	11~16	溝銑 (SLOTTING)
LRTD1620	100	85	1500~1800	300~500	0.12~0.17	11~16	溝銑 (SLOTTING)
LRTD1620	100	30	500~800	200~350	16~32	0.3~0.35	側銑 (SIDE MILLING)
LRTD1620	100	45	800~1100	200~350	16~32	0.12~0.17	側銑 (SIDE MILLING)
LRTD1620	100	150	3000~3400	1200~1600	0.3~0.35	0.3~0.35	3D銑 (3D MILLING)
LRTD1620	100	150	3000~3400	700~1000	0.12~0.17	0.12~0.17	3D銑 (3D MILLING)

LRTD

切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼：*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTD0405	40	60	4500~5000	600~800	0.05~0.07	2~4	溝銑 (SLOTTING)
LRTD0405	40	100	8000~9000	600~800	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
LRTD0410	40	60	4500~5000	600~800	0.05~0.07	2~4	溝銑 (SLOTTING)
LRTD0410	40	100	8000~9000	600~800	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
LRTD0602	40	85	4500~5000	600~800	0.06~0.08	5~6	溝銑 (SLOTTING)
LRTD0602	40	50	2700~3200	400~600	6~12	0.06~0.08	側銑 (SIDE MILLING)
LRTD0602	40	120	6200~6600	800~1000	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTD0603	40	85	4500~5000	600~800	0.06~0.08	5~6	溝銑 (SLOTTING)
LRTD0603	40	50	2700~3200	400~600	6~12	0.06~0.08	側銑 (SIDE MILLING)
LRTD0603	40	120	6200~6600	800~1000	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTD0605	40	85	4500~5000	600~800	0.06~0.08	4~6	溝銑 (SLOTTING)
LRTD0605	40	50	2700~3200	400~600	6~12	0.06~0.08	側銑 (SIDE MILLING)
LRTD0605	40	120	6200~6600	800~1000	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTD0610	40	85	4500~5000	600~800	0.06~0.08	3~6	溝銑 (SLOTTING)
LRTD0610	40	50	2700~3200	400~600	6~12	0.06~0.08	側銑 (SIDE MILLING)
LRTD0610	40	120	6200~6600	800~1000	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
LRTD0803	50	90	3500~4000	450~650	0.08~0.12	7~8	溝銑 (SLOTTING)
LRTD0803	50	50	1800~2200	300~500	8~16	0.08~0.12	側銑 (SIDE MILLING)
LRTD0803	50	120	4600~5000	800~1100	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
LRTD0805	50	90	3500~4000	450~650	0.08~0.12	6~8	溝銑 (SLOTTING)
LRTD0805	50	50	1800~2200	300~500	8~16	0.08~0.12	側銑 (SIDE MILLING)
LRTD0805	50	120	4600~5000	800~1100	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
LRTD0810	50	90	3500~4000	450~650	0.08~0.12	5~8	溝銑 (SLOTTING)
LRTD0810	50	50	1800~2200	300~500	8~16	0.08~0.12	側銑 (SIDE MILLING)
LRTD0810	50	120	4600~5000	800~1100	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
LRTD1002	60	90	2800~3200	400~600	0.08~0.12	9~10	溝銑 (SLOTTING)
LRTD1002	60	60	1800~2200	400~600	10~20	0.08~0.12	側銑 (SIDE MILLING)
LRTD1002	60	125	4000~4500	800~1000	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
LRTD1003	60	90	2800~3200	400~600	0.08~0.12	8~10	溝銑 (SLOTTING)
LRTD1003	60	60	1800~2200	400~600	10~20	0.08~0.12	側銑 (SIDE MILLING)
LRTD1003	60	125	4000~4500	800~1000	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
LRTD1005	60	90	2800~3200	400~600	0.08~0.12	8~10	溝銑 (SLOTTING)
LRTD1005	60	60	1800~2200	400~600	10~20	0.08~0.12	側銑 (SIDE MILLING)
LRTD1005	60	125	4000~4500	800~1000	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
LRTD1010	60	90	2800~3200	400~600	0.08~0.12	7~10	溝銑 (SLOTTING)
LRTD1010	60	60	1800~2200	400~600	10~20	0.08~0.12	側銑 (SIDE MILLING)
LRTD1010	60	125	4000~4500	800~1000	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)
LRTD1020	60	90	2800~3200	400~600	0.08~0.12	5~10	溝銑 (SLOTTING)
LRTD1020	60	60	1800~2200	400~600	10~20	0.08~0.12	側銑 (SIDE MILLING)
LRTD1020	60	125	4000~4500	800~1000	0.08~0.12	0.08~0.12	3D銑 (3D MILLING)

LRTR

切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼：*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LRTD1205	60	75	2000~2400	400~600	0.1~0.15	10~12	溝銑 (SLOTTING)
LRTD1205	60	70	1800~2200	350~500	12~24	0.1~0.15	側銑 (SIDE MILLING)
LRTD1205	60	120	3200~3600	600~800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
LRTD1210	60	75	2000~2400	400~600	0.1~0.15	9~12	溝銑 (SLOTTING)
LRTD1210	60	70	1800~2200	350~500	12~24	0.1~0.15	側銑 (SIDE MILLING)
LRTD1210	60	120	3200~3600	600~800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
LRTD1210	60	75	2000~2400	400~600	0.1~0.15	7~12	溝銑 (SLOTTING)
LRTD1210	60	70	1800~2200	350~500	12~24	0.1~0.15	側銑 (SIDE MILLING)
LRTD1210	60	120	3200~3600	600~800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
LRTD1610	100	75	1300~1700	300~500	0.12~0.17	13~16	溝銑 (SLOTTING)
LRTD1610	100	60	1000~1300	200~350	16~32	0.12~0.17	側銑 (SIDE MILLING)
LRTD1610	100	120	2200~2600	700~900	0.12~0.17	0.12~0.17	3D銑 (3D MILLING)
LRTD1620	100	75	1300~1700	300~500	0.12~0.17	11~16	溝銑 (SLOTTING)
LRTD1620	100	60	1000~1300	200~350	16~32	0.12~0.17	側銑 (SIDE MILLING)
LRTD1620	100	120	2200~2600	700~900	0.12~0.17	0.12~0.17	3D銑 (3D MILLING)

RTB

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTB0305	12	90	9500~10000	800~1200	0.15~0.2	3	溝銑 (SLOTTING)
RTB0305	12	90	9500~10000	800~1200	0.05~0.1	3	溝銑 (SLOTTING)
RTB0305	12	90	9500~10000	700~1100	6	0.05~0.1	側銑 (SIDE MILLING)
RTB0305	12	90	9500~10000	800~1200	6	0.15~0.2	側銑 (SIDE MILLING)
RTB0305	12	90	9500~10000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0305	12	90	9500~10000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTB0305	12	145	15000~16000	1800~2200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0305	12	145	15000~16000	1600~2000	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTB0405	12	100	7500~8000	800~1200	0.05~0.1	4	溝銑 (SLOTTING)
RTB0405	12	100	7500~8000	1000~1400	0.15~0.2	4	溝銑 (SLOTTING)
RTB0405	12	100	7500~8000	700~1000	0.3	4	溝銑 (SLOTTING)
RTB0405	12	95	7200~7700	700~1100	8	0.05~0.1	側銑 (SIDE MILLING)
RTB0405	12	95	7200~7700	1000~1400	8	0.15~0.2	側銑 (SIDE MILLING)
RTB0405	12	95	7200~7700	700~1000	8	0.3	側銑 (SIDE MILLING)
RTB0405	12	120	9500~10000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0405	12	120	9500~10000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTB0405	12	160	12000~13000	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0405	12	160	12000~13000	1800~2200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTB0505	17	115	7200~7700	800~1200	0.05~0.1	5	溝銑 (SLOTTING)
RTB0505	17	115	7200~7700	1000~1400	0.15~0.25	5	溝銑 (SLOTTING)
RTB0505	17	115	7200~7700	700~1000	0.35	5	溝銑 (SLOTTING)
RTB0505	17	100	6200~6700	700~1100	10	0.05~0.1	側銑 (SIDE MILLING)
RTB0505	17	100	6200~6700	1000~1400	10	0.15~0.25	側銑 (SIDE MILLING)
RTB0505	17	100	6200~6700	700~1000	10	0.4	側銑 (SIDE MILLING)
RTB0505	17	150	9200~9700	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0505	17	150	9200~9700	1400~1800	0.15~0.25	0.15~0.25	3D銑 (3D MILLING)
RTB0505	17	165	10000~11000	1800~2200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0505	17	165	10000~11000	1800~2200	0.15~0.25	0.15~0.25	3D銑 (3D MILLING)
RTB0510	17	115	7200~7700	800~1200	0.05~0.1	5	溝銑 (SLOTTING)
RTB0510	17	115	7200~7700	1000~1400	0.15~0.25	5	溝銑 (SLOTTING)
RTB0510	17	115	7200~7700	700~1000	0.35	5	溝銑 (SLOTTING)
RTB0510	17	100	6200~6700	700~1100	10	0.05~0.1	側銑 (SIDE MILLING)
RTB0510	17	100	6200~6700	1000~1400	10	0.15~0.25	側銑 (SIDE MILLING)
RTB0510	17	100	6200~6700	700~1000	10	0.4	側銑 (SIDE MILLING)
RTB0510	17	150	9200~9700	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0510	17	150	9200~9700	1400~1800	0.15~0.25	0.15~0.25	3D銑 (3D MILLING)
RTB0510	17	165	10000~11000	1800~2200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0510	17	165	10000~11000	1800~2200	0.15~0.25	0.15~0.25	3D銑 (3D MILLING)

RTB

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTB0605	20	120	6200~6700	800~1200	0.05~0.1	6	溝銑 (SLOTTING)
RTB0605	20	120	6200~6700	1000~1400	0.15~0.25	6	溝銑 (SLOTTING)
RTB0605	20	120	6200~6700	700~1100	0.4	6	溝銑 (SLOTTING)
RTB0605	20	100	5200~5700	700~1000	12	0.05~0.1	側銑 (SIDE MILLING)
RTB0605	20	95	4800~5300	1000~1400	12	0.15~0.25	側銑 (SIDE MILLING)
RTB0605	20	100	5200~5700	700~1100	12	0.4	側銑 (SIDE MILLING)
RTB0605	20	170	8700~9200	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0605	20	170	8700~9200	1800~2200	0.15~0.25	0.15~0.25	3D銑 (3D MILLING)
RTB0610	20	120	6200~6700	800~1200	0.05~0.1	6	溝銑 (SLOTTING)
RTB0610	20	120	6200~6700	1000~1400	0.15~0.25	6	溝銑 (SLOTTING)
RTB0610	20	120	6200~6700	700~1100	0.4	6	溝銑 (SLOTTING)
RTB0610	20	100	5200~5700	700~1000	12	0.05~0.1	側銑 (SIDE MILLING)
RTB0610	20	95	4800~5300	1000~1400	12	0.15~0.25	側銑 (SIDE MILLING)
RTB0610	20	100	5200~5700	700~1100	12	0.4	側銑 (SIDE MILLING)
RTB0610	20	170	8700~9200	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0610	20	170	8700~9200	1800~2200	0.15~0.25	0.15~0.25	3D銑 (3D MILLING)
RTB0805	25	130	5000~5500	800~1200	0.05~0.1	8	溝銑 (SLOTTING)
RTB0805	25	130	5000~5500	1200~1600	0.2~0.3	8	溝銑 (SLOTTING)
RTB0805	25	130	5000~5500	700~1100	0.5	8	溝銑 (SLOTTING)
RTB0805	25	95	3500~4000	700~1000	16	0.05~0.1	側銑 (SIDE MILLING)
RTB0805	25	95	3500~4000	1200~1600	16	0.2~0.3	側銑 (SIDE MILLING)
RTB0805	25	95	3500~4000	800~1200	16	0.5	側銑 (SIDE MILLING)
RTB0805	25	200	7700~8200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0805	25	200	7700~8200	2400~2800	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB0810	25	130	5000~5500	800~1200	0.05~0.1	8	溝銑 (SLOTTING)
RTB0810	25	130	5000~5500	1200~1600	0.2~0.3	8	溝銑 (SLOTTING)
RTB0810	25	130	5000~5500	700~1100	0.5	8	溝銑 (SLOTTING)
RTB0810	25	95	3500~4000	700~1000	16	0.05~0.1	側銑 (SIDE MILLING)
RTB0810	25	95	3500~4000	1200~1600	16	0.2~0.3	側銑 (SIDE MILLING)
RTB0810	25	95	3500~4000	800~1200	16	0.5	側銑 (SIDE MILLING)
RTB0810	25	200	7700~8200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0810	25	200	7700~8200	2400~2800	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB1005Z	35	135	4000~4500	700~1100	0.05~0.1	10	溝銑 (SLOTTING)
RTB1005Z	35	135	4000~4500	1400~1800	0.2~0.3	10	溝銑 (SLOTTING)
RTB1005Z	35	135	4000~4500	800~1200	0.5	10	溝銑 (SLOTTING)
RTB1005Z	35	75	2200~2700	400~700	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1005Z	35	95	2800~3300	1600~2000	20	0.2~0.3	側銑 (SIDE MILLING)
RTB1005Z	35	95	2800~3300	1000~1400	20	0.5	側銑 (SIDE MILLING)
RTB1005Z	35	220	6700~7200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1005Z	35	220	6700~7200	2400~2800	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)

RTB

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTB1005	35	135	4000~4500	700~1100	0.05~0.1	10	溝銑 (SLOTTING)
RTB1005	35	135	4000~4500	1400~1800	0.2~0.3	10	溝銑 (SLOTTING)
RTB1005	35	135	4000~4500	800~1200	0.5	10	溝銑 (SLOTTING)
RTB1005	35	75	2200~2700	400~700	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1005	35	95	2800~3300	1600~2000	20	0.2~0.3	側銑 (SIDE MILLING)
RTB1005	35	95	2800~3300	1000~1400	20	0.5	側銑 (SIDE MILLING)
RTB1005	35	220	6700~7200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1005	35	220	6700~7200	2400~2800	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB1010Z	35	135	4000~4500	700~1100	0.05~0.1	10	溝銑 (SLOTTING)
RTB1010Z	35	135	4000~4500	1400~1800	0.2~0.3	10	溝銑 (SLOTTING)
RTB1010Z	35	135	4000~4500	800~1200	0.5	10	溝銑 (SLOTTING)
RTB1010Z	35	75	2200~2700	400~700	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1010Z	35	95	2800~3300	1600~2000	20	0.2~0.3	側銑 (SIDE MILLING)
RTB1010Z	35	95	2800~3300	1000~1400	20	0.5	側銑 (SIDE MILLING)
RTB1010Z	35	220	6700~7200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1010Z	35	220	6700~7200	2400~2800	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB1010	35	135	4000~4500	700~1100	0.05~0.1	10	溝銑 (SLOTTING)
RTB1010	35	135	4000~4500	1400~1800	0.2~0.3	10	溝銑 (SLOTTING)
RTB1010	35	135	4000~4500	800~1200	0.5	10	溝銑 (SLOTTING)
RTB1010	35	75	2200~2700	400~700	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1010	35	95	2800~3300	1600~2000	20	0.2~0.3	側銑 (SIDE MILLING)
RTB1010	35	95	2800~3300	1000~1400	20	0.5	側銑 (SIDE MILLING)
RTB1010	35	220	6700~7200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1010	35	220	6700~7200	2400~2800	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB1020Z	35	135	4000~4500	700~1100	0.05~0.1	10	溝銑 (SLOTTING)
RTB1020Z	35	135	4000~4500	1400~1800	0.2~0.3	10	溝銑 (SLOTTING)
RTB1020Z	35	135	4000~4500	800~1200	0.5	10	溝銑 (SLOTTING)
RTB1020Z	35	75	2200~2700	400~700	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1020Z	35	95	2800~3300	1600~2000	20	0.2~0.3	側銑 (SIDE MILLING)
RTB1020Z	35	95	2800~3300	1000~1400	20	0.5	側銑 (SIDE MILLING)
RTB1020Z	35	220	6700~7200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1020Z	35	220	6700~7200	2400~2800	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB1020	35	135	4000~4500	700~1100	0.05~0.1	10	溝銑 (SLOTTING)
RTB1020	35	135	4000~4500	1400~1800	0.2~0.3	10	溝銑 (SLOTTING)
RTB1020	35	135	4000~4500	800~1200	0.5	10	溝銑 (SLOTTING)
RTB1020	35	75	2200~2700	400~700	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1020	35	95	2800~3300	1600~2000	20	0.2~0.3	側銑 (SIDE MILLING)
RTB1020	35	95	2800~3300	1000~1400	20	0.5	側銑 (SIDE MILLING)
RTB1020	35	220	6700~7200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1020	35	220	6700~7200	2400~2800	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)

RTB

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTB1030Z	35	135	4000~4500	700~1100	0.05~0.1	10	溝銑 (SLOTTING)
RTB1030Z	35	135	4000~4500	1400~1800	0.2~0.3	10	溝銑 (SLOTTING)
RTB1030Z	35	135	4000~4500	800~1200	0.5	10	溝銑 (SLOTTING)
RTB1030Z	35	75	2200~2700	400~700	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1030Z	35	95	2800~3300	1600~2000	20	0.2~0.3	側銑 (SIDE MILLING)
RTB1030Z	35	95	2800~3300	1000~1400	20	0.5	側銑 (SIDE MILLING)
RTB1030Z	35	220	6700~7200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1030Z	35	220	6700~7200	2400~2800	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB1030	35	135	4000~4500	700~1100	0.05~0.1	10	溝銑 (SLOTTING)
RTB1030	35	135	4000~4500	1400~1800	0.2~0.3	10	溝銑 (SLOTTING)
RTB1030	35	135	4000~4500	800~1200	0.5	10	溝銑 (SLOTTING)
RTB1030	35	75	2200~2700	400~700	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1030	35	95	2800~3300	1600~2000	20	0.2~0.3	側銑 (SIDE MILLING)
RTB1030	35	95	2800~3300	1000~1400	20	0.5	側銑 (SIDE MILLING)
RTB1030	35	220	6700~7200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1030	35	220	6700~7200	2400~2800	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB1210	37	150	3700~4200	800~1200	0.05~0.1	12	溝銑 (SLOTTING)
RTB1210	37	150	3700~4200	1400~1800	0.2~0.3	12	溝銑 (SLOTTING)
RTB1210	37	150	3700~4200	1000~1400	0.5	12	溝銑 (SLOTTING)
RTB1210	37	115	2800~3300	500~800	24	0.05~0.1	側銑 (SIDE MILLING)
RTB1210	37	115	2800~3300	1200~1600	24	0.2~0.3	側銑 (SIDE MILLING)
RTB1210	37	115	2800~3300	800~1100	24	0.5	側銑 (SIDE MILLING)
RTB1210	37	185	4700~5200	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1210	37	185	4700~5200	2000~2400	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB1220	37	150	3700~4200	800~1200	0.05~0.1	12	溝銑 (SLOTTING)
RTB1220	37	150	3700~4200	1400~1800	0.2~0.3	12	溝銑 (SLOTTING)
RTB1220	37	150	3700~4200	1000~1400	0.5	12	溝銑 (SLOTTING)
RTB1220	37	115	2800~3300	500~800	24	0.05~0.1	側銑 (SIDE MILLING)
RTB1220	37	115	2800~3300	1200~1600	24	0.2~0.3	側銑 (SIDE MILLING)
RTB1220	37	115	2800~3300	800~1100	24	0.5	側銑 (SIDE MILLING)
RTB1220	37	185	4700~5200	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1220	37	185	4700~5200	2000~2400	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB1230	37	150	3700~4200	800~1200	0.05~0.1	12	溝銑 (SLOTTING)
RTB1230	37	150	3700~4200	1400~1800	0.2~0.3	12	溝銑 (SLOTTING)
RTB1230	37	150	3700~4200	1000~1400	0.5	12	溝銑 (SLOTTING)
RTB1230	37	115	2800~3300	500~800	24	0.05~0.1	側銑 (SIDE MILLING)
RTB1230	37	115	2800~3300	1200~1600	24	0.2~0.3	側銑 (SIDE MILLING)
RTB1230	37	115	2800~3300	800~1100	24	0.5	側銑 (SIDE MILLING)
RTB1230	37	185	4700~5200	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1230	37	185	4700~5200	2000~2400	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)

RTB

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTB0305	12	90	9500~10000	800~1200	0.15~0.2	3	溝銑 (SLOTTING)
RTB0305	12	90	9500~10000	800~1200	0.05~0.1	3	溝銑 (SLOTTING)
RTB0305	12	90	9500~10000	700~1100	6	0.05~0.1	側銑 (SIDE MILLING)
RTB0305	12	90	9500~10000	800~1200	6	0.15~0.2	側銑 (SIDE MILLING)
RTB0305	12	90	9500~10000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0305	12	90	9500~10000	1200~1600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTB0305	12	145	15000~16000	1800~2200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0305	12	145	15000~16000	1600~2000	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTB0405	12	100	7500~8000	800~1200	0.05~0.1	4	溝銑 (SLOTTING)
RTB0405	12	100	7500~8000	1000~1400	0.15~0.2	4	溝銑 (SLOTTING)
RTB0405	12	95	7200~7700	700~1100	8	0.05~0.1	側銑 (SIDE MILLING)
RTB0405	12	95	7200~7700	800~1200	8	0.15~0.2	側銑 (SIDE MILLING)
RTB0405	12	120	9500~10000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0405	12	120	9500~10000	1400~1800	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTB0405	12	160	12000~13000	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0405	12	160	12000~13000	1800~2200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTB0505	17	115	7200~7700	800~1200	0.05~0.1	5	溝銑 (SLOTTING)
RTB0505	17	115	7200~7700	1000~1400	0.15~0.25	5	溝銑 (SLOTTING)
RTB0505	17	95	5700~6200	700~1100	10	0.05~0.1	側銑 (SIDE MILLING)
RTB0505	17	95	5700~6200	800~1200	10	0.15~0.25	側銑 (SIDE MILLING)
RTB0505	17	150	9200~9700	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0505	17	150	9200~9700	1400~1800	0.15~0.25	0.15~0.25	3D銑 (3D MILLING)
RTB0505	17	165	10000~11000	1800~2200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0505	17	165	10000~11000	1800~2200	0.15~0.25	0.15~0.25	3D銑 (3D MILLING)
RTB0510	17	115	7200~7700	800~1200	0.05~0.1	5	溝銑 (SLOTTING)
RTB0510	17	115	7200~7700	1000~1400	0.15~0.25	5	溝銑 (SLOTTING)
RTB0510	17	95	5700~6200	700~1100	10	0.05~0.1	側銑 (SIDE MILLING)
RTB0510	17	95	5700~6200	800~1200	10	0.15~0.25	側銑 (SIDE MILLING)
RTB0510	17	150	9200~9700	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0510	17	150	9200~9700	1400~1800	0.15~0.25	0.15~0.25	3D銑 (3D MILLING)
RTB0510	17	165	10000~11000	1800~2200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0510	17	165	10000~11000	1800~2200	0.15~0.25	0.15~0.25	3D銑 (3D MILLING)
RTB0605	20	120	6200~6700	800~1200	0.05~0.1	6	溝銑 (SLOTTING)
RTB0605	20	120	6200~6700	1000~1400	0.15~0.25	6	溝銑 (SLOTTING)
RTB0605	20	95	4800~5300	700~1000	12	0.05~0.1	側銑 (SIDE MILLING)
RTB0605	20	95	4800~5300	800~1200	12	0.15~0.25	側銑 (SIDE MILLING)
RTB0605	20	170	8700~9200	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0605	20	170	8700~9200	1600~2000	0.15~0.25	0.15~0.25	3D銑 (3D MILLING)

RTB

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTB0610	20	120	6200~6700	800~1200	0.05~0.1	6	溝銑 (SLOTTING)
RTB0610	20	120	6200~6700	1000~1400	0.15~0.25	6	溝銑 (SLOTTING)
RTB0610	20	95	4800~5300	700~1000	12	0.05~0.1	側銑 (SIDE MILLING)
RTB0610	20	95	4800~5300	800~1200	12	0.15~0.25	側銑 (SIDE MILLING)
RTB0610	20	170	8700~9200	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0610	20	170	8700~9200	1600~2000	0.15~0.25	0.15~0.25	3D銑 (3D MILLING)
RTB0805	25	130	5000~5500	700~1100	0.05~0.1	8	溝銑 (SLOTTING)
RTB0805	25	130	5000~5500	1000~1400	0.2~0.3	8	溝銑 (SLOTTING)
RTB0805	25	95	3500~4000	700~1000	16	0.05~0.1	側銑 (SIDE MILLING)
RTB0805	25	95	3500~4000	800~1200	16	0.2~0.3	側銑 (SIDE MILLING)
RTB0805	25	200	7700~8200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0805	25	200	7700~8200	2200~2600	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB0810	25	130	5000~5500	700~1100	0.05~0.1	8	溝銑 (SLOTTING)
RTB0810	25	130	5000~5500	1000~1400	0.2~0.3	8	溝銑 (SLOTTING)
RTB0810	25	95	3500~4000	700~1000	16	0.05~0.1	側銑 (SIDE MILLING)
RTB0810	25	95	3500~4000	800~1200	16	0.2~0.3	側銑 (SIDE MILLING)
RTB0810	25	200	7700~8200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0810	25	200	7700~8200	2200~2600	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB1005Z	35	135	4000~4500	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTB1005Z	35	135	4000~4500	800~1200	0.2~0.3	10	溝銑 (SLOTTING)
RTB1005Z	35	95	2800~3300	500~800	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1005Z	35	95	2800~3300	1200~1600	20	0.2~0.3	側銑 (SIDE MILLING)
RTB1005Z	35	220	6700~7200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1005Z	35	220	6700~7200	2200~2600	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB1005	35	135	4000~4500	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTB1005	35	135	4000~4500	800~1200	0.2~0.3	10	溝銑 (SLOTTING)
RTB1005	35	95	2800~3300	500~800	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1005	35	95	2800~3300	1200~1600	20	0.2~0.3	側銑 (SIDE MILLING)
RTB1005	35	220	6700~7200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1005	35	220	6700~7200	2200~2600	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB1010Z	35	135	4000~4500	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTB1010Z	35	135	4000~4500	800~1200	0.2~0.3	10	溝銑 (SLOTTING)
RTB1010Z	35	95	2800~3300	500~800	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1010Z	35	95	2800~3300	1200~1600	20	0.2~0.3	側銑 (SIDE MILLING)
RTB1010Z	35	220	6700~7200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1010Z	35	220	6700~7200	2200~2600	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)

RTB

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTB1010	35	135	4000~4500	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTB1010	35	135	4000~4500	800~1200	0.2~0.3	10	溝銑 (SLOTTING)
RTB1010	35	95	2800~3300	500~800	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1010	35	95	2800~3300	1200~1600	20	0.2~0.3	側銑 (SIDE MILLING)
RTB1010	35	220	6700~7200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1010	35	220	6700~7200	2200~2600	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB1020Z	35	135	4000~4500	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTB1020Z	35	135	4000~4500	800~1200	0.2~0.3	10	溝銑 (SLOTTING)
RTB1020Z	35	95	2800~3300	500~800	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1020Z	35	95	2800~3300	1200~1600	20	0.2~0.3	側銑 (SIDE MILLING)
RTB1020Z	35	220	6700~7200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1020Z	35	220	6700~7200	2200~2600	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB1020	35	135	4000~4500	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTB1020	35	135	4000~4500	800~1200	0.2~0.3	10	溝銑 (SLOTTING)
RTB1020	35	95	2800~3300	500~800	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1020	35	95	2800~3300	1200~1600	20	0.2~0.3	側銑 (SIDE MILLING)
RTB1020	35	220	6700~7200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1020	35	220	6700~7200	2200~2600	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB1030Z	35	135	4000~4500	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTB1030Z	35	135	4000~4500	800~1200	0.2~0.3	10	溝銑 (SLOTTING)
RTB1030Z	35	95	2800~3300	500~800	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1030Z	35	95	2800~3300	1200~1600	20	0.2~0.3	側銑 (SIDE MILLING)
RTB1030Z	35	220	6700~7200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1030Z	35	220	6700~7200	2200~2600	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB1030	35	135	4000~4500	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTB1030	35	135	4000~4500	800~1200	0.2~0.3	10	溝銑 (SLOTTING)
RTB1030	35	95	2800~3300	500~800	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1030	35	95	2800~3300	1200~1600	20	0.2~0.3	側銑 (SIDE MILLING)
RTB1030	35	220	6700~7200	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1030	35	220	6700~7200	2200~2600	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB1210	37	150	3700~4200	700~1100	0.05~0.1	12	溝銑 (SLOTTING)
RTB1210	37	150	3700~4200	800~1200	0.2~0.3	12	溝銑 (SLOTTING)
RTB1210	37	115	2800~3300	500~800	24	0.05~0.1	側銑 (SIDE MILLING)
RTB1210	37	115	2800~3300	1000~1400	24	0.2~0.3	側銑 (SIDE MILLING)
RTB1210	37	185	4700~5200	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1210	37	185	4700~5200	1800~2200	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)

RTB

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTB1220	37	150	3700~4200	700~1100	0.05~0.1	12	溝銑 (SLOTTING)
RTB1220	37	150	3700~4200	800~1200	0.2~0.3	12	溝銑 (SLOTTING)
RTB1220	37	115	2800~3300	500~800	24	0.05~0.1	側銑 (SIDE MILLING)
RTB1220	37	115	2800~3300	1000~1400	24	0.2~0.3	側銑 (SIDE MILLING)
RTB1220	37	185	4700~5200	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1220	37	185	4700~5200	1800~2200	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
RTB1230	37	150	3700~4200	700~1100	0.05~0.1	12	溝銑 (SLOTTING)
RTB1230	37	150	3700~4200	800~1200	0.2~0.3	12	溝銑 (SLOTTING)
RTB1230	37	115	2800~3300	500~800	24	0.05~0.1	側銑 (SIDE MILLING)
RTB1230	37	115	2800~3300	1000~1400	24	0.2~0.3	側銑 (SIDE MILLING)
RTB1230	37	185	4700~5200	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1230	37	185	4700~5200	1800~2200	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTB0305	12	85	9000~10000	800~1000	0.12~0.15	1~3	溝銑 (SLOTTING)
RTB0305	12	85	9000~10000	800~1000	0.06~0.08	1~3	溝銑 (SLOTTING)
RTB0305	12	80	8500~9000	1000~1200	3~6	0.12~0.15	側銑 (SIDE MILLING)
RTB0305	12	80	8500~9000	700~900	3~6	0.06~0.08	側銑 (SIDE MILLING)
RTB0305	12	85	9000~10000	1000~1200	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
RTB0305	12	85	9000~10000	1000~1200	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
RTB0405	14	100	8000~8400	800~1000	0.15~0.18	2~4	溝銑 (SLOTTING)
RTB0405	14	100	8000~8400	800~1000	0.07~0.1	2~4	溝銑 (SLOTTING)
RTB0405	14	85	6800~7200	800~1000	4~8	0.15~0.18	側銑 (SIDE MILLING)
RTB0405	14	85	6500~7000	500~700	4~8	0.07~0.1	側銑 (SIDE MILLING)
RTB0405	14	110	8700~9200	800~1000	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTB0405	14	110	8700~9200	1000~1200	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTB0505	17	90	5800~6400	800~1000	0.15~0.18	3~5	溝銑 (SLOTTING)
RTB0505	17	115	7200~7600	1000~1200	0.07~0.1	3~5	溝銑 (SLOTTING)
RTB0505	17	85	5400~6000	800~1000	5~10	0.15~0.18	側銑 (SIDE MILLING)
RTB0505	17	90	5800~6400	600~800	5~10	0.07~0.1	側銑 (SIDE MILLING)
RTB0505	17	130	8000~8500	800~1200	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTB0505	17	130	8000~8500	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)

RTB

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTB0510	17	90	5800~6400	800~1000	0.15~0.18	2~5	溝銑 (SLOTTING)
RTB0510	17	115	7200~7600	1000~1200	0.07~0.1	2~5	溝銑 (SLOTTING)
RTB0510	17	85	5400~6000	800~1000	5~10	0.15~0.18	側銑 (SIDE MILLING)
RTB0510	17	90	5800~6400	600~800	5~10	0.07~0.1	側銑 (SIDE MILLING)
RTB0510	17	130	8000~8500	800~1200	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
RTB0510	17	130	8000~8500	1000~1400	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTB0605	20	90	4800~5400	1000~1400	0.15~0.2	4~6	溝銑 (SLOTTING)
RTB0605	20	115	6000~6400	1200~1400	0.07~0.1	4~6	溝銑 (SLOTTING)
RTB0605	20	85	4500~5000	800~1000	6~12	0.15~0.2	側銑 (SIDE MILLING)
RTB0605	20	90	4800~5200	600~800	6~12	0.07~0.1	側銑 (SIDE MILLING)
RTB0605	20	160	8500~9000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTB0605	20	160	8500~9000	1400~1800	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTB0610	20	90	4800~5400	1000~1400	0.15~0.2	3~6	溝銑 (SLOTTING)
RTB0610	20	115	6000~6400	1200~1400	0.07~0.1	3~6	溝銑 (SLOTTING)
RTB0610	20	85	4500~5000	800~1000	6~12	0.15~0.2	側銑 (SIDE MILLING)
RTB0610	20	90	4800~5200	600~800	6~12	0.07~0.1	側銑 (SIDE MILLING)
RTB0610	20	160	8500~9000	1000~1400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
RTB0610	20	160	8500~9000	1400~1800	0.07~0.1	0.07~0.1	3D銑 (3D MILLING)
RTB0805	30	100	4000~4500	700~1000	0.2~0.25	6~8	溝銑 (SLOTTING)
RTB0805	30	140	5500~6000	800~1000	0.07~0.11	6~8	溝銑 (SLOTTING)
RTB0805	30	90	3500~4000	700~900	8~16	0.2~0.25	側銑 (SIDE MILLING)
RTB0805	30	90	3500~4000	600~800	8~16	0.07~0.11	側銑 (SIDE MILLING)
RTB0805	30	100	4000~4500	1400~1800	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTB0805	30	185	7200~7700	1200~1600	0.07~0.11	0.07~0.11	3D銑 (3D MILLING)
RTB0810	30	100	4000~4500	700~1000	0.2~0.25	5~8	溝銑 (SLOTTING)
RTB0810	30	140	5500~6000	800~1000	0.07~0.11	5~8	溝銑 (SLOTTING)
RTB0810	30	90	3500~4000	700~900	8~16	0.2~0.25	側銑 (SIDE MILLING)
RTB0810	30	90	3500~4000	600~800	8~16	0.07~0.11	側銑 (SIDE MILLING)
RTB0810	30	100	4000~4500	1400~1800	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
RTB0810	30	185	7200~7700	1200~1600	0.07~0.11	0.07~0.11	3D銑 (3D MILLING)
RTB1005Z	30	100	3200~3600	800~1100	0.25~0.3	8~10	溝銑 (SLOTTING)
RTB1005Z	30	140	4400~4800	800~1000	0.08~0.13	8~10	溝銑 (SLOTTING)
RTB1005Z	30	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTB1005Z	30	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTB1005Z	30	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTB1005Z	30	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)

RTB

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTB1005	35	100	3200~3600	800~1100	0.25~0.3	8~10	溝銑 (SLOTTING)
RTB1005	35	140	4400~4800	800~1000	0.08~0.13	8~10	溝銑 (SLOTTING)
RTB1005	35	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTB1005	35	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTB1005	35	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTB1005	35	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTB1010Z	30	100	3200~3600	800~1100	0.25~0.3	7~10	溝銑 (SLOTTING)
RTB1010Z	30	140	4400~4800	800~1000	0.08~0.13	7~10	溝銑 (SLOTTING)
RTB1010Z	30	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTB1010Z	30	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTB1010Z	30	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTB1010Z	30	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTB1010	35	100	3200~3600	800~1100	0.25~0.3	7~10	溝銑 (SLOTTING)
RTB1010	35	140	4400~4800	800~1000	0.08~0.13	7~10	溝銑 (SLOTTING)
RTB1010	35	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTB1010	35	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTB1010	35	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTB1010	35	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTB1020Z	30	100	3200~3600	800~1100	0.25~0.3	5~10	溝銑 (SLOTTING)
RTB1020Z	30	140	4400~4800	800~1000	0.08~0.13	5~10	溝銑 (SLOTTING)
RTB1020Z	30	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTB1020Z	30	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTB1020Z	30	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTB1020Z	30	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTB1020	35	100	3200~3600	800~1100	0.25~0.3	5~10	溝銑 (SLOTTING)
RTB1020	35	140	4400~4800	800~1000	0.08~0.13	5~10	溝銑 (SLOTTING)
RTB1020	35	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTB1020	35	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTB1020	35	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTB1020	35	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTB1030Z	30	100	3200~3600	800~1100	0.25~0.3	3~10	溝銑 (SLOTTING)
RTB1030Z	30	140	4400~4800	800~1000	0.08~0.13	3~10	溝銑 (SLOTTING)
RTB1030Z	30	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTB1030Z	30	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTB1030Z	30	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTB1030Z	30	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)

RTB

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTB1030	35	100	3200~3600	800~1100	0.25~0.3	3~10	溝銑 (SLOTTING)
RTB1030	35	140	4400~4800	800~1000	0.08~0.13	3~10	溝銑 (SLOTTING)
RTB1030	35	90	2800~3200	700~1000	10~20	0.25~0.3	側銑 (SIDE MILLING)
RTB1030	35	90	2800~3200	600~800	10~20	0.08~0.13	側銑 (SIDE MILLING)
RTB1030	35	100	3200~3600	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTB1030	35	185	5800~6200	1300~1700	0.08~0.13	0.08~0.13	3D銑 (3D MILLING)
RTB1210	40	90	2400~2800	800~1000	0.25~0.3	9~12	溝銑 (SLOTTING)
RTB1210	40	145	3800~4200	1200~1400	0.1~0.15	9~12	溝銑 (SLOTTING)
RTB1210	40	70	1800~2200	600~800	12~24	0.25~0.3	側銑 (SIDE MILLING)
RTB1210	40	75	1900~2300	400~600	12~24	0.1~0.15	側銑 (SIDE MILLING)
RTB1210	40	150	4000~4400	1200~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTB1210	40	180	4700~5200	1400~1800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
RTB1220	40	90	2400~2800	800~1000	0.25~0.3	7~12	溝銑 (SLOTTING)
RTB1220	40	145	3800~4200	1200~1400	0.1~0.15	7~12	溝銑 (SLOTTING)
RTB1220	40	70	1800~2200	600~800	12~24	0.25~0.3	側銑 (SIDE MILLING)
RTB1220	40	75	1900~2300	400~600	12~24	0.1~0.15	側銑 (SIDE MILLING)
RTB1220	40	150	4000~4400	1200~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTB1220	40	180	4700~5200	1400~1800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
RTB1230	40	90	2400~2800	800~1000	0.25~0.3	5~12	溝銑 (SLOTTING)
RTB1230	40	145	3800~4200	1200~1400	0.1~0.15	5~12	溝銑 (SLOTTING)
RTB1230	40	70	1800~2200	600~800	12~24	0.25~0.3	側銑 (SIDE MILLING)
RTB1230	40	75	1900~2300	400~600	12~24	0.1~0.15	側銑 (SIDE MILLING)
RTB1230	40	150	4000~4400	1200~1400	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
RTB1230	40	180	4700~5200	1400~1800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)

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切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼：*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTB0305	12	90	9500~10000	700~1100	0.05~0.1	3	溝銑 (SLOTTING)
RTB0305	12	80	8000~8500	700~1100	6	0.05~0.1	側銑 (SIDE MILLING)
RTB0305	12	90	9500~10000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0305	12	135	14000~15000	900~1300	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0405	12	95	7200~7700	700~1100	0.05~0.1	4	溝銑 (SLOTTING)
RTB0405	12	80	6000~6500	700~1000	8	0.05~0.1	側銑 (SIDE MILLING)
RTB0405	12	110	8700~9200	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0405	12	145	11000~12000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0505	17	110	6800~7300	700~1100	0.05~0.1	5	溝銑 (SLOTTING)
RTB0505	17	80	4800~5300	700~1000	10	0.05~0.1	側銑 (SIDE MILLING)
RTB0505	17	150	9200~9700	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0510	17	110	6800~7300	700~1100	0.05~0.1	5	溝銑 (SLOTTING)
RTB0510	17	80	4800~5300	700~1000	10	0.05~0.1	側銑 (SIDE MILLING)
RTB0510	17	150	9200~9700	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0605	20	110	5700~6200	700~1000	0.05~0.1	6	溝銑 (SLOTTING)
RTB0605	20	80	4000~4500	500~800	12	0.05~0.1	側銑 (SIDE MILLING)
RTB0605	20	150	7700~8200	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0610	20	110	5700~6200	700~1000	0.05~0.1	6	溝銑 (SLOTTING)
RTB0610	20	80	4000~4500	500~800	12	0.05~0.1	側銑 (SIDE MILLING)
RTB0610	20	150	7700~8200	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0805	25	110	4200~4700	700~1000	0.05~0.1	8	溝銑 (SLOTTING)
RTB0805	25	85	3200~3700	500~800	16	0.05~0.1	側銑 (SIDE MILLING)
RTB0805	25	155	6000~6500	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB0810	25	110	4200~4700	700~1000	0.05~0.1	8	溝銑 (SLOTTING)
RTB0810	25	85	3200~3700	500~800	16	0.05~0.1	側銑 (SIDE MILLING)
RTB0810	25	155	6000~6500	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1005Z	35	125	3800~4300	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTB1005Z	35	75	2200~2700	500~800	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1005Z	35	155	4700~5200	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1005	35	125	3800~4300	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTB1005	35	75	2200~2700	500~800	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1005	35	155	4700~5200	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1010Z	35	125	3800~4300	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTB1010Z	35	75	2200~2700	500~800	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1010Z	35	155	4700~5200	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1010	35	125	3800~4300	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTB1010	35	75	2200~2700	500~800	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1010	35	155	4700~5200	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)

RTB

切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTB1020Z	35	125	3800~4300	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTB1020Z	35	75	2200~2700	500~800	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1020Z	35	155	4700~5200	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1020	35	125	3800~4300	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTB1020	35	75	2200~2700	500~800	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1020	35	155	4700~5200	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1030Z	35	125	3800~4300	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTB1030Z	35	75	2200~2700	500~800	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1030Z	35	155	4700~5200	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1030	35	125	3800~4300	700~1000	0.05~0.1	10	溝銑 (SLOTTING)
RTB1030	35	75	2200~2700	500~800	20	0.05~0.1	側銑 (SIDE MILLING)
RTB1030	35	155	4700~5200	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1210	37	110	2700~3200	700~1100	0.05~0.1	12	溝銑 (SLOTTING)
RTB1210	37	75	1800~2300	400~700	24	0.05~0.1	側銑 (SIDE MILLING)
RTB1210	37	130	3200~3700	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1220	37	110	2700~3200	700~1100	0.05~0.1	12	溝銑 (SLOTTING)
RTB1220	37	75	1800~2300	400~700	24	0.05~0.1	側銑 (SIDE MILLING)
RTB1220	37	130	3200~3700	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
RTB1230	37	110	2700~3200	700~1100	0.05~0.1	12	溝銑 (SLOTTING)
RTB1230	37	75	1800~2300	400~700	24	0.05~0.1	側銑 (SIDE MILLING)
RTB1230	37	130	3200~3700	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)

HTA / HTD

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
HTA[3T] 冷卻方式 Coolant Type	乾式切削 Dry coolant
HTD[3T] 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
HTA HTD 0203	11	125	19000~20000	1300~1600	0.04~0.06	2	溝銑 (SLOTTING)
0203	11	125	19000~20000	1100~1300	0.1~0.15	2	溝銑 (SLOTTING)
0203	11	105	16000~17000	1000~1200	2~4	0.04~0.06	側銑 (SIDE MILLING)
0203	11	100	15500~16000	1000~1200	2~4	0.1~0.15	側銑 (SIDE MILLING)
HTA HTD 0303	15	140	14500~15000	1300~1600	0.04~0.08	3	溝銑 (SLOTTING)
0303	15	125	13000~13500	1100~1300	0.1~0.2	3	溝銑 (SLOTTING)
0303	15	105	11000~11500	900~1100	3~6	0.04~0.08	側銑 (SIDE MILLING)
0303	15	100	10500~11000	1000~1200	3~6	0.1~0.2	側銑 (SIDE MILLING)
HTA HTD 0403	16	140	10700~11200	1100~1400	0.04~0.08	4	溝銑 (SLOTTING)
0403	16	125	9500~10000	1000~1200	0.2~0.3	4	溝銑 (SLOTTING)
0403	16	105	8000~8500	800~1000	4~8	0.04~0.08	側銑 (SIDE MILLING)
0403	16	100	7800~8200	900~1100	4~8	0.2~0.3	側銑 (SIDE MILLING)
HTA HTD 0503	19	140	8500~9000	1100~1400	0.05~0.1	5	溝銑 (SLOTTING)
0503	19	125	7800~8200	1000~1200	0.3~0.4	5	溝銑 (SLOTTING)
0503	19	105	6700~7000	800~1000	5~10	0.05~0.1	側銑 (SIDE MILLING)
0503	19	100	6300~6600	900~1100	5~10	0.3~0.4	側銑 (SIDE MILLING)
HTA HTD 0603	20	140	7300~7600	1000~1300	0.05~0.15	6	溝銑 (SLOTTING)
0603	20	125	6600~6800	1000~1200	0.4~0.6	6	溝銑 (SLOTTING)
0603	20	105	5500~5800	700~900	6~12	0.05~0.1	側銑 (SIDE MILLING)
0603	20	100	5000~5300	1000~1200	6~12	0.5~0.7	側銑 (SIDE MILLING)
HTA HTD 0803	25	140	5500~5800	1000~1200	0.05~0.15	8	溝銑 (SLOTTING)
0803	25	110	4300~4600	700~900	0.6~0.7	8	溝銑 (SLOTTING)
0803	25	105	4100~4300	600~800	8~16	0.05~0.1	側銑 (SIDE MILLING)
0803	25	100	3900~4200	1000~1200	8~16	0.5~1	側銑 (SIDE MILLING)
HTA HTD 1003	30	140	4400~4600	900~1100	0.05~0.15	10	溝銑 (SLOTTING)
1003	30	95	2800~3000	500~700	0.8~1.2	10	溝銑 (SLOTTING)
1003	30	105	3300~3500	600~800	10~20	0.05~0.12	側銑 (SIDE MILLING)
1003	30	105	3300~3500	1000~1200	10~20	0.5~0.8	側銑 (SIDE MILLING)
HTA HTD 1203	37	140	3700~4000	900~1100	0.05~0.2	12	溝銑 (SLOTTING)
1203	37	110	2800~3000	500~700	0.8~1.2	12	溝銑 (SLOTTING)
1203	37	105	2700~2900	500~700	12~24	0.05~0.12	側銑 (SIDE MILLING)
1203	37	100	2600~2800	1100~1300	12~24	0.5~1	側銑 (SIDE MILLING)
HTA HTD 1603	50	140	2700~3000	700~900	0.05~0.2	16	溝銑 (SLOTTING)
1603	50	105	2000~2200	400~600	0.8~1.2	16	溝銑 (SLOTTING)
1603	50	105	2000~2200	400~600	16~32	0.05~0.12	側銑 (SIDE MILLING)
1603	50	90	1700~2000	700~900	16~32	0.5~1	側銑 (SIDE MILLING)
HTA HTD 2003	50	140	2100~2300	700~900	0.05~0.25	20	溝銑 (SLOTTING)
2003	50	105	1500~1700	400~600	0.8~1.2	20	溝銑 (SLOTTING)
2003	50	105	1500~1700	300~500	20~40	0.05~0.15	側銑 (SIDE MILLING)
2003	50	90	1400~1600	500~700	20~40	0.5~1	側銑 (SIDE MILLING)

HTA / HTD

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
HTA[3T] 冷卻方式 Coolant Type	乾式切削 Dry coolant
HTD[3T] 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
HTA HTD 0203	11	110	17000~18000	1300~1600	0.04~0.06	2	溝銑 (SLOTTING)
0203	11	110	17000~18000	1100~1300	0.1~0.15	2	溝銑 (SLOTTING)
0203	11	105	16000~17000	1000~1200	2~4	0.04~0.06	側銑 (SIDE MILLING)
0203	11	100	15500~16000	1000~1200	2~4	0.1~0.15	側銑 (SIDE MILLING)
HTA HTD 0303	15	140	14500~15000	1300~1600	0.04~0.08	3	溝銑 (SLOTTING)
0303	15	125	13000~13500	1000~1200	0.1~0.2	3	溝銑 (SLOTTING)
0303	15	105	11000~11500	900~1100	3~6	0.04~0.08	側銑 (SIDE MILLING)
0303	15	100	10500~11000	900~1100	3~6	0.1~0.2	側銑 (SIDE MILLING)
HTA HTD 0403	16	140	10700~11200	1100~1400	0.04~0.08	4	溝銑 (SLOTTING)
0403	16	125	9500~10000	900~1100	0.2~0.3	4	溝銑 (SLOTTING)
0403	16	105	8000~8500	800~1000	4~8	0.04~0.08	側銑 (SIDE MILLING)
0403	16	100	7800~8200	800~1000	4~8	0.2~0.3	側銑 (SIDE MILLING)
HTA HTD 0503	19	140	8500~9000	1100~1400	0.05~0.1	5	溝銑 (SLOTTING)
0503	19	125	7800~8200	900~1100	0.3~0.4	5	溝銑 (SLOTTING)
0503	19	105	6700~7000	800~1000	5~10	0.05~0.1	側銑 (SIDE MILLING)
0503	19	100	6300~6600	900~1100	5~10	0.3~0.4	側銑 (SIDE MILLING)
HTA HTD 0603	20	140	7300~7600	1000~1300	0.05~0.15	6	溝銑 (SLOTTING)
0603	20	125	6600~6800	900~1100	0.5~0.7	6	溝銑 (SLOTTING)
0603	20	105	5500~5800	700~900	6~12	0.05~0.15	側銑 (SIDE MILLING)
0603	20	100	5000~5300	900~1100	6~12	0.5~0.7	側銑 (SIDE MILLING)
HTA HTD 0803	25	140	5500~5800	1000~1200	0.05~0.15	8	溝銑 (SLOTTING)
0803	25	110	4300~4600	650~850	0.6~0.7	8	溝銑 (SLOTTING)
0803	25	105	4100~4300	600~800	8~16	0.05~0.1	側銑 (SIDE MILLING)
0803	25	100	3900~4200	900~1100	8~16	0.5~1	側銑 (SIDE MILLING)
HTA HTD 1003	30	140	4400~4600	900~1100	0.05~0.15	10	溝銑 (SLOTTING)
1003	30	95	2800~3000	400~600	0.8~1.2	10	溝銑 (SLOTTING)
1003	30	105	3300~3500	600~800	10~20	0.05~0.12	側銑 (SIDE MILLING)
1003	30	100	3000~3200	1000~1200	10~20	0.5~0.8	側銑 (SIDE MILLING)
HTA HTD 1203	37	140	3700~4000	900~1100	0.05~0.2	12	溝銑 (SLOTTING)
1203	37	110	2800~3000	400~500	0.8~1.2	12	溝銑 (SLOTTING)
1203	37	105	2700~2900	500~700	12~24	0.05~0.12	側銑 (SIDE MILLING)
1203	37	100	2600~2800	1000~1200	12~24	0.5~1	側銑 (SIDE MILLING)
HTA HTD 1603	50	140	2700~3000	700~900	0.05~0.2	16	溝銑 (SLOTTING)
1603	50	105	2000~2200	400~500	0.8~1.2	16	溝銑 (SLOTTING)
1603	50	105	2000~2200	400~600	16~32	0.05~0.12	側銑 (SIDE MILLING)
1603	50	90	1700~2000	700~900	16~32	0.5~1	側銑 (SIDE MILLING)
HTA HTD 2003	50	140	2100~2300	700~900	0.05~0.25	20	溝銑 (SLOTTING)
2003	50	105	1500~1700	400~500	0.8~1.2	20	溝銑 (SLOTTING)
2003	50	105	1500~1700	300~500	20~40	0.05~0.15	側銑 (SIDE MILLING)
2003	50	90	1400~1600	500~700	20~40	0.5~1	側銑 (SIDE MILLING)

HTA / HTD

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
HTA[3T] 冷卻方式 Coolant Type	乾式切削 Dry coolant
HTD[3T] 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
HTA HTD 0203	11	110	17000~18000	1300~1600	0.04~0.06	2	溝銑 (SLOTTING)
0203	11	110	17000~18000	1100~1300	0.1~0.15	2	溝銑 (SLOTTING)
0203	11	105	16000~17000	1000~1200	2~4	0.04~0.06	側銑 (SIDE MILLING)
0203	11	100	15500~16000	1000~1200	2~4	0.1~0.15	側銑 (SIDE MILLING)
HTA HTD 0303	15	140	14500~15000	1300~1600	0.04~0.08	3	溝銑 (SLOTTING)
0303	15	125	13000~13500	1000~1200	0.1~0.2	3	溝銑 (SLOTTING)
0303	15	105	11000~11500	900~1100	3~6	0.04~0.08	側銑 (SIDE MILLING)
0303	15	100	10500~11000	900~1100	3~6	0.1~0.2	側銑 (SIDE MILLING)
HTA HTD 0403	16	140	10700~11200	1100~1400	0.04~0.08	4	溝銑 (SLOTTING)
0403	16	125	9500~10000	900~1100	0.2~0.3	4	溝銑 (SLOTTING)
0403	16	105	8000~8500	800~1000	4~8	0.04~0.08	側銑 (SIDE MILLING)
0403	16	100	7800~8200	800~1000	4~8	0.2~0.3	側銑 (SIDE MILLING)
HTA HTD 0503	19	140	8500~9000	1100~1400	0.05~0.1	5	溝銑 (SLOTTING)
0503	19	125	7800~8200	900~1100	0.3~0.4	5	溝銑 (SLOTTING)
0503	19	105	6700~7000	800~1000	5~10	0.05~0.1	側銑 (SIDE MILLING)
0503	19	100	6300~6600	900~1100	5~10	0.3~0.4	側銑 (SIDE MILLING)
HTA HTD 0603	20	140	7300~7600	1000~1300	0.05~0.15	6	溝銑 (SLOTTING)
0603	20	125	6600~6800	900~1100	0.5~0.7	6	溝銑 (SLOTTING)
0603	20	105	5500~5800	700~900	6~12	0.05~0.15	側銑 (SIDE MILLING)
0603	20	100	5000~5300	900~1100	6~12	0.5~0.7	側銑 (SIDE MILLING)
HTA HTD 0803	25	140	5500~5800	1000~1200	0.05~0.15	8	溝銑 (SLOTTING)
0803	25	110	4300~4600	650~850	0.6~0.7	8	溝銑 (SLOTTING)
0803	25	105	4100~4300	600~800	8~16	0.05~0.1	側銑 (SIDE MILLING)
0803	25	100	3900~4200	900~1100	8~16	0.5~1	側銑 (SIDE MILLING)
HTA HTD 1003	30	140	4400~4600	900~1100	0.05~0.15	10	溝銑 (SLOTTING)
1003	30	95	2800~3000	400~600	0.8~1.2	10	溝銑 (SLOTTING)
1003	30	105	3300~3500	600~800	10~20	0.05~0.12	側銑 (SIDE MILLING)
1003	30	100	3000~3200	1000~1200	10~20	0.5~0.8	側銑 (SIDE MILLING)
HTA HTD 1203	37	140	3700~4000	900~1100	0.05~0.2	12	溝銑 (SLOTTING)
1203	37	110	2800~3000	400~500	0.8~1.2	12	溝銑 (SLOTTING)
1203	37	105	2700~2900	500~700	12~24	0.05~0.12	側銑 (SIDE MILLING)
1203	37	100	2600~2800	1000~1200	12~24	0.5~1	側銑 (SIDE MILLING)
HTA HTD 1603	50	140	2700~3000	700~900	0.05~0.2	16	溝銑 (SLOTTING)
1603	50	105	2000~2200	400~500	0.8~1.2	16	溝銑 (SLOTTING)
1603	50	105	2000~2200	400~600	16~32	0.05~0.12	側銑 (SIDE MILLING)
1603	50	90	1700~2000	700~900	16~32	0.5~1	側銑 (SIDE MILLING)
HTA HTD 2003	50	140	2100~2300	700~900	0.05~0.25	20	溝銑 (SLOTTING)
2003	50	105	1500~1700	400~500	0.8~1.2	20	溝銑 (SLOTTING)
2003	50	105	1500~1700	300~500	20~40	0.05~0.15	側銑 (SIDE MILLING)
2003	50	90	1400~1600	500~700	20~40	0.5~1	側銑 (SIDE MILLING)

ITA / ITH

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
ITA[3T] 冷卻方式 Coolant Type	乾式切削 Dry coolant
ITH[3T] 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ITA ITH 0303	15	140	14500~15000	1300~1600	0.04~0.08	3	溝銑 (SLOTTING)
0303	15	125	13000~13500	1100~1300	0.1~0.2	3	溝銑 (SLOTTING)
0303	15	105	11000~11500	900~1100	3~6	0.04~0.08	側銑 (SIDE MILLING)
0303	15	100	10500~11000	1000~1200	3~6	0.1~0.2	側銑 (SIDE MILLING)
ITA ITH 0403	16	140	10700~11200	1100~1400	0.04~0.08	4	溝銑 (SLOTTING)
0403	16	125	9500~10000	1000~1200	0.2~0.3	4	溝銑 (SLOTTING)
0403	16	105	8000~8500	800~1000	4~8	0.04~0.08	側銑 (SIDE MILLING)
0403	16	100	7800~8200	900~1100	4~8	0.2~0.3	側銑 (SIDE MILLING)
ITA ITH 0603	20	140	7300~7600	1000~1300	0.05~0.15	6	溝銑 (SLOTTING)
0603	20	125	6600~6800	1000~1200	0.4~0.6	6	溝銑 (SLOTTING)
0603	20	105	5500~5800	700~900	6~12	0.05~0.1	側銑 (SIDE MILLING)
0603	20	100	5000~5300	1000~1200	6~12	0.5~0.7	側銑 (SIDE MILLING)
ITA ITH 0803	25	140	5500~5800	1000~1200	0.05~0.15	8	溝銑 (SLOTTING)
0803	25	110	4300~4600	700~900	0.6~0.7	8	溝銑 (SLOTTING)
0803	25	105	4100~4300	600~800	8~16	0.05~0.1	側銑 (SIDE MILLING)
0803	25	100	3900~4200	1000~1200	8~16	0.5~1	側銑 (SIDE MILLING)
ITA ITH 1003	30	140	4400~4600	900~1100	0.05~0.15	10	溝銑 (SLOTTING)
1003	30	95	2800~3000	500~700	0.8~1.2	10	溝銑 (SLOTTING)
1003	30	105	3300~3500	600~800	10~20	0.05~0.12	側銑 (SIDE MILLING)
1003	30	105	3300~3500	1000~1200	10~20	0.5~0.8	側銑 (SIDE MILLING)
ITA ITH 1203	37	140	3700~4000	900~1100	0.05~0.2	12	溝銑 (SLOTTING)
1203	37	110	2800~3000	500~700	0.8~1.2	12	溝銑 (SLOTTING)
1203	37	105	2700~2900	500~700	12~24	0.05~0.12	側銑 (SIDE MILLING)
1203	37	100	2600~2800	1100~1300	12~24	0.5~1	側銑 (SIDE MILLING)
ITA ITH 1603	50	140	2700~3000	700~900	0.05~0.2	16	溝銑 (SLOTTING)
1603	50	105	2000~2200	400~600	0.8~1.2	16	溝銑 (SLOTTING)
1603	50	105	2000~2200	400~600	16~32	0.05~0.12	側銑 (SIDE MILLING)
1603	50	90	1700~2000	700~900	16~32	0.5~1	側銑 (SIDE MILLING)
ITA ITH 2003	50	140	2100~2300	700~900	0.05~0.25	20	溝銑 (SLOTTING)
2003	50	105	1500~1700	400~600	0.8~1.2	20	溝銑 (SLOTTING)
2003	50	105	1500~1700	300~500	20~40	0.05~0.15	側銑 (SIDE MILLING)
2003	50	90	1400~1600	500~700	20~40	0.5~1	側銑 (SIDE MILLING)

ITA / ITH

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
ITA[3T] 冷卻方式 Coolant Type	乾式切削 Dry coolant
ITH[3T] 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ITA ITH 0303	15	140	14500~15000	1300~1600	0.04~0.08	3	溝銑 (SLOTTING)
0303	15	125	13000~13500	1000~1200	0.1~0.2	3	溝銑 (SLOTTING)
0303	15	105	11000~11500	900~1100	3~6	0.04~0.08	側銑 (SIDE MILLING)
0303	15	100	10500~11000	900~1100	3~6	0.1~0.2	側銑 (SIDE MILLING)
ITA ITH 0403	16	140	10700~11200	1100~1400	0.04~0.08	4	溝銑 (SLOTTING)
0403	16	125	9500~10000	900~1100	0.2~0.3	4	溝銑 (SLOTTING)
0403	16	105	8000~8500	800~1000	4~8	0.04~0.08	側銑 (SIDE MILLING)
0403	16	100	7800~8200	800~1000	4~8	0.2~0.3	側銑 (SIDE MILLING)
ITA ITH 0603	20	140	7300~7600	1000~1300	0.05~0.15	6	溝銑 (SLOTTING)
0603	20	125	6600~6800	900~1100	0.5~0.7	6	溝銑 (SLOTTING)
0603	20	105	5500~5800	700~900	6~12	0.05~0.15	側銑 (SIDE MILLING)
0603	20	100	5000~5300	900~1100	6~12	0.5~0.7	側銑 (SIDE MILLING)
ITA ITH 0803	25	140	5500~5800	1000~1200	0.05~0.15	8	溝銑 (SLOTTING)
0803	25	110	4300~4600	650~850	0.6~0.7	8	溝銑 (SLOTTING)
0803	25	105	4100~4300	600~800	8~16	0.05~0.1	側銑 (SIDE MILLING)
0803	25	100	3900~4200	900~1100	8~16	0.5~1	側銑 (SIDE MILLING)
ITA ITH 1003	30	140	4400~4600	900~1100	0.05~0.15	10	溝銑 (SLOTTING)
1003	30	95	2800~3000	400~600	0.8~1.2	10	溝銑 (SLOTTING)
1003	30	105	3300~3500	600~800	10~20	0.05~0.12	側銑 (SIDE MILLING)
1003	30	100	3000~3200	1000~1200	10~20	0.5~0.8	側銑 (SIDE MILLING)
ITA ITH 1203	37	140	3700~4000	900~1100	0.05~0.2	12	溝銑 (SLOTTING)
1203	37	110	2800~3000	400~500	0.8~1.2	12	溝銑 (SLOTTING)
1203	37	105	2700~2900	500~700	12~24	0.05~0.12	側銑 (SIDE MILLING)
1203	37	100	2600~2800	1000~1200	12~24	0.5~1	側銑 (SIDE MILLING)
ITA ITH 1603	50	140	2700~3000	700~900	0.05~0.2	16	溝銑 (SLOTTING)
1603	50	105	2000~2200	400~500	0.8~1.2	16	溝銑 (SLOTTING)
1603	50	105	2000~2200	400~600	16~32	0.05~0.12	側銑 (SIDE MILLING)
1603	50	90	1700~2000	700~900	16~32	0.5~1	側銑 (SIDE MILLING)
ITA ITH 2003	50	140	2100~2300	700~900	0.05~0.25	20	溝銑 (SLOTTING)
2003	50	105	1500~1700	400~500	0.8~1.2	20	溝銑 (SLOTTING)
2003	50	105	1500~1700	300~500	20~40	0.05~0.15	側銑 (SIDE MILLING)
2003	50	90	1400~1600	500~700	20~40	0.5~1	側銑 (SIDE MILLING)

ITA / ITH

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
ITA[3T] 冷卻方式 Coolant Type	乾式切削 Dry coolant
ITH[3T] 冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ITA ITH 0303	15	140	14500~15000	1300~1600	0.04~0.08	3	溝銑 (SLOTTING)
0303	15	125	13000~13500	1000~1200	0.1~0.2	3	溝銑 (SLOTTING)
0303	15	105	11000~11500	900~1100	3~6	0.04~0.08	側銑 (SIDE MILLING)
0303	15	100	10500~11000	900~1100	3~6	0.1~0.2	側銑 (SIDE MILLING)
ITA ITH 0403	16	140	10700~11200	1100~1400	0.04~0.08	4	溝銑 (SLOTTING)
0403	16	125	9500~10000	900~1100	0.2~0.3	4	溝銑 (SLOTTING)
0403	16	105	8000~8500	800~1000	4~8	0.04~0.08	側銑 (SIDE MILLING)
0403	16	100	7800~8200	800~1000	4~8	0.2~0.3	側銑 (SIDE MILLING)
ITA ITH 0603	20	140	7300~7600	1000~1300	0.05~0.15	6	溝銑 (SLOTTING)
0603	20	125	6600~6800	900~1100	0.5~0.7	6	溝銑 (SLOTTING)
0603	20	105	5500~5800	700~900	6~12	0.05~0.15	側銑 (SIDE MILLING)
0603	20	100	5000~5300	900~1100	6~12	0.5~0.7	側銑 (SIDE MILLING)
ITA ITH 0803	25	140	5500~5800	1000~1200	0.05~0.15	8	溝銑 (SLOTTING)
0803	25	110	4300~4600	650~850	0.6~0.7	8	溝銑 (SLOTTING)
0803	25	105	4100~4300	600~800	8~16	0.05~0.1	側銑 (SIDE MILLING)
0803	25	100	3900~4200	900~1100	8~16	0.5~1	側銑 (SIDE MILLING)
ITA ITH 1003	30	140	4400~4600	900~1100	0.05~0.15	10	溝銑 (SLOTTING)
1003	30	95	2800~3000	400~600	0.8~1.2	10	溝銑 (SLOTTING)
1003	30	105	3300~3500	600~800	10~20	0.05~0.12	側銑 (SIDE MILLING)
1003	30	100	3000~3200	1000~1200	10~20	0.5~0.8	側銑 (SIDE MILLING)
ITA ITH 1203	37	140	3700~4000	900~1100	0.05~0.2	12	溝銑 (SLOTTING)
1203	37	110	2800~3000	400~500	0.8~1.2	12	溝銑 (SLOTTING)
1203	37	105	2700~2900	500~700	12~24	0.05~0.12	側銑 (SIDE MILLING)
1203	37	100	2600~2800	1000~1200	12~24	0.5~1	側銑 (SIDE MILLING)
ITA ITH 1603	50	140	2700~3000	700~900	0.05~0.2	16	溝銑 (SLOTTING)
1603	50	105	2000~2200	400~500	0.8~1.2	16	溝銑 (SLOTTING)
1603	50	105	2000~2200	400~600	16~32	0.05~0.12	側銑 (SIDE MILLING)
1603	50	90	1700~2000	700~900	16~32	0.5~1	側銑 (SIDE MILLING)
ITA ITH 2003	50	140	2100~2300	700~900	0.05~0.25	20	溝銑 (SLOTTING)
2003	50	105	1500~1700	400~500	0.8~1.2	20	溝銑 (SLOTTING)
2003	50	105	1500~1700	300~500	20~40	0.05~0.15	側銑 (SIDE MILLING)
2003	50	90	1400~1600	500~700	20~40	0.5~1	側銑 (SIDE MILLING)

VTA

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
VTA0606	20	130	6700~7200	1300~1500	0.1~0.2	4~6	溝銑 (SLOTTING)
VTA0606	20	130	6700~7200	1000~1300	0.05~0.1	4~6	溝銑 (SLOTTING)
VTA0606	20	85	4000~4500	1000~1200	6~12	0.15~0.25	側銑 (SIDE MILLING)
VTA0606	20	85	4000~4500	800~1000	6~12	0.05~0.12	側銑 (SIDE MILLING)
VTA0806	25	130	4800~5300	1300~1600	0.1~0.2	6~8	溝銑 (SLOTTING)
VTA0806	25	130	4800~5300	1000~1300	0.05~0.1	6~8	溝銑 (SLOTTING)
VTA0806	25	85	3200~3500	1200~1500	8~16	0.2~0.3	側銑 (SIDE MILLING)
VTA0806	25	85	3200~3500	700~900	8~16	0.05~0.15	側銑 (SIDE MILLING)
VTA1006	30	130	4000~4500	1300~1600	0.15~0.25	8~10	溝銑 (SLOTTING)
VTA1006	30	130	4000~4500	1000~1300	0.05~0.15	8~10	溝銑 (SLOTTING)
VTA1006	30	85	2500~3000	1100~1400	10~20	0.2~0.3	側銑 (SIDE MILLING)
VTA1006	30	85	2500~3000	650~850	10~20	0.05~0.15	側銑 (SIDE MILLING)
VTA1206	35	130	3200~3700	1100~1400	0.15~0.25	10~12	溝銑 (SLOTTING)
VTA1206	35	130	3200~3700	900~1200	0.05~0.15	10~12	溝銑 (SLOTTING)
VTA1206	35	85	2000~2500	900~1200	12~24	0.2~0.3	側銑 (SIDE MILLING)
VTA1206	35	85	2000~2500	600~800	12~24	0.05~0.15	側銑 (SIDE MILLING)
VTA1606	50	130	2400~2900	900~1200	0.15~0.25	14~16	溝銑 (SLOTTING)
VTA1606	50	130	2400~2900	700~900	0.05~0.15	14~16	溝銑 (SLOTTING)
VTA1606	50	85	1500~2000	800~1000	16~32	0.2~0.4	側銑 (SIDE MILLING)
VTA1606	50	85	1500~2000	500~700	16~32	0.05~0.2	側銑 (SIDE MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
VTA0606	20	130	6700~7200	1300~1500	0.1~0.2	4~6	溝銑 (SLOTTING)
VTA0606	20	130	6700~7200	1000~1300	0.05~0.1	4~6	溝銑 (SLOTTING)
VTA0606	20	85	4000~4500	1000~1200	6~12	0.15~0.25	側銑 (SIDE MILLING)
VTA0606	20	85	4000~4500	800~1000	6~12	0.05~0.12	側銑 (SIDE MILLING)
VTA0806	25	130	4800~5300	1300~1600	0.1~0.2	6~8	溝銑 (SLOTTING)
VTA0806	25	130	4800~5300	1000~1300	0.05~0.1	6~8	溝銑 (SLOTTING)
VTA0806	25	85	3200~3500	1200~1500	8~16	0.2~0.3	側銑 (SIDE MILLING)
VTA0806	25	85	3200~3500	700~900	8~16	0.05~0.15	側銑 (SIDE MILLING)
VTA1006	30	130	4000~4500	1300~1600	0.15~0.25	8~10	溝銑 (SLOTTING)
VTA1006	30	130	4000~4500	1000~1300	0.05~0.15	8~10	溝銑 (SLOTTING)
VTA1006	30	85	2500~3000	1100~1400	10~20	0.2~0.3	側銑 (SIDE MILLING)
VTA1006	30	85	2500~3000	650~850	10~20	0.05~0.15	側銑 (SIDE MILLING)

VTA

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
VTA1206	35	130	3200~3700	1100~1400	0.15~0.25	10~12	溝銑 (SLOTTING)
VTA1206	35	130	3200~3700	900~1200	0.05~0.15	10~12	溝銑 (SLOTTING)
VTA1206	35	85	2000~2500	900~1200	12~24	0.2~0.3	側銑 (SIDE MILLING)
VTA1206	35	85	2000~2500	600~800	12~24	0.05~0.15	側銑 (SIDE MILLING)
VTA1606	50	130	2400~2900	900~1200	0.15~0.25	14~16	溝銑 (SLOTTING)
VTA1606	50	130	2400~2900	700~900	0.05~0.15	14~16	溝銑 (SLOTTING)
VTA1606	50	85	1500~2000	800~1000	16~32	0.2~0.4	側銑 (SIDE MILLING)
VTA1606	50	85	1500~2000	500~700	16~32	0.05~0.2	側銑 (SIDE MILLING)

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
VTA0606	20	100	5000~5500	1000~1200	0.1~0.2	4~6	溝銑 (SLOTTING)
VTA0606	20	100	5000~5500	800~1000	0.05~0.1	4~6	溝銑 (SLOTTING)
VTA0606	20	75	3800~4300	700~1000	6~12	0.1~0.2	側銑 (SIDE MILLING)
VTA0606	20	75	3800~4300	500~700	6~12	0.05~0.1	側銑 (SIDE MILLING)
VTA0806	25	100	3800~4300	1100~1300	0.1~0.2	6~8	溝銑 (SLOTTING)
VTA0806	25	100	3800~4300	900~1200	0.05~0.1	6~8	溝銑 (SLOTTING)
VTA0806	25	75	2800~3300	800~1100	8~16	0.15~0.25	側銑 (SIDE MILLING)
VTA0806	25	75	2800~3300	500~700	8~16	0.05~0.12	側銑 (SIDE MILLING)
VTA1006	30	100	3000~3500	1000~1300	0.15~0.25	8~10	溝銑 (SLOTTING)
VTA1006	30	100	3000~3500	800~1100	0.05~0.15	8~10	溝銑 (SLOTTING)
VTA1006	30	75	2200~2600	800~1100	10~20	0.2~0.3	側銑 (SIDE MILLING)
VTA1006	30	75	2200~2600	500~700	10~20	0.05~0.15	側銑 (SIDE MILLING)
VTA1206	35	100	2500~3000	800~1100	0.15~0.25	10~12	溝銑 (SLOTTING)
VTA1206	35	100	2500~3000	700~1000	0.05~0.15	10~12	溝銑 (SLOTTING)
VTA1206	35	75	1800~2200	700~900	12~24	0.2~0.3	側銑 (SIDE MILLING)
VTA1206	35	75	1800~2200	450~650	12~24	0.05~0.15	側銑 (SIDE MILLING)
VTA1606	50	100	1800~2300	700~900	0.15~0.25	14~16	溝銑 (SLOTTING)
VTA1606	50	100	1800~2300	600~800	0.05~0.15	14~16	溝銑 (SLOTTING)
VTA1606	50	75	1300~1700	600~800	16~32	0.2~0.4	側銑 (SIDE MILLING)
VTA1606	50	75	1300~1700	300~500	16~32	0.05~0.2	側銑 (SIDE MILLING)

VTB

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵 : *Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
VTB0606	20	130	6700~7200	1000~1300	0.05~0.1	4~6	溝銑 (SLOTTING)
VTB0606	20	130	6700~7200	1400~1600	0.1~0.2	4~6	溝銑 (SLOTTING)
VTB0606	20	85	4000~4500	800~1000	6~12	0.05~0.12	側銑 (SIDE MILLING)
VTB0606	20	85	4000~4500	1100~1300	6~12	0.15~0.25	側銑 (SIDE MILLING)
VTB0806	25	130	4800~5300	1000~1300	0.05~0.1	6~8	溝銑 (SLOTTING)
VTB0806	25	130	4800~5300	1400~1600	0.1~0.2	6~8	溝銑 (SLOTTING)
VTB0806	25	85	3200~3500	700~900	8~16	0.05~0.15	側銑 (SIDE MILLING)
VTB0806	25	85	3200~3500	1300~1500	8~16	0.2~0.3	側銑 (SIDE MILLING)
VTB1006	30	130	4000~4500	1000~1300	0.05~0.15	8~10	溝銑 (SLOTTING)
VTB1006	30	130	4000~4500	1400~1600	0.15~0.25	8~10	溝銑 (SLOTTING)
VTB1006	30	85	2500~3000	650~850	10~20	0.05~0.15	側銑 (SIDE MILLING)
VTB1006	30	85	2500~3000	1200~1400	10~20	0.2~0.3	側銑 (SIDE MILLING)
VTB1206	35	130	3200~3700	900~1200	0.05~0.15	10~12	溝銑 (SLOTTING)
VTB1206	35	130	3200~3700	1200~1400	0.15~0.25	10~12	溝銑 (SLOTTING)
VTB1206	35	85	2000~2500	600~800	12~24	0.05~0.15	側銑 (SIDE MILLING)
VTB1206	35	85	2000~2500	1000~1300	12~24	0.2~0.3	側銑 (SIDE MILLING)
VTB1606	50	130	2400~2900	700~900	0.05~0.15	14~16	溝銑 (SLOTTING)
VTB1606	50	130	2400~2900	1000~1300	0.15~0.25	14~16	溝銑 (SLOTTING)
VTB1606	50	85	1500~2000	500~700	16~32	0.05~0.2	側銑 (SIDE MILLING)
VTB1606	50	85	1500~2000	900~1100	16~32	0.2~0.4	側銑 (SIDE MILLING)

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
VTB0606	20	130	6700~7200	1000~1300	0.05~0.1	4~6	溝銑 (SLOTTING)
VTB0606	20	130	6700~7200	1300~1500	0.1~0.2	4~6	溝銑 (SLOTTING)
VTB0606	20	85	4000~4500	800~1000	6~12	0.05~0.12	側銑 (SIDE MILLING)
VTB0606	20	85	4000~4500	1000~1200	6~12	0.15~0.25	側銑 (SIDE MILLING)
VTB0806	25	130	4800~5300	1000~1300	0.05~0.1	6~8	溝銑 (SLOTTING)
VTB0806	25	130	4800~5300	1300~1600	0.1~0.2	6~8	溝銑 (SLOTTING)
VTB0806	25	85	3200~3500	700~900	8~16	0.05~0.15	側銑 (SIDE MILLING)
VTB0806	25	85	3200~3500	1200~1500	8~16	0.2~0.3	側銑 (SIDE MILLING)
VTB1006	30	130	4000~4500	1000~1300	0.05~0.15	8~10	溝銑 (SLOTTING)
VTB1006	30	130	4000~4500	1300~1600	0.15~0.25	8~10	溝銑 (SLOTTING)
VTB1006	30	85	2500~3000	650~850	10~20	0.05~0.15	側銑 (SIDE MILLING)
VTB1006	30	85	2500~3000	1100~1400	10~20	0.2~0.3	側銑 (SIDE MILLING)

VTB

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
VTB1206	35	130	3200~3700	900~1200	0.05~0.15	10~12	溝銑 (SLOTTING)
VTB1206	35	130	3200~3700	1100~1400	0.15~0.25	10~12	溝銑 (SLOTTING)
VTB1206	35	85	2000~2500	600~800	12~24	0.05~0.15	側銑 (SIDE MILLING)
VTB1206	35	85	2000~2500	900~1200	12~24	0.2~0.3	側銑 (SIDE MILLING)
VTB1606	50	130	2400~2900	700~900	0.05~0.15	14~16	溝銑 (SLOTTING)
VTB1606	50	130	2400~2900	900~1200	0.15~0.25	14~16	溝銑 (SLOTTING)
VTB1606	50	85	1500~2000	500~700	16~32	0.05~0.2	側銑 (SIDE MILLING)
VTB1606	50	85	1500~2000	800~1000	16~32	0.2~0.4	側銑 (SIDE MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
VTB0606	20	130	6700~7200	1000~1300	0.05~0.1	4~6	溝銑 (SLOTTING)
VTB0606	20	130	6700~7200	1300~1500	0.1~0.2	4~6	溝銑 (SLOTTING)
VTB0606	20	85	4000~4500	800~1000	6~12	0.05~0.12	側銑 (SIDE MILLING)
VTB0606	20	85	4000~4500	1000~1200	6~12	0.15~0.25	側銑 (SIDE MILLING)
VTB0806	25	130	4800~5300	1000~1300	0.05~0.1	6~8	溝銑 (SLOTTING)
VTB0806	25	130	4800~5300	1300~1600	0.1~0.2	6~8	溝銑 (SLOTTING)
VTB0806	25	85	3200~3500	700~900	8~16	0.05~0.15	側銑 (SIDE MILLING)
VTB0806	25	85	3200~3500	1200~1500	8~16	0.2~0.3	側銑 (SIDE MILLING)
VTB1006	30	130	4000~4500	1000~1300	0.05~0.15	8~10	溝銑 (SLOTTING)
VTB1006	30	130	4000~4500	1300~1600	0.15~0.25	8~10	溝銑 (SLOTTING)
VTB1006	30	85	2500~3000	650~850	10~20	0.05~0.15	側銑 (SIDE MILLING)
VTB1006	30	85	2500~3000	1100~1400	10~20	0.2~0.3	側銑 (SIDE MILLING)
VTB1206	35	130	3200~3700	900~1200	0.05~0.15	10~12	溝銑 (SLOTTING)
VTB1206	35	130	3200~3700	1100~1400	0.15~0.25	10~12	溝銑 (SLOTTING)
VTB1206	35	85	2000~2500	600~800	12~24	0.05~0.15	側銑 (SIDE MILLING)
VTB1206	35	85	2000~2500	900~1200	12~24	0.2~0.3	側銑 (SIDE MILLING)
VTB1606	50	130	2400~2900	700~900	0.05~0.15	14~16	溝銑 (SLOTTING)
VTB1606	50	130	2400~2900	900~1200	0.15~0.25	14~16	溝銑 (SLOTTING)
VTB1606	50	85	1500~2000	500~700	16~32	0.05~0.2	側銑 (SIDE MILLING)
VTB1606	50	85	1500~2000	800~1000	16~32	0.2~0.4	側銑 (SIDE MILLING)

VTB

切削條件表 Milling Conditions

被切削材 Work Material	沃斯田鐵系不銹鋼：*Stainless Steels* **SUS304 : 1.4301 : AISI 304 (HRc28~32)**
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
VTB0606	20	130	6700~7200	1000~1300	0.05~0.12	4	溝銑 (SLOTTING)
VTB0606	20	115	5800~6300	1600~2000	0.12~0.25	4~6	溝銑 (SLOTTING)
VTB0606	20	85	4500~4800	650~850	6~12	0.05~0.12	側銑 (SIDE MILLING)
VTB0606	20	85	4500~4800	1400~1800	6~12	0.12~0.3	側銑 (SIDE MILLING)
VTB0806	25	130	4800~5300	900~1200	0.05~0.15	6	溝銑 (SLOTTING)
VTB0806	25	115	4300~4800	1800~2200	0.15~0.3	6~8	溝銑 (SLOTTING)
VTB0806	25	80	3000~3200	650~850	8~16	0.05~0.15	側銑 (SIDE MILLING)
VTB0806	25	80	3000~3200	1800~2200	8~16	0.2~0.4	側銑 (SIDE MILLING)
VTB1006	28	130	4000~4500	900~1200	0.05~0.15	8	溝銑 (SLOTTING)
VTB1006	28	115	3300~3800	1600~2000	0.15~0.3	8~10	溝銑 (SLOTTING)
VTB1006	28	85	2700~2900	700~900	10~20	0.05~0.2	側銑 (SIDE MILLING)
VTB1006	28	85	2700~2900	1600~2000	10~20	0.2~0.45	側銑 (SIDE MILLING)
VTB1206	35	130	3200~3700	900~1200	0.05~0.15	10	溝銑 (SLOTTING)
VTB1206	35	115	2700~3200	1400~1800	0.15~0.3	10~12	溝銑 (SLOTTING)
VTB1206	35	85	2200~2400	700~900	12~24	0.05~0.2	側銑 (SIDE MILLING)
VTB1206	35	85	2200~2400	1400~1800	12~24	0.2~0.45	側銑 (SIDE MILLING)
VTB1606	50	130	2400~2900	700~900	0.05~0.2	14	溝銑 (SLOTTING)
VTB1606	50	115	2000~2500	800~1100	0.2~0.4	14~16	溝銑 (SLOTTING)
VTB1606	50	85	1600~1800	600~700	16~32	0.05~0.2	側銑 (SIDE MILLING)
VTB1606	50	85	1600~1800	800~1100	16~32	0.2~0.4	側銑 (SIDE MILLING)

WUA 3T

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WUA0603	22	105	5300~5800	600~800	1~1.5	6	溝銑 (SLOTTING)
WUA0603	22	105	5300~5800	350~550	2~3	6	溝銑 (SLOTTING)
WUA0603	22	105	5300~5800	200~400	5~6	6	溝銑 (SLOTTING)
WUA0603	22	105	5300~5800	400~600	6	1.2~2	側銑 (SIDE MILLING)
WUA0603	22	105	5300~5800	300~500	6	2~3	側銑 (SIDE MILLING)
WUA0603	22	105	5300~5800	200~400	6	4~5	側銑 (SIDE MILLING)
WUA0803	26	110	4200~4700	600~800	2	8	溝銑 (SLOTTING)
WUA0803	26	110	4200~4700	350~550	3~4	8	溝銑 (SLOTTING)
WUA0803	26	110	4200~4700	200~350	7~8	8	溝銑 (SLOTTING)
WUA0803	26	110	4200~4700	400~550	8	1.5~2	側銑 (SIDE MILLING)
WUA0803	26	115	4400~4900	300~500	8	3~4	側銑 (SIDE MILLING)
WUA0803	26	110	4200~4700	200~400	8	6~7	側銑 (SIDE MILLING)
WUA1003	35	75	2000~2500	450~650	2	10	溝銑 (SLOTTING)
WUA1003	35	55	1600~2100	180~380	4~5	10	溝銑 (SLOTTING)
WUA1003	35	55	1600~2100	150~300	9~10	10	溝銑 (SLOTTING)
WUA1003	35	75	2000~2500	300~500	20	1~1.5	側銑 (SIDE MILLING)
WUA1003	35	60	1700~2100	200~400	10	4~5	側銑 (SIDE MILLING)
WUA1003	35	55	1600~2100	150~300	10	8~9	側銑 (SIDE MILLING)
WUA1203	38	75	1700~2200	350~550	1~2	12	溝銑 (SLOTTING)
WUA1203	38	70	1600~2000	130~250	5~6	12	溝銑 (SLOTTING)
WUA1203	38	70	1600~2000	100~180	9~10	12	溝銑 (SLOTTING)
WUA1203	38	70	1600~2000	250~400	24	1~2	側銑 (SIDE MILLING)
WUA1203	38	70	1600~2000	130~250	12	5~6	側銑 (SIDE MILLING)
WUA1203	38	70	1600~2000	100~180	12	9~10	側銑 (SIDE MILLING)
WUA1403	50	75	1500~1900	300~500	1~2	14	溝銑 (SLOTTING)
WUA1403	50	70	1400~1800	120~220	4~5	14	溝銑 (SLOTTING)
WUA1403	50	70	1400~1800	100~170	7~8	14	溝銑 (SLOTTING)
WUA1403	50	70	1400~1800	200~400	28	1~2	側銑 (SIDE MILLING)
WUA1403	50	70	1400~1800	120~220	14	4~5	側銑 (SIDE MILLING)
WUA1403	50	70	1400~1800	100~170	14	7~8	側銑 (SIDE MILLING)
WUA1603	50	75	1300~1700	250~400	1~2	16	溝銑 (SLOTTING)
WUA1603	50	70	1200~1600	100~200	4~5	16	溝銑 (SLOTTING)
WUA1603	50	70	1200~1600	100~160	6~7	16	溝銑 (SLOTTING)
WUA1603	50	70	1200~1600	200~350	32	1~2	側銑 (SIDE MILLING)
WUA1603	50	70	1200~1600	100~200	16	4~5	側銑 (SIDE MILLING)
WUA1603	50	70	1200~1600	100~160	16	6~7	側銑 (SIDE MILLING)

WUA 3T

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵 : *Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WUA1803	50	75	1100~1500	200~350	1~2	18	溝銑 (SLOTTING)
WUA1803	50	70	1000~1400	100~150	4~5	18	溝銑 (SLOTTING)
WUA1803	50	70	1000~1400	80~130	6~7	18	溝銑 (SLOTTING)
WUA1803	50	70	1000~1400	200~350	36	1~2	側銑 (SIDE MILLING)
WUA1803	50	70	1000~1400	100~150	18	4~5	側銑 (SIDE MILLING)
WUA1803	50	70	1000~1400	80~130	18	6~7	側銑 (SIDE MILLING)
WUA2003	50	75	1000~1400	200~350	1~2	20	溝銑 (SLOTTING)
WUA2003	50	70	900~1300	100~150	4~5	20	溝銑 (SLOTTING)
WUA2003	50	70	900~1300	80~130	6~7	20	溝銑 (SLOTTING)
WUA2003	50	70	900~1300	200~350	40	1~2	側銑 (SIDE MILLING)
WUA2003	50	70	900~1300	100~150	20	4~5	側銑 (SIDE MILLING)
WUA2003	50	70	900~1300	80~130	20	6~7	側銑 (SIDE MILLING)

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式 / 油霧切削 Wet/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WUA0603	22	95	4900~5300	450~650	1~1.5	6	溝銑 (SLOTTING)
WUA0603	22	95	4900~5300	200~400	2~3	6	溝銑 (SLOTTING)
WUA0603	22	95	4900~5300	150~250	5~6	6	溝銑 (SLOTTING)
WUA0603	22	95	4900~5300	450~650	12	1~1.5	側銑 (SIDE MILLING)
WUA0603	22	95	4900~5300	250~400	6	2~3	側銑 (SIDE MILLING)
WUA0603	22	95	4900~5300	150~280	6	4~5	側銑 (SIDE MILLING)
WUA0803	25	105	4000~4500	400~600	1.5~2	8	溝銑 (SLOTTING)
WUA0803	25	105	4000~4500	300~450	3~4	8	溝銑 (SLOTTING)
WUA0803	25	105	4000~4500	200~350	7~8	8	溝銑 (SLOTTING)
WUA0803	25	110	4200~4700	300~500	16	1.5~2	側銑 (SIDE MILLING)
WUA0803	25	110	4200~4700	300~400	8	3~4	側銑 (SIDE MILLING)
WUA0803	25	110	4200~4700	200~350	8	6~7	側銑 (SIDE MILLING)

WUA 3T

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式 / 油霧切削 Wet/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WUA1003	35	75	2000~2500	300~450	2	10	溝銑 (SLOTTING)
WUA1003	35	60	1700~2100	150~250	4~5	10	溝銑 (SLOTTING)
WUA1003	35	60	1800~2000	100~180	9~10	10	溝銑 (SLOTTING)
WUA1003	35	60	1700~2100	200~400	20	1~2	側銑 (SIDE MILLING)
WUA1003	35	60	1700~2100	120~220	20	4~5	側銑 (SIDE MILLING)
WUA1003	35	60	1800~2000	100~180	10	8~9	側銑 (SIDE MILLING)
WUA1203	38	75	1700~2200	300~400	1~2	12	溝銑 (SLOTTING)
WUA1203	38	60	1400~1800	130~200	5~6	12	溝銑 (SLOTTING)
WUA1203	38	60	1400~1800	100~150	9~10	12	溝銑 (SLOTTING)
WUA1203	38	60	1400~1800	200~350	24	1~2	側銑 (SIDE MILLING)
WUA1203	38	60	1400~1800	130~200	12	5~6	側銑 (SIDE MILLING)
WUA1203	38	60	1400~1800	100~160	12	9~10	側銑 (SIDE MILLING)
WUA1403	50	75	1500~1900	300~400	1~2	14	溝銑 (SLOTTING)
WUA1403	50	70	1400~1800	120~180	4~5	14	溝銑 (SLOTTING)
WUA1403	50	70	1400~1800	100~150	7~8	14	溝銑 (SLOTTING)
WUA1403	50	70	1400~1800	200~350	28	1~2	側銑 (SIDE MILLING)
WUA1403	50	70	1400~1800	100~180	14	4~5	側銑 (SIDE MILLING)
WUA1403	50	70	1400~1800	100~150	14	7~8	側銑 (SIDE MILLING)
WUA1603	50	75	1300~1700	250~350	1~2	16	溝銑 (SLOTTING)
WUA1603	50	70	1200~1600	100~170	4~5	16	溝銑 (SLOTTING)
WUA1603	50	70	1200~1600	100~130	6~7	16	溝銑 (SLOTTING)
WUA1603	50	70	1200~1600	200~300	32	1~2	側銑 (SIDE MILLING)
WUA1603	50	70	1200~1600	100~170	16	4~5	側銑 (SIDE MILLING)
WUA1603	50	70	1200~1600	100~130	16	6~7	側銑 (SIDE MILLING)
WUA1803	50	75	1100~1500	200~300	1~2	18	溝銑 (SLOTTING)
WUA1803	50	70	1000~1400	100~130	4~5	18	溝銑 (SLOTTING)
WUA1803	50	70	1000~1400	80~110	6~7	18	溝銑 (SLOTTING)
WUA1803	50	70	1000~1400	200~300	36	1~2	側銑 (SIDE MILLING)
WUA1803	50	70	1000~1400	90~120	18	4~5	側銑 (SIDE MILLING)
WUA1803	50	70	1000~1400	80~110	18	6~7	側銑 (SIDE MILLING)
WUA2003	50	75	1000~1400	200~300	1~2	20	溝銑 (SLOTTING)
WUA2003	50	70	900~1300	100~130	4~5	20	溝銑 (SLOTTING)
WUA2003	50	70	900~1300	80~110	6~7	20	溝銑 (SLOTTING)
WUA2003	50	70	900~1300	200~300	40	1~2	側銑 (SIDE MILLING)
WUA2003	50	70	900~1300	90~120	20	4~5	側銑 (SIDE MILLING)
WUA2003	50	70	900~1300	80~110	20	6~7	側銑 (SIDE MILLING)

WUA 3T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式 / 油霧切削 Wet/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WUA0603	22	95	4900~5300	400~550	1~1.5	6	溝銑 (SLOTTING)
WUA0603	22	95	4900~5300	200~350	2~3	6	溝銑 (SLOTTING)
WUA0603	22	95	4900~5300	200~350	6	2~3	側銑 (SIDE MILLING)
WUA0603	22	95	4900~5300	150~220	6	3~4	側銑 (SIDE MILLING)
WUA0803	25	105	4000~4500	400~500	1.5~2	8	溝銑 (SLOTTING)
WUA0803	25	105	4000~4500	200~350	3~4	8	溝銑 (SLOTTING)
WUA0803	25	110	4200~4700	200~350	8	3~4	側銑 (SIDE MILLING)
WUA0803	25	110	4200~4700	200~300	8	4~5	側銑 (SIDE MILLING)
WUA1003	35	75	2000~2500	300~400	2	10	溝銑 (SLOTTING)
WUA1003	35	60	1700~2100	150~200	4~5	10	溝銑 (SLOTTING)
WUA1003	35	60	1700~2100	120~180	20	4~5	側銑 (SIDE MILLING)
WUA1003	35	60	1800~2000	100~130	10	5~6	側銑 (SIDE MILLING)
WUA1203	38	75	1700~2200	250~350	1~2	12	溝銑 (SLOTTING)
WUA1203	38	60	1400~1800	120~160	5~6	12	溝銑 (SLOTTING)
WUA1203	38	60	1400~1800	120~180	12	5~6	側銑 (SIDE MILLING)
WUA1203	38	60	1400~1800	100~130	12	6~7	側銑 (SIDE MILLING)
WUA1403	50	75	1500~1900	200~300	1~2	14	溝銑 (SLOTTING)
WUA1403	50	70	1400~1800	120~150	4~5	14	溝銑 (SLOTTING)
WUA1403	50	70	1400~1800	100~130	14	4~5	側銑 (SIDE MILLING)
WUA1403	50	70	1400~1800	100~120	14	6~7	側銑 (SIDE MILLING)
WUA1603	50	75	1300~1700	200~300	1~2	16	溝銑 (SLOTTING)
WUA1603	50	70	1200~1600	120~150	4~5	16	溝銑 (SLOTTING)
WUA1603	50	70	1200~1600	100~130	16	4~5	側銑 (SIDE MILLING)
WUA1603	50	70	1200~1600	100~120	16	6~7	側銑 (SIDE MILLING)
WUA1803	50	75	1100~1500	200~250	1~2	18	溝銑 (SLOTTING)
WUA1803	50	70	1000~1400	90~110	4~5	18	溝銑 (SLOTTING)
WUA1803	50	70	1000~1400	90~110	18	4~5	側銑 (SIDE MILLING)
WUA1803	50	70	1000~1400	80~100	18	6~7	側銑 (SIDE MILLING)
WUA2003	50	75	1000~1400	200~250	1~2	20	溝銑 (SLOTTING)
WUA2003	50	70	900~1300	90~110	4~5	20	溝銑 (SLOTTING)
WUA2003	50	70	900~1300	90~110	20	4~5	側銑 (SIDE MILLING)
WUA2003	50	70	900~1300	80~100	20	6~7	側銑 (SIDE MILLING)

WUA 4T

切削條件表 Milling Conditions

被切削材 Work Material	鑄鐵：*Cast Iron* FC250
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WUA0604	20	110	5800~6200	1100~1400	1	6	溝銑 (SLOTTING)
WUA0604	20	110	5800~6200	800~1000	2~3	6	溝銑 (SLOTTING)
WUA0604	20	110	5800~6200	600~800	5~6	6	溝銑 (SLOTTING)
WUA0604	20	110	5800~6200	1300~1600	6~12	0~1	側銑 (SIDE MILLING)
WUA0604	20	110	5800~6200	600~800	6	2~3	側銑 (SIDE MILLING)
WUA0604	20	110	5800~6200	500~700	6	4~5	側銑 (SIDE MILLING)
WUA0804	25	110	4300~4600	1100~1400	1	8	溝銑 (SLOTTING)
WUA0804	25	110	4300~4600	700~900	3~4	8	溝銑 (SLOTTING)
WUA0804	25	105	4100~4400	500~700	7~8	8	溝銑 (SLOTTING)
WUA0804	25	110	4300~4600	1300~1600	8~16	0~1	側銑 (SIDE MILLING)
WUA0804	25	110	4300~4600	500~700	8	3~4	側銑 (SIDE MILLING)
WUA0804	25	110	4300~4600	400~600	8	6~7	側銑 (SIDE MILLING)
WUA1004	30	110	3500~3800	1100~1400	1.5	10	溝銑 (SLOTTING)
WUA1004	30	105	3200~3500	500~700	4~5	10	溝銑 (SLOTTING)
WUA1004	30	105	3200~3500	300~500	9~10	10	溝銑 (SLOTTING)
WUA1004	30	105	3200~3500	1300~1600	10~20	0~1	側銑 (SIDE MILLING)
WUA1004	30	105	3200~3500	500~700	10	4~5	側銑 (SIDE MILLING)
WUA1004	30	105	3200~3500	300~500	10	8~9	側銑 (SIDE MILLING)
WUA1204	35	105	2700~3000	900~1200	1.5	12	溝銑 (SLOTTING)
WUA1204	35	105	2700~3000	400~600	5~6	12	溝銑 (SLOTTING)
WUA1204	35	105	2700~3000	300~450	9~10	12	溝銑 (SLOTTING)
WUA1204	35	105	2700~3000	900~1200	12~24	0~1.5	側銑 (SIDE MILLING)
WUA1204	35	105	2700~3000	400~600	12	5~6	側銑 (SIDE MILLING)
WUA1204	35	105	2700~3000	300~450	12	9~10	側銑 (SIDE MILLING)
WUA1404	40	105	2300~2600	800~1100	2	14	溝銑 (SLOTTING)
WUA1404	40	105	2300~2600	400~500	6~7	14	溝銑 (SLOTTING)
WUA1404	40	105	2300~2600	300~400	8~9	14	溝銑 (SLOTTING)
WUA1404	40	105	2300~2600	800~1100	14~28	0~1.5	側銑 (SIDE MILLING)
WUA1404	40	105	2300~2600	400~600	14	6~7	側銑 (SIDE MILLING)
WUA1404	40	105	2300~2600	300~450	14	8~9	側銑 (SIDE MILLING)
WUA1604	45	105	2000~2300	700~900	2	16	溝銑 (SLOTTING)
WUA1604	45	105	2000~2300	250~350	5~6	16	溝銑 (SLOTTING)
WUA1604	45	105	2000~2300	150~250	7~8	16	溝銑 (SLOTTING)
WUA1604	45	105	2000~2300	700~900	16	0~1.5	側銑 (SIDE MILLING)
WUA1604	45	105	2000~2300	300~400	16	5~6	側銑 (SIDE MILLING)
WUA1604	45	105	2000~2300	200~300	16	7~8	側銑 (SIDE MILLING)

WUA 4T

切削條件表 Milling Conditions

被切削材 Work Material	鑄鐵：*Cast Iron* FC250
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WUA1804	45	105	1700~2000	600~800	2	18	溝銑 (SLOTTING)
WUA1804	45	105	1700~2000	250~350	5~6	18	溝銑 (SLOTTING)
WUA1804	45	105	1700~2000	150~250	7~8	18	溝銑 (SLOTTING)
WUA1804	45	105	1700~2000	600~800	18	0~1.5	側銑 (SIDE MILLING)
WUA1804	45	105	1700~2000	250~350	18	5~6	側銑 (SIDE MILLING)
WUA1804	45	105	1700~2000	180~280	18	7~8	側銑 (SIDE MILLING)
WUA2004	50	105	1500~1800	500~700	2	20	溝銑 (SLOTTING)
WUA2004	50	105	1500~1800	200~300	5~6	20	溝銑 (SLOTTING)
WUA2004	50	105	1500~1800	150~250	7~8	20	溝銑 (SLOTTING)
WUA2004	50	105	1500~1800	500~700	20	0~1.5	側銑 (SIDE MILLING)
WUA2004	50	105	1500~1800	220~320	20	5~6	側銑 (SIDE MILLING)
WUA2004	50	105	1500~1800	150~250	20	7~8	側銑 (SIDE MILLING)

被切削材 Work Material	碳素鋼：*Carbon Steels* S50C / SS400 ：1.1210 / 1.0036 : 1050 / A570 Gr.45(~HRc22)
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WUA0604	20	90	4700~5000	800~1000	1.5	6	溝銑 (SLOTTING)
WUA0604	20	90	4700~5000	350~550	2~3	6	溝銑 (SLOTTING)
WUA0604	20	90	4700~5000	250~450	5~6	6	溝銑 (SLOTTING)
WUA0604	20	90	4700~5000	600~800	12	1.5	側銑 (SIDE MILLING)
WUA0604	20	90	4700~5000	350~550	6	2~3	側銑 (SIDE MILLING)
WUA0604	20	90	4700~5000	300~500	6	4~5	側銑 (SIDE MILLING)
WUA0804	25	90	3500~3700	800~1000	2	8	溝銑 (SLOTTING)
WUA0804	25	90	3500~3700	400~600	3~4	8	溝銑 (SLOTTING)
WUA0804	25	90	3500~3700	250~450	7~8	8	溝銑 (SLOTTING)
WUA0804	25	90	3500~3700	450~650	16	2	側銑 (SIDE MILLING)
WUA0804	25	90	3500~3700	400~600	8	3~4	側銑 (SIDE MILLING)
WUA0804	25	90	3500~3700	300~500	8	6~7	側銑 (SIDE MILLING)

WUA 4T

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼：*Carbon Steels* S50C / SS400 ：1.1210 / 1.0036 : 1050 / A570 Gr.45(~HRc22)
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WUA1004	30	90	2800~3000	600~800	2	10	溝銑 (SLOTTING)
WUA1004	30	90	2800~3000	300~400	4~5	10	溝銑 (SLOTTING)
WUA1004	30	90	2800~3000	200~350	9~10	10	溝銑 (SLOTTING)
WUA1004	30	90	2800~3000	400~500	20	1~2	側銑 (SIDE MILLING)
WUA1004	30	90	2800~3000	300~400	10	4~5	側銑 (SIDE MILLING)
WUA1004	30	90	2800~3000	200~350	10	8~9	側銑 (SIDE MILLING)
WUA1204	35	90	2300~2600	550~750	2	12	溝銑 (SLOTTING)
WUA1204	35	90	2300~2600	300~450	5~6	12	溝銑 (SLOTTING)
WUA1204	35	90	2300~2600	200~350	9~10	12	溝銑 (SLOTTING)
WUA1204	35	90	2300~2600	400~500	24	1~2	側銑 (SIDE MILLING)
WUA1204	35	90	2300~2600	300~400	12	5~6	側銑 (SIDE MILLING)
WUA1204	35	90	2300~2600	200~350	12	9~10	側銑 (SIDE MILLING)
WUA1404	40	90	1900~2200	550~750	2	14	溝銑 (SLOTTING)
WUA1404	40	90	1900~2200	300~450	6~7	14	溝銑 (SLOTTING)
WUA1404	40	90	1900~2200	200~350	8~9	14	溝銑 (SLOTTING)
WUA1404	40	90	1900~2200	400~500	28	1~2	側銑 (SIDE MILLING)
WUA1404	40	90	1900~2200	300~400	14	6~7	側銑 (SIDE MILLING)
WUA1404	40	90	1900~2200	200~350	14	8~9	側銑 (SIDE MILLING)
WUA1604	45	90	1700~2000	550~750	2	16	溝銑 (SLOTTING)
WUA1604	45	90	1700~2000	200~300	5~6	16	溝銑 (SLOTTING)
WUA1604	45	90	1700~2000	150~250	7~8	16	溝銑 (SLOTTING)
WUA1604	45	90	1700~2000	400~500	32	1~2	側銑 (SIDE MILLING)
WUA1604	45	90	1700~2000	200~300	16	5~6	側銑 (SIDE MILLING)
WUA1604	45	90	1700~2000	150~250	16	7~8	側銑 (SIDE MILLING)
WUA1804	45	90	1500~1800	450~650	2	18	溝銑 (SLOTTING)
WUA1804	45	90	1500~1800	200~300	5~6	18	溝銑 (SLOTTING)
WUA1804	45	90	1500~1800	150~250	7~8	18	溝銑 (SLOTTING)
WUA1804	45	90	1500~1800	300~400	36	1~2	側銑 (SIDE MILLING)
WUA1804	45	90	1500~1800	200~300	18	5~6	側銑 (SIDE MILLING)
WUA1804	45	90	1500~1800	150~250	18	7~8	側銑 (SIDE MILLING)
WUA2004	50	90	1200~1500	450~650	2	20	溝銑 (SLOTTING)
WUA2004	50	90	1200~1500	200~300	5~6	20	溝銑 (SLOTTING)
WUA2004	50	90	1200~1500	150~250	7~8	20	溝銑 (SLOTTING)
WUA2004	50	90	1200~1500	300~400	40	1~2	側銑 (SIDE MILLING)
WUA2004	50	90	1200~1500	200~300	20	5~6	側銑 (SIDE MILLING)
WUA2004	50	90	1200~1500	150~220	20	7~8	側銑 (SIDE MILLING)

WUA 4T

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式 / 油霧切削 Wet/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WUA0604	20	90	4700~5000	700~900	1.5	6	溝銑 (SLOTTING)
WUA0604	20	90	4700~5000	300~500	2~3	6	溝銑 (SLOTTING)
WUA0604	20	90	4700~5000	250~400	5~6	6	溝銑 (SLOTTING)
WUA0604	20	90	4700~5000	500~700	12	1.5	側銑 (SIDE MILLING)
WUA0604	20	90	4700~5000	350~500	6	2~3	側銑 (SIDE MILLING)
WUA0604	20	90	4700~5000	300~450	6	4~5	側銑 (SIDE MILLING)
WUA0804	25	90	3500~3700	700~900	2	8	溝銑 (SLOTTING)
WUA0804	25	90	3500~3700	350~550	3~4	8	溝銑 (SLOTTING)
WUA0804	25	90	3500~3700	250~450	7~8	8	溝銑 (SLOTTING)
WUA0804	25	90	3500~3700	450~650	16	2	側銑 (SIDE MILLING)
WUA0804	25	90	3500~3700	350~500	8	3~4	側銑 (SIDE MILLING)
WUA0804	25	90	3500~3700	250~450	8	6~7	側銑 (SIDE MILLING)
WUA1004	30	90	2800~3000	500~700	2	10	溝銑 (SLOTTING)
WUA1004	30	90	2800~3000	250~350	4~5	10	溝銑 (SLOTTING)
WUA1004	30	90	2800~3000	180~280	9~10	10	溝銑 (SLOTTING)
WUA1004	30	90	2800~3000	400~500	20	1~2	側銑 (SIDE MILLING)
WUA1004	30	90	2800~3000	300~400	10	4~5	側銑 (SIDE MILLING)
WUA1004	30	90	2800~3000	200~300	10	8~9	側銑 (SIDE MILLING)
WUA1204	35	90	2300~2600	400~600	2	12	溝銑 (SLOTTING)
WUA1204	35	90	2300~2600	200~300	5~6	12	溝銑 (SLOTTING)
WUA1204	35	90	2300~2600	170~250	9~10	12	溝銑 (SLOTTING)
WUA1204	35	90	2300~2600	350~450	24	1~2	側銑 (SIDE MILLING)
WUA1204	35	90	2300~2600	200~300	12	5~6	側銑 (SIDE MILLING)
WUA1204	35	90	2300~2600	170~270	12	9~10	側銑 (SIDE MILLING)
WUA1404	40	90	1900~2200	400~600	2	14	溝銑 (SLOTTING)
WUA1404	40	90	1900~2200	300~400	6~7	14	溝銑 (SLOTTING)
WUA1404	40	90	1900~2200	200~300	8~9	14	溝銑 (SLOTTING)
WUA1404	40	90	1900~2200	350~450	28	1~2	側銑 (SIDE MILLING)
WUA1404	40	90	1900~2200	250~350	14	6~7	側銑 (SIDE MILLING)
WUA1404	40	90	1900~2200	150~250	14	8~9	側銑 (SIDE MILLING)
WUA1604	45	90	1700~2000	350~500	2	16	溝銑 (SLOTTING)
WUA1604	45	90	1700~2000	150~220	5~6	16	溝銑 (SLOTTING)
WUA1604	45	90	1700~2000	120~180	7~8	16	溝銑 (SLOTTING)
WUA1604	45	90	1700~2000	250~350	32	1~2	側銑 (SIDE MILLING)
WUA1604	45	90	1700~2000	150~220	16	5~6	側銑 (SIDE MILLING)
WUA1604	45	90	1700~2000	120~180	16	7~8	側銑 (SIDE MILLING)

WUA 4T

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式 / 油霧切削 Wet/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WUA1804	45	90	1500~1800	300~450	2	18	溝銑 (SLOTTING)
WUA1804	45	90	1500~1800	150~220	5~6	18	溝銑 (SLOTTING)
WUA1804	45	90	1500~1800	120~180	7~8	18	溝銑 (SLOTTING)
WUA1804	45	90	1500~1800	250~350	36	1~2	側銑 (SIDE MILLING)
WUA1804	45	90	1500~1800	150~220	18	5~6	側銑 (SIDE MILLING)
WUA1804	45	90	1500~1800	120~180	18	7~8	側銑 (SIDE MILLING)
WUA2004	50	90	1200~1500	300~450	2	20	溝銑 (SLOTTING)
WUA2004	50	90	1200~1500	150~220	5~6	20	溝銑 (SLOTTING)
WUA2004	50	90	1200~1500	120~180	7~8	20	溝銑 (SLOTTING)
WUA2004	50	90	1200~1500	250~350	40	1~2	側銑 (SIDE MILLING)
WUA2004	50	90	1200~1500	150~220	20	5~6	側銑 (SIDE MILLING)
WUA2004	50	90	1200~1500	120~180	20	7~8	側銑 (SIDE MILLING)

WUA 4T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式 / 油霧切削 Wet/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WUA0604	20	90	4700~5000	600~800	1.5	6	溝銑 (SLOTTING)
WUA0604	20	90	4700~5000	300~450	2~3	6	溝銑 (SLOTTING)
WUA0604	20	90	4700~5000	400~600	12	1.5	側銑 (SIDE MILLING)
WUA0604	20	90	4700~5000	300~450	6	2~3	側銑 (SIDE MILLING)
WUA0804	25	90	3500~3700	600~800	2	8	溝銑 (SLOTTING)
WUA0804	25	90	3500~3700	300~450	3~4	8	溝銑 (SLOTTING)
WUA0804	25	90	3500~3700	400~600	16	2	側銑 (SIDE MILLING)
WUA0804	25	90	3500~3700	300~450	8	3~4	側銑 (SIDE MILLING)
WUA1004	30	90	2800~3000	400~600	2	10	溝銑 (SLOTTING)
WUA1004	30	90	2800~3000	200~300	4~5	10	溝銑 (SLOTTING)
WUA1004	30	90	2800~3000	350~450	20	1~2	側銑 (SIDE MILLING)
WUA1004	30	90	2800~3000	200~300	10	4~5	側銑 (SIDE MILLING)
WUA1204	35	90	2300~2600	300~500	2	12	溝銑 (SLOTTING)
WUA1204	35	90	2300~2600	180~280	5~6	12	溝銑 (SLOTTING)
WUA1204	35	90	2300~2600	250~350	24	1~2	側銑 (SIDE MILLING)
WUA1204	35	90	2300~2600	150~250	12	5~6	側銑 (SIDE MILLING)
WUA1404	40	90	1900~2200	300~500	2	14	溝銑 (SLOTTING)
WUA1404	40	90	1900~2200	180~280	6~7	14	溝銑 (SLOTTING)
WUA1404	40	90	1900~2200	250~350	28	1~2	側銑 (SIDE MILLING)
WUA1404	40	90	1900~2200	150~250	14	6~7	側銑 (SIDE MILLING)
WUA1604	45	90	1700~2000	250~400	2	16	溝銑 (SLOTTING)
WUA1604	45	90	1700~2000	140~200	5~6	16	溝銑 (SLOTTING)
WUA1604	45	90	1700~2000	200~300	32	1~2	側銑 (SIDE MILLING)
WUA1604	45	90	1700~2000	140~200	16	5~6	側銑 (SIDE MILLING)
WUA1804	45	90	1500~1800	250~400	2	18	溝銑 (SLOTTING)
WUA1804	45	90	1500~1800	140~200	5~6	18	溝銑 (SLOTTING)
WUA1804	45	90	1500~1800	200~300	36	1~2	側銑 (SIDE MILLING)
WUA1804	45	90	1500~1800	120~180	18	5~6	側銑 (SIDE MILLING)
WUA2004	50	90	1200~1500	250~400	2	20	溝銑 (SLOTTING)
WUA2004	50	90	1200~1500	120~200	5~6	20	溝銑 (SLOTTING)
WUA2004	50	90	1200~1500	200~300	40	1~2	側銑 (SIDE MILLING)
WUA2004	50	90	1200~1500	100~180	20	5~6	側銑 (SIDE MILLING)

WWA 3T

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WWA0603	22	105	5300~5800	700~900	1~1.5	6	溝銑 (SLOTTING)
WWA0603	22	105	5300~5800	350~500	2~3	6	溝銑 (SLOTTING)
WWA0603	22	105	5300~5800	250~400	5~6	6	溝銑 (SLOTTING)
WWA0603	22	100	5000~5500	400~600	6	1.2~2	側銑 (SIDE MILLING)
WWA0603	22	100	5000~5500	300~500	6	2~3	側銑 (SIDE MILLING)
WWA0603	22	105	5300~5800	200~400	6	4~5	側銑 (SIDE MILLING)
WWA0803	28	125	4700~5200	550~750	2	8	溝銑 (SLOTTING)
WWA0803	28	125	4700~5200	300~450	3~4	8	溝銑 (SLOTTING)
WWA0803	28	125	4700~5200	150~300	7~8	8	溝銑 (SLOTTING)
WWA0803	28	125	4700~5200	400~550	8	1.5~2	側銑 (SIDE MILLING)
WWA0803	28	125	4700~5200	300~450	8	3~4	側銑 (SIDE MILLING)
WWA0803	28	125	4700~5200	200~400	8	6~7	側銑 (SIDE MILLING)
WWA1003	35	60	1700~2100	450~650	2	10	溝銑 (SLOTTING)
WWA1003	35	60	1700~2100	180~380	4~5	10	溝銑 (SLOTTING)
WWA1003	35	60	1700~2100	150~300	9~10	10	溝銑 (SLOTTING)
WWA1003	35	60	1700~2100	300~500	20	1.5~2	側銑 (SIDE MILLING)
WWA1003	35	60	1700~2100	200~400	10	4~5	側銑 (SIDE MILLING)
WWA1003	35	60	1700~2100	150~300	10	8~9	側銑 (SIDE MILLING)
WWA1203	38	75	1700~2200	350~550	1~2	12	溝銑 (SLOTTING)
WWA1203	38	70	1600~2000	130~250	5~6	12	溝銑 (SLOTTING)
WWA1203	38	70	1600~2000	100~180	9~10	12	溝銑 (SLOTTING)
WWA1203	38	70	1600~2000	250~400	24	1~2	側銑 (SIDE MILLING)
WWA1203	38	70	1600~2000	130~250	12	5~6	側銑 (SIDE MILLING)
WWA1203	38	70	1600~2000	100~180	12	9~10	側銑 (SIDE MILLING)
WWA1403	50	75	1500~1900	300~500	1~2	14	溝銑 (SLOTTING)
WWA1403	50	70	1400~1800	120~220	4~5	14	溝銑 (SLOTTING)
WWA1403	50	70	1400~1800	100~170	7~8	14	溝銑 (SLOTTING)
WWA1403	50	70	1400~1800	200~400	28	1~2	側銑 (SIDE MILLING)
WWA1403	50	70	1400~1800	120~220	14	4~5	側銑 (SIDE MILLING)
WWA1403	50	70	1400~1800	100~170	14	7~8	側銑 (SIDE MILLING)
WWA1603	50	75	1300~1700	250~400	1~2	16	溝銑 (SLOTTING)
WWA1603	50	70	1200~1600	100~200	4~5	16	溝銑 (SLOTTING)
WWA1603	50	70	1200~1600	100~160	6~7	16	溝銑 (SLOTTING)
WWA1603	50	70	1200~1600	200~350	32	1~2	側銑 (SIDE MILLING)
WWA1603	50	70	1200~1600	100~200	16	4~5	側銑 (SIDE MILLING)
WWA1603	50	70	1200~1600	100~160	16	6~7	側銑 (SIDE MILLING)

WWA 3T

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵 : *Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WWA1803	50	75	1100~1500	200~350	1~2	18	溝銑 (SLOTTING)
WWA1803	50	70	1000~1400	100~150	4~5	18	溝銑 (SLOTTING)
WWA1803	50	70	1000~1400	80~130	6~7	18	溝銑 (SLOTTING)
WWA1803	50	70	1000~1400	200~350	36	1~2	側銑 (SIDE MILLING)
WWA1803	50	70	1000~1400	100~150	18	4~5	側銑 (SIDE MILLING)
WWA1803	50	70	1000~1400	80~130	18	6~7	側銑 (SIDE MILLING)
WWA2003	50	75	1000~1400	200~350	1~2	20	溝銑 (SLOTTING)
WWA2003	50	70	900~1300	100~150	4~5	20	溝銑 (SLOTTING)
WWA2003	50	70	900~1300	80~130	6~7	20	溝銑 (SLOTTING)
WWA2003	50	70	900~1300	200~350	40	1~2	側銑 (SIDE MILLING)
WWA2003	50	70	900~1300	100~150	20	4~5	側銑 (SIDE MILLING)
WWA2003	50	70	900~1300	80~130	20	6~7	側銑 (SIDE MILLING)

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式 / 油霧切削 Wet/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WWA0603	22	95	4900~5300	400~600	1~1.5	6	溝銑 (SLOTTING)
WWA0603	22	95	4900~5300	200~400	2~3	6	溝銑 (SLOTTING)
WWA0603	22	95	4900~5300	150~250	5~6	6	溝銑 (SLOTTING)
WWA0603	22	95	4900~5300	450~650	12	1~1.5	側銑 (SIDE MILLING)
WWA0603	22	95	4900~5300	250~400	6	2~3	側銑 (SIDE MILLING)
WWA0603	22	95	4900~5300	150~280	6	4~5	側銑 (SIDE MILLING)
WWA0803	28	100	3800~4300	300~500	1.5~2	8	溝銑 (SLOTTING)
WWA0803	28	105	4000~4500	250~400	3~4	8	溝銑 (SLOTTING)
WWA0803	28	95	3600~4000	120~250	7~8	8	溝銑 (SLOTTING)
WWA0803	28	95	3600~4000	180~280	8	3~4	側銑 (SIDE MILLING)
WWA0803	28	95	3600~4000	120~250	8	6~7	側銑 (SIDE MILLING)

WWA 3T

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式 / 油霧切削 Wet/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WWA1003	35	60	1700~2200	300~500	2	10	溝銑 (SLOTTING)
WWA1003	35	60	1700~2100	150~250	4~5	10	溝銑 (SLOTTING)
WWA1003	35	60	1700~2100	100~180	9~10	10	溝銑 (SLOTTING)
WWA1003	35	60	1700~2100	200~400	20	1.5~2	側銑 (SIDE MILLING)
WWA1003	35	60	1700~2000	150~250	10~20	4~5	側銑 (SIDE MILLING)
WWA1003	35	60	1700~2100	100~180	10	8~9	側銑 (SIDE MILLING)
WWA1203	38	75	1700~2200	300~400	1~2	12	溝銑 (SLOTTING)
WWA1203	38	60	1400~1800	130~200	5~6	12	溝銑 (SLOTTING)
WWA1203	38	60	1400~1800	100~150	9~10	12	溝銑 (SLOTTING)
WWA1203	38	60	1400~1800	200~350	24	1~2	側銑 (SIDE MILLING)
WWA1203	38	60	1400~1800	130~200	12	5~6	側銑 (SIDE MILLING)
WWA1203	38	60	1400~1800	100~160	12	9~10	側銑 (SIDE MILLING)
WWA1403	50	75	1500~1900	300~400	1~2	14	溝銑 (SLOTTING)
WWA1403	50	70	1400~1800	120~180	4~5	14	溝銑 (SLOTTING)
WWA1403	50	70	1400~1800	100~150	7~8	14	溝銑 (SLOTTING)
WWA1403	50	70	1400~1800	200~350	28	1~2	側銑 (SIDE MILLING)
WWA1403	50	70	1400~1800	100~180	14	4~5	側銑 (SIDE MILLING)
WWA1403	50	70	1400~1800	100~150	14	7~8	側銑 (SIDE MILLING)
WWA1603	50	75	1300~1700	250~350	1~2	16	溝銑 (SLOTTING)
WWA1603	50	70	1200~1600	100~170	4~5	16	溝銑 (SLOTTING)
WWA1603	50	70	1200~1600	100~130	6~7	16	溝銑 (SLOTTING)
WWA1603	50	70	1200~1600	200~300	32	1~2	側銑 (SIDE MILLING)
WWA1603	50	70	1200~1600	100~170	16	4~5	側銑 (SIDE MILLING)
WWA1603	50	70	1200~1600	100~130	16	6~7	側銑 (SIDE MILLING)
WWA1803	50	75	1100~1500	200~300	1~2	18	溝銑 (SLOTTING)
WWA1803	50	70	1000~1400	100~130	4~5	18	溝銑 (SLOTTING)
WWA1803	50	70	1000~1400	80~110	6~7	18	溝銑 (SLOTTING)
WWA1803	50	70	1000~1400	200~300	36	1~2	側銑 (SIDE MILLING)
WWA1803	50	70	1000~1400	90~120	18	4~5	側銑 (SIDE MILLING)
WWA1803	50	70	1000~1400	80~110	18	6~7	側銑 (SIDE MILLING)
WWA2003	50	75	1000~1400	200~300	1~2	20	溝銑 (SLOTTING)
WWA2003	50	70	900~1300	100~130	4~5	20	溝銑 (SLOTTING)
WWA2003	50	70	900~1300	80~110	6~7	20	溝銑 (SLOTTING)
WWA2003	50	70	900~1300	200~300	40	1~2	側銑 (SIDE MILLING)
WWA2003	50	70	900~1300	90~120	20	4~5	側銑 (SIDE MILLING)
WWA2003	50	70	900~1300	80~110	20	6~7	側銑 (SIDE MILLING)

WWA 3T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式 / 油霧切削 Wet/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WWA0603	22	95	4900~5300	400~550	1~1.5	6	溝銑 (SLOTTING)
WWA0603	22	95	4900~5300	200~350	2~3	6	溝銑 (SLOTTING)
WWA0603	22	95	4900~5300	200~350	6	2~3	側銑 (SIDE MILLING)
WWA0603	22	95	4900~5300	150~220	6	3~4	側銑 (SIDE MILLING)
WWA0803	25	105	4000~4500	400~500	1.5~2	8	溝銑 (SLOTTING)
WWA0803	25	105	4000~4500	200~350	3~4	8	溝銑 (SLOTTING)
WWA0803	25	110	4200~4700	200~350	8	3~4	側銑 (SIDE MILLING)
WWA0803	25	110	4200~4700	200~300	8	4~5	側銑 (SIDE MILLING)
WWA1003	35	75	2000~2500	300~400	2	10	溝銑 (SLOTTING)
WWA1003	35	60	1700~2100	150~200	4~5	10	溝銑 (SLOTTING)
WWA1003	35	60	1700~2100	120~180	20	4~5	側銑 (SIDE MILLING)
WWA1003	35	60	1800~2000	100~130	10	5~6	側銑 (SIDE MILLING)
WWA1203	38	75	1700~2200	250~350	1~2	12	溝銑 (SLOTTING)
WWA1203	38	60	1400~1800	120~160	5~6	12	溝銑 (SLOTTING)
WWA1203	38	60	1400~1800	120~180	12	5~6	側銑 (SIDE MILLING)
WWA1203	38	60	1400~1800	100~130	12	6~7	側銑 (SIDE MILLING)
WWA1403	50	75	1500~1900	200~300	1~2	14	溝銑 (SLOTTING)
WWA1403	50	70	1400~1800	120~150	4~5	14	溝銑 (SLOTTING)
WWA1403	50	70	1400~1800	100~130	14	4~5	側銑 (SIDE MILLING)
WWA1403	50	70	1400~1800	100~120	14	6~7	側銑 (SIDE MILLING)
WWA1603	50	75	1300~1700	200~300	1~2	16	溝銑 (SLOTTING)
WWA1603	50	70	1200~1600	120~150	4~5	16	溝銑 (SLOTTING)
WWA1603	50	70	1200~1600	100~130	16	4~5	側銑 (SIDE MILLING)
WWA1603	50	70	1200~1600	100~120	16	6~7	側銑 (SIDE MILLING)
WWA1803	50	75	1100~1500	200~250	1~2	18	溝銑 (SLOTTING)
WWA1803	50	70	1000~1400	90~110	4~5	18	溝銑 (SLOTTING)
WWA1803	50	70	1000~1400	90~110	18	4~5	側銑 (SIDE MILLING)
WWA1803	50	70	1000~1400	80~100	18	6~7	側銑 (SIDE MILLING)
WWA2003	50	75	1000~1400	200~250	1~2	20	溝銑 (SLOTTING)
WWA2003	50	70	900~1300	90~110	4~5	20	溝銑 (SLOTTING)
WWA2003	50	70	900~1300	90~110	20	4~5	側銑 (SIDE MILLING)
WWA2003	50	70	900~1300	80~100	20	6~7	側銑 (SIDE MILLING)

WWA 4T

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵：*Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WWA0604	20	90	4700~5000	700~900	1.5	6	溝銑 (SLOTTING)
WWA0604	20	90	4700~5000	350~550	2~3	6	溝銑 (SLOTTING)
WWA0604	20	90	4700~5000	250~450	5~6	6	溝銑 (SLOTTING)
WWA0604	20	90	4700~5000	600~800	12	1.5	側銑 (SIDE MILLING)
WWA0604	20	90	4700~5000	350~550	6	2~3	側銑 (SIDE MILLING)
WWA0604	20	90	4700~5000	300~500	6	4~5	側銑 (SIDE MILLING)
WWA0804	25	90	3500~3700	800~1000	2	8	溝銑 (SLOTTING)
WWA0804	25	90	3500~3700	350~550	3~4	8	溝銑 (SLOTTING)
WWA0804	25	90	3500~3700	250~450	7~8	8	溝銑 (SLOTTING)
WWA0804	25	90	3500~3700	450~650	16	2	側銑 (SIDE MILLING)
WWA0804	25	90	3500~3700	350~550	8	3~4	側銑 (SIDE MILLING)
WWA0804	25	90	3500~3700	250~450	8	6~7	側銑 (SIDE MILLING)
WWA1004	30	90	2800~3000	600~800	2	10	溝銑 (SLOTTING)
WWA1004	30	90	2800~3000	300~400	4~5	10	溝銑 (SLOTTING)
WWA1004	30	90	2800~3000	200~350	9~10	10	溝銑 (SLOTTING)
WWA1004	30	90	2800~3000	400~500	20	1~2	側銑 (SIDE MILLING)
WWA1004	30	90	2800~3000	300~400	10	4~5	側銑 (SIDE MILLING)
WWA1004	30	90	2800~3000	200~350	10	8~9	側銑 (SIDE MILLING)
WWA1204	35	90	2300~2600	500~700	2	12	溝銑 (SLOTTING)
WWA1204	35	90	2300~2600	200~350	4~5	12	溝銑 (SLOTTING)
WWA1204	35	90	2300~2600	200~300	6~7	12	溝銑 (SLOTTING)
WWA1204	35	90	2300~2600	350~450	24	1~2	側銑 (SIDE MILLING)
WWA1204	35	90	2300~2600	200~350	12	4~5	側銑 (SIDE MILLING)
WWA1204	35	90	2300~2600	200~300	12	6~7	側銑 (SIDE MILLING)
WWA1404	40	90	1800~2200	400~600	2	14	溝銑 (SLOTTING)
WWA1404	40	90	1800~2200	200~350	4~5	14	溝銑 (SLOTTING)
WWA1404	40	90	1800~2200	200~300	6~7	14	溝銑 (SLOTTING)
WWA1404	40	90	1800~2200	400~500	28	1~2	側銑 (SIDE MILLING)
WWA1404	40	90	1800~2200	200~350	14	4~5	側銑 (SIDE MILLING)
WWA1404	40	90	1800~2200	200~300	14	6~7	側銑 (SIDE MILLING)
WWA1604	45	90	1700~2000	400~600	2	16	溝銑 (SLOTTING)
WWA1604	45	90	1700~2000	200~300	4~5	16	溝銑 (SLOTTING)
WWA1604	45	90	1700~2000	150~250	6~7	16	溝銑 (SLOTTING)
WWA1604	45	90	1700~2000	400~500	32	1~2	側銑 (SIDE MILLING)
WWA1604	45	90	1700~2000	250~350	16	4~5	側銑 (SIDE MILLING)
WWA1604	45	90	1700~2000	150~250	16	6~7	側銑 (SIDE MILLING)

WWA 4T

切削條件表 Milling Conditions

被切削材 Work Material	碳素鋼 / 鑄鐵 : *Carbon Steels / Cast Iron* S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / NO.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WWA1804	45	90	1500~1800	400~600	2	18	溝銑 (SLOTTING)
WWA1804	45	90	1500~1800	200~300	4~5	18	溝銑 (SLOTTING)
WWA1804	45	90	1500~1800	150~250	6~7	18	溝銑 (SLOTTING)
WWA1804	45	90	1500~1800	300~400	36	1~2	側銑 (SIDE MILLING)
WWA1804	45	90	1500~1800	200~300	18	4~5	側銑 (SIDE MILLING)
WWA1804	45	90	1500~1800	150~250	18	6~7	側銑 (SIDE MILLING)
WWA2004	50	90	1200~1500	400~600	2	20	溝銑 (SLOTTING)
WWA2004	50	90	1200~1500	200~300	4~5	20	溝銑 (SLOTTING)
WWA2004	50	90	1200~1500	150~250	6~7	20	溝銑 (SLOTTING)
WWA2004	50	90	1200~1500	300~400	40	1~2	側銑 (SIDE MILLING)
WWA2004	50	90	1200~1500	200~300	20	4~5	側銑 (SIDE MILLING)
WWA2004	50	90	1200~1500	150~250	20	6~7	側銑 (SIDE MILLING)

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WWA0604	20	90	4700~5000	600~800	1.5	6	溝銑 (SLOTTING)
WWA0604	20	90	4700~5000	350~500	2~3	6	溝銑 (SLOTTING)
WWA0604	20	90	4700~5000	250~400	5~6	6	溝銑 (SLOTTING)
WWA0604	20	90	4700~5000	600~800	12	1.5	側銑 (SIDE MILLING)
WWA0604	20	90	4700~5000	350~500	6	2~3	側銑 (SIDE MILLING)
WWA0604	20	90	4700~5000	300~450	6	4~5	側銑 (SIDE MILLING)
WWA0804	25	90	3500~3700	700~900	2	8	溝銑 (SLOTTING)
WWA0804	25	90	3500~3700	350~500	3~4	8	溝銑 (SLOTTING)
WWA0804	25	90	3500~3700	250~400	7~8	8	溝銑 (SLOTTING)
WWA0804	25	90	3500~3700	450~650	16	2	側銑 (SIDE MILLING)
WWA0804	25	90	3500~3700	350~500	8	3~4	側銑 (SIDE MILLING)
WWA0804	25	90	3500~3700	250~400	8	6~7	側銑 (SIDE MILLING)

WWA 4T

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WWA1004	30	90	2800~3000	500~700	2	10	溝銑 (SLOTTING)
WWA1004	30	90	2800~3000	250~350	4~5	10	溝銑 (SLOTTING)
WWA1004	30	90	2800~3000	150~300	9~10	10	溝銑 (SLOTTING)
WWA1004	30	90	2800~3000	400~500	20	1~2	側銑 (SIDE MILLING)
WWA1004	30	90	2800~3000	250~350	10	4~5	側銑 (SIDE MILLING)
WWA1004	30	90	2800~3000	150~300	10	8~9	側銑 (SIDE MILLING)
WWA1204	35	90	2300~2600	400~600	2	12	溝銑 (SLOTTING)
WWA1204	35	90	2300~2600	200~300	5~6	12	溝銑 (SLOTTING)
WWA1204	35	90	2300~2600	200~250	9~10	12	溝銑 (SLOTTING)
WWA1204	35	90	2300~2600	300~400	24	1~2	側銑 (SIDE MILLING)
WWA1204	35	90	2300~2600	200~300	12	5~6	側銑 (SIDE MILLING)
WWA1204	35	90	2300~2600	150~250	12	9~10	側銑 (SIDE MILLING)
WWA1404	40	90	1900~2200	400~550	2	14	溝銑 (SLOTTING)
WWA1404	40	90	1900~2200	200~300	6~7	14	溝銑 (SLOTTING)
WWA1404	40	90	1900~2200	180~250	8~9	14	溝銑 (SLOTTING)
WWA1404	40	90	1900~2200	350~450	28	1~2	側銑 (SIDE MILLING)
WWA1404	40	90	1900~2200	200~300	14	6~7	側銑 (SIDE MILLING)
WWA1404	40	90	1900~2200	150~250	14	8~9	側銑 (SIDE MILLING)
WWA1604	45	90	1700~2000	400~500	2	16	溝銑 (SLOTTING)
WWA1604	45	90	1700~2000	170~270	5~6	16	溝銑 (SLOTTING)
WWA1604	45	90	1700~2000	150~200	7~8	16	溝銑 (SLOTTING)
WWA1604	45	90	1700~2000	300~400	32	1~2	側銑 (SIDE MILLING)
WWA1604	45	90	1700~2000	200~300	16	5~6	側銑 (SIDE MILLING)
WWA1604	45	90	1700~2000	120~200	16	7~8	側銑 (SIDE MILLING)
WWA1804	45	90	1500~1800	350~450	2	18	溝銑 (SLOTTING)
WWA1804	45	90	1500~1800	170~230	5~6	18	溝銑 (SLOTTING)
WWA1804	45	90	1500~1800	120~200	7~8	18	溝銑 (SLOTTING)
WWA1804	45	90	1500~1800	250~350	36	1~2	側銑 (SIDE MILLING)
WWA1804	45	90	1500~1800	170~230	18	5~6	側銑 (SIDE MILLING)
WWA1804	45	90	1500~1800	120~180	18	7~8	側銑 (SIDE MILLING)
WWA2004	50	90	1200~1500	350~450	2	20	溝銑 (SLOTTING)
WWA2004	50	90	1200~1500	170~230	5~6	20	溝銑 (SLOTTING)
WWA2004	50	90	1200~1500	120~200	7~8	20	溝銑 (SLOTTING)
WWA2004	50	90	1200~1500	250~350	40	1~2	側銑 (SIDE MILLING)
WWA2004	50	90	1200~1500	170~230	20	5~6	側銑 (SIDE MILLING)
WWA2004	50	90	1200~1500	120~180	20	7~8	側銑 (SIDE MILLING)

WWA 4T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧切削 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WWA0604	22	80	4200~4400	350~450	1.5	6	溝銑 (SLOTTING)
WWA0604	22	80	4200~4400	300~420	3	6	溝銑 (SLOTTING)
WWA0604	22	80	4200~4400	500~700	6	1	側銑 (SIDE MILLING)
WWA0604	22	80	4200~4400	450~600	6	2	側銑 (SIDE MILLING)
WWA0604	22	80	4200~4400	250~320	6	3	側銑 (SIDE MILLING)
WWA0804	28	80	3200~3400	350~480	2	8	溝銑 (SLOTTING)
WWA0804	28	80	3200~3400	270~360	4	8	溝銑 (SLOTTING)
WWA0804	28	80	3200~3400	350~480	8	2	側銑 (SIDE MILLING)
WWA0804	28	80	3200~3400	270~360	8	4	側銑 (SIDE MILLING)
WWA0804	28	80	3200~3400	200~260	8	7.7	側銑 (SIDE MILLING)
WWA1004	32	80	2500~2700	350~500	2	10	溝銑 (SLOTTING)
WWA1004	32	80	2500~2700	300~400	3.5	10	溝銑 (SLOTTING)
WWA1004	32	80	2500~2700	350~500	10	1	側銑 (SIDE MILLING)
WWA1004	32	80	2500~2700	300~400	10	3	側銑 (SIDE MILLING)
WWA1004	32	80	2500~2700	200~300	10	5	側銑 (SIDE MILLING)
WWA1204	38	80	2000~2200	260~420	2	12	溝銑 (SLOTTING)
WWA1204	38	80	2000~2200	200~300	4	12	溝銑 (SLOTTING)
WWA1204	38	80	2000~2200	300~400	12	1	側銑 (SIDE MILLING)
WWA1204	38	80	2000~2200	180~260	12	4	側銑 (SIDE MILLING)
WWA1204	38	80	2000~2200	100~190	12	6	側銑 (SIDE MILLING)
WWA1404	42	80	1700~1900	200~360	2	14	溝銑 (SLOTTING)
WWA1404	42	80	1700~1900	150~250	4	14	溝銑 (SLOTTING)
WWA1404	42	80	1700~1900	200~300	14	2	側銑 (SIDE MILLING)
WWA1404	42	80	1700~1900	70~110	14	5	側銑 (SIDE MILLING)
WWA1404	42	80	1700~1900	70~110	14	7	側銑 (SIDE MILLING)
WWA1604	47	80	1500~1700	200~280	2	16	溝銑 (SLOTTING)
WWA1604	47	80	1500~1700	130~200	4	16	溝銑 (SLOTTING)
WWA1604	47	80	1500~1700	180~260	16	2	側銑 (SIDE MILLING)
WWA1604	47	80	1500~1700	50~100	16	6	側銑 (SIDE MILLING)
WWA1604	47	80	1500~1700	50~100	16	8	側銑 (SIDE MILLING)
WWA1804	50	80	1300~1500	200~250	2	18	溝銑 (SLOTTING)
WWA1804	50	80	1300~1500	130~180	4	18	溝銑 (SLOTTING)
WWA1804	50	80	1300~1500	170~240	18	1	側銑 (SIDE MILLING)
WWA1804	50	80	1300~1500	50~100	18	6	側銑 (SIDE MILLING)
WWA1804	50	80	1300~1500	50~100	18	8	側銑 (SIDE MILLING)
WWA2004	50	80	1150~1350	180~230	2	20	溝銑 (SLOTTING)
WWA2004	50	80	1150~1350	120~160	4	20	溝銑 (SLOTTING)
WWA2004	50	80	1150~1350	160~230	20	1	側銑 (SIDE MILLING)
WWA2004	50	80	1150~1350	80~120	20	5	側銑 (SIDE MILLING)
WWA2004	50	80	1150~1350	50~80	20	8	側銑 (SIDE MILLING)

WWA 4T

切削條件表 Milling Conditions

被切削材 Work Material	沃斯田鐵系不銹鋼：*Stainless Steels* **SUS304 : 1.4301 : AISI 304 (HRc28~32)**
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WWA0604	22	80	4200~4400	400~550	1	6	溝銑 (SLOTTING)
WWA0604	22	80	4200~4400	350~450	1.5	6	溝銑 (SLOTTING)
WWA0604	22	80	4200~4400	300~420	3	6	溝銑 (SLOTTING)
WWA0604	22	80	4200~4400	170~220	6	6	溝銑 (SLOTTING)
WWA0604	22	80	4200~4400	500~700	6	1	側銑 (SIDE MILLING)
WWA0604	22	80	4200~4400	450~600	6	2	側銑 (SIDE MILLING)
WWA0604	22	80	4200~4400	250~320	6	3	側銑 (SIDE MILLING)
WWA0604	22	80	4200~4400	170~220	6	5.7	側銑 (SIDE MILLING)
WWA0804	28	80	3200~3400	350~480	2	8	溝銑 (SLOTTING)
WWA0804	28	80	3200~3400	270~360	4	8	溝銑 (SLOTTING)
WWA0804	28	80	3200~3400	240~320	6	8	溝銑 (SLOTTING)
WWA0804	28	80	3200~3400	200~260	8	8	溝銑 (SLOTTING)
WWA0804	28	80	3200~3400	350~480	8	2	側銑 (SIDE MILLING)
WWA0804	28	80	3200~3400	270~360	8	4	側銑 (SIDE MILLING)
WWA0804	28	80	3200~3400	200~260	8	7.7	側銑 (SIDE MILLING)
WWA1004	32	80	2500~2700	350~500	2	10	溝銑 (SLOTTING)
WWA1004	32	80	2500~2700	300~400	3.5	10	溝銑 (SLOTTING)
WWA1004	32	80	2500~2700	250~320	5	10	溝銑 (SLOTTING)
WWA1004	32	80	2500~2700	200~260	10	10	溝銑 (SLOTTING)
WWA1004	32	80	2500~2700	350~500	10	1	側銑 (SIDE MILLING)
WWA1004	32	80	2500~2700	200~300	10	5	側銑 (SIDE MILLING)
WWA1004	32	80	2500~2700	200~260	10	9.7	側銑 (SIDE MILLING)
WWA1204	38	80	2000~2200	260~420	2	12	溝銑 (SLOTTING)
WWA1204	38	80	2000~2200	200~300	4	12	溝銑 (SLOTTING)
WWA1204	38	80	2000~2200	180~260	6	12	溝銑 (SLOTTING)
WWA1204	38	80	2000~2200	150~210	10	12	溝銑 (SLOTTING)
WWA1204	38	80	2000~2200	120~200	12	12	溝銑 (SLOTTING)
WWA1204	38	80	2000~2200	300~400	12	1	側銑 (SIDE MILLING)
WWA1204	38	80	2000~2200	180~260	12	6	側銑 (SIDE MILLING)
WWA1204	38	80	2000~2200	100~190	12	11.7	側銑 (SIDE MILLING)
WWA1404	42	80	1700~1900	200~360	2	14	溝銑 (SLOTTING)
WWA1404	42	80	1700~1900	150~250	4	14	溝銑 (SLOTTING)
WWA1404	42	80	1700~1900	120~200	6	14	溝銑 (SLOTTING)
WWA1404	42	80	1700~1900	100~150	10	14	溝銑 (SLOTTING)
WWA1404	42	80	1700~1900	200~300	14	1	側銑 (SIDE MILLING)
WWA1404	42	80	1700~1900	70~110	14	7	側銑 (SIDE MILLING)
WWA1404	42	80	1700~1900	70~110	7	13.7	側銑 (SIDE MILLING)

WWA 4T

切削條件表 Milling Conditions

被切削材 Work Material	沃斯田鐵系不銹鋼：*Stainless Steels* **SUS304 : 1.4301 : AISI 304 (HRc28~32)**
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WWA1604	47	80	1500~1700	200~280	2	16	溝銑 (SLOTTING)
WWA1604	47	80	1500~1700	130~200	4	16	溝銑 (SLOTTING)
WWA1604	47	80	1500~1700	100~170	6	16	溝銑 (SLOTTING)
WWA1604	47	80	1500~1700	80~100	10	16	溝銑 (SLOTTING)
WWA1604	47	80	1500~1700	180~260	16	1	側銑 (SIDE MILLING)
WWA1604	47	80	1500~1700	50~100	16	8	側銑 (SIDE MILLING)
WWA1604	47	80	1500~1700	50~100	8	15.7	側銑 (SIDE MILLING)
WWA1804	50	80	1300~1500	200~250	2	18	溝銑 (SLOTTING)
WWA1804	50	80	1300~1500	130~180	4	18	溝銑 (SLOTTING)
WWA1804	50	80	1300~1500	100~150	6	18	溝銑 (SLOTTING)
WWA1804	50	80	1300~1500	80~100	10	18	溝銑 (SLOTTING)
WWA1804	50	80	1300~1500	170~240	18	1	側銑 (SIDE MILLING)
WWA1804	50	80	1300~1500	50~100	18	6	側銑 (SIDE MILLING)
WWA1804	50	80	1300~1500	50~100	9	17.7	側銑 (SIDE MILLING)
WWA2004	50	80	1150~1350	180~230	2	20	溝銑 (SLOTTING)
WWA2004	50	80	1150~1350	120~160	4	20	溝銑 (SLOTTING)
WWA2004	50	80	1150~1350	100~140	6	20	溝銑 (SLOTTING)
WWA2004	50	80	1150~1350	70~90	10	20	溝銑 (SLOTTING)
WWA2004	50	80	1150~1350	160~230	20	1	側銑 (SIDE MILLING)
WWA2004	50	80	1150~1350	80~120	20	5	側銑 (SIDE MILLING)
WWA2004	50	80	1150~1350	50~80	10	19.7	側銑 (SIDE MILLING)

DHF標準系列刀具推薦表（一）

被切削材 Work Material	平刀 End Mills			圓鼻刀 Corner Radius End Mills			球刀 Ball Nose End Mills		
	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection
紅銅 *Copper* **C1100 / 2.0090 /B152C11000**	ETH	ETB	ETG ETA	RTB	RTD	RTG RTA	BTH	BTB	BTA
碳素鋼 *Carbon Steels* **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc 22)	ETH	ETB	ETG ETA	RTB	RTD	RTG RTA	BTB	BTH	BTA
合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2** (HRc 23~32)	ETH	ETB	ETG ETA	RTB	RTD	RTG RTA	BTB	BTH	BTA
調質鋼/預硬鋼 *Prehardened Steels* **NAK80 : 1.2083 : AISI420 : M310** (HRc36~45)	ETH	ETB	ETA	RTB	RTD	RTG RTA	BTB	BTH	BTA
熱處理鋼 *Hardened Steels* **SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420** (HRc48~54)	ETH	ETB	ETA	RTB	RTD	RTG RTA	BTB	BTH	BTA
沃斯田鐵系不銹鋼 *Stainless Steels :* **SUS304 : 1.4301 : AISI 304** (HRc 28~32)	ETH	ETB	ETG ETA	RTB	RTD	RTG RTA	BTH	BTB	BTA
（麻田散鐵, 析出硬化）系不銹鋼 *Stainless Steels* **SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH** (HRc 28~32)	ETH	ETB	ETG ETA	RTB	RTD	RTG RTA	BTH	BTB	BTA
鈦合金/純鈦 *Titanium Alloy / Pure Titanium* **Ti-6Al-4V / Ti-2 : 3.7165 / 3.7035 : Gr5 / Gr2 : TC4 / TA1**	–	ETH	ETB	–	RTB	RTD	–	BTH	BTB

DHF標準系列刀具推薦表〔二〕

被切削材 Work Material	平刀 End Mills			圓鼻刀 Corner Radius End Mills			球刀 Ball Nose End Mills		
	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection
紅銅 *Copper* **C1100 / 2.0090 /B152C11000**	ITH HTD	HEH IEH JEH	-	LRTD	LRTA	-	HBH IBH JBH	HBA IBA JBA	-
	LFTH	-	-						
碳素鋼 *Carbon Steels* **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc 22)	VTB	HTA ITA	HEA IEA JEA	LRTD	LRTA	-	HBH IBH JBH	HBA IBA JBA	-
	LFTH WWA	LFTA WUA	-						
合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2** (HRc 23~32)	VTB	HTA ITA	HEA IEA JEA	LRTD	LRTA	-	HBH IBH JBH	HBA IBA JBA	-
	LFTH WWA	LFTA WUA	-						
調質鋼/預硬鋼 *Prehardened Steels* **NAK80 : 1.2083 : AISI420 : M310** (HRc36~45)	VTB	HTA ITA	HEA IEA JEA	LRTD	LRTA	-	HBH IBH JBH	HBA IBA JBA	-
	LFTH WWA	LFTA WUA	-						
熱處理鋼 *Hardened Steels* **SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420** (HRc48~54)	VTA	HEH IEH JEH	-	LRTD	LRTA	-	HBH IBH JBH	HBA IBA JBA	-
	LFTA	-	-						
沃斯田鐵系不銹鋼 *Stainless Steels :* **SUS304 : 1.4301 : AISI 304** (HRc 28~32)	VTB	ITH HTD	HEA IEA JEA	LRTD	LRTA	-	HBH IBH JBH	HBA IBA JBA	-
	LFTH WWA	WUA	-						
(麻田散鐵, 析出硬化) 系不銹鋼 *Stainless Steels* **SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH** (HRc 28~32)	VTB	ITH HTD	HEA IEA JEA	LRTD	LRTA	-	HBH IBH JBH	HBA IBA JBA	-
	LFTH WWA	WUA	-						

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2015.2.2000

DHF

Economy

經濟型系列



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經濟型系列
Economy Series

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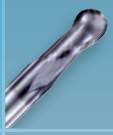
DB^{2T}	P.1	P.15~16	
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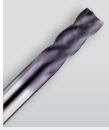
DHE^{4T} DIE^{4T} DJE^{4T}	P.6	P.32~39	
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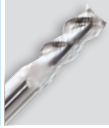
DC^{3T}	P.12	P.66~68	
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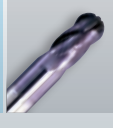
DB^{4T}	P.14	P.71~72	

圖示說明
Guide Lines to Icons

鎢鋼種類 Carbide



超微粒。
Micro grain.

刃數 Flute



顆粒大小 Grain Size



粉末顆粒是0.6μm
Grain size is 0.6 μm.

被切削材硬度 Work Material Hardness



被切削工件硬度可達HRc50。
Work material hardness is up to HRc50.

螺旋角 Helix Angle



螺旋角度 25°、30°、35°、45°、50°。
Helix Angle is 25°,30°,35°,45°,50°.

鍍層 Coating



適用於各式切削，使用壽命長。
Genetally used on all kind of machining with benefit of long tool life.

圓隅角 Corner R



圓隅角。
Corner Radius.

切削性能 Cutting Performance



優
Excellent



良
Good



尚可
Acceptable



禁止
No

DB 2T

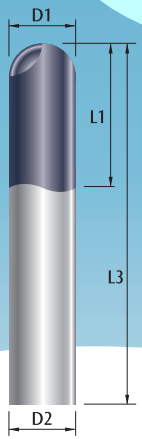
超微粒圓頭立銑刀 Ball Nose End Mills

經濟型系列
Economy Series

Perfect MG | 0.6 μm | 30° | 2 Flutes | HRc ▶50 | T1







產品規格 / SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
DB0102	R0.5	2	50	4
DB0152	R0.75	3	50	4
DB0202	R1	4	50	4
DB0252	R1.25	5	50	4
DB0302	R1.5	6	50	4
DB0402	R2	8	50	4
DB0502	R2.5	10	50	6
DB0602	R3	12	50	6
DB0802	R4	16	60	8
DB1002	R5	20	75	10
DB1202	R6	24	75	12
DB1602	R8	32	100	16

unit : mm

直徑 D1	球頭公差值 R Tolerance
R0.5	±0.01
R0.75	±0.01
R1	±0.01
R1.5	±0.01
R2	±0.01
R2·5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	$^{0}_{-0.008}$
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$

unit : mm

DB-2T 的切削條件詳見 P.15~16 Please find the **DB-2T** Condition on P.15~16

DHB DIB 2T

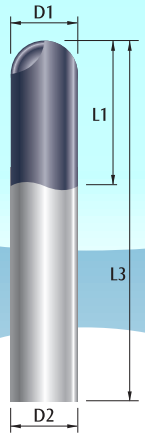
超微粒長柄圓頭立銑刀 Ball Nose End Mills

經濟型系列
Economy Series

Long Shank







產品規格 / SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
DHB0202	R1	4	75	6
DHB0252	R1.25	5	75	6
DHB0302	R1.5	6	75	6
DHB0402	R2	8	75	6
DHB0502	R2.5	10	75	6
DHB0602	R3	12	75	6
DHB0802	R4	16	75	8
DIB0202	R1	4	100	6
DIB0302	R1.5	6	100	6
DIB0402	R2	8	100	6
DIB0602	R3	12	100	6
DIB0802	R4	16	100	8
DIB1002	R5	20	100	10
DIB1202	R6	24	100	12

unit : mm

直徑 D1	球頭公差值 R Tolerance
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$

unit : mm

DHB.DIB-2T 的切削條件詳見 P.17 Please find the DHB.DIB-2T Condition on P.17

DE 2T

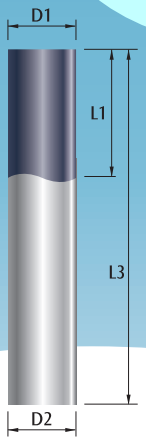
超微粒立銑刀 End Mills

經濟型系列
Economy Series

Perfect MG | 0.6 μm | 35° | 2 Flutes | HRc ▶50 | T1

- 乾式切削 Dry Machining
- 油霧切削 MQL (Mist)
- 水溶性切削 Emulsion Machining
- 油性切削 Oil Machining
- 精銑 Finishing
- 中銑 Semi-finishing
- 粗銑 Roughing





產品規格 / SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
DE0102	1.0	3	50	4
DE0152	1.5	4	50	4
DE0202	2.0	6	50	4
DE0252	2.5	8	50	4
DE0302	3.0	8	50	4
DE0402	4.0	11	50	4
DE0502	5.0	13	50	6
DE0602	6.0	16	50	6
DE0802	8.0	20	60	8
DE1002	10.0	25	75	10
DE1202	12.0	30	75	12
DE1602	16.0	40	100	16

unit : mm

直徑 D1	直徑公差值 D1 Tolerance
1.0	$^{0}_{-0.02}$
1.5	$^{0}_{-0.02}$
2.0	$^{0}_{-0.02}$
2.5	$^{0}_{-0.02}$
3.0	$^{0}_{-0.02}$
4.0	$^{0}_{-0.02}$
5.0	$^{0}_{-0.02}$
6.0	$^{0}_{-0.025}$
8.0	$^{0}_{-0.03}$
10.0	$^{0}_{-0.035}$
12.0	$^{0}_{-0.035}$
16.0	$^{0}_{-0.04}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	$^{0}_{-0.008}$
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$

unit : mm

DE-2T 的切削條件詳見 P.18~21 Please find the DE-2T Condition on P.18~21

DHE DIE DJE 2T

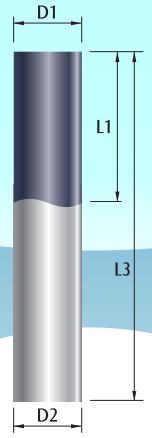
超微粒長柄立銑刀 End Mills

經濟型系列
Economy Series

Long Shank







產品規格 / SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
DHE0302	3.0	8	75	3
DHE0402	4.0	11	75	4
DHE0502	5.0	13	75	6
DHE0602	6.0	16	75	6
DHE0802	8.0	20	75	8
DIE0302	3.0	8	100	3
DIE0402	4.0	11	100	4
DIE0502	5.0	13	100	6
DIE0602	6.0	16	100	6
DIE0802	8.0	20	100	8
DIE1002	10.0	25	100	10
DIE1202	12.0	30	100	12
DJE0602	6.0	16	150	6
DJE0802	8.0	20	150	8
DJE1002	10.0	25	150	10
DJE1202	12.0	30	150	12

unit : mm

直徑 D1	直徑公差值 D1 Tolerance
3.0	$^{0}_{-0.02}$
4.0	$^{0}_{-0.02}$
5.0	$^{0}_{-0.02}$
6.0	$^{0}_{-0.025}$
8.0	$^{0}_{-0.03}$
10.0	$^{0}_{-0.035}$
12.0	$^{0}_{-0.035}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø3	$^{0}_{-0.006}$
Ø4	$^{0}_{-0.008}$
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$

unit : mm

DHE.DIE.DJE-2T 的切削條件詳見 P.22~25 Please find the DHE.DIE.DJE-2T Condition on P.22~25

DE 4T

DHF

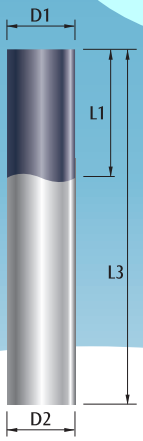
超微粒立銑刀 End Mills

經濟型系列
Economy Series

Perfect MG | 0.6 μm | 35° | 4 Flutes | HRc ▶50 | T1







產品規格 / SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
DE0104	1.0	3	50	4
DE0154	1.5	4	50	4
DE0204	2.0	6	50	4
DE0254	2.5	8	50	4
DE0304	3.0	8	50	4
DE0404	4.0	11	50	4
DE0504	5.0	13	50	6
DE0604	6.0	16	50	6
DE0804	8.0	20	60	8
DE1004	10.0	25	75	10
DE1204	12.0	30	75	12
DE1604	16.0	40	100	16
DE2004	20.0	45	100	20

unit : mm

直徑 D1	直徑公差值 D1 Tolerance
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
2.5	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.025
8.0	0 -0.03
10.0	0 -0.035
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm

DE-4T 的切削條件詳見 P.26~31 Please find the DE-4T Condition on P.26~31

DHE DIE DJE 4T

DHF

超微粒長柄立銑刀 End Mills

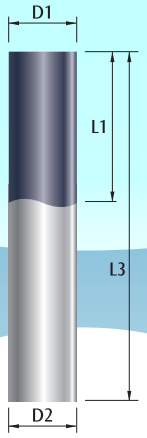
經濟型系列
Economy Series

Long Shank

Perfect MG | 0.6 μm | 35° | 4 Flutes | HRc ▶50 | T1

- 乾式切削 Dry Machining
- 油霧切削 MQL (Mist)
- 水溶性切削 Emulsion Machining
- 油性切削 Oil Machining
- 精銑 Finishing
- 中銑 Semi-finishing
- 粗銑 Roughing





產品規格 / SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
DHE0304	3.0	8	75	3
DHE0404	4.0	11	75	4
DHE0504	5.0	13	75	6
DHE0604	6.0	16	75	6
DHE0804	8.0	20	75	8
DIE0404	4.0	11	100	4
DIE0604	6.0	16	100	6
DIE0804	8.0	20	100	8
DIE1004	10.0	25	100	10
DIE1204	12.0	30	100	12
DJE0604	6.0	16	150	6
DJE0804	8.0	20	150	8
DJE1004	10.0	25	150	10
DJE1204	12.0	30	150	12
DJE1604	16.0	45	150	16
DJE2004	20.0	50	150	20

unit : mm

直徑 D1	直徑公差值 D1 Tolerance	柄徑 D2	柄徑公差值 D2 Tolerance
3.0	$^{0}_{-0.02}$	Ø3	$^{0}_{-0.006}$
4.0	$^{0}_{-0.02}$	Ø4	$^{0}_{-0.008}$
5.0	$^{0}_{-0.02}$	Ø6	$^{0}_{-0.008}$
6.0	$^{0}_{-0.025}$	Ø8	$^{0}_{-0.009}$
8.0	$^{0}_{-0.03}$	Ø10	$^{0}_{-0.009}$
10.0	$^{0}_{-0.035}$	Ø12	$^{0}_{-0.011}$
12.0	$^{0}_{-0.035}$	Ø16	$^{0}_{-0.011}$
16.0	$^{0}_{-0.04}$	Ø20	$^{0}_{-0.013}$
20.0	$^{0}_{-0.04}$		

unit : mm

DHE.DIE.DJE-4T 的切削條件詳見 P.32~39 Please find the DHE.DIE.DJE-4T Condition on P.32~39

DRA

超微粒圓鼻角立銑刀 **End Mills**

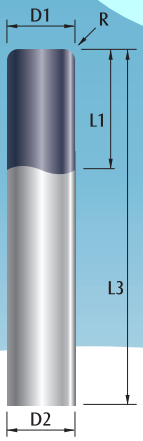
經濟型系列
Economy Series

Corner Radius









產品規格 / SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
DRA0205	2.0	0.5	6	50	4
DRA0305	3.0	0.5	8	50	3
DRA0405	4.0	0.5	10	50	4
DRA0410	4.0	1.0	10	50	4
DRA0505	5.0	0.5	13	50	6
DRA0510	5.0	1.0	13	50	6
DRA0605	6.0	0.5	16	50	6
DRA0610	6.0	1.0	16	50	6
DRA0805	8.0	0.5	19	60	8
DRA0810	8.0	1.0	19	60	8
DRA1005	10.0	0.5	25	75	10
DRA1010	10.0	1.0	25	75	10
DRA1015	10.0	1.5	25	75	10
DRA1020	10.0	2.0	25	75	10
DRA1210	12.0	1.0	30	75	12
DRA1220	12.0	2.0	30	75	12

unit : mm

直徑 D1	R徑公差值 R Tolerance	直徑公差值 D1 Tolerance
2.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
3.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
4.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
5.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
6.0	$^{+0.02}_{0}$	$^{0}_{-0.025}$
8.0	$^{+0.02}_{0}$	$^{0}_{-0.03}$
10.0	$^{+0.02}_{0}$	$^{0}_{-0.035}$
12.0	$^{+0.02}_{0}$	$^{0}_{-0.035}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø3	$^{0}_{-0.006}$
Ø4	$^{0}_{-0.008}$
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$

unit : mm

DRA 的切削條件詳見 P.40~47 Please find the **DRA** Condition on P.40~47

DLRA

超微粒長柄圓鼻角立銑刀 End Mills

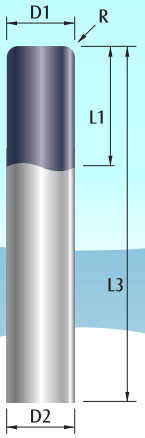
經濟型系列
Economy Series

Corner Radius









產品規格 / SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
DLRA0405	4.0	0.5	11	75	4
DLRA0605	6.0	0.5	16	75	6
DLRA0610	6.0	1.0	16	75	6
DLRA0805	8.0	0.5	19	100	8
DLRA0810	8.0	1.0	19	100	8
DLRA1005	10.0	0.5	25	100	10
DLRA1010	10.0	1.0	25	100	10
DLRA1020	10.0	2.0	25	100	10
DLRA1210	12.0	1.0	30	100	12
DLRA1220	12.0	2.0	30	100	12

unit : mm

直徑 D1	R徑公差值 R Tolerance	直徑公差值 D1 Tolerance	柄徑 D2	柄徑公差值 D2 Tolerance
4.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$	Ø4	$^{0}_{-0.008}$
6.0	$^{+0.02}_{0}$	$^{0}_{-0.025}$	Ø6	$^{0}_{-0.008}$
8.0	$^{+0.02}_{0}$	$^{0}_{-0.03}$	Ø8	$^{0}_{-0.009}$
10.0	$^{+0.02}_{0}$	$^{0}_{-0.035}$	Ø10	$^{0}_{-0.009}$
12.0	$^{+0.02}_{0}$	$^{0}_{-0.035}$	Ø12	$^{0}_{-0.011}$

unit : mm

DLRA 的切削條件詳見 P.48~51 Please find the DLRA Condition on P.48~51

DRD

超微粒圓鼻角立銑刀 **End Mills**

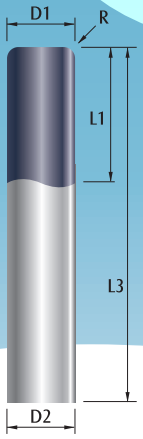
經濟型系列
Economy Series

Corner Radius

Perfect MG | 0.6 μm | 35° | R | 4 Flutes | HRc ▶50 | T1

- 乾式切削 Dry Machining
- 油霧切削 MQL (Mist)
- 水溶性切削 Emulsion Machining
- 油性切削 Oil Machining
- 精銑 Finishing
- 中銑 Semi-finishing
- 粗銑 Roughing





產品規格 / SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
DRD0305	3.0	0.5	8	50	3
DRD0405	4.0	0.5	10	50	4
DRD0505	5.0	0.5	13	50	6
DRD0510	5.0	1.0	13	50	6
DRD0605	6.0	0.5	16	50	6
DRD0610	6.0	1.0	16	50	6
DRD0805	8.0	0.5	20	60	8
DRD0810	8.0	1.0	20	60	8
DRD1010	10.0	1.0	25	75	10
DRD1020	10.0	2.0	25	75	10
DRD1030	10.0	3.0	25	75	10
DRD1210	12.0	1.0	30	75	12
DRD1220	12.0	2.0	30	75	12
DRD1230	12.0	3.0	30	75	12

unit : mm

直徑 D1	R徑公差值 R Tolerance	直徑公差值 D1 Tolerance
3.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
4.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
5.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
6.0	$^{+0.02}_{0}$	$^{0}_{-0.025}$
8.0	$^{+0.02}_{0}$	$^{0}_{-0.03}$
10.0	$^{+0.02}_{0}$	$^{0}_{-0.035}$
12.0	$^{+0.02}_{0}$	$^{0}_{-0.035}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø3	$^{0}_{-0.006}$
Ø4	$^{0}_{-0.008}$
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$

unit : mm

DRD 的切削條件詳見 P.52~57 Please find the DRD Condition on P.52~57

DLRD

超微粒長柄圓鼻角立銑刀 End Mills

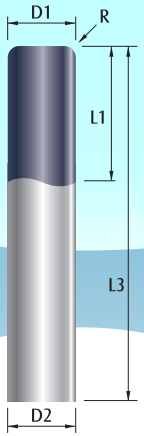
經濟型系列
Economy Series

Corner Radius

Perfect MG | 0.6 μm | 35° | R | 4 Flutes | HRc ▶50 | T1

- 乾式切削 Dry Machining
- 油霧切削 MQL (Mist)
- 水溶性切削 Emulsion Machining
- 油性切削 Oil Machining
- 精銑 Finishing
- 中銑 Semi-finishing
- 粗銑 Roughing





產品規格 / SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
DLRD0605	6.0	0.5	16	75	6
DLRD0610	6.0	1.0	16	75	6
DLRD0805	8.0	0.5	19	100	8
DLRD0810	8.0	1.0	19	100	8
DLRD1005	10.0	0.5	25	100	10
DLRD1010	10.0	1.0	25	100	10
DLRD1020	10.0	2.0	25	100	10
DLRD1210	12.0	1.0	30	100	12
DLRD1220	12.0	2.0	30	100	12
DLRD1610	16.0	1.0	45	150	16
DLRD1620	16.0	2.0	45	150	16

unit : mm

直徑 D1	R徑公差值 R Tolerance	直徑公差值 D1 Tolerance	柄徑 D2	柄徑公差值 D2 Tolerance
6.0	$^{+0.02}_{0}$	$^{0}_{-0.025}$	Ø6	$^{0}_{-0.008}$
8.0	$^{+0.02}_{0}$	$^{0}_{-0.03}$	Ø8	$^{0}_{-0.009}$
10.0	$^{+0.02}_{0}$	$^{0}_{-0.035}$	Ø10	$^{0}_{-0.009}$
12.0	$^{+0.02}_{0}$	$^{0}_{-0.035}$	Ø12	$^{0}_{-0.011}$
16.0	$^{+0.02}_{0}$	$^{0}_{-0.04}$	Ø16	$^{0}_{-0.011}$

unit : mm

DLRD 的切削條件詳見 P.58~63 Please find the DLRD Condition on P.58~63

DC 2T

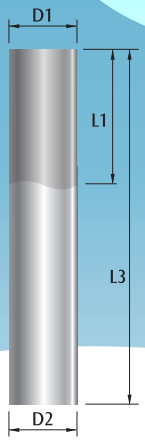
鋁用立銑刀 End Mills

經濟型系列
Economy Series









產品規格 / SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
DC0202	2.0	7	50	6
DC0302	3.0	9	50	6
DC0402	4.0	12	50	6
DC0502	5.0	16	60	6
DC0602	6.0	18	60	6
DC0802	8.0	20	60	8
DC1002	10.0	30	75	10
DC1202	12.0	32	75	12
DC1602	16.0	45	100	16
DC2002	20.0	45	100	20

unit : mm

直徑 D1	直徑公差值 D1 Tolerance
2.0	$^{0}_{-0.02}$
3.0	$^{0}_{-0.02}$
4.0	$^{0}_{-0.02}$
5.0	$^{0}_{-0.02}$
6.0	$^{0}_{-0.02}$
8.0	$^{0}_{-0.02}$
10.0	$^{0}_{-0.02}$
12.0	$^{0}_{-0.02}$
16.0	$^{0}_{-0.02}$
20.0	$^{0}_{-0.02}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$
Ø20	$^{0}_{-0.013}$

unit : mm

DC-2T 的切削條件詳見 P.64~65 Please find the **DC-2T** Condition on P.64~65

DC 3T

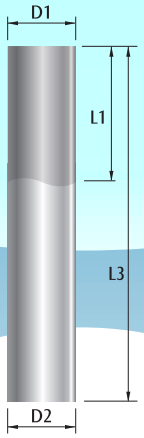
鋁用立銑刀 End Mills

經濟型系列
Economy Series









產品規格 / SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
DC0203	2.0	6	50	6
DC0303	3.0	10	50	6
DC0403	4.0	12	50	6
DC0503	5.0	16	60	6
DC0603	6.0	18	60	6
DC0803	8.0	20	60	8
DC1003	10.0	25	75	10
DC1203	12.0	30	75	12
DC1603	16.0	40	100	16

unit : mm

直徑 D1	直徑公差值 D1 Tolerance
2.0	$^{0}_{-0.02}$
3.0	$^{0}_{-0.02}$
4.0	$^{0}_{-0.02}$
5.0	$^{0}_{-0.02}$
6.0	$^{0}_{-0.02}$
8.0	$^{0}_{-0.02}$
10.0	$^{0}_{-0.02}$
12.0	$^{0}_{-0.02}$
16.0	$^{0}_{-0.02}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$

unit : mm

DC-3T 的切削條件詳見 P.66~68 Please find the DC-3T Condition on P.66~68

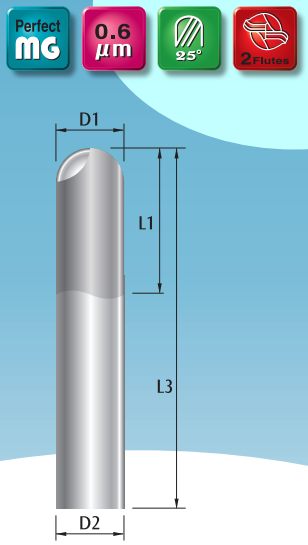
DBC

銅鋁用圓頭立銑刀 Ball Nose End Mills

經濟型系列
Economy Series







產品規格 / SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
DBC0102	R0.5	2	50	4
DBC0152	R0.75	3	50	4
DBC0202	R1	4	50	4
DBC0302	R1.5	6	50	3
DBC0402	R2	8	50	4
DBC0602	R3	12	50	6
DBC0802	R4	16	60	8
DBC1002	R5	20	75	10
DBC1202	R6	24	75	12

unit : mm

直徑 D1	球頭公差值 R Tolerance
R0.5	±0.01
R0.75	±0.01
R1	±0.01
R1.5	±0.01
R2	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015

柄徑 D2	柄徑公差值 D2 Tolerance
Ø3	$^{0}_{-0.006}$
Ø4	$^{0}_{-0.008}$
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$

unit : mm

DBC 的切削條件詳見 P.69~70 Please find the DBC Condition on P.69~70

DB 4T

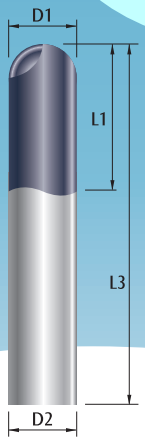
超微粒圓頭立銑刀 Ball Nose End Mills

經濟型系列
Economy Series









產品規格 / SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
DB0104	R0.5	2	50	4
DB0154	R0.75	3	50	4
DB0204	R1	4	50	4
DB0304	R1.5	6	50	4
DB0404	R2	8	50	4
DB0504	R2.5	10	50	6
DB0604	R3	12	50	6
DB0804	R4	16	60	8
DB1004	R5	20	75	10
DB1204	R6	24	75	12
DB1604	R8	32	100	16

unit : mm

直徑 D1	球頭公差值 R Tolerance
R0.5	±0.01
R0.75	±0.01
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

unit : mm

DB-4T 的切削條件詳見 P.71~72 Please find the DB-4T Condition on P.71~72

DB 2T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DB0102	10	60	18000~20000	600~900	0.05~0.08	0.12~0.16	3D 銑 (3D milling)
DB0102	10	60	18000~20000	800~1200	0.02~0.04	0.04~0.08	3D 銑 (3D milling)
DB0152	10	90	18000~20000	600~900	0.05~0.09	0.14~0.18	3D 銑 (3D milling)
DB0152	10	90	18000~20000	800~1200	0.03~0.05	0.06~0.1	3D 銑 (3D milling)
DB0202	12	120	18000~20000	600~900	0.05~0.09	0.14~0.18	3D 銑 (3D milling)
DB0202	12	120	18000~20000	800~1200	0.03~0.05	0.06~0.1	3D 銑 (3D milling)
DB0252	12	135	17000~18000	600~900	0.06~0.1	0.16~0.2	3D 銑 (3D milling)
DB0252	12	135	17000~18000	800~1200	0.04~0.06	0.08~0.12	3D 銑 (3D milling)
DB0302	13	150	16000~17000	600~900	0.07~0.12	0.2~0.24	3D 銑 (3D milling)
DB0302	13	150	16000~17000	800~1200	0.05~0.07	0.1~0.14	3D 銑 (3D milling)
DB0402	15	190	15000~16000	600~900	0.1~0.14	0.22~0.26	3D 銑 (3D milling)
DB0402	15	190	15000~16000	900~1300	0.06~0.08	0.14~0.22	3D 銑 (3D milling)
DB0502	18	220	14000~15000	600~900	0.1~0.16	0.26~0.32	3D 銑 (3D milling)
DB0502	18	220	14000~15000	1000~1400	0.07~0.09	0.14~0.18	3D 銑 (3D milling)
DB0602	20	245	13000~14000	800~1200	0.15~0.2	0.3~0.4	3D 銑 (3D milling)
DB0602	20	245	13000~14000	1200~1600	0.07~0.11	0.14~0.22	3D 銑 (3D milling)
DB0802	30	255	10000~11000	900~1200	0.1~0.23	0.36~0.46	3D 銑 (3D milling)
DB0802	30	255	10000~11000	1300~1700	0.08~0.13	0.16~0.26	3D 銑 (3D milling)
DB1002	35	285	8700~9200	900~1200	0.2~0.28	0.46~0.56	3D 銑 (3D milling)
DB1002	35	285	8700~9200	1300~1700	0.1~0.15	0.2~0.3	3D 銑 (3D milling)
DB1202	40	265	7000~8000	900~1200	0.2~0.3	0.54~0.64	3D 銑 (3D milling)
DB1202	40	265	7000~8000	1200~1600	0.15~0.2	0.3~0.4	3D 銑 (3D milling)
DB1602	50	255	5000~6000	700~1100	0.3~0.4	0.7~0.8	3D 銑 (3D milling)
DB1602	50	255	5000~6000	1000~1400	0.15~0.2	0.36~0.46	3D 銑 (3D milling)

DB 2T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 : Prehardened Steels NAK80 : 1.2083 : AISI420 : M310 (HRc 36~45)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DB0102	10	60	18000~20000	300~600	0.05~0.08	0.12~0.16	3D 銑 (3D milling)
DB0102	10	60	18000~20000	600~900	0.02~0.04	0.04~0.08	3D 銑 (3D milling)
DB0152	10	90	18000~20000	300~600	0.05~0.09	0.14~0.18	3D 銑 (3D milling)
DB0152	10	90	18000~20000	600~900	0.03~0.05	0.06~0.1	3D 銑 (3D milling)
DB0202	12	120	18000~20000	300~600	0.05~0.09	0.14~0.18	3D 銑 (3D milling)
DB0202	12	120	18000~20000	600~900	0.03~0.05	0.06~0.1	3D 銑 (3D milling)
DB0252	12	135	17000~18000	300~600	0.05~0.09	0.14~0.18	3D 銑 (3D milling)
DB0252	12	135	17000~18000	600~900	0.03~0.05	0.06~0.1	3D 銑 (3D milling)
DB0302	13	150	16000~17000	300~600	0.06~0.11	0.18~0.22	3D 銑 (3D milling)
DB0302	13	150	16000~17000	600~900	0.04~0.06	0.08~0.12	3D 銑 (3D milling)
DB0402	15	175	14000~15000	400~700	0.1~0.13	0.22~0.26	3D 銑 (3D milling)
DB0402	15	175	14000~15000	800~1200	0.06~0.08	0.14~0.22	3D 銑 (3D milling)
DB0502	18	205	13000~14000	500~800	0.1~0.13	0.22~0.26	3D 銑 (3D milling)
DB0502	18	205	13000~14000	900~1300	0.06~0.08	0.14~0.22	3D 銑 (3D milling)
DB0602	20	230	12000~13000	600~900	0.1~0.16	0.26~0.32	3D 銑 (3D milling)
DB0602	20	230	12000~13000	900~1300	0.07~0.11	0.14~0.22	3D 銑 (3D milling)
DB0802	30	255	10000~11000	700~1100	0.1~0.2	0.3~0.4	3D 銑 (3D milling)
DB0802	30	255	10000~11000	1000~1400	0.08~0.12	0.16~0.24	3D 銑 (3D milling)
DB1002	35	285	8700~9200	700~1100	0.2~0.25	0.4~0.5	3D 銑 (3D milling)
DB1002	35	285	8700~9200	1000~1400	0.1~0.15	0.2~0.3	3D 銑 (3D milling)
DB1202	40	260	6500~7500	600~900	0.2~0.28	0.4~0.56	3D 銑 (3D milling)
DB1202	40	260	6500~7500	1000~1400	0.15~0.2	0.2~0.3	3D 銑 (3D milling)
DB1602	50	275	5000~6000	500~700	0.2~0.32	0.54~0.64	3D 銑 (3D milling)
DB1602	50	275	5000~6000	800~1100	0.15~0.2	0.3~0.4	3D 銑 (3D milling)

DHB.DIB 2T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : Alloy Tool Steels / Carbon Tool Steels P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DHB0202	40	100	15000~16000	900~1200	0.03~0.05	0.06~0.1	3D 銑 (3D milling)
DHB0252	40	125	15000~16000	1000~1300	0.03~0.05	0.06~0.1	3D 銑 (3D milling)
DHB0302	40	130	13000~14000	1000~1300	0.04~0.05	0.08~0.1	3D 銑 (3D milling)
DHB0402	40	150	11500~12500	1000~1300	0.04~0.08	0.12~0.16	3D 銑 (3D milling)
DHB0502	40	175	10000~11000	1100~1400	0.04~0.08	0.12~0.16	3D 銑 (3D milling)
DHB0602	40	160	7800~8300	1300~1700	0.1~0.15	0.24~0.3	3D 銑 (3D milling)
DHB0602	40	175	8800~9300	1400~1800	0.05~0.09	0.14~0.18	3D 銑 (3D milling)
DHB0802	40	235	8700~9200	1300~1700	0.12~0.2	0.32~0.4	3D 銑 (3D milling)
DHB0802	40	265	9500~10500	1400~1800	0.05~0.1	0.16~0.2	3D 銑 (3D milling)
DIB0202	50	150	11500~12000	700~1000	0.04~0.06	0.08~0.12	3D 銑 (3D milling)
DIB0302	50	150	11500~12000	800~1100	0.04~0.06	0.08~0.12	3D 銑 (3D milling)
DIB0402	50	150	11500~12000	900~1200	0.04~0.06	0.08~0.12	3D 銑 (3D milling)
DIB0602	50	230	11000~12000	900~1200	0.06~0.08	0.12~0.16	3D 銑 (3D milling)
DIB0802	50	185	6700~7300	900~1200	0.15~0.2	0.3~0.4	3D 銑 (3D milling)
DIB0802	50	225	8300~8800	1000~1400	0.06~0.1	0.16~0.2	3D 銑 (3D milling)
DIB1002	60	290	8700~9200	1000~1400	0.09~0.14	0.18~0.28	3D 銑 (3D milling)
DIB1202	60	325	8200~8600	900~1200	0.2~0.25	0.4~0.5	3D 銑 (3D milling)
DIB1202	60	325	8200~8600	1000~1400	0.1~0.15	0.2~0.3	3D 銑 (3D milling)

DE 2T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DE0102	12	30	9000~10000	600~900	0.05~0.1	1	溝銑 (Slotting)
DE0102	12	30	9000~10000	700~1000	0.1~0.15	1	溝銑 (Slotting)
DE0102	12	30	9000~10000	400~700	1~2	0.05~0.1	側銑 (Side milling)
DE0102	12	30	9000~10000	300~600	1~2	0.1~0.15	側銑 (Side milling)
DE0152	14	45	9000~10000	600~900	0.05~0.1	1.5	溝銑 (Slotting)
DE0152	14	45	9000~10000	700~1000	0.15~0.2	1.5	溝銑 (Slotting)
DE0152	14	45	9000~10000	400~700	3	0.05~0.1	側銑 (Side milling)
DE0152	14	45	9000~10000	300~600	3	0.15~0.2	側銑 (Side milling)
DE0202	16	55	8700~9200	600~900	0.05~0.1	2	溝銑 (Slotting)
DE0202	16	55	8700~9200	700~1000	0.15~0.2	2	溝銑 (Slotting)
DE0202	16	55	8700~9200	400~700	4	0.05~0.1	側銑 (Side milling)
DE0202	16	55	8700~9200	300~600	4	0.15~0.2	側銑 (Side milling)
DE0252	16	65	8000~8500	600~900	0.05~0.1	2.5	溝銑 (Slotting)
DE0252	16	65	8000~8500	700~1000	0.15~0.2	2.5	溝銑 (Slotting)
DE0252	16	65	8000~8500	500~800	5	0.05~0.1	側銑 (Side milling)
DE0252	16	65	8000~8500	400~700	5	0.15~0.2	側銑 (Side milling)
DE0302	18	75	7500~8000	600~900	0.05~0.1	3	溝銑 (Slotting)
DE0302	18	75	7500~8000	700~1000	0.15~0.2	3	溝銑 (Slotting)
DE0302	18	75	7500~8000	500~800	6	0.05~0.1	側銑 (Side milling)
DE0302	18	75	7500~8000	400~700	6	0.15~0.2	側銑 (Side milling)
DE0402	20	75	5700~6200	600~900	0.05~0.1	4	溝銑 (Slotting)
DE0402	20	75	5700~6200	800~1100	0.2~0.3	4	溝銑 (Slotting)
DE0402	20	75	5700~6200	600~900	8	0.05~0.1	側銑 (Side milling)
DE0402	20	75	5700~6200	800~1100	8	0.2~0.3	側銑 (Side milling)
DE0502	20	80	4800~5300	600~900	0.05~0.1	5	溝銑 (Slotting)
DE0502	20	80	4800~5300	800~1100	0.2~0.3	5	溝銑 (Slotting)
DE0502	20	80	4800~5300	600~900	10	0.05~0.1	側銑 (Side milling)
DE0502	20	80	4800~5300	800~1100	10	0.2~0.3	側銑 (Side milling)

DE 2T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DE0602	23	80	4000~4500	600~900	0.05~0.15	6	溝銑 (Slotting)
DE0602	23	80	4000~4500	800~1100	0.7~1	6	溝銑 (Slotting)
DE0602	23	80	4000~4500	600~900	12	0.05~0.15	側銑 (Side milling)
DE0602	23	80	4000~4500	800~1100	12	0.3~0.4	側銑 (Side milling)
DE0802	30	90	2700~3200	600~900	0.05~0.15	8	溝銑 (Slotting)
DE0802	30	90	2700~3200	600~900	0.7~1	8	溝銑 (Slotting)
DE0802	30	90	2700~3200	500~800	16	0.05~0.15	側銑 (Side milling)
DE0802	30	90	2700~3200	900~1200	16	0.4~0.5	側銑 (Side milling)
DE1002	35	85	2500~3000	600~900	0.05~0.15	10	溝銑 (Slotting)
DE1002	35	85	2500~3000	700~1100	0.7~1	10	溝銑 (Slotting)
DE1002	35	70	2000~2500	400~700	20	0.05~0.15	側銑 (Side milling)
DE1002	35	70	2000~2500	700~1100	20	0.4~0.5	側銑 (Side milling)
DE1202	37	105	2500~3000	600~900	0.05~0.15	12	溝銑 (Slotting)
DE1202	37	85	2000~2500	400~600	0.7~1	12	溝銑 (Slotting)
DE1202	37	115	2800~3300	400~600	24	0.05~0.15	側銑 (Side milling)
DE1202	37	115	2800~3300	600~900	24	0.4~0.5	側銑 (Side milling)
DE1602	50	100	1800~2300	400~600	0.05~0.15	16	溝銑 (Slotting)
DE1602	50	85	1500~2000	400~600	0.9~1.2	16	溝銑 (Slotting)
DE1602	50	115	2000~2500	400~600	32	0.05~0.15	側銑 (Side milling)
DE1602	50	115	2000~2500	500~800	32	0.4~0.5	側銑 (Side milling)

DE 2T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : Alloy Tool Steels / Carbon Tool Steels P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DE0102	14	30	9000~10000	500~800	0.05~0.1	1	溝銑 (Slotting)
DE0102	14	30	9000~10000	600~900	0.1~0.15	1	溝銑 (Slotting)
DE0102	14	30	9000~10000	300~600	1~2	0.05~0.1	側銑 (Side milling)
DE0102	14	30	9000~10000	300~500	1~2	0.1~0.15	側銑 (Side milling)
DE0152	14	45	9000~10000	500~800	0.05~0.1	1.5	溝銑 (Slotting)
DE0152	14	45	9000~10000	600~900	0.15~0.2	1.5	溝銑 (Slotting)
DE0152	14	45	9000~10000	300~600	3	0.05~0.1	側銑 (Side milling)
DE0152	14	45	9000~10000	300~500	3	0.15~0.2	側銑 (Side milling)
DE0202	16	55	8700~9200	500~800	0.05~0.1	2	溝銑 (Slotting)
DE0202	16	55	8700~9200	600~900	0.15~0.2	2	溝銑 (Slotting)
DE0202	16	55	8700~9200	300~600	4	0.05~0.1	側銑 (Side milling)
DE0202	16	55	8700~9200	300~500	4	0.15~0.2	側銑 (Side milling)
DE0252	16	65	8000~8500	500~800	0.05~0.1	2.5	溝銑 (Slotting)
DE0252	16	65	8000~8500	600~900	0.15~0.2	2.5	溝銑 (Slotting)
DE0252	16	65	8000~8500	300~600	5	0.05~0.1	側銑 (Side milling)
DE0252	16	65	8000~8500	300~500	5	0.15~0.2	側銑 (Side milling)
DE0302	18	75	7500~8000	500~800	0.05~0.1	3	溝銑 (Slotting)
DE0302	18	75	7500~8000	600~900	0.15~0.2	3	溝銑 (Slotting)
DE0302	18	75	7500~8000	400~700	6	0.05~0.1	側銑 (Side milling)
DE0302	18	75	7500~8000	400~700	6	0.15~0.2	側銑 (Side milling)
DE0402	20	75	5700~6200	500~800	0.05~0.1	4	溝銑 (Slotting)
DE0402	20	75	5700~6200	700~1000	0.2~0.3	4	溝銑 (Slotting)
DE0402	20	75	5700~6200	500~800	8	0.05~0.1	側銑 (Side milling)
DE0402	20	75	5700~6200	600~900	8	0.2~0.3	側銑 (Side milling)
DE0502	20	80	4800~5300	500~800	0.05~0.1	5	溝銑 (Slotting)
DE0502	20	80	4800~5300	700~1000	0.2~0.3	5	溝銑 (Slotting)
DE0502	20	80	4800~5300	500~800	10	0.05~0.1	側銑 (Side milling)
DE0502	20	80	4800~5300	600~900	10	0.2~0.3	側銑 (Side milling)

DE 2T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : Alloy Tool Steels / Carbon Tool Steels P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DE0602	23	80	4000~4500	500~800	0.05~0.15	6	溝銑 (Slotting)
DE0602	23	80	4000~4500	700~1000	0.7~1	6	溝銑 (Slotting)
DE0602	23	80	4000~4500	500~800	12	0.05~0.15	側銑 (Side milling)
DE0602	23	80	4000~4500	600~900	12	0.3~0.4	側銑 (Side milling)
DE0802	30	75	2700~3200	500~800	0.05~0.15	8	溝銑 (Slotting)
DE0802	30	75	2700~3200	500~800	0.7~1	8	溝銑 (Slotting)
DE0802	30	75	2700~3200	400~700	16	0.05~0.15	側銑 (Side milling)
DE0802	30	75	2700~3200	700~1000	16	0.4~0.5	側銑 (Side milling)
DE1002	35	100	3000~3500	500~800	0.05~0.15	10	溝銑 (Slotting)
DE1002	35	75	2200~2700	600~900	0.7~1	10	溝銑 (Slotting)
DE1002	35	100	3000~3500	400~600	20	0.05~0.15	側銑 (Side milling)
DE1002	35	70	2000~2500	600~900	20	0.4~0.5	側銑 (Side milling)
DE1202	37	105	2500~3000	500~800	0.05~0.15	12	溝銑 (Slotting)
DE1202	37	85	2000~2500	300~500	0.7~1	12	溝銑 (Slotting)
DE1202	37	115	2800~3300	300~500	24	0.05~0.15	側銑 (Side milling)
DE1202	37	115	2800~3300	500~800	24	0.4~0.5	側銑 (Side milling)
DE1602	50	100	1800~2300	300~500	0.05~0.15	16	溝銑 (Slotting)
DE1602	50	85	1500~2000	300~500	0.9~1.2	16	溝銑 (Slotting)
DE1602	50	115	2000~2500	300~500	32	0.05~0.15	側銑 (Side milling)
DE1602	50	115	2000~2500	400~600	32	0.4~0.5	側銑 (Side milling)

DHE 2T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DHE0302	18	75	7500~8000	600~900	0.05~0.1	3	溝銑 (Slotting)
DHE0302	18	75	7500~8000	700~1000	0.15~0.2	3	溝銑 (Slotting)
DHE0302	18	75	7500~8000	500~800	6	0.05~0.1	側銑 (Side milling)
DHE0302	18	75	7500~8000	400~700	6	0.15~0.2	側銑 (Side milling)
DHE0302	30	50	5000~5500	400~600	0.03~0.07	3	溝銑 (Slotting)
DHE0302	30	45	4500~5000	250~450	3~6	0.03~0.07	側銑 (Side milling)
DHE0402	20	80	6000~6500	600~900	0.05~0.1	4	溝銑 (Slotting)
DHE0402	20	80	6000~6500	800~1100	0.2~0.3	4	溝銑 (Slotting)
DHE0402	20	80	6000~6500	600~900	8	0.05~0.1	側銑 (Side milling)
DHE0402	20	80	6000~6500	800~1100	8	0.2~0.3	側銑 (Side milling)
DHE0402	40	40	3000~3500	400~600	0.05~0.1	3	溝銑 (Slotting)
DHE0402	40	35	2500~3000	250~450	4~8	0.05~0.1	側銑 (Side milling)
DHE0502	20	90	5500~6000	600~900	0.05~0.1	5	溝銑 (Slotting)
DHE0502	20	90	5500~6000	800~1100	0.2~0.3	5	溝銑 (Slotting)
DHE0502	20	90	5500~6000	600~900	10	0.05~0.1	側銑 (Side milling)
DHE0502	20	90	5500~6000	800~1100	10	0.2~0.3	側銑 (Side milling)
DHE0502	40	70	4000~4500	400~600	0.05~0.15	4	溝銑 (Slotting)
DHE0502	40	55	3200~3700	250~450	5~10	0.05~0.15	側銑 (Side milling)
DHE0602	23	90	4500~5000	600~900	0.05~0.15	6	溝銑 (Slotting)
DHE0602	23	90	4500~5000	800~1100	0.7~1	6	溝銑 (Slotting)
DHE0602	23	90	4500~5000	600~900	12	0.05~0.15	側銑 (Side milling)
DHE0602	23	90	4500~5000	800~1100	12	0.3~0.4	側銑 (Side milling)
DHE0602	40	70	3500~4000	600~900	0.05~0.15	5	溝銑 (Slotting)
DHE0602	40	70	3500~4000	300~500	6~12	0.05~0.15	側銑 (Side milling)
DHE0802	30	90	3300~3800	600~900	0.05~0.15	8	溝銑 (Slotting)
DHE0802	30	90	3300~3800	600~900	0.7~1	8	溝銑 (Slotting)
DHE0802	30	90	3300~3800	500~800	16	0.05~0.15	側銑 (Side milling)
DHE0802	30	90	3300~3800	900~1200	16	0.4~0.5	側銑 (Side milling)
DHE0802	45	70	2500~3000	700~900	0.05~0.15	7	溝銑 (Slotting)
DHE0802	45	70	2500~3000	400~600	8~16	0.05~0.15	側銑 (Side milling)

DHE 2T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : Alloy Tool Steels / Carbon Tool Steels P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DHE0302	18	75	7500~8000	500~800	0.05~0.1	3	溝銑 (Slotting)
DHE0302	18	75	7500~8000	600~900	0.15~0.2	3	溝銑 (Slotting)
DHE0302	18	75	7500~8000	400~700	6	0.05~0.1	側銑 (Side milling)
DHE0302	18	75	7500~8000	400~700	6	0.15~0.2	側銑 (Side milling)
DHE0302	30	40	4000~4500	300~500	0.03~0.07	3	溝銑 (Slotting)
DHE0302	30	35	3500~4000	250~400	3~6	0.03~0.07	側銑 (Side milling)
DHE0402	20	75	5700~6200	500~800	0.05~0.1	4	溝銑 (Slotting)
DHE0402	20	75	5700~6200	700~1000	0.2~0.3	4	溝銑 (Slotting)
DHE0402	20	75	5700~6200	500~800	8	0.05~0.1	側銑 (Side milling)
DHE0402	20	75	5700~6200	600~900	8	0.2~0.3	側銑 (Side milling)
DHE0402	40	35	2700~3200	300~500	0.05~0.1	3	溝銑 (Slotting)
DHE0402	40	30	2400~2800	200~400	4~8	0.05~0.1	側銑 (Side milling)
DHE0502	20	80	4800~5300	500~800	0.05~0.1	5	溝銑 (Slotting)
DHE0502	20	80	4800~5300	700~1000	0.2~0.3	5	溝銑 (Slotting)
DHE0502	20	80	4800~5300	500~800	10	0.05~0.1	側銑 (Side milling)
DHE0502	20	80	4800~5300	600~900	10	0.2~0.3	側銑 (Side milling)
DHE0502	40	65	3700~4200	350~550	0.05~0.15	4	溝銑 (Slotting)
DHE0502	40	50	3000~3500	200~400	5~10	0.05~0.15	側銑 (Side milling)
DHE0602	23	80	4000~4500	500~800	0.05~0.15	6	溝銑 (Slotting)
DHE0602	23	80	4000~4500	700~1000	0.7~1	6	溝銑 (Slotting)
DHE0602	23	80	4000~4500	500~800	12	0.05~0.15	側銑 (Side milling)
DHE0602	23	80	4000~4500	600~900	12	0.3~0.4	側銑 (Side milling)
DHE0602	40	70	3500~4000	600~800	0.05~0.15	5	溝銑 (Slotting)
DHE0602	40	70	3500~4000	300~450	6~12	0.05~0.15	側銑 (Side milling)
DHE0802	30	75	2700~3200	500~800	0.05~0.15	8	溝銑 (Slotting)
DHE0802	30	75	2700~3200	500~800	0.7~1	8	溝銑 (Slotting)
DHE0802	30	75	2700~3200	400~700	16	0.05~0.15	側銑 (Side milling)
DHE0802	30	75	2700~3200	700~1000	16	0.4~0.5	側銑 (Side milling)
DHE0802	45	60	2000~2500	600~800	0.05~0.15	7	溝銑 (Slotting)
DHE0802	45	60	2000~2500	300~450	8~16	0.05~0.15	側銑 (Side milling)

DIE 2T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DIE0302	50	50	5000~5500	400~600	0.03~0.07	3	溝銑 (Slotting)
DIE0402	50	50	3800~4300	400~600	0.05~0.1	4	溝銑 (Slotting)
DIE0502	50	70	4000~4500	400~600	0.05~0.15	5	溝銑 (Slotting)
DIE0502	50	55	3200~3700	250~450	5~10	0.05~0.1	側銑 (Side milling)
DIE0602	50	70	3500~4000	600~900	0.05~0.15	6	溝銑 (Slotting)
DIE0602	50	55	2800~3200	300~500	6~12	0.05~0.1	側銑 (Side milling)
DIE0802	55	70	2500~3000	700~900	0.05~0.15	8	溝銑 (Slotting)
DIE0802	55	60	2200~2600	350~450	8~16	0.05~0.15	側銑 (Side milling)
DIE1002	60	70	2100~2400	600~800	0.05~0.15	10	溝銑 (Slotting)
DIE1002	60	60	1700~2000	250~350	10~20	0.05~0.15	側銑 (Side milling)
DIE1202	60	70	1700~2000	600~800	0.05~0.15	12	溝銑 (Slotting)
DIE1202	60	60	1500~1800	250~350	12~24	0.05~0.15	側銑 (Side milling)

DIE 2T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : Alloy Tool Steels / Carbon Tool Steels P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DIE0302	50	40	4000~4500	300~500	0.03~0.07	3	溝銑 (Slotting)
DIE0402	50	40	3000~3500	300~500	0.05~0.1	4	溝銑 (Slotting)
DIE0502	50	65	3700~4200	350~550	0.05~0.15	5	溝銑 (Slotting)
DIE0502	50	50	3000~3500	200~400	5~10	0.05~0.1	側銑 (Side milling)
DIE0602	50	70	3500~4000	600~800	0.05~0.15	6	溝銑 (Slotting)
DIE0602	50	50	2500~3000	300~450	6~12	0.05~0.1	側銑 (Side milling)
DIE0802	55	60	2200~2600	600~800	0.05~0.15	8	溝銑 (Slotting)
DIE0802	55	60	2200~2600	300~400	8~16	0.05~0.15	側銑 (Side milling)
DIE1002	60	70	2100~2400	600~700	0.05~0.15	10	溝銑 (Slotting)
DIE1002	60	60	1700~2000	200~300	10~20	0.05~0.15	側銑 (Side milling)
DIE1202	60	70	1700~2000	600~700	0.05~0.15	12	溝銑 (Slotting)
DIE1202	60	60	1500~1800	200~300	12~24	0.05~0.15	側銑 (Side milling)

DE 4T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DE0104	9	65	20000	1000~1300	0.03~0.05	1	溝銑 (Slotting)
DE0104	9	65	20000	500~700	0.05~0.1	1	溝銑 (Slotting)
DE0104	9	65	20000	500~800	1~2	0.03~0.05	側銑 (Side milling)
DE0104	9	65	20000	700~900	1~2	0.05~0.1	側銑 (Side milling)
DE0104	9	65	20000	500~700	1~2	0.15~0.2	側銑 (Side milling)
DE0154	9	80	17000	1000~1300	0.03~0.05	1.5	溝銑 (Slotting)
DE0154	9	80	17000	500~700	0.1~0.15	1.5	溝銑 (Slotting)
DE0154	9	80	17000	500~800	1.5~3	0.03~0.05	側銑 (Side milling)
DE0154	9	80	17000	700~900	1.5~3	0.1~0.15	側銑 (Side milling)
DE0154	9	80	17000	500~700	1.5~3	0.15~0.25	側銑 (Side milling)
DE0204	11	95	15000	1000~1300	0.03~0.05	2	溝銑 (Slotting)
DE0204	11	90	14300	500~700	0.1~0.15	2	溝銑 (Slotting)
DE0204	11	95	15000	500~800	2~4	0.03~0.05	側銑 (Side milling)
DE0204	11	90	14300	700~900	2~4	0.1~0.15	側銑 (Side milling)
DE0204	11	90	14300	500~700	2~4	0.2~0.3	側銑 (Side milling)
DE0254	12	110	14000	1000~1300	0.04~0.06	2.5	溝銑 (Slotting)
DE0254	12	90	11400	500~700	0.4~0.5	2.5	溝銑 (Slotting)
DE0254	12	110	14000	500~800	2.5~5	0.04~0.06	側銑 (Side milling)
DE0254	12	90	11400	700~900	2.5~5	0.2~0.3	側銑 (Side milling)
DE0254	12	90	11400	500~700	2.5~5	0.4~0.5	側銑 (Side milling)
DE0304	15	115	12200	1000~1300	0.04~0.06	3	溝銑 (Slotting)
DE0304	15	90	9500	500~700	0.8~0.9	3	溝銑 (Slotting)
DE0304	15	115	12200	500~800	3~6	0.04~0.06	側銑 (Side milling)
DE0304	15	90	9500	700~900	3~6	0.4~0.6	側銑 (Side milling)
DE0304	15	90	9500	500~700	3~6	0.8~0.9	側銑 (Side milling)

DE 4T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DE0404	16	125	10000	1000~1300	0.04~0.07	4	溝銑 (Slotting)
DE0404	16	100	8000	500~700	1~1.2	4	溝銑 (Slotting)
DE0404	16	125	10000	500~800	4~8	0.04~0.07	側銑 (Side milling)
DE0404	16	100	8000	800~1100	4~8	0.6~0.7	側銑 (Side milling)
DE0404	16	100	8000	500~700	4~8	1~1.2	側銑 (Side milling)
DE0504	19	125	8000	1000~1300	0.05~0.08	5	溝銑 (Slotting)
DE0504	19	100	6400	500~700	1.3~1.5	5	溝銑 (Slotting)
DE0504	19	125	8000	500~800	5~10	0.05~0.08	側銑 (Side milling)
DE0504	19	100	6400	800~1100	5~10	0.8~1	側銑 (Side milling)
DE0504	19	100	6400	500~700	5~10	1.3~1.5	側銑 (Side milling)
DE0604	21	125	6600	1000~1300	0.05~0.1	6	溝銑 (Slotting)
DE0604	21	100	5300	600~800	1.5~1.8	6	溝銑 (Slotting)
DE0604	21	125	6600	500~800	6~12	0.05~0.1	側銑 (Side milling)
DE0604	21	100	5300	800~1100	6~12	0.8~1.2	側銑 (Side milling)
DE0604	21	100	5300	600~800	6~12	1.5~1.8	側銑 (Side milling)
DE0804	27	125	5000	900~1200	0.05~0.12	8	溝銑 (Slotting)
DE0804	27	100	4000	600~800	2~2.4	8	溝銑 (Slotting)
DE0804	27	125	5000	500~700	8~16	0.05~0.12	側銑 (Side milling)
DE0804	27	100	4000	800~1100	8~16	1~1.5	側銑 (Side milling)
DE0804	27	100	4000	600~800	8~16	2~2.4	側銑 (Side milling)
DE1004	34	125	4000	800~1100	0.05~0.15	10	溝銑 (Slotting)
DE1004	34	100	3200	700~900	2~3	10	溝銑 (Slotting)
DE1004	34	125	4000	500~700	10~20	0.05~0.2	側銑 (Side milling)
DE1004	34	130	4200	900~1200	10~20	1.3~1.5	側銑 (Side milling)
DE1004	34	115	3600	700~900	10~20	2~3	側銑 (Side milling)

DE 4T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DE1204	37	125	3300	700~1000	0.05~0.15	12	溝銑 (Slotting)
DE1204	37	100	2650	500~700	3~3.6	12	溝銑 (Slotting)
DE1204	37	125	3300	400~600	12~24	0.05~0.15	側銑 (Side milling)
DE1204	37	100	2650	700~900	12~24	1.5~2	側銑 (Side milling)
DE1204	37	100	2650	500~700	12~24	3~3.6	側銑 (Side milling)
DE1604	50	125	2500	500~800	0.05~0.2	16	溝銑 (Slotting)
DE1604	50	100	2000	200~350	3~4	16	溝銑 (Slotting)
DE1604	50	100	2000	350~550	16~32	0.05~0.2	側銑 (Side milling)
DE1604	50	100	2000	600~800	16~32	1~2	側銑 (Side milling)
DE1604	50	100	2000	200~400	16~32	3~4	側銑 (Side milling)
DE2004	50	125	2000	400~700	0.05~0.25	20	溝銑 (Slotting)
DE2004	50	100	1600	200~350	3~4	20	溝銑 (Slotting)
DE2004	50	100	1600	250~450	20~40	0.05~0.25	側銑 (Side milling)
DE2004	50	100	1600	350~500	20~40	2~3	側銑 (Side milling)
DE2004	50	100	1600	250~400	20~40	3~4	側銑 (Side milling)

DE 4T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : Alloy Tool Steels / Carbon Tool Steels P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DE0104	9	65	20000	1000~1300	0.03~0.05	1	溝銑 (Slotting)
DE0104	9	65	20000	400~600	0.05~0.1	1	溝銑 (Slotting)
DE0104	9	65	20000	500~800	1~2	0.03~0.05	側銑 (Side milling)
DE0104	9	65	20000	600~800	1~2	0.05~0.1	側銑 (Side milling)
DE0104	9	65	20000	400~600	1~2	0.15~0.2	側銑 (Side milling)
DE0154	9	80	17000	1000~1300	0.03~0.05	1.5	溝銑 (Slotting)
DE0154	9	80	17000	400~600	0.1~0.15	1.5	溝銑 (Slotting)
DE0154	9	80	17000	500~800	1.5~3	0.03~0.05	側銑 (Side milling)
DE0154	9	80	17000	600~800	1.5~3	0.1~0.15	側銑 (Side milling)
DE0154	9	80	17000	400~600	1.5~3	0.15~0.25	側銑 (Side milling)
DE0204	11	95	15000	1000~1300	0.03~0.05	2	溝銑 (Slotting)
DE0204	11	90	14300	400~600	0.1~0.15	2	溝銑 (Slotting)
DE0204	11	95	15000	500~800	2~4	0.03~0.05	側銑 (Side milling)
DE0204	11	90	14300	600~800	2~4	0.1~0.15	側銑 (Side milling)
DE0204	11	90	14300	400~600	2~4	0.2~0.3	側銑 (Side milling)
DE0254	12	110	14000	1000~1300	0.04~0.06	2.5	溝銑 (Slotting)
DE0254	12	90	11400	400~600	0.4~0.5	2.5	溝銑 (Slotting)
DE0254	12	110	14000	500~800	2.5~5	0.04~0.06	側銑 (Side milling)
DE0254	12	90	11400	600~800	2.5~5	0.2~0.3	側銑 (Side milling)
DE0254	12	90	11400	400~600	2.5~5	0.4~0.5	側銑 (Side milling)
DE0304	15	115	12200	1000~1300	0.04~0.06	3	溝銑 (Slotting)
DE0304	15	90	9500	400~600	0.8~0.9	3	溝銑 (Slotting)
DE0304	15	105	11100	500~800	3~6	0.04~0.06	側銑 (Side milling)
DE0304	15	90	9500	600~800	3~6	0.4~0.6	側銑 (Side milling)
DE0304	15	90	9500	400~600	3~6	0.8~0.9	側銑 (Side milling)

DE 4T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : Alloy Tool Steels / Carbon Tool Steels P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DE0404	16	115	9200	1000~1300	0.04~0.07	4	溝銑 (Slotting)
DE0404	16	100	8000	400~600	1~1.2	4	溝銑 (Slotting)
DE0404	16	105	8400	500~800	4~8	0.04~0.07	側銑 (Side milling)
DE0404	16	100	8000	600~900	4~8	0.6~0.7	側銑 (Side milling)
DE0404	16	100	8000	400~600	4~8	1~1.2	側銑 (Side milling)
DE0504	19	115	7300	1000~1300	0.05~0.08	5	溝銑 (Slotting)
DE0504	19	100	6400	400~600	1.3~1.5	5	溝銑 (Slotting)
DE0504	19	105	6700	500~800	5~10	0.05~0.08	側銑 (Side milling)
DE0504	19	100	6400	600~900	5~10	0.8~1	側銑 (Side milling)
DE0504	19	100	6400	400~600	5~10	1.3~1.5	側銑 (Side milling)
DE0604	21	115	6100	1000~1300	0.05~0.1	6	溝銑 (Slotting)
DE0604	21	100	5300	500~700	1.5~1.8	6	溝銑 (Slotting)
DE0604	21	105	5600	500~800	6~12	0.05~0.1	側銑 (Side milling)
DE0604	21	100	5300	700~1000	6~12	0.8~1.2	側銑 (Side milling)
DE0604	21	100	5300	500~700	6~12	1.5~1.8	側銑 (Side milling)
DE0804	27	120	4800	900~1200	0.05~0.12	8	溝銑 (Slotting)
DE0804	27	105	4200	500~700	2~2.4	8	溝銑 (Slotting)
DE0804	27	105	4200	500~700	8~16	0.05~0.12	側銑 (Side milling)
DE0804	27	105	4200	700~1000	8~16	1~1.5	側銑 (Side milling)
DE0804	27	105	4200	500~700	8~16	2~2.4	側銑 (Side milling)
DE1004	34	110	3500	800~1100	0.05~0.15	10	溝銑 (Slotting)
DE1004	34	110	3500	600~800	2~3	10	溝銑 (Slotting)
DE1004	34	110	3500	500~700	10~20	0.05~0.2	側銑 (Side milling)
DE1004	34	110	3500	800~1100	10~20	1.3~1.5	側銑 (Side milling)
DE1004	34	110	3500	600~800	10~20	2~3	側銑 (Side milling)

DE 4T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : Alloy Tool Steels / Carbon Tool Steels P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DE1204	37	115	3000	700~1000	0.05~0.15	12	溝銑 (Slotting)
DE1204	37	95	2500	400~600	3~3.6	12	溝銑 (Slotting)
DE1204	37	95	2500	400~600	12~24	0.05~0.15	側銑 (Side milling)
DE1204	37	95	2500	500~800	12~24	1.5~2	側銑 (Side milling)
DE1204	37	95	2500	400~600	12~24	3~3.6	側銑 (Side milling)
DE1604	50	115	2300	500~800	0.05~0.2	16	溝銑 (Slotting)
DE1604	50	95	1900	150~300	3~4	16	溝銑 (Slotting)
DE1604	50	95	1900	350~550	16~32	0.05~0.2	側銑 (Side milling)
DE1604	50	95	1900	500~700	16~32	1~2	側銑 (Side milling)
DE1604	50	95	1900	150~350	16~32	3~4	側銑 (Side milling)
DE2004	50	115	1850	400~700	0.05~0.25	20	溝銑 (Slotting)
DE2004	50	95	1500	150~300	3~4	20	溝銑 (Slotting)
DE2004	50	95	1500	250~450	20~40	0.05~0.25	側銑 (Side milling)
DE2004	50	95	1500	250~450	20~40	2~3	側銑 (Side milling)
DE2004	50	95	1500	150~300	20~40	3~4	側銑 (Side milling)

DHE 4T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DHE0304	15	115	12000	1000~1300	0.05~0.1	3	溝銑 (Slotting)
DHE0304	15	90	9500	600~900	0.3~0.4	3	溝銑 (Slotting)
DHE0304	15	115	12000	600~900	3~6	0.05~0.1	側銑 (Side milling)
DHE0304	15	90	9500	600~900	3~6	0.3~0.4	側銑 (Side milling)
DHE0304	30	50	5300	500~700	0.03~0.07	3	溝銑 (Slotting)
DHE0304	30	50	5300	800~1000	0.05~0.12	3	溝銑 (Slotting)
DHE0304	30	45	4800	300~500	3~6	0.03~0.07	側銑 (Side milling)
DHE0304	30	45	4800	500~700	3~6	0.07~0.12	側銑 (Side milling)
DHE0404	20	100	8000	800~1000	0.05~0.1	3	溝銑 (Slotting)
DHE0404	20	100	8000	900~1200	0.3~0.4	4	溝銑 (Slotting)
DHE0404	20	90	7500	500~700	4~8	0.05~0.1	側銑 (Side milling)
DHE0404	20	90	7500	900~1200	4~8	0.3~0.4	側銑 (Side milling)
DHE0404	40	40	3200	500~700	0.05~0.1	3	溝銑 (Slotting)
DHE0404	40	40	3200	800~1000	0.08~0.15	4	溝銑 (Slotting)
DHE0404	40	35	2800	250~450	4~8	0.05~0.1	側銑 (Side milling)
DHE0404	40	35	2800	500~700	4~8	0.08~0.15	側銑 (Side milling)
DHE0504	21	125	8000	1100~1300	0.05~0.13	4	溝銑 (Slotting)
DHE0504	21	100	6400	800~1100	0.4~0.6	5	溝銑 (Slotting)
DHE0504	21	125	8000	600~800	5~10	0.05~0.13	側銑 (Side milling)
DHE0504	21	100	6400	800~1100	5~10	0.4~0.6	側銑 (Side milling)
DHE0504	35	80	5100	600~800	0.05~0.15	4	溝銑 (Slotting)
DHE0504	35	65	4200	800~1000	0.2~0.3	5	溝銑 (Slotting)
DHE0504	35	55	3500	250~450	5~10	0.05~0.15	側銑 (Side milling)
DHE0504	35	60	3800	600~800	5~10	0.2~0.3	側銑 (Side milling)

DHE 4T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DHE0604	21	125	6600	1000~1300	0.05~0.15	5	溝銑 (Slotting)
DHE0604	21	100	5300	800~1100	0.8~1	6	溝銑 (Slotting)
DHE0604	21	125	6600	600~800	6~12	0.05~0.15	側銑 (Side milling)
DHE0604	21	100	5300	800~1100	6~12	0.8~1	側銑 (Side milling)
DHE0604	35	90	4800	800~1000	0.05~0.15	5	溝銑 (Slotting)
DHE0604	35	75	4000	1100~1400	0.3~0.5	6	溝銑 (Slotting)
DHE0604	35	65	3400	450~650	6~12	0.05~0.15	側銑 (Side milling)
DHE0604	35	70	3800	800~1000	6~12	0.3~0.5	側銑 (Side milling)
DHE0804	27	125	5000	1000~1200	0.05~0.15	7	溝銑 (Slotting)
DHE0804	27	100	4000	800~1100	1~1.2	8	溝銑 (Slotting)
DHE0804	27	125	5000	600~900	8~16	0.05~0.15	側銑 (Side milling)
DHE0804	27	100	4000	800~1100	8~16	1~1.2	側銑 (Side milling)
DHE0804	42	70	2700	700~900	0.05~0.15	7	溝銑 (Slotting)
DHE0804	42	50	2000	800~1000	0.4~0.6	8	溝銑 (Slotting)
DHE0804	42	65	2500	400~600	8~16	0.05~0.15	側銑 (Side milling)
DHE0804	42	50	2000	800~1000	8~16	0.4~0.6	側銑 (Side milling)

DHE 4T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : Alloy Tool Steels / Carbon Tool Steels P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DHE0304	15	115	12000	900~1200	0.05~0.1	3	溝銑 (Slotting)
DHE0304	15	90	9500	500~800	0.3~0.4	3	溝銑 (Slotting)
DHE0304	15	105	11000	500~800	3~6	0.05~0.1	側銑 (Side milling)
DHE0304	15	90	9500	500~800	3~6	0.3~0.4	側銑 (Side milling)
DHE0304	30	40	4200	400~600	0.03~0.07	3	溝銑 (Slotting)
DHE0304	30	40	4200	700~900	0.05~0.12	3	溝銑 (Slotting)
DHE0304	30	35	3700	250~400	3~6	0.03~0.07	側銑 (Side milling)
DHE0304	30	35	3700	400~600	3~6	0.07~0.12	側銑 (Side milling)
DHE0404	20	100	8000	700~900	0.05~0.1	3	溝銑 (Slotting)
DHE0404	20	100	8000	800~1100	0.3~0.4	4	溝銑 (Slotting)
DHE0404	20	90	7500	400~600	4~8	0.05~0.1	側銑 (Side milling)
DHE0404	20	90	7500	800~1100	4~8	0.3~0.4	側銑 (Side milling)
DHE0404	40	35	3000	400~600	0.05~0.1	3	溝銑 (Slotting)
DHE0404	40	35	3000	700~900	0.08~0.15	4	溝銑 (Slotting)
DHE0404	40	30	2600	200~400	4~8	0.05~0.1	側銑 (Side milling)
DHE0404	40	30	2600	400~600	4~8	0.08~0.15	側銑 (Side milling)
DHE0504	21	115	7300	1000~1200	0.05~0.13	4	溝銑 (Slotting)
DHE0504	21	100	6400	700~1000	0.4~0.6	5	溝銑 (Slotting)
DHE0504	21	105	6700	500~700	5~10	0.05~0.13	側銑 (Side milling)
DHE0504	21	100	6400	700~1000	5~10	0.4~0.6	側銑 (Side milling)
DHE0504	35	80	5100	500~700	0.05~0.15	4	溝銑 (Slotting)
DHE0504	35	60	3800	700~900	0.2~0.3	5	溝銑 (Slotting)
DHE0504	35	50	3200	200~400	5~10	0.05~0.15	側銑 (Side milling)
DHE0504	35	55	3500	500~700	5~10	0.2~0.3	側銑 (Side milling)

DHE 4T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : Alloy Tool Steels / Carbon Tool Steels P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DHE0604	21	115	6100	900~1200	0.05~0.15	5	溝銑 (Slotting)
DHE0604	21	100	5300	700~1000	0.8~1	6	溝銑 (Slotting)
DHE0604	21	105	5600	500~700	6~12	0.05~0.15	側銑 (Side milling)
DHE0604	21	100	5300	700~1000	6~12	0.8~1	側銑 (Side milling)
DHE0604	35	90	4800	700~900	0.05~0.15	5	溝銑 (Slotting)
DHE0604	35	70	3800	1000~1300	0.3~0.5	6	溝銑 (Slotting)
DHE0604	35	60	3200	400~600	6~12	0.05~0.15	側銑 (Side milling)
DHE0604	35	65	3600	700~900	6~12	0.3~0.5	側銑 (Side milling)
DHE0804	27	120	4800	900~1100	0.05~0.15	7	溝銑 (Slotting)
DHE0804	27	105	4200	700~1000	1~1.2	8	溝銑 (Slotting)
DHE0804	27	105	4200	500~800	8~16	0.05~0.15	側銑 (Side milling)
DHE0804	27	105	4200	700~1000	8~16	1~1.2	側銑 (Side milling)
DHE0804	42	60	2400	600~800	0.05~0.15	7	溝銑 (Slotting)
DHE0804	42	50	2000	700~900	0.4~0.6	8	溝銑 (Slotting)
DHE0804	42	50	2000	300~500	8~16	0.05~0.15	側銑 (Side milling)
DHE0804	42	45	1700	700~900	8~16	0.4~0.6	側銑 (Side milling)

DIE 4T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DIE0404	28	50	4000	800~1000	0~0.1	4	溝銑 (Slotting)
DIE0404	28	50	3800	1100~1300	0.1~0.2	4	溝銑 (Slotting)
DIE0404	28	40	3200	300~500	4~8	0~0.1	側銑 (Side milling)
DIE0404	28	40	3200	500~700	4	0.1~0.2	側銑 (Side milling)
DIE0404	28	40	3200	400~600	4	0.2~0.3	側銑 (Side milling)
DIE0404	40	40	3200	500~700	0~0.08	4	溝銑 (Slotting)
DIE0404	40	40	3200	800~1000	0.08~0.15	4	溝銑 (Slotting)
DIE0404	40	35	2800	250~450	4~8	0~0.08	側銑 (Side milling)
DIE0404	40	35	2800	400~600	4	0.08~0.15	側銑 (Side milling)
DIE0404	40	35	2800	300~500	4	0.15~0.2	側銑 (Side milling)
DIE0604	30	90	4800	850~1100	0.05~0.15	6	溝銑 (Slotting)
DIE0604	30	75	4000	1400~1600	0~1	6	溝銑 (Slotting)
DIE0604	30	65	3400	450~650	6~12	0.05~0.15	側銑 (Side milling)
DIE0604	30	70	3800	1400~1600	6	0~1	側銑 (Side milling)
DIE0604	30	70	3800	1100~1300	6	1~2	側銑 (Side milling)
DIE0604	50	55	2800	600~800	0.05~0.15	6	溝銑 (Slotting)
DIE0604	50	55	3000	1200~1400	0.15~0.25	6	溝銑 (Slotting)
DIE0604	50	45	2400	400~600	6~12	0.05~0.15	側銑 (Side milling)
DIE0604	50	40	2100	500~700	6~12	0.15~0.25	側銑 (Side milling)
DIE0604	50	40	2100	300~500	6~12	0.25~0.5	側銑 (Side milling)
DIE0804	45	70	2700	700~900	0.05~0.15	8	溝銑 (Slotting)
DIE0804	45	50	2000	900~1100	0~0.5	8	溝銑 (Slotting)
DIE0804	45	65	2500	500~700	8~16	0.05~0.15	側銑 (Side milling)
DIE0804	45	50	2000	800~1000	8	0~0.5	側銑 (Side milling)
DIE0804	45	50	2000	700~900	8	0.5~1	側銑 (Side milling)
DIE0804	60	55	2200	700~900	0.05~0.15	8	溝銑 (Slotting)
DIE0804	60	40	1600	800~1000	0~0.5	8	溝銑 (Slotting)
DIE0804	60	55	2000	400~600	8~16	0.05~0.15	側銑 (Side milling)
DIE0804	60	40	1600	1000~1200	8	0~0.3	側銑 (Side milling)
DIE0804	60	35	1400	600~800	8	0.3~0.6	側銑 (Side milling)

DIE 4T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DIE1004	50	115	3600	900~1100	0.05~0.15	10	溝銑 (Slotting)
DIE1004	50	65	2000	500~700	0~1	10	溝銑 (Slotting)
DIE1004	50	90	2800	400~600	10	0.05~0.15	側銑 (Side milling)
DIE1004	50	50	1650	700~900	10~20	0~1.5	側銑 (Side milling)
DIE1004	50	50	1650	500~700	10~20	1.5~3	側銑 (Side milling)
DIE1004	70	55	1700	500~700	0.05~0.15	10	溝銑 (Slotting)
DIE1004	70	50	1600	700~900	0~0.5	10	溝銑 (Slotting)
DIE1004	70	65	2000	350~550	10	0.05~0.15	側銑 (Side milling)
DIE1004	70	50	1600	1100~1300	10	0~0.5	側銑 (Side milling)
DIE1004	70	50	1600	1000~1200	10	0.5~0.8	側銑 (Side milling)
DIE1204	50	115	3000	900~1100	0.05~0.2	12	溝銑 (Slotting)
DIE1204	50	90	2400	1000~1200	0~0.5	12	溝銑 (Slotting)
DIE1204	50	90	2400	400~600	12~24	0.05~0.2	側銑 (Side milling)
DIE1204	50	90	2400	400~600	12~24	0~0.5	側銑 (Side milling)
DIE1204	50	85	2200	300~500	12~24	0.5~1	側銑 (Side milling)
DIE1204	70	75	2000	600~800	0.05~0.2	12	溝銑 (Slotting)
DIE1204	70	55	1500	800~1000	0.2~0.4	12	溝銑 (Slotting)
DIE1204	70	60	1600	300~500	12~24	0.05~0.2	側銑 (Side milling)
DIE1204	70	55	1500	600~800	12~24	0.2~0.4	側銑 (Side milling)
DIE1204	70	45	1200	300~500	12	0.4~0.8	側銑 (Side milling)

DIE 4T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : Alloy Tool Steels / Carbon Tool Steels P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DIE0404	28	45	3600	700~900	0~0.1	4	溝銑 (Slotting)
DIE0404	28	45	3600	900~1100	0.1~0.2	4	溝銑 (Slotting)
DIE0404	28	35	3000	300~500	4~8	0~0.1	側銑 (Side milling)
DIE0404	28	35	3000	400~600	4~8	0.1~0.2	側銑 (Side milling)
DIE0404	28	35	3000	300~500	4~8	0.2~0.3	側銑 (Side milling)
DIE0404	40	35	3000	300~500	0~0.07	4	溝銑 (Slotting)
DIE0404	40	35	3000	500~700	0~0.1	4	溝銑 (Slotting)
DIE0404	40	30	2600	200~400	4~8	0~0.08	側銑 (Side milling)
DIE0404	40	30	2600	300~500	4	0~0.1	側銑 (Side milling)
DIE0404	40	30	2400	200~400	4	0.1~0.15	側銑 (Side milling)
DIE0604	30	90	4800	850~1100	0.05~0.15	6	溝銑 (Slotting)
DIE0604	30	70	3800	1400~1600	0~0.5	6	溝銑 (Slotting)
DIE0604	30	60	3200	450~650	6~12	0.05~0.15	側銑 (Side milling)
DIE0604	30	65	3600	800~1000	6	0~0.5	側銑 (Side milling)
DIE0604	30	65	3600	600~800	6	0.5~1	側銑 (Side milling)
DIE0604	50	45	2500	400~600	0.05~0.1	6	溝銑 (Slotting)
DIE0604	50	45	2500	700~900	0.1~0.15	6	溝銑 (Slotting)
DIE0604	50	40	2000	250~400	6~12	0.05~0.1	側銑 (Side milling)
DIE0604	50	35	1800	200~300	6~12	0.1~0.15	側銑 (Side milling)
DIE0604	50	35	1800	200~250	6~12	0.15~0.2	側銑 (Side milling)
DIE0804	45	60	2400	600~800	0.05~0.15	8	溝銑 (Slotting)
DIE0804	45	50	2000	800~1000	0~0.5	8	溝銑 (Slotting)
DIE0804	45	50	2000	400~600	8~16	0.05~0.15	側銑 (Side milling)
DIE0804	45	45	1700	700~900	8	0~0.5	側銑 (Side milling)
DIE0804	45	40	1600	600~750	8	0.5~1	側銑 (Side milling)
DIE0804	60	50	2000	550~750	0.05~0.15	8	溝銑 (Slotting)
DIE0804	60	45	1700	900~1100	0~0.3	8	溝銑 (Slotting)
DIE0804	60	45	1700	300~450	8~16	0.05~0.15	側銑 (Side milling)
DIE0804	60	40	1500	900~1100	8	0~0.3	側銑 (Side milling)
DIE0804	60	40	1350	700~900	8	0.3~0.5	側銑 (Side milling)

DIE 4T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : Alloy Tool Steels / Carbon Tool Steels P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DIE1004	50	100	3200	800~1000	0.05~0.15	10	溝銑 (Slotting)
DIE1004	50	60	1900	600~800	0~0.5	10	溝銑 (Slotting)
DIE1004	50	70	2000	400~600	10~20	0.05~0.15	側銑 (Side milling)
DIE1004	50	45	1400	600~800	10~20	0~0.5	側銑 (Side milling)
DIE1004	50	40	1250	450~650	10~20	0.5~1	側銑 (Side milling)
DIE1004	70	50	1600	450~650	0.05~0.15	10	溝銑 (Slotting)
DIE1004	70	45	1400	700~900	0.15~0.25	10	溝銑 (Slotting)
DIE1004	70	50	1600	300~500	10~20	0.05~0.15	側銑 (Side milling)
DIE1004	70	45	1400	500~700	10~20	0.15~0.3	側銑 (Side milling)
DIE1004	70	45	1400	400~600	10~20	0.3~0.4	側銑 (Side milling)
DIE1204	50	110	2900	900~1100	0.05~0.2	12	溝銑 (Slotting)
DIE1204	50	80	2100	900~1100	0.2~0.4	12	溝銑 (Slotting)
DIE1204	50	75	2000	400~600	12~24	0.05~0.2	側銑 (Side milling)
DIE1204	50	75	2000	400~600	12~24	0.2~0.4	側銑 (Side milling)
DIE1204	50	75	2000	300~450	12~24	0.4~0.8	側銑 (Side milling)
DIE1204	70	70	1900	600~800	0.05~0.2	12	溝銑 (Slotting)
DIE1204	70	50	1400	900~1100	0.2~0.3	12	溝銑 (Slotting)
DIE1204	70	55	1500	250~450	12~24	0.05~0.2	側銑 (Side milling)
DIE1204	70	55	1500	500~700	12~24	0.2~0.3	側銑 (Side milling)
DIE1204	70	50	1400	400~600	12~24	0.3~0.4	側銑 (Side milling)

DRA

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DRA0205	12	60	9000~9500	600~800	0.09~0.13	1~2	溝銑 (Slotting)
DRA0205	12	60	9000~9500	700~900	0.04~0.06	1~2	溝銑 (Slotting)
DRA0205	12	60	9000~9500	800~1000	2~4	0.1~0.15	側銑 (Side milling)
DRA0205	12	60	9000~9500	600~800	2~4	0.04~0.06	側銑 (Side milling)
DRA0205	12	60	9000~9500	1000~1300	0.1~0.15	0.1~0.15	3D 銑 (3D milling)
DRA0205	12	60	9000~9500	1000~1200	0.04~0.06	0.04~0.06	3D 銑 (3D milling)
DRA0305	12	85	8800~9300	700~900	0.1~0.15	1~3	溝銑 (Slotting)
DRA0305	12	85	8800~9300	800~1000	0.05~0.07	1~3	溝銑 (Slotting)
DRA0305	12	85	8800~9300	900~1100	3~6	0.1~0.15	側銑 (Side milling)
DRA0305	12	85	8800~9300	800~1000	3~6	0.05~0.07	側銑 (Side milling)
DRA0305	12	85	8800~9300	1000~1200	0.1~0.15	0.1~0.15	3D 銑 (3D milling)
DRA0305	12	85	8800~9300	1000~1200	0.05~0.07	0.05~0.07	3D 銑 (3D milling)
DRA0405	14	100	8000~8400	600~800	0.1~0.15	2~4	溝銑 (Slotting)
DRA0405	14	100	8000~8400	800~1000	0.05~0.07	2~4	溝銑 (Slotting)
DRA0405	14	85	6500~7000	800~1000	4~8	0.1~0.15	側銑 (Side milling)
DRA0405	14	85	6500~7000	600~800	4~8	0.05~0.07	側銑 (Side milling)
DRA0405	14	110	8700~9200	800~1000	0.1~0.15	0.1~0.15	3D 銑 (3D milling)
DRA0405	14	110	8700~9200	1000~1200	0.05~0.07	0.05~0.07	3D 銑 (3D milling)
DRA0410	14	100	8000~8400	700~900	0.1~0.15	1~4	溝銑 (Slotting)
DRA0410	14	100	8000~8400	800~1000	0.05~0.07	1~4	溝銑 (Slotting)
DRA0410	14	85	6500~7000	800~1000	4~8	0.1~0.15	側銑 (Side milling)
DRA0410	14	85	6500~7000	600~800	4~8	0.05~0.07	側銑 (Side milling)
DRA0410	14	110	8700~9200	900~1100	0.1~0.15	0.1~0.15	3D 銑 (3D milling)
DRA0410	14	110	8700~9200	1100~1400	0.05~0.07	0.05~0.07	3D 銑 (3D milling)
DRA0505	17	95	5800~6300	900~1100	0.13~0.18	3~5	溝銑 (Slotting)
DRA0505	17	120	7300~7800	800~1200	0.05~0.08	3~5	溝銑 (Slotting)
DRA0505	17	95	5800~6300	800~1000	5~10	0.13~0.18	側銑 (Side milling)
DRA0505	17	95	5800~6300	600~800	5~10	0.05~0.08	側銑 (Side milling)
DRA0505	17	135	8300~8800	1400~1800	0.13~0.18	0.13~0.18	3D 銑 (3D milling)
DRA0505	17	135	8300~8800	1300~1700	0.05~0.08	0.05~0.08	3D 銑 (3D milling)

DRA

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DRA0510	17	95	5800~6300	900~1100	0.13~0.18	2~5	溝銑 (Slotting)
DRA0510	17	120	7300~7800	800~1200	0.05~0.08	2~5	溝銑 (Slotting)
DRA0510	17	95	5800~6300	800~1000	5~10	0.13~0.18	側銑 (Side milling)
DRA0510	17	95	5800~6300	600~800	5~10	0.05~0.08	側銑 (Side milling)
DRA0510	17	135	8300~8800	1400~1800	0.13~0.18	0.13~0.18	3D 銑 (3D milling)
DRA0510	17	135	8300~8800	1300~1700	0.05~0.08	0.05~0.08	3D 銑 (3D milling)
DRA0605	20	95	4800~5200	900~1100	0.13~0.18	4~6	溝銑 (Slotting)
DRA0605	20	120	6200~6600	800~1200	0.05~0.08	4~6	溝銑 (Slotting)
DRA0605	20	95	4800~5200	800~1000	6~12	0.13~0.18	側銑 (Side milling)
DRA0605	20	95	4800~5200	600~800	6~12	0.05~0.08	側銑 (Side milling)
DRA0605	20	135	7200~7600	1400~1800	0.13~0.18	0.13~0.18	3D 銑 (3D milling)
DRA0605	20	135	7200~7600	1300~1700	0.05~0.08	0.05~0.08	3D 銑 (3D milling)
DRA0610	20	80	4200~4600	900~1100	0.13~0.18	3~6	溝銑 (Slotting)
DRA0610	20	130	6800~7200	800~1200	0.05~0.08	3~6	溝銑 (Slotting)
DRA0610	20	95	5000~5500	800~1000	6~12	0.13~0.18	側銑 (Side milling)
DRA0610	20	95	5000~5500	600~800	6~12	0.05~0.08	側銑 (Side milling)
DRA0610	20	135	7200~7600	1400~1800	0.13~0.18	0.13~0.18	3D 銑 (3D milling)
DRA0610	20	135	7200~7600	1300~1700	0.05~0.08	0.05~0.08	3D 銑 (3D milling)
DRA0805	30	125	5000~5600	900~1100	0.18~0.23	6~8	溝銑 (Slotting)
DRA0805	30	135	5200~5600	600~800	0.05~0.1	6~8	溝銑 (Slotting)
DRA0805	30	90	3500~4000	700~1000	8~16	0.18~0.23	側銑 (Side milling)
DRA0805	30	90	3500~4000	600~800	8~16	0.05~0.1	側銑 (Side milling)
DRA0805	30	150	6000~6600	1600~2000	0.18~0.23	0.18~0.23	3D 銑 (3D milling)
DRA0805	30	190	7500~8000	1100~1500	0.05~0.1	0.05~0.1	3D 銑 (3D milling)
DRA0810	30	125	5000~5600	900~1100	0.18~0.23	5~8	溝銑 (Slotting)
DRA0810	30	135	5200~5600	600~800	0.05~0.1	5~8	溝銑 (Slotting)
DRA0810	30	90	3500~4000	600~1000	8~16	0.18~0.23	側銑 (Side milling)
DRA0810	30	90	3500~4000	600~800	8~16	0.05~0.1	側銑 (Side milling)
DRA0810	30	150	6000~6600	1600~2000	0.18~0.23	0.18~0.23	3D 銑 (3D milling)
DRA0810	30	190	7500~8000	1000~1400	0.05~0.1	0.05~0.1	3D 銑 (3D milling)

DRA

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DRA1005	35	125	4000~4500	800~1200	0.2~0.25	8~10	溝銑 (Slotting)
DRA1005	35	135	4200~4600	600~800	0.05~0.1	8~10	溝銑 (Slotting)
DRA1005	35	90	2800~3200	600~900	10~20	0.2~0.25	側銑 (Side milling)
DRA1005	35	90	2800~3200	600~800	10~20	0.05~0.1	側銑 (Side milling)
DRA1005	35	150	4800~5400	1600~2000	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DRA1005	35	190	6000~6500	1200~1600	0.05~0.1	0.05~0.1	3D 銑 (3D milling)
DRA1010	35	125	4000~4500	800~1200	0.2~0.25	7~10	溝銑 (Slotting)
DRA1010	35	135	4200~4600	600~800	0.05~0.1	7~10	溝銑 (Slotting)
DRA1010	35	90	2800~3200	600~900	10~20	0.2~0.25	側銑 (Side milling)
DRA1010	35	90	2800~3200	600~800	10~20	0.05~0.1	側銑 (Side milling)
DRA1010	35	150	4800~5400	1600~2000	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DRA1010	35	190	6000~6500	1200~1600	0.05~0.1	0.05~0.1	3D 銑 (3D milling)
DRA1015	35	125	4000~4500	800~1200	0.2~0.25	6~10	溝銑 (Slotting)
DRA1015	35	135	4200~4600	600~800	0.05~0.1	6~10	溝銑 (Slotting)
DRA1015	35	90	2800~3200	600~900	10~20	0.2~0.25	側銑 (Side milling)
DRA1015	35	90	2800~3200	600~800	10~20	0.05~0.1	側銑 (Side milling)
DRA1015	35	150	4800~5400	1600~2000	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DRA1015	35	190	6000~6500	1200~1600	0.05~0.1	0.05~0.1	3D 銑 (3D milling)
DRA1020	35	125	4000~4500	800~1200	0.2~0.25	5~10	溝銑 (Slotting)
DRA1020	35	135	4200~4600	600~800	0.05~0.1	5~10	溝銑 (Slotting)
DRA1020	35	90	2800~3200	600~900	10~20	0.2~0.25	側銑 (Side milling)
DRA1020	35	90	2800~3200	600~800	10~20	0.05~0.1	側銑 (Side milling)
DRA1020	35	150	4800~5400	1600~2000	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DRA1020	35	190	6000~6500	1200~1600	0.05~0.1	0.05~0.1	3D 銑 (3D milling)
DRA1210	40	75	2000~2500	800~1100	0.2~0.25	9~12	溝銑 (Slotting)
DRA1210	40	150	4000~4500	800~1000	0.07~0.12	9~12	溝銑 (Slotting)
DRA1210	40	105	2800~3200	600~800	12~24	0.2~0.25	側銑 (Side milling)
DRA1210	40	105	2800~3200	400~600	12~24	0.07~0.12	側銑 (Side milling)
DRA1210	40	150	4000~4500	1400~1600	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DRA1210	40	170	4500~5000	1300~1600	0.07~0.12	0.07~0.12	3D 銑 (3D milling)

DRA

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DRA1220	40	75	2000~2500	800~1100	0.2~0.25	7~12	溝銑 (Slotting)
DRA1220	40	150	4000~4500	800~1000	0.05~0.12	7~12	溝銑 (Slotting)
DRA1220	40	105	2800~3200	600~800	12~24	0.2~0.25	側銑 (Side milling)
DRA1220	40	105	2800~3200	400~600	12~24	0.05~0.12	側銑 (Side milling)
DRA1220	40	150	4000~4500	1400~1600	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DRA1220	40	170	4500~5000	1300~1600	0.05~0.12	0.05~0.12	3D 銑 (3D milling)

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切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 : Prehardened Steels NAK80 : 1.2083 : AISI420 : M310 (HRc 36~45)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DRA0205	12	60	9000~9500	500~700	0.09~0.13	1~2	溝銑 (Slotting)
DRA0205	12	60	9000~9500	600~800	0.04~0.06	1~2	溝銑 (Slotting)
DRA0205	12	60	9000~9500	700~900	2~4	0.1~0.15	側銑 (Side milling)
DRA0205	12	60	9000~9500	600~800	2~4	0.04~0.06	側銑 (Side milling)
DRA0205	12	60	9000~9500	900~1200	0.1~0.15	0.1~0.15	3D 銑 (3D milling)
DRA0205	12	60	9000~9500	1000~1200	0.04~0.06	0.04~0.06	3D 銑 (3D milling)
DRA0305	12	85	8800~9300	600~800	0.1~0.15	1~3	溝銑 (Slotting)
DRA0305	12	85	8800~9300	700~900	0.05~0.07	1~3	溝銑 (Slotting)
DRA0305	12	85	8800~9300	800~1000	3~6	0.1~0.15	側銑 (Side milling)
DRA0305	12	85	8800~9300	800~1000	3~6	0.05~0.07	側銑 (Side milling)
DRA0305	12	85	8800~9300	900~1100	0.1~0.15	0.1~0.15	3D 銑 (3D milling)
DRA0305	12	85	8800~9300	1000~1200	0.05~0.07	0.05~0.07	3D 銑 (3D milling)
DRA0405	14	95	7800~8200	600~800	0.1~0.15	2~4	溝銑 (Slotting)
DRA0405	14	100	8000~8400	800~1000	0.05~0.07	2~4	溝銑 (Slotting)
DRA0405	14	85	6500~7000	800~1000	4~8	0.1~0.15	側銑 (Side milling)
DRA0405	14	85	6500~7000	600~800	4~8	0.05~0.07	側銑 (Side milling)
DRA0405	14	110	8700~9200	800~1000	0.1~0.15	0.1~0.15	3D 銑 (3D milling)
DRA0405	14	110	8700~9200	1000~1200	0.05~0.07	0.05~0.07	3D 銑 (3D milling)
DRA0410	14	95	7800~8200	600~800	0.1~0.15	1~4	溝銑 (Slotting)
DRA0410	14	100	8000~8400	800~1000	0.05~0.07	1~4	溝銑 (Slotting)
DRA0410	14	85	6500~7000	800~1000	4~8	0.1~0.15	側銑 (Side milling)
DRA0410	14	85	6500~7000	600~800	4~8	0.05~0.07	側銑 (Side milling)
DRA0410	14	110	8700~9200	900~1100	0.1~0.15	0.1~0.15	3D 銑 (3D milling)
DRA0410	14	110	8700~9200	1000~1200	0.05~0.07	0.05~0.07	3D 銑 (3D milling)
DRA0505	17	85	5200~5700	800~1000	0.13~0.18	3~5	溝銑 (Slotting)
DRA0505	17	120	7300~7800	800~1200	0.05~0.08	3~5	溝銑 (Slotting)
DRA0505	17	85	5200~5700	800~1000	5~10	0.13~0.18	側銑 (Side milling)
DRA0505	17	95	5800~6300	600~800	5~10	0.05~0.08	側銑 (Side milling)
DRA0505	17	135	8300~8800	1000~1200	0.13~0.18	0.13~0.18	3D 銑 (3D milling)
DRA0505	17	135	8300~8800	1300~1700	0.05~0.08	0.05~0.08	3D 銑 (3D milling)

DRA

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 : Prehardened Steels NAK80 : 1.2083 : AISI420 : M310 (HRc 36~45)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DRA0510	17	85	5200~5700	800~1000	0.13~0.18	2~5	溝銑 (Slotting)
DRA0510	17	120	7300~7800	800~1200	0.05~0.08	2~5	溝銑 (Slotting)
DRA0510	17	85	5200~5700	800~1000	5~10	0.13~0.18	側銑 (Side milling)
DRA0510	17	95	5800~6300	600~800	5~10	0.05~0.08	側銑 (Side milling)
DRA0510	17	135	8300~8800	1000~1200	0.13~0.18	0.13~0.18	3D 銑 (3D milling)
DRA0510	17	135	8300~8800	1300~1700	0.05~0.08	0.05~0.08	3D 銑 (3D milling)
DRA0605	20	85	4200~4700	800~1000	0.13~0.18	4~6	溝銑 (Slotting)
DRA0605	20	115	5700~6200	800~1200	0.05~0.08	4~6	溝銑 (Slotting)
DRA0605	20	85	4200~4600	800~1000	6~12	0.13~0.18	側銑 (Side milling)
DRA0605	20	90	4400~4800	600~800	6~12	0.05~0.08	側銑 (Side milling)
DRA0605	20	135	7200~7600	1100~1400	0.13~0.18	0.13~0.18	3D 銑 (3D milling)
DRA0605	20	135	7200~7600	1300~1700	0.05~0.08	0.05~0.08	3D 銑 (3D milling)
DRA0610	20	85	4200~4700	800~1000	0.13~0.18	3~6	溝銑 (Slotting)
DRA0610	20	115	5700~6200	800~1200	0.05~0.08	3~6	溝銑 (Slotting)
DRA0610	20	85	4200~4600	800~1000	6~12	0.13~0.18	側銑 (Side milling)
DRA0610	20	90	4400~4800	600~800	6~12	0.05~0.08	側銑 (Side milling)
DRA0610	20	135	7200~7600	1100~1400	0.13~0.18	0.13~0.18	3D 銑 (3D milling)
DRA0610	20	135	7200~7600	1300~1700	0.05~0.08	0.05~0.08	3D 銑 (3D milling)
DRA0805	30	100	3800~4300	800~1000	0.18~0.23	6~8	溝銑 (Slotting)
DRA0805	30	135	5200~5600	600~800	0.05~0.1	6~8	溝銑 (Slotting)
DRA0805	30	80	3000~3500	700~1000	8~16	0.18~0.23	側銑 (Side milling)
DRA0805	30	90	3400~3800	600~800	8~16	0.05~0.1	側銑 (Side milling)
DRA0805	30	105	4000~4500	1300~1700	0.18~0.23	0.18~0.23	3D 銑 (3D milling)
DRA0805	30	185	7200~7700	1100~1500	0.05~0.1	0.05~0.1	3D 銑 (3D milling)
DRA0810	30	100	3800~4300	800~1000	0.18~0.23	5~8	溝銑 (Slotting)
DRA0810	30	135	5200~5600	600~800	0.05~0.1	5~8	溝銑 (Slotting)
DRA0810	30	80	3000~3500	700~1000	8~16	0.18~0.23	側銑 (Side milling)
DRA0810	30	90	3400~3800	600~800	8~16	0.05~0.1	側銑 (Side milling)
DRA0810	30	105	4000~4500	1300~1700	0.18~0.23	0.18~0.23	3D 銑 (3D milling)
DRA0810	30	185	7000~7700	1100~1500	0.05~0.1	0.05~0.1	3D 銑 (3D milling)

DRA

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 : Prehardened Steels NAK80 : 1.2083 : AISI420 : M310 (HRc 36~45)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DRA1005	35	100	3000~3400	800~1100	0.2~0.25	8~10	溝銑 (Slotting)
DRA1005	35	135	4200~4600	600~800	0.05~0.1	8~10	溝銑 (Slotting)
DRA1005	35	80	2400~2800	600~900	10~20	0.2~0.25	側銑 (Side milling)
DRA1005	35	90	2800~3200	600~800	10~20	0.05~0.1	側銑 (Side milling)
DRA1005	35	105	3200~3600	1300~1700	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DRA1005	35	185	5800~6200	1200~1600	0.05~0.1	0.05~0.1	3D 銑 (3D milling)
DRA1010	35	100	3000~3400	800~1100	0.2~0.25	7~10	溝銑 (Slotting)
DRA1010	35	135	4200~4600	600~800	0.05~0.1	7~10	溝銑 (Slotting)
DRA1010	35	80	2400~2800	600~900	10~20	0.2~0.25	側銑 (Side milling)
DRA1010	35	90	2800~3200	600~800	10~20	0.05~0.1	側銑 (Side milling)
DRA1010	35	105	3200~3600	1300~1700	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DRA1010	35	185	5800~6200	1200~1600	0.05~0.1	0.05~0.1	3D 銑 (3D milling)
DRA1015	35	100	3000~3400	800~1100	0.2~0.25	6~10	溝銑 (Slotting)
DRA1015	35	135	4200~4600	600~800	0.05~0.1	6~10	溝銑 (Slotting)
DRA1015	35	80	2400~2800	600~900	10~20	0.2~0.25	側銑 (Side milling)
DRA1015	35	90	2800~3200	600~800	10~20	0.05~0.1	側銑 (Side milling)
DRA1015	35	105	3200~3600	1300~1700	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DRA1015	35	185	5800~6200	1200~1600	0.05~0.1	0.05~0.1	3D 銑 (3D milling)
DRA1020	35	100	3000~3400	800~1100	0.2~0.25	5~10	溝銑 (Slotting)
DRA1020	35	135	4200~4600	600~800	0.05~0.1	5~10	溝銑 (Slotting)
DRA1020	35	80	2400~2800	600~900	10~20	0.2~0.25	側銑 (Side milling)
DRA1020	35	90	2800~3200	600~800	10~20	0.05~0.1	側銑 (Side milling)
DRA1020	35	105	3200~3600	1300~1700	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DRA1020	35	185	5800~6200	1200~1600	0.05~0.1	0.05~0.1	3D 銑 (3D milling)
DRA1210	40	75	2000~2400	700~1000	0.2~0.25	9~12	溝銑 (Slotting)
DRA1210	40	145	3800~4200	800~1000	0.07~0.12	9~12	溝銑 (Slotting)
DRA1210	40	70	1800~2200	600~800	12~24	0.2~0.25	側銑 (Side milling)
DRA1210	40	70	1800~2200	400~600	12~24	0.07~0.12	側銑 (Side milling)
DRA1210	40	140	3600~4000	1200~1400	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DRA1210	40	150	4500~5000	1300~1600	0.07~0.12	0.07~0.12	3D 銑 (3D milling)

DRA

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 : Prehardened Steels NAK80 : 1.2083 : AISI420 : M310 (HRc 36~45)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DRA1220	40	75	2000~2400	700~1000	0.2~0.25	7~12	溝銑 (Slotting)
DRA1220	40	145	3800~4200	800~1000	0.05~0.12	7~12	溝銑 (Slotting)
DRA1220	40	70	1800~2200	600~800	12~24	0.2~0.25	側銑 (Side milling)
DRA1220	40	70	1800~2200	400~600	12~24	0.05~0.12	側銑 (Side milling)
DRA1220	40	140	3600~4000	1200~1400	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DRA1220	40	150	4500~5000	1300~1600	0.05~0.12	0.05~0.12	3D 銑 (3D milling)

DLRA

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DLRA0405	40	70	5400~5800	700~900	0.06~0.08	1~4	溝銑 (Slotting)
DLRA0405	40	90	7000~7400	1100~1300	0.06~0.08	0.06~0.08	3D 銑 (3D milling)
DLRA0605	40	80	4000~4400	600~800	0.15~0.18	4~6	溝銑 (Slotting)
DLRA0605	40	75	3800~4200	400~600	0.06~0.08	4~6	溝銑 (Slotting)
DLRA0605	40	45	2000~2400	600~800	6~12	0.15~0.18	側銑 (Side milling)
DLRA0605	40	65	3200~3600	400~700	6~12	0.06~0.08	側銑 (Side milling)
DLRA0605	40	90	4500~5000	1300~1500	0.15~0.18	0.15~0.18	3D 銑 (3D milling)
DLRA0605	40	120	6300~6800	1200~1400	0.06~0.08	0.06~0.08	3D 銑 (3D milling)
DLRA0610	40	80	4000~4400	600~800	0.15~0.18	4~6	溝銑 (Slotting)
DLRA0610	40	75	3800~4200	400~600	0.06~0.08	4~6	溝銑 (Slotting)
DLRA0610	40	45	2000~2400	600~800	6~12	0.15~0.18	側銑 (Side milling)
DLRA0610	40	65	3200~3600	400~700	6~12	0.06~0.08	側銑 (Side milling)
DLRA0610	40	90	4500~5000	1300~1500	0.15~0.18	0.15~0.18	3D 銑 (3D milling)
DLRA0610	40	120	6300~6800	1200~1400	0.06~0.08	0.06~0.08	3D 銑 (3D milling)
DLRA0805	50	65	2400~2900	500~700	0.2~0.25	6~8	溝銑 (Slotting)
DLRA0805	50	65	2400~2900	400~600	0.07~0.1	6~8	溝銑 (Slotting)
DLRA0805	50	65	2400~2900	500~700	8~16	0.2~0.25	側銑 (Side milling)
DLRA0805	50	65	2400~2900	400~600	8~16	0.07~0.1	側銑 (Side milling)
DLRA0805	50	120	4500~5000	1200~1400	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DLRA0805	50	120	4500~5000	1100~1300	0.07~0.1	0.07~0.1	3D 銑 (3D milling)
DLRA0810	50	65	2400~2900	500~700	0.2~0.25	5~8	溝銑 (Slotting)
DLRA0810	50	65	2400~2900	400~600	0.07~0.1	5~8	溝銑 (Slotting)
DLRA0810	50	65	2400~2900	500~700	8~16	0.2~0.25	側銑 (Side milling)
DLRA0810	50	65	2400~2900	400~600	8~16	0.07~0.1	側銑 (Side milling)
DLRA0810	50	120	4500~5000	1200~1400	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DLRA0810	50	120	4500~5000	1100~1300	0.07~0.1	0.07~0.1	3D 銑 (3D milling)
DLRA1005	60	65	1800~2200	400~600	0.2~0.25	8~10	溝銑 (Slotting)
DLRA1005	60	65	1800~2300	400~600	0.07~0.1	8~10	溝銑 (Slotting)
DLRA1005	60	65	1800~2200	400~600	10~20	0.2~0.25	側銑 (Side milling)
DLRA1005	60	65	1800~2200	400~600	10~20	0.07~0.1	側銑 (Side milling)
DLRA1005	60	95	2700~3200	1000~1200	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DLRA1005	60	120	3600~4000	900~1100	0.07~0.1	0.07~0.1	3D 銑 (3D milling)

DLRA

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DLRA1010	60	65	1800~2200	400~600	0.2~0.25	7~10	溝銑 (Slotting)
DLRA1010	60	65	1800~2300	400~600	0.07~0.1	7~10	溝銑 (Slotting)
DLRA1010	60	65	1800~2200	400~600	10~20	0.2~0.25	側銑 (Side milling)
DLRA1010	60	65	1800~2200	400~600	10~20	0.07~0.1	側銑 (Side milling)
DLRA1010	60	95	2700~3200	1000~1200	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DLRA1010	60	120	3600~4000	900~1100	0.07~0.1	0.07~0.1	3D 銑 (3D milling)
DLRA1020	60	65	1800~2200	400~600	0.2~0.25	6~10	溝銑 (Slotting)
DLRA1020	60	65	1800~2300	400~600	0.07~0.1	6~10	溝銑 (Slotting)
DLRA1020	60	65	1800~2200	400~600	10~20	0.2~0.25	側銑 (Side milling)
DLRA1020	60	65	1800~2200	400~600	10~20	0.07~0.1	側銑 (Side milling)
DLRA1020	60	95	2700~3200	1000~1200	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DLRA1020	60	120	3600~4000	900~1100	0.07~0.1	0.07~0.1	3D 銑 (3D milling)
DLRA1210	60	80	1900~2200	800~1000	0.2~0.25	9~12	溝銑 (Slotting)
DLRA1210	60	85	2000~2400	600~800	0.07~0.12	9~12	溝銑 (Slotting)
DLRA1210	60	80	1800~2200	400~600	12~24	0.2~0.25	側銑 (Side milling)
DLRA1210	60	95	2200~2700	400~600	12~24	0.07~0.12	側銑 (Side milling)
DLRA1210	60	160	4000~4500	1000~1200	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DLRA1210	60	160	4000~4500	900~1100	0.07~0.12	0.07~0.12	3D 銑 (3D milling)
DLRA1220	60	80	1900~2200	800~1000	0.2~0.25	7~12	溝銑 (Slotting)
DLRA1220	60	85	2000~2400	600~800	0.07~0.12	7~12	溝銑 (Slotting)
DLRA1220	60	80	1800~2200	400~600	12~24	0.2~0.25	側銑 (Side milling)
DLRA1220	60	95	2200~2700	400~600	12~24	0.07~0.12	側銑 (Side milling)
DLRA1220	60	160	4000~4500	1000~1200	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DLRA1220	60	160	4000~4500	900~1100	0.07~0.12	0.07~0.12	3D 銑 (3D milling)

DLRA

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 : Prehardened Steels NAK80 : 1.2083 : AISI420 : M310 (HRc 36~45)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DLRA0405	40	55	4200~4600	600~800	0.06~0.08	1~4	溝銑 (Slotting)
DLRA0405	40	90	7000~7400	1000~1200	0.06~0.08	0.06~0.08	3D 銑 (3D milling)
DLRA0605	40	60	3000~3400	500~700	0.15~0.18	4~6	溝銑 (Slotting)
DLRA0605	40	75	3800~4200	600~800	0.06~0.08	4~6	溝銑 (Slotting)
DLRA0605	40	50	2400~2800	300~500	6~12	0.06~0.08	側銑 (Side milling)
DLRA0605	40	80	4000~4500	1100~1300	0.15~0.18	0.15~0.18	3D 銑 (3D milling)
DLRA0605	40	115	6000~5000	1000~1200	0.06~0.08	0.06~0.08	3D 銑 (3D milling)
DLRA0610	40	60	3000~3400	500~700	0.15~0.18	4~6	溝銑 (Slotting)
DLRA0610	40	75	3800~4200	600~800	0.06~0.08	4~6	溝銑 (Slotting)
DLRA0610	40	50	2400~2800	300~500	6~12	0.06~0.08	側銑 (Side milling)
DLRA0610	40	80	4000~4500	1100~1300	0.15~0.18	0.15~0.18	3D 銑 (3D milling)
DLRA0610	40	115	6000~5000	1000~1200	0.06~0.08	0.06~0.08	3D 銑 (3D milling)
DLRA0805	50	60	2200~2700	500~700	0.2~0.25	6~8	溝銑 (Slotting)
DLRA0805	50	60	2200~2700	400~600	0.07~0.1	6~8	溝銑 (Slotting)
DLRA0805	50	60	2200~2700	400~600	8~16	0.07~0.1	側銑 (Side milling)
DLRA0805	50	110	4200~4700	1100~1300	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DLRA0805	50	110	4200~4700	1000~1200	0.07~0.1	0.07~0.1	3D 銑 (3D milling)
DLRA0810	50	60	2200~2700	500~700	0.2~0.25	5~8	溝銑 (Slotting)
DLRA0810	50	60	2200~2700	400~600	0.07~0.1	5~8	溝銑 (Slotting)
DLRA0810	50	60	2200~2700	400~600	8~16	0.07~0.1	側銑 (Side milling)
DLRA0810	50	110	4200~4700	1100~1300	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DLRA0810	50	110	4200~4700	1000~1200	0.07~0.1	0.07~0.1	3D 銑 (3D milling)
DLRA1005	60	70	2000~2400	500~700	0.2~0.25	8~10	溝銑 (Slotting)
DLRA1005	60	90	2600~3000	400~600	0.07~0.1	8~10	溝銑 (Slotting)
DLRA1005	60	45	1200~1600	350~500	10~20	0.07~0.1	側銑 (Side milling)
DLRA1005	60	105	3200~3600	800~1000	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DLRA1005	60	110	3400~3800	800~1000	0.07~0.1	0.07~0.1	3D 銑 (3D milling)
DLRA1010	60	70	2000~2400	500~700	0.2~0.25	7~10	溝銑 (Slotting)
DLRA1010	60	90	2600~3000	400~600	0.07~0.1	7~10	溝銑 (Slotting)
DLRA1010	60	45	1200~1600	350~500	10~20	0.07~0.1	側銑 (Side milling)
DLRA1010	60	105	3200~3600	800~1000	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DLRA1010	60	110	3400~3800	800~1000	0.07~0.1	0.07~0.1	3D 銑 (3D milling)

DLRA

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 : Prehardened Steels NAK80 : 1.2083 : AISI420 : M310 (HRc 36~45)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DLRA1020	60	70	2000~2400	500~700	0.2~0.25	5~10	溝銑 (Slotting)
DLRA1020	60	90	2600~3000	400~600	0.07~0.1	5~10	溝銑 (Slotting)
DLRA1020	60	45	1200~1600	350~500	10~20	0.07~0.1	側銑 (Side milling)
DLRA1020	60	105	3200~3600	800~1000	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DLRA1020	60	110	3400~3800	800~1000	0.07~0.1	0.07~0.1	3D 銑 (3D milling)
DLRA1210	60	80	1800~2200	600~800	0.2~0.25	9~12	溝銑 (Slotting)
DLRA1210	60	95	2300~2700	500~700	0.07~0.12	9~12	溝銑 (Slotting)
DLRA1210	60	45	1000~1300	250~400	12~24	0.07~0.12	側銑 (Side milling)
DLRA1210	60	150	3700~4200	800~1000	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DLRA1210	60	150	3700~4200	800~1000	0.07~0.12	0.07~0.12	3D 銑 (3D milling)
DLRA1220	60	80	1800~2200	600~800	0.2~0.25	7~12	溝銑 (Slotting)
DLRA1220	60	95	2300~2700	500~700	0.07~0.12	7~12	溝銑 (Slotting)
DLRA1220	60	45	1000~1300	250~400	12~24	0.07~0.12	側銑 (Side milling)
DLRA1220	60	150	3700~4200	800~1000	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DLRA1220	60	150	3700~4200	800~1000	0.07~0.12	0.07~0.12	3D 銑 (3D milling)

DRD

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DRD0305	12	85	9000~10000	900~1100	0.1~0.15	1~3	溝銑 (Slotting)
DRD0305	12	85	9000~10000	800~1000	0.05~0.08	1~3	溝銑 (Slotting)
DRD0305	12	80	8500~9000	1100~1300	3~6	0.1~0.15	側銑 (Side milling)
DRD0305	12	80	8500~9000	800~1000	3~6	0.06~0.08	側銑 (Side milling)
DRD0305	12	85	9000~10000	1100~1400	0.1~0.15	0.1~0.15	3D 銑 (3D milling)
DRD0305	12	85	9000~10000	1100~1400	0.05~0.08	0.05~0.08	3D 銑 (3D milling)
DRD0405	14	100	8000~8400	1000~1200	0.12~0.17	2~4	溝銑 (Slotting)
DRD0405	14	100	8000~8400	1000~1200	0.05~0.1	2~4	溝銑 (Slotting)
DRD0405	14	85	6800~7200	1000~1200	4~8	0.12~0.17	側銑 (Side milling)
DRD0405	14	85	6500~7500	800~1000	4~8	0.05~0.1	側銑 (Side milling)
DRD0405	14	110	8700~9200	1000~1200	0.12~0.17	0.12~0.17	3D 銑 (3D milling)
DRD0405	14	110	8700~9200	1200~1600	0.05~0.1	0.05~0.1	3D 銑 (3D milling)
DRD0505	17	90	5800~6400	1200~1400	0.12~0.17	3~5	溝銑 (Slotting)
DRD0505	17	130	8000~8500	1000~1400	0.05~0.1	3~5	溝銑 (Slotting)
DRD0505	17	95	6000~7000	1000~1200	5~10	0.12~0.17	側銑 (Side milling)
DRD0505	17	95	6000~7000	800~1000	5~10	0.05~0.1	側銑 (Side milling)
DRD0505	17	135	8500~9000	1400~1800	0.12~0.17	0.12~0.17	3D 銑 (3D milling)
DRD0505	17	135	8500~9000	1300~1600	0.05~0.1	0.05~0.1	3D 銑 (3D milling)
DRD0510	17	90	5800~6400	1200~1400	0.12~0.17	2~5	溝銑 (Slotting)
DRD0510	17	130	8000~8500	1000~1400	0.05~0.1	2~5	溝銑 (Slotting)
DRD0510	17	95	6000~7000	1000~1200	5~10	0.12~0.17	側銑 (Side milling)
DRD0510	17	95	6000~7000	800~1000	5~10	0.05~0.1	側銑 (Side milling)
DRD0510	17	135	8500~9000	1400~1800	0.12~0.17	0.12~0.17	3D 銑 (3D milling)
DRD0510	17	135	8500~9000	1300~1600	0.05~0.1	0.05~0.1	3D 銑 (3D milling)
DRD0605	20	90	4800~5400	1200~1400	0.15~0.2	4~6	溝銑 (Slotting)
DRD0605	20	130	6800~7200	1400~1600	0.05~0.1	4~6	溝銑 (Slotting)
DRD0605	20	95	5000~6000	1000~1200	6~12	0.15~0.2	側銑 (Side milling)
DRD0605	20	95	5000~6000	800~1000	6~12	0.05~0.1	側銑 (Side milling)
DRD0605	20	160	8500~9000	1600~2000	0.15~0.2	0.15~0.2	3D 銑 (3D milling)
DRD0605	20	160	8500~9000	1600~2000	0.05~0.1	0.05~0.1	3D 銑 (3D milling)

DRD

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DRD0610	20	90	4800~5400	1400~1600	0.15~0.2	3~6	溝銑 (Slotting)
DRD0610	20	130	6800~7200	1400~1600	0.05~0.1	3~6	溝銑 (Slotting)
DRD0610	20	95	5000~6000	1000~1200	6~12	0.15~0.2	側銑 (Side milling)
DRD0610	20	95	5000~6000	800~1000	6~12	0.05~0.1	側銑 (Side milling)
DRD0610	20	160	8500~9000	1600~2000	0.15~0.2	0.15~0.2	3D 銑 (3D milling)
DRD0610	20	160	8500~9000	1600~2000	0.05~0.1	0.05~0.1	3D 銑 (3D milling)
DRD0805	30	135	5200~5800	1000~1400	0.2~0.25	6~8	溝銑 (Slotting)
DRD0805	30	145	5800~6200	1000~1200	0.06~0.11	6~8	溝銑 (Slotting)
DRD0805	30	90	3500~4000	1000~1200	8~16	0.2~0.25	側銑 (Side milling)
DRD0805	30	90	3500~4000	700~1000	8~16	0.06~0.11	側銑 (Side milling)
DRD0805	30	190	7500~8500	1600~2000	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DRD0805	30	190	7500~8500	1400~1800	0.06~0.11	0.06~0.11	3D 銑 (3D milling)
DRD0810	30	135	5200~5800	1000~1400	0.2~0.25	5~8	溝銑 (Slotting)
DRD0810	30	145	5800~6200	1000~1200	0.06~0.11	5~8	溝銑 (Slotting)
DRD0810	30	90	3500~4000	1000~1200	8~16	0.2~0.25	側銑 (Side milling)
DRD0810	30	90	3500~4000	700~1000	8~16	0.06~0.11	側銑 (Side milling)
DRD0810	30	190	7500~8500	1600~2000	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DRD0810	30	190	7500~8500	1400~1800	0.06~0.11	0.06~0.11	3D 銑 (3D milling)
DRD1010	35	135	4200~4700	1200~1600	0.2~0.3	7~10	溝銑 (Slotting)
DRD1010	35	145	4500~5000	800~1000	0.05~0.12	7~10	溝銑 (Slotting)
DRD1010	35	90	2800~3200	800~1200	10~20	0.2~0.3	側銑 (Side milling)
DRD1010	35	90	2800~3200	700~900	10~20	0.05~0.12	側銑 (Side milling)
DRD1010	35	190	6000~7000	1600~2000	0.2~0.3	0.2~0.3	3D 銑 (3D milling)
DRD1010	35	190	6000~7000	1400~1800	0.05~0.12	0.05~0.12	3D 銑 (3D milling)
DRD1020	35	135	4200~4700	1200~1600	0.2~0.3	5~10	溝銑 (Slotting)
DRD1020	35	145	4500~5000	800~1000	0.05~0.12	5~10	溝銑 (Slotting)
DRD1020	35	90	2800~3200	800~1200	10~20	0.2~0.3	側銑 (Side milling)
DRD1020	35	90	2800~3200	700~900	10~20	0.05~0.12	側銑 (Side milling)
DRD1020	35	190	6000~7000	1600~2000	0.2~0.3	0.2~0.3	3D 銑 (3D milling)
DRD1020	35	190	6000~7000	1400~1800	0.05~0.12	0.05~0.12	3D 銑 (3D milling)

DRD

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DRD1030	35	135	4200~4700	1200~1600	0.2~0.3	3~10	溝銑 (Slotting)
DRD1030	35	145	4500~5000	800~1000	0.05~0.12	3~10	溝銑 (Slotting)
DRD1030	35	90	2800~3200	800~1200	10~20	0.2~0.3	側銑 (Side milling)
DRD1030	35	90	2800~3200	700~900	10~20	0.05~0.12	側銑 (Side milling)
DRD1030	35	190	6000~7000	1600~2000	0.2~0.3	0.2~0.3	3D 銑 (3D milling)
DRD1030	35	190	6000~7000	1400~1800	0.05~0.12	0.05~0.12	3D 銑 (3D milling)
DRD1210	40	145	3800~4200	1200~1600	0.2~0.3	9~12	溝銑 (Slotting)
DRD1210	40	150	4000~4500	1400~1600	0.1~0.15	9~12	溝銑 (Slotting)
DRD1210	40	105	2800~3200	1000~1200	12~24	0.2~0.3	側銑 (Side milling)
DRD1210	40	105	2800~3200	600~800	12~24	0.1~0.15	側銑 (Side milling)
DRD1210	40	170	4500~5000	1600~2000	0.2~0.3	0.2~0.3	3D 銑 (3D milling)
DRD1210	40	190	5000~5500	1400~1800	0.1~0.15	0.1~0.15	3D 銑 (3D milling)
DRD1220	40	145	3800~4200	1200~1600	0.25~0.3	7~12	溝銑 (Slotting)
DRD1220	40	150	4000~4500	1400~1600	0.1~0.15	7~12	溝銑 (Slotting)
DRD1220	40	105	2800~3200	1000~1200	12~24	0.25~0.3	側銑 (Side milling)
DRD1220	40	105	2800~3200	600~800	12~24	0.1~0.15	側銑 (Side milling)
DRD1220	40	170	4500~5000	1600~2000	0.25~0.3	0.25~0.3	3D 銑 (3D milling)
DRD1220	40	190	5000~5500	1400~1800	0.1~0.15	0.1~0.15	3D 銑 (3D milling)
DRD1230	40	145	3800~4200	1200~1600	0.25~0.3	5~12	溝銑 (Slotting)
DRD1230	40	150	4000~4500	1400~1600	0.1~0.15	5~12	溝銑 (Slotting)
DRD1230	40	105	2800~3200	1000~1200	12~24	0.25~0.3	側銑 (Side milling)
DRD1230	40	105	2800~3200	600~800	12~24	0.1~0.15	側銑 (Side milling)
DRD1230	40	170	4500~5000	1600~2000	0.25~0.3	0.25~0.3	3D 銑 (3D milling)
DRD1230	40	190	5000~5500	1400~1800	0.1~0.15	0.1~0.15	3D 銑 (3D milling)

DRD

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 : Prehardened Steels NAK80 : 1.2083 : AISI420 : M310 (HRc 36~45)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DRD0305	12	85	9000~10000	800~1000	0.1~0.15	1~3	溝銑 (Slotting)
DRD0305	12	85	9000~10000	800~1000	0.05~0.08	1~3	溝銑 (Slotting)
DRD0305	12	80	8500~9000	1000~1200	3~6	0.1~0.15	側銑 (Side milling)
DRD0305	12	80	8500~9000	700~900	3~6	0.06~0.08	側銑 (Side milling)
DRD0305	12	85	9000~10000	1000~1200	0.1~0.15	0.1~0.15	3D 銑 (3D milling)
DRD0305	12	85	9000~10000	1000~1200	0.05~0.08	0.05~0.08	3D 銑 (3D milling)
DRD0405	14	100	8000~8400	800~1000	0.12~0.17	2~4	溝銑 (Slotting)
DRD0405	14	100	8000~8400	800~1000	0.05~0.1	2~4	溝銑 (Slotting)
DRD0405	14	85	6800~7200	800~1000	4~8	0.12~0.17	側銑 (Side milling)
DRD0405	14	85	6500~7000	500~700	4~8	0.05~0.1	側銑 (Side milling)
DRD0405	14	110	8700~9200	800~1000	0.12~0.17	0.12~0.17	3D 銑 (3D milling)
DRD0405	14	110	8700~9200	1000~1200	0.05~0.1	0.05~0.1	3D 銑 (3D milling)
DRD0505	17	90	5800~6400	800~1000	0.12~0.17	3~5	溝銑 (Slotting)
DRD0505	17	115	7200~7600	1000~1200	0.05~0.1	3~5	溝銑 (Slotting)
DRD0505	17	85	5400~6000	800~1000	5~10	0.12~0.17	側銑 (Side milling)
DRD0505	17	90	5800~6400	600~800	5~10	0.05~0.1	側銑 (Side milling)
DRD0505	17	130	8000~8500	800~1200	0.12~0.17	0.12~0.17	3D 銑 (3D milling)
DRD0505	17	130	8000~8500	1000~1400	0.05~0.1	0.05~0.1	3D 銑 (3D milling)
DRD0510	17	90	5800~6400	800~1000	0.12~0.17	2~5	溝銑 (Slotting)
DRD0510	17	115	7200~7600	1000~1200	0.05~0.1	2~5	溝銑 (Slotting)
DRD0510	17	85	5400~6000	800~1000	5~10	0.12~0.17	側銑 (Side milling)
DRD0510	17	90	5800~6400	600~800	5~10	0.05~0.1	側銑 (Side milling)
DRD0510	17	130	8000~8500	800~1200	0.12~0.17	0.12~0.17	3D 銑 (3D milling)
DRD0510	17	130	8000~8500	1000~1400	0.05~0.1	0.05~0.1	3D 銑 (3D milling)
DRD0605	20	90	4800~5400	1000~1400	0.15~0.2	4~6	溝銑 (Slotting)
DRD0605	20	115	6000~6400	1200~1400	0.05~0.1	4~6	溝銑 (Slotting)
DRD0605	20	85	4500~5000	800~1000	6~12	0.15~0.2	側銑 (Side milling)
DRD0605	20	90	4800~5200	600~800	6~12	0.05~0.1	側銑 (Side milling)
DRD0605	20	160	8500~9000	1000~1400	0.15~0.2	0.15~0.2	3D 銑 (3D milling)
DRD0605	20	160	8500~9000	1400~1800	0.05~0.1	0.05~0.1	3D 銑 (3D milling)

DRD

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 : Prehardened Steels NAK80 : 1.2083 : AISI420 : M310 (HRc 36~45)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DRD0610	20	90	4800~5400	1000~1400	0.15~0.2	3~6	溝銑 (Slotting)
DRD0610	20	115	6000~6400	1200~1400	0.05~0.1	3~6	溝銑 (Slotting)
DRD0610	20	85	4500~5000	800~1000	6~12	0.15~0.2	側銑 (Side milling)
DRD0610	20	90	4800~5200	600~800	6~12	0.05~0.1	側銑 (Side milling)
DRD0610	20	160	8500~9000	1000~1400	0.15~0.2	0.15~0.2	3D 銑 (3D milling)
DRD0610	20	160	8500~9000	1400~1800	0.05~0.1	0.05~0.1	3D 銑 (3D milling)
DRD0805	30	100	4000~4500	700~1000	0.2~0.25	6~8	溝銑 (Slotting)
DRD0805	30	140	5500~6000	800~1000	0.06~0.11	6~8	溝銑 (Slotting)
DRD0805	30	90	3500~4000	700~900	8~16	0.2~0.25	側銑 (Side milling)
DRD0805	30	90	3500~4000	600~800	8~16	0.06~0.11	側銑 (Side milling)
DRD0805	30	100	4000~4500	1400~1800	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DRD0805	30	185	7200~7700	1200~1600	0.06~0.11	0.06~0.11	3D 銑 (3D milling)
DRD0810	30	100	4000~4500	700~1000	0.2~0.25	5~8	溝銑 (Slotting)
DRD0810	30	140	5500~6000	800~1000	0.06~0.11	5~8	溝銑 (Slotting)
DRD0810	30	90	3500~4000	700~900	8~16	0.2~0.25	側銑 (Side milling)
DRD0810	30	90	3500~4000	600~800	8~16	0.06~0.11	側銑 (Side milling)
DRD0810	30	100	4000~4500	1400~1800	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DRD0810	30	185	7200~7700	1200~1600	0.06~0.11	0.06~0.11	3D 銑 (3D milling)
DRD1010	35	100	3200~3600	800~1100	0.2~0.3	7~10	溝銑 (Slotting)
DRD1010	35	140	4400~4800	800~1000	0.05~0.12	7~10	溝銑 (Slotting)
DRD1010	35	90	2800~3200	700~1000	10~20	0.2~0.3	側銑 (Side milling)
DRD1010	35	90	2800~3200	600~800	10~20	0.05~0.12	側銑 (Side milling)
DRD1010	35	100	3200~3600	1400~1800	0.2~0.3	0.2~0.3	3D 銑 (3D milling)
DRD1010	35	185	5800~6200	1200~1600	0.05~0.12	0.05~0.12	3D 銑 (3D milling)
DRD1020	35	100	3200~3600	800~1100	0.2~0.3	5~10	溝銑 (Slotting)
DRD1020	35	140	4400~4800	800~1000	0.05~0.12	5~10	溝銑 (Slotting)
DRD1020	35	90	2800~3200	700~1000	10~20	0.2~0.3	側銑 (Side milling)
DRD1020	35	90	2800~3200	600~800	10~20	0.05~0.12	側銑 (Side milling)
DRD1020	35	100	3200~3600	1400~1800	0.2~0.3	0.2~0.3	3D 銑 (3D milling)
DRD1020	35	185	5800~6200	1200~1600	0.05~0.12	0.05~0.12	3D 銑 (3D milling)

DRD

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 : Prehardened Steels NAK80 : 1.2083 : AISI420 : M310 (HRc 36~45)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DRD1030	35	100	3200~3600	800~1100	0.2~0.3	3~10	溝銑 (Slotting)
DRD1030	35	140	4400~4800	800~1000	0.05~0.12	3~10	溝銑 (Slotting)
DRD1030	35	90	2800~3200	700~1000	10~20	0.2~0.3	側銑 (Side milling)
DRD1030	35	90	2800~3200	600~800	10~20	0.05~0.12	側銑 (Side milling)
DRD1030	35	100	3200~3600	1400~1800	0.2~0.3	0.2~0.3	3D 銑 (3D milling)
DRD1030	35	185	5800~6200	1200~1600	0.05~0.12	0.05~0.12	3D 銑 (3D milling)
DRD1210	40	90	2400~2800	800~1000	0.2~0.3	9~12	溝銑 (Slotting)
DRD1210	40	145	3800~4200	1200~1400	0.1~0.15	9~12	溝銑 (Slotting)
DRD1210	40	70	1800~2200	600~800	12~24	0.2~0.3	側銑 (Side milling)
DRD1210	40	75	1900~2300	400~600	12~24	0.1~0.15	側銑 (Side milling)
DRD1210	40	150	4000~4400	1200~1400	0.2~0.3	0.2~0.3	3D 銑 (3D milling)
DRD1210	40	180	4700~5200	1200~1600	0.1~0.15	0.1~0.15	3D 銑 (3D milling)
DRD1220	40	90	2400~2800	800~1000	0.25~0.3	7~12	溝銑 (Slotting)
DRD1220	40	145	3800~4200	1200~1400	0.1~0.15	7~12	溝銑 (Slotting)
DRD1220	40	70	1800~2200	600~800	12~24	0.25~0.3	側銑 (Side milling)
DRD1220	40	75	1900~2300	400~600	12~24	0.1~0.15	側銑 (Side milling)
DRD1220	40	150	4000~4400	1200~1400	0.25~0.3	0.25~0.3	3D 銑 (3D milling)
DRD1220	40	180	4700~5200	1200~1600	0.1~0.15	0.1~0.15	3D 銑 (3D milling)
DRD1230	40	90	2400~2800	800~1000	0.25~0.3	5~12	溝銑 (Slotting)
DRD1230	40	145	3800~4200	1200~1400	0.1~0.15	5~12	溝銑 (Slotting)
DRD1230	40	70	1800~2200	600~800	12~24	0.25~0.3	側銑 (Side milling)
DRD1230	40	75	1900~2300	400~600	12~24	0.1~0.15	側銑 (Side milling)
DRD1230	40	150	4000~4400	1200~1400	0.25~0.3	0.25~0.3	3D 銑 (3D milling)
DRD1230	40	180	4700~5200	1200~1600	0.1~0.15	0.1~0.15	3D 銑 (3D milling)

DLRD

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DLRD0605	40	75	4000~4600	600~800	0.15~0.2	4~6	溝銑 (Slotting)
DLRD0605	40	95	5000~5500	1200~1400	0.07~0.1	4~6	溝銑 (Slotting)
DLRD0605	40	60	3200~3600	1000~1200	6~12	0.15~0.2	側銑 (Side milling)
DLRD0605	40	60	3200~3600	600~800	6~12	0.07~0.1	側銑 (Side milling)
DLRD0605	40	90	4800~5400	1800~2200	0.15~0.2	0.15~0.2	3D 銑 (3D milling)
DLRD0605	40	135	7200~7600	1200~1600	0.07~0.1	0.07~0.1	3D 銑 (3D milling)
DLRD0610	40	75	4000~4600	600~800	0.15~0.2	3~6	溝銑 (Slotting)
DLRD0610	40	95	5000~5500	1200~1400	0.07~0.1	3~6	溝銑 (Slotting)
DLRD0610	40	60	3200~3600	1000~1200	6~12	0.15~0.2	側銑 (Side milling)
DLRD0610	40	60	3200~3600	600~800	6~12	0.07~0.1	側銑 (Side milling)
DLRD0610	40	90	4800~5400	1800~2200	0.15~0.2	0.15~0.2	3D 銑 (3D milling)
DLRD0610	40	135	7200~7600	1200~1600	0.07~0.1	0.07~0.1	3D 銑 (3D milling)
DLRD0805	50	65	2500~3000	800~1000	0.2~0.25	6~8	溝銑 (Slotting)
DLRD0805	50	75	3000~3500	600~800	0.08~0.12	6~8	溝銑 (Slotting)
DLRD0805	50	90	3500~4000	500~800	8~16	0.2~0.25	側銑 (Side milling)
DLRD0805	50	65	2500~3000	500~800	8~16	0.08~0.12	側銑 (Side milling)
DLRD0805	50	115	4500~5200	1000~1400	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DLRD0805	50	165	6500~7000	1000~1400	0.08~0.12	0.08~0.12	3D 銑 (3D milling)
DLRD0810	50	65	2500~3000	800~1000	0.2~0.25	5~8	溝銑 (Slotting)
DLRD0810	50	75	3000~3500	600~800	0.08~0.12	5~8	溝銑 (Slotting)
DLRD0810	50	90	3500~4000	500~800	8~16	0.2~0.25	側銑 (Side milling)
DLRD0810	50	65	2500~3000	500~800	8~16	0.08~0.12	側銑 (Side milling)
DLRD0810	50	115	4500~5200	1000~1400	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DLRD0810	50	165	6500~7000	1000~1400	0.08~0.12	0.08~0.12	3D 銑 (3D milling)
DLRD1005	60	65	2000~2400	800~1000	0.25~0.3	10~20	溝銑 (Slotting)
DLRD1005	60	75	2400~2800	500~800	0.08~0.13	10~20	溝銑 (Slotting)
DLRD1005	60	90	2800~3200	500~800	10~20	0.25~0.3	側銑 (Side milling)
DLRD1005	60	65	2000~2400	500~800	10~20	0.08~0.13	側銑 (Side milling)
DLRD1005	60	115	3600~4200	1000~1400	0.25~0.3	0.25~0.3	3D 銑 (3D milling)
DLRD1005	60	165	5200~5600	1000~1400	0.08~0.13	0.08~0.13	3D 銑 (3D milling)

DLRD

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DLRD1010	60	65	2000~2400	800~1000	0.25~0.3	7~10	溝銑 (Slotting)
DLRD1010	60	75	2400~2800	500~800	0.08~0.13	7~10	溝銑 (Slotting)
DLRD1010	60	90	2800~3200	500~800	10~20	0.25~0.3	側銑 (Side milling)
DLRD1010	60	65	2000~2400	500~800	10~20	0.1~0.15	側銑 (Side milling)
DLRD1010	60	115	3600~4200	1000~1400	0.25~0.3	0.25~0.3	3D 銑 (3D milling)
DLRD1010	60	165	5200~5600	1000~1400	0.08~0.13	0.08~0.13	3D 銑 (3D milling)
DLRD1020	60	65	2000~2400	800~1000	0.25~0.3	5~10	溝銑 (Slotting)
DLRD1020	60	75	2400~2800	500~800	0.08~0.13	5~10	溝銑 (Slotting)
DLRD1020	60	90	2800~3200	500~800	10~20	0.25~0.3	側銑 (Side milling)
DLRD1020	60	65	2000~2400	500~800	10~20	0.1~0.15	側銑 (Side milling)
DLRD1020	60	115	3600~4200	1000~1400	0.25~0.3	0.25~0.3	3D 銑 (3D milling)
DLRD1020	60	165	5200~5600	1000~1400	0.08~0.13	0.08~0.13	3D 銑 (3D milling)
DLRD1210	60	75	2000~2400	800~1200	0.25~0.3	9~12	溝銑 (Slotting)
DLRD1210	60	105	2800~3200	800~1000	0.1~0.15	9~12	溝銑 (Slotting)
DLRD1210	60	80	1900~2300	800~1000	12~24	0.25~0.3	側銑 (Side milling)
DLRD1210	60	80	1900~2300	400~600	12~24	0.1~0.15	側銑 (Side milling)
DLRD1210	60	150	4000~4500	1400~1800	0.25~0.3	0.25~0.3	3D 銑 (3D milling)
DLRD1210	60	170	4500~5000	1200~1600	0.1~0.15	0.1~0.15	3D 銑 (3D milling)
DLRD1220	60	75	2000~2400	800~1200	0.25~0.3	7~12	溝銑 (Slotting)
DLRD1220	60	105	2800~3200	800~1000	0.1~0.15	7~12	溝銑 (Slotting)
DLRD1220	60	80	1900~2300	800~1000	12~24	0.25~0.3	側銑 (Side milling)
DLRD1220	60	80	1900~2300	400~600	12~24	0.1~0.15	側銑 (Side milling)
DLRD1220	60	150	4000~4500	1400~1800	0.25~0.3	0.25~0.3	3D 銑 (3D milling)
DLRD1220	60	170	4500~5000	1200~1600	0.1~0.15	0.1~0.15	3D 銑 (3D milling)

DLRD

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS440 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DLRD1610	100	75	1500~1800	700~1100	0.3~0.35	13~16	溝銑 (Slotting)
DLRD1610	100	90	1800~2100	400~600	0.12~0.17	13~16	溝銑 (Slotting)
DLRD1610	100	75	1500~1800	600~800	16~32	0.3~0.35	側銑 (Side milling)
DLRD1610	100	75	1500~1800	400~600	16~32	0.12~0.17	側銑 (Side milling)
DLRD1610	100	150	3000~3400	1400~1800	0.3~0.35	0.3~0.35	3D 銑 (3D milling)
DLRD1610	100	170	3400~3800	800~1200	0.12~0.17	0.12~0.17	3D 銑 (3D milling)
DLRD1620	100	75	1500~1800	700~1100	0.3~0.35	11~16	溝銑 (Slotting)
DLRD1620	100	90	1800~2100	400~600	0.12~0.17	11~16	溝銑 (Slotting)
DLRD1620	100	75	1500~1800	600~800	16~32	0.3~0.35	側銑 (Side milling)
DLRD1620	100	75	1500~1800	400~600	16~32	0.12~0.17	側銑 (Side milling)
DLRD1620	100	150	3000~3400	1400~1800	0.3~0.35	0.3~0.35	3D 銑 (3D milling)
DLRD1620	100	170	3400~3800	800~1200	0.12~0.17	0.12~0.17	3D 銑 (3D milling)

DLRD

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 : Prehardened Steels NAK80 : 1.2083 : AISI420 : M310 (HRc 36~45)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DLRD0605	40	70	3600~4000	600~800	0.15~0.2	4~6	溝銑 (Slotting)
DLRD0605	40	85	4500~5000	1000~1200	0.07~0.1	4~6	溝銑 (Slotting)
DLRD0605	40	30	1600~2000	200~400	6~12	0.15~0.2	側銑 (Side milling)
DLRD0605	40	50	2700~3200	400~600	6~12	0.07~0.1	側銑 (Side milling)
DLRD0605	40	90	4800~5400	1000~1400	0.15~0.2	0.15~0.2	3D 銑 (3D milling)
DLRD0605	40	130	6800~7200	1200~1600	0.07~0.1	0.07~0.1	3D 銑 (3D milling)
DLRD0610	40	70	3600~4000	600~800	0.15~0.2	3~6	溝銑 (Slotting)
DLRD0610	40	85	4500~5000	1000~1200	0.07~0.1	3~6	溝銑 (Slotting)
DLRD0610	40	30	1600~2000	200~400	6~12	0.15~0.2	側銑 (Side milling)
DLRD0610	40	50	2700~3200	400~600	6~12	0.07~0.1	側銑 (Side milling)
DLRD0610	40	90	4800~5400	1000~1400	0.15~0.2	0.15~0.2	3D 銑 (3D milling)
DLRD0610	40	130	6800~7200	1200~1600	0.07~0.1	0.07~0.1	3D 銑 (3D milling)
DLRD0805	50	65	2400~2800	600~800	0.2~0.25	6~8	溝銑 (Slotting)
DLRD0805	50	90	3500~4000	500~700	0.08~0.12	6~8	溝銑 (Slotting)
DLRD0805	50	35	1200~1600	250~350	8~16	0.2~0.25	側銑 (Side milling)
DLRD0805	50	50	1800~2200	400~600	8~16	0.08~0.12	側銑 (Side milling)
DLRD0805	50	115	4500~5200	800~1000	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DLRD0805	50	150	5700~6300	800~1200	0.08~0.12	0.08~0.12	3D 銑 (3D milling)
DLRD0810	50	65	2400~2800	600~800	0.2~0.25	5~8	溝銑 (Slotting)
DLRD0810	50	90	3500~4000	500~700	0.08~0.12	5~8	溝銑 (Slotting)
DLRD0810	50	35	1200~1600	250~350	8~16	0.2~0.25	側銑 (Side milling)
DLRD0810	50	50	1800~2200	400~600	8~16	0.08~0.12	側銑 (Side milling)
DLRD0810	50	115	4500~5200	800~1000	0.2~0.25	0.2~0.25	3D 銑 (3D milling)
DLRD0810	50	150	5700~6300	800~1200	0.08~0.12	0.08~0.12	3D 銑 (3D milling)
DLRD1005	60	65	2000~2400	600~800	0.25~0.3	8~10	溝銑 (Slotting)
DLRD1005	60	90	2800~3200	500~700	0.08~0.13	8~10	溝銑 (Slotting)
DLRD1005	60	35	1000~1300	200~300	10~20	0.2~0.25	側銑 (Side milling)
DLRD1005	60	40	1200~1600	400~600	10~20	0.08~0.13	側銑 (Side milling)
DLRD1005	60	115	3600~4000	800~1000	0.25~0.3	0.25~0.3	3D 銑 (3D milling)
DLRD1005	60	150	4800~5200	800~1200	0.08~0.13	0.08~0.13	3D 銑 (3D milling)

DLRD

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 : Prehardened Steels NAK80 : 1.2083 : AISI420 : M310 (HRc 36~45)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DLRD1010	60	65	2000~2400	600~800	0.25~0.3	7~10	溝銑 (Slotting)
DLRD1010	60	90	2800~3200	500~700	0.08~0.13	7~10	溝銑 (Slotting)
DLRD1010	60	35	1000~1300	200~300	10~20	0.2~0.25	側銑 (Side milling)
DLRD1010	60	40	1200~1600	400~600	10~20	0.08~0.13	側銑 (Side milling)
DLRD1010	60	115	3600~4000	800~1000	0.25~0.3	0.25~0.3	3D 銑 (3D milling)
DLRD1010	60	150	4800~5200	800~1200	0.08~0.13	0.08~0.13	3D 銑 (3D milling)
DLRD1020	60	65	2000~2400	600~800	0.25~0.3	5~10	溝銑 (Slotting)
DLRD1020	60	90	2800~3200	500~700	0.08~0.13	5~10	溝銑 (Slotting)
DLRD1020	60	35	1000~1300	200~300	10~20	0.2~0.25	側銑 (Side milling)
DLRD1020	60	40	1200~1600	400~600	10~20	0.08~0.13	側銑 (Side milling)
DLRD1020	60	115	3600~4000	800~1000	0.25~0.3	0.25~0.3	3D 銑 (3D milling)
DLRD1020	60	150	4800~5200	800~1200	0.08~0.13	0.08~0.13	3D 銑 (3D milling)
DLRD1210	60	70	1800~2200	800~1000	0.25~0.3	9~12	溝銑 (Slotting)
DLRD1210	60	95	2500~2800	600~800	0.1~0.15	9~12	溝銑 (Slotting)
DLRD1210	60	30	700~1000	200~300	12~24	0.15~0.25	側銑 (Side milling)
DLRD1210	60	45	1100~1400	300~450	12~24	0.1~0.15	側銑 (Side milling)
DLRD1210	60	150	4000~4500	800~1000	0.25~0.3	0.25~0.3	3D 銑 (3D milling)
DLRD1210	60	150	4000~4500	1000~1400	0.1~0.15	0.1~0.15	3D 銑 (3D milling)
DLRD1220	60	70	1800~2200	800~1000	0.25~0.3	7~12	溝銑 (Slotting)
DLRD1220	60	95	2500~2800	600~800	0.1~0.15	7~12	溝銑 (Slotting)
DLRD1220	60	30	700~1000	200~300	12~24	0.15~0.25	側銑 (Side milling)
DLRD1220	60	45	1100~1400	300~450	12~24	0.1~0.15	側銑 (Side milling)
DLRD1220	60	150	4000~4500	800~1000	0.25~0.3	0.25~0.3	3D 銑 (3D milling)
DLRD1220	60	150	4000~4500	1000~1400	0.1~0.15	0.1~0.15	3D 銑 (3D milling)

DLRD

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 : Prehardened Steels NAK80 : 1.2083 : AISI420 : M310 (HRc 36~45)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DLRD1610	100	70	1200~1600	600~900	0.3~0.35	13~16	溝銑 (Slotting)
DLRD1610	100	85	1500~1800	300~500	0.12~0.17	13~16	溝銑 (Slotting)
DLRD1610	100	30	500~800	200~350	16~32	0.3~0.35	側銑 (Side milling)
DLRD1610	100	45	800~1100	200~350	16~32	0.12~0.17	側銑 (Side milling)
DLRD1610	100	150	3000~3400	1200~1600	0.3~0.35	0.3~0.35	3D 銑 (3D milling)
DLRD1610	100	150	3000~3400	700~1000	0.12~0.17	0.12~0.17	3D 銑 (3D milling)
DLRD1620	100	70	1200~1600	600~900	0.3~0.35	11~16	溝銑 (Slotting)
DLRD1620	100	85	1500~1800	300~500	0.12~0.17	11~16	溝銑 (Slotting)
DLRD1620	100	30	500~800	200~350	16~32	0.3~0.35	側銑 (Side milling)
DLRD1620	100	45	800~1100	200~350	16~32	0.12~0.17	側銑 (Side milling)
DLRD1620	100	150	3000~3400	1200~1600	0.3~0.35	0.3~0.35	3D 銑 (3D milling)
DLRD1620	100	150	3000~3400	700~1000	0.12~0.17	0.12~0.17	3D 銑 (3D milling)

DC 2T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 : Aluminum Alloy 5052 / 6061 / 7075
冷卻方式 Coolant Type	溼式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DC0202	9	60	9000~9500	900~1300	0.05~0.08	1.5~2	溝銑 (Slotting)
DC0202	9	60	9000~9500	1300~1700	0.1~0.2	2	溝銑 (Slotting)
DC0202	9	60	9000~9500	800~1100	0.4~0.6	2	溝銑 (Slotting)
DC0202	9	60	9000~9500	1000~1400	2~4	0.05~0.08	側銑 (Side milling)
DC0202	9	60	9000~9500	1500~1900	2~4	0.2~0.3	側銑 (Side milling)
DC0302	12	85	8500~9000	900~1300	0.05~0.1	2.5~3	溝銑 (Slotting)
DC0302	12	85	8500~9000	1300~1700	0.2~0.4	3	溝銑 (Slotting)
DC0302	12	85	8500~9000	800~1100	0.4~0.8	3	溝銑 (Slotting)
DC0302	12	85	8500~9000	1000~1400	3~6	0.05~0.1	側銑 (Side milling)
DC0302	12	85	8500~9000	1500~1900	3~6	0.4~0.6	側銑 (Side milling)
DC0402	15	110	8500~9000	900~1300	0.05~0.12	3~4	溝銑 (Slotting)
DC0402	15	110	8500~9000	1300~1700	0.3~0.6	4	溝銑 (Slotting)
DC0402	15	110	8500~9000	800~1100	0.6~1.2	4	溝銑 (Slotting)
DC0402	15	110	8500~9000	1000~1400	4~8	0.05~0.12	側銑 (Side milling)
DC0402	15	110	8500~9000	1500~1900	4~8	0.5~0.7	側銑 (Side milling)
DC0502	19	140	8500~9000	1100~1500	0.05~0.12	4~5	溝銑 (Slotting)
DC0502	19	140	8500~9000	2000~2400	0.4~0.7	5	溝銑 (Slotting)
DC0502	19	140	8500~9000	1100~1500	0.7~1.5	5	溝銑 (Slotting)
DC0502	19	140	8500~9000	1000~1400	5~10	0.05~0.12	側銑 (Side milling)
DC0502	19	140	8500~9000	1500~1900	5~10	0.7~1	側銑 (Side milling)
DC0602	21	165	8500~9000	1200~1600	0.05~0.15	5~6	溝銑 (Slotting)
DC0602	21	165	8500~9000	2000~2400	0.5~1	6	溝銑 (Slotting)
DC0602	21	165	8500~9000	1000~1400	1~2	6	溝銑 (Slotting)
DC0602	21	165	8500~9000	1000~1400	6~12	0.05~0.15	側銑 (Side milling)
DC0602	21	165	8500~9000	1800~2200	6~12	0.8~1.2	側銑 (Side milling)

DC 2T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 : Aluminum Alloy 5052 / 6061 / 7075
冷卻方式 Coolant Type	溼式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DC0802	25	200	7800~8300	1200~1600	0.05~0.15	6~8	溝銑 (Slotting)
DC0802	25	200	7800~8300	2000~2400	1~1.5	8	溝銑 (Slotting)
DC0802	25	200	7800~8300	1000~1400	2~3	8	溝銑 (Slotting)
DC0802	25	200	7800~8300	1000~1400	8~16	0.05~0.15	側銑 (Side milling)
DC0802	25	200	7800~8300	1800~2200	8~16	1~1.5	側銑 (Side milling)
DC1002	30	250	7800~8300	1200~1600	0.05~0.15	8~10	溝銑 (Slotting)
DC1002	30	250	7800~8300	2000~2400	1~1.5	10	溝銑 (Slotting)
DC1002	30	250	7800~8300	1000~1400	2~3	10	溝銑 (Slotting)
DC1002	30	250	7800~8300	1000~1400	10~20	0.05~0.15	側銑 (Side milling)
DC1002	30	250	7800~8300	1800~2200	10~20	1~1.5	側銑 (Side milling)
DC1202	35	225	5800~6300	1200~1600	0.05~0.15	10~12	溝銑 (Slotting)
DC1202	35	225	5800~6300	2000~2400	1~1.5	12	溝銑 (Slotting)
DC1202	35	225	5800~6300	1000~1400	2~3	12	溝銑 (Slotting)
DC1202	35	225	5800~6300	1000~1400	12~24	0.05~0.15	側銑 (Side milling)
DC1202	35	225	5800~6300	1800~2200	12~24	1~1.5	側銑 (Side milling)
DC1602	55	225	4200~4700	800~1200	0.05~0.15	14~16	溝銑 (Slotting)
DC1602	55	225	4200~4700	1400~1800	1~1.5	14~16	溝銑 (Slotting)
DC1602	55	225	4200~4700	800~1200	2~3	14~16	溝銑 (Slotting)
DC1602	55	225	4200~4700	700~1100	16~32	0.05~0.15	側銑 (Side milling)
DC1602	55	225	4200~4700	1400~1800	16~32	1~1.5	側銑 (Side milling)
DC2002	65	225	3300~3800	700~1100	0.05~0.15	18~20	溝銑 (Slotting)
DC2002	65	225	3300~3800	1200~1600	1~1.5	18~20	溝銑 (Slotting)
DC2002	65	225	3300~3800	800~1200	2~3	18~20	溝銑 (Slotting)
DC2002	65	225	3300~3800	700~1100	20~40	0.05~0.15	側銑 (Side milling)
DC2002	65	225	3300~3800	1200~1600	20~40	1.5~2	側銑 (Side milling)

DC 3T

建議機器轉速 RPM = 10000 (min^{-1}) 以下
< Be used under the machine of RPM = 10000 (min^{-1}) >

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 : Aluminum Alloy 5052 / 6061 / 7075
冷卻方式 Coolant Type	溼式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DC0203	14	60	9500~10000	600~1000	0.05~0.1	2	溝銑 (Slotting)
DC0203	14	60	9500~10000	1000~1400	0.2	2	溝銑 (Slotting)
DC0203	14	60	9500~10000	600~1000	2	0.05~0.1	側銑 (Side milling)
DC0203	14	60	9500~10000	1200~1600	2	0.4	側銑 (Side milling)
DC0203	14	60	9500~10000	400~800	4	0.05~0.1	側銑 (Side milling)
DC0203	14	60	9500~10000	700~1100	4	0.2	側銑 (Side milling)
DC0303	16	90	9500~10000	700~1100	0.05~0.1	3	溝銑 (Slotting)
DC0303	16	90	9500~10000	1200~1600	0.3	3	溝銑 (Slotting)
DC0303	16	90	9500~10000	700~1100	3	0.05~0.1	側銑 (Side milling)
DC0303	16	90	9500~10000	1400~1800	3	0.4	側銑 (Side milling)
DC0303	16	90	9500~10000	400~800	6	0.05~0.1	側銑 (Side milling)
DC0303	16	90	9500~10000	800~1200	6	0.3	側銑 (Side milling)
DC0403	16	120	9500~10000	800~1200	0.05~0.1	4	溝銑 (Slotting)
DC0403	16	120	9500~10000	1200~1600	0.4	4	溝銑 (Slotting)
DC0403	16	120	9500~10000	800~1200	4	0.05~0.1	側銑 (Side milling)
DC0403	16	120	9500~10000	1400~1800	4	0.4	側銑 (Side milling)
DC0403	16	120	9500~10000	400~800	8	0.05~0.1	側銑 (Side milling)
DC0403	16	120	9500~10000	800~1200	8	0.4	側銑 (Side milling)
DC0503	16	155	9500~10000	800~1200	0.05~0.15	5	溝銑 (Slotting)
DC0503	16	155	9500~10000	1400~1800	0.4	5	溝銑 (Slotting)
DC0503	16	155	9500~10000	800~1200	5	0.05~0.15	側銑 (Side milling)
DC0503	16	155	9500~10000	1600~2000	5	0.4	側銑 (Side milling)
DC0503	16	155	9500~10000	400~800	10	0.05~0.15	側銑 (Side milling)
DC0503	16	155	9500~10000	1000~1400	10	0.4	側銑 (Side milling)

DC 3T

建議機器轉速 RPM = 10000 (min^{-1}) 以下
< Be used under the machine of RPM = 10000 (min^{-1}) >

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 : Aluminum Alloy 5052 / 6061 / 7075
冷卻方式 Coolant Type	溼式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DC0603	20	175	9000~9500	800~1200	0.05~0.15	6	溝銑 (Slotting)
DC0603	20	185	9500~10000	1600~2000	0.5	6	溝銑 (Slotting)
DC0603	20	175	9000~9500	800~1200	6	0.05~0.15	側銑 (Side milling)
DC0603	20	185	9500~10000	1800~2200	6	0.5	側銑 (Side milling)
DC0603	20	175	9000~9500	600~800	12	0.05~0.15	側銑 (Side milling)
DC0603	20	185	9500~10000	1200~1600	12	0.5	側銑 (Side milling)
DC0803	25	230	8800~9300	1000~1400	0.05~0.15	8	溝銑 (Slotting)
DC0803	25	230	8800~9300	1800~2200	0.5	8	溝銑 (Slotting)
DC0803	25	230	8800~9300	1000~1400	8	0.05~0.15	側銑 (Side milling)
DC0803	25	230	8800~9300	2000~2400	8	0.5	側銑 (Side milling)
DC0803	25	230	8800~9300	800~1200	8	1	側銑 (Side milling)
DC0803	25	230	8800~9300	800~1200	16	0.05~0.15	側銑 (Side milling)
DC0803	25	230	8800~9300	1400~1800	16	0.5	側銑 (Side milling)
DC1003	30	285	8800~9300	1000~1400	0.05~0.15	10	溝銑 (Slotting)
DC1003	30	285	8800~9300	2000~2400	0.5	10	溝銑 (Slotting)
DC1003	30	285	8800~9300	1000~1400	10	0.05~0.15	側銑 (Side milling)
DC1003	30	285	8800~9300	1600~2000	10	0.5~1	側銑 (Side milling)
DC1003	30	285	8800~9300	1000~1400	10	1.5~2	側銑 (Side milling)
DC1003	30	285	8800~9300	800~1200	20	0.05~0.15	側銑 (Side milling)
DC1003	30	285	8800~9300	600~1000	20	0.5~1	側銑 (Side milling)
DC1203	35	275	7000~7500	800~1200	0.05~0.15	12	溝銑 (Slotting)
DC1203	35	275	7000~7500	1600~2000	0.5	12	溝銑 (Slotting)
DC1203	35	275	7000~7500	1000~1400	12	0.05~0.15	側銑 (Side milling)
DC1203	35	275	7000~7500	1600~2000	12	0.5	側銑 (Side milling)
DC1203	35	275	7000~7500	1200~1600	12	1~1.5	側銑 (Side milling)
DC1203	35	275	7000~7500	800~1200	24	0.05~0.15	側銑 (Side milling)
DC1203	35	275	7000~7500	800~1200	24	1~1.5	側銑 (Side milling)

DC 3T

建議機器轉速 RPM = 10000 (min^{-1}) 以下
< Be used under the machine of RPM = 10000 (min^{-1}) >

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 : Aluminum Alloy 5052 / 6061 / 7075
冷卻方式 Coolant Type	溼式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DC1603	55	265	5000~5500	600~1000	0.05~0.15	16	溝銑 (Slotting)
DC1603	55	265	5000~5500	1000~1400	0.5	16	溝銑 (Slotting)
DC1603	55	265	5000~5500	600~1000	16	0.05~0.15	側銑 (Side milling)
DC1603	55	265	5000~5500	1000~1400	16	0.5	側銑 (Side milling)
DC1603	55	265	5000~5500	400~800	32	0.05~0.15	側銑 (Side milling)
DC1603	55	265	5000~5500	300~700	32	0.5	側銑 (Side milling)

DBC

建議機器轉速 RPM = 10000 (min^{-1}) 以下
< Be used under the machine of RPM = 10000 (min^{-1}) >

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 : Aluminum Alloy 5052 / 6061 / 7075
冷卻方式 Coolant Type	溼式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DBC0102	10	30	9500~10000	600~1000	0.08~0.11	0.15~0.18	3D 銑 (3D milling)
DBC0102	10	30	9500~10000	1000~1400	0.03~0.05	0.05~0.08	3D 銑 (3D milling)
DBC0152	12	45	9500~10000	800~1200	0.08~0.11	0.15~0.18	3D 銑 (3D milling)
DBC0152	12	45	9500~10000	1200~1600	0.03~0.05	0.05~0.08	3D 銑 (3D milling)
DBC0202	12	60	9000~9500	1000~1400	0.1~0.13	0.2~0.25	3D 銑 (3D milling)
DBC0202	12	60	9000~9500	1600~2000	0.04~0.06	0.06~0.1	3D 銑 (3D milling)
DBC0302	14	85	9000~9500	1100~1500	0.12~0.15	0.23~0.28	3D 銑 (3D milling)
DBC0302	14	85	9000~9500	1800~2200	0.05~0.07	0.8~0.12	3D 銑 (3D milling)
DBC0402	14	115	9000~9500	1400~1800	0.15~0.18	0.3~0.4	3D 銑 (3D milling)
DBC0402	14	115	9000~9500	1800~2200	0.06~0.08	0.1~0.13	3D 銑 (3D milling)
DBC0602	20	160	8500~9000	1400~1800	0.2~0.25	0.4~0.5	3D 銑 (3D milling)
DBC0602	20	170	9000~9500	1800~2200	0.08~0.1	0.12~0.15	3D 銑 (3D milling)
DBC0802	25	200	8000~8500	1600~2000	0.25~0.3	0.5~0.6	3D 銑 (3D milling)
DBC0802	25	230	9000~9500	2000~2400	0.08~0.13	0.15~0.2	3D 銑 (3D milling)
DBC1002	35	255	8000~8500	1600~2000	0.3~0.35	0.7~0.8	3D 銑 (3D milling)
DBC1002	35	285	9000~9500	2000~2400	0.1~0.15	0.18~0.23	3D 銑 (3D milling)
DBC1202	40	290	7700~8200	1600~2000	0.4~0.45	0.8~1	3D 銑 (3D milling)
DBC1202	40	290	7700~8200	2000~2400	0.13~0.16	0.2~0.25	3D 銑 (3D milling)

DBC

建議機器轉速 RPM = 20000 (min^{-1}) 以下
< Be used under the machine of RPM = 20000 (min^{-1}) >

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 : Aluminum Alloy 5052 / 6061 / 7075
冷卻方式 Coolant Type	溼式切削 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DBC0102	10	65	19000~20000	800~1200	0.08~0.11	0.15~0.18	3D 銑 (3D milling)
DBC0102	10	65	19000~20000	1200~1600	0.03~0.05	0.05~0.08	3D 銑 (3D milling)
DBC0152	12	90	18000~19000	1000~1400	0.08~0.11	0.15~0.18	3D 銑 (3D milling)
DBC0152	12	90	18000~19000	1400~1800	0.03~0.05	0.05~0.08	3D 銑 (3D milling)
DBC0202	12	120	18000~19000	1200~1600	0.1~0.13	0.2~0.25	3D 銑 (3D milling)
DBC0202	12	120	18000~19000	1800~2200	0.04~0.06	0.06~0.1	3D 銑 (3D milling)
DBC0302	14	160	17000~18000	1300~1700	0.12~0.15	0.23~0.28	3D 銑 (3D milling)
DBC0302	14	160	17000~18000	2000~2400	0.05~0.07	0.8~0.12	3D 銑 (3D milling)
DBC0402	14	200	16000~17000	1600~2000	0.15~0.18	0.3~0.4	3D 銑 (3D milling)
DBC0402	14	200	16000~17000	2000~2400	0.06~0.08	0.1~0.13	3D 銑 (3D milling)
DBC0602	20	285	15000~16000	1600~2000	0.2~0.25	0.4~0.5	3D 銑 (3D milling)
DBC0602	20	285	15000~16000	2000~2400	0.08~0.1	0.12~0.15	3D 銑 (3D milling)
DBC0802	25	330	13000~14000	2000~2400	0.25~0.3	0.5~0.6	3D 銑 (3D milling)
DBC0802	25	330	13000~14000	2400~2800	0.08~0.13	0.15~0.2	3D 銑 (3D milling)
DBC1002	35	380	12000~13000	2000~2400	0.3~0.35	0.7~0.8	3D 銑 (3D milling)
DBC1002	35	380	12000~13000	2400~2800	0.1~0.15	0.18~0.23	3D 銑 (3D milling)
DBC1202	40	415	11000~12000	2000~2400	0.4~0.45	0.8~1	3D 銑 (3D milling)
DBC1202	40	415	11000~12000	2400~2800	0.13~0.16	0.2~0.25	3D 銑 (3D milling)

DB 4T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 / 鑄鐵 : Carbon Steels / Cast Iron S50C / Fc250 / SS400 : 1.1210 / 0.6025 / 1.0036 : 1050 / N0.35 / A570 Gr.45 (~HRc22)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DB0104	10	60	18000~20000	800~1200	0.06~0.08	0.12~0.16	3D 銑 (3D milling)
DB0104	10	60	18000~20000	1100~1500	0.02~0.04	0.04~0.08	3D 銑 (3D milling)
DB0154	10	90	18000~20000	800~1200	0.07~0.09	0.14~0.18	3D 銑 (3D milling)
DB0154	10	90	18000~20000	1100~1500	0.03~0.05	0.06~0.1	3D 銑 (3D milling)
DB0204	12	120	18000~20000	800~1200	0.07~0.09	0.14~0.18	3D 銑 (3D milling)
DB0204	12	120	18000~20000	1100~1500	0.03~0.05	0.06~0.1	3D 銑 (3D milling)
DB0304	13	150	16000~17000	800~1200	0.1~0.12	0.2~0.24	3D 銑 (3D milling)
DB0304	13	150	16000~17000	1100~1500	0.05~0.07	0.1~0.14	3D 銑 (3D milling)
DB0404	15	190	15000~16000	800~1200	0.11~0.13	0.22~0.26	3D 銑 (3D milling)
DB0404	15	190	15000~16000	1200~1600	0.06~0.08	0.14~0.22	3D 銑 (3D milling)
DB0504	18	220	14000~15000	800~1200	0.13~0.16	0.26~0.32	3D 銑 (3D milling)
DB0504	18	220	14000~15000	1200~1600	0.07~0.09	0.14~0.18	3D 銑 (3D milling)
DB0604	20	245	13000~14000	1100~1500	0.15~0.2	0.3~0.4	3D 銑 (3D milling)
DB0604	20	245	13000~14000	1400~1800	0.07~0.11	0.14~0.22	3D 銑 (3D milling)
DB0804	25	305	12000~13000	1100~1500	0.18~0.23	0.36~0.46	3D 銑 (3D milling)
DB0804	25	305	12000~13000	1500~1900	0.08~0.13	0.16~0.26	3D 銑 (3D milling)
DB1004	35	285	8700~9200	1100~1500	0.23~0.28	0.46~0.56	3D 銑 (3D milling)
DB1004	35	285	8700~9200	1500~1900	0.1~0.15	0.2~0.3	3D 銑 (3D milling)
DB1204	40	265	7000~8000	1100~1500	0.27~0.32	0.54~0.64	3D 銑 (3D milling)
DB1204	40	265	7000~8000	1500~1900	0.15~0.2	0.3~0.4	3D 銑 (3D milling)
DB1604	50	255	5000~6000	900~1200	0.35~0.4	0.7~0.8	3D 銑 (3D milling)
DB1604	50	255	5000~6000	1200~1600	0.18~0.23	0.36~0.46	3D 銑 (3D milling)

DB 4T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 : Prehardened Steels NAK80 : 1.2083 : AISI420 : M310 (HRc 36~45)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 Cutting Speed(m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
DB0104	10	50	16000~17000	400~700	0.06~0.08	0.12~0.16	3D 銑 (3D milling)
DB0104	10	50	16000~17000	700~1000	0.02~0.04	0.04~0.08	3D 銑 (3D milling)
DB0154	10	80	16000~17000	400~700	0.07~0.09	0.14~0.18	3D 銑 (3D milling)
DB0154	10	80	16000~17000	700~1000	0.03~0.05	0.06~0.1	3D 銑 (3D milling)
DB0204	12	100	15000~16000	400~700	0.07~0.09	0.14~0.18	3D 銑 (3D milling)
DB0204	12	100	15000~16000	700~1000	0.03~0.05	0.06~0.1	3D 銑 (3D milling)
DB0304	13	135	14000~15000	400~700	0.09~0.11	0.18~0.22	3D 銑 (3D milling)
DB0304	13	135	14000~15000	700~1000	0.04~0.06	0.08~0.12	3D 銑 (3D milling)
DB0404	15	170	13000~14000	500~800	0.11~0.13	0.22~0.26	3D 銑 (3D milling)
DB0404	15	170	13000~14000	1000~1400	0.06~0.08	0.14~0.22	3D 銑 (3D milling)
DB0504	18	195	12000~13000	600~900	0.11~0.13	0.22~0.26	3D 銑 (3D milling)
DB0504	18	195	12000~13000	1000~1400	0.06~0.08	0.14~0.22	3D 銑 (3D milling)
DB0604	20	215	11000~12000	700~1000	0.15~0.18	0.3~0.36	3D 銑 (3D milling)
DB0604	20	215	11000~12000	1100~1500	0.07~0.11	0.14~0.22	3D 銑 (3D milling)
DB0804	25	240	9000~10000	900~1200	0.15~0.2	0.3~0.4	3D 銑 (3D milling)
DB0804	25	240	9000~10000	1200~1600	0.08~0.12	0.16~0.24	3D 銑 (3D milling)
DB1004	35	235	7000~8000	900~1200	0.2~0.25	0.4~0.5	3D 銑 (3D milling)
DB1004	35	235	7000~8000	1200~1600	0.1~0.15	0.2~0.3	3D 銑 (3D milling)
DB1204	40	190	5000~6000	800~1100	0.27~0.32	0.54~0.64	3D 銑 (3D milling)
DB1204	40	190	5000~6000	1200~1600	0.15~0.2	0.3~0.4	3D 銑 (3D milling)
DB1604	50	255	4500~5500	600~900	0.3~0.35	0.6~0.7	3D 銑 (3D milling)
DB1604	50	255	4500~5500	1000~1300	0.15~0.23	0.36~0.46	3D 銑 (3D milling)



德信發企業有限公司
DHF Precision Tool Co., Ltd.

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2014.10.2000

DHF



鋁用切削專用
SOFT MATERIALS CUTTING SERIES

DESIGN . HONESTY . FUTURE

版權聲明

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AEW 彩虹立銑刀

1. 抗震好，穩定性佳。
2. 獨特的斷屑設計，不易黏屑，排屑順暢。
3. 高進給、大切深，縮短加工時間。
4. 切深在1D以上，削鐵如泥。

1. Low vibration and high stability.
2. Special design features smooth chip removal and low stickiness.
3. High Feed and large Depth of cutting; shorten milling times.
4. Depth of cutting is over 1D, and the endmill is very easy to cut.

AES 高效能鋁用立銑刀

1. 獨特的刀刃設計，表面光潔度佳。
2. 獨特的溝槽設計，粗、精銑適用。
3. 高進給、大切深。

1. Unique flute design enables the optimum surface finishing.
2. Special grooving concept is suitable for Roughing and Finishing millings.
3. High Feed and large Depth of cutting.



鋁合金側銑加工表面光潔度實例
Demonstration for side milling with optimum surface finishing on Aluminum alloy

AES





AET-3T

AEA-3T





AET-2T

AEA-2T



DHF Design . Honesty . Future

目錄
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品名 Product	AEW	AEWR	AES	AES+
說明 Explanation	P.1	P.2	P.3	P.4
切削條件 Milling Conditions	P.13~16	P.17~18	P.19~24	






品名 Product	AER	AESR	AEA-2T	AEA-3T
說明 Explanation	P.5	P.6	P.7	P.8
切削條件 Milling Conditions	P.25~26	P.27~29	P.30~33	P.34~37






品名 Product	AET-2T	AET-3T	BTC	HBC IBC JBC
說明 Explanation	P.9	P.10	P.11	P.12
切削條件 Milling Conditions	P.38~39	P.40~41	P.42~43	P.44

圖示說明
Guide Line to Icons

切削性能 CUTTING PERFORMANCE


優
Excellent


良
Good


尚可
Acceptable


禁止
No

鎢鋼種類 CARBIDE


超微粒。
Micro grain.


極超微粒。
Super micro grain.

顆粒大小 GRAIN SIZE


粉末顆粒是0.4 μm
Grain size is 0.4 μm.


粉末顆粒是0.6 μm
Grain size is 0.6 μm.

螺旋角 HELIX ANGLE



螺旋角度25°、40°、45°、55°
Helix Angle is 25°,40°,45°,55°.

圓隅角 CORNER R



圓隅角。
Corner Radius.

刃數 FLUTE



鍍層 COATING



適用於銅加工，有良好表面光潔度及刀具壽命。
Good at copper machining. With benefits of surface finishing and long tool life.

齒形 ROUGHING



大粗齒
Big Roughing.

縮頸 SHRINK NECK


適用於深溝加工
Best for long neck machine.



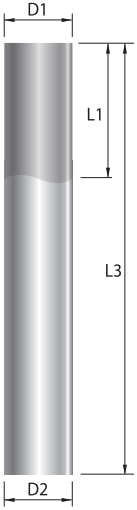
彩虹立銑刀
End Mills

AEW

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MG | 0.6 μm | Roughing | 45° | 3 Flutes



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
6.0	0 -0.025
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AEW0603	6.0	16	50	6
AEW0803	8.0	20	60	8
AEW0803L	8.0	25	80	8
AEW1003	10.0	22	75	10
AEW1003L	10.0	30	80	10
AEW1203	12.0	26	75	12
AEW1203L	12.0	35	100	12
AEW1603	16.0	40	100	16
AEW1603L	16.0	50	120	16
AEW2003	20.0	45	100	20
AEW2003L	20.0	55	120	20

unit : mm

★ AEW的切削數據請查閱P.13~16 Please find the milling condition on P.13~16



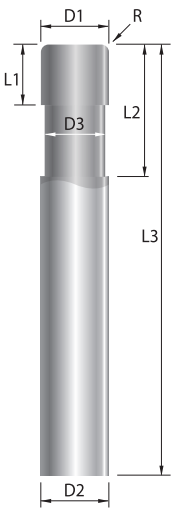
彩虹圓鼻角立銑刀
End Mills
Corner Radius

AEWR

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MG | 0.6 μm | Roughing | 45° | R | 3 Flutes



公差表 TOLERANCE

直徑 D1	R徑公差值 R Tolerance	直徑公差值 D1 Tolerance
6.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
8.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
10.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
12.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
16.0	$^{+0.02}_{0}$	$^{0}_{-0.03}$
20.0	$^{+0.02}_{0}$	$^{0}_{-0.03}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$
Ø20	$^{0}_{-0.013}$

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia.	R R角 Corner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AEWR0605	6.0	5.8	0.5	8	18	50	6
AEWR0805	8.0	7.7	0.5	10	24	60	8
AEWR1005	10.0	9.6	0.5	12	30	75	10
AEWR1205	12.0	11.5	0.5	15	36	75	12
AEWR1610	16.0	15.5	1.0	24	40	120	16
AEWR2010	20.0	19.0	1.0	30	50	120	20

unit : mm

★ AEWR的切削數據請查閱P.17~18 Please find the milling condition on P.17~18

高效能 鋁用立銑刀 End Mills

AES



精銑 Finishing

中銑 Semi-finishing

粗銑 Roughing

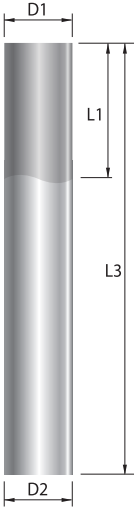
乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

Super MG | 0.4 μm | 40° | 3 Flutes



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
2.0	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.02
10.0	0 -0.02
12.0	0 -0.02
16.0	0 -0.03
20.0	0 -0.03

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AES0203S	2.0	6	50	4
AES0203	2.0	6	50	6
AES0303S	3.0	8	50	4
AES0303	3.0	8	50	6
AES0403S	4.0	11	50	4
AES0403	4.0	11	50	6
AES0503	5.0	13	50	6
AES0603	6.0	16	50	6
AES0603L	6.0	32	75	6
AES0803	8.0	20	60	8
AES0803L	8.0	45	100	8
AES1003	10.0	25	75	10
AES1003L	10.0	50	100	10
AES1203	12.0	30	75	12
AES1203L	12.0	55	100	12
AES1603	16.0	40	100	16
AES1603L	16.0	50	120	16
AES2003	20.0	45	100	20
AES2003L	20.0	60	120	20

unit : mm

★ AES的切削數據請查閱P.19~24 Please find the milling condition on P.19~24

新產品 NEW PRODUCT

無現貨，需下單後塗層
Coating after order.

高效能 鋁用立銑刀 End Mills

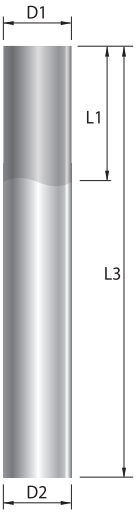
AES+



- 精銑 Finishing
- 中銑 Semi-finishing
- 粗銑 Roughing

- 乾式切削 Dry Machining
- 油霧切削 MQL (Mist)
- 水溶性切削 Emulsion Machining
- 油性切削 Oil Machining

Super MG | 0.4 μm | 40° | 3 Flutes | DLC



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
2.0	$^{0}_{-0.02}$
3.0	$^{0}_{-0.02}$
4.0	$^{0}_{-0.02}$
5.0	$^{0}_{-0.02}$
6.0	$^{0}_{-0.02}$
8.0	$^{0}_{-0.02}$
10.0	$^{0}_{-0.02}$
12.0	$^{0}_{-0.02}$
16.0	$^{0}_{-0.03}$
20.0	$^{0}_{-0.03}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$
Ø20	$^{0}_{-0.013}$

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AES0203S+	2.0	6	50	4
AES0203+	2.0	6	50	6
AES0303S+	3.0	8	50	4
AES0303+	3.0	8	50	6
AES0403S+	4.0	11	50	4
AES0403+	4.0	11	50	6
AES0503+	5.0	13	50	6
AES0603+	6.0	16	50	6
AES0603L+	6.0	32	75	6
AES0803+	8.0	20	60	8
AES0803L+	8.0	45	100	8
AES1003+	10.0	25	75	10
AES1003L+	10.0	50	100	10
AES1203+	12.0	30	75	12
AES1203L+	12.0	55	100	12
AES1603+	16.0	40	100	16
AES1603L+	16.0	50	120	16
AES2003+	20.0	45	100	20
AES2003L+	20.0	60	120	20

unit : mm



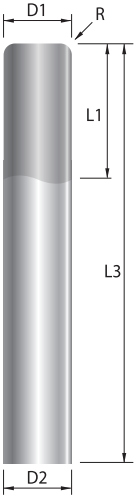
鋁用圓鼻角立銑刀
End Mills
Corner Radius

AER

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MG | 0.6 μm | 45° | R | 3 Flutes



公差表 TOLERANCE

直徑 D1	R徑公差值 R Tolerance	直徑公差值 D1 Tolerance
2.0	+0.02 0	0 -0.02
3.0	+0.02 0	0 -0.02
4.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.02
10.0	+0.02 0	0 -0.02

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AER0202	2.0	0.2	6	50	6
AER0302	3.0	0.2	10	50	6
AER0402	4.0	0.2	12	50	6
AER0603	6.0	0.3	18	50	6
AER0805	8.0	0.5	20	60	8
AER1005	10.0	0.5	30	75	10

unit : mm

★ AER的切削數據請查閱P.25~26 Please find the milling condition on P.25~26



高效能鋁用 圓鼻角立銑刀 End Mills

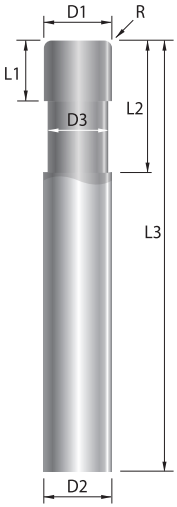
Corner Radius

AESR

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

Super MG | 0.4 μm | 40° | R | 3 Flutes



公差表 TOLERANCE

直徑 D1	R徑公差值 R Tolerance	直徑公差值 D1 Tolerance
3.0	+0.02 0	0 -0.02
4.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.02
10.0	+0.02 0	0 -0.02
12.0	+0.02 0	0 -0.02
16.0	+0.02 0	0 -0.03
20.0	+0.02 0	0 -0.03

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia.	R R角 Corner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AESR0305	3.0	2.9	0.5	4.5	9	50	6
AESR0405	4.0	3.9	0.5	6.0	12	50	6
AESR0605	6.0	5.8	0.5	9.0	18	60	6
AESR0610	6.0	5.8	1.0	9.0	18	60	6
AESR0805	8.0	7.7	0.5	12.0	24	60	8
AESR0810	8.0	7.7	1.0	12.0	24	60	8
AESR1005	10.0	9.6	0.5	15.0	30	75	10
AESR1010	10.0	9.6	1.0	15.0	30	75	10
AESR1205	12.0	11.5	0.5	18.0	36	75	12
AESR1210	12.0	11.5	1.0	18.0	36	75	12
AESR1605	16.0	15.5	0.5	24.0	40	120	16
AESR1610	16.0	15.5	1.0	24.0	40	120	16
AESR1630	16.0	15.5	3.0	24.0	40	120	16
AESR2005	20.0	19.0	0.5	30.0	50	120	20
AESR2010	20.0	19.0	1.0	30.0	50	120	20
AESR2030	20.0	19.0	3.0	30.0	50	120	20

unit : mm

★ AESR的切削數據請查閱P.27~29 Please find the milling condition on P.27~29



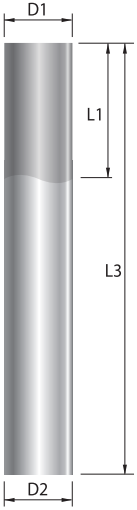
鋁用立銑刀
End Mills

AEA-2T

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MG | 0.6 μm | 55° | 2 Flutes



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
0.5	$^{0}_{-0.02}$
1.0	$^{0}_{-0.02}$
1.5	$^{0}_{-0.02}$
2.0	$^{0}_{-0.02}$
3.0	$^{0}_{-0.02}$
4.0	$^{0}_{-0.02}$
5.0	$^{0}_{-0.02}$
6.0	$^{0}_{-0.02}$
8.0	$^{0}_{-0.02}$
10.0	$^{0}_{-0.02}$
12.0	$^{0}_{-0.02}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	$^{0}_{-0.008}$
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AEA0052	0.5	1.5	50	4
AEA0102	1.0	3	50	4
AEA0152	1.5	4	50	4
AEA0202	2.0	6	50	4
AEA0302	3.0	8	50	4
AEA0402	4.0	12	50	4
AEA0502	5.0	16	50	6
AEA0602	6.0	18	50	6
AEA0802	8.0	22	60	8
AEA1002	10.0	28	75	10
AEA1202	12.0	30	75	12

unit : mm

★ AEA-2T的切削數據請查閱P.30~33 Please find the milling condition on P.30~33



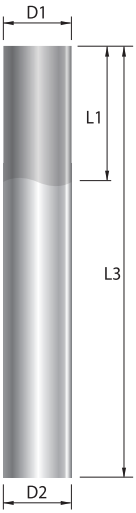
鋁用立銑刀
End Mills

AEA-3T

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MG | 0.6 μm | 45° | 3 Flutes



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
2.0	$^{0}_{-0.02}$
3.0	$^{0}_{-0.02}$
4.0	$^{0}_{-0.02}$
5.0	$^{0}_{-0.02}$
6.0	$^{0}_{-0.02}$
8.0	$^{0}_{-0.02}$
10.0	$^{0}_{-0.02}$
12.0	$^{0}_{-0.02}$
16.0	$^{0}_{-0.03}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AEA0203	2.0	6	50	6
AEA0303	3.0	10	50	6
AEA0403	4.0	12	50	6
AEA0503	5.0	16	50	6
AEA0603	6.0	18	50	6
AEA0803	8.0	20	60	8
AEA1003	10.0	25	75	10
AEA1203	12.0	30	75	12
AEA1603	16.0	40	100	16

unit : mm

★ AEA-3T的切削數據請查閱P.34~37 Please find the milling condition on P.34~37



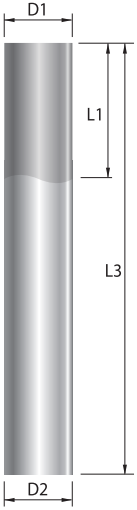
鏡面鋁用立銑刀
End Mills

AET-2T

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MG | 0.6 μm | 45° | 2 Flutes



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
0.5	0 -0.02
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.02
10.0	0 -0.02
12.0	0 -0.02

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AET0052	0.5	1.5	50	4
AET0102	1.0	3	50	6
AET0152	1.5	4	50	6
AET0202	2.0	6	50	6
AET0302	3.0	8	50	6
AET0402	4.0	11	50	6
AET0502	5.0	13	50	6
AET0602	6.0	16	50	6
AET0802	8.0	19	60	8
AET1002	10.0	25	75	10
AET1202	12.0	26	75	12

unit : mm

★ AET-2T的切削數據請查閱P.38~39 Please find the milling condition on P.38~39



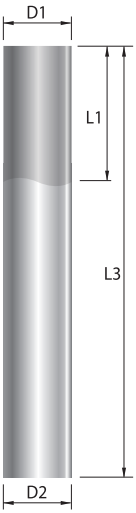
鏡面鋁用立銑刀
End Mills

AET-3T

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MG | 0.6 μm | 45° | 3 Flutes



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
2.0	$^{0}_{-0.02}$
3.0	$^{0}_{-0.02}$
4.0	$^{0}_{-0.02}$
5.0	$^{0}_{-0.02}$
6.0	$^{0}_{-0.02}$
8.0	$^{0}_{-0.02}$
10.0	$^{0}_{-0.02}$
12.0	$^{0}_{-0.02}$
16.0	$^{0}_{-0.02}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AET0203	2.0	6	50	6
AET0303	3.0	10	50	6
AET0403	4.0	12	50	6
AET0503	5.0	16	60	6
AET0603	6.0	18	60	6
AET0803	8.0	20	60	8
AET1003	10.0	25	75	10
AET1203	12.0	30	75	12
AET1603	16.0	40	100	16

unit : mm

★ AET-2T的切削數據請查閱P.40~41 Please find the milling condition on P.40~41

鋁用圓頭立銑刀
Ball Nose End Mills

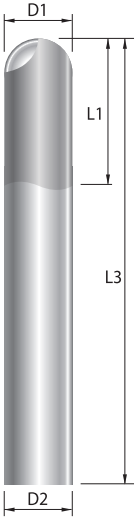
BTC



精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MG | 0.6 μm | 25° | 2 Flutes



公差表 TOLERANCE

直徑 D1	球頭公差值 R Tolerance
R0.5	±0.01
R0.75	±0.01
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015

柄徑 D2	柄徑公差值 D2 Tolerance
Ø3	$^{0}_{-0.006}$
Ø4	$^{0}_{-0.008}$
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
BTC0102	R0.5	2	50	4
BTC0152	R0.75	3	50	4
BTC0202	R1	4	50	4
BTC0302	R1.5	6	50	3
BTC0402	R2	8	50	4
BTC0602	R3	12	50	6
BTC0802	R4	16	60	8
BTC1002	R5	20	75	10
BTC1202	R6	24	75	12

unit : mm

★ BTC的切削數據請查閱P.42~43 Please find the milling condition on P.42~43



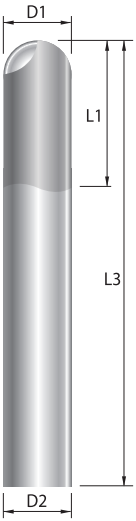
鋁用圓頭立銑刀
Ball Nose End Mills

HBC IBC JBC

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MG | 0.6 μm | 25° | 2 Flutes



公差表 TOLERANCE

直徑 D1	球頭公差值 R Tolerance
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
HBC0402	R2	8	75	6
HBC0502	R2.5	10	75	6
HBC0602	R3	12	75	6
IBC0402	R2	8	100	6
IBC0602	R3	12	100	6
IBC0802	R4	16	100	8
IBC1002	R5	20	100	10
IBC1202	R6	24	100	12
JBC0602	R3	12	150	6
JBC0802	R4	16	150	8
JBC1002	R5	20	150	10
JBC1202	R6	24	150	12

unit : mm

★ HBC IBC JBC的切削數據請查閱P.44 Please find the milling condition on P.44

切削條件表 MILLING CONDITIONS

AEW

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**
冷卻方式 Coolant Type	濕式切削 Wet coolant

建議機器轉速RPM=10000 (min^{-1}) 以下
Be used under the machine of RPM=10000 (min^{-1})

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEW0603	20	185	9500~10000	4500~5000	0~1	4~6	溝銑 SLOTTING
AEW0603	20	185	9500~10000	3000~3500	2~3	4~6	溝銑 SLOTTING
AEW0603	20	185	9500~10000	2000~2500	4~6	4~6	溝銑 SLOTTING
AEW0603	20	185	9500~10000	6500~7000	6	0~1	側銑 SIDE MILLING
AEW0603	20	185	9500~10000	4500~5000	6	2~3	側銑 SIDE MILLING
AEW0603	20	185	9500~10000	2000~2500	6	4~6	側銑 SIDE MILLING
AEW0603	20	185	9500~10000	5000~5500	12	0~1	側銑 SIDE MILLING
AEW0603	20	185	9500~10000	2000~2500	12	2~3	側銑 SIDE MILLING
AEW0603	20	185	9500~10000	900~13000	12	4~5	側銑 SIDE MILLING
AEW0803	23	220	8500~9000	6000~6500	0~1.5	6~8	溝銑 SLOTTING
AEW0803	23	220	8500~9000	4000~4500	2~4	6~8	溝銑 SLOTTING
AEW0803	23	220	8500~9000	3000~3500	5~8	6~8	溝銑 SLOTTING
AEW0803	23	220	8500~9000	6000~6500	8	0~2	側銑 SIDE MILLING
AEW0803	23	220	8500~9000	4500~5000	8	3~5	側銑 SIDE MILLING
AEW0803	23	220	8500~9000	3000~3500	8	6~8	側銑 SIDE MILLING
AEW0803	23	220	8500~9000	4000~4500	16	0~2	側銑 SIDE MILLING
AEW0803	23	220	8500~9000	2500~3000	16	3~5	側銑 SIDE MILLING
AEW0803	23	220	8500~9000	1500~2000	16	6~8	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	4000~4500	8	0~2	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	2300~2800	8	3~5	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	1000~1500	8	6~8	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	3500~4000	16	0~2	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	1800~2300	16	3~5	側銑 SIDE MILLING
AEW0803L	40	180	7000~7500	1800~2300	22	0~2	側銑 SIDE MILLING
AEW0803L	40	180	7000~7500	1000~1400	22	3~5	側銑 SIDE MILLING
AEW1003	26	250	7800~8300	5000~5500	0~2	8~10	溝銑 SLOTTING
AEW1003	26	250	7800~8300	4000~4500	3~5	8~10	溝銑 SLOTTING
AEW1003	26	250	7800~8300	3000~3500	6~10	8~10	溝銑 SLOTTING
AEW1003	26	250	7800~8300	5500~6000	10	0~2	側銑 SIDE MILLING
AEW1003	26	250	7800~8300	4000~4500	10	3~5	側銑 SIDE MILLING
AEW1003	26	250	7800~8300	3000~3500	10	6~10	側銑 SIDE MILLING
AEW1003	26	250	7800~8300	4000~4500	20	0~2	側銑 SIDE MILLING
AEW1003	26	250	7800~8300	3000~3500	20	3~5	側銑 SIDE MILLING
AEW1003	26	250	7800~8300	2500~3000	20	6~10	側銑 SIDE MILLING
AEW1003L	45	140	4300~4800	2000~2500	0~2	8~10	溝銑 SLOTTING
AEW1003L	45	155	4700~5200	1800~2300	3~5	8~10	溝銑 SLOTTING
AEW1003L	45	155	4700~5200	1000~1500	6~10	8~10	溝銑 SLOTTING
AEW1003L	45	230	7000~7500	4000~4500	10	0~2	側銑 SIDE MILLING
AEW1003L	45	190	5800~6300	2700~3200	10	3~5	側銑 SIDE MILLING
AEW1003L	45	190	5800~6300	1300~1800	10	6~10	側銑 SIDE MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEW1003L	45	165	5000~5500	2000~2500	20	0~2	側銑 SIDE MILLING
AEW1003L	45	165	5000~5500	800~1300	20	3~5	側銑 SIDE MILLING
AEW1003L	45	165	5000~5500	600~1000	20	6~10	側銑 SIDE MILLING
AEW1003L	45	155	4700~5300	700~1200	28	0~2	側銑 SIDE MILLING
AEW1003L	45	155	4700~5300	500~800	28	3~5	側銑 SIDE MILLING
AEW1203	30	290	7500~8000	4500~5000	0~2	10~12	溝銑 SLOTTING
AEW1203	30	290	7500~8000	3000~3500	3~6	10~12	溝銑 SLOTTING
AEW1203	30	290	7500~8000	2500~3000	7~12	10~12	溝銑 SLOTTING
AEW1203	30	290	7500~8000	3500~4000	12	0~2	側銑 SIDE MILLING
AEW1203	30	290	7500~8000	3000~3500	12	3~6	側銑 SIDE MILLING
AEW1203	30	290	7500~8000	3000~3500	12	7~12	側銑 SIDE MILLING
AEW1203	30	290	7500~8000	4500~5000	24	0~2	側銑 SIDE MILLING
AEW1203	30	290	7500~8000	4000~4500	24	3~6	側銑 SIDE MILLING
AEW1203	30	290	7500~8000	3000~3500	24	7~12	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	2000~2500	12	0~2	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1800~2300	12	3~6	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1500~2000	12	7~12	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	2000~2500	24	0~2	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1500~2000	24	3~6	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1500~2000	34	0~2	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1000~1500	34	3~6	側銑 SIDE MILLING
AEW1603	55	340	6500~7000	2500~3000	3~4	14~16	溝銑 SLOTTING
AEW1603	55	340	6500~7000	1700~2200	6~8	14~16	溝銑 SLOTTING
AEW1603	55	340	6500~7000	1500~2000	10~12	14~16	溝銑 SLOTTING
AEW1603	55	340	6500~7000	4000~4500	16	0~2	側銑 SIDE MILLING
AEW1603	55	340	6500~7000	2700~3200	16	6~8	側銑 SIDE MILLING
AEW1603	55	340	6500~7000	2200~2700	16	10~12	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	2000~2500	32	0~2	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	1800~2300	32	6~8	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	1500~2000	32	10~12	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	2000~2500	48	0~2	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	1000~1500	48	6~8	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	700~1100	48	10~12	側銑 SIDE MILLING
AEW2003	60	340	5200~5700	2200~2700	3~4	18~20	溝銑 SLOTTING
AEW2003	60	340	5200~5700	1400~1900	6~8	18~20	溝銑 SLOTTING
AEW2003	60	340	5200~5700	1100~1500	10~12	18~20	溝銑 SLOTTING
AEW2003	60	340	5200~5700	3000~3500	20	0~2	側銑 SIDE MILLING
AEW2003	60	340	5200~5700	2000~2500	20	6~8	側銑 SIDE MILLING
AEW2003	60	340	5200~5700	1500~2000	20	10~12	側銑 SIDE MILLING
AEW2003	60	315	4800~5300	1700~2200	40	0~2	側銑 SIDE MILLING
AEW2003	60	315	4800~5300	1800~2300	40	6~8	側銑 SIDE MILLING
AEW2003	60	315	4800~5200	1000~1400	40	10~12	側銑 SIDE MILLING

切削條件表 MILLING CONDITIONS

AEW

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=18000 (min^{-1}) 以下 Be used under the machine of RPM=18000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEW0603	20	330	17000~18000	6500~7000	0~1	4~6	溝銑 SLOTTING
AEW0603	20	330	17000~18000	5000~5500	2~3	4~6	溝銑 SLOTTING
AEW0603	20	330	17000~18000	4500~5000	4~6	4~6	溝銑 SLOTTING
AEW0603	20	330	17000~18000	8500~9000	6	0~1	側銑 SIDE MILLING
AEW0603	20	330	17000~18000	6000~6500	6	2~3	側銑 SIDE MILLING
AEW0603	20	330	17000~18000	3000~3500	6	4~6	側銑 SIDE MILLING
AEW0603	20	330	17000~18000	7000~7500	12	0~1	側銑 SIDE MILLING
AEW0603	20	330	17000~18000	3000~3500	12	2~3	側銑 SIDE MILLING
AEW0603	20	330	17000~18000	2000~2500	12	4~5	側銑 SIDE MILLING
AEW0803	23	390	15000~16000	7500~8500	0~1.5	6~8	溝銑 SLOTTING
AEW0803	23	390	15000~16000	4500~5000	2~4	6~8	溝銑 SLOTTING
AEW0803	23	390	15000~16000	5500~6500	5~8	6~8	溝銑 SLOTTING
AEW0803	23	390	15000~16000	9000~10000	8	0~2	側銑 SIDE MILLING
AEW0803	23	390	15000~16000	6500~7500	8	3~5	側銑 SIDE MILLING
AEW0803	23	390	15000~16000	5000~5500	8	6~8	側銑 SIDE MILLING
AEW0803	23	390	15000~16000	7500~8500	16	0~2	側銑 SIDE MILLING
AEW0803	23	390	15000~16000	5500~6000	16	3~5	側銑 SIDE MILLING
AEW0803	23	390	15000~16000	4500~5000	16	6~8	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	4000~4500	8	0~2	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	2300~2800	8	3~5	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	1000~1500	8	6~8	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	3500~4000	16	0~2	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	1800~2300	16	3~5	側銑 SIDE MILLING
AEW0803L	40	180	7000~7500	1800~2300	22	0~2	側銑 SIDE MILLING
AEW0803L	40	180	7000~7500	1000~1400	22	3~5	側銑 SIDE MILLING
AEW1003	26	390	12000~13000	7000~7500	0~2	8~10	溝銑 SLOTTING
AEW1003	26	390	12000~13000	6500~7000	3~5	8~10	溝銑 SLOTTING
AEW1003	26	390	12000~13000	6000~6500	6~10	8~10	溝銑 SLOTTING
AEW1003	26	485	15000~16000	9000~9500	0~2	8~10	側銑 SIDE MILLING
AEW1003	26	390	12000~13000	7500~8500	10	0~2	側銑 SIDE MILLING
AEW1003	26	390	12000~13000	6000~6500	10	3~5	側銑 SIDE MILLING
AEW1003	26	390	12000~13000	5500~6000	10	6~10	側銑 SIDE MILLING
AEW1003	26	390	12000~13000	5000~5500	20	0~2	側銑 SIDE MILLING
AEW1003	26	390	12000~13000	4000~4500	20	3~5	側銑 SIDE MILLING
AEW1003	26	390	12000~13000	3000~3500	20	6~10	側銑 SIDE MILLING
AEW1003	26	485	15000~16000	7500~8500	10	0~2	側銑 SIDE MILLING
AEW1003	26	485	15000~16000	8500~9000	10	3~5	側銑 SIDE MILLING
AEW1003	26	485	15000~16000	5000~5500	10	6~10	側銑 SIDE MILLING
AEW1003	26	485	15000~16000	5000~5500	20	0~2	側銑 SIDE MILLING
AEW1003	26	485	15000~16000	5000~5500	20	3~5	側銑 SIDE MILLING
AEW1003	26	485	15000~16000	4000~4500	20	6~10	側銑 SIDE MILLING
AEW1003L	45	140	4300~4800	2000~2500	0~2	8~10	溝銑 SLOTTING
AEW1003L	45	155	4700~5200	1800~2300	3~5	8~10	溝銑 SLOTTING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEW1003L	45	155	4700~5200	1000~1500	6~10	8~10	溝銑 SLOTTING
AEW1003L	45	230	7000~7500	4000~4500	10	0~2	側銑 SIDE MILLING
AEW1003L	45	190	5800~6300	2700~3200	10	3~5	側銑 SIDE MILLING
AEW1003L	45	190	5800~6300	1300~1800	10	6~10	側銑 SIDE MILLING
AEW1003L	45	165	5000~5500	2000~2500	20	0~2	側銑 SIDE MILLING
AEW1003L	45	165	5000~5500	800~1300	20	3~5	側銑 SIDE MILLING
AEW1003L	45	165	5000~5500	600~1000	20	6~10	側銑 SIDE MILLING
AEW1003L	45	155	4700~5300	700~1200	28	0~2	側銑 SIDE MILLING
AEW1003L	45	155	4700~5300	500~800	28	3~5	側銑 SIDE MILLING
AEW1203	30	395	10000~11000	7000~7500	0~2	10~12	溝銑 SLOTTING
AEW1203	30	395	10000~11000	5500~6000	3~6	10~12	溝銑 SLOTTING
AEW1203	30	395	10000~11000	5500~6000	7~12	10~12	溝銑 SLOTTING
AEW1203	30	395	10000~11000	8000~8500	12	0~2	側銑 SIDE MILLING
AEW1203	30	395	10000~11000	4500~5000	12	3~6	側銑 SIDE MILLING
AEW1203	30	395	10000~11000	4500~5000	12	7~12	側銑 SIDE MILLING
AEW1203	30	395	10000~11000	7000~7500	24	0~2	側銑 SIDE MILLING
AEW1203	30	395	10000~11000	4500~5000	24	3~6	側銑 SIDE MILLING
AEW1203	30	395	10000~11000	4500~5000	24	7~12	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	2000~2500	12	0~2	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1800~2300	12	3~6	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1500~2000	12	7~12	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	2000~2500	24	0~2	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1500~2000	24	3~6	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1500~2000	34	0~2	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1000~1500	34	3~6	側銑 SIDE MILLING
AEW1603	55	340	6500~7000	2500~3000	3~4	14~16	溝銑 SLOTTING
AEW1603	55	340	6500~7000	1700~2200	6~8	14~16	溝銑 SLOTTING
AEW1603	55	340	6500~7000	1500~2000	10~12	14~16	溝銑 SLOTTING
AEW1603	55	340	6500~7000	4000~4500	16	0~2	側銑 SIDE MILLING
AEW1603	55	340	6500~7000	2700~3200	16	6~8	側銑 SIDE MILLING
AEW1603	55	340	6500~7000	2200~2700	16	10~12	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	2000~2500	32	0~2	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	1800~2300	32	6~8	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	1500~2000	32	10~12	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	2000~2500	48	0~2	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	1000~1500	48	6~8	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	700~1100	48	10~12	側銑 SIDE MILLING
AEW2003	60	340	5200~5700	2200~2700	3~4	18~20	溝銑 SLOTTING
AEW2003	60	340	5200~5700	1400~1900	6~8	18~20	溝銑 SLOTTING
AEW2003	60	340	5200~5700	1100~1500	10~12	18~20	溝銑 SLOTTING
AEW2003	60	340	5200~5700	3000~3500	20	0~2	側銑 SIDE MILLING
AEW2003	60	340	5200~5700	2000~2500	20	6~8	側銑 SIDE MILLING
AEW2003	60	340	5200~5700	1500~2000	20	10~12	側銑 SIDE MILLING
AEW2003	60	315	4800~5300	1700~2200	40	0~2	側銑 SIDE MILLING
AEW2003	60	315	4800~5300	1800~2300	40	6~8	側銑 SIDE MILLING
AEW2003	60	315	4800~5200	1000~1400	40	10~12	側銑 SIDE MILLING

切削條件表 MILLING CONDITIONS

AEWR

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=10000 (min^{-1}) 以下 Be used under the machine of RPM=10000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEWR0605	20	185	9500~10000	3500~4000	0~1	4~6	溝銑 SLOTTING
AEWR0605	20	185	9500~10000	2000~2500	2~3	4~6	溝銑 SLOTTING
AEWR0605	20	185	9500~10000	1000~1500	4~6	4~6	溝銑 SLOTTING
AEWR0605	20	185	9500~10000	5000~5500	6	0~1	側銑 SIDE MILLING
AEWR0605	20	185	9500~10000	3000~3500	6	2~3	側銑 SIDE MILLING
AEWR0605	20	185	9500~10000	1000~1500	6	4~6	側銑 SIDE MILLING
AEWR0805	27	220	8500~9000	5000~5500	0~1.5	6~8	溝銑 SLOTTING
AEWR0805	27	220	8500~9000	3000~3500	2~4	6~8	溝銑 SLOTTING
AEWR0805	27	220	8500~9000	2000~2500	5~8	6~8	溝銑 SLOTTING
AEWR0805	27	220	8500~9000	5000~5500	8	0~2	側銑 SIDE MILLING
AEWR0805	27	220	8500~9000	3000~3500	8	3~5	側銑 SIDE MILLING
AEWR0805	27	220	8500~9000	1800~2300	8	6~8	側銑 SIDE MILLING
AEWR1005	33	250	7800~8300	4000~4500	0~2	8~10	溝銑 SLOTTING
AEWR1005	33	250	7800~8300	3000~3500	3~5	8~10	溝銑 SLOTTING
AEWR1005	33	250	7800~8300	2000~2500	6~10	8~10	溝銑 SLOTTING
AEWR1005	33	250	7800~8300	4000~4500	10	0~2	側銑 SIDE MILLING
AEWR1005	33	250	7800~8300	3000~3500	10	3~5	側銑 SIDE MILLING
AEWR1005	33	250	7800~8300	1800~2300	10	6~10	側銑 SIDE MILLING
AEWR1205	37	290	7500~8000	4000~4500	0~2	10~12	溝銑 SLOTTING
AEWR1205	37	290	7500~8000	2500~3000	3~6	10~12	溝銑 SLOTTING
AEWR1205	37	290	7500~8000	2000~2500	7~12	10~12	溝銑 SLOTTING
AEWR1205	37	290	7500~8000	3000~3500	12	0~2	側銑 SIDE MILLING
AEWR1205	37	290	7500~8000	2500~3000	12	3~6	側銑 SIDE MILLING
AEWR1205	37	290	7500~8000	2000~2500	12	7~12	側銑 SIDE MILLING
AEWR1610	55	340	6500~7000	2000~2500	3~4	14~16	溝銑 SLOTTING
AEWR1610	55	340	6500~7000	1200~1700	6~8	14~16	溝銑 SLOTTING
AEWR1610	55	340	6500~7000	1100~1600	9~10	14~16	溝銑 SLOTTING
AEWR1610	55	340	6500~7000	3200~3700	16	0~2	側銑 SIDE MILLING
AEWR1610	55	340	6500~7000	2000~2500	16	6~8	側銑 SIDE MILLING
AEWR1610	55	340	6500~7000	1400~1900	16	9~10	側銑 SIDE MILLING
AEWR2010	60	315	4800~5300	1700~2200	3~4	18~20	溝銑 SLOTTING
AEWR2010	60	315	4800~5300	1000~1400	6~8	18~20	溝銑 SLOTTING
AEWR2010	60	315	4800~5300	900~1200	9~10	18~20	溝銑 SLOTTING
AEWR2010	60	315	4800~5300	2500~3000	20	0~2	側銑 SIDE MILLING
AEWR2010	60	315	4800~5300	1600~2000	20	6~8	側銑 SIDE MILLING
AEWR2010	60	315	4800~5300	1100~1500	20	9~10	側銑 SIDE MILLING

AEWR

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=18000 (min^{-1}) 以下 Be used under the machine of RPM=18000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEWR0605	20	330	17000~18000	5500~6000	0~1	4~6	溝銑 SLOTTING
AEWR0605	20	330	17000~18000	4000~4500	2~3	4~6	溝銑 SLOTTING
AEWR0605	20	330	17000~18000	3500~4000	4~6	4~6	溝銑 SLOTTING
AEWR0605	20	330	17000~18000	7000~7500	6	0~1	側銑 SIDE MILLING
AEWR0605	20	330	17000~18000	5000~5500	6	2~3	側銑 SIDE MILLING
AEWR0605	20	330	17000~18000	2000~2500	6	4~6	側銑 SIDE MILLING
AEWR0805	27	390	15000~16000	6500~7000	0~1.5	6~8	溝銑 SLOTTING
AEWR0805	27	390	15000~16000	3500~4000	2~4	6~8	溝銑 SLOTTING
AEWR0805	27	340	13000~14000	2500~3000	5~8	6~8	溝銑 SLOTTING
AEWR0805	27	390	15000~16000	7000~7500	8	0~2	側銑 SIDE MILLING
AEWR0805	27	390	15000~16000	5000~5500	8	3~5	側銑 SIDE MILLING
AEWR0805	27	390	15000~16000	4000~4500	8	6~8	側銑 SIDE MILLING
AEWR1005	33	390	12000~13000	6500~7000	0~2	8~10	溝銑 SLOTTING
AEWR1005	33	390	12000~13000	3500~4000	3~5	8~10	溝銑 SLOTTING
AEWR1005	33	390	12000~13000	2500~3000	6~10	8~10	溝銑 SLOTTING
AEWR1005	33	390	12000~13000	7000~7500	10	0~2	側銑 SIDE MILLING
AEWR1005	33	390	12000~13000	5000~5500	10	3~5	側銑 SIDE MILLING
AEWR1005	33	390	12000~13000	4000~4500	10	6~10	側銑 SIDE MILLING
AEWR1205	37	395	10000~11000	6000~6500	0~2	10~12	溝銑 SLOTTING
AEWR1205	37	395	10000~11000	4500~5000	3~6	10~12	溝銑 SLOTTING
AEWR1205	37	395	10000~11000	4500~5000	7~12	10~12	溝銑 SLOTTING
AEWR1205	37	395	10000~11000	7000~7500	12	0~2	側銑 SIDE MILLING
AEWR1205	37	395	10000~11000	3500~4000	12	3~6	側銑 SIDE MILLING
AEWR1205	37	395	10000~11000	3500~4000	12	7~12	側銑 SIDE MILLING
AEWR1610	55	340	6500~7000	2000~2500	3~4	14~16	溝銑 SLOTTING
AEWR1610	55	340	6500~7000	1200~1700	6~8	14~16	溝銑 SLOTTING
AEWR1610	55	340	6500~7000	1100~1600	9~10	14~16	溝銑 SLOTTING
AEWR1610	55	340	6500~7000	3200~3700	16	0~2	側銑 SIDE MILLING
AEWR1610	55	340	6500~7000	2000~2500	16	6~8	側銑 SIDE MILLING
AEWR1610	55	340	6500~7000	1400~1900	16	9~10	側銑 SIDE MILLING
AEWR2010	60	315	4800~5300	1700~2200	3~4	18~20	溝銑 SLOTTING
AEWR2010	60	315	4800~5300	1000~1400	6~8	18~20	溝銑 SLOTTING
AEWR2010	60	315	4800~5300	900~1200	9~10	18~20	溝銑 SLOTTING
AEWR2010	60	315	4800~5300	2500~3000	20	0~2	側銑 SIDE MILLING
AEWR2010	60	315	4800~5300	1600~2000	20	6~8	側銑 SIDE MILLING
AEWR2010	60	315	4800~5300	1100~1500	20	9~10	側銑 SIDE MILLING

切削條件表 MILLING CONDITIONS

AES

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=10000 (min^{-1}) 以下 Be used under the machine of RPM=10000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AES0203S	14	60	9500~10000	2000~2400	0~0.2	0.5~2	溝銑 SLOTTING
AES0203S	14	60	9500~10000	1400~1800	0.3~0.6	0.5~2	溝銑 SLOTTING
AES0203S	14	60	9500~10000	1400~1800	0.05~0.08	0.5~2	溝銑 SLOTTING
AES0203S	14	60	9500~10000	2000~2400	4	0~0.2	側銑 SIDE MILLING
AES0203S	14	60	9500~10000	1400~1800	4	0.3~0.6	側銑 SIDE MILLING
AES0203S	14	60	9500~10000	1200~1600	4	0.05~0.08	側銑 SIDE MILLING
AES0203	14	60	9500~10000	1800~2200	0.05~0.08	0.5~2	溝銑 SLOTTING
AES0203	14	60	9500~10000	2600~3000	0~0.2	0.5~2	溝銑 SLOTTING
AES0203	14	60	9500~10000	1800~2200	0.3~0.6	0.5~2	溝銑 SLOTTING
AES0203	14	60	9500~10000	1000~1300	0.7~1	0.5~2	溝銑 SLOTTING
AES0203	14	60	9500~10000	1200~1600	4	0.05~0.08	側銑 SIDE MILLING
AES0203	14	60	9500~10000	2800~3200	4	0~0.2	側銑 SIDE MILLING
AES0203	14	60	9500~10000	1800~2200	4	0.3~0.6	側銑 SIDE MILLING
AES0203	14	60	9500~10000	1000~1400	4	0.7~1	側銑 SIDE MILLING
AES0303S	16	90	9500~10000	2500~3000	0~0.4	1~3	溝銑 SLOTTING
AES0303S	16	90	9500~10000	1800~2300	0.5~0.8	1~3	溝銑 SLOTTING
AES0303S	16	90	9500~10000	1400~1800	0.05~0.1	1~3	溝銑 SLOTTING
AES0303S	16	90	9500~10000	2500~3000	6	0~0.4	側銑 SIDE MILLING
AES0303S	16	90	9500~10000	1800~2300	6	0.5~0.8	側銑 SIDE MILLING
AES0303S	16	90	9500~10000	1400~1800	6	0.05~0.1	側銑 SIDE MILLING
AES0303	16	90	9500~10000	1500~2000	0.05~0.1	1~3	溝銑 SLOTTING
AES0303	16	90	9500~10000	3000~3500	0~0.4	1~3	溝銑 SLOTTING
AES0303	16	90	9500~10000	2200~2700	0.5~0.8	1~3	溝銑 SLOTTING
AES0303	16	90	9500~10000	1200~1600	0.9~1.2	1~3	溝銑 SLOTTING
AES0303	16	90	9500~10000	1400~1800	6	0.05~0.1	側銑 SIDE MILLING
AES0303	16	90	9500~10000	3000~3500	6	0~0.4	側銑 SIDE MILLING
AES0303	16	90	9500~10000	2200~2700	6	0.5~0.8	側銑 SIDE MILLING
AES0303	16	90	9500~10000	1200~1600	6	0.9~1.2	側銑 SIDE MILLING
AES0403S	16	119	9500~10000	2800~3300	0~0.6	2~4	溝銑 SLOTTING
AES0403S	16	119	9500~10000	2000~2400	0.7~1.2	2~4	溝銑 SLOTTING
AES0403S	16	119	9500~10000	1400~1800	0.05~0.12	2~4	溝銑 SLOTTING
AES0403S	16	119	9500~10000	2800~3300	8	0~0.6	側銑 SIDE MILLING
AES0403S	16	119	9500~10000	2000~2400	8	0.7~1.2	側銑 SIDE MILLING
AES0403S	16	119	9500~10000	1400~1800	8	0.05~0.12	側銑 SIDE MILLING
AES0403	16	120	9500~10000	1500~2000	0.05~0.12	2~4	溝銑 SLOTTING
AES0403	16	120	9500~10000	4000~4500	0~0.6	2~4	溝銑 SLOTTING
AES0403	16	120	9500~10000	2500~3000	0.7~1.2	2~4	溝銑 SLOTTING
AES0403	16	120	9500~10000	1500~2000	1.3~2	2~4	溝銑 SLOTTING
AES0403	16	120	9500~10000	1400~1800	8	0.05~0.12	側銑 SIDE MILLING
AES0403	16	120	9500~10000	4000~4500	8	0~0.6	側銑 SIDE MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AES0403	16	120	9500~10000	2500~3000	8	0.7~1.2	側銑 SIDE MILLING
AES0403	16	120	9500~10000	1500~2000	8	1.3~2	側銑 SIDE MILLING
AES0503	16	150	9500~10000	1800~2200	0.05~0.15	3~5	溝銑 SLOTTING
AES0503	16	150	9500~10000	4500~5000	0~0.7	3~5	溝銑 SLOTTING
AES0503	16	150	9500~10000	2500~3000	0.8~1.5	3~5	溝銑 SLOTTING
AES0503	16	150	9500~10000	1500~2000	1.6~3.5	3~5	溝銑 SLOTTING
AES0503	16	150	9500~10000	1600~2000	10	0.05~0.15	側銑 SIDE MILLING
AES0503	16	150	9500~10000	4500~5000	10	0~0.7	側銑 SIDE MILLING
AES0503	16	150	9500~10000	3000~3500	10	0.8~1.5	側銑 SIDE MILLING
AES0503	16	150	9500~10000	1500~2000	10	1.6~3.5	側銑 SIDE MILLING
AES0603	20	170	9000~9500	1800~2200	0.05~0.15	4~6	溝銑 SLOTTING
AES0603	20	170	9000~9500	5000~5500	0~1	4~6	溝銑 SLOTTING
AES0603	20	170	9000~9500	3800~4300	2~3	4~6	溝銑 SLOTTING
AES0603	20	170	9000~9500	3000~3500	3.5~6	4~6	溝銑 SLOTTING
AES0603	20	170	9000~9500	1800~2200	12	0.05~0.15	側銑 SIDE MILLING
AES0603	20	170	9000~9500	5000~5500	12	0~1	側銑 SIDE MILLING
AES0603	20	170	9000~9500	3800~4300	12	2~3	側銑 SIDE MILLING
AES0603	20	170	9000~9500	2400~2800	12	3.5~6	側銑 SIDE MILLING
AES0603L	40	130	6700~7200	500~800	30	0.05~0.15	側銑 SIDE MILLING
AES0603L	40	130	6700~7200	1000~1400	30	0.4~0.6	側銑 SIDE MILLING
AES0603L	40	130	6700~7200	700~1100	30	0.7~1	側銑 SIDE MILLING
AES0803	25	215	8500~9000	1800~2300	0.05~0.15	6~8	溝銑 SLOTTING
AES0803	25	215	8500~9000	5000~5500	0~1.5	6~8	溝銑 SLOTTING
AES0803	25	215	8500~9000	3500~4000	2~4	6~8	溝銑 SLOTTING
AES0803	25	215	8500~9000	2500~3000	5~8	6~8	溝銑 SLOTTING
AES0803	25	215	8500~9000	1800~2300	16	0.05~0.15	側銑 SIDE MILLING
AES0803	25	215	8500~9000	5000~5500	16	0~2	側銑 SIDE MILLING
AES0803	25	215	8500~9000	4000~4500	16	2.5~4	側銑 SIDE MILLING
AES0803	25	215	8500~9000	2500~3000	16	5~8	側銑 SIDE MILLING
AES0803L	55	150	5700~6200	500~800	40	0.05~0.15	側銑 SIDE MILLING
AES0803L	55	145	5500~6000	1000~1400	40	1	側銑 SIDE MILLING
AES0803L	55	145	5500~6000	700~1100	40	1.5~2	側銑 SIDE MILLING
AES1003	30	245	7800~8200	2000~2400	0.05~0.15	8~10	溝銑 SLOTTING
AES1003	30	245	7800~8200	5500~6000	0~2	8~10	溝銑 SLOTTING
AES1003	30	245	7800~8200	3000~3500	3~5	8~10	溝銑 SLOTTING
AES1003	30	245	7800~8200	2000~2500	6~10	8~10	溝銑 SLOTTING
AES1003	30	245	7800~8200	1400~1800	20	0.05~0.15	側銑 SIDE MILLING
AES1003	30	245	7800~8200	5500~6000	20	0~2	側銑 SIDE MILLING
AES1003	30	245	7800~8200	2800~3300	20	3~5	側銑 SIDE MILLING
AES1003	30	245	7800~8200	1200~1600	20	6~10	側銑 SIDE MILLING
AES1003L	60	140	4200~4700	500~800	50	0.05~0.15	側銑 SIDE MILLING
AES1003L	60	165	5000~5500	800~1200	50	1	側銑 SIDE MILLING
AES1003L	60	165	5000~5500	500~800	50	2	側銑 SIDE MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
AES1203	35	295	7800~8200	2000~2400	0.05~0.15	10~12	溝銑 SLOTTING
AES1203	35	295	7800~8200	6000~6500	0~2	10~12	溝銑 SLOTTING
AES1203	35	295	7800~8200	3500~4000	3~6	10~12	溝銑 SLOTTING
AES1203	35	295	7800~8200	2800~3300	7~12	10~12	溝銑 SLOTTING
AES1203	35	295	7800~8200	2000~2400	24	0.05~0.15	側銑 SIDE MILLING
AES1203	35	295	7800~8200	5500~6000	24	0~2	側銑 SIDE MILLING
AES1203	35	295	7800~8200	3500~4000	24	3~6	側銑 SIDE MILLING
AES1203	35	295	7800~8200	2800~3300	24	7~12	側銑 SIDE MILLING
AES1203L	60	170	4200~4700	500~800	50	0.05~0.15	側銑 SIDE MILLING
AES1203L	60	130	3200~3700	800~1200	50	1	側銑 SIDE MILLING
AES1203L	60	130	3200~3700	700~1000	50	2	側銑 SIDE MILLING
AES1603	55	325	6200~6700	1400~1800	0.05~0.2	14~16	溝銑 SLOTTING
AES1603	55	325	6200~6700	3500~4000	0~2	14~16	溝銑 SLOTTING
AES1603	55	325	6200~6700	2500~3000	3~6	14~16	溝銑 SLOTTING
AES1603	55	325	6200~6700	1700~2200	7~12	14~16	溝銑 SLOTTING
AES1603	55	325	6200~6700	4000~4500	16	0~2	側銑 SIDE MILLING
AES1603	55	325	6200~6700	2500~3000	16	3~6	側銑 SIDE MILLING
AES1603	55	325	6200~6700	2000~2500	16	8~10	側銑 SIDE MILLING
AES1603	55	325	5800~6300	800~1200	32	0.05~0.2	側銑 SIDE MILLING
AES1603	55	325	6200~6700	2000~2500	32	0~2	側銑 SIDE MILLING
AES1603	55	325	6200~6700	1400~1800	32	3~6	側銑 SIDE MILLING
AES1603	55	325	6200~6700	900~1300	32	8~10	側銑 SIDE MILLING
AES1603L	75	165	3000~3500	500~800	50	0.05~0.15	側銑 SIDE MILLING
AES1603L	75	165	3000~3500	800~1200	50	1	側銑 SIDE MILLING
AES1603L	75	165	3000~3500	700~1000	50	2	側銑 SIDE MILLING
AES2003	65	315	5000~5400	1200~1600	0.05~0.2	18~20	溝銑 SLOTTING
AES2003	65	315	5000~5400	4000~4500	0~2	18~20	溝銑 SLOTTING
AES2003	65	315	5000~5400	2800~3300	3~6	18~20	溝銑 SLOTTING
AES2003	65	315	5000~5400	2000~2500	7~12	18~20	溝銑 SLOTTING
AES2003	65	315	5000~5400	1200~1600	40	0.05~0.2	側銑 SIDE MILLING
AES2003	65	315	5000~5400	4000~4500	40	0~2	側銑 SIDE MILLING
AES2003	65	315	5000~5400	2800~3300	40	3~6	側銑 SIDE MILLING
AES2003	65	315	5000~5400	2000~2500	40	7~12	側銑 SIDE MILLING
AES2003L	80	190	2800~3300	400~700	55	0.05~0.2	側銑 SIDE MILLING
AES2003L	80	190	2800~3300	700~1000	55	1	側銑 SIDE MILLING
AES2003L	80	190	2800~3300	600~800	55	2	側銑 SIDE MILLING

AES

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=20000 (min^{-1}) 以下 Be used under the machine of RPM=20000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AES0203S	14	115	18000~20000	3500~4000	0~0.2	0.5~2	溝銑 SLOTTING
AES0203S	14	115	18000~20000	2500~3000	0.3~0.6	0.5~2	溝銑 SLOTTING
AES0203S	14	115	18000~20000	2000~2400	0.05~0.08	0.5~2	溝銑 SLOTTING
AES0203S	14	115	18000~20000	3500~4000	4	0~0.2	側銑 SIDE MILLING
AES0203S	14	115	18000~20000	2500~3000	4	0.3~0.6	側銑 SIDE MILLING
AES0203S	14	115	18000~20000	2000~2400	4	0.05~0.08	側銑 SIDE MILLING
AES0203	14	115	18000~20000	2400~2800	0.05~0.08	0.5~2	溝銑 SLOTTING
AES0203	14	115	18000~20000	4400~4800	0~0.2	0.5~2	溝銑 SLOTTING
AES0203	14	115	18000~20000	3400~3800	0.3~0.6	0.5~2	溝銑 SLOTTING
AES0203	14	115	18000~20000	2400~2800	0.7~1	0.5~2	溝銑 SLOTTING
AES0203	14	115	18000~20000	2400~2800	4	0.05~0.08	側銑 SIDE MILLING
AES0203	14	115	18000~20000	4000~4400	4	0~0.2	側銑 SIDE MILLING
AES0203	14	115	18000~20000	3000~3400	4	0.3~0.6	側銑 SIDE MILLING
AES0203	14	115	18000~20000	2000~2400	4	0.7~1	側銑 SIDE MILLING
AES0303S	16	160	17000~18000	3500~4000	0~0.4	1~3	溝銑 SLOTTING
AES0303S	16	160	17000~18000	2500~3000	0.5~0.8	1~3	溝銑 SLOTTING
AES0303S	16	160	17000~18000	2000~2400	0.05~0.1	1~3	溝銑 SLOTTING
AES0303S	16	160	17000~18000	3500~4000	6	0~0.4	側銑 SIDE MILLING
AES0303S	16	160	17000~18000	2500~3000	6	0.5~0.8	側銑 SIDE MILLING
AES0303S	16	160	17000~18000	2000~2400	6	0.05~0.1	側銑 SIDE MILLING
AES0303	16	160	17000~18000	2400~2800	0.05~0.1	1~3	溝銑 SLOTTING
AES0303	16	160	17000~18000	4400~4800	0~0.4	1~3	溝銑 SLOTTING
AES0303	16	160	17000~18000	3400~3800	0.5~0.8	1~3	溝銑 SLOTTING
AES0303	16	160	17000~18000	2400~2800	0.9~1.2	1~3	溝銑 SLOTTING
AES0303	16	160	17000~18000	2400~2800	6	0.05~0.1	側銑 SIDE MILLING
AES0303	16	160	17000~18000	4000~4400	6	0~0.4	側銑 SIDE MILLING
AES0303	16	160	17000~18000	3000~3400	6	0.5~0.8	側銑 SIDE MILLING
AES0303	16	160	17000~18000	2000~2400	6	0.9~1.2	側銑 SIDE MILLING
AES0403S	16	175	14000~15000	3800~4300	0~0.6	2~4	溝銑 SLOTTING
AES0403S	16	150	12000~13000	2400~2800	0.7~1.2	2~4	溝銑 SLOTTING
AES0403S	16	200	16000~17000	2000~2400	0.05~0.12	2~4	溝銑 SLOTTING
AES0403S	16	175	14000~15000	3800~4300	8	0~0.6	側銑 SIDE MILLING
AES0403S	16	150	12000~13000	2400~2800	8	0.7~1.2	側銑 SIDE MILLING
AES0403S	16	150	12000~13000	1600~2000	8	0.05~0.12	側銑 SIDE MILLING
AES0403	16	200	16000~17000	3000~3500	0.05~0.12	2~4	溝銑 SLOTTING
AES0403	16	175	14000~15000	4800~5300	0~0.6	2~4	溝銑 SLOTTING
AES0403	16	150	12000~13000	3200~3700	0.7~1.2	2~4	溝銑 SLOTTING
AES0403	16	150	12000~13000	2200~2700	1.3~2	2~4	溝銑 SLOTTING
AES0403	16	150	12000~13000	1600~2000	8	0.05~0.12	側銑 SIDE MILLING
AES0403	16	175	14000~15000	4800~5300	8	0~0.6	側銑 SIDE MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AES0403	16	150	12000~13000	3200~3700	8	0.7~1.2	側銑 SIDE MILLING
AES0403	16	150	12000~13000	2200~2700	8	1.3~2	側銑 SIDE MILLING
AES0503	16	235	15000~16000	3000~3500	0.05~0.15	3~5	溝銑 SLOTTING
AES0503	16	235	15000~16000	5500~6000	0~0.7	3~5	溝銑 SLOTTING
AES0503	16	190	12000~13000	3500~4000	0.8~1.5	3~5	溝銑 SLOTTING
AES0503	16	190	12000~13000	2500~3000	1.6~3.5	3~5	溝銑 SLOTTING
AES0503	16	205	13000~14000	2200~2600	10	0.05~0.15	側銑 SIDE MILLING
AES0503	16	205	13000~14000	5500~6000	10	0~0.7	側銑 SIDE MILLING
AES0503	16	190	12000~13000	3500~4000	10	0.8~1.5	側銑 SIDE MILLING
AES0503	16	190	12000~13000	2500~3000	10	1.6~3.5	側銑 SIDE MILLING
AES0603	20	305	16000~17000	3000~3500	0.05~0.15	4~6	溝銑 SLOTTING
AES0603	20	305	16000~17000	6500~7500	0~1	4~6	溝銑 SLOTTING
AES0603	20	285	15000~16000	5000~5500	2~3	4~6	溝銑 SLOTTING
AES0603	20	285	15000~16000	3800~4300	3.5~6	4~6	溝銑 SLOTTING
AES0603	20	305	16000~17000	2800~3200	12	0.05~0.15	側銑 SIDE MILLING
AES0603	20	305	16000~17000	6500~7500	12	0~1	側銑 SIDE MILLING
AES0603	20	285	15000~16000	4500~5000	12	2~3	側銑 SIDE MILLING
AES0603	20	285	15000~16000	3000~3500	12	3.5~6	側銑 SIDE MILLING
AES0803	25	355	14000~15000	2600~3000	0.05~0.15	6~8	溝銑 SLOTTING
AES0803	25	355	14000~15000	6000~6500	0~1.5	6~8	溝銑 SLOTTING
AES0803	25	355	14000~15000	4500~5000	2~4	6~8	溝銑 SLOTTING
AES0803	25	355	14000~15000	3000~3500	5~8	6~8	溝銑 SLOTTING
AES0803	25	305	12000~13000	2400~2800	16	0.05~0.15	側銑 SIDE MILLING
AES0803	25	330	13000~14000	6500~7500	16	0~2	側銑 SIDE MILLING
AES0803	25	330	13000~14000	5000~5500	16	2.5~4	側銑 SIDE MILLING
AES0803	25	330	13000~14000	3000~3500	16	5~8	側銑 SIDE MILLING
AES1003	30	380	12000~13000	3000~3500	0.05~0.15	8~10	溝銑 SLOTTING
AES1003	30	380	12000~13000	6500~7000	0~2	8~10	溝銑 SLOTTING
AES1003	30	315	10000~11000	3500~4000	3~5	8~10	溝銑 SLOTTING
AES1003	30	315	10000~11000	3000~3500	6~10	8~10	溝銑 SLOTTING
AES1003	30	380	12000~13000	2800~3200	20	0.05~0.15	側銑 SIDE MILLING
AES1003	30	380	12000~13000	7000~8000	20	0~2	側銑 SIDE MILLING
AES1003	30	315	10000~11000	3500~4000	20	3~5	側銑 SIDE MILLING
AES1003	30	315	10000~11000	2000~2500	20	6~10	側銑 SIDE MILLING
AES1203	35	295	7800~8200	2000~2400	0.05~0.15	10~12	溝銑 SLOTTING
AES1203	35	295	7800~8200	6000~6500	0~2	10~12	溝銑 SLOTTING
AES1203	35	295	7800~8200	3500~4000	3~6	10~12	溝銑 SLOTTING
AES1203	35	295	7800~8200	2800~3300	7~12	10~12	溝銑 SLOTTING
AES1203	35	295	7800~8200	2000~2400	24	0.05~0.15	側銑 SIDE MILLING
AES1203	35	295	7800~8200	5500~6000	24	0~2	側銑 SIDE MILLING
AES1203	35	295	7800~8200	3500~4000	24	3~6	側銑 SIDE MILLING
AES1203	35	295	7800~8200	2800~3300	24	7~12	側銑 SIDE MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AES1603	55	325	6400~6800	4800~5300	0~2	14~16	溝銑 SLOTTING
AES1603	55	325	6400~6800	3500~4000	3~6	14~16	溝銑 SLOTTING
AES1603	55	325	6400~6800	2800~3300	7~12	14~16	溝銑 SLOTTING
AES1603	55	325	6400~6800	1400~1800	0.05~0.2	14~16	溝銑 SLOTTING
AES1603	55	325	6400~6800	5000~5500	16	0~2	側銑 SIDE MILLING
AES1603	55	325	6400~6800	3500~4000	16	3~6	側銑 SIDE MILLING
AES1603	55	325	6400~6800	2800~3300	16	7~12	側銑 SIDE MILLING
AES1603	55	325	6400~6800	1400~1800	16	0.05~0.2	側銑 SIDE MILLING
AES2003	65	315	5000~5400	1200~1600	32	18~20	溝銑 SLOTTING
AES2003	65	315	5000~5400	4000~4500	0~2	18~20	溝銑 SLOTTING
AES2003	65	315	5000~5400	2800~3300	3~6	18~20	溝銑 SLOTTING
AES2003	65	315	5000~5400	2000~2500	7~12	18~20	溝銑 SLOTTING
AES2003	65	315	5000~5400	1200~1600	40	0.05~0.2	側銑 SIDE MILLING
AES2003	65	315	5000~5400	4000~4500	40	0~2	側銑 SIDE MILLING
AES2003	65	315	5000~5400	2800~3300	40	3~6	側銑 SIDE MILLING
AES2003	65	315	5000~5400	2000~2500	40	7~12	側銑 SIDE MILLING

切削條件表 MILLING CONDITIONS

AER

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**
冷卻方式 Coolant Type	濕式切削 Wet coolant

建議機器轉速RPM=10000 (min^{-1}) 以下
Be used under the machine of RPM=10000 (min^{-1})

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AER0202	9	65	9500~10000	1400~1800	0.05~0.08	1.5~2	溝銑 SLOTTING
AER0202	9	65	9500~10000	2200~2600	0~0.2	2	溝銑 SLOTTING
AER0202	9	65	9500~10000	1400~1800	0.2~0.6	2	溝銑 SLOTTING
AER0202	9	65	9500~10000	1100~1500	0.6~1	2	溝銑 SLOTTING
AER0202	9	65	9500~10000	1400~1800	4	0.05~0.08	側銑 SIDE MILLING
AER0202	9	65	9500~10000	2200~2600	2	0~0.2	側銑 SIDE MILLING
AER0202	9	65	9500~10000	1400~1800	2	0.2~0.6	側銑 SIDE MILLING
AER0202	9	65	9500~10000	1100~1500	2	0.6~1	側銑 SIDE MILLING
AER0302	13	90	9000~9500	1400~1600	0.05~0.1	2.5~3	溝銑 SLOTTING
AER0302	13	90	9000~9500	2000~2400	0~0.4	3	溝銑 SLOTTING
AER0302	13	90	9000~9500	1600~2000	0.4~0.8	3	溝銑 SLOTTING
AER0302	13	90	9000~9500	1200~1600	0.8~1.2	3	溝銑 SLOTTING
AER0302	13	90	9000~9500	1400~1600	6	0.05~0.1	側銑 SIDE MILLING
AER0302	13	90	9000~9500	2000~2400	3	0~0.4	側銑 SIDE MILLING
AER0302	13	90	9000~9500	1600~2000	3	0.4~0.8	側銑 SIDE MILLING
AER0302	13	90	9000~9500	1100~1500	3	0.8~1.2	側銑 SIDE MILLING
AER0402	15	110	8500~9000	1400~1800	0.05~0.12	3~4	溝銑 SLOTTING
AER0402	15	110	8500~9000	2400~2800	0~0.6	4	溝銑 SLOTTING
AER0402	15	110	8500~9000	1800~2200	0.6~1.2	4	溝銑 SLOTTING
AER0402	15	110	8500~9000	1200~1600	1.2~2	4	溝銑 SLOTTING
AER0402	15	110	8500~9000	1400~1800	8	0.05~0.12	側銑 SIDE MILLING
AER0402	15	110	8500~9000	2700~3200	4	0~0.6	側銑 SIDE MILLING
AER0402	15	110	8500~9000	2100~2500	4	0.6~1.2	側銑 SIDE MILLING
AER0402	15	110	8500~9000	1200~1600	4	1.2~2	側銑 SIDE MILLING
AER0603	21	150	7800~8300	1600~2000	0.05~0.15	5~6	溝銑 SLOTTING
AER0603	21	150	7800~8300	2800~3200	0~1	6	溝銑 SLOTTING
AER0603	21	150	7800~8300	1700~2200	1~3	6	溝銑 SLOTTING
AER0603	21	150	7800~8300	1200~1700	3~6	6	溝銑 SLOTTING
AER0603	21	150	7800~8300	1600~2000	12	0.05~0.15	側銑 SIDE MILLING
AER0603	21	150	7800~8300	2500~3000	6	0~1	側銑 SIDE MILLING
AER0603	21	150	7800~8300	1800~2300	6	1~3	側銑 SIDE MILLING
AER0603	21	150	7800~8300	1200~1700	6	3~6	側銑 SIDE MILLING
AER0805	25	200	7800~8300	1600~2000	0.05~0.15	6~8	溝銑 SLOTTING
AER0805	25	200	7800~8300	3500~4000	0~1.5	8	溝銑 SLOTTING
AER0805	25	200	7800~8300	3000~3500	1.5~4	8	溝銑 SLOTTING
AER0805	25	200	7800~8300	2400~2800	4~8	8	溝銑 SLOTTING
AER0805	25	200	7800~8300	1600~2000	16	0.05~0.15	側銑 SIDE MILLING
AER0805	25	200	7800~8300	3800~4300	8	0~2	側銑 SIDE MILLING
AER0805	25	200	7800~8300	2800~3300	8	2~4	側銑 SIDE MILLING
AER0805	25	200	7800~8300	2400~2800	8	4~8	側銑 SIDE MILLING
AER1005	33	250	7800~8300	1600~2000	0.05~0.15	8~10	溝銑 SLOTTING
AER1005	33	250	7800~8300	3500~4000	0~2	10	溝銑 SLOTTING
AER1005	33	250	7800~8300	3000~3500	2~5	10	溝銑 SLOTTING
AER1005	33	250	7800~8300	2000~2400	5~10	10	溝銑 SLOTTING
AER1005	33	250	7800~8300	1600~2000	20	0.05~0.15	側銑 SIDE MILLING
AER1005	33	250	7800~8300	3500~4000	10	0~2	側銑 SIDE MILLING
AER1005	33	250	7800~8300	3000~3500	10	2~5	側銑 SIDE MILLING
AER1005	33	250	7800~8300	2000~2400	10	5~10	側銑 SIDE MILLING

AER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=20000 (min^{-1}) 以下 Be used under the machine of RPM=20000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AER0202	9	115	18000~20000	1800~2200	0.05~0.08	1.5~2	溝銑 SLOTTING
AER0202	9	115	18000~20000	3000~3500	0~0.2	2	溝銑 SLOTTING
AER0202	9	115	18000~20000	1700~2000	0.2~0.6	2	溝銑 SLOTTING
AER0202	9	115	18000~20000	1300~1700	0.6~1	2	溝銑 SLOTTING
AER0202	9	115	18000~20000	1800~2200	4	0.05~0.08	側銑 SIDE MILLING
AER0202	9	115	18000~20000	3200~3700	2	0~0.2	側銑 SIDE MILLING
AER0202	9	115	18000~20000	1600~1900	2	0.2~0.6	側銑 SIDE MILLING
AER0202	9	115	18000~20000	1300~1700	2	0.6~1	側銑 SIDE MILLING
AER0302	13	160	17000~18000	1800~2200	0.05~0.1	2.5~3	溝銑 SLOTTING
AER0302	13	160	17000~18000	2600~3000	0~0.4	3	溝銑 SLOTTING
AER0302	13	160	17000~18000	2000~2400	0.4~0.8	3	溝銑 SLOTTING
AER0302	13	160	17000~18000	1200~1600	0.8~1.2	3	溝銑 SLOTTING
AER0302	13	160	17000~18000	1800~2200	6	0.05~0.1	側銑 SIDE MILLING
AER0302	13	160	17000~18000	2800~3200	3	0~0.4	側銑 SIDE MILLING
AER0302	13	160	17000~18000	2000~2400	3	0.4~0.8	側銑 SIDE MILLING
AER0302	13	160	17000~18000	1300~1700	3	0.8~1.2	側銑 SIDE MILLING
AER0402	15	175	14000~15000	2000~2400	0.05~0.12	3~4	溝銑 SLOTTING
AER0402	15	150	12000~13000	3000~3500	0~0.6	4	溝銑 SLOTTING
AER0402	15	150	12000~13000	2100~2500	0.6~1.2	4	溝銑 SLOTTING
AER0402	15	200	16000~17000	1500~1900	1.2~2	4	溝銑 SLOTTING
AER0402	15	175	14000~15000	2000~2400	8	0.05~0.12	側銑 SIDE MILLING
AER0402	15	150	12000~13000	3000~3500	4	0~0.6	側銑 SIDE MILLING
AER0402	15	150	12000~13000	2100~2500	4	0.6~1.2	側銑 SIDE MILLING
AER0402	15	150	12000~13000	1400~1800	4	1.2~2	側銑 SIDE MILLING
AER0603	21	270	14000~15000	2000~2400	0.05~0.15	5~6	溝銑 SLOTTING
AER0603	21	270	14000~15000	3500~4000	0~1	6	溝銑 SLOTTING
AER0603	21	270	14000~15000	2400~2800	1~3	6	溝銑 SLOTTING
AER0603	21	270	14000~15000	1600~2000	3~6	6	溝銑 SLOTTING
AER0603	21	270	14000~15000	2000~2400	12	0.05~0.15	側銑 SIDE MILLING
AER0603	21	270	14000~15000	3500~4000	6	0~1	側銑 SIDE MILLING
AER0603	21	270	14000~15000	2000~2500	6	1~3	側銑 SIDE MILLING
AER0603	21	270	14000~15000	1600~2000	6	3~6	側銑 SIDE MILLING
AER0805	25	315	12000~13000	2000~2400	0.05~0.15	6~8	溝銑 SLOTTING
AER0805	25	315	12000~13000	4500~5000	0~1.5	8	溝銑 SLOTTING
AER0805	25	315	12000~13000	3500~4000	1.5~4	8	溝銑 SLOTTING
AER0805	25	315	12000~13000	2400~2800	4~8	8	溝銑 SLOTTING
AER0805	25	315	12000~13000	2000~2400	16	0.05~0.15	側銑 SIDE MILLING
AER0805	25	315	12000~13000	4500~5000	8	0~2	側銑 SIDE MILLING
AER0805	25	315	12000~13000	3500~4000	8	2~4	側銑 SIDE MILLING
AER0805	25	315	12000~13000	2400~2800	8	4~8	側銑 SIDE MILLING
AER1005	33	330	10000~11000	2000~2400	0.05~0.15	8~10	溝銑 SLOTTING
AER1005	33	330	10000~11000	5000~5500	0~2	10	溝銑 SLOTTING
AER1005	33	330	10000~11000	3500~4000	2~5	10	溝銑 SLOTTING
AER1005	33	330	10000~11000	2000~2400	5~10	10	溝銑 SLOTTING
AER1005	33	330	10000~11000	2000~2400	20	0.05~0.15	側銑 SIDE MILLING
AER1005	33	330	10000~11000	5000~5500	10	0~2	側銑 SIDE MILLING
AER1005	33	330	10000~11000	3500~4000	10	2~5	側銑 SIDE MILLING
AER1005	33	330	10000~11000	2000~2400	10	5~10	側銑 SIDE MILLING

切削條件表 MILLING CONDITIONS

AESR

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AESR0305	16	90	9500~10000	2000~2500	0~0.4	1~3	溝銑 SLOTTING
AESR0305	16	90	9500~10000	1200~1600	0.5~0.8	1~3	溝銑 SLOTTING
AESR0305	16	90	9500~10000	600~800	0.9~1.2	1~3	溝銑 SLOTTING
AESR0305	16	90	9500~10000	1000~1400	0.05~0.1	1~3	溝銑 SLOTTING
AESR0305	16	90	9500~10000	2000~2500	3	0~0.4	側銑 SIDE MILLING
AESR0305	16	90	9500~10000	1500~2000	3	0.5~0.8	側銑 SIDE MILLING
AESR0305	16	90	9500~10000	1000~1200	3	0.9~1.2	側銑 SIDE MILLING
AESR0305	16	90	9500~10000	1000~1400	3	0.05~0.1	側銑 SIDE MILLING
AESR0405	16	120	9500~10000	3000~3500	0~0.6	2~4	溝銑 SLOTTING
AESR0405	16	120	9500~10000	1500~2000	0.7~1.2	2~4	溝銑 SLOTTING
AESR0405	16	120	9500~10000	1000~1500	1.3~2	2~4	溝銑 SLOTTING
AESR0405	16	120	9500~10000	1000~1400	0.05~0.12	2~4	溝銑 SLOTTING
AESR0405	16	120	9500~10000	3000~3500	4	0~0.6	側銑 SIDE MILLING
AESR0405	16	120	9500~10000	1500~2000	4	0.7~1.2	側銑 SIDE MILLING
AESR0405	16	120	9500~10000	1000~1500	4	1.3~2	側銑 SIDE MILLING
AESR0405	16	120	9500~10000	1000~1400	4	0.05~0.12	側銑 SIDE MILLING
AESR0605	20	175	9000~9500	3500~4000	0~1	4~6	溝銑 SLOTTING
AESR0605	20	175	9000~9500	2500~3000	2~3	4~6	溝銑 SLOTTING
AESR0605	20	175	9000~9500	1700~2200	3.5~6	4~6	溝銑 SLOTTING
AESR0605	20	175	9000~9500	1200~1600	0.05~0.15	4~6	溝銑 SLOTTING
AESR0605	20	175	9000~9500	3500~4000	6	0~1	側銑 SIDE MILLING
AESR0605	20	175	9000~9500	2500~3000	6	2~3	側銑 SIDE MILLING
AESR0605	20	175	9000~9500	1700~2200	6	3.5~6	側銑 SIDE MILLING
AESR0605	20	175	9000~9500	1200~1600	6	0.05~0.15	側銑 SIDE MILLING
AESR0610	20	175	9000~9500	3500~4000	0~1	4~6	溝銑 SLOTTING
AESR0610	20	175	9000~9500	2500~3000	2~3	4~6	溝銑 SLOTTING
AESR0610	20	175	9000~9500	1700~2200	3.5~6	4~6	溝銑 SLOTTING
AESR0610	20	175	9000~9500	1200~1600	0.05~0.15	4~6	溝銑 SLOTTING
AESR0610	20	175	9000~9500	3500~4000	6	0~1	側銑 SIDE MILLING
AESR0610	20	175	9000~9500	2500~3000	6	2~3	側銑 SIDE MILLING
AESR0610	20	175	9000~9500	1700~2200	6	3.5~6	側銑 SIDE MILLING
AESR0610	20	175	9000~9500	1200~1600	6	0.05~0.15	側銑 SIDE MILLING
AESR0805	25	290	11000~12000	5000~5500	0~1.5	6~8	溝銑 SLOTTING
AESR0805	25	220	8500~9000	3000~3500	2~4	6~8	溝銑 SLOTTING
AESR0805	25	220	8500~9000	2000~2500	5~8	6~8	溝銑 SLOTTING
AESR0805	25	220	8500~9000	1400~1800	0.05~0.15	6~8	溝銑 SLOTTING
AESR0805	25	290	11000~12000	5500~6000	8	0~2	側銑 SIDE MILLING
AESR0805	25	220	8500~9000	3500~4000	8	2.5~4	側銑 SIDE MILLING
AESR0805	25	220	8500~9000	2000~2500	8	5~8	側銑 SIDE MILLING
AESR0805	25	220	8500~9000	1600~2000	8	0.05~0.15	側銑 SIDE MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AESR0810	25	220	8500~9000	4000~4500	0~1.5	6~8	溝銑 SLOTTING
AESR0810	25	220	8500~9000	3000~3500	2~4	6~8	溝銑 SLOTTING
AESR0810	25	220	8500~9000	2000~2500	5~8	6~8	溝銑 SLOTTING
AESR0810	25	220	8500~9000	1400~1800	0.05~0.15	6~8	溝銑 SLOTTING
AESR0810	25	220	8500~9000	4500~5000	8	0~2	側銑 SIDE MILLING
AESR0810	25	220	8500~9000	3500~4000	8	2.5~4	側銑 SIDE MILLING
AESR0810	25	220	8500~9000	2000~2500	8	5~8	側銑 SIDE MILLING
AESR0810	25	220	8500~9000	1600~2000	8	0.05~0.15	側銑 SIDE MILLING
AESR1005	32	250	7800~8200	4500~5000	0~2	8~10	溝銑 SLOTTING
AESR1005	32	180	5500~6000	2000~2500	3~5	8~10	溝銑 SLOTTING
AESR1005	32	180	5500~6000	1000~1500	6~10	8~10	溝銑 SLOTTING
AESR1005	32	180	5500~6000	1200~1600	0.05~0.15	8~10	溝銑 SLOTTING
AESR1005	32	250	7800~8200	4500~5000	10	0~2	側銑 SIDE MILLING
AESR1005	32	180	5500~6000	2000~2400	10	3~5	側銑 SIDE MILLING
AESR1005	32	180	5500~6000	1000~1400	10	6~10	側銑 SIDE MILLING
AESR1005	32	250	7800~8200	1200~1600	10	0.05~0.15	側銑 SIDE MILLING
AESR1010	32	250	7800~8200	4500~5000	0~2	8~10	溝銑 SLOTTING
AESR1010	32	180	5500~6000	2000~2500	3~5	8~10	溝銑 SLOTTING
AESR1010	32	180	5500~6000	1000~1500	6~10	8~10	溝銑 SLOTTING
AESR1010	32	180	5500~6000	1200~1600	0.05~0.15	8~10	溝銑 SLOTTING
AESR1010	32	250	7800~8200	4500~5000	10	0~2	側銑 SIDE MILLING
AESR1010	32	180	5500~6000	2000~2400	10	3~5	側銑 SIDE MILLING
AESR1010	32	180	5500~6000	1000~1400	10	6~10	側銑 SIDE MILLING
AESR1010	32	250	7800~8200	1200~1600	10	0.05~0.15	側銑 SIDE MILLING
AESR1205	37	295	7800~8200	5000~5500	0~2	10~12	溝銑 SLOTTING
AESR1205	37	295	7800~8200	3000~3500	3~6	10~12	溝銑 SLOTTING
AESR1205	37	295	7800~8200	2300~2800	7~12	10~12	溝銑 SLOTTING
AESR1205	37	295	7800~8200	1500~2000	0.05~0.15	10~12	溝銑 SLOTTING
AESR1205	37	295	7800~8200	5000~5500	24	0~2	側銑 SIDE MILLING
AESR1205	37	295	7800~8200	3000~3500	24	3~6	側銑 SIDE MILLING
AESR1205	37	295	7800~8200	2300~2800	24	7~12	側銑 SIDE MILLING
AESR1205	37	295	7800~8200	1500~2000	24	0.05~0.15	側銑 SIDE MILLING
AESR1210	37	295	7800~8200	4500~5000	0~2	9~12	溝銑 SLOTTING
AESR1210	37	295	7800~8200	2700~3200	3~6	9~12	溝銑 SLOTTING
AESR1210	37	295	7800~8200	2000~2500	7~12	9~12	溝銑 SLOTTING
AESR1210	37	295	7800~8200	1500~2000	0.05~0.15	9~12	溝銑 SLOTTING
AESR1210	37	295	7800~8200	4500~5000	12	0~2	側銑 SIDE MILLING
AESR1210	37	295	7800~8200	2700~3200	12	3~6	側銑 SIDE MILLING
AESR1210	37	295	7800~8200	2000~2500	12	7~12	側銑 SIDE MILLING
AESR1210	37	295	7800~8200	1500~2000	12	0.05~0.15	側銑 SIDE MILLING
AESR1605	55	325	6200~6700	3000~3500	0~2	14~16	溝銑 SLOTTING
AESR1605	55	325	6200~6700	2000~2500	3~5	14~16	溝銑 SLOTTING
AESR1605	55	325	6200~6700	1400~1800	6~7	14~16	溝銑 SLOTTING
AESR1605	55	325	6200~6700	1000~1400	0.05~0.2	14~16	溝銑 SLOTTING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AESR1605	55	325	6200~6700	3500~4000	16	0~2	側銑 SIDE MILLING
AESR1605	55	325	6200~6700	2000~2500	16	3~5	側銑 SIDE MILLING
AESR1605	55	325	6200~6700	1500~2000	16	6~7	側銑 SIDE MILLING
AESR1605	55	325	6200~6700	1000~1400	16	0.05~0.2	側銑 SIDE MILLING
AESR1610	55	325	6200~6700	2700~3200	0~2	13~16	溝銑 SLOTTING
AESR1610	55	325	6200~6700	1800~2300	3~5	13~16	溝銑 SLOTTING
AESR1610	55	325	6200~6700	1200~1600	6~7	13~16	溝銑 SLOTTING
AESR1610	55	325	6200~6700	1000~1400	0.05~0.2	13~16	溝銑 SLOTTING
AESR1610	55	325	6200~6700	3000~3500	16	0~2	側銑 SIDE MILLING
AESR1610	55	325	6200~6700	1800~2300	16	3~5	側銑 SIDE MILLING
AESR1610	55	325	6200~6700	1200~1600	16	6~7	側銑 SIDE MILLING
AESR1610	55	325	6200~6700	1000~1400	16	0.05~0.2	側銑 SIDE MILLING
AESR1630	55	325	6200~6700	2300~2800	0~2	9~16	溝銑 SLOTTING
AESR1630	55	325	6200~6700	1600~2000	3~5	9~16	溝銑 SLOTTING
AESR1630	55	325	6200~6700	1000~1400	6~7	9~16	溝銑 SLOTTING
AESR1630	55	325	6200~6700	1000~1400	0.05~0.2	9~16	溝銑 SLOTTING
AESR1630	55	325	6200~6700	2500~3000	16	0~2	側銑 SIDE MILLING
AESR1630	55	325	6200~6700	1600~2000	16	3~5	側銑 SIDE MILLING
AESR1630	55	325	6200~6700	1000~1400	16	6~7	側銑 SIDE MILLING
AESR1630	55	325	6200~6700	1000~1400	16	0.05~0.2	側銑 SIDE MILLING
AESR2005	65	315	5000~5400	2700~3200	0~2	18~20	溝銑 SLOTTING
AESR2005	65	315	5000~5400	1700~2200	3~5	18~20	溝銑 SLOTTING
AESR2005	65	315	5000~5400	1000~1400	6~7	18~20	溝銑 SLOTTING
AESR2005	65	315	5000~5400	1000~1400	0.05~0.2	18~20	溝銑 SLOTTING
AESR2005	65	315	5000~5400	2700~3200	20	0~2	側銑 SIDE MILLING
AESR2005	65	315	5000~5400	1700~2200	20	3~5	側銑 SIDE MILLING
AESR2005	65	315	5000~5400	1000~1400	20	6~7	側銑 SIDE MILLING
AESR2005	65	315	5000~5400	1000~1400	20	0.05~0.2	側銑 SIDE MILLING
AESR2010	65	315	5000~5400	2400~2900	0~2	16~20	溝銑 SLOTTING
AESR2010	65	315	5000~5400	1500~2000	3~5	16~20	溝銑 SLOTTING
AESR2010	65	315	5000~5400	900~1200	6~7	16~20	溝銑 SLOTTING
AESR2010	65	315	5000~5400	1000~1400	0.05~0.2	16~20	溝銑 SLOTTING
AESR2010	65	315	5000~5400	2400~2900	20	0~2	側銑 SIDE MILLING
AESR2010	65	315	5000~5400	1500~2000	20	3~5	側銑 SIDE MILLING
AESR2010	65	315	5000~5400	900~1200	20	6~7	側銑 SIDE MILLING
AESR2010	65	315	5000~5400	1000~1400	20	0.05~0.2	側銑 SIDE MILLING
AESR2030	65	315	5000~5400	2000~2500	0~2	13~20	溝銑 SLOTTING
AESR2030	65	315	5000~5400	1300~1700	3~5	13~20	溝銑 SLOTTING
AESR2030	65	315	5000~5400	800~1100	6~7	13~20	溝銑 SLOTTING
AESR2030	65	315	5000~5400	1000~1400	0.05~0.2	13~20	溝銑 SLOTTING
AESR2030	65	315	5000~5400	2000~2500	20	0~2	側銑 SIDE MILLING
AESR2030	65	315	5000~5400	1300~1700	20	3~5	側銑 SIDE MILLING
AESR2030	65	315	5000~5400	800~1100	20	6~7	側銑 SIDE MILLING
AESR2030	65	315	5000~5400	1000~1400	20	0.05~0.2	側銑 SIDE MILLING

AEA-2T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=10000 (min^{-1}) 以下 Be used under the machine of RPM=10000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEA0052	9	15	9500~10000	1200~1600	0.02~0.04	0.4~0.5	溝銑 SLOTTING
AEA0052	9	15	9500~10000	1200~1600	0~0.04	0.5	溝銑 SLOTTING
AEA0052	9	15	9500~10000	500~800	0.04~0.07	0.5	溝銑 SLOTTING
AEA0052	9	15	9500~10000	200~400	0.07~0.1	0.5	溝銑 SLOTTING
AEA0052	9	15	9500~10000	1200~1600	1	0.03~0.05	側銑 SIDE MILLING
AEA0052	9	15	9500~10000	1200~1600	1	0~0.04	側銑 SIDE MILLING
AEA0052	9	15	9500~10000	500~800	1	0.04~0.07	側銑 SIDE MILLING
AEA0052	9	15	9500~10000	200~400	1	0.07~0.1	側銑 SIDE MILLING
AEA0102	9	30	9500~10000	1200~1600	0.03~0.06	0.8~1	溝銑 SLOTTING
AEA0102	9	30	9500~10000	1500~2000	0~0.1	1	溝銑 SLOTTING
AEA0102	9	30	9500~10000	900~1200	0.1~0.2	1	溝銑 SLOTTING
AEA0102	9	30	9500~10000	500~800	0.2~0.3	1	溝銑 SLOTTING
AEA0102	9	30	9500~10000	1100~1500	2	0.03~0.06	側銑 SIDE MILLING
AEA0102	9	30	9500~10000	1500~2000	2	0~0.1	側銑 SIDE MILLING
AEA0102	9	30	9500~10000	1000~1300	2	0.1~0.2	側銑 SIDE MILLING
AEA0102	9	30	9500~10000	600~900	2	0.2~0.3	側銑 SIDE MILLING
AEA0152	9	45	9000~9500	1200~1600	0.04~0.07	1.3~1.5	溝銑 SLOTTING
AEA0152	9	45	9000~9500	1500~2000	0~0.2	1.5	溝銑 SLOTTING
AEA0152	9	45	9000~9500	1000~1300	0.2~0.4	1.5	溝銑 SLOTTING
AEA0152	9	45	9000~9500	500~800	0.4~0.6	1.5	溝銑 SLOTTING
AEA0152	9	45	9000~9500	1200~1600	3	0.04~0.07	側銑 SIDE MILLING
AEA0152	9	45	9000~9500	1500~2000	2	0~0.2	側銑 SIDE MILLING
AEA0152	9	45	9000~9500	1000~1300	2	0.2~0.4	側銑 SIDE MILLING
AEA0152	9	45	9000~9500	600~900	2	0.4~0.6	側銑 SIDE MILLING
AEA0202	9	60	9000~9500	1200~1600	0.05~0.08	1.5~2	溝銑 SLOTTING
AEA0202	9	60	9000~9500	1600~2000	0~0.2	2	溝銑 SLOTTING
AEA0202	9	60	9000~9500	1100~1400	0.2~0.6	2	溝銑 SLOTTING
AEA0202	9	60	9000~9500	600~900	0.6~1	2	溝銑 SLOTTING
AEA0202	9	60	9000~9500	1300~1700	4	0.05~0.08	側銑 SIDE MILLING
AEA0202	9	60	9000~9500	1800~2200	2	0~0.2	側銑 SIDE MILLING
AEA0202	9	60	9000~9500	1100~1400	2	0.2~0.6	側銑 SIDE MILLING
AEA0202	9	60	9000~9500	600~900	2	0.6~1	側銑 SIDE MILLING
AEA0302	12	85	8500~9000	1200~1600	0.05~0.1	2.5~3	溝銑 SLOTTING
AEA0302	12	85	8500~9000	1600~2000	0~0.4	3	溝銑 SLOTTING
AEA0302	12	85	8500~9000	1200~1600	0.4~0.8	3	溝銑 SLOTTING
AEA0302	12	85	8500~9000	600~900	0.8~1.2	3	溝銑 SLOTTING
AEA0302	12	85	8500~9000	1200~1600	6	0.05~0.1	側銑 SIDE MILLING
AEA0302	12	85	8500~9000	1600~2000	3	0~0.4	側銑 SIDE MILLING
AEA0302	12	85	8500~9000	1200~1600	3	0.4~0.8	側銑 SIDE MILLING
AEA0302	12	85	8500~9000	700~1000	3	0.8~1.2	側銑 SIDE MILLING
AEA0402	15	110	8500~9000	1200~1600	0.05~0.12	3~4	溝銑 SLOTTING
AEA0402	15	110	8500~9000	1800~2200	0~0.6	4	溝銑 SLOTTING
AEA0402	15	110	8500~9000	1200~1600	0.6~1.2	4	溝銑 SLOTTING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEA0402	15	110	8500~9000	700~1000	1.2~2	4	溝銑 SLOTTING
AEA0402	15	110	8500~9000	1200~1600	8	0.05~0.12	側銑 SIDE MILLING
AEA0402	15	110	8500~9000	1800~2200	4	0~0.6	側銑 SIDE MILLING
AEA0402	15	110	8500~9000	1200~1600	4	0.6~1.2	側銑 SIDE MILLING
AEA0402	15	110	8500~9000	800~1100	4	1.2~2	側銑 SIDE MILLING
AEA0502	19	140	8500~9000	1400~1800	0.05~0.12	4~5	溝銑 SLOTTING
AEA0502	19	140	8500~9000	2700~3200	0~0.7	5	溝銑 SLOTTING
AEA0502	19	140	8500~9000	1400~1900	0.7~1.5	5	溝銑 SLOTTING
AEA0502	19	140	8500~9000	700~1100	1.5~3.5	5	溝銑 SLOTTING
AEA0502	19	140	8500~9000	1400~1800	10	0.05~0.12	側銑 SIDE MILLING
AEA0502	19	140	8500~9000	2500~3000	5	0~0.7	側銑 SIDE MILLING
AEA0502	19	140	8500~9000	1600~2000	5	0.7~1.5	側銑 SIDE MILLING
AEA0502	19	140	8500~9000	800~1200	5	1.5~3.5	側銑 SIDE MILLING
AEA0602	21	165	8500~9000	1600~2000	0.05~0.15	5~6	溝銑 SLOTTING
AEA0602	21	165	8500~9000	2500~3000	0~1	6	溝銑 SLOTTING
AEA0602	21	165	8500~9000	1400~1800	1~3	6	溝銑 SLOTTING
AEA0602	21	165	8500~9000	800~1200	3~6	6	溝銑 SLOTTING
AEA0602	21	165	8500~9000	1600~2000	12	0.05~0.15	側銑 SIDE MILLING
AEA0602	21	165	8500~9000	2400~2800	6	0~1	側銑 SIDE MILLING
AEA0602	21	165	8500~9000	1500~1900	6	1~3	側銑 SIDE MILLING
AEA0602	21	165	8500~9000	900~1300	6	3~6	側銑 SIDE MILLING
AEA0802	25	200	7800~8300	1400~1800	0.05~0.15	6~8	溝銑 SLOTTING
AEA0802	25	200	7800~8300	2500~3000	0~1.5	8	溝銑 SLOTTING
AEA0802	25	200	7800~8300	1600~2000	1.5~4	8	溝銑 SLOTTING
AEA0802	25	200	7800~8300	1500~2000	4~8	8	溝銑 SLOTTING
AEA0802	25	200	7800~8300	1400~1800	16	0.05~0.15	側銑 SIDE MILLING
AEA0802	25	200	7800~8300	2800~3200	8	0~2	側銑 SIDE MILLING
AEA0802	25	200	7800~8300	2000~2500	8	2~4	側銑 SIDE MILLING
AEA0802	25	200	7800~8300	1600~2000	8	4~8	側銑 SIDE MILLING
AEA1002	30	250	7800~8300	1400~1800	0.05~0.15	8~10	溝銑 SLOTTING
AEA1002	30	250	7800~8300	3000~3500	0~2	10	溝銑 SLOTTING
AEA1002	30	250	7800~8300	2000~2500	2~5	10	溝銑 SLOTTING
AEA1002	30	250	7800~8300	1400~1800	5~10	10	溝銑 SLOTTING
AEA1002	30	250	7800~8300	1400~1800	20	0.05~0.15	側銑 SIDE MILLING
AEA1002	30	250	7800~8300	3000~3500	10	0~2	側銑 SIDE MILLING
AEA1002	30	250	7800~8300	2200~2600	10	2~5	側銑 SIDE MILLING
AEA1002	30	250	7800~8300	1400~1800	10	5~10	側銑 SIDE MILLING
AEA1202	35	225	5800~6300	1600~2000	0.05~0.15	10~12	溝銑 SLOTTING
AEA1202	35	225	5800~6300	2000~2400	0~2	12	溝銑 SLOTTING
AEA1202	35	225	5800~6300	1500~2000	2~6	12	溝銑 SLOTTING
AEA1202	35	225	5800~6300	1000~1400	6~12	12	溝銑 SLOTTING
AEA1202	35	225	5800~6300	1600~2000	24	0.05~0.15	側銑 SIDE MILLING
AEA1202	35	225	5800~6300	2400~2800	12	0~2	側銑 SIDE MILLING
AEA1202	35	225	5800~6300	2000~2500	12	2~6	側銑 SIDE MILLING
AEA1202	35	225	5800~6300	1100~1500	12	6~12	側銑 SIDE MILLING

AEA-2T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=24000 (min^{-1}) 以下 Be used under the machine of RPM=24000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEA0052	9	40	23000~24000	1600~2000	0.02~0.04	0.4~0.5	溝銑 SLOTTING
AEA0052	9	40	23000~24000	1600~2000	0~0.04	0.5	溝銑 SLOTTING
AEA0052	9	40	23000~24000	700~1000	0.04~0.07	0.5	溝銑 SLOTTING
AEA0052	9	40	23000~24000	300~500	0.07~0.1	0.5	溝銑 SLOTTING
AEA0052	9	40	23000~24000	1600~2000	1	0.03~0.05	側銑 SIDE MILLING
AEA0052	9	40	23000~24000	1600~2000	1	0~0.04	側銑 SIDE MILLING
AEA0052	9	40	23000~24000	700~1000	1	0.04~0.07	側銑 SIDE MILLING
AEA0052	9	40	23000~24000	300~500	1	0.07~0.1	側銑 SIDE MILLING
AEA0102	9	75	23000~24000	1800~2200	0.03~0.06	0.8~1	溝銑 SLOTTING
AEA0102	9	75	23000~24000	1800~2200	0~0.1	1	溝銑 SLOTTING
AEA0102	9	75	23000~24000	1200~1500	0.1~0.2	1	溝銑 SLOTTING
AEA0102	9	75	23000~24000	700~1000	0.2~0.3	1	溝銑 SLOTTING
AEA0102	9	75	23000~24000	1800~2200	2	0.03~0.06	側銑 SIDE MILLING
AEA0102	9	75	23000~24000	1800~2200	2	0~0.1	側銑 SIDE MILLING
AEA0102	9	75	23000~24000	1200~1500	2	0.1~0.2	側銑 SIDE MILLING
AEA0102	9	75	23000~24000	800~1100	2	0.2~0.3	側銑 SIDE MILLING
AEA0152	9	105	21000~22000	2000~2400	0.04~0.07	1.3~1.5	溝銑 SLOTTING
AEA0152	9	105	21000~22000	2400~2800	0~0.2	1.5	溝銑 SLOTTING
AEA0152	9	105	21000~22000	1600~1900	0.2~0.4	1.5	溝銑 SLOTTING
AEA0152	9	105	21000~22000	800~1100	0.4~0.6	1.5	溝銑 SLOTTING
AEA0152	9	105	21000~22000	2000~2400	3	0.04~0.07	側銑 SIDE MILLING
AEA0152	9	105	21000~22000	2400~2800	2	0~0.2	側銑 SIDE MILLING
AEA0152	9	105	21000~22000	1700~2000	2	0.2~0.4	側銑 SIDE MILLING
AEA0152	9	105	21000~22000	900~1200	2	0.4~0.6	側銑 SIDE MILLING
AEA0202	9	125	19000~20000	1800~2200	0.05~0.08	1.5~2	溝銑 SLOTTING
AEA0202	9	125	19000~20000	2700~3200	0~0.2	2	溝銑 SLOTTING
AEA0202	9	125	19000~20000	1400~1800	0.2~0.6	2	溝銑 SLOTTING
AEA0202	9	125	19000~20000	1000~1400	0.6~1	2	溝銑 SLOTTING
AEA0202	9	125	19000~20000	1800~2200	4	0.05~0.08	側銑 SIDE MILLING
AEA0202	9	125	19000~20000	2700~3200	2	0~0.2	側銑 SIDE MILLING
AEA0202	9	125	19000~20000	1400~1800	2	0.2~0.6	側銑 SIDE MILLING
AEA0202	9	125	19000~20000	1000~1400	2	0.6~1	側銑 SIDE MILLING
AEA0302	12	180	18000~19000	1800~2200	0.05~0.1	2.5~3	溝銑 SLOTTING
AEA0302	12	180	18000~19000	2400~2800	0~0.4	3	溝銑 SLOTTING
AEA0302	12	180	18000~19000	1800~2000	0.4~0.8	3	溝銑 SLOTTING
AEA0302	12	180	18000~19000	1000~1400	0.8~1.2	3	溝銑 SLOTTING
AEA0302	12	180	18000~19000	1800~2200	6	0.05~0.1	側銑 SIDE MILLING
AEA0302	12	180	18000~19000	3000~3400	3	0~0.4	側銑 SIDE MILLING
AEA0302	12	180	18000~19000	1600~2000	3	0.4~0.8	側銑 SIDE MILLING
AEA0302	12	180	18000~19000	1000~1400	3	0.8~1.2	側銑 SIDE MILLING
AEA0402	15	225	17000~18000	1800~2200	0.05~0.12	3~4	溝銑 SLOTTING
AEA0402	15	225	17000~18000	2500~3000	0~0.6	4	溝銑 SLOTTING
AEA0402	15	225	17000~18000	1800~2200	0.6~1.2	4	溝銑 SLOTTING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEA0402	15	225	17000~18000	1100~1500	1.2~2	4	溝銑 SLOTTING
AEA0402	15	225	17000~18000	1800~2200	8	0.05~0.12	側銑 SIDE MILLING
AEA0402	15	225	17000~18000	2500~3000	4	0~0.6	側銑 SIDE MILLING
AEA0402	15	225	17000~18000	1800~2200	4	0.6~1.2	側銑 SIDE MILLING
AEA0402	15	225	17000~18000	1200~1600	4	1.2~2	側銑 SIDE MILLING
AEA0502	19	250	15000~16000	1700~2100	0.05~0.12	4~5	溝銑 SLOTTING
AEA0502	19	250	15000~16000	3200~3600	0~0.7	5	溝銑 SLOTTING
AEA0502	19	250	15000~16000	2000~2500	0.7~1.5	5	溝銑 SLOTTING
AEA0502	19	250	15000~16000	1200~1600	1.5~3.5	5	溝銑 SLOTTING
AEA0502	19	250	15000~16000	1700~2100	10	0.05~0.12	側銑 SIDE MILLING
AEA0502	19	250	15000~16000	3200~3600	5	0~0.7	側銑 SIDE MILLING
AEA0502	19	250	15000~16000	2000~2400	5	0.7~1.5	側銑 SIDE MILLING
AEA0502	19	250	15000~16000	1200~1600	5	1.5~3.5	側銑 SIDE MILLING
AEA0602	21	250	12500~13500	1700~2100	0.05~0.15	5~6	溝銑 SLOTTING
AEA0602	21	225	11500~12500	3200~3600	0~1	6	溝銑 SLOTTING
AEA0602	21	225	11500~12500	1800~2200	1~3	6	溝銑 SLOTTING
AEA0602	21	225	11500~12500	1200~1600	3~6	6	溝銑 SLOTTING
AEA0602	21	250	12500~13500	1800~2200	12	0.05~0.15	側銑 SIDE MILLING
AEA0602	21	225	11500~12500	3200~3600	6	0~1	側銑 SIDE MILLING
AEA0602	21	225	11500~12500	1700~2100	6	1~3	側銑 SIDE MILLING
AEA0602	21	225	11500~12500	1300~1700	6	3~6	側銑 SIDE MILLING
AEA0802	25	300	11000~12000	1700~2100	0.05~0.15	6~8	溝銑 SLOTTING
AEA0802	25	300	11000~12000	3400~3800	0~1.5	8	溝銑 SLOTTING
AEA0802	25	300	11000~12000	2000~2500	1.5~4	8	溝銑 SLOTTING
AEA0802	25	300	11000~12000	2000~2400	4~8	8	溝銑 SLOTTING
AEA0802	25	300	11000~12000	1700~2100	16	0.05~0.15	側銑 SIDE MILLING
AEA0802	25	300	11000~12000	3800~4200	8	0~2	側銑 SIDE MILLING
AEA0802	25	300	11000~12000	2500~3000	8	2~4	側銑 SIDE MILLING
AEA0802	25	300	11000~12000	2000~2400	8	4~8	側銑 SIDE MILLING
AEA1002	30	300	9000~9500	1600~2000	0.05~0.15	8~10	溝銑 SLOTTING
AEA1002	30	300	9000~9500	3500~4000	0~2	10	溝銑 SLOTTING
AEA1002	30	300	9000~9500	2500~3000	2~5	10	溝銑 SLOTTING
AEA1002	30	300	9000~9500	1600~2000	5~10	10	溝銑 SLOTTING
AEA1002	30	300	9000~9500	1600~2000	20	0.05~0.15	側銑 SIDE MILLING
AEA1002	30	300	9000~9500	3800~4200	10	0~2	側銑 SIDE MILLING
AEA1002	30	300	9000~9500	2700~3200	10	2~5	側銑 SIDE MILLING
AEA1002	30	300	9000~9500	1700~2100	10	5~10	側銑 SIDE MILLING
AEA1202	35	300	7800~8300	1600~2000	0.05~0.15	10~12	溝銑 SLOTTING
AEA1202	35	300	7800~8300	2800~3200	0~2	12	溝銑 SLOTTING
AEA1202	35	300	7800~8300	2000~2500	2~6	12	溝銑 SLOTTING
AEA1202	35	300	7800~8300	1600~2000	6~12	12	溝銑 SLOTTING
AEA1202	35	300	7800~8300	1600~2000	24	0.05~0.15	側銑 SIDE MILLING
AEA1202	35	300	7800~8300	3200~3600	12	0~2	側銑 SIDE MILLING
AEA1202	35	300	7800~8300	2500~3000	12	2~6	側銑 SIDE MILLING
AEA1202	35	300	7800~8300	1600~2000	12	6~12	側銑 SIDE MILLING

AEA-3T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=10000 (min^{-1}) 以下 Be used under the machine of RPM=10000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEA0203	9	65	9500~10000	1300~1700	0.05~0.08	1.5~2	溝銑 SLOTTING
AEA0203	9	65	9500~10000	1800~2200	0~0.2	2	溝銑 SLOTTING
AEA0203	9	65	9500~10000	1400~1800	0.2~0.6	2	溝銑 SLOTTING
AEA0203	9	65	9500~10000	900~1300	0.6~1	2	溝銑 SLOTTING
AEA0203	9	65	9500~10000	1300~1700	4	0.05~0.08	側銑 SIDE MILLING
AEA0203	9	65	9500~10000	2000~2400	2	0~0.2	側銑 SIDE MILLING
AEA0203	9	65	9500~10000	1400~1800	2	0.2~0.6	側銑 SIDE MILLING
AEA0203	9	65	9500~10000	1000~1400	2	0.6~1	側銑 SIDE MILLING
AEA0303	12	90	9000~9500	1400~1800	0.05~0.1	2.5~3	溝銑 SLOTTING
AEA0303	12	90	9000~9500	1800~2200	0~0.4	3	溝銑 SLOTTING
AEA0303	12	90	9000~9500	1500~1900	0.4~0.8	3	溝銑 SLOTTING
AEA0303	12	90	9000~9500	1000~1400	0.8~1.2	3	溝銑 SLOTTING
AEA0303	12	90	9000~9500	1400~1800	6	0.05~0.1	側銑 SIDE MILLING
AEA0303	12	90	9000~9500	1800~2200	3	0~0.4	側銑 SIDE MILLING
AEA0303	12	90	9000~9500	1500~1900	3	0.4~0.8	側銑 SIDE MILLING
AEA0303	12	90	9000~9500	1000~1400	3	0.8~1.2	側銑 SIDE MILLING
AEA0403	15	110	8500~9000	1400~1800	0.05~0.12	3~4	溝銑 SLOTTING
AEA0403	15	110	8500~9000	2200~2600	0~0.6	4	溝銑 SLOTTING
AEA0403	15	110	8500~9000	1800~2200	0.6~1.2	4	溝銑 SLOTTING
AEA0403	15	110	8500~9000	1000~1400	1.2~2	4	溝銑 SLOTTING
AEA0403	15	110	8500~9000	1400~1800	8	0.05~0.12	側銑 SIDE MILLING
AEA0403	15	110	8500~9000	2200~2600	4	0~0.6	側銑 SIDE MILLING
AEA0403	15	110	8500~9000	1800~2200	4	0.6~1.2	側銑 SIDE MILLING
AEA0403	15	110	8500~9000	1000~1400	4	1.2~2	側銑 SIDE MILLING
AEA0503	19	125	7800~8300	1600~2000	0.05~0.12	4~5	溝銑 SLOTTING
AEA0503	19	125	7800~8300	3500~4000	0~0.7	5	溝銑 SLOTTING
AEA0503	19	125	7800~8300	2000~2500	0.7~1.5	5	溝銑 SLOTTING
AEA0503	19	125	7800~8300	1200~1700	1.5~3.5	5	溝銑 SLOTTING
AEA0503	19	125	7800~8300	1600~2000	10	0.05~0.12	側銑 SIDE MILLING
AEA0503	19	125	7800~8300	3500~4000	5	0~0.7	側銑 SIDE MILLING
AEA0503	19	125	7800~8300	2000~2500	5	0.7~1.5	側銑 SIDE MILLING
AEA0503	19	125	7800~8300	1200~1700	5	1.5~3.5	側銑 SIDE MILLING
AEA0603	21	150	7800~8300	1800~2200	0.05~0.15	5~6	溝銑 SLOTTING
AEA0603	21	150	7800~8300	3200~3600	0~1	6	溝銑 SLOTTING
AEA0603	21	150	7800~8300	1700~2200	1~3	6	溝銑 SLOTTING
AEA0603	21	150	7800~8300	1200~1700	3~6	6	溝銑 SLOTTING
AEA0603	21	150	7800~8300	1800~2200	12	0.05~0.15	側銑 SIDE MILLING
AEA0603	21	150	7800~8300	2800~3200	6	0~1	側銑 SIDE MILLING
AEA0603	21	150	7800~8300	1800~2300	6	1~3	側銑 SIDE MILLING
AEA0603	21	150	7800~8300	1200~1700	6	3~6	側銑 SIDE MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEA0803	25	200	7800~8300	1800~2200	0.05~0.15	6~8	溝銑 SLOTTING
AEA0803	25	200	7800~8300	4500~5000	0~1.5	8	溝銑 SLOTTING
AEA0803	25	200	7800~8300	3000~3500	1.5~4	8	溝銑 SLOTTING
AEA0803	25	200	7800~8300	2400~2800	4~8	8	溝銑 SLOTTING
AEA0803	25	200	7800~8300	1800~2200	16	0.05~0.15	側銑 SIDE MILLING
AEA0803	25	200	7800~8300	4500~5000	8	0~2	側銑 SIDE MILLING
AEA0803	25	200	7800~8300	3000~3500	8	2~4	側銑 SIDE MILLING
AEA0803	25	200	7800~8300	2400~2800	8	4~8	側銑 SIDE MILLING
AEA1003	30	250	7800~8300	1800~2200	0.05~0.15	8~10	溝銑 SLOTTING
AEA1003	30	250	7800~8300	4500~5000	0~2	10	溝銑 SLOTTING
AEA1003	30	250	7800~8300	3500~4000	2~5	10	溝銑 SLOTTING
AEA1003	30	250	7800~8300	2000~2400	5~10	10	溝銑 SLOTTING
AEA1003	30	250	7800~8300	1800~2200	20	0.05~0.15	側銑 SIDE MILLING
AEA1003	30	250	7800~8300	4500~5000	10	0~2	側銑 SIDE MILLING
AEA1003	30	250	7800~8300	3500~4000	10	2~5	側銑 SIDE MILLING
AEA1003	30	250	7800~8300	2000~2400	10	5~10	側銑 SIDE MILLING
AEA1203	35	300	7800~8300	2000~2400	0.05~0.15	10~12	溝銑 SLOTTING
AEA1203	35	300	7800~8300	4500~5000	0~2	12	溝銑 SLOTTING
AEA1203	35	300	7800~8300	3000~3500	2~6	12	溝銑 SLOTTING
AEA1203	35	300	7800~8300	2000~2400	6~12	12	溝銑 SLOTTING
AEA1203	35	300	7800~8300	2000~2400	24	0.05~0.15	側銑 SIDE MILLING
AEA1203	35	300	7800~8300	4500~5000	12	0~2	側銑 SIDE MILLING
AEA1203	35	300	7800~8300	3500~4000	12	2~6	側銑 SIDE MILLING
AEA1203	35	300	7800~8300	2000~2400	12	6~12	側銑 SIDE MILLING
AEA1603	50	300	6000~6500	1700~2100	0.05~0.2	14~16	溝銑 SLOTTING
AEA1603	50	300	6000~6500	3500~4000	0~2	16	溝銑 SLOTTING
AEA1603	50	300	6000~6500	2600~3200	2~6	16	溝銑 SLOTTING
AEA1603	50	300	6000~6500	2000~2400	6~12	16	溝銑 SLOTTING
AEA1603	50	300	6000~6500	1700~2100	32	0.05~0.2	側銑 SIDE MILLING
AEA1603	50	300	6000~6500	3500~4000	16	0~2	側銑 SIDE MILLING
AEA1603	50	300	6000~6500	2600~3200	16	2~6	側銑 SIDE MILLING
AEA1603	50	300	6000~6500	2000~2400	16	6~12	側銑 SIDE MILLING

AEA-3T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=24000 (min^{-1}) 以下 Be used under the machine of RPM=24000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEA0203	9	150	23000~24000	2000~2400	0.05~0.08	1.5~2	溝銑 SLOTTING
AEA0203	9	150	23000~24000	3000~3500	0~0.2	2	溝銑 SLOTTING
AEA0203	9	150	23000~24000	1700~2000	0.2~0.6	2	溝銑 SLOTTING
AEA0203	9	150	23000~24000	1300~1700	0.6~1	2	溝銑 SLOTTING
AEA0203	9	150	23000~24000	2000~2400	4	0.05~0.08	側銑 SIDE MILLING
AEA0203	9	150	23000~24000	3200~3700	2	0~0.2	側銑 SIDE MILLING
AEA0203	9	150	23000~24000	1600~1900	2	0.2~0.6	側銑 SIDE MILLING
AEA0203	9	150	23000~24000	1300~1700	2	0.6~1	側銑 SIDE MILLING
AEA0303	12	210	21000~22000	2000~2400	0.05~0.1	2.5~3	溝銑 SLOTTING
AEA0303	12	210	21000~22000	2600~3000	0~0.4	3	溝銑 SLOTTING
AEA0303	12	210	21000~22000	2000~2400	0.4~0.8	3	溝銑 SLOTTING
AEA0303	12	210	21000~22000	1200~1600	0.8~1.2	3	溝銑 SLOTTING
AEA0303	12	210	21000~22000	2000~2400	6	0.05~0.1	側銑 SIDE MILLING
AEA0303	12	210	21000~22000	3400~3900	3	0~0.4	側銑 SIDE MILLING
AEA0303	12	210	21000~22000	1800~2100	3	0.4~0.8	側銑 SIDE MILLING
AEA0303	12	210	21000~22000	1300~1700	3	0.8~1.2	側銑 SIDE MILLING
AEA0403	15	250	19000~20000	2000~2400	0.05~0.12	3~4	溝銑 SLOTTING
AEA0403	15	250	19000~20000	3000~3500	0~0.6	4	溝銑 SLOTTING
AEA0403	15	250	19000~20000	2100~2500	0.6~1.2	4	溝銑 SLOTTING
AEA0403	15	250	19000~20000	1400~1800	1.2~2	4	溝銑 SLOTTING
AEA0403	15	250	19000~20000	2000~2400	8	0.05~0.12	側銑 SIDE MILLING
AEA0403	15	250	19000~20000	3000~3500	4	0~0.6	側銑 SIDE MILLING
AEA0403	15	250	19000~20000	2100~2500	4	0.6~1.2	側銑 SIDE MILLING
AEA0403	15	250	19000~20000	1400~1800	4	1.2~2	側銑 SIDE MILLING
AEA0503	19	260	16000~17000	2000~2400	0.05~0.12	4~5	溝銑 SLOTTING
AEA0503	19	260	16000~17000	4000~4500	0~0.7	5	溝銑 SLOTTING
AEA0503	19	260	16000~17000	2400~2800	0.7~1.5	5	溝銑 SLOTTING
AEA0503	19	260	16000~17000	1400~1800	1.5~3.5	5	溝銑 SLOTTING
AEA0503	19	260	16000~17000	2000~2400	10	0.05~0.12	側銑 SIDE MILLING
AEA0503	19	260	16000~17000	4200~4800	5	0~0.7	側銑 SIDE MILLING
AEA0503	19	260	16000~17000	2400~2800	5	0.7~1.5	側銑 SIDE MILLING
AEA0503	19	260	16000~17000	1400~1800	5	1.5~3.5	側銑 SIDE MILLING
AEA0603	21	270	14000~15000	2000~2400	0.05~0.15	5~6	溝銑 SLOTTING
AEA0603	21	270	14000~15000	4000~4500	0~1	6	溝銑 SLOTTING
AEA0603	21	270	14000~15000	2500~3000	1~3	6	溝銑 SLOTTING
AEA0603	21	270	14000~15000	1600~2000	3~6	6	溝銑 SLOTTING
AEA0603	21	270	14000~15000	2000~2400	12	0.05~0.15	側銑 SIDE MILLING
AEA0603	21	270	14000~15000	3500~4000	6	0~1	側銑 SIDE MILLING
AEA0603	21	270	14000~15000	2000~2500	6	1~3	側銑 SIDE MILLING
AEA0603	21	270	14000~15000	1600~2000	6	3~6	側銑 SIDE MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEA0803	25	315	12000~13000	2000~2400	0.05~0.15	6~8	溝銑 SLOTTING
AEA0803	25	315	12000~13000	5000~5500	0~1.5	8	溝銑 SLOTTING
AEA0803	25	315	12000~13000	3500~4000	1.5~4	8	溝銑 SLOTTING
AEA0803	25	315	12000~13000	2400~2800	4~8	8	溝銑 SLOTTING
AEA0803	25	315	12000~13000	2000~2400	16	0.05~0.15	側銑 SIDE MILLING
AEA0803	25	315	12000~13000	5000~5500	8	0~2	側銑 SIDE MILLING
AEA0803	25	315	12000~13000	3500~4000	8	2~4	側銑 SIDE MILLING
AEA0803	25	315	12000~13000	2400~2800	8	4~8	側銑 SIDE MILLING
AEA1003	30	330	10000~11000	2000~2400	0.05~0.15	8~10	溝銑 SLOTTING
AEA1003	30	330	10000~11000	5000~5500	0~2	10	溝銑 SLOTTING
AEA1003	30	330	10000~11000	3500~4000	2~5	10	溝銑 SLOTTING
AEA1003	30	330	10000~11000	2000~2400	5~10	10	溝銑 SLOTTING
AEA1003	30	330	10000~11000	2000~2400	20	0.05~0.15	側銑 SIDE MILLING
AEA1003	30	330	10000~11000	5000~5500	10	0~2	側銑 SIDE MILLING
AEA1003	30	330	10000~11000	3500~4000	10	2~5	側銑 SIDE MILLING
AEA1003	30	330	10000~11000	2000~2400	10	5~10	側銑 SIDE MILLING
AEA1203	35	300	7800~8300	2000~2400	0.05~0.15	10~12	溝銑 SLOTTING
AEA1203	35	300	7800~8300	4500~5000	0~2	12	溝銑 SLOTTING
AEA1203	35	300	7800~8300	3000~3500	2~6	12	溝銑 SLOTTING
AEA1203	35	300	7800~8300	2000~2400	6~12	12	溝銑 SLOTTING
AEA1203	35	300	7800~8300	2000~2400	24	0.05~0.15	側銑 SIDE MILLING
AEA1203	35	300	7800~8300	4500~5000	12	0~2	側銑 SIDE MILLING
AEA1203	35	300	7800~8300	3500~4000	12	2~6	側銑 SIDE MILLING
AEA1203	35	300	7800~8300	2000~2400	12	6~12	側銑 SIDE MILLING
AEA1603	50	300	6000~6500	1700~2100	0.05~0.2	14~16	溝銑 SLOTTING
AEA1603	50	300	6000~6500	3500~4000	0~2	16	溝銑 SLOTTING
AEA1603	50	300	6000~6500	2600~3200	2~6	16	溝銑 SLOTTING
AEA1603	50	300	6000~6500	2000~2400	6~12	16	溝銑 SLOTTING
AEA1603	50	300	6000~6500	1700~2100	32	0.05~0.2	側銑 SIDE MILLING
AEA1603	50	300	6000~6500	3500~4000	16	0~2	側銑 SIDE MILLING
AEA1603	50	300	6000~6500	2600~3200	16	2~6	側銑 SIDE MILLING
AEA1603	50	300	6000~6500	2000~2400	16	6~12	側銑 SIDE MILLING

AET-2T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=10000 (min^{-1}) 以下 Be used under the machine of RPM=10000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AET0052	13	15	9500~10000	500~700	0.04~0.06	0.1~0.5	溝銑 SLOTTING
AET0052	13	15	9500~10000	300~500	1	0.04~0.06	側銑 SIDE MILLING
AET0102	13	30	9500~10000	800~1000	0.05~0.08	0.5~1	溝銑 SLOTTING
AET0102	13	30	9500~10000	600~800	2	0.05~0.08	側銑 SIDE MILLING
AET0152	13	45	9500~10000	1000~1200	0.05~0.08	0.5~1.5	溝銑 SLOTTING
AET0152	13	45	9500~10000	800~1000	3	0.05~0.08	側銑 SIDE MILLING
AET0202	14	60	9500~10000	1800~2200	0~0.2	0.5~2	溝銑 SLOTTING
AET0202	14	60	9500~10000	1000~1200	0.05~0.08	0.5~2	溝銑 SLOTTING
AET0202	14	60	9500~10000	2000~2400	4	0~0.2	側銑 SIDE MILLING
AET0202	14	60	9500~10000	800~1000	4	0.05~0.08	側銑 SIDE MILLING
AET0302	14	90	9500~10000	2200~2600	0~0.4	1~3	溝銑 SLOTTING
AET0302	14	90	9500~10000	1000~1400	0.05~0.1	1~3	溝銑 SLOTTING
AET0302	14	90	9500~10000	2600~3000	6	0~0.4	側銑 SIDE MILLING
AET0302	14	90	9500~10000	800~1200	6	0.05~0.1	側銑 SIDE MILLING
AET0402	16	120	9500~10000	2800~3200	0~0.6	2~4	溝銑 SLOTTING
AET0402	16	120	9500~10000	1200~1600	0.05~0.12	2~4	溝銑 SLOTTING
AET0402	16	120	9500~10000	3000~3400	8	0~0.6	側銑 SIDE MILLING
AET0402	16	120	9500~10000	1000~1400	8	0.05~0.12	側銑 SIDE MILLING
AET0502	18	150	9500~10000	3400~3800	0~0.7	3~5	溝銑 SLOTTING
AET0502	18	150	9500~10000	1400~1800	0.05~0.15	3~5	溝銑 SLOTTING
AET0502	18	150	9500~10000	3400~3800	10	0~0.7	側銑 SIDE MILLING
AET0502	18	150	9500~10000	1000~1400	10	0.05~0.15	側銑 SIDE MILLING
AET0602	20	170	9000~9500	3400~3800	0~1	4~6	溝銑 SLOTTING
AET0602	20	170	9000~9500	1400~1800	0.05~0.15	4~6	溝銑 SLOTTING
AET0602	20	170	9000~9500	3400~3800	12	0~1	側銑 SIDE MILLING
AET0602	20	170	9000~9500	1000~1400	12	0.05~0.15	側銑 SIDE MILLING
AET0802	26	215	8500~9000	3400~3800	0~1.5	6~8	溝銑 SLOTTING
AET0802	26	215	8500~9000	1600~2000	0.05~0.15	6~8	溝銑 SLOTTING
AET0802	26	215	8500~9000	3600~4000	16	0~2	側銑 SIDE MILLING
AET0802	26	215	8500~9000	1400~1800	16	0.05~0.15	側銑 SIDE MILLING
AET1002	30	245	7800~8200	4000~4500	0~2	8~10	溝銑 SLOTTING
AET1002	30	245	7800~8200	1400~1800	0.05~0.15	8~10	溝銑 SLOTTING
AET1002	30	245	7800~8200	4000~4500	20	0~2	側銑 SIDE MILLING
AET1002	30	245	7800~8200	1400~1800	20	0.05~0.15	側銑 SIDE MILLING
AET1202	36	295	7800~8200	4000~4500	0~2	10~12	溝銑 SLOTTING
AET1202	36	295	7800~8200	1200~1600	0.05~0.15	10~12	溝銑 SLOTTING
AET1202	36	295	7800~8200	3200~3600	24	0~2	側銑 SIDE MILLING
AET1202	36	295	7800~8200	1200~1600	24	0.05~0.15	側銑 SIDE MILLING

切削條件表 MILLING CONDITIONS

AET-2T

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**
冷卻方式 Coolant Type	濕式切削 Wet coolant

建議機器轉速RPM=20000 (min^{-1}) 以下
Be used under the machine of RPM=20000 (min^{-1})

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AET0052	13	30	18000~20000	600~800	0.04~0.06	0.1~0.5	溝銑 SLOTTING
AET0052	13	30	18000~20000	400~600	1	0.04~0.06	側銑 SIDE MILLING
AET0102	13	60	18000~20000	1200~1400	0.05~0.08	0.5~1	溝銑 SLOTTING
AET0102	13	60	18000~20000	1000~1200	2	0.05~0.08	側銑 SIDE MILLING
AET0152	13	85	18000~20000	1400~1600	0.05~0.08	0.5~1.5	溝銑 SLOTTING
AET0152	13	85	18000~20000	1200~1400	3	0.05~0.08	側銑 SIDE MILLING
AET0202	14	110	17000~18000	2200~2600	0~0.2	0.5~2	溝銑 SLOTTING
AET0202	14	110	17000~18000	1400~1600	0.05~0.08	0.5~2	溝銑 SLOTTING
AET0202	14	110	17000~18000	2600~3000	4	0~0.2	側銑 SIDE MILLING
AET0202	14	110	17000~18000	1400~1600	4	0.05~0.08	側銑 SIDE MILLING
AET0302	14	160	17000~18000	2600~3000	0~0.4	1~3	溝銑 SLOTTING
AET0302	14	160	17000~18000	1800~2200	0.05~0.1	1~3	溝銑 SLOTTING
AET0302	14	160	17000~18000	3000~3400	6	0~0.4	側銑 SIDE MILLING
AET0302	14	160	17000~18000	1600~2000	6	0.05~0.1	側銑 SIDE MILLING
AET0402	16	200	16000~17000	3400~3800	0~0.6	2~4	溝銑 SLOTTING
AET0402	16	200	16000~17000	2000~2400	0.05~0.12	2~4	溝銑 SLOTTING
AET0402	16	200	16000~17000	3400~3800	8	0~0.6	側銑 SIDE MILLING
AET0402	16	200	16000~17000	1600~2000	8	0.05~0.12	側銑 SIDE MILLING
AET0502	18	235	15000~16000	4400~4800	0~0.7	3~5	溝銑 SLOTTING
AET0502	18	235	15000~16000	2400~2800	0.05~0.15	3~5	溝銑 SLOTTING
AET0502	18	235	15000~16000	4400~4800	10	0~0.7	側銑 SIDE MILLING
AET0502	18	235	15000~16000	1600~2000	10	0.05~0.15	側銑 SIDE MILLING
AET0602	20	285	15000~16000	4400~4800	0~1	4~6	溝銑 SLOTTING
AET0602	20	285	15000~16000	2400~2800	0.05~0.15	4~6	溝銑 SLOTTING
AET0602	20	285	15000~16000	4400~4800	12	0~1	側銑 SIDE MILLING
AET0602	20	285	15000~16000	1600~2000	12	0.05~0.15	側銑 SIDE MILLING
AET0802	26	355	14000~15000	4500~5000	0~1.5	6~8	溝銑 SLOTTING
AET0802	26	355	14000~15000	2200~2600	0.05~0.15	6~8	溝銑 SLOTTING
AET0802	26	355	14000~15000	5000~5500	16	0~2	側銑 SIDE MILLING
AET0802	26	355	14000~15000	2000~2400	16	0.05~0.15	側銑 SIDE MILLING
AET1002	30	380	12000~13000	5500~6000	0~2	8~10	溝銑 SLOTTING
AET1002	30	380	12000~13000	2000~2400	0.05~0.15	8~10	溝銑 SLOTTING
AET1002	30	380	12000~13000	6000~6500	20	0~2	側銑 SIDE MILLING
AET1002	30	380	12000~13000	1800~2200	20	0.05~0.15	側銑 SIDE MILLING
AET1202	36	295	7800~8200	4000~4500	0~2	10~12	溝銑 SLOTTING
AET1202	36	295	7800~8200	1200~1600	0.05~0.15	10~12	溝銑 SLOTTING
AET1202	36	295	7800~8200	3200~3600	24	0~2	側銑 SIDE MILLING
AET1202	36	295	7800~8200	1200~1600	24	0.05~0.15	側銑 SIDE MILLING

AET-3T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=10000 (min^{-1}) 以下 Be used under the machine of RPM=10000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AET0203	14	60	9500~10000	2200~2600	0~0.2	0.5~2	溝銑 SLOTTING
AET0203	14	60	9500~10000	1200~1600	0.05~0.08	0.5~2	溝銑 SLOTTING
AET0203	14	60	9500~10000	2400~2800	4	0~0.2	側銑 SIDE MILLING
AET0203	14	60	9500~10000	1200~1600	4	0.05~0.08	側銑 SIDE MILLING
AET0303	16	90	9500~10000	2800~3200	0~0.4	1~3	溝銑 SLOTTING
AET0303	16	90	9500~10000	1600~2000	0.05~0.1	1~3	溝銑 SLOTTING
AET0303	16	90	9500~10000	3000~3400	6	0~0.4	側銑 SIDE MILLING
AET0303	16	90	9500~10000	1400~1800	6	0.05~0.1	側銑 SIDE MILLING
AET0403	18	115	9000~9500	3400~3800	0~0.6	2~4	溝銑 SLOTTING
AET0403	18	115	9000~9500	1600~2000	0.05~0.12	2~4	溝銑 SLOTTING
AET0403	18	115	9000~9500	3400~3800	8	0~0.6	側銑 SIDE MILLING
AET0403	18	115	9000~9500	1400~1800	8	0.05~0.12	側銑 SIDE MILLING
AET0503	20	125	7800~8300	3800~4200	0~0.7	3~5	溝銑 SLOTTING
AET0503	20	125	7800~8300	1600~2000	0.05~0.15	3~5	溝銑 SLOTTING
AET0503	20	125	7800~8300	3800~4200	10	0~0.7	側銑 SIDE MILLING
AET0503	20	125	7800~8300	1200~1600	10	0.05~0.15	側銑 SIDE MILLING
AET0603	22	150	7800~8200	4200~4600	0~0.9	4~6	溝銑 SLOTTING
AET0603	22	150	7800~8200	1600~2000	0.05~0.15	4~6	溝銑 SLOTTING
AET0603	22	150	7800~8200	4200~4600	12	0~0.9	側銑 SIDE MILLING
AET0603	22	150	7800~8200	1600~2000	12	0.05~0.15	側銑 SIDE MILLING
AET0803	26	175	7000~7500	3000~3400	0~1.5	6~8	溝銑 SLOTTING
AET0803	26	215	8500~9000	1800~2200	0.05~0.15	6~8	溝銑 SLOTTING
AET0803	26	215	8500~9000	1600~2000	16	0~1	側銑 SIDE MILLING
AET0803	26	215	8500~9000	1600~2000	16	0.05~0.15	側銑 SIDE MILLING
AET1003	30	245	7800~8200	4500~5000	0~2	8~10	溝銑 SLOTTING
AET1003	30	245	7800~8200	1600~2000	0.05~0.15	8~10	溝銑 SLOTTING
AET1003	30	245	7800~8200	4000~4500	20	0~2	側銑 SIDE MILLING
AET1003	30	245	7800~8200	1600~2000	20	0.05~0.15	側銑 SIDE MILLING
AET1203	36	295	7800~8200	5000~5500	0~2	10~12	溝銑 SLOTTING
AET1203	36	295	7800~8200	1600~2000	0.05~0.15	10~12	溝銑 SLOTTING
AET1203	36	295	7800~8200	4500~5000	24	0~2	側銑 SIDE MILLING
AET1203	36	295	7800~8200	1600~2000	24	2	側銑 SIDE MILLING
AET1603	55	325	6400~6800	4400~4800	0~2	14~16	溝銑 SLOTTING
AET1603	55	325	6400~6800	1400~1800	0.05~0.2	14~16	溝銑 SLOTTING
AET1603	55	325	6400~6800	4600~5000	32	0~2	側銑 SIDE MILLING
AET1603	55	325	6400~6800	1400~1800	32	0.05~0.2	側銑 SIDE MILLING

切削條件表 MILLING CONDITIONS

AET-3T

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=20000 (min^{-1}) 以下 Be used under the machine of RPM=20000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AET0203	14	115	18000~20000	3400~3800	0~0.2	0.5~2	溝銑 SLOTTING
AET0203	14	115	18000~20000	1800~2200	0.05~0.08	0.5~2	溝銑 SLOTTING
AET0203	14	115	18000~20000	3400~3800	4	0~0.2	側銑 SIDE MILLING
AET0203	14	115	18000~20000	1800~2200	4	0.05~0.08	側銑 SIDE MILLING
AET0303	16	160	17000~18000	3800~4200	0~0.4	1~3	溝銑 SLOTTING
AET0303	16	160	17000~18000	2400~2800	0.05~0.1	1~3	溝銑 SLOTTING
AET0303	16	160	17000~18000	3800~4200	6	0~0.4	側銑 SIDE MILLING
AET0303	16	160	17000~18000	2000~2400	6	0.05~0.1	側銑 SIDE MILLING
AET0403	18	165	13000~14000	4200~4600	0~0.6	2~4	溝銑 SLOTTING
AET0403	18	165	13000~14000	2400~2800	0.05~0.12	2~4	溝銑 SLOTTING
AET0403	18	165	13000~14000	4200~4600	8	0~0.6	側銑 SIDE MILLING
AET0403	18	165	13000~14000	2000~2400	8	0.05~0.12	側銑 SIDE MILLING
AET0503	20	175	11000~12000	5000~5400	0~0.7	3~5	溝銑 SLOTTING
AET0503	20	175	11000~12000	2600~3000	0.05~0.15	3~5	溝銑 SLOTTING
AET0503	20	175	11000~12000	5000~5400	10	0~0.7	側銑 SIDE MILLING
AET0503	20	175	11000~12000	1800~2200	10	0.05~0.15	側銑 SIDE MILLING
AET0603	22	255	13000~14000	6000~6500	0~0.9	4~6	溝銑 SLOTTING
AET0603	22	255	13000~14000	2400~2800	0.05~0.15	4~6	溝銑 SLOTTING
AET0603	22	255	13000~14000	6500~7500	12	0~0.9	側銑 SIDE MILLING
AET0603	22	255	13000~14000	2200~2600	12	0.05~0.15	側銑 SIDE MILLING
AET0803	26	280	11000~12000	4000~4500	0~1	6~8	溝銑 SLOTTING
AET0803	26	355	14000~15000	2400~2800	0.05~0.15	6~8	溝銑 SLOTTING
AET0803	26	355	14000~15000	2800~3200	16	0~1	側銑 SIDE MILLING
AET0803	26	355	14000~15000	2200~2600	16	0.05~0.15	側銑 SIDE MILLING
AET1003	30	360	11000~12000	5500~6000	0~2	8~10	溝銑 SLOTTING
AET1003	30	360	11000~12000	2400~2800	0.05~0.15	8~10	溝銑 SLOTTING
AET1003	30	360	11000~12000	5500~6000	20	0~2	側銑 SIDE MILLING
AET1003	30	360	11000~12000	2200~2600	20	0.05~0.15	側銑 SIDE MILLING
AET1203	36	295	7800~8200	5000~5500	0~2	10~12	溝銑 SLOTTING
AET1203	36	295	7800~8200	1600~2000	0.05~0.15	10~12	溝銑 SLOTTING
AET1203	36	295	7800~8200	4500~5000	24	0~2	側銑 SIDE MILLING
AET1203	36	295	7800~8200	1600~2000	24	2	側銑 SIDE MILLING
AET1603	55	325	6400~6800	4400~4800	0~2	14~16	溝銑 SLOTTING
AET1603	55	325	6400~6800	1400~1800	0.05~0.2	14~16	溝銑 SLOTTING
AET1603	55	325	6400~6800	4600~5000	32	0~2	側銑 SIDE MILLING
AET1603	55	325	6400~6800	1400~1800	32	0.05~0.2	側銑 SIDE MILLING

BTC

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=10000 (min^{-1}) 以下 Be used under the machine of RPM=10000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
BTC0102	10	30	9500~10000	400~600	0.15~0.18	0.3~0.36	3D銑 3D MILLING
BTC0102	10	30	9500~10000	800~1200	0.08~0.11	0.15~0.18	3D銑 3D MILLING
BTC0102	10	30	9500~10000	1400~1800	0.03~0.05	0.05~0.08	3D銑 3D MILLING
BTC0152	12	45	9500~10000	400~600	0.15~0.18	0.3~0.36	3D銑 3D MILLING
BTC0152	12	45	9500~10000	1000~1400	0.08~0.11	0.15~0.18	3D銑 3D MILLING
BTC0152	12	45	9500~10000	1800~2200	0.03~0.05	0.05~0.08	3D銑 3D MILLING
BTC0202	12	60	9000~9500	600~1000	0.2~0.25	0.45~0.5	3D銑 3D MILLING
BTC0202	12	60	9000~9500	1200~1600	0.1~0.13	0.2~0.25	3D銑 3D MILLING
BTC0202	12	60	9000~9500	2200~2600	0.04~0.06	0.06~0.1	3D銑 3D MILLING
BTC0302	14	85	9000~9500	800~1200	0.25~0.3	0.5~0.6	3D銑 3D MILLING
BTC0302	14	85	9000~9500	1500~1900	0.12~0.15	0.23~0.28	3D銑 3D MILLING
BTC0302	14	85	9000~9500	2400~2800	0.05~0.07	0.8~0.12	3D銑 3D MILLING
BTC0402	14	115	9000~9500	1000~1400	0.3~0.35	0.7~08	3D銑 3D MILLING
BTC0402	14	115	9000~9500	2000~2400	0.15~0.18	0.3~0.4	3D銑 3D MILLING
BTC0402	14	115	9000~9500	2600~3000	0.06~0.08	0.1~0.13	3D銑 3D MILLING
BTC0602	20	160	8500~9000	1200~1600	0.5~0.6	1~1.5	3D銑 3D MILLING
BTC0602	20	160	8500~9000	2400~2800	0.2~0.25	0.4~0.5	3D銑 3D MILLING
BTC0602	20	170	9000~9500	3000~3400	0.08~0.1	0.12~0.15	3D銑 3D MILLING
BTC0802	25	200	8000~8500	1400~1800	0.7~1	2~2.5	3D銑 3D MILLING
BTC0802	25	200	8000~8500	2600~3000	0.25~0.3	0.5~0.6	3D銑 3D MILLING
BTC0802	25	230	9000~9500	3200~3600	0.08~0.13	0.15~0.2	3D銑 3D MILLING
BTC1002	35	255	8000~8500	1600~2000	0.8~1.3	2~2.5	3D銑 3D MILLING
BTC1002	35	255	8000~8500	3400~3800	0.3~0.35	0.7~0.8	3D銑 3D MILLING
BTC1002	35	285	9000~9500	3000~3400	0.1~0.15	0.18~0.23	3D銑 3D MILLING
BTC1202	40	290	7700~8200	1600~2000	1~1.5	2.5~3.5	3D銑 3D MILLING
BTC1202	40	290	7700~8200	2800~3200	0.4~0.45	0.8~1	3D銑 3D MILLING
BTC1202	40	290	7700~8200	3800~4200	0.13~0.16	0.2~0.25	3D銑 3D MILLING

切削條件表 MILLING CONDITIONS

BTC

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=24000 (min^{-1}) 以下 Be used under the machine of RPM=24000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
BTC0102	10	75	23000~24000	600~800	0.15~0.18	0.3~0.36	3D銑 3D MILLING
BTC0102	10	75	23000~24000	1000~1400	0.08~0.11	0.15~0.18	3D銑 3D MILLING
BTC0102	10	75	23000~24000	1800~2200	0.03~0.05	0.05~0.08	3D銑 3D MILLING
BTC0152	12	105	22000~23000	600~800	0.15~0.18	0.3~0.36	3D銑 3D MILLING
BTC0152	12	105	22000~23000	1400~1800	0.08~0.11	0.15~0.18	3D銑 3D MILLING
BTC0152	12	105	22000~23000	2200~2600	0.03~0.05	0.05~0.08	3D銑 3D MILLING
BTC0202	12	125	20000~22000	800~1200	0.2~0.25	0.45~0.5	3D銑 3D MILLING
BTC0202	12	125	20000~22000	1600~2000	0.1~0.13	0.2~0.25	3D銑 3D MILLING
BTC0202	12	125	20000~22000	2600~3000	0.04~0.06	0.06~0.1	3D銑 3D MILLING
BTC0302	14	160	17000~19000	1100~1500	0.25~0.3	0.5~0.6	3D銑 3D MILLING
BTC0302	14	160	17000~19000	1800~2200	0.12~0.15	0.23~0.28	3D銑 3D MILLING
BTC0302	14	160	17000~19000	2800~3200	0.05~0.07	0.8~0.12	3D銑 3D MILLING
BTC0402	14	200	16000~17000	1400~1800	0.3~0.35	0.7~0.8	3D銑 3D MILLING
BTC0402	14	200	16000~17000	2600~3000	0.15~0.18	0.3~0.4	3D銑 3D MILLING
BTC0402	14	200	16000~17000	3000~3400	0.06~0.08	0.1~0.13	3D銑 3D MILLING
BTC0602	20	285	15000~16000	1600~2000	0.5~0.6	1~1.5	3D銑 3D MILLING
BTC0602	20	285	15000~16000	2800~3200	0.2~0.25	0.4~0.5	3D銑 3D MILLING
BTC0602	20	285	15000~16000	3400~3800	0.08~0.1	0.12~0.15	3D銑 3D MILLING
BTC0802	25	330	13000~14000	2000~2400	0.7~1	2~2.5	3D銑 3D MILLING
BTC0802	25	330	13000~14000	3600~4000	0.25~0.3	0.5~0.6	3D銑 3D MILLING
BTC0802	25	330	13000~14000	4200~4600	0.08~0.13	0.15~0.2	3D銑 3D MILLING
BTC1002	35	315	10000~11000	2000~2400	0.8~1.3	2~2.5	3D銑 3D MILLING
BTC1002	35	380	12000~13000	4000~4400	0.3~0.35	0.7~0.8	3D銑 3D MILLING
BTC1002	35	380	12000~13000	3800~4200	0.1~0.15	0.18~0.23	3D銑 3D MILLING
BTC1202	40	415	11000~12000	2400~2800	1~1.5	2.5~3.5	3D銑 3D MILLING
BTC1202	40	415	11000~12000	3800~4200	0.4~0.45	0.8~1	3D銑 3D MILLING
BTC1202	40	415	11000~12000	4200~4600	0.13~0.16	0.2~0.25	3D銑 3D MILLING

切削條件表 MILLING CONDITIONS HBC . IBC . JBC

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
HBC0402	35	100	8000~8500	1200~1600	0.09~0.18	0.18~0.3	3D銑 3D MILLING
HBC0402	35	115	9000~9500	1800~2200	0.06~0.08	0.1~0.15	3D銑 3D MILLING
HBC0502	35	120	7300~7800	1400~1800	0.15~0.22	0.38~0.48	3D銑 3D MILLING
HBC0502	35	130	8000~8500	2000~2400	0.05~0.1	0.1~0.15	3D銑 3D MILLING
HBC0602	35	130	6700~7200	1400~1800	0.15~0.25	0.3~0.5	3D銑 3D MILLING
HBC0602	35	150	7700~8200	2000~2400	0.05~0.1	0.12~0.16	3D銑 3D MILLING
IBC0402	50	85	6700~7200	1000~1400	0.09~0.18	0.18~0.3	3D銑 3D MILLING
IBC0402	50	100	8000~8500	1600~2000	0.06~0.08	0.1~0.15	3D銑 3D MILLING
IBC0602	50	120	6000~6500	1200~1600	0.15~0.25	0.3~0.5	3D銑 3D MILLING
IBC0602	50	140	7200~7600	1800~2200	0.05~0.1	0.12~0.16	3D銑 3D MILLING
IBC0802	50	200	8000~8500	2000~2400	0.25~0.3	0.5~0.6	3D銑 3D MILLING
IBC0802	50	230	9000~9500	3200~3600	0.08~0.13	0.15~0.2	3D銑 3D MILLING
IBC1002	60	255	8000~8500	3600~4000	0.3~0.35	0.7~0.8	3D銑 3D MILLING
IBC1002	60	285	9000~9500	3000~3400	0.1~0.15	0.18~0.23	3D銑 3D MILLING
IBC1202	60	290	7700~8200	3000~3400	0.35~0.4	0.8~1	3D銑 3D MILLING
IBC1202	60	290	7700~8200	3000~3400	0.13~0.16	0.2~0.25	3D銑 3D MILLING
JBC0602	80	120	4700~5200	1600~2000	0.1~0.2	0.2~0.4	3D銑 3D MILLING
JBC0602	80	180	9000~9500	2000~2400	0.05~0.1	0.12~0.16	3D銑 3D MILLING
JBC0802	80	120	4700~5200	2000~2400	0.25~0.3	0.5~0.6	3D銑 3D MILLING
JBC0802	80	230	9000~9500	3000~3400	0.08~0.13	0.15~0.2	3D銑 3D MILLING
JBC1002	100	125	4000~4400	1200~1600	0.1~0.15	0.18~0.23	3D銑 3D MILLING
JBC1002	100	285	9000~9500	3000~3400	0.1~0.15	0.18~0.23	3D銑 3D MILLING
JBC1202	100	85	2000~2400	800~1000	0.35~0.4	0.8~1	3D銑 3D MILLING
JBC1202	100	150	3700~4200	1800~2200	0.13~0.16	0.2~0.25	3D銑 3D MILLING

德信發企業有限公司

DHF Precision Tool Co., Ltd.

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Distributor

2012.8.2000

DESIGN . HONESTY . FUTURE

DHF

Stainless Steel Cutting

不銹鋼切削專用



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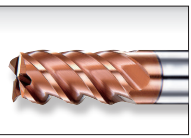
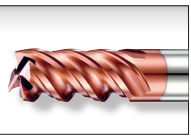
UPS		P.14
UPZ		P.19
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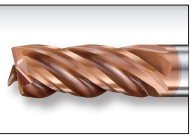
UPE		P.27
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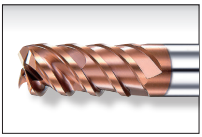
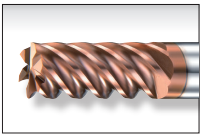
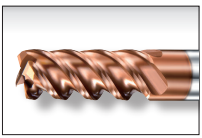
UPJ		P.40
VTB		P.45
RTB		P.47
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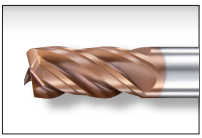
UPER		P.57
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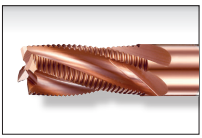
WWB		P.63

Guide Line to Icons
圖示說明

鎢鋼種類 CARBIDE



超微粒。
Micro grain.



極超微粒。
Super micro grain.

顆粒大小 GRAIN SIZE



粉末顆粒是0.4 μm
Grain size is 0.4 μm.



粉末顆粒是0.6 μm
Grain size is 0.6 μm.

螺旋角 HELIX ANGLE



螺旋角度20°、30°、35°、35-38°、45°、50°、52°
Helix Angle is 20°,30°,35°,35-38°,45°,50°,52°.

圓隅角 CORNER R



圓隅角。
Corner Radius.

刃數 FLUTE



被切削材硬度 WORK MATERIAL HARDNESS



被切削工件硬度可達HRC55、HRC60。
Work material hardness is up to HRC55、HRC60.

鍍層 COATING



適用於高速加工。乾式切削。
Good at high speed cutting. For dry cutting.



適用於難切削材，油霧、溼式切削。
Good at difficult material. For Dry & Wet cutting.

齒形 ROUGHING



細粗齒
Small Roughing.



中粗齒
Middle Roughing.

切削性能 CUTTING PERFORMANCE



優
Excellent



良
Good



尚可
Acceptable



禁止
No

Stainless Steel Cutting

Standard

ETB

極超微粒立銑刀
END MILLS

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining
精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

Stainless Steel Cutting

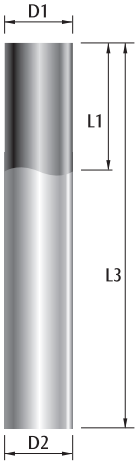


Super MG | 0.4 μm | 45° | 4 Flutes | HRc ▶60 | T2

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ETB0104	1.0	3	50	4
ETB0154	1.5	4	50	4
ETB0204S	2.0	6	50	4
ETB0204	2.0	6	50	6
ETB0254S	2.5	8	50	4
ETB0254	2.5	8	50	6
ETB0304S	3.0	8	50	4
ETB0304	3.0	8	50	6
ETB0354	3.5	10	50	6
ETB0404S	4.0	11	50	4
ETB0404	4.0	11	50	6
ETB0454	4.5	11	50	6
ETB0504	5.0	13	50	6
ETB0604	6.0	16	50	6
ETB0804	8.0	20	60	8
ETB1004Z	10.0	25	75	10
ETB1004	10.0	30	75	10
ETB1204	12.0	30	75	12
ETB1604	16.0	40	100	16
ETB2004	20.0	45	100	20

unit : mm



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
2.5	0 -0.02
3.0	0 -0.02
3.5	0 -0.02
4.0	0 -0.02
4.5	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm

ETB

切削條件表 MILLING CONDITIONS

被切削材 Work Material

沃斯田鐵系不銹鋼
Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB0104	9	80	25000	1100~1300	0~0.1	1	溝銑 SLOTTING
ETB0104	9	80	25000	600~900	0.1~0.2	1	溝銑 SLOTTING
ETB0104	9	80	25000	400~600	0.2~0.3	1	溝銑 SLOTTING
ETB0104	9	80	25000	200~400	1~2	0~0.1	側銑 SIDE MILLING
ETB0104	9	80	25000	800~1100	1	0.15	側銑 SIDE MILLING
ETB0104	9	80	25000	600~900	1~2	0~0.06	側銑 SIDE MILLING
ETB0154	9	105	22000	1100~1300	0~0.13	1.5	溝銑 SLOTTING
ETB0154	9	105	22000	600~900	0.13~0.3	1.5	溝銑 SLOTTING
ETB0154	9	105	22000	400~600	0.3~0.5	1.5	溝銑 SLOTTING
ETB0154	9	105	22000	200~400	1.5~3	0~0.13	側銑 SIDE MILLING
ETB0154	9	105	22000	800~1100	1.5	0.25	側銑 SIDE MILLING
ETB0154	9	105	22000	600~900	1.5~3	0~0.08	側銑 SIDE MILLING
ETB0204S	11	105	16500	1100~1300	0~0.18	2	溝銑 SLOTTING
ETB0204S	11	105	16500	600~900	0.2~0.3	2	溝銑 SLOTTING
ETB0204S	11	105	16500	400~600	0.3~0.6	2	溝銑 SLOTTING
ETB0204S	11	105	16500	200~400	2~4	0~0.18	側銑 SIDE MILLING
ETB0204S	11	105	16500	800~1100	2	0.35	側銑 SIDE MILLING
ETB0204S	11	105	16500	600~900	2~4	0~0.1	側銑 SIDE MILLING
ETB0204	11	105	16500	1100~1300	0~0.18	2	溝銑 SLOTTING
ETB0204	11	105	16500	600~900	0.2~0.3	2	溝銑 SLOTTING
ETB0204	11	105	16500	400~600	0.3~0.6	2	溝銑 SLOTTING
ETB0204	11	105	16500	200~400	2~4	0~0.18	側銑 SIDE MILLING
ETB0204	11	105	16500	800~1100	2	0.35	側銑 SIDE MILLING
ETB0204	11	105	16500	600~900	2~4	0~0.1	側銑 SIDE MILLING
ETB0254S	12	105	13300	1200~1400	0~0.25	2.5	溝銑 SLOTTING
ETB0254S	12	105	13300	800~1000	0.25~0.6	2.5	溝銑 SLOTTING
ETB0254S	12	105	13300	500~700	0.6~1	2.5	溝銑 SLOTTING
ETB0254S	12	105	13300	1000~1200	2.5~5	0~0.25	側銑 SIDE MILLING
ETB0254S	12	105	13300	800~1000	2.5	0.45	側銑 SIDE MILLING
ETB0254S	12	105	13300	700~900	2.5~5	0~0.12	側銑 SIDE MILLING
ETB0254	12	105	13300	1200~1600	0~0.25	2.5	溝銑 SLOTTING
ETB0254	12	105	13300	800~1000	0.25~0.6	2.5	溝銑 SLOTTING
ETB0254	12	105	13300	600~800	0.6~1	2.5	溝銑 SLOTTING
ETB0254	12	105	13300	1000~1200	2.5~5	0~0.25	側銑 SIDE MILLING
ETB0254	12	105	13300	800~1000	2.5	0.45	側銑 SIDE MILLING
ETB0254	12	105	13300	700~900	2.5~5	0~0.12	側銑 SIDE MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB0304S	13	105	11100	1200~1600	0~0.3	3	溝銑 SLOTTING
ETB0304S	13	105	11100	800~1000	0.3~0.7	3	溝銑 SLOTTING
ETB0304S	13	105	11100	600~800	0.8~1.5	3	溝銑 SLOTTING
ETB0304S	13	105	11100	1000~1200	3~6	0~0.3	側銑 SIDE MILLING
ETB0304S	13	105	11100	800~1000	3	0.65	側銑 SIDE MILLING
ETB0304S	13	105	11100	700~900	3~6	0~0.12	側銑 SIDE MILLING
ETB0304	15	105	11100	1200~1600	0~0.3	3	溝銑 SLOTTING
ETB0304	15	105	11100	800~1000	0.3~0.7	3	溝銑 SLOTTING
ETB0304	15	105	11100	600~800	0.8~1.5	3	溝銑 SLOTTING
ETB0304	15	105	11100	1000~1200	3~6	0~0.3	側銑 SIDE MILLING
ETB0304	15	105	11100	800~1000	3	0.65	側銑 SIDE MILLING
ETB0304	15	105	11100	700~900	3~6	0~0.12	側銑 SIDE MILLING
ETB0354	15	105	9600	1200~1600	0~0.35	3.5	溝銑 SLOTTING
ETB0354	15	105	9600	800~1000	0.35~0.8	3.5	溝銑 SLOTTING
ETB0354	15	105	9600	600~800	0.8~1.6	3.5	溝銑 SLOTTING
ETB0354	15	105	9600	1000~1200	3.5~7	0~0.35	側銑 SIDE MILLING
ETB0354	15	105	9600	800~1000	3.5	0.75	側銑 SIDE MILLING
ETB0354	15	105	9600	700~900	3.5~7	0~0.15	側銑 SIDE MILLING
ETB0404S	16	105	8400	1200~1600	0~0.4	4	溝銑 SLOTTING
ETB0404S	16	105	8400	800~1000	0.4~1	4	溝銑 SLOTTING
ETB0404S	16	105	8400	600~800	1~2	4	溝銑 SLOTTING
ETB0404S	16	105	8400	1000~1200	4~8	0~0.4	側銑 SIDE MILLING
ETB0404S	16	105	8400	800~1000	8	0.9	側銑 SIDE MILLING
ETB0404S	16	105	8400	700~900	4~8	0~0.2	側銑 SIDE MILLING
ETB0404	16	105	8400	1400~1800	0~0.4	4	溝銑 SLOTTING
ETB0404	16	105	8400	1000~1200	0.4~1	4	溝銑 SLOTTING
ETB0404	16	105	8400	700~900	1~2	4	溝銑 SLOTTING
ETB0404	16	105	8400	1200~1400	4~8	0~0.4	側銑 SIDE MILLING
ETB0404	16	105	8400	900~1100	8	0.9	側銑 SIDE MILLING
ETB0404	16	105	8400	800~1000	4~8	0~0.2	側銑 SIDE MILLING
ETB0454	16	105	7500	1400~1800	0~0.45	4.5	溝銑 SLOTTING
ETB0454	16	105	7500	1000~1200	0.45~1.1	4.5	溝銑 SLOTTING
ETB0454	16	105	7500	750~950	1.1~2	4.5	溝銑 SLOTTING
ETB0454	16	105	7500	1200~1400	4.5~9	0~0.45	側銑 SIDE MILLING
ETB0454	16	105	7500	900~1100	4.5	0.9	側銑 SIDE MILLING
ETB0454	16	105	7500	800~1000	4.5~9	0~0.2	側銑 SIDE MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

沃斯田鐵系不銹鋼
Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB0504	19	105	6700	1400~1800	0~0.45	5	溝銑 SLOTTING
ETB0504	19	105	6700	1000~1200	0.45~1.2	5	溝銑 SLOTTING
ETB0504	19	105	6700	750~950	1.3~2.5	5	溝銑 SLOTTING
ETB0504	19	105	6700	1200~1400	5~10	0~0.45	側銑 SIDE MILLING
ETB0504	19	105	6700	900~1100	5~10	0.9	側銑 SIDE MILLING
ETB0504	19	95	6050	700~900	5~10	1.5	側銑 SIDE MILLING
ETB0504	19	95	6050	500~700	5	2	側銑 SIDE MILLING
ETB0504	19	105	6700	800~1000	5~10	0~0.25	側銑 SIDE MILLING
ETB0604	21	105	5600	1400~1800	0~0.5	6	溝銑 SLOTTING
ETB0604	21	105	5600	1000~1200	0.5~1.5	6	溝銑 SLOTTING
ETB0604	21	105	5600	800~1000	1.5~3	6	溝銑 SLOTTING
ETB0604	21	105	5600	1200~1400	6~12	0~0.5	側銑 SIDE MILLING
ETB0604	21	105	5600	900~1100	6~12	1	側銑 SIDE MILLING
ETB0604	21	90	4750	700~900	6~12	2	側銑 SIDE MILLING
ETB0604	21	90	4750	550~750	6~12	3	側銑 SIDE MILLING
ETB0604	21	90	4750	400~600	6	5	側銑 SIDE MILLING
ETB0604	21	105	5600	800~1000	6~12	0~0.25	側銑 SIDE MILLING
ETB0804	27	105	4200	1300~1600	0~0.5	8	溝銑 SLOTTING
ETB0804	27	105	4200	800~1000	0.5~2	8	溝銑 SLOTTING
ETB0804	27	105	4200	600~800	3~4	8	溝銑 SLOTTING
ETB0804	27	105	4200	1000~1200	8~16	0~0.5	側銑 SIDE MILLING
ETB0804	27	70	2750	600~800	8~16	1	側銑 SIDE MILLING
ETB0804	27	70	2750	300~500	8~16	2	側銑 SIDE MILLING
ETB0804	27	70	2750	300~500	8	2~4	側銑 SIDE MILLING
ETB0804	27	115	4500	600~800	16	0~0.3	側銑 SIDE MILLING
ETB1004Z	30	115	3600	1400~1800	0~0.6	10	溝銑 SLOTTING
ETB1004Z	30	115	3600	650~850	2~3	10	溝銑 SLOTTING
ETB1004Z	30	115	3600	500~700	3~5	10	溝銑 SLOTTING
ETB1004Z	30	105	3300	1200~1500	10~25	0~0.6	側銑 SIDE MILLING
ETB1004Z	30	105	3300	600~800	20	1	側銑 SIDE MILLING
ETB1004Z	30	65	2000or2700	250~400	20	2~4	側銑 SIDE MILLING
ETB1004Z	30	65	2000	200~350	20	4~5	側銑 SIDE MILLING
ETB1004Z	30	105	3400	700~900	25	0~0.3	側銑 SIDE MILLING
ETB1004	34	105	3350	1300~1500	0~0.6	10	溝銑 SLOTTING
ETB1004	34	110	3500	600~800	2~3	10	溝銑 SLOTTING
ETB1004	34	105	3300	450~650	3~5	10	溝銑 SLOTTING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETB1004	34	105	3300	1100~1400	10~20	0~0.6	側銑 SIDE MILLING
ETB1004	34	105	3300	600~800	20	1	側銑 SIDE MILLING
ETB1004	34	65	2000	250~400	20	2~4	側銑 SIDE MILLING
ETB1004	34	65	2000	200~350	20	4~5	側銑 SIDE MILLING
ETB1004	34	115	3600	700~900	10~20	0~0.3	側銑 SIDE MILLING
ETB1204	37	105	2800	1000~1300	0~0.7	12	溝銑 SLOTTING
ETB1204	37	85	2250	400~600	0.7~2	12	溝銑 SLOTTING
ETB1204	37	75	1950	300~400	3~4.5	12	溝銑 SLOTTING
ETB1204	37	105	2800	800~1000	12~24	0~0.7	側銑 SIDE MILLING
ETB1204	37	80	2100	500~700	12~24	1~1.3	側銑 SIDE MILLING
ETB1204	37	65	1700	250~400	24	1.5~3	側銑 SIDE MILLING
ETB1204	37	65	1700	200~300	24	3~5	側銑 SIDE MILLING
ETB1204	37	105	2800	600~800	12~24	0~0.35	側銑 SIDE MILLING
ETB1604	50	105	2100	800~1000	0~0.7	16	溝銑 SLOTTING
ETB1604	50	85	1700	300~500	0.7~2	16	溝銑 SLOTTING
ETB1604	50	75	1500	200~300	3~4	16	溝銑 SLOTTING
ETB1604	50	105	2100	600~800	16~32	0~0.7	側銑 SIDE MILLING
ETB1604	50	80	1600	400~600	16	1~1.3	側銑 SIDE MILLING
ETB1604	50	105	2100	400~600	16~32	0~0.35	側銑 SIDE MILLING
ETB2004	50	105	1650	600~800	0~0.7	20	溝銑 SLOTTING
ETB2004	50	85	1350	200~400	0.7~2	20	溝銑 SLOTTING
ETB2004	50	75	1200	150~250	3~4	20	溝銑 SLOTTING
ETB2004	50	105	1650	450~650	20~40	0~0.7	側銑 SIDE MILLING
ETB2004	50	80	1250	300~500	20	1~1.3	側銑 SIDE MILLING
ETB2004	50	105	1650	300~500	20~40	0~0.35	側銑 SIDE MILLING

附 註

1. **ETB**適用於粗、精銑加工，溝銑(Aa)與側銑(Ap)都有0.3~0.5D切削能力。粗切削時建議使用溼式高壓水溶性切削液，以免造成排屑不良；當使用精銑及0.1D以內請用乾式切削（因塗層特性關係）。直徑Ø10以上，需視機器剛性與主軸扭力值的不同，做適當調整。
2. 建議冷卻方式為溼式。

NOTE

1. **ETB** is good at Roughing and Finishing. It can do a 0.3~0.5D machining for both Slotting (Aa) and Side milling (Ap). When Roughing, we suggest high pressure emulsion coolant for better chip removal. Please use Dry Maching for Finishing and 0.1D cutting (due to coating features). For diameter above 10.0mm, make necessary adjustment as per the rigidity of machine and the torque of spindle.
2. Suggest to use wet coolant.

Standard

ETH

極超微粒立銑刀

END MILLS

Super MG | 0.4 μm | 45° | 4 Flutes | HRc ▶60 | G10

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining
精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing



Stainless Steel Cutting

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ETH0104	1.0	3	50	4
ETH0154	1.5	4	50	4
ETH0204	2.0	6	50	4
ETH0254	2.5	8	50	4
ETH0304	3.0	8	50	4
ETH0354	3.5	10	50	4
ETH0404	4.0	11	50	4
ETH0454	4.5	11	50	6
ETH0504	5.0	13	50	6
ETH0604	6.0	16	50	6
ETH0804	8.0	20	60	8
ETH1004Z	10.0	25	75	10
ETH1004	10.0	30	75	10
ETH1204	12.0	30	75	12
ETH1604	16.0	40	100	16
ETH2004	20.0	45	100	20

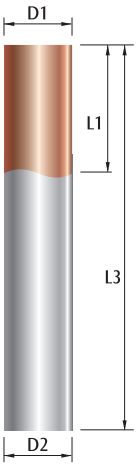
unit : mm

公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
2.5	0 -0.02
3.0	0 -0.02
3.5	0 -0.02
4.0	0 -0.02
4.5	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm



ETH

切削條件表 MILLING CONDITIONS

被切削材 Work Material

沃斯田鐵系不銹鋼
Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH0104	9	80	25000	1100~1300	0~0.1	1	溝銑 SLOTTING
ETH0104	9	80	25000	600~900	0.1~0.2	1	溝銑 SLOTTING
ETH0104	9	80	25000	400~600	0.2~0.3	1	溝銑 SLOTTING
ETH0104	9	80	25000	200~400	1~2	0~0.1	側銑 SIDE MILLING
ETH0104	9	80	25000	800~1100	1	0.15	側銑 SIDE MILLING
ETH0104	9	80	25000	600~900	1~2	0~0.06	側銑 SIDE MILLING
ETH0154	9	105	22000	1100~1300	0~0.13	1.5	溝銑 SLOTTING
ETH0154	9	105	22000	600~900	0.13~0.3	1.5	溝銑 SLOTTING
ETH0154	9	105	22000	400~600	0.3~0.5	1.5	溝銑 SLOTTING
ETH0154	9	105	22000	200~400	1.5~3	0~0.13	側銑 SIDE MILLING
ETH0154	9	105	22000	800~1100	1.5	0.25	側銑 SIDE MILLING
ETH0154	9	105	22000	600~900	1.5~3	0~0.08	側銑 SIDE MILLING
ETH0204	11	105	16500	1100~1300	0~0.18	2	溝銑 SLOTTING
ETH0204	11	105	16500	600~900	0.2~0.3	2	溝銑 SLOTTING
ETH0204	11	105	16500	400~600	0.3~0.6	2	溝銑 SLOTTING
ETH0204	11	105	16500	200~400	2~4	0~0.18	側銑 SIDE MILLING
ETH0204	11	105	16500	800~1100	2	0.35	側銑 SIDE MILLING
ETH0204	11	105	16500	600~900	2~4	0~0.1	側銑 SIDE MILLING
ETH0254	12	105	13300	1200~1600	0~0.25	2.5	溝銑 SLOTTING
ETH0254	12	105	13300	800~1000	0.25~0.6	2.5	溝銑 SLOTTING
ETH0254	12	105	13300	600~800	0.6~1	2.5	溝銑 SLOTTING
ETH0254	12	105	13300	1000~1200	2.5~5	0~0.25	側銑 SIDE MILLING
ETH0254	12	105	13300	800~1000	2.5	0.45	側銑 SIDE MILLING
ETH0254	12	105	13300	700~900	2.5~5	0~0.12	側銑 SIDE MILLING
ETH0304	15	105	11100	1200~1600	0~0.3	3	溝銑 SLOTTING
ETH0304	15	105	11100	800~1000	0.3~0.7	3	溝銑 SLOTTING
ETH0304	15	105	11100	600~800	0.8~1.5	3	溝銑 SLOTTING
ETH0304	15	105	11100	1000~1200	3~6	0~0.3	側銑 SIDE MILLING
ETH0304	15	105	11100	800~1000	3	0.65	側銑 SIDE MILLING
ETH0304	15	105	11100	700~900	3~6	0~0.12	側銑 SIDE MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH0354	15	105	9600	1200~1600	0~0.35	3.5	溝銑 SLOTTING
ETH0354	15	105	9600	800~1000	0.35~0.8	3.5	溝銑 SLOTTING
ETH0354	15	105	9600	600~800	0.8~1.6	3.5	溝銑 SLOTTING
ETH0354	15	105	9600	1000~1200	3.5~7	0~0.35	側銑 SIDE MILLING
ETH0354	15	105	9600	800~1000	3.5	0.75	側銑 SIDE MILLING
ETH0354	15	105	9600	700~900	3.5~7	0~0.15	側銑 SIDE MILLING
ETH0404	16	105	8400	1400~1800	0~0.4	4	溝銑 SLOTTING
ETH0404	16	105	8400	1000~1200	0.4~1	4	溝銑 SLOTTING
ETH0404	16	105	8400	700~900	1~2	4	溝銑 SLOTTING
ETH0404	16	105	8400	1200~1400	4~8	0~0.4	側銑 SIDE MILLING
ETH0404	16	105	8400	900~1100	8	0.9	側銑 SIDE MILLING
ETH0404	16	105	8400	800~1000	4~8	0~0.2	側銑 SIDE MILLING
ETH0454	16	105	7500	1400~1800	0~0.45	4.5	溝銑 SLOTTING
ETH0454	16	105	7500	1000~1200	0.45~1.1	4.5	溝銑 SLOTTING
ETH0454	16	105	7500	750~950	1.1~2	4.5	溝銑 SLOTTING
ETH0454	16	105	7500	1200~1400	4.5~9	0~0.45	側銑 SIDE MILLING
ETH0454	16	105	7500	900~1100	4.5	0.9	側銑 SIDE MILLING
ETH0454	16	105	7500	800~1000	4.5~9	0~0.2	側銑 SIDE MILLING
ETH0504	19	105	6700	1400~1800	0~0.45	5	溝銑 SLOTTING
ETH0504	19	105	6700	1000~1200	0.45~1.2	5	溝銑 SLOTTING
ETH0504	19	105	6700	750~950	1.3~2.5	5	溝銑 SLOTTING
ETH0504	19	105	6700	1200~1400	5~10	0~0.45	側銑 SIDE MILLING
ETH0504	19	105	6700	900~1100	5~10	0.9	側銑 SIDE MILLING
ETH0504	19	95	6050	700~900	5~10	1.5	側銑 SIDE MILLING
ETH0504	19	95	6050	500~700	5	2	側銑 SIDE MILLING
ETH0504	19	105	6700	800~1000	5~10	0~0.25	側銑 SIDE MILLING
ETH0604	21	105	5600	1400~1800	0~0.5	6	溝銑 SLOTTING
ETH0604	21	105	5600	1000~1200	0.5~1.5	6	溝銑 SLOTTING
ETH0604	21	105	5600	800~1000	1.5~3	6	溝銑 SLOTTING
ETH0604	21	105	5600	1200~1400	6~12	0~0.5	側銑 SIDE MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

沃斯田鐵系不銹鋼
Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH0604	21	105	5600	900~1100	6~12	1	側銑 SIDE MILLING
ETH0604	21	90	4750	700~900	6~12	2	側銑 SIDE MILLING
ETH0604	21	90	4750	550~750	6~12	3	側銑 SIDE MILLING
ETH0604	21	90	4750	400~600	6	5	側銑 SIDE MILLING
ETH0604	21	105	5600	800~1000	6~12	0~0.25	側銑 SIDE MILLING
ETH0804	27	105	4200	1300~1600	0~0.5	8	溝銑 SLOTTING
ETH0804	27	105	4200	800~1000	0.5~2	8	溝銑 SLOTTING
ETH0804	27	105	4200	600~800	3~4	8	溝銑 SLOTTING
ETH0804	27	105	4200	1000~1200	8~16	0~0.5	側銑 SIDE MILLING
ETH0804	27	70	2750	600~800	8~16	1	側銑 SIDE MILLING
ETH0804	27	70	2750	300~500	8~16	2	側銑 SIDE MILLING
ETH0804	27	70	2750	300~500	8	2~4	側銑 SIDE MILLING
ETH0804	27	115	4500	600~800	16	0~0.3	側銑 SIDE MILLING
ETH1004Z	30	115	3600	1400~1800	0~0.6	10	溝銑 SLOTTING
ETH1004Z	30	115	3600	650~850	2~3	10	溝銑 SLOTTING
ETH1004Z	30	115	3600	500~700	3~5	10	溝銑 SLOTTING
ETH1004Z	30	105	3300	1200~1500	10~25	0~0.6	側銑 SIDE MILLING
ETH1004Z	30	105	3300	600~800	20	1	側銑 SIDE MILLING
ETH1004Z	30	65	2000or2700	250~400	20	2~4	側銑 SIDE MILLING
ETH1004Z	30	65	2000	200~350	20	4~5	側銑 SIDE MILLING
ETH1004Z	30	105	3400	700~900	25	0~0.3	側銑 SIDE MILLING
ETH1004	34	105	3350	1300~1500	0~0.6	10	溝銑 SLOTTING
ETH1004	34	110	3500	600~800	2~3	10	溝銑 SLOTTING
ETH1004	34	105	3300	450~650	3~5	10	溝銑 SLOTTING
ETH1004	34	105	3300	1100~1400	10~20	0~0.6	側銑 SIDE MILLING
ETH1004	34	105	3300	600~800	10~20	1	側銑 SIDE MILLING
ETH1004	34	65	2000	250~400	20	2~4	側銑 SIDE MILLING
ETH1004	34	65	2000	200~350	20	4~5	側銑 SIDE MILLING
ETH1004	34	115	3600	700~900	10~20	0~0.3	側銑 SIDE MILLING

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

切削條件表 *MILLING CONDITIONS*

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ETH1204	37	105	2800	1000~1300	0~0.7	12	溝銑 SLOTTING
ETH1204	37	85	2250	400~600	0.7~2	12	溝銑 SLOTTING
ETH1204	37	75	1950	300~400	3~4.5	12	溝銑 SLOTTING
ETH1204	37	105	2800	800~1000	12~24	0~0.7	側銑 SIDE MILLING
ETH1204	37	80	2100	500~700	12~24	1~1.3	側銑 SIDE MILLING
ETH1204	37	65	1700	250~400	24	1.5~3	側銑 SIDE MILLING
ETH1204	37	65	1700	200~300	24	3~5	側銑 SIDE MILLING
ETH1204	37	105	2800	600~800	12~24	0~0.35	側銑 SIDE MILLING
ETH1604	50	105	2100	800~1000	0~0.7	16	溝銑 SLOTTING
ETH1604	50	85	1700	300~500	0.7~2	16	溝銑 SLOTTING
ETH1604	50	75	1500	200~300	3~4	16	溝銑 SLOTTING
ETH1604	50	105	2100	600~800	16~32	0~0.7	側銑 SIDE MILLING
ETH1604	50	80	1600	400~600	16	1~1.3	側銑 SIDE MILLING
ETH1604	50	105	2100	400~600	16~32	0~0.35	側銑 SIDE MILLING
ETH2004	50	105	1650	600~800	0~0.7	20	溝銑 SLOTTING
ETH2004	50	85	1350	200~400	0.7~2	20	溝銑 SLOTTING
ETH2004	50	75	1200	150~250	3~4	20	溝銑 SLOTTING
ETH2004	50	105	1650	450~650	20~40	0~0.7	側銑 SIDE MILLING
ETH2004	50	80	1250	300~500	20	1~1.3	側銑 SIDE MILLING
ETH2004	50	105	1650	300~500	20~40	0~0.35	側銑 SIDE MILLING

附 註

1. **ETH**適用於粗、精銑加工，溝銑(Aa)與側銑(Ap)都有0.3~0.5D切削能力。直徑Ø10以上，需視機器剛性與主軸扭力值的不同，做適當調整。
2. 建議冷卻方式為溼式。

NOTE

1. **ETH** is good at Roughing and Finishing. It can do a 0.3~0.5D machining for both Slotting (Aa) and Side milling (Ap). For diameter above 10.0mm, make necessary adjustment as per the rigidity of machine and the torque of spindle.
2. Suggest to use wet coolant.

HPC

UPS

無敵高效能立銑刀
END MILLS

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining
精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

Stainless Steel Cutting

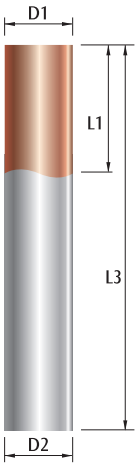


Super MG | 0.4 µm | 45° | 4 Flutes | HRc ▶60 | G10

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UPS0304	3.0	8	50	6
UPS0304L	3.0	12	60	6
UPS0404	4.0	11	50	6
UPS0404L	4.0	16	60	6
UPS0504	5.0	13	50	6
UPS0604	6.0	16	50	6
UPS0604L	6.0	20	60	6
UPS0804	8.0	20	60	8
UPS0804L	8.0	25	75	8
UPS1004	10.0	22	75	10
UPS1004L	10.0	30	80	10
UPS1204	12.0	26	75	12
UPS1204L	12.0	35	100	12
UPS1604	16.0	36	100	16
UPS1604L	16.0	50	110	16
UPS1804	18.0	40	100	18
UPS2004	20.0	40	100	20
UPS2004L	20.0	50	120	20

unit : mm



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
18.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø18	0 -0.011
Ø20	0 -0.013

unit : mm

UPS

切削條件表 MILLING CONDITIONS

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPS0304	13	110	11500	1600~2000	0~0.25	3	溝銑 SLOTTING
UPS0304	13	105	11000	800~1200	0.25~0.8	3	溝銑 SLOTTING
UPS0304	13	105	11000	400~500	0.8~1.2	3	溝銑 SLOTTING
UPS0304	13	100	14800	200~350	1.2~1.6	3	溝銑 SLOTTING
UPS0304	13	100	11000	1400~1800	3~6	0~0.25	側銑 SIDE MILLING
UPS0304	13	100	11000	500~700	3	0.25~0.8	側銑 SIDE MILLING
UPS0304	13	100	11000	200~450	3	0.8~1.2	側銑 SIDE MILLING
UPS0304	13	105	11000	700~900	3~6	0~0.1	側銑 SIDE MILLING
UPS0404	16	110	8750	1800~2200	0~0.3	4	溝銑 SLOTTING
UPS0404	16	105	8350	1000~1400	0.3~1	4	溝銑 SLOTTING
UPS0404	16	105	8350	500~600	1~2	4	溝銑 SLOTTING
UPS0404	16	100	8000	250~400	2~4	4	溝銑 SLOTTING
UPS0404	16	100	8000	1600~2000	4~8	0~0.3	側銑 SIDE MILLING
UPS0404	16	100	8000	600~800	4	0.3~1	側銑 SIDE MILLING
UPS0404	16	100	8000	300~500	4	1~2	側銑 SIDE MILLING
UPS0404	16	105	8350	800~1000	4~8	0~0.13	側銑 SIDE MILLING
UPS0404L	21	110	8750	1600~2000	0~0.3	4	溝銑 SLOTTING
UPS0404L	21	105	8350	800~1200	0.3~1	4	溝銑 SLOTTING
UPS0404L	21	105	8350	400~500	1~2	4	溝銑 SLOTTING
UPS0404L	21	100	8000	200~350	2~4	4	溝銑 SLOTTING
UPS0404L	21	100	8000	1400~1800	4~8	0~0.3	側銑 SIDE MILLING
UPS0404L	21	100	8000	500~700	4	0.3~1	側銑 SIDE MILLING
UPS0404L	21	100	8000	200~450	4	1~2	側銑 SIDE MILLING
UPS0404L	21	105	8350	700~850	4~8	0~0.13	側銑 SIDE MILLING
UPS0504	18	110	7000	1800~2200	0~0.35	5	溝銑 SLOTTING
UPS0504	18	105	6700	1000~1400	0.35~1.2	5	溝銑 SLOTTING
UPS0504	18	105	6700	500~600	1.2~2.5	5	溝銑 SLOTTING
UPS0504	18	100	6350	250~400	2.5~5	5	溝銑 SLOTTING
UPS0504	18	100	6350	1600~2000	5~10	0~0.35	側銑 SIDE MILLING
UPS0504	18	100	6350	600~800	5	2.5	側銑 SIDE MILLING
UPS0504	18	100	6350	300~500	5	4	側銑 SIDE MILLING
UPS0504	18	105	6700	800~1000	5~10	0~0.15	側銑 SIDE MILLING
UPS0604	20	110	5850	1700~2100	0~0.4	6	溝銑 SLOTTING
UPS0604	20	105	5600	1000~1200	0.4~1.5	6	溝銑 SLOTTING
UPS0604	20	105	5600	500~600	1.5~3	6	溝銑 SLOTTING
UPS0604	20	100	5300	250~400	3~6	6	溝銑 SLOTTING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPS0604	20	100	5300	900~1300	6~12	0~0.4	側銑 SIDE MILLING
UPS0604	20	100	5300	600~800	6	3	側銑 SIDE MILLING
UPS0604	20	100	5300	300~500	6	5	側銑 SIDE MILLING
UPS0604	20	105	5600	700~900	6~12	0~0.2	側銑 SIDE MILLING
UPS0604L	26	110	5850	1500~1900	0~0.4	6	溝銑 SLOTTING
UPS0604L	26	105	5600	800~1000	0.4~1.5	6	溝銑 SLOTTING
UPS0604L	26	105	5600	400~500	1.5~3	6	溝銑 SLOTTING
UPS0604L	26	100	5300	200~300	3~6	6	溝銑 SLOTTING
UPS0604L	26	100	5300	800~1000	6~12	0~0.4	側銑 SIDE MILLING
UPS0604L	26	100	5300	500~700	6	3	側銑 SIDE MILLING
UPS0604L	26	100	5300	300~400	6	5	側銑 SIDE MILLING
UPS0604L	26	105	5600	600~800	6~12	0~0.2	側銑 SIDE MILLING
UPS0804	24	115	4500	1700~2100	0~0.5	8	溝銑 SLOTTING
UPS0804	24	115	4500	1000~1400	0.5~1	8	溝銑 SLOTTING
UPS0804	24	115	4500	600~750	3~4	8	溝銑 SLOTTING
UPS0804	24	115	4500	400~600	4~8	8	溝銑 SLOTTING
UPS0804	24	125	5000	800~1100	8~16	0~0.5	側銑 SIDE MILLING
UPS0804	24	115	4500	650~850	8	3~4	側銑 SIDE MILLING
UPS0804	24	105	4200	600~800	8	4~8	側銑 SIDE MILLING
UPS0804	24	100	4000	700~900	8~16	0~0.2	側銑 SIDE MILLING
UPS1004	27	110	3500	1600~2000	0~0.5	10	溝銑 SLOTTING
UPS1004	27	110	3500	800~1000	0.5~1	10	溝銑 SLOTTING
UPS1004	27	105	3300	400~600	3~5	10	溝銑 SLOTTING
UPS1004	27	105	3300	300~500	5~8	10	溝銑 SLOTTING
UPS1004	27	155	5000	1300~1600	10~20	0~0.6	側銑 SIDE MILLING
UPS1004	27	90	2800	200~400	10~20	2~4	側銑 SIDE MILLING
UPS1004	27	80	2500	400~500	10	3.6~5	側銑 SIDE MILLING
UPS1004	27	95	3000	700~900	10~20	0~0.25	側銑 SIDE MILLING
UPS1004L	37	110	3500	1300~1600	0~0.5	10	溝銑 SLOTTING
UPS1004L	37	110	3500	700~900	0.5~1	10	溝銑 SLOTTING
UPS1004L	37	105	3300	400~600	3~5	10	溝銑 SLOTTING
UPS1004L	37	110	3500	1000~1400	10~25	0~0.6	側銑 SIDE MILLING
UPS1004L	37	60	1800	200~400	10~25	2	側銑 SIDE MILLING
UPS1004L	37	65	2100	300~450	10	3.6~5	側銑 SIDE MILLING
UPS1004L	37	95	3000	600~800	10~25	0~0.25	側銑 SIDE MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPS1204	33	110	2900	900~1200	0~0.7	12	溝銑 SLOTTING
UPS1204	33	80	2100	600~800	2	12	溝銑 SLOTTING
UPS1204	33	80	2100	250~350	4~6	12	溝銑 SLOTTING
UPS1204	33	80	2100	800~1100	12~24	0~0.7	側銑 SIDE MILLING
UPS1204	33	80	2100	600~800	12	2	側銑 SIDE MILLING
UPS1204	33	110	2900	300~400	24	1.2	側銑 SIDE MILLING
UPS1204	33	80	2100	200~300	12	4~6	側銑 SIDE MILLING
UPS1204	33	100	2650	450~650	12~24	0~0.3	側銑 SIDE MILLING
UPS1204L	40	110	2900	800~1000	0~0.7	12	溝銑 SLOTTING
UPS1204L	40	80	2100	500~600	2	12	溝銑 SLOTTING
UPS1204L	40	80	2100	200~300	3~4	12	溝銑 SLOTTING
UPS1204L	40	80	2100	700~900	12~32	0~0.7	側銑 SIDE MILLING
UPS1204L	40	80	2100	500~700	12	2	側銑 SIDE MILLING
UPS1204L	40	80	2100	200~300	24	1.2	側銑 SIDE MILLING
UPS1204L	40	80	2100	200~300	12	3~4	側銑 SIDE MILLING
UPS1204L	40	100	2650	450~650	12~32	0~0.3	側銑 SIDE MILLING
UPS1604	43	110	2200	600~850	0~0.7	16	溝銑 SLOTTING
UPS1604	43	80	1600	400~500	2	16	溝銑 SLOTTING
UPS1604	43	80	1600	200~250	3~4	16	溝銑 SLOTTING
UPS1604	43	80	1600	600~750	16~32	0~0.7	側銑 SIDE MILLING
UPS1604	43	80	1600	400~600	16	2	側銑 SIDE MILLING
UPS1604	43	80	1600	200~250	32	1.2	側銑 SIDE MILLING
UPS1604	43	80	1600	200~250	16	3~4	側銑 SIDE MILLING
UPS1604	43	100	2000	350~550	16~32	0~0.3	側銑 SIDE MILLING
UPS1804	47	110	1950	500~700	0~0.7	18	溝銑 SLOTTING
UPS1804	47	80	1400	300~450	1.6	18	溝銑 SLOTTING
UPS1804	47	80	1400	150~200	2~3	18	溝銑 SLOTTING
UPS1804	47	80	1400	550~650	18~36	0~0.7	側銑 SIDE MILLING
UPS1804	47	80	1400	300~500	18	1.6	側銑 SIDE MILLING
UPS1804	47	80	1400	200~250	36	1	側銑 SIDE MILLING
UPS1804	47	80	1400	150~200	18	2~3	側銑 SIDE MILLING
UPS1804	47	100	1750	300~450	18~36	0~0.3	側銑 SIDE MILLING
UPS2004	47	110	1750	500~700	0~0.7	20	溝銑 SLOTTING
UPS2004	47	80	1300	300~500	1.6	20	溝銑 SLOTTING
UPS2004	47	80	1300	200~350	2~3	20	溝銑 SLOTTING
UPS2004	47	80	1300	300~450	20~40	0~0.7	側銑 SIDE MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPS2004	47	80	1300	500~600	20	1.6	側銑 SIDE MILLING
UPS2004	47	80	1300	500~700	40	1	側銑 SIDE MILLING
UPS2004	47	80	1300	300~500	20	2~3	側銑 SIDE MILLING
UPS2004	47	100	1600	200~400	20~40	0~0.3	側銑 SIDE MILLING
UPS2004L	55	110	1750	500~600	0~0.7	20	溝銑 SLOTTING
UPS2004L	55	80	1300	250~450	1.6	20	溝銑 SLOTTING
UPS2004L	55	80	1300	200~300	2~3	20	溝銑 SLOTTING
UPS2004L	55	80	1300	250~350	20~40	0~0.7	側銑 SIDE MILLING
UPS2004L	55	80	1300	500~600	20	1.6	側銑 SIDE MILLING
UPS2004L	55	80	1300	400~550	40	1	側銑 SIDE MILLING
UPS2004L	55	80	1300	300~400	20	2~3	側銑 SIDE MILLING
UPS2004L	55	100	1600	200~400	20~40	0~0.3	側銑 SIDE MILLING

附 註

1. **UPS**適用於粗、精銑加工，溝銑(Aa)與側銑(Ap)都有1.0D切削能力。粗切削時建議使用溼式高壓水溶性切削液，以免造成排屑不良；直徑Ø10以上，需視機器剛性與主軸扭力值的不同，做適當調整。
2. 建議冷卻方式為溼式。

NOTE

1. **UPS** is good at Roughing and Finishing. It can do a 1.0D machining for both Slotting (Aa) and Side milling (Ap). When Roughing, we suggest high pressure emulsion coolant for better chip removal. For diameter above 10.0mm, make necessary adjustment as per the rigidity of machine and the torque of spindle.
2. Suggest to use wet coolant.

HPC

UPZ

抗震高效能立銑刀

END MILLS

Super MG | 0.4 μm | 45° | 4 Flutes | HRC ▸60 | G10

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

精銑 Finishing

中銑 Semi-finishing

粗銑 Roughing

Stainless Steel Cutting

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UPZ0304	3.0	8	50	6
UPZ0404	4.0	11	50	6
UPZ0504	5.0	13	50	6
UPZ0604	6.0	16	50	6
UPZ0804	8.0	20	60	8
UPZ1004	10.0	22	75	10
UPZ1204	12.0	26	75	12
UPZ1604	16.0	36	100	16
UPZ2004	20.0	40	100	20

unit : mm

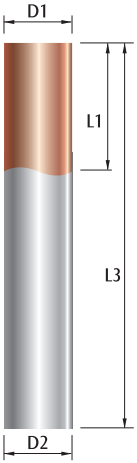


公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm



UPZ

切削條件表 MILLING CONDITIONS

被切削材 Work Material

沃斯田鐵系不銹鋼
Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPZ0304	13	105	11000	700~900	0~0.7	3	溝銑 SLOTTING
UPZ0304	13	105	11000	450~650	0.7~1.5	3	溝銑 SLOTTING
UPZ0304	13	105	11000	300~400	1.5~3	3	溝銑 SLOTTING
UPZ0304	13	140	14800	400~550	1.5~3	3	溝銑 SLOTTING
UPZ0304	13	105	11000	1500~1700	3~6	0~0.3	側銑 SIDE MILLING
UPZ0304	13	105	11000	600~800	3	1~1.5	側銑 SIDE MILLING
UPZ0304	13	105	11000	500~700	6	1~1.5	側銑 SIDE MILLING
UPZ0304	13	105	11000	400~500	3	1.5~3	側銑 SIDE MILLING
UPZ0304	13	140	14800	500~700	3	1.5~3	側銑 SIDE MILLING
UPZ0404	16	105	8300	800~1000	0~1	4	溝銑 SLOTTING
UPZ0404	16	105	8300	500~700	1~2	4	溝銑 SLOTTING
UPZ0404	16	105	8300	400~500	2~4	4	溝銑 SLOTTING
UPZ0404	16	140	11000	700~900	2~4	4	溝銑 SLOTTING
UPZ0404	16	105	8300	1500~1700	4~8	0~0.4	側銑 SIDE MILLING
UPZ0404	16	105	8300	800~1000	4	1.6~2	側銑 SIDE MILLING
UPZ0404	16	105	8300	600~800	8	1.6~2	側銑 SIDE MILLING
UPZ0404	16	105	8300	500~700	4	2~4	側銑 SIDE MILLING
UPZ0404	16	140	11000	700~900	4	2~4	側銑 SIDE MILLING
UPZ0504	18	105	6700	900~1100	0~1.2	5	溝銑 SLOTTING
UPZ0504	18	105	6700	600~800	1.2~2.5	5	溝銑 SLOTTING
UPZ0504	18	105	6700	500~600	2.5~5	5	溝銑 SLOTTING
UPZ0504	18	140	8900	900~1100	2.5~5	5	溝銑 SLOTTING
UPZ0504	18	105	6700	1500~1700	5~10	0~0.5	側銑 SIDE MILLING
UPZ0504	18	105	6700	900~1100	5	1.8~2.5	側銑 SIDE MILLING
UPZ0504	18	105	6700	700~900	10	1.8~2.5	側銑 SIDE MILLING
UPZ0504	18	105	6700	600~800	5	2.5~5	側銑 SIDE MILLING
UPZ0504	18	140	8900	900~1100	5	2.5~5	側銑 SIDE MILLING
UPZ0604	20	105	5500	1000~1200	0~1.5	6	溝銑 SLOTTING
UPZ0604	20	105	5500	700~900	1.5~3	6	溝銑 SLOTTING
UPZ0604	20	105	5500	600~800	3~6	6	溝銑 SLOTTING
UPZ0604	20	140	7400	1000~1200	3~6	6	溝銑 SLOTTING
UPZ0604	20	105	5500	1600~1800	6~12	0~0.5	側銑 SIDE MILLING
UPZ0604	20	105	5500	1000~1200	6	2.2~3	側銑 SIDE MILLING
UPZ0604	20	105	5500	700~900	12	2.2~3	側銑 SIDE MILLING
UPZ0604	20	105	5500	700~900	6	3~6	側銑 SIDE MILLING
UPZ0604	20	140	7400	1000~1200	6	3~6	側銑 SIDE MILLING
UPZ0804	25	105	4200	1000~1200	0~1.8	8	溝銑 SLOTTING
UPZ0804	25	105	4200	800~1000	2~4	8	溝銑 SLOTTING
UPZ0804	25	105	4200	700~900	4~8	8	溝銑 SLOTTING
UPZ0804	25	140	5600	900~1100	4~8	8	溝銑 SLOTTING
UPZ0804	25	105	4200	1400~1600	8~16	0~0.5	側銑 SIDE MILLING
UPZ0804	25	105	4200	800~1000	8	3~4	側銑 SIDE MILLING
UPZ0804	25	105	4200	600~800	16	3~4	側銑 SIDE MILLING
UPZ0804	25	105	4200	700~900	8	4~8	側銑 SIDE MILLING
UPZ0804	25	140	5600	900~1100	8	4~8	側銑 SIDE MILLING

切削條件表 MILLING CONDITIONS

被切削材 Work Material

沃斯田鐵系不銹鋼
Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPZ1004	30	110	3500	1000~1200	0~2	10	溝銑 SLOTTING
UPZ1004	30	110	3500	800~1000	3~5	10	溝銑 SLOTTING
UPZ1004	30	110	3500	700~900	5~10	10	溝銑 SLOTTING
UPZ1004	30	155	5000	800~1000	5~10	10	溝銑 SLOTTING
UPZ1004	30	110	3500	1400~1600	10~20	0~0.6	側銑 SIDE MILLING
UPZ1004	30	110	3500	800~1000	10	3.6~5	側銑 SIDE MILLING
UPZ1004	30	110	3500	600~800	20	3.6~5	側銑 SIDE MILLING
UPZ1004	30	110	3500	700~900	10	5~10	側銑 SIDE MILLING
UPZ1004	30	155	5000	800~1000	10	5~10	側銑 SIDE MILLING
UPZ1204	34	110	2900	900~1100	0~2	12	溝銑 SLOTTING
UPZ1204	34	110	2900	600~800	2.5~5	12	溝銑 SLOTTING
UPZ1204	34	110	2900	500~700	5~9	12	溝銑 SLOTTING
UPZ1204	34	150	4000	650~850	5~9	12	溝銑 SLOTTING
UPZ1204	34	110	2900	1400~1600	12~24	0~0.7	側銑 SIDE MILLING
UPZ1204	34	110	2900	800~1000	12	4.3~5	側銑 SIDE MILLING
UPZ1204	34	110	2900	600~800	24	4.3~5	側銑 SIDE MILLING
UPZ1204	34	110	2900	500~700	12	5~9	側銑 SIDE MILLING
UPZ1204	34	150	4000	650~850	12	5~9	側銑 SIDE MILLING
UPZ1604	45	110	2200	700~900	0~2.5	16	溝銑 SLOTTING
UPZ1604	45	110	2200	500~700	2.5~6	16	溝銑 SLOTTING
UPZ1604	45	110	2200	350~550	6~10	16	溝銑 SLOTTING
UPZ1604	45	150	3000	450~650	6~10	16	溝銑 SLOTTING
UPZ1604	45	110	2200	1300~1500	16~32	0~0.7	側銑 SIDE MILLING
UPZ1604	45	110	2200	700~900	16	5.7~7	側銑 SIDE MILLING
UPZ1604	45	110	2200	500~700	32	5.7~7	側銑 SIDE MILLING
UPZ1604	45	110	2200	350~550	16	7~10	側銑 SIDE MILLING
UPZ1604	45	150	3000	500~700	16	7~10	側銑 SIDE MILLING
UPZ2004	50	110	1750	500~700	0~2.5	20	溝銑 SLOTTING
UPZ2004	50	110	1750	300~500	2.5~6	20	溝銑 SLOTTING
UPZ2004	50	110	1750	200~350	6~10	20	溝銑 SLOTTING
UPZ2004	50	150	2400	300~450	6~10	20	溝銑 SLOTTING
UPZ2004	50	110	1750	1000~1200	20~40	0~0.8	側銑 SIDE MILLING
UPZ2004	50	110	1750	500~700	20	7~8	側銑 SIDE MILLING
UPZ2004	50	110	1750	300~500	40	7~8	側銑 SIDE MILLING
UPZ2004	50	110	1750	200~400	20	8~10	側銑 SIDE MILLING
UPZ2004	50	150	2400	300~450	20	8~10	側銑 SIDE MILLING

附 註

1. **UPZ**適用於粗、精銑加工，溝銑(Aa)與側銑(Ap)都有1.0D切削能力。0.5D以上切削時，請用濕式高壓水溶性切削液，以免造成排屑不良。直徑Ø10以上，需視機器剛性與主軸扭力值的不同，而做適當調整。
2. 注意側銑(Ap)0.2~0.35D禁止使用。
3. 建議冷卻方式為濕式。

NOTE

1. **UPZ** is good at Finishing and Roughing. It can do a 1.0D machining for both Slotting (Aa) and Side milling (Ap). When it is above 0.5D machining,we suggest high pressure emulsion coolant for better chip removal. For diameter above 10.0mm, make necessary adjustment as per the rigidity of machine and the torque of spindle.
2. Do not apply it for Side milling (Ap) 0.2~0.35D.
3. Suggest to use wet coolant.

UPZ

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

（麻田散鐵，析出硬化）系不銹鋼
Stainless Steels [Difficult] : **SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPZ0304	13	100	10600	650~850	0~0.7	3	溝銑 SLOTTING
UPZ0304	13	100	10600	400~600	0.7~1.5	3	溝銑 SLOTTING
UPZ0304	13	100	10600	300~400	1.5~3	3	溝銑 SLOTTING
UPZ0304	13	140	14800	400~550	1.5~3	3	溝銑 SLOTTING
UPZ0304	13	100	10600	1500~1700	3~6	0~0.3	側銑 SIDE MILLING
UPZ0304	13	100	10600	550~750	3	1~1.5	側銑 SIDE MILLING
UPZ0304	13	100	10600	450~650	6	1~1.5	側銑 SIDE MILLING
UPZ0304	13	100	10600	400~500	3	1.5~3	側銑 SIDE MILLING
UPZ0304	13	140	14800	450~650	3	1.5~3	側銑 SIDE MILLING
UPZ0404	16	100	8000	800~1000	0~1	4	溝銑 SLOTTING
UPZ0404	16	100	8000	500~700	1~2	4	溝銑 SLOTTING
UPZ0404	16	100	8000	400~500	2~4	4	溝銑 SLOTTING
UPZ0404	16	140	11000	700~900	2~4	4	溝銑 SLOTTING
UPZ0404	16	100	8000	1500~1700	4~8	0~0.4	側銑 SIDE MILLING
UPZ0404	16	100	8000	800~1000	4	1.6~2	側銑 SIDE MILLING
UPZ0404	16	100	8000	600~800	8	1.6~2	側銑 SIDE MILLING
UPZ0404	16	100	8000	500~700	4	2~4	側銑 SIDE MILLING
UPZ0404	16	140	11000	700~900	4	2~4	側銑 SIDE MILLING
UPZ0504	18	100	6400	850~1050	0~1.2	5	溝銑 SLOTTING
UPZ0504	18	100	6400	600~800	1.2~2.5	5	溝銑 SLOTTING
UPZ0504	18	100	6400	500~600	2.5~5	5	溝銑 SLOTTING
UPZ0504	18	140	8900	900~1100	2.5~5	5	溝銑 SLOTTING
UPZ0504	18	100	6400	1500~1700	5~10	0~0.5	側銑 SIDE MILLING
UPZ0504	18	100	6400	900~1100	5	1.8~2.5	側銑 SIDE MILLING
UPZ0504	18	100	6400	650~850	10	1.8~2.5	側銑 SIDE MILLING
UPZ0504	18	100	6400	550~750	5	2.5~5	側銑 SIDE MILLING
UPZ0504	18	140	8900	800~1000	5	2.5~5	側銑 SIDE MILLING
UPZ0604	20	100	5300	1000~1200	0~1.5	6	溝銑 SLOTTING
UPZ0604	20	100	5300	650~850	1.5~3	6	溝銑 SLOTTING
UPZ0604	20	100	5300	550~750	3~6	6	溝銑 SLOTTING
UPZ0604	20	140	7400	1000~1200	3~6	6	溝銑 SLOTTING
UPZ0604	20	100	5300	1600~1800	6~12	0~0.5	側銑 SIDE MILLING
UPZ0604	20	100	5300	900~1100	6	2.2~3	側銑 SIDE MILLING
UPZ0604	20	100	5300	700~900	12	2.2~3	側銑 SIDE MILLING
UPZ0604	20	100	5300	700~900	6	3~6	側銑 SIDE MILLING
UPZ0604	20	140	7400	900~1100	6	3~6	側銑 SIDE MILLING
UPZ0804	25	100	4000	1000~1200	0~1.8	8	溝銑 SLOTTING
UPZ0804	25	100	4000	750~950	2~4	8	溝銑 SLOTTING
UPZ0804	25	100	4000	650~850	4~8	8	溝銑 SLOTTING
UPZ0804	25	140	5600	900~1100	4~8	8	溝銑 SLOTTING
UPZ0804	25	100	4000	1400~1600	8~16	0~0.5	側銑 SIDE MILLING
UPZ0804	25	100	4000	800~1000	8	3~4	側銑 SIDE MILLING
UPZ0804	25	100	4000	600~800	16	3~4	側銑 SIDE MILLING
UPZ0804	25	100	4000	700~900	8	4~8	側銑 SIDE MILLING
UPZ0804	25	140	5600	800~1000	8	4~8	側銑 SIDE MILLING

被切削材 Work Material

（麻田散鐵，析出硬化）系不銹鋼
Stainless Steels [Difficult] : **SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH** (HRc 28~32)

切削條件表 *MILLING CONDITIONS*

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPZ1004	30	100	3200	1000~1200	0~2	10	溝銑 SLOTTING
UPZ1004	30	100	3200	800~1000	3~5	10	溝銑 SLOTTING
UPZ1004	30	100	3200	600~800	5~10	10	溝銑 SLOTTING
UPZ1004	30	155	5000	700~900	5~10	10	溝銑 SLOTTING
UPZ1004	30	100	3200	1400~1600	10~20	0~0.6	側銑 SIDE MILLING
UPZ1004	30	100	3200	800~1000	10	3.6~5	側銑 SIDE MILLING
UPZ1004	30	100	3200	500~700	20	3.6~5	側銑 SIDE MILLING
UPZ1004	30	100	3200	600~800	10	5~10	側銑 SIDE MILLING
UPZ1004	30	155	5000	700~900	10	5~10	側銑 SIDE MILLING
UPZ1204	34	105	2800	900~1100	0~2	12	溝銑 SLOTTING
UPZ1204	34	105	2800	600~800	2.5~5	12	溝銑 SLOTTING
UPZ1204	34	105	2800	450~650	5~9	12	溝銑 SLOTTING
UPZ1204	34	150	4000	600~800	5~9	12	溝銑 SLOTTING
UPZ1204	34	105	2800	1400~1600	12~24	0~0.7	側銑 SIDE MILLING
UPZ1204	34	105	2800	800~1000	12	4.3~5	側銑 SIDE MILLING
UPZ1204	34	105	2800	500~700-	24	4.3~5	側銑 SIDE MILLING
UPZ1204	34	105	2800	500~700	12	5~9	側銑 SIDE MILLING
UPZ1204	34	150	4000	600~800	12	5~9	側銑 SIDE MILLING
UPZ1604	45	105	2100	700~900	0~2.5	16	溝銑 SLOTTING
UPZ1604	45	105	2100	500~700	2.5~6	16	溝銑 SLOTTING
UPZ1604	45	105	2100	350~550	6~10	16	溝銑 SLOTTING
UPZ1604	45	150	3000	450~650	6~10	16	溝銑 SLOTTING
UPZ1604	45	105	2100	1300~1500	16~32	0~0.7	側銑 SIDE MILLING
UPZ1604	45	105	2100	650~850	16	5.7~7	側銑 SIDE MILLING
UPZ1604	45	105	2100	450~650	32	5.7~7	側銑 SIDE MILLING
UPZ1604	45	105	2100	300~500	16	7~10	側銑 SIDE MILLING
UPZ1604	45	150	3000	450~650	16	7~10	側銑 SIDE MILLING
UPZ2004	50	105	1650	500~700	0~2.5	20	溝銑 SLOTTING
UPZ2004	50	105	1650	300~500	2.5~6	20	溝銑 SLOTTING
UPZ2004	50	105	1650	200~350	6~10	20	溝銑 SLOTTING
UPZ2004	50	150	2400	300~450	6~10	20	溝銑 SLOTTING
UPZ2004	50	105	1650	1000~1200	20~40	0~0.8	側銑 SIDE MILLING
UPZ2004	50	105	1650	500~700	20	7~8	側銑 SIDE MILLING
UPZ2004	50	105	1650	300~500	40	7~8	側銑 SIDE MILLING
UPZ2004	50	105	1650	200~350	20	8~10	側銑 SIDE MILLING
UPZ2004	50	150	2400	250~400	20	8~10	側銑 SIDE MILLING

附 註

1. **UPZ**適用於粗、精銑加工，溝銑(Aa)與側銑(Ap)都有1.0D切削能力。0.5D以上切削時，請用濕式高壓水溶性切削液，以免造成排屑不良。直徑Ø10以上，需視機器剛性與主軸扭力值的不同，而做適當調整。
2. 注意側銑(Ap)0.2~0.35D禁止使用。
3. 建議冷卻方式為濕式。

NOTE

1. **UPZ** is good at Finishing and Roughing. It can do a 1.0D machining for both Slotting (Aa) and Side milling (Ap). When it is above 0.5D machining, we suggest high pressure emulsion coolant for better chip removal. For diameter above 10.0mm, make necessary adjustment as per the rigidity of machine and the torque of spindle.
2. Do not apply it for Side milling (Ap) 0.2~0.35D.
3. Suggest to use wet coolant.

Titanium Cutting

UTH

鈦滿意立銑刀
END MILLS

Super MG | 0.4 μm | 52° | 4 Flutes | HRc ▸55 | G10

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining
精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

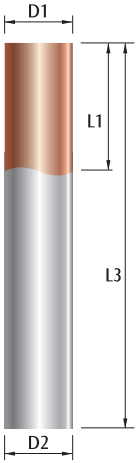
Stainless Steel Cutting



產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UTH0304	3.0	8	50	6
UTH0404	4.0	11	50	6
UTH0504	5.0	13	50	6
UTH0604	6.0	16	50	6
UTH0804	8.0	20	60	8
UTH1004	10.0	25	75	10
UTH1204	12.0	30	75	12
UTH1604	16.0	40	100	16
UTH2004	20.0	45	100	20

unit : mm



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance	柄徑 D2	柄徑公差值 D2 Tolerance
3.0	$^{0}_{-0.02}$	Ø6	$^{0}_{-0.008}$
4.0	$^{0}_{-0.02}$	Ø8	$^{0}_{-0.009}$
5.0	$^{0}_{-0.02}$	Ø10	$^{0}_{-0.009}$
6.0	$^{0}_{-0.02}$	Ø12	$^{0}_{-0.011}$
8.0	$^{0}_{-0.025}$	Ø16	$^{0}_{-0.011}$
10.0	$^{0}_{-0.03}$	Ø20	$^{0}_{-0.013}$
12.0	$^{0}_{-0.035}$		
16.0	$^{0}_{-0.04}$		
20.0	$^{0}_{-0.04}$		

unit : mm

UTH

切削條件表 MILLING CONDITIONS

被切削材 Work Material

沃斯田鐵系不銹鋼
Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UTH0304	13	120	12500~13000	1600~2000	0~0.25	3	溝銑 SLOTTING
UTH0304	13	120	12500~13000	800~1200	0.25~0.6	3	溝銑 SLOTTING
UTH0304	13	120	12500~13000	400~600	0.8~1.5	3	溝銑 SLOTTING
UTH0304	13	120	12500~13000	300~450	2~2.5	3	溝銑 SLOTTING
UTH0304	13	155	16000~16500	1400~1800	3~6	0~0.25	側銑 SIDE MILLING
UTH0304	13	105	11000~11500	500~700	3	0.25~0.6	側銑 SIDE MILLING
UTH0304	13	105	11000~11500	400~600	3	0.8~1.5	側銑 SIDE MILLING
UTH0304	13	105	11000~11500	300~450	3	2~2.5	側銑 SIDE MILLING
UTH0304	13	105	11000~11500	700~900	3~6	0~0.1	側銑 SIDE MILLING
UTH0404	16	120	9300~9800	2000~2400	0~0.3	4	溝銑 SLOTTING
UTH0404	16	120	9300~9800	1000~1300	0.3~0.7	4	溝銑 SLOTTING
UTH0404	16	120	9300~9800	700~900	1~2	4	溝銑 SLOTTING
UTH0404	16	120	9300~9800	500~700	3~4	4	溝銑 SLOTTING
UTH0404	16	155	12000~12500	1600~1800	4~8	0~0.3	側銑 SIDE MILLING
UTH0404	16	105	8000~8500	800~1000	4	0.3~1	側銑 SIDE MILLING
UTH0404	16	105	8000~8500	550~750	4	1~2	側銑 SIDE MILLING
UTH0404	16	105	8000~8500	500~700	4	3~4	側銑 SIDE MILLING
UTH0404	16	105	8000~8500	700~900	4~8	0~0.13	側銑 SIDE MILLING
UTH0504	18	120	7500~7800	2000~2400	0~0.35	5	溝銑 SLOTTING
UTH0504	18	120	7500~7800	1000~1300	0.35~0.8	5	溝銑 SLOTTING
UTH0504	18	120	7500~7800	700~900	1.5~2.5	5	溝銑 SLOTTING
UTH0504	18	120	7500~7800	500~700	3~5	5	溝銑 SLOTTING
UTH0504	18	155	9600~10000	1600~1800	5~10	0~0.35	側銑 SIDE MILLING
UTH0504	18	105	6500~6800	800~1000	5	0~1	側銑 SIDE MILLING
UTH0504	18	105	6500~6800	550~750	5	2.5	側銑 SIDE MILLING
UTH0504	18	105	6500~6800	500~700	5	4	側銑 SIDE MILLING
UTH0504	18	105	6500~6800	700~900	5~10	0~0.15	側銑 SIDE MILLING
UTH0604	20	120	6300~6600	2000~2400	0~0.4	6	溝銑 SLOTTING
UTH0604	20	120	6300~6600	1000~1300	0.4~1	6	溝銑 SLOTTING
UTH0604	20	120	6300~6600	800~1000	2~3	6	溝銑 SLOTTING
UTH0604	20	120	6300~6600	600~800	5~6	6	溝銑 SLOTTING
UTH0604	20	155	7800~8200	1600~1800	6~12	0~0.4	側銑 SIDE MILLING
UTH0604	20	105	5600~5800	800~1000	6	0~1.2	側銑 SIDE MILLING
UTH0604	20	105	5600~5800	600~800	6	2~3	側銑 SIDE MILLING
UTH0604	20	105	5600~5800	500~750	6	5	側銑 SIDE MILLING
UTH0604	20	105	5600~5800	700~900	6~12	0~0.2	側銑 SIDE MILLING
UTH0804	24	120	4700~5000	1300~1600	0~0.5	8	溝銑 SLOTTING
UTH0804	24	120	4700~5000	800~1000	0.5~1	8	溝銑 SLOTTING
UTH0804	24	115	4500~4700	700~900	3~4	8	溝銑 SLOTTING
UTH0804	24	115	4500~4700	600~800	4~8	8	溝銑 SLOTTING
UTH0804	24	155	6200~6400	1000~1200	8~16	0~0.5	側銑 SIDE MILLING
UTH0804	24	95	3500~3800	650~850	8~16	0~1.5	側銑 SIDE MILLING
UTH0804	24	110	4300~4600	700~900	8	3~4	側銑 SIDE MILLING
UTH0804	24	110	4300~4600	600~800	8	6~7	側銑 SIDE MILLING
UTH0804	24	90	3300~3500	400~600	8~16	0~0.2	側銑 SIDE MILLING

切削條件表 MILLING CONDITIONS

被切削材 Work Material

沃斯田鐵系不銹鋼
Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UTH1004	30	115	3500~3800	1500~1800	0~0.5	10	溝銑 SLOTTING
UTH1004	30	110	3300~3600	800~1000	0.5~1	10	溝銑 SLOTTING
UTH1004	30	110	3300~3600	500~700	3~5	10	溝銑 SLOTTING
UTH1004	30	110	3300~3600	400~600	10	10	溝銑 SLOTTING
UTH1004	30	150	4700~5000	1000~1200	10~20	0~0.6	側銑 SIDE MILLING
UTH1004	30	90	2800~3100	300~450	10	2	側銑 SIDE MILLING
UTH1004	30	110	3300~3600	500~700	10	4~5	側銑 SIDE MILLING
UTH1004	30	110	3300~3600	400~600	10	8~9	側銑 SIDE MILLING
UTH1004	30	90	2800~3000	500~700	10~20	0~0.25	側銑 SIDE MILLING
UTH1204	33	115	3000~3200	1000~1300	0~0.6	12	溝銑 SLOTTING
UTH1204	33	110	2800~3000	800~1000	0.6~1.2	12	溝銑 SLOTTING
UTH1204	33	110	2800~3000	400~600	4~6	12	溝銑 SLOTTING
UTH1204	33	110	2800~3000	300~500	6~8	12	溝銑 SLOTTING
UTH1204	33	150	3800~4000	900~1100	12~24	0~0.6	側銑 SIDE MILLING
UTH1204	33	90	2300~2600	300~400	12	2	側銑 SIDE MILLING
UTH1204	33	110	2800~3000	300~500	12	4~6	側銑 SIDE MILLING
UTH1204	33	110	2800~3000	300~400	12	6~8	側銑 SIDE MILLING
UTH1204	33	90	2300~2600	450~650	12~24	0~0.25	側銑 SIDE MILLING
UTH1604	43	115	2200~2400	800~1100	0~0.7	16	溝銑 SLOTTING
UTH1604	43	110	2100~2300	600~800	2	16	溝銑 SLOTTING
UTH1604	43	110	2100~2300	300~500	3~4	16	溝銑 SLOTTING
UTH1604	43	110	2100~2300	200~350	6~8	16	溝銑 SLOTTING
UTH1604	43	150	2800~3200	800~1000	16~32	0~0.7	側銑 SIDE MILLING
UTH1604	43	90	1700~1900	300~400	16	2	側銑 SIDE MILLING
UTH1604	43	110	2100~2300	250~400	16	3~4	側銑 SIDE MILLING
UTH1604	43	110	2100~2300	200~350	16	6~8	側銑 SIDE MILLING
UTH1604	43	90	1700~1900	350~550	16~32	0~0.3	側銑 SIDE MILLING
UTH2004	47	115	1750~1950	600~800	0~0.7	20	溝銑 SLOTTING
UTH2004	47	110	1700~1900	400~550	2	20	溝銑 SLOTTING
UTH2004	47	110	1700~1900	200~350	3~4	20	溝銑 SLOTTING
UTH2004	47	110	1700~1900	150~250	6~8	20	溝銑 SLOTTING
UTH2004	47	150	2300~2500	600~800	20~40	0~0.7	側銑 SIDE MILLING
UTH2004	47	90	1300~1500	300~400	20	2	側銑 SIDE MILLING
UTH2004	47	110	1700~1900	250~350	20	3~4	側銑 SIDE MILLING
UTH2004	47	110	1700~1900	200~300	20	6~8	側銑 SIDE MILLING
UTH2004	47	90	1300~1500	200~400	20~40	0~0.3	側銑 SIDE MILLING

附註

1. **UTH**適用於粗、中、精銑加工，溝銑(Aa)與側銑(Ap)都有1.0D切削能力。粗切削時，請用濕式高壓水溶性切削液，以免造成排屑不良。直徑Ø10以上，需視機器剛性與主軸扭力值的不同，而做適當調整。
2. 建議冷卻方式為濕式。

NOTE

1. **UTH** is good at Roughing, Semi-finishing and Finishing. It can do a 1.0D machining for both Slotting (Aa) and Side milling (Ap). When it is Roughing, we suggest high pressure emulsion coolant for better chip removal. For diameter above 10.0mm, make necessary adjustment as per the rigidity of machine and the torque of spindle.
2. Suggest to use wet coolant.

Super MG | 0.4 µm | 35° | 4 Flutes | HRC ▶60 | G10

HPC

UPE

高效能立銑刀
END MILLS

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining
精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

Stainless Steel Cutting

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UPE0304	3.0	8	50	6
UPE0404	4.0	11	50	6
UPE0504	5.0	13	50	6
UPE0604	6.0	16	50	6
UPE0804	8.0	20	60	8
UPE1004	10.0	22	75	10
UPE1204	12.0	26	75	12
UPE1404	14.0	30	80	14
UPE1604	16.0	36	100	16
UPE1804	18.0	40	100	18
UPE2004	20.0	40	100	20
UPE2504	25.0	45	100	25

unit : mm

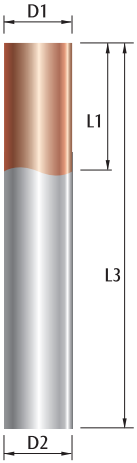


公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
14.0	0 -0.04
16.0	0 -0.04
18.0	0 -0.04
20.0	0 -0.04
25.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø14	0 -0.011
Ø16	0 -0.011
Ø18	0 -0.011
Ø20	0 -0.013
Ø25	0 -0.013

unit : mm



UPE

切削條件表 MILLING CONDITIONS

被切削材 Work Material

沃斯田鐵系不銹鋼
Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPE0304	13	110	11600	1200~1400	0~0.3	3	溝銑 SLOTTING
UPE0304	13	110	11600	600~800	0.3~0.7	3	溝銑 SLOTTING
UPE0304	13	110	11600	500~700	0.7~1.5	3	溝銑 SLOTTING
UPE0304	13	110	11600	350~550	1.5~2	3	溝銑 SLOTTING
UPE0304	13	110	11600	900~1200	3~6	0~0.3	側銑 SIDE MILLING
UPE0304	13	110	11600	900~1200	3~6	0~0.15	側銑 SIDE MILLING
UPE0404	16	115	9150	1200~1400	0~0.4	4	溝銑 SLOTTING
UPE0404	16	115	9150	600~800	0.4~1	4	溝銑 SLOTTING
UPE0404	16	115	9150	500~700	1~2	4	溝銑 SLOTTING
UPE0404	16	115	9150	350~550	2~3	4	溝銑 SLOTTING
UPE0404	16	115	9150	900~1200	4~8	0~0.4	側銑 SIDE MILLING
UPE0404	16	115	9150	900~1200	4~8	0~0.2	側銑 SIDE MILLING
UPE0504	18	115	7300	1200~1400	0~0.4	5	溝銑 SLOTTING
UPE0504	18	115	7300	700~900	0.4~1.2	5	溝銑 SLOTTING
UPE0504	18	115	7300	500~700	1.2~2.5	5	溝銑 SLOTTING
UPE0504	18	115	7300	400~600	2.5~4.5	0~1.2	溝銑 SLOTTING
UPE0504	18	115	7300	900~1200	5~10	0~0.4	側銑 SIDE MILLING
UPE0504	18	115	7300	900~1200	5~10	0~0.2	側銑 SIDE MILLING
UPE0604	20	115	6100	1300~1500	0~0.4	6	溝銑 SLOTTING
UPE0604	20	115	6100	700~900	0.5~1.5	6	溝銑 SLOTTING
UPE0604	20	115	6100	600~800	1.5~3	6	溝銑 SLOTTING
UPE0604	20	115	6100	500~700	3~6	6	溝銑 SLOTTING
UPE0604	20	115	6100	900~1200	6~12	0~0.4	側銑 SIDE MILLING
UPE0604	20	130	6900	900~1200	6~12	0~0.,2	側銑 SIDE MILLING
UPE0804	25	115	4500	1200~1400	0~0.5	8	溝銑 SLOTTING
UPE0804	25	115	4500	700~900	0.5~2	8	溝銑 SLOTTING
UPE0804	25	115	4500	600~800	2~4	8	溝銑 SLOTTING
UPE0804	25	115	4500	400~600	4~8	8	溝銑 SLOTTING
UPE0804	25	115	4500	800~1100	8~16	0~0.5	側銑 SIDE MILLING
UPE0804	25	125	5000	800~1100	8~16	0~0.25	側銑 SIDE MILLING
UPE1004	30	110	3500	1200~1400	0~0.6	10	溝銑 SLOTTING
UPE1004	30	110	3500	600~800	0.6~2	10	溝銑 SLOTTING
UPE1004	30	110	3500	400~600	3~5	10	溝銑 SLOTTING
UPE1004	30	110	3500	300~450	5~10	10	溝銑 SLOTTING
UPE1004	30	110	3500	1300~1600	10~20	0~0.6	側銑 SIDE MILLING
UPE1004	30	115	3700	800~1000	10~20	0~0.3	側銑 SIDE MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPE1204	34	110	2900	1100~1300	0~0.7	12	溝銑 SLOTTING
UPE1204	34	110	2900	500~700	0.7~2	12	溝銑 SLOTTING
UPE1204	34	110	2900	400~600	2~4	12	溝銑 SLOTTING
UPE1204	34	110	2900	300~400	4~7	12	溝銑 SLOTTING
UPE1204	34	110	2900	1000~1300	12~24	0~0.7	側銑 SIDE MILLING
UPE1204	34	130	3450	800~1000	12~24	0~0.3	側銑 SIDE MILLING
UPE1404	40	110	2500	1000~1200	0~0.7	14	溝銑 SLOTTING
UPE1404	40	110	2500	500~700	0.7~2	14	溝銑 SLOTTING
UPE1404	40	110	2500	350~550	2~4	14	溝銑 SLOTTING
UPE1404	40	110	2500	300~500	4~7	14	溝銑 SLOTTING
UPE1404	40	110	2500	900~1100	14~28	0~0.7	側銑 SIDE MILLING
UPE1404	40	120	2700	650~850	14~28	0~0.3	側銑 SIDE MILLING
UPE1604	45	110	2200	900~1100	0~0.7	16	溝銑 SLOTTING
UPE1604	45	110	2200	400~600	0.7~2	16	溝銑 SLOTTING
UPE1604	45	110	2200	300~500	2~4	16	溝銑 SLOTTING
UPE1604	45	110	2200	250~450	4~7	16	溝銑 SLOTTING
UPE1604	45	110	2200	800~1000	16~32	0~0.7	側銑 SIDE MILLING
UPE1604	45	110	2200	500~700	16~32	0~0.3	側銑 SIDE MILLING
UPE1804	50	110	1950	800~1000	0~0.7	18	溝銑 SLOTTING
UPE1804	50	110	1950	400~500	0.7~2	18	溝銑 SLOTTING
UPE1804	50	110	1950	300~400	2~4	18	溝銑 SLOTTING
UPE1804	50	110	1950	200~400	4~7	0~2	溝銑 SLOTTING
UPE1804	50	110	1950	700~900	18~36	0~0.7	側銑 SIDE MILLING
UPE1804	50	110	1950	400~600	18~36	0~0.3	側銑 SIDE MILLING
UPE2004	50	110	1750	700~900	0~0.8	20	溝銑 SLOTTING
UPE2004	50	110	1750	300~400	0.8~2	20	溝銑 SLOTTING
UPE2004	50	110	1750	250~350	2~4	20	溝銑 SLOTTING
UPE2004	50	110	1750	200~300	4~6	20	溝銑 SLOTTING
UPE2004	50	110	1750	600~800	20~40	0~0.7	側銑 SIDE MILLING
UPE2004	50	110	1750	400~550	20~40	0~0.3	側銑 SIDE MILLING
UPE2504	55	110	1400	600~800	0~0.8	25	溝銑 SLOTTING
UPE2504	55	110	1400	250~350	0.8~2	25	溝銑 SLOTTING
UPE2504	55	110	1400	200~300	2~4	25	溝銑 SLOTTING
UPE2504	55	110	1400	150~250	4~6	25	溝銑 SLOTTING
UPE2504	55	110	1400	500~700	25~50	0~0.8	側銑 SIDE MILLING
UPE2504	55	110	1400	350~500	25~50	0~0.3	側銑 SIDE MILLING

UPE

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

（麻田散鐵, 析出硬化）系不銹鋼
Stainless Steels [Difficult] : **SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPE0304	13	130	13800	1200~1500	0~0.35	3	溝銑 SLOTTING
UPE0304	13	130	13800	700~900	0.35~0.7	3	溝銑 SLOTTING
UPE0304	13	130	13800	500~700	0.7~1.5	3	溝銑 SLOTTING
UPE0304	13	130	13800	400~600	1.5~2	3	溝銑 SLOTTING
UPE0304	13	130	13800	1200~1400	3~6	0~0.35	側銑 SIDE MILLING
UPE0304	13	130	13800	600~800	3	0.35~0.7	側銑 SIDE MILLING
UPE0304	13	130	13800	500~700	3	0.7~1.5	側銑 SIDE MILLING
UPE0304	13	130	13800	400~600	3	1.5~2	側銑 SIDE MILLING
UPE0304	13	130	13800	900~1200	3~6	0~0.15	側銑 SIDE MILLING
UPE0404	16	130	10300	1200~1500	0~0.4	4	溝銑 SLOTTING
UPE0404	16	130	10300	700~900	0.4~1	4	溝銑 SLOTTING
UPE0404	16	130	10300	500~700	1~2	4	溝銑 SLOTTING
UPE0404	16	130	10300	400~600	2~3	4	溝銑 SLOTTING
UPE0404	16	130	10300	1200~1400	4~8	0~0.4	側銑 SIDE MILLING
UPE0404	16	130	10300	600~800	4	0.4~1	側銑 SIDE MILLING
UPE0404	16	130	10300	500~700	4	1~2	側銑 SIDE MILLING
UPE0404	16	130	10300	400~600	4	2~3	側銑 SIDE MILLING
UPE0404	16	130	10300	900~1200	4~8	0~0.15	側銑 SIDE MILLING
UPE0504	18	130	8200	1200~1500	0~0.5	5	溝銑 SLOTTING
UPE0504	18	130	8200	700~900	0.5~1.2	5	溝銑 SLOTTING
UPE0504	18	130	8200	500~700	1.2~2.5	5	溝銑 SLOTTING
UPE0504	18	130	8200	400~600	2.5~5	5	溝銑 SLOTTING
UPE0504	18	130	8200	1200~1400	5~10	0~0.5	側銑 SIDE MILLING
UPE0504	18	130	8200	600~800	5	0.5~1.2	側銑 SIDE MILLING
UPE0504	18	130	8200	500~700	5	1.2~2.5	側銑 SIDE MILLING
UPE0504	18	130	8200	400~600	5	2.5~5	側銑 SIDE MILLING
UPE0504	18	130	8200	900~1200	5~10	0~0.2	側銑 SIDE MILLING
UPE0604	20	125	6600	1300~1600	0~0.5	6	溝銑 SLOTTING
UPE0604	20	125	6600	800~1000	0.5~1.5	6	溝銑 SLOTTING
UPE0604	20	125	6600	600~800	1.5~3	6	溝銑 SLOTTING
UPE0604	20	125	6600	450~650	3~6	6	溝銑 SLOTTING
UPE0604	20	125	6600	1200~1400	6~12	0~0.4	側銑 SIDE MILLING
UPE0604	20	125	6600	700~900	6	0.5~1.5	側銑 SIDE MILLING
UPE0604	20	125	6600	550~750	6	1.5~3	側銑 SIDE MILLING
UPE0604	20	125	6600	450~650	6	3~6	側銑 SIDE MILLING
UPE0604	20	130	6900	900~1200	6~12	0~0.,2	側銑 SIDE MILLING
UPE0804	25	135	5500	1800~2200	0~0.5	8	溝銑 SLOTTING
UPE0804	25	135	5500	800~1100	0.5~2	8	溝銑 SLOTTING
UPE0804	25	135	5500	700~900	2~4	8	溝銑 SLOTTING

被切削材 Work Material

（麻田散鐵，析出硬化）系不銹鋼
Stainless Steels [Difficult] : **SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH** (HRc 28~32)

切削條件表 *MILLING CONDITIONS*

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPE0804	25	135	5500	500~700	4~8	8	溝銑 SLOTTING
UPE0804	25	135	5500	1700~2100	8~16	0~0.5	側銑 SIDE MILLING
UPE0804	25	135	5500	800~1100	8	0.5~2	側銑 SIDE MILLING
UPE0804	25	135	5500	700~900	8	2~4	側銑 SIDE MILLING
UPE0804	25	135	5500	550~750	8	4~8	側銑 SIDE MILLING
UPE0804	25	125	5000	800~1100	8~16	0~0.25	側銑 SIDE MILLING
UPE1004	30	130	4200	1400~1800	0~0.6	10	溝銑 SLOTTING
UPE1004	30	130	4200	800~1000	0.6~2	10	溝銑 SLOTTING
UPE1004	30	130	4200	600~800	3~5	10	溝銑 SLOTTING
UPE1004	30	130	4200	500~700	5~10	10	溝銑 SLOTTING
UPE1004	30	130	4200	1400~1700	10~20	0~0.6	側銑 SIDE MILLING
UPE1004	30	130	4200	700~1000	10	0.6~2	側銑 SIDE MILLING
UPE1004	30	130	4200	600~800	10	3~5	側銑 SIDE MILLING
UPE1004	30	130	4200	500~700	10	5~10	側銑 SIDE MILLING
UPE1004	30	115	3700	800~1000	10~20	0~0.3	側銑 SIDE MILLING
UPE1204	34	130	3450	1300~1600	0~0.7	12	溝銑 SLOTTING
UPE1204	34	130	3450	650~850	0.7~2	12	溝銑 SLOTTING
UPE1204	34	130	3450	450~650	2~5	12	溝銑 SLOTTING
UPE1204	34	130	3450	350~550	5~10	12	溝銑 SLOTTING
UPE1204	34	130	3450	1400~1700	12~24	0~0.7	側銑 SIDE MILLING
UPE1204	34	130	3450	800~1100	12	0.7~2	側銑 SIDE MILLING
UPE1204	34	130	3450	450~650	12	2~5	側銑 SIDE MILLING
UPE1204	34	130	3450	350~550	12	5~10	側銑 SIDE MILLING
UPE1204	34	130	3450	800~1000	12~24	0~0.3	側銑 SIDE MILLING
UPE1404	40	130	2950	1200~1500	0~0.7	14	溝銑 SLOTTING
UPE1404	40	130	2950	600~750	0.7~2	14	溝銑 SLOTTING
UPE1404	40	130	2950	400~600	2~5	14	溝銑 SLOTTING
UPE1404	40	130	2950	350~550	5~8	14	溝銑 SLOTTING
UPE1404	40	130	2950	1300~1600	14~28	0~0.7	側銑 SIDE MILLING
UPE1404	40	130	2950	700~1000	14	0.7~2	側銑 SIDE MILLING
UPE1404	40	130	2950	400~600	14	2~5	側銑 SIDE MILLING
UPE1404	40	130	2950	350~550	14	5~8	側銑 SIDE MILLING
UPE1404	40	130	2950	700~900	14~28	0~0.4	側銑 SIDE MILLING
UPE1604	45	130	2600	1100~1400	0~0.7	16	溝銑 SLOTTING
UPE1604	45	130	2600	550~700	0.7~2	16	溝銑 SLOTTING
UPE1604	45	130	2600	400~500	2~5	16	溝銑 SLOTTING
UPE1604	45	130	2600	300~500	5~8	16	溝銑 SLOTTING
UPE1604	45	130	2600	1200~1400	16~32	0~0.7	側銑 SIDE MILLING
UPE1604	45	130	2600	700~900	16	0.7~2	側銑 SIDE MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

（麻田散鐵,析出硬化）系不銹鋼
Stainless Steels [Difficult] : **SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPE1604	45	130	2600	400~500	16	2~5	側銑 SIDE MILLING
UPE1604	45	130	2600	300~450	16	5~8	側銑 SIDE MILLING
UPE1604	45	130	2600	600~800	16~32	0~0.4	側銑 SIDE MILLING
UPE1804	50	130	2300	1000~1300	0~0.7	18	溝銑 SLOTTING
UPE1804	50	130	2300	500~650	0.7~2	18	溝銑 SLOTTING
UPE1804	50	130	2300	350~450	2~5	18	溝銑 SLOTTING
UPE1804	50	130	2300	250~400	5~8	18	溝銑 SLOTTING
UPE1804	50	130	2300	1000~1200	18~36	0~0.7	側銑 SIDE MILLING
UPE1804	50	130	2300	600~800	18	0.7~2	側銑 SIDE MILLING
UPE1804	50	130	2300	300~450	18	2~5	側銑 SIDE MILLING
UPE1804	50	130	2300	250~350	18	5~8	側銑 SIDE MILLING
UPE1804	50	130	2300	500~700	18~36	0~0.4	側銑 SIDE MILLING
UPE2004	50	130	2050	900~1100	0~0.7	20	溝銑 SLOTTING
UPE2004	50	130	2050	400~600	0.7~2	20	溝銑 SLOTTING
UPE2004	50	130	2050	300~400	2~5	20	溝銑 SLOTTING
UPE2004	50	130	2050	200~350	5~8	20	溝銑 SLOTTING
UPE2004	50	130	2050	800~1000	20~40	0~0.7	側銑 SIDE MILLING
UPE2004	50	130	2050	500~700	20	0.7~2	側銑 SIDE MILLING
UPE2004	50	130	2050	250~400	20	2~5	側銑 SIDE MILLING
UPE2004	50	130	2050	200~300	20	5~8	側銑 SIDE MILLING
UPE2004	50	130	2050	450~650	20~40	0~0.7	側銑 SIDE MILLING
UPE2504	55	130	1650	700~950	0~0.7	25	溝銑 SLOTTING
UPE2504	55	130	1650	300~500	0.7~2	25	溝銑 SLOTTING
UPE2504	55	130	1650	200~300	2~5	25	溝銑 SLOTTING
UPE2504	55	130	1650	150~250	5~8	25	溝銑 SLOTTING
UPE2504	55	130	1650	600~850	25~50	0~0.7	側銑 SIDE MILLING
UPE2504	55	130	1650	300~500	25	0.7~2	側銑 SIDE MILLING
UPE2504	55	130	1650	200~300	25	2~5	側銑 SIDE MILLING
UPE2504	55	130	1650	150~250	25	5~8	側銑 SIDE MILLING
UPE2504	55	130	1650	350~550	25~50	0~0.7	側銑 SIDE MILLING

附 註

1. **UPE**適用於粗、精銑加工，溝銑(Aa)與側銑(Ap)都有1.0D切削能力。粗切削時，請用濕式高壓水溶性切削液，以免造成排屑不良。直徑Ø10以上，需視機器剛性與主軸扭力值的不同，而做適當調整。
2. 建議冷卻方式為濕式。

NOTE

1. **UPE** is good at Roughing and Finishing. It can do a 1.0D machining for both Slotting (Aa) and Sidemilling (Ap). When Roughing, we suggest high pressure emulsion coolant for better chip removal. For diameter above 10.0mm, make necessary adjustment as per the rigidity of machine and the torque of spindle.
2. Suggest to use wet coolant.

HPC

UPG

抗震高效能立銑刀
END MILLS

Super MG | 0.4 μm | 35°~38° | 4 Flutes | HRc ▶60 | G10

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining
精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

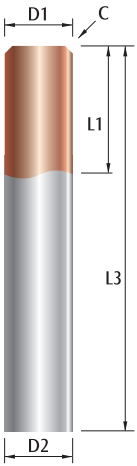
Stainless Steel Cutting



產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	C 倒角 Chamfer	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UPG0304	3.0	0.15	8	50	6
UPG0404	4.0	0.15	11	50	6
UPG0504	5.0	0.2	13	50	6
UPG0604	6.0	0.2	16	50	6
UPG0604L	6.0	0.2	20	60	6
UPG0804	8.0	0.25	20	60	8
UPG0804L	8.0	0.25	25	75	8
UPG1004	10.0	0.3	22	75	10
UPG1004L	10.0	0.3	30	80	10
UPG1204	12.0	0.3	26	75	12
UPG1204L	12.0	0.3	35	100	12
UPG1604	16.0	0.4	40	100	16
UPG1604L	16.0	0.4	50	120	16
UPG1804	18.0	0.5	40	100	18
UPG2004	20.0	0.5	40	100	20
UPG2004L	20.0	0.5	50	120	20

unit : mm



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
18.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø18	0 -0.011
Ø20	0 -0.013

unit : mm

UPG

切削條件表 MILLING CONDITIONS

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPG0304	13	95	10000	400~600	0~0.5	3	溝銑 SLOTTING
UPG0304	13	95	10000	300~500	0.5~0.9	3	溝銑 SLOTTING
UPG0304	13	95	10000	200~400	0.9~1.3	3	溝銑 SLOTTING
UPG0304	13	95	10000	600~800	3	0~0.5	側銑 SIDE MILLING
UPG0304	13	95	10000	300~500	3	0.5~0.9	側銑 SIDE MILLING
UPG0304	13	95	10000	250~450	3	0.9~1.3	側銑 SIDE MILLING
UPG0404	16	95	7500	500~700	0~0.7	4	溝銑 SLOTTING
UPG0404	16	95	7500	400~600	0.7~1.1	4	溝銑 SLOTTING
UPG0404	16	95	7500	250~450	1.1~1.6	4	溝銑 SLOTTING
UPG0404	16	95	7500	600~800	4	0~0.7	側銑 SIDE MILLING
UPG0404	16	95	7500	400~600	4	0.7~1.1	側銑 SIDE MILLING
UPG0404	16	95	7500	300~500	4	1.1~1.6	側銑 SIDE MILLING
UPG0504	18	95	6050	500~700	0~0.9	5	溝銑 SLOTTING
UPG0504	18	95	6050	400~600	0.9~1.5	5	溝銑 SLOTTING
UPG0504	18	95	6050	300~500	1.5~2.2	5	溝銑 SLOTTING
UPG0504	18	95	6050	600~800	5	0~0.9	側銑 SIDE MILLING
UPG0504	18	95	6050	400~600	5	0.9~1.5	側銑 SIDE MILLING
UPG0504	18	95	6050	350~450	5	1.5~2.2	側銑 SIDE MILLING
UPG0604	20	95	5050	550~750	0~1.2	6	溝銑 SLOTTING
UPG0604	20	95	5050	500~650	1.2~2	6	溝銑 SLOTTING
UPG0604	20	95	5050	300~400	2~3	6	溝銑 SLOTTING
UPG0604	20	95	5050	700~900	6	0~1.2	側銑 SIDE MILLING
UPG0604	20	95	5050	500~700	6	1.2~2	側銑 SIDE MILLING
UPG0604	20	95	5050	450~650	6	2~3	側銑 SIDE MILLING
UPG0604L	25	95	5050	500~700	0~1	6	溝銑 SLOTTING
UPG0604L	25	95	5050	400~600	1~1.5	6	溝銑 SLOTTING
UPG0604L	25	95	5050	300~400	1.5~2	6	溝銑 SLOTTING
UPG0604L	25	95	5050	600~800	6	0~1	側銑 SIDE MILLING
UPG0604L	25	95	5050	400~600	6	1~1.5	側銑 SIDE MILLING
UPG0604L	25	95	5050	300~500	6	1.5~2	側銑 SIDE MILLING
UPG0804	25	95	3750	600~800	0~1.5	8	溝銑 SLOTTING
UPG0804	25	95	3750	400~600	2~4	8	溝銑 SLOTTING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

沃斯田鐵系不銹鋼
Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPG0804	25	95	3750	350~550	4~6.5	8	溝銑 SLOTTING
UPG0804	25	95	3750	800~1100	8	0~2	側銑 SIDE MILLING
UPG0804	25	95	3750	500~700	8	2~4	側銑 SIDE MILLING
UPG0804	25	95	3750	400~600	8	4~6.5	側銑 SIDE MILLING
UPG0804L	33	95	3750	500~700	0~1	8	溝銑 SLOTTING
UPG0804L	33	95	3750	400~600	1~2	8	溝銑 SLOTTING
UPG0804L	33	95	3750	300~500	2~3	8	溝銑 SLOTTING
UPG0804L	33	95	3750	700~1000	8	0~1	側銑 SIDE MILLING
UPG0804L	33	95	3750	500~700	8	1~2	側銑 SIDE MILLING
UPG0804L	33	95	3750	400~600	8	2~3	側銑 SIDE MILLING
UPG1004	30	95	3050	600~800	0~2	10	溝銑 SLOTTING
UPG1004	30	95	3050	400~500	3~5	10	溝銑 SLOTTING
UPG1004	30	95	3050	300~400	8	10	溝銑 SLOTTING
UPG1004	30	95	3050	900~1200	10	0~2	側銑 SIDE MILLING
UPG1004	30	95	3050	500~700	10	3~5	側銑 SIDE MILLING
UPG1004	30	95	3050	300~450	10	8	側銑 SIDE MILLING
UPG1004L	40	60	1900	500~700	0~1	10	溝銑 SLOTTING
UPG1004L	40	60	1900	200~400	1~2	10	溝銑 SLOTTING
UPG1004L	40	60	1900	200~350	2~3	10	溝銑 SLOTTING
UPG1004L	40	60	1900	700~1000	10~20	0~0.5	側銑 SIDE MILLING
UPG1004L	40	60	1900	400~600	10~20	0.5~1	側銑 SIDE MILLING
UPG1004L	40	60	1900	200~300	10~20	1~1.5	側銑 SIDE MILLING
UPG1204	34	95	2500	500~700	0~2	12	溝銑 SLOTTING
UPG1204	34	95	2500	400~600	2~4	12	溝銑 SLOTTING
UPG1204	34	95	2500	300~500	4~6	12	溝銑 SLOTTING
UPG1204	34	95	2500	600~800	12	0~2	側銑 SIDE MILLING
UPG1204	34	95	2500	400~600	12	2~4	側銑 SIDE MILLING
UPG1204	34	95	2500	300~500	12	4~6	側銑 SIDE MILLING
UPG1204L	50	60	1600	400~600	0~1	12	溝銑 SLOTTING
UPG1204L	50	60	1600	300~500	1~2	12	溝銑 SLOTTING
UPG1204L	50	60	1600	200~400	2~3	12	溝銑 SLOTTING
UPG1204L	50	55	1400	500~700	12~24	0~0.5	側銑 SIDE MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPG1204L	50	45	1200	400~600	12~24	0.5~1	側銑 SIDE MILLING
UPG1204L	50	45	1200	400~600	12~24	1~1.5	側銑 SIDE MILLING
UPG1604	45	95	1900	350~550	0~2	16	溝銑 SLOTTING
UPG1604	45	95	1900	300~500	2~3	16	溝銑 SLOTTING
UPG1604	45	95	1900	200~400	3~5	16	溝銑 SLOTTING
UPG1604	45	95	1900	500~700	16	0~2	側銑 SIDE MILLING
UPG1604	45	95	1900	400~600	16	2~3	側銑 SIDE MILLING
UPG1604	45	95	1900	300~500	16	3~5	側銑 SIDE MILLING
UPG1604L	55	60	1200	350~550	0~1	16	溝銑 SLOTTING
UPG1604L	55	60	1200	300~500	1~2	16	溝銑 SLOTTING
UPG1604L	55	60	1200	200~400	2~3	16	溝銑 SLOTTING
UPG1604L	55	50	1000	400~600	16~32	0~0.5	側銑 SIDE MILLING
UPG1604L	55	50	1000	350~550	16~32	0.5~1	側銑 SIDE MILLING
UPG1604L	55	50	1000	300~400	16~32	1~1.5	側銑 SIDE MILLING
UPG1804	50	95	1700	350~550	0~2	18	溝銑 SLOTTING
UPG1804	50	95	1700	250~450	2~4	18	溝銑 SLOTTING
UPG1804	50	95	1700	150~350	4~6	18	溝銑 SLOTTING
UPG1804	50	95	1700	450~650	18	0~2	側銑 SIDE MILLING
UPG1804	50	95	1700	350~550	18	2~4	側銑 SIDE MILLING
UPG1804	50	95	1700	250~450	18	4~6	側銑 SIDE MILLING
UPG2004	50	95	1500	250~450	0~2	20	溝銑 SLOTTING
UPG2004	50	95	1500	200~400	2~3	20	溝銑 SLOTTING
UPG2004	50	95	1500	150~300	3~5	20	溝銑 SLOTTING
UPG2004	50	95	1500	400~600	20	0~2	側銑 SIDE MILLING
UPG2004	50	95	1500	300~500	20	2~3	側銑 SIDE MILLING
UPG2004	50	95	1500	200~400	20	3~5	側銑 SIDE MILLING
UPG2004L	65	60	950	200~400	0~1	20	溝銑 SLOTTING
UPG2004L	65	60	950	150~350	1~2	20	溝銑 SLOTTING
UPG2004L	65	60	950	100~300	2~3	20	溝銑 SLOTTING
UPG2004L	65	50	800	200~400	20~40	0~0.5	側銑 SIDE MILLING
UPG2004L	65	50	800	150~350	20~40	0.5~1	側銑 SIDE MILLING
UPG2004L	65	50	800	100~300	20~40	1~1.5	側銑 SIDE MILLING

UPG

切削條件表 MILLING CONDITIONS

被切削材 Work Material

（麻田散鐵, 析出硬化）系不銹鋼
Stainless Steels [Difficult] : **SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPG0304	13	95	10000	400~600	0~0.5	3	溝銑 SLOTTING
UPG0304	13	95	10000	300~500	0.5~0.9	3	溝銑 SLOTTING
UPG0304	13	95	10000	200~400	0.9~1.3	3	溝銑 SLOTTING
UPG0304	13	95	10000	600~800	3	0~0.5	側銑 SIDE MILLING
UPG0304	13	95	10000	300~500	3	0.5~0.9	側銑 SIDE MILLING
UPG0304	13	95	10000	250~450	3	0.9~1.3	側銑 SIDE MILLING
UPG0404	16	95	7500	500~700	0~0.7	4	溝銑 SLOTTING
UPG0404	16	95	7500	400~600	0.7~1.1	4	溝銑 SLOTTING
UPG0404	16	95	7500	250~450	1.1~1.6	4	溝銑 SLOTTING
UPG0404	16	95	7500	600~800	4	0~0.7	側銑 SIDE MILLING
UPG0404	16	95	7500	400~600	4	0.7~1.1	側銑 SIDE MILLING
UPG0404	16	95	7500	300~500	4	1.1~1.6	側銑 SIDE MILLING
UPG0504	18	95	6050	500~700	0~0.9	5	溝銑 SLOTTING
UPG0504	18	95	6050	400~600	0.9~1.5	5	溝銑 SLOTTING
UPG0504	18	95	6050	300~500	1.5~2.2	5	溝銑 SLOTTING
UPG0504	18	95	6050	600~800	5	0~0.9	側銑 SIDE MILLING
UPG0504	18	95	6050	400~600	5	0.9~1.5	側銑 SIDE MILLING
UPG0504	18	95	6050	350~450	5	1.5~2.2	側銑 SIDE MILLING
UPG0604	20	95	5050	550~750	0~1.2	6	溝銑 SLOTTING
UPG0604	20	95	5050	500~650	1.2~2	6	溝銑 SLOTTING
UPG0604	20	95	5050	300~400	2~3	6	溝銑 SLOTTING
UPG0604	20	95	5050	700~900	6	0~1.2	側銑 SIDE MILLING
UPG0604	20	95	5050	500~700	6	1.2~2	側銑 SIDE MILLING
UPG0604	20	95	5050	450~650	6	2~3	側銑 SIDE MILLING
UPG0604L	25	95	5050	500~700	0~1	6	溝銑 SLOTTING
UPG0604L	25	95	5050	400~600	1~1.5	6	溝銑 SLOTTING
UPG0604L	25	95	5050	300~400	1.5~2	6	溝銑 SLOTTING
UPG0604L	25	95	5050	600~800	6	0~1	側銑 SIDE MILLING
UPG0604L	25	95	5050	400~600	6	1~1.5	側銑 SIDE MILLING
UPG0604L	25	95	5050	300~500	6	1.5~2	側銑 SIDE MILLING
UPG0804	25	90	3600	600~800	0~1.5	8	溝銑 SLOTTING
UPG0804	25	90	3600	400~600	2~4	8	溝銑 SLOTTING
UPG0804	25	90	3600	300~500	4~6.5	8	溝銑 SLOTTING
UPG0804	25	90	3600	800~1100	8	0~2	側銑 SIDE MILLING
UPG0804	25	90	3600	500~700	8	2~4	側銑 SIDE MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

（麻田散鐵, 析出硬化）系不銹鋼
Stainless Steels [Difficult] : **SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPG0804	25	90	3600	400~600	8	4~6.5	側銑 SIDE MILLING
UPG0804L	33	90	3600	500~700	0~1	8	溝銑 SLOTTING
UPG0804L	33	90	3600	400~600	1~2	8	溝銑 SLOTTING
UPG0804L	33	90	3600	300~500	2~3	8	溝銑 SLOTTING
UPG0804L	33	90	3600	700~1000	8	0~1	側銑 SIDE MILLING
UPG0804L	33	90	3600	500~700	8	1~2	側銑 SIDE MILLING
UPG0804L	33	90	3600	400~600	8	2~3	側銑 SIDE MILLING
UPG1004	30	90	2900	600~800	0~2	10	溝銑 SLOTTING
UPG1004	30	90	2900	400~500	3~5	10	溝銑 SLOTTING
UPG1004	30	90	2900	300~400	8	10	溝銑 SLOTTING
UPG1004	30	90	2900	800~1000	10	0~2	側銑 SIDE MILLING
UPG1004	30	90	2900	500~600	10	3~5	側銑 SIDE MILLING
UPG1004	30	90	2900	300~500	10	8	側銑 SIDE MILLING
UPG1004L	40	60	1900	500~700	0~1	10	溝銑 SLOTTING
UPG1004L	40	60	1900	200~400	1~2	10	溝銑 SLOTTING
UPG1004L	40	60	1900	200~350	2~3	10	溝銑 SLOTTING
UPG1004L	40	60	1900	700~1000	10~20	0~0.5	側銑 SIDE MILLING
UPG1004L	40	60	1900	400~600	10~20	0.5~1	側銑 SIDE MILLING
UPG1004L	40	60	1900	200~300	10~20	1~1.5	側銑 SIDE MILLING
UPG1204	34	90	2400	500~700	0~2	12	溝銑 SLOTTING
UPG1204	34	90	2400	400~600	2~4	12	溝銑 SLOTTING
UPG1204	34	90	2400	300~500	4~6	12	溝銑 SLOTTING
UPG1204	34	90	2400	600~800	12	0~2	側銑 SIDE MILLING
UPG1204	34	90	2400	400~600	12	2~4	側銑 SIDE MILLING
UPG1204	34	90	2400	300~500	12	4~6	側銑 SIDE MILLING
UPG1204L	50	60	1600	400~600	0~1	12	溝銑 SLOTTING
UPG1204L	50	60	1600	300~500	1~2	12	溝銑 SLOTTING
UPG1204L	50	60	1600	200~400	2~3	12	溝銑 SLOTTING
UPG1204L	50	55	1400	500~700	12~24	0~0.5	側銑 SIDE MILLING
UPG1204L	50	45	1200	400~600	12~24	0.5~1	側銑 SIDE MILLING
UPG1204L	50	45	1200	400~600	12~24	1~1.5	側銑 SIDE MILLING
UPG1604	45	90	1800	350~550	0~2	16	溝銑 SLOTTING
UPG1604	45	90	1800	300~500	2~3	16	溝銑 SLOTTING
UPG1604	45	90	1800	200~400	3~5	16	溝銑 SLOTTING
UPG1604	45	90	1800	500~700	16	0~2	側銑 SIDE MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

（麻田散鐵，析出硬化）系不銹鋼
Stainless Steels [Difficult] : **SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPG1604	45	90	1800	400~600	16	2~3	側銑 SIDE MILLING
UPG1604	45	90	1800	300~500	16	3~5	側銑 SIDE MILLING
UPG1604L	55	60	1200	350~550	0~1	16	溝銑 SLOTTING
UPG1604L	55	60	1200	300~500	1~2	16	溝銑 SLOTTING
UPG1604L	55	60	1200	200~400	2~3	16	溝銑 SLOTTING
UPG1604L	55	50	1000	400~600	16~32	0~0.5	側銑 SIDE MILLING
UPG1604L	55	50	1000	350~550	16~32	0.5~1	側銑 SIDE MILLING
UPG1604L	55	50	1000	300~400	16~32	1~1.5	側銑 SIDE MILLING
UPG1804	50	90	1600	350~550	0~2	18	溝銑 SLOTTING
UPG1804	50	90	1600	250~450	2~4	18	溝銑 SLOTTING
UPG1804	50	90	1600	150~350	4~6	18	溝銑 SLOTTING
UPG1804	50	90	1600	450~650	18	0~2	側銑 SIDE MILLING
UPG1804	50	90	1600	350~550	18	2~4	側銑 SIDE MILLING
UPG1804	50	90	1600	250~450	18	4~6	側銑 SIDE MILLING
UPG2004	50	90	1450	250~450	0~2	20	溝銑 SLOTTING
UPG2004	50	90	1450	200~400	2~3	20	溝銑 SLOTTING
UPG2004	50	90	1450	150~300	3~5	20	溝銑 SLOTTING
UPG2004	50	90	1450	400~600	20	0~2	側銑 SIDE MILLING
UPG2004	50	90	1450	300~500	20	2~3	側銑 SIDE MILLING
UPG2004	50	90	1450	200~400	20	3~5	側銑 SIDE MILLING
UPG2004L	65	60	950	200~400	0~1	20	溝銑 SLOTTING
UPG2004L	65	60	950	150~350	1~2	20	溝銑 SLOTTING
UPG2004L	65	60	950	100~300	2~3	20	溝銑 SLOTTING
UPG2004L	65	50	800	200~400	20~40	0~0.5	側銑 SIDE MILLING
UPG2004L	65	50	800	150~350	20~40	0.5~1	側銑 SIDE MILLING
UPG2004L	65	50	800	100~300	20~40	1~1.5	側銑 SIDE MILLING

附 註

1. **UPG**適用於粗、精銑加工，溝銑(Aa)與側銑(Ap)都有1.0D切削能力。0.5D以上切削時，請用濕式高壓水溶性切削液，以免造成排屑不良。直徑Ø10以上，需視機器剛性與主軸扭力值的不同，而做適當調整。
2. 建議冷卻方式為濕式。

NOTE

1. **UPG** is good at Roughing. It can do a 1.0D machining for both Slotting (Aa) and Sidemilling (Ap). When it is above 0.5D machining, we suggest high pressure emulsion coolant for better chip removal. For diameter above 10.0mm, make necessary adjustment as per the rigidity of machine and the torque of spindle.
2. Suggest to use wet coolant.

HPC

UPJ

無敵高剛性立銑刀
END MILLS

Super MG | 0.4 µm | 50° | R | 4 Flutes | HRc ▶60 | G10

乾式切削 Dry Machining

油霧切削 MQL (Mist) — 精銑 Finishing

水溶性切削 Emulsion Machining — 中銑 Semi-finishing

油性切削 Oil Machining — 粗銑 Roughing

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UPJ0304	3.0	0.2	8	50	6
UPJ0404	4.0	0.3	11	50	6
UPJ0504	5.0	0.3	13	50	6
UPJ0604	6.0	0.4	16	50	6
UPJ0804	8.0	0.5	20	60	8
UPJ1004	10.0	0.6	25	75	10
UPJ1204	12.0	0.6	30	75	12
UPJ1604	16.0	0.8	45	110	16
UPJ2004	20.0	1.0	50	110	20

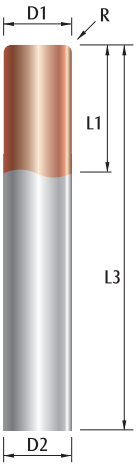
unit : mm

公差表 TOLERANCE

直徑 D1	R徑公差值 R Tolerance	直徑公差值 D1 Tolerance
3.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
4.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
5.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
6.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
8.0	$^{+0.02}_{0}$	$^{0}_{-0.025}$
10.0	$^{+0.02}_{0}$	$^{0}_{-0.03}$
12.0	$^{+0.02}_{0}$	$^{0}_{-0.035}$
16.0	$^{+0.02}_{0}$	$^{0}_{-0.04}$
20.0	$^{+0.02}_{0}$	$^{0}_{-0.04}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$
Ø20	$^{0}_{-0.013}$

unit : mm





Stainless Steel Cutting

UPJ

切削條件表 MILLING CONDITIONS

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPJ0304	13	115	12000	2000~2200	0~0.3	3	溝銑 SLOTTING
UPJ0304	13	115	12000	1400~1600	0.3~0.8	3	溝銑 SLOTTING
UPJ0304	13	115	12000	900~1200	0.8~1.5	3	溝銑 SLOTTING
UPJ0304	13	115	12000	600~800	1.5~3	3	溝銑 SLOTTING
UPJ0304	13	115	12000	1700~2000	3~6	0~0.3	側銑 SIDE MILLING
UPJ0304	13	115	12000	1400~1600	3	0.3~0.8	側銑 SIDE MILLING
UPJ0304	13	115	12000	1100~1300	3	0.8~1.5	側銑 SIDE MILLING
UPJ0304	13	115	12000	700~900	6	0.8~1.5	側銑 SIDE MILLING
UPJ0304	13	115	12000	800~1000	3	1.5~2.5	側銑 SIDE MILLING
UPJ0404	16	115	9200	2000~2200	0~0.4	4	溝銑 SLOTTING
UPJ0404	16	115	9200	1400~1600	0.4~1	4	溝銑 SLOTTING
UPJ0404	16	115	9200	900~1200	1~2	4	溝銑 SLOTTING
UPJ0404	16	115	9200	700~900	2~4	4	溝銑 SLOTTING
UPJ0404	16	115	9200	1700~2000	4~8	0~0.4	側銑 SIDE MILLING
UPJ0404	16	115	9200	1400~1600	4	0.4~1	側銑 SIDE MILLING
UPJ0404	16	115	9200	1100~1300	4	1~2	側銑 SIDE MILLING
UPJ0404	16	115	9200	700~900	8	1~2	側銑 SIDE MILLING
UPJ0404	16	115	9200	800~1000	4	2~3	側銑 SIDE MILLING
UPJ0504	18	115	7400	2000~2200	0~0.4	5	溝銑 SLOTTING
UPJ0504	18	115	7400	1400~1600	0.4~1.2	5	溝銑 SLOTTING
UPJ0504	18	115	7400	1000~1300	1.2~2.5	5	溝銑 SLOTTING
UPJ0504	18	115	7400	800~1000	2.5~5	5	溝銑 SLOTTING
UPJ0504	18	115	7400	1700~2000	5~10	0~0.4	側銑 SIDE MILLING
UPJ0504	18	115	7400	1400~1600	5	0.4~1.2	側銑 SIDE MILLING
UPJ0504	18	115	7400	1100~1300	5	1.2~2.5	側銑 SIDE MILLING
UPJ0504	18	115	7400	700~900	10	1.2~2.5	側銑 SIDE MILLING
UPJ0504	18	115	7400	900~1100	5	2.5~4	側銑 SIDE MILLING
UPJ0604	20	115	6100	2000~2200	0~0.5	6	溝銑 SLOTTING
UPJ0604	20	115	6100	1400~1600	0.5~1.5	6	溝銑 SLOTTING
UPJ0604	20	115	6100	1000~1300	1.5~3	6	溝銑 SLOTTING
UPJ0604	20	115	6100	800~1000	3~6	6	溝銑 SLOTTING
UPJ0604	20	115	6100	1700~2000	6~12	0~0.5	側銑 SIDE MILLING
UPJ0604	20	115	6100	1400~1600	6	0.5~1.5	側銑 SIDE MILLING
UPJ0604	20	115	6100	1100~1300	6	1.5~3	側銑 SIDE MILLING
UPJ0604	20	115	6100	700~900	12	1.5~3	側銑 SIDE MILLING
UPJ0604	20	115	6100	900~1100	6	3~5	側銑 SIDE MILLING
UPJ0804	25	115	4600	2000~2200	0~0.5	8	溝銑 SLOTTING
UPJ0804	25	115	4600	1300~1500	0.5~1.8	8	溝銑 SLOTTING
UPJ0804	25	115	4600	1000~1300	2~4	8	溝銑 SLOTTING
UPJ0804	25	115	4600	800~1000	4~8	8	溝銑 SLOTTING
UPJ0804	25	115	4600	1600~1900	8~16	0~0.5	側銑 SIDE MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

沃斯田鐵系不銹鋼
Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPJ0804	25	115	4600	1200~1500	8	0.5~2	側銑 SIDE MILLING
UPJ0804	25	115	4600	1100~1300	8	3~4	側銑 SIDE MILLING
UPJ0804	25	115	4600	700~900	16	3~4	側銑 SIDE MILLING
UPJ0804	25	115	4600	900~1100	8	4~7	側銑 SIDE MILLING
UPJ1004	30	115	3650	1800~2000	0~0.6	10	溝銑 SLOTTING
UPJ1004	30	115	3650	1200~1400	0.6~2	10	溝銑 SLOTTING
UPJ1004	30	115	3650	900~1100	3~5	10	溝銑 SLOTTING
UPJ1004	30	115	3650	700~900	5~10	10	溝銑 SLOTTING
UPJ1004	30	115	3650	1500~1800	10~20	0~0.5	側銑 SIDE MILLING
UPJ1004	30	115	3650	900~1100	10	0.5~2	側銑 SIDE MILLING
UPJ1004	30	115	3650	800~1000	10	3.6~5	側銑 SIDE MILLING
UPJ1004	30	115	3650	600~800	20	3.6~5	側銑 SIDE MILLING
UPJ1004	30	115	3650	600~800	10	5~8.7	側銑 SIDE MILLING
UPJ1204	34	115	3050	1600~1800	0~0.6	12	溝銑 SLOTTING
UPJ1204	34	115	3050	1000~1200	0.6~2	12	溝銑 SLOTTING
UPJ1204	34	115	3050	500~700	2~3	12	溝銑 SLOTTING
UPJ1204	34	115	3050	400~600	3~6	12	溝銑 SLOTTING
UPJ1204	34	115	3050	1400~1600	12~24	0~0.6	側銑 SIDE MILLING
UPJ1204	34	115	3050	900~1100	12	0.6~2	側銑 SIDE MILLING
UPJ1204	34	115	3050	700~900	12	2~3	側銑 SIDE MILLING
UPJ1204	34	115	3050	600~800	24	2~3	側銑 SIDE MILLING
UPJ1204	34	115	3050	500~700	12	3~6	側銑 SIDE MILLING
UPJ1604	50	115	2300	1200~1400	0~0.7	16	溝銑 SLOTTING
UPJ1604	50	115	2300	700~900	0.7~2	16	溝銑 SLOTTING
UPJ1604	50	115	2300	400~600	2~3	16	溝銑 SLOTTING
UPJ1604	50	115	2300	300~500	3~7	16	溝銑 SLOTTING
UPJ1604	50	115	2300	1100~1300	16~32	0~0.7	側銑 SIDE MILLING
UPJ1604	50	115	2300	600~800	16	0.7~2	側銑 SIDE MILLING
UPJ1604	50	115	2300	500~700	16	2~3	側銑 SIDE MILLING
UPJ1604	50	115	2300	400~600	32	2~3	側銑 SIDE MILLING
UPJ1604	50	115	2300	300~500	16	3~7	側銑 SIDE MILLING
UPJ2004	55	115	1850	900~1200	0~0.7	20	溝銑 SLOTTING
UPJ2004	55	115	1850	550~750	0.7~2	20	溝銑 SLOTTING
UPJ2004	55	115	1850	400~600	2~3	20	溝銑 SLOTTING
UPJ2004	55	115	1850	250~450	3~7	20	溝銑 SLOTTING
UPJ2004	55	115	1850	800~1100	20~40	0~0.7	側銑 SIDE MILLING
UPJ2004	55	115	1850	500~700	20	0.7~2	側銑 SIDE MILLING
UPJ2004	55	115	1850	350~550	20	2~3	側銑 SIDE MILLING
UPJ2004	55	115	1850	250~450	40	2~3	側銑 SIDE MILLING
UPJ2004	55	115	1850	200~400	20	3~7	側銑 SIDE MILLING

UPJ

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

（麻田散鐵, 析出硬化）系不銹鋼
Stainless Steels [Difficult] : **SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPJ0304	13	120	12700	1700~1900	0~0.3	3	溝銑 SLOTTING
UPJ0304	13	120	12700	1100~1300	0.3~0.8	3	溝銑 SLOTTING
UPJ0304	13	120	12700	800~1100	0.8~1.5	3	溝銑 SLOTTING
UPJ0304	13	120	12700	500~700	1.5~3	3	溝銑 SLOTTING
UPJ0304	13	120	12700	1400~1600	3~6	0~0.3	側銑 SIDE MILLING
UPJ0304	13	120	12700	1200~1400	3	0.3~0.8	側銑 SIDE MILLING
UPJ0304	13	120	12700	1000~1200	3	0.8~1.5	側銑 SIDE MILLING
UPJ0304	13	120	12700	600~800	6	0.8~1.5	側銑 SIDE MILLING
UPJ0304	13	120	12700	700~900	3	1.5~2.5	側銑 SIDE MILLING
UPJ0404	16	120	9500	1700~1900	0~0.4	4	溝銑 SLOTTING
UPJ0404	16	120	9500	1100~1300	0.4~1	4	溝銑 SLOTTING
UPJ0404	16	120	9500	800~1100	1~2	4	溝銑 SLOTTING
UPJ0404	16	120	9500	600~800	2~4	4	溝銑 SLOTTING
UPJ0404	16	120	9500	1400~1600	4~8	0~0.4	側銑 SIDE MILLING
UPJ0404	16	120	9500	1200~1400	4	0.4~1	側銑 SIDE MILLING
UPJ0404	16	120	9500	1000~1200	4	1~2	側銑 SIDE MILLING
UPJ0404	16	120	9500	600~800	8	1~2	側銑 SIDE MILLING
UPJ0404	16	120	9500	700~900	4	2~3	側銑 SIDE MILLING
UPJ0504	18	120	7600	1800~2000	0~0.4	5	溝銑 SLOTTING
UPJ0504	18	120	7600	1200~1400	0.4~1.2	5	溝銑 SLOTTING
UPJ0504	18	120	7600	900~1200	1.2~2.5	5	溝銑 SLOTTING
UPJ0504	18	120	7600	700~900	2.5~5	5	溝銑 SLOTTING
UPJ0504	18	120	7600	1500~1700	5~10	0~0.4	側銑 SIDE MILLING
UPJ0504	18	120	7600	1300~1500	5	0.4~1.2	側銑 SIDE MILLING
UPJ0504	18	120	7600	1100~1300	5	1.2~2.5	側銑 SIDE MILLING
UPJ0504	18	120	7600	700~900	10	1.2~2.5	側銑 SIDE MILLING
UPJ0504	18	120	7600	800~1000	5	2.5~4	側銑 SIDE MILLING
UPJ0604	20	120	6400	1800~2000	0~0.5	6	溝銑 SLOTTING
UPJ0604	20	120	6400	1200~1400	0.5~1.5	6	溝銑 SLOTTING
UPJ0604	20	120	6400	900~1200	1.5~3	6	溝銑 SLOTTING
UPJ0604	20	120	6400	700~900	3~6	6	溝銑 SLOTTING
UPJ0604	20	120	6400	1500~1700	6~12	0~0.5	側銑 SIDE MILLING
UPJ0604	20	120	6400	1300~1500	6	0.5~1.5	側銑 SIDE MILLING
UPJ0604	20	120	6400	1100~1300	6	1.5~3	側銑 SIDE MILLING
UPJ0604	20	120	6400	700~900	12	1.5~3	側銑 SIDE MILLING
UPJ0604	20	120	6400	800~1000	6	3~5	側銑 SIDE MILLING
UPJ0804	25	120	4750	1800~2000	0~0.5	8	溝銑 SLOTTING
UPJ0804	25	120	4750	1200~1400	0.5~1.8	8	溝銑 SLOTTING
UPJ0804	25	120	4750	900~1100	2~4	8	溝銑 SLOTTING
UPJ0804	25	120	4750	700~900	4~8	8	溝銑 SLOTTING
UPJ0804	25	120	4750	1600~1800	8~16	0~0.5	側銑 SIDE MILLING
UPJ0804	25	120	4750	1200~1400	8	0.5~2	側銑 SIDE MILLING
UPJ0804	25	120	4750	1000~1200	8	3~4	側銑 SIDE MILLING
UPJ0804	25	120	4750	700~900	16	3~4	側銑 SIDE MILLING
UPJ0804	25	120	4750	700~800	8	4~7	側銑 SIDE MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

（麻田散鐵,析出硬化）系不銹鋼
Stainless Steels [Difficult] : **SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPJ1004	30	125	4000	1500~1700	0~0.6	10	溝銑 SLOTTING
UPJ1004	30	125	4000	800~1000	0.6~2	10	溝銑 SLOTTING
UPJ1004	30	125	4000	600~800	3~5	10	溝銑 SLOTTING
UPJ1004	30	125	4000	500~700	5~10	10	溝銑 SLOTTING
UPJ1004	30	125	4000	1500~1800	10~20	0~0.5	側銑 SIDE MILLING
UPJ1004	30	125	4000	900~1100	10	0.5~2	側銑 SIDE MILLING
UPJ1004	30	125	4000	800~1000	10	3.6~5	側銑 SIDE MILLING
UPJ1004	30	125	4000	600~800	20	3.6~5	側銑 SIDE MILLING
UPJ1004	30	125	4000	500~700	10	5~8.7	側銑 SIDE MILLING
UPJ1204	34	120	3200	1600~1800	0~0.6	12	溝銑 SLOTTING
UPJ1204	34	120	3200	1000~1200	0.6~2	12	溝銑 SLOTTING
UPJ1204	34	120	3200	500~700	2~3	12	溝銑 SLOTTING
UPJ1204	34	120	3200	400~600	3~6	12	溝銑 SLOTTING
UPJ1204	34	120	3200	1400~1600	12~24	0~0.6	側銑 SIDE MILLING
UPJ1204	34	120	3200	900~1100	12	0.6~2	側銑 SIDE MILLING
UPJ1204	34	120	3200	700~900	12	2~3	側銑 SIDE MILLING
UPJ1204	34	120	3200	600~800	24	2~3	側銑 SIDE MILLING
UPJ1204	34	120	3200	500~700	12	3~6	側銑 SIDE MILLING
UPJ1604	50	120	2400	1200~1400	0~0.7	16	溝銑 SLOTTING
UPJ1604	50	120	2400	700~900	0.7~2	16	溝銑 SLOTTING
UPJ1604	50	120	2400	400~600	2~3	16	溝銑 SLOTTING
UPJ1604	50	120	2400	300~500	3~7	16	溝銑 SLOTTING
UPJ1604	50	120	2400	1100~1300	16~32	0~0.7	側銑 SIDE MILLING
UPJ1604	50	120	2400	600~800	16	0.7~2	側銑 SIDE MILLING
UPJ1604	50	120	2400	500~700	16	2~3	側銑 SIDE MILLING
UPJ1604	50	120	2400	400~600	32	2~3	側銑 SIDE MILLING
UPJ1604	50	120	2400	300~500	16	3~7	側銑 SIDE MILLING
UPJ2004	55	120	1900	900~1200	0~0.7	20	溝銑 SLOTTING
UPJ2004	55	120	1900	550~750	0.7~2	20	溝銑 SLOTTING
UPJ2004	55	120	1900	400~600	2~3	20	溝銑 SLOTTING
UPJ2004	55	120	1900	250~450	3~7	20	溝銑 SLOTTING
UPJ2004	55	120	1900	800~1100	20~40	0~0.7	側銑 SIDE MILLING
UPJ2004	55	120	1900	500~700	20	0.7~2	側銑 SIDE MILLING
UPJ2004	55	120	1900	350~550	20	2~3	側銑 SIDE MILLING
UPJ2004	55	120	1900	250~450	40	2~3	側銑 SIDE MILLING
UPJ2004	55	120	1900	200~400	20	3~7	側銑 SIDE MILLING

附 註

1. **UPZ**適用於粗、精銑加工，溝銑(Aa)與側銑(Ap)都有1.0D切削能力。0.5D以上切削時，請用濕式高壓水溶性切削液，以免造成排屑不良。直徑Ø10以上，需視機器剛性與主軸扭力值的不同，而做適當調整。(BT40/SK40主軸需調降)。
2. 建議冷卻方式為濕式。

NOTE

1. UPJ is good at Roughing and Finishing. It can do a 1.0D machining for both Slotting (Aa) and Sidemilling (Ap). When it is above 0.5D machining, we suggest high pressure emulsion coolant for better chip removal. For diameter above 10.0mm, make necessary adjustment as per the rigidity of machine and the torque of spindle. (Lower BT40/SK40 spindle)
2. Suggest to use wet coolant.

Standard

VTB

難切削材用立銑刀
END MILLS

乾式切削 Dry Machining			
油霧切削 MQL (Mist)		精銑 Finishing	
水溶性切削 Emulsion Machining		中銑 Semi-finishing	
油性切削 Oil Machining		----	粗銑 Roughing

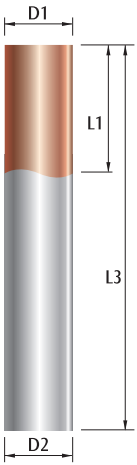
Super MG | 0.4 μm | 45° | 6 Flutes | HRc ▶60 | G10

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
VTB0606	6.0	16	50	6
VTB0806	8.0	20	60	8
VTB1006	10.0	25	75	10
VTB1206	12.0	30	75	12
VTB1606	16.0	40	100	16

unit : mm





公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance	柄徑 D2	柄徑公差值 D2 Tolerance
6.0	$^{0}_{-0.02}$	Ø6	$^{0}_{-0.008}$
8.0	$^{0}_{-0.025}$	Ø8	$^{0}_{-0.009}$
10.0	$^{0}_{-0.03}$	Ø10	$^{0}_{-0.009}$
12.0	$^{0}_{-0.035}$	Ø12	$^{0}_{-0.011}$
16.0	$^{0}_{-0.04}$	Ø16	$^{0}_{-0.011}$

unit : mm

VTB

切削條件表 MILLING CONDITIONS

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
VTB0606	20	155	8200	1000~1300	0.05~0.12	4	面銑 SURFACE MILLING
VTB0606	20	115	6100	1600~2000	0.12~0.25	4~6	溝銑 SLOTTING
VTB0606	20	85	4500~4800	650~850	6~12	0.05~0.12	側銑 SIDE MILLING
VTB0606	20	85	4500~4800	1400~1800	6~12	0.12~0.3	側銑 SIDE MILLING
VTB0806	25	155	6200	900~1200	0.05~0.15	6	面銑 SURFACE MILLING
VTB0806	25	115	4600	1800~2200	0.15~0.3	6~8	溝銑 SLOTTING
VTB0806	25	80	3000~3200	650~850	8~16	0.05~0.15	側銑 SIDE MILLING
VTB0806	25	80	3000~3200	1800~2200	8~16	0.2~0.4	側銑 SIDE MILLING
VTB1006	28	155	4950	900~1200	0.05~0.15	8	面銑 SURFACE MILLING
VTB1006	28	115	3600	1600~2000	0.15~0.3	8~10	溝銑 SLOTTING
VTB1006	28	85	2700~2900	700~900	10~20	0.05~0.2	側銑 SIDE MILLING
VTB1006	28	85	2700~2900	1600~2000	10~20	0.2~0.45	側銑 SIDE MILLING
VTB1206	35	155	4200	900~1200	0.05~0.15	10	面銑 SURFACE MILLING
VTB1206	35	115	3000	1400~1800	0.15~0.3	10~12	溝銑 SLOTTING
VTB1206	35	85	2200~2400	700~900	12~24	0.05~0.2	側銑 SIDE MILLING
VTB1206	35	85	2200~2400	1400~1800	12~24	0.2~0.45	側銑 SIDE MILLING
VTB1606	50	155	3000	700~900	0.05~0.2	14	面銑 SURFACE MILLING
VTB1606	50	115	2250	800~1100	0.2~0.4	14~16	溝銑 SLOTTING
VTB1606	50	85	1600~1800	600~700	16~32	0.05~0.2	側銑 SIDE MILLING
VTB1606	50	85	1600~1800	800~1100	16~32	0.2~0.4	側銑 SIDE MILLING

附 註

1. **VTB**適用於中精加工，禁止粗加工。
2. 建議冷卻方式為濕式。

NOTE

1. **VTB** is designed for both Semi-finishing and Finishing. Do not apply it for Roughing.
2. Suggest to use wet coolant.

Standard

RTB

超微粒圓鼻角立銑刀
END MILLS

Super MG | 0.4 μm | 45° | R | 4 Flutes | HRc ▶60 | G10

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining
精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

Stainless Steel Cutting

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
RTB0305	3.0	0.5	8	50	3
RTB0405	4.0	0.5	10	50	4
RTB0505	5.0	0.5	13	50	6
RTB0510	5.0	1.0	13	50	6
RTB0605	6.0	0.5	16	50	6
RTB0610	6.0	1.0	16	50	6
RTB0805	8.0	0.5	20	60	8
RTB0810	8.0	1.0	20	60	8
RTB1005Z	10.0	0.5	25	75	10
RTB1005	10.0	0.5	30	75	10
RTB1010Z	10.0	1.0	25	75	10
RTB1010	10.0	1.0	30	75	10
RTB1020Z	10.0	2.0	25	75	10
RTB1020	10.0	2.0	30	75	10
RTB1030Z	10.0	3.0	25	75	10
RTB1030	10.0	3.0	30	75	10
RTB1210	12.0	1.0	30	75	12
RTB1220	12.0	2.0	30	75	12
RTB1230	12.0	3.0	30	75	12

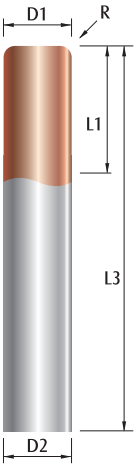
unit : mm

公差表 TOLERANCE

直徑 D1	R徑公差值 R Tolerance	直徑公差值 D1 Tolerance
3.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
4.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
5.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
6.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
8.0	$^{+0.02}_{0}$	$^{0}_{-0.025}$
10.0	$^{+0.02}_{0}$	$^{0}_{-0.03}$
12.0	$^{+0.02}_{0}$	$^{0}_{-0.035}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø3	$^{0}_{-0.006}$
Ø4	$^{0}_{-0.008}$
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$

unit : mm





RTB

切削條件表 MILLING CONDITIONS

被切削材 Work Material

沃斯田鐵系不銹鋼
Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTB0305	18	130	13500	1000~1300	0.05~0.1	1.8	面銑 SURFACE MILLING
RTB0305	18	115	12000	1600~2000	0.1~0.2	1.8~3	溝銑 SLOTTING
RTB0305	18	100	10400~10700	700~900	3~6	0.05~0.1	側銑 SIDE MILLING
RTB0305	18	85	8900~9200	1600~2000	3~6	0.1~0.2	側銑 SIDE MILLING
RTB0305	18	180	18000	1800~2200	0.05~0.1	0.12~0.16	3D銑 3D MILLING
RTB0405	18	130	10300	1000~1300	0.05~0.1	2.8	面銑 SURFACE MILLING
RTB0405	18	115	9100	1600~2000	0.1~0.2	2.8~4	溝銑 SLOTTING
RTB0405	18	100	7800~8100	700~900	4~8	0.05~0.12	側銑 SIDE MILLING
RTB0405	18	85	6600~6900	1600~2000	4~8	0.12~0.22	側銑 SIDE MILLING
RTB0405	18	180	14000	1800~2200	0.05~0.1	0.13~0.18	3D銑 3D MILLING
RTB0505	18	130	8200	1000~1300	0.05~0.12	3.8	面銑 SURFACE MILLING
RTB0505	18	115	7300	1600~2000	0.12~0.25	3.8~5	溝銑 SLOTTING
RTB0505	18	100	6200~6500	700~900	5~10	0.05~0.12	側銑 SIDE MILLING
RTB0505	18	85	5300~5600	1600~2000	5~10	0.12~0.25	側銑 SIDE MILLING
RTB0505	18	180	11000	1800~2200	0.05~0.12	0.15~0.2	3D銑 3D MILLING
RTB0510	18	130	8200	1000~1300	0.05~0.12	3.8	面銑 SURFACE MILLING
RTB0510	18	115	7300	1600~2000	0.12~0.25	3.8~5	溝銑 SLOTTING
RTB0510	18	100	6200~6500	700~900	5~10	0.05~0.12	側銑 SIDE MILLING
RTB0510	18	85	5300~5600	1600~2000	5~10	0.12~0.25	側銑 SIDE MILLING
RTB0510	18	180	11000	1800~2200	0.05~0.12	0.15~0.2	3D銑 3D MILLING
RTB0605	20	130	6900	1000~1300	0.05~0.12	4.5	面銑 SURFACE MILLING
RTB0605	20	115	6600	1600~2000	0.12~0.3	4~6	溝銑 SLOTTING
RTB0605	20	100	5200~5400	700~900	6~12	0.05~0.12	側銑 SIDE MILLING
RTB0605	20	85	4500~4800	1600~2000	6~12	0.12~0.3	側銑 SIDE MILLING
RTB0605	20	180	9500	1800~2200	0.05~0.12	0.15~0.2	3D銑 3D MILLING
RTB0610	20	130	6900	1000~1300	0.05~0.12	3.5	面銑 SURFACE MILLING
RTB0610	20	115	6600	1600~2000	0.12~0.3	4~6	溝銑 SLOTTING
RTB0610	20	100	5200~5400	700~900	6~12	0.05~0.12	側銑 SIDE MILLING
RTB0610	20	85	4500~4800	1600~2000	6~12	0.12~0.3	側銑 SIDE MILLING
RTB0610	20	180	9500	1800~2200	0.05~0.12	0.15~0.2	3D銑 3D MILLING
RTB0805	25	125	5000	900~1200	0.05~0.15	6.5	面銑 SURFACE MILLING
RTB0805	25	125	5000	1800~2200	0.15~0.3	6~8	溝銑 SLOTTING
RTB0805	25	100	3800~4000	700~900	8~16	0.05~0.15	側銑 SIDE MILLING
RTB0805	25	90	3600~3800	1600~2000	8~16	0.2~0.4	側銑 SIDE MILLING
RTB0805	25	180	7200	1600~2000	0.05~0.12	0.15~0.2	3D銑 3D MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTB0810	25	125	5000	900~1200	0.05~0.15	5.5	面銑 SURFACE MILLING
RTB0810	25	125	5000	1800~2200	0.15~0.3	5.5~8	溝銑 SLOTTING
RTB0810	25	100	3800~4000	700~900	8~16	0.05~0.15	側銑 SIDE MILLING
RTB0810	25	90	3600~3800	1600~2000	8~16	0.2~0.4	側銑 SIDE MILLING
RTB0810	25	180	7200	1600~2000	0.05~0.12	0.15~0.2	3D銑 3D MILLING
RTB1005Z	28	125	4000	900~1200	0.05~0.15	8	面銑 SURFACE MILLING
RTB1005Z	28	125	4000	1400~1600	0.25~0.35	8~10	溝銑 SLOTTING
RTB1005Z	28	105	3000~3200	600~800	10~20	0.05~0.2	側銑 SIDE MILLING
RTB1005Z	28	90	2800~3000	1600~2000	10~20	0.2~0.4	側銑 SIDE MILLING
RTB1005Z	28	185	6000	1500~1800	0.05~0.12	0.15~0.2	3D銑 3D MILLING
RTB1005	33	125	4000	900~1200	0.05~0.15	8	面銑 SURFACE MILLING
RTB1005	33	125	4000	1400~1600	0.25~0.35	8~10	溝銑 SLOTTING
RTB1005	33	105	3000~3200	600~800	10~20	0.05~0.2	側銑 SIDE MILLING
RTB1005	33	90	2800~3000	1600~2000	10~20	0.2~0.4	側銑 SIDE MILLING
RTB1005	33	185	6000	1500~1800	0.05~0.12	0.15~0.2	3D銑 3D MILLING
RTB1010Z	28	125	4000	900~1200	0.05~0.15	7.5	面銑 SURFACE MILLING
RTB1010Z	28	125	4000	1400~1600	0.25~0.35	7.5~10	溝銑 SLOTTING
RTB1010Z	28	105	3000~3200	600~800	10~20	0.05~0.2	側銑 SIDE MILLING
RTB1010Z	28	90	2800~3000	1600~2000	10~20	0.2~0.4	側銑 SIDE MILLING
RTB1010Z	28	185	6000	1500~1800	0.05~0.12	0.15~0.2	3D銑 3D MILLING
RTB1010	33	125	4000	900~1200	0.05~0.15	7.5	面銑 SURFACE MILLING
RTB1010	33	125	4000	1400~1600	0.25~0.35	7.5~10	溝銑 SLOTTING
RTB1010	33	105	3000~3200	600~800	10~20	0.05~0.2	側銑 SIDE MILLING
RTB1010	33	90	2800~3000	1600~2000	10~20	0.2~0.4	側銑 SIDE MILLING
RTB1010	33	185	6000	1500~1800	0.05~0.12	0.15~0.2	3D銑 3D MILLING
RTB1020Z	28	125	4000	900~1200	0.05~0.15	5.5	面銑 SURFACE MILLING
RTB1020Z	28	125	4000	1400~1600	0.25~0.35	5.5~10	溝銑 SLOTTING
RTB1020Z	28	105	3000~3200	600~800	10~20	0.05~0.2	側銑 SIDE MILLING
RTB1020Z	28	90	2800~3000	1600~2000	10~20	0.2~0.4	側銑 SIDE MILLING
RTB1020Z	28	185	6000	1500~1800	0.05~0.12	0.15~0.2	3D銑 3D MILLING
RTB1020	33	125	4000	900~1200	0.05~0.15	5.5	面銑 SURFACE MILLING
RTB1020	33	125	4000	1400~1600	0.25~0.35	5.5~10	溝銑 SLOTTING
RTB1020	33	105	3000~3200	600~800	10~20	0.05~0.2	側銑 SIDE MILLING
RTB1020	33	90	2800~3000	1600~2000	10~20	0.2~0.4	側銑 SIDE MILLING
RTB1020	33	185	6000	1500~1800	0.05~0.12	0.15~0.2	3D銑 3D MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

沃斯田鐵系不銹鋼
Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
RTB1030Z	28	125	4000	900~1200	0.05~0.15	3.5	面銑 SURFACE MILLING
RTB1030Z	28	125	4000	1400~1600	0.25~0.35	3.5~10	溝銑 SLOTTING
RTB1030Z	28	105	3000~3200	600~800	10~20	0.05~0.2	側銑 SIDE MILLING
RTB1030Z	28	90	2800~3000	1600~2000	10~20	0.2~0.4	側銑 SIDE MILLING
RTB1030Z	28	185	6000	1500~1800	0.05~0.12	0.15~0.2	3D銑 3D MILLING
RTB1030	33	125	4000	900~1200	0.05~0.15	3.5	面銑 SURFACE MILLING
RTB1030	33	125	4000	1400~1600	0.25~0.35	3.5~10	溝銑 SLOTTING
RTB1030	33	105	3000~3200	600~800	10~20	0.05~0.2	側銑 SIDE MILLING
RTB1030	33	90	2800~3000	1600~2000	10~20	0.2~0.4	側銑 SIDE MILLING
RTB1030	33	185	6000	1500~1800	0.05~0.12	0.15~0.2	3D銑 3D MILLING
RTB1210	35	125	3300	800~1100	0.05~0.15	9.5	面銑 SURFACE MILLING
RTB1210	35	115	3000	1400~1600	0.15~0.3	9~12	溝銑 SLOTTING
RTB1210	35	100	2500~2700	500~700	12~24	0.05~0.2	側銑 SIDE MILLING
RTB1210	35	90	2200~2400	1400~1600	12~24	0.2~0.45	側銑 SIDE MILLING
RTB1210	35	185	4900	1400~1700	0.05~0.15	0.15~0.2	3D銑 3D MILLING
RTB1220	35	125	3300	800~1100	0.05~0.15	7.5	面銑 SURFACE MILLING
RTB1220	35	115	3000	1400~1600	0.15~0.3	7.5~12	溝銑 SLOTTING
RTB1220	35	100	2500~2700	500~700	12~24	0.05~0.2	側銑 SIDE MILLING
RTB1220	35	90	2200~2400	1400~1600	12~24	0.2~0.45	側銑 SIDE MILLING
RTB1220	35	185	4900	1400~1700	0.05~0.15	0.15~0.2	3D銑 3D MILLING
RTB1230	35	125	3300	800~1100	0.05~0.15	5.5	面銑 SURFACE MILLING
RTB1230	35	115	3000	1400~1600	0.15~0.3	5.5~12	溝銑 SLOTTING
RTB1230	35	100	2500~2700	500~700	12~24	0.05~0.2	側銑 SIDE MILLING
RTB1230	35	90	2200~2400	1400~1600	12~24	0.2~0.45	側銑 SIDE MILLING
RTB1230	35	185	4900	1400~1700	0.05~0.15	0.15~0.2	3D銑 3D MILLING

附 註

1. **RTB**適用於中精加工及3D銑削加工。
2. 建議冷卻方式為濕式。

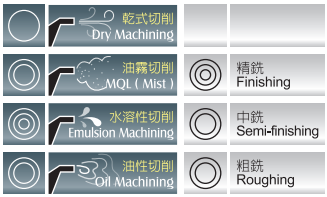
NOTE

1. **RTB** is good at Semi-finishing, Finishing and 3D milling.
2. Suggest to use wet coolant.

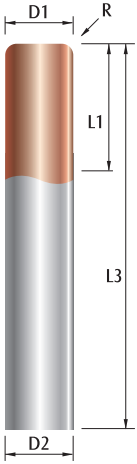
Titanium Cutting

UTHR

鈦滿意圓鼻角立銑刀
END MILLS







Stainless Steel Cutting

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UTHR0305	3.0	0.5	8	50	6
UTHR0405	4.0	0.5	10	50	6
UTHR0405S	4.0	0.5	10	50	4
UTHR0505	5.0	0.5	13	50	6
UTHR0605	6.0	0.5	16	50	6
UTHR0610	6.0	1.0	16	50	6
UTHR0805	8.0	0.5	20	60	8
UTHR0810	8.0	1.0	20	60	8
UTHR1005	10.0	0.5	25	75	10
UTHR1010	10.0	1.0	25	75	10
UTHR1020	10.0	2.0	25	75	10
UTHR1030	10.0	3.0	25	75	10
UTHR1210	12.0	1.0	30	75	12
UTHR1220	12.0	2.0	30	75	12
UTHR1230	12.0	3.0	30	75	12
UTHR1610	16.0	1.0	40	100	16
UTHR1620	16.0	2.0	40	100	16
UTHR1630	16.0	3.0	40	100	16
UTHR2010	20.0	1.0	45	100	20
UTHR2020	20.0	2.0	45	100	20
UTHR2030	20.0	3.0	45	100	20

unit : mm

公差表 TOLERANCE

直徑 D1	R徑公差值 R Tolerance	直徑公差值 D1 Tolerance
3.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
4.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
5.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
6.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
8.0	$^{+0.02}_{0}$	$^{0}_{-0.025}$
10.0	$^{+0.02}_{0}$	$^{0}_{-0.03}$
12.0	$^{+0.02}_{0}$	$^{0}_{-0.035}$
16.0	$^{+0.02}_{0}$	$^{0}_{-0.04}$
20.0	$^{+0.02}_{0}$	$^{0}_{-0.04}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$
Ø20	$^{0}_{-0.013}$

unit : mm

UTHR

切削條件表 MILLING CONDITIONS

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UTHR0305	13	120	12500~13000	1600~2000	0~0.25	3	溝銑 SLOTTING
UTHR0305	13	120	12500~13000	800~1200	0.25~0.6	3	溝銑 SLOTTING
UTHR0305	13	120	12500~13000	300~500	0.8~1.5	3	溝銑 SLOTTING
UTHR0305	13	120	12500~13000	250~350	2~2.5	3	溝銑 SLOTTING
UTHR0305	13	155	16000~16500	1400~1800	3~6	0~0.25	側銑 SIDE MILLING
UTHR0305	13	105	11000~11500	500~700	3	0.25~0.6	側銑 SIDE MILLING
UTHR0305	13	105	11000~11500	300~450	3	0.8~1.5	側銑 SIDE MILLING
UTHR0305	13	105	11000~11500	200~300	3	2~2.5	側銑 SIDE MILLING
UTHR0305	13	105	11000~11500	700~900	3~6	0~0.1	側銑 SIDE MILLING
UTHR0405	16	120	9300~9800	2000~2400	0~0.3	4	溝銑 SLOTTING
UTHR0405	16	120	9300~9800	900~1200	0.3~0.7	4	溝銑 SLOTTING
UTHR0405	16	120	9300~9800	600~750	1~2	4	溝銑 SLOTTING
UTHR0405	16	120	9300~9800	400~550	3~4	4	溝銑 SLOTTING
UTHR0405	16	155	12000~12500	1600~1800	4~8	0~0.3	側銑 SIDE MILLING
UTHR0405	16	105	8000~8500	800~1000	4	0.3~1	側銑 SIDE MILLING
UTHR0405	16	105	8000~8500	500~700	4	1~2	側銑 SIDE MILLING
UTHR0405	16	105	8000~8500	400~600	4	3~4	側銑 SIDE MILLING
UTHR0405	16	105	8000~8500	700~900	4~8	0~0.13	側銑 SIDE MILLING
UTHR0505	18	120	7500~7800	2000~2400	0~0.35	5	溝銑 SLOTTING
UTHR0505	18	120	7500~7800	900~1200	0.35~0.8	5	溝銑 SLOTTING
UTHR0505	18	120	7500~7800	600~750	1.5~2.5	5	溝銑 SLOTTING
UTHR0505	18	120	7500~7800	400~550	3~5	5	溝銑 SLOTTING
UTHR0505	18	155	9600~10000	1600~1800	5~10	0~0.35	側銑 SIDE MILLING
UTHR0505	18	105	6500~6800	800~1000	5	0~1	側銑 SIDE MILLING
UTHR0505	18	105	6500~6800	500~700	5	2.5	側銑 SIDE MILLING
UTHR0505	18	105	6500~6800	400~600	5	4	側銑 SIDE MILLING
UTHR0505	18	105	6500~6800	700~900	5~10	0~0.15	側銑 SIDE MILLING
UTHR0605	20	120	6300~6600	1800~2200	0~0.4	6	溝銑 SLOTTING
UTHR0605	20	120	6300~6600	900~1200	0.4~1	6	溝銑 SLOTTING
UTHR0605	20	120	6300~6600	600~800	2~3	6	溝銑 SLOTTING
UTHR0605	20	120	6300~6600	450~600	5~6	6	溝銑 SLOTTING
UTHR0605	20	155	7800~8200	1600~1800	6~12	0~0.4	側銑 SIDE MILLING
UTHR0605	20	105	5600~5800	700~900	6	1.2	側銑 SIDE MILLING
UTHR0605	20	105	5600~5800	500~700	6	3	側銑 SIDE MILLING
UTHR0605	20	105	5600~5800	500~650	6	5	側銑 SIDE MILLING
UTHR0605	20	105	5600~5800	700~900	6~12	0~0.2	側銑 SIDE MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

沃斯田鐵系不銹鋼
Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UTHR0610	20	120	6300~6600	1800~2200	0~0.4	6	溝銑 SLOTTING
UTHR0610	20	120	6300~6600	800~1000	0.4~1	6	溝銑 SLOTTING
UTHR0610	20	120	6300~6600	500~650	2~3	6	溝銑 SLOTTING
UTHR0610	20	120	6300~6600	350~500	5~6	6	溝銑 SLOTTING
UTHR0610	20	155	7800~8200	1600~1800	6~12	0~0.4	側銑 SIDE MILLING
UTHR0610	20	105	5600~5800	700~900	6	1.2	側銑 SIDE MILLING
UTHR0610	20	105	5600~5800	500~700	6	3	側銑 SIDE MILLING
UTHR0610	20	105	5600~5800	500~650	6	5	側銑 SIDE MILLING
UTHR0610	20	105	5600~5800	700~900	6~12	0~0.2	側銑 SIDE MILLING
UTHR0805	24	120	4700~5000	1500~1800	0~0.5	8	溝銑 SLOTTING
UTHR0805	24	115	4400~4700	1100~1400	0.5~1	8	溝銑 SLOTTING
UTHR0805	24	115	4400~4700	600~800	3~4	8	溝銑 SLOTTING
UTHR0805	24	115	4400~4700	550~750	4~8	8	溝銑 SLOTTING
UTHR0805	24	155	6200~6400	1000~1200	8~16	0~0.5	側銑 SIDE MILLING
UTHR0805	24	85	3200~3500	700~900	8~16	0.5~1.5	側銑 SIDE MILLING
UTHR0805	24	110	4300~4600	700~900	8	3~4	側銑 SIDE MILLING
UTHR0805	24	110	4300~4600	600~800	8	6~7	側銑 SIDE MILLING
UTHR0805	24	90	3300~3500	700~900	8~16	0~0.2	側銑 SIDE MILLING
UTHR0810	24	120	4700~5000	1500~1800	0~0.5	8	溝銑 SLOTTING
UTHR0810	24	115	4400~4700	900~1300	0.5~1	8	溝銑 SLOTTING
UTHR0810	24	115	4400~4700	500~700	3~4	8	溝銑 SLOTTING
UTHR0810	24	115	4400~4700	450~600	4~8	8	溝銑 SLOTTING
UTHR0810	24	155	6200~6400	1000~1200	8~16	0~0.5	側銑 SIDE MILLING
UTHR0810	24	85	3200~3500	700~900	8~16	0.5~1.5	側銑 SIDE MILLING
UTHR0810	24	110	4300~4600	600~750	8	3~4	側銑 SIDE MILLING
UTHR0810	24	110	4300~4600	500~650	8	6~7	側銑 SIDE MILLING
UTHR0810	24	90	3300~3500	700~900	8~16	0~0.2	側銑 SIDE MILLING
UTHR1005	30	115	3800~4000	1300~1500	0~0.5	10	溝銑 SLOTTING
UTHR1005	30	115	3800~4000	700~800	0.5~1	10	溝銑 SLOTTING
UTHR1005	30	110	3300~3600	400~600	3~5	10	溝銑 SLOTTING
UTHR1005	30	110	3300~3600	350~450	10	10	溝銑 SLOTTING
UTHR1005	30	150	4700~5000	1300~1500	10~20	0~0.5	側銑 SIDE MILLING
UTHR1005	30	90	2800~3100	300~400	10~20	2	側銑 SIDE MILLING
UTHR1005	30	110	3300~3600	400~600	10	3.6~5	側銑 SIDE MILLING
UTHR1005	30	110	3300~3600	400~550	10	7~8	側銑 SIDE MILLING
UTHR1005	30	90	2800~3000	500~700	10~20	0~0.25	側銑 SIDE MILLING

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

切削條件表 *MILLING CONDITIONS*

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UTHR1010	30	115	3800~4000	1300~1500	0~0.5	10	溝銑 SLOTTING
UTHR1010	30	115	3800~4000	700~800	0.5~1	10	溝銑 SLOTTING
UTHR1010	30	110	3300~3600	400~600	3~5	10	溝銑 SLOTTING
UTHR1010	30	110	3300~3600	350~450	10	10	溝銑 SLOTTING
UTHR1010	30	150	4700~5000	1300~1500	10~20	0~0.5	側銑 SIDE MILLING
UTHR1010	30	90	2800~3100	300~400	10~20	2	側銑 SIDE MILLING
UTHR1010	30	110	3300~3600	400~600	10	3.6~5	側銑 SIDE MILLING
UTHR1010	30	110	3300~3600	400~550	10	7~8	側銑 SIDE MILLING
UTHR1010	30	90	2800~3000	500~700	10~20	0~0.25	側銑 SIDE MILLING
UTHR1020	30	115	3800~4000	1100~1300	0~0.5	10	溝銑 SLOTTING
UTHR1020	30	115	3800~4000	600~700	0.5~1	10	溝銑 SLOTTING
UTHR1020	30	110	3300~3600	300~500	3~5	10	溝銑 SLOTTING
UTHR1020	30	110	3300~3600	250~350	10	10	溝銑 SLOTTING
UTHR1020	30	150	4700~5000	1200~1400	10~20	0~0.5	側銑 SIDE MILLING
UTHR1020	30	90	2800~3100	300~400	10~20	2	側銑 SIDE MILLING
UTHR1020	30	110	3300~3600	300~500	10	3.6~5	側銑 SIDE MILLING
UTHR1020	30	110	3300~3600	300~450	10	7~8	側銑 SIDE MILLING
UTHR1020	30	90	2800~3000	500~700	10~20	0~0.25	側銑 SIDE MILLING
UTHR1210	33	115	3000~3200	1000~1300	0~0.6	12	溝銑 SLOTTING
UTHR1210	33	110	2800~3000	800~1000	0.6~1.2	12	溝銑 SLOTTING
UTHR1210	33	110	2800~3000	300~500	4~6	12	溝銑 SLOTTING
UTHR1210	33	110	2800~3000	250~400	6~8	12	溝銑 SLOTTING
UTHR1210	33	150	3800~4000	900~1100	12~24	0~0.6	側銑 SIDE MILLING
UTHR1210	33	90	2300~2600	300~400	12	2	側銑 SIDE MILLING
UTHR1210	33	110	2800~3000	300~400	12	4~6	側銑 SIDE MILLING
UTHR1210	33	110	2800~3000	250~350	12	6~8	側銑 SIDE MILLING
UTHR1210	33	90	2300~2600	450~650	12~24	0~0.25	側銑 SIDE MILLING
UTHR1220	33	115	3000~3200	900~1200	0~0.6	12	溝銑 SLOTTING
UTHR1220	33	110	2800~3000	700~900	0.6~1.2	12	溝銑 SLOTTING
UTHR1220	33	110	2800~3000	300~500	4~6	12	溝銑 SLOTTING
UTHR1220	33	110	2800~3000	250~400	6~8	12	溝銑 SLOTTING
UTHR1220	33	150	3800~4000	900~1100	12~24	0~0.6	側銑 SIDE MILLING
UTHR1220	33	90	2300~2600	300~400	12	2	側銑 SIDE MILLING
UTHR1220	33	110	2800~3000	300~400	12	4~6	側銑 SIDE MILLING
UTHR1220	33	110	2800~3000	250~350	12	6~8	側銑 SIDE MILLING
UTHR1220	33	90	2300~2600	450~650	12~24	0~0.25	側銑 SIDE MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

沃斯田鐵系不銹鋼
Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UTHR1230	33	115	3000~3200	900~1200	0~0.6	12	溝銑 SLOTTING
UTHR1230	33	110	2800~3000	700~900	0.6~1.2	12	溝銑 SLOTTING
UTHR1230	33	110	2800~3000	300~500	4~6	12	溝銑 SLOTTING
UTHR1230	33	110	2800~3000	250~400	6~8	12	溝銑 SLOTTING
UTHR1230	33	150	3800~4000	900~1100	12~24	0~0.6	側銑 SIDE MILLING
UTHR1230	33	90	2300~2600	300~400	12	2	側銑 SIDE MILLING
UTHR1230	33	110	2800~3000	300~400	12	4~6	側銑 SIDE MILLING
UTHR1230	33	110	2800~3000	250~350	12	6~8	側銑 SIDE MILLING
UTHR1230	33	90	2300~2600	450~650	12~24	0~0.25	側銑 SIDE MILLING
UTHR1610	43	115	2200~2400	800~1100	0~0.7	16	溝銑 SLOTTING
UTHR1610	43	110	2100~2300	600~800	2	16	溝銑 SLOTTING
UTHR1610	43	110	2100~2300	300~400	3~4	16	溝銑 SLOTTING
UTHR1610	43	110	2100~2300	200~300	6~8	16	溝銑 SLOTTING
UTHR1610	43	150	2800~3200	800~1000	16~32	0~0.7	側銑 SIDE MILLING
UTHR1610	43	90	1700~1900	300~400	16	2	側銑 SIDE MILLING
UTHR1610	43	110	2100~2300	250~400	16	3~4	側銑 SIDE MILLING
UTHR1610	43	110	2100~2300	200~350	16	6~8	側銑 SIDE MILLING
UTHR1610	43	90	1700~1900	350~550	16~32	0~0.3	側銑 SIDE MILLING
UTHR1620	43	115	2200~2400	700~1000	0~0.7	16	溝銑 SLOTTING
UTHR1620	43	110	2100~2300	500~650	2	16	溝銑 SLOTTING
UTHR1620	43	110	2100~2300	300~400	3~4	16	溝銑 SLOTTING
UTHR1620	43	110	2100~2300	200~300	5~6	16	溝銑 SLOTTING
UTHR1620	43	150	2800~3200	800~1000	16~32	0~0.7	側銑 SIDE MILLING
UTHR1620	43	90	1700~1900	300~400	16	2	側銑 SIDE MILLING
UTHR1620	43	110	2100~2300	250~400	16	3~4	側銑 SIDE MILLING
UTHR1620	43	110	2100~2300	200~350	16	6~8	側銑 SIDE MILLING
UTHR1620	43	90	1700~1900	350~550	16~32	0~0.3	側銑 SIDE MILLING
UTHR1630	43	115	2200~2400	700~1000	0~0.7	16	溝銑 SLOTTING
UTHR1630	43	110	2100~2300	500~650	2	16	溝銑 SLOTTING
UTHR1630	43	110	2100~2300	300~400	3~4	16	溝銑 SLOTTING
UTHR1630	43	110	2100~2300	200~300	5~6	16	溝銑 SLOTTING
UTHR1630	43	150	2800~3200	800~1000	16~32	0~0.7	側銑 SIDE MILLING
UTHR1630	43	90	1700~1900	300~400	16	2	側銑 SIDE MILLING
UTHR1630	43	110	2100~2300	250~400	16	3~4	側銑 SIDE MILLING
UTHR1630	43	110	2100~2300	200~350	16	6~8	側銑 SIDE MILLING
UTHR1630	43	90	1700~1900	350~550	16~32	0~0.3	側銑 SIDE MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UTHR2010	47	115	1750~1950	600~800	0~0.7	20	溝銑 SLOTTING
UTHR2010	47	110	1700~1900	400~550	2	20	溝銑 SLOTTING
UTHR2010	47	110	1700~1900	200~350	3~4	20	溝銑 SLOTTING
UTHR2010	47	110	1700~1900	150~250	6~8	20	溝銑 SLOTTING
UTHR2010	47	150	2300~2500	600~800	20~40	0~0.7	側銑 SIDE MILLING
UTHR2010	47	90	1300~1500	300~400	20	2	側銑 SIDE MILLING
UTHR2010	47	110	1700~1900	250~350	20	3~4	側銑 SIDE MILLING
UTHR2010	47	110	1700~1900	200~300	20	6~8	側銑 SIDE MILLING
UTHR2010	47	90	1300~1500	200~400	20~40	0~0.3	側銑 SIDE MILLING
UTHR2020	47	115	1750~1950	600~800	0~0.7	20	溝銑 SLOTTING
UTHR2020	47	110	1700~1900	400~500	2	20	溝銑 SLOTTING
UTHR2020	47	110	1700~1900	200~300	3~4	20	溝銑 SLOTTING
UTHR2020	47	110	1700~1900	120~200	6~8	20	溝銑 SLOTTING
UTHR2020	47	150	2300~2500	600~800	20~40	0~0.7	側銑 SIDE MILLING
UTHR2020	47	90	1300~1500	300~400	20	2	側銑 SIDE MILLING
UTHR2020	47	110	1700~1900	250~300	20	3~4	側銑 SIDE MILLING
UTHR2020	47	110	1700~1900	150~!250	20	6~8	側銑 SIDE MILLING
UTHR2020	47	90	1300~1500	200~400	20~40	0~0.3	側銑 SIDE MILLING
UTHR2030	47	115	1750~1950	600~800	0~0.7	20	溝銑 SLOTTING
UTHR2030	47	110	1700~1900	400~500	2	20	溝銑 SLOTTING
UTHR2030	47	110	1700~1900	200~300	3~4	20	溝銑 SLOTTING
UTHR2030	47	110	1700~1900	120~200	6~8	20	溝銑 SLOTTING
UTHR2030	47	150	2300~2500	600~800	20~40	0~0.7	側銑 SIDE MILLING
UTHR2030	47	90	1300~1500	300~400	20	2	側銑 SIDE MILLING
UTHR2030	47	110	1700~1900	250~300	20	3~4	側銑 SIDE MILLING
UTHR2030	47	110	1700~1900	150~!250	20	6~8	側銑 SIDE MILLING
UTHR2030	47	90	1300~1500	200~400	20~40	0~0.3	側銑 SIDE MILLING

附 註

1. **UTHR**適用於粗、中、精銑加工，溝銑(Aa)與側銑(Ap)都有1.0D切削能力。粗切削時，請用濕式高壓水溶性切削液，以免造成排屑不良。直徑Ø10以上，需視機器剛性與主軸扭力值的不同，而做適當調整。
2. 建議冷卻方式為濕式。

NOTE

1. **UTHR** is good at Roughing, Semi-finishing and Finishing. It can do a 1.0D machining for both Slotting (Aa) and Side milling (Ap). When it is Roughing, we suggest high pressure emulsion coolant for better chip removal. For diameter above 10.0mm, make necessary adjustment as per the rigidity of machine and the torque of spindle.
2. Suggest to use wet coolant.

HPC

UPER

高效能圓鼻角立銑刀

END MILLS

Super MG | 0.4 µm | 35° | R | 4 Flutes | HRc ▶60 | G10

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining
精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

Stainless Steel Cutting

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UPER0405	4.0	0.5	11	50	6
UPER0502	5.0	0.2	13	50	6
UPER0505	5.0	0.5	13	50	6
UPER0605	6.0	0.5	16	50	6
UPER0610	6.0	1.0	16	50	6
UPER0805	8.0	0.5	20	60	8
UPER0810	8.0	1.0	20	60	8
UPER1005	10.0	0.5	22	75	10
UPER1010	10.0	1.0	22	75	10
UPER1020	10.0	2.0	22	75	10
UPER1210	12.0	1.0	26	75	12
UPER1220	12.0	2.0	26	75	12
UPER1610	16.0	1.0	36	100	16
UPER1620	16.0	2.0	36	100	16
UPER2010	20.0	1.0	40	100	20
UPER2020	20.0	2.0	40	100	20

unit : mm

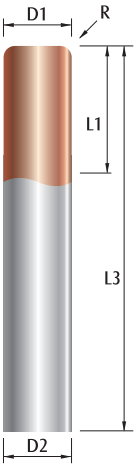


公差表 TOLERANCE

直徑 D1	R徑公差值 R Tolerance	直徑公差值 D1 Tolerance
4.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
5.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
6.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
8.0	$^{+0.02}_{0}$	$^{0}_{-0.025}$
10.0	$^{+0.02}_{0}$	$^{0}_{-0.03}$
12.0	$^{+0.02}_{0}$	$^{0}_{-0.035}$
16.0	$^{+0.02}_{0}$	$^{0}_{-0.04}$
20.0	$^{+0.02}_{0}$	$^{0}_{-0.04}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$
Ø20	$^{0}_{-0.013}$

unit : mm



UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material

沃斯田鐵系不銹鋼
Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPER0405	13	110	8800	1800~2200	0~0.25	4	溝銑 SLOTTING
UPER0405	13	110	8800	800~1100	0.25~0.4	4	溝銑 SLOTTING
UPER0405	13	110	8800	600~800	0.4~0.6	4	溝銑 SLOTTING
UPER0405	13	100	8000	1400~1800	4~8	0~0.3	側銑 SIDE MILLING
UPER0405	13	100	8000	600~850	4~8	0~0.15	側銑 SIDE MILLING
UPER0502	16	110	7000	1800~2200	0~0.3	5	溝銑 SLOTTING
UPER0502	16	110	7000	800~1100	0.3~0.5	5	溝銑 SLOTTING
UPER0502	16	110	7000	600~800	0.5~0.7	5	溝銑 SLOTTING
UPER0502	16	100	6400	1400~1800	5~10	0~0.35	側銑 SIDE MILLING
UPER0502	16	100	6400	600~850	5~10	0~0.15	側銑 SIDE MILLING
UPER0505	16	110	7000	1800~2200	0~0.3	5	溝銑 SLOTTING
UPER0505	16	110	7000	800~1100	0.3~0.5	5	溝銑 SLOTTING
UPER0505	16	110	7000	600~800	0.5~0.7	5	溝銑 SLOTTING
UPER0505	16	100	6400	1400~1800	5~10	0~0.35	側銑 SIDE MILLING
UPER0505	16	100	6400	600~850	5~10	0~0.15	側銑 SIDE MILLING
UPER0605	18	110	5850	1800~2200	0~0.3	6	溝銑 SLOTTING
UPER0605	18	110	5850	800~1100	0.3~0.6	6	溝銑 SLOTTING
UPER0605	18	110	5850	700~900	0.6~0.9	6	溝銑 SLOTTING
UPER0605	18	100	5300	1400~1800	6~12	0~0.4	側銑 SIDE MILLING
UPER0605	18	100	5300	600~850	6~12	0~0.,2	側銑 SIDE MILLING
UPER0610	18	110	5850	1800~2200	0~0.3	6	溝銑 SLOTTING
UPER0610	18	110	5850	800~1100	0.3~0.6	6	溝銑 SLOTTING
UPER0610	18	110	5850	700~900	0.6~0.9	6	溝銑 SLOTTING
UPER0610	18	100	5300	1400~1800	6~12	0~0.4	側銑 SIDE MILLING
UPER0610	18	100	5300	600~850	6~12	0~0.,2	側銑 SIDE MILLING
UPER0805	22	135	5500	1800~2200	0~0.5	8	溝銑 SLOTTING
UPER0805	22	135	5500	900~1300	0.5~1	8	溝銑 SLOTTING
UPER0805	22	125	5000	700~900	1~1.5	8	溝銑 SLOTTING
UPER0805	22	135	5500	1300~1600	8~16	0~0.5	側銑 SIDE MILLING
UPER0805	22	125	5000	800~1100	8~16	0~0.25	側銑 SIDE MILLING
UPER0810	22	135	5500	1800~2200	0~0.5	8	溝銑 SLOTTING
UPER0810	22	135	5500	900~1300	0.5~1	8	溝銑 SLOTTING
UPER0810	22	125	5000	700~900	1~1.5	8	溝銑 SLOTTING
UPER0810	22	135	5500	1300~1600	8~16	0~0.5	側銑 SIDE MILLING
UPER0810	22	125	5000	800~1100	8~16	0~0.25	側銑 SIDE MILLING
UPER1005	27	130	4200	1700~2100	0~0.5	10	溝銑 SLOTTING
UPER1005	27	120	3800	900~1200	0.5~1	10	溝銑 SLOTTING
UPER1005	27	120	3800	700~900	1~1.5	10	溝銑 SLOTTING
UPER1005	27	120	3800	800~1000	10~20	0~0.6	側銑 SIDE MILLING
UPER1005	27	115	3700	800~1000	10~20	0~0.3	側銑 SIDE MILLING
UPER1010	27	130	4200	1700~2100	0~0.5	10	溝銑 SLOTTING
UPER1010	27	120	3800	900~1200	0.5~1	10	溝銑 SLOTTING
UPER1010	27	120	3800	700~900	1~1.5	10	溝銑 SLOTTING
UPER1010	27	120	3800	800~1000	10~20	0~0.6	側銑 SIDE MILLING
UPER1010	27	115	3700	800~1000	10~20	0~0.3	側銑 SIDE MILLING

切削條件表 *MILLING CONDITIONS*

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPER1020	27	130	4200	1700~2100	0~0.5	10	溝銑 SLOTTING
UPER1020	27	120	3800	900~1200	0.5~1	10	溝銑 SLOTTING
UPER1020	27	120	3800	700~900	1~1.5	10	溝銑 SLOTTING
UPER1020	27	120	3800	800~1000	10~20	0~0.6	側銑 SIDE MILLING
UPER1020	27	115	3700	800~1000	10~20	0~0.3	側銑 SIDE MILLING
UPER1210	32	130	3450	1700~2100	0~0.5	12	溝銑 SLOTTING
UPER1210	32	100	2700	900~1200	0.5~1	12	溝銑 SLOTTING
UPER1210	32	85	2200	600~900	1~1.5	12	溝銑 SLOTTING
UPER1210	32	130	3450	700~900	12~24	0~0.6	側銑 SIDE MILLING
UPER1210	32	95	2550	500~800	12~24	0~0.3	側銑 SIDE MILLING
UPER1220	32	130	3450	1700~2100	0~0.5	12	溝銑 SLOTTING
UPER1220	32	100	2700	900~1200	0.5~1	12	溝銑 SLOTTING
UPER1220	32	85	2200	600~900	1~1.5	12	溝銑 SLOTTING
UPER1220	32	130	3450	700~900	12~24	0~0.6	側銑 SIDE MILLING
UPER1220	32	95	2550	500~800	12~24	0~0.3	側銑 SIDE MILLING
UPER1610	42	130	2600	1300~1600	0~0.5	16	溝銑 SLOTTING
UPER1610	42	100	2000	700~900	0.5~1	16	溝銑 SLOTTING
UPER1610	42	85	1700	500~700	1~1.5	16	溝銑 SLOTTING
UPER1610	42	130	2600	600~800	16~32	0~0.6	側銑 SIDE MILLING
UPER1610	42	95	1900	500~650	16~32	0~0.3	側銑 SIDE MILLING
UPER1620	42	130	2600	1300~1600	0~0.5	16	溝銑 SLOTTING
UPER1620	42	100	2000	700~900	0.5~1	16	溝銑 SLOTTING
UPER1620	42	85	1700	500~700	1~1.5	16	溝銑 SLOTTING
UPER1620	42	130	2600	600~800	16~32	0~0.6	側銑 SIDE MILLING
UPER1620	42	95	1900	500~650	16~32	0~0.3	側銑 SIDE MILLING
UPER2010	48	130	2050	900~1300	0~0.5	20	溝銑 SLOTTING
UPER2010	48	100	1600	500~700	0.5~1	20	溝銑 SLOTTING
UPER2010	48	85	1350	350~550	1~1.5	20	溝銑 SLOTTING
UPER2010	48	130	2050	450~650	20~40	0~0.6	側銑 SIDE MILLING
UPER2010	48	95	1500	350~500	20~40	0~0.3	側銑 SIDE MILLING
UPER2020	48	130	2050	900~1300	0~0.5	20	溝銑 SLOTTING
UPER2020	48	100	1600	500~700	0.5~1	20	溝銑 SLOTTING
UPER2020	48	85	1350	350~550	1~1.5	20	溝銑 SLOTTING
UPER2020	48	130	2050	450~650	20~40	0~0.6	側銑 SIDE MILLING
UPER2020	48	95	1500	350~500	20~40	0~0.3	側銑 SIDE MILLING

附 註

建議冷卻方式為濕式。

NOTE

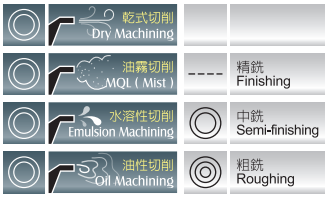
Suggest to use wet coolant.

Standard

WWA

超微粒粗齒細目立銑刀

END MILLS



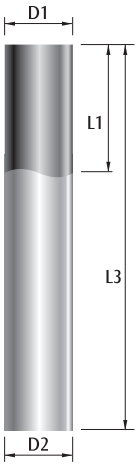




產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
WWA0604	6.0	16	50	6
WWA0804	8.0	20	60	8
WWA1004	10.0	25	75	10
WWA1204	12.0	30	75	12
WWA1404	14.0	35	100	16
WWA1604	16.0	40	100	16
WWA1804	18.0	40	100	20
WWA2004	20.0	45	100	20

unit : mm



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
6.0	$^{0}_{-0.04}$
8.0	$^{0}_{-0.04}$
10.0	$^{0}_{-0.045}$
12.0	$^{0}_{-0.045}$
14.0	$^{0}_{-0.045}$
16.0	$^{0}_{-0.05}$
18.0	$^{0}_{-0.05}$
20.0	$^{0}_{-0.05}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$
Ø20	$^{0}_{-0.013}$

unit : mm

WWA

切削條件表 MILLING CONDITIONS

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WWA0604	22	80	4200~4400	400~550	1	6	溝銑 SLOTTING
WWA0604	22	80	4200~4400	350~450	1.5	6	溝銑 SLOTTING
WWA0604	22	80	4200~4400	300~420	3	6	溝銑 SLOTTING
WWA0604	22	80	4200~4400	170~220	6	6	溝銑 SLOTTING
WWA0604	22	80	4200~4400	500~700	6	1	側銑 SIDE MILLING
WWA0604	22	80	4200~4400	450~600	6	2	側銑 SIDE MILLING
WWA0604	22	80	4200~4400	250~320	6	3	側銑 SIDE MILLING
WWA0604	22	80	4200~4400	170~220	6	5.7	側銑 SIDE MILLING
WWA0804	28	80	3200~3400	350~480	2	8	溝銑 SLOTTING
WWA0804	28	80	3200~3400	270~360	4	8	溝銑 SLOTTING
WWA0804	28	80	3200~3400	240~320	6	8	溝銑 SLOTTING
WWA0804	28	80	3200~3400	200~260	8	8	溝銑 SLOTTING
WWA0804	28	80	3200~3400	350~480	8	2	側銑 SIDE MILLING
WWA0804	28	80	3200~3400	270~360	8	4	側銑 SIDE MILLING
WWA0804	28	80	3200~3400	200~260	8	7.7	側銑 SIDE MILLING
WWA1004	32	80	2500~2700	350~500	2	10	溝銑 SLOTTING
WWA1004	32	80	2500~2700	300~400	3.5	10	溝銑 SLOTTING
WWA1004	32	80	2500~2700	250~320	5	10	溝銑 SLOTTING
WWA1004	32	80	2500~2700	200~260	10	10	溝銑 SLOTTING
WWA1004	32	80	2500~2700	350~500	10	1	側銑 SIDE MILLING
WWA1004	32	80	2500~2700	200~300	10	5	側銑 SIDE MILLING
WWA1004	32	80	2500~2700	200~260	10	9.7	側銑 SIDE MILLING
WWA1204	38	80	2000~2200	260~420	2	12	溝銑 SLOTTING
WWA1204	38	80	2000~2200	200~300	4	12	溝銑 SLOTTING
WWA1204	38	80	2000~2200	180~260	6	12	溝銑 SLOTTING
WWA1204	38	80	2000~2200	150~210	10	12	溝銑 SLOTTING
WWA1204	38	80	2000~2200	120~200	12	12	溝銑 SLOTTING
WWA1204	38	80	2000~2200	300~400	12	1	側銑 SIDE MILLING
WWA1204	38	80	2000~2200	180~260	12	6	側銑 SIDE MILLING
WWA1204	38	80	2000~2200	100~190	12	11.7	側銑 SIDE MILLING
WWA1404	42	80	1700~1900	200~360	2	14	溝銑 SLOTTING
WWA1404	42	80	1700~1900	150~250	4	14	溝銑 SLOTTING
WWA1404	42	80	1700~1900	120~200	6	14	溝銑 SLOTTING
WWA1404	42	80	1700~1900	100~150	10	14	溝銑 SLOTTING
WWA1404	42	80	1700~1900	200~300	14	1	側銑 SIDE MILLING
WWA1404	42	80	1700~1900	70~110	14	7	側銑 SIDE MILLING
WWA1404	42	80	1700~1900	70~110	7	13.7	側銑 SIDE MILLING

切削條件表 MILLING CONDITIONS

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WWA1604	47	80	1500~1700	200~280	2	16	溝銑 SLOTTING
WWA1604	47	80	1500~1700	130~200	4	16	溝銑 SLOTTING
WWA1604	47	80	1500~1700	100~170	6	16	溝銑 SLOTTING
WWA1604	47	80	1500~1700	80~100	10	16	溝銑 SLOTTING
WWA1604	47	80	1500~1700	180~260	16	1	側銑 SIDE MILLING
WWA1604	47	80	1500~1700	50~100	16	8	側銑 SIDE MILLING
WWA1604	47	80	1500~1700	50~100	8	15.7	側銑 SIDE MILLING
WWA1804	50	80	1300~1500	200~250	2	18	溝銑 SLOTTING
WWA1804	50	80	1300~1500	130~180	4	18	溝銑 SLOTTING
WWA1804	50	80	1300~1500	100~150	6	18	溝銑 SLOTTING
WWA1804	50	80	1300~1500	80~100	10	18	溝銑 SLOTTING
WWA1804	50	80	1300~1500	170~240	18	1	側銑 SIDE MILLING
WWA1804	50	80	1300~1500	50~100	18	6	側銑 SIDE MILLING
WWA1804	50	80	1300~1500	50~100	9	17.7	側銑 SIDE MILLING
WWA2004	50	80	1150~1350	180~230	2	20	溝銑 SLOTTING
WWA2004	50	80	1150~1350	120~160	4	20	溝銑 SLOTTING
WWA2004	50	80	1150~1350	100~140	6	20	溝銑 SLOTTING
WWA2004	50	80	1150~1350	70~90	10	20	溝銑 SLOTTING
WWA2004	50	80	1150~1350	160~230	20	1	側銑 SIDE MILLING
WWA2004	50	80	1150~1350	80~120	20	5	側銑 SIDE MILLING
WWA2004	50	80	1150~1350	50~80	10	19.7	側銑 SIDE MILLING

附 註

建議冷卻方式為濕式。

NOTE

Suggest to use wet coolant.

HPC

WWB

抗震粗齒細目銑刀
END MILLS

MG | 0.6 μm | Roughing | 20° | 4 Flutes | HRc ▶55 | G10

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining
精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

Stainless Steel Cutting

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
WWB0604	6.0	16	50	6
WWB0804	8.0	20	60	8
WWB1004	10.0	25	75	10
WWB1204	12.0	30	75	12
WWB1404	14.0	35	100	16
WWB1604	16.0	40	100	16
WWB1804	18.0	40	100	20
WWB2004	20.0	45	100	20

unit : mm

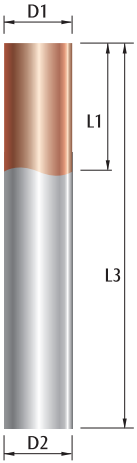


公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
6.0	0 -0.04
8.0	0 -0.04
10.0	0 -0.045
12.0	0 -0.045
14.0	0 -0.045
16.0	0 -0.05
18.0	0 -0.05
20.0	0 -0.05

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm



WWB

切削條件表 MILLING CONDITIONS

被切削材 Work Material

沃斯田鐵系不銹鋼
Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WWB0604	22	80	4200~4400	400~550	1	6	溝銑 SLOTTING
WWB0604	22	80	4200~4400	350~450	1.5	6	溝銑 SLOTTING
WWB0604	22	80	4200~4400	300~420	3	6	溝銑 SLOTTING
WWB0604	22	80	4200~4400	200~270	6	6	溝銑 SLOTTING
WWB0604	22	80	4200~4400	200~270	6	5.7	側銑 SIDE MILLING
WWB0804	28	80	3200~3400	350~480	2	8	溝銑 SLOTTING
WWB0804	28	80	3200~3400	270~360	4	8	溝銑 SLOTTING
WWB0804	28	80	3200~3400	240~320	6	8	溝銑 SLOTTING
WWB0804	28	80	3200~3400	200~260	8	8	溝銑 SLOTTING
WWB0804	28	80	3200~3400	200~260	8	7.7	側銑 SIDE MILLING
WWB1004	32	80	2500~2700	350~500	2	10	溝銑 SLOTTING
WWB1004	32	80	2500~2700	300~400	3.5	10	溝銑 SLOTTING
WWB1004	32	80	2500~2700	250~320	5	10	溝銑 SLOTTING
WWB1004	32	80	2500~2700	200~260	10	10	溝銑 SLOTTING
WWB1004	32	80	2500~2700	200~260	10	9.7	側銑 SIDE MILLING
WWB1204	38	80	2000~2200	260~420	2	12	溝銑 SLOTTING
WWB1204	38	80	2000~2200	200~300	4	12	溝銑 SLOTTING
WWB1204	38	80	2000~2200	180~260	6	12	溝銑 SLOTTING
WWB1204	38	80	2000~2200	150~210	10	12	溝銑 SLOTTING
WWB1204	38	80	2000~2200	120~200	12	12	溝銑 SLOTTING
WWB1204	38	80	2000~2200	100~190	12	11.7	側銑 SIDE MILLING
WWB1404	42	80	1700~1900	200~360	2	14	溝銑 SLOTTING
WWB1404	42	80	1700~1900	150~250	4	14	溝銑 SLOTTING
WWB1404	42	80	1700~1900	120~200	6	14	溝銑 SLOTTING
WWB1404	42	80	1700~1900	100~150	10	14	溝銑 SLOTTING
WWB1404	42	80	1700~1900	70~110	7	13.7	側銑 SIDE MILLING
WWB1604	47	80	1500~1700	200~280	2	16	溝銑 SLOTTING
WWB1604	47	80	1500~1700	130~200	4	16	溝銑 SLOTTING
WWB1604	47	80	1500~1700	100~170	6	16	溝銑 SLOTTING
WWB1604	47	80	1500~1700	80~120	10	16	溝銑 SLOTTING
WWB1604	47	80	1500~1700	50~100	8	15.7	側銑 SIDE MILLING

被切削材 Work Material

沃斯田鐵系不銹鋼

Stainless Steels [Easy] :**SUS304 : 1.4301 : AISI 304** (HRc 28~32)

切削條件表 *MILLING CONDITIONS*

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
WWB1804	50	80	1300~1500	200~250	2	18	溝銑 SLOTTING
WWB1804	50	80	1300~1500	130~180	4	18	溝銑 SLOTTING
WWB1804	50	80	1300~1500	100~150	6	18	溝銑 SLOTTING
WWB1804	50	80	1300~1500	80~100	10	18	溝銑 SLOTTING
WWB1804	50	80	1300~1500	50~100	9	17.7	側銑 SIDE MILLING
WWB2004	50	80	1150~1350	180~230	2	20	溝銑 SLOTTING
WWB2004	50	80	1150~1350	120~160	4	20	溝銑 SLOTTING
WWB2004	50	80	1150~1350	100~140	6	20	溝銑 SLOTTING
WWB2004	50	80	1150~1350	70~90	10	20	溝銑 SLOTTING
WWB2004	50	80	1150~1350	50~80	10	19.7	側銑 SIDE MILLING

附 註

1. **WWB**適用於粗銑加工，溝銑(Aa)有1.0D切削能力。側銑(Ap)需1.0D滿刀（側銑低於0.95D會產生加工共振，影響刀具壽命）。粗切削時，請用濕式高壓水溶性切削液，以免造成排屑不良。直徑Ø10以上，需視機器剛性與主軸扭力值的不同，而做適當調整。
2. 建議冷卻方式為濕式。

NOTE

1. **WWB** is good at Roughing. It can do a 1.0D machining for Slotting (Aa). Side milling (Ap) would require 1.0D full cut (When it is less than 0.95D, vibration will cause short tool life.) When Roughing, we suggest high pressure emulsion coolant for better chip removal. For diameter above 10.0mm, make necessary adjustment as per the rigidity of machine and the torque of spindle.
2. Suggest to use wet coolant.

本書中所列之切削條件由**DHF**應用技術中心測試提供

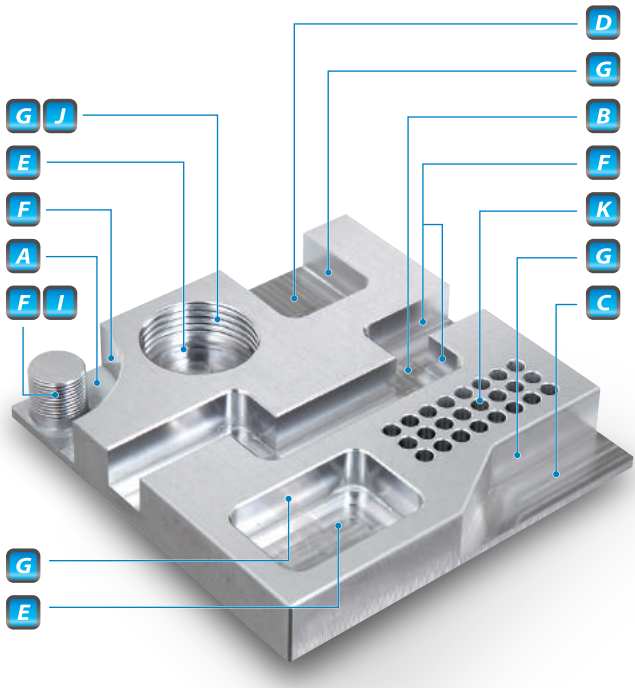
Above milling conditions are issued by **DHF Technical Applications Center**.

切削實例 CUTTING DEMO

切削材規格 Material Size (mm)	總加工時間 Total Machining Time (min)
L150 x W150 x H35	25

被切削材 Work Material

沈澱不銹鋼
Stainless Steels : **AISI : 17-4PH / JIS : SUS630** (HRc45)



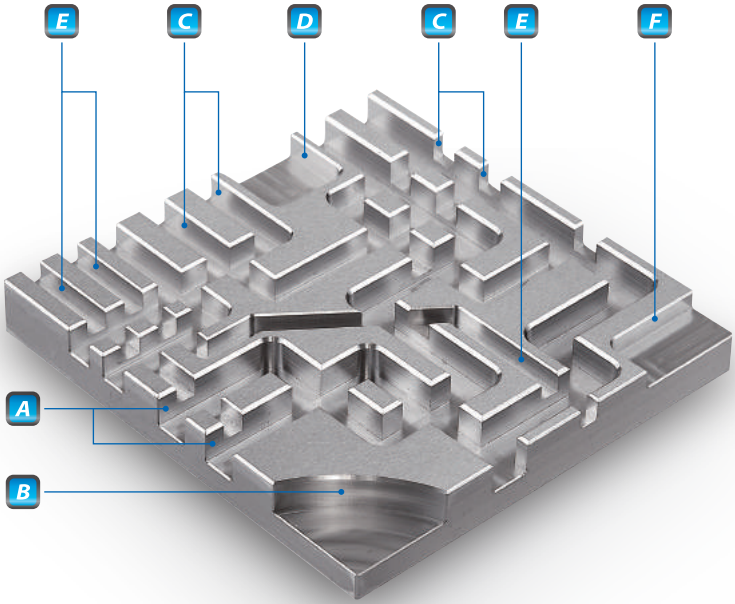
標記 Label	型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 Depth of Cut (a_a)	加工寬度 Width of Cut (a_p)	冷卻方式 Coolant Type	每刃切削量 fz (mm)	備註 Remark
A	*WWB1004*	30	80	2600	200	10	10	濕式水冷 *(Wet)*	0.02	粗加工 *Roughing*
B	*UEW1004*	30	140	4500	600	8	10	濕式水冷 *(Wet)*	0.03	粗加工 *Roughing*
C	*UPW1005*	30	130	4200	600	10	6	乾式切削 *(Dry)*	0.03	粗加工 *Roughing*
D	*UPW1005*	30	130	4200	600	8	6	乾式切削 *(Dry)*	0.03	粗加工 *Roughing*
E	*UXR1010*	30	190	6000	4800	0.25	7.5	濕式水冷 *(Wet)*	0.2	粗加工 *Roughing*
F	*VTB1006*	30	115	3600	800	20	0.15	濕式水冷 *(Wet)*	0.04	精加工 *Finishing*
G	*UET1004*	30	115	3600	500	20	0.15	乾式切削 *(Dry)*	0.03	精加工 *Finishing*
H	*X-TD1003*	30	160	5000	700	1.5	1.5	氣冷 *(Air)*	0.05	倒角 *Chamfering*
I	*TW07517 M10150*	28	75	3200	240	15	0.25	濕式水冷 *(Wet)*	0.03	銑牙 *Thread Milling*
J	*X-TW161830*	30	90	1800	220	15	0.3	濕式水冷 *(Wet)*	0.03	銑牙 *Thread Milling*
K	*DAK060*	34	60	3100	300	12	6	濕式水冷 *(Wet)*	0.05	鑽孔 *Drill*

切削實例 CUTTING DEMO

切削材規格 Material Size (mm)	總加工時間 Total Machining Time (min)
L150 x W150 x H35	5

被切削材 Work Material

沃斯田鐵系不銹鋼
Austenite Stainless Steels :**JIS : SUS304 / DIN : 1.4301** (HRc30)



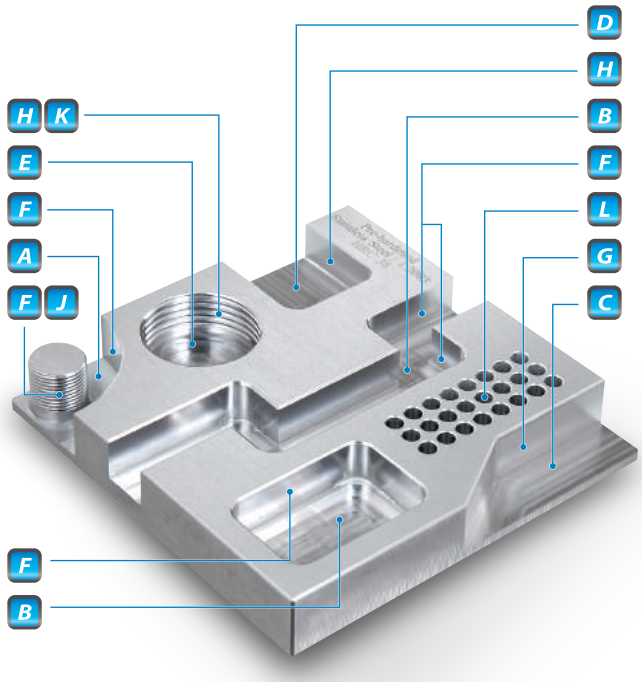
標記 Label	型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 Depth of Cut (a_a)	加工寬度 Width of Cut (a_p)	冷卻方式 Coolant Type	每刃切削量 fz (mm)	備註 Remark
A	*UPZ1004*	30	110	3500	700	10	10	濕式水冷 *(Wet)*	0.05	粗銑溝銑 *Roughing & Slotting*
B	*UPZ1004*	30	110	3500	700	10	9	濕式水冷 *(Wet)*	0.05	粗銑側銑 *Roughing & Side Milling*
C	*UPZ0804*	25	105	4200	700	8	8	濕式水冷 *(Wet)*	0.04	粗銑溝銑 *Roughing & Slotting*
D	*UPZ0804*	25	105	4200	700	8	7	濕式水冷 *(Wet)*	0.04	粗銑側銑 *Roughing & Side Milling*
E	*UPZ0604*	20	105	5500	600	6	6	濕式水冷 *(Wet)*	0.03	粗銑溝銑 *Roughing & Slotting*
F	*UPZ0604*	20	105	5500	600	6	5	濕式水冷 *(Wet)*	0.03	粗銑側銑 *Roughing & Side Milling*

切削實例 CUTTING DEMO

切削材規格 Material Size (mm)	總加工時間 Total Machining Time (min)
L150 x W150 x H35	13

被切削材 Work Material

預硬不銹鋼
Pre-Hardened Stainless Steels : **AISI : 420 / DIN : 1.2083** (HRc38)



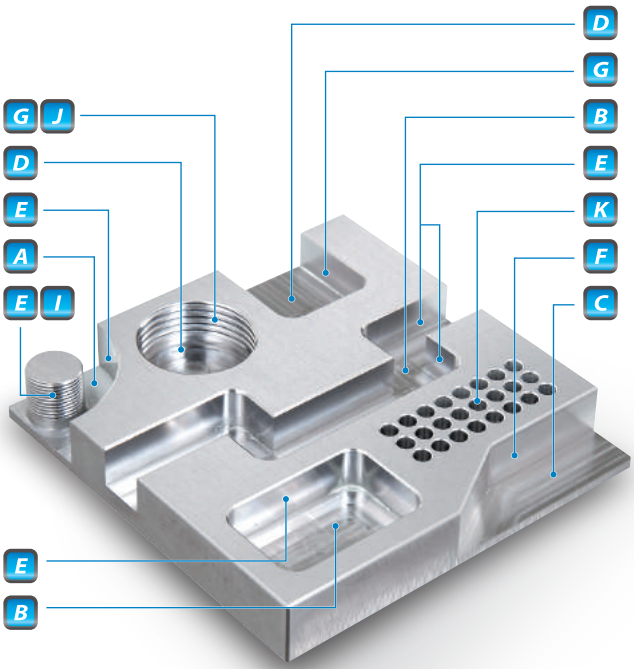
標記 Label	型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 Depth of Cut (a_a)	加工寬度 Width of Cut (a_e)	每刃切削量 fz (mm)	備註 Remark
A	WWB1004	35	85	2700	270	20	10	0.03	粗加工 Roughing
B	UEW1004	33	160	5000	600	8	10	0.03	粗加工 Roughing
C	UTHR1010	33	140	4500	800	10	4.5	0.04	粗加工 Roughing
D	UPZ1004	33	110	3500	1000	8	10	0.07	粗加工 Roughing
E	UPZ1004	33	110	3500	1000	8	8	0.07	粗加工 Roughing
F	VTB1006	35	100	3200	600	20	0.2	0.03	精加工 Finishing
G	UTH1004	33	110	3500	450	20	0.2	0.03	精加工 Finishing
H	UTE1004	33	110	3500	450	16	0.2	0.03	精加工 Finishing
I	X-TD1003	30	190	6000	900	1.5	1.5	0.05	倒角 Chamfering
J	TW07517 M10150	30	110	4800	300	16	0.25	0.02	銑牙 Thread Milling
K	X-TW161830	40	140	2800	300	16	0.4	0.03	銑牙 Thread Milling
L	DAK060	34	80	4200	800	12	6	0.10	鑽孔 Drill

切削實例 CUTTING DEMO

切削材規格 Material Size (mm)	總加工時間 Total Machining Time (min)
L150 x W150 x H35	14

被切削材 Work Material

不銹鋼1.2083 熱處理前、後加工
Un-Hardened Stainless Steels / Hardened Stainless Steels
AISI : 420 / DIN : 1.2083 (HRc18) / (HRc52)



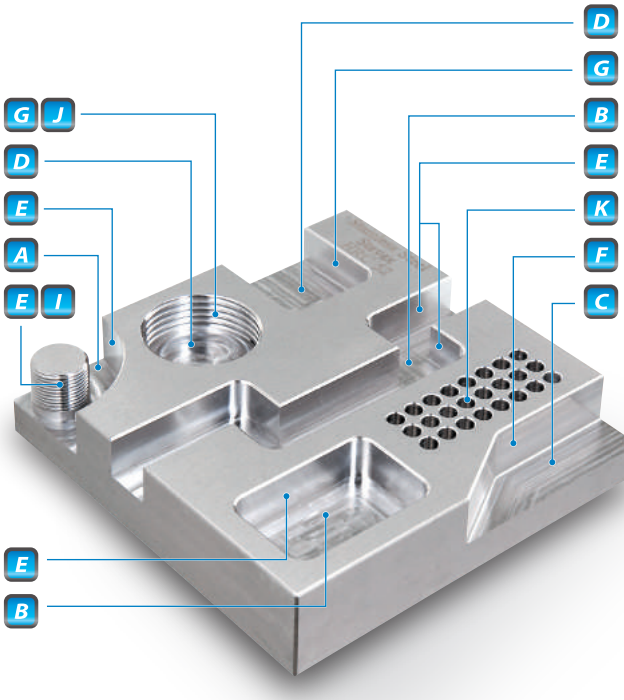
標記 Label	型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 Depth of Cut (a_p)	加工寬度 Width of Cut (a_e)	每刃切削量 fz (mm)	備註 Remark
A	WWB1004	35	85	2700	300	20	10	0.03	粗加工 / 熱處理前加工(HRc18) *Roughing / Un-Hardened Stainless Steel (HRc18)*
B	UEW1004	33	160	5000	1000	8	10	0.05	粗加工 / 熱處理前加工(HRc18) *Roughing / Un-Hardened Stainless Steel (HRc18)*
C	UTHR1010	35	140	4500	1000	10	6	0.06	粗加工 / 熱處理前加工(HRc18) *Roughing / Un-Hardened Stainless Steel (HRc18)*
D	UPZ1004	35	110	3500	1000	8	10	0.07	粗加工 / 熱處理前加工(HRc18) *Roughing / Un-Hardened Stainless Steel (HRc18)*
E	UVT1006	33	70	2200	400	20	0.1	0.03	精加工 / 熱處理後加工(HRc52) *Finishing / Hardened Stainless Steel (HRc52)*
F	UVTR1010	33	60	2000	350	20	0.1	0.04	精加工 / 熱處理後加工(HRc52) *Finishing / Hardened Stainless Steel (HRc52)*
G	UEX1004	33	80	2500	350	16	0.1	0.04	精加工 / 熱處理後加工(HRc52) *Finishing / Hardened Stainless Steel (HRc52)*
H	X-TD1003	30	160	5000	500	1.5	1.5	0.03	倒角 / 熱處理後加工(HRc52) *Chamfering / Hardened Stainless Steel (HRc52)*
I	TW07517M10150	30	50	2000	120	16	0.15	0.02	銑牙 / 熱處理後加工(HRc52) *Thread Milling / Hardened Stainless Steel (HRc52)*
J	X-TW161830	40	50	1000	220	16	0.3	0.06	銑牙 / 熱處理後加工(HRc52) *Thread Milling / Hardened Stainless Steel (HRc52)*
K	DAK060	34	30	1700	150	12	6	0.04	鑽孔 / 熱處理後加工(HRc52) *Drill / Hardened Stainless Steel (HRc52)*

切削實例 CUTTING DEMO

切削材規格 Material Size (mm)	總加工時間 Total Machining Time (min)
L150 x W150 x H35	13

被切削材 Work Material

不銹鋼STAVAX 熱處理前、後加工
Un-Hardened Stainless Steels / Hardened Stainless Steels
ASSAB : STAVAX (S136) (HRc18) / (HRc52)



標記 Label	型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 Depth of Cut (a_a)	加工寬度 Width of Cut (a_e)	每刃切削量 fz (mm)	備註 Remark
A	WWB1004	35	85	2700	300	20	10	0.03	粗加工 / 熱處理前加工(HRc18) *Roughing / Un-Hardened Stainless Steel (HRc18)*
B	UEW1004	33	160	5000	1000	8	10	0.05	粗加工 / 熱處理前加工(HRc18) *Roughing / Un-Hardened Stainless Steel (HRc18)*
C	UTHR1010	35	140	4500	1000	10	6	0.06	粗加工 / 熱處理前加工(HRc18) *Roughing / Un-Hardened Stainless Steel (HRc18)*
D	UPZ1004	35	110	3500	1000	8	10	0.07	粗加工 / 熱處理前加工(HRc18) *Roughing / Un-Hardened Stainless Steel (HRc18)*
E	UVT1006	33	70	2200	400	20	0.1	0.03	精加工 / 熱處理後加工(HRc52) *Finishing / Hardened Stainless Steel (HRc52)*
F	UVTR1010	33	60	2000	350	20	0.1	0.04	精加工 / 熱處理後加工(HRc52) *Finishing / Hardened Stainless Steel (HRc52)*
G	UEX1004	33	80	2500	350	16	0.1	0.04	精加工 / 熱處理後加工(HRc52) *Finishing / Hardened Stainless Steel (HRc52)*
H	X-TD1003	30	160	5000	500	1.5	1.5	0.03	倒角 / 熱處理後加工(HRc52) *Chamfering / Hardened Stainless Steel (HRc52)*
I	TW07517 M10150	30	50	2000	120	16	0.15	0.02	銑牙 / 熱處理後加工(HRc52) *Thread Milling / Hardened Stainless Steel (HRc52)*
J	X-TW161830	40	50	1000	220	16	0.3	0.06	銑牙 / 熱處理後加工(HRc52) *Thread Milling / Hardened Stainless Steel (HRc52)*
K	DAK060	34	30	1700	150	12	6	0.04	鑽孔 / 熱處理後加工(HRc52) *Drill / Hardened Stainless Steel (HRc52)*

DHF刀具推薦表 DHF SELECTION OF ENDMILLS

高速高硬度/破壞王/鋁用加工/標準/鈦好切/不鏽鋼/沖 系列 (HSC / HPC/ ALU / STD / TAI/ SUS /ECM) SERIES

平刀--粗銑 End Mills-Roughing

被切削材 Work Material	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection
沃斯田鐵系不銹鋼 Stainless Steels : SUS304 : 1.4301 : AISI 304 (HRc 28~32)	UTH / UPZ / UPS / UPE UPG	ETH / ETB	ETA
	WWB	WWA / LFTH	LFTA
（麻田散鐵，析出硬化）系不銹鋼 Stainless Steels : SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH (HRc 28~32)	UTH / UPZ / UPS / UPE UPG	ETH / ETB	ETA
	WWB	WWA / LFTH	LFTA

平刀--精銑 End Mills-Finishing

被切削材 Work Material	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection
沃斯田鐵系不銹鋼 Stainless Steels : SUS304 : 1.4301 : AISI 304 (HRc 28~32)	VTB / UTH / UPE / UPS	ETB / ETH	ETA
		LFTH	LFTA
（麻田散鐵，析出硬化）系不銹鋼 Stainless Steels : SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH (HRc 28~32)	VTB / UTH / UPE / UPS	ETB / ETH / ITH	ETA
		LFTH	LFTA

圓鼻刀—粗銑 Corner Radius End Mills-Roughing

被切削材 Work Material	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection
沃斯田鐵系不銹鋼 Stainless Steels : SUS304 : 1.4301 : AISI 304 (HRc 28~32)	UTHR / UPJ	UPER	RTB
	ULR / ULXR	LRTD / LRTA	DLRA
（麻田散鐵，析出硬化）系不銹鋼 Stainless Steels : SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH (HRc 28~32)	UTHR / UPJ	UPER	RTB
	ULR / ULXR	LRTD / LRTA	DLRA

圓鼻刀—精銑 Corner Radius End Mills-Finishing

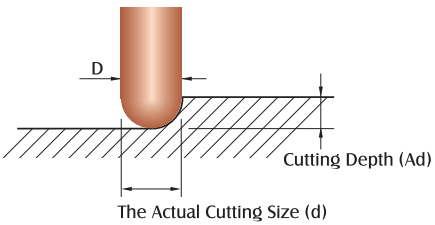
被切削材 Work Material	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection
沃斯田鐵系不銹鋼 Stainless Steels : SUS304 : 1.4301 : AISI 304 (HRc 28~32)	UTHR	UPER	RTB
	ULR / ULXR	LRTD	LRTA
（麻田散鐵，析出硬化）系不銹鋼 Stainless Steels : SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH (HRc 28~32)	UTHR	UPER	RTB
	ULR / ULXR	LRTD	LRTA

球刀實際切削直徑 BALL NOSE REAL CUTTING DIAMETER

球徑 R Ball R (mm)	直徑 Ø Mill Dia. (mm)	切削深度 (Ad) Depth of Cut (mm/min)														
		0.01	0.02	0.03	0.04	0.05	0.08	0.1	0.15	0.2	0.3	0.5	0.8	1.0	2.0	3.0
0.1	0.2	0.087	0.12	0.143	0.16	0.173	0.196	0.2	----	----	----	----	----	----	----	----
0.2	0.4	0.125	0.174	0.211	0.24	0.265	0.32	0.35	0.39	0.4	----	----	----	----	----	----
0.3	0.6	0.154	0.215	0.262	0.299	0.332	0.41	0.45	0.52	0.57	0.6	----	----	----	----	----
0.4	0.8	0.178	0.25	0.304	0.349	0.387	0.48	0.53	0.62	0.63	0.77	0.77	----	----	----	----
0.5	1	0.199	0.28	0.341	0.392	0.436	0.54	0.6	0.71	0.8	0.92	1	----	----	----	----
1	2	0.282	0.398	0.486	0.56	0.624	0.78	0.87	1.05	1.2	1.43	1.73	1.96	2	----	----
1.5	3	0.346	0.488	0.597	0.688	0.768	0.97	1.08	1.31	1.5	1.8	2.24	2.65	2.83	2.83	----
2	4	0.399	0.564	0.69	0.796	0.889	1.12	1.25	1.52	1.74	2.11	2.65	3.2	3.46	4	----
2.5	5	0.447	0.631	0.772	0.891	0.995	1.25	1.4	1.71	1.96	2.37	3	3.67	4	4.9	4.9
3	6	0.489	0.692	0.846	0.977	1.091	1.38	1.54	1.87	2.15	2.62	3.32	4.08	4.47	5.66	6
4	8	0.565	0.799	0.978	1.129	1.261	1.59	1.78	2.17	2.5	3.04	3.87	4.8	5.29	6.93	7.75
5	10	0.632	0.894	1.094	1.262	1.411	1.78	1.99	2.43	2.8	3.41	4.36	5.43	6	8	9.17
6	12	0.693	0.979	1.198	1.383	1.546	1.95	2.18	2.67	3.07	3.75	4.8	5.99	6.63	8.94	10.39
7	14	0.748	1.058	1.295	1.495	1.67	2.11	2.36	2.88	3.32	4.05	5.2	66.5	7.21	9.8	11.49
8	16	0.8	1.131	1.384	1.598	1.786	2.26	2.52	3.08	3.56	4.34	5.57	6.97	7.75	10.58	12.49
9	18	0.848	1.199	1.468	1.695	1.895	2.39	2.68	3.27	3.77	4.61	5.92	7.42	8.25	11.31	13.42
10	20	0.894	1.264	1.548	1.787	1.997	2.52	2.82	3.45	3.98	4.86	6.24	7.84	8.72	12	14.28

實際直徑計算 CALCULATION OF REAL DIA.

$$d = 2\sqrt{Ad\ (D\text{-}Ad)}$$



Stainless Steel Cutting

德信發企業有限公司

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Distributor

2016.04. 2000

DHF



鋁用切削專用
SOFT MATERIALS CUTTING SERIES

DESIGN . HONESTY . FUTURE

版權聲明

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AEW 彩虹立銑刀

1. 抗震好，穩定性佳。
2. 獨特的斷屑設計，不易黏屑，排屑順暢。
3. 高進給、大切深，縮短加工時間。
4. 切深在1D以上，削鐵如泥。

1. Low vibration and high stability.
2. Special design features smooth chip removal and low stickiness.
3. High Feed and large Depth of cutting; shorten milling times.
4. Depth of cutting is over 1D, and the endmill is very easy to cut.

AES 高效能鋁用立銑刀

1. 獨特的刀刃設計，表面光潔度佳。
2. 獨特的溝槽設計，粗、精銑適用。
3. 高進給、大切深。

1. Unique flute design enables the optimum surface finishing.
2. Special grooving concept is suitable for Roughing and Finishing millings.
3. High Feed and large Depth of cutting.



鋁合金側銑加工表面光潔度實例
Demonstration for side milling with optimum surface finishing on Aluminum alloy

AES





AET-3T

AEA-3T





AET-2T

AEA-2T



DHF Design . Honesty . Future

目錄
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品名 Product	AEW	AEWR	AES	AES+
說明 Explanation	P.1	P.2	P.3	P.4
切削條件 Milling Conditions	P.13~16	P.17~18	P.19~24	






品名 Product	AER	AESR	AEA-2T	AEA-3T
說明 Explanation	P.5	P.6	P.7	P.8
切削條件 Milling Conditions	P.25~26	P.27~29	P.30~33	P.34~37






品名 Product	AET-2T	AET-3T	BTC	HBC IBC JBC
說明 Explanation	P.9	P.10	P.11	P.12
切削條件 Milling Conditions	P.38~39	P.40~41	P.42~43	P.44

圖示說明
Guide Line to Icons

切削性能 CUTTING PERFORMANCE


優
Excellent


良
Good


尚可
Acceptable


禁止
No

鎢鋼種類 CARBIDE



超微粒。
Micro grain.



極超微粒。
Super micro grain.

顆粒大小 GRAIN SIZE



粉末顆粒是0.4 μm
Grain size is 0.4 μm.



粉末顆粒是0.6 μm
Grain size is 0.6 μm.

螺旋角 HELIX ANGLE



螺旋角度25°、40°、45°、55°
Helix Angle is 25°,40°,45°,55°.

圓隅角 CORNER R



圓隅角。
Corner Radius.

刃數 FLUTE



鍍層 COATING



適用於銅加工，有良好表面光潔度及刀具壽命。
Good at copper machining. With benefits of surface finishing and long tool life.

齒形 ROUGHING



大粗齒
Big Roughing.

縮頸 SHRINK NECK


適用於深溝加工
Best for long neck machine.



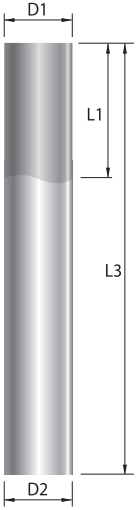
彩虹立銑刀
End Mills

AEW

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MG | 0.6 μm | Roughing | 45° | 3 Flutes



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
6.0	0 -0.025
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AEW0603	6.0	16	50	6
AEW0803	8.0	20	60	8
AEW0803L	8.0	25	80	8
AEW1003	10.0	22	75	10
AEW1003L	10.0	30	80	10
AEW1203	12.0	26	75	12
AEW1203L	12.0	35	100	12
AEW1603	16.0	40	100	16
AEW1603L	16.0	50	120	16
AEW2003	20.0	45	100	20
AEW2003L	20.0	55	120	20

unit : mm

★ AEW的切削數據請查閱P.13~16 Please find the milling condition on P.13~16



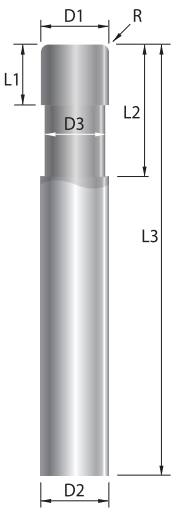
彩虹圓鼻角立銑刀
End Mills
Corner Radius

AEWR

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MG | 0.6 μm | Roughing | 45° | R | 3 Flutes



公差表 TOLERANCE

直徑 D1	R徑公差值 R Tolerance	直徑公差值 D1 Tolerance
6.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
8.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
10.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
12.0	$^{+0.02}_{0}$	$^{0}_{-0.02}$
16.0	$^{+0.02}_{0}$	$^{0}_{-0.03}$
20.0	$^{+0.02}_{0}$	$^{0}_{-0.03}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$
Ø20	$^{0}_{-0.013}$

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia.	R R角 Corner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AEWR0605	6.0	5.8	0.5	8	18	50	6
AEWR0805	8.0	7.7	0.5	10	24	60	8
AEWR1005	10.0	9.6	0.5	12	30	75	10
AEWR1205	12.0	11.5	0.5	15	36	75	12
AEWR1610	16.0	15.5	1.0	24	40	120	16
AEWR2010	20.0	19.0	1.0	30	50	120	20

unit : mm

★ AEWR的切削數據請查閱P.17~18 Please find the milling condition on P.17~18

高效能 鋁用立銑刀 End Mills

AES



精銑 Finishing

中銑 Semi-finishing

粗銑 Roughing

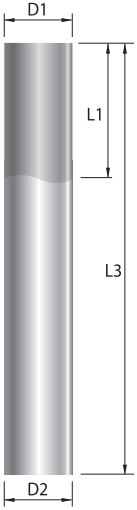
乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

Super MG | 0.4 μm | 40° | 3 Flutes



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
2.0	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.02
10.0	0 -0.02
12.0	0 -0.02
16.0	0 -0.03
20.0	0 -0.03

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AES0203S	2.0	6	50	4
AES0203	2.0	6	50	6
AES0303S	3.0	8	50	4
AES0303	3.0	8	50	6
AES0403S	4.0	11	50	4
AES0403	4.0	11	50	6
AES0503	5.0	13	50	6
AES0603	6.0	16	50	6
AES0603L	6.0	32	75	6
AES0803	8.0	20	60	8
AES0803L	8.0	45	100	8
AES1003	10.0	25	75	10
AES1003L	10.0	50	100	10
AES1203	12.0	30	75	12
AES1203L	12.0	55	100	12
AES1603	16.0	40	100	16
AES1603L	16.0	50	120	16
AES2003	20.0	45	100	20
AES2003L	20.0	60	120	20

unit : mm

★ AES的切削數據請查閱P.19~24 Please find the milling condition on P.19~24

新產品 NEW PRODUCT

無現貨，需下單後塗層
Coating after order.

高效能 鋁用立銑刀 End Mills

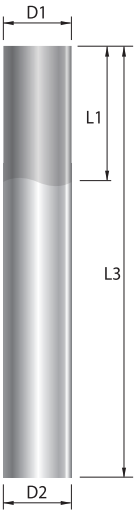
AES+



- 精銑 Finishing
- 中銑 Semi-finishing
- 粗銑 Roughing

- 乾式切削 Dry Machining
- 油霧切削 MQL (Mist)
- 水溶性切削 Emulsion Machining
- 油性切削 Oil Machining

Super MG | 0.4 μm | 40° | 3 Flutes | DLC



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
2.0	$^{0}_{-0.02}$
3.0	$^{0}_{-0.02}$
4.0	$^{0}_{-0.02}$
5.0	$^{0}_{-0.02}$
6.0	$^{0}_{-0.02}$
8.0	$^{0}_{-0.02}$
10.0	$^{0}_{-0.02}$
12.0	$^{0}_{-0.02}$
16.0	$^{0}_{-0.03}$
20.0	$^{0}_{-0.03}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$
Ø20	$^{0}_{-0.013}$

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AES0203S+	2.0	6	50	4
AES0203+	2.0	6	50	6
AES0303S+	3.0	8	50	4
AES0303+	3.0	8	50	6
AES0403S+	4.0	11	50	4
AES0403+	4.0	11	50	6
AES0503+	5.0	13	50	6
AES0603+	6.0	16	50	6
AES0603L+	6.0	32	75	6
AES0803+	8.0	20	60	8
AES0803L+	8.0	45	100	8
AES1003+	10.0	25	75	10
AES1003L+	10.0	50	100	10
AES1203+	12.0	30	75	12
AES1203L+	12.0	55	100	12
AES1603+	16.0	40	100	16
AES1603L+	16.0	50	120	16
AES2003+	20.0	45	100	20
AES2003L+	20.0	60	120	20

unit : mm



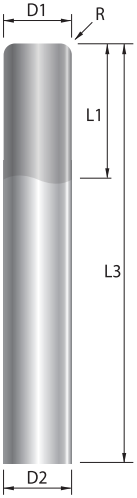
鋁用圓鼻角立銑刀
End Mills
Corner Radius

AER

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MG | 0.6 μm | 45° | R | 3 Flutes



公差表 TOLERANCE

直徑 D1	R徑公差值 R Tolerance	直徑公差值 D1 Tolerance
2.0	+0.02 0	0 -0.02
3.0	+0.02 0	0 -0.02
4.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.02
10.0	+0.02 0	0 -0.02

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AER0202	2.0	0.2	6	50	6
AER0302	3.0	0.2	10	50	6
AER0402	4.0	0.2	12	50	6
AER0603	6.0	0.3	18	50	6
AER0805	8.0	0.5	20	60	8
AER1005	10.0	0.5	30	75	10

unit : mm

★ AER的切削數據請查閱P.25~26 Please find the milling condition on P.25~26



高效能鋁用 圓鼻角立銑刀 End Mills

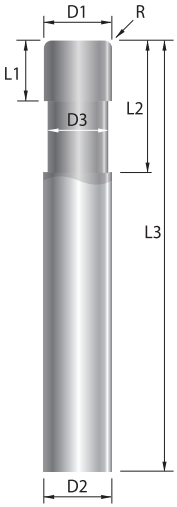
Corner Radius

AESR

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

Super MG | 0.4 μm | 40° | R | 3 Flutes



公差表 TOLERANCE

直徑 D1	R徑公差值 R Tolerance	直徑公差值 D1 Tolerance
3.0	+0.02 0	0 -0.02
4.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.02
10.0	+0.02 0	0 -0.02
12.0	+0.02 0	0 -0.02
16.0	+0.02 0	0 -0.03
20.0	+0.02 0	0 -0.03

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia.	R R角 Corner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AESR0305	3.0	2.9	0.5	4.5	9	50	6
AESR0405	4.0	3.9	0.5	6.0	12	50	6
AESR0605	6.0	5.8	0.5	9.0	18	60	6
AESR0610	6.0	5.8	1.0	9.0	18	60	6
AESR0805	8.0	7.7	0.5	12.0	24	60	8
AESR0810	8.0	7.7	1.0	12.0	24	60	8
AESR1005	10.0	9.6	0.5	15.0	30	75	10
AESR1010	10.0	9.6	1.0	15.0	30	75	10
AESR1205	12.0	11.5	0.5	18.0	36	75	12
AESR1210	12.0	11.5	1.0	18.0	36	75	12
AESR1605	16.0	15.5	0.5	24.0	40	120	16
AESR1610	16.0	15.5	1.0	24.0	40	120	16
AESR1630	16.0	15.5	3.0	24.0	40	120	16
AESR2005	20.0	19.0	0.5	30.0	50	120	20
AESR2010	20.0	19.0	1.0	30.0	50	120	20
AESR2030	20.0	19.0	3.0	30.0	50	120	20

unit : mm

★ AESR的切削數據請查閱P.27~29 Please find the milling condition on P.27~29



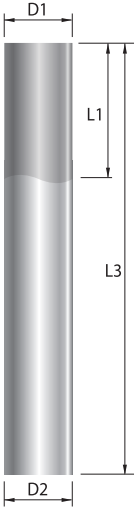
鋁用立銑刀
End Mills

AEA-2T

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MG | 0.6 μm | 55° | 2 Flutes



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
0.5	$^{0}_{-0.02}$
1.0	$^{0}_{-0.02}$
1.5	$^{0}_{-0.02}$
2.0	$^{0}_{-0.02}$
3.0	$^{0}_{-0.02}$
4.0	$^{0}_{-0.02}$
5.0	$^{0}_{-0.02}$
6.0	$^{0}_{-0.02}$
8.0	$^{0}_{-0.02}$
10.0	$^{0}_{-0.02}$
12.0	$^{0}_{-0.02}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	$^{0}_{-0.008}$
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AEA0052	0.5	1.5	50	4
AEA0102	1.0	3	50	4
AEA0152	1.5	4	50	4
AEA0202	2.0	6	50	4
AEA0302	3.0	8	50	4
AEA0402	4.0	12	50	4
AEA0502	5.0	16	50	6
AEA0602	6.0	18	50	6
AEA0802	8.0	22	60	8
AEA1002	10.0	28	75	10
AEA1202	12.0	30	75	12

unit : mm

★ AEA-2T的切削數據請查閱P.30~33 Please find the milling condition on P.30~33



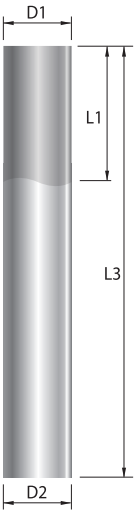
鋁用立銑刀
End Mills

AEA-3T

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MG | 0.6 μm | 45° | 3 Flutes



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
2.0	$^{0}_{-0.02}$
3.0	$^{0}_{-0.02}$
4.0	$^{0}_{-0.02}$
5.0	$^{0}_{-0.02}$
6.0	$^{0}_{-0.02}$
8.0	$^{0}_{-0.02}$
10.0	$^{0}_{-0.02}$
12.0	$^{0}_{-0.02}$
16.0	$^{0}_{-0.03}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AEA0203	2.0	6	50	6
AEA0303	3.0	10	50	6
AEA0403	4.0	12	50	6
AEA0503	5.0	16	50	6
AEA0603	6.0	18	50	6
AEA0803	8.0	20	60	8
AEA1003	10.0	25	75	10
AEA1203	12.0	30	75	12
AEA1603	16.0	40	100	16

unit : mm

★ AEA-3T的切削數據請查閱P.34~37 Please find the milling condition on P.34~37



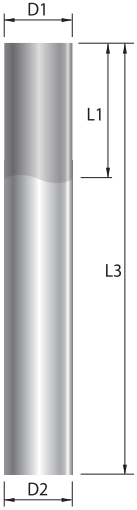
鏡面鋁用立銑刀
End Mills

AET-2T

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MG | 0.6 μm | 45° | 2 Flutes



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
0.5	0 -0.02
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.02
10.0	0 -0.02
12.0	0 -0.02

柄徑 D2	柄徑公差值 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AET0052	0.5	1.5	50	4
AET0102	1.0	3	50	6
AET0152	1.5	4	50	6
AET0202	2.0	6	50	6
AET0302	3.0	8	50	6
AET0402	4.0	11	50	6
AET0502	5.0	13	50	6
AET0602	6.0	16	50	6
AET0802	8.0	19	60	8
AET1002	10.0	25	75	10
AET1202	12.0	26	75	12

unit : mm

★ AET-2T的切削數據請查閱P.38~39 Please find the milling condition on P.38~39



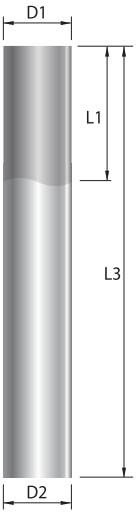
鏡面鋁用立銑刀
End Mills

AET-3T

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MG | 0.6 μm | 45° | 3 Flutes



公差表 TOLERANCE

直徑 D1	直徑公差值 D1 Tolerance
2.0	$^{0}_{-0.02}$
3.0	$^{0}_{-0.02}$
4.0	$^{0}_{-0.02}$
5.0	$^{0}_{-0.02}$
6.0	$^{0}_{-0.02}$
8.0	$^{0}_{-0.02}$
10.0	$^{0}_{-0.02}$
12.0	$^{0}_{-0.02}$
16.0	$^{0}_{-0.02}$

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$
Ø16	$^{0}_{-0.011}$

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
AET0203	2.0	6	50	6
AET0303	3.0	10	50	6
AET0403	4.0	12	50	6
AET0503	5.0	16	60	6
AET0603	6.0	18	60	6
AET0803	8.0	20	60	8
AET1003	10.0	25	75	10
AET1203	12.0	30	75	12
AET1603	16.0	40	100	16

unit : mm

★ AET-2T的切削數據請查閱P.40~41 Please find the milling condition on P.40~41

鋁用圓頭立銑刀
Ball Nose End Mills

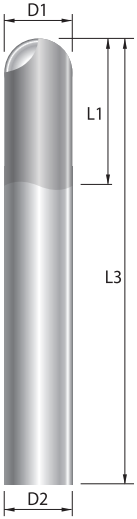
BTC



精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MG | 0.6 μm | 25° | 2 Flutes



公差表 TOLERANCE

直徑 D1	球頭公差值 R Tolerance
R0.5	±0.01
R0.75	±0.01
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015

柄徑 D2	柄徑公差值 D2 Tolerance
Ø3	$^{0}_{-0.006}$
Ø4	$^{0}_{-0.008}$
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
BTC0102	R0.5	2	50	4
BTC0152	R0.75	3	50	4
BTC0202	R1	4	50	4
BTC0302	R1.5	6	50	3
BTC0402	R2	8	50	4
BTC0602	R3	12	50	6
BTC0802	R4	16	60	8
BTC1002	R5	20	75	10
BTC1202	R6	24	75	12

unit : mm

★ BTC的切削數據請查閱P.42~43 Please find the milling condition on P.42~43



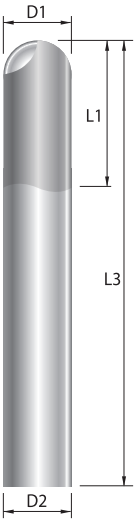
鋁用圓頭立銑刀
Ball Nose End Mills

HBC IBC JBC

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MG | 0.6 μm | 25° | 2 Flutes



公差表 TOLERANCE

直徑 D1	球頭公差值 R Tolerance
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015

柄徑 D2	柄徑公差值 D2 Tolerance
Ø6	$^{0}_{-0.008}$
Ø8	$^{0}_{-0.009}$
Ø10	$^{0}_{-0.009}$
Ø12	$^{0}_{-0.011}$

unit : mm

產品規格 SPECIFICATIONS

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
HBC0402	R2	8	75	6
HBC0502	R2.5	10	75	6
HBC0602	R3	12	75	6
IBC0402	R2	8	100	6
IBC0602	R3	12	100	6
IBC0802	R4	16	100	8
IBC1002	R5	20	100	10
IBC1202	R6	24	100	12
JBC0602	R3	12	150	6
JBC0802	R4	16	150	8
JBC1002	R5	20	150	10
JBC1202	R6	24	150	12

unit : mm

★ HBC IBC JBC的切削數據請查閱P.44 Please find the milling condition on P.44

切削條件表 MILLING CONDITIONS

AEW

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**
冷卻方式 Coolant Type	濕式切削 Wet coolant

建議機器轉速RPM=10000 (min^{-1}) 以下
Be used under the machine of RPM=10000 (min^{-1})

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEW0603	20	185	9500~10000	4500~5000	0~1	4~6	溝銑 SLOTTING
AEW0603	20	185	9500~10000	3000~3500	2~3	4~6	溝銑 SLOTTING
AEW0603	20	185	9500~10000	2000~2500	4~6	4~6	溝銑 SLOTTING
AEW0603	20	185	9500~10000	6500~7000	6	0~1	側銑 SIDE MILLING
AEW0603	20	185	9500~10000	4500~5000	6	2~3	側銑 SIDE MILLING
AEW0603	20	185	9500~10000	2000~2500	6	4~6	側銑 SIDE MILLING
AEW0603	20	185	9500~10000	5000~5500	12	0~1	側銑 SIDE MILLING
AEW0603	20	185	9500~10000	2000~2500	12	2~3	側銑 SIDE MILLING
AEW0603	20	185	9500~10000	900~13000	12	4~5	側銑 SIDE MILLING
AEW0803	23	220	8500~9000	6000~6500	0~1.5	6~8	溝銑 SLOTTING
AEW0803	23	220	8500~9000	4000~4500	2~4	6~8	溝銑 SLOTTING
AEW0803	23	220	8500~9000	3000~3500	5~8	6~8	溝銑 SLOTTING
AEW0803	23	220	8500~9000	6000~6500	8	0~2	側銑 SIDE MILLING
AEW0803	23	220	8500~9000	4500~5000	8	3~5	側銑 SIDE MILLING
AEW0803	23	220	8500~9000	3000~3500	8	6~8	側銑 SIDE MILLING
AEW0803	23	220	8500~9000	4000~4500	16	0~2	側銑 SIDE MILLING
AEW0803	23	220	8500~9000	2500~3000	16	3~5	側銑 SIDE MILLING
AEW0803	23	220	8500~9000	1500~2000	16	6~8	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	4000~4500	8	0~2	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	2300~2800	8	3~5	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	1000~1500	8	6~8	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	3500~4000	16	0~2	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	1800~2300	16	3~5	側銑 SIDE MILLING
AEW0803L	40	180	7000~7500	1800~2300	22	0~2	側銑 SIDE MILLING
AEW0803L	40	180	7000~7500	1000~1400	22	3~5	側銑 SIDE MILLING
AEW1003	26	250	7800~8300	5000~5500	0~2	8~10	溝銑 SLOTTING
AEW1003	26	250	7800~8300	4000~4500	3~5	8~10	溝銑 SLOTTING
AEW1003	26	250	7800~8300	3000~3500	6~10	8~10	溝銑 SLOTTING
AEW1003	26	250	7800~8300	5500~6000	10	0~2	側銑 SIDE MILLING
AEW1003	26	250	7800~8300	4000~4500	10	3~5	側銑 SIDE MILLING
AEW1003	26	250	7800~8300	3000~3500	10	6~10	側銑 SIDE MILLING
AEW1003	26	250	7800~8300	4000~4500	20	0~2	側銑 SIDE MILLING
AEW1003	26	250	7800~8300	3000~3500	20	3~5	側銑 SIDE MILLING
AEW1003	26	250	7800~8300	2500~3000	20	6~10	側銑 SIDE MILLING
AEW1003L	45	140	4300~4800	2000~2500	0~2	8~10	溝銑 SLOTTING
AEW1003L	45	155	4700~5200	1800~2300	3~5	8~10	溝銑 SLOTTING
AEW1003L	45	155	4700~5200	1000~1500	6~10	8~10	溝銑 SLOTTING
AEW1003L	45	230	7000~7500	4000~4500	10	0~2	側銑 SIDE MILLING
AEW1003L	45	190	5800~6300	2700~3200	10	3~5	側銑 SIDE MILLING
AEW1003L	45	190	5800~6300	1300~1800	10	6~10	側銑 SIDE MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEW1003L	45	165	5000~5500	2000~2500	20	0~2	側銑 SIDE MILLING
AEW1003L	45	165	5000~5500	800~1300	20	3~5	側銑 SIDE MILLING
AEW1003L	45	165	5000~5500	600~1000	20	6~10	側銑 SIDE MILLING
AEW1003L	45	155	4700~5300	700~1200	28	0~2	側銑 SIDE MILLING
AEW1003L	45	155	4700~5300	500~800	28	3~5	側銑 SIDE MILLING
AEW1203	30	290	7500~8000	4500~5000	0~2	10~12	溝銑 SLOTTING
AEW1203	30	290	7500~8000	3000~3500	3~6	10~12	溝銑 SLOTTING
AEW1203	30	290	7500~8000	2500~3000	7~12	10~12	溝銑 SLOTTING
AEW1203	30	290	7500~8000	3500~4000	12	0~2	側銑 SIDE MILLING
AEW1203	30	290	7500~8000	3000~3500	12	3~6	側銑 SIDE MILLING
AEW1203	30	290	7500~8000	3000~3500	12	7~12	側銑 SIDE MILLING
AEW1203	30	290	7500~8000	4500~5000	24	0~2	側銑 SIDE MILLING
AEW1203	30	290	7500~8000	4000~4500	24	3~6	側銑 SIDE MILLING
AEW1203	30	290	7500~8000	3000~3500	24	7~12	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	2000~2500	12	0~2	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1800~2300	12	3~6	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1500~2000	12	7~12	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	2000~2500	24	0~2	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1500~2000	24	3~6	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1500~2000	34	0~2	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1000~1500	34	3~6	側銑 SIDE MILLING
AEW1603	55	340	6500~7000	2500~3000	3~4	14~16	溝銑 SLOTTING
AEW1603	55	340	6500~7000	1700~2200	6~8	14~16	溝銑 SLOTTING
AEW1603	55	340	6500~7000	1500~2000	10~12	14~16	溝銑 SLOTTING
AEW1603	55	340	6500~7000	4000~4500	16	0~2	側銑 SIDE MILLING
AEW1603	55	340	6500~7000	2700~3200	16	6~8	側銑 SIDE MILLING
AEW1603	55	340	6500~7000	2200~2700	16	10~12	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	2000~2500	32	0~2	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	1800~2300	32	6~8	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	1500~2000	32	10~12	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	2000~2500	48	0~2	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	1000~1500	48	6~8	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	700~1100	48	10~12	側銑 SIDE MILLING
AEW2003	60	340	5200~5700	2200~2700	3~4	18~20	溝銑 SLOTTING
AEW2003	60	340	5200~5700	1400~1900	6~8	18~20	溝銑 SLOTTING
AEW2003	60	340	5200~5700	1100~1500	10~12	18~20	溝銑 SLOTTING
AEW2003	60	340	5200~5700	3000~3500	20	0~2	側銑 SIDE MILLING
AEW2003	60	340	5200~5700	2000~2500	20	6~8	側銑 SIDE MILLING
AEW2003	60	340	5200~5700	1500~2000	20	10~12	側銑 SIDE MILLING
AEW2003	60	315	4800~5300	1700~2200	40	0~2	側銑 SIDE MILLING
AEW2003	60	315	4800~5300	1800~2300	40	6~8	側銑 SIDE MILLING
AEW2003	60	315	4800~5200	1000~1400	40	10~12	側銑 SIDE MILLING

切削條件表 MILLING CONDITIONS

AEW

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=18000 (min^{-1}) 以下 Be used under the machine of RPM=18000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEW0603	20	330	17000~18000	6500~7000	0~1	4~6	溝銑 SLOTTING
AEW0603	20	330	17000~18000	5000~5500	2~3	4~6	溝銑 SLOTTING
AEW0603	20	330	17000~18000	4500~5000	4~6	4~6	溝銑 SLOTTING
AEW0603	20	330	17000~18000	8500~9000	6	0~1	側銑 SIDE MILLING
AEW0603	20	330	17000~18000	6000~6500	6	2~3	側銑 SIDE MILLING
AEW0603	20	330	17000~18000	3000~3500	6	4~6	側銑 SIDE MILLING
AEW0603	20	330	17000~18000	7000~7500	12	0~1	側銑 SIDE MILLING
AEW0603	20	330	17000~18000	3000~3500	12	2~3	側銑 SIDE MILLING
AEW0603	20	330	17000~18000	2000~2500	12	4~5	側銑 SIDE MILLING
AEW0803	23	390	15000~16000	7500~8500	0~1.5	6~8	溝銑 SLOTTING
AEW0803	23	390	15000~16000	4500~5000	2~4	6~8	溝銑 SLOTTING
AEW0803	23	390	15000~16000	5500~6500	5~8	6~8	溝銑 SLOTTING
AEW0803	23	390	15000~16000	9000~10000	8	0~2	側銑 SIDE MILLING
AEW0803	23	390	15000~16000	6500~7500	8	3~5	側銑 SIDE MILLING
AEW0803	23	390	15000~16000	5000~5500	8	6~8	側銑 SIDE MILLING
AEW0803	23	390	15000~16000	7500~8500	16	0~2	側銑 SIDE MILLING
AEW0803	23	390	15000~16000	5500~6000	16	3~5	側銑 SIDE MILLING
AEW0803	23	390	15000~16000	4500~5000	16	6~8	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	4000~4500	8	0~2	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	2300~2800	8	3~5	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	1000~1500	8	6~8	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	3500~4000	16	0~2	側銑 SIDE MILLING
AEW0803L	40	195	7500~8000	1800~2300	16	3~5	側銑 SIDE MILLING
AEW0803L	40	180	7000~7500	1800~2300	22	0~2	側銑 SIDE MILLING
AEW0803L	40	180	7000~7500	1000~1400	22	3~5	側銑 SIDE MILLING
AEW1003	26	390	12000~13000	7000~7500	0~2	8~10	溝銑 SLOTTING
AEW1003	26	390	12000~13000	6500~7000	3~5	8~10	溝銑 SLOTTING
AEW1003	26	390	12000~13000	6000~6500	6~10	8~10	溝銑 SLOTTING
AEW1003	26	485	15000~16000	9000~9500	0~2	8~10	側銑 SIDE MILLING
AEW1003	26	390	12000~13000	7500~8500	10	0~2	側銑 SIDE MILLING
AEW1003	26	390	12000~13000	6000~6500	10	3~5	側銑 SIDE MILLING
AEW1003	26	390	12000~13000	5500~6000	10	6~10	側銑 SIDE MILLING
AEW1003	26	390	12000~13000	5000~5500	20	0~2	側銑 SIDE MILLING
AEW1003	26	390	12000~13000	4000~4500	20	3~5	側銑 SIDE MILLING
AEW1003	26	390	12000~13000	3000~3500	20	6~10	側銑 SIDE MILLING
AEW1003	26	485	15000~16000	7500~8500	10	0~2	側銑 SIDE MILLING
AEW1003	26	485	15000~16000	8500~9000	10	3~5	側銑 SIDE MILLING
AEW1003	26	485	15000~16000	5000~5500	10	6~10	側銑 SIDE MILLING
AEW1003	26	485	15000~16000	5000~5500	20	0~2	側銑 SIDE MILLING
AEW1003	26	485	15000~16000	5000~5500	20	3~5	側銑 SIDE MILLING
AEW1003	26	485	15000~16000	4000~4500	20	6~10	側銑 SIDE MILLING
AEW1003L	45	140	4300~4800	2000~2500	0~2	8~10	溝銑 SLOTTING
AEW1003L	45	155	4700~5200	1800~2300	3~5	8~10	溝銑 SLOTTING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEW1003L	45	155	4700~5200	1000~1500	6~10	8~10	溝銑 SLOTTING
AEW1003L	45	230	7000~7500	4000~4500	10	0~2	側銑 SIDE MILLING
AEW1003L	45	190	5800~6300	2700~3200	10	3~5	側銑 SIDE MILLING
AEW1003L	45	190	5800~6300	1300~1800	10	6~10	側銑 SIDE MILLING
AEW1003L	45	165	5000~5500	2000~2500	20	0~2	側銑 SIDE MILLING
AEW1003L	45	165	5000~5500	800~1300	20	3~5	側銑 SIDE MILLING
AEW1003L	45	165	5000~5500	600~1000	20	6~10	側銑 SIDE MILLING
AEW1003L	45	155	4700~5300	700~1200	28	0~2	側銑 SIDE MILLING
AEW1003L	45	155	4700~5300	500~800	28	3~5	側銑 SIDE MILLING
AEW1203	30	395	10000~11000	7000~7500	0~2	10~12	溝銑 SLOTTING
AEW1203	30	395	10000~11000	5500~6000	3~6	10~12	溝銑 SLOTTING
AEW1203	30	395	10000~11000	5500~6000	7~12	10~12	溝銑 SLOTTING
AEW1203	30	395	10000~11000	8000~8500	12	0~2	側銑 SIDE MILLING
AEW1203	30	395	10000~11000	4500~5000	12	3~6	側銑 SIDE MILLING
AEW1203	30	395	10000~11000	4500~5000	12	7~12	側銑 SIDE MILLING
AEW1203	30	395	10000~11000	7000~7500	24	0~2	側銑 SIDE MILLING
AEW1203	30	395	10000~11000	4500~5000	24	3~6	側銑 SIDE MILLING
AEW1203	30	395	10000~11000	4500~5000	24	7~12	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	2000~2500	12	0~2	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1800~2300	12	3~6	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1500~2000	12	7~12	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	2000~2500	24	0~2	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1500~2000	24	3~6	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1500~2000	34	0~2	側銑 SIDE MILLING
AEW1203L	55	180	4500~5000	1000~1500	34	3~6	側銑 SIDE MILLING
AEW1603	55	340	6500~7000	2500~3000	3~4	14~16	溝銑 SLOTTING
AEW1603	55	340	6500~7000	1700~2200	6~8	14~16	溝銑 SLOTTING
AEW1603	55	340	6500~7000	1500~2000	10~12	14~16	溝銑 SLOTTING
AEW1603	55	340	6500~7000	4000~4500	16	0~2	側銑 SIDE MILLING
AEW1603	55	340	6500~7000	2700~3200	16	6~8	側銑 SIDE MILLING
AEW1603	55	340	6500~7000	2200~2700	16	10~12	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	2000~2500	32	0~2	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	1800~2300	32	6~8	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	1500~2000	32	10~12	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	2000~2500	48	0~2	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	1000~1500	48	6~8	側銑 SIDE MILLING
AEW1603	55	315	6000~6500	700~1100	48	10~12	側銑 SIDE MILLING
AEW2003	60	340	5200~5700	2200~2700	3~4	18~20	溝銑 SLOTTING
AEW2003	60	340	5200~5700	1400~1900	6~8	18~20	溝銑 SLOTTING
AEW2003	60	340	5200~5700	1100~1500	10~12	18~20	溝銑 SLOTTING
AEW2003	60	340	5200~5700	3000~3500	20	0~2	側銑 SIDE MILLING
AEW2003	60	340	5200~5700	2000~2500	20	6~8	側銑 SIDE MILLING
AEW2003	60	340	5200~5700	1500~2000	20	10~12	側銑 SIDE MILLING
AEW2003	60	315	4800~5300	1700~2200	40	0~2	側銑 SIDE MILLING
AEW2003	60	315	4800~5300	1800~2300	40	6~8	側銑 SIDE MILLING
AEW2003	60	315	4800~5200	1000~1400	40	10~12	側銑 SIDE MILLING

切削條件表 MILLING CONDITIONS

AEWR

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=10000 (min^{-1}) 以下 Be used under the machine of RPM=10000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEWR0605	20	185	9500~10000	3500~4000	0~1	4~6	溝銑 SLOTTING
AEWR0605	20	185	9500~10000	2000~2500	2~3	4~6	溝銑 SLOTTING
AEWR0605	20	185	9500~10000	1000~1500	4~6	4~6	溝銑 SLOTTING
AEWR0605	20	185	9500~10000	5000~5500	6	0~1	側銑 SIDE MILLING
AEWR0605	20	185	9500~10000	3000~3500	6	2~3	側銑 SIDE MILLING
AEWR0605	20	185	9500~10000	1000~1500	6	4~6	側銑 SIDE MILLING
AEWR0805	27	220	8500~9000	5000~5500	0~1.5	6~8	溝銑 SLOTTING
AEWR0805	27	220	8500~9000	3000~3500	2~4	6~8	溝銑 SLOTTING
AEWR0805	27	220	8500~9000	2000~2500	5~8	6~8	溝銑 SLOTTING
AEWR0805	27	220	8500~9000	5000~5500	8	0~2	側銑 SIDE MILLING
AEWR0805	27	220	8500~9000	3000~3500	8	3~5	側銑 SIDE MILLING
AEWR0805	27	220	8500~9000	1800~2300	8	6~8	側銑 SIDE MILLING
AEWR1005	33	250	7800~8300	4000~4500	0~2	8~10	溝銑 SLOTTING
AEWR1005	33	250	7800~8300	3000~3500	3~5	8~10	溝銑 SLOTTING
AEWR1005	33	250	7800~8300	2000~2500	6~10	8~10	溝銑 SLOTTING
AEWR1005	33	250	7800~8300	4000~4500	10	0~2	側銑 SIDE MILLING
AEWR1005	33	250	7800~8300	3000~3500	10	3~5	側銑 SIDE MILLING
AEWR1005	33	250	7800~8300	1800~2300	10	6~10	側銑 SIDE MILLING
AEWR1205	37	290	7500~8000	4000~4500	0~2	10~12	溝銑 SLOTTING
AEWR1205	37	290	7500~8000	2500~3000	3~6	10~12	溝銑 SLOTTING
AEWR1205	37	290	7500~8000	2000~2500	7~12	10~12	溝銑 SLOTTING
AEWR1205	37	290	7500~8000	3000~3500	12	0~2	側銑 SIDE MILLING
AEWR1205	37	290	7500~8000	2500~3000	12	3~6	側銑 SIDE MILLING
AEWR1205	37	290	7500~8000	2000~2500	12	7~12	側銑 SIDE MILLING
AEWR1610	55	340	6500~7000	2000~2500	3~4	14~16	溝銑 SLOTTING
AEWR1610	55	340	6500~7000	1200~1700	6~8	14~16	溝銑 SLOTTING
AEWR1610	55	340	6500~7000	1100~1600	9~10	14~16	溝銑 SLOTTING
AEWR1610	55	340	6500~7000	3200~3700	16	0~2	側銑 SIDE MILLING
AEWR1610	55	340	6500~7000	2000~2500	16	6~8	側銑 SIDE MILLING
AEWR1610	55	340	6500~7000	1400~1900	16	9~10	側銑 SIDE MILLING
AEWR2010	60	315	4800~5300	1700~2200	3~4	18~20	溝銑 SLOTTING
AEWR2010	60	315	4800~5300	1000~1400	6~8	18~20	溝銑 SLOTTING
AEWR2010	60	315	4800~5300	900~1200	9~10	18~20	溝銑 SLOTTING
AEWR2010	60	315	4800~5300	2500~3000	20	0~2	側銑 SIDE MILLING
AEWR2010	60	315	4800~5300	1600~2000	20	6~8	側銑 SIDE MILLING
AEWR2010	60	315	4800~5300	1100~1500	20	9~10	側銑 SIDE MILLING

AEWR

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=18000 (min^{-1}) 以下 Be used under the machine of RPM=18000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEWR0605	20	330	17000~18000	5500~6000	0~1	4~6	溝銑 SLOTTING
AEWR0605	20	330	17000~18000	4000~4500	2~3	4~6	溝銑 SLOTTING
AEWR0605	20	330	17000~18000	3500~4000	4~6	4~6	溝銑 SLOTTING
AEWR0605	20	330	17000~18000	7000~7500	6	0~1	側銑 SIDE MILLING
AEWR0605	20	330	17000~18000	5000~5500	6	2~3	側銑 SIDE MILLING
AEWR0605	20	330	17000~18000	2000~2500	6	4~6	側銑 SIDE MILLING
AEWR0805	27	390	15000~16000	6500~7000	0~1.5	6~8	溝銑 SLOTTING
AEWR0805	27	390	15000~16000	3500~4000	2~4	6~8	溝銑 SLOTTING
AEWR0805	27	340	13000~14000	2500~3000	5~8	6~8	溝銑 SLOTTING
AEWR0805	27	390	15000~16000	7000~7500	8	0~2	側銑 SIDE MILLING
AEWR0805	27	390	15000~16000	5000~5500	8	3~5	側銑 SIDE MILLING
AEWR0805	27	390	15000~16000	4000~4500	8	6~8	側銑 SIDE MILLING
AEWR1005	33	390	12000~13000	6500~7000	0~2	8~10	溝銑 SLOTTING
AEWR1005	33	390	12000~13000	3500~4000	3~5	8~10	溝銑 SLOTTING
AEWR1005	33	390	12000~13000	2500~3000	6~10	8~10	溝銑 SLOTTING
AEWR1005	33	390	12000~13000	7000~7500	10	0~2	側銑 SIDE MILLING
AEWR1005	33	390	12000~13000	5000~5500	10	3~5	側銑 SIDE MILLING
AEWR1005	33	390	12000~13000	4000~4500	10	6~10	側銑 SIDE MILLING
AEWR1205	37	395	10000~11000	6000~6500	0~2	10~12	溝銑 SLOTTING
AEWR1205	37	395	10000~11000	4500~5000	3~6	10~12	溝銑 SLOTTING
AEWR1205	37	395	10000~11000	4500~5000	7~12	10~12	溝銑 SLOTTING
AEWR1205	37	395	10000~11000	7000~7500	12	0~2	側銑 SIDE MILLING
AEWR1205	37	395	10000~11000	3500~4000	12	3~6	側銑 SIDE MILLING
AEWR1205	37	395	10000~11000	3500~4000	12	7~12	側銑 SIDE MILLING
AEWR1610	55	340	6500~7000	2000~2500	3~4	14~16	溝銑 SLOTTING
AEWR1610	55	340	6500~7000	1200~1700	6~8	14~16	溝銑 SLOTTING
AEWR1610	55	340	6500~7000	1100~1600	9~10	14~16	溝銑 SLOTTING
AEWR1610	55	340	6500~7000	3200~3700	16	0~2	側銑 SIDE MILLING
AEWR1610	55	340	6500~7000	2000~2500	16	6~8	側銑 SIDE MILLING
AEWR1610	55	340	6500~7000	1400~1900	16	9~10	側銑 SIDE MILLING
AEWR2010	60	315	4800~5300	1700~2200	3~4	18~20	溝銑 SLOTTING
AEWR2010	60	315	4800~5300	1000~1400	6~8	18~20	溝銑 SLOTTING
AEWR2010	60	315	4800~5300	900~1200	9~10	18~20	溝銑 SLOTTING
AEWR2010	60	315	4800~5300	2500~3000	20	0~2	側銑 SIDE MILLING
AEWR2010	60	315	4800~5300	1600~2000	20	6~8	側銑 SIDE MILLING
AEWR2010	60	315	4800~5300	1100~1500	20	9~10	側銑 SIDE MILLING

切削條件表 MILLING CONDITIONS

AES

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=10000 (min^{-1}) 以下 Be used under the machine of RPM=10000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AES0203S	14	60	9500~10000	2000~2400	0~0.2	0.5~2	溝銑 SLOTTING
AES0203S	14	60	9500~10000	1400~1800	0.3~0.6	0.5~2	溝銑 SLOTTING
AES0203S	14	60	9500~10000	1400~1800	0.05~0.08	0.5~2	溝銑 SLOTTING
AES0203S	14	60	9500~10000	2000~2400	4	0~0.2	側銑 SIDE MILLING
AES0203S	14	60	9500~10000	1400~1800	4	0.3~0.6	側銑 SIDE MILLING
AES0203S	14	60	9500~10000	1200~1600	4	0.05~0.08	側銑 SIDE MILLING
AES0203	14	60	9500~10000	1800~2200	0.05~0.08	0.5~2	溝銑 SLOTTING
AES0203	14	60	9500~10000	2600~3000	0~0.2	0.5~2	溝銑 SLOTTING
AES0203	14	60	9500~10000	1800~2200	0.3~0.6	0.5~2	溝銑 SLOTTING
AES0203	14	60	9500~10000	1000~1300	0.7~1	0.5~2	溝銑 SLOTTING
AES0203	14	60	9500~10000	1200~1600	4	0.05~0.08	側銑 SIDE MILLING
AES0203	14	60	9500~10000	2800~3200	4	0~0.2	側銑 SIDE MILLING
AES0203	14	60	9500~10000	1800~2200	4	0.3~0.6	側銑 SIDE MILLING
AES0203	14	60	9500~10000	1000~1400	4	0.7~1	側銑 SIDE MILLING
AES0303S	16	90	9500~10000	2500~3000	0~0.4	1~3	溝銑 SLOTTING
AES0303S	16	90	9500~10000	1800~2300	0.5~0.8	1~3	溝銑 SLOTTING
AES0303S	16	90	9500~10000	1400~1800	0.05~0.1	1~3	溝銑 SLOTTING
AES0303S	16	90	9500~10000	2500~3000	6	0~0.4	側銑 SIDE MILLING
AES0303S	16	90	9500~10000	1800~2300	6	0.5~0.8	側銑 SIDE MILLING
AES0303S	16	90	9500~10000	1400~1800	6	0.05~0.1	側銑 SIDE MILLING
AES0303	16	90	9500~10000	1500~2000	0.05~0.1	1~3	溝銑 SLOTTING
AES0303	16	90	9500~10000	3000~3500	0~0.4	1~3	溝銑 SLOTTING
AES0303	16	90	9500~10000	2200~2700	0.5~0.8	1~3	溝銑 SLOTTING
AES0303	16	90	9500~10000	1200~1600	0.9~1.2	1~3	溝銑 SLOTTING
AES0303	16	90	9500~10000	1400~1800	6	0.05~0.1	側銑 SIDE MILLING
AES0303	16	90	9500~10000	3000~3500	6	0~0.4	側銑 SIDE MILLING
AES0303	16	90	9500~10000	2200~2700	6	0.5~0.8	側銑 SIDE MILLING
AES0303	16	90	9500~10000	1200~1600	6	0.9~1.2	側銑 SIDE MILLING
AES0403S	16	119	9500~10000	2800~3300	0~0.6	2~4	溝銑 SLOTTING
AES0403S	16	119	9500~10000	2000~2400	0.7~1.2	2~4	溝銑 SLOTTING
AES0403S	16	119	9500~10000	1400~1800	0.05~0.12	2~4	溝銑 SLOTTING
AES0403S	16	119	9500~10000	2800~3300	8	0~0.6	側銑 SIDE MILLING
AES0403S	16	119	9500~10000	2000~2400	8	0.7~1.2	側銑 SIDE MILLING
AES0403S	16	119	9500~10000	1400~1800	8	0.05~0.12	側銑 SIDE MILLING
AES0403	16	120	9500~10000	1500~2000	0.05~0.12	2~4	溝銑 SLOTTING
AES0403	16	120	9500~10000	4000~4500	0~0.6	2~4	溝銑 SLOTTING
AES0403	16	120	9500~10000	2500~3000	0.7~1.2	2~4	溝銑 SLOTTING
AES0403	16	120	9500~10000	1500~2000	1.3~2	2~4	溝銑 SLOTTING
AES0403	16	120	9500~10000	1400~1800	8	0.05~0.12	側銑 SIDE MILLING
AES0403	16	120	9500~10000	4000~4500	8	0~0.6	側銑 SIDE MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AES0403	16	120	9500~10000	2500~3000	8	0.7~1.2	側銑 SIDE MILLING
AES0403	16	120	9500~10000	1500~2000	8	1.3~2	側銑 SIDE MILLING
AES0503	16	150	9500~10000	1800~2200	0.05~0.15	3~5	溝銑 SLOTTING
AES0503	16	150	9500~10000	4500~5000	0~0.7	3~5	溝銑 SLOTTING
AES0503	16	150	9500~10000	2500~3000	0.8~1.5	3~5	溝銑 SLOTTING
AES0503	16	150	9500~10000	1500~2000	1.6~3.5	3~5	溝銑 SLOTTING
AES0503	16	150	9500~10000	1600~2000	10	0.05~0.15	側銑 SIDE MILLING
AES0503	16	150	9500~10000	4500~5000	10	0~0.7	側銑 SIDE MILLING
AES0503	16	150	9500~10000	3000~3500	10	0.8~1.5	側銑 SIDE MILLING
AES0503	16	150	9500~10000	1500~2000	10	1.6~3.5	側銑 SIDE MILLING
AES0603	20	170	9000~9500	1800~2200	0.05~0.15	4~6	溝銑 SLOTTING
AES0603	20	170	9000~9500	5000~5500	0~1	4~6	溝銑 SLOTTING
AES0603	20	170	9000~9500	3800~4300	2~3	4~6	溝銑 SLOTTING
AES0603	20	170	9000~9500	3000~3500	3.5~6	4~6	溝銑 SLOTTING
AES0603	20	170	9000~9500	1800~2200	12	0.05~0.15	側銑 SIDE MILLING
AES0603	20	170	9000~9500	5000~5500	12	0~1	側銑 SIDE MILLING
AES0603	20	170	9000~9500	3800~4300	12	2~3	側銑 SIDE MILLING
AES0603	20	170	9000~9500	2400~2800	12	3.5~6	側銑 SIDE MILLING
AES0603L	40	130	6700~7200	500~800	30	0.05~0.15	側銑 SIDE MILLING
AES0603L	40	130	6700~7200	1000~1400	30	0.4~0.6	側銑 SIDE MILLING
AES0603L	40	130	6700~7200	700~1100	30	0.7~1	側銑 SIDE MILLING
AES0803	25	215	8500~9000	1800~2300	0.05~0.15	6~8	溝銑 SLOTTING
AES0803	25	215	8500~9000	5000~5500	0~1.5	6~8	溝銑 SLOTTING
AES0803	25	215	8500~9000	3500~4000	2~4	6~8	溝銑 SLOTTING
AES0803	25	215	8500~9000	2500~3000	5~8	6~8	溝銑 SLOTTING
AES0803	25	215	8500~9000	1800~2300	16	0.05~0.15	側銑 SIDE MILLING
AES0803	25	215	8500~9000	5000~5500	16	0~2	側銑 SIDE MILLING
AES0803	25	215	8500~9000	4000~4500	16	2.5~4	側銑 SIDE MILLING
AES0803	25	215	8500~9000	2500~3000	16	5~8	側銑 SIDE MILLING
AES0803L	55	150	5700~6200	500~800	40	0.05~0.15	側銑 SIDE MILLING
AES0803L	55	145	5500~6000	1000~1400	40	1	側銑 SIDE MILLING
AES0803L	55	145	5500~6000	700~1100	40	1.5~2	側銑 SIDE MILLING
AES1003	30	245	7800~8200	2000~2400	0.05~0.15	8~10	溝銑 SLOTTING
AES1003	30	245	7800~8200	5500~6000	0~2	8~10	溝銑 SLOTTING
AES1003	30	245	7800~8200	3000~3500	3~5	8~10	溝銑 SLOTTING
AES1003	30	245	7800~8200	2000~2500	6~10	8~10	溝銑 SLOTTING
AES1003	30	245	7800~8200	1400~1800	20	0.05~0.15	側銑 SIDE MILLING
AES1003	30	245	7800~8200	5500~6000	20	0~2	側銑 SIDE MILLING
AES1003	30	245	7800~8200	2800~3300	20	3~5	側銑 SIDE MILLING
AES1003	30	245	7800~8200	1200~1600	20	6~10	側銑 SIDE MILLING
AES1003L	60	140	4200~4700	500~800	50	0.05~0.15	側銑 SIDE MILLING
AES1003L	60	165	5000~5500	800~1200	50	1	側銑 SIDE MILLING
AES1003L	60	165	5000~5500	500~800	50	2	側銑 SIDE MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
AES1203	35	295	7800~8200	2000~2400	0.05~0.15	10~12	溝銑 SLOTTING
AES1203	35	295	7800~8200	6000~6500	0~2	10~12	溝銑 SLOTTING
AES1203	35	295	7800~8200	3500~4000	3~6	10~12	溝銑 SLOTTING
AES1203	35	295	7800~8200	2800~3300	7~12	10~12	溝銑 SLOTTING
AES1203	35	295	7800~8200	2000~2400	24	0.05~0.15	側銑 SIDE MILLING
AES1203	35	295	7800~8200	5500~6000	24	0~2	側銑 SIDE MILLING
AES1203	35	295	7800~8200	3500~4000	24	3~6	側銑 SIDE MILLING
AES1203	35	295	7800~8200	2800~3300	24	7~12	側銑 SIDE MILLING
AES1203L	60	170	4200~4700	500~800	50	0.05~0.15	側銑 SIDE MILLING
AES1203L	60	130	3200~3700	800~1200	50	1	側銑 SIDE MILLING
AES1203L	60	130	3200~3700	700~1000	50	2	側銑 SIDE MILLING
AES1603	55	325	6200~6700	1400~1800	0.05~0.2	14~16	溝銑 SLOTTING
AES1603	55	325	6200~6700	3500~4000	0~2	14~16	溝銑 SLOTTING
AES1603	55	325	6200~6700	2500~3000	3~6	14~16	溝銑 SLOTTING
AES1603	55	325	6200~6700	1700~2200	7~12	14~16	溝銑 SLOTTING
AES1603	55	325	6200~6700	4000~4500	16	0~2	側銑 SIDE MILLING
AES1603	55	325	6200~6700	2500~3000	16	3~6	側銑 SIDE MILLING
AES1603	55	325	6200~6700	2000~2500	16	8~10	側銑 SIDE MILLING
AES1603	55	325	5800~6300	800~1200	32	0.05~0.2	側銑 SIDE MILLING
AES1603	55	325	6200~6700	2000~2500	32	0~2	側銑 SIDE MILLING
AES1603	55	325	6200~6700	1400~1800	32	3~6	側銑 SIDE MILLING
AES1603	55	325	6200~6700	900~1300	32	8~10	側銑 SIDE MILLING
AES1603L	75	165	3000~3500	500~800	50	0.05~0.15	側銑 SIDE MILLING
AES1603L	75	165	3000~3500	800~1200	50	1	側銑 SIDE MILLING
AES1603L	75	165	3000~3500	700~1000	50	2	側銑 SIDE MILLING
AES2003	65	315	5000~5400	1200~1600	0.05~0.2	18~20	溝銑 SLOTTING
AES2003	65	315	5000~5400	4000~4500	0~2	18~20	溝銑 SLOTTING
AES2003	65	315	5000~5400	2800~3300	3~6	18~20	溝銑 SLOTTING
AES2003	65	315	5000~5400	2000~2500	7~12	18~20	溝銑 SLOTTING
AES2003	65	315	5000~5400	1200~1600	40	0.05~0.2	側銑 SIDE MILLING
AES2003	65	315	5000~5400	4000~4500	40	0~2	側銑 SIDE MILLING
AES2003	65	315	5000~5400	2800~3300	40	3~6	側銑 SIDE MILLING
AES2003	65	315	5000~5400	2000~2500	40	7~12	側銑 SIDE MILLING
AES2003L	80	190	2800~3300	400~700	55	0.05~0.2	側銑 SIDE MILLING
AES2003L	80	190	2800~3300	700~1000	55	1	側銑 SIDE MILLING
AES2003L	80	190	2800~3300	600~800	55	2	側銑 SIDE MILLING

AES

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=20000 (min^{-1}) 以下 Be used under the machine of RPM=20000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AES0203S	14	115	18000~20000	3500~4000	0~0.2	0.5~2	溝銑 SLOTTING
AES0203S	14	115	18000~20000	2500~3000	0.3~0.6	0.5~2	溝銑 SLOTTING
AES0203S	14	115	18000~20000	2000~2400	0.05~0.08	0.5~2	溝銑 SLOTTING
AES0203S	14	115	18000~20000	3500~4000	4	0~0.2	側銑 SIDE MILLING
AES0203S	14	115	18000~20000	2500~3000	4	0.3~0.6	側銑 SIDE MILLING
AES0203S	14	115	18000~20000	2000~2400	4	0.05~0.08	側銑 SIDE MILLING
AES0203	14	115	18000~20000	2400~2800	0.05~0.08	0.5~2	溝銑 SLOTTING
AES0203	14	115	18000~20000	4400~4800	0~0.2	0.5~2	溝銑 SLOTTING
AES0203	14	115	18000~20000	3400~3800	0.3~0.6	0.5~2	溝銑 SLOTTING
AES0203	14	115	18000~20000	2400~2800	0.7~1	0.5~2	溝銑 SLOTTING
AES0203	14	115	18000~20000	2400~2800	4	0.05~0.08	側銑 SIDE MILLING
AES0203	14	115	18000~20000	4000~4400	4	0~0.2	側銑 SIDE MILLING
AES0203	14	115	18000~20000	3000~3400	4	0.3~0.6	側銑 SIDE MILLING
AES0203	14	115	18000~20000	2000~2400	4	0.7~1	側銑 SIDE MILLING
AES0303S	16	160	17000~18000	3500~4000	0~0.4	1~3	溝銑 SLOTTING
AES0303S	16	160	17000~18000	2500~3000	0.5~0.8	1~3	溝銑 SLOTTING
AES0303S	16	160	17000~18000	2000~2400	0.05~0.1	1~3	溝銑 SLOTTING
AES0303S	16	160	17000~18000	3500~4000	6	0~0.4	側銑 SIDE MILLING
AES0303S	16	160	17000~18000	2500~3000	6	0.5~0.8	側銑 SIDE MILLING
AES0303S	16	160	17000~18000	2000~2400	6	0.05~0.1	側銑 SIDE MILLING
AES0303	16	160	17000~18000	2400~2800	0.05~0.1	1~3	溝銑 SLOTTING
AES0303	16	160	17000~18000	4400~4800	0~0.4	1~3	溝銑 SLOTTING
AES0303	16	160	17000~18000	3400~3800	0.5~0.8	1~3	溝銑 SLOTTING
AES0303	16	160	17000~18000	2400~2800	0.9~1.2	1~3	溝銑 SLOTTING
AES0303	16	160	17000~18000	2400~2800	6	0.05~0.1	側銑 SIDE MILLING
AES0303	16	160	17000~18000	4000~4400	6	0~0.4	側銑 SIDE MILLING
AES0303	16	160	17000~18000	3000~3400	6	0.5~0.8	側銑 SIDE MILLING
AES0303	16	160	17000~18000	2000~2400	6	0.9~1.2	側銑 SIDE MILLING
AES0403S	16	175	14000~15000	3800~4300	0~0.6	2~4	溝銑 SLOTTING
AES0403S	16	150	12000~13000	2400~2800	0.7~1.2	2~4	溝銑 SLOTTING
AES0403S	16	200	16000~17000	2000~2400	0.05~0.12	2~4	溝銑 SLOTTING
AES0403S	16	175	14000~15000	3800~4300	8	0~0.6	側銑 SIDE MILLING
AES0403S	16	150	12000~13000	2400~2800	8	0.7~1.2	側銑 SIDE MILLING
AES0403S	16	150	12000~13000	1600~2000	8	0.05~0.12	側銑 SIDE MILLING
AES0403	16	200	16000~17000	3000~3500	0.05~0.12	2~4	溝銑 SLOTTING
AES0403	16	175	14000~15000	4800~5300	0~0.6	2~4	溝銑 SLOTTING
AES0403	16	150	12000~13000	3200~3700	0.7~1.2	2~4	溝銑 SLOTTING
AES0403	16	150	12000~13000	2200~2700	1.3~2	2~4	溝銑 SLOTTING
AES0403	16	150	12000~13000	1600~2000	8	0.05~0.12	側銑 SIDE MILLING
AES0403	16	175	14000~15000	4800~5300	8	0~0.6	側銑 SIDE MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AES0403	16	150	12000~13000	3200~3700	8	0.7~1.2	側銑 SIDE MILLING
AES0403	16	150	12000~13000	2200~2700	8	1.3~2	側銑 SIDE MILLING
AES0503	16	235	15000~16000	3000~3500	0.05~0.15	3~5	溝銑 SLOTTING
AES0503	16	235	15000~16000	5500~6000	0~0.7	3~5	溝銑 SLOTTING
AES0503	16	190	12000~13000	3500~4000	0.8~1.5	3~5	溝銑 SLOTTING
AES0503	16	190	12000~13000	2500~3000	1.6~3.5	3~5	溝銑 SLOTTING
AES0503	16	205	13000~14000	2200~2600	10	0.05~0.15	側銑 SIDE MILLING
AES0503	16	205	13000~14000	5500~6000	10	0~0.7	側銑 SIDE MILLING
AES0503	16	190	12000~13000	3500~4000	10	0.8~1.5	側銑 SIDE MILLING
AES0503	16	190	12000~13000	2500~3000	10	1.6~3.5	側銑 SIDE MILLING
AES0603	20	305	16000~17000	3000~3500	0.05~0.15	4~6	溝銑 SLOTTING
AES0603	20	305	16000~17000	6500~7500	0~1	4~6	溝銑 SLOTTING
AES0603	20	285	15000~16000	5000~5500	2~3	4~6	溝銑 SLOTTING
AES0603	20	285	15000~16000	3800~4300	3.5~6	4~6	溝銑 SLOTTING
AES0603	20	305	16000~17000	2800~3200	12	0.05~0.15	側銑 SIDE MILLING
AES0603	20	305	16000~17000	6500~7500	12	0~1	側銑 SIDE MILLING
AES0603	20	285	15000~16000	4500~5000	12	2~3	側銑 SIDE MILLING
AES0603	20	285	15000~16000	3000~3500	12	3.5~6	側銑 SIDE MILLING
AES0803	25	355	14000~15000	2600~3000	0.05~0.15	6~8	溝銑 SLOTTING
AES0803	25	355	14000~15000	6000~6500	0~1.5	6~8	溝銑 SLOTTING
AES0803	25	355	14000~15000	4500~5000	2~4	6~8	溝銑 SLOTTING
AES0803	25	355	14000~15000	3000~3500	5~8	6~8	溝銑 SLOTTING
AES0803	25	305	12000~13000	2400~2800	16	0.05~0.15	側銑 SIDE MILLING
AES0803	25	330	13000~14000	6500~7500	16	0~2	側銑 SIDE MILLING
AES0803	25	330	13000~14000	5000~5500	16	2.5~4	側銑 SIDE MILLING
AES0803	25	330	13000~14000	3000~3500	16	5~8	側銑 SIDE MILLING
AES1003	30	380	12000~13000	3000~3500	0.05~0.15	8~10	溝銑 SLOTTING
AES1003	30	380	12000~13000	6500~7000	0~2	8~10	溝銑 SLOTTING
AES1003	30	315	10000~11000	3500~4000	3~5	8~10	溝銑 SLOTTING
AES1003	30	315	10000~11000	3000~3500	6~10	8~10	溝銑 SLOTTING
AES1003	30	380	12000~13000	2800~3200	20	0.05~0.15	側銑 SIDE MILLING
AES1003	30	380	12000~13000	7000~8000	20	0~2	側銑 SIDE MILLING
AES1003	30	315	10000~11000	3500~4000	20	3~5	側銑 SIDE MILLING
AES1003	30	315	10000~11000	2000~2500	20	6~10	側銑 SIDE MILLING
AES1203	35	295	7800~8200	2000~2400	0.05~0.15	10~12	溝銑 SLOTTING
AES1203	35	295	7800~8200	6000~6500	0~2	10~12	溝銑 SLOTTING
AES1203	35	295	7800~8200	3500~4000	3~6	10~12	溝銑 SLOTTING
AES1203	35	295	7800~8200	2800~3300	7~12	10~12	溝銑 SLOTTING
AES1203	35	295	7800~8200	2000~2400	24	0.05~0.15	側銑 SIDE MILLING
AES1203	35	295	7800~8200	5500~6000	24	0~2	側銑 SIDE MILLING
AES1203	35	295	7800~8200	3500~4000	24	3~6	側銑 SIDE MILLING
AES1203	35	295	7800~8200	2800~3300	24	7~12	側銑 SIDE MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AES1603	55	325	6400~6800	4800~5300	0~2	14~16	溝銑 SLOTTING
AES1603	55	325	6400~6800	3500~4000	3~6	14~16	溝銑 SLOTTING
AES1603	55	325	6400~6800	2800~3300	7~12	14~16	溝銑 SLOTTING
AES1603	55	325	6400~6800	1400~1800	0.05~0.2	14~16	溝銑 SLOTTING
AES1603	55	325	6400~6800	5000~5500	16	0~2	側銑 SIDE MILLING
AES1603	55	325	6400~6800	3500~4000	16	3~6	側銑 SIDE MILLING
AES1603	55	325	6400~6800	2800~3300	16	7~12	側銑 SIDE MILLING
AES1603	55	325	6400~6800	1400~1800	16	0.05~0.2	側銑 SIDE MILLING
AES2003	65	315	5000~5400	1200~1600	32	18~20	溝銑 SLOTTING
AES2003	65	315	5000~5400	4000~4500	0~2	18~20	溝銑 SLOTTING
AES2003	65	315	5000~5400	2800~3300	3~6	18~20	溝銑 SLOTTING
AES2003	65	315	5000~5400	2000~2500	7~12	18~20	溝銑 SLOTTING
AES2003	65	315	5000~5400	1200~1600	40	0.05~0.2	側銑 SIDE MILLING
AES2003	65	315	5000~5400	4000~4500	40	0~2	側銑 SIDE MILLING
AES2003	65	315	5000~5400	2800~3300	40	3~6	側銑 SIDE MILLING
AES2003	65	315	5000~5400	2000~2500	40	7~12	側銑 SIDE MILLING

切削條件表 MILLING CONDITIONS

AER

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**
冷卻方式 Coolant Type	濕式切削 Wet coolant

建議機器轉速RPM=10000 (min^{-1}) 以下
Be used under the machine of RPM=10000 (min^{-1})

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AER0202	9	65	9500~10000	1400~1800	0.05~0.08	1.5~2	溝銑 SLOTTING
AER0202	9	65	9500~10000	2200~2600	0~0.2	2	溝銑 SLOTTING
AER0202	9	65	9500~10000	1400~1800	0.2~0.6	2	溝銑 SLOTTING
AER0202	9	65	9500~10000	1100~1500	0.6~1	2	溝銑 SLOTTING
AER0202	9	65	9500~10000	1400~1800	4	0.05~0.08	側銑 SIDE MILLING
AER0202	9	65	9500~10000	2200~2600	2	0~0.2	側銑 SIDE MILLING
AER0202	9	65	9500~10000	1400~1800	2	0.2~0.6	側銑 SIDE MILLING
AER0202	9	65	9500~10000	1100~1500	2	0.6~1	側銑 SIDE MILLING
AER0302	13	90	9000~9500	1400~1600	0.05~0.1	2.5~3	溝銑 SLOTTING
AER0302	13	90	9000~9500	2000~2400	0~0.4	3	溝銑 SLOTTING
AER0302	13	90	9000~9500	1600~2000	0.4~0.8	3	溝銑 SLOTTING
AER0302	13	90	9000~9500	1200~1600	0.8~1.2	3	溝銑 SLOTTING
AER0302	13	90	9000~9500	1400~1600	6	0.05~0.1	側銑 SIDE MILLING
AER0302	13	90	9000~9500	2000~2400	3	0~0.4	側銑 SIDE MILLING
AER0302	13	90	9000~9500	1600~2000	3	0.4~0.8	側銑 SIDE MILLING
AER0302	13	90	9000~9500	1100~1500	3	0.8~1.2	側銑 SIDE MILLING
AER0402	15	110	8500~9000	1400~1800	0.05~0.12	3~4	溝銑 SLOTTING
AER0402	15	110	8500~9000	2400~2800	0~0.6	4	溝銑 SLOTTING
AER0402	15	110	8500~9000	1800~2200	0.6~1.2	4	溝銑 SLOTTING
AER0402	15	110	8500~9000	1200~1600	1.2~2	4	溝銑 SLOTTING
AER0402	15	110	8500~9000	1400~1800	8	0.05~0.12	側銑 SIDE MILLING
AER0402	15	110	8500~9000	2700~3200	4	0~0.6	側銑 SIDE MILLING
AER0402	15	110	8500~9000	2100~2500	4	0.6~1.2	側銑 SIDE MILLING
AER0402	15	110	8500~9000	1200~1600	4	1.2~2	側銑 SIDE MILLING
AER0603	21	150	7800~8300	1600~2000	0.05~0.15	5~6	溝銑 SLOTTING
AER0603	21	150	7800~8300	2800~3200	0~1	6	溝銑 SLOTTING
AER0603	21	150	7800~8300	1700~2200	1~3	6	溝銑 SLOTTING
AER0603	21	150	7800~8300	1200~1700	3~6	6	溝銑 SLOTTING
AER0603	21	150	7800~8300	1600~2000	12	0.05~0.15	側銑 SIDE MILLING
AER0603	21	150	7800~8300	2500~3000	6	0~1	側銑 SIDE MILLING
AER0603	21	150	7800~8300	1800~2300	6	1~3	側銑 SIDE MILLING
AER0603	21	150	7800~8300	1200~1700	6	3~6	側銑 SIDE MILLING
AER0805	25	200	7800~8300	1600~2000	0.05~0.15	6~8	溝銑 SLOTTING
AER0805	25	200	7800~8300	3500~4000	0~1.5	8	溝銑 SLOTTING
AER0805	25	200	7800~8300	3000~3500	1.5~4	8	溝銑 SLOTTING
AER0805	25	200	7800~8300	2400~2800	4~8	8	溝銑 SLOTTING
AER0805	25	200	7800~8300	1600~2000	16	0.05~0.15	側銑 SIDE MILLING
AER0805	25	200	7800~8300	3800~4300	8	0~2	側銑 SIDE MILLING
AER0805	25	200	7800~8300	2800~3300	8	2~4	側銑 SIDE MILLING
AER0805	25	200	7800~8300	2400~2800	8	4~8	側銑 SIDE MILLING
AER1005	33	250	7800~8300	1600~2000	0.05~0.15	8~10	溝銑 SLOTTING
AER1005	33	250	7800~8300	3500~4000	0~2	10	溝銑 SLOTTING
AER1005	33	250	7800~8300	3000~3500	2~5	10	溝銑 SLOTTING
AER1005	33	250	7800~8300	2000~2400	5~10	10	溝銑 SLOTTING
AER1005	33	250	7800~8300	1600~2000	20	0.05~0.15	側銑 SIDE MILLING
AER1005	33	250	7800~8300	3500~4000	10	0~2	側銑 SIDE MILLING
AER1005	33	250	7800~8300	3000~3500	10	2~5	側銑 SIDE MILLING
AER1005	33	250	7800~8300	2000~2400	10	5~10	側銑 SIDE MILLING

AER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=20000 (min^{-1}) 以下 Be used under the machine of RPM=20000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AER0202	9	115	18000~20000	1800~2200	0.05~0.08	1.5~2	溝銑 SLOTTING
AER0202	9	115	18000~20000	3000~3500	0~0.2	2	溝銑 SLOTTING
AER0202	9	115	18000~20000	1700~2000	0.2~0.6	2	溝銑 SLOTTING
AER0202	9	115	18000~20000	1300~1700	0.6~1	2	溝銑 SLOTTING
AER0202	9	115	18000~20000	1800~2200	4	0.05~0.08	側銑 SIDE MILLING
AER0202	9	115	18000~20000	3200~3700	2	0~0.2	側銑 SIDE MILLING
AER0202	9	115	18000~20000	1600~1900	2	0.2~0.6	側銑 SIDE MILLING
AER0202	9	115	18000~20000	1300~1700	2	0.6~1	側銑 SIDE MILLING
AER0302	13	160	17000~18000	1800~2200	0.05~0.1	2.5~3	溝銑 SLOTTING
AER0302	13	160	17000~18000	2600~3000	0~0.4	3	溝銑 SLOTTING
AER0302	13	160	17000~18000	2000~2400	0.4~0.8	3	溝銑 SLOTTING
AER0302	13	160	17000~18000	1200~1600	0.8~1.2	3	溝銑 SLOTTING
AER0302	13	160	17000~18000	1800~2200	6	0.05~0.1	側銑 SIDE MILLING
AER0302	13	160	17000~18000	2800~3200	3	0~0.4	側銑 SIDE MILLING
AER0302	13	160	17000~18000	2000~2400	3	0.4~0.8	側銑 SIDE MILLING
AER0302	13	160	17000~18000	1300~1700	3	0.8~1.2	側銑 SIDE MILLING
AER0402	15	175	14000~15000	2000~2400	0.05~0.12	3~4	溝銑 SLOTTING
AER0402	15	150	12000~13000	3000~3500	0~0.6	4	溝銑 SLOTTING
AER0402	15	150	12000~13000	2100~2500	0.6~1.2	4	溝銑 SLOTTING
AER0402	15	200	16000~17000	1500~1900	1.2~2	4	溝銑 SLOTTING
AER0402	15	175	14000~15000	2000~2400	8	0.05~0.12	側銑 SIDE MILLING
AER0402	15	150	12000~13000	3000~3500	4	0~0.6	側銑 SIDE MILLING
AER0402	15	150	12000~13000	2100~2500	4	0.6~1.2	側銑 SIDE MILLING
AER0402	15	150	12000~13000	1400~1800	4	1.2~2	側銑 SIDE MILLING
AER0603	21	270	14000~15000	2000~2400	0.05~0.15	5~6	溝銑 SLOTTING
AER0603	21	270	14000~15000	3500~4000	0~1	6	溝銑 SLOTTING
AER0603	21	270	14000~15000	2400~2800	1~3	6	溝銑 SLOTTING
AER0603	21	270	14000~15000	1600~2000	3~6	6	溝銑 SLOTTING
AER0603	21	270	14000~15000	2000~2400	12	0.05~0.15	側銑 SIDE MILLING
AER0603	21	270	14000~15000	3500~4000	6	0~1	側銑 SIDE MILLING
AER0603	21	270	14000~15000	2000~2500	6	1~3	側銑 SIDE MILLING
AER0603	21	270	14000~15000	1600~2000	6	3~6	側銑 SIDE MILLING
AER0805	25	315	12000~13000	2000~2400	0.05~0.15	6~8	溝銑 SLOTTING
AER0805	25	315	12000~13000	4500~5000	0~1.5	8	溝銑 SLOTTING
AER0805	25	315	12000~13000	3500~4000	1.5~4	8	溝銑 SLOTTING
AER0805	25	315	12000~13000	2400~2800	4~8	8	溝銑 SLOTTING
AER0805	25	315	12000~13000	2000~2400	16	0.05~0.15	側銑 SIDE MILLING
AER0805	25	315	12000~13000	4500~5000	8	0~2	側銑 SIDE MILLING
AER0805	25	315	12000~13000	3500~4000	8	2~4	側銑 SIDE MILLING
AER0805	25	315	12000~13000	2400~2800	8	4~8	側銑 SIDE MILLING
AER1005	33	330	10000~11000	2000~2400	0.05~0.15	8~10	溝銑 SLOTTING
AER1005	33	330	10000~11000	5000~5500	0~2	10	溝銑 SLOTTING
AER1005	33	330	10000~11000	3500~4000	2~5	10	溝銑 SLOTTING
AER1005	33	330	10000~11000	2000~2400	5~10	10	溝銑 SLOTTING
AER1005	33	330	10000~11000	2000~2400	20	0.05~0.15	側銑 SIDE MILLING
AER1005	33	330	10000~11000	5000~5500	10	0~2	側銑 SIDE MILLING
AER1005	33	330	10000~11000	3500~4000	10	2~5	側銑 SIDE MILLING
AER1005	33	330	10000~11000	2000~2400	10	5~10	側銑 SIDE MILLING

切削條件表 MILLING CONDITIONS

AESR

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AESR0305	16	90	9500~10000	2000~2500	0~0.4	1~3	溝銑 SLOTTING
AESR0305	16	90	9500~10000	1200~1600	0.5~0.8	1~3	溝銑 SLOTTING
AESR0305	16	90	9500~10000	600~800	0.9~1.2	1~3	溝銑 SLOTTING
AESR0305	16	90	9500~10000	1000~1400	0.05~0.1	1~3	溝銑 SLOTTING
AESR0305	16	90	9500~10000	2000~2500	3	0~0.4	側銑 SIDE MILLING
AESR0305	16	90	9500~10000	1500~2000	3	0.5~0.8	側銑 SIDE MILLING
AESR0305	16	90	9500~10000	1000~1200	3	0.9~1.2	側銑 SIDE MILLING
AESR0305	16	90	9500~10000	1000~1400	3	0.05~0.1	側銑 SIDE MILLING
AESR0405	16	120	9500~10000	3000~3500	0~0.6	2~4	溝銑 SLOTTING
AESR0405	16	120	9500~10000	1500~2000	0.7~1.2	2~4	溝銑 SLOTTING
AESR0405	16	120	9500~10000	1000~1500	1.3~2	2~4	溝銑 SLOTTING
AESR0405	16	120	9500~10000	1000~1400	0.05~0.12	2~4	溝銑 SLOTTING
AESR0405	16	120	9500~10000	3000~3500	4	0~0.6	側銑 SIDE MILLING
AESR0405	16	120	9500~10000	1500~2000	4	0.7~1.2	側銑 SIDE MILLING
AESR0405	16	120	9500~10000	1000~1500	4	1.3~2	側銑 SIDE MILLING
AESR0405	16	120	9500~10000	1000~1400	4	0.05~0.12	側銑 SIDE MILLING
AESR0605	20	175	9000~9500	3500~4000	0~1	4~6	溝銑 SLOTTING
AESR0605	20	175	9000~9500	2500~3000	2~3	4~6	溝銑 SLOTTING
AESR0605	20	175	9000~9500	1700~2200	3.5~6	4~6	溝銑 SLOTTING
AESR0605	20	175	9000~9500	1200~1600	0.05~0.15	4~6	溝銑 SLOTTING
AESR0605	20	175	9000~9500	3500~4000	6	0~1	側銑 SIDE MILLING
AESR0605	20	175	9000~9500	2500~3000	6	2~3	側銑 SIDE MILLING
AESR0605	20	175	9000~9500	1700~2200	6	3.5~6	側銑 SIDE MILLING
AESR0605	20	175	9000~9500	1200~1600	6	0.05~0.15	側銑 SIDE MILLING
AESR0610	20	175	9000~9500	3500~4000	0~1	4~6	溝銑 SLOTTING
AESR0610	20	175	9000~9500	2500~3000	2~3	4~6	溝銑 SLOTTING
AESR0610	20	175	9000~9500	1700~2200	3.5~6	4~6	溝銑 SLOTTING
AESR0610	20	175	9000~9500	1200~1600	0.05~0.15	4~6	溝銑 SLOTTING
AESR0610	20	175	9000~9500	3500~4000	6	0~1	側銑 SIDE MILLING
AESR0610	20	175	9000~9500	2500~3000	6	2~3	側銑 SIDE MILLING
AESR0610	20	175	9000~9500	1700~2200	6	3.5~6	側銑 SIDE MILLING
AESR0610	20	175	9000~9500	1200~1600	6	0.05~0.15	側銑 SIDE MILLING
AESR0805	25	290	11000~12000	5000~5500	0~1.5	6~8	溝銑 SLOTTING
AESR0805	25	220	8500~9000	3000~3500	2~4	6~8	溝銑 SLOTTING
AESR0805	25	220	8500~9000	2000~2500	5~8	6~8	溝銑 SLOTTING
AESR0805	25	220	8500~9000	1400~1800	0.05~0.15	6~8	溝銑 SLOTTING
AESR0805	25	290	11000~12000	5500~6000	8	0~2	側銑 SIDE MILLING
AESR0805	25	220	8500~9000	3500~4000	8	2.5~4	側銑 SIDE MILLING
AESR0805	25	220	8500~9000	2000~2500	8	5~8	側銑 SIDE MILLING
AESR0805	25	220	8500~9000	1600~2000	8	0.05~0.15	側銑 SIDE MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AESR0810	25	220	8500~9000	4000~4500	0~1.5	6~8	溝銑 SLOTTING
AESR0810	25	220	8500~9000	3000~3500	2~4	6~8	溝銑 SLOTTING
AESR0810	25	220	8500~9000	2000~2500	5~8	6~8	溝銑 SLOTTING
AESR0810	25	220	8500~9000	1400~1800	0.05~0.15	6~8	溝銑 SLOTTING
AESR0810	25	220	8500~9000	4500~5000	8	0~2	側銑 SIDE MILLING
AESR0810	25	220	8500~9000	3500~4000	8	2.5~4	側銑 SIDE MILLING
AESR0810	25	220	8500~9000	2000~2500	8	5~8	側銑 SIDE MILLING
AESR0810	25	220	8500~9000	1600~2000	8	0.05~0.15	側銑 SIDE MILLING
AESR1005	32	250	7800~8200	4500~5000	0~2	8~10	溝銑 SLOTTING
AESR1005	32	180	5500~6000	2000~2500	3~5	8~10	溝銑 SLOTTING
AESR1005	32	180	5500~6000	1000~1500	6~10	8~10	溝銑 SLOTTING
AESR1005	32	180	5500~6000	1200~1600	0.05~0.15	8~10	溝銑 SLOTTING
AESR1005	32	250	7800~8200	4500~5000	10	0~2	側銑 SIDE MILLING
AESR1005	32	180	5500~6000	2000~2400	10	3~5	側銑 SIDE MILLING
AESR1005	32	180	5500~6000	1000~1400	10	6~10	側銑 SIDE MILLING
AESR1005	32	250	7800~8200	1200~1600	10	0.05~0.15	側銑 SIDE MILLING
AESR1010	32	250	7800~8200	4500~5000	0~2	8~10	溝銑 SLOTTING
AESR1010	32	180	5500~6000	2000~2500	3~5	8~10	溝銑 SLOTTING
AESR1010	32	180	5500~6000	1000~1500	6~10	8~10	溝銑 SLOTTING
AESR1010	32	180	5500~6000	1200~1600	0.05~0.15	8~10	溝銑 SLOTTING
AESR1010	32	250	7800~8200	4500~5000	10	0~2	側銑 SIDE MILLING
AESR1010	32	180	5500~6000	2000~2400	10	3~5	側銑 SIDE MILLING
AESR1010	32	180	5500~6000	1000~1400	10	6~10	側銑 SIDE MILLING
AESR1010	32	250	7800~8200	1200~1600	10	0.05~0.15	側銑 SIDE MILLING
AESR1205	37	295	7800~8200	5000~5500	0~2	10~12	溝銑 SLOTTING
AESR1205	37	295	7800~8200	3000~3500	3~6	10~12	溝銑 SLOTTING
AESR1205	37	295	7800~8200	2300~2800	7~12	10~12	溝銑 SLOTTING
AESR1205	37	295	7800~8200	1500~2000	0.05~0.15	10~12	溝銑 SLOTTING
AESR1205	37	295	7800~8200	5000~5500	24	0~2	側銑 SIDE MILLING
AESR1205	37	295	7800~8200	3000~3500	24	3~6	側銑 SIDE MILLING
AESR1205	37	295	7800~8200	2300~2800	24	7~12	側銑 SIDE MILLING
AESR1205	37	295	7800~8200	1500~2000	24	0.05~0.15	側銑 SIDE MILLING
AESR1210	37	295	7800~8200	4500~5000	0~2	9~12	溝銑 SLOTTING
AESR1210	37	295	7800~8200	2700~3200	3~6	9~12	溝銑 SLOTTING
AESR1210	37	295	7800~8200	2000~2500	7~12	9~12	溝銑 SLOTTING
AESR1210	37	295	7800~8200	1500~2000	0.05~0.15	9~12	溝銑 SLOTTING
AESR1210	37	295	7800~8200	4500~5000	12	0~2	側銑 SIDE MILLING
AESR1210	37	295	7800~8200	2700~3200	12	3~6	側銑 SIDE MILLING
AESR1210	37	295	7800~8200	2000~2500	12	7~12	側銑 SIDE MILLING
AESR1210	37	295	7800~8200	1500~2000	12	0.05~0.15	側銑 SIDE MILLING
AESR1605	55	325	6200~6700	3000~3500	0~2	14~16	溝銑 SLOTTING
AESR1605	55	325	6200~6700	2000~2500	3~5	14~16	溝銑 SLOTTING
AESR1605	55	325	6200~6700	1400~1800	6~7	14~16	溝銑 SLOTTING
AESR1605	55	325	6200~6700	1000~1400	0.05~0.2	14~16	溝銑 SLOTTING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AESR1605	55	325	6200~6700	3500~4000	16	0~2	側銑 SIDE MILLING
AESR1605	55	325	6200~6700	2000~2500	16	3~5	側銑 SIDE MILLING
AESR1605	55	325	6200~6700	1500~2000	16	6~7	側銑 SIDE MILLING
AESR1605	55	325	6200~6700	1000~1400	16	0.05~0.2	側銑 SIDE MILLING
AESR1610	55	325	6200~6700	2700~3200	0~2	13~16	溝銑 SLOTTING
AESR1610	55	325	6200~6700	1800~2300	3~5	13~16	溝銑 SLOTTING
AESR1610	55	325	6200~6700	1200~1600	6~7	13~16	溝銑 SLOTTING
AESR1610	55	325	6200~6700	1000~1400	0.05~0.2	13~16	溝銑 SLOTTING
AESR1610	55	325	6200~6700	3000~3500	16	0~2	側銑 SIDE MILLING
AESR1610	55	325	6200~6700	1800~2300	16	3~5	側銑 SIDE MILLING
AESR1610	55	325	6200~6700	1200~1600	16	6~7	側銑 SIDE MILLING
AESR1610	55	325	6200~6700	1000~1400	16	0.05~0.2	側銑 SIDE MILLING
AESR1630	55	325	6200~6700	2300~2800	0~2	9~16	溝銑 SLOTTING
AESR1630	55	325	6200~6700	1600~2000	3~5	9~16	溝銑 SLOTTING
AESR1630	55	325	6200~6700	1000~1400	6~7	9~16	溝銑 SLOTTING
AESR1630	55	325	6200~6700	1000~1400	0.05~0.2	9~16	溝銑 SLOTTING
AESR1630	55	325	6200~6700	2500~3000	16	0~2	側銑 SIDE MILLING
AESR1630	55	325	6200~6700	1600~2000	16	3~5	側銑 SIDE MILLING
AESR1630	55	325	6200~6700	1000~1400	16	6~7	側銑 SIDE MILLING
AESR1630	55	325	6200~6700	1000~1400	16	0.05~0.2	側銑 SIDE MILLING
AESR2005	65	315	5000~5400	2700~3200	0~2	18~20	溝銑 SLOTTING
AESR2005	65	315	5000~5400	1700~2200	3~5	18~20	溝銑 SLOTTING
AESR2005	65	315	5000~5400	1000~1400	6~7	18~20	溝銑 SLOTTING
AESR2005	65	315	5000~5400	1000~1400	0.05~0.2	18~20	溝銑 SLOTTING
AESR2005	65	315	5000~5400	2700~3200	20	0~2	側銑 SIDE MILLING
AESR2005	65	315	5000~5400	1700~2200	20	3~5	側銑 SIDE MILLING
AESR2005	65	315	5000~5400	1000~1400	20	6~7	側銑 SIDE MILLING
AESR2005	65	315	5000~5400	1000~1400	20	0.05~0.2	側銑 SIDE MILLING
AESR2010	65	315	5000~5400	2400~2900	0~2	16~20	溝銑 SLOTTING
AESR2010	65	315	5000~5400	1500~2000	3~5	16~20	溝銑 SLOTTING
AESR2010	65	315	5000~5400	900~1200	6~7	16~20	溝銑 SLOTTING
AESR2010	65	315	5000~5400	1000~1400	0.05~0.2	16~20	溝銑 SLOTTING
AESR2010	65	315	5000~5400	2400~2900	20	0~2	側銑 SIDE MILLING
AESR2010	65	315	5000~5400	1500~2000	20	3~5	側銑 SIDE MILLING
AESR2010	65	315	5000~5400	900~1200	20	6~7	側銑 SIDE MILLING
AESR2010	65	315	5000~5400	1000~1400	20	0.05~0.2	側銑 SIDE MILLING
AESR2030	65	315	5000~5400	2000~2500	0~2	13~20	溝銑 SLOTTING
AESR2030	65	315	5000~5400	1300~1700	3~5	13~20	溝銑 SLOTTING
AESR2030	65	315	5000~5400	800~1100	6~7	13~20	溝銑 SLOTTING
AESR2030	65	315	5000~5400	1000~1400	0.05~0.2	13~20	溝銑 SLOTTING
AESR2030	65	315	5000~5400	2000~2500	20	0~2	側銑 SIDE MILLING
AESR2030	65	315	5000~5400	1300~1700	20	3~5	側銑 SIDE MILLING
AESR2030	65	315	5000~5400	800~1100	20	6~7	側銑 SIDE MILLING
AESR2030	65	315	5000~5400	1000~1400	20	0.05~0.2	側銑 SIDE MILLING

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切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=10000 (min^{-1}) 以下 Be used under the machine of RPM=10000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEA0052	9	15	9500~10000	1200~1600	0.02~0.04	0.4~0.5	溝銑 SLOTTING
AEA0052	9	15	9500~10000	1200~1600	0~0.04	0.5	溝銑 SLOTTING
AEA0052	9	15	9500~10000	500~800	0.04~0.07	0.5	溝銑 SLOTTING
AEA0052	9	15	9500~10000	200~400	0.07~0.1	0.5	溝銑 SLOTTING
AEA0052	9	15	9500~10000	1200~1600	1	0.03~0.05	側銑 SIDE MILLING
AEA0052	9	15	9500~10000	1200~1600	1	0~0.04	側銑 SIDE MILLING
AEA0052	9	15	9500~10000	500~800	1	0.04~0.07	側銑 SIDE MILLING
AEA0052	9	15	9500~10000	200~400	1	0.07~0.1	側銑 SIDE MILLING
AEA0102	9	30	9500~10000	1200~1600	0.03~0.06	0.8~1	溝銑 SLOTTING
AEA0102	9	30	9500~10000	1500~2000	0~0.1	1	溝銑 SLOTTING
AEA0102	9	30	9500~10000	900~1200	0.1~0.2	1	溝銑 SLOTTING
AEA0102	9	30	9500~10000	500~800	0.2~0.3	1	溝銑 SLOTTING
AEA0102	9	30	9500~10000	1100~1500	2	0.03~0.06	側銑 SIDE MILLING
AEA0102	9	30	9500~10000	1500~2000	2	0~0.1	側銑 SIDE MILLING
AEA0102	9	30	9500~10000	1000~1300	2	0.1~0.2	側銑 SIDE MILLING
AEA0102	9	30	9500~10000	600~900	2	0.2~0.3	側銑 SIDE MILLING
AEA0152	9	45	9000~9500	1200~1600	0.04~0.07	1.3~1.5	溝銑 SLOTTING
AEA0152	9	45	9000~9500	1500~2000	0~0.2	1.5	溝銑 SLOTTING
AEA0152	9	45	9000~9500	1000~1300	0.2~0.4	1.5	溝銑 SLOTTING
AEA0152	9	45	9000~9500	500~800	0.4~0.6	1.5	溝銑 SLOTTING
AEA0152	9	45	9000~9500	1200~1600	3	0.04~0.07	側銑 SIDE MILLING
AEA0152	9	45	9000~9500	1500~2000	2	0~0.2	側銑 SIDE MILLING
AEA0152	9	45	9000~9500	1000~1300	2	0.2~0.4	側銑 SIDE MILLING
AEA0152	9	45	9000~9500	600~900	2	0.4~0.6	側銑 SIDE MILLING
AEA0202	9	60	9000~9500	1200~1600	0.05~0.08	1.5~2	溝銑 SLOTTING
AEA0202	9	60	9000~9500	1600~2000	0~0.2	2	溝銑 SLOTTING
AEA0202	9	60	9000~9500	1100~1400	0.2~0.6	2	溝銑 SLOTTING
AEA0202	9	60	9000~9500	600~900	0.6~1	2	溝銑 SLOTTING
AEA0202	9	60	9000~9500	1300~1700	4	0.05~0.08	側銑 SIDE MILLING
AEA0202	9	60	9000~9500	1800~2200	2	0~0.2	側銑 SIDE MILLING
AEA0202	9	60	9000~9500	1100~1400	2	0.2~0.6	側銑 SIDE MILLING
AEA0202	9	60	9000~9500	600~900	2	0.6~1	側銑 SIDE MILLING
AEA0302	12	85	8500~9000	1200~1600	0.05~0.1	2.5~3	溝銑 SLOTTING
AEA0302	12	85	8500~9000	1600~2000	0~0.4	3	溝銑 SLOTTING
AEA0302	12	85	8500~9000	1200~1600	0.4~0.8	3	溝銑 SLOTTING
AEA0302	12	85	8500~9000	600~900	0.8~1.2	3	溝銑 SLOTTING
AEA0302	12	85	8500~9000	1200~1600	6	0.05~0.1	側銑 SIDE MILLING
AEA0302	12	85	8500~9000	1600~2000	3	0~0.4	側銑 SIDE MILLING
AEA0302	12	85	8500~9000	1200~1600	3	0.4~0.8	側銑 SIDE MILLING
AEA0302	12	85	8500~9000	700~1000	3	0.8~1.2	側銑 SIDE MILLING
AEA0402	15	110	8500~9000	1200~1600	0.05~0.12	3~4	溝銑 SLOTTING
AEA0402	15	110	8500~9000	1800~2200	0~0.6	4	溝銑 SLOTTING
AEA0402	15	110	8500~9000	1200~1600	0.6~1.2	4	溝銑 SLOTTING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEA0402	15	110	8500~9000	700~1000	1.2~2	4	溝銑 SLOTTING
AEA0402	15	110	8500~9000	1200~1600	8	0.05~0.12	側銑 SIDE MILLING
AEA0402	15	110	8500~9000	1800~2200	4	0~0.6	側銑 SIDE MILLING
AEA0402	15	110	8500~9000	1200~1600	4	0.6~1.2	側銑 SIDE MILLING
AEA0402	15	110	8500~9000	800~1100	4	1.2~2	側銑 SIDE MILLING
AEA0502	19	140	8500~9000	1400~1800	0.05~0.12	4~5	溝銑 SLOTTING
AEA0502	19	140	8500~9000	2700~3200	0~0.7	5	溝銑 SLOTTING
AEA0502	19	140	8500~9000	1400~1900	0.7~1.5	5	溝銑 SLOTTING
AEA0502	19	140	8500~9000	700~1100	1.5~3.5	5	溝銑 SLOTTING
AEA0502	19	140	8500~9000	1400~1800	10	0.05~0.12	側銑 SIDE MILLING
AEA0502	19	140	8500~9000	2500~3000	5	0~0.7	側銑 SIDE MILLING
AEA0502	19	140	8500~9000	1600~2000	5	0.7~1.5	側銑 SIDE MILLING
AEA0502	19	140	8500~9000	800~1200	5	1.5~3.5	側銑 SIDE MILLING
AEA0602	21	165	8500~9000	1600~2000	0.05~0.15	5~6	溝銑 SLOTTING
AEA0602	21	165	8500~9000	2500~3000	0~1	6	溝銑 SLOTTING
AEA0602	21	165	8500~9000	1400~1800	1~3	6	溝銑 SLOTTING
AEA0602	21	165	8500~9000	800~1200	3~6	6	溝銑 SLOTTING
AEA0602	21	165	8500~9000	1600~2000	12	0.05~0.15	側銑 SIDE MILLING
AEA0602	21	165	8500~9000	2400~2800	6	0~1	側銑 SIDE MILLING
AEA0602	21	165	8500~9000	1500~1900	6	1~3	側銑 SIDE MILLING
AEA0602	21	165	8500~9000	900~1300	6	3~6	側銑 SIDE MILLING
AEA0802	25	200	7800~8300	1400~1800	0.05~0.15	6~8	溝銑 SLOTTING
AEA0802	25	200	7800~8300	2500~3000	0~1.5	8	溝銑 SLOTTING
AEA0802	25	200	7800~8300	1600~2000	1.5~4	8	溝銑 SLOTTING
AEA0802	25	200	7800~8300	1500~2000	4~8	8	溝銑 SLOTTING
AEA0802	25	200	7800~8300	1400~1800	16	0.05~0.15	側銑 SIDE MILLING
AEA0802	25	200	7800~8300	2800~3200	8	0~2	側銑 SIDE MILLING
AEA0802	25	200	7800~8300	2000~2500	8	2~4	側銑 SIDE MILLING
AEA0802	25	200	7800~8300	1600~2000	8	4~8	側銑 SIDE MILLING
AEA1002	30	250	7800~8300	1400~1800	0.05~0.15	8~10	溝銑 SLOTTING
AEA1002	30	250	7800~8300	3000~3500	0~2	10	溝銑 SLOTTING
AEA1002	30	250	7800~8300	2000~2500	2~5	10	溝銑 SLOTTING
AEA1002	30	250	7800~8300	1400~1800	5~10	10	溝銑 SLOTTING
AEA1002	30	250	7800~8300	1400~1800	20	0.05~0.15	側銑 SIDE MILLING
AEA1002	30	250	7800~8300	3000~3500	10	0~2	側銑 SIDE MILLING
AEA1002	30	250	7800~8300	2200~2600	10	2~5	側銑 SIDE MILLING
AEA1002	30	250	7800~8300	1400~1800	10	5~10	側銑 SIDE MILLING
AEA1202	35	225	5800~6300	1600~2000	0.05~0.15	10~12	溝銑 SLOTTING
AEA1202	35	225	5800~6300	2000~2400	0~2	12	溝銑 SLOTTING
AEA1202	35	225	5800~6300	1500~2000	2~6	12	溝銑 SLOTTING
AEA1202	35	225	5800~6300	1000~1400	6~12	12	溝銑 SLOTTING
AEA1202	35	225	5800~6300	1600~2000	24	0.05~0.15	側銑 SIDE MILLING
AEA1202	35	225	5800~6300	2400~2800	12	0~2	側銑 SIDE MILLING
AEA1202	35	225	5800~6300	2000~2500	12	2~6	側銑 SIDE MILLING
AEA1202	35	225	5800~6300	1100~1500	12	6~12	側銑 SIDE MILLING

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切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=24000 (min^{-1}) 以下 Be used under the machine of RPM=24000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEA0052	9	40	23000~24000	1600~2000	0.02~0.04	0.4~0.5	溝銑 SLOTTING
AEA0052	9	40	23000~24000	1600~2000	0~0.04	0.5	溝銑 SLOTTING
AEA0052	9	40	23000~24000	700~1000	0.04~0.07	0.5	溝銑 SLOTTING
AEA0052	9	40	23000~24000	300~500	0.07~0.1	0.5	溝銑 SLOTTING
AEA0052	9	40	23000~24000	1600~2000	1	0.03~0.05	側銑 SIDE MILLING
AEA0052	9	40	23000~24000	1600~2000	1	0~0.04	側銑 SIDE MILLING
AEA0052	9	40	23000~24000	700~1000	1	0.04~0.07	側銑 SIDE MILLING
AEA0052	9	40	23000~24000	300~500	1	0.07~0.1	側銑 SIDE MILLING
AEA0102	9	75	23000~24000	1800~2200	0.03~0.06	0.8~1	溝銑 SLOTTING
AEA0102	9	75	23000~24000	1800~2200	0~0.1	1	溝銑 SLOTTING
AEA0102	9	75	23000~24000	1200~1500	0.1~0.2	1	溝銑 SLOTTING
AEA0102	9	75	23000~24000	700~1000	0.2~0.3	1	溝銑 SLOTTING
AEA0102	9	75	23000~24000	1800~2200	2	0.03~0.06	側銑 SIDE MILLING
AEA0102	9	75	23000~24000	1800~2200	2	0~0.1	側銑 SIDE MILLING
AEA0102	9	75	23000~24000	1200~1500	2	0.1~0.2	側銑 SIDE MILLING
AEA0102	9	75	23000~24000	800~1100	2	0.2~0.3	側銑 SIDE MILLING
AEA0152	9	105	21000~22000	2000~2400	0.04~0.07	1.3~1.5	溝銑 SLOTTING
AEA0152	9	105	21000~22000	2400~2800	0~0.2	1.5	溝銑 SLOTTING
AEA0152	9	105	21000~22000	1600~1900	0.2~0.4	1.5	溝銑 SLOTTING
AEA0152	9	105	21000~22000	800~1100	0.4~0.6	1.5	溝銑 SLOTTING
AEA0152	9	105	21000~22000	2000~2400	3	0.04~0.07	側銑 SIDE MILLING
AEA0152	9	105	21000~22000	2400~2800	2	0~0.2	側銑 SIDE MILLING
AEA0152	9	105	21000~22000	1700~2000	2	0.2~0.4	側銑 SIDE MILLING
AEA0152	9	105	21000~22000	900~1200	2	0.4~0.6	側銑 SIDE MILLING
AEA0202	9	125	19000~20000	1800~2200	0.05~0.08	1.5~2	溝銑 SLOTTING
AEA0202	9	125	19000~20000	2700~3200	0~0.2	2	溝銑 SLOTTING
AEA0202	9	125	19000~20000	1400~1800	0.2~0.6	2	溝銑 SLOTTING
AEA0202	9	125	19000~20000	1000~1400	0.6~1	2	溝銑 SLOTTING
AEA0202	9	125	19000~20000	1800~2200	4	0.05~0.08	側銑 SIDE MILLING
AEA0202	9	125	19000~20000	2700~3200	2	0~0.2	側銑 SIDE MILLING
AEA0202	9	125	19000~20000	1400~1800	2	0.2~0.6	側銑 SIDE MILLING
AEA0202	9	125	19000~20000	1000~1400	2	0.6~1	側銑 SIDE MILLING
AEA0302	12	180	18000~19000	1800~2200	0.05~0.1	2.5~3	溝銑 SLOTTING
AEA0302	12	180	18000~19000	2400~2800	0~0.4	3	溝銑 SLOTTING
AEA0302	12	180	18000~19000	1800~2000	0.4~0.8	3	溝銑 SLOTTING
AEA0302	12	180	18000~19000	1000~1400	0.8~1.2	3	溝銑 SLOTTING
AEA0302	12	180	18000~19000	1800~2200	6	0.05~0.1	側銑 SIDE MILLING
AEA0302	12	180	18000~19000	3000~3400	3	0~0.4	側銑 SIDE MILLING
AEA0302	12	180	18000~19000	1600~2000	3	0.4~0.8	側銑 SIDE MILLING
AEA0302	12	180	18000~19000	1000~1400	3	0.8~1.2	側銑 SIDE MILLING
AEA0402	15	225	17000~18000	1800~2200	0.05~0.12	3~4	溝銑 SLOTTING
AEA0402	15	225	17000~18000	2500~3000	0~0.6	4	溝銑 SLOTTING
AEA0402	15	225	17000~18000	1800~2200	0.6~1.2	4	溝銑 SLOTTING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEA0402	15	225	17000~18000	1100~1500	1.2~2	4	溝銑 SLOTTING
AEA0402	15	225	17000~18000	1800~2200	8	0.05~0.12	側銑 SIDE MILLING
AEA0402	15	225	17000~18000	2500~3000	4	0~0.6	側銑 SIDE MILLING
AEA0402	15	225	17000~18000	1800~2200	4	0.6~1.2	側銑 SIDE MILLING
AEA0402	15	225	17000~18000	1200~1600	4	1.2~2	側銑 SIDE MILLING
AEA0502	19	250	15000~16000	1700~2100	0.05~0.12	4~5	溝銑 SLOTTING
AEA0502	19	250	15000~16000	3200~3600	0~0.7	5	溝銑 SLOTTING
AEA0502	19	250	15000~16000	2000~2500	0.7~1.5	5	溝銑 SLOTTING
AEA0502	19	250	15000~16000	1200~1600	1.5~3.5	5	溝銑 SLOTTING
AEA0502	19	250	15000~16000	1700~2100	10	0.05~0.12	側銑 SIDE MILLING
AEA0502	19	250	15000~16000	3200~3600	5	0~0.7	側銑 SIDE MILLING
AEA0502	19	250	15000~16000	2000~2400	5	0.7~1.5	側銑 SIDE MILLING
AEA0502	19	250	15000~16000	1200~1600	5	1.5~3.5	側銑 SIDE MILLING
AEA0602	21	250	12500~13500	1700~2100	0.05~0.15	5~6	溝銑 SLOTTING
AEA0602	21	225	11500~12500	3200~3600	0~1	6	溝銑 SLOTTING
AEA0602	21	225	11500~12500	1800~2200	1~3	6	溝銑 SLOTTING
AEA0602	21	225	11500~12500	1200~1600	3~6	6	溝銑 SLOTTING
AEA0602	21	250	12500~13500	1800~2200	12	0.05~0.15	側銑 SIDE MILLING
AEA0602	21	225	11500~12500	3200~3600	6	0~1	側銑 SIDE MILLING
AEA0602	21	225	11500~12500	1700~2100	6	1~3	側銑 SIDE MILLING
AEA0602	21	225	11500~12500	1300~1700	6	3~6	側銑 SIDE MILLING
AEA0802	25	300	11000~12000	1700~2100	0.05~0.15	6~8	溝銑 SLOTTING
AEA0802	25	300	11000~12000	3400~3800	0~1.5	8	溝銑 SLOTTING
AEA0802	25	300	11000~12000	2000~2500	1.5~4	8	溝銑 SLOTTING
AEA0802	25	300	11000~12000	2000~2400	4~8	8	溝銑 SLOTTING
AEA0802	25	300	11000~12000	1700~2100	16	0.05~0.15	側銑 SIDE MILLING
AEA0802	25	300	11000~12000	3800~4200	8	0~2	側銑 SIDE MILLING
AEA0802	25	300	11000~12000	2500~3000	8	2~4	側銑 SIDE MILLING
AEA0802	25	300	11000~12000	2000~2400	8	4~8	側銑 SIDE MILLING
AEA1002	30	300	9000~9500	1600~2000	0.05~0.15	8~10	溝銑 SLOTTING
AEA1002	30	300	9000~9500	3500~4000	0~2	10	溝銑 SLOTTING
AEA1002	30	300	9000~9500	2500~3000	2~5	10	溝銑 SLOTTING
AEA1002	30	300	9000~9500	1600~2000	5~10	10	溝銑 SLOTTING
AEA1002	30	300	9000~9500	1600~2000	20	0.05~0.15	側銑 SIDE MILLING
AEA1002	30	300	9000~9500	3800~4200	10	0~2	側銑 SIDE MILLING
AEA1002	30	300	9000~9500	2700~3200	10	2~5	側銑 SIDE MILLING
AEA1002	30	300	9000~9500	1700~2100	10	5~10	側銑 SIDE MILLING
AEA1202	35	300	7800~8300	1600~2000	0.05~0.15	10~12	溝銑 SLOTTING
AEA1202	35	300	7800~8300	2800~3200	0~2	12	溝銑 SLOTTING
AEA1202	35	300	7800~8300	2000~2500	2~6	12	溝銑 SLOTTING
AEA1202	35	300	7800~8300	1600~2000	6~12	12	溝銑 SLOTTING
AEA1202	35	300	7800~8300	1600~2000	24	0.05~0.15	側銑 SIDE MILLING
AEA1202	35	300	7800~8300	3200~3600	12	0~2	側銑 SIDE MILLING
AEA1202	35	300	7800~8300	2500~3000	12	2~6	側銑 SIDE MILLING
AEA1202	35	300	7800~8300	1600~2000	12	6~12	側銑 SIDE MILLING

AEA-3T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=10000 (min^{-1}) 以下 Be used under the machine of RPM=10000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEA0203	9	65	9500~10000	1300~1700	0.05~0.08	1.5~2	溝銑 SLOTTING
AEA0203	9	65	9500~10000	1800~2200	0~0.2	2	溝銑 SLOTTING
AEA0203	9	65	9500~10000	1400~1800	0.2~0.6	2	溝銑 SLOTTING
AEA0203	9	65	9500~10000	900~1300	0.6~1	2	溝銑 SLOTTING
AEA0203	9	65	9500~10000	1300~1700	4	0.05~0.08	側銑 SIDE MILLING
AEA0203	9	65	9500~10000	2000~2400	2	0~0.2	側銑 SIDE MILLING
AEA0203	9	65	9500~10000	1400~1800	2	0.2~0.6	側銑 SIDE MILLING
AEA0203	9	65	9500~10000	1000~1400	2	0.6~1	側銑 SIDE MILLING
AEA0303	12	90	9000~9500	1400~1800	0.05~0.1	2.5~3	溝銑 SLOTTING
AEA0303	12	90	9000~9500	1800~2200	0~0.4	3	溝銑 SLOTTING
AEA0303	12	90	9000~9500	1500~1900	0.4~0.8	3	溝銑 SLOTTING
AEA0303	12	90	9000~9500	1000~1400	0.8~1.2	3	溝銑 SLOTTING
AEA0303	12	90	9000~9500	1400~1800	6	0.05~0.1	側銑 SIDE MILLING
AEA0303	12	90	9000~9500	1800~2200	3	0~0.4	側銑 SIDE MILLING
AEA0303	12	90	9000~9500	1500~1900	3	0.4~0.8	側銑 SIDE MILLING
AEA0303	12	90	9000~9500	1000~1400	3	0.8~1.2	側銑 SIDE MILLING
AEA0403	15	110	8500~9000	1400~1800	0.05~0.12	3~4	溝銑 SLOTTING
AEA0403	15	110	8500~9000	2200~2600	0~0.6	4	溝銑 SLOTTING
AEA0403	15	110	8500~9000	1800~2200	0.6~1.2	4	溝銑 SLOTTING
AEA0403	15	110	8500~9000	1000~1400	1.2~2	4	溝銑 SLOTTING
AEA0403	15	110	8500~9000	1400~1800	8	0.05~0.12	側銑 SIDE MILLING
AEA0403	15	110	8500~9000	2200~2600	4	0~0.6	側銑 SIDE MILLING
AEA0403	15	110	8500~9000	1800~2200	4	0.6~1.2	側銑 SIDE MILLING
AEA0403	15	110	8500~9000	1000~1400	4	1.2~2	側銑 SIDE MILLING
AEA0503	19	125	7800~8300	1600~2000	0.05~0.12	4~5	溝銑 SLOTTING
AEA0503	19	125	7800~8300	3500~4000	0~0.7	5	溝銑 SLOTTING
AEA0503	19	125	7800~8300	2000~2500	0.7~1.5	5	溝銑 SLOTTING
AEA0503	19	125	7800~8300	1200~1700	1.5~3.5	5	溝銑 SLOTTING
AEA0503	19	125	7800~8300	1600~2000	10	0.05~0.12	側銑 SIDE MILLING
AEA0503	19	125	7800~8300	3500~4000	5	0~0.7	側銑 SIDE MILLING
AEA0503	19	125	7800~8300	2000~2500	5	0.7~1.5	側銑 SIDE MILLING
AEA0503	19	125	7800~8300	1200~1700	5	1.5~3.5	側銑 SIDE MILLING
AEA0603	21	150	7800~8300	1800~2200	0.05~0.15	5~6	溝銑 SLOTTING
AEA0603	21	150	7800~8300	3200~3600	0~1	6	溝銑 SLOTTING
AEA0603	21	150	7800~8300	1700~2200	1~3	6	溝銑 SLOTTING
AEA0603	21	150	7800~8300	1200~1700	3~6	6	溝銑 SLOTTING
AEA0603	21	150	7800~8300	1800~2200	12	0.05~0.15	側銑 SIDE MILLING
AEA0603	21	150	7800~8300	2800~3200	6	0~1	側銑 SIDE MILLING
AEA0603	21	150	7800~8300	1800~2300	6	1~3	側銑 SIDE MILLING
AEA0603	21	150	7800~8300	1200~1700	6	3~6	側銑 SIDE MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEA0803	25	200	7800~8300	1800~2200	0.05~0.15	6~8	溝銑 SLOTTING
AEA0803	25	200	7800~8300	4500~5000	0~1.5	8	溝銑 SLOTTING
AEA0803	25	200	7800~8300	3000~3500	1.5~4	8	溝銑 SLOTTING
AEA0803	25	200	7800~8300	2400~2800	4~8	8	溝銑 SLOTTING
AEA0803	25	200	7800~8300	1800~2200	16	0.05~0.15	側銑 SIDE MILLING
AEA0803	25	200	7800~8300	4500~5000	8	0~2	側銑 SIDE MILLING
AEA0803	25	200	7800~8300	3000~3500	8	2~4	側銑 SIDE MILLING
AEA0803	25	200	7800~8300	2400~2800	8	4~8	側銑 SIDE MILLING
AEA1003	30	250	7800~8300	1800~2200	0.05~0.15	8~10	溝銑 SLOTTING
AEA1003	30	250	7800~8300	4500~5000	0~2	10	溝銑 SLOTTING
AEA1003	30	250	7800~8300	3500~4000	2~5	10	溝銑 SLOTTING
AEA1003	30	250	7800~8300	2000~2400	5~10	10	溝銑 SLOTTING
AEA1003	30	250	7800~8300	1800~2200	20	0.05~0.15	側銑 SIDE MILLING
AEA1003	30	250	7800~8300	4500~5000	10	0~2	側銑 SIDE MILLING
AEA1003	30	250	7800~8300	3500~4000	10	2~5	側銑 SIDE MILLING
AEA1003	30	250	7800~8300	2000~2400	10	5~10	側銑 SIDE MILLING
AEA1203	35	300	7800~8300	2000~2400	0.05~0.15	10~12	溝銑 SLOTTING
AEA1203	35	300	7800~8300	4500~5000	0~2	12	溝銑 SLOTTING
AEA1203	35	300	7800~8300	3000~3500	2~6	12	溝銑 SLOTTING
AEA1203	35	300	7800~8300	2000~2400	6~12	12	溝銑 SLOTTING
AEA1203	35	300	7800~8300	2000~2400	24	0.05~0.15	側銑 SIDE MILLING
AEA1203	35	300	7800~8300	4500~5000	12	0~2	側銑 SIDE MILLING
AEA1203	35	300	7800~8300	3500~4000	12	2~6	側銑 SIDE MILLING
AEA1203	35	300	7800~8300	2000~2400	12	6~12	側銑 SIDE MILLING
AEA1603	50	300	6000~6500	1700~2100	0.05~0.2	14~16	溝銑 SLOTTING
AEA1603	50	300	6000~6500	3500~4000	0~2	16	溝銑 SLOTTING
AEA1603	50	300	6000~6500	2600~3200	2~6	16	溝銑 SLOTTING
AEA1603	50	300	6000~6500	2000~2400	6~12	16	溝銑 SLOTTING
AEA1603	50	300	6000~6500	1700~2100	32	0.05~0.2	側銑 SIDE MILLING
AEA1603	50	300	6000~6500	3500~4000	16	0~2	側銑 SIDE MILLING
AEA1603	50	300	6000~6500	2600~3200	16	2~6	側銑 SIDE MILLING
AEA1603	50	300	6000~6500	2000~2400	16	6~12	側銑 SIDE MILLING

AEA-3T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=24000 (min^{-1}) 以下 Be used under the machine of RPM=24000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEA0203	9	150	23000~24000	2000~2400	0.05~0.08	1.5~2	溝銑 SLOTTING
AEA0203	9	150	23000~24000	3000~3500	0~0.2	2	溝銑 SLOTTING
AEA0203	9	150	23000~24000	1700~2000	0.2~0.6	2	溝銑 SLOTTING
AEA0203	9	150	23000~24000	1300~1700	0.6~1	2	溝銑 SLOTTING
AEA0203	9	150	23000~24000	2000~2400	4	0.05~0.08	側銑 SIDE MILLING
AEA0203	9	150	23000~24000	3200~3700	2	0~0.2	側銑 SIDE MILLING
AEA0203	9	150	23000~24000	1600~1900	2	0.2~0.6	側銑 SIDE MILLING
AEA0203	9	150	23000~24000	1300~1700	2	0.6~1	側銑 SIDE MILLING
AEA0303	12	210	21000~22000	2000~2400	0.05~0.1	2.5~3	溝銑 SLOTTING
AEA0303	12	210	21000~22000	2600~3000	0~0.4	3	溝銑 SLOTTING
AEA0303	12	210	21000~22000	2000~2400	0.4~0.8	3	溝銑 SLOTTING
AEA0303	12	210	21000~22000	1200~1600	0.8~1.2	3	溝銑 SLOTTING
AEA0303	12	210	21000~22000	2000~2400	6	0.05~0.1	側銑 SIDE MILLING
AEA0303	12	210	21000~22000	3400~3900	3	0~0.4	側銑 SIDE MILLING
AEA0303	12	210	21000~22000	1800~2100	3	0.4~0.8	側銑 SIDE MILLING
AEA0303	12	210	21000~22000	1300~1700	3	0.8~1.2	側銑 SIDE MILLING
AEA0403	15	250	19000~20000	2000~2400	0.05~0.12	3~4	溝銑 SLOTTING
AEA0403	15	250	19000~20000	3000~3500	0~0.6	4	溝銑 SLOTTING
AEA0403	15	250	19000~20000	2100~2500	0.6~1.2	4	溝銑 SLOTTING
AEA0403	15	250	19000~20000	1400~1800	1.2~2	4	溝銑 SLOTTING
AEA0403	15	250	19000~20000	2000~2400	8	0.05~0.12	側銑 SIDE MILLING
AEA0403	15	250	19000~20000	3000~3500	4	0~0.6	側銑 SIDE MILLING
AEA0403	15	250	19000~20000	2100~2500	4	0.6~1.2	側銑 SIDE MILLING
AEA0403	15	250	19000~20000	1400~1800	4	1.2~2	側銑 SIDE MILLING
AEA0503	19	260	16000~17000	2000~2400	0.05~0.12	4~5	溝銑 SLOTTING
AEA0503	19	260	16000~17000	4000~4500	0~0.7	5	溝銑 SLOTTING
AEA0503	19	260	16000~17000	2400~2800	0.7~1.5	5	溝銑 SLOTTING
AEA0503	19	260	16000~17000	1400~1800	1.5~3.5	5	溝銑 SLOTTING
AEA0503	19	260	16000~17000	2000~2400	10	0.05~0.12	側銑 SIDE MILLING
AEA0503	19	260	16000~17000	4200~4800	5	0~0.7	側銑 SIDE MILLING
AEA0503	19	260	16000~17000	2400~2800	5	0.7~1.5	側銑 SIDE MILLING
AEA0503	19	260	16000~17000	1400~1800	5	1.5~3.5	側銑 SIDE MILLING
AEA0603	21	270	14000~15000	2000~2400	0.05~0.15	5~6	溝銑 SLOTTING
AEA0603	21	270	14000~15000	4000~4500	0~1	6	溝銑 SLOTTING
AEA0603	21	270	14000~15000	2500~3000	1~3	6	溝銑 SLOTTING
AEA0603	21	270	14000~15000	1600~2000	3~6	6	溝銑 SLOTTING
AEA0603	21	270	14000~15000	2000~2400	12	0.05~0.15	側銑 SIDE MILLING
AEA0603	21	270	14000~15000	3500~4000	6	0~1	側銑 SIDE MILLING
AEA0603	21	270	14000~15000	2000~2500	6	1~3	側銑 SIDE MILLING
AEA0603	21	270	14000~15000	1600~2000	6	3~6	側銑 SIDE MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AEA0803	25	315	12000~13000	2000~2400	0.05~0.15	6~8	溝銑 SLOTTING
AEA0803	25	315	12000~13000	5000~5500	0~1.5	8	溝銑 SLOTTING
AEA0803	25	315	12000~13000	3500~4000	1.5~4	8	溝銑 SLOTTING
AEA0803	25	315	12000~13000	2400~2800	4~8	8	溝銑 SLOTTING
AEA0803	25	315	12000~13000	2000~2400	16	0.05~0.15	側銑 SIDE MILLING
AEA0803	25	315	12000~13000	5000~5500	8	0~2	側銑 SIDE MILLING
AEA0803	25	315	12000~13000	3500~4000	8	2~4	側銑 SIDE MILLING
AEA0803	25	315	12000~13000	2400~2800	8	4~8	側銑 SIDE MILLING
AEA1003	30	330	10000~11000	2000~2400	0.05~0.15	8~10	溝銑 SLOTTING
AEA1003	30	330	10000~11000	5000~5500	0~2	10	溝銑 SLOTTING
AEA1003	30	330	10000~11000	3500~4000	2~5	10	溝銑 SLOTTING
AEA1003	30	330	10000~11000	2000~2400	5~10	10	溝銑 SLOTTING
AEA1003	30	330	10000~11000	2000~2400	20	0.05~0.15	側銑 SIDE MILLING
AEA1003	30	330	10000~11000	5000~5500	10	0~2	側銑 SIDE MILLING
AEA1003	30	330	10000~11000	3500~4000	10	2~5	側銑 SIDE MILLING
AEA1003	30	330	10000~11000	2000~2400	10	5~10	側銑 SIDE MILLING
AEA1203	35	300	7800~8300	2000~2400	0.05~0.15	10~12	溝銑 SLOTTING
AEA1203	35	300	7800~8300	4500~5000	0~2	12	溝銑 SLOTTING
AEA1203	35	300	7800~8300	3000~3500	2~6	12	溝銑 SLOTTING
AEA1203	35	300	7800~8300	2000~2400	6~12	12	溝銑 SLOTTING
AEA1203	35	300	7800~8300	2000~2400	24	0.05~0.15	側銑 SIDE MILLING
AEA1203	35	300	7800~8300	4500~5000	12	0~2	側銑 SIDE MILLING
AEA1203	35	300	7800~8300	3500~4000	12	2~6	側銑 SIDE MILLING
AEA1203	35	300	7800~8300	2000~2400	12	6~12	側銑 SIDE MILLING
AEA1603	50	300	6000~6500	1700~2100	0.05~0.2	14~16	溝銑 SLOTTING
AEA1603	50	300	6000~6500	3500~4000	0~2	16	溝銑 SLOTTING
AEA1603	50	300	6000~6500	2600~3200	2~6	16	溝銑 SLOTTING
AEA1603	50	300	6000~6500	2000~2400	6~12	16	溝銑 SLOTTING
AEA1603	50	300	6000~6500	1700~2100	32	0.05~0.2	側銑 SIDE MILLING
AEA1603	50	300	6000~6500	3500~4000	16	0~2	側銑 SIDE MILLING
AEA1603	50	300	6000~6500	2600~3200	16	2~6	側銑 SIDE MILLING
AEA1603	50	300	6000~6500	2000~2400	16	6~12	側銑 SIDE MILLING

AET-2T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=10000 (min^{-1}) 以下 Be used under the machine of RPM=10000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AET0052	13	15	9500~10000	500~700	0.04~0.06	0.1~0.5	溝銑 SLOTTING
AET0052	13	15	9500~10000	300~500	1	0.04~0.06	側銑 SIDE MILLING
AET0102	13	30	9500~10000	800~1000	0.05~0.08	0.5~1	溝銑 SLOTTING
AET0102	13	30	9500~10000	600~800	2	0.05~0.08	側銑 SIDE MILLING
AET0152	13	45	9500~10000	1000~1200	0.05~0.08	0.5~1.5	溝銑 SLOTTING
AET0152	13	45	9500~10000	800~1000	3	0.05~0.08	側銑 SIDE MILLING
AET0202	14	60	9500~10000	1800~2200	0~0.2	0.5~2	溝銑 SLOTTING
AET0202	14	60	9500~10000	1000~1200	0.05~0.08	0.5~2	溝銑 SLOTTING
AET0202	14	60	9500~10000	2000~2400	4	0~0.2	側銑 SIDE MILLING
AET0202	14	60	9500~10000	800~1000	4	0.05~0.08	側銑 SIDE MILLING
AET0302	14	90	9500~10000	2200~2600	0~0.4	1~3	溝銑 SLOTTING
AET0302	14	90	9500~10000	1000~1400	0.05~0.1	1~3	溝銑 SLOTTING
AET0302	14	90	9500~10000	2600~3000	6	0~0.4	側銑 SIDE MILLING
AET0302	14	90	9500~10000	800~1200	6	0.05~0.1	側銑 SIDE MILLING
AET0402	16	120	9500~10000	2800~3200	0~0.6	2~4	溝銑 SLOTTING
AET0402	16	120	9500~10000	1200~1600	0.05~0.12	2~4	溝銑 SLOTTING
AET0402	16	120	9500~10000	3000~3400	8	0~0.6	側銑 SIDE MILLING
AET0402	16	120	9500~10000	1000~1400	8	0.05~0.12	側銑 SIDE MILLING
AET0502	18	150	9500~10000	3400~3800	0~0.7	3~5	溝銑 SLOTTING
AET0502	18	150	9500~10000	1400~1800	0.05~0.15	3~5	溝銑 SLOTTING
AET0502	18	150	9500~10000	3400~3800	10	0~0.7	側銑 SIDE MILLING
AET0502	18	150	9500~10000	1000~1400	10	0.05~0.15	側銑 SIDE MILLING
AET0602	20	170	9000~9500	3400~3800	0~1	4~6	溝銑 SLOTTING
AET0602	20	170	9000~9500	1400~1800	0.05~0.15	4~6	溝銑 SLOTTING
AET0602	20	170	9000~9500	3400~3800	12	0~1	側銑 SIDE MILLING
AET0602	20	170	9000~9500	1000~1400	12	0.05~0.15	側銑 SIDE MILLING
AET0802	26	215	8500~9000	3400~3800	0~1.5	6~8	溝銑 SLOTTING
AET0802	26	215	8500~9000	1600~2000	0.05~0.15	6~8	溝銑 SLOTTING
AET0802	26	215	8500~9000	3600~4000	16	0~2	側銑 SIDE MILLING
AET0802	26	215	8500~9000	1400~1800	16	0.05~0.15	側銑 SIDE MILLING
AET1002	30	245	7800~8200	4000~4500	0~2	8~10	溝銑 SLOTTING
AET1002	30	245	7800~8200	1400~1800	0.05~0.15	8~10	溝銑 SLOTTING
AET1002	30	245	7800~8200	4000~4500	20	0~2	側銑 SIDE MILLING
AET1002	30	245	7800~8200	1400~1800	20	0.05~0.15	側銑 SIDE MILLING
AET1202	36	295	7800~8200	4000~4500	0~2	10~12	溝銑 SLOTTING
AET1202	36	295	7800~8200	1200~1600	0.05~0.15	10~12	溝銑 SLOTTING
AET1202	36	295	7800~8200	3200~3600	24	0~2	側銑 SIDE MILLING
AET1202	36	295	7800~8200	1200~1600	24	0.05~0.15	側銑 SIDE MILLING

切削條件表 MILLING CONDITIONS

AET-2T

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**
冷卻方式 Coolant Type	濕式切削 Wet coolant

建議機器轉速RPM=20000 (min^{-1}) 以下
Be used under the machine of RPM=20000 (min^{-1})

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AET0052	13	30	18000~20000	600~800	0.04~0.06	0.1~0.5	溝銑 SLOTTING
AET0052	13	30	18000~20000	400~600	1	0.04~0.06	側銑 SIDE MILLING
AET0102	13	60	18000~20000	1200~1400	0.05~0.08	0.5~1	溝銑 SLOTTING
AET0102	13	60	18000~20000	1000~1200	2	0.05~0.08	側銑 SIDE MILLING
AET0152	13	85	18000~20000	1400~1600	0.05~0.08	0.5~1.5	溝銑 SLOTTING
AET0152	13	85	18000~20000	1200~1400	3	0.05~0.08	側銑 SIDE MILLING
AET0202	14	110	17000~18000	2200~2600	0~0.2	0.5~2	溝銑 SLOTTING
AET0202	14	110	17000~18000	1400~1600	0.05~0.08	0.5~2	溝銑 SLOTTING
AET0202	14	110	17000~18000	2600~3000	4	0~0.2	側銑 SIDE MILLING
AET0202	14	110	17000~18000	1400~1600	4	0.05~0.08	側銑 SIDE MILLING
AET0302	14	160	17000~18000	2600~3000	0~0.4	1~3	溝銑 SLOTTING
AET0302	14	160	17000~18000	1800~2200	0.05~0.1	1~3	溝銑 SLOTTING
AET0302	14	160	17000~18000	3000~3400	6	0~0.4	側銑 SIDE MILLING
AET0302	14	160	17000~18000	1600~2000	6	0.05~0.1	側銑 SIDE MILLING
AET0402	16	200	16000~17000	3400~3800	0~0.6	2~4	溝銑 SLOTTING
AET0402	16	200	16000~17000	2000~2400	0.05~0.12	2~4	溝銑 SLOTTING
AET0402	16	200	16000~17000	3400~3800	8	0~0.6	側銑 SIDE MILLING
AET0402	16	200	16000~17000	1600~2000	8	0.05~0.12	側銑 SIDE MILLING
AET0502	18	235	15000~16000	4400~4800	0~0.7	3~5	溝銑 SLOTTING
AET0502	18	235	15000~16000	2400~2800	0.05~0.15	3~5	溝銑 SLOTTING
AET0502	18	235	15000~16000	4400~4800	10	0~0.7	側銑 SIDE MILLING
AET0502	18	235	15000~16000	1600~2000	10	0.05~0.15	側銑 SIDE MILLING
AET0602	20	285	15000~16000	4400~4800	0~1	4~6	溝銑 SLOTTING
AET0602	20	285	15000~16000	2400~2800	0.05~0.15	4~6	溝銑 SLOTTING
AET0602	20	285	15000~16000	4400~4800	12	0~1	側銑 SIDE MILLING
AET0602	20	285	15000~16000	1600~2000	12	0.05~0.15	側銑 SIDE MILLING
AET0802	26	355	14000~15000	4500~5000	0~1.5	6~8	溝銑 SLOTTING
AET0802	26	355	14000~15000	2200~2600	0.05~0.15	6~8	溝銑 SLOTTING
AET0802	26	355	14000~15000	5000~5500	16	0~2	側銑 SIDE MILLING
AET0802	26	355	14000~15000	2000~2400	16	0.05~0.15	側銑 SIDE MILLING
AET1002	30	380	12000~13000	5500~6000	0~2	8~10	溝銑 SLOTTING
AET1002	30	380	12000~13000	2000~2400	0.05~0.15	8~10	溝銑 SLOTTING
AET1002	30	380	12000~13000	6000~6500	20	0~2	側銑 SIDE MILLING
AET1002	30	380	12000~13000	1800~2200	20	0.05~0.15	側銑 SIDE MILLING
AET1202	36	295	7800~8200	4000~4500	0~2	10~12	溝銑 SLOTTING
AET1202	36	295	7800~8200	1200~1600	0.05~0.15	10~12	溝銑 SLOTTING
AET1202	36	295	7800~8200	3200~3600	24	0~2	側銑 SIDE MILLING
AET1202	36	295	7800~8200	1200~1600	24	0.05~0.15	側銑 SIDE MILLING

AET-3T

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=10000 (min^{-1}) 以下 Be used under the machine of RPM=10000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AET0203	14	60	9500~10000	2200~2600	0~0.2	0.5~2	溝銑 SLOTTING
AET0203	14	60	9500~10000	1200~1600	0.05~0.08	0.5~2	溝銑 SLOTTING
AET0203	14	60	9500~10000	2400~2800	4	0~0.2	側銑 SIDE MILLING
AET0203	14	60	9500~10000	1200~1600	4	0.05~0.08	側銑 SIDE MILLING
AET0303	16	90	9500~10000	2800~3200	0~0.4	1~3	溝銑 SLOTTING
AET0303	16	90	9500~10000	1600~2000	0.05~0.1	1~3	溝銑 SLOTTING
AET0303	16	90	9500~10000	3000~3400	6	0~0.4	側銑 SIDE MILLING
AET0303	16	90	9500~10000	1400~1800	6	0.05~0.1	側銑 SIDE MILLING
AET0403	18	115	9000~9500	3400~3800	0~0.6	2~4	溝銑 SLOTTING
AET0403	18	115	9000~9500	1600~2000	0.05~0.12	2~4	溝銑 SLOTTING
AET0403	18	115	9000~9500	3400~3800	8	0~0.6	側銑 SIDE MILLING
AET0403	18	115	9000~9500	1400~1800	8	0.05~0.12	側銑 SIDE MILLING
AET0503	20	125	7800~8300	3800~4200	0~0.7	3~5	溝銑 SLOTTING
AET0503	20	125	7800~8300	1600~2000	0.05~0.15	3~5	溝銑 SLOTTING
AET0503	20	125	7800~8300	3800~4200	10	0~0.7	側銑 SIDE MILLING
AET0503	20	125	7800~8300	1200~1600	10	0.05~0.15	側銑 SIDE MILLING
AET0603	22	150	7800~8200	4200~4600	0~0.9	4~6	溝銑 SLOTTING
AET0603	22	150	7800~8200	1600~2000	0.05~0.15	4~6	溝銑 SLOTTING
AET0603	22	150	7800~8200	4200~4600	12	0~0.9	側銑 SIDE MILLING
AET0603	22	150	7800~8200	1600~2000	12	0.05~0.15	側銑 SIDE MILLING
AET0803	26	175	7000~7500	3000~3400	0~1.5	6~8	溝銑 SLOTTING
AET0803	26	215	8500~9000	1800~2200	0.05~0.15	6~8	溝銑 SLOTTING
AET0803	26	215	8500~9000	1600~2000	16	0~1	側銑 SIDE MILLING
AET0803	26	215	8500~9000	1600~2000	16	0.05~0.15	側銑 SIDE MILLING
AET1003	30	245	7800~8200	4500~5000	0~2	8~10	溝銑 SLOTTING
AET1003	30	245	7800~8200	1600~2000	0.05~0.15	8~10	溝銑 SLOTTING
AET1003	30	245	7800~8200	4000~4500	20	0~2	側銑 SIDE MILLING
AET1003	30	245	7800~8200	1600~2000	20	0.05~0.15	側銑 SIDE MILLING
AET1203	36	295	7800~8200	5000~5500	0~2	10~12	溝銑 SLOTTING
AET1203	36	295	7800~8200	1600~2000	0.05~0.15	10~12	溝銑 SLOTTING
AET1203	36	295	7800~8200	4500~5000	24	0~2	側銑 SIDE MILLING
AET1203	36	295	7800~8200	1600~2000	24	2	側銑 SIDE MILLING
AET1603	55	325	6400~6800	4400~4800	0~2	14~16	溝銑 SLOTTING
AET1603	55	325	6400~6800	1400~1800	0.05~0.2	14~16	溝銑 SLOTTING
AET1603	55	325	6400~6800	4600~5000	32	0~2	側銑 SIDE MILLING
AET1603	55	325	6400~6800	1400~1800	32	0.05~0.2	側銑 SIDE MILLING

切削條件表 MILLING CONDITIONS

AET-3T

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=20000 (min^{-1}) 以下 Be used under the machine of RPM=20000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
AET0203	14	115	18000~20000	3400~3800	0~0.2	0.5~2	溝銑 SLOTTING
AET0203	14	115	18000~20000	1800~2200	0.05~0.08	0.5~2	溝銑 SLOTTING
AET0203	14	115	18000~20000	3400~3800	4	0~0.2	側銑 SIDE MILLING
AET0203	14	115	18000~20000	1800~2200	4	0.05~0.08	側銑 SIDE MILLING
AET0303	16	160	17000~18000	3800~4200	0~0.4	1~3	溝銑 SLOTTING
AET0303	16	160	17000~18000	2400~2800	0.05~0.1	1~3	溝銑 SLOTTING
AET0303	16	160	17000~18000	3800~4200	6	0~0.4	側銑 SIDE MILLING
AET0303	16	160	17000~18000	2000~2400	6	0.05~0.1	側銑 SIDE MILLING
AET0403	18	165	13000~14000	4200~4600	0~0.6	2~4	溝銑 SLOTTING
AET0403	18	165	13000~14000	2400~2800	0.05~0.12	2~4	溝銑 SLOTTING
AET0403	18	165	13000~14000	4200~4600	8	0~0.6	側銑 SIDE MILLING
AET0403	18	165	13000~14000	2000~2400	8	0.05~0.12	側銑 SIDE MILLING
AET0503	20	175	11000~12000	5000~5400	0~0.7	3~5	溝銑 SLOTTING
AET0503	20	175	11000~12000	2600~3000	0.05~0.15	3~5	溝銑 SLOTTING
AET0503	20	175	11000~12000	5000~5400	10	0~0.7	側銑 SIDE MILLING
AET0503	20	175	11000~12000	1800~2200	10	0.05~0.15	側銑 SIDE MILLING
AET0603	22	255	13000~14000	6000~6500	0~0.9	4~6	溝銑 SLOTTING
AET0603	22	255	13000~14000	2400~2800	0.05~0.15	4~6	溝銑 SLOTTING
AET0603	22	255	13000~14000	6500~7500	12	0~0.9	側銑 SIDE MILLING
AET0603	22	255	13000~14000	2200~2600	12	0.05~0.15	側銑 SIDE MILLING
AET0803	26	280	11000~12000	4000~4500	0~1	6~8	溝銑 SLOTTING
AET0803	26	355	14000~15000	2400~2800	0.05~0.15	6~8	溝銑 SLOTTING
AET0803	26	355	14000~15000	2800~3200	16	0~1	側銑 SIDE MILLING
AET0803	26	355	14000~15000	2200~2600	16	0.05~0.15	側銑 SIDE MILLING
AET1003	30	360	11000~12000	5500~6000	0~2	8~10	溝銑 SLOTTING
AET1003	30	360	11000~12000	2400~2800	0.05~0.15	8~10	溝銑 SLOTTING
AET1003	30	360	11000~12000	5500~6000	20	0~2	側銑 SIDE MILLING
AET1003	30	360	11000~12000	2200~2600	20	0.05~0.15	側銑 SIDE MILLING
AET1203	36	295	7800~8200	5000~5500	0~2	10~12	溝銑 SLOTTING
AET1203	36	295	7800~8200	1600~2000	0.05~0.15	10~12	溝銑 SLOTTING
AET1203	36	295	7800~8200	4500~5000	24	0~2	側銑 SIDE MILLING
AET1203	36	295	7800~8200	1600~2000	24	2	側銑 SIDE MILLING
AET1603	55	325	6400~6800	4400~4800	0~2	14~16	溝銑 SLOTTING
AET1603	55	325	6400~6800	1400~1800	0.05~0.2	14~16	溝銑 SLOTTING
AET1603	55	325	6400~6800	4600~5000	32	0~2	側銑 SIDE MILLING
AET1603	55	325	6400~6800	1400~1800	32	0.05~0.2	側銑 SIDE MILLING

BTC

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=10000 (min^{-1}) 以下 Be used under the machine of RPM=10000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
BTC0102	10	30	9500~10000	400~600	0.15~0.18	0.3~0.36	3D銑 3D MILLING
BTC0102	10	30	9500~10000	800~1200	0.08~0.11	0.15~0.18	3D銑 3D MILLING
BTC0102	10	30	9500~10000	1400~1800	0.03~0.05	0.05~0.08	3D銑 3D MILLING
BTC0152	12	45	9500~10000	400~600	0.15~0.18	0.3~0.36	3D銑 3D MILLING
BTC0152	12	45	9500~10000	1000~1400	0.08~0.11	0.15~0.18	3D銑 3D MILLING
BTC0152	12	45	9500~10000	1800~2200	0.03~0.05	0.05~0.08	3D銑 3D MILLING
BTC0202	12	60	9000~9500	600~1000	0.2~0.25	0.45~0.5	3D銑 3D MILLING
BTC0202	12	60	9000~9500	1200~1600	0.1~0.13	0.2~0.25	3D銑 3D MILLING
BTC0202	12	60	9000~9500	2200~2600	0.04~0.06	0.06~0.1	3D銑 3D MILLING
BTC0302	14	85	9000~9500	800~1200	0.25~0.3	0.5~0.6	3D銑 3D MILLING
BTC0302	14	85	9000~9500	1500~1900	0.12~0.15	0.23~0.28	3D銑 3D MILLING
BTC0302	14	85	9000~9500	2400~2800	0.05~0.07	0.8~0.12	3D銑 3D MILLING
BTC0402	14	115	9000~9500	1000~1400	0.3~0.35	0.7~08	3D銑 3D MILLING
BTC0402	14	115	9000~9500	2000~2400	0.15~0.18	0.3~0.4	3D銑 3D MILLING
BTC0402	14	115	9000~9500	2600~3000	0.06~0.08	0.1~0.13	3D銑 3D MILLING
BTC0602	20	160	8500~9000	1200~1600	0.5~0.6	1~1.5	3D銑 3D MILLING
BTC0602	20	160	8500~9000	2400~2800	0.2~0.25	0.4~0.5	3D銑 3D MILLING
BTC0602	20	170	9000~9500	3000~3400	0.08~0.1	0.12~0.15	3D銑 3D MILLING
BTC0802	25	200	8000~8500	1400~1800	0.7~1	2~2.5	3D銑 3D MILLING
BTC0802	25	200	8000~8500	2600~3000	0.25~0.3	0.5~0.6	3D銑 3D MILLING
BTC0802	25	230	9000~9500	3200~3600	0.08~0.13	0.15~0.2	3D銑 3D MILLING
BTC1002	35	255	8000~8500	1600~2000	0.8~1.3	2~2.5	3D銑 3D MILLING
BTC1002	35	255	8000~8500	3400~3800	0.3~0.35	0.7~0.8	3D銑 3D MILLING
BTC1002	35	285	9000~9500	3000~3400	0.1~0.15	0.18~0.23	3D銑 3D MILLING
BTC1202	40	290	7700~8200	1600~2000	1~1.5	2.5~3.5	3D銑 3D MILLING
BTC1202	40	290	7700~8200	2800~3200	0.4~0.45	0.8~1	3D銑 3D MILLING
BTC1202	40	290	7700~8200	3800~4200	0.13~0.16	0.2~0.25	3D銑 3D MILLING

切削條件表 MILLING CONDITIONS

BTC

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**	建議機器轉速RPM=24000 (min^{-1}) 以下 Be used under the machine of RPM=24000 (min^{-1})
冷卻方式 Coolant Type	濕式切削 Wet coolant	

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
BTC0102	10	75	23000~24000	600~800	0.15~0.18	0.3~0.36	3D銑 3D MILLING
BTC0102	10	75	23000~24000	1000~1400	0.08~0.11	0.15~0.18	3D銑 3D MILLING
BTC0102	10	75	23000~24000	1800~2200	0.03~0.05	0.05~0.08	3D銑 3D MILLING
BTC0152	12	105	22000~23000	600~800	0.15~0.18	0.3~0.36	3D銑 3D MILLING
BTC0152	12	105	22000~23000	1400~1800	0.08~0.11	0.15~0.18	3D銑 3D MILLING
BTC0152	12	105	22000~23000	2200~2600	0.03~0.05	0.05~0.08	3D銑 3D MILLING
BTC0202	12	125	20000~22000	800~1200	0.2~0.25	0.45~0.5	3D銑 3D MILLING
BTC0202	12	125	20000~22000	1600~2000	0.1~0.13	0.2~0.25	3D銑 3D MILLING
BTC0202	12	125	20000~22000	2600~3000	0.04~0.06	0.06~0.1	3D銑 3D MILLING
BTC0302	14	160	17000~19000	1100~1500	0.25~0.3	0.5~0.6	3D銑 3D MILLING
BTC0302	14	160	17000~19000	1800~2200	0.12~0.15	0.23~0.28	3D銑 3D MILLING
BTC0302	14	160	17000~19000	2800~3200	0.05~0.07	0.8~0.12	3D銑 3D MILLING
BTC0402	14	200	16000~17000	1400~1800	0.3~0.35	0.7~0.8	3D銑 3D MILLING
BTC0402	14	200	16000~17000	2600~3000	0.15~0.18	0.3~0.4	3D銑 3D MILLING
BTC0402	14	200	16000~17000	3000~3400	0.06~0.08	0.1~0.13	3D銑 3D MILLING
BTC0602	20	285	15000~16000	1600~2000	0.5~0.6	1~1.5	3D銑 3D MILLING
BTC0602	20	285	15000~16000	2800~3200	0.2~0.25	0.4~0.5	3D銑 3D MILLING
BTC0602	20	285	15000~16000	3400~3800	0.08~0.1	0.12~0.15	3D銑 3D MILLING
BTC0802	25	330	13000~14000	2000~2400	0.7~1	2~2.5	3D銑 3D MILLING
BTC0802	25	330	13000~14000	3600~4000	0.25~0.3	0.5~0.6	3D銑 3D MILLING
BTC0802	25	330	13000~14000	4200~4600	0.08~0.13	0.15~0.2	3D銑 3D MILLING
BTC1002	35	315	10000~11000	2000~2400	0.8~1.3	2~2.5	3D銑 3D MILLING
BTC1002	35	380	12000~13000	4000~4400	0.3~0.35	0.7~0.8	3D銑 3D MILLING
BTC1002	35	380	12000~13000	3800~4200	0.1~0.15	0.18~0.23	3D銑 3D MILLING
BTC1202	40	415	11000~12000	2400~2800	1~1.5	2.5~3.5	3D銑 3D MILLING
BTC1202	40	415	11000~12000	3800~4200	0.4~0.45	0.8~1	3D銑 3D MILLING
BTC1202	40	415	11000~12000	4200~4600	0.13~0.16	0.2~0.25	3D銑 3D MILLING

切削條件表 MILLING CONDITIONS HBC . IBC . JBC

被切削材 Work Material	鋁合金 *Aluminum Alloy* : **5052 / 6061 / 7075**
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
HBC0402	35	100	8000~8500	1200~1600	0.09~0.18	0.18~0.3	3D銑 3D MILLING
HBC0402	35	115	9000~9500	1800~2200	0.06~0.08	0.1~0.15	3D銑 3D MILLING
HBC0502	35	120	7300~7800	1400~1800	0.15~0.22	0.38~0.48	3D銑 3D MILLING
HBC0502	35	130	8000~8500	2000~2400	0.05~0.1	0.1~0.15	3D銑 3D MILLING
HBC0602	35	130	6700~7200	1400~1800	0.15~0.25	0.3~0.5	3D銑 3D MILLING
HBC0602	35	150	7700~8200	2000~2400	0.05~0.1	0.12~0.16	3D銑 3D MILLING
IBC0402	50	85	6700~7200	1000~1400	0.09~0.18	0.18~0.3	3D銑 3D MILLING
IBC0402	50	100	8000~8500	1600~2000	0.06~0.08	0.1~0.15	3D銑 3D MILLING
IBC0602	50	120	6000~6500	1200~1600	0.15~0.25	0.3~0.5	3D銑 3D MILLING
IBC0602	50	140	7200~7600	1800~2200	0.05~0.1	0.12~0.16	3D銑 3D MILLING
IBC0802	50	200	8000~8500	2000~2400	0.25~0.3	0.5~0.6	3D銑 3D MILLING
IBC0802	50	230	9000~9500	3200~3600	0.08~0.13	0.15~0.2	3D銑 3D MILLING
IBC1002	60	255	8000~8500	3600~4000	0.3~0.35	0.7~0.8	3D銑 3D MILLING
IBC1002	60	285	9000~9500	3000~3400	0.1~0.15	0.18~0.23	3D銑 3D MILLING
IBC1202	60	290	7700~8200	3000~3400	0.35~0.4	0.8~1	3D銑 3D MILLING
IBC1202	60	290	7700~8200	3000~3400	0.13~0.16	0.2~0.25	3D銑 3D MILLING
JBC0602	80	120	4700~5200	1600~2000	0.1~0.2	0.2~0.4	3D銑 3D MILLING
JBC0602	80	180	9000~9500	2000~2400	0.05~0.1	0.12~0.16	3D銑 3D MILLING
JBC0802	80	120	4700~5200	2000~2400	0.25~0.3	0.5~0.6	3D銑 3D MILLING
JBC0802	80	230	9000~9500	3000~3400	0.08~0.13	0.15~0.2	3D銑 3D MILLING
JBC1002	100	125	4000~4400	1200~1600	0.1~0.15	0.18~0.23	3D銑 3D MILLING
JBC1002	100	285	9000~9500	3000~3400	0.1~0.15	0.18~0.23	3D銑 3D MILLING
JBC1202	100	85	2000~2400	800~1000	0.35~0.4	0.8~1	3D銑 3D MILLING
JBC1202	100	150	3700~4200	1800~2200	0.13~0.16	0.2~0.25	3D銑 3D MILLING

德信發企業有限公司

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Distributor

2012.8.2000



微小徑・深溝系列

MICRO

CATALOGUE

Micro Diameter & Long Neck Series



DESIGN ・HONESTY・FUTURE

版權聲明

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圖示說明 Guide Lines to Icons

★全系列均適用高速切削 All series good at high speed cutting.

鎢鋼種類 Carbide



超微粒。
Micro grain.



極超微粒。
Super micro grain.

被切削材硬度 Work Material Hardness



被切削工件硬度可達HRc 60 、65。
Work material hardness is up to HRc 60 、65.

顆粒大小 Grain Size



粉末顆粒是0.2μm
Grain size is 0.2 μm.



粉末顆粒是0.4μm
Grain size is 0.4 μm.



粉末顆粒是0.6μm
Grain size is 0.6 μm.

鍍層 Coating



適用於高速、高硬度加工。乾式、油霧、濕式切削（乾濕兩用）。
Good at high speed cutting & high hard cutting.
For Dry cutting, MQL and Wet cutting.



適用於難切削材和含碳量高之材料
（例：S45C/1.1210），油霧、濕式切削。
Good at difficult material and high carbon content
(e.g., S45C/1.1210) , for MQL & Wet cutting.



適用於高速、高硬度切削。乾式、油霧切削。
Good at high speed cutting & high hard cutting.
For Dry cutting and MQL.

螺旋角 Helix Angle



螺旋角度 15°、30°、35°。
Helix Angle is 15°, 30°, 35°.

圓隅角 Corner R



圓隅角。
Corner Radius.

刃數 Flute



縮頸 Shrink Neck



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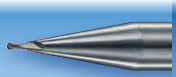
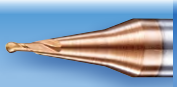
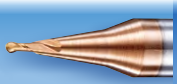
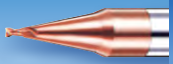
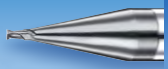
產品型號 Type NO.	產品圖片 Product Picture	頁碼 Page	切削條件 Milling Conditions
UMB		P.5	P.6
MBTA		P.9	P.10
MSB		P.25	P.15
MET		P.19	P.20
UME		P.22	P.23
META		P.24	P.25
UNBX 2 Flutes		P.27	P.29
UNBX 4 Flutes		P.38	P.39

產品型號 Type NO.	產品圖片 Product Picture	頁碼 Page	切削條件 Milling Conditions
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UNB		P.48	P.50
UXE		P.52	P.54
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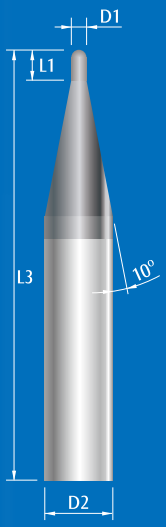
LNH		P.72	P.73
LNX		P.76	P.77

UMB Micro Diameter

Ball Nose End Mills 微小徑圓頭立銑刀



精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing ------
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining



直徑 D1	R0.1	R0.15	R0.2	R0.25	R0.3	R0.35	R0.4
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01
直徑 D1	R0.5	R0.75	R1.0	R1.5	R2.0		
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01		
柄徑 Shank(h6)	∅3	∅4					
柄徑公差值 D2 Tolerance	0 -0.006	0 -0.008					

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UMB0022	R 0.1	0.4	50	4
UMB0032	R 0.15	0.6	50	4
UMB0042	R 0.2	0.8	50	4
UMB0052	R 0.25	1.0	50	4
UMB0062	R 0.3	1.2	50	4
UMB0072	R 0.35	1.4	50	4
UMB0082	R 0.4	1.6	50	4
UMB0102S	R 0.5	2.0	50	3
UMB0102	R 0.5	2.0	50	4
UMB0152S	R 0.75	3.0	50	3
UMB0152	R 0.75	3.0	50	4
UMB0202S	R 1.0	4.0	50	3
UMB0202	R 1.0	4.0	50	4
UMB0302S	R 1.5	6.0	50	3
UMB0302	R 1.5	6.0	50	4
UMB0402	R 2.0	8.0	50	4

unit : mm

UMB

切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	油霧切削 MQL coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UMB0022	10	15	18000~20000	250~400	0.008~0.012	0.2	溝銑 SLOTTING
UMB0022	10	15	18000~20000	400~500	0.005~0.008	0.2	溝銑 SLOTTING
UMB0022	10	15	18000~20000	500~700	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UMB0022	10	15	18000~20000	700~900	0.005~0.008	0.01~0.016	3D銑 3D MILLING
UMB0032	10	20	18000~20000	300~500	0.01~0.015	0.3	溝銑 SLOTTING
UMB0032	10	20	18000~20000	500~600	0.005~0.01	0.3	溝銑 SLOTTING
UMB0032	10	20	18000~20000	600~800	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UMB0032	10	20	18000~20000	800~1000	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UMB0042	10	25	18000~20000	400~600	0.015~0.02	0.4	溝銑 SLOTTING
UMB0042	10	25	18000~20000	600~700	0.005~0.01	0.4	溝銑 SLOTTING
UMB0042	10	25	18000~20000	700~900	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UMB0042	10	25	18000~20000	900~1100	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UMB0052	12	30	18000~20000	600~800	0.015~0.02	0.5	溝銑 SLOTTING
UMB0052	12	30	18000~20000	800~900	0.005~0.01	0.5	溝銑 SLOTTING
UMB0052	12	30	18000~20000	800~900	0.02~0.03	0.04~0.06	3D銑 3D MILLING
UMB0052	12	30	18000~20000	1000~1200	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UMB0062	12	35	18000~20000	600~800	0.02~0.025	0.6	溝銑 SLOTTING
UMB0062	12	35	18000~20000	800~1000	0.005~0.01	0.6	溝銑 SLOTTING
UMB0062	12	35	18000~20000	800~1000	0.03~0.045	0.06~0.09	3D銑 3D MILLING
UMB0062	12	35	18000~20000	1200~1600	0.005~0.02	0.01~0.04	3D銑 3D MILLING
UMB0072	12	40	16000~18000	600~800	0.02~0.03	0.7	溝銑 SLOTTING
UMB0072	12	40	16000~18000	800~1000	0.005~0.015	0.7	溝銑 SLOTTING
UMB0072	12	40	16000~18000	800~1000	0.035~0.05	0.07~0.1	3D銑 3D MILLING
UMB0072	12	40	16000~18000	1200~1600	0.005~0.025	0.01~0.05	3D銑 3D MILLING
UMB0082	12	45	16000~18000	600~800	0.02~0.04	0.8	溝銑 SLOTTING
UMB0082	12	45	16000~18000	800~1000	0.005~0.015	0.8	溝銑 SLOTTING
UMB0082	12	45	16000~18000	800~1000	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UMB0082	12	45	16000~18000	1400~1800	0.005~0.025	0.01~0.05	3D銑 3D MILLING
UMB0102S	12	50	14000~16000	600~800	0.04~0.06	1	溝銑 SLOTTING
UMB0102S	12	50	14000~16000	1000~1200	0.015~0.03	1	溝銑 SLOTTING
UMB0102S	12	50	14000~16000	1000~1200	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UMB0102S	12	50	14000~16000	1600~2000	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UMB0102	12	50	14000~16000	600~800	0.04~0.06	1	溝銑 SLOTTING
UMB0102	12	50	14000~16000	1000~1200	0.015~0.03	1	溝銑 SLOTTING
UMB0102	12	50	14000~16000	1000~1200	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UMB0102	12	50	14000~16000	1600~2000	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UMB0152S	12	75	14000~16000	600~800	0.06~0.08	1.5	溝銑 SLOTTING
UMB0152S	12	75	14000~16000	1000~1200	0.015~0.04	1.5	溝銑 SLOTTING
UMB0152S	12	75	14000~16000	1000~1200	0.08~0.1	0.16~0.2	3D銑 3D MILLING
UMB0152S	12	75	14000~16000	1800~2200	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UMB0152	12	75	14000~16000	600~800	0.06~0.08	1.5	溝銑 SLOTTING
UMB0152	12	75	14000~16000	1000~1200	0.015~0.04	1.5	溝銑 SLOTTING
UMB0152	12	75	14000~16000	1000~1200	0.08~0.1	0.16~0.2	3D銑 3D MILLING
UMB0152	12	75	14000~16000	1800~2200	0.02~0.05	0.04~0.1	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UMB0202S	12	90	13000~14000	800~1000	0.1~0.12	2	溝銑 SLOTTING
UMB0202S	12	90	13000~14000	1200~1400	0.02~0.06	2	溝銑 SLOTTING
UMB0202S	12	90	13000~14000	1600~1800	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UMB0202S	12	90	13000~14000	2200~2600	0.025~0.06	0.05~0.12	3D銑 3D MILLING
UMB0202	12	90	13000~14000	800~1000	0.1~0.12	2	溝銑 SLOTTING
UMB0202	12	90	13000~14000	1200~1400	0.02~0.06	2	溝銑 SLOTTING
UMB0202	12	90	13000~14000	1600~1800	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UMB0202	12	90	13000~14000	2200~2600	0.025~0.06	0.05~0.12	3D銑 3D MILLING
UMB0302S	12	125	12000~13000	1000~1200	0.14~0.16	3	溝銑 SLOTTING
UMB0302S	12	125	12000~13000	1400~1800	0.03~0.08	3	溝銑 SLOTTING
UMB0302S	12	125	12000~13000	2200~2400	0.16~0.18	0.32~0.36	3D銑 3D MILLING
UMB0302S	12	125	12000~13000	2800~3200	0.03~0.08	0.06~0.16	3D銑 3D MILLING
UMB0302	12	125	12000~13000	1000~1200	0.14~0.16	3	溝銑 SLOTTING
UMB0302	12	125	12000~13000	1400~1800	0.03~0.08	3	溝銑 SLOTTING
UMB0302	12	125	12000~13000	2200~2400	0.16~0.18	0.32~0.36	3D銑 3D MILLING
UMB0302	12	125	12000~13000	2800~3200	0.03~0.08	0.06~0.16	3D銑 3D MILLING
UMB0402	12	150	11000~12000	1200~1400	0.16~0.18	4	溝銑 SLOTTING
UMB0402	12	150	11000~12000	1800~2200	0.04~0.09	4	溝銑 SLOTTING
UMB0402	12	150	11000~12000	2600~2800	0.2~0.22	0.4~0.44	3D銑 3D MILLING
UMB0402	12	150	11000~12000	3200~3600	0.035~0.1	0.07~0.2	3D銑 3D MILLING

UMB 切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :Hardened Steels SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	油霧切削 MQL coolant

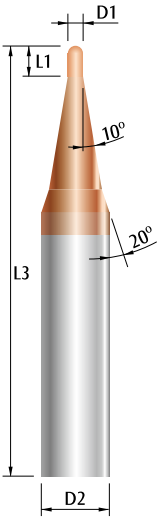
型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UMB0022	10	15	16000~18000	100~200	0.005~0.008	0.2	溝銑 SLOTTING
UMB0022	10	15	16000~18000	100~200	0.005~0.008	0.2	溝銑 SLOTTING
UMB0022	10	15	16000~18000	200~300	0.008~0.01	0.016~0.02	3D銑 3D MILLING
UMB0022	10	15	16000~18000	300~400	0.005~0.008	0.01~0.016	3D銑 3D MILLING
UMB0032	10	15	15000~16000	100~200	0.005~0.008	0.3	溝銑 SLOTTING
UMB0032	10	15	15000~16000	100~200	0.005~0.008	0.3	溝銑 SLOTTING
UMB0032	10	15	15000~16000	200~300	0.008~0.01	0.016~0.02	3D銑 3D MILLING
UMB0032	10	15	15000~16000	300~400	0.005~0.008	0.01~0.016	3D銑 3D MILLING
UMB0042	10	20	15000~16000	150~250	0.005~0.01	0.4	溝銑 SLOTTING
UMB0042	10	20	15000~16000	150~250	0.005~0.01	0.4	溝銑 SLOTTING
UMB0042	10	20	15000~16000	200~300	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UMB0042	10	20	15000~16000	300~400	0.005~0.008	0.01~0.016	3D銑 3D MILLING
UMB0052	12	25	14000~15000	200~300	0.005~0.015	0.5	溝銑 SLOTTING
UMB0052	12	25	14000~15000	200~300	0.005~0.015	0.5	溝銑 SLOTTING
UMB0052	12	25	14000~15000	300~500	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UMB0052	12	25	14000~15000	500~700	0.005~0.015	0.01~0.03	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UMB0062	12	30	14000~15000	200~400	0.015~0.025	0.6	溝銑 SLOTTING
UMB0062	12	30	14000~15000	400~500	0.005~0.015	0.6	溝銑 SLOTTING
UMB0062	12	30	14000~15000	300~500	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UMB0062	12	30	14000~15000	500~700	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UMB0072	12	30	13000~14000	300~500	0.02~0.03	0.7	溝銑 SLOTTING
UMB0072	12	30	13000~14000	500~700	0.005~0.015	0.7	溝銑 SLOTTING
UMB0072	12	30	13000~14000	400~600	0.025~0.035	0.05~0.07	3D銑 3D MILLING
UMB0072	12	30	13000~14000	800~1000	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UMB0082	12	35	13000~14000	300~500	0.02~0.03	0.8	溝銑 SLOTTING
UMB0082	12	35	13000~14000	500~700	0.005~0.015	0.8	溝銑 SLOTTING
UMB0082	12	35	13000~14000	400~600	0.03~0.04	0.06~0.08	3D銑 3D MILLING
UMB0082	12	35	13000~14000	800~1000	0.005~0.02	0.01~0.04	3D銑 3D MILLING
UMB0102S	12	40	12000~13000	400~600	0.03~0.04	1	溝銑 SLOTTING
UMB0102S	12	40	12000~13000	600~800	0.015~0.025	1	溝銑 SLOTTING
UMB0102S	12	40	12000~13000	400~600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UMB0102S	12	40	12000~13000	800~1000	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UMB0102	12	40	12000~13000	400~600	0.03~0.04	1	溝銑 SLOTTING
UMB0102	12	40	12000~13000	600~800	0.015~0.025	1	溝銑 SLOTTING
UMB0102	12	40	12000~13000	400~600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UMB0102	12	40	12000~13000	800~1000	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UMB0152S	12	60	11000~12000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
UMB0152S	12	60	11000~12000	800~1000	0.015~0.03	1.5	溝銑 SLOTTING
UMB0152S	12	60	11000~12000	400~600	0.08~0.1	0.16~0.2	3D銑 3D MILLING
UMB0152S	12	60	11000~12000	1000~1400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UMB0152	12	60	11000~12000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
UMB0152	12	60	11000~12000	800~1000	0.015~0.03	1.5	溝銑 SLOTTING
UMB0152	12	60	11000~12000	400~600	0.08~0.1	0.16~0.2	3D銑 3D MILLING
UMB0152	12	60	11000~12000	1000~1400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UMB0202S	12	70	10000~11000	600~800	0.06~0.08	2	溝銑 SLOTTING
UMB0202S	12	70	10000~11000	1000~1200	0.02~0.04	2	溝銑 SLOTTING
UMB0202S	12	70	10000~11000	800~1000	0.09~0.11	0.18~0.22	3D銑 3D MILLING
UMB0202S	12	70	10000~11000	1400~1800	0.02~0.06	0.04~0.12	3D銑 3D MILLING
UMB0202	12	70	10000~11000	600~800	0.06~0.08	2	溝銑 SLOTTING
UMB0202	12	70	10000~11000	1000~1200	0.02~0.04	2	溝銑 SLOTTING
UMB0202	12	70	10000~11000	800~1000	0.09~0.11	0.18~0.22	3D銑 3D MILLING
UMB0202	12	70	10000~11000	1400~1800	0.02~0.06	0.04~0.12	3D銑 3D MILLING
UMB0302S	12	95	9000~10000	600~800	0.1~0.12	3	溝銑 SLOTTING
UMB0302S	12	95	9000~10000	1200~1400	0.02~0.06	3	溝銑 SLOTTING
UMB0302S	12	95	9000~10000	800~1000	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UMB0302S	12	95	9000~10000	1400~1800	0.025~0.06	0.05~0.12	3D銑 3D MILLING
UMB0302	12	95	9000~10000	600~800	0.1~0.12	3	溝銑 SLOTTING
UMB0302	12	95	9000~10000	1200~1400	0.02~0.06	3	溝銑 SLOTTING
UMB0302	12	95	9000~10000	800~1000	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UMB0302	12	95	9000~10000	1400~1800	0.025~0.06	0.05~0.12	3D銑 3D MILLING
UMB0402	12	115	8000~9000	800~1000	0.14~0.16	4	溝銑 SLOTTING
UMB0402	12	115	8000~9000	1200~1400	0.03~0.08	4	溝銑 SLOTTING
UMB0402	12	115	8000~9000	1000~1200	0.16~0.18	0.32~0.36	3D銑 3D MILLING
UMB0402	12	115	8000~9000	1600~2000	0.03~0.08	0.06~0.16	3D銑 3D MILLING

MBTA Micro Diameter

微小徑圓頭立銑刀 Ball Nose End Mills





直徑 D1	R0.15	R0.2	R0.25	R0.3	R0.35	R0.4	R0.5
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01

直徑 D1	R0.6	R0.7	R0.75	R0.8	R0.9	R1.0	R1.5	R2.0
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01

柄徑 Shank(h6)	Ø4
柄徑公差值 D2 Tolerance	0 -0.008

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
MBTA0032	R 0.15	0.6	50	4
MBTA0042	R 0.2	0.8	50	4
MBTA0052	R 0.25	1.0	50	4
MBTA0062	R 0.3	1.2	50	4
MBTA0072	R 0.35	1.4	50	4
MBTA0082	R 0.4	1.6	50	4
MBTA0102	R 0.5	2.0	50	4
MBTA0122	R 0.6	2.4	50	4
MBTA0142	R 0.7	2.8	50	4
MBTA0152	R 0.75	3.0	50	4
MBTA0162	R 0.8	3.2	50	4
MBTA0182	R 0.9	3.6	50	4
MBTA0202	R 1.0	4.0	50	4
MBTA0302	R 1.5	6.0	50	4
MBTA0402	R 2.0	8.0	50	4

unit : mm



精銑 Finishing

中銑 Semi-finishing

粗銑 Roughing

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

MBTA 切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 :*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
MBTA0032	10	24000~26000	200~300	0.01~0.015	0.3	溝銑 SLOTTING
MBTA0032	10	24000~26000	250~350	0.005~0.01	0.3	溝銑 SLOTTING
MBTA0032	10	24000~26000	300~400	0.01~0.015	0.03	3D銑 3D MILLING
MBTA0032	10	24000~26000	350~450	0.005~0.01	0.02	3D銑 3D MILLING
MBTA0042	10	23000~25000	300~400	0.01~0.02	0.4	溝銑 SLOTTING
MBTA0042	10	23000~25000	350~450	0.01~0.015	0.4	溝銑 SLOTTING
MBTA0042	10	23000~25000	400~500	0.01~0.02	0.06	3D銑 3D MILLING
MBTA0042	10	23000~25000	500~600	0.01~0.015	0.03	3D銑 3D MILLING
MBTA0052	10	23000~25000	300~500	0.02~0.03	0.5	溝銑 SLOTTING
MBTA0052	10	23000~25000	500~600	0.015~0.025	0.5	溝銑 SLOTTING
MBTA0052	10	23000~25000	400~600	0.02~0.03	0.06	3D銑 3D MILLING
MBTA0052	10	23000~25000	600~800	0.015~0.025	0.06	3D銑 3D MILLING
MBTA0062	10	22000~24000	400~600	0.03~0.04	0.6	溝銑 SLOTTING
MBTA0062	10	22000~24000	600~900	0.02~0.03	0.6	溝銑 SLOTTING
MBTA0062	10	22000~24000	500~600	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0062	10	22000~24000	600~800	0.02~0.03	0.06	3D銑 3D MILLING
MBTA0072	10	22000~24000	500~700	0.04~0.06	0.7	溝銑 SLOTTING
MBTA0072	10	22000~24000	800~1000	0.03~0.04	0.7	溝銑 SLOTTING
MBTA0072	10	22000~24000	600~800	0.04~0.06	0.12	3D銑 3D MILLING
MBTA0072	10	22000~24000	900~1200	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0082	10	21000~23000	600~800	0.05~0.06	0.8	溝銑 SLOTTING
MBTA0082	10	21000~23000	1000~1200	0.03~0.04	0.8	溝銑 SLOTTING
MBTA0082	10	21000~23000	700~900	0.05~0.06	0.12	3D銑 3D MILLING
MBTA0082	10	21000~23000	1000~1300	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0102	10	18000~20000	700~800	0.05~0.06	1	溝銑 SLOTTING
MBTA0102	10	18000~20000	1200~1400	0.04~0.05	1	溝銑 SLOTTING
MBTA0102	10	18000~20000	900~1100	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0102	10	18000~20000	1300~1500	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0122	10	18000~20000	700~800	0.05~0.06	1.2	溝銑 SLOTTING
MBTA0122	10	18000~20000	1300~1500	0.04~0.05	1.2	溝銑 SLOTTING
MBTA0122	10	18000~20000	900~1100	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0122	10	18000~20000	1400~1600	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0142	10	18000~20000	800~1000	0.05~0.06	1.4	溝銑 SLOTTING
MBTA0142	10	18000~20000	1600~1800	0.04~0.05	1.4	溝銑 SLOTTING
MBTA0142	10	18000~20000	1200~1400	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0142	10	18000~20000	1800~2000	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0162	10	16000~18000	800~1000	0.05~0.06	1.6	溝銑 SLOTTING
MBTA0162	10	16000~18000	1800~2000	0.04~0.05	1.6	溝銑 SLOTTING
MBTA0162	10	16000~18000	1300~1500	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0162	10	16000~18000	2000~2300	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0182	10	15000~17000	900~1100	0.06~0.08	1.8	溝銑 SLOTTING
MBTA0182	10	15000~17000	1800~2000	0.04~0.06	1.8	溝銑 SLOTTING
MBTA0182	10	15000~17000	1400~1700	0.06~0.08	0.16	3D銑 3D MILLING
MBTA0182	10	15000~17000	2200~2500	0.04~0.06	0.12	3D銑 3D MILLING
MBTA0202	11	14000~16000	1000~1200	0.06~0.08	2	溝銑 SLOTTING
MBTA0202	11	14000~16000	2000~2200	0.04~0.06	2	溝銑 SLOTTING
MBTA0202	11	14000~16000	1400~1800	0.06~0.08	0.16	3D銑 3D MILLING
MBTA0202	11	14000~16000	2200~2600	0.04~0.06	0.12	3D銑 3D MILLING
MBTA0302	13	13000~15000	1200~1400	0.08~0.1	3	溝銑 SLOTTING
MBTA0302	13	13000~15000	2000~2200	0.04~0.06	3	溝銑 SLOTTING
MBTA0302	13	13000~15000	1400~1800	0.1~0.12	0.24	3D銑 3D MILLING
MBTA0302	13	13000~15000	2400~2800	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0402	15	13000~15000	1300~1500	0.1~0.12	4	溝銑 SLOTTING
MBTA0402	15	13000~15000	2200~2400	0.05~0.07	4	溝銑 SLOTTING
MBTA0402	15	13000~15000	1400~1800	0.12~0.15	0.3	3D銑 3D MILLING
MBTA0402	15	13000~15000	2600~3000	0.05~0.07	0.14	3D銑 3D MILLING

MBTA 切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 :*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
MBTA0032	10	17000~18000	200~300	0.01~0.015	0.3	溝銑 SLOTTING
MBTA0032	10	17000~18000	250~350	0.005~0.01	0.3	溝銑 SLOTTING
MBTA0032	10	17000~18000	300~400	0.01~0.015	0.03	3D銑 3D MILLING
MBTA0032	10	17000~18000	350~450	0.005~0.01	0.02	3D銑 3D MILLING
MBTA0042	10	17000~18000	300~400	0.01~0.02	0.4	溝銑 SLOTTING
MBTA0042	10	17000~18000	350~450	0.01~0.015	0.4	溝銑 SLOTTING
MBTA0042	10	17000~18000	400~500	0.01~0.02	0.06	3D銑 3D MILLING
MBTA0042	10	17000~18000	500~600	0.01~0.015	0.03	3D銑 3D MILLING
MBTA0052	10	17000~18000	300~500	0.02~0.03	0.5	溝銑 SLOTTING
MBTA0052	10	17000~18000	500~600	0.015~0.025	0.5	溝銑 SLOTTING
MBTA0052	10	17000~18000	400~600	0.02~0.03	0.06	3D銑 3D MILLING
MBTA0052	10	17000~18000	600~800	0.015~0.025	0.06	3D銑 3D MILLING
MBTA0062	10	17000~18000	400~600	0.03~0.04	0.6	溝銑 SLOTTING
MBTA0062	10	17000~18000	600~900	0.02~0.03	0.6	溝銑 SLOTTING
MBTA0062	10	17000~18000	500~600	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0062	10	17000~18000	600~800	0.02~0.03	0.06	3D銑 3D MILLING
MBTA0072	10	17000~18000	500~700	0.04~0.06	0.7	溝銑 SLOTTING
MBTA0072	10	17000~18000	800~1000	0.03~0.04	0.7	溝銑 SLOTTING
MBTA0072	10	17000~18000	600~800	0.04~0.06	0.12	3D銑 3D MILLING
MBTA0072	10	17000~18000	900~1200	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0082	10	17000~18000	600~800	0.05~0.06	0.8	溝銑 SLOTTING
MBTA0082	10	17000~18000	1000~1200	0.03~0.04	0.8	溝銑 SLOTTING
MBTA0082	10	17000~18000	700~900	0.05~0.06	0.12	3D銑 3D MILLING
MBTA0082	10	17000~18000	1000~1300	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0102	10	16000~17000	700~800	0.05~0.06	1	溝銑 SLOTTING
MBTA0102	10	16000~17000	1200~1400	0.04~0.05	1	溝銑 SLOTTING
MBTA0102	10	16000~17000	900~1100	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0102	10	16000~17000	1300~1500	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0122	10	16000~17000	700~800	0.05~0.06	1.2	溝銑 SLOTTING
MBTA0122	10	16000~17000	1300~1500	0.04~0.05	1.2	溝銑 SLOTTING
MBTA0122	10	16000~17000	900~1100	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0122	10	16000~17000	1400~1600	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0142	10	16000~17000	800~1000	0.05~0.06	1.4	溝銑 SLOTTING
MBTA0142	10	16000~17000	1600~1800	0.04~0.05	1.4	溝銑 SLOTTING
MBTA0142	10	16000~17000	1200~1400	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0142	10	16000~17000	1800~2000	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0162	10	16000~17000	800~1000	0.05~0.06	1.6	溝銑 SLOTTING
MBTA0162	10	16000~17000	1800~2000	0.04~0.05	1.6	溝銑 SLOTTING
MBTA0162	10	16000~17000	1300~1500	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0162	10	16000~17000	2000~2300	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0182	10	15000~17000	900~1100	0.06~0.08	1.8	溝銑 SLOTTING
MBTA0182	10	15000~17000	1800~2000	0.04~0.06	1.8	溝銑 SLOTTING
MBTA0182	10	15000~17000	1400~1700	0.06~0.08	0.16	3D銑 3D MILLING
MBTA0182	10	15000~17000	2200~2500	0.04~0.06	0.12	3D銑 3D MILLING
MBTA0202	11	14000~16000	1000~1200	0.06~0.08	2	溝銑 SLOTTING
MBTA0202	11	14000~16000	2000~2200	0.04~0.06	2	溝銑 SLOTTING
MBTA0202	11	14000~16000	1400~1800	0.06~0.08	0.16	3D銑 3D MILLING
MBTA0202	11	14000~16000	2200~2600	0.04~0.06	0.12	3D銑 3D MILLING
MBTA0302	13	13000~15000	1200~1400	0.08~0.1	3	溝銑 SLOTTING
MBTA0302	13	13000~15000	2000~2200	0.04~0.06	3	溝銑 SLOTTING
MBTA0302	13	13000~15000	1400~1800	0.1~0.12	0.24	3D銑 3D MILLING
MBTA0302	13	13000~15000	2400~2800	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0402	15	12000~14000	1300~1500	0.1~0.12	4	溝銑 SLOTTING
MBTA0402	15	12000~14000	2200~2400	0.05~0.07	4	溝銑 SLOTTING
MBTA0402	15	12000~14000	1400~1800	0.12~0.15	0.3	3D銑 3D MILLING
MBTA0402	15	12000~14000	2600~3000	0.05~0.07	0.14	3D銑 3D MILLING

MBTA 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
MBTA0032	10	24000~26000	400~600	0.015~0.02	0.3	溝銑 SLOTTING
MBTA0032	10	24000~26000	500~700	0.01~0.015	0.3	溝銑 SLOTTING
MBTA0032	10	24000~26000	500~600	0.015~0.02	0.04	3D銑 3D MILLING
MBTA0032	10	24000~26000	600~700	0.01~0.015	0.02	3D銑 3D MILLING
MBTA0042	10	23000~25000	400~600	0.015~0.025	0.4	溝銑 SLOTTING
MBTA0042	10	23000~25000	500~700	0.015~0.02	0.4	溝銑 SLOTTING
MBTA0042	10	23000~25000	500~700	0.015~0.025	0.05	3D銑 3D MILLING
MBTA0042	10	23000~25000	600~800	0.015~0.02	0.03	3D銑 3D MILLING
MBTA0052	10	23000~25000	500~700	0.02~0.03	0.5	溝銑 SLOTTING
MBTA0052	10	23000~25000	650~850	0.015~0.02	0.5	溝銑 SLOTTING
MBTA0052	10	23000~25000	650~850	0.02~0.03	0.06	3D銑 3D MILLING
MBTA0052	10	23000~25000	700~800	0.015~0.02	0.04	3D銑 3D MILLING
MBTA0062	10	22000~24000	550~750	0.04~0.06	0.6	溝銑 SLOTTING
MBTA0062	10	22000~24000	700~900	0.025~0.035	0.6	溝銑 SLOTTING
MBTA0062	10	22000~24000	700~900	0.03~0.04	0.1	3D銑 3D MILLING
MBTA0062	10	22000~24000	800~1000	0.025~0.035	0.05	3D銑 3D MILLING
MBTA0072	10	22000~24000	650~800	0.05~0.07	0.7	溝銑 SLOTTING
MBTA0072	10	22000~24000	900~1200	0.03~0.04	0.7	溝銑 SLOTTING
MBTA0072	10	22000~24000	800~1000	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0072	10	22000~24000	1200~1400	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0082	10	21000~23000	750~950	0.05~0.07	0.8	溝銑 SLOTTING
MBTA0082	10	21000~23000	1000~1300	0.03~0.04	0.8	溝銑 SLOTTING
MBTA0082	10	21000~23000	1000~1200	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0082	10	21000~23000	1200~1400	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0102	10	18000~20000	900~1100	0.06~0.07	1	溝銑 SLOTTING
MBTA0102	10	18000~20000	1300~1500	0.04~0.05	1	溝銑 SLOTTING
MBTA0102	10	18000~20000	1300~1500	0.06~0.07	0.14	3D銑 3D MILLING
MBTA0102	10	18000~20000	1600~1800	0.03~0.05	0.1	3D銑 3D MILLING
MBTA0122	10	18000~20000	900~1100	0.06~0.08	1.2	溝銑 SLOTTING
MBTA0122	10	18000~20000	1300~1500	0.04~0.05	1.2	溝銑 SLOTTING
MBTA0122	10	18000~20000	1300~1500	0.06~0.08	0.16	3D銑 3D MILLING
MBTA0122	10	18000~20000	1800~2200	0.03~0.05	0.1	3D銑 3D MILLING
MBTA0142	10	18000~20000	1000~1200	0.06~0.08	1.4	溝銑 SLOTTING
MBTA0142	10	18000~20000	1400~1600	0.04~0.05	1.4	溝銑 SLOTTING
MBTA0142	10	18000~20000	1400~1600	0.07~0.09	0.18	3D銑 3D MILLING
MBTA0142	10	18000~20000	2000~2300	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0162	10	16000~18000	1000~1200	0.07~0.09	1.6	溝銑 SLOTTING
MBTA0162	10	16000~18000	1800~2200	0.04~0.05	1.6	溝銑 SLOTTING
MBTA0162	10	16000~18000	1400~1600	0.08~0.1	0.2	3D銑 3D MILLING
MBTA0162	10	16000~18000	2000~2400	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0182	10	15000~17000	1100~1300	0.08~0.1	1.8	溝銑 SLOTTING
MBTA0182	10	15000~17000	2000~2400	0.04~0.05	1.8	溝銑 SLOTTING
MBTA0182	10	15000~17000	1500~1700	0.1~0.12	0.24	3D銑 3D MILLING
MBTA0182	10	15000~17000	2400~2600	0.05~0.06	0.12	3D銑 3D MILLING
MBTA0202	11	14000~16000	1100~1400	0.08~0.1	2	溝銑 SLOTTING
MBTA0202	11	14000~16000	2200~2600	0.04~0.06	2	溝銑 SLOTTING
MBTA0202	11	14000~16000	1600~1800	0.1~0.12	0.24	3D銑 3D MILLING
MBTA0202	11	14000~16000	2400~2700	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0302	13	13000~15000	1100~1400	0.12~0.15	3	溝銑 SLOTTING
MBTA0302	13	13000~15000	2500~3000	0.05~0.07	3	溝銑 SLOTTING
MBTA0302	13	13000~15000	1600~1800	0.13~0.15	0.3	3D銑 3D MILLING
MBTA0302	13	13000~15000	2800~3000	0.06~0.08	0.16	3D銑 3D MILLING
MBTA0402	15	13000~15000	1100~1400	0.15~0.18	4	溝銑 SLOTTING
MBTA0402	15	13000~15000	2600~3000	0.05~0.07	4	溝銑 SLOTTING
MBTA0402	15	13000~15000	1600~2000	0.14~0.16	0.32	3D銑 3D MILLING
MBTA0402	15	13000~15000	2800~3200	0.06~0.09	0.18	3D銑 3D MILLING

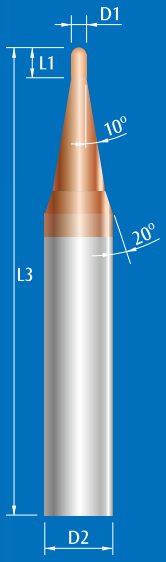
MBTA 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)				
冷卻方式 Coolant Type	濕式切削 Wet coolant				
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
MBTA0032	10	17000~18000	400~600	0.015~0.02	0.3	溝銑 SLOTTING
MBTA0032	10	17000~18000	500~700	0.01~0.015	0.3	溝銑 SLOTTING
MBTA0032	10	17000~18000	500~600	0.015~0.02	0.04	3D銑 3D MILLING
MBTA0032	10	17000~18000	600~700	0.01~0.015	0.02	3D銑 3D MILLING
MBTA0042	10	17000~18000	400~600	0.015~0.025	0.4	溝銑 SLOTTING
MBTA0042	10	17000~18000	500~700	0.015~0.02	0.4	溝銑 SLOTTING
MBTA0042	10	17000~18000	500~700	0.015~0.025	0.05	3D銑 3D MILLING
MBTA0042	10	17000~18000	600~800	0.015~0.02	0.03	3D銑 3D MILLING
MBTA0052	10	17000~18000	500~700	0.02~0.03	0.5	溝銑 SLOTTING
MBTA0052	10	17000~18000	650~850	0.015~0.02	0.5	溝銑 SLOTTING
MBTA0052	10	17000~18000	650~850	0.02~0.03	0.06	3D銑 3D MILLING
MBTA0052	10	17000~18000	700~800	0.015~0.02	0.04	3D銑 3D MILLING
MBTA0062	10	17000~18000	550~750	0.04~0.06	0.6	溝銑 SLOTTING
MBTA0062	10	17000~18000	700~900	0.025~0.035	0.6	溝銑 SLOTTING
MBTA0062	10	17000~18000	700~900	0.03~0.04	0.1	3D銑 3D MILLING
MBTA0062	10	17000~18000	800~1000	0.025~0.035	0.05	3D銑 3D MILLING
MBTA0072	10	17000~18000	650~800	0.05~0.07	0.7	溝銑 SLOTTING
MBTA0072	10	17000~18000	900~1200	0.03~0.04	0.7	溝銑 SLOTTING
MBTA0072	10	17000~18000	800~1000	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0072	10	17000~18000	1200~1400	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0082	10	17000~18000	750~950	0.05~0.07	0.8	溝銑 SLOTTING
MBTA0082	10	17000~18000	1000~1300	0.03~0.04	0.8	溝銑 SLOTTING
MBTA0082	10	17000~18000	1000~1200	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0082	10	17000~18000	1200~1400	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0102	10	16000~17000	900~1100	0.06~0.07	1	溝銑 SLOTTING
MBTA0102	10	16000~17000	1300~1500	0.04~0.05	1	溝銑 SLOTTING
MBTA0102	10	16000~17000	1300~1500	0.06~0.07	0.14	3D銑 3D MILLING
MBTA0102	10	16000~17000	1600~1800	0.03~0.05	0.1	3D銑 3D MILLING
MBTA0122	10	16000~17000	900~1100	0.06~0.08	1.2	溝銑 SLOTTING
MBTA0122	10	16000~17000	1300~1500	0.04~0.05	1.2	溝銑 SLOTTING
MBTA0122	10	16000~17000	1300~1500	0.06~0.08	0.16	3D銑 3D MILLING
MBTA0122	10	16000~17000	1800~2200	0.03~0.05	0.1	3D銑 3D MILLING
MBTA0142	10	16000~17000	1000~1200	0.06~0.08	1.4	溝銑 SLOTTING
MBTA0142	10	16000~17000	1400~1600	0.04~0.05	1.4	溝銑 SLOTTING
MBTA0142	10	16000~17000	1400~1600	0.07~0.09	0.18	3D銑 3D MILLING
MBTA0142	10	16000~17000	2000~2300	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0162	10	16000~17000	1000~1200	0.07~0.09	1.6	溝銑 SLOTTING
MBTA0162	10	16000~17000	1800~2200	0.04~0.05	1.6	溝銑 SLOTTING
MBTA0162	10	16000~17000	1400~1600	0.08~0.1	0.2	3D銑 3D MILLING
MBTA0162	10	16000~17000	2000~2400	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0182	10	15000~17000	1100~1300	0.08~0.1	1.8	溝銑 SLOTTING
MBTA0182	10	15000~17000	2000~2400	0.04~0.05	1.8	溝銑 SLOTTING
MBTA0182	10	15000~17000	1500~1700	0.1~0.12	0.24	3D銑 3D MILLING
MBTA0182	10	15000~17000	2400~2600	0.05~0.06	0.12	3D銑 3D MILLING
MBTA0202	11	14000~16000	1100~1400	0.08~0.1	2	溝銑 SLOTTING
MBTA0202	11	14000~16000	2200~2600	0.04~0.06	2	溝銑 SLOTTING
MBTA0202	11	14000~16000	1600~1800	0.1~0.12	0.24	3D銑 3D MILLING
MBTA0202	11	14000~16000	2400~2700	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0302	13	13000~15000	1100~1400	0.12~0.15	3	溝銑 SLOTTING
MBTA0302	13	13000~15000	2500~3000	0.05~0.07	3	溝銑 SLOTTING
MBTA0302	13	13000~15000	1600~1800	0.13~0.15	0.3	3D銑 3D MILLING
MBTA0302	13	13000~15000	2800~3000	0.06~0.08	0.16	3D銑 3D MILLING
MBTA0402	15	12000~14000	1100~1400	0.15~0.18	4	溝銑 SLOTTING
MBTA0402	15	12000~14000	2600~3000	0.05~0.07	4	溝銑 SLOTTING
MBTA0402	15	12000~14000	1600~2000	0.14~0.16	0.32	3D銑 3D MILLING
MBTA0402	15	12000~14000	2800~3200	0.06~0.09	0.18	3D銑 3D MILLING

MSB Micro Diameter

Ball Nose End Mills 微小徑圓頭立銑刀





直徑 D1	R0.15	R0.2	R0.25	R0.3	R0.35	R0.4	R0.5
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01
直徑 D1	R0.6	R0.7	R0.75	R0.8	R0.9	R1.0	R1.5
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01
柄徑 Shank(h6)	∅3						
柄徑公差值 D2 Tolerance	0 -0.006						

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
MSB0032	R 0.15	0.6	50	3
MSB0042	R 0.2	0.8	50	3
MSB0052	R 0.25	1.0	50	3
MSB0062	R 0.3	1.2	50	3
MSB0072	R 0.35	1.4	50	3
MSB0082	R 0.4	1.6	50	3
MSB0102	R 0.5	2.0	50	3
MSB0122	R 0.6	2.4	50	3
MSB0142	R 0.7	2.8	50	3
MSB0152	R 0.75	3.0	50	3
MSB0162	R 0.8	3.2	50	3
MSB0182	R 0.9	3.6	50	3
MSB0202	R 1.0	4.0	50	3
MSB0302	R 1.5	6.0	50	3

unit : mm

精銑 Finishing

中銑 Semi-finishing

粗銑 Roughing ------

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

MSB 切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 :*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
MSB0032	10	24000~26000	200~300	0.01~0.015	0.3	溝銑 SLOTTING
MSB0032	10	24000~26000	250~350	0.005~0.01	0.3	溝銑 SLOTTING
MSB0032	10	24000~26000	300~400	0.01~0.015	0.03	3D銑 3D MILLING
MSB0032	10	24000~26000	350~450	0.005~0.01	0.02	3D銑 3D MILLING
MSB0042	10	23000~25000	300~400	0.01~0.02	0.4	溝銑 SLOTTING
MSB0042	10	23000~25000	350~450	0.01~0.015	0.4	溝銑 SLOTTING
MSB0042	10	23000~25000	400~500	0.01~0.02	0.06	3D銑 3D MILLING
MSB0042	10	23000~25000	500~600	0.01~0.015	0.03	3D銑 3D MILLING
MSB0052	10	23000~25000	300~500	0.02~0.03	0.5	溝銑 SLOTTING
MSB0052	10	23000~25000	500~600	0.015~0.025	0.5	溝銑 SLOTTING
MSB0052	10	23000~25000	400~600	0.02~0.03	0.06	3D銑 3D MILLING
MSB0052	10	23000~25000	600~800	0.015~0.025	0.06	3D銑 3D MILLING
MSB0062	10	22000~24000	400~600	0.03~0.04	0.6	溝銑 SLOTTING
MSB0062	10	22000~24000	600~900	0.02~0.03	0.6	溝銑 SLOTTING
MSB0062	10	22000~24000	500~600	0.03~0.04	0.08	3D銑 3D MILLING
MSB0062	10	22000~24000	600~800	0.02~0.03	0.06	3D銑 3D MILLING
MSB0072	10	22000~24000	500~700	0.04~0.06	0.7	溝銑 SLOTTING
MSB0072	10	22000~24000	800~1000	0.03~0.04	0.7	溝銑 SLOTTING
MSB0072	10	22000~24000	600~800	0.04~0.06	0.12	3D銑 3D MILLING
MSB0072	10	22000~24000	900~1200	0.03~0.04	0.08	3D銑 3D MILLING
MSB0082	10	21000~23000	600~800	0.05~0.06	0.8	溝銑 SLOTTING
MSB0082	10	21000~23000	1000~1200	0.03~0.04	0.8	溝銑 SLOTTING
MSB0082	10	21000~23000	700~900	0.05~0.06	0.12	3D銑 3D MILLING
MSB0082	10	21000~23000	1000~1300	0.03~0.04	0.08	3D銑 3D MILLING
MSB0102	10	18000~20000	700~800	0.05~0.06	1	溝銑 SLOTTING
MSB0102	10	18000~20000	1200~1400	0.04~0.05	1	溝銑 SLOTTING
MSB0102	10	18000~20000	900~1100	0.05~0.07	0.14	3D銑 3D MILLING
MSB0102	10	18000~20000	1300~1500	0.04~0.05	0.1	3D銑 3D MILLING
MSB0122	10	18000~20000	700~800	0.05~0.06	1.2	溝銑 SLOTTING
MSB0122	10	18000~20000	1300~1500	0.04~0.05	1.2	溝銑 SLOTTING
MSB0122	10	18000~20000	900~1100	0.05~0.07	0.14	3D銑 3D MILLING
MSB0122	10	18000~20000	1400~1600	0.04~0.05	0.1	3D銑 3D MILLING
MSB0142	10	18000~20000	800~1000	0.05~0.06	1.4	溝銑 SLOTTING
MSB0142	10	18000~20000	1600~1800	0.04~0.05	1.4	溝銑 SLOTTING
MSB0142	10	18000~20000	1200~1400	0.05~0.07	0.14	3D銑 3D MILLING
MSB0142	10	18000~20000	1800~2000	0.04~0.05	0.1	3D銑 3D MILLING
MSB0162	10	16000~18000	800~1000	0.05~0.06	1.6	溝銑 SLOTTING
MSB0162	10	16000~18000	1800~2000	0.04~0.05	1.6	溝銑 SLOTTING
MSB0162	10	16000~18000	1300~1500	0.05~0.07	0.14	3D銑 3D MILLING
MSB0162	10	16000~18000	2000~2300	0.04~0.05	0.1	3D銑 3D MILLING
MSB0182	10	15000~17000	900~1100	0.06~0.08	1.8	溝銑 SLOTTING
MSB0182	10	15000~17000	1800~2000	0.04~0.06	1.8	溝銑 SLOTTING
MSB0182	10	15000~17000	1400~1700	0.06~0.08	0.16	3D銑 3D MILLING
MSB0182	10	15000~17000	2200~2500	0.04~0.06	0.12	3D銑 3D MILLING
MSB0202	11	14000~16000	1000~1200	0.06~0.08	2	溝銑 SLOTTING
MSB0202	11	14000~16000	2000~2200	0.04~0.06	2	溝銑 SLOTTING
MSB0202	11	14000~16000	1400~1800	0.06~0.08	0.16	3D銑 3D MILLING
MSB0202	11	14000~16000	2200~2600	0.04~0.06	0.12	3D銑 3D MILLING
MSB0302	13	13000~15000	1200~1400	0.08~0.1	3	溝銑 SLOTTING
MSB0302	13	13000~15000	2000~2200	0.04~0.06	3	溝銑 SLOTTING
MSB0302	13	13000~15000	1400~1800	0.1~0.12	0.24	3D銑 3D MILLING
MSB0302	13	13000~15000	2400~2800	0.05~0.07	0.14	3D銑 3D MILLING

MSB 切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 :*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
MSB0032	10	17000~18000	200~300	0.01~0.015	0.3	溝銑 SLOTTING
MSB0032	10	17000~18000	250~350	0.005~0.01	0.3	溝銑 SLOTTING
MSB0032	10	17000~18000	300~400	0.01~0.015	0.03	3D銑 3D MILLING
MSB0032	10	17000~18000	350~450	0.005~0.01	0.02	3D銑 3D MILLING
MSB0042	10	17000~18000	300~400	0.01~0.02	0.4	溝銑 SLOTTING
MSB0042	10	17000~18000	350~450	0.01~0.015	0.4	溝銑 SLOTTING
MSB0042	10	17000~18000	400~500	0.01~0.02	0.06	3D銑 3D MILLING
MSB0042	10	17000~18000	500~600	0.01~0.015	0.03	3D銑 3D MILLING
MSB0052	10	17000~18000	300~500	0.02~0.03	0.5	溝銑 SLOTTING
MSB0052	10	17000~18000	500~600	0.015~0.025	0.5	溝銑 SLOTTING
MSB0052	10	17000~18000	400~600	0.02~0.03	0.06	3D銑 3D MILLING
MSB0052	10	17000~18000	600~800	0.015~0.025	0.06	3D銑 3D MILLING
MSB0062	10	17000~18000	400~600	0.03~0.04	0.6	溝銑 SLOTTING
MSB0062	10	17000~18000	600~900	0.02~0.03	0.6	溝銑 SLOTTING
MSB0062	10	17000~18000	500~600	0.03~0.04	0.08	3D銑 3D MILLING
MSB0062	10	17000~18000	600~800	0.02~0.03	0.06	3D銑 3D MILLING
MSB0072	10	17000~18000	500~700	0.04~0.06	0.7	溝銑 SLOTTING
MSB0072	10	17000~18000	800~1000	0.03~0.04	0.7	溝銑 SLOTTING
MSB0072	10	17000~18000	600~800	0.04~0.06	0.12	3D銑 3D MILLING
MSB0072	10	17000~18000	900~1200	0.03~0.04	0.08	3D銑 3D MILLING
MSB0082	10	17000~18000	600~800	0.05~0.06	0.8	溝銑 SLOTTING
MSB0082	10	17000~18000	1000~1200	0.03~0.04	0.8	溝銑 SLOTTING
MSB0082	10	17000~18000	700~900	0.05~0.06	0.12	3D銑 3D MILLING
MSB0082	10	17000~18000	1000~1300	0.03~0.04	0.08	3D銑 3D MILLING
MSB0102	10	16000~17000	700~800	0.05~0.06	1	溝銑 SLOTTING
MSB0102	10	16000~17000	1200~1400	0.04~0.05	1	溝銑 SLOTTING
MSB0102	10	16000~17000	900~1100	0.05~0.07	0.14	3D銑 3D MILLING
MSB0102	10	16000~17000	1300~1500	0.04~0.05	0.1	3D銑 3D MILLING
MSB0122	10	16000~17000	700~800	0.05~0.06	1.2	溝銑 SLOTTING
MSB0122	10	16000~17000	1300~1500	0.04~0.05	1.2	溝銑 SLOTTING
MSB0122	10	16000~17000	900~1100	0.05~0.07	0.14	3D銑 3D MILLING
MSB0122	10	16000~17000	1400~1600	0.04~0.05	0.1	3D銑 3D MILLING
MSB0142	10	16000~17000	800~1000	0.05~0.06	1.4	溝銑 SLOTTING
MSB0142	10	16000~17000	1600~1800	0.04~0.05	1.4	溝銑 SLOTTING
MSB0142	10	16000~17000	1200~1400	0.05~0.07	0.14	3D銑 3D MILLING
MSB0142	10	16000~17000	1800~2000	0.04~0.05	0.1	3D銑 3D MILLING
MSB0162	10	16000~17000	800~1000	0.05~0.06	1.6	溝銑 SLOTTING
MSB0162	10	16000~17000	1800~2000	0.04~0.05	1.6	溝銑 SLOTTING
MSB0162	10	16000~17000	1300~1500	0.05~0.07	0.14	3D銑 3D MILLING
MSB0162	10	16000~17000	2000~2300	0.04~0.05	0.1	3D銑 3D MILLING
MSB0182	10	15000~17000	900~1100	0.06~0.08	1.8	溝銑 SLOTTING
MSB0182	10	15000~17000	1800~2000	0.04~0.06	1.8	溝銑 SLOTTING
MSB0182	10	15000~17000	1400~1700	0.06~0.08	0.16	3D銑 3D MILLING
MSB0182	10	15000~17000	2200~2500	0.04~0.06	0.12	3D銑 3D MILLING
MSB0202	11	14000~16000	1000~1200	0.06~0.08	2	溝銑 SLOTTING
MSB0202	11	14000~16000	2000~2200	0.04~0.06	2	溝銑 SLOTTING
MSB0202	11	14000~16000	1400~1800	0.06~0.08	0.16	3D銑 3D MILLING
MSB0202	11	14000~16000	2200~2600	0.04~0.06	0.12	3D銑 3D MILLING
MSB0302	13	13000~15000	1200~1400	0.08~0.1	3	溝銑 SLOTTING
MSB0302	13	13000~15000	2000~2200	0.04~0.06	3	溝銑 SLOTTING
MSB0302	13	13000~15000	1400~1800	0.1~0.12	0.24	3D銑 3D MILLING
MSB0302	13	13000~15000	2400~2800	0.05~0.07	0.14	3D銑 3D MILLING

MSB 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
MSB0032	10	24000~26000	400~600	0.015~0.02	0.3	溝銑 SLOTTING
MSB0032	10	24000~26000	500~700	0.01~0.015	0.3	溝銑 SLOTTING
MSB0032	10	24000~26000	500~600	0.015~0.02	0.04	3D銑 3D MILLING
MSB0032	10	24000~26000	600~700	0.01~0.015	0.02	3D銑 3D MILLING
MSB0042	10	23000~25000	400~600	0.015~0.025	0.4	溝銑 SLOTTING
MSB0042	10	23000~25000	500~700	0.015~0.02	0.4	溝銑 SLOTTING
MSB0042	10	23000~25000	500~700	0.015~0.025	0.05	3D銑 3D MILLING
MSB0042	10	23000~25000	600~800	0.015~0.02	0.03	3D銑 3D MILLING
MSB0052	10	23000~25000	500~700	0.02~0.03	0.5	溝銑 SLOTTING
MSB0052	10	23000~25000	650~850	0.015~0.02	0.5	溝銑 SLOTTING
MSB0052	10	23000~25000	650~850	0.02~0.03	0.06	3D銑 3D MILLING
MSB0052	10	23000~25000	700~800	0.015~0.02	0.04	3D銑 3D MILLING
MSB0062	10	22000~24000	550~750	0.04~0.06	0.6	溝銑 SLOTTING
MSB0062	10	22000~24000	700~900	0.025~0.035	0.6	溝銑 SLOTTING
MSB0062	10	22000~24000	700~900	0.03~0.04	0.1	3D銑 3D MILLING
MSB0062	10	22000~24000	800~1000	0.025~0.035	0.05	3D銑 3D MILLING
MSB0072	10	22000~24000	650~800	0.05~0.07	0.7	溝銑 SLOTTING
MSB0072	10	22000~24000	900~1200	0.03~0.04	0.7	溝銑 SLOTTING
MSB0072	10	22000~24000	800~1000	0.05~0.07	0.14	3D銑 3D MILLING
MSB0072	10	22000~24000	1200~1400	0.03~0.04	0.08	3D銑 3D MILLING
MSB0082	10	21000~23000	750~950	0.05~0.07	0.8	溝銑 SLOTTING
MSB0082	10	21000~23000	1000~1300	0.03~0.04	0.8	溝銑 SLOTTING
MSB0082	10	21000~23000	1000~1200	0.05~0.07	0.14	3D銑 3D MILLING
MSB0082	10	21000~23000	1200~1400	0.03~0.04	0.08	3D銑 3D MILLING
MSB0102	10	18000~20000	900~1100	0.06~0.07	1	溝銑 SLOTTING
MSB0102	10	18000~20000	1300~1500	0.04~0.05	1	溝銑 SLOTTING
MSB0102	10	18000~20000	1300~1500	0.06~0.07	0.14	3D銑 3D MILLING
MSB0102	10	18000~20000	1600~1800	0.03~0.05	0.1	3D銑 3D MILLING
MSB0122	10	18000~20000	900~1100	0.06~0.08	1.2	溝銑 SLOTTING
MSB0122	10	18000~20000	1300~1500	0.04~0.05	1.2	溝銑 SLOTTING
MSB0122	10	18000~20000	1300~1500	0.06~0.08	0.16	3D銑 3D MILLING
MSB0122	10	18000~20000	1800~2200	0.03~0.05	0.1	3D銑 3D MILLING
MSB0142	10	18000~20000	1000~1200	0.06~0.08	1.4	溝銑 SLOTTING
MSB0142	10	18000~20000	1400~1600	0.04~0.05	1.4	溝銑 SLOTTING
MSB0142	10	18000~20000	1400~1600	0.07~0.09	0.18	3D銑 3D MILLING
MSB0142	10	18000~20000	2000~2300	0.04~0.05	0.1	3D銑 3D MILLING
MSB0162	10	16000~18000	1000~1200	0.07~0.09	1.6	溝銑 SLOTTING
MSB0162	10	16000~18000	1800~2200	0.04~0.05	1.6	溝銑 SLOTTING
MSB0162	10	16000~18000	1400~1600	0.08~0.1	0.2	3D銑 3D MILLING
MSB0162	10	16000~18000	2000~2400	0.04~0.05	0.1	3D銑 3D MILLING
MSB0182	10	15000~17000	1100~1300	0.08~0.1	1.8	溝銑 SLOTTING
MSB0182	10	15000~17000	2000~2400	0.04~0.05	1.8	溝銑 SLOTTING
MSB0182	10	15000~17000	1500~1700	0.1~0.12	0.24	3D銑 3D MILLING
MSB0182	10	15000~17000	2400~2600	0.05~0.06	0.12	3D銑 3D MILLING
MSB0202	11	14000~16000	1100~1400	0.08~0.1	2	溝銑 SLOTTING
MSB0202	11	14000~16000	2200~2600	0.04~0.06	2	溝銑 SLOTTING
MSB0202	11	14000~16000	1600~1800	0.1~0.12	0.24	3D銑 3D MILLING
MSB0202	11	14000~16000	2400~2700	0.05~0.07	0.14	3D銑 3D MILLING
MSB0302	13	13000~15000	1100~1400	0.12~0.15	3	溝銑 SLOTTING
MSB0302	13	13000~15000	2500~3000	0.05~0.07	3	溝銑 SLOTTING
MSB0302	13	13000~15000	1600~1800	0.13~0.15	0.3	3D銑 3D MILLING
MSB0302	13	13000~15000	2800~3000	0.06~0.08	0.16	3D銑 3D MILLING

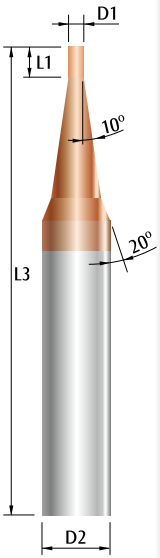
MSB 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
MSB0032	10	17000~18000	400~600	0.015~0.02	0.3	溝銑 SLOTTING
MSB0032	10	17000~18000	500~700	0.01~0.015	0.3	溝銑 SLOTTING
MSB0032	10	17000~18000	500~600	0.015~0.02	0.04	3D銑 3D MILLING
MSB0032	10	17000~18000	600~700	0.01~0.015	0.02	3D銑 3D MILLING
MSB0042	10	17000~18000	400~600	0.015~0.025	0.4	溝銑 SLOTTING
MSB0042	10	17000~18000	500~700	0.015~0.02	0.4	溝銑 SLOTTING
MSB0042	10	17000~18000	500~700	0.015~0.025	0.05	3D銑 3D MILLING
MSB0042	10	17000~18000	600~800	0.015~0.02	0.03	3D銑 3D MILLING
MSB0052	10	17000~18000	500~700	0.02~0.03	0.5	溝銑 SLOTTING
MSB0052	10	17000~18000	650~850	0.015~0.02	0.5	溝銑 SLOTTING
MSB0052	10	17000~18000	650~850	0.02~0.03	0.06	3D銑 3D MILLING
MSB0052	10	17000~18000	700~800	0.015~0.02	0.04	3D銑 3D MILLING
MSB0062	10	17000~18000	550~750	0.04~0.06	0.6	溝銑 SLOTTING
MSB0062	10	17000~18000	700~900	0.025~0.035	0.6	溝銑 SLOTTING
MSB0062	10	17000~18000	700~900	0.03~0.04	0.1	3D銑 3D MILLING
MSB0062	10	17000~18000	800~1000	0.025~0.035	0.05	3D銑 3D MILLING
MSB0072	10	17000~18000	650~800	0.05~0.07	0.7	溝銑 SLOTTING
MSB0072	10	17000~18000	900~1200	0.03~0.04	0.7	溝銑 SLOTTING
MSB0072	10	17000~18000	800~1000	0.05~0.07	0.14	3D銑 3D MILLING
MSB0072	10	17000~18000	1200~1400	0.03~0.04	0.08	3D銑 3D MILLING
MSB0082	10	17000~18000	750~950	0.05~0.07	0.8	溝銑 SLOTTING
MSB0082	10	17000~18000	1000~1300	0.03~0.04	0.8	溝銑 SLOTTING
MSB0082	10	17000~18000	1000~1200	0.05~0.07	0.14	3D銑 3D MILLING
MSB0082	10	17000~18000	1200~1400	0.03~0.04	0.08	3D銑 3D MILLING
MSB0102	10	16000~17000	900~1100	0.06~0.07	1	溝銑 SLOTTING
MSB0102	10	16000~17000	1300~1500	0.04~0.05	1	溝銑 SLOTTING
MSB0102	10	16000~17000	1300~1500	0.06~0.07	0.14	3D銑 3D MILLING
MSB0102	10	16000~17000	1600~1800	0.03~0.05	0.1	3D銑 3D MILLING
MSB0122	10	16000~17000	900~1100	0.06~0.08	1.2	溝銑 SLOTTING
MSB0122	10	16000~17000	1300~1500	0.04~0.05	1.2	溝銑 SLOTTING
MSB0122	10	16000~17000	1300~1500	0.06~0.08	0.16	3D銑 3D MILLING
MSB0122	10	16000~17000	1800~2200	0.03~0.05	0.1	3D銑 3D MILLING
MSB0142	10	16000~17000	1000~1200	0.06~0.08	1.4	溝銑 SLOTTING
MSB0142	10	16000~17000	1400~1600	0.04~0.05	1.4	溝銑 SLOTTING
MSB0142	10	16000~17000	1400~1600	0.07~0.09	0.18	3D銑 3D MILLING
MSB0142	10	16000~17000	2000~2300	0.04~0.05	0.1	3D銑 3D MILLING
MSB0162	10	16000~17000	1000~1200	0.07~0.09	1.6	溝銑 SLOTTING
MSB0162	10	16000~17000	1800~2200	0.04~0.05	1.6	溝銑 SLOTTING
MSB0162	10	16000~17000	1400~1600	0.08~0.1	0.2	3D銑 3D MILLING
MSB0162	10	16000~17000	2000~2400	0.04~0.05	0.1	3D銑 3D MILLING
MSB0182	10	15000~17000	1100~1300	0.08~0.1	1.8	溝銑 SLOTTING
MSB0182	10	15000~17000	2000~2400	0.04~0.05	1.8	溝銑 SLOTTING
MSB0182	10	15000~17000	1500~1700	0.1~0.12	0.24	3D銑 3D MILLING
MSB0182	10	15000~17000	2400~2600	0.05~0.06	0.12	3D銑 3D MILLING
MSB0202	11	14000~16000	1100~1400	0.08~0.1	2	溝銑 SLOTTING
MSB0202	11	14000~16000	2200~2600	0.04~0.06	2	溝銑 SLOTTING
MSB0202	11	14000~16000	1600~1800	0.1~0.12	0.24	3D銑 3D MILLING
MSB0202	11	14000~16000	2400~2700	0.05~0.07	0.14	3D銑 3D MILLING
MSB0302	13	13000~15000	1100~1400	0.12~0.15	3	溝銑 SLOTTING
MSB0302	13	13000~15000	2500~3000	0.05~0.07	3	溝銑 SLOTTING
MSB0302	13	13000~15000	1600~1800	0.13~0.15	0.3	3D銑 3D MILLING
MSB0302	13	13000~15000	2800~3000	0.06~0.08	0.16	3D銑 3D MILLING

MET Micro Diameter

微小徑立銑刀 End Mills

Super MG | 0.4 µm | 35° | 2 Flutes | HRc ▸60 | G12



直徑 D1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2
直徑公差值 D1 Tolerance	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.02	0 -0.02
直徑 D1	1.4	1.5	1.6	1.8	2.0	2.5	3.0	
直徑公差值 D1 Tolerance	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02	
柄徑 Shank(h6)	Ø3							
柄徑公差值 D2 Tolerance	0 -0.006							

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
MET0022	0.2	0.4	50	3
MET0032	0.3	0.6	50	3
MET0042	0.4	0.8	50	3
MET0052	0.5	1.0	50	3
MET0062	0.6	1.2	50	3
MET0082	0.8	1.6	50	3
MET0102	1.0	2.5	50	3
MET0122	1.2	3.0	50	3
MET0142	1.4	3.0	50	3
MET0152	1.5	4.0	50	3
MET0162	1.6	4.0	50	3
MET0182	1.8	5.0	50	3
MET0202	2.0	6.0	50	3
MET0252	2.5	8.0	50	3
MET0302	3.0	8.0	50	3

unit : mm



精銑 Finishing

中銑 Semi-finishing

粗銑 Roughing

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

MET 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
MET0022	10	24000~26000	250~300	0.005~0.01	0.2	溝銑 SLOTTING
MET0022	10	24000~26000	250~300	0.005~0.01	0.2	溝銑 SLOTTING
MET0032	10	24000~26000	300~400	0.01~0.015	0.3	溝銑 SLOTTING
MET0032	10	24000~26000	400~500	0.005~0.01	0.3	溝銑 SLOTTING
MET0042	10	23000~25000	400~500	0.02~0.03	0.4	溝銑 SLOTTING
MET0042	10	23000~25000	500~600	0.01~0.02	0.4	溝銑 SLOTTING
MET0052	10	23000~25000	500~700	0.03~0.04	0.5	溝銑 SLOTTING
MET0052	10	23000~25000	800~900	0.01~0.02	0.5	溝銑 SLOTTING
MET0062	10	22000~24000	500~700	0.04~0.05	0.6	溝銑 SLOTTING
MET0062	10	22000~24000	800~900	0.03~0.04	0.6	溝銑 SLOTTING
MET0072	10	22000~24000	600~800	0.04~0.05	0.7	溝銑 SLOTTING
MET0072	10	22000~24000	800~1000	0.03~0.04	0.7	溝銑 SLOTTING
MET0082	10	21000~23000	600~800	0.05~0.06	0.8	溝銑 SLOTTING
MET0082	10	21000~23000	800~1000	0.04~0.05	0.8	溝銑 SLOTTING
MET0092	10	21000~23000	650~850	0.05~0.06	0.9	溝銑 SLOTTING
MET0092	10	21000~23000	850~1050	0.04~0.05	0.9	溝銑 SLOTTING
MET0102	10	19000~21000	700~900	0.05~0.06	1	溝銑 SLOTTING
MET0102	10	19000~21000	900~1100	0.04~0.05	1	溝銑 SLOTTING
MET0122	10	19000~21000	700~900	0.06~0.08	1.2	溝銑 SLOTTING
MET0122	10	19000~21000	900~1100	0.04~0.05	1.2	溝銑 SLOTTING
MET0142	10	18000~20000	700~900	0.07~0.09	1.4	溝銑 SLOTTING
MET0142	10	18000~20000	900~1100	0.04~0.05	1.4	溝銑 SLOTTING
MET0152	10	18000~20000	750~950	0.08~0.1	1.5	溝銑 SLOTTING
MET0152	10	18000~20000	950~1150	0.05~0.06	1.5	溝銑 SLOTTING
MET0162	10	17000~19000	800~1000	0.09~0.11	1.6	溝銑 SLOTTING
MET0162	10	17000~19000	1000~1200	0.05~0.07	1.6	溝銑 SLOTTING
MET0182	10	15000~17000	900~1000	0.1~0.12	1.8	溝銑 SLOTTING
MET0182	10	15000~17000	1100~1200	0.06~0.08	1.8	溝銑 SLOTTING
MET0202	11	15000~17000	900~1100	0.1~0.12	2	溝銑 SLOTTING
MET0202	11	15000~17000	1100~1300	0.06~0.08	2	溝銑 SLOTTING
MET0252	13	14000~16000	1300~1500	0.12~0.14	2.5	溝銑 SLOTTING
MET0252	13	14000~16000	1500~1700	0.07~0.12	2.5	溝銑 SLOTTING
MET0302	14	14000~16000	1500~1700	0.14~0.16	3	溝銑 SLOTTING
MET0302	14	14000~16000	1700~1900	0.08~0.13	3	溝銑 SLOTTING

MET 切削條件表 MILLING CONDITIONS

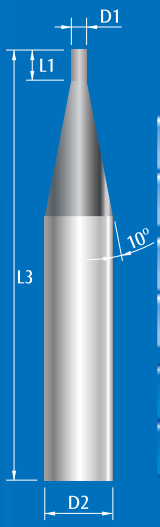
被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
MET0022	10	17000~18000	150~200	0.005~0.01	0.2	溝銑 SLOTTING
MET0022	10	17000~18000	150~200	0.005~0.01	0.2	溝銑 SLOTTING
MET0032	10	17000~18000	200~300	0.01~0.015	0.3	溝銑 SLOTTING
MET0032	10	17000~18000	300~400	0.005~0.01	0.3	溝銑 SLOTTING
MET0042	10	17000~18000	300~400	0.02~0.03	0.4	溝銑 SLOTTING
MET0042	10	17000~18000	400~500	0.01~0.02	0.4	溝銑 SLOTTING
MET0052	10	17000~18000	400~600	0.03~0.04	0.5	溝銑 SLOTTING
MET0052	10	17000~18000	700~800	0.01~0.02	0.5	溝銑 SLOTTING
MET0062	10	16000~17000	400~600	0.04~0.05	0.6	溝銑 SLOTTING
MET0062	10	16000~17000	700~800	0.03~0.04	0.6	溝銑 SLOTTING
MET0072	10	16000~17000	500~700	0.04~0.05	0.7	溝銑 SLOTTING
MET0072	10	16000~17000	700~900	0.03~0.04	0.7	溝銑 SLOTTING
MET0082	10	16000~17000	500~700	0.05~0.06	0.8	溝銑 SLOTTING
MET0082	10	16000~17000	700~900	0.04~0.05	0.8	溝銑 SLOTTING
MET0092	10	16000~17000	550~750	0.05~0.06	0.9	溝銑 SLOTTING
MET0092	10	16000~17000	750~950	0.04~0.05	0.9	溝銑 SLOTTING
MET0102	10	16000~17000	600~800	0.05~0.06	1	溝銑 SLOTTING
MET0102	10	16000~17000	800~1000	0.04~0.05	1	溝銑 SLOTTING
MET0122	10	15000~16000	600~800	0.06~0.08	1.2	溝銑 SLOTTING
MET0122	10	15000~16000	800~1000	0.04~0.05	1.2	溝銑 SLOTTING
MET0142	10	15000~16000	600~800	0.07~0.09	1.4	溝銑 SLOTTING
MET0142	10	15000~16000	800~1000	0.04~0.05	1.4	溝銑 SLOTTING
MET0152	10	15000~16000	650~850	0.08~0.1	1.5	溝銑 SLOTTING
MET0152	10	15000~16000	850~1050	0.05~0.06	1.5	溝銑 SLOTTING
MET0162	10	15000~16000	700~900	0.09~0.11	1.6	溝銑 SLOTTING
MET0162	10	15000~16000	900~1100	0.05~0.07	1.6	溝銑 SLOTTING
MET0182	10	14000~15000	800~900	0.1~0.12	1.8	溝銑 SLOTTING
MET0182	10	14000~15000	1000~1100	0.06~0.08	1.8	溝銑 SLOTTING
MET0202	11	14000~15000	800~1000	0.1~0.12	2	溝銑 SLOTTING
MET0202	11	14000~15000	1000~1200	0.06~0.08	2	溝銑 SLOTTING
MET0252	13	11000~12000	1200~1400	0.12~0.14	2.5	溝銑 SLOTTING
MET0252	13	11000~12000	1400~1600	0.07~0.12	2.5	溝銑 SLOTTING
MET0302	14	10000~11000	1400~1600	0.14~0.16	3	溝銑 SLOTTING
MET0302	14	10000~11000	1600~1800	0.08~0.13	3	溝銑 SLOTTING

UME Micro Diameter

End Mills 微小徑立銑刀



精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing ------
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining



直徑 D1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1.0
直徑公差值 D1 Tolerance	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.02
直徑 D1	1.2	1.5	1.6	1.8	2.0	2.5	3.0	4.0
直徑公差值 D1 Tolerance	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02
柄徑 Shank(h6)	Ø4							
柄徑公差值 D2 Tolerance	0 -0.008							

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UME0022	0.2	0.4	50	4
UME0032	0.3	0.6	50	4
UME0042	0.4	0.8	50	4
UME0052	0.5	1.0	50	4
UME0062	0.6	1.2	50	4
UME0072	0.7	1.4	50	4
UME0082	0.8	1.6	50	4
UME0102	1.0	2.5	50	4
UME0122	1.2	3.0	50	4
UME0152	1.5	4.0	50	4
UME0162	1.6	4.0	50	4
UME0182	1.8	5.0	50	4
UME0202	2.0	6.0	50	4
UME0252	2.5	8.0	50	4
UME0302	3.0	8.0	50	4
UME0402	4.0	11.0	50	4

unit : mm

UME 切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	油霧切削 MQL coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UME0022	12	15	18000~20000	150~300	0.005~0.008	0.2	溝銑 SLOTTING
UME0022	12	15	18000~20000	150~300	0.005~0.008	0.2	溝銑 SLOTTING
UME0032	12	20	18000~20000	150~300	0.005~0.01	0.3	溝銑 SLOTTING
UME0032	12	20	18000~20000	150~300	0.005~0.01	0.3	溝銑 SLOTTING
UME0042	12	25	18000~20000	200~400	0.008~0.015	0.4	溝銑 SLOTTING
UME0042	12	25	18000~20000	200~400	0.008~0.015	0.4	溝銑 SLOTTING
UME0052	12	30	18000~20000	200~400	0.015~0.025	0.5	溝銑 SLOTTING
UME0052	12	30	18000~20000	400~600	0.01~0.015	0.5	溝銑 SLOTTING
UME0062	12	35	16000~18000	200~400	0.02~0.04	0.6	溝銑 SLOTTING
UME0062	12	35	16000~18000	400~600	0.015~0.025	0.6	溝銑 SLOTTING
UME0072	12	40	16000~18000	300~500	0.03~0.05	0.7	溝銑 SLOTTING
UME0072	12	40	16000~18000	600~800	0.015~0.025	0.7	溝銑 SLOTTING
UME0082	12	45	16000~18000	400~600	0.04~0.06	0.8	溝銑 SLOTTING
UME0082	12	45	16000~18000	800~1000	0.015~0.03	0.8	溝銑 SLOTTING
UME0102	12	50	16000~18000	400~600	0.04~0.06	1	溝銑 SLOTTING
UME0102	12	50	16000~18000	800~1000	0.015~0.03	1	溝銑 SLOTTING
UME0122	12	60	16000~18000	400~600	0.04~0.06	1.2	溝銑 SLOTTING
UME0122	12	60	16000~18000	800~1000	0.015~0.03	1.2	溝銑 SLOTTING
UME0152	12	75	15000~16000	600~800	0.05~0.07	1.5	溝銑 SLOTTING
UME0152	12	75	15000~16000	1000~1200	0.015~0.035	1.5	溝銑 SLOTTING
UME0162	13	80	15000~16000	600~800	0.06~0.08	1.6	溝銑 SLOTTING
UME0162	13	80	15000~16000	1000~1200	0.015~0.035	1.6	溝銑 SLOTTING
UME0182	13	90	15000~16000	600~800	0.07~0.09	1.8	溝銑 SLOTTING
UME0182	13	90	15000~16000	1200~1600	0.02~0.04	1.8	溝銑 SLOTTING
UME0202	15	95	13000~15000	600~800	0.08~0.1	2	溝銑 SLOTTING
UME0202	15	95	13000~15000	1200~1600	0.02~0.045	2	溝銑 SLOTTING
UME0252	15	105	11000~13000	800~1000	0.08~0.1	2.5	溝銑 SLOTTING
UME0252	15	105	11000~13000	1400~1800	0.02~0.05	2.5	溝銑 SLOTTING
UME0302	14	105	9000~11000	1000~1200	0.09~0.11	3	溝銑 SLOTTING
UME0302	14	105	9000~11000	1600~2000	0.025~0.06	3	溝銑 SLOTTING
UME0402	15	115	7000~9000	1400~1600	0.12~0.14	4	溝銑 SLOTTING
UME0402	15	115	7000~9000	2000~2400	0.03~0.08	4	溝銑 SLOTTING

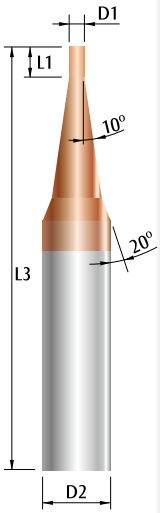
附註 Note	**UME**不適用於**SKD11**(HRc62)溝銑或面銑，可用於清角 **UME** *is not good at slotting or surfacing on material* **SKD11** *(HRc62), it is suitable for Corner Finishing Milling.*

META Micro Diameter

微小徑立銑刀 End Mills



直徑 D1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
直徑公差值 D1 Tolerance	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.015
直徑 D1	1.0	1.2	1.4	1.5	1.6	1.8	2.0	3.0
直徑公差值 D1 Tolerance	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02
柄徑 Shank(h6)	Ø4							
柄徑公差值 D2 Tolerance	0 -0.008							



型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
META0022	0.2	0.4	50	4
META0032	0.3	0.6	50	4
META0042	0.4	0.8	50	4
META0052	0.5	1.0	50	4
META0062	0.6	1.2	50	4
META0072	0.7	1.4	50	4
META0082	0.8	1.6	50	4
META0092	0.9	1.8	50	4
META0102	1.0	2.5	50	4
META0122	1.2	3.0	50	4
META0142	1.4	3.0	50	4
META0152	1.5	4.0	50	4
META0162	1.6	4.0	50	4
META0182	1.8	5.0	50	4
META0202	2.0	6.0	50	4
META0252	2.5	8.0	50	4
META0302	3.0	8.0	50	4



精銑 Finishing

中銑 Semi-finishing

粗銑 Roughing ------

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

META 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
META0022	10	24000~26000	250~300	0.005~0.01	0.2	溝銑 SLOTTING
META0022	10	24000~26000	250~300	0.005~0.01	0.2	溝銑 SLOTTING
META0032	10	24000~26000	300~400	0.01~0.015	0.3	溝銑 SLOTTING
META0032	10	24000~26000	400~500	0.005~0.01	0.3	溝銑 SLOTTING
META0042	10	23000~25000	400~500	0.02~0.03	0.4	溝銑 SLOTTING
META0042	10	23000~25000	500~600	0.01~0.02	0.4	溝銑 SLOTTING
META0052	10	23000~25000	500~700	0.03~0.04	0.5	溝銑 SLOTTING
META0052	10	23000~25000	800~900	0.01~0.02	0.5	溝銑 SLOTTING
META0062	10	22000~24000	500~700	0.04~0.05	0.6	溝銑 SLOTTING
META0062	10	22000~24000	800~900	0.03~0.04	0.6	溝銑 SLOTTING
META0072	10	22000~24000	600~800	0.04~0.05	0.7	溝銑 SLOTTING
META0072	10	22000~24000	800~1000	0.03~0.04	0.7	溝銑 SLOTTING
META0082	10	21000~23000	600~800	0.05~0.06	0.8	溝銑 SLOTTING
META0082	10	21000~23000	800~1000	0.04~0.05	0.8	溝銑 SLOTTING
META0092	10	21000~23000	650~850	0.05~0.06	0.9	溝銑 SLOTTING
META0092	10	21000~23000	850~1050	0.04~0.05	0.9	溝銑 SLOTTING
META0102	10	19000~21000	700~900	0.05~0.06	1	溝銑 SLOTTING
META0102	10	19000~21000	900~1100	0.04~0.05	1	溝銑 SLOTTING
META0122	10	19000~21000	700~900	0.06~0.08	1.2	溝銑 SLOTTING
META0122	10	19000~21000	900~1100	0.04~0.05	1.2	溝銑 SLOTTING
META0142	10	18000~20000	700~900	0.07~0.09	1.4	溝銑 SLOTTING
META0142	10	18000~20000	900~1100	0.04~0.05	1.4	溝銑 SLOTTING
META0152	10	18000~20000	750~950	0.08~0.1	1.5	溝銑 SLOTTING
META0152	10	18000~20000	950~1150	0.05~0.06	1.5	溝銑 SLOTTING
META0162	10	17000~19000	800~1000	0.09~0.11	1.6	溝銑 SLOTTING
META0162	10	17000~19000	1000~1200	0.05~0.07	1.6	溝銑 SLOTTING
META0182	10	15000~17000	900~1000	0.1~0.12	1.8	溝銑 SLOTTING
META0182	10	15000~17000	1100~1200	0.06~0.08	1.8	溝銑 SLOTTING
META0202	11	15000~17000	900~1100	0.1~0.12	2	溝銑 SLOTTING
META0202	11	15000~17000	1100~1300	0.06~0.08	2	溝銑 SLOTTING
META0252	13	14000~16000	1300~1500	0.12~0.14	2.5	溝銑 SLOTTING
META0252	13	14000~16000	1500~1700	0.07~0.12	2.5	溝銑 SLOTTING
META0302	14	14000~16000	1500~1700	0.14~0.16	3	溝銑 SLOTTING
META0302	14	14000~16000	1700~1900	0.08~0.13	3	溝銑 SLOTTING

META 切削條件表 MILLING CONDITIONS

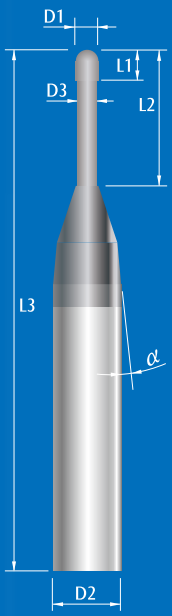
被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
META0022	10	17000~18000	150~200	0.005~0.01	0.2	溝銑 SLOTTING
META0022	10	17000~18000	150~200	0.005~0.01	0.2	溝銑 SLOTTING
META0032	10	17000~18000	200~300	0.01~0.015	0.3	溝銑 SLOTTING
META0032	10	17000~18000	300~400	0.005~0.01	0.3	溝銑 SLOTTING
META0042	10	17000~18000	300~400	0.02~0.03	0.4	溝銑 SLOTTING
META0042	10	17000~18000	400~500	0.01~0.02	0.4	溝銑 SLOTTING
META0052	10	17000~18000	400~600	0.03~0.04	0.5	溝銑 SLOTTING
META0052	10	17000~18000	700~800	0.01~0.02	0.5	溝銑 SLOTTING
META0062	10	16000~17000	400~600	0.04~0.05	0.6	溝銑 SLOTTING
META0062	10	16000~17000	700~800	0.03~0.04	0.6	溝銑 SLOTTING
META0072	10	16000~17000	500~700	0.04~0.05	0.7	溝銑 SLOTTING
META0072	10	16000~17000	700~900	0.03~0.04	0.7	溝銑 SLOTTING
META0082	10	16000~17000	500~700	0.05~0.06	0.8	溝銑 SLOTTING
META0082	10	16000~17000	700~900	0.04~0.05	0.8	溝銑 SLOTTING
META0092	10	16000~17000	550~750	0.05~0.06	0.9	溝銑 SLOTTING
META0092	10	16000~17000	750~950	0.04~0.05	0.9	溝銑 SLOTTING
META0102	10	16000~17000	600~800	0.05~0.06	1	溝銑 SLOTTING
META0102	10	16000~17000	800~1000	0.04~0.05	1	溝銑 SLOTTING
META0122	10	15000~16000	600~800	0.06~0.08	1.2	溝銑 SLOTTING
META0122	10	15000~16000	800~1000	0.04~0.05	1.2	溝銑 SLOTTING
META0142	10	15000~16000	600~800	0.07~0.09	1.4	溝銑 SLOTTING
META0142	10	15000~16000	800~1000	0.04~0.05	1.4	溝銑 SLOTTING
META0152	10	15000~16000	650~850	0.08~0.1	1.5	溝銑 SLOTTING
META0152	10	15000~16000	850~1050	0.05~0.06	1.5	溝銑 SLOTTING
META0162	10	15000~16000	700~900	0.09~0.11	1.6	溝銑 SLOTTING
META0162	10	15000~16000	900~1100	0.05~0.07	1.6	溝銑 SLOTTING
META0182	10	14000~15000	800~900	0.1~0.12	1.8	溝銑 SLOTTING
META0182	10	14000~15000	1000~1100	0.06~0.08	1.8	溝銑 SLOTTING
META0202	11	14000~15000	800~1000	0.1~0.12	2	溝銑 SLOTTING
META0202	11	14000~15000	1000~1200	0.06~0.08	2	溝銑 SLOTTING
META0252	13	11000~12000	1200~1400	0.12~0.14	2.5	溝銑 SLOTTING
META0252	13	11000~12000	1400~1600	0.07~0.12	2.5	溝銑 SLOTTING
META0302	14	10000~11000	1400~1600	0.14~0.16	3	溝銑 SLOTTING
META0302	14	10000~11000	1600~1800	0.08~0.13	3	溝銑 SLOTTING

2 Flutes

UNBX Long Neck

Ball Nose End Mills 深溝用圓頭立銑刀





直徑 D1	R0.1	R0.15	R0.2	R0.25	R0.3	R0.4	R0.5
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01
直徑 D1	R0.6	R0.75	R0.8	R1.0	R1.5	R2.0	
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	
柄徑 Shank(h6)	Ø4	Ø6					
柄徑公差值 D2 Tolerance	0 -0.008	0 -0.008					

D1≦R0.25&L2≦4mm α=15°
D1>R0.25&L2<4mm α=15°
The Other α=12°

精銑 Finishing	◎
中銑 Semi-finishing	------
粗銑 Roughing	------
乾式切削 Dry Machining	◎
油霧切削 MQL (Mist)	◎
水溶性切削 Emulsion Machining	○
油性切削 Oil Machining	○

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UNBX0201	R0.1	0.18	0.3	1	50	4
UNBX0202	R0.1	0.18	0.3	2	50	4
UNBX0301	R0.15	0.26	0.4	1	50	4
UNBX0302	R0.15	0.26	0.4	2	50	4
UNBX0303	R0.15	0.26	0.4	3	50	4
UNBX0402	R0.2	0.36	0.6	2	50	4
UNBX0403	R0.2	0.36	0.6	3	50	4
UNBX0404	R0.2	0.36	0.6	4	50	4
UNBX0502	R0.25	0.46	0.8	2	50	4
UNBX0504	R0.25	0.46	0.8	4	50	4
UNBX0506	R0.25	0.46	0.8	6	50	4

unit : mm

2 Flutes

UNBX Long Neck

深溝用圓頭立銑刀 Ball Nose End Mills

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UNBX0602	R 0.3	0.56	0.9	2	50	4
UNBX0604	R 0.3	0.56	0.9	4	50	4
UNBX0606	R 0.3	0.56	0.9	6	50	4
UNBX0804	R 0.4	0.76	1.2	4	50	4
UNBX0806	R 0.4	0.76	1.2	6	50	4
UNBX0808	R 0.4	0.76	1.2	8	50	4
UNBX1004	R 0.5	0.95	1.5	4	50	4
UNBX1006	R 0.5	0.95	1.5	6	50	4
UNBX1008	R 0.5	0.95	1.5	8	50	4
UNBX1010	R 0.5	0.95	1.5	10	50	4
UNBX1012	R 0.5	0.95	1.5	12	50	4
UNBX1208	R 0.6	1.15	2	8	50	4
UNBX1212	R 0.6	1.15	2	12	50	4
UNBX1506	R 0.75	1.45	2	6	50	4
UNBX1508	R 0.75	1.45	2	8	50	4
UNBX1510	R 0.75	1.45	2	10	50	4
UNBX1512	R 0.75	1.45	2	12	50	4
UNBX1516	R 0.75	1.45	2	16	50	4
UNBX1520	R 0.75	1.45	2	20	50	4
UNBX1608	R 0.8	1.54	2.5	8	50	4
UNBX1612	R 0.8	1.54	2.5	12	50	4
UNBX1616	R 0.8	1.54	2.5	16	50	4
UNBX2008	R 1.0	1.92	3	8	50	4
UNBX2010	R 1.0	1.92	3	10	50	4
UNBX2012	R 1.0	1.92	3	12	50	4
UNBX2016	R 1.0	1.92	3	16	50	4
UNBX2020	R 1.0	1.92	3	20	50	4
UNBX3008	R 1.5	2.90	4	8	50	6
UNBX3010	R 1.5	2.90	4	10	50	6
UNBX3012	R 1.5	2.90	4	12	50	6
UNBX3016	R 1.5	2.90	4	16	50	6
UNBX3020	R 1.5	2.90	4	20	60	6
UNBX3025	R 1.5	2.90	4	25	60	6
UNBX4010	R 2.0	3.88	5	10	75	6
UNBX4015	R 2.0	3.88	5	15	75	6
UNBX4020	R 2.0	3.88	5	20	75	6
UNBX4025	R 2.0	3.88	5	25	75	6
UNBX4030	R 2.0	3.88	5	30	75	6

UNBX 2 Flute

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	油霧切削 MQL coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UNBX0201	12	15	24000~26000	250~400	0.008~0.012	0.2	溝銑 SLOTTING
UNBX0201	12	15	24000~26000	400~550	0.008~0.012	0.01~0.03	3D銑 3D MILLING
UNBX0202	13	15	24000~26000	200~350	0.006~0.01	0.2	溝銑 SLOTTING
UNBX0202	13	15	24000~26000	350~500	0.006~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0301	13	25	22000~24000	400~600	0.015~0.02	0.3	溝銑 SLOTTING
UNBX0301	13	25	22000~24000	600~700	0.015~0.02	0.02~0.04	3D銑 3D MILLING
UNBX0302	14	25	22000~24000	350~550	0.015~0.02	0.3	溝銑 SLOTTING
UNBX0302	14	25	22000~24000	500~600	0.015~0.02	0.02~0.04	3D銑 3D MILLING
UNBX0303	15	25	22000~24000	200~400	0.01~0.015	0.3	溝銑 SLOTTING
UNBX0303	15	25	22000~24000	300~500	0.01~0.015	0.02~0.03	3D銑 3D MILLING
UNBX0402	14	30	22000~24000	400~600	0.015~0.025	0.4	溝銑 SLOTTING
UNBX0402	14	30	22000~24000	500~700	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UNBX0403	15	30	22000~24000	300~500	0.01~0.015	0.4	溝銑 SLOTTING
UNBX0403	15	30	22000~24000	400~600	0.01~0.015	0.02~0.03	3D銑 3D MILLING
UNBX0404	16	30	22000~24000	200~400	0.008~0.012	0.4	溝銑 SLOTTING
UNBX0404	16	30	22000~24000	300~500	0.008~0.012	0.015~0.03	3D銑 3D MILLING
UNBX0502	15	35	20000~22000	500~700	0.02~0.03	0.5	溝銑 SLOTTING
UNBX0502	15	35	20000~22000	650~850	0.02~0.03	0.04~0.06	3D銑 3D MILLING
UNBX0504	17	35	20000~22000	350~550	0.015~0.02	0.5	溝銑 SLOTTING
UNBX0504	17	35	20000~22000	500~700	0.015~0.02	0.02~0.05	3D銑 3D MILLING
UNBX0506	19	35	20000~22000	300~500	0.01~0.015	0.5	溝銑 SLOTTING
UNBX0506	19	35	20000~22000	450~650	0.01~0.015	0.02~0.05	3D銑 3D MILLING
UNBX0602	16	40	20000~22000	700~900	0.025~0.035	0.6	溝銑 SLOTTING
UNBX0602	16	40	20000~22000	800~1000	0.025~0.035	0.05~0.08	3D銑 3D MILLING
UNBX0604	18	40	20000~22000	400~600	0.02~0.03	0.6	溝銑 SLOTTING
UNBX0604	18	40	20000~22000	600~800	0.015~0.03	0.03~0.06	3D銑 3D MILLING
UNBX0606	20	40	20000~22000	300~500	0.015~0.025	0.6	溝銑 SLOTTING
UNBX0606	20	40	20000~22000	450~650	0.015~0.03	0.03~0.06	3D銑 3D MILLING
UNBX0804	15	50	18000~20000	800~1000	0.02~0.04	0.8	溝銑 SLOTTING
UNBX0804	15	50	18000~20000	900~1100	0.04~0.06	0.1~0.15	3D銑 3D MILLING
UNBX0804	15	50	18000~20000	1300~1500	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX0806	17	50	18000~20000	700~900	0.02~0.04	0.8	溝銑 SLOTTING
UNBX0806	17	50	18000~20000	800~1000	0.04~0.06	0.1~0.15	3D銑 3D MILLING
UNBX0806	17	50	18000~20000	1100~1300	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX0808	19	50	18000~20000	600~800	0.02~0.04	0.8	溝銑 SLOTTING
UNBX0808	19	50	18000~20000	700~900	0.04~0.06	0.1~0.15	3D銑 3D MILLING
UNBX0808	19	50	18000~20000	1100~1300	0.01~0.03	0.04~0.08	3D銑 3D MILLING
UNBX1004	11	55	17000~18000	800~1000	0.02~0.04	1	溝銑 SLOTTING
UNBX1004	11	55	17000~18000	900~1100	0.05~0.07	0.1~0.15	3D銑 3D MILLING
UNBX1004	11	55	17000~18000	1300~1500	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1006	13	55	17000~18000	700~900	0.02~0.04	1	溝銑 SLOTTING
UNBX1006	13	55	17000~18000	800~1000	0.05~0.07	0.1~0.15	3D銑 3D MILLING
UNBX1006	13	55	17000~18000	1300~1500	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1008	15	55	17000~18000	600~800	0.02~0.04	1	溝銑 SLOTTING
UNBX1008	15	55	17000~18000	700~900	0.05~0.07	0.1~0.15	3D銑 3D MILLING
UNBX1008	15	55	17000~18000	1200~1400	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1010	17	55	17000~18000	500~700	0.02~0.04	1	溝銑 SLOTTING
UNBX1010	17	55	17000~18000	700~900	0.05~0.07	0.1~0.15	3D銑 3D MILLING
UNBX1010	17	55	17000~18000	1000~1200	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1012	19	55	17000~18000	400~600	0.02~0.04	1	溝銑 SLOTTING
UNBX1012	19	55	17000~18000	500~700	0.05~0.07	0.1~0.15	3D銑 3D MILLING
UNBX1012	19	55	17000~18000	800~1000	0.02~0.04	0.04~0.08	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UNBX1208	15	65	17000~18000	600~800	0.02~0.04	1.2	溝銑 SLOTTING
UNBX1208	15	65	17000~18000	700~900	0.05~0.07	0.1~0.15	3D銑 3D MILLING
UNBX1208	15	65	17000~18000	1200~1400	0.02~0.04	0.04~0.09	3D銑 3D MILLING
UNBX1212	19	65	17000~18000	500~700	0.02~0.04	1.2	溝銑 SLOTTING
UNBX1212	19	65	17000~18000	700~900	0.05~0.07	0.1~0.15	3D銑 3D MILLING
UNBX1212	19	65	17000~18000	1000~1200	0.02~0.04	0.04~0.09	3D銑 3D MILLING
UNBX1506	13	70	16000~17000	1100~1300	0.08~0.1	1.5	溝銑 SLOTTING
UNBX1506	13	70	16000~17000	1300~1700	0.01~0.04	1.5	溝銑 SLOTTING
UNBX1506	13	70	16000~17000	1500~1700	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UNBX1506	13	70	16000~17000	2100~2600	0.02~0.045	0.04~0.09	3D銑 3D MILLING
UNBX1508	14	70	16000~17000	1100~1300	0.08~0.1	1.5	溝銑 SLOTTING
UNBX1508	14	70	16000~17000	1300~1700	0.01~0.04	1.5	溝銑 SLOTTING
UNBX1508	14	70	16000~17000	1500~1700	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UNBX1508	14	70	16000~17000	2100~2600	0.02~0.045	0.04~0.09	3D銑 3D MILLING
UNBX1510	16	70	16000~17000	900~1100	0.08~0.1	1.5	溝銑 SLOTTING
UNBX1510	16	70	16000~17000	1200~1600	0.01~0.04	1.5	溝銑 SLOTTING
UNBX1510	16	70	16000~17000	1400~1600	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNBX1510	16	70	16000~17000	2000~2400	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1512	18	70	16000~17000	700~900	0.06~0.08	1.5	溝銑 SLOTTING
UNBX1512	18	70	16000~17000	1000~1400	0.01~0.04	1.5	溝銑 SLOTTING
UNBX1512	18	70	16000~17000	1300~1500	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNBX1512	18	70	16000~17000	1800~2200	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1516	22	70	16000~17000	600~800	0.04~0.06	1.5	溝銑 SLOTTING
UNBX1516	22	70	16000~17000	900~1100	0.01~0.03	1.5	溝銑 SLOTTING
UNBX1516	22	70	16000~17000	1100~1300	0.08~0.1	0.16~0.2	3D銑 3D MILLING
UNBX1516	22	70	16000~17000	1700~2100	0.015~0.04	0.03~0.08	3D銑 3D MILLING
UNBX1520	26	70	16000~17000	300~500	0.04~0.06	1.5	溝銑 SLOTTING
UNBX1520	26	70	16000~17000	600~1000	0.01~0.03	1.5	溝銑 SLOTTING
UNBX1520	26	70	16000~17000	900~1100	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNBX1520	26	70	16000~17000	1300~1700	0.015~0.03	0.03~0.06	3D銑 3D MILLING
UNBX1608	14	85	16000~17000	1100~1300	0.08~0.1	1.6	溝銑 SLOTTING
UNBX1608	14	85	16000~17000	1300~1700	0.01~0.04	1.6	溝銑 SLOTTING
UNBX1608	14	85	16000~17000	1500~1700	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UNBX1608	14	85	16000~17000	2100~2600	0.02~0.045	0.04~0.09	3D銑 3D MILLING
UNBX1612	16	85	16000~17000	700~900	0.06~0.08	1.6	溝銑 SLOTTING
UNBX1612	16	85	16000~17000	1000~1400	0.01~0.04	1.6	溝銑 SLOTTING
UNBX1612	16	85	16000~17000	1300~1500	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNBX1612	16	85	16000~17000	1800~2200	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1616	20	85	16000~17000	600~800	0.04~0.06	1.6	溝銑 SLOTTING
UNBX1616	20	85	16000~17000	900~1100	0.01~0.03	1.6	溝銑 SLOTTING
UNBX1616	20	85	16000~17000	1100~1300	0.08~0.1	0.16~0.2	3D銑 3D MILLING
UNBX1616	20	85	16000~17000	1700~2100	0.015~0.04	0.03~0.08	3D銑 3D MILLING
UNBX2008	14	100	15000~16000	1900~2100	0.12~0.14	2	溝銑 SLOTTING
UNBX2008	14	100	15000~16000	2400~2800	0.02~0.07	2	溝銑 SLOTTING
UNBX2008	14	100	15000~16000	2000~2400	0.16~0.18	0.32~0.36	3D銑 3D MILLING
UNBX2008	14	100	15000~16000	3000~3400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX2010	16	100	15000~16000	1800~2000	0.12~0.14	2	溝銑 SLOTTING
UNBX2010	16	100	15000~16000	2300~2700	0.02~0.07	2	溝銑 SLOTTING
UNBX2010	16	100	15000~16000	1900~2300	0.16~0.18	0.32~0.36	3D銑 3D MILLING
UNBX2010	16	100	15000~16000	3000~3400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX2012	18	100	15000~16000	1700~1900	0.1~0.12	2	溝銑 SLOTTING
UNBX2012	18	100	15000~16000	2100~2500	0.015~0.05	2	溝銑 SLOTTING
UNBX2012	18	100	15000~16000	1900~2300	0.14~0.16	0.28~0.32	3D銑 3D MILLING
UNBX2012	18	100	15000~16000	2600~3000	0.015~0.05	0.03~0.1	3D銑 3D MILLING
UNBX2016	22	100	15000~16000	1400~1600	0.1~0.12	2	溝銑 SLOTTING
UNBX2016	22	100	15000~16000	1800~2200	0.015~0.05	2	溝銑 SLOTTING
UNBX2016	22	100	15000~16000	1700~1900	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UNBX2016	22	100	15000~16000	2200~2600	0.015~0.05	0.03~0.1	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UNBX2020	26	100	15000~16000	1300~1500	0.08~0.1	2	溝銑 SLOTTING
UNBX2020	26	100	15000~16000	1700~2100	0.015~0.05	2	溝銑 SLOTTING
UNBX2020	26	100	15000~16000	1400~1600	0.1~0.12	0.2~0.24	**3D**銑 3D MILLING
UNBX2020	26	100	15000~16000	2000~2400	0.015~0.05	0.03~0.1	**3D**銑 3D MILLING
UNBX3008	16	140	14000~15000	2000~2300	0.16~0.18	3	溝銑 SLOTTING
UNBX3008	16	140	14000~15000	2400~2800	0.03~0.1	3	溝銑 SLOTTING
UNBX3008	16	140	14000~15000	2800~3200	0.2~0.22	0.4~0.44	**3D**銑 3D MILLING
UNBX3008	16	140	14000~15000	3200~3600	0.03~0.1	0.06~0.2	**3D**銑 3D MILLING
UNBX3010	18	140	14000~15000	2000~2300	0.16~0.18	3	溝銑 SLOTTING
UNBX3010	18	140	14000~15000	2400~2800	0.03~0.1	3	溝銑 SLOTTING
UNBX3010	18	140	14000~15000	2800~3000	0.2~0.22	0.4~0.44	**3D**銑 3D MILLING
UNBX3010	18	140	14000~15000	3200~3600	0.03~0.1	0.06~0.2	**3D**銑 3D MILLING
UNBX3012	20	140	14000~15000	1800~2100	0.14~0.16	3	溝銑 SLOTTING
UNBX3012	20	140	14000~15000	2200~2600	0.03~0.08	3	溝銑 SLOTTING
UNBX3012	20	140	14000~15000	2600~2800	0.18~0.2	0.36~0.4	**3D**銑 3D MILLING
UNBX3012	20	140	14000~15000	3000~3400	0.03~0.08	0.06~0.16	**3D**銑 3D MILLING
UNBX3016	24	140	14000~15000	1700~1900	0.13~0.15	3	溝銑 SLOTTING
UNBX3016	24	140	14000~15000	1900~2300	0.03~0.08	3	溝銑 SLOTTING
UNBX3016	24	140	14000~15000	2000~2200	0.16~0.18	0.32~0.36	**3D**銑 3D MILLING
UNBX3016	24	140	14000~15000	2600~3000	0.03~0.08	0.06~0.16	**3D**銑 3D MILLING
UNBX3020	28	140	14000~15000	1500~1700	0.1~0.12	3	溝銑 SLOTTING
UNBX3020	28	140	14000~15000	1800~2100	0.02~0.06	3	溝銑 SLOTTING
UNBX3020	28	140	14000~15000	1800~2100	0.14~0.16	0.28~0.32	**3D**銑 3D MILLING
UNBX3020	28	140	14000~15000	2300~2700	0.02~0.06	0.04~0.12	**3D**銑 3D MILLING
UNBX3025	33	140	14000~15000	1100~1300	0.08~0.1	3	溝銑 SLOTTING
UNBX3025	33	140	14000~15000	1500~1900	0.015~0.04	3	溝銑 SLOTTING
UNBX3025	33	140	14000~15000	1500~1800	0.1~0.12	0.2~0.24	**3D**銑 3D MILLING
UNBX3025	33	140	14000~15000	2000~2400	0.015~0.04	0.03~0.08	**3D**銑 3D MILLING
UNBX4010	20	160	12000~13000	2000~2400	0.24~0.26	4	溝銑 SLOTTING
UNBX4010	20	160	12000~13000	3000~3400	0.04~0.1	4	溝銑 SLOTTING
UNBX4010	20	160	12000~13000	2100~2600	0.26~0.28	0.52~0.56	**3D**銑 3D MILLING
UNBX4010	20	160	12000~13000	3200~3400	0.04~0.12	0.08~0.24	**3D**銑 3D MILLING
UNBX4015	25	160	12000~13000	2000~2400	0.22~0.24	4	溝銑 SLOTTING
UNBX4015	25	160	12000~13000	3000~3400	0.03~0.08	4	溝銑 SLOTTING
UNBX4015	25	160	12000~13000	2100~2600	0.24~0.26	0.48~0.52	**3D**銑 3D MILLING
UNBX4015	25	160	12000~13000	3200~3400	0.04~0.1	0.08~0.2	**3D**銑 3D MILLING
UNBX4020	30	160	12000~13000	1800~2200	0.21~0.23	4	溝銑 SLOTTING
UNBX4020	30	160	12000~13000	2800~3200	0.03~0.08	4	溝銑 SLOTTING
UNBX4020	30	160	12000~13000	2100~2300	0.23~0.25	0.46~0.5	**3D**銑 3D MILLING
UNBX4020	30	160	12000~13000	3200~3500	0.04~0.1	0.08~0.2	**3D**銑 3D MILLING
UNBX4025	35	160	12000~13000	1600~2000	0.19~0.21	4	溝銑 SLOTTING
UNBX4025	35	160	12000~13000	2400~2600	0.04~0.08	4	溝銑 SLOTTING
UNBX4025	35	160	12000~13000	1900~2100	0.21~0.23	0.42~0.46	**3D**銑 3D MILLING
UNBX4025	35	160	12000~13000	2600~3000	0.04~0.1	0.08~0.2	**3D**銑 3D MILLING
UNBX4030	40	160	12000~13000	1500~1700	0.16~0.18	4	溝銑 SLOTTING
UNBX4030	40	160	12000~13000	1800~2200	0.03~0.07	4	溝銑 SLOTTING
UNBX4030	40	160	12000~13000	1600~1800	0.18~0.2	0.36~0.4	**3D**銑 3D MILLING
UNBX4030	40	160	12000~13000	2200~2500	0.04~0.07	0.08~0.14	**3D**銑 3D MILLING

UNBX 2 Flute 切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	油霧切削 MQL coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UNBX0201	12	15	18000~20000	150~300	0.005~0.008	0.2	溝銑 SLOTTING
UNBX0201	12	15	18000~20000	150~300	0.005~0.008	0.01~0.016	3D銑 3D MILLING
UNBX0202	13	15	18000~20000	150~300	0.005~0.008	0.2	溝銑 SLOTTING
UNBX0202	13	15	18000~20000	150~300	0.005~0.008	0.01~0.016	3D銑 3D MILLING
UNBX0301	13	20	18000~20000	150~300	0.005~0.008	0.3	溝銑 SLOTTING
UNBX0301	13	20	18000~20000	150~300	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0302	14	20	18000~20000	150~300	0.005~0.008	0.3	溝銑 SLOTTING
UNBX0302	14	20	18000~20000	150~300	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0303	15	20	18000~20000	150~300	0.005~0.008	0.3	溝銑 SLOTTING
UNBX0303	15	20	18000~20000	150~300	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0402	14	25	18000~20000	150~300	0.005~0.01	0.4	溝銑 SLOTTING
UNBX0402	14	25	18000~20000	200~400	0.005~0.013	0.01~0.026	3D銑 3D MILLING
UNBX0403	15	25	18000~20000	150~300	0.005~0.01	0.4	溝銑 SLOTTING
UNBX0403	15	25	18000~20000	200~400	0.005~0.013	0.01~0.026	3D銑 3D MILLING
UNBX0404	16	25	18000~20000	150~300	0.005~0.01	0.4	溝銑 SLOTTING
UNBX0404	16	25	18000~20000	200~400	0.005~0.013	0.01~0.026	3D銑 3D MILLING
UNBX0502	15	35	18000~20000	200~400	0.005~0.013	0.5	溝銑 SLOTTING
UNBX0502	15	35	18000~20000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX0504	17	35	18000~20000	200~400	0.005~0.013	0.5	溝銑 SLOTTING
UNBX0504	17	35	18000~20000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX0506	19	35	18000~20000	150~300	0.005~0.013	0.5	溝銑 SLOTTING
UNBX0506	19	35	18000~20000	200~400	0.005~0.013	0.01~0.026	3D銑 3D MILLING
UNBX0602	16	40	18000~20000	200~400	0.005~0.013	0.6	溝銑 SLOTTING
UNBX0602	16	40	18000~20000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX0604	18	40	18000~20000	200~400	0.005~0.013	0.6	溝銑 SLOTTING
UNBX0604	18	40	18000~20000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX0606	20	40	18000~20000	150~300	0.005~0.013	0.6	溝銑 SLOTTING
UNBX0606	20	40	18000~20000	200~400	0.005~0.013	0.01~0.026	3D銑 3D MILLING
UNBX0804	15	45	16000~18000	300~500	0.01~0.02	0.8	溝銑 SLOTTING
UNBX0804	15	45	16000~18000	300~500	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UNBX0804	15	45	16000~18000	500~700	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX0806	17	45	16000~18000	300~500	0.01~0.02	0.8	溝銑 SLOTTING
UNBX0806	17	45	16000~18000	300~500	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UNBX0806	17	45	16000~18000	500~700	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UNBX0808	19	45	16000~18000	200~400	0.01~0.02	0.8	溝銑 SLOTTING
UNBX0808	19	45	16000~18000	200~400	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UNBX0808	19	45	16000~18000	400~600	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UNBX1004	11	50	15000~16000	400~600	0.015~0.035	1	溝銑 SLOTTING
UNBX1004	11	50	15000~16000	400~600	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX1004	11	50	15000~16000	600~800	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX1006	13	50	15000~16000	400~600	0.015~0.035	1	溝銑 SLOTTING
UNBX1006	13	50	15000~16000	400~600	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX1006	13	50	15000~16000	600~800	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX1008	15	50	15000~16000	300~500	0.01~0.03	1	溝銑 SLOTTING
UNBX1008	15	50	15000~16000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX1008	15	50	15000~16000	600~800	0.01~0.02	0.02~0.04	3D銑 3D MILLING
UNBX1010	17	50	15000~16000	300~500	0.01~0.03	1	溝銑 SLOTTING
UNBX1010	17	50	15000~16000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX1010	17	50	15000~16000	600~800	0.01~0.02	0.02~0.04	3D銑 3D MILLING
UNBX1012	19	50	15000~16000	300~500	0.01~0.03	1	溝銑 SLOTTING
UNBX1012	19	50	15000~16000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX1012	19	50	15000~16000	600~800	0.01~0.02	0.02~0.04	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UNBX2020	26	100	15000~16000	1300~1500	0.08~0.1	2	溝銑 SLOTTING
UNBX2020	26	100	15000~16000	1700~2100	0.015~0.05	2	溝銑 SLOTTING
UNBX2020	26	100	15000~16000	1400~1600	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNBX2020	26	100	15000~16000	2000~2400	0.015~0.05	0.03~0.1	3D銑 3D MILLING
UNBX3008	16	140	14000~15000	2000~2300	0.16~0.18	3	溝銑 SLOTTING
UNBX3008	16	140	14000~15000	2400~2800	0.03~0.1	3	溝銑 SLOTTING
UNBX3008	16	140	14000~15000	2800~3200	0.2~0.22	0.4~0.44	3D銑 3D MILLING
UNBX3008	16	140	14000~15000	3200~3600	0.03~0.1	0.06~0.2	3D銑 3D MILLING
UNBX3010	18	140	14000~15000	2000~2300	0.16~0.18	3	溝銑 SLOTTING
UNBX3010	18	140	14000~15000	2400~2800	0.03~0.1	3	溝銑 SLOTTING
UNBX3010	18	140	14000~15000	2800~3000	0.2~0.22	0.4~0.44	3D銑 3D MILLING
UNBX3010	18	140	14000~15000	3200~3600	0.03~0.1	0.06~0.2	3D銑 3D MILLING
UNBX3012	20	140	14000~15000	1800~2100	0.14~0.16	3	溝銑 SLOTTING
UNBX3012	20	140	14000~15000	2200~2600	0.03~0.08	3	溝銑 SLOTTING
UNBX3012	20	140	14000~15000	2600~2800	0.18~0.2	0.36~0.4	3D銑 3D MILLING
UNBX3012	20	140	14000~15000	3000~3400	0.03~0.08	0.06~0.16	3D銑 3D MILLING
UNBX3016	24	140	14000~15000	1700~1900	0.13~0.15	3	溝銑 SLOTTING
UNBX3016	24	140	14000~15000	1900~2300	0.03~0.08	3	溝銑 SLOTTING
UNBX3016	24	140	14000~15000	2000~2200	0.16~0.18	0.32~0.36	3D銑 3D MILLING
UNBX3016	24	140	14000~15000	2600~3000	0.03~0.08	0.06~0.16	3D銑 3D MILLING
UNBX3020	28	140	14000~15000	1500~1700	0.1~0.12	3	溝銑 SLOTTING
UNBX3020	28	140	14000~15000	1800~2100	0.02~0.06	3	溝銑 SLOTTING
UNBX3020	28	140	14000~15000	1800~2100	0.14~0.16	0.28~0.32	3D銑 3D MILLING
UNBX3020	28	140	14000~15000	2300~2700	0.02~0.06	0.04~0.12	3D銑 3D MILLING
UNBX3025	33	140	14000~15000	1100~1300	0.08~0.1	3	溝銑 SLOTTING
UNBX3025	33	140	14000~15000	1500~1900	0.015~0.04	3	溝銑 SLOTTING
UNBX3025	33	140	14000~15000	1500~1800	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNBX3025	33	140	14000~15000	2000~2400	0.015~0.04	0.03~0.08	3D銑 3D MILLING
UNBX4010	20	160	12000~13000	2000~2400	0.24~0.26	4	溝銑 SLOTTING
UNBX4010	20	160	12000~13000	3000~3400	0.04~0.1	4	溝銑 SLOTTING
UNBX4010	20	160	12000~13000	2100~2600	0.26~0.28	0.52~0.56	3D銑 3D MILLING
UNBX4010	20	160	12000~13000	3200~3400	0.04~0.12	0.08~0.24	3D銑 3D MILLING
UNBX4015	25	160	12000~13000	2000~2400	0.22~0.24	4	溝銑 SLOTTING
UNBX4015	25	160	12000~13000	3000~3400	0.03~0.08	4	溝銑 SLOTTING
UNBX4015	25	160	12000~13000	2100~2600	0.24~0.26	0.48~0.52	3D銑 3D MILLING
UNBX4015	25	160	12000~13000	3200~3400	0.04~0.1	0.08~0.2	3D銑 3D MILLING
UNBX4020	30	160	12000~13000	1800~2200	0.21~0.23	4	溝銑 SLOTTING
UNBX4020	30	160	12000~13000	2800~3200	0.03~0.08	4	溝銑 SLOTTING
UNBX4020	30	160	12000~13000	2100~2300	0.23~0.25	0.46~0.5	3D銑 3D MILLING
UNBX4020	30	160	12000~13000	3200~3500	0.04~0.1	0.08~0.2	3D銑 3D MILLING
UNBX4025	35	160	12000~13000	1600~2000	0.19~0.21	4	溝銑 SLOTTING
UNBX4025	35	160	12000~13000	2400~2600	0.04~0.08	4	溝銑 SLOTTING
UNBX4025	35	160	12000~13000	1900~2100	0.21~0.23	0.42~0.46	3D銑 3D MILLING
UNBX4025	35	160	12000~13000	2600~3000	0.04~0.1	0.08~0.2	3D銑 3D MILLING
UNBX4030	40	160	12000~13000	1500~1700	0.16~0.18	4	溝銑 SLOTTING
UNBX4030	40	160	12000~13000	1800~2200	0.03~0.07	4	溝銑 SLOTTING
UNBX4030	40	160	12000~13000	1600~1800	0.18~0.2	0.36~0.4	3D銑 3D MILLING
UNBX4030	40	160	12000~13000	2200~2500	0.04~0.07	0.08~0.14	3D銑 3D MILLING
UNBX2010	16	85	12000~13000	800~1000	0.01~0.03	2	溝銑 SLOTTING
UNBX2010	16	85	12000~13000	400~600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNBX2010	16	85	12000~13000	1000~1200	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNBX2012	18	85	12000~13000	400~600	0.04~0.06	2	溝銑 SLOTTING
UNBX2012	18	85	12000~13000	800~1000	0.01~0.03	2	溝銑 SLOTTING
UNBX2012	18	85	12000~13000	400~600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNBX2012	18	85	12000~13000	1000~1200	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNBX2016	22	85	12000~13000	300~500	0.03~0.05	2	溝銑 SLOTTING
UNBX2016	22	85	12000~13000	600~800	0.01~0.025	2	溝銑 SLOTTING
UNBX2016	22	85	12000~13000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNBX2016	22	85	12000~13000	800~1000	0.015~0.03	0.03~0.06	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UNBX2020	26	85	12000~13000	200~400	0.03~0.05	2	溝銑 SLOTTING
UNBX2020	26	85	12000~13000	400~600	0.01~0.025	2	溝銑 SLOTTING
UNBX2020	26	85	12000~13000	400~600	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX2020	26	85	12000~13000	600~800	0.015~0.03	0.03~0.06	3D銑 3D MILLING
UNBX3008	16	105	10000~11000	700~900	0.08~0.1	3	溝銑 SLOTTING
UNBX3008	16	105	10000~11000	1200~1600	0.02~0.05	3	溝銑 SLOTTING
UNBX3008	16	105	10000~11000	800~1000	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UNBX3008	16	105	10000~11000	1400~1800	0.03~0.07	0.06~0.14	3D銑 3D MILLING
UNBX3010	18	105	10000~11000	600~800	0.08~0.1	3	溝銑 SLOTTING
UNBX3010	18	105	10000~11000	1100~1500	0.02~0.05	3	溝銑 SLOTTING
UNBX3010	18	105	10000~11000	700~900	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UNBX3010	18	105	10000~11000	1300~1700	0.03~0.07	0.06~0.14	3D銑 3D MILLING
UNBX3012	20	105	10000~11000	500~700	0.07~0.09	3	溝銑 SLOTTING
UNBX3012	20	105	10000~11000	1000~1400	0.02~0.05	3	溝銑 SLOTTING
UNBX3012	20	105	10000~11000	700~900	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNBX3012	20	105	10000~11000	1200~1600	0.03~0.06	0.06~0.12	3D銑 3D MILLING
UNBX3016	24	105	10000~11000	400~600	0.06~0.08	3	溝銑 SLOTTING
UNBX3016	24	105	10000~11000	800~1200	0.015~0.035	3	溝銑 SLOTTING
UNBX3016	24	105	10000~11000	600~800	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNBX3016	24	105	10000~11000	1000~1400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX3020	28	105	10000~11000	300~500	0.04~0.06	3	溝銑 SLOTTING
UNBX3020	28	105	10000~11000	700~900	0.01~0.03	3	溝銑 SLOTTING
UNBX3020	28	105	10000~11000	400~600	0.07~0.09	0.14~0.18	3D銑 3D MILLING
UNBX3020	28	105	10000~11000	900~1300	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNBX3025	33	105	10000~11000	200~400	0.04~0.06	3	溝銑 SLOTTING
UNBX3025	33	105	10000~11000	600~800	0.01~0.03	3	溝銑 SLOTTING
UNBX3025	33	105	10000~11000	400~600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNBX3025	33	105	10000~11000	800~1200	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNBX4010	20	115	8000~9000	800~1000	0.1~0.12	4	溝銑 SLOTTING
UNBX4010	20	115	8000~9000	1400~1800	0.03~0.07	4	溝銑 SLOTTING
UNBX4010	20	115	8000~9000	1000~1200	0.14~0.16	0.28~0.32	3D銑 3D MILLING
UNBX4010	20	115	8000~9000	1600~2000	0.04~0.09	0.08~0.18	3D銑 3D MILLING
UNBX4015	25	115	8000~9000	600~800	0.08~0.1	4	溝銑 SLOTTING
UNBX4015	25	115	8000~9000	1200~1600	0.025~0.06	4	溝銑 SLOTTING
UNBX4015	25	115	8000~9000	1000~1200	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNBX4015	25	115	8000~9000	1600~2000	0.03~0.06	0.06~0.12	3D銑 3D MILLING
UNBX4020	30	115	8000~9000	600~800	0.06~0.08	4	溝銑 SLOTTING
UNBX4020	30	115	8000~9000	1000~1400	0.025~0.05	4	溝銑 SLOTTING
UNBX4020	30	115	8000~9000	1000~1200	0.08~0.1	0.16~0.2	3D銑 3D MILLING
UNBX4020	30	115	8000~9000	1600~2000	0.025~0.05	0.05~0.1	3D銑 3D MILLING
UNBX4025	35	115	8000~9000	500~700	0.05~0.07	4	溝銑 SLOTTING
UNBX4025	35	115	8000~9000	800~1200	0.015~0.035	4	溝銑 SLOTTING
UNBX4025	35	115	8000~9000	800~1000	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNBX4025	35	115	8000~9000	1200~1600	0.025~0.05	0.05~0.1	3D銑 3D MILLING
UNBX4030	40	115	8000~9000	400~600	0.04~0.06	4	溝銑 SLOTTING
UNBX4030	40	115	8000~9000	700~1100	0.015~0.035	4	溝銑 SLOTTING
UNBX4030	40	115	8000~9000	600~800	0.05~0.07	0.1~0.14	3D銑 3D MILLING
UNBX4030	40	115	8000~9000	1000~1400	0.015~0.04	0.03~0.08	3D銑 3D MILLING

UNBX 2 Flute

切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	油霧切削 MQL coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UNBX0201	12	15	16000~18000	100~200	0.003~0.006	0.2	溝銑 SLOTTING
UNBX0201	12	15	16000~18000	100~200	0.005~0.008	0.01~0.016	3D銑 3D MILLING
UNBX0202	13	15	16000~18000	100~200	0.003~0.006	0.2	溝銑 SLOTTING
UNBX0202	13	15	16000~18000	100~200	0.005~0.008	0.01~0.016	3D銑 3D MILLING
UNBX0301	13	15	15000~16000	100~200	0.003~0.006	0.3	溝銑 SLOTTING
UNBX0301	13	15	15000~16000	100~200	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0302	14	15	15000~16000	100~200	0.003~0.006	0.3	溝銑 SLOTTING
UNBX0302	14	15	15000~16000	100~200	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0303	15	15	15000~16000	100~200	0.003~0.006	0.3	溝銑 SLOTTING
UNBX0303	15	15	15000~16000	100~200	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0402	14	20	15000~16000	100~200	0.005~0.008	0.4	溝銑 SLOTTING
UNBX0402	14	20	15000~16000	150~300	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0403	15	20	15000~16000	100~200	0.005~0.008	0.4	溝銑 SLOTTING
UNBX0403	15	20	15000~16000	150~300	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0404	16	20	15000~16000	100~200	0.005~0.008	0.4	溝銑 SLOTTING
UNBX0404	16	20	15000~16000	100~200	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0502	15	25	15000~16000	150~300	0.005~0.01	0.5	溝銑 SLOTTING
UNBX0502	15	25	15000~16000	150~300	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0504	17	25	15000~16000	100~200	0.005~0.01	0.5	溝銑 SLOTTING
UNBX0504	17	25	15000~16000	100~200	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0506	19	25	15000~16000	100~200	0.005~0.01	0.5	溝銑 SLOTTING
UNBX0506	19	25	15000~16000	100~200	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0602	16	30	14000~15000	150~300	0.005~0.01	0.6	溝銑 SLOTTING
UNBX0602	16	30	14000~15000	150~300	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0604	18	30	14000~15000	100~200	0.005~0.01	0.6	溝銑 SLOTTING
UNBX0604	18	30	14000~15000	100~200	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0606	20	30	14000~15000	100~200	0.005~0.01	0.6	溝銑 SLOTTING
UNBX0606	20	30	14000~15000	100~200	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0804	15	40	14000~15000	200~400	0.01~0.02	0.8	溝銑 SLOTTING
UNBX0804	15	40	14000~15000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX0804	15	40	14000~15000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX0806	17	40	14000~15000	150~300	0.01~0.02	0.8	溝銑 SLOTTING
UNBX0806	17	40	14000~15000	150~300	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UNBX0806	17	40	14000~15000	150~300	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UNBX0808	19	40	14000~15000	150~300	0.01~0.02	0.8	溝銑 SLOTTING
UNBX0808	19	40	14000~15000	150~300	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UNBX0808	19	40	14000~15000	150~300	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UNBX1004	11	45	13000~14000	200~400	0.01~0.02	1	溝銑 SLOTTING
UNBX1004	11	45	13000~14000	300~500	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1004	11	45	13000~14000	500~700	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX1006	13	45	13000~14000	200~400	0.01~0.02	1	溝銑 SLOTTING
UNBX1006	13	45	13000~14000	300~500	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1006	13	45	13000~14000	500~700	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX1008	15	45	13000~14000	200~400	0.01~0.02	1	溝銑 SLOTTING
UNBX1008	15	45	13000~14000	200~400	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1008	15	45	13000~14000	500~700	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX1010	17	45	13000~14000	200~400	0.01~0.02	1	溝銑 SLOTTING
UNBX1010	17	45	13000~14000	200~400	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1010	17	45	13000~14000	500~700	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX1012	19	45	13000~14000	150~300	0.01~0.02	1	溝銑 SLOTTING
UNBX1012	19	45	13000~14000	150~300	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UNBX1012	19	45	13000~14000	300~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UNBX1208	15	50	12000~13000	200~400	0.02~0.04	1.2	溝銑 SLOTTING
UNBX1208	15	50	12000~13000	300~500	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1208	15	50	12000~13000	500~700	0.01~0.02	0.02~0.04	3D銑 3D MILLING
UNBX1212	19	50	12000~13000	200~400	0.01~0.03	1.2	溝銑 SLOTTING
UNBX1212	19	50	12000~13000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX1212	19	50	12000~13000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX1506	13	60	11000~12000	400~600	0.03~0.05	1.5	溝銑 SLOTTING
UNBX1506	13	60	11000~12000	600~800	0.01~0.03	1.5	溝銑 SLOTTING
UNBX1506	13	60	11000~12000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNBX1506	13	60	11000~12000	700~900	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX1508	14	60	11000~12000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
UNBX1508	14	60	11000~12000	500~700	0.01~0.03	1.5	溝銑 SLOTTING
UNBX1508	14	60	11000~12000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNBX1508	14	60	11000~12000	700~900	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX1510	16	60	11000~12000	300~500	0.02~0.04	1.5	溝銑 SLOTTING
UNBX1510	16	60	11000~12000	500~700	0.01~0.02	1.5	溝銑 SLOTTING
UNBX1510	16	60	11000~12000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX1510	16	60	11000~12000	500~700	0.01~0.025	0.02~0.05	3D銑 3D MILLING
UNBX1512	18	60	11000~12000	300~500	0.02~0.04	1.5	溝銑 SLOTTING
UNBX1512	18	60	11000~12000	500~700	0.01~0.02	1.5	溝銑 SLOTTING
UNBX1512	18	60	11000~12000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX1512	18	60	11000~12000	500~700	0.01~0.025	0.02~0.05	3D銑 3D MILLING
UNBX1516	22	60	11000~12000	200~400	0.01~0.02	1.5	溝銑 SLOTTING
UNBX1516	22	60	11000~12000	200~400	0.01~0.02	1.5	溝銑 SLOTTING
UNBX1516	22	60	11000~12000	300~500	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1516	22	60	11000~12000	500~700	0.01~0.02	0.02~0.04	3D銑 3D MILLING
UNBX1520	26	60	11000~12000	150~300	0.01~0.02	1.5	溝銑 SLOTTING
UNBX1520	26	60	11000~12000	150~300	0.01~0.02	1.5	溝銑 SLOTTING
UNBX1520	26	60	11000~12000	150~300	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1520	26	60	11000~12000	300~500	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX1608	14	60	11000~12000	300~500	0.03~0.05	1.6	溝銑 SLOTTING
UNBX1608	14	60	11000~12000	500~700	0.01~0.03	1.6	溝銑 SLOTTING
UNBX1608	14	60	11000~12000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNBX1608	14	60	11000~12000	700~900	0.015~0.03	0.03~0.06	3D銑 3D MILLING
UNBX1612	16	60	11000~12000	200~400	0.02~0.04	1.6	溝銑 SLOTTING
UNBX1612	16	60	11000~12000	400~600	0.01~0.02	1.6	溝銑 SLOTTING
UNBX1612	16	60	11000~12000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX1612	16	60	11000~12000	500~700	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX1616	20	60	11000~12000	200~400	0.01~0.02	1.6	溝銑 SLOTTING
UNBX1616	20	60	11000~12000	200~400	0.01~0.02	1.6	溝銑 SLOTTING
UNBX1616	20	60	11000~12000	200~400	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX1616	20	60	11000~12000	200~400	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX2008	14	70	10000~11000	400~600	0.04~0.06	2	溝銑 SLOTTING
UNBX2008	14	70	10000~11000	700~900	0.01~0.03	2	溝銑 SLOTTING
UNBX2008	14	70	10000~11000	400~600	0.05~0.07	0.1~0.14	3D銑 3D MILLING
UNBX2008	14	70	10000~11000	800~1000	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNBX2010	16	70	10000~11000	300~500	0.03~0.05	2	溝銑 SLOTTING
UNBX2010	16	70	10000~11000	500~700	0.01~0.03	2	溝銑 SLOTTING
UNBX2010	16	70	10000~11000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNBX2010	16	70	10000~11000	800~1000	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX2012	18	70	10000~11000	300~500	0.03~0.05	2	溝銑 SLOTTING
UNBX2012	18	70	10000~11000	500~700	0.01~0.03	2	溝銑 SLOTTING
UNBX2012	18	70	10000~11000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNBX2012	18	70	10000~11000	800~1000	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX2016	22	70	10000~11000	200~400	0.02~0.04	2	溝銑 SLOTTING
UNBX2016	22	70	10000~11000	400~600	0.01~0.02	2	溝銑 SLOTTING
UNBX2016	22	70	10000~11000	300~500	0.03~0.05	0.09~0.1	3D銑 3D MILLING
UNBX2016	22	70	10000~11000	500~700	0.01~0.03	0.02~0.06	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UNBX2020	26	70	10000~11000	200~400	0.01~0.02	2	溝銑 SLOTTING
UNBX2020	26	70	10000~11000	200~400	0.01~0.02	2	溝銑 SLOTTING
UNBX2020	26	70	10000~11000	200~400	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX2020	26	70	10000~11000	200~400	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX3008	16	85	8000~9000	600~800	0.06~0.08	3	溝銑 SLOTTING
UNBX3008	16	85	8000~9000	1000~1200	0.02~0.04	3	溝銑 SLOTTING
UNBX3008	16	85	8000~9000	600~800	0.09~0.11	0.18~0.22	3D銑 3D MILLING
UNBX3008	16	85	8000~9000	1000~1400	0.03~0.065	0.06~0.13	3D銑 3D MILLING
UNBX3010	18	85	8000~9000	500~700	0.06~0.08	3	溝銑 SLOTTING
UNBX3010	18	85	8000~9000	800~1000	0.02~0.04	3	溝銑 SLOTTING
UNBX3010	18	85	8000~9000	500~700	0.09~0.11	0.18~0.22	3D銑 3D MILLING
UNBX3010	18	85	8000~9000	900~1300	0.03~0.065	0.06~0.13	3D銑 3D MILLING
UNBX3012	20	85	8000~9000	500~700	0.05~0.07	3	溝銑 SLOTTING
UNBX3012	20	85	8000~9000	800~1000	0.02~0.04	3	溝銑 SLOTTING
UNBX3012	20	85	8000~9000	500~700	0.08~0.1	0.16~0.2	3D銑 3D MILLING
UNBX3012	20	85	8000~9000	900~1300	0.02~0.06	0.04~0.12	3D銑 3D MILLING
UNBX3016	24	85	8000~9000	400~600	0.05~0.07	3	溝銑 SLOTTING
UNBX3016	24	85	8000~9000	700~1100	0.015~0.035	3	溝銑 SLOTTING
UNBX3016	24	85	8000~9000	400~600	0.08~0.1	0.16~0.2	3D銑 3D MILLING
UNBX3016	24	85	8000~9000	800~1200	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX3020	28	85	8000~9000	300~500	0.03~0.05	3	溝銑 SLOTTING
UNBX3020	28	85	8000~9000	500~700	0.01~0.03	3	溝銑 SLOTTING
UNBX3020	28	85	8000~9000	400~600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNBX3020	28	85	8000~9000	800~1000	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNBX3025	33	85	8000~9000	200~400	0.02~0.04	3	溝銑 SLOTTING
UNBX3025	33	85	8000~9000	400~600	0.008~0.02	3	溝銑 SLOTTING
UNBX3025	33	85	8000~9000	300~500	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNBX3025	33	85	8000~9000	700~900	0.01~0.025	0.02~0.05	3D銑 3D MILLING
UNBX4010	20	100	6000~8000	600~800	0.07~0.09	4	溝銑 SLOTTING
UNBX4010	20	100	6000~8000	1000~1400	0.03~0.05	4	溝銑 SLOTTING
UNBX4010	20	100	6000~8000	800~1000	0.11~0.13	0.22~0.26	3D銑 3D MILLING
UNBX4010	20	100	6000~8000	1400~1800	0.035~0.07	0.07~0.14	3D銑 3D MILLING
UNBX4015	25	100	6000~8000	400~600	0.06~0.08	4	溝銑 SLOTTING
UNBX4015	25	100	6000~8000	800~1000	0.025~0.05	4	溝銑 SLOTTING
UNBX4015	25	100	6000~8000	600~800	0.07~0.09	0.14~0.18	3D銑 3D MILLING
UNBX4015	25	100	6000~8000	1200~1600	0.03~0.06	0.06~0.12	3D銑 3D MILLING
UNBX4020	30	100	6000~8000	400~600	0.05~0.07	4	溝銑 SLOTTING
UNBX4020	30	100	6000~8000	800~1000	0.015~0.03	4	溝銑 SLOTTING
UNBX4020	30	100	6000~8000	600~800	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNBX4020	30	100	6000~8000	1200~1600	0.025~0.05	0.05~0.1	3D銑 3D MILLING
UNBX4025	35	100	6000~8000	300~500	0.04~0.06	4	溝銑 SLOTTING
UNBX4025	35	100	6000~8000	700~900	0.015~0.03	4	溝銑 SLOTTING
UNBX4025	35	100	6000~8000	500~700	0.05~0.07	0.1~0.14	3D銑 3D MILLING
UNBX4025	35	100	6000~8000	900~1100	0.015~0.03	0.03~0.06	3D銑 3D MILLING
UNBX4030	40	100	6000~8000	200~400	0.04~0.06	4	溝銑 SLOTTING
UNBX4030	40	100	6000~8000	500~700	0.015~0.03	4	溝銑 SLOTTING
UNBX4030	40	100	6000~8000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNBX4030	40	100	6000~8000	800~1000	0.01~0.03	0.02~0.06	3D銑 3D MILLING

4 Flutes

UNBX Long Neck

Ball Nose End Mills 深溝用圓頭立銑刀



精銑 Finishing

中銑 Semi-finishing ------

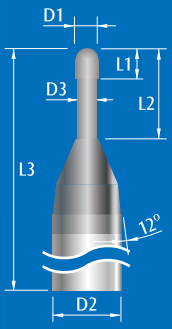
粗銑 Roughing ------

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining



直徑 D1	R0.5	R0.75	R1.0	R1.5	R2.0
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01
柄徑 Shank(h6)	Ø4	Ø6			
柄徑公差值 D2 Tolerance	0 -0.008	0 -0.008			

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UNBX100404	R 0.5	0.95	1.5	4	50	4
UNBX100604	R 0.5	0.95	1.5	6	50	4
UNBX100804	R 0.5	0.95	1.5	8	50	4
UNBX101004	R 0.5	0.95	1.5	10	50	4
UNBX101204	R 0.5	0.95	1.5	12	50	4
UNBX150604	R 0.75	1.45	2	6	50	4
UNBX150804	R 0.75	1.45	2	8	50	4
UNBX151004	R 0.75	1.45	2	10	50	4
UNBX151204	R 0.75	1.45	2	12	50	4
UNBX151604	R 0.75	1.45	2	16	50	4
UNBX200804	R 1.0	1.92	3	8	50	4
UNBX201004	R 1.0	1.92	3	10	50	4
UNBX201204	R 1.0	1.92	3	12	50	4
UNBX201604	R 1.0	1.92	3	16	50	4
UNBX202004	R 1.0	1.92	3	20	50	4
UNBX300804	R 1.5	2.90	4	8	60	6
UNBX301004	R 1.5	2.90	4	10	60	6
UNBX301204	R 1.5	2.90	4	12	60	6
UNBX301604	R 1.5	2.90	4	16	60	6
UNBX302004	R 1.5	2.90	4	20	60	6
UNBX302504	R 1.5	2.90	4	25	60	6
UNBX401004	R 2.0	3.88	5	10	75	6
UNBX401204	R 2.0	3.88	5	12	75	6
UNBX401604	R 2.0	3.88	5	16	75	6
UNBX402004	R 2.0	3.88	5	20	75	6
UNBX402504	R 2.0	3.88	5	25	75	6

unit : mm

UNBX 4 Flute 切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	油霧切削 MQL coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UNBX100404	11	60	17000~18000	600~800	0.015~0.035	1	溝銑 SLOTTING
UNBX100404	11	60	17000~18000	900~1100	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX100604	13	60	17000~18000	500~700	0.015~0.035	1	溝銑 SLOTTING
UNBX100604	13	60	17000~18000	800~1000	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX100804	15	60	17000~18000	400~600	0.015~0.035	1	溝銑 SLOTTING
UNBX100804	15	60	17000~18000	700~900	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX101004	17	60	17000~18000	300~500	0.01~0.025	1	溝銑 SLOTTING
UNBX101004	17	60	17000~18000	600~800	0.02~0.03	0.04~0.06	3D銑 3D MILLING
UNBX101204	19	60	17000~18000	300~500	0.01~0.025	1	溝銑 SLOTTING
UNBX101204	19	60	17000~18000	600~800	0.01~0.025	0.02~0.05	3D銑 3D MILLING
UNBX150604	13	80	16000~17000	600~800	0.02~0.04	1.5	溝銑 SLOTTING
UNBX150604	13	80	16000~17000	900~1100	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX150804	15	80	16000~17000	500~700	0.02~0.04	1.5	溝銑 SLOTTING
UNBX150804	15	80	16000~17000	800~1000	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX151004	17	80	16000~17000	400~600	0.015~0.035	1.5	溝銑 SLOTTING
UNBX151004	17	80	16000~17000	700~900	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX151204	19	80	16000~17000	300~500	0.015~0.035	1.5	溝銑 SLOTTING
UNBX151204	19	80	16000~17000	600~800	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX151604	23	80	16000~17000	200~400	0.015~0.035	1.5	溝銑 SLOTTING
UNBX151604	23	80	16000~17000	500~700	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX200804	14	100	15000~16000	600~800	0.03~0.06	2	溝銑 SLOTTING
UNBX200804	14	100	15000~16000	1000~1400	0.03~0.06	0.06~0.12	3D銑 3D MILLING
UNBX201004	16	100	15000~16000	600~800	0.03~0.06	2	溝銑 SLOTTING
UNBX201004	16	100	15000~16000	1000~1200	0.03~0.06	0.06~0.12	3D銑 3D MILLING
UNBX201204	18	100	15000~16000	500~700	0.03~0.06	2	溝銑 SLOTTING
UNBX201204	18	100	15000~16000	900~1100	0.03~0.06	0.06~0.12	3D銑 3D MILLING
UNBX201604	22	100	15000~16000	500~700	0.02~0.05	2	溝銑 SLOTTING
UNBX201604	22	100	15000~16000	900~1100	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX202004	26	100	15000~16000	400~600	0.02~0.05	2	溝銑 SLOTTING
UNBX202004	26	100	15000~16000	700~900	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX300804	19	145	14000~15000	900~1100	0.04~0.08	3	溝銑 SLOTTING
UNBX300804	19	145	14000~15000	1400~1800	0.04~0.08	0.08~0.16	3D銑 3D MILLING
UNBX301004	21	145	14000~15000	900~1100	0.04~0.08	3	溝銑 SLOTTING
UNBX301004	21	145	14000~15000	1400~1800	0.04~0.08	0.08~0.16	3D銑 3D MILLING
UNBX301204	23	145	14000~15000	800~1000	0.04~0.08	3	溝銑 SLOTTING
UNBX301204	23	145	14000~15000	1300~1700	0.04~0.08	0.08~0.16	3D銑 3D MILLING
UNBX301604	27	145	14000~15000	700~900	0.03~0.06	3	溝銑 SLOTTING
UNBX301604	27	145	14000~15000	1200~1600	0.03~0.07	0.06~0.14	3D銑 3D MILLING
UNBX302004	31	145	14000~15000	700~900	0.02~0.05	3	溝銑 SLOTTING
UNBX302004	31	145	14000~15000	1200~1600	0.02~0.06	0.04~0.12	3D銑 3D MILLING
UNBX302504	36	145	14000~15000	600~800	0.01~0.03	3	溝銑 SLOTTING
UNBX302504	36	145	14000~15000	1100~1500	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX401004	26	165	11000~13000	1100~1500	0.04~0.08	4	溝銑 SLOTTING
UNBX401004	26	165	11000~13000	1600~2000	0.04~0.09	0.08~0.18	3D銑 3D MILLING
UNBX401204	28	165	11000~13000	1100~1500	0.04~0.08	4	溝銑 SLOTTING
UNBX401204	28	165	11000~13000	1600~2000	0.04~0.09	0.08~0.18	3D銑 3D MILLING
UNBX401604	32	165	11000~13000	1000~1400	0.03~0.06	4	溝銑 SLOTTING
UNBX401604	32	165	11000~13000	1600~2000	0.03~0.08	0.06~0.16	3D銑 3D MILLING
UNBX402004	36	165	11000~13000	1000~1200	0.03~0.06	4	溝銑 SLOTTING
UNBX402004	36	165	11000~13000	1400~1800	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX402504	41	165	11000~13000	800~1000	0.03~0.06	4	溝銑 SLOTTING
UNBX402504	41	165	11000~13000	1200~1600	0.02~0.05	0.04~0.1	3D銑 3D MILLING

UNBX 4 Flute 切削條件表 MILLING CONDITIONS

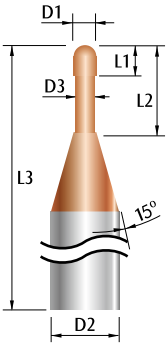
被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	油霧切削 MQL coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UNBX100404	11	50	15000~16000	400~600	0.01~0.025	1	溝銑 SLOTTING
UNBX100404	11	50	15000~16000	700~900	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX100604	13	50	15000~16000	400~600	0.01~0.025	1	溝銑 SLOTTING
UNBX100604	13	50	15000~16000	700~900	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX100804	15	50	15000~16000	300~500	0.01~0.025	1	溝銑 SLOTTING
UNBX100804	15	50	15000~16000	600~800	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX101004	17	50	15000~16000	200~400	0.01~0.02	1	溝銑 SLOTTING
UNBX101004	17	50	15000~16000	400~600	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX101204	19	50	15000~16000	200~400	0.01~0.02	1	溝銑 SLOTTING
UNBX101204	19	50	15000~16000	400~600	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX150604	13	65	13000~14000	500~700	0.01~0.03	1.5	溝銑 SLOTTING
UNBX150604	13	65	13000~14000	800~1000	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX150804	15	65	13000~14000	400~600	0.01~0.03	1.5	溝銑 SLOTTING
UNBX150804	15	65	13000~14000	700~900	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX151004	17	65	13000~14000	300~500	0.01~0.02	1.5	溝銑 SLOTTING
UNBX151004	17	65	13000~14000	600~800	0.02~0.03	0.04~0.06	3D銑 3D MILLING
UNBX151204	19	65	13000~14000	300~500	0.01~0.02	1.5	溝銑 SLOTTING
UNBX151204	19	65	13000~14000	600~800	0.02~0.03	0.04~0.06	3D銑 3D MILLING
UNBX151604	23	65	13000~14000	200~400	0.01~0.02	1.5	溝銑 SLOTTING
UNBX151604	23	65	13000~14000	500~700	0.01~0.02	0.02~0.04	3D銑 3D MILLING
UNBX200804	14	85	12000~13000	500~700	0.02~0.05	2	溝銑 SLOTTING
UNBX200804	14	85	12000~13000	700~1100	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX201004	16	85	12000~13000	500~700	0.02~0.05	2	溝銑 SLOTTING
UNBX201004	16	85	12000~13000	700~1100	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX201204	18	85	12000~13000	400~600	0.02~0.04	2	溝銑 SLOTTING
UNBX201204	18	85	12000~13000	600~1000	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX201604	22	85	12000~13000	300~500	0.01~0.03	2	溝銑 SLOTTING
UNBX201604	22	85	12000~13000	500~900	0.01~0.04	0.02~0.08	3D銑 3D MILLING
UNBX202004	26	85	12000~13000	200~400	0.01~0.02	2	溝銑 SLOTTING
UNBX202004	26	85	12000~13000	400~800	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX300804	19	115	10000~12000	800~1000	0.03~0.06	3	溝銑 SLOTTING
UNBX300804	19	115	10000~12000	1300~1700	0.03~0.07	0.06~0.14	3D銑 3D MILLING
UNBX301004	21	115	10000~12000	800~1000	0.03~0.06	3	溝銑 SLOTTING
UNBX301004	21	115	10000~12000	1300~1700	0.03~0.07	0.06~0.14	3D銑 3D MILLING
UNBX301204	23	115	10000~12000	700~900	0.03~0.06	3	溝銑 SLOTTING
UNBX301204	23	115	10000~12000	1200~1600	0.03~0.07	0.06~0.14	3D銑 3D MILLING
UNBX301604	27	115	10000~12000	600~800	0.02~0.05	3	溝銑 SLOTTING
UNBX301604	27	115	10000~12000	1000~1400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX302004	31	115	10000~12000	500~700	0.02~0.04	3	溝銑 SLOTTING
UNBX302004	31	115	10000~12000	1000~1400	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX302504	36	115	10000~12000	400~600	0.02~0.04	3	溝銑 SLOTTING
UNBX302504	36	115	10000~12000	600~1000	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX401004	26	115	7000~9000	800~1200	0.03~0.07	4	溝銑 SLOTTING
UNBX401004	26	115	7000~9000	1200~1600	0.04~0.08	0.08~0.16	3D銑 3D MILLING
UNBX401204	28	115	7000~9000	800~1200	0.03~0.07	4	溝銑 SLOTTING
UNBX401204	28	115	7000~9000	1200~1600	0.04~0.08	0.08~0.16	3D銑 3D MILLING
UNBX401604	32	115	7000~9000	600~1000	0.02~0.06	4	溝銑 SLOTTING
UNBX401604	32	115	7000~9000	1000~1400	0.03~0.07	0.06~0.14	3D銑 3D MILLING
UNBX402004	36	115	7000~9000	600~800	0.02~0.05	4	溝銑 SLOTTING
UNBX402004	36	115	7000~9000	800~1200	0.02~0.06	0.04~0.12	3D銑 3D MILLING
UNBX402504	41	115	7000~9000	500~700	0.02~0.05	4	溝銑 SLOTTING
UNBX402504	41	115	7000~9000	600~1000	0.02~0.06	0.04~0.12	3D銑 3D MILLING

LNB Long Neck

深溝用圓頭立銑刀 Ball Nose End Mills





直徑 D1	R0.5	R0.75	R1.0	R1.5	R2.0
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01

柄徑 Shank(h6)	Ø4	Ø6
柄徑公差值 D2 Tolerance	0 -0.008	0 -0.008

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
LNB1006	R0.5	0.95	1.5	6	50	4
LNB1008	R0.5	0.95	1.5	8	50	4
LNB1010	R0.5	0.95	1.5	10	50	4
LNB1012	R0.5	0.95	1.5	12	50	4
LNB1508	R0.75	1.45	2	8	50	4
LNB1510	R0.75	1.45	2	10	50	4
LNB1512	R0.75	1.45	2	12	50	4
LNB1516	R0.75	1.45	2	16	50	4
LNB1520	R0.75	1.45	2	20	50	4
LNB2008	R 1.0	1.92	3	8	50	4
LNB2010	R 1.0	1.92	3	10	50	4
LNB2012	R 1.0	1.92	3	12	50	4
LNB2016	R 1.0	1.92	3	16	50	4
LNB2020	R 1.0	1.92	3	20	50	4
LNB3008	R 1.5	2.90	4	8	50	6
LNB3010	R 1.5	2.90	4	10	50	6
LNB3012	R 1.5	2.90	4	12	50	6
LNB3016	R 1.5	2.90	4	16	50	6
LNB3020	R 1.5	2.90	4	20	60	6
LNB3025	R 1.5	2.90	4	25	60	6
LNB4012	R 2.0	3.88	5	12	60	6
LNB4016	R 2.0	3.88	5	16	60	6
LNB4020	R 2.0	3.88	5	20	60	6
LNB4025	R 2.0	3.88	5	25	75	6
LNB4030	R 2.0	3.88	5	30	75	6

unit : mm



精銑 Finishing

中銑 Semi-finishing ------

粗銑 Roughing ------

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

LNB 切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 :*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LNB1006	18	13000~14000	600~800	0.04~0.06	1	溝銑 SLOTTING
LNB1006	18	13000~14000	800~1000	0.01~0.03	1	溝銑 SLOTTING
LNB1006	18	14000~15000	800~1000	0.05~0.07	0.1~0.14	3D銑 3D MILLING
LNB1006	18	14000~15000	1200~1600	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1008	20	13000~14000	600~800	0.04~0.05	1	溝銑 SLOTTING
LNB1008	20	13000~14000	800~1000	0.01~0.03	1	溝銑 SLOTTING
LNB1008	20	14000~15000	800~1000	0.04~0.06	0.08~0.12	3D銑 3D MILLING
LNB1008	20	14000~15000	1200~1600	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1010	22	13000~14000	400~600	0.04~0.05	1	溝銑 SLOTTING
LNB1010	22	13000~14000	600~800	0.01~0.03	1	溝銑 SLOTTING
LNB1010	22	14000~15000	600~800	0.04~0.06	0.08~0.12	3D銑 3D MILLING
LNB1010	22	14000~15000	1000~1200	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1012	24	13000~14000	350~550	0.02~0.04	1	溝銑 SLOTTING
LNB1012	24	13000~14000	550~750	0.01~0.02	1	溝銑 SLOTTING
LNB1012	24	14000~15000	550~750	0.04~0.06	0.08~0.12	3D銑 3D MILLING
LNB1012	24	14000~15000	750~950	0.01~0.025	0.02~0.05	3D銑 3D MILLING
LNB1508	16	12000~13000	1000~1200	0.04~0.06	1.5	溝銑 SLOTTING
LNB1508	16	12000~13000	1200~1400	0.01~0.035	1.5	溝銑 SLOTTING
LNB1508	16	13000~14000	1400~1600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
LNB1508	16	13000~14000	1600~2000	0.01~0.045	0.02~0.09	3D銑 3D MILLING
LNB1510	18	12000~13000	800~1000	0.04~0.06	1.5	溝銑 SLOTTING
LNB1510	18	12000~13000	1000~1200	0.01~0.03	1.5	溝銑 SLOTTING
LNB1510	18	13000~14000	1200~1400	0.06~0.08	0.12~0.16	3D銑 3D MILLING
LNB1510	18	13000~14000	1400~1800	0.01~0.04	0.02~0.08	3D銑 3D MILLING
LNB1512	20	12000~13000	800~1000	0.04~0.06	1.5	溝銑 SLOTTING
LNB1512	20	12000~13000	1000~1200	0.01~0.03	1.5	溝銑 SLOTTING
LNB1512	20	13000~14000	1200~1400	0.06~0.08	0.12~0.16	3D銑 3D MILLING
LNB1512	20	13000~14000	1400~1800	0.01~0.035	0.02~0.07	3D銑 3D MILLING
LNB1516	24	12000~13000	600~800	0.03~0.05	1.5	溝銑 SLOTTING
LNB1516	24	12000~13000	800~1000	0.01~0.02	1.5	溝銑 SLOTTING
LNB1516	24	13000~14000	1000~1200	0.04~0.06	0.08~0.12	3D銑 3D MILLING
LNB1516	24	13000~14000	1200~1600	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1520	28	12000~13000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
LNB1520	28	12000~13000	600~800	0.01~0.015	1.5	溝銑 SLOTTING
LNB1520	28	13000~14000	800~1000	0.04~0.05	0.08~0.1	3D銑 3D MILLING
LNB1520	28	13000~14000	1000~1200	0.01~0.025	0.02~0.05	3D銑 3D MILLING
LNB2008	16	11000~12000	1000~1200	0.06~0.08	2	溝銑 SLOTTING
LNB2008	16	11000~12000	1200~1600	0.015~0.04	2	溝銑 SLOTTING
LNB2008	16	12000~13000	1400~1600	0.1~0.12	0.2~0.24	3D銑 3D MILLING
LNB2008	16	12000~13000	2000~2400	0.01~0.04	0.02~0.08	3D銑 3D MILLING
LNB2010	18	11000~12000	800~1000	0.06~0.08	2	溝銑 SLOTTING
LNB2010	18	11000~12000	1200~1400	0.01~0.03	2	溝銑 SLOTTING
LNB2010	18	12000~13000	1200~1400	0.08~0.1	0.16~0.2	3D銑 3D MILLING
LNB2010	18	12000~13000	1800~2000	0.01~0.035	0.02~0.07	3D銑 3D MILLING
LNB2012	20	11000~12000	800~1000	0.05~0.07	2	溝銑 SLOTTING
LNB2012	20	11000~12000	1200~1400	0.01~0.025	2	溝銑 SLOTTING
LNB2012	20	12000~13000	800~1000	0.08~0.1	0.16~0.2	3D銑 3D MILLING
LNB2012	20	12000~13000	1600~2000	0.01~0.035	0.02~0.07	3D銑 3D MILLING
LNB2016	24	11000~12000	600~800	0.03~0.05	2	溝銑 SLOTTING
LNB2016	24	11000~12000	1000~1200	0.01~0.02	2	溝銑 SLOTTING
LNB2016	24	12000~13000	800~1000	0.06~0.08	0.12~0.16	3D銑 3D MILLING
LNB2016	24	12000~13000	1400~1600	0.01~0.035	0.02~0.07	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
LNB2020	26	11000~12000	600~800	0.02~0.04	2	溝銑 SLOTTING
LNB2020	26	11000~12000	800~1000	0.01~0.02	2	溝銑 SLOTTING
LNB2020	26	12000~13000	800~1000	0.06~0.08	0.12~0.16	**3D**銑 3D MILLING
LNB2020	26	12000~13000	1200~1400	0.01~0.035	0.02~0.07	**3D**銑 3D MILLING
LNB3008	18	10000~11000	1200~1400	0.1~0.12	3	溝銑 SLOTTING
LNB3008	18	10000~11000	1600~1800	0.015~0.05	3	溝銑 SLOTTING
LNB3008	18	11000~12000	1800~2000	0.1~0.12	0.2~0.24	**3D**銑 3D MILLING
LNB3008	18	11000~12000	2200~2400	0.025~0.06	0.05~0.12	**3D**銑 3D MILLING
LNB3010	20	10000~11000	1000~1200	0.08~0.1	3	溝銑 SLOTTING
LNB3010	20	10000~11000	1600~1800	0.015~0.045	3	溝銑 SLOTTING
LNB3010	20	11000~12000	1600~1800	0.1~0.12	0.2~0.24	**3D**銑 3D MILLING
LNB3010	20	11000~12000	2000~2400	0.025~0.06	0.05~0.12	**3D**銑 3D MILLING
LNB3012	22	10000~11000	1000~1200	0.08~0.1	3	溝銑 SLOTTING
LNB3012	22	10000~11000	1600~1800	0.015~0.045	3	溝銑 SLOTTING
LNB3012	22	11000~12000	1600~1800	0.1~0.12	0.2~0.24	**3D**銑 3D MILLING
LNB3012	22	11000~12000	2000~2400	0.025~0.06	0.05~0.12	**3D**銑 3D MILLING
LNB3016	26	10000~11000	800~1000	0.06~0.08	3	溝銑 SLOTTING
LNB3016	26	10000~11000	1200~1400	0.01~0.04	3	溝銑 SLOTTING
LNB3016	26	11000~12000	1000~1200	0.08~0.1	0.16~0.2	**3D**銑 3D MILLING
LNB3016	26	11000~12000	1400~1800	0.02~0.05	0.04~0.1	**3D**銑 3D MILLING
LNB3020	30	10000~11000	600~800	0.04~0.06	3	溝銑 SLOTTING
LNB3020	30	10000~11000	800~1000	0.01~0.04	3	溝銑 SLOTTING
LNB3020	30	11000~12000	800~1000	0.06~0.08	0.12~0.16	**3D**銑 3D MILLING
LNB3020	30	11000~12000	1200~1600	0.015~0.04	0.03~0.08	**3D**銑 3D MILLING
LNB3025	35	10000~11000	400~600	0.04~0.06	3	溝銑 SLOTTING
LNB3025	35	10000~11000	700~900	0.01~0.03	3	溝銑 SLOTTING
LNB3025	35	11000~12000	600~800	0.04~0.06	0.08~0.12	**3D**銑 3D MILLING
LNB3025	35	11000~12000	1000~1400	0.015~0.03	0.03~0.06	**3D**銑 3D MILLING
LNB4012	23	9000~10000	1400~1600	0.1~0.12	4	溝銑 SLOTTING
LNB4012	23	9000~10000	1600~2000	0.025~0.06	4	溝銑 SLOTTING
LNB4012	23	10000~11000	1600~2000	0.12~0.14	0.24~0.28	**3D**銑 3D MILLING
LNB4012	23	10000~11000	2400~2600	0.03~0.07	0.06~0.14	**3D**銑 3D MILLING
LNB4016	27	9000~10000	1000~1200	0.08~0.1	4	溝銑 SLOTTING
LNB4016	27	9000~10000	1400~1600	0.025~0.05	4	溝銑 SLOTTING
LNB4016	27	10000~11000	1400~1600	0.12~0.14	0.24~0.28	**3D**銑 3D MILLING
LNB4016	27	10000~11000	1600~2000	0.03~0.07	0.06~0.14	**3D**銑 3D MILLING
LNB4020	31	9000~10000	1000~1200	0.08~0.1	4	溝銑 SLOTTING
LNB4020	31	9000~10000	1200~1500	0.025~0.05	4	溝銑 SLOTTING
LNB4020	31	10000~11000	1200~1400	0.1~0.12	0.2~0.24	**3D**銑 3D MILLING
LNB4020	31	10000~11000	1600~2000	0.03~0.07	0.06~0.14	**3D**銑 3D MILLING
LNB4025	36	9000~10000	800~1000	0.06~0.08	4	溝銑 SLOTTING
LNB4025	36	9000~10000	1200~1500	0.02~0.045	4	溝銑 SLOTTING
LNB4025	36	10000~11000	1200~1400	0.08~0.1	0.16~0.2	**3D**銑 3D MILLING
LNB4025	36	10000~11000	1600~2000	0.025~0.06	0.05~0.12	**3D**銑 3D MILLING
LNB4030	40	9000~10000	800~1000	0.04~0.06	4	溝銑 SLOTTING
LNB4030	40	9000~10000	1200~1500	0.015~0.03	4	溝銑 SLOTTING
LNB4030	40	10000~11000	1200~1400	0.06~0.08	0.12~0.16	**3D**銑 3D MILLING
LNB4030	40	10000~11000	1600~2000	0.015~0.05	0.03~0.1	**3D**銑 3D MILLING

LNB 切削條件表 MILLING CONDITIONS

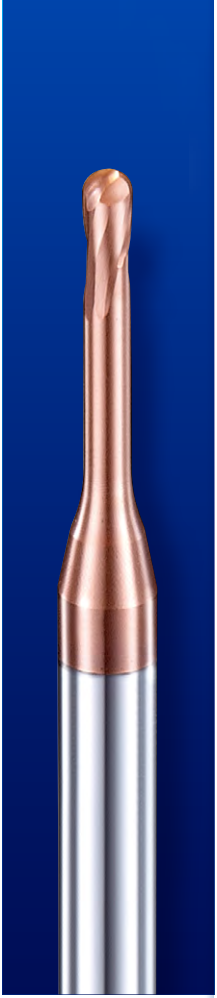
被切削材 Work Material	合金工具鋼 / 碳工具鋼 :*Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LNB1006	18	17000~18000	700~900	0.04~0.06	1	溝銑 SLOTTING
LNB1006	18	17000~18000	1000~1400	0.01~0.03	1	溝銑 SLOTTING
LNB1006	18	17000~18000	1000~1200	0.05~0.07	0.1~0.14	3D銑 3D MILLING
LNB1006	18	17000~18000	1400~1600	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1008	20	17000~18000	600~800	0.04~0.05	1	溝銑 SLOTTING
LNB1008	20	17000~18000	900~1100	0.01~0.03	1	溝銑 SLOTTING
LNB1008	20	17000~18000	1000~1200	0.05~0.07	0.1~0.14	3D銑 3D MILLING
LNB1008	20	17000~18000	1400~1600	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1010	22	17000~18000	500~700	0.04~0.05	1	溝銑 SLOTTING
LNB1010	22	17000~18000	900~1100	0.01~0.03	1	溝銑 SLOTTING
LNB1010	22	17000~18000	800~1000	0.04~0.06	0.08~0.12	3D銑 3D MILLING
LNB1010	22	17000~18000	1200~1400	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1012	24	17000~18000	400~600	0.02~0.04	1	溝銑 SLOTTING
LNB1012	24	17000~18000	600~800	0.01~0.02	1	溝銑 SLOTTING
LNB1012	24	17000~18000	600~800	0.04~0.06	0.08~0.12	3D銑 3D MILLING
LNB1012	24	17000~18000	800~1000	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1508	16	16000~17000	1000~1400	0.08~0.1	1.5	溝銑 SLOTTING
LNB1508	16	16000~17000	1600~2000	0.01~0.04	1.5	溝銑 SLOTTING
LNB1508	16	16000~17000	1600~1800	0.12~0.14	0.24~0.28	3D銑 3D MILLING
LNB1508	16	16000~17000	2200~2600	0.02~0.045	0.04~0.09	3D銑 3D MILLING
LNB1510	18	16000~17000	800~1200	0.08~0.1	1.5	溝銑 SLOTTING
LNB1510	18	16000~17000	1400~1800	0.01~0.04	1.5	溝銑 SLOTTING
LNB1510	18	16000~17000	1400~1600	0.1~0.12	0.2~0.24	3D銑 3D MILLING
LNB1510	18	16000~17000	2000~2400	0.02~0.04	0.04~0.08	3D銑 3D MILLING
LNB1512	20	16000~17000	600~1000	0.06~0.08	1.5	溝銑 SLOTTING
LNB1512	20	16000~17000	1200~1600	0.01~0.04	1.5	溝銑 SLOTTING
LNB1512	20	16000~17000	1400~1600	0.1~0.12	0.2~0.24	3D銑 3D MILLING
LNB1512	20	16000~17000	2000~2400	0.02~0.04	0.04~0.08	3D銑 3D MILLING
LNB1516	24	16000~17000	500~800	0.04~0.06	1.5	溝銑 SLOTTING
LNB1516	24	16000~17000	1000~1200	0.01~0.03	1.5	溝銑 SLOTTING
LNB1516	24	16000~17000	1200~1400	0.08~0.1	0.16~0.2	3D銑 3D MILLING
LNB1516	24	16000~17000	1800~2200	0.015~0.04	0.03~0.08	3D銑 3D MILLING
LNB1520	28	16000~17000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
LNB1520	28	16000~17000	600~1000	0.01~0.03	1.5	溝銑 SLOTTING
LNB1520	28	16000~17000	1000~1200	0.06~0.08	0.12~0.16	3D銑 3D MILLING
LNB1520	28	16000~17000	1400~1800	0.015~0.03	0.03~0.06	3D銑 3D MILLING
LNB2008	16	15000~16000	1800~2200	0.12~0.14	2	溝銑 SLOTTING
LNB2008	16	15000~16000	2400~2800	0.02~0.07	2	溝銑 SLOTTING
LNB2008	16	15000~16000	2400~2600	0.16~0.18	0.32~0.36	3D銑 3D MILLING
LNB2008	16	15000~16000	3000~3400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
LNB2010	18	15000~16000	1800~2200	0.12~0.14	2	溝銑 SLOTTING
LNB2010	18	15000~16000	2400~2800	0.02~0.07	2	溝銑 SLOTTING
LNB2010	18	15000~16000	2400~2600	0.16~0.18	0.32~0.36	3D銑 3D MILLING
LNB2010	18	15000~16000	3000~3400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
LNB2012	20	15000~16000	1600~2000	0.1~0.12	2	溝銑 SLOTTING
LNB2012	20	15000~16000	2200~2600	0.015~0.05	2	溝銑 SLOTTING
LNB2012	20	15000~16000	2200~2400	0.14~0.16	0.28~0.32	3D銑 3D MILLING
LNB2012	20	15000~16000	2600~3000	0.015~0.05	0.03~0.1	3D銑 3D MILLING
LNB2016	24	15000~16000	1400~1800	0.1~0.12	2	溝銑 SLOTTING
LNB2016	24	15000~16000	2000~2400	0.015~0.05	2	溝銑 SLOTTING
LNB2016	24	15000~16000	1800~2000	0.12~0.14	0.24~0.28	3D銑 3D MILLING
LNB2016	24	15000~16000	2400~2800	0.015~0.05	0.03~0.1	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
LNB2020	26	15000~16000	1200~1600	0.08~0.1	2	溝銑 SLOTTING
LNB2020	26	15000~16000	1800~2200	0.015~0.05	2	溝銑 SLOTTING
LNB2020	26	15000~16000	1600~1800	0.1~0.12	0.2~0.24	**3D**銑 3D MILLING
LNB2020	26	15000~16000	2200~2600	0.015~0.05	0.03~0.1	**3D**銑 3D MILLING
LNB3008	18	14000~15000	2000~2400	0.16~0.18	3	溝銑 SLOTTING
LNB3008	18	14000~15000	2600~3000	0.03~0.1	3	溝銑 SLOTTING
LNB3008	18	14000~15000	3000~3200	0.2~0.22	0.4~0.44	**3D**銑 3D MILLING
LNB3008	18	14000~15000	3400~3800	0.03~0.1	0.06~0.2	**3D**銑 3D MILLING
LNB3010	20	14000~15000	2000~2400	0.16~0.18	3	溝銑 SLOTTING
LNB3010	20	14000~15000	2400~2800	0.03~0.1	3	溝銑 SLOTTING
LNB3010	20	14000~15000	2800~3000	0.2~0.22	0.4~0.44	**3D**銑 3D MILLING
LNB3010	20	14000~15000	3200~3600	0.03~0.1	0.06~0.2	**3D**銑 3D MILLING
LNB3012	22	14000~15000	1800~2200	0.14~0.16	3	溝銑 SLOTTING
LNB3012	22	14000~15000	2200~2600	0.03~0.08	3	溝銑 SLOTTING
LNB3012	22	14000~15000	2600~2800	0.18~0.2	0.36~0.4	**3D**銑 3D MILLING
LNB3012	22	14000~15000	3000~3400	0.03~0.08	0.06~0.16	**3D**銑 3D MILLING
LNB3016	26	14000~15000	1600~2000	0.13~0.15	3	溝銑 SLOTTING
LNB3016	26	14000~15000	2000~2400	0.03~0.08	3	溝銑 SLOTTING
LNB3016	26	14000~15000	2200~2400	0.16~0.18	0.32~0.36	**3D**銑 3D MILLING
LNB3016	26	14000~15000	2800~3200	0.03~0.08	0.06~0.16	**3D**銑 3D MILLING
LNB3020	30	14000~15000	1400~1800	0.1~0.12	3	溝銑 SLOTTING
LNB3020	30	14000~15000	2000~2400	0.02~0.06	3	溝銑 SLOTTING
LNB3020	30	14000~15000	2000~2200	0.14~0.16	0.28~0.32	**3D**銑 3D MILLING
LNB3020	30	14000~15000	2400~2800	0.02~0.06	0.04~0.12	**3D**銑 3D MILLING
LNB3025	35	14000~15000	1000~1400	0.08~0.1	3	溝銑 SLOTTING
LNB3025	35	14000~15000	1600~2000	0.015~0.04	3	溝銑 SLOTTING
LNB3025	35	14000~15000	1600~2000	0.1~0.12	0.2~0.24	**3D**銑 3D MILLING
LNB3025	35	14000~15000	2200~2600	0.015~0.04	0.03~0.08	**3D**銑 3D MILLING
LNB4012	23	12000~13000	2400~2800	0.24~0.26	4	溝銑 SLOTTING
LNB4012	23	12000~13000	3500~3700	0.04~0.1	4	溝銑 SLOTTING
LNB4012	23	12000~13000	2400~2800	0.26~0.28	0.52~0.56	**3D**銑 3D MILLING
LNB4012	23	12000~13000	3500~3800	0.04~0.12	0.08~0.24	**3D**銑 3D MILLING
LNB4016	27	12000~13000	2200~2600	0.22~0.24	4	溝銑 SLOTTING
LNB4016	27	12000~13000	3300~3600	0.03~0.08	4	溝銑 SLOTTING
LNB4016	27	12000~13000	2400~2800	0.24~0.26	0.48~0.52	**3D**銑 3D MILLING
LNB4016	27	12000~13000	3500~3800	0.04~0.1	0.08~0.2	**3D**銑 3D MILLING
LNB4020	31	12000~13000	2000~2400	0.21~0.23	4	溝銑 SLOTTING
LNB4020	31	12000~13000	3200~3500	0.03~0.08	4	溝銑 SLOTTING
LNB4020	31	12000~13000	2300~2500	0.23~0.25	0.46~0.5	**3D**銑 3D MILLING
LNB4020	31	12000~13000	3400~3700	0.04~0.1	0.08~0.2	**3D**銑 3D MILLING
LNB4025	36	12000~13000	1800~2200	0.19~0.21	4	溝銑 SLOTTING
LNB4025	36	12000~13000	2600~2800	0.04~0.08	4	溝銑 SLOTTING
LNB4025	36	12000~13000	2100~2300	0.21~0.23	0.42~0.46	**3D**銑 3D MILLING
LNB4025	36	12000~13000	2800~3200	0.04~0.1	0.08~0.2	**3D**銑 3D MILLING
LNB4030	40	12000~13000	1600~1800	0.16~0.18	4	溝銑 SLOTTING
LNB4030	40	12000~13000	2000~2400	0.03~0.07	4	溝銑 SLOTTING
LNB4030	40	12000~13000	1800~2000	0.18~0.2	0.36~0.4	**3D**銑 3D MILLING
LNB4030	40	12000~13000	2500~2800	0.04~0.07	0.08~0.14	**3D**銑 3D MILLING

LNB 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LNB1006	18	17000~18000	700~900	0.04~0.06	1	溝銑 SLOTTING
LNB1006	18	17000~18000	900~1300	0.01~0.03	1	溝銑 SLOTTING
LNB1006	18	17000~18000	900~1100	0.05~0.07	0.1~0.14	3D銑 3D MILLING
LNB1006	18	17000~18000	1300~1500	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1008	20	17000~18000	500~700	0.04~0.05	1	溝銑 SLOTTING
LNB1008	20	17000~18000	800~1000	0.01~0.03	1	溝銑 SLOTTING
LNB1008	20	17000~18000	900~1100	0.05~0.07	0.1~0.14	3D銑 3D MILLING
LNB1008	20	17000~18000	1300~1500	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1010	22	17000~18000	500~700	0.04~0.05	1	溝銑 SLOTTING
LNB1010	22	17000~18000	800~1000	0.01~0.03	1	溝銑 SLOTTING
LNB1010	22	17000~18000	700~900	0.04~0.06	0.08~0.12	3D銑 3D MILLING
LNB1010	22	17000~18000	1100~1300	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1012	24	17000~18000	400~500	0.02~0.04	1	溝銑 SLOTTING
LNB1012	24	17000~18000	600~700	0.01~0.02	1	溝銑 SLOTTING
LNB1012	24	17000~18000	500~700	0.04~0.06	0.08~0.12	3D銑 3D MILLING
LNB1012	24	17000~18000	800~900	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1508	16	16000~17000	1100~1300	0.08~0.1	1.5	溝銑 SLOTTING
LNB1508	16	16000~17000	1300~1700	0.01~0.04	1.5	溝銑 SLOTTING
LNB1508	16	16000~17000	1500~1700	0.12~0.14	0.24~0.28	3D銑 3D MILLING
LNB1508	16	16000~17000	2100~2600	0.02~0.045	0.04~0.09	3D銑 3D MILLING
LNB1510	18	16000~17000	900~1100	0.08~0.1	1.5	溝銑 SLOTTING
LNB1510	18	16000~17000	1200~1600	0.01~0.04	1.5	溝銑 SLOTTING
LNB1510	18	16000~17000	1400~1600	0.1~0.12	0.2~0.24	3D銑 3D MILLING
LNB1510	18	16000~17000	2000~2400	0.02~0.04	0.04~0.08	3D銑 3D MILLING
LNB1512	20	16000~17000	700~900	0.06~0.08	1.5	溝銑 SLOTTING
LNB1512	20	16000~17000	1000~1400	0.01~0.04	1.5	溝銑 SLOTTING
LNB1512	20	16000~17000	1300~1500	0.1~0.12	0.2~0.24	3D銑 3D MILLING
LNB1512	20	16000~17000	1800~2200	0.02~0.04	0.04~0.08	3D銑 3D MILLING
LNB1516	24	16000~17000	600~800	0.04~0.06	1.5	溝銑 SLOTTING
LNB1516	24	16000~17000	900~1100	0.01~0.03	1.5	溝銑 SLOTTING
LNB1516	24	16000~17000	1100~1300	0.08~0.1	0.16~0.2	3D銑 3D MILLING
LNB1516	24	16000~17000	1700~2100	0.015~0.04	0.03~0.08	3D銑 3D MILLING
LNB1520	28	16000~17000	300~500	0.04~0.06	1.5	溝銑 SLOTTING
LNB1520	28	16000~17000	600~1000	0.01~0.03	1.5	溝銑 SLOTTING
LNB1520	28	16000~17000	900~1100	0.06~0.08	0.12~0.16	3D銑 3D MILLING
LNB1520	28	16000~17000	1300~1700	0.015~0.03	0.03~0.06	3D銑 3D MILLING
LNB2008	16	15000~16000	1900~2100	0.12~0.14	2	溝銑 SLOTTING
LNB2008	16	15000~16000	2400~2800	0.02~0.07	2	溝銑 SLOTTING
LNB2008	16	15000~16000	2000~2400	0.16~0.18	0.32~0.36	3D銑 3D MILLING
LNB2008	16	15000~16000	3000~3400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
LNB2010	18	15000~16000	1800~2000	0.12~0.14	2	溝銑 SLOTTING
LNB2010	18	15000~16000	2300~2700	0.02~0.07	2	溝銑 SLOTTING
LNB2010	18	15000~16000	1900~2300	0.16~0.18	0.32~0.36	3D銑 3D MILLING
LNB2010	18	15000~16000	3000~3400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
LNB2012	20	15000~16000	1700~1900	0.1~0.12	2	溝銑 SLOTTING
LNB2012	20	15000~16000	2100~2500	0.02~0.05	2	溝銑 SLOTTING
LNB2012	20	15000~16000	1900~2300	0.14~0.16	0.28~0.32	3D銑 3D MILLING
LNB2012	20	15000~16000	2600~3000	0.02~0.05	0.03~0.1	3D銑 3D MILLING
LNB2016	24	15000~16000	1400~1600	0.1~0.12	2	溝銑 SLOTTING
LNB2016	24	15000~16000	1800~2200	0.02~0.05	2	溝銑 SLOTTING
LNB2016	24	15000~16000	1700~1900	0.12~0.14	0.24~0.28	3D銑 3D MILLING
LNB2016	24	15000~16000	2200~2600	0.02~0.05	0.03~0.1	3D銑 3D MILLING

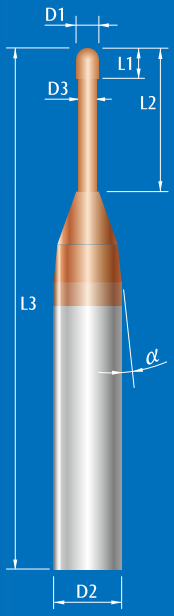
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
LNB2020	26	15000~16000	1300~1500	0.08~0.1	2	溝銑 SLOTTING
LNB2020	26	15000~16000	1700~2100	0.02~0.05	2	溝銑 SLOTTING
LNB2020	26	15000~16000	1400~1600	0.1~0.12	0.2~0.24	**3D**銑 3D MILLING
LNB2020	26	15000~16000	2000~2400	0.02~0.05	0.03~0.1	**3D**銑 3D MILLING
LNB3008	18	14000~15000	1800~2200	0.16~0.18	3	溝銑 SLOTTING
LNB3008	18	14000~15000	2400~2800	0.03~0.1	3	溝銑 SLOTTING
LNB3008	18	14000~15000	2800~3200	0.2~0.22	0.4~0.44	**3D**銑 3D MILLING
LNB3008	18	14000~15000	3200~3600	0.03~0.1	0.06~0.2	**3D**銑 3D MILLING
LNB3010	20	14000~15000	1800~2200	0.16~0.18	3	溝銑 SLOTTING
LNB3010	20	14000~15000	2400~2800	0.03~0.1	3	溝銑 SLOTTING
LNB3010	20	14000~15000	2800~3000	0.2~0.22	0.4~0.44	**3D**銑 3D MILLING
LNB3010	20	14000~15000	3200~3600	0.03~0.1	0.06~0.2	**3D**銑 3D MILLING
LNB3012	22	14000~15000	1600~2000	0.14~0.16	3	溝銑 SLOTTING
LNB3012	22	14000~15000	2200~2600	0.03~0.08	3	溝銑 SLOTTING
LNB3012	22	14000~15000	2600~2800	0.18~0.2	0.36~0.4	**3D**銑 3D MILLING
LNB3012	22	14000~15000	3000~3400	0.03~0.08	0.06~0.16	**3D**銑 3D MILLING
LNB3016	26	14000~15000	1400~1800	0.13~0.15	3	溝銑 SLOTTING
LNB3016	26	14000~15000	1800~2200	0.03~0.08	3	溝銑 SLOTTING
LNB3016	26	14000~15000	2000~2200	0.16~0.18	0.32~0.36	**3D**銑 3D MILLING
LNB3016	26	14000~15000	2600~3000	0.03~0.08	0.06~0.16	**3D**銑 3D MILLING
LNB3020	30	14000~15000	1200~1600	0.1~0.12	3	溝銑 SLOTTING
LNB3020	30	14000~15000	1800~2100	0.02~0.06	3	溝銑 SLOTTING
LNB3020	30	14000~15000	1800~2100	0.14~0.16	0.28~0.32	**3D**銑 3D MILLING
LNB3020	30	14000~15000	2300~2700	0.02~0.06	0.04~0.12	**3D**銑 3D MILLING
LNB3025	35	14000~15000	1000~1400	0.08~0.1	3	溝銑 SLOTTING
LNB3025	35	14000~15000	1500~1900	0.015~0.04	3	溝銑 SLOTTING
LNB3025	35	14000~15000	1500~1800	0.1~0.12	0.2~0.24	**3D**銑 3D MILLING
LNB3025	35	14000~15000	2000~2400	0.015~0.04	0.03~0.08	**3D**銑 3D MILLING
LNB4012	23	12000~13000	2200~2600	0.24~0.26	4	溝銑 SLOTTING
LNB4012	23	12000~13000	3200~3400	0.04~0.1	4	溝銑 SLOTTING
LNB4012	23	12000~13000	2100~2600	0.26~0.28	0.52~0.56	**3D**銑 3D MILLING
LNB4012	23	12000~13000	3200~3400	0.04~0.12	0.08~0.24	**3D**銑 3D MILLING
LNB4016	27	12000~13000	2200~2600	0.22~0.24	4	溝銑 SLOTTING
LNB4016	27	12000~13000	3200~3400	0.03~0.08	4	溝銑 SLOTTING
LNB4016	27	12000~13000	2100~2600	0.24~0.26	0.48~0.52	**3D**銑 3D MILLING
LNB4016	27	12000~13000	3200~3400	0.04~0.1	0.08~0.2	**3D**銑 3D MILLING
LNB4020	31	12000~13000	1800~2200	0.21~0.23	4	溝銑 SLOTTING
LNB4020	31	12000~13000	3000~3300	0.03~0.08	4	溝銑 SLOTTING
LNB4020	31	12000~13000	2100~2300	0.23~0.25	0.46~0.5	**3D**銑 3D MILLING
LNB4020	31	12000~13000	3200~3500	0.04~0.1	0.08~0.2	**3D**銑 3D MILLING
LNB4025	36	12000~13000	1600~2000	0.19~0.21	4	溝銑 SLOTTING
LNB4025	36	12000~13000	2400~2600	0.04~0.08	4	溝銑 SLOTTING
LNB4025	36	12000~13000	1900~2100	0.21~0.23	0.42~0.46	**3D**銑 3D MILLING
LNB4025	36	12000~13000	2600~3000	0.04~0.1	0.08~0.2	**3D**銑 3D MILLING
LNB4030	40	12000~13000	1300~1700	0.16~0.18	4	溝銑 SLOTTING
LNB4030	40	12000~13000	1800~2200	0.03~0.07	4	溝銑 SLOTTING
LNB4030	40	12000~13000	1600~1800	0.18~0.2	0.36~0.4	**3D**銑 3D MILLING
LNB4030	40	12000~13000	2200~2500	0.04~0.07	0.08~0.14	**3D**銑 3D MILLING



UNB Long Neck

Ball Nose End Mills 深溝用圓頭立銑刀

Super MG | 0.2 μm | 15° | 2 Flutes | HRc ▶65 | G12



直徑 D1	R0.25	R0.3	R0.4	R0.5	R0.6	R0.75	R0.8
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01
直徑 D1	R1.0	R1.5	R2.0				
球徑公差值 R Tolerance	±0.01	±0.01	±0.01				
柄徑 Shank(h6)	Ø4	Ø6					
柄徑公差值 D2 Tolerance	0 -0.008	0 -0.008					

D1≦R0.25&L2≦4mm α=15°
The Other α=12°

精銑 Finishing
中銑 Semi-finishing ------
粗銑 Roughing ------
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UNB0502	R0.25	0.46	0.8	2	50	4
UNB0504	R0.25	0.46	0.8	4	50	4
UNB0506	R0.25	0.46	0.8	6	50	4
UNB0604	R0.3	0.56	0.9	4	50	4
UNB0606	R0.3	0.56	0.9	6	50	4
UNB0806	R0.4	0.76	1.2	6	50	4
UNB0808	R0.4	0.76	1.2	8	50	4
UNB1006	R0.5	0.95	1.5	6	50	4

unit : mm

UNB Long Neck

深溝用圓頭立銑刀 Ball Nose End Mills

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UNB1008	R0.5	0.95	1.5	8	50	4
UNB1010	R0.5	0.95	1.5	10	50	4
UNB1012	R0.5	0.95	1.5	12	50	4
UNB1208	R0.6	1.15	2	8	50	4
UNB1212	R0.6	1.15	2	12	50	4
UNB1508	R0.75	1.45	2	8	50	4
UNB1510	R0.75	1.45	2	10	50	4
UNB1512	R0.75	1.45	2	12	50	4
UNB1516	R0.75	1.45	2	16	50	4
UNB1520	R0.75	1.45	2	20	50	4
UNB1608	R0.8	1.54	2.5	8	50	4
UNB1612	R0.8	1.54	2.5	12	50	4
UNB1616	R0.8	1.54	2.5	16	50	4
UNB2008	R1.0	1.92	3	8	50	4
UNB2010	R1.0	1.92	3	10	50	4
UNB2012	R1.0	1.92	3	12	50	4
UNB2016	R1.0	1.92	3	16	50	4
UNB2020	R1.0	1.92	3	20	50	4
UNB3008	R1.5	2.90	4	8	50	6
UNB3010	R1.5	2.90	4	10	50	6
UNB3016	R1.5	2.90	4	16	50	6
UNB3020	R1.5	2.90	4	20	60	6
UNB3025	R1.5	2.90	4	25	60	6
UNB4010	R2.0	3.88	5	10	75	6
UNB4015	R2.0	3.88	5	15	75	6
UNB4020	R2.0	3.88	5	20	75	6
UNB4025	R2.0	3.88	5	25	75	6
UNB4030	R2.0	3.88	5	30	75	6

unit : mm

UNB 切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式切削 Dry coolant

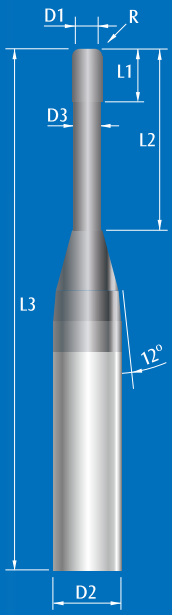
型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UNB0502	15	35	18000~20000	200~400	0.005~0.013	0.5	溝銑 SLOTTING
UNB0502	15	35	18000~20000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNB0504	17	35	18000~20000	200~400	0.005~0.013	0.5	溝銑 SLOTTING
UNB0504	17	35	18000~20000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNB0506	19	35	18000~20000	150~300	0.005~0.013	0.5	溝銑 SLOTTING
UNB0506	19	35	18000~20000	200~400	0.005~0.013	0.01~0.026	3D銑 3D MILLING
UNB0604	18	40	18000~20000	200~400	0.005~0.013	0.6	溝銑 SLOTTING
UNB0604	18	40	18000~20000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNB0606	20	40	18000~20000	150~300	0.005~0.013	0.6	溝銑 SLOTTING
UNB0606	20	40	18000~20000	200~400	0.005~0.013	0.01~0.026	3D銑 3D MILLING
UNB0806	17	45	16000~18000	300~500	0.01~0.02	0.8	溝銑 SLOTTING
UNB0806	17	45	16000~18000	300~500	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UNB0806	17	45	16000~18000	500~700	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UNB0808	19	45	16000~18000	200~400	0.01~0.02	0.8	溝銑 SLOTTING
UNB0808	19	45	16000~18000	200~400	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UNB0808	19	45	16000~18000	400~600	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UNB1006	13	50	15000~16000	400~600	0.015~0.035	1	溝銑 SLOTTING
UNB1006	13	50	15000~16000	400~600	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNB1006	13	50	15000~16000	600~800	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNB1008	15	50	15000~16000	300~500	0.01~0.03	1	溝銑 SLOTTING
UNB1008	15	50	15000~16000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNB1008	15	50	15000~16000	600~800	0.01~0.02	0.02~0.04	3D銑 3D MILLING
UNB1010	17	50	15000~16000	300~500	0.01~0.03	1	溝銑 SLOTTING
UNB1010	17	50	15000~16000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNB1010	17	50	15000~16000	600~800	0.01~0.02	0.02~0.04	3D銑 3D MILLING
UNB1012	19	50	15000~16000	300~500	0.01~0.03	1	溝銑 SLOTTING
UNB1012	19	50	15000~16000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNB1012	19	50	15000~16000	600~800	0.01~0.02	0.02~0.04	3D銑 3D MILLING
UNB1208	15	60	15000~16000	400~600	0.02~0.04	1.2	溝銑 SLOTTING
UNB1208	15	60	15000~16000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNB1208	15	60	15000~16000	800~100	0.01~0.025	0.02~0.05	3D銑 3D MILLING
UNB1212	19	60	15000~16000	400~600	0.02~0.04	1.2	溝銑 SLOTTING
UNB1212	19	60	15000~16000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNB1212	19	60	15000~16000	800~100	0.01~0.025	0.02~0.05	3D銑 3D MILLING
UNB1508	14	70	14000~15000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
UNB1508	14	70	14000~15000	700~900	0.01~0.03	1.5	溝銑 SLOTTING
UNB1508	14	70	14000~15000	400~600	0.05~0.07	0.1~0.14	3D銑 3D MILLING
UNB1508	14	70	14000~15000	800~1000	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNB1510	16	70	14000~15000	400~600	0.03~0.05	1.5	溝銑 SLOTTING
UNB1510	16	70	14000~15000	600~800	0.01~0.03	1.5	溝銑 SLOTTING
UNB1510	16	70	14000~15000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNB1510	16	70	14000~15000	700~900	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNB1512	18	70	14000~15000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
UNB1512	18	70	14000~15000	500~700	0.01~0.03	1.5	溝銑 SLOTTING
UNB1512	18	70	14000~15000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNB1512	18	70	14000~15000	600~800	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNB1516	22	70	14000~15000	300~500	0.02~0.04	1.5	溝銑 SLOTTING
UNB1516	22	70	14000~15000	500~600	0.008~0.02	1.5	溝銑 SLOTTING
UNB1516	22	70	14000~15000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNB1516	22	70	14000~15000	600~800	0.01~0.025	0.02~0.05	3D銑 3D MILLING
UNB1520	26	70	14000~15000	200~400	0.02~0.04	1.5	溝銑 SLOTTING
UNB1520	26	70	14000~15000	400~600	0.008~0.02	1.5	溝銑 SLOTTING
UNB1520	26	70	14000~15000	200~400	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNB1520	26	70	14000~15000	400~600	0.008~0.02	0.016~0.04	3D銑 3D MILLING
UNB1608	14	75	14000~15000	500~700	0.04~0.06	1.6	溝銑 SLOTTING
UNB1608	14	75	14000~15000	800~1000	0.01~0.03	1.6	溝銑 SLOTTING
UNB1608	14	75	14000~15000	500~700	0.05~0.07	0.1~0.14	3D銑 3D MILLING
UNB1608	14	75	14000~15000	800~1000	0.015~0.035	0.03~0.07	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UNB1612	16	75	14000~15000	400~600	0.03~0.05	1.6	溝銑 SLOTTING
UNB1612	16	75	14000~15000	600~800	0.01~0.03	1.6	溝銑 SLOTTING
UNB1612	16	75	14000~15000	500~700	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNB1612	16	75	14000~15000	800~1000	0.015~0.03	0.03~0.06	3D銑 3D MILLING
UNB1616	20	75	14000~15000	300~500	0.02~0.04	1.6	溝銑 SLOTTING
UNB1616	20	75	14000~15000	500~700	0.008~0.02	1.6	溝銑 SLOTTING
UNB1616	20	75	14000~15000	400~600	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNB1616	20	75	14000~15000	600~800	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNB2008	14	85	12000~13000	500~700	0.05~0.07	2	溝銑 SLOTTING
UNB2008	14	85	12000~13000	800~1000	0.01~0.03	2	溝銑 SLOTTING
UNB2008	14	85	12000~13000	500~700	0.07~0.09	0.14~0.18	3D銑 3D MILLING
UNB2008	14	85	12000~13000	1100~1300	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNB2010	16	85	12000~13000	400~600	0.04~0.06	2	溝銑 SLOTTING
UNB2010	16	85	12000~13000	800~1000	0.01~0.03	2	溝銑 SLOTTING
UNB2010	16	85	12000~13000	400~600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNB2010	16	85	12000~13000	1000~1200	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNB2012	18	85	12000~13000	400~600	0.04~0.06	2	溝銑 SLOTTING
UNB2012	18	85	12000~13000	800~1000	0.01~0.03	2	溝銑 SLOTTING
UNB2012	18	85	12000~13000	400~600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNB2012	18	85	12000~13000	1000~1200	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNB2016	22	85	12000~13000	300~500	0.03~0.05	2	溝銑 SLOTTING
UNB2016	22	85	12000~13000	600~800	0.01~0.025	2	溝銑 SLOTTING
UNB2016	22	85	12000~13000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNB2016	22	85	12000~13000	800~1000	0.015~0.03	0.03~0.06	3D銑 3D MILLING
UNB2020	26	85	12000~13000	200~400	0.03~0.05	2	溝銑 SLOTTING
UNB2020	26	85	12000~13000	400~600	0.01~0.025	2	溝銑 SLOTTING
UNB2020	26	85	12000~13000	400~600	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNB2020	26	85	12000~13000	600~800	0.015~0.03	0.03~0.06	3D銑 3D MILLING
UNB3008	16	105	10000~11000	700~900	0.08~0.1	3	溝銑 SLOTTING
UNB3008	16	105	10000~11000	1200~1600	0.02~0.05	3	溝銑 SLOTTING
UNB3008	16	105	10000~11000	800~1000	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UNB3008	16	105	10000~11000	1400~1800	0.03~0.07	0.06~0.14	3D銑 3D MILLING
UNB3010	18	105	10000~11000	600~800	0.08~0.1	3	溝銑 SLOTTING
UNB3010	18	105	10000~11000	1100~1500	0.02~0.05	3	溝銑 SLOTTING
UNB3010	18	105	10000~11000	700~900	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UNB3010	18	105	10000~11000	1300~1700	0.03~0.07	0.06~0.14	3D銑 3D MILLING
UNB3016	20	105	10000~11000	400~600	0.06~0.08	3	溝銑 SLOTTING
UNB3016	20	105	10000~11000	800~1200	0.015~0.035	3	溝銑 SLOTTING
UNB3016	20	105	10000~11000	600~800	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNB3016	20	105	10000~11000	1000~1400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNB3020	24	105	10000~11000	300~500	0.04~0.06	3	溝銑 SLOTTING
UNB3020	24	105	10000~11000	700~900	0.01~0.03	3	溝銑 SLOTTING
UNB3020	24	105	10000~11000	400~600	0.07~0.09	0.14~0.18	3D銑 3D MILLING
UNB3020	24	105	10000~11000	900~1300	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNB3025	28	105	10000~11000	200~400	0.04~0.06	3	溝銑 SLOTTING
UNB3025	28	105	10000~11000	600~800	0.01~0.03	3	溝銑 SLOTTING
UNB3025	28	105	10000~11000	400~600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNB3025	28	105	10000~11000	800~1200	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNB4010	20	115	8000~9000	800~1000	0.1~0.12	4	溝銑 SLOTTING
UNB4010	20	115	8000~9000	1400~1800	0.03~0.07	4	溝銑 SLOTTING
UNB4010	20	115	8000~9000	1000~1200	0.14~0.16	0.28~0.32	3D銑 3D MILLING
UNB4010	20	115	8000~9000	1600~2000	0.04~0.09	0.08~0.18	3D銑 3D MILLING
UNB4015	25	115	8000~9000	600~800	0.08~0.1	4	溝銑 SLOTTING
UNB4015	25	115	8000~9000	1200~1600	0.025~0.06	4	溝銑 SLOTTING
UNB4015	25	115	8000~9000	1000~1200	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNB4015	25	115	8000~9000	1600~2000	0.03~0.06	0.06~0.12	3D銑 3D MILLING
UNB4020	30	115	8000~9000	600~800	0.06~0.08	4	溝銑 SLOTTING
UNB4020	30	115	8000~9000	1000~1400	0.025~0.05	4	溝銑 SLOTTING
UNB4020	30	115	8000~9000	1000~1200	0.08~0.1	0.16~0.2	3D銑 3D MILLING
UNB4020	30	115	8000~9000	1600~2000	0.025~0.05	0.05~0.1	3D銑 3D MILLING
UNB4025	35	115	8000~9000	500~700	0.05~0.07	4	溝銑 SLOTTING
UNB4025	35	115	8000~9000	800~1200	0.015~0.035	4	溝銑 SLOTTING
UNB4025	35	115	8000~9000	800~1000	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNB4025	35	115	8000~9000	1200~1600	0.025~0.05	0.05~0.1	3D銑 3D MILLING
UNB4030	40	115	8000~9000	400~600	0.04~0.06	4	溝銑 SLOTTING
UNB4030	40	115	8000~9000	700~1100	0.015~0.035	4	溝銑 SLOTTING
UNB4030	40	115	8000~9000	600~800	0.05~0.07	0.1~0.14	3D銑 3D MILLING
UNB4030	40	115	8000~9000	1000~1400	0.015~0.04	0.03~0.08	3D銑 3D MILLING

UXE Long Neck, Corner Radius

End Mills 深溝用圓鼻立銑刀





直徑 D1	1.0	1.5	2.0	3.0	4.0
R徑公差值 R Tolerance	+0.02 0	+0.02 0	+0.02 0	+0.02 0	+0.02 0
直徑公差值 D1 Tolerance	0 −0.02	0 −0.02	0 −0.02	0 −0.02	0 −0.02
柄徑 Shank(h6)	Ø6				
柄徑公差值 D2 Tolerance	0 -0.008				

精銑 Finishing

中銑 Semi-finishing ------

粗銑 Roughing ------

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	R R角 Conner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UXE100401	1.0	0.95	0.1	1.5	4	50	6
UXE100601	1.0	0.95	0.1	1.5	6	50	6
UXE100801	1.0	0.95	0.1	1.5	8	50	6
UXE101001	1.0	0.95	0.1	1.5	10	50	6
UXE101201	1.0	0.95	0.1	1.5	12	50	6
UXE100402	1.0	0.95	0.2	1.5	4	50	6
UXE100602	1.0	0.95	0.2	1.5	6	50	6
UXE100802	1.0	0.95	0.2	1.5	8	50	6
UXE101002	1.0	0.95	0.2	1.5	10	50	6
UXE101202	1.0	0.95	0.2	1.5	12	50	6
UXE150401	1.5	1.44	0.1	1.5	4	50	6

unit : mm

UXE Long Neck, Corner Radius

深溝用圓鼻立銑刀 End Mills

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	R R角 Conner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UXE150601	1.5	1.44	0.1	1.5	6	50	6
UXE150801	1.5	1.44	0.1	1.5	8	50	6
UXE151001	1.5	1.44	0.1	1.5	10	50	6
UXE151201	1.5	1.44	0.1	1.5	12	50	6
UXE150402	1.5	1.44	0.2	1.5	4	50	6
UXE150602	1.5	1.44	0.2	1.5	6	50	6
UXE150802	1.5	1.44	0.2	1.5	8	50	6
UXE151002	1.5	1.44	0.2	1.5	10	50	6
UXE151202	1.5	1.44	0.2	1.5	12	50	6
UXE200801	2.0	1.92	0.1	2	8	50	6
UXE201001	2.0	1.92	0.1	2	10	50	6
UXE201201	2.0	1.92	0.1	2	12	50	6
UXE201601	2.0	1.92	0.1	2	16	50	6
UXE202001	2.0	1.92	0.1	2	20	50	6
UXE200802	2.0	1.92	0.2	2	8	50	6
UXE201002	2.0	1.92	0.2	2	10	50	6
UXE201202	2.0	1.92	0.2	2	12	50	6
UXE201602	2.0	1.92	0.2	2	16	50	6
UXE202002	2.0	1.92	0.2	2	20	50	6
UXE300802	3.0	2.90	0.2	3	8	50	6
UXE301002	3.0	2.90	0.2	3	10	50	6
UXE301202	3.0	2.90	0.2	3	12	50	6
UXE301602	3.0	2.90	0.2	3	16	50	6
UXE302002	3.0	2.90	0.2	3	20	50	6
UXE300803	3.0	2.90	0.3	3	8	50	6
UXE301003	3.0	2.90	0.3	3	10	50	6
UXE301203	3.0	2.90	0.3	3	12	50	6
UXE301603	3.0	2.90	0.3	3	16	50	6
UXE302003	3.0	2.90	0.3	3	20	50	6
UXE401002	4.0	3.88	0.2	4	10	50	6
UXE401202	4.0	3.88	0.2	4	12	50	6
UXE401602	4.0	3.88	0.2	4	16	50	6
UXE402002	4.0	3.88	0.2	4	20	60	6
UXE401003	4.0	3.88	0.3	4	10	50	6
UXE401203	4.0	3.88	0.3	4	12	50	6
UXE401603	4.0	3.88	0.3	4	16	50	6
UXE402003	4.0	3.88	0.3	4	20	60	6

unit : mm

UXE 切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	油霧切削 MQL coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UXE100401	18	55	15000~17000	400~600	0.04~0.06	1	溝銑 SLOTTING
UXE100401	18	55	15000~17000	800~1200	0.01~0.025	1	溝銑 SLOTTING
UXE100601	20	55	15000~17000	400~600	0.03~0.05	1	溝銑 SLOTTING
UXE100601	20	55	15000~17000	800~1200	0.008~0.02	1	溝銑 SLOTTING
UXE100801	22	55	15000~17000	300~500	0.03~0.05	1	溝銑 SLOTTING
UXE100801	22	55	15000~17000	600~800	0.008~0.02	1	溝銑 SLOTTING
UXE101001	24	55	15000~17000	300~500	0.02~0.04	1	溝銑 SLOTTING
UXE101001	24	55	15000~17000	500~700	0.008~0.02	1	溝銑 SLOTTING
UXE101201	26	55	15000~17000	200~400	0.02~0.04	1	溝銑 SLOTTING
UXE101201	26	55	15000~17000	400~600	0.008~0.02	1	溝銑 SLOTTING
UXE100402	18	55	15000~17000	500~700	0.04~0.06	1	溝銑 SLOTTING
UXE100402	18	55	15000~17000	900~1300	0.01~0.025	1	溝銑 SLOTTING
UXE100602	20	55	15000~17000	500~700	0.03~0.05	1	溝銑 SLOTTING
UXE100602	20	55	15000~17000	900~1300	0.008~0.02	1	溝銑 SLOTTING
UXE100802	22	55	15000~17000	400~600	0.03~0.05	1	溝銑 SLOTTING
UXE100802	22	55	15000~17000	700~900	0.008~0.02	1	溝銑 SLOTTING
UXE101002	24	55	15000~17000	400~600	0.02~0.04	1	溝銑 SLOTTING
UXE101002	24	55	15000~17000	700~900	0.008~0.02	1	溝銑 SLOTTING
UXE101202	26	55	15000~17000	300~500	0.02~0.04	1	溝銑 SLOTTING
UXE101202	26	55	15000~17000	500~700	0.008~0.02	1	溝銑 SLOTTING
UXE150401	18	70	13000~15000	400~600	0.06~0.08	1.5	溝銑 SLOTTING
UXE150401	18	70	13000~15000	800~1200	0.02~0.04	1.5	溝銑 SLOTTING
UXE150601	20	70	13000~15000	400~600	0.05~0.07	1.5	溝銑 SLOTTING
UXE150601	20	70	13000~15000	800~1200	0.015~0.035	1.5	溝銑 SLOTTING
UXE150801	22	70	13000~15000	300~500	0.05~0.07	1.5	溝銑 SLOTTING
UXE150801	22	70	13000~15000	600~800	0.015~0.035	1.5	溝銑 SLOTTING
UXE151001	24	70	13000~15000	300~500	0.04~0.06	1.5	溝銑 SLOTTING
UXE151001	24	70	13000~15000	500~700	0.01~0.025	1.5	溝銑 SLOTTING
UXE151201	26	70	13000~15000	200~400	0.04~0.06	1.5	溝銑 SLOTTING
UXE151201	26	70	13000~15000	400~600	0.01~0.025	1.5	溝銑 SLOTTING
UXE150402	18	70	13000~15000	500~700	0.06~0.08	1.5	溝銑 SLOTTING
UXE150402	18	70	13000~15000	900~1300	0.02~0.04	1.5	溝銑 SLOTTING
UXE150602	20	70	13000~15000	500~700	0.05~0.07	1.5	溝銑 SLOTTING
UXE150602	20	70	13000~15000	900~1300	0.015~0.035	1.5	溝銑 SLOTTING
UXE150802	22	70	13000~15000	400~600	0.05~0.07	1.5	溝銑 SLOTTING
UXE150802	22	70	13000~15000	700~900	0.015~0.035	1.5	溝銑 SLOTTING
UXE151002	24	70	13000~15000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
UXE151002	24	70	13000~15000	700~900	0.01~0.025	1.5	溝銑 SLOTTING
UXE151202	26	70	13000~15000	300~500	0.04~0.06	1.5	溝銑 SLOTTING
UXE151202	26	70	13000~15000	500~700	0.01~0.025	1.5	溝銑 SLOTTING
UXE200801	18	85	11000~13000	500~700	0.1~0.12	2	溝銑 SLOTTING
UXE200801	18	85	11000~13000	1000~1400	0.02~0.06	2	溝銑 SLOTTING
UXE201001	20	85	11000~13000	400~600	0.09~0.11	2	溝銑 SLOTTING
UXE201001	20	85	11000~13000	1000~1400	0.02~0.06	2	溝銑 SLOTTING
UXE201201	22	85	11000~13000	400~600	0.08~0.1	2	溝銑 SLOTTING
UXE201201	22	85	11000~13000	1000~1400	0.02~0.06	2	溝銑 SLOTTING
UXE201601	26	85	11000~13000	400~600	0.06~0.08	2	溝銑 SLOTTING
UXE201601	26	85	11000~13000	1000~1400	0.02~0.04	2	溝銑 SLOTTING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UXE202001	30	85	11000~13000	300~500	0.05~0.07	2	溝銑 SLOTTING
UXE202001	30	85	11000~13000	800~1200	0.015~0.035	2	溝銑 SLOTTING
UXE200802	18	85	11000~13000	600~800	0.1~0.12	2	溝銑 SLOTTING
UXE200802	18	85	11000~13000	1200~1600	0.02~0.06	2	溝銑 SLOTTING
UXE201002	20	85	11000~13000	500~700	0.09~0.11	2	溝銑 SLOTTING
UXE201002	20	85	11000~13000	1100~1500	0.02~0.06	2	溝銑 SLOTTING
UXE201202	22	85	11000~13000	500~700	0.08~0.1	2	溝銑 SLOTTING
UXE201202	22	85	11000~13000	1100~1500	0.02~0.06	2	溝銑 SLOTTING
UXE201602	26	85	11000~13000	500~700	0.06~0.08	2	溝銑 SLOTTING
UXE201602	26	85	11000~13000	1100~1500	0.02~0.04	2	溝銑 SLOTTING
UXE202002	30	85	11000~13000	400~600	0.05~0.07	2	溝銑 SLOTTING
UXE202002	30	85	11000~13000	900~1300	0.015~0.035	2	溝銑 SLOTTING
UXE300802	18	105	9000~11000	500~700	0.12~0.14	3	溝銑 SLOTTING
UXE300802	18	105	9000~11000	1100~1500	0.03~0.08	3	溝銑 SLOTTING
UXE301002	20	105	9000~11000	400~600	0.12~0.14	3	溝銑 SLOTTING
UXE301002	20	105	9000~11000	1000~1400	0.03~0.08	3	溝銑 SLOTTING
UXE301202	22	105	9000~11000	400~600	0.12~0.14	3	溝銑 SLOTTING
UXE301202	22	105	9000~11000	1000~1400	0.03~0.08	3	溝銑 SLOTTING
UXE301602	26	105	9000~11000	400~600	0.08~0.1	3	溝銑 SLOTTING
UXE301602	26	105	9000~11000	1000~1400	0.02~0.06	3	溝銑 SLOTTING
UXE302002	30	105	9000~11000	300~500	0.06~0.08	3	溝銑 SLOTTING
UXE302002	30	105	9000~11000	700~900	0.01~0.035	3	溝銑 SLOTTING
UXE300803	18	105	9000~11000	600~800	0.12~0.14	3	溝銑 SLOTTING
UXE300803	18	105	9000~11000	1200~1600	0.03~0.08	3	溝銑 SLOTTING
UXE301003	20	105	9000~11000	500~700	0.12~0.14	3	溝銑 SLOTTING
UXE301003	20	105	9000~11000	1100~1500	0.03~0.08	3	溝銑 SLOTTING
UXE301203	22	105	9000~11000	500~700	0.12~0.14	3	溝銑 SLOTTING
UXE301203	22	105	9000~11000	1100~1500	0.03~0.08	3	溝銑 SLOTTING
UXE301603	26	105	9000~11000	500~700	0.08~0.1	3	溝銑 SLOTTING
UXE301603	26	105	9000~11000	1100~1500	0.02~0.06	3	溝銑 SLOTTING
UXE302003	30	105	9000~11000	400~600	0.06~0.08	3	溝銑 SLOTTING
UXE302003	30	105	9000~11000	800~1000	0.01~0.035	3	溝銑 SLOTTING
UXE401002	20	115	7000~9000	700~900	0.13~0.15	4	溝銑 SLOTTING
UXE401002	20	115	7000~9000	1300~1700	0.03~0.08	4	溝銑 SLOTTING
UXE401202	22	115	7000~9000	700~900	0.12~0.14	4	溝銑 SLOTTING
UXE401202	22	115	7000~9000	1300~1700	0.03~0.08	4	溝銑 SLOTTING
UXE401602	26	115	7000~9000	600~800	0.08~0.1	4	溝銑 SLOTTING
UXE401602	26	115	7000~9000	1200~1600	0.02~0.06	4	溝銑 SLOTTING
UXE402002	30	115	7000~9000	500~700	0.06~0.08	4	溝銑 SLOTTING
UXE402002	30	115	7000~9000	900~1100	0.015~0.04	4	溝銑 SLOTTING
UXE401003	20	115	7000~9000	800~1000	0.14~0.16	4	溝銑 SLOTTING
UXE401003	20	115	7000~9000	1400~1800	0.04~0.09	4	溝銑 SLOTTING
UXE401203	22	115	7000~9000	800~1000	0.13~0.15	4	溝銑 SLOTTING
UXE401203	22	115	7000~9000	1400~1800	0.04~0.09	4	溝銑 SLOTTING
UXE401603	26	115	7000~9000	700~900	0.09~0.11	4	溝銑 SLOTTING
UXE401603	26	115	7000~9000	1300~1700	0.03~0.08	4	溝銑 SLOTTING
UXE402003	30	115	7000~9000	600~800	0.07~0.09	4	溝銑 SLOTTING
UXE402003	30	115	7000~9000	1000~1200	0.02~0.05	4	溝銑 SLOTTING

UXE 切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	油霧切削 MQL coolant

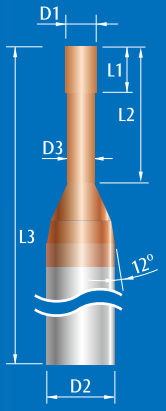
型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UXE100401	18	40	11000~13000	400~600	0.01~0.03	1	溝銑 SLOTTING
UXE100401	18	40	11000~13000	400~600	0.01~0.03	1	溝銑 SLOTTING
UXE100601	20	40	11000~13000	400~600	0.01~0.03	1	溝銑 SLOTTING
UXE100601	20	40	11000~13000	400~600	0.01~0.03	1	溝銑 SLOTTING
UXE100801	22	40	11000~13000	300~500	0.01~0.03	1	溝銑 SLOTTING
UXE100801	22	40	11000~13000	300~500	0.01~0.03	1	溝銑 SLOTTING
UXE101001	24	40	11000~13000	300~500	0.01~0.03	1	溝銑 SLOTTING
UXE101001	24	40	11000~13000	300~500	0.01~0.03	1	溝銑 SLOTTING
UXE101201	26	40	11000~13000	200~400	0.01~0.025	1	溝銑 SLOTTING
UXE101201	26	40	11000~13000	200~400	0.01~0.025	1	溝銑 SLOTTING
UXE100402	18	40	11000~13000	400~600	0.01~0.03	1	溝銑 SLOTTING
UXE100402	18	40	11000~13000	400~600	0.01~0.03	1	溝銑 SLOTTING
UXE100602	20	40	11000~13000	400~600	0.01~0.03	1	溝銑 SLOTTING
UXE100602	20	40	11000~13000	400~600	0.01~0.03	1	溝銑 SLOTTING
UXE100802	22	40	11000~13000	300~500	0.01~0.03	1	溝銑 SLOTTING
UXE100802	22	40	11000~13000	300~500	0.01~0.03	1	溝銑 SLOTTING
UXE101002	24	40	11000~13000	300~500	0.01~0.03	1	溝銑 SLOTTING
UXE101002	24	40	11000~13000	300~500	0.01~0.03	1	溝銑 SLOTTING
UXE101202	26	40	11000~13000	200~400	0.01~0.025	1	溝銑 SLOTTING
UXE101202	26	40	11000~13000	200~400	0.01~0.025	1	溝銑 SLOTTING
UXE150401	18	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150401	18	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150601	20	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150601	20	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150801	22	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150801	22	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE151001	24	55	9000~11000	300~500	0.01~0.025	1.5	溝銑 SLOTTING
UXE151001	24	55	9000~11000	300~500	0.01~0.025	1.5	溝銑 SLOTTING
UXE151201	26	55	9000~11000	300~500	0.01~0.025	1.5	溝銑 SLOTTING
UXE151201	26	55	9000~11000	300~500	0.01~0.025	1.5	溝銑 SLOTTING
UXE150402	18	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150402	18	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150602	20	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150602	20	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150802	22	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150802	22	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE151002	24	55	9000~11000	300~500	0.01~0.025	1.5	溝銑 SLOTTING
UXE151002	24	55	9000~11000	300~500	0.01~0.025	1.5	溝銑 SLOTTING
UXE151202	26	55	9000~11000	300~500	0.01~0.025	1.5	溝銑 SLOTTING
UXE151202	26	55	9000~11000	300~500	0.01~0.025	1.5	溝銑 SLOTTING
UXE200801	18	60	7000~9000	500~700	0.04~0.06	2	溝銑 SLOTTING
UXE200801	18	60	7000~9000	800~1000	0.01~0.025	2	溝銑 SLOTTING
UXE201001	20	60	7000~9000	400~600	0.03~0.05	2	溝銑 SLOTTING
UXE201001	20	60	7000~9000	800~1000	0.008~0.02	2	溝銑 SLOTTING
UXE201201	22	60	7000~9000	400~600	0.03~0.05	2	溝銑 SLOTTING
UXE201201	22	60	7000~9000	800~1000	0.008~0.02	2	溝銑 SLOTTING
UXE201601	26	60	7000~9000	400~600	0.02~0.04	2	溝銑 SLOTTING
UXE201601	26	60	7000~9000	800~1000	0.008~0.015	2	溝銑 SLOTTING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UXE202001	30	60	7000~9000	300~500	0.02~0.04	2	溝銑 SLOTTING
UXE202001	30	60	7000~9000	600~800	0.008~0.013	2	溝銑 SLOTTING
UXE200802	18	60	7000~9000	500~700	0.04~0.06	2	溝銑 SLOTTING
UXE200802	18	60	7000~9000	800~1000	0.01~0.025	2	溝銑 SLOTTING
UXE201002	20	60	7000~9000	400~600	0.03~0.05	2	溝銑 SLOTTING
UXE201002	20	60	7000~9000	800~1000	0.008~0.02	2	溝銑 SLOTTING
UXE201202	22	60	7000~9000	400~600	0.03~0.05	2	溝銑 SLOTTING
UXE201202	22	60	7000~9000	800~1000	0.008~0.02	2	溝銑 SLOTTING
UXE201602	26	60	7000~9000	400~600	0.02~0.04	2	溝銑 SLOTTING
UXE201602	26	60	7000~9000	800~1000	0.008~0.015	2	溝銑 SLOTTING
UXE202002	30	60	7000~9000	300~500	0.02~0.04	2	溝銑 SLOTTING
UXE202002	30	60	7000~9000	600~800	0.008~0.013	2	溝銑 SLOTTING
UXE300802	18	65	5000~7000	500~700	0.05~0.07	3	溝銑 SLOTTING
UXE300802	18	65	5000~7000	900~1100	0.01~0.03	3	溝銑 SLOTTING
UXE301002	20	65	5000~7000	400~600	0.05~0.07	3	溝銑 SLOTTING
UXE301002	20	65	5000~7000	800~1000	0.01~0.03	3	溝銑 SLOTTING
UXE301202	22	65	5000~7000	400~600	0.05~0.07	3	溝銑 SLOTTING
UXE301202	22	65	5000~7000	800~1000	0.01~0.03	3	溝銑 SLOTTING
UXE301602	26	65	5000~7000	400~600	0.03~0.05	3	溝銑 SLOTTING
UXE301602	26	65	5000~7000	400~600	0.03~0.05	3	溝銑 SLOTTING
UXE302002	30	65	5000~7000	300~500	0.02~0.04	3	溝銑 SLOTTING
UXE302002	30	65	5000~7000	300~500	0.02~0.04	3	溝銑 SLOTTING
UXE300803	18	65	5000~7000	600~800	0.05~0.07	3	溝銑 SLOTTING
UXE300803	18	65	5000~7000	1000~1200	0.01~0.03	3	溝銑 SLOTTING
UXE301003	20	65	5000~7000	500~700	0.05~0.07	3	溝銑 SLOTTING
UXE301003	20	65	5000~7000	900~1100	0.01~0.03	3	溝銑 SLOTTING
UXE301203	22	65	5000~7000	500~700	0.05~0.07	3	溝銑 SLOTTING
UXE301203	22	65	5000~7000	900~1100	0.01~0.03	3	溝銑 SLOTTING
UXE301603	26	65	5000~7000	500~700	0.03~0.05	3	溝銑 SLOTTING
UXE301603	26	65	5000~7000	500~700	0.03~0.05	3	溝銑 SLOTTING
UXE302003	30	65	5000~7000	400~600	0.02~0.04	3	溝銑 SLOTTING
UXE302003	30	65	5000~7000	400~600	0.02~0.04	3	溝銑 SLOTTING
UXE401002	20	65	4000~5000	700~900	0.08~0.1	4	溝銑 SLOTTING
UXE401002	20	65	4000~5000	1100~1300	0.02~0.04	4	溝銑 SLOTTING
UXE401202	22	65	4000~5000	700~900	0.06~0.08	4	溝銑 SLOTTING
UXE401202	22	65	4000~5000	1000~1200	0.02~0.04	4	溝銑 SLOTTING
UXE401602	26	65	4000~5000	600~800	0.05~0.07	4	溝銑 SLOTTING
UXE401602	26	65	4000~5000	900~1100	0.01~0.03	4	溝銑 SLOTTING
UXE402002	30	65	4000~5000	500~700	0.04~0.06	4	溝銑 SLOTTING
UXE402002	30	65	4000~5000	800~1000	0.01~0.03	4	溝銑 SLOTTING
UXE401003	20	65	4000~5000	800~1000	0.08~0.1	4	溝銑 SLOTTING
UXE401003	20	65	4000~5000	1200~1400	0.02~0.04	4	溝銑 SLOTTING
UXE401203	22	65	4000~5000	800~1000	0.06~0.08	4	溝銑 SLOTTING
UXE401203	22	65	4000~5000	1100~1300	0.02~0.04	4	溝銑 SLOTTING
UXE401603	26	65	4000~5000	700~900	0.05~0.07	4	溝銑 SLOTTING
UXE401603	26	65	4000~5000	1000~1200	0.01~0.03	4	溝銑 SLOTTING
UXE402003	30	65	4000~5000	600~800	0.04~0.06	4	溝銑 SLOTTING
UXE402003	30	65	4000~5000	900~1100	0.01~0.03	4	溝銑 SLOTTING

UNE Long Neck, Corner Radius

End Mills 深溝用圓鼻立銑刀





直徑 D1	1.0	1.5	2.0	3.0	4.0
R徑公差值 R Tolerance	+0.02 0	+0.02 0	+0.02 0	+0.02 0	+0.02 0
直徑公差值 D1 Tolerance	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02
柄徑 Shank(h6)	Ø6				
柄徑公差值 D2 Tolerance	0 -0.008				

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	R R角 Conner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UNE1004	1.0	0.95	0.1	1.5	4	50	6
UNE1006	1.0	0.95	0.1	1.5	6	50	6
UNE1008	1.0	0.95	0.1	1.5	8	50	6
UNE1010	1.0	0.95	0.1	1.5	10	50	6
UNE1012	1.0	0.95	0.1	1.5	12	50	6
UNE1504	1.5	1.44	0.1	1.5	4	50	6
UNE1508	1.5	1.44	0.1	1.5	8	50	6
UNE1510	1.5	1.44	0.1	1.5	10	50	6
UNE1512	1.5	1.44	0.1	1.5	12	50	6
UNE2008	2.0	1.92	0.2	2	8	50	6
UNE2010	2.0	1.92	0.2	2	10	50	6
UNE2012	2.0	1.92	0.2	2	12	50	6
UNE2016	2.0	1.92	0.2	2	16	50	6
UNE3008	3.0	2.90	0.2	3	8	50	6
UNE3012	3.0	2.90	0.2	3	12	50	6
UNE3016	3.0	2.90	0.2	3	16	50	6
UNE3020	3.0	2.90	0.2	3	20	50	6
UNE4010	4.0	3.88	0.2	4	10	50	6
UNE4016	4.0	3.88	0.2	4	16	50	6
UNE4020	4.0	3.88	0.2	4	20	60	6

unit : mm

精銑 Finishing

中銑 Semi-finishing ------

粗銑 Roughing ------

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

UNE 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UNE1004	16	60	17000~18000	300~500	0.04~0.06	1	溝銑 SLOTTING
UNE1004	16	60	17000~18000	700~900	0.01~0.025	1	溝銑 SLOTTING
UNE1006	18	60	17000~18000	300~500	0.03~0.05	1	溝銑 SLOTTING
UNE1006	18	60	17000~18000	700~900	0.008~0.015	1	溝銑 SLOTTING
UNE1008	20	60	17000~18000	200~400	0.03~0.05	1	溝銑 SLOTTING
UNE1008	20	60	17000~18000	600~800	0.008~0.015	1	溝銑 SLOTTING
UNE1010	22	60	17000~18000	200~400	0.02~0.04	1	溝銑 SLOTTING
UNE1010	22	60	17000~18000	500~700	0.008~0.015	1	溝銑 SLOTTING
UNE1012	24	60	17000~18000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNE1012	24	60	17000~18000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNE1504	16	80	16000~17000	400~600	0.06~0.08	1.5	溝銑 SLOTTING
UNE1504	16	80	16000~17000	800~1000	0.015~0.035	1.5	溝銑 SLOTTING
UNE1508	18	80	16000~17000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
UNE1508	18	80	16000~17000	800~1000	0.01~0.025	1.5	溝銑 SLOTTING
UNE1510	20	80	16000~17000	300~500	0.04~0.06	1.5	溝銑 SLOTTING
UNE1510	20	80	16000~17000	700~900	0.01~0.025	1.5	溝銑 SLOTTING
UNE1512	22	80	16000~17000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
UNE1512	22	80	16000~17000	700~900	0.008~0.015	1.5	溝銑 SLOTTING
UNE2008	20	100	14000~16000	500~700	0.05~0.07	2	溝銑 SLOTTING
UNE2008	20	100	14000~16000	900~1100	0.02~0.04	2	溝銑 SLOTTING
UNE2010	22	100	14000~16000	500~700	0.04~0.06	2	溝銑 SLOTTING
UNE2010	22	100	14000~16000	900~1100	0.01~0.03	2	溝銑 SLOTTING
UNE2012	24	100	14000~16000	400~600	0.04~0.06	2	溝銑 SLOTTING
UNE2012	24	100	14000~16000	800~1000	0.01~0.03	2	溝銑 SLOTTING
UNE2016	28	100	14000~16000	300~500	0.03~0.05	2	溝銑 SLOTTING
UNE2016	28	100	14000~16000	600~800	0.008~0.02	2	溝銑 SLOTTING
UNE3008	15	125	11000~13000	600~800	0.12~0.14	3	溝銑 SLOTTING
UNE3008	15	125	11000~13000	1200~1600	0.04~0.08	3	溝銑 SLOTTING
UNE3012	19	125	11000~13000	600~800	0.1~0.12	3	溝銑 SLOTTING
UNE3012	19	125	11000~13000	1200~1600	0.03~0.07	3	溝銑 SLOTTING
UNE3016	23	125	11000~13000	600~800	0.08~0.1	3	溝銑 SLOTTING
UNE3016	23	125	11000~13000	1000~1400	0.02~0.05	3	溝銑 SLOTTING
UNE3020	27	125	11000~13000	500~700	0.06~0.08	3	溝銑 SLOTTING
UNE3020	27	125	11000~13000	900~1100	0.02~0.04	3	溝銑 SLOTTING
UNE4010	17	140	9000~11000	800~1000	0.12~0.14	4	溝銑 SLOTTING
UNE4010	17	140	9000~11000	1400~1800	0.04~0.08	4	溝銑 SLOTTING
UNE4016	23	140	9000~11000	600~800	0.1~0.12	4	溝銑 SLOTTING
UNE4016	23	140	9000~11000	1200~1600	0.03~0.07	4	溝銑 SLOTTING
UNE4020	27	140	9000~11000	600~800	0.06~0.08	4	溝銑 SLOTTING
UNE4020	27	140	9000~11000	1200~1600	0.02~0.04	4	溝銑 SLOTTING

UNE

切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UNE1004	16	50	14000~15000	300~500	0.03~0.05	1	溝銑 SLOTTING
UNE1004	16	50	14000~15000	500~700	0.01~0.03	1	溝銑 SLOTTING
UNE1006	18	50	14000~15000	300~500	0.02~0.04	1	溝銑 SLOTTING
UNE1006	18	50	14000~15000	300~500	0.02~0.04	1	溝銑 SLOTTING
UNE1008	20	50	14000~15000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNE1008	20	50	14000~15000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNE1010	22	50	14000~15000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNE1010	22	50	14000~15000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNE1012	24	50	14000~15000	200~400	0.008~0.015	1	溝銑 SLOTTING
UNE1012	24	50	14000~15000	200~400	0.008~0.015	1	溝銑 SLOTTING
UNE1504	16	65	13000~14000	300~500	0.04~0.06	1.5	溝銑 SLOTTING
UNE1504	16	65	13000~14000	600~800	0.015~0.03	1.5	溝銑 SLOTTING
UNE1508	18	65	13000~14000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
UNE1508	18	65	13000~14000	600~800	0.01~0.02	1.5	溝銑 SLOTTING
UNE1510	20	65	13000~14000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
UNE1510	20	65	13000~14000	600~800	0.01~0.02	1.5	溝銑 SLOTTING
UNE1512	22	65	13000~14000	200~400	0.02~0.04	1.5	溝銑 SLOTTING
UNE1512	22	65	13000~14000	200~400	0.02~0.04	1.5	溝銑 SLOTTING
UNE2008	20	85	12000~13000	400~600	0.03~0.05	2	溝銑 SLOTTING
UNE2008	20	85	12000~13000	700~900	0.01~0.02	2	溝銑 SLOTTING
UNE2010	22	85	12000~13000	300~500	0.03~0.05	2	溝銑 SLOTTING
UNE2010	22	85	12000~13000	600~800	0.01~0.02	2	溝銑 SLOTTING
UNE2012	24	85	12000~13000	300~500	0.02~0.04	2	溝銑 SLOTTING
UNE2012	24	85	12000~13000	300~500	0.02~0.04	2	溝銑 SLOTTING
UNE2016	28	85	12000~13000	200~400	0.02~0.04	2	溝銑 SLOTTING
UNE2016	28	85	12000~13000	200~400	0.02~0.04	2	溝銑 SLOTTING
UNE3008	15	105	11000~12000	500~700	0.06~0.08	3	溝銑 SLOTTING
UNE3008	15	105	11000~12000	900~1100	0.02~0.04	3	溝銑 SLOTTING
UNE3012	19	105	11000~12000	400~600	0.06~0.08	3	溝銑 SLOTTING
UNE3012	19	105	11000~12000	800~1000	0.02~0.04	3	溝銑 SLOTTING
UNE3016	23	105	11000~12000	400~600	0.04~0.06	3	溝銑 SLOTTING
UNE3016	23	105	11000~12000	800~1000	0.01~0.025	3	溝銑 SLOTTING
UNE3020	27	105	11000~12000	300~500	0.03~0.05	3	溝銑 SLOTTING
UNE3020	27	105	11000~12000	600~800	0.01~0.02	3	溝銑 SLOTTING
UNE4010	17	115	7000~9000	500~700	0.06~0.08	4	溝銑 SLOTTING
UNE4010	17	115	7000~9000	900~1100	0.02~0.04	4	溝銑 SLOTTING
UNE4016	23	115	7000~9000	400~600	0.04~0.06	4	溝銑 SLOTTING
UNE4016	23	115	7000~9000	800~1000	0.01~0.03	4	溝銑 SLOTTING
UNE4020	27	115	7000~9000	400~600	0.03~0.05	4	溝銑 SLOTTING
UNE4020	27	115	7000~9000	600~800	0.01~0.03	4	溝銑 SLOTTING

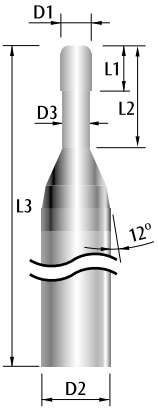
UNER Long Neck, Corner Radius

深溝用圓鼻立銑刀 End Mills



直徑 D1	1.0	1.5	2.0	2.5	3.0
R徑公差值 R Tolerance	+0.02 0	+0.02 0	+0.02 0	+0.02 0	+0.02 0
直徑公差值 D1 Tolerance	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02

柄徑 Shank(h6)	Ø4	Ø6
柄徑公差值 D2 Tolerance	0 -0.008	0 -0.008



型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	R R角 Conner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UNER1006	1.0	0.95	0.2	1.5	6	50	4
UNER1008	1.0	0.95	0.2	1.5	8	50	4
UNER1010	1.0	0.95	0.2	1.5	10	50	4
UNER1012	1.0	0.95	0.2	1.5	12	50	4
UNER1508	1.5	1.44	0.2	2	8	50	4
UNER1510	1.5	1.44	0.2	2	10	50	4
UNER1512	1.5	1.44	0.2	2	12	50	4
UNER1516	1.5	1.44	0.2	2	16	50	4
UNER2008	2.0	1.92	0.2	3	8	50	4
UNER2010	2.0	1.92	0.2	3	10	50	4
UNER2012	2.0	1.92	0.2	3	12	50	4
UNER2016	2.0	1.92	0.2	3	16	50	4
UNER2020	2.0	1.92	0.2	3	20	50	4
UNER2510	2.5	2.40	0.2	3	10	50	4
UNER2512	2.5	2.40	0.2	3	12	50	4
UNER2516	2.5	2.40	0.2	3	16	50	4
UNER2520	2.5	2.40	0.2	3	20	50	4
UNER3010	3.0	2.90	0.2	4	10	50	6
UNER3012	3.0	2.90	0.2	4	12	50	6
UNER3016	3.0	2.90	0.2	4	16	50	6
UNER3020	3.0	2.90	0.2	4	20	60	6
UNER3025	3.0	2.90	0.2	4	25	60	6

unit : mm



精銑 Finishing

中銑 Semi-finishing ------

粗銑 Roughing ------

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

UNER 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UNER1006	13	60	17000~18000	300~500	0.03~0.05	1	溝銑 SLOTTING
UNER1006	13	60	17000~18000	700~900	0.008~0.015	1	溝銑 SLOTTING
UNER1008	15	60	17000~18000	200~400	0.03~0.05	1	溝銑 SLOTTING
UNER1008	15	60	17000~18000	600~800	0.008~0.015	1	溝銑 SLOTTING
UNER1010	17	60	17000~18000	200~400	0.02~0.04	1	溝銑 SLOTTING
UNER1010	17	60	17000~18000	500~700	0.008~0.015	1	溝銑 SLOTTING
UNER1012	19	60	17000~18000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNER1012	19	60	17000~18000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNER1508	17	80	16000~17000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
UNER1508	17	80	16000~17000	800~1000	0.01~0.025	1.5	溝銑 SLOTTING
UNER1510	19	80	16000~17000	300~500	0.04~0.06	1.5	溝銑 SLOTTING
UNER1510	19	80	16000~17000	700~900	0.01~0.025	1.5	溝銑 SLOTTING
UNER1512	21	80	16000~17000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
UNER1512	21	80	16000~17000	700~900	0.008~0.015	1.5	溝銑 SLOTTING
UNER1516	25	80	16000~17000	200~400	0.02~0.04	1.5	溝銑 SLOTTING
UNER1516	25	80	16000~17000	500~700	0.008~0.015	1.5	溝銑 SLOTTING
UNER2008	20	100	14000~16000	500~700	0.05~0.07	2	溝銑 SLOTTING
UNER2008	20	100	14000~16000	900~1100	0.02~0.04	2	溝銑 SLOTTING
UNER2010	22	100	14000~16000	500~700	0.04~0.06	2	溝銑 SLOTTING
UNER2010	22	100	14000~16000	900~1100	0.01~0.03	2	溝銑 SLOTTING
UNER2012	24	100	14000~16000	400~600	0.04~0.06	2	溝銑 SLOTTING
UNER2012	24	100	14000~16000	800~1000	0.01~0.03	2	溝銑 SLOTTING
UNER2016	28	100	14000~16000	300~500	0.03~0.05	2	溝銑 SLOTTING
UNER2016	28	100	14000~16000	600~800	0.008~0.02	2	溝銑 SLOTTING
UNER2020	32	100	14000~16000	300~500	0.02~0.04	2	溝銑 SLOTTING
UNER2020	32	100	14000~16000	500~700	0.008~0.02	2	溝銑 SLOTTING
UNER2510	20	110	13000~14000	600~800	0.06~0.08	2.5	溝銑 SLOTTING
UNER2510	20	110	13000~14000	1100~1400	0.02~0.05	2.5	溝銑 SLOTTING
UNER2512	22	110	13000~14000	500~700	0.06~0.08	2.5	溝銑 SLOTTING
UNER2512	22	110	13000~14000	1000~1300	0.02~0.05	2.5	溝銑 SLOTTING
UNER2516	26	110	13000~14000	400~600	0.04~0.06	2.5	溝銑 SLOTTING
UNER2516	26	110	13000~14000	800~1000	0.01~0.025	2.5	溝銑 SLOTTING
UNER2520	30	110	13000~14000	300~500	0.03~0.05	2.5	溝銑 SLOTTING
UNER2520	30	110	13000~14000	600~800	0.01~0.02	2.5	溝銑 SLOTTING
UNER3010	18	125	11000~13000	700~900	0.1~0.12	3	溝銑 SLOTTING
UNER3010	18	125	11000~13000	1300~1700	0.03~0.07	3	溝銑 SLOTTING
UNER3012	20	125	11000~13000	600~800	0.1~0.12	3	溝銑 SLOTTING
UNER3012	20	125	11000~13000	1200~1600	0.03~0.07	3	溝銑 SLOTTING
UNER3016	24	125	11000~13000	600~800	0.08~0.1	3	溝銑 SLOTTING
UNER3016	24	125	11000~13000	1000~1400	0.02~0.05	3	溝銑 SLOTTING
UNER3020	28	125	11000~13000	500~700	0.06~0.08	3	溝銑 SLOTTING
UNER3020	28	125	11000~13000	900~1100	0.02~0.04	3	溝銑 SLOTTING
UNER3025	33	125	11000~13000	400~600	0.05~0.07	3	溝銑 SLOTTING
UNER3025	33	125	11000~13000	800~1000	0.01~0.03	3	溝銑 SLOTTING

UNER 切削條件表 MILLING CONDITIONS

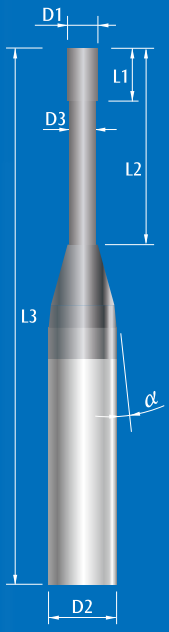
被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UNER1006	13	50	14000~15000	300~500	0.02~0.04	1	溝銑 SLOTTING
UNER1006	13	50	14000~15000	300~500	0.02~0.04	1	溝銑 SLOTTING
UNER1008	15	50	14000~15000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNER1008	15	50	14000~15000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNER1010	17	50	14000~15000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNER1010	17	50	14000~15000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNER1012	19	50	14000~15000	200~400	0.008~0.015	1	溝銑 SLOTTING
UNER1012	19	50	14000~15000	200~400	0.008~0.015	1	溝銑 SLOTTING
UNER1508	17	65	13000~14000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
UNER1508	17	65	13000~14000	600~800	0.01~0.02	1.5	溝銑 SLOTTING
UNER1510	19	65	13000~14000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
UNER1510	19	65	13000~14000	600~800	0.01~0.02	1.5	溝銑 SLOTTING
UNER1512	21	65	13000~14000	200~400	0.02~0.04	1.5	溝銑 SLOTTING
UNER1512	21	65	13000~14000	200~400	0.02~0.04	1.5	溝銑 SLOTTING
UNER1516	25	65	13000~14000	200~400	0.01~0.03	1.5	溝銑 SLOTTING
UNER1516	25	65	13000~14000	200~400	0.01~0.03	1.5	溝銑 SLOTTING
UNER2008	20	85	12000~13000	400~600	0.03~0.05	2	溝銑 SLOTTING
UNER2008	20	85	12000~13000	700~900	0.01~0.02	2	溝銑 SLOTTING
UNER2010	22	85	12000~13000	300~500	0.03~0.05	2	溝銑 SLOTTING
UNER2010	22	85	12000~13000	600~800	0.01~0.02	2	溝銑 SLOTTING
UNER2012	24	85	12000~13000	300~500	0.02~0.04	2	溝銑 SLOTTING
UNER2012	24	85	12000~13000	300~500	0.02~0.04	2	溝銑 SLOTTING
UNER2016	28	85	12000~13000	200~400	0.02~0.04	2	溝銑 SLOTTING
UNER2016	28	85	12000~13000	200~400	0.02~0.04	2	溝銑 SLOTTING
UNER2020	32	85	12000~13000	200~400	0.01~0.03	2	溝銑 SLOTTING
UNER2020	32	85	12000~13000	200~400	0.01~0.03	2	溝銑 SLOTTING
UNER2510	20	95	11000~12000	400~600	0.04~0.06	2.5	溝銑 SLOTTING
UNER2510	20	95	11000~12000	600~800	0.02~0.04	2.5	溝銑 SLOTTING
UNER2512	22	95	11000~12000	400~600	0.03~0.05	2.5	溝銑 SLOTTING
UNER2512	22	95	11000~12000	600~800	0.01~0.02	2.5	溝銑 SLOTTING
UNER2516	26	95	11000~12000	300~500	0.02~0.04	2.5	溝銑 SLOTTING
UNER2516	26	95	11000~12000	300~500	0.02~0.04	2.5	溝銑 SLOTTING
UNER2520	30	95	11000~12000	200~400	0.01~0.03	2.5	溝銑 SLOTTING
UNER2520	30	95	11000~12000	200~400	0.01~0.03	2.5	溝銑 SLOTTING
UNER3010	18	105	11000~12000	500~700	0.06~0.08	3	溝銑 SLOTTING
UNER3010	18	105	11000~12000	900~1100	0.02~0.04	3	溝銑 SLOTTING
UNER3012	20	105	11000~12000	400~600	0.06~0.08	3	溝銑 SLOTTING
UNER3012	20	105	11000~12000	800~1000	0.02~0.04	3	溝銑 SLOTTING
UNER3016	24	105	11000~12000	400~600	0.04~0.06	3	溝銑 SLOTTING
UNER3016	24	105	11000~12000	800~1000	0.01~0.025	3	溝銑 SLOTTING
UNER3020	28	105	11000~12000	300~500	0.03~0.05	3	溝銑 SLOTTING
UNER3020	28	105	11000~12000	600~800	0.01~0.02	3	溝銑 SLOTTING
UNER3025	33	105	11000~12000	200~400	0.02~0.04	3	溝銑 SLOTTING
UNER3025	33	105	11000~12000	200~400	0.02~0.04	3	溝銑 SLOTTING

UDE Long Neck

End Mills 深溝用立銑刀





直徑 D1	0.2	0.3	0.4	0.5	1.0	1.2	1.5
直徑公差值 D1 Tolerance	0 −0.015	0 −0.015	0 −0.015	0 −0.015	0 −0.02	0 −0.02	0 −0.02

直徑 D1	2.0	2.5	3.0
直徑公差值 D1 Tolerance	0 −0.02	0 −0.02	0 −0.02

柄徑 Shank(h6)	Ø4	Ø6
柄徑公差值 D2 Tolerance	0 -0.008	0 -0.008

D1≦0. 5&L2≦4mm α=15°
D1>0. 5&L2<4mm α=15°
The Other α=12°

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UDE0201	0.2	0.18	0.3	1	50	4
UDE0202	0.2	0.18	0.3	2	50	4
UDE0301	0.3	0.26	0.4	1	50	4
UDE0302	0.3	0.26	0.4	2	50	4
UDE0303	0.3	0.26	0.4	3	50	4
UDE0402	0.4	0.36	0.6	2	50	4
UDE0403	0.4	0.36	0.6	3	50	4
UDE0404	0.4	0.36	0.6	4	50	4
UDE0502	0.5	0.46	0.8	2	50	4

unit : mm

精銑 Finishing
中銑 Semi-finishing ------
粗銑 Roughing ------
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

UDE Long Neck

深溝用立銑刀 End Mills

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UDE0504	0.5	0.46	0.8	4	50	4
UDE0506	0.5	0.46	0.8	6	50	4
UDE0602	0.6	0.55	0.9	2	50	4
UDE0604	0.6	0.55	0.9	4	50	4
UDE0606	0.6	0.55	0.9	6	50	4
UDE0702	0.7	0.65	1	2	50	4
UDE0704	0.7	0.65	1	4	50	4
UDE0706	0.7	0.65	1	6	50	4
UDE0802	0.8	0.75	1.2	2	50	4
UDE0804	0.8	0.75	1.2	4	50	4
UDE0806	0.8	0.75	1.2	6	50	4
UDE0808	0.8	0.75	1.2	8	50	4
UDE1006	1.0	0.95	1.5	6	50	4
UDE1008	1.0	0.95	1.5	8	50	4
UDE1010	1.0	0.95	1.5	10	50	4
UDE1012	1.0	0.95	1.5	12	50	4
UDE1206	1.2	1.15	1.8	6	50	4
UDE1208	1.2	1.15	1.8	8	50	4
UDE1210	1.2	1.15	1.8	10	50	4
UDE1508	1.5	1.44	2	8	50	4
UDE1510	1.5	1.44	2	10	50	4
UDE1512	1.5	1.44	2	12	50	4
UDE1516	1.5	1.44	2	16	50	4
UDE2008	2.0	1.92	3	8	50	4
UDE2010	2.0	1.92	3	10	50	4
UDE2012	2.0	1.92	3	12	50	4
UDE2016	2.0	1.92	3	16	50	4
UDE2020	2.0	1.92	3	20	50	4
UDE2510	2.5	2.40	3	10	50	4
UDE2512	2.5	2.40	3	12	50	4
UDE2516	2.5	2.40	3	16	50	4
UDE2520	2.5	2.40	3	20	50	4
UDE3010	3.0	2.90	4	10	50	6
UDE3012	3.0	2.90	4	12	50	6
UDE3016	3.0	2.90	4	16	50	6
UDE3020	3.0	2.90	4	20	60	6
UDE3025	3.0	2.90	4	25	60	6

unit : mm

UDE 切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	油霧切削 MQL coolant

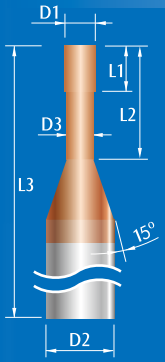
型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UDE0201	10	15	18000~20000	100~150	0.003~0.006	0.2	溝銑 SLOTTING
UDE0201	10	15	18000~20000	100~150	0.003~0.006	0.2	溝銑 SLOTTING
UDE0202	11	15	18000~20000	100~150	0.003~0.006	0.2	溝銑 SLOTTING
UDE0202	11	15	18000~20000	100~150	0.003~0.006	0.2	溝銑 SLOTTING
UDE0301	10	20	18000~20000	100~150	0.005~0.008	0.3	溝銑 SLOTTING
UDE0301	10	20	18000~20000	100~150	0.005~0.008	0.3	溝銑 SLOTTING
UDE0302	12	20	18000~20000	100~150	0.005~0.008	0.3	溝銑 SLOTTING
UDE0302	12	20	18000~20000	100~150	0.005~0.008	0.3	溝銑 SLOTTING
UDE0303	13	20	18000~20000	100~150	0.005~0.008	0.3	溝銑 SLOTTING
UDE0303	13	20	18000~20000	100~150	0.005~0.008	0.3	溝銑 SLOTTING
UDE0402	12	25	18000~20000	100~200	0.008~0.012	0.4	溝銑 SLOTTING
UDE0402	12	25	18000~20000	100~200	0.008~0.012	0.4	溝銑 SLOTTING
UDE0403	13	25	18000~20000	100~200	0.008~0.012	0.4	溝銑 SLOTTING
UDE0403	13	25	18000~20000	100~200	0.008~0.012	0.4	溝銑 SLOTTING
UDE0404	14	25	18000~20000	100~200	0.008~0.012	0.4	溝銑 SLOTTING
UDE0404	14	25	18000~20000	100~200	0.008~0.012	0.4	溝銑 SLOTTING
UDE0502	11	30	17000~18000	150~250	0.008~0.015	0.5	溝銑 SLOTTING
UDE0502	11	30	17000~18000	150~250	0.008~0.015	0.5	溝銑 SLOTTING
UDE0504	13	30	17000~18000	100~200	0.008~0.015	0.5	溝銑 SLOTTING
UDE0504	13	30	17000~18000	100~200	0.008~0.015	0.5	溝銑 SLOTTING
UDE0506	15	30	17000~18000	100~200	0.008~0.015	0.5	溝銑 SLOTTING
UDE0506	15	30	17000~18000	100~200	0.008~0.015	0.5	溝銑 SLOTTING
UDE0602	11	35	17000~18000	200~300	0.01~0.018	0.6	溝銑 SLOTTING
UDE0602	11	35	17000~18000	200~300	0.01~0.018	0.6	溝銑 SLOTTING
UDE0604	13	35	17000~18000	150~250	0.008~0.015	0.6	溝銑 SLOTTING
UDE0604	13	35	17000~18000	150~250	0.008~0.015	0.6	溝銑 SLOTTING
UDE0606	15	35	17000~18000	150~250	0.008~0.015	0.6	溝銑 SLOTTING
UDE0606	15	35	17000~18000	150~250	0.008~0.015	0.6	溝銑 SLOTTING
UDE0702	11	40	17000~18000	200~300	0.01~0.02	0.7	溝銑 SLOTTING
UDE0702	11	40	17000~18000	200~300	0.01~0.02	0.7	溝銑 SLOTTING
UDE0704	13	40	17000~18000	150~250	0.01~0.02	0.7	溝銑 SLOTTING
UDE0704	13	40	17000~18000	150~250	0.01~0.02	0.7	溝銑 SLOTTING
UDE0706	15	40	17000~18000	150~250	0.01~0.02	0.7	溝銑 SLOTTING
UDE0706	15	40	17000~18000	150~250	0.01~0.02	0.7	溝銑 SLOTTING
UDE0802	12	45	16000~17000	250~350	0.015~0.025	0.8	溝銑 SLOTTING
UDE0802	12	45	16000~17000	250~350	0.015~0.025	0.8	溝銑 SLOTTING
UDE0804	14	45	16000~17000	250~350	0.015~0.025	0.8	溝銑 SLOTTING
UDE0804	14	45	16000~17000	250~350	0.015~0.025	0.8	溝銑 SLOTTING
UDE0806	16	45	16000~17000	200~300	0.015~0.025	0.8	溝銑 SLOTTING
UDE0806	16	45	16000~17000	200~300	0.015~0.025	0.8	溝銑 SLOTTING
UDE0808	18	45	16000~17000	150~250	0.01~0.02	0.8	溝銑 SLOTTING
UDE0808	18	45	16000~17000	150~250	0.01~0.02	0.8	溝銑 SLOTTING
UDE1006	13	55	16000~17000	300~500	0.03~0.05	1	溝銑 SLOTTING
UDE1006	13	55	16000~17000	600~800	0.008~0.02	1	溝銑 SLOTTING
UDE1008	15	55	16000~17000	300~500	0.03~0.05	1	溝銑 SLOTTING
UDE1008	15	55	16000~17000	600~800	0.008~0.02	1	溝銑 SLOTTING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UDE1010	17	55	16000~17000	300~500	0.03~0.05	1	溝銑 SLOTTING
UDE1010	17	55	16000~17000	600~800	0.008~0.02	1	溝銑 SLOTTING
UDE1012	19	55	16000~17000	200~400	0.02~0.04	1	溝銑 SLOTTING
UDE1012	19	55	16000~17000	400~600	0.008~0.02	1	溝銑 SLOTTING
UDE1206	13	65	16000~17000	400~600	0.04~0.06	1.2	溝銑 SLOTTING
UDE1206	13	65	16000~17000	700~900	0.01~0.025	1.2	溝銑 SLOTTING
UDE1208	15	65	16000~17000	400~600	0.03~0.05	1.2	溝銑 SLOTTING
UDE1208	15	65	16000~17000	700~900	0.01~0.025	1.2	溝銑 SLOTTING
UDE1210	17	65	16000~17000	300~500	0.03~0.05	1.2	溝銑 SLOTTING
UDE1210	17	65	16000~17000	600~800	0.008~0.02	1.2	溝銑 SLOTTING
UDE1508	15	75	15000~16000	500~700	0.05~0.07	1.5	溝銑 SLOTTING
UDE1508	15	75	15000~16000	800~1000	0.01~0.03	1.5	溝銑 SLOTTING
UDE1510	17	75	15000~16000	500~700	0.05~0.07	1.5	溝銑 SLOTTING
UDE1510	17	75	15000~16000	800~1000	0.01~0.03	1.5	溝銑 SLOTTING
UDE1512	19	75	15000~16000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
UDE1512	19	75	15000~16000	700~900	0.01~0.025	1.5	溝銑 SLOTTING
UDE1516	23	75	15000~16000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
UDE1516	23	75	15000~16000	600~800	0.008~0.02	1.5	溝銑 SLOTTING
UDE2008	15	95	13000~15000	600~800	0.06~0.08	2	溝銑 SLOTTING
UDE2008	15	95	13000~15000	1000~1400	0.015~0.04	2	溝銑 SLOTTING
UDE2010	17	95	13000~15000	600~800	0.06~0.08	2	溝銑 SLOTTING
UDE2010	17	95	13000~15000	1000~1400	0.015~0.04	2	溝銑 SLOTTING
UDE2012	19	95	13000~15000	500~700	0.05~0.07	2	溝銑 SLOTTING
UDE2012	19	95	13000~15000	800~1000	0.01~0.03	2	溝銑 SLOTTING
UDE2016	23	95	13000~15000	400~600	0.04~0.06	2	溝銑 SLOTTING
UDE2016	23	95	13000~15000	800~1000	0.008~0.02	2	溝銑 SLOTTING
UDE2020	27	95	13000~15000	300~500	0.04~0.06	2	溝銑 SLOTTING
UDE2020	27	95	13000~15000	700~900	0.008~0.02	2	溝銑 SLOTTING
UDE2510	17	120	13000~15000	600~800	0.08~0.1	2.5	溝銑 SLOTTING
UDE2510	17	120	13000~15000	1200~1600	0.03~0.05	2.5	溝銑 SLOTTING
UDE2512	19	120	13000~15000	400~600	0.08~0.1	2.5	溝銑 SLOTTING
UDE2512	19	120	13000~15000	1000~1400	0.03~0.05	2.5	溝銑 SLOTTING
UDE2516	23	120	13000~15000	400~600	0.07~0.09	2.5	溝銑 SLOTTING
UDE2516	23	120	13000~15000	1000~1400	0.02~0.04	2.5	溝銑 SLOTTING
UDE2520	27	120	13000~15000	400~600	0.05~0.07	2.5	溝銑 SLOTTING
UDE2520	27	120	13000~15000	800~1200	0.015~0.035	2.5	溝銑 SLOTTING
UDE3010	17	125	11000~13000	800~1000	0.1~0.12	3	溝銑 SLOTTING
UDE3010	17	125	11000~13000	1300~1700	0.04~0.07	3	溝銑 SLOTTING
UDE3012	19	125	11000~13000	600~800	0.08~0.1	3	溝銑 SLOTTING
UDE3012	19	125	11000~13000	1100~1500	0.03~0.06	3	溝銑 SLOTTING
UDE3016	23	125	11000~13000	500~700	0.07~0.09	3	溝銑 SLOTTING
UDE3016	23	125	11000~13000	1000~1400	0.02~0.05	3	溝銑 SLOTTING
UDE3020	27	125	11000~13000	400~600	0.06~0.08	3	溝銑 SLOTTING
UDE3020	27	125	11000~13000	1000~1400	0.015~0.035	3	溝銑 SLOTTING
UDE3025	32	125	11000~13000	400~600	0.05~0.07	3	溝銑 SLOTTING
UDE3025	32	125	11000~13000	1000~1400	0.015~0.035	3	溝銑 SLOTTING

LNE Long Neck

End Mills 深溝用立銑刀





直徑 D1	0.5	1.0	1.5	2.0	2.5	3.0
直徑公差值 D1 Tolerance	0 −0.015	0 −0.02	0 −0.02	0 −0.02	0 −0.02	0 −0.02

柄徑 Shank(h6)	Ø4	Ø6
柄徑公差值 D2 Tolerance	0 -0.008	0 -0.008

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
LNE0502	0.5	0.46	0.8	2	50	4
LNE0504	0.5	0.46	0.8	4	50	4
LNE0506	0.5	0.46	0.8	6	50	4
LNE1006	1.0	0.95	1.5	6	50	4
LNE1008	1.0	0.95	1.5	8	50	4
LNE1010	1.0	0.95	1.5	10	50	4
LNE1012	1.0	0.95	1.5	12	50	4
LNE1508	1.5	1.45	2	8	50	4
LNE1510	1.5	1.45	2	10	50	4
LNE1512	1.5	1.45	2	12	50	4
LNE1516	1.5	1.45	2	16	50	4
LNE2008	2.0	1.92	3	8	50	4
LNE2010	2.0	1.92	3	10	50	4
LNE2012	2.0	1.92	3	12	50	4
LNE2016	2.0	1.92	3	16	50	4
LNE2020	2.0	1.92	3	20	50	4
LNE2510	2.5	2.42	3	10	50	4
LNE2512	2.5	2.42	3	12	50	4
LNE2516	2.5	2.42	3	16	50	4
LNE2520	2.5	2.42	3	20	50	4
LNE3010	3.0	2.90	4	10	50	6
LNE3012	3.0	2.90	4	12	50	6
LNE3016	3.0	2.90	4	16	50	6
LNE3020	3.0	2.90	4	20	60	6
LNE3025	3.0	2.90	4	25	60	6

unit : mm

精銑 Finishing

中銑 Semi-finishing ------

粗銑 Roughing ------

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

LNE 切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 :*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LNE0502	11	16000~18000	200~300	0.015~0.02	0.5	溝銑 SLOTTING
LNE0502	11	16000~18000	300~500	0.005~0.015	0.5	溝銑 SLOTTING
LNE0504	13	16000~18000	150~300	0.015~0.02	0.5	溝銑 SLOTTING
LNE0504	13	16000~18000	300~500	0.005~0.015	0.5	溝銑 SLOTTING
LNE0506	15	16000~18000	150~300	0.01~0.015	0.5	溝銑 SLOTTING
LNE0506	15	16000~18000	300~500	0.005~0.01	0.5	溝銑 SLOTTING
LNE1006	15	16000~18000	200~300	0.02~0.04	1	溝銑 SLOTTING
LNE1006	15	16000~18000	300~500	0.005~0.015	1	溝銑 SLOTTING
LNE1008	17	16000~18000	200~300	0.02~0.04	1	溝銑 SLOTTING
LNE1008	17	16000~18000	300~500	0.005~0.015	1	溝銑 SLOTTING
LNE1010	19	16000~18000	200~300	0.02~0.03	1	溝銑 SLOTTING
LNE1010	19	16000~18000	300~500	0.005~0.015	1	溝銑 SLOTTING
LNE1012	20	16000~18000	200~300	0.015~0.02	1	溝銑 SLOTTING
LNE1012	20	16000~18000	300~500	0.005~0.015	1	溝銑 SLOTTING
LNE1508	15	13000~15000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
LNE1508	15	13000~15000	700~900	0.01~0.03	1.5	溝銑 SLOTTING
LNE1510	17	13000~15000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
LNE1510	17	13000~15000	700~900	0.01~0.03	1.5	溝銑 SLOTTING
LNE1512	19	13000~15000	400~600	0.04~0.05	1.5	溝銑 SLOTTING
LNE1512	19	13000~15000	700~900	0.01~0.03	1.5	溝銑 SLOTTING
LNE1516	21	13000~15000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
LNE1516	21	13000~15000	600~800	0.01~0.025	1.5	溝銑 SLOTTING
LNE2008	15	12000~14000	600~800	0.06~0.08	2	溝銑 SLOTTING
LNE2008	15	12000~14000	800~1200	0.015~0.045	2	溝銑 SLOTTING
LNE2010	17	12000~14000	400~600	0.04~0.06	2	溝銑 SLOTTING
LNE2010	17	12000~14000	800~1200	0.015~0.03	2	溝銑 SLOTTING
LNE2012	19	12000~14000	400~600	0.04~0.06	2	溝銑 SLOTTING
LNE2012	19	12000~14000	700~1000	0.01~0.03	2	溝銑 SLOTTING
LNE2016	23	12000~14000	400~600	0.03~0.04	2	溝銑 SLOTTING
LNE2016	23	12000~14000	700~1000	0.01~0.02	2	溝銑 SLOTTING
LNE2020	26	12000~14000	400~600	0.03~0.04	2	溝銑 SLOTTING
LNE2020	26	12000~14000	700~1000	0.01~0.02	2	溝銑 SLOTTING
LNE2510	17	12000~14000	800~1000	0.08~0.1	2.5	溝銑 SLOTTING
LNE2510	17	12000~14000	1000~1400	0.025~0.06	2.5	溝銑 SLOTTING
LNE2512	19	12000~14000	800~1000	0.07~0.09	2.5	溝銑 SLOTTING
LNE2512	19	12000~14000	1000~1400	0.025~0.06	2.5	溝銑 SLOTTING
LNE2516	23	12000~14000	700~900	0.05~0.07	2.5	溝銑 SLOTTING
LNE2516	23	12000~14000	900~1200	0.01~0.035	2.5	溝銑 SLOTTING
LNE2520	26	12000~14000	400~600	0.03~0.05	2.5	溝銑 SLOTTING
LNE2520	26	12000~14000	800~1000	0.01~0.025	2.5	溝銑 SLOTTING
LNE3010	20	11000~13000	800~1000	0.06~0.08	3	溝銑 SLOTTING
LNE3010	20	11000~13000	1200~1400	0.015~0.04	3	溝銑 SLOTTING
LNE3012	22	11000~13000	600~800	0.06~0.08	3	溝銑 SLOTTING
LNE3012	22	11000~13000	1200~1400	0.015~0.04	3	溝銑 SLOTTING
LNE3016	26	11000~13000	400~600	0.06~0.08	3	溝銑 SLOTTING
LNE3016	26	11000~13000	1000~1200	0.015~0.04	3	溝銑 SLOTTING
LNE3020	30	11000~13000	400~600	0.04~0.06	3	溝銑 SLOTTING
LNE3020	30	11000~13000	800~1200	0.01~0.03	3	溝銑 SLOTTING
LNE3025	34	11000~13000	400~600	0.02~0.04	3	溝銑 SLOTTING
LNE3025	34	11000~13000	600~800	0.01~0.015	3	溝銑 SLOTTING

LNE 切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼 / 碳工具鋼 :*Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
LNE0502	11	16000~18000	200~400	0.015~0.02	0.5	溝銑 SLOTTING
LNE0502	11	16000~18000	400~600	0.005~0.015	0.5	溝銑 SLOTTING
LNE0504	13	16000~18000	150~300	0.015~0.02	0.5	溝銑 SLOTTING
LNE0504	13	16000~18000	300~500	0.005~0.015	0.5	溝銑 SLOTTING
LNE0506	15	16000~18000	150~300	0.01~0.015	0.5	溝銑 SLOTTING
LNE0506	15	16000~18000	300~500	0.005~0.01	0.5	溝銑 SLOTTING
LNE1006	15	16000~18000	400~600	0.03~0.05	1	溝銑 SLOTTING
LNE1006	15	16000~18000	600~800	0.01~0.025	1	溝銑 SLOTTING
LNE1008	17	16000~18000	400~600	0.03~0.05	1	溝銑 SLOTTING
LNE1008	17	16000~18000	600~800	0.01~0.025	1	溝銑 SLOTTING
LNE1010	19	16000~18000	300~500	0.02~0.03	1	溝銑 SLOTTING
LNE1010	19	16000~18000	500~700	0.005~0.015	1	溝銑 SLOTTING
LNE1012	20	16000~18000	300~500	0.02~0.03	1	溝銑 SLOTTING
LNE1012	20	16000~18000	500~700	0.005~0.015	1	溝銑 SLOTTING
LNE1508	15	15000~17000	800~1000	0.06~0.08	1.5	溝銑 SLOTTING
LNE1508	15	15000~17000	1200~1400	0.02~0.05	1.5	溝銑 SLOTTING
LNE1510	17	15000~17000	800~1000	0.05~0.07	1.5	溝銑 SLOTTING
LNE1510	17	15000~17000	1000~1200	0.015~0.04	1.5	溝銑 SLOTTING
LNE1512	19	15000~17000	700~900	0.04~0.06	1.5	溝銑 SLOTTING
LNE1512	19	15000~17000	1000~1200	0.015~0.03	1.5	溝銑 SLOTTING
LNE1516	21	15000~17000	600~800	0.04~0.06	1.5	溝銑 SLOTTING
LNE1516	21	15000~17000	900~1100	0.015~0.03	1.5	溝銑 SLOTTING
LNE2008	15	14000~16000	1200~1400	0.1~0.12	2	溝銑 SLOTTING
LNE2008	15	14000~16000	1600~1800	0.03~0.07	2	溝銑 SLOTTING
LNE2010	17	14000~16000	1200~1400	0.08~0.1	2	溝銑 SLOTTING
LNE2010	17	14000~16000	1600~1800	0.025~0.05	2	溝銑 SLOTTING
LNE2012	19	14000~16000	1200~1400	0.06~0.08	2	溝銑 SLOTTING
LNE2012	19	14000~16000	1600~1800	0.02~0.04	2	溝銑 SLOTTING
LNE2016	23	14000~16000	800~1000	0.04~0.05	2	溝銑 SLOTTING
LNE2016	23	14000~16000	1200~1400	0.015~0.03	2	溝銑 SLOTTING
LNE2020	26	14000~16000	600~800	0.03~0.05	2	溝銑 SLOTTING
LNE2020	26	14000~16000	1000~1200	0.01~0.025	2	溝銑 SLOTTING
LNE2510	17	13000~15000	1400~1600	0.1~0.12	2.5	溝銑 SLOTTING
LNE2510	17	13000~15000	1800~2000	0.03~0.06	2.5	溝銑 SLOTTING
LNE2512	19	13000~15000	1400~1600	0.08~0.1	2.5	溝銑 SLOTTING
LNE2512	19	13000~15000	1800~2000	0.03~0.06	2.5	溝銑 SLOTTING
LNE2516	23	13000~15000	1200~1400	0.06~0.08	2.5	溝銑 SLOTTING
LNE2516	23	13000~15000	1500~1700	0.025~0.05	2.5	溝銑 SLOTTING
LNE2520	26	13000~15000	800~1000	0.04~0.06	2.5	溝銑 SLOTTING
LNE2520	26	13000~15000	1200~1400	0.015~0.03	2.5	溝銑 SLOTTING
LNE3010	20	12000~14000	1800~2000	0.12~0.14	3	溝銑 SLOTTING
LNE3010	20	12000~14000	2100~2300	0.035~0.08	3	溝銑 SLOTTING
LNE3012	22	12000~14000	1800~2000	0.1~0.12	3	溝銑 SLOTTING
LNE3012	22	12000~14000	2100~2300	0.03~0.07	3	溝銑 SLOTTING
LNE3016	26	12000~14000	1600~1800	0.08~0.1	3	溝銑 SLOTTING
LNE3016	26	12000~14000	1900~2100	0.02~0.045	3	溝銑 SLOTTING
LNE3020	30	12000~14000	1200~1400	0.06~0.08	3	溝銑 SLOTTING
LNE3020	30	12000~14000	1500~1700	0.015~0.035	3	溝銑 SLOTTING
LNE3025	34	12000~14000	800~1000	0.04~0.06	3	溝銑 SLOTTING
LNE3025	34	12000~14000	1200~1400	0.015~0.03	3	溝銑 SLOTTING

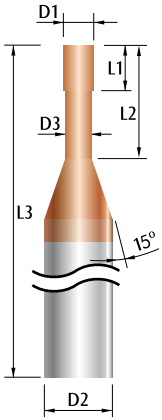
LNE 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LNE0502	11	16000~18000	200~300	0.015~0.02	0.5	溝銑 SLOTTING
LNE0502	11	16000~18000	400~500	0.005~0.015	0.5	溝銑 SLOTTING
LNE0504	13	16000~18000	150~250	0.015~0.02	0.5	溝銑 SLOTTING
LNE0504	13	16000~18000	300~400	0.005~0.015	0.5	溝銑 SLOTTING
LNE0506	15	16000~18000	150~220	0.01~0.015	0.5	溝銑 SLOTTING
LNE0506	15	16000~18000	250~350	0.005~0.01	0.5	溝銑 SLOTTING
LNE1006	15	16000~18000	400~500	0.03~0.05	1	溝銑 SLOTTING
LNE1006	15	16000~18000	600~700	0.01~0.025	1	溝銑 SLOTTING
LNE1008	17	16000~18000	350~450	0.03~0.05	1	溝銑 SLOTTING
LNE1008	17	16000~18000	550~650	0.01~0.025	1	溝銑 SLOTTING
LNE1010	19	16000~18000	300~400	0.02~0.03	1	溝銑 SLOTTING
LNE1010	19	16000~18000	500~600	0.005~0.015	1	溝銑 SLOTTING
LNE1012	20	16000~18000	300~400	0.02~0.03	1	溝銑 SLOTTING
LNE1012	20	16000~18000	500~600	0.005~0.015	1	溝銑 SLOTTING
LNE1508	15	15000~17000	700~900	0.06~0.08	1.5	溝銑 SLOTTING
LNE1508	15	15000~17000	1100~1300	0.02~0.05	1.5	溝銑 SLOTTING
LNE1510	17	15000~17000	700~900	0.05~0.07	1.5	溝銑 SLOTTING
LNE1510	17	15000~17000	900~1100	0.015~0.04	1.5	溝銑 SLOTTING
LNE1512	19	15000~17000	600~800	0.04~0.06	1.5	溝銑 SLOTTING
LNE1512	19	15000~17000	900~1100	0.015~0.03	1.5	溝銑 SLOTTING
LNE1516	21	15000~17000	500~700	0.04~0.06	1.5	溝銑 SLOTTING
LNE1516	21	15000~17000	800~1000	0.015~0.03	1.5	溝銑 SLOTTING
LNE2008	15	14000~16000	1100~1300	0.1~0.12	2	溝銑 SLOTTING
LNE2008	15	14000~16000	1500~1700	0.03~0.07	2	溝銑 SLOTTING
LNE2010	17	14000~16000	1100~1300	0.08~0.1	2	溝銑 SLOTTING
LNE2010	17	14000~16000	1500~1700	0.025~0.05	2	溝銑 SLOTTING
LNE2012	19	14000~16000	1100~1300	0.06~0.08	2	溝銑 SLOTTING
LNE2012	19	14000~16000	1500~1700	0.02~0.04	2	溝銑 SLOTTING
LNE2016	23	14000~16000	700~900	0.04~0.05	2	溝銑 SLOTTING
LNE2016	23	14000~16000	1100~1300	0.015~0.03	2	溝銑 SLOTTING
LNE2020	26	14000~16000	500~700	0.03~0.05	2	溝銑 SLOTTING
LNE2020	26	14000~16000	1000~1200	0.01~0.025	2	溝銑 SLOTTING
LNE2510	17	13000~15000	1300~1500	0.1~0.12	2.5	溝銑 SLOTTING
LNE2510	17	13000~15000	1700~1900	0.03~0.06	2.5	溝銑 SLOTTING
LNE2512	19	13000~15000	1300~1500	0.08~0.1	2.5	溝銑 SLOTTING
LNE2512	19	13000~15000	1700~1900	0.03~0.06	2.5	溝銑 SLOTTING
LNE2516	23	13000~15000	1100~1300	0.06~0.08	2.5	溝銑 SLOTTING
LNE2516	23	13000~15000	1400~1600	0.025~0.05	2.5	溝銑 SLOTTING
LNE2520	26	13000~15000	700~900	0.04~0.06	2.5	溝銑 SLOTTING
LNE2520	26	13000~15000	1100~1300	0.015~0.03	2.5	溝銑 SLOTTING
LNE3010	20	12000~14000	1700~1900	0.12~0.14	3	溝銑 SLOTTING
LNE3010	20	12000~14000	2000~2200	0.035~0.08	3	溝銑 SLOTTING
LNE3012	22	12000~14000	1700~1900	0.1~0.12	3	溝銑 SLOTTING
LNE3012	22	12000~14000	2000~2200	0.03~0.07	3	溝銑 SLOTTING
LNE3016	26	12000~14000	1400~1600	0.08~0.1	3	溝銑 SLOTTING
LNE3016	26	12000~14000	1800~2000	0.02~0.045	3	溝銑 SLOTTING
LNE3020	30	12000~14000	1000~1200	0.06~0.08	3	溝銑 SLOTTING
LNE3020	30	12000~14000	1300~1500	0.015~0.035	3	溝銑 SLOTTING
LNE3025	34	12000~14000	700~900	0.04~0.06	3	溝銑 SLOTTING
LNE3025	34	12000~14000	1100~1300	0.015~0.03	3	溝銑 SLOTTING

LNH Long Neck

深溝用立銑刀 End Mills





直徑 D1	1.0	1.5	2.0	2.5	3.0
直徑公差值 D1 Tolerance	0 −0.02	0 −0.02	0 −0.02	0 −0.02	0 −0.02
柄徑 Shank(h6)	Ø4	Ø6			
柄徑公差值 D2 Tolerance	0 -0.008	0 -0.008			

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
LNH1006	1.0	0.95	1.5	6	50	4
LNH1008	1.0	0.95	1.5	8	50	4
LNH1010	1.0	0.95	1.5	10	50	4
LNH1012	1.0	0.95	1.5	12	50	4
LNH1508	1.5	1.45	2	8	50	4
LNH1510	1.5	1.45	2	10	50	4
LNH1512	1.5	1.45	2	12	50	4
LNH1516	1.5	1.45	2	16	50	4
LNH2008	2.0	1.92	3	8	50	4
LNH2010	2.0	1.92	3	10	50	4
LNH2012	2.0	1.92	3	12	50	4
LNH2016	2.0	1.92	3	16	50	4
LNH2020	2.0	1.92	3	20	50	4
LNH2510	2.5	2.42	3	10	50	4
LNH2512	2.5	2.42	3	12	50	4
LNH2516	2.5	2.42	3	16	50	4
LNH2520	2.5	2.42	3	20	50	4
LNH3010	3.0	2.90	4	10	50	6
LNH3012	3.0	2.90	4	12	50	6
LNH3016	3.0	2.90	4	16	50	6
LNH3020	3.0	2.90	4	20	60	6
LNH3025	3.0	2.90	4	25	60	6

unit : mm



精銑 Finishing

中銑 Semi-finishing ------

粗銑 Roughing ------

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

LNH 切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 :*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
LNH1006	15	16000~18000	200~300	0.02~0.04	1	溝銑 SLOTTING
LNH1006	15	16000~18000	300~500	0.01~0.015	1	溝銑 SLOTTING
LNH1008	17	16000~18000	200~300	0.02~0.04	1	溝銑 SLOTTING
LNH1008	17	16000~18000	300~500	0.01~0.015	1	溝銑 SLOTTING
LNH1010	19	16000~18000	200~300	0.02~0.03	1	溝銑 SLOTTING
LNH1010	19	16000~18000	300~500	0.005~0.015	1	溝銑 SLOTTING
LNH1012	20	16000~18000	200~300	0.015~0.02	1	溝銑 SLOTTING
LNH1012	20	16000~18000	300~500	0.005~0.015	1	溝銑 SLOTTING
LNH1508	15	13000~15000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
LNH1508	15	13000~15000	700~900	0.01~0.03	1.5	溝銑 SLOTTING
LNH1510	17	13000~15000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
LNH1510	17	13000~15000	700~900	0.01~0.03	1.5	溝銑 SLOTTING
LNH1512	19	13000~15000	400~600	0.04~0.05	1.5	溝銑 SLOTTING
LNH1512	19	13000~15000	700~900	0.01~0.03	1.5	溝銑 SLOTTING
LNH1516	21	13000~15000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
LNH1516	21	13000~15000	600~800	0.01~0.025	1.5	溝銑 SLOTTING
LNH2008	15	12000~14000	600~800	0.06~0.08	2	溝銑 SLOTTING
LNH2008	15	12000~14000	800~1200	0.015~0.045	2	溝銑 SLOTTING
LNH2010	17	12000~14000	400~600	0.04~0.06	2	溝銑 SLOTTING
LNH2010	17	12000~14000	800~1200	0.015~0.03	2	溝銑 SLOTTING
LNH2012	19	12000~14000	400~600	0.04~0.06	2	溝銑 SLOTTING
LNH2012	19	12000~14000	700~1100	0.01~0.03	2	溝銑 SLOTTING
LNH2016	23	12000~14000	400~600	0.03~0.04	2	溝銑 SLOTTING
LNH2016	23	12000~14000	700~900	0.01~0.02	2	溝銑 SLOTTING
LNH2020	26	12000~14000	400~600	0.03~0.04	2	溝銑 SLOTTING
LNH2020	26	12000~14000	600~800	0.01~0.02	2	溝銑 SLOTTING
LNH2510	17	12000~14000	800~1000	0.08~0.1	2.5	溝銑 SLOTTING
LNH2510	17	12000~14000	1000~1400	0.025~0.05	2.5	溝銑 SLOTTING
LNH2512	19	12000~14000	600~800	0.06~0.08	2.5	溝銑 SLOTTING
LNH2512	19	12000~14000	1000~1400	0.025~0.05	2.5	溝銑 SLOTTING
LNH2516	23	12000~14000	500~700	0.06~0.08	2.5	溝銑 SLOTTING
LNH2516	23	12000~14000	900~1200	0.02~0.05	2.5	溝銑 SLOTTING
LNH2520	26	12000~14000	400~600	0.04~0.06	2.5	溝銑 SLOTTING
LNH2520	26	12000~14000	800~1000	0.015~0.03	2.5	溝銑 SLOTTING
LNH3010	20	11000~13000	1000~1200	0.08~0.1	3	溝銑 SLOTTING
LNH3010	20	11000~13000	1400~1800	0.02~0.06	3	溝銑 SLOTTING
LNH3012	22	11000~13000	800~1000	0.07~0.09	3	溝銑 SLOTTING
LNH3012	22	11000~13000	1200~1600	0.02~0.05	3	溝銑 SLOTTING
LNH3016	26	11000~13000	600~800	0.06~0.08	3	溝銑 SLOTTING
LNH3016	26	11000~13000	1000~1400	0.015~0.045	3	溝銑 SLOTTING
LNH3020	30	11000~13000	500~700	0.05~0.07	3	溝銑 SLOTTING
LNH3020	30	11000~13000	800~1200	0.01~0.035	3	溝銑 SLOTTING
LNH3025	34	11000~13000	400~600	0.04~0.06	3	溝銑 SLOTTING
LNH3025	34	11000~13000	600~800	0.01~0.025	3	溝銑 SLOTTING

LNH 切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼 / 碳工具鋼 :*Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LNH1006	15	16000~18000	400~600	0.03~0.05	1	溝銑 SLOTTING
LNH1006	15	16000~18000	600~800	0.01~0.025	1	溝銑 SLOTTING
LNH1008	17	16000~18000	400~600	0.03~0.05	1	溝銑 SLOTTING
LNH1008	17	16000~18000	600~800	0.01~0.025	1	溝銑 SLOTTING
LNH1010	19	16000~18000	300~500	0.02~0.03	1	溝銑 SLOTTING
LNH1010	19	16000~18000	500~700	0.005~0.015	1	溝銑 SLOTTING
LNH1012	20	16000~18000	300~500	0.02~0.03	1	溝銑 SLOTTING
LNH1012	20	16000~18000	500~700	0.005~0.015	1	溝銑 SLOTTING
LNH1508	15	15000~17000	800~1000	0.06~0.08	1.5	溝銑 SLOTTING
LNH1508	15	15000~17000	1200~1400	0.02~0.05	1.5	溝銑 SLOTTING
LNH1510	17	15000~17000	800~1000	0.05~0.07	1.5	溝銑 SLOTTING
LNH1510	17	15000~17000	1000~1200	0.015~0.04	1.5	溝銑 SLOTTING
LNH1512	19	15000~17000	700~900	0.04~0.06	1.5	溝銑 SLOTTING
LNH1512	19	15000~17000	1000~1200	0.015~0.03	1.5	溝銑 SLOTTING
LNH1516	21	15000~17000	600~800	0.04~0.06	1.5	溝銑 SLOTTING
LNH1516	21	15000~17000	900~1100	0.015~0.03	1.5	溝銑 SLOTTING
LNH2008	15	14000~16000	1200~1400	0.1~0.12	2	溝銑 SLOTTING
LNH2008	15	14000~16000	1600~1800	0.03~0.07	2	溝銑 SLOTTING
LNH2010	17	14000~16000	1200~1400	0.08~0.1	2	溝銑 SLOTTING
LNH2010	17	14000~16000	1600~1800	0.025~0.05	2	溝銑 SLOTTING
LNH2012	19	14000~16000	1200~1400	0.06~0.08	2	溝銑 SLOTTING
LNH2012	19	14000~16000	1600~1800	0.02~0.04	2	溝銑 SLOTTING
LNH2016	23	14000~16000	800~1000	0.04~0.05	2	溝銑 SLOTTING
LNH2016	23	14000~16000	1200~1400	0.015~0.04	2	溝銑 SLOTTING
LNH2020	26	14000~16000	600~800	0.04~0.05	2	溝銑 SLOTTING
LNH2020	26	14000~16000	1000~1200	0.01~0.03	2	溝銑 SLOTTING
LNH2510	17	13000~15000	1400~1600	0.11~0.13	2.5	溝銑 SLOTTING
LNH2510	17	13000~15000	1800~2000	0.025~0.06	2.5	溝銑 SLOTTING
LNH2512	19	13000~15000	1400~1600	0.1~0.12	2.5	溝銑 SLOTTING
LNH2512	19	13000~15000	1800~2000	0.025~0.06	2.5	溝銑 SLOTTING
LNH2516	23	13000~15000	1200~1400	0.06~0.08	2.5	溝銑 SLOTTING
LNH2516	23	13000~15000	1500~1700	0.02~0.05	2.5	溝銑 SLOTTING
LNH2520	26	13000~15000	800~1000	0.04~0.06	2.5	溝銑 SLOTTING
LNH2520	26	13000~15000	1200~1400	0.015~0.03	2.5	溝銑 SLOTTING
LNH3010	20	12000~14000	1800~2000	0.12~0.14	3	溝銑 SLOTTING
LNH3010	20	12000~14000	2100~2300	0.035~0.1	3	溝銑 SLOTTING
LNH3012	22	12000~14000	1800~2000	0.11~0.13	3	溝銑 SLOTTING
LNH3012	22	12000~14000	2100~2300	0.03~0.09	3	溝銑 SLOTTING
LNH3016	26	12000~14000	1600~1800	0.1~0.12	3	溝銑 SLOTTING
LNH3016	26	12000~14000	1900~2100	0.03~0.07	3	溝銑 SLOTTING
LNH3020	30	12000~14000	1200~1400	0.08~0.1	3	溝銑 SLOTTING
LNH3020	30	12000~14000	1500~1700	0.02~0.06	3	溝銑 SLOTTING
LNH3025	34	12000~14000	800~1000	0.06~0.08	3	溝銑 SLOTTING
LNH3025	34	12000~14000	1200~1400	0.02~0.05	3	溝銑 SLOTTING

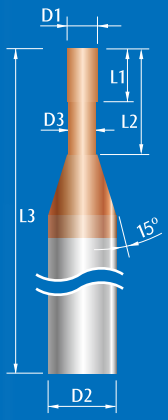
LNH 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)				
冷卻方式 Coolant Type	濕式切削 Wet coolant				
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
LNH1006	15	16000~18000	350~550	0.03~0.05	1	溝銑 SLOTTING
LNH1006	15	16000~18000	550~750	0.01~0.025	1	溝銑 SLOTTING
LNH1008	17	16000~18000	350~550	0.03~0.05	1	溝銑 SLOTTING
LNH1008	17	16000~18000	550~750	0.01~0.025	1	溝銑 SLOTTING
LNH1010	19	16000~18000	300~500	0.02~0.03	1	溝銑 SLOTTING
LNH1010	19	16000~18000	500~700	0.005~0.015	1	溝銑 SLOTTING
LNH1012	20	16000~18000	300~400	0.02~0.03	1	溝銑 SLOTTING
LNH1012	20	16000~18000	500~600	0.005~0.015	1	溝銑 SLOTTING
LNH1508	15	15000~17000	700~900	0.06~0.08	1.5	溝銑 SLOTTING
LNH1508	15	15000~17000	1100~1300	0.02~0.05	1.5	溝銑 SLOTTING
LNH1510	17	15000~17000	700~900	0.05~0.07	1.5	溝銑 SLOTTING
LNH1510	17	15000~17000	1000~1200	0.015~0.04	1.5	溝銑 SLOTTING
LNH1512	19	15000~17000	600~800	0.04~0.06	1.5	溝銑 SLOTTING
LNH1512	19	15000~17000	900~1100	0.015~0.03	1.5	溝銑 SLOTTING
LNH1516	21	15000~17000	500~700	0.04~0.06	1.5	溝銑 SLOTTING
LNH1516	21	15000~17000	800~1000	0.015~0.03	1.5	溝銑 SLOTTING
LNH2008	15	14000~16000	1100~1300	0.1~0.12	2	溝銑 SLOTTING
LNH2008	15	14000~16000	1500~1700	0.03~0.07	2	溝銑 SLOTTING
LNH2010	17	14000~16000	1100~1300	0.08~0.1	2	溝銑 SLOTTING
LNH2010	17	14000~16000	1500~1700	0.025~0.05	2	溝銑 SLOTTING
LNH2012	19	14000~16000	1000~1200	0.06~0.08	2	溝銑 SLOTTING
LNH2012	19	14000~16000	1400~1600	0.02~0.04	2	溝銑 SLOTTING
LNH2016	23	14000~16000	700~900	0.04~0.05	2	溝銑 SLOTTING
LNH2016	23	14000~16000	1100~1300	0.015~0.04	2	溝銑 SLOTTING
LNH2020	26	14000~16000	500~700	0.04~0.05	2	溝銑 SLOTTING
LNH2020	26	14000~16000	900~1100	0.01~0.03	2	溝銑 SLOTTING
LNH2510	17	13000~15000	1300~1500	0.11~0.13	2.5	溝銑 SLOTTING
LNH2510	17	13000~15000	1700~1900	0.025~0.06	2.5	溝銑 SLOTTING
LNH2512	19	13000~15000	1300~1500	0.1~0.12	2.5	溝銑 SLOTTING
LNH2512	19	13000~15000	1700~1900	0.025~0.06	2.5	溝銑 SLOTTING
LNH2516	23	13000~15000	1100~1300	0.06~0.08	2.5	溝銑 SLOTTING
LNH2516	23	13000~15000	1400~1600	0.02~0.05	2.5	溝銑 SLOTTING
LNH2520	26	13000~15000	700~900	0.04~0.06	2.5	溝銑 SLOTTING
LNH2520	26	13000~15000	1100~1300	0.015~0.03	2.5	溝銑 SLOTTING
LNH3010	20	12000~14000	1600~1800	0.12~0.14	3	溝銑 SLOTTING
LNH3010	20	12000~14000	2000~2200	0.035~0.1	3	溝銑 SLOTTING
LNH3012	22	12000~14000	1600~1800	0.11~0.13	3	溝銑 SLOTTING
LNH3012	22	12000~14000	2000~2200	0.03~0.09	3	溝銑 SLOTTING
LNH3016	26	12000~14000	1500~1700	0.1~0.12	3	溝銑 SLOTTING
LNH3016	26	12000~14000	1800~2000	0.03~0.07	3	溝銑 SLOTTING
LNH3020	30	12000~14000	1100~1300	0.08~0.1	3	溝銑 SLOTTING
LNH3020	30	12000~14000	1500~1700	0.02~0.06	3	溝銑 SLOTTING
LNH3025	34	12000~14000	700~900	0.06~0.08	3	溝銑 SLOTTING
LNH3025	34	12000~14000	1200~1400	0.02~0.05	3	溝銑 SLOTTING

LNX Long Neck

End Mills 深溝用立銑刀





直徑 D1	1.0	1.5	2.0	2.5	3.0
直徑公差值 D1 Tolerance	0 −0.02	0 −0.02	0 −0.02	0 −0.02	0 −0.02
柄徑 Shank(h6)	∅4	∅6			
柄徑公差值 D2 Tolerance	0 -0.008	0 -0.008			

精銑 Finishing

中銑 Semi-finishing ------

粗銑 Roughing ------

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
LNX1006	1.0	0.95	1.5	6	50	4
LNX1008	1.0	0.95	1.5	8	50	4
LNX1010	1.0	0.95	1.5	10	50	4
LNX1012	1.0	0.95	1.5	12	50	4
LNX1508	1.5	1.45	2	8	50	4
LNX1510	1.5	1.45	2	10	50	4
LNX1512	1.5	1.45	2	12	50	4
LNX1516	1.5	1.45	2	16	50	4
LNX2008	2.0	1.92	3	8	50	4
LNX2010	2.0	1.92	3	10	50	4
LNX2012	2.0	1.92	3	12	50	4
LNX2016	2.0	1.92	3	16	50	4
LNX2020	2.0	1.92	3	20	50	4
LNX2510	2.5	2.42	3	10	50	4
LNX2512	2.5	2.42	3	12	50	4
LNX2516	2.5	2.42	3	16	50	4
LNX2520	2.5	2.42	3	20	50	4
LNX3010	3.0	2.90	4	10	50	6
LNX3012	3.0	2.90	4	12	50	6
LNX3016	3.0	2.90	4	16	50	6
LNX3020	3.0	2.90	4	20	60	6
LNX3025	3.0	2.90	4	25	60	6

unit : mm

LNX 切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 :*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LNX1006	15	16000~18000	200~300	0.02~0.04	1	溝銑 SLOTTING
LNX1006	15	16000~18000	300~500	0.005~0.015	1	溝銑 SLOTTING
LNX1008	17	16000~18000	200~300	0.02~0.04	1	溝銑 SLOTTING
LNX1008	17	16000~18000	300~500	0.01~0.015	1	溝銑 SLOTTING
LNX1010	19	16000~18000	200~300	0.02~0.03	1	溝銑 SLOTTING
LNX1010	19	16000~18000	300~500	0.005~0.015	1	溝銑 SLOTTING
LNX1012	20	16000~18000	200~300	0.015~0.02	1	溝銑 SLOTTING
LNX1012	20	16000~18000	300~500	0.005~0.015	1	溝銑 SLOTTING
LNX1508	15	13000~15000	500~700	0.04~0.06	1.5	溝銑 SLOTTING
LNX1508	15	13000~15000	700~900	0.01~0.03	1.5	溝銑 SLOTTING
LNX1510	17	13000~15000	500~700	0.04~0.06	1.5	溝銑 SLOTTING
LNX1510	17	13000~15000	700~900	0.01~0.03	1.5	溝銑 SLOTTING
LNX1512	19	13000~15000	400~600	0.04~0.05	1.5	溝銑 SLOTTING
LNX1512	19	13000~15000	600~800	0.01~0.03	1.5	溝銑 SLOTTING
LNX1516	21	13000~15000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
LNX1516	21	13000~15000	500~600	0.01~0.03	1.5	溝銑 SLOTTING
LNX2008	15	12000~14000	600~800	0.06~0.08	2	溝銑 SLOTTING
LNX2008	15	12000~14000	800~1000	0.03~0.06	2	溝銑 SLOTTING
LNX2010	17	12000~14000	600~800	0.05~0.07	2	溝銑 SLOTTING
LNX2010	17	12000~14000	800~1000	0.03~0.05	2	溝銑 SLOTTING
LNX2012	19	12000~14000	500~700	0.05~0.06	2	溝銑 SLOTTING
LNX2012	19	12000~14000	700~900	0.03~0.05	2	溝銑 SLOTTING
LNX2016	23	12000~14000	400~600	0.04~0.05	2	溝銑 SLOTTING
LNX2016	23	12000~14000	600~800	0.01~0.03	2	溝銑 SLOTTING
LNX2020	26	12000~14000	400~600	0.03~0.04	2	溝銑 SLOTTING
LNX2020	26	12000~14000	600~800	0.01~0.03	2	溝銑 SLOTTING
LNX2510	17	12000~14000	800~1000	0.08~0.1	2.5	溝銑 SLOTTING
LNX2510	17	12000~14000	1000~1200	0.05~0.08	2.5	溝銑 SLOTTING
LNX2512	19	12000~14000	800~1000	0.08~0.1	2.5	溝銑 SLOTTING
LNX2512	19	12000~14000	1000~1200	0.05~0.08	2.5	溝銑 SLOTTING
LNX2516	23	12000~14000	700~900	0.06~0.08	2.5	溝銑 SLOTTING
LNX2516	23	12000~14000	900~1100	0.025~0.05	2.5	溝銑 SLOTTING
LNX2520	26	12000~14000	600~800	0.04~0.06	2.5	溝銑 SLOTTING
LNX2520	26	12000~14000	800~1000	0.015~0.03	2.5	溝銑 SLOTTING
LNX3010	20	11000~13000	1000~1200	0.1~0.12	3	溝銑 SLOTTING
LNX3010	20	11000~13000	1200~1400	0.06~0.1	3	溝銑 SLOTTING
LNX3012	22	11000~13000	1000~1200	0.09~0.11	3	溝銑 SLOTTING
LNX3012	22	11000~13000	1200~1400	0.05~0.09	3	溝銑 SLOTTING
LNX3016	26	11000~13000	800~1000	0.07~0.09	3	溝銑 SLOTTING
LNX3016	26	11000~13000	1000~1200	0.04~0.08	3	溝銑 SLOTTING
LNX3020	30	11000~13000	600~800	0.05~0.07	3	溝銑 SLOTTING
LNX3020	30	11000~13000	800~1000	0.03~0.06	3	溝銑 SLOTTING
LNX3025	34	11000~13000	600~800	0.04~0.06	3	溝銑 SLOTTING
LNX3025	34	11000~13000	700~900	0.02~0.04	3	溝銑 SLOTTING

LNX 切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼 / 碳工具鋼 :*Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
LNX1006	15	16000~18000	400~600	0.03~0.05	1	溝銑 SLOTTING
LNX1006	15	16000~18000	600~800	0.01~0.03	1	溝銑 SLOTTING
LNX1008	17	16000~18000	400~600	0.03~0.05	1	溝銑 SLOTTING
LNX1008	17	16000~18000	600~800	0.01~0.03	1	溝銑 SLOTTING
LNX1010	19	16000~18000	300~500	0.02~0.03	1	溝銑 SLOTTING
LNX1010	19	16000~18000	500~700	0.01~0.02	1	溝銑 SLOTTING
LNX1012	20	16000~18000	300~500	0.02~0.03	1	溝銑 SLOTTING
LNX1012	20	16000~18000	500~700	0.01~0.02	1	溝銑 SLOTTING
LNX1508	15	15000~17000	800~1000	0.06~0.08	1.5	溝銑 SLOTTING
LNX1508	15	15000~17000	1000~1200	0.025~0.05	1.5	溝銑 SLOTTING
LNX1510	17	15000~17000	800~1000	0.05~0.07	1.5	溝銑 SLOTTING
LNX1510	17	15000~17000	1000~1200	0.02~0.05	1.5	溝銑 SLOTTING
LNX1512	19	15000~17000	700~900	0.04~0.06	1.5	溝銑 SLOTTING
LNX1512	19	15000~17000	900~1100	0.02~0.04	1.5	溝銑 SLOTTING
LNX1516	21	15000~17000	600~800	0.04~0.06	1.5	溝銑 SLOTTING
LNX1516	21	15000~17000	800~1000	0.02~0.04	1.5	溝銑 SLOTTING
LNX2008	15	14000~16000	1200~1400	0.1~0.12	2	溝銑 SLOTTING
LNX2008	15	14000~16000	1400~1600	0.04~0.08	2	溝銑 SLOTTING
LNX2010	17	14000~16000	1200~1400	0.08~0.1	2	溝銑 SLOTTING
LNX2010	17	14000~16000	1400~1600	0.03~0.07	2	溝銑 SLOTTING
LNX2012	19	14000~16000	1100~1300	0.06~0.08	2	溝銑 SLOTTING
LNX2012	19	14000~16000	1300~1500	0.02~0.05	2	溝銑 SLOTTING
LNX2016	23	14000~16000	1000~1200	0.04~0.05	2	溝銑 SLOTTING
LNX2016	23	14000~16000	1200~1400	0.015~0.04	2	溝銑 SLOTTING
LNX2020	26	14000~16000	800~1000	0.04~0.05	2	溝銑 SLOTTING
LNX2020	26	14000~16000	1000~1200	0.01~0.03	2	溝銑 SLOTTING
LNX2510	17	13000~15000	1400~1600	0.1~0.12	2.5	溝銑 SLOTTING
LNX2510	17	13000~15000	1600~1800	0.06~0.08	2.5	溝銑 SLOTTING
LNX2512	19	13000~15000	1400~1600	0.1~0.12	2.5	溝銑 SLOTTING
LNX2512	19	13000~15000	1600~1800	0.06~0.08	2.5	溝銑 SLOTTING
LNX2516	23	13000~15000	1200~1400	0.06~0.08	2.5	溝銑 SLOTTING
LNX2516	23	13000~15000	1400~1600	0.04~0.06	2.5	溝銑 SLOTTING
LNX2520	26	13000~15000	800~1000	0.04~0.06	2.5	溝銑 SLOTTING
LNX2520	26	13000~15000	1200~1400	0.02~0.04	2.5	溝銑 SLOTTING
LNX3010	20	12000~14000	1800~2000	0.12~0.14	3	溝銑 SLOTTING
LNX3010	20	12000~14000	2000~2200	0.07~0.12	3	溝銑 SLOTTING
LNX3012	22	12000~14000	1800~2000	0.12~0.14	3	溝銑 SLOTTING
LNX3012	22	12000~14000	2000~2200	0.07~0.1	3	溝銑 SLOTTING
LNX3016	26	12000~14000	1600~1800	0.1~0.12	3	溝銑 SLOTTING
LNX3016	26	12000~14000	1800~2000	0.05~0.1	3	溝銑 SLOTTING
LNX3020	30	12000~14000	1200~1400	0.08~0.1	3	溝銑 SLOTTING
LNX3020	30	12000~14000	1400~1600	0.05~0.08	3	溝銑 SLOTTING
LNX3025	34	12000~14000	800~1000	0.06~0.08	3	溝銑 SLOTTING
LNX3025	34	12000~14000	1000~1200	0.03~0.06	3	溝銑 SLOTTING

LNX 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LNX1006	15	16000~18000	400~550	0.03~0.05	1	溝銑 SLOTTING
LNX1006	15	16000~18000	600~800	0.01~0.03	1	溝銑 SLOTTING
LNX1008	17	16000~18000	400~500	0.03~0.05	1	溝銑 SLOTTING
LNX1008	17	16000~18000	600~800	0.01~0.03	1	溝銑 SLOTTING
LNX1010	19	16000~18000	300~450	0.02~0.03	1	溝銑 SLOTTING
LNX1010	19	16000~18000	500~700	0.01~0.02	1	溝銑 SLOTTING
LNX1012	20	16000~18000	300~400	0.02~0.03	1	溝銑 SLOTTING
LNX1012	20	16000~18000	500~700	0.01~0.02	1	溝銑 SLOTTING
LNX1508	15	15000~17000	800~950	0.06~0.08	1.5	溝銑 SLOTTING
LNX1508	15	15000~17000	1000~1200	0.025~0.05	1.5	溝銑 SLOTTING
LNX1510	17	15000~17000	800~900	0.05~0.07	1.5	溝銑 SLOTTING
LNX1510	17	15000~17000	1000~1200	0.02~0.05	1.5	溝銑 SLOTTING
LNX1512	19	15000~17000	700~800	0.04~0.06	1.5	溝銑 SLOTTING
LNX1512	19	15000~17000	900~1100	0.02~0.04	1.5	溝銑 SLOTTING
LNX1516	21	15000~17000	600~700	0.04~0.06	1.5	溝銑 SLOTTING
LNX1516	21	15000~17000	800~1000	0.02~0.04	1.5	溝銑 SLOTTING
LNX2008	15	14000~16000	1200~1300	0.1~0.12	2	溝銑 SLOTTING
LNX2008	15	14000~16000	1400~1600	0.04~0.08	2	溝銑 SLOTTING
LNX2010	17	14000~16000	1100~1300	0.08~0.1	2	溝銑 SLOTTING
LNX2010	17	14000~16000	1400~1600	0.03~0.07	2	溝銑 SLOTTING
LNX2012	19	14000~16000	1000~1200	0.06~0.08	2	溝銑 SLOTTING
LNX2012	19	14000~16000	1300~1500	0.02~0.05	2	溝銑 SLOTTING
LNX2016	23	14000~16000	900~1100	0.04~0.05	2	溝銑 SLOTTING
LNX2016	23	14000~16000	1200~1400	0.015~0.04	2	溝銑 SLOTTING
LNX2020	26	14000~16000	700~900	0.04~0.05	2	溝銑 SLOTTING
LNX2020	26	14000~16000	1000~1200	0.01~0.03	2	溝銑 SLOTTING
LNX2510	17	13000~15000	1300~1500	0.1~0.12	2.5	溝銑 SLOTTING
LNX2510	17	13000~15000	1600~1800	0.06~0.08	2.5	溝銑 SLOTTING
LNX2512	19	13000~15000	1300~1500	0.1~0.12	2.5	溝銑 SLOTTING
LNX2512	19	13000~15000	1600~1800	0.06~0.08	2.5	溝銑 SLOTTING
LNX2516	23	13000~15000	1200~1300	0.06~0.08	2.5	溝銑 SLOTTING
LNX2516	23	13000~15000	1400~1600	0.04~0.06	2.5	溝銑 SLOTTING
LNX2520	26	13000~15000	800~1000	0.04~0.06	2.5	溝銑 SLOTTING
LNX2520	26	13000~15000	1200~1400	0.02~0.04	2.5	溝銑 SLOTTING
LNX3010	20	12000~14000	1700~1900	0.12~0.14	3	溝銑 SLOTTING
LNX3010	20	12000~14000	2000~2200	0.07~0.12	3	溝銑 SLOTTING
LNX3012	22	12000~14000	1700~1900	0.12~0.14	3	溝銑 SLOTTING
LNX3012	22	12000~14000	2000~2200	0.07~0.1	3	溝銑 SLOTTING
LNX3016	26	12000~14000	1600~1800	0.1~0.12	3	溝銑 SLOTTING
LNX3016	26	12000~14000	1800~2000	0.05~0.1	3	溝銑 SLOTTING
LNX3020	30	12000~14000	1100~1300	0.08~0.1	3	溝銑 SLOTTING
LNX3020	30	12000~14000	1400~1600	0.05~0.08	3	溝銑 SLOTTING
LNX3025	34	12000~14000	700~900	0.06~0.08	3	溝銑 SLOTTING
LNX3025	34	12000~14000	900~1100	0.03~0.06	3	溝銑 SLOTTING

DHF微小徑系列刀具推薦表

SELECTION OF DHF Micro Diameter & Long Neck Series

被切削材 Work Material	平刀 End Mills			圓鼻刀 Corner Radius End Mills			球刀 Ball Nose End Mills		
	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection
碳素鋼 *Carbon Steels* S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45 (~HRc 22)	META LNE	MET LNH	LNX	UNER	UNE	–	MBTA LNB	MSB UNB	–
合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc 23~32)	META LNE	MET LNH	LNX	UNER	UNE	–	MBTA LNB	MSB UNB	–
調質鋼/預硬鋼 *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)	UME LNE	META LNH	MET LNE	UNER	UNE	UXE	UMB UNBX	MBTA UNB	MSB LNB
熱處理鋼 *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)	UME UDE	META LNX	LNE LNH	UXE	UNE	UNER	UMB UNBX	MBTA UNB	MSB LNB
熱處理鋼 *Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)	UME UDE	–	–	UXE	UNE	–	UMB UNBX	UNB	–

DHF微小徑系列刀具推薦表

SELECTION OF DHF Micro Diameter & Long Neck Series

被切削材 Work Material	平刀 End Mills			圓鼻刀 Corner Radius End Mills			球刀 Ball Nose End Mills		
	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection
鋁合金 *Aluminum Alloy* **5052 / 6061 / 7075**	META LNE	MET LNH	LNX	UNER	UNE	–	MBTA LNB	MSB UNB	–
紅銅 *Copper* **C1100 / 2.0090 / B152C11000**	META LNE	MET LNH	LNX	UNER	UNE	–	MBTA LNB	MSB UNB	–
沃斯田鐵系不銹鋼 *Stainless Steels* **SUS304 : 1.4301 : AISI 304** (HRc 28~32)	META LNE	MET LNH	LNX	UNER	UNE	–	UMB UNB	MBTA LNB	MSB
(麻田散鐵, 析出硬化) 系不銹鋼 *Stainless Steels* **SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH** (HRc 28~32)	META LNE	MET LNH	LNX	UNER	UNE	–	UMB UNB	MBTA LNB	MSB
鈦合金/純鈦 *Titanium Alloy / Pure Titanium* **Ti-6Al-4V / Ti-2 : 3.7165 / 3.7035 : Gr5 / Gr2 : TC4 / TA1**	META LNE	LNH	–	UNER	UNE	–	MBTA LNB	MSB UNB	–

DHF

DESIGN . HONESTY . FUTURE

HIGH SPEED CUTTING & HIGH HARD CUTTING

高速&高硬度切削系列



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圖示說明 GUIDE LINES TO ICONS

鎢鋼種類 Carbide



極超微粒。
Super micro grain.

顆粒大小 Grain Size



粉末顆粒是0.2μm
Grain size is 0.2μm



粉末顆粒是0.4μm
Grain size is 0.4μm

螺旋角 Helix Angle



螺旋角度0°、5°、15°、25°、30°、35°、45°。
Helix Angle is 0°, 5°, 15°, 25°, 30°, 35°, 45°.

縮頸 Shrink Neck



適用於深溝加工。
Best for long neck machine.

圓隅角 Conner R



圓隅角。
Conner Radius.

刃數 Flute



被切削材硬度 Work Material Hardness



被切削工件硬度可達HRc60、HRc65。
Work material hardness is up to HRc60, HRc65.

鍍層 Coating



適用於高速、高硬度加工。乾式、油霧、濕式切削（乾濕兩用）。
Good at high speed cutting & high hard cutting.
For Dry cutting, MQL and Wet cutting.



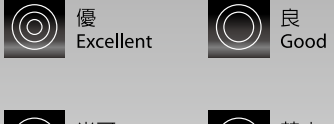
適用於高速、高硬度切削。乾式、油霧切削。
Good at high speed cutting & high hard cutting.
For Dry cutting and MQL.

球頭形狀 Ball Nose Shape



適用於3D曲面切削。
It is suitable for three-dimentional curved surface cutting.

切削性能 Cutting Performance



UQB

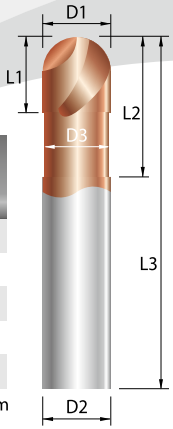
BALL NOSE END MILLS
極超微粒短刃圓頭立銑刀



直徑 D1	球頭公差 R Tolerance
R0.5	±0.01
R0.75	±0.01
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

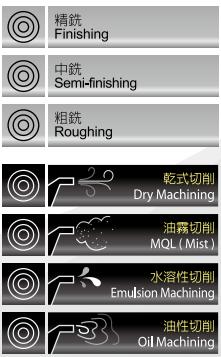
unit : mm



型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia.	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UQB0102	R0.5	0.95	1	2.5	50	4
UQB0152	R0.75	1.45	1	3	50	4
UQB0202	R1	1.92	1.5	5	50	4
UQB0302S	R1.5	2.90	2	8	50	4
UQB0302	R1.5	2.90	2	8	50	6
UQB0402S	R2	3.90	4	10	50	4
UQB0402	R2	3.90	4	10	50	6
UQB0502	R2.5	4.80	5	13	50	6
UQB0602	R3	5.80	6	15	50	6
UQB0802	R4	7.70	8	20	60	8
UQB1002	R5	9.60	10	25	75	10
UQB1202	R6	11.5	12	30	75	12

unit : mm





UQB2T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UQB0102	12	65	18000~20000	800~1000	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UQB0102	12	65	18000~20000	1200~1600	0.03~0.04	0.06~0.08	3D銑 (3D MILLING)
UQB0152	12	85	17000~18000	800~1000	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UQB0152	12	85	17000~18000	1200~1600	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UQB0202	12	115	17000~18000	800~1000	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UQB0202	12	115	17000~18000	1600~2000	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UQB0302S	12	160	16000~17000	1200~1600	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
UQB0302S	12	160	16000~17000	2000~2400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UQB0302	12	160	16000~17000	1200~1600	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
UQB0302	12	160	16000~17000	2000~2400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UQB0402S	15	200	15000~16000	1600~2000	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UQB0402S	15	200	15000~16000	2400~2800	0.05~0.08	0.1~0.16	3D銑 (3D MILLING)
UQB0402	15	200	15000~16000	1600~2000	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UQB0402	15	200	15000~16000	2400~2800	0.05~0.08	0.1~0.16	3D銑 (3D MILLING)
UQB0502	17	240	14000~15000	1800~2200	0.14~0.17	0.28~0.34	3D銑 (3D MILLING)
UQB0502	17	240	14000~15000	2600~3000	0.06~0.09	0.12~0.18	3D銑 (3D MILLING)
UQB0602	20	250	12000~13000	2000~2400	0.16~0.21	0.32~0.42	3D銑 (3D MILLING)
UQB0602	20	250	12000~13000	2800~3200	0.07~0.12	0.14~0.24	3D銑 (3D MILLING)
UQB0802	25	280	10000~11000	2000~2400	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
UQB0802	25	305	11000~12000	3000~3400	0.08~0.13	0.16~0.26	3D銑 (3D MILLING)
UQB1002	30	290	8700~9200	2000~2400	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
UQB1002	30	290	8700~9200	3200~3600	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UQB1202	35	315	7800~8300	2400~2800	0.25~0.3	0.5~0.6	3D銑 (3D MILLING)
UQB1202	35	315	7800~8300	2800~3200	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UQB0102	13	65	18000~20000	600~800	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UQB0102	13	65	18000~20000	1000~1200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UQB0152	14	95	18000~20000	700~900	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UQB0152	14	95	18000~20000	1000~1200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UQB0202	15	115	17000~18000	700~900	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UQB0202	15	115	17000~18000	1600~1800	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)

UQB2T

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UQB0302S	17	160	16000~17000	1000~1200	0.08~0.1	0.2~0.24	3D銑 (3D MILLING)
UQB0302S	17	160	16000~17000	1500~1700	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UQB0302	17	160	16000~17000	1000~1200	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
UQB0302	17	160	16000~17000	1800~2000	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UQB0402S	20	200	15000~16000	1400~1600	0.1~0.12	0.24~0.3	3D銑 (3D MILLING)
UQB0402S	20	200	15000~16000	2000~2400	0.05~0.08	0.1~0.16	3D銑 (3D MILLING)
UQB0402	20	200	15000~16000	1400~1600	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UQB0402	20	200	15000~16000	2400~2800	0.05~0.08	0.1~0.16	3D銑 (3D MILLING)
UQB0502	20	235	13000~15000	1800~2000	0.13~0.17	0.26~0.34	3D銑 (3D MILLING)
UQB0502	20	235	13000~15000	2800~3200	0.05~0.08	0.1~0.16	3D銑 (3D MILLING)
UQB0602	20	245	11000~13000	1800~2000	0.14~0.18	0.28~0.36	3D銑 (3D MILLING)
UQB0602	20	245	11000~13000	3000~3400	0.05~0.09	0.1~0.18	3D銑 (3D MILLING)
UQB0802	24	280	10000~11000	1800~2000	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
UQB0802	24	280	10000~11000	3000~3400	0.07~0.1	0.14~0.2	3D銑 (3D MILLING)
UQB1002	35	290	8700~9200	1800~2200	0.2~0.3	0.4~0.6	3D銑 (3D MILLING)
UQB1002	35	290	8700~9200	3000~3400	0.08~0.12	0.16~0.24	3D銑 (3D MILLING)
UQB1202	37	275	6800~7300	2000~2400	0.2~0.3	0.4~0.6	3D銑 (3D MILLING)
UQB1202	37	275	6800~7300	2800~3200	0.08~0.13	0.16~0.26	3D銑 (3D MILLING)

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UQB0102	13	65	18000~20000	400~600	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UQB0152	14	85	16000~18000	500~700	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UQB0202	15	100	14000~16000	600~800	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)
UQB0302S	17	135	13000~14000	1000~1200	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UQB0302	17	135	13000~14000	1200~1400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UQB0402S	20	150	11000~12000	1000~1400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UQB0402	20	150	11000~12000	1200~1600	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UQB0502	20	175	10000~11000	1800~2200	0.05~0.08	0.1~0.16	3D銑 (3D MILLING)
UQB0602	20	175	10000~11000	1600~2000	0.05~0.08	0.1~0.16	3D銑 (3D MILLING)
UQB0802	24	210	7800~8300	2000~2400	0.07~0.1	0.14~0.2	3D銑 (3D MILLING)
UQB1002	35	230	6800~7300	2000~2400	0.08~0.12	0.16~0.24	3D銑 (3D MILLING)
UQB1202	37	240	5800~6300	1800~2200	0.08~0.13	0.16~0.26	3D銑 (3D MILLING)



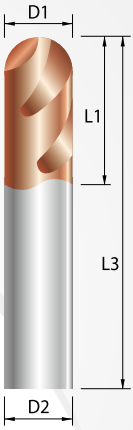
UB

BALL NOSE END MILLS
極超微粒圓頭立銑刀

直徑 D1	球頭公差 R Tolerance
R0.5	±0.01
R0.75	±0.01
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

unit : mm



Super MG
0.4 µm
30°
2 Flutes
HRc >60
G12
S type

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UB0102	R0.5	2	50	4
UB0152	R0.75	3	50	4
UB0202	R1	4	50	6
UB0302	R1.5	6	50	6
UB0402	R2	8	50	6
UB0502	R2.5	10	50	6
UB0602	R3	12	50	6
UB0802	R4	16	60	8
UB1002	R5	20	75	10
UB1202	R6	24	75	12
UB1602	R8	32	100	16

unit : mm

UB

切削條件表 *Milling Conditions*

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UB0102	12	65	18000~20000	800~1000	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UB0102	12	65	18000~20000	1200~1600	0.03~0.04	0.06~0.08	3D銑 (3D MILLING)
UB0152	13	85	17000~18000	800~1200	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UB0152	13	85	17000~18000	1400~1800	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UB0202	14	115	17000~18000	1000~1400	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UB0202	14	115	17000~18000	1800~2200	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UB0302	15	160	16000~17000	1400~1800	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
UB0302	15	170	17000~18000	2400~2800	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UB0402	15	200	15000~16000	1800~2200	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UB0402	15	215	16000~17000	3600~4000	0.04~0.08	0.1~0.16	3D銑 (3D MILLING)
UB0502	17	220	13000~14000	1800~2200	0.14~0.18	0.28~0.36	3D銑 (3D MILLING)
UB0502	17	235	14000~15000	3600~4000	0.04~0.08	0.12~0.22	3D銑 (3D MILLING)
UB0602	19	230	11000~12000	2000~2400	0.16~0.21	0.32~0.42	3D銑 (3D MILLING)
UB0602	19	245	12000~13000	3800~4200	0.04~0.08	0.14~0.24	3D銑 (3D MILLING)
UB0802	30	280	10000~11000	2000~2400	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
UB0802	30	330	12000~13000	3800~4200	0.05~0.1	0.16~0.26	3D銑 (3D MILLING)
UB1002	40	290	8700~9200	2600~3000	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
UB1002	40	290	8700~9200	3800~4200	0.05~0.12	0.2~0.3	3D銑 (3D MILLING)
UB1202	40	315	7800~8300	2400~2800	0.28~0.3	0.56~0.6	3D銑 (3D MILLING)
UB1202	40	315	7800~8300	3600~4000	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
UB1602	50	315	5700~6200	1400~1800	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
UB1602	50	315	5700~6200	2400~2800	0.05~0.15	0.26~0.36	3D銑 (3D MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UB0102	12	65	18000~20000	800~1000	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UB0102	12	65	18000~20000	1200~1600	0.03~0.04	0.06~0.08	3D銑 (3D MILLING)
UB0152	13	85	17000~18000	800~1200	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UB0152	13	85	17000~18000	1400~1800	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UB0202	14	115	17000~18000	1000~1400	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UB0202	14	115	17000~18000	1800~2200	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)

UB

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UB0302	15	160	16000~17000	1400~1800	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
UB0302	15	170	17000~18000	2200~2600	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UB0402	15	200	15000~16000	1800~2200	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UB0402	15	215	16000~17000	3000~3400	0.04~0.08	0.1~0.16	3D銑 (3D MILLING)
UB0502	17	220	13000~14000	1800~2200	0.14~0.18	0.28~0.36	3D銑 (3D MILLING)
UB0502	17	235	14000~15000	3200~3600	0.04~0.08	0.12~0.22	3D銑 (3D MILLING)
UB0602	19	230	11000~12000	2000~2400	0.16~0.21	0.32~0.42	3D銑 (3D MILLING)
UB0602	19	245	12000~13000	3400~3800	0.04~0.08	0.14~0.24	3D銑 (3D MILLING)
UB0802	30	280	10000~11000	2000~2400	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
UB0802	30	330	12000~13000	3400~3800	0.05~0.1	0.16~0.26	3D銑 (3D MILLING)
UB1002	40	290	8700~9200	2600~3000	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
UB1002	40	290	8700~9200	3400~3800	0.05~0.12	0.2~0.3	3D銑 (3D MILLING)
UB1202	40	315	7800~8300	2400~2800	0.28~0.3	0.56~0.6	3D銑 (3D MILLING)
UB1202	40	315	7800~8300	3000~3400	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
UB1602	50	315	5700~6200	1400~1800	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
UB1602	50	315	5700~6200	2400~2800	0.05~0.15	0.26~0.36	3D銑 (3D MILLING)

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UB0102	12	65	18000~20000	800~1000	0.03~0.04	0.06~0.08	3D銑 (3D MILLING)
UB0152	13	85	17000~18000	800~1200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UB0202	14	115	17000~18000	1200~1600	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UB0302	15	170	17000~18000	1400~1800	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UB0402	15	200	15000~16000	2000~2400	0.04~0.07	0.08~0.14	3D銑 (3D MILLING)
UB0502	17	220	13000~14000	2200~2600	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UB0602	19	230	11000~12000	2400~2800	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UB0802	30	280	10000~11000	2600~3000	0.06~0.09	0.12~0.18	3D銑 (3D MILLING)
UB1002	40	260	7700~8200	2600~3000	0.08~0.12	0.16~0.24	3D銑 (3D MILLING)
UB1202	40	305	7500~8000	1800~2200	0.08~0.13	0.16~0.26	3D銑 (3D MILLING)
UB1602	50	255	4500~5000	1400~1800	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)

UB

切削條件表 *Milling Conditions*

被切削材 Work Material	沃斯田鐵系不銹鋼：*Stainless Steels* **SUS304 : 1.4301 : AISI 304 (HRc28~32)**
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UB0102	12	65	18000~20000	800~1000	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UB0102	12	65	18000~20000	1200~1600	0.03~0.04	0.06~0.08	3D銑 (3D MILLING)
UB0152	13	85	17000~18000	800~1200	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UB0152	13	85	17000~18000	1400~1800	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UB0202	14	115	17000~18000	1000~1400	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UB0202	14	115	17000~18000	1800~2200	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UB0302	15	160	16000~17000	1400~1800	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
UB0302	15	170	17000~18000	2200~2600	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UB0402	15	200	15000~16000	1800~2200	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UB0402	15	215	16000~17000	3000~3400	0.04~0.08	0.1~0.16	3D銑 (3D MILLING)
UB0502	17	220	13000~14000	1800~2200	0.14~0.18	0.28~0.36	3D銑 (3D MILLING)
UB0502	17	235	14000~15000	3200~3600	0.04~0.08	0.12~0.22	3D銑 (3D MILLING)
UB0602	19	230	11000~12000	2000~2400	0.16~0.21	0.32~0.42	3D銑 (3D MILLING)
UB0602	19	245	12000~13000	3400~3800	0.04~0.08	0.14~0.24	3D銑 (3D MILLING)
UB0802	30	280	10000~11000	2000~2400	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
UB0802	30	330	12000~13000	3400~3800	0.05~0.1	0.16~0.26	3D銑 (3D MILLING)
UB1002	40	290	8700~9200	2600~3000	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
UB1002	40	290	8700~9200	3400~3800	0.05~0.12	0.2~0.3	3D銑 (3D MILLING)
UB1202	40	315	7800~8300	2400~2800	0.28~0.3	0.56~0.6	3D銑 (3D MILLING)
UB1202	40	315	7800~8300	3000~3400	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
UB1602	50	315	5700~6200	1400~1800	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
UB1602	50	315	5700~6200	2400~2800	0.05~0.15	0.26~0.36	3D銑 (3D MILLING)

UB

切削條件表 Milling Conditions

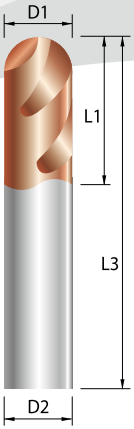
被切削材 Work Material	鈦合金 / 純鈦：*Titanium Alloy / Pure Titanium* Ti-6Al-4V / Ti-2 : 3.7165 / 3.7035 : Gr5 / Gr2 : TC4 / TA1
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UB0102	12	65	18000~20000	700~900	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UB0102	12	65	18000~20000	1000~1300	0.03~0.04	0.06~0.08	3D銑 (3D MILLING)
UB0152	13	85	17000~18000	700~900	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UB0152	13	85	17000~18000	1000~1300	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UB0202	14	115	17000~18000	900~1200	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UB0202	14	115	17000~18000	1200~1500	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UB0302	15	160	16000~17000	1000~1300	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
UB0302	15	170	17000~18000	1400~1700	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UB0402	15	200	15000~16000	1100~1400	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UB0402	15	215	16000~17000	1500~1800	0.04~0.08	0.1~0.16	3D銑 (3D MILLING)
UB0502	17	220	13000~14000	1200~1500	0.14~0.18	0.28~0.36	3D銑 (3D MILLING)
UB0502	17	235	14000~15000	1600~2000	0.04~0.08	0.12~0.22	3D銑 (3D MILLING)
UB0602	19	230	11000~12000	1200~1500	0.16~0.21	0.32~0.42	3D銑 (3D MILLING)
UB0602	19	245	12000~13000	1600~2000	0.04~0.08	0.14~0.24	3D銑 (3D MILLING)
UB0802	30	280	10000~11000	1200~1500	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
UB0802	30	330	12000~13000	1600~2000	0.05~0.1	0.16~0.26	3D銑 (3D MILLING)
UB1002	40	290	8700~9200	1200~1500	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
UB1002	40	290	8700~9200	1600~2000	0.05~0.12	0.2~0.3	3D銑 (3D MILLING)
UB1202	40	315	7800~8300	1200~1500	0.28~0.3	0.56~0.6	3D銑 (3D MILLING)
UB1202	40	315	7800~8300	1600~2000	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
UB1602	50	315	5700~6200	1200~1500	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
UB1602	50	315	5700~6200	1400~1800	0.05~0.15	0.26~0.36	3D銑 (3D MILLING)

UHB UIB UJB

BALL NOSE END MILLS
極超微粒長柄圓頭立銑刀





直徑 D1	球頭公差 R Tolerance
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02
R10	±0.02

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UHB0202	R1	4	75	6
UHB0302	R1.5	6	75	6
UHB0402	R2	8	75	6
UHB0502	R2.5	10	75	6
UHB0602	R3	12	75	6
UHB0802	R4	16	75	8
UIB0402	R2	8	100	6
UIB0602	R3	12	100	6
UIB0802	R4	16	100	8
UIB1002	R5	20	100	10
UIB1202	R6	24	100	12
UJB1002	R5	20	150	10
UJB1202	R6	24	150	12
UJB1602	R8	32	150	16
UJB2002	R10	40	150	20

unit : mm





UHB UIB UJB

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UHB0202	40	105	15500~16500	1800~2200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UHB0302	40	135	13000~14000	2000~2400	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)
UHB0402	40	160	11500~12500	2400~2800	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UHB0502	40	175	10000~11000	2600~3000	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UHB0602	40	175	8800~9300	3000~3400	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UHB0802	40	265	9500~10500	2800~3200	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UIB0402	50	150	11500~12000	2000~2400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UIB0602	50	230	11000~12000	2000~2400	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UIB0802	50	225	8300~8800	1800~2200	0.06~0.1	0.16~0.2	3D銑 (3D MILLING)
UIB1002	60	290	8700~9200	1800~2200	0.09~0.14	0.18~0.28	3D銑 (3D MILLING)
UIB1202	60	325	8200~8600	2200~2600	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UJB1002	100	260	7700~8200	1400~1700	0.06~0.1	0.16~0.2	3D銑 (3D MILLING)
UJB1202	100	220	5300~5800	800~1200	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UJB1602	100	230	4000~4500	1800~2200	0.12~0.17	0.24~0.34	3D銑 (3D MILLING)
UJB2002	100	240	3800~4300	1400~1800	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UHB0202	40	105	15500~16500	1800~2200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UHB0302	40	135	13000~14000	2000~2400	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)
UHB0402	40	160	11500~12500	2400~2800	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UHB0502	40	175	10000~11000	2600~3000	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UHB0602	40	175	8800~9300	3000~3400	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UHB0802	40	265	9500~10500	2800~3200	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UIB0402	50	150	11500~12000	2000~2400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UIB0602	50	230	11000~12000	2000~2400	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UIB0802	50	225	8300~8800	1800~2200	0.06~0.1	0.16~0.2	3D銑 (3D MILLING)
UIB1002	60	290	8700~9200	1800~2200	0.09~0.14	0.18~0.28	3D銑 (3D MILLING)
UIB1202	60	325	8200~8600	2200~2600	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UJB1002	100	260	7700~8200	1400~1700	0.06~0.1	0.16~0.2	3D銑 (3D MILLING)
UJB1202	100	220	5300~5800	800~1200	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UJB1602	100	230	4000~4500	1800~2200	0.12~0.17	0.24~0.34	3D銑 (3D MILLING)
UJB2002	100	240	3800~4300	1400~1800	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)

UHB UIB UJB

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UHB0202	40	95	14000~15000	1000~1400	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UHB0302	40	125	12000~13000	1200~1600	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UHB0402	40	135	9500~10500	1200~1600	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UHB0502	40	140	8300~8800	1400~1800	0.05~0.06	0.1~0.12	3D銑 (3D MILLING)
UHB0602	40	150	7500~8000	1400~1800	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UHB0802	40	235	8700~9200	2000~2400	0.05~0.08	0.12~0.16	3D銑 (3D MILLING)
UIB0402	50	135	9500~10500	1800~2200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UIB0602	50	160	7700~8300	1800~2200	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UIB0802	50	145	5400~5800	1600~2000	0.05~0.08	0.12~0.16	3D銑 (3D MILLING)
UIB1002	60	230	6700~7200	1400~1800	0.05~0.13	0.16~0.26	3D銑 (3D MILLING)
UIB1202	60	290	7200~7700	1000~1400	0.05~0.13	0.16~0.26	3D銑 (3D MILLING)
UJB1002	80	185	5300~5800	1000~1200	0.05~0.1	0.16~0.2	3D銑 (3D MILLING)
UJB1202	100	220	5300~5800	800~1200	0.05~0.12	0.16~0.26	3D銑 (3D MILLING)
UJB1602	100	160	2800~3200	1200~1600	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
UJB2002	100	220	3300~3800	900~1300	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)

被切削材 Work Material	沃斯田鐵系不銹鋼 : *Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

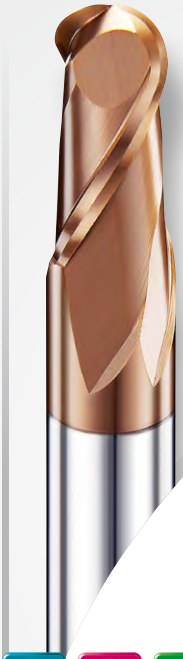
型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UHB0202	40	105	15500~16500	1800~2200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UHB0302	40	135	13000~14000	2000~2400	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)
UHB0402	40	160	11500~12500	2400~2800	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UHB0502	40	175	10000~11000	2600~3000	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UHB0602	40	175	8800~9300	3000~3400	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UHB0802	40	265	9500~10500	2800~3200	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UIB0402	50	150	11500~12000	2000~2400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UIB0602	50	230	11000~12000	2000~2400	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UIB0802	50	225	8300~8800	1800~2200	0.06~0.1	0.16~0.2	3D銑 (3D MILLING)
UIB1002	60	290	8700~9200	1800~2200	0.09~0.14	0.18~0.28	3D銑 (3D MILLING)
UIB1202	60	325	8200~8600	2200~2600	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UJB1002	100	260	7700~8200	1400~1700	0.06~0.1	0.16~0.2	3D銑 (3D MILLING)
UJB1202	100	220	5300~5800	800~1200	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UJB1602	100	230	4000~4500	1800~2200	0.12~0.17	0.24~0.34	3D銑 (3D MILLING)
UJB2002	100	240	3800~4300	1400~1800	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)

UHB UIB UJB

切削條件表 Milling Conditions

被切削材 Work Material	鈦合金 / 純鈦：*Titanium Alloy / Pure Titanium* Ti-6Al-4V / Ti-2 : 3.7165 / 3.7035 : Gr5 / Gr2 : TC4 / TA1
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UHB0202	40	105	15500~16500	1200~1600	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UHB0302	40	135	13000~14000	1200~1600	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)
UHB0402	40	160	11500~12500	1200~1600	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UHB0502	40	175	10000~11000	1400~1800	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UHB0602	40	175	8800~9300	1400~1800	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UHB0802	40	265	9500~10500	1400~1800	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UIB0402	50	150	11500~12000	1400~1800	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UIB0602	50	230	11000~12000	1400~1800	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UIB0802	50	225	8300~8800	1400~1800	0.06~0.1	0.16~0.2	3D銑 (3D MILLING)
UIB1002	60	290	8700~9200	1200~1600	0.09~0.14	0.18~0.28	3D銑 (3D MILLING)
UIB1202	60	325	8200~8600	1200~1600	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UJB1002	100	260	7700~8200	1200~1600	0.06~0.1	0.16~0.2	3D銑 (3D MILLING)
UJB1202	100	220	5300~5800	800~1200	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UJB1602	100	230	4000~4500	1200~1600	0.12~0.17	0.24~0.34	3D銑 (3D MILLING)
UJB2002	100	240	3800~4300	1000~1400	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)



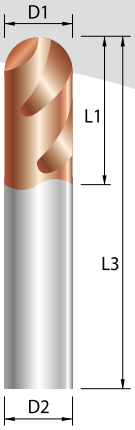
UBX

BALL NOSE END MILLS
極超微粒圓頭立銑刀

直徑 D1	球頭公差 R Tolerance
R0.5	±0.01
R0.75	±0.01
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

unit : mm



Super MG
0.2 µm
30°
2 Flutes
HRc ▶65
G12

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UBX0102	R0.5	2	50	6
UBX0152	R0.75	3	50	6
UBX0202	R1	4	50	6
UBX0302	R1.5	6	50	6
UBX0402	R2	8	50	6
UBX0502	R2.5	10	50	6
UBX0602	R3	12	50	6
UBX0802	R4	16	60	8
UBX1002	R5	20	75	10
UBX1202	R6	24	75	12
UBX1602	R8	32	100	16

unit : mm

UBX

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UBX0102	12	65	18000~20000	800~1000	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UBX0102	12	65	18000~20000	1200~1600	0.03~0.04	0.06~0.08	3D銑 (3D MILLING)
UBX0152	12	85	17000~18000	800~1000	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UBX0152	12	85	17000~18000	1200~1600	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UBX0202	12	115	17000~18000	900~1100	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UBX0202	12	115	17000~18000	1600~2000	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UBX0302	12	160	16000~17000	1200~1600	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
UBX0302	12	160	16000~17000	2000~2400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UBX0402	15	200	15000~16000	1600~2000	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UBX0402	15	200	15000~16000	2400~2800	0.05~0.08	0.1~0.16	3D銑 (3D MILLING)
UBX0502	17	220	13000~14000	1800~2200	0.14~0.17	0.28~0.34	3D銑 (3D MILLING)
UBX0502	17	235	14000~15000	2600~3000	0.06~0.09	0.12~0.18	3D銑 (3D MILLING)
UBX0602	20	230	11000~12000	2000~2400	0.16~0.21	0.32~0.42	3D銑 (3D MILLING)
UBX0602	20	245	12000~13000	2800~3200	0.07~0.12	0.14~0.24	3D銑 (3D MILLING)
UBX0802	25	280	10000~11000	2000~2400	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
UBX0802	25	305	11000~12000	3000~3400	0.08~0.13	0.16~0.26	3D銑 (3D MILLING)
UBX1002	30	290	8700~9200	2000~2400	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
UBX1002	30	290	8700~9200	3200~3600	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UBX1202	35	315	7800~8300	2400~2800	0.25~0.3	0.5~0.6	3D銑 (3D MILLING)
UBX1202	35	315	7800~8300	2800~3200	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UBX1602	50	260	5000~5500	1200~1400	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
UBX1602	50	260	5000~5500	2000~2400	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UBX0102	14	65	18000~20000	600~800	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UBX0102	14	65	18000~20000	1200~1600	0.03~0.04	0.06~0.08	3D銑 (3D MILLING)
UBX0152	14	85	17000~18000	600~800	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UBX0152	14	85	17000~18000	1200~1600	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UBX0202	14	115	17000~18000	700~900	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UBX0202	14	115	17000~18000	1600~2000	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)

UBX

切削條件表 *Milling Conditions*

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UBX0302	15	160	16000~17000	1200~1600	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
UBX0302	15	160	16000~17000	2000~2400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UBX0402	15	200	15000~16000	1600~2000	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UBX0402	15	200	15000~16000	2400~2800	0.05~0.08	0.1~0.16	3D銑 (3D MILLING)
UBX0502	17	220	13000~14000	1800~2200	0.14~0.17	0.28~0.34	3D銑 (3D MILLING)
UBX0502	17	220	13000~14000	2600~3000	0.06~0.09	0.12~0.18	3D銑 (3D MILLING)
UBX0602	20	230	11000~12000	2000~2400	0.16~0.21	0.32~0.42	3D銑 (3D MILLING)
UBX0602	20	245	12000~13000	2800~3200	0.07~0.12	0.14~0.24	3D銑 (3D MILLING)
UBX0802	25	280	10000~11000	2000~2400	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
UBX0802	25	305	11000~12000	3000~3400	0.08~0.13	0.16~0.26	3D銑 (3D MILLING)
UBX1002	30	290	8700~9200	1800~2200	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
UBX1002	30	290	8700~9200	3000~3400	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UBX1202	35	315	7800~8300	2400~2800	0.25~0.3	0.5~0.6	3D銑 (3D MILLING)
UBX1202	35	315	7800~8300	2800~3200	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UBX1602	50	260	5000~5500	1200~1400	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
UBX1602	50	260	5000~5500	2000~2400	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UBX0102	14	65	18000~20000	600~800	0.03~0.04	0.06~0.08	3D銑 (3D MILLING)
UBX0152	14	85	17000~18000	800~1200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UBX0202	14	115	17000~18000	1000~1400	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UBX0302	15	160	16000~17000	1400~1800	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UBX0402	15	200	15000~16000	1800~2200	0.04~0.07	0.08~0.14	3D銑 (3D MILLING)
UBX0502	17	220	13000~14000	2000~2400	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UBX0602	20	230	11000~12000	2200~2600	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UBX0802	25	280	10000~11000	2400~2800	0.06~0.09	0.12~0.18	3D銑 (3D MILLING)
UBX1002	30	260	7700~8200	2400~2800	0.08~0.12	0.16~0.24	3D銑 (3D MILLING)
UBX1202	35	305	7500~8000	1800~2200	0.08~0.13	0.16~0.26	3D銑 (3D MILLING)
UBX1602	50	215	3800~4200	1600~2000	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)

UBX

切削條件表 *Milling Conditions*

被切削材 Work Material	沃斯田鐵系不銹鋼：*Stainless Steels* **SUS304 : 1.4301 : AISI 304 (HRc28~32)**
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UBX0102	12	65	18000~20000	800~1000	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UBX0102	12	65	18000~20000	1200~1600	0.03~0.04	0.06~0.08	3D銑 (3D MILLING)
UBX0152	13	85	17000~18000	800~1200	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UBX0152	13	85	17000~18000	1400~1800	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UBX0202	14	115	17000~18000	1000~1400	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UBX0202	14	115	17000~18000	1800~2200	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UBX0302	15	160	16000~17000	1400~1800	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
UBX0302	15	170	17000~18000	2200~2600	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UBX0402	15	200	15000~16000	1800~2200	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UBX0402	15	215	16000~17000	3000~3400	0.04~0.08	0.1~0.16	3D銑 (3D MILLING)
UBX0502	17	220	13000~14000	1800~2200	0.14~0.18	0.28~0.36	3D銑 (3D MILLING)
UBX0502	17	235	14000~15000	3200~3600	0.04~0.08	0.12~0.22	3D銑 (3D MILLING)
UBX0602	19	230	11000~12000	2000~2400	0.16~0.21	0.32~0.42	3D銑 (3D MILLING)
UBX0602	19	245	12000~13000	3400~3800	0.04~0.08	0.14~0.24	3D銑 (3D MILLING)
UBX0802	30	280	10000~11000	2000~2400	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
UBX0802	30	330	12000~13000	3400~3800	0.05~0.1	0.16~0.26	3D銑 (3D MILLING)
UBX1002	40	290	8700~9200	2600~3000	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
UBX1002	40	290	8700~9200	3400~3800	0.05~0.12	0.2~0.3	3D銑 (3D MILLING)
UBX1202	40	315	7800~8300	2400~2800	0.28~0.3	0.56~0.6	3D銑 (3D MILLING)
UBX1202	40	315	7800~8300	3000~3400	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
UBX1602	50	315	5700~6200	1400~1800	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
UBX1602	50	315	5700~6200	2400~2800	0.05~0.15	0.26~0.36	3D銑 (3D MILLING)

UBX

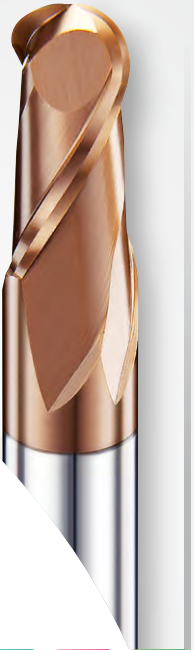
切削條件表 *Milling Conditions*

被切削材 Work Material	鈦合金 / 純鈦：*Titanium Alloy / Pure Titanium* Ti-6Al-4V / Ti-2 : 3.7165 / 3.7035 : Gr5 / Gr2 : TC4 / TA1
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (mim^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UBX0102	12	65	18000~20000	700~900	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UBX0102	12	65	18000~20000	1000~1300	0.03~0.04	0.06~0.08	3D銑 (3D MILLING)
UBX0152	13	85	17000~18000	700~900	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UBX0152	13	85	17000~18000	1000~1300	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UBX0202	14	115	17000~18000	900~1200	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UBX0202	14	115	17000~18000	1200~1500	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UBX0302	15	160	16000~17000	1000~1300	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
UBX0302	15	170	17000~18000	1400~1700	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UBX0402	15	200	15000~16000	1100~1400	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UBX0402	15	215	16000~17000	1500~1800	0.04~0.08	0.1~0.16	3D銑 (3D MILLING)
UBX0502	17	220	13000~14000	1200~1500	0.14~0.18	0.28~0.36	3D銑 (3D MILLING)
UBX0502	17	235	14000~15000	1600~2000	0.04~0.08	0.12~0.22	3D銑 (3D MILLING)
UBX0602	19	230	11000~12000	1200~1500	0.16~0.21	0.32~0.42	3D銑 (3D MILLING)
UBX0602	19	245	12000~13000	1600~2000	0.04~0.08	0.14~0.24	3D銑 (3D MILLING)
UBX0802	30	280	10000~11000	1200~1500	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
UBX0802	30	330	12000~13000	1600~2000	0.05~0.1	0.16~0.26	3D銑 (3D MILLING)
UBX1002	40	290	8700~9200	1200~1500	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
UBX1002	40	290	8700~9200	1600~2000	0.05~0.12	0.2~0.3	3D銑 (3D MILLING)
UBX1202	40	315	7800~8300	1200~1500	0.28~0.3	0.56~0.6	3D銑 (3D MILLING)
UBX1202	40	315	7800~8300	1600~2000	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
UBX1602	50	315	5700~6200	1200~1500	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
UBX1602	50	315	5700~6200	1400~1800	0.05~0.15	0.26~0.36	3D銑 (3D MILLING)

UHBX UIBX

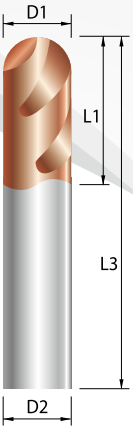
BALL NOSE END MILLS
極超微粒長柄圓頭立銑刀



直徑 D1	球頭公差 R Tolerance
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02
R10	±0.02

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

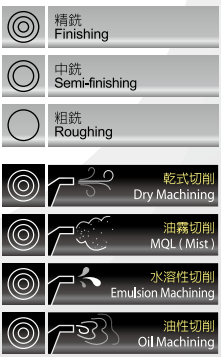
unit : mm



型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UHBX0302	R1.5	6	75	6
UHBX0402	R2	8	75	6
UHBX0502	R2.5	10	75	6
UHBX0602	R3	12	75	6
UHBX0802	R4	16	75	8
UIBX0602	R3	12	100	6
UIBX0802	R4	16	100	8
UIBX1002	R5	20	100	10
UIBX1202	R6	24	100	12

unit : mm





UHBX UIBX

切削條件表 *Milling Conditions*

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UHBX0302	40	135	13000~14000	2200~2600	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)
UHBX0402	40	160	11500~12500	2400~2800	0.05~0.08	0.12~0.16	3D銑 (3D MILLING)
UHBX0502	40	175	10000~11000	2600~3000	0.05~0.08	0.12~0.16	3D銑 (3D MILLING)
UHBX0602	40	160	7800~8300	2200~2600	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UHBX0602	40	175	8800~9300	3000~3400	0.05~0.09	0.14~0.18	3D銑 (3D MILLING)
UHBX0802	40	235	8700~9200	1800~2200	0.16~0.2	0.32~0.4	3D銑 (3D MILLING)
UHBX0802	40	265	9500~10500	2800~3200	0.05~0.1	0.16~0.2	3D銑 (3D MILLING)
UIBX0602	50	230	11000~12000	2000~2400	0.05~0.08	0.12~0.16	3D銑 (3D MILLING)
UIBX0802	50	185	6700~7300	1200~1600	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
UIBX0802	50	225	8300~8800	1800~2200	0.05~0.1	0.16~0.2	3D銑 (3D MILLING)
UIBX1002	60	290	8700~9200	1800~2200	0.05~0.14	0.18~0.28	3D銑 (3D MILLING)
UIBX1202	60	325	8200~8600	1600~2000	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
UIBX1202	60	325	8200~8600	2200~2600	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UHBX0302	40	135	13000~14000	2000~2400	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)
UHBX0402	40	160	11500~12500	2400~2800	0.05~0.08	0.12~0.16	3D銑 (3D MILLING)
UHBX0502	40	175	10000~11000	2600~3000	0.05~0.08	0.12~0.16	3D銑 (3D MILLING)
UHBX0602	40	160	7800~8300	2200~2600	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UHBX0602	40	175	8800~9300	3000~3400	0.05~0.09	0.14~0.18	3D銑 (3D MILLING)
UHBX0802	40	235	8700~9200	1800~2200	0.16~0.2	0.32~0.4	3D銑 (3D MILLING)
UHBX0802	40	265	9500~10500	2800~3200	0.05~0.1	0.16~0.2	3D銑 (3D MILLING)
UIBX0602	50	230	11000~12000	2000~2400	0.05~0.08	0.12~0.16	3D銑 (3D MILLING)
UIBX0802	50	185	6700~7300	1200~1600	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
UIBX0802	50	225	8300~8800	1800~2200	0.05~0.1	0.16~0.2	3D銑 (3D MILLING)
UIBX1002	60	290	8700~9200	1800~2200	0.05~0.14	0.18~0.28	3D銑 (3D MILLING)
UIBX1202	60	325	8200~8600	1600~2000	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
UIBX1202	60	325	8200~8600	2200~2600	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)

UHBX UIBX

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UHBX0302	40	125	12000~13000	1200~1600	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UHBX0402	40	135	9500~10500	1200~1600	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UHBX0502	40	140	8300~8800	1400~1800	0.05~0.06	0.1~0.12	3D銑 (3D MILLING)
UHBX0602	40	150	7500~8000	1400~1800	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UHBX0802	40	235	8700~9200	2000~2400	0.05~0.08	0.12~0.16	3D銑 (3D MILLING)
UIBX0602	50	160	7700~8300	1800~2200	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UIBX0802	50	145	5400~5800	1600~2000	0.05~0.08	0.12~0.16	3D銑 (3D MILLING)
UIBX1002	60	230	6700~7200	1400~1800	0.05~0.13	0.16~0.26	3D銑 (3D MILLING)
UIBX1202	60	290	7200~7700	1000~1400	0.05~0.13	0.16~0.26	3D銑 (3D MILLING)

被切削材 Work Material	沃斯田鐵系不銹鋼 : *Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UHBX0302	40	135	13000~14000	2000~2400	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)
UHBX0402	40	160	11500~12500	2400~2800	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UHBX0502	40	175	10000~11000	2600~3000	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UHBX0602	40	175	8800~9300	3000~3400	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UHBX0802	40	265	9500~10500	2800~3200	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UIBX0602	50	230	11000~12000	2000~2400	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UIBX0802	50	225	8300~8800	1800~2200	0.06~0.1	0.16~0.2	3D銑 (3D MILLING)
UIBX1002	60	290	8700~9200	1800~2200	0.09~0.14	0.18~0.28	3D銑 (3D MILLING)
UIBX1202	60	325	8200~8600	2200~2600	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)

UHBX UIBX

切削條件表 *Milling Conditions*

被切削材 Work Material	鈦合金 / 純鈦：*Titanium Alloy / Pure Titanium* Ti-6Al-4V / Ti-2 : 3.7165 / 3.7035 : Gr5 / Gr2 : TC4 / TA1
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UHBX0302	40	135	13000~14000	1200~1600	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)
UHBX0402	40	160	11500~12500	1200~1600	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UHBX0502	40	175	10000~11000	1400~1800	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UHBX0602	40	175	8800~9300	1400~1800	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UHBX0802	40	265	9500~10500	1400~1800	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UIBX0602	50	230	11000~12000	1400~1800	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UIBX0802	50	225	8300~8800	1400~1800	0.06~0.1	0.16~0.2	3D銑 (3D MILLING)
UIBX1002	60	290	8700~9200	1200~1600	0.09~0.14	0.18~0.28	3D銑 (3D MILLING)
UIBX1202	60	325	8200~8600	1200~1600	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)



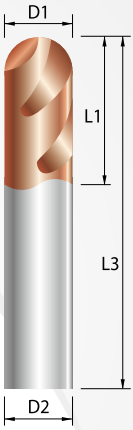
UBG

BALL NOSE END MILLS
極超微粒圓頭立銑刀

直徑 D1	球頭公差 R Tolerance
R0.5	±0.01
R0.75	±0.01
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

unit : mm



Super MG | 0.2 µm | 15° | 2 Flutes | HRc >60 | G12

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UBG0102	R0.5	2	50	4
UBG0152	R0.75	3	50	4
UBG0202	R1	4	50	4
UBG0302	R1.5	6	50	4
UBG0402	R2	8	50	4
UBG0502	R2.5	10	50	6
UBG0602	R3	12	50	6
UBG0802	R4	16	60	8
UBG1002	R5	20	75	10
UBG1202	R6	24	75	12
UBG1602	R8	32	100	16

unit : mm

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

UBG

切削條件表 *Milling Conditions*

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UBG0102	12	65	18000~20000	800~1000	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UBG0102	12	65	18000~20000	1200~1600	0.03~0.04	0.06~0.08	3D銑 (3D MILLING)
UBG0152	12	85	17000~18000	800~1000	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UBG0152	12	85	17000~18000	1200~1600	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UBG0202	12	115	17000~18000	900~1100	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UBG0202	12	115	17000~18000	1600~2000	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UBG0302	12	160	16000~17000	1200~1600	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
UBG0302	12	160	16000~17000	2000~2400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UBG0402	15	200	15000~16000	1600~2000	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UBG0402	15	200	15000~16000	2400~2800	0.05~0.08	0.1~0.16	3D銑 (3D MILLING)
UBG0502	17	220	13000~14000	1800~2200	0.14~0.17	0.28~0.34	3D銑 (3D MILLING)
UBG0502	17	235	14000~15000	2600~3000	0.06~0.09	0.12~0.18	3D銑 (3D MILLING)
UBG0602	20	230	11000~12000	2000~2400	0.16~0.21	0.32~0.42	3D銑 (3D MILLING)
UBG0602	20	245	12000~13000	2800~3200	0.07~0.12	0.14~0.24	3D銑 (3D MILLING)
UBG0802	25	280	10000~11000	2000~2400	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
UBG0802	25	305	11000~12000	3000~3400	0.08~0.13	0.16~0.26	3D銑 (3D MILLING)
UBG1002	30	290	8700~9200	2000~2400	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
UBG1002	30	290	8700~9200	3200~3600	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UBG1202	35	315	7800~8300	2400~2800	0.25~0.3	0.5~0.6	3D銑 (3D MILLING)
UBG1202	35	315	7800~8300	2800~3200	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UBG1602	50	260	5000~5500	1200~1400	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
UBG1602	50	260	5000~5500	2000~2400	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UBG0102	12	65	18000~20000	600~800	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UBG0102	12	65	18000~20000	1200~1600	0.03~0.04	0.06~0.08	3D銑 (3D MILLING)
UBG0152	12	85	17000~18000	600~800	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UBG0152	12	85	17000~18000	1200~1600	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UBG0202	12	115	17000~18000	700~900	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UBG0202	12	115	17000~18000	1600~2000	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)

UBG

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UBG0302	12	160	16000~17000	1200~1600	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
UBG0302	12	160	16000~17000	2000~2400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UBG0402	15	200	15000~16000	1600~2000	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UBG0402	15	200	15000~16000	2400~2800	0.05~0.08	0.1~0.16	3D銑 (3D MILLING)
UBG0502	17	220	13000~14000	1800~2200	0.14~0.17	0.28~0.34	3D銑 (3D MILLING)
UBG0502	17	235	14000~15000	2600~3000	0.06~0.09	0.12~0.18	3D銑 (3D MILLING)
UBG0602	20	230	11000~12000	2000~2400	0.16~0.21	0.32~0.42	3D銑 (3D MILLING)
UBG0602	20	245	12000~13000	2800~3200	0.07~0.12	0.14~0.24	3D銑 (3D MILLING)
UBG0802	25	280	10000~11000	2000~2400	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
UBG0802	25	305	11000~12000	3000~3400	0.08~0.13	0.16~0.26	3D銑 (3D MILLING)
UBG1002	30	290	8700~9200	2000~2400	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
UBG1002	30	290	8700~9200	3200~3600	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UBG1202	35	315	7800~8300	2400~2800	0.25~0.3	0.5~0.6	3D銑 (3D MILLING)
UBG1202	35	315	7800~8300	2800~3200	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UBG1602	50	260	5000~5500	1200~1400	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
UBG1602	50	260	5000~5500	2000~2400	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)

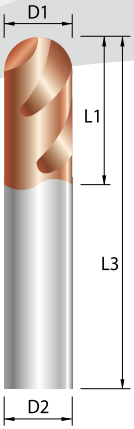
被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式冷卻 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UBG0102	12	65	18000~20000	600~800	0.03~0.04	0.06~0.08	3D銑 (3D MILLING)
UBG0152	12	85	17000~18000	800~1200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UBG0202	12	115	17000~18000	1000~1400	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UBG0302	12	160	16000~17000	1400~1800	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UBG0402	15	200	15000~16000	1800~2200	0.04~0.07	0.08~0.14	3D銑 (3D MILLING)
UBG0502	17	220	13000~14000	2000~2400	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UBG0602	20	230	11000~12000	2200~2600	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UBG0802	25	280	10000~11000	2400~2800	0.06~0.09	0.12~0.18	3D銑 (3D MILLING)
UBG1002	30	260	7700~8200	2600~3000	0.08~0.12	0.16~0.24	3D銑 (3D MILLING)
UBG1202	35	305	7500~8000	1800~2200	0.08~0.13	0.16~0.26	3D銑 (3D MILLING)
UBG1602	50	215	3800~4200	1600~2000	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)

UHBG UIBG

BALL NOSE END MILLS
極超微粒長柄圓頭立銑刀





直徑 D1	球頭公差 R Tolerance
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

unit : mm

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UHBG0202	R1	4	75	6
UHBG0302	R1.5	6	75	6
UHBG0402	R2	8	75	6
UHBG0502	R2.5	10	75	6
UHBG0602	R3	12	75	6
UHBG0802	R4	16	75	8
UIBG0402	R2	8	100	6
UIBG0602	R3	12	100	6
UIBG0802	R4	16	100	8
UIBG1002	R5	20	100	10
UIBG1202	R6	24	100	12

unit : mm





UHBG UIBG

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UHBG0202	40	105	15500~16500	1800~2200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UHBG0302	40	135	13000~14000	2000~2400	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)
UHBG0402	40	160	11500~12500	2400~2800	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UHBG0502	40	175	10000~11000	2600~3000	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UHBG0602	40	160	7800~8300	2200~2600	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UHBG0602	40	175	8800~9300	3000~3400	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UHBG0802	40	235	8700~9200	1800~2200	0.16~0.2	0.32~0.4	3D銑 (3D MILLING)
UHBG0802	40	265	9500~10500	2800~3200	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UIBG0402	50	150	11500~12000	2000~2400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UIBG0602	50	230	11000~12000	2000~2400	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UIBG0802	50	185	6700~7300	1200~1600	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
UIBG0802	50	225	8300~8800	1800~2200	0.06~0.1	0.16~0.2	3D銑 (3D MILLING)
UIBG1002	60	290	8700~9200	1800~2200	0.09~0.14	0.18~0.28	3D銑 (3D MILLING)
UIBG1202	60	325	8200~8600	1600~2000	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
UIBG1202	60	325	8200~8600	2200~2600	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UHBG0202	40	105	15500~16500	1800~2200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UHBG0302	40	135	13000~14000	2000~2400	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)
UHBG0402	40	160	11500~12500	2400~2800	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UHBG0502	40	175	10000~11000	2600~3000	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UHBG0602	40	160	7800~8300	2200~2600	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UHBG0602	40	175	8800~9300	3000~3400	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UHBG0802	40	235	8700~9200	1800~2200	0.16~0.2	0.32~0.4	3D銑 (3D MILLING)
UHBG0802	40	265	9500~10500	2800~3200	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UIBG0402	50	150	11500~12000	2000~2400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UIBG0602	50	230	11000~12000	2000~2400	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UIBG0802	50	185	6700~7300	1200~1600	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
UIBG0802	50	225	8300~8800	1800~2200	0.06~0.1	0.16~0.2	3D銑 (3D MILLING)
UIBG1002	60	290	8700~9200	1800~2200	0.09~0.14	0.18~0.28	3D銑 (3D MILLING)
UIBG1202	60	325	8200~8600	1600~2000	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
UIBG1202	60	325	8200~8600	2200~2600	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)

UHBG UIBG

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (mim^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UHBG0202	40	95	14000~15000	1000~1400	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UHBG0302	40	125	12000~13000	1200~1600	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UHBG0402	40	135	9500~10500	1200~1600	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UHBG0502	40	140	8300~8800	1400~1800	0.05~0.06	0.1~0.12	3D銑 (3D MILLING)
UHBG0602	40	150	7500~8000	1400~1800	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UHBG0802	40	235	8700~9200	2000~2400	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UIBG0402	50	135	9500~10500	1800~2200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UIBG0602	50	160	7700~8300	1800~2200	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UIBG0802	50	145	5400~5800	1600~2000	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UIBG1002	60	230	6700~7200	1400~1800	0.08~0.13	0.16~0.26	3D銑 (3D MILLING)
UIBG1202	60	290	7200~7700	1000~1400	0.08~0.13	0.16~0.26	3D銑 (3D MILLING)



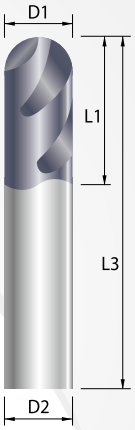
2T UBT

BALL NOSE END MILLS
極超微粒圓頭立銑刀

直徑 D1	球頭公差 R Tolerance
R0.5	±0.01
R0.75	±0.01
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

unit : mm





型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UBT0102	R0.5	2	50	4
UBT0152	R0.75	3	50	4
UBT0202	R1	4	50	6
UBT0302	R1.5	6	50	6
UBT0402	R2	8	50	6
UBT0502	R2.5	10	50	6
UBT0602	R3	12	50	6
UBT0802	R4	16	60	8
UBT1002	R5	20	75	10
UBT1202	R6	24	75	12
UBT1602	R8	32	100	16

unit : mm



UBT2T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UBT0102	12	65	18000~20000	800~1000	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UBT0102	12	65	18000~20000	1200~1600	0.03~0.04	0.06~0.08	3D銑 (3D MILLING)
UBT0152	12	85	17000~18000	800~1000	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UBT0152	12	85	17000~18000	1200~1600	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UBT0202	12	115	17000~18000	800~1000	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UBT0202	12	115	17000~18000	1600~2000	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UBT0302	12	160	16000~17000	1200~1600	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
UBT0302	12	160	16000~17000	2000~2400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UBT0402	15	200	15000~16000	1600~2000	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UBT0402	15	200	15000~16000	2400~2800	0.05~0.08	0.1~0.16	3D銑 (3D MILLING)
UBT0502	17	240	14000~15000	1800~2200	0.14~0.17	0.28~0.34	3D銑 (3D MILLING)
UBT0502	17	240	14000~15000	2600~3000	0.06~0.09	0.12~0.18	3D銑 (3D MILLING)
UBT0602	20	250	12000~13000	2000~2400	0.16~0.21	0.32~0.42	3D銑 (3D MILLING)
UBT0602	20	250	12000~13000	2800~3200	0.07~0.12	0.14~0.24	3D銑 (3D MILLING)
UBT0802	25	280	10000~11000	2000~2400	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
UBT0802	25	305	11000~12000	3000~3400	0.08~0.13	0.16~0.26	3D銑 (3D MILLING)
UBT1002	30	290	8700~9200	2000~2400	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
UBT1002	30	290	8700~9200	3200~3600	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UBT1202	35	315	7800~8300	2400~2800	0.25~0.3	0.5~0.6	3D銑 (3D MILLING)
UBT1202	35	315	7800~8300	2800~3200	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UBT1602	50	260	5000~5500	1200~1400	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
UBT1602	50	260	5000~5500	2000~2400	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UBT0102	13	65	18000~20000	600~800	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UBT0102	13	65	18000~20000	1000~1200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UBT0152	14	95	18000~20000	700~900	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UBT0152	14	95	18000~20000	1000~1200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UBT0202	15	115	17000~18000	700~900	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UBT0202	15	115	17000~18000	1600~1800	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)

UBT2T

切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UBT0302	17	160	16000~17000	1000~1200	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
UBT0302	17	160	16000~17000	1800~2000	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UBT0402	20	200	15000~16000	1400~1600	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UBT0402	20	200	15000~16000	2400~2800	0.05~0.08	0.1~0.16	3D銑 (3D MILLING)
UBT0502	20	235	13000~15000	1800~2000	0.13~0.17	0.26~0.34	3D銑 (3D MILLING)
UBT0502	20	235	13000~15000	2800~3200	0.05~0.08	0.1~0.16	3D銑 (3D MILLING)
UBT0602	20	245	11000~13000	1800~2000	0.14~0.18	0.28~0.36	3D銑 (3D MILLING)
UBT0602	20	245	11000~13000	3000~3400	0.05~0.09	0.1~0.18	3D銑 (3D MILLING)
UBT0802	24	280	10000~11000	1800~2000	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
UBT0802	24	280	10000~11000	3000~3400	0.07~0.1	0.14~0.2	3D銑 (3D MILLING)
UBT1002	35	290	8700~9200	1800~2200	0.2~0.3	0.4~0.6	3D銑 (3D MILLING)
UBT1002	35	290	8700~9200	3000~3400	0.08~0.12	0.16~0.24	3D銑 (3D MILLING)
UBT1202	37	275	6800~7300	2000~2400	0.2~0.3	0.4~0.6	3D銑 (3D MILLING)
UBT1202	37	275	6800~7300	2600~3000	0.08~0.13	0.16~0.26	3D銑 (3D MILLING)
UBT1602	50	250	4500~5000	1200~1400	0.3~0.35	0.6~0.7	3D銑 (3D MILLING)
UBT1602	50	250	4500~5000	1800~2200	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UBT0102	13	65	18000~20000	400~600	0.02~0.03	0.06~0.1	3D銑 (3D MILLING)
UBT0152	14	85	16000~18000	500~700	0.02~0.04	0.06~0.1	3D銑 (3D MILLING)
UBT0202	15	100	14000~16000	600~800	0.03~0.05	0.08~0.1	3D銑 (3D MILLING)
UBT0302	17	135	13000~14000	1200~1400	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UBT0402	20	150	11000~12000	1200~1600	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UBT0502	20	175	10000~11000	1800~2200	0.04~0.06	0.1~0.16	3D銑 (3D MILLING)
UBT0602	20	210	10000~11000	1600~2000	0.04~0.06	0.1~0.16	3D銑 (3D MILLING)
UBT0802	24	210	7800~8300	2000~2400	0.04~0.07	0.14~0.2	3D銑 (3D MILLING)
UBT1002	35	230	6800~7300	2000~2400	0.05~0.1	0.16~0.24	3D銑 (3D MILLING)
UBT1202	37	240	5800~6300	1800~2200	0.05~0.1	0.16~0.26	3D銑 (3D MILLING)
UBT1602	50	185	3200~3700	1200~1600	0.05~0.12	0.2~0.3	3D銑 (3D MILLING)

UHBT UIBT

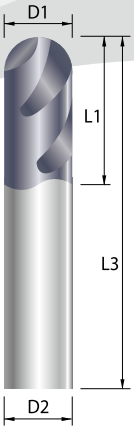
BALL NOSE END MILLS
極超微粒長柄圓頭立銑刀



直徑 D1	球頭公差 R Tolerance
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015
R8	±0.02
R10	±0.02

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

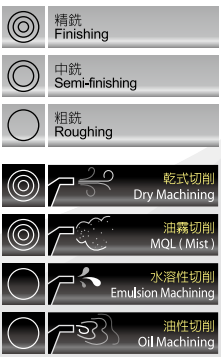
unit : mm



型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UHBT0302	R1.5	6	75	6
UHBT0402	R2	8	75	6
UHBT0502	R2.5	10	75	6
UHBT0602	R3	12	75	6
UHBT0802	R4	16	75	8
UIBT0602	R3	12	100	6
UIBT0802	R4	16	100	8
UIBT1002	R5	20	100	10
UIBT1202	R6	24	100	12

unit : mm





UHBT UIBT^{2T}

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UHBT0302	40	155	15000~16000	2000~2400	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)
UHBT0402	40	180	13500~14500	2400~2800	0.05~0.08	0.12~0.16	3D銑 (3D MILLING)
UHBT0502	40	210	12500~13500	2600~3000	0.05~0.08	0.12~0.16	3D銑 (3D MILLING)
UHBT0602	40	240	11500~12500	2200~2600	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UHBT0602	40	240	11500~12500	3000~3400	0.05~0.09	0.14~0.18	3D銑 (3D MILLING)
UHBT0802	40	255	9000~10000	1800~2200	0.16~0.2	0.32~0.4	3D銑 (3D MILLING)
UHBT0802	40	265	9500~10500	2800~3200	0.05~0.1	0.16~0.2	3D銑 (3D MILLING)
UIBT0602	50	230	11000~12000	2000~2400	0.05~0.08	0.12~0.16	3D銑 (3D MILLING)
UIBT0802	50	185	6700~7300	1200~1600	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
UIBT0802	50	225	8300~8800	1800~2200	0.05~0.1	0.16~0.2	3D銑 (3D MILLING)
UIBT1002	60	290	8700~9200	1800~2200	0.05~0.14	0.18~0.28	3D銑 (3D MILLING)
UIBT1202	60	330	8200~8600	1600~2000	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
UIBT1202	60	330	8200~8600	2200~2600	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UHBT0302	40	145	14000~15000	1000~1200	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UHBT0402	40	175	13000~14000	1600~2000	0.04~0.08	0.12~0.16	3D銑 (3D MILLING)
UHBT0502	40	205	12000~13000	1800~2200	0.04~0.08	0.12~0.16	3D銑 (3D MILLING)
UHBT0602	40	230	11000~12000	2000~2400	0.04~0.09	0.14~0.18	3D銑 (3D MILLING)
UHBT0802	40	255	9000~10000	2400~2800	0.05~0.1	0.16~0.2	3D銑 (3D MILLING)
UIBT0602	50	75	3600~4000	1300~1500	0.04~0.08	0.12~0.16	3D銑 (3D MILLING)
UIBT0802	50	145	5400~5800	1800~2000	0.04~0.09	0.14~0.18	3D銑 (3D MILLING)
UIBT1002	60	230	6700~7200	1800~2200	0.05~0.12	0.16~0.24	3D銑 (3D MILLING)
UIBT1202	60	330	8200~8700	2200~2400	0.05~0.14	0.22~0.28	3D銑 (3D MILLING)

UHBT UIBT^{2T}

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UHBT0302	40	125	12000~13000	600~800	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UHBT0402	40	150	11000~12000	900~1300	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UHBT0502	40	155	9000~10000	1400~1600	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UHBT0602	40	155	7700~8200	1400~1800	0.04~0.07	0.1~0.14	3D銑 (3D MILLING)
UHBT0802	40	195	7200~7700	1800~2200	0.04~0.09	0.14~0.18	3D銑 (3D MILLING)
UIBT0602	50	75	3400~3800	800~1000	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UIBT0802	50	135	4800~5300	1300~1500	0.04~0.07	0.1~0.14	3D銑 (3D MILLING)
UIBT1002	60	195	5700~6200	1800~2000	0.04~0.08	0.12~0.16	3D銑 (3D MILLING)
UIBT1202	60	305	7500~8000	1800~2000	0.05~0.1	0.18~0.22	3D銑 (3D MILLING)



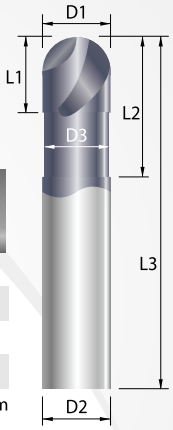
UOB

BALL NOSE END MILLS
極超微粒直刃圓頭立銑刀

直徑 D1	球頭公差 R Tolerance
R0.5	±0.01
R0.75	±0.01
R1	±0.01
R1.5	±0.01
R2	±0.01
R3	±0.01
R4	±0.01
R5	±0.015

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009

unit : mm



Super MG
0.2 µm
5°
2 Flutes
HRc ▶65
G15

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia.	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UOB0102	R0.5	0.95	1	3	50	4
UOB0152	R0.75	1.44	2	5	50	4
UOB0202	R1	1.92	3	6	50	6
UOB0302S	R1.5	2.90	4	8	50	4
UOB0302	R1.5	2.90	4	8	50	6
UOB0302L	R1.5	2.90	4	8	75	6
UOB0402S	R2	3.90	5	10	50	4
UOB0402	R2	3.90	5	10	50	6
UOB0402L	R2	3.90	5	10	75	6
UOB0602	R3	5.80	6	12	50	6
UOB0602M	R3	5.80	6	12	75	6
UOB0602L	R3	5.80	6	16	100	6
UOB0802	R4	7.70	8	16	60	8
UOB0802L	R4	7.70	8	25	100	8
UOB1002	R5	9.60	10	20	75	10
UOB1002L	R5	9.60	10	30	100	10

unit : mm

UOB

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UOB0102	15	65	18000~20000	600~800	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UOB0102	15	65	18000~20000	1000~1200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UOB0152	15	85	17000~18000	700~900	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UOB0152	15	85	17000~18000	1000~1200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UOB0202	15	115	17000~18000	700~900	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UOB0202	15	115	17000~18000	1600~1800	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)
UOB0302S	15	160	16000~17000	600~800	0.1~0.13	0.2~0.26	3D銑 (3D MILLING)
UOB0302S	15	160	16000~17000	1600~1800	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UOB0302	15	160	16000~17000	800~1000	0.1~0.13	0.2~0.26	3D銑 (3D MILLING)
UOB0302	15	160	16000~17000	1800~2000	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UOB0302L	40	140	14000~15000	400~600	0.08~0.11	0.16~0.22	3D銑 (3D MILLING)
UOB0302L	40	160	16000~17000	1300~1500	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UOB0402S	15	200	15000~16000	600~800	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UOB0402S	15	200	15000~16000	2400~2600	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)
UOB0402	15	200	15000~16000	800~1000	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UOB0402	15	200	15000~16000	2400~2800	0.05~0.08	0.1~0.16	3D銑 (3D MILLING)
UOB0402L	40	175	13000~14000	400~600	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
UOB0402L	40	190	14000~15000	1900~2300	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UOB0602	15	230	11000~12000	800~1200	0.2~0.3	0.4~0.6	3D銑 (3D MILLING)
UOB0602	15	245	12000~13000	3000~3400	0.05~0.09	0.1~0.18	3D銑 (3D MILLING)
UOB0602M	35	210	10000~11000	600~1000	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
UOB0602M	35	245	12000~13000	2400~2900	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UOB0602L	50	75	3400~3800	600~800	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
UOB0602L	50	75	3400~3800	1600~2000	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UOB0802	20	235	8700~9200	1200~1600	0.3~0.5	0.6~1	3D銑 (3D MILLING)
UOB0802	20	305	10000~12000	3000~3400	0.05~0.1	0.14~0.2	3D銑 (3D MILLING)
UOB0802L	50	145	5400~5800	800~1200	0.2~0.4	0.4~0.8	3D銑 (3D MILLING)
UOB0802L	50	145	5400~5800	2000~2400	0.05~0.1	0.14~0.2	3D銑 (3D MILLING)
UOB1002	30	270	7500~8500	1400~1800	0.4~0.6	0.8~1.2	3D銑 (3D MILLING)
UOB1002	30	300	8700~9500	3000~3400	0.05~0.12	0.16~0.24	3D銑 (3D MILLING)
UOB1002L	60	230	6700~7200	1000~1400	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
UOB1002L	60	230	6700~7200	2000~2500	0.05~0.12	0.16~0.24	3D銑 (3D MILLING)

UOB

切削條件表 Milling Conditions

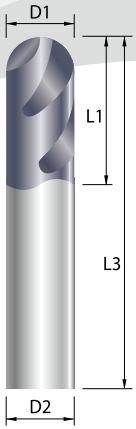
被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UOB0102	15	65	18000~20000	600~800	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UOB0152	15	85	17000~18000	700~900	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UOB0202	15	115	17000~18000	700~900	0.04~0.05	0.08~0.1	3D銑 (3D MILLING)
UOB0302S	15	150	14000~16000	500~700	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UOB0302S	15	160	16000~17000	1000~1200	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UOB0302	15	150	14000~16000	600~800	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UOB0302	15	160	16000~17000	1300~1500	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UOB0302L	40	125	12000~13000	400~600	0.06~0.08	0.12~0.16	3D銑 (3D MILLING)
UOB0302L	40	125	12000~13000	700~900	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UOB0402S	15	175	13000~14000	400~600	0.08~0.12	0.16~0.24	3D銑 (3D MILLING)
UOB0402S	15	200	15000~16000	1100~1500	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UOB0402	15	175	13000~14000	600~800	0.11~0.13	0.22~0.26	3D銑 (3D MILLING)
UOB0402	15	200	15000~16000	1300~1700	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UOB0402L	40	150	11000~12000	400~600	0.08~0.12	0.16~0.24	3D銑 (3D MILLING)
UOB0402L	40	150	11000~12000	900~1300	0.03~0.05	0.06~0.1	3D銑 (3D MILLING)
UOB0602	15	175	8700~9200	600~1000	0.14~0.15	0.28~0.3	3D銑 (3D MILLING)
UOB0602	15	210	10000~11000	1700~2100	0.05~0.08	0.1~0.16	3D銑 (3D MILLING)
UOB0602M	35	160	7500~8500	500~800	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
UOB0602M	35	190	9000~10000	1300~1700	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UOB0602L	50	75	3400~3800	500~700	0.07~0.09	0.14~0.18	3D銑 (3D MILLING)
UOB0602L	50	75	3400~3800	700~900	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UOB0802	20	180	6800~7200	600~1000	0.2~0.25	0.4~0.5	3D銑 (3D MILLING)
UOB0802	20	235	8700~9200	2100~2500	0.05~0.1	0.14~0.2	3D銑 (3D MILLING)
UOB0802L	50	165	5500~6500	500~700	0.1~0.15	0.2~0.3	3D銑 (3D MILLING)
UOB0802L	50	175	6500~7000	1100~1600	0.05~0.08	0.14~0.2	3D銑 (3D MILLING)
UOB1002	30	190	5500~6000	1000~1400	0.2~0.3	0.6~0.8	3D銑 (3D MILLING)
UOB1002	30	210	6200~6700	2100~2500	0.05~0.1	0.16~0.24	3D銑 (3D MILLING)
UOB1002L	60	160	4500~5000	600~1000	0.15~0.2	0.3~0.4	3D銑 (3D MILLING)
UOB1002L	60	190	5000~6000	1600~2100	0.05~0.1	0.16~0.24	3D銑 (3D MILLING)

4T UBT

BALL NOSE END MILLS
極超微粒圓頭立銑刀





直徑 D1	球頭公差 R Tolerance
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.015
R6	±0.015

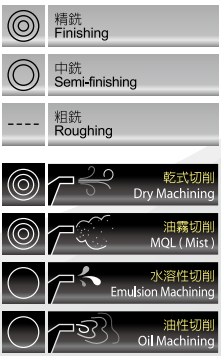
柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

unit : mm

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UBT0204	R1	4	50	6
UBT0304	R1.5	6	50	6
UBT0404	R2	8	50	6
UBT0504	R2.5	10	50	6
UBT0604	R3	12	50	6
UBT0804	R4	16	60	8
UBT1004	R5	20	75	10
UBT1204	R6	24	75	12

unit : mm





UBT4T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UBT0202	14	125	18000~20000	1000~1400	0.08~0.1	0.16~0.2	3D銑 (3D MILLING)
UBT0202	14	125	18000~20000	2400~2800	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UBT0302	15	170	17000~18000	1400~1800	0.1~0.12	0.2~0.24	3D銑 (3D MILLING)
UBT0302	15	170	17000~18000	2600~3000	0.05~0.07	0.1~0.14	3D銑 (3D MILLING)
UBT0402	15	215	16000~17000	1800~2200	0.12~0.15	0.24~0.3	3D銑 (3D MILLING)
UBT0402	15	215	16000~17000	3200~3600	0.04~0.08	0.1~0.16	3D銑 (3D MILLING)
UBT0502	17	235	14000~15000	1800~2200	0.14~0.18	0.28~0.36	3D銑 (3D MILLING)
UBT0502	17	235	14000~15000	3600~4000	0.04~0.08	0.12~0.22	3D銑 (3D MILLING)
UBT0602	19	245	12000~13000	2000~2400	0.16~0.21	0.32~0.42	3D銑 (3D MILLING)
UBT0602	19	245	12000~13000	3600~4000	0.04~0.08	0.14~0.24	3D銑 (3D MILLING)
UBT0802	30	330	12000~13000	2000~2400	0.18~0.23	0.36~0.46	3D銑 (3D MILLING)
UBT0802	30	330	12000~13000	3600~4000	0.05~0.1	0.16~0.26	3D銑 (3D MILLING)
UBT1002	40	290	8700~9200	2600~3000	0.23~0.28	0.46~0.56	3D銑 (3D MILLING)
UBT1002	40	290	8700~9200	3600~4000	0.05~0.12	0.2~0.3	3D銑 (3D MILLING)
UBT1202	40	315	7800~8300	2400~2800	0.28~0.3	0.56~0.6	3D銑 (3D MILLING)
UBT1202	40	315	7800~8300	3400~3800	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)

UBT4T

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UBT0204	12	125	18000~20000	2200~2400	0.03~0.05	0.08~0.1	3D銑 (3D MILLING)
UBT0304	14	160	16000~17000	2400~2600	0.04~0.06	0.08~0.12	3D銑 (3D MILLING)
UBT0404	16	200	15000~16000	3000~3400	0.05~0.08	0.1~0.16	3D銑 (3D MILLING)
UBT0504	18	235	13000~15000	3400~3800	0.05~0.08	0.1~0.16	3D銑 (3D MILLING)
UBT0604	20	245	11000~13000	3600~4000	0.05~0.09	0.1~0.18	3D銑 (3D MILLING)
UBT0804	24	280	10000~11000	3600~4000	0.07~0.1	0.14~0.2	3D銑 (3D MILLING)
UBT1004	30	290	8700~9200	3600~4000	0.08~0.12	0.16~0.24	3D銑 (3D MILLING)
UBT1204	34	290	7200~7700	3400~3800	0.08~0.13	0.16~0.26	3D銑 (3D MILLING)

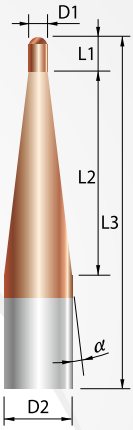
被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UBT0204	12	115	16000~18000	1200~1400	0.02~0.04	0.08~0.1	3D銑 (3D MILLING)
UBT0304	14	150	14000~16000	1800~2000	0.02~0.04	0.08~0.12	3D銑 (3D MILLING)
UBT0404	16	175	12000~14000	2200~2600	0.03~0.05	0.08~0.12	3D銑 (3D MILLING)
UBT0504	18	190	10000~12000	2400~2800	0.04~0.07	0.1~0.16	3D銑 (3D MILLING)
UBT0604	20	175	8700~9200	2600~3000	0.04~0.07	0.1~0.16	3D銑 (3D MILLING)
UBT0804	24	210	7800~8300	2600~3000	0.04~0.08	0.14~0.2	3D銑 (3D MILLING)
UBT1004	30	230	6800~7300	2600~3000	0.05~0.1	0.16~0.24	3D銑 (3D MILLING)
UBT1204	34	190	4500~5000	2400~2800	0.05~0.12	0.16~0.26	3D銑 (3D MILLING)



UPB

BALL NOSE END MILLS
極超微粒斜頸圓頭立銑刀



直徑 D1	球頭公差 R Tolerance
R1	±0.01
R1.5	±0.01
R2	±0.01

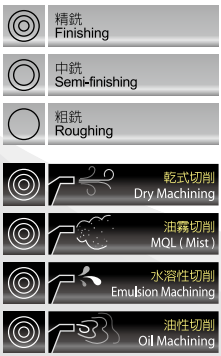
柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008

unit : mm



型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.	α 斜角 Taper Angle
UPB0205	R1	3	60	100	6	0.5°
UPB0210	R1	3	60	100	6	1°
UPB0215	R1	3	60	100	6	1.5°
UPB0220	R1	3	57	100	6	2°
UPB0305	R1.5	4	60	100	6	0.5°
UPB0310	R1.5	4	60	100	6	1°
UPB0315	R1.5	4	57	100	6	1.5°
UPB0320	R1.5	4	43	100	6	2°
UPB0405	R2	5	60	100	6	0.5°
UPB0410	R2	5	57	100	6	1°
UPB0415	R2	5	38	100	6	1.5°
UPB0420	R2	5	29	100	6	2°

unit : mm



UPB

切削條件表 *Milling Conditions*

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPB0205	65	35	5800~6300	700~900	0.05~0.1	0.1~0.2	3D銑 (3D MILLING)
UPB0205	65	40	6200~6700	600~800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0210	65	35	5800~6300	800~1200	0.05~0.1	0.1~0.2	3D銑 (3D MILLING)
UPB0210	65	40	6200~6700	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0215	65	35	5800~6300	800~1200	0.05~0.1	0.1~0.2	3D銑 (3D MILLING)
UPB0215	65	40	6200~6700	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0220	65	35	5800~6300	900~1300	0.05~0.1	0.1~0.2	3D銑 (3D MILLING)
UPB0220	65	40	6200~6700	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0305	65	40	4000~4500	1000~1400	0.05~0.1	0.1~0.2	3D銑 (3D MILLING)
UPB0305	65	45	4500~5000	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0310	65	40	4000~4500	1100~1500	0.05~0.1	0.1~0.2	3D銑 (3D MILLING)
UPB0310	65	45	4500~5000	900~1300	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0315	65	40	4000~4500	1100~1500	0.05~0.1	0.1~0.2	3D銑 (3D MILLING)
UPB0315	65	45	4500~5000	900~1300	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0320	65	40	4000~4500	1200~1600	0.05~0.1	0.1~0.2	3D銑 (3D MILLING)
UPB0320	65	45	4500~5000	900~1300	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0405	60	50	3800~4300	1200~1600	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
UPB0405	60	55	4200~4700	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UPB0410	60	50	3800~4300	1200~1600	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
UPB0410	60	55	4200~4700	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UPB0415	60	50	3800~4300	1300~1700	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
UPB0415	60	55	4200~4700	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UPB0420	60	50	3800~4300	1400~1800	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
UPB0420	60	55	4200~4700	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPB0205	65	35	5800~6300	600~800	0.05~0.1	0.1~0.2	3D銑 (3D MILLING)
UPB0205	65	40	6200~6700	500~700	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0210	65	35	5800~6300	700~1100	0.05~0.1	0.1~0.2	3D銑 (3D MILLING)
UPB0210	65	40	6200~6700	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0215	65	35	5800~6300	700~1100	0.05~0.1	0.1~0.2	3D銑 (3D MILLING)
UPB0215	65	40	6200~6700	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)

UPB

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPB0220	65	35	5800~6300	800~1200	0.05~0.1	0.1~0.2	3D銑 (3D MILLING)
UPB0220	65	40	6200~6700	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0305	65	40	4000~4500	900~1300	0.05~0.1	0.1~0.2	3D銑 (3D MILLING)
UPB0305	65	45	4500~5000	600~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0310	65	40	4000~4500	1000~1400	0.05~0.1	0.1~0.2	3D銑 (3D MILLING)
UPB0310	65	45	4500~5000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0315	65	40	4000~4500	1000~1400	0.05~0.1	0.1~0.2	3D銑 (3D MILLING)
UPB0315	65	45	4500~5000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0320	65	40	4000~4500	1100~1500	0.05~0.1	0.1~0.2	3D銑 (3D MILLING)
UPB0320	65	45	4500~5000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0405	60	50	3800~4300	1000~1400	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
UPB0405	60	55	4200~4700	1000~1400	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UPB0410	60	50	3800~4300	1000~1400	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
UPB0410	60	55	4200~4700	1000~1400	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UPB0415	60	50	3800~4300	1100~1500	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
UPB0415	60	55	4200~4700	1000~1400	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UPB0420	60	50	3800~4300	1200~1600	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
UPB0420	60	55	4200~4700	1000~1400	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)

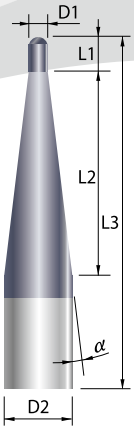
被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPB0205	65	25	4000~4500	300~500	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0210	65	25	4000~4500	500~700	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0215	65	25	4000~4500	500~700	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0220	65	25	4000~4500	600~800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0305	65	30	2800~3300	400~600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0310	65	30	2800~3300	600~800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0315	65	30	2800~3300	600~800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0320	65	30	2800~3300	700~900	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0405	60	30	2200~2600	600~800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0410	60	30	2200~2600	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0415	60	30	2200~2600	700~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPB0420	60	30	2200~2600	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)

USB

BALL NOSE END MILLS
極超微粒斜頸圓頭立銑刀





直徑 D1	球頭公差 R Tolerance
R1	±0.01
R1.5	±0.01
R2	±0.01
R3	±0.01

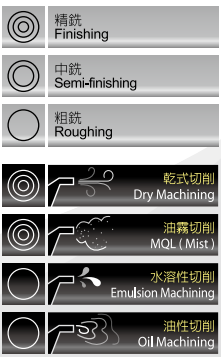
柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009

unit : mm

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.	α 斜角 Taper Angle
USB0203	R1	4	75	6	3°
USB0205	R1	4	75	6	5°
USB0315	R1.5	6	100	6	1.5°
USB0303	R1.5	6	75	6	3°
USB0305	R1.5	6	75	6	5°
USB0415	R2	8	100	6	1.5°
USB0405	R2	8	75	6	5°
USB0615	R3	12	100	8	1.5°
USB0603	R3	12	75	8	3°
USB0605	R3	12	100	8	5°
USB0603B	R3	12	100	10	3°
USB0605B	R3	12	100	10	5°

unit : mm





USB

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
USB0203	45	85	13000~14000	1700~2100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0203	45	85	13000~14000	1100~1500	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0205	45	85	13000~14000	1900~2300	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0205	45	85	13000~14000	1100~1500	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0315	55	55	5500~6000	1300~1700	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0315	55	60	6000~6500	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0303	40	110	11000~12000	2100~2500	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0303	40	120	12000~13000	1300~1700	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0305	40	110	11000~12000	2300~2700	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0305	40	120	12000~13000	1300~1700	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0415	55	50	3800~4300	1200~1600	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
USB0415	55	55	4200~4700	1100~1500	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
USB0405	35	100	8000~8500	2200~2600	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
USB0405	35	130	10000~11000	1400~1800	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
USB0615	50	180	9500~10000	1500~1900	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
USB0615	50	200	10000~11000	1300~1700	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
USB0603	40	200	10000~11000	2300~2700	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
USB0603	40	215	11000~12000	2100~2500	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
USB0605	50	180	9500~10000	2100~2500	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
USB0605	50	200	10000~11000	1700~2100	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
USB0603B	50	200	10000~11000	2300~2700	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
USB0603B	50	215	11000~12000	2100~2500	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
USB0605B	50	200	10000~11000	2500~2900	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
USB0605B	50	215	11000~12000	2100~2500	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
USB0203	45	85	13000~14000	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0203	45	85	13000~14000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0205	45	85	13000~14000	1800~2200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0205	45	85	13000~14000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0315	55	55	5500~6000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0315	55	60	6000~6500	900~1300	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)

USB

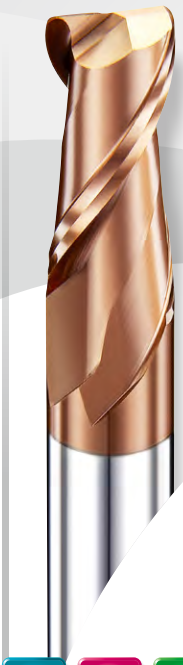
切削條件表 *Milling Conditions*

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
USB0303	40	110	11000~12000	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0303	40	120	12000~13000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0305	40	110	11000~12000	2200~2600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0305	40	120	12000~13000	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0415	55	50	3800~4300	1100~1500	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
USB0415	55	55	4200~4700	1000~1400	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
USB0405	35	100	8000~8500	2000~2400	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
USB0405	35	130	10000~11000	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
USB0615	55	180	9500~10000	1200~1600	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
USB0615	55	200	10000~11000	1000~1400	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
USB0603	40	200	10000~11000	2000~2400	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
USB0603	40	215	11000~12000	1800~2200	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
USB0605	55	180	9500~10000	1800~2200	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
USB0605	55	200	10000~11000	1400~1800	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
USB0603B	55	200	10000~11000	2000~2400	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
USB0603B	55	215	11000~12000	1800~2200	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
USB0605B	55	200	10000~11000	2200~2600	0.05~0.15	0.2~0.3	3D銑 (3D MILLING)
USB0605B	55	215	11000~12000	1800~2200	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
USB0203	40	45	6700~7300	600~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0205	40	45	6700~7300	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0315	55	50	4800~5300	500~700	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0303	40	80	8000~8500	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0305	40	80	8000~8500	900~1300	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0415	55	45	3300~3800	500~700	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0405	35	90	7000~7500	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0615	55	120	6200~6700	600~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0603	40	140	7200~7700	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0605	55	120	6200~6700	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0603B	55	140	7200~7700	1300~1700	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
USB0605B	55	140	7200~7700	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)



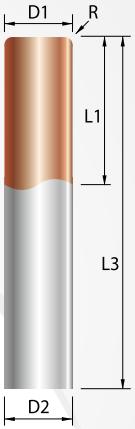
UKR

END MILLS
極超微粒圓鼻角立銑刀

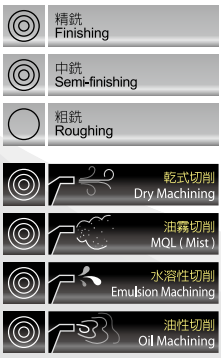
直徑 D1	R徑公差 R Tolerance	直徑公差 D1 Tolerance
1.0	+0.02 0	0 -0.02
1.5	+0.02 0	0 -0.02
2.0	+0.02 0	0 -0.02
2.5	+0.02 0	0 -0.02
3.0	+0.02 0	0 -0.02
4.0	+0.02 0	0 -0.02
5.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.025
10.0	+0.02 0	0 -0.03
12.0	+0.02 0	0 -0.035

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

unit : mm







型號 Type No.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UKR0102	1.0	0.2	3	50	4
UKR0152	1.5	0.2	4	50	4
UKR0202	2.0	0.2	6	50	4
UKR0205	2.0	0.5	6	50	4
UKR0252	2.5	0.2	8	50	4
UKR0255	2.5	0.5	8	50	4
UKR0302	3.0	0.2	8	50	4
UKR0303	3.0	0.3	8	50	4
UKR0305	3.0	0.5	8	50	4
UKR0402	4.0	0.2	11	50	4
UKR0403	4.0	0.3	11	50	4
UKR0405	4.0	0.5	11	50	4
UKR0503	5.0	0.3	13	50	6
UKR0505	5.0	0.5	13	50	6

unit : mm

UKR

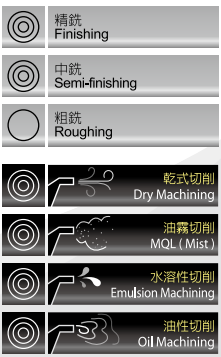
END MILLS
極超微粒圓鼻角立銑刀



型號 Type No.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UKR0602	6.0	0.2	16	50	6
UKR0603	6.0	0.3	16	50	6
UKR0605	6.0	0.5	16	50	6
UKR0610	6.0	1.0	16	50	6
UKR0803	8.0	0.3	20	60	8
UKR0805	8.0	0.5	20	60	8
UKR0810	8.0	1.0	20	60	8
UKR1002	10.0	0.2	25	75	10
UKR1003	10.0	0.3	25	75	10
UKR1005	10.0	0.5	25	75	10
UKR1010	10.0	1.0	25	75	10
UKR1203	12.0	0.3	30	75	12
UKR1205	12.0	0.5	30	75	12
UKR1210	12.0	1.0	30	75	12
UKR1215	12.0	1.5	30	75	12
UKR1220	12.0	2.0	30	75	12

unit : mm





UKR

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UKR0102	12	65	18000~20000	2000~2400	0.06~0.08	0.4~1	溝銑 (SLOTTING)
UKR0102	12	65	18000~20000	800~1100	0.03~0.05	0.4~1	溝銑 (SLOTTING)
UKR0102	12	65	18000~20000	2200~2600	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
UKR0102	12	65	18000~20000	2000~2400	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UKR0152	12	95	18000~20000	2200~2600	0.06~0.08	0.7~1.5	溝銑 (SLOTTING)
UKR0152	12	95	18000~20000	900~1300	0.03~0.05	0.7~1.5	溝銑 (SLOTTING)
UKR0152	12	95	18000~20000	2400~2800	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
UKR0152	12	95	18000~20000	2200~2600	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UKR0202	14	115	16000~18000	2400~2800	0.07~0.09	1~2	溝銑 (SLOTTING)
UKR0202	14	115	16000~18000	1100~1500	0.03~0.05	1~2	溝銑 (SLOTTING)
UKR0202	14	115	16000~18000	2600~3000	0.07~0.09	0.07~0.09	3D銑 (3D MILLING)
UKR0202	14	115	16000~18000	2400~2800	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UKR0205	14	115	16000~18000	2400~2800	0.07~0.09	0.5~2	溝銑 (SLOTTING)
UKR0205	14	115	16000~18000	1100~1500	0.03~0.05	0.5~2	溝銑 (SLOTTING)
UKR0205	14	115	16000~18000	2600~3000	0.07~0.09	0.07~0.09	3D銑 (3D MILLING)
UKR0205	14	115	16000~18000	2400~2800	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UKR0252	14	125	15000~16000	2600~3000	0.09~0.12	1.5~2.5	溝銑 (SLOTTING)
UKR0252	14	125	15000~16000	1200~1600	0.04~0.06	1.5~2.5	溝銑 (SLOTTING)
UKR0252	14	125	15000~16000	2600~3000	0.09~0.12	0.09~0.12	3D銑 (3D MILLING)
UKR0252	14	125	15000~16000	2400~2800	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
UKR0255	14	125	15000~16000	2600~3000	0.09~0.12	1~2.5	溝銑 (SLOTTING)
UKR0255	14	125	15000~16000	1200~1600	0.04~0.06	1~2.5	溝銑 (SLOTTING)
UKR0255	14	125	15000~16000	2600~3000	0.09~0.12	0.09~0.12	3D銑 (3D MILLING)
UKR0255	14	125	15000~16000	2400~2800	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
UKR0302	14	150	15000~16000	2800~3200	0.09~0.12	2~3	溝銑 (SLOTTING)
UKR0302	14	150	15000~16000	1400~1800	0.04~0.06	2~3	溝銑 (SLOTTING)
UKR0302	14	150	15000~16000	2800~3200	0.09~0.12	0.09~0.12	3D銑 (3D MILLING)
UKR0302	14	150	15000~16000	2600~3000	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
UKR0303	14	150	15000~16000	2800~3200	0.09~0.12	2~3	溝銑 (SLOTTING)
UKR0303	14	150	15000~16000	1400~1800	0.04~0.06	2~3	溝銑 (SLOTTING)
UKR0303	14	150	15000~16000	2800~3200	0.09~0.12	0.09~0.12	3D銑 (3D MILLING)
UKR0303	14	150	15000~16000	2600~3000	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
UKR0305	14	150	15000~16000	2800~3200	0.09~0.12	1.5~3	溝銑 (SLOTTING)
UKR0305	14	150	15000~16000	1400~1800	0.04~0.06	1.5~3	溝銑 (SLOTTING)
UKR0305	14	150	15000~16000	2800~3200	0.09~0.12	0.09~0.12	3D銑 (3D MILLING)
UKR0305	14	150	15000~16000	2600~3000	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
UKR0402	16	175	13000~14000	2800~3200	0.11~0.13	3~4	溝銑 (SLOTTING)
UKR0402	16	175	13000~14000	1400~1800	0.05~0.07	3~4	溝銑 (SLOTTING)
UKR0402	16	175	13000~14000	3000~3400	0.11~0.13	0.11~0.13	3D銑 (3D MILLING)
UKR0402	16	175	13000~14000	3200~3600	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)

UKR

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UKR0403	16	175	13000~14000	2800~3200	0.11~0.13	3~4	溝銑 (SLOTTING)
UKR0403	16	175	13000~14000	1400~1800	0.05~0.07	3~4	溝銑 (SLOTTING)
UKR0403	16	175	13000~14000	3000~3400	0.11~0.13	0.11~0.13	3D銑 (3D MILLING)
UKR0403	16	175	13000~14000	3200~3600	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
UKR0405	16	175	13000~14000	2800~3200	0.11~0.13	2~4	溝銑 (SLOTTING)
UKR0405	16	175	13000~14000	1400~1800	0.05~0.07	2~4	溝銑 (SLOTTING)
UKR0405	16	175	13000~14000	3000~3400	0.11~0.13	0.11~0.13	3D銑 (3D MILLING)
UKR0405	16	175	13000~14000	3200~3600	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
UKR0503	18	205	12000~13000	2800~3200	0.13~0.16	3~5	溝銑 (SLOTTING)
UKR0503	18	205	12000~13000	1400~1800	0.05~0.08	3~5	溝銑 (SLOTTING)
UKR0503	18	205	12000~13000	3200~3600	0.13~0.16	0.13~0.16	3D銑 (3D MILLING)
UKR0503	18	205	12000~13000	3200~3600	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UKR0505	18	205	12000~13000	2800~3200	0.13~0.16	3~5	溝銑 (SLOTTING)
UKR0505	18	205	12000~13000	1400~1800	0.05~0.08	3~5	溝銑 (SLOTTING)
UKR0505	18	205	12000~13000	3200~3600	0.13~0.16	0.13~0.16	3D銑 (3D MILLING)
UKR0505	18	205	12000~13000	3200~3600	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UKR0602	24	230	11000~12000	3000~3500	0.15~0.18	3~6	溝銑 (SLOTTING)
UKR0602	24	230	11000~12000	1600~2000	0.05~0.1	3~6	溝銑 (SLOTTING)
UKR0602	24	230	11000~12000	3400~3800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
UKR0602	24	230	11000~12000	3400~3800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UKR0603	24	230	11000~12000	3000~3500	0.15~0.18	3~6	溝銑 (SLOTTING)
UKR0603	24	230	11000~12000	1600~2000	0.05~0.1	3~6	溝銑 (SLOTTING)
UKR0603	24	230	11000~12000	3400~3800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
UKR0603	24	230	11000~12000	3400~3800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UKR0605	24	230	11000~12000	3000~3500	0.15~0.18	3~6	溝銑 (SLOTTING)
UKR0605	24	230	11000~12000	1600~2000	0.05~0.1	3~6	溝銑 (SLOTTING)
UKR0605	24	230	11000~12000	3400~3800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
UKR0605	24	230	11000~12000	3400~3800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UKR0610	24	230	11000~12000	3000~3500	0.15~0.18	3~6	溝銑 (SLOTTING)
UKR0610	24	230	11000~12000	1600~2000	0.05~0.1	3~6	溝銑 (SLOTTING)
UKR0610	24	230	11000~12000	3400~3800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
UKR0610	24	230	11000~12000	3400~3800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UKR0803	28	280	10000~11000	2200~2600	0.15~0.2	5~8	溝銑 (SLOTTING)
UKR0803	28	280	10000~11000	1400~1800	0.05~0.11	5~8	溝銑 (SLOTTING)
UKR0803	28	280	10000~11000	3000~3400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UKR0803	28	280	10000~11000	2800~3200	0.05~0.11	0.05~0.11	3D銑 (3D MILLING)
UKR0805	28	280	10000~11000	2200~2600	0.15~0.2	5~8	溝銑 (SLOTTING)
UKR0805	28	280	10000~11000	1400~1800	0.05~0.11	5~8	溝銑 (SLOTTING)
UKR0805	28	280	10000~11000	3000~3400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UKR0805	28	280	10000~11000	2800~3200	0.05~0.11	0.05~0.11	3D銑 (3D MILLING)

UKR

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UKR0810	28	280	10000~11000	2200~2600	0.15~0.2	5~8	溝銑 (SLOTTING)
UKR0810	28	280	10000~11000	1400~1800	0.05~0.11	5~8	溝銑 (SLOTTING)
UKR0810	28	280	10000~11000	3000~3400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UKR0810	28	280	10000~11000	2800~3200	0.05~0.11	0.05~0.11	3D銑 (3D MILLING)
UKR1002	36	315	9000~10000	2000~2400	0.15~0.2	7~10	溝銑 (SLOTTING)
UKR1002	36	315	9000~10000	1200~1600	0.05~0.12	7~10	溝銑 (SLOTTING)
UKR1002	36	315	9000~10000	2800~3200	0.18~0.22	0.18~0.22	3D銑 (3D MILLING)
UKR1002	36	315	9000~10000	2800~3200	0.05~0.12	0.05~0.12	3D銑 (3D MILLING)
UKR1003	36	315	9000~10000	2000~2400	0.15~0.2	7~10	溝銑 (SLOTTING)
UKR1003	36	315	9000~10000	1200~1600	0.05~0.12	7~10	溝銑 (SLOTTING)
UKR1003	36	315	9000~10000	2800~3200	0.18~0.22	0.18~0.22	3D銑 (3D MILLING)
UKR1003	36	315	9000~10000	2800~3200	0.05~0.12	0.05~0.12	3D銑 (3D MILLING)
UKR1005	36	315	9000~10000	2000~2400	0.15~0.2	7~10	溝銑 (SLOTTING)
UKR1005	36	315	9000~10000	1200~1600	0.05~0.12	7~10	溝銑 (SLOTTING)
UKR1005	36	315	9000~10000	2800~3200	0.18~0.22	0.18~0.22	3D銑 (3D MILLING)
UKR1005	36	315	9000~10000	2800~3200	0.05~0.12	0.05~0.12	3D銑 (3D MILLING)
UKR1010	36	315	9000~10000	2000~2400	0.15~0.2	7~10	溝銑 (SLOTTING)
UKR1010	36	315	9000~10000	1200~1600	0.05~0.12	7~10	溝銑 (SLOTTING)
UKR1010	36	315	9000~10000	2800~3200	0.18~0.22	0.18~0.22	3D銑 (3D MILLING)
UKR1010	36	315	9000~10000	2800~3200	0.05~0.12	0.05~0.12	3D銑 (3D MILLING)
UKR1203	40	245	5500~6500	2000~2400	0.18~0.23	11~12	溝銑 (SLOTTING)
UKR1203	40	245	5500~6500	1200~1600	0.05~0.16	11~12	溝銑 (SLOTTING)
UKR1203	40	245	5500~6500	2600~3000	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UKR1203	40	245	5500~6500	2000~2400	0.05~0.16	0.05~0.16	3D銑 (3D MILLING)
UKR1205	40	245	5500~6500	2000~2400	0.18~0.23	10~12	溝銑 (SLOTTING)
UKR1205	40	245	5500~6500	1200~1600	0.05~0.16	10~12	溝銑 (SLOTTING)
UKR1205	40	245	5500~6500	2600~3000	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UKR1205	40	245	5500~6500	2000~2400	0.05~0.16	0.05~0.16	3D銑 (3D MILLING)
UKR1210	40	245	5500~6500	2000~2400	0.18~0.23	9~12	溝銑 (SLOTTING)
UKR1210	40	245	5500~6500	1200~1600	0.05~0.16	9~12	溝銑 (SLOTTING)
UKR1210	40	245	5500~6500	2600~3000	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UKR1210	40	245	5500~6500	2000~2400	0.05~0.16	0.05~0.16	3D銑 (3D MILLING)
UKR1215	40	245	5500~6500	2000~2400	0.18~0.23	7~12	溝銑 (SLOTTING)
UKR1215	40	245	5500~6500	1200~1600	0.05~0.16	7~12	溝銑 (SLOTTING)
UKR1215	40	245	5500~6500	2600~3000	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UKR1215	40	245	5500~6500	2000~2400	0.05~0.16	0.05~0.16	3D銑 (3D MILLING)
UKR1220	40	245	5500~6500	2000~2400	0.18~0.23	7~12	溝銑 (SLOTTING)
UKR1220	40	245	5500~6500	1200~1600	0.05~0.16	7~12	溝銑 (SLOTTING)
UKR1220	40	245	5500~6500	2600~3000	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UKR1220	40	245	5500~6500	2000~2400	0.05~0.16	0.05~0.16	3D銑 (3D MILLING)

UKR

切削條件表 *Milling Conditions*

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UKR0102	12	65	18000~20000	2000~2400	0.06~0.08	0.4~1	溝銑 (SLOTTING)
UKR0102	12	65	18000~20000	600~1000	0.03~0.05	0.4~1	溝銑 (SLOTTING)
UKR0102	12	65	18000~20000	2200~2600	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
UKR0102	12	65	18000~20000	1800~2200	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UKR0152	12	95	18000~20000	2200~2600	0.06~0.08	0.7~1.5	溝銑 (SLOTTING)
UKR0152	12	95	18000~20000	800~1200	0.03~0.05	0.7~1.5	溝銑 (SLOTTING)
UKR0152	12	95	18000~20000	2400~2800	0.06~0.08	0.06~0.08	3D銑 (3D MILLING)
UKR0152	12	95	18000~20000	2000~2400	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UKR0202	14	115	16000~18000	2400~2800	0.07~0.09	1~2	溝銑 (SLOTTING)
UKR0202	14	115	16000~18000	1000~1400	0.03~0.05	1~2	溝銑 (SLOTTING)
UKR0202	14	115	16000~18000	2600~3000	0.07~0.09	0.07~0.09	3D銑 (3D MILLING)
UKR0202	14	115	16000~18000	2200~2600	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UKR0205	14	115	16000~18000	2400~2800	0.07~0.09	0.5~2	溝銑 (SLOTTING)
UKR0205	14	115	16000~18000	1000~1400	0.03~0.05	0.5~2	溝銑 (SLOTTING)
UKR0205	14	115	16000~18000	2600~3000	0.07~0.09	0.07~0.09	3D銑 (3D MILLING)
UKR0205	14	115	16000~18000	2200~2600	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UKR0252	14	125	15000~16000	2600~3000	0.09~0.12	1.5~2.5	溝銑 (SLOTTING)
UKR0252	14	125	15000~16000	1200~1600	0.04~0.06	1.5~2.5	溝銑 (SLOTTING)
UKR0252	14	125	15000~16000	2600~3000	0.09~0.12	0.09~0.12	3D銑 (3D MILLING)
UKR0252	14	125	15000~16000	2400~2800	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
UKR0255	14	125	15000~16000	2600~3000	0.09~0.12	1~2.5	溝銑 (SLOTTING)
UKR0255	14	125	15000~16000	1200~1600	0.04~0.06	1~2.5	溝銑 (SLOTTING)
UKR0255	14	125	15000~16000	2600~3000	0.09~0.12	0.09~0.12	3D銑 (3D MILLING)
UKR0255	14	125	15000~16000	2400~2800	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
UKR0302	14	150	15000~16000	2800~3200	0.09~0.12	2~3	溝銑 (SLOTTING)
UKR0302	14	150	15000~16000	1400~1800	0.04~0.06	2~3	溝銑 (SLOTTING)
UKR0302	14	150	15000~16000	2800~3200	0.09~0.12	0.09~0.12	3D銑 (3D MILLING)
UKR0302	14	150	15000~16000	2600~3000	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
UKR0303	14	150	15000~16000	2800~3200	0.09~0.12	2~3	溝銑 (SLOTTING)
UKR0303	14	150	15000~16000	1400~1800	0.04~0.06	2~3	溝銑 (SLOTTING)
UKR0303	14	150	15000~16000	2800~3200	0.09~0.12	0.09~0.12	3D銑 (3D MILLING)
UKR0303	14	150	15000~16000	2600~3000	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
UKR0305	14	150	15000~16000	2800~3200	0.09~0.12	1.5~3	溝銑 (SLOTTING)
UKR0305	14	150	15000~16000	1400~1800	0.04~0.06	1.5~3	溝銑 (SLOTTING)
UKR0305	14	150	15000~16000	2800~3200	0.09~0.12	0.09~0.12	3D銑 (3D MILLING)
UKR0305	14	150	15000~16000	2600~3000	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
UKR0402	16	175	13000~14000	2800~3200	0.11~0.13	3~4	溝銑 (SLOTTING)
UKR0402	16	175	13000~14000	1400~1800	0.05~0.07	3~4	溝銑 (SLOTTING)
UKR0402	16	175	13000~14000	3000~3400	0.11~0.13	0.11~0.13	3D銑 (3D MILLING)
UKR0402	16	175	13000~14000	3200~3600	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)

UKR

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UKR0403	16	175	13000~14000	2800~3200	0.11~0.13	3~4	溝銑 (SLOTTING)
UKR0403	16	175	13000~14000	1400~1800	0.05~0.07	3~4	溝銑 (SLOTTING)
UKR0403	16	175	13000~14000	3000~3400	0.11~0.13	0.11~0.13	3D銑 (3D MILLING)
UKR0403	16	175	13000~14000	3200~3600	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
UKR0405	16	175	13000~14000	2800~3200	0.11~0.13	2~4	溝銑 (SLOTTING)
UKR0405	16	175	13000~14000	1400~1800	0.05~0.07	2~4	溝銑 (SLOTTING)
UKR0405	16	175	13000~14000	3000~3400	0.11~0.13	0.11~0.13	3D銑 (3D MILLING)
UKR0405	16	175	13000~14000	3200~3600	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
UKR0503	18	205	12000~13000	2800~3200	0.13~0.16	3~5	溝銑 (SLOTTING)
UKR0503	18	205	12000~13000	1400~1800	0.05~0.08	3~5	溝銑 (SLOTTING)
UKR0503	18	205	12000~13000	3200~3600	0.13~0.16	0.13~0.16	3D銑 (3D MILLING)
UKR0503	18	205	12000~13000	3200~3600	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UKR0505	18	205	12000~13000	2800~3200	0.13~0.16	3~5	溝銑 (SLOTTING)
UKR0505	18	205	12000~13000	1400~1800	0.05~0.08	3~5	溝銑 (SLOTTING)
UKR0505	18	205	12000~13000	3200~3600	0.13~0.16	0.13~0.16	3D銑 (3D MILLING)
UKR0505	18	205	12000~13000	3200~3600	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UKR0602	24	230	11000~12000	3000~3500	0.15~0.18	3~6	溝銑 (SLOTTING)
UKR0602	24	230	11000~12000	1600~2000	0.05~0.1	3~6	溝銑 (SLOTTING)
UKR0602	24	230	11000~12000	3400~3800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
UKR0602	24	230	11000~12000	3400~3800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UKR0603	24	230	11000~12000	3000~3500	0.15~0.18	3~6	溝銑 (SLOTTING)
UKR0603	24	230	11000~12000	1600~2000	0.05~0.1	3~6	溝銑 (SLOTTING)
UKR0603	24	230	11000~12000	3400~3800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
UKR0603	24	230	11000~12000	3400~3800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UKR0605	24	230	11000~12000	3000~3500	0.15~0.18	3~6	溝銑 (SLOTTING)
UKR0605	24	230	11000~12000	1600~2000	0.05~0.1	3~6	溝銑 (SLOTTING)
UKR0605	24	230	11000~12000	3400~3800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
UKR0605	24	230	11000~12000	3400~3800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UKR0610	24	230	11000~12000	3000~3500	0.15~0.18	3~6	溝銑 (SLOTTING)
UKR0610	24	230	11000~12000	1600~2000	0.05~0.1	3~6	溝銑 (SLOTTING)
UKR0610	24	230	11000~12000	3400~3800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
UKR0610	24	230	11000~12000	3400~3800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UKR0803	28	280	10000~11000	2200~2600	0.15~0.2	5~8	溝銑 (SLOTTING)
UKR0803	28	280	10000~11000	1400~1800	0.05~0.11	5~8	溝銑 (SLOTTING)
UKR0803	28	280	10000~11000	3000~3400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UKR0803	28	280	10000~11000	2800~3200	0.05~0.11	0.05~0.11	3D銑 (3D MILLING)
UKR0805	28	280	10000~11000	2200~2600	0.15~0.2	5~8	溝銑 (SLOTTING)
UKR0805	28	280	10000~11000	1400~1800	0.05~0.11	5~8	溝銑 (SLOTTING)
UKR0805	28	280	10000~11000	3000~3400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UKR0805	28	280	10000~11000	2800~3200	0.05~0.11	0.05~0.11	3D銑 (3D MILLING)

UKR

切削條件表 *Milling Conditions*

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UKR0810	28	280	10000~11000	2200~2600	0.15~0.2	5~8	溝銑 (SLOTTING)
UKR0810	28	280	10000~11000	1400~1800	0.05~0.11	5~8	溝銑 (SLOTTING)
UKR0810	28	280	10000~11000	3000~3400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UKR0810	28	280	10000~11000	2800~3200	0.05~0.11	0.05~0.11	3D銑 (3D MILLING)
UKR1002	36	315	9000~10000	2000~2400	0.15~0.2	7~10	溝銑 (SLOTTING)
UKR1002	36	315	9000~10000	1200~1600	0.05~0.12	7~10	溝銑 (SLOTTING)
UKR1002	36	315	9000~10000	2800~3200	0.18~0.22	0.18~0.22	3D銑 (3D MILLING)
UKR1002	36	315	9000~10000	2800~3200	0.05~0.12	0.05~0.12	3D銑 (3D MILLING)
UKR1003	36	315	9000~10000	2000~2400	0.15~0.2	7~10	溝銑 (SLOTTING)
UKR1003	36	315	9000~10000	1200~1600	0.05~0.12	7~10	溝銑 (SLOTTING)
UKR1003	36	315	9000~10000	2800~3200	0.18~0.22	0.18~0.22	3D銑 (3D MILLING)
UKR1003	36	315	9000~10000	2800~3200	0.05~0.12	0.05~0.12	3D銑 (3D MILLING)
UKR1005	36	315	9000~10000	2000~2400	0.15~0.2	7~10	溝銑 (SLOTTING)
UKR1005	36	315	9000~10000	1200~1600	0.05~0.12	7~10	溝銑 (SLOTTING)
UKR1005	36	315	9000~10000	2800~3200	0.18~0.22	0.18~0.22	3D銑 (3D MILLING)
UKR1005	36	315	9000~10000	2800~3200	0.05~0.12	0.05~0.12	3D銑 (3D MILLING)
UKR1010	36	315	9000~10000	2000~2400	0.15~0.2	7~10	溝銑 (SLOTTING)
UKR1010	36	315	9000~10000	1200~1600	0.05~0.12	7~10	溝銑 (SLOTTING)
UKR1010	36	315	9000~10000	2800~3200	0.18~0.22	0.18~0.22	3D銑 (3D MILLING)
UKR1010	36	315	9000~10000	2800~3200	0.05~0.12	0.05~0.12	3D銑 (3D MILLING)
UKR1203	40	245	5500~6500	2000~2400	0.18~0.23	11~12	溝銑 (SLOTTING)
UKR1203	40	245	5500~6500	1200~1600	0.05~0.16	11~12	溝銑 (SLOTTING)
UKR1203	40	245	5500~6500	2600~3000	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UKR1203	40	245	5500~6500	2000~2400	0.05~0.16	0.05~0.16	3D銑 (3D MILLING)
UKR1205	40	245	5500~6500	2000~2400	0.18~0.23	10~12	溝銑 (SLOTTING)
UKR1205	40	245	5500~6500	1200~1600	0.05~0.16	10~12	溝銑 (SLOTTING)
UKR1205	40	245	5500~6500	2600~3000	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UKR1205	40	245	5500~6500	2000~2400	0.05~0.16	0.05~0.16	3D銑 (3D MILLING)
UKR1210	40	245	5500~6500	2000~2400	0.18~0.23	9~12	溝銑 (SLOTTING)
UKR1210	40	245	5500~6500	1200~1600	0.05~0.16	9~12	溝銑 (SLOTTING)
UKR1210	40	245	5500~6500	2600~3000	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UKR1210	40	245	5500~6500	2000~2400	0.05~0.16	0.05~0.16	3D銑 (3D MILLING)
UKR1215	40	245	5500~6500	2000~2400	0.18~0.23	7~12	溝銑 (SLOTTING)
UKR1215	40	245	5500~6500	1200~1600	0.05~0.16	7~12	溝銑 (SLOTTING)
UKR1215	40	245	5500~6500	2600~3000	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UKR1215	40	245	5500~6500	2000~2400	0.05~0.16	0.05~0.16	3D銑 (3D MILLING)
UKR1220	40	245	5500~6500	2000~2400	0.18~0.23	7~12	溝銑 (SLOTTING)
UKR1220	40	245	5500~6500	1200~1600	0.05~0.16	7~12	溝銑 (SLOTTING)
UKR1220	40	245	5500~6500	2600~3000	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UKR1220	40	245	5500~6500	2000~2400	0.05~0.16	0.05~0.16	3D銑 (3D MILLING)

UKR

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UKR0102	12	60	17000~18000	600~1000	0.03~0.05	0.4~1	溝銑 (SLOTTING)
UKR0102	12	60	17000~18000	1800~2200	0.03~0.05	0.03~0.05	溝銑 (SLOTTING)
UKR0152	12	85	17000~18000	600~1000	0.03~0.05	0.7~1.5	3D銑 (3D MILLING)
UKR0152	12	85	17000~18000	1800~2200	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UKR0202	14	110	16000~17000	800~1200	0.03~0.05	1~2	溝銑 (SLOTTING)
UKR0202	14	110	16000~17000	2000~2400	0.03~0.05	0.03~0.05	溝銑 (SLOTTING)
UKR0205	14	110	16000~17000	800~1200	0.03~0.05	0.5~2	3D銑 (3D MILLING)
UKR0205	14	110	16000~17000	2000~2400	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UKR0252	14	120	14000~15000	1000~1400	0.04~0.06	1.5~2.5	溝銑 (SLOTTING)
UKR0252	14	120	14000~15000	2200~2600	0.04~0.06	0.04~0.06	溝銑 (SLOTTING)
UKR0255	14	120	14000~15000	1000~1400	0.04~0.06	1~2.5	3D銑 (3D MILLING)
UKR0255	14	120	14000~15000	2200~2600	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
UKR0302	14	135	14000~15000	1200~1600	0.04~0.06	2~3	溝銑 (SLOTTING)
UKR0302	14	135	14000~15000	2400~2800	0.04~0.06	0.04~0.06	溝銑 (SLOTTING)
UKR0303	14	135	14000~15000	1200~1600	0.04~0.06	2~3	3D銑 (3D MILLING)
UKR0303	14	135	14000~15000	2400~2800	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
UKR0305	14	135	14000~15000	1200~1600	0.04~0.06	1.5~3	溝銑 (SLOTTING)
UKR0305	14	135	14000~15000	2400~2800	0.04~0.06	0.04~0.06	溝銑 (SLOTTING)
UKR0402	16	175	13000~14000	1200~1600	0.05~0.07	3~4	3D銑 (3D MILLING)
UKR0402	16	175	13000~14000	2600~3000	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
UKR0403	16	175	13000~14000	1200~1600	0.05~0.07	3~4	溝銑 (SLOTTING)
UKR0403	16	175	13000~14000	2600~3000	0.05~0.07	0.05~0.07	溝銑 (SLOTTING)
UKR0405	16	175	13000~14000	1200~1600	0.05~0.07	2~4	3D銑 (3D MILLING)
UKR0405	16	175	13000~14000	2600~3000	0.05~0.07	0.05~0.07	3D銑 (3D MILLING)
UKR0503	18	200	12000~13000	1400~1800	0.04~0.08	4~5	溝銑 (SLOTTING)
UKR0503	18	200	12000~13000	2800~3200	0.04~0.08	0.04~0.08	溝銑 (SLOTTING)
UKR0505	18	200	12000~13000	1400~1800	0.04~0.08	4~5	3D銑 (3D MILLING)
UKR0505	18	200	12000~13000	2800~3200	0.04~0.08	0.04~0.08	3D銑 (3D MILLING)
UKR0602	24	205	10000~11000	1400~1800	0.05~0.08	5~6	溝銑 (SLOTTING)
UKR0602	24	205	10000~11000	3000~3400	0.05~0.08	0.05~0.08	溝銑 (SLOTTING)
UKR0603	24	205	10000~11000	1400~1800	0.05~0.08	5~6	3D銑 (3D MILLING)
UKR0603	24	205	10000~11000	3000~3400	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UKR0605	24	205	10000~11000	1400~1800	0.05~0.08	5~6	溝銑 (SLOTTING)
UKR0605	24	205	10000~11000	3000~3400	0.05~0.08	0.05~0.08	溝銑 (SLOTTING)
UKR0610	24	205	10000~11000	1400~1800	0.05~0.08	5~6	3D銑 (3D MILLING)
UKR0610	24	205	10000~11000	3000~3400	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UKR0803	28	205	7500~8500	1200~1600	0.05~0.1	7~8	溝銑 (SLOTTING)
UKR0803	28	205	7500~8500	2600~3000	0.05~0.1	0.05~0.1	溝銑 (SLOTTING)
UKR0805	28	205	7500~8500	1200~1600	0.05~0.1	7~8	3D銑 (3D MILLING)
UKR0805	28	205	7500~8500	2600~3000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)

UKR

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UKR0810	28	205	7500~8500	1200~1600	0.05~0.1	7~8	溝銑 (SLOTTING)
UKR0810	28	205	7500~8500	2600~3000	0.05~0.1	0.05~0.1	溝銑 (SLOTTING)
UKR1002	36	205	6000~7000	1100~1500	0.05~0.12	9~10	3D銑 (3D MILLING)
UKR1002	36	205	6000~7000	2600~3000	0.05~0.12	0.05~0.12	3D銑 (3D MILLING)
UKR1003	36	205	6000~7000	1100~1500	0.05~0.12	9~10	溝銑 (SLOTTING)
UKR1003	36	205	6000~7000	2600~3000	0.05~0.12	0.05~0.12	溝銑 (SLOTTING)
UKR1005	36	205	6000~7000	1100~1500	0.05~0.12	9~10	3D銑 (3D MILLING)
UKR1005	36	205	6000~7000	2600~3000	0.05~0.12	0.05~0.12	3D銑 (3D MILLING)
UKR1010	36	205	6000~7000	1100~1500	0.05~0.12	9~10	溝銑 (SLOTTING)
UKR1010	36	205	6000~7000	2600~3000	0.05~0.12	0.05~0.12	溝銑 (SLOTTING)
UKR1203	40	200	4500~5500	1100~1500	0.05~0.13	11~12	3D銑 (3D MILLING)
UKR1203	40	200	4500~5500	2000~2400	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
UKR1205	40	200	4500~5500	1100~1500	0.05~0.13	11~12	溝銑 (SLOTTING)
UKR1205	40	200	4500~5500	2000~2400	0.05~0.13	0.05~0.13	溝銑 (SLOTTING)
UKR1210	40	200	4500~5500	1100~1500	0.05~0.13	11~12	3D銑 (3D MILLING)
UKR1210	40	200	4500~5500	2000~2400	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
UKR1215	40	200	4500~5500	1100~1500	0.05~0.13	11~12	溝銑 (SLOTTING)
UKR1215	40	200	4500~5500	2000~2400	0.05~0.13	0.05~0.13	溝銑 (SLOTTING)
UKR1220	40	200	4500~5500	1100~1500	0.05~0.13	11~12	3D銑 (3D MILLING)
UKR1220	40	200	4500~5500	2000~2400	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)



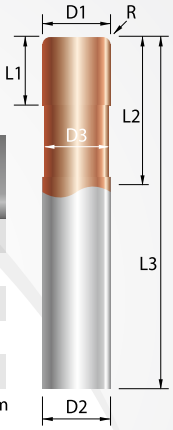
UXR

END MILLS
極超微粒圓鼻角立銑刀

直徑 D1	R徑公差 R Tolerance	直徑公差 D1 Tolerance
4.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.025
10.0	+0.02 0	0 -0.03
12.0	+0.02 0	0 -0.035
16.0	+0.02 0	0 -0.04

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

unit : mm



Super MG | 0.4 µm | 35° | R | 4 Flutes | HRc ▸60 | G12

- 精銑 Finishing
- 中銑 Semi-finishing
- 粗銑 Roughing
- 乾式切削 Dry Machining
- 油霧切削 MQL (Mist)
- 水溶性切削 Emulsion Machining
- 油性切削 Oil Machining

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia.	R R角 Corner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UXR0403	4.0	3.90	0.3	6	12	50	6
UXR0405	4.0	3.90	0.5	6	12	50	6
UXR0603	6.0	5.80	0.3	8	18	50	6
UXR0605	6.0	5.80	0.5	8	18	50	6
UXR0610	6.0	5.80	1.0	8	18	50	6
UXR0803	8.0	7.70	0.3	10	24	60	8
UXR0805	8.0	7.70	0.5	10	24	60	8
UXR0810	8.0	7.70	1.0	10	24	60	8
UXR1005	10.0	9.60	0.5	12	30	75	10
UXR1010	10.0	9.60	1.0	12	30	75	10
UXR1020	10.0	9.60	2.0	12	30	75	10
UXR1030	10.0	9.60	3.0	12	30	75	10
UXR1205	12.0	11.5	0.5	15	36	75	12
UXR1210	12.0	11.5	1.0	15	36	75	12
UXR1605	16.0	15.5	0.5	24	40	100	16
UXR1610	16.0	15.5	1.0	24	40	100	16

unit : mm

UXR

切削條件表 *Milling Conditions*

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UXR0403	20	195	15000~16000	3000~3500	0.1~0.15	3~4	溝銑 (SLOTTING)
UXR0403	20	195	15000~16000	1400~1800	0.04~0.08	3~4	溝銑 (SLOTTING)
UXR0403	20	195	15000~16000	3400~3800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UXR0403	20	195	15000~16000	3400~3800	0.04~0.08	0.04~0.08	3D銑 (3D MILLING)
UXR0405	20	195	15000~16000	3000~3500	0.1~0.15	2~4	溝銑 (SLOTTING)
UXR0405	20	195	15000~16000	1400~1800	0.04~0.08	2~4	溝銑 (SLOTTING)
UXR0405	20	195	15000~16000	3400~3800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UXR0405	20	195	15000~16000	3400~3800	0.04~0.08	0.04~0.08	3D銑 (3D MILLING)
UXR0603	20	215	11000~12000	3000~3500	0.15~0.18	5~6	溝銑 (SLOTTING)
UXR0603	20	215	11000~12000	1600~2000	0.05~0.1	5~6	溝銑 (SLOTTING)
UXR0603	20	215	11000~12000	3400~3800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
UXR0603	20	215	11000~12000	3400~3800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UXR0605	20	215	11000~12000	3000~3500	0.15~0.18	4~6	溝銑 (SLOTTING)
UXR0605	20	215	11000~12000	1600~2000	0.05~0.1	4~6	溝銑 (SLOTTING)
UXR0605	20	215	11000~12000	3400~3800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
UXR0605	20	215	11000~12000	3400~3800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UXR0610	20	215	11000~12000	3000~3500	0.15~0.18	3~6	溝銑 (SLOTTING)
UXR0610	20	215	11000~12000	1600~2000	0.05~0.1	3~6	溝銑 (SLOTTING)
UXR0610	20	215	11000~12000	3400~3800	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
UXR0610	20	215	11000~12000	3400~3800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UXR0803	30	235	9000~10000	2200~2600	0.15~0.2	7~8	溝銑 (SLOTTING)
UXR0803	30	235	9000~10000	1400~1800	0.05~0.11	7~8	溝銑 (SLOTTING)
UXR0803	30	235	9000~10000	3000~3400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UXR0803	30	235	9000~10000	3200~3600	0.05~0.11	0.05~0.11	3D銑 (3D MILLING)
UXR0805	30	235	9000~10000	2200~2600	0.15~0.2	6~8	溝銑 (SLOTTING)
UXR0805	30	235	9000~10000	1400~1800	0.05~0.11	6~8	溝銑 (SLOTTING)
UXR0805	30	235	9000~10000	3000~3400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UXR0805	30	235	9000~10000	3200~3600	0.05~0.11	0.05~0.11	3D銑 (3D MILLING)
UXR0810	30	235	9000~10000	2200~2600	0.15~0.2	5~8	溝銑 (SLOTTING)
UXR0810	30	235	9000~10000	1400~1800	0.05~0.11	5~8	溝銑 (SLOTTING)
UXR0810	30	235	9000~10000	3000~3400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UXR0810	30	235	9000~10000	3200~3600	0.05~0.11	0.05~0.11	3D銑 (3D MILLING)
UXR1005	35	240	7500~8000	2000~2400	0.18~0.23	8~!0	溝銑 (SLOTTING)
UXR1005	35	240	7500~8000	1400~1800	0.05~0.13	8~!0	溝銑 (SLOTTING)
UXR1005	35	240	7500~8000	2800~3200	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UXR1005	35	240	7500~8000	3000~3500	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
UXR1010	35	240	7500~8000	2000~2400	0.18~0.23	7~10	溝銑 (SLOTTING)
UXR1010	35	240	7500~8000	1400~1800	0.05~0.13	7~10	溝銑 (SLOTTING)
UXR1010	35	240	7500~8000	2800~3200	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UXR1010	35	240	7500~8000	3000~3500	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)

UXR

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UXR1020	35	240	7500~8000	2000~2400	0.18~0.23	5~10	溝銑 (SLOTTING)
UXR1020	35	240	7500~8000	1400~1800	0.05~0.13	5~10	溝銑 (SLOTTING)
UXR1020	35	240	7500~8000	2800~3200	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UXR1020	35	240	7500~8000	3000~3500	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
UXR1030	35	240	7500~8000	2000~2400	0.18~0.23	3~10	溝銑 (SLOTTING)
UXR1030	35	240	7500~8000	1400~1800	0.05~0.13	3~10	溝銑 (SLOTTING)
UXR1030	35	240	7500~8000	2800~3200	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UXR1030	35	240	7500~8000	3000~3500	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
UXR1205	40	210	5000~5500	1400~1800	0.15~0.2	10~12	溝銑 (SLOTTING)
UXR1205	40	210	5000~5500	1200~1600	0.05~0.15	10~12	溝銑 (SLOTTING)
UXR1205	40	210	5000~5500	2200~2600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UXR1205	40	210	5000~5500	2000~2400	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UXR1210	40	210	5000~5500	1400~1800	0.15~0.2	9~12	溝銑 (SLOTTING)
UXR1210	40	210	5000~5500	1200~1600	0.05~0.15	9~12	溝銑 (SLOTTING)
UXR1210	40	210	5000~5500	2200~2600	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UXR1210	40	210	5000~5500	2000~2400	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UXR1605	60	145	2600~3000	700~1100	0.25~0.3	14~16	溝銑 (SLOTTING)
UXR1605	60	200	3500~4000	800~1100	0.05~0.18	14~16	溝銑 (SLOTTING)
UXR1605	60	160	2700~3200	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
UXR1605	60	215	3700~4200	1400~1800	0.05~0.18	0.05~0.18	3D銑 (3D MILLING)
UXR1610	60	145	2600~3000	700~1100	0.25~0.3	13~16	溝銑 (SLOTTING)
UXR1610	60	200	3500~4000	800~1100	0.05~0.18	13~16	溝銑 (SLOTTING)
UXR1610	60	160	2700~3200	1600~2000	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
UXR1610	60	215	3700~4200	1400~1800	0.05~0.18	0.05~0.18	3D銑 (3D MILLING)

UXR

切削條件表 *Milling Conditions*

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UXR0403	20	190	14000~15000	2600~3000	0.1~0.15	3~4	溝銑 (SLOTTING)
UXR0403	20	190	14000~15000	1300~1700	0.04~0.08	3~4	溝銑 (SLOTTING)
UXR0403	20	190	14000~15000	3000~3500	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UXR0403	20	190	14000~15000	2800~3200	0.04~0.08	0.04~0.08	3D銑 (3D MILLING)
UXR0405	20	190	14000~15000	2600~3000	0.1~0.15	2~4	溝銑 (SLOTTING)
UXR0405	20	190	14000~15000	1300~1700	0.04~0.08	2~4	溝銑 (SLOTTING)
UXR0405	20	190	14000~15000	3000~3500	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UXR0405	20	190	14000~15000	2800~3200	0.04~0.08	0.04~0.08	3D銑 (3D MILLING)
UXR0603	20	210	10000~11000	2600~3000	0.15~0.18	5~6	溝銑 (SLOTTING)
UXR0603	20	210	10000~11000	1300~1700	0.05~0.1	5~6	溝銑 (SLOTTING)
UXR0603	20	210	10000~11000	3000~3500	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
UXR0603	20	210	10000~11000	2800~3200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UXR0605	20	210	10000~11000	2600~3000	0.15~0.18	4~6	溝銑 (SLOTTING)
UXR0605	20	210	10000~11000	1300~1700	0.05~0.1	4~6	溝銑 (SLOTTING)
UXR0605	20	210	10000~11000	3000~3500	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
UXR0605	20	210	10000~11000	2800~3200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UXR0610	20	210	10000~11000	2600~3000	0.15~0.18	3~6	溝銑 (SLOTTING)
UXR0610	20	210	10000~11000	1300~1700	0.05~0.1	3~6	溝銑 (SLOTTING)
UXR0610	20	210	10000~11000	3000~3500	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
UXR0610	20	210	10000~11000	2800~3200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UXR0803	30	210	8500~9000	2000~2400	0.15~0.2	7~8	溝銑 (SLOTTING)
UXR0803	30	210	8500~9000	1200~1600	0.05~0.11	7~8	溝銑 (SLOTTING)
UXR0803	30	210	8500~9000	2800~3200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UXR0803	30	210	8500~9000	2800~3200	0.05~0.11	0.05~0.11	3D銑 (3D MILLING)
UXR0805	30	210	8500~9000	2000~2400	0.15~0.2	6~8	溝銑 (SLOTTING)
UXR0805	30	210	8500~9000	1200~1600	0.05~0.11	6~8	溝銑 (SLOTTING)
UXR0805	30	210	8500~9000	2800~3200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UXR0805	30	210	8500~9000	2800~3200	0.05~0.11	0.05~0.11	3D銑 (3D MILLING)
UXR0810	30	210	8500~9000	2000~2400	0.15~0.2	5~8	溝銑 (SLOTTING)
UXR0810	30	210	8500~9000	1200~1600	0.05~0.11	5~8	溝銑 (SLOTTING)
UXR0810	30	210	8500~9000	2800~3200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UXR0810	30	210	8500~9000	2800~3200	0.05~0.11	0.05~0.11	3D銑 (3D MILLING)
UXR1005	35	220	7000~7500	1800~2200	0.18~0.23	8~10	溝銑 (SLOTTING)
UXR1005	35	220	7000~7500	1200~1600	0.05~0.13	8~10	溝銑 (SLOTTING)
UXR1005	35	220	7000~7500	2400~2800	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UXR1005	35	220	7000~7500	2400~2800	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
UXR1010	35	220	7000~7500	1800~2200	0.18~0.23	7~10	溝銑 (SLOTTING)
UXR1010	35	220	7000~7500	1200~1600	0.05~0.13	7~10	溝銑 (SLOTTING)
UXR1010	35	220	7000~7500	2400~2800	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UXR1010	35	220	7000~7500	2400~2800	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)

UXR

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UXR1020	35	220	7000~7500	1800~2200	0.18~0.23	5~10	溝銑 (SLOTTING)
UXR1020	35	220	7000~7500	1200~1600	0.05~0.13	5~10	溝銑 (SLOTTING)
UXR1020	35	220	7000~7500	2400~2800	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UXR1020	35	220	7000~7500	2400~2800	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
UXR1030	35	220	7000~7500	1800~2200	0.18~0.23	3~!0	溝銑 (SLOTTING)
UXR1030	35	220	7000~7500	1200~1600	0.05~0.13	3~10	溝銑 (SLOTTING)
UXR1030	35	220	7000~7500	2400~2800	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UXR1030	35	220	7000~7500	2400~2800	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
UXR1205	40	190	4500~5000	1200~1600	0.15~0.2	10~12	溝銑 (SLOTTING)
UXR1205	40	190	4500~5000	1100~1400	0.05~0.15	10~12	溝銑 (SLOTTING)
UXR1205	40	190	4500~5000	2000~2400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UXR1205	40	190	4500~5000	1800~2200	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UXR1210	40	190	4500~5000	1200~1600	0.15~0.2	9~12	溝銑 (SLOTTING)
UXR1210	40	190	4500~5000	1100~1400	0.05~0.15	9~12	溝銑 (SLOTTING)
UXR1210	40	190	4500~5000	2000~2400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UXR1210	40	190	4500~5000	1800~2200	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UXR1605	60	140	2400~2800	700~1000	0.25~0.3	14~16	溝銑 (SLOTTING)
UXR1605	60	200	3500~4000	800~1000	0.05~0.18	14~16	溝銑 (SLOTTING)
UXR1605	60	160	2700~3200	1400~1800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
UXR1605	60	215	3700~4200	1400~1800	0.05~0.18	0.05~0.18	3D銑 (3D MILLING)
UXR1610	60	140	2400~2800	700~1000	0.25~0.3	13~16	溝銑 (SLOTTING)
UXR1610	60	200	3500~4000	800~1000	0.05~0.18	13~16	溝銑 (SLOTTING)
UXR1610	60	160	2700~3200	1400~1800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
UXR1610	60	215	3700~4200	1400~1800	0.05~0.18	0.05~0.18	3D銑 (3D MILLING)

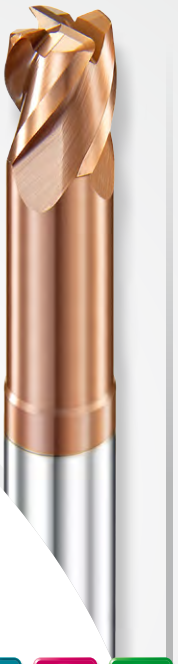
UXR

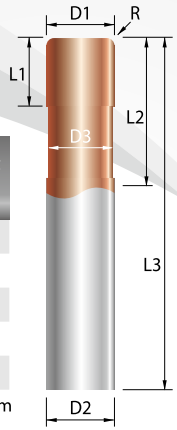
切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UXR0403	20	140	11000~12000	1200~1600	0.04~0.06	3~4	溝銑 (SLOTTING)
UXR0403	20	140	11000~12000	2600~3000	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
UXR0405	20	140	11000~12000	1200~1600	0.04~0.06	2~4	溝銑 (SLOTTING)
UXR0405	20	140	11000~12000	2600~3000	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
UXR0603	20	150	7500~8500	1200~1600	0.04~0.08	5~6	溝銑 (SLOTTING)
UXR0603	20	150	7500~8500	2600~3000	0.04~0.08	0.04~0.08	3D銑 (3D MILLING)
UXR0605	20	150	7500~8500	1200~1600	0.04~0.08	4~6	溝銑 (SLOTTING)
UXR0605	20	150	7500~8500	2600~3000	0.04~0.08	0.04~0.08	3D銑 (3D MILLING)
UXR0610	20	150	7500~8500	1200~1600	0.04~0.08	3~6	溝銑 (SLOTTING)
UXR0610	20	150	7500~8500	2600~3000	0.04~0.08	0.04~0.08	3D銑 (3D MILLING)
UXR0803	30	150	5500~6500	1200~1600	0.05~0.1	7~8	溝銑 (SLOTTING)
UXR0803	30	150	5500~6500	2200~2600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UXR0805	30	150	5500~6500	1200~1600	0.05~0.1	6~8	溝銑 (SLOTTING)
UXR0805	30	150	5500~6500	2200~2600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UXR0810	30	150	5500~6500	1200~1600	0.05~0.1	5~8	溝銑 (SLOTTING)
UXR0810	30	150	5500~6500	2200~2600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UXR1005	35	160	5000~5500	1400~1800	0.05~0.12	8~10	溝銑 (SLOTTING)
UXR1005	35	160	5000~5500	2600~3000	0.05~0.12	0.05~0.12	3D銑 (3D MILLING)
UXR1010	35	160	5000~5500	1400~1800	0.05~0.12	7~10	溝銑 (SLOTTING)
UXR1010	35	160	5000~5500	2600~3000	0.05~0.12	0.05~0.12	3D銑 (3D MILLING)
UXR1020	35	160	5000~5500	1400~1800	0.05~0.12	5~10	溝銑 (SLOTTING)
UXR1020	35	160	5000~5500	2600~3000	0.05~0.12	0.05~0.12	3D銑 (3D MILLING)
UXR1030	35	160	5000~5500	1400~1800	0.05~0.12	3~10	溝銑 (SLOTTING)
UXR1030	35	160	5000~5500	2600~3000	0.05~0.12	0.05~0.12	3D銑 (3D MILLING)
UXR1205	40	140	3500~4000	1200~1600	0.05~0.13	10~12	溝銑 (SLOTTING)
UXR1205	40	140	3500~4000	1600~2000	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
UXR1210	40	140	3500~4000	1200~1600	0.05~0.13	9~12	溝銑 (SLOTTING)
UXR1210	40	140	3500~4000	1600~2000	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
UXR1605	60	150	2500~3000	800~1100	0.05~0.15	14~16	溝銑 (SLOTTING)
UXR1605	60	150	2500~3000	1400~1800	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UXR1610	60	150	2500~3000	800~1100	0.05~0.15	13~16	溝銑 (SLOTTING)
UXR1610	60	150	2500~3000	1400~1800	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)

ULXR END MILLS 極超微粒圓鼻角立銑刀





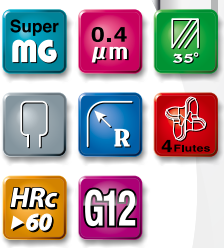
直徑 D1	R徑公差 R Tolerance	直徑公差 D1 Tolerance
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.025
10.0	+0.02 0	0 -0.03
12.0	+0.02 0	0 -0.035
16.0	+0.02 0	0 -0.04

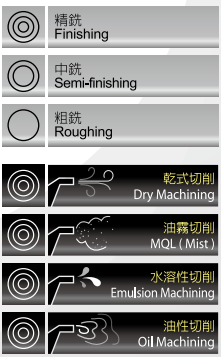
柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

unit : mm

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia.	R R角 Corner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ULXR0605	6.0	5.80	0.5	6	18	75	6
ULXR0610	6.0	5.80	1.0	6	18	75	6
ULXR0805	8.0	7.80	0.5	8	24	100	8
ULXR0810	8.0	7.80	1.0	8	24	100	8
ULXR1005	10.0	9.60	0.5	10	30	100	10
ULXR1010	10.0	9.60	1.0	10	30	100	10
ULXR1020	10.0	9.60	2.0	10	30	100	10
ULXR1205	12.0	11.5	0.5	12	36	100	12
ULXR1210	12.0	11.5	1.0	12	36	100	12
ULXR1220	12.0	11.5	2.0	12	36	100	12
ULXR1610	16.0	15.5	1.0	16	40	150	16
ULXR1620	16.0	15.5	2.0	16	40	150	16

unit : mm





ULXR

切削條件表 *Milling Conditions*

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ULXR0605	40	140	7200~7600	1400~1800	0.12~0.15	4~6	溝銑 (SLOTTING)
ULXR0605	40	140	7200~7600	1200~1400	0.05~0.08	4~6	溝銑 (SLOTTING)
ULXR0605	40	140	7200~7600	2200~2600	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
ULXR0605	40	140	7200~7600	2000~2400	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
ULXR0610	40	140	7200~7600	1400~1800	0.12~0.15	3~6	溝銑 (SLOTTING)
ULXR0610	40	140	7200~7600	1200~1400	0.05~0.08	3~6	溝銑 (SLOTTING)
ULXR0610	40	140	7200~7600	2200~2600	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
ULXR0610	40	140	7200~7600	2000~2400	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
ULXR0805	50	140	5400~5600	1800~2200	0.15~0.2	6~8	溝銑 (SLOTTING)
ULXR0805	50	140	5400~5600	800~1200	0.05~0.1	6~8	溝銑 (SLOTTING)
ULXR0805	50	140	5400~5600	2600~3000	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
ULXR0805	50	140	5400~5600	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULXR0810	50	140	5400~5600	1800~2200	0.15~0.2	5~8	溝銑 (SLOTTING)
ULXR0810	50	140	5400~5600	800~1200	0.05~0.1	5~8	溝銑 (SLOTTING)
ULXR0810	50	140	5400~5600	2600~3000	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
ULXR0810	50	140	5400~5600	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULXR1005	50	195	5700~6200	2000~2400	0.18~0.23	8~10	溝銑 (SLOTTING)
ULXR1005	50	195	5700~6200	1400~1800	0.05~0.13	8~10	溝銑 (SLOTTING)
ULXR1005	50	195	5700~6200	2200~2600	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
ULXR1005	50	195	5700~6200	2200~2600	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
ULXR1010	50	195	5700~6200	2000~2400	0.18~0.23	7~10	溝銑 (SLOTTING)
ULXR1010	50	195	5700~6200	1400~1800	0.05~0.13	7~10	溝銑 (SLOTTING)
ULXR1010	50	195	5700~6200	2200~2600	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
ULXR1010	50	195	5700~6200	2200~2600	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
ULXR1020	50	195	5700~6200	2000~2400	0.18~0.23	5~10	溝銑 (SLOTTING)
ULXR1020	50	195	5700~6200	1400~1800	0.05~0.13	5~10	溝銑 (SLOTTING)
ULXR1020	50	195	5700~6200	2200~2600	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
ULXR1020	50	195	5700~6200	2200~2600	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
ULXR1205	60	180	4200~4700	1100~1500	0.05~0.15	10~12	溝銑 (SLOTTING)
ULXR1205	60	180	4200~4700	1400~1800	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
ULXR1210	60	180	4200~4700	1100~1500	0.05~0.15	9~12	溝銑 (SLOTTING)
ULXR1210	60	180	4200~4700	1400~1800	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
ULXR1220	60	180	4200~4700	1100~1500	0.05~0.15	7~12	溝銑 (SLOTTING)
ULXR1220	60	180	4200~4700	1400~1800	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
ULXR1610	100	125	2000~2500	700~1000	0.05~0.15	13~16	溝銑 (SLOTTING)
ULXR1610	100	125	2000~2500	900~1300	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
ULXR1620	100	125	2000~2500	700~1000	0.05~0.15	11~16	溝銑 (SLOTTING)
ULXR1620	100	125	2000~2500	900~1300	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)

ULXR

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ULXR0605	40	140	7200~7600	1400~1800	0.12~0.15	4~6	溝銑 (SLOTTING)
ULXR0605	40	140	7200~7600	1000~1200	0.05~0.08	4~6	溝銑 (SLOTTING)
ULXR0605	40	140	7200~7600	2200~2600	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
ULXR0605	40	140	7200~7600	1800~2200	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
ULXR0610	40	140	7200~7600	1400~1800	0.12~0.15	3~6	溝銑 (SLOTTING)
ULXR0610	40	140	7200~7600	1000~1200	0.05~0.08	3~6	溝銑 (SLOTTING)
ULXR0610	40	140	7200~7600	2200~2600	0.12~0.15	0.12~0.15	3D銑 (3D MILLING)
ULXR0610	40	140	7200~7600	1800~2200	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
ULXR0805	50	140	5400~5600	1800~2200	0.15~0.2	6~8	溝銑 (SLOTTING)
ULXR0805	50	140	5400~5600	700~1100	0.05~0.1	6~8	溝銑 (SLOTTING)
ULXR0805	50	140	5400~5600	2600~3000	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
ULXR0805	50	140	5400~5600	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULXR0810	50	140	5400~5600	1800~2200	0.15~0.2	5~8	溝銑 (SLOTTING)
ULXR0810	50	140	5400~5600	700~1100	0.05~0.1	5~8	溝銑 (SLOTTING)
ULXR0810	50	140	5400~5600	2600~3000	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
ULXR0810	50	140	5400~5600	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULXR1005	50	195	5700~6200	2000~2400	0.18~0.23	8~10	溝銑 (SLOTTING)
ULXR1005	50	195	5700~6200	1400~1800	0.05~0.13	8~10	溝銑 (SLOTTING)
ULXR1005	50	195	5700~6200	2200~2600	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
ULXR1005	50	195	5700~6200	2200~2600	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
ULXR1010	50	195	5700~6200	2000~2400	0.18~0.23	7~10	溝銑 (SLOTTING)
ULXR1010	50	195	5700~6200	1400~1800	0.05~0.13	7~10	溝銑 (SLOTTING)
ULXR1010	50	195	5700~6200	2200~2600	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
ULXR1010	50	195	5700~6200	2200~2600	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
ULXR1020	50	195	5700~6200	2000~2400	0.18~0.23	5~10	溝銑 (SLOTTING)
ULXR1020	50	195	5700~6200	1400~1800	0.05~0.13	5~10	溝銑 (SLOTTING)
ULXR1020	50	195	5700~6200	2200~2600	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
ULXR1020	50	195	5700~6200	2200~2600	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
ULXR1205	60	180	4200~4700	1100~1500	0.05~0.15	10~12	溝銑 (SLOTTING)
ULXR1205	60	180	4200~4700	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
ULXR1210	60	180	4200~4700	1100~1500	0.05~0.15	9~12	溝銑 (SLOTTING)
ULXR1210	60	180	4200~4700	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
ULXR1220	60	180	4200~4700	1100~1500	0.05~0.15	7~12	溝銑 (SLOTTING)
ULXR1220	60	180	4200~4700	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
ULXR1610	100	125	2000~2500	700~1000	0.05~0.15	13~16	溝銑 (SLOTTING)
ULXR1610	100	120	2000~2400	800~1200	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
ULXR1620	100	125	2000~2500	700~1000	0.05~0.15	11~16	溝銑 (SLOTTING)
ULXR1620	100	120	2000~2400	800~1200	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)

ULXR

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (mim^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ULXR0605	40	125	6000~6600	600~800	0.04~0.06	4~6	溝銑 (SLOTTING)
ULXR0605	40	125	6000~6600	1000~1200	0.04~0.06	0.04~0.07	3D銑 (3D MILLING)
ULXR0610	40	125	6000~6600	600~800	0.04~0.06	3~6	溝銑 (SLOTTING)
ULXR0610	40	125	6000~6600	1000~1200	0.04~0.06	0.04~0.07	3D銑 (3D MILLING)
ULXR0805	50	125	4500~5000	600~1000	0.04~0.07	6~8	溝銑 (SLOTTING)
ULXR0805	50	125	4500~5000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULXR0810	50	125	4500~5000	600~1000	0.04~0.08	5~8	溝銑 (SLOTTING)
ULXR0810	50	125	4500~5000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULXR1005	50	150	4700~5200	1200~1600	0.05~0.12	8~10	溝銑 (SLOTTING)
ULXR1005	50	150	4700~5200	1400~1800	0.05~0.12	0.05~0.12	3D銑 (3D MILLING)
ULXR1010	50	150	4700~5200	1200~1600	0.05~0.12	7~10	溝銑 (SLOTTING)
ULXR1010	50	150	4700~5200	1400~1800	0.05~0.12	0.05~0.12	3D銑 (3D MILLING)
ULXR1020	50	150	4700~5200	1200~1600	0.05~0.12	5~10	溝銑 (SLOTTING)
ULXR1020	50	150	4700~5200	1400~1800	0.05~0.12	0.05~0.12	3D銑 (3D MILLING)
ULXR1205	60	120	2700~3200	800~1200	0.05~0.13	10~12	溝銑 (SLOTTING)
ULXR1205	60	120	2700~3200	1000~1400	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
ULXR1210	60	120	2700~3200	800~1200	0.05~0.13	9~12	溝銑 (SLOTTING)
ULXR1210	60	120	2700~3200	1000~1400	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
ULXR1220	60	120	2700~3200	800~1200	0.05~0.13	7~!2	溝銑 (SLOTTING)
ULXR1220	60	120	2700~3200	1000~1400	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
ULXR1610	100	110	1800~2200	600~1000	0.05~0.15	13~16	溝銑 (SLOTTING)
ULXR1610	100	110	1800~2200	600~1000	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
ULXR1620	100	110	1800~2200	600~1000	0.05~0.15	11~16	溝銑 (SLOTTING)
ULXR1620	100	110	1800~2200	600~1000	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)



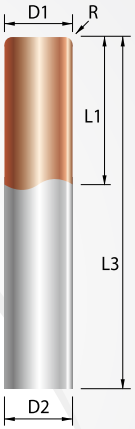
UER

END MILLS
極超微粒圓鼻角立銑刀

直徑 D1	R徑公差 R Tolerance	直徑公差 D1 Tolerance
2.0	+0.02 0	0 -0.02
3.0	+0.02 0	0 -0.02
4.0	+0.02 0	0 -0.02
5.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.025
10.0	+0.02 0	0 -0.03
12.0	+0.02 0	0 -0.035
16.0	+0.02 0	0 -0.04

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

unit : mm



Super MG

0.4 µm

45°

R

4 Flutes

HRc ▶60

G12

精銑 Finishing

中銑 Semi-finishing

粗銑 Roughing

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

型號 Type No.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UER0202	2.0	0.2	6	50	4
UER0205	2.0	0.5	6	50	4
UER0302S	3.0	0.2	8	50	3
UER0305S	3.0	0.5	8	50	3
UER0402	4.0	0.2	10	50	4
UER0405	4.0	0.5	10	50	4
UER0505	5.0	0.5	13	50	6
UER0510	5.0	1.0	13	50	6
UER0605	6.0	0.5	16	50	6
UER0610	6.0	1.0	16	50	6
UER0805	8.0	0.5	20	60	8
UER0810	8.0	1.0	20	60	8
UER1005	10.0	0.5	30	75	10
UER1010	10.0	1.0	30	75	10
UER1020	10.0	2.0	30	75	10
UER1030	10.0	3.0	30	75	10
UER1210	12.0	1.0	30	75	12
UER1220	12.0	2.0	30	75	12
UER1230	12.0	3.0	30	75	12
UER1610	16.0	1.0	45	100	16
UER1620	16.0	2.0	45	100	16
UER1630	16.0	3.0	45	100	16

unit : mm

UER

< 適用於 RPM=10000(min^{-1}) 以下之機器 >

切削條件表 *Milling Conditions*

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UER0202	12	60	9600~10000	1000~1400	0.03~0.05	1~2	溝銑 (SLOTTING)
UER0202	12	60	9600~10000	800~1000	4	0.03~0.05	側銑 (SIDE MILLING)
UER0202	12	60	9600~10000	1000~1400	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UER0205	12	60	9600~10000	1000~1400	0.03~0.05	0.5~2	溝銑 (SLOTTING)
UER0205	12	60	9600~10000	800~1000	4	0.03~0.05	側銑 (SIDE MILLING)
UER0205	12	60	9600~10000	1000~1400	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UER0302S	12	85	9000~9500	1000~1400	0.03~0.06	1~3	溝銑 (SLOTTING)
UER0302S	12	60	6400~6800	700~900	6	0.03~0.06	側銑 (SIDE MILLING)
UER0302S	12	85	9000~9500	1000~1400	0.03~0.06	0.03~0.06	3D銑 (3D MILLING)
UER0305S	12	85	9000~9500	1000~1400	0.03~0.06	1~3	溝銑 (SLOTTING)
UER0305S	12	60	6400~6800	700~900	6	0.03~0.06	側銑 (SIDE MILLING)
UER0305S	12	85	9000~9500	1000~1400	0.03~0.06	0.03~0.06	3D銑 (3D MILLING)
UER0402	12	110	8600~9000	1200~1600	0.05~0.08	3~4	溝銑 (SLOTTING)
UER0402	12	65	5000~5400	600~800	8	0.05~0.08	側銑 (SIDE MILLING)
UER0402	12	110	8600~9000	1400~1800	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UER0405	12	110	8600~9000	1200~1600	0.05~0.08	2~4	溝銑 (SLOTTING)
UER0405	12	65	5000~5400	600~800	8	0.05~0.08	側銑 (SIDE MILLING)
UER0405	12	110	8600~9000	1400~1800	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UER0505	16	135	8600~9000	1200~1600	0.05~0.1	3~5	溝銑 (SLOTTING)
UER0505	16	70	4300~4800	600~800	10	0.05~0.1	側銑 (SIDE MILLING)
UER0505	16	135	8600~9000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0510	16	135	8600~9000	1200~1600	0.05~0.1	2~5	溝銑 (SLOTTING)
UER0510	16	70	4300~4800	600~800	10	0.05~0.1	側銑 (SIDE MILLING)
UER0510	16	135	8600~9000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0605	20	155	8000~8400	1400~1800	0.05~0.1	4~6	溝銑 (SLOTTING)
UER0605	20	70	3600~4000	400~600	12	0.05~0.1	側銑 (SIDE MILLING)
UER0605	20	160	8200~8600	1800~2200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0610	20	155	8000~8400	1400~1800	0.05~0.1	3~6	溝銑 (SLOTTING)
UER0610	20	70	3600~4000	400~600	12	0.05~0.1	側銑 (SIDE MILLING)
UER0610	20	160	8200~8600	1800~2200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0805	25	160	6200~6600	1400~1800	0.05~0.1	6~8	溝銑 (SLOTTING)
UER0805	25	75	3000~3400	400~600	16	0.05~0.1	側銑 (SIDE MILLING)
UER0805	25	170	6600~7000	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0810	25	160	6200~6600	1400~1800	0.05~0.1	5~8	溝銑 (SLOTTING)
UER0810	25	75	3000~3400	400~600	16	0.05~0.1	側銑 (SIDE MILLING)
UER0810	25	170	6600~7000	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1005	35	175	5600~6000	1300~1700	0.05~0.1	8~10	溝銑 (SLOTTING)
UER1005	35	90	2800~3200	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1005	35	185	5800~6200	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)

< 適用於 RPM=10000(min^{-1}) 以下之機器 >

UER

切削條件表 *Milling Conditions*

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UER1010	35	175	5600~6000	1300~1700	0.05~0.1	7~10	溝銑 (SLOTTING)
UER1010	35	90	2800~3200	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1010	35	185	5800~6200	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1020	35	175	5600~6000	1300~1700	0.05~0.1	5~10	溝銑 (SLOTTING)
UER1020	35	90	2800~3200	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1020	35	185	5800~6200	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1030	35	175	5600~6000	1300~1700	0.05~0.1	3~10	溝銑 (SLOTTING)
UER1030	35	90	2800~3200	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1030	35	185	5800~6200	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1210	35	170	4400~4800	1200~1600	0.1~0.15	9~12	溝銑 (SLOTTING)
UER1210	35	75	2000~2400	250~450	24	0.1~0.15	側銑 (SIDE MILLING)
UER1210	35	170	4400~4800	1400~1800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1220	35	170	4400~4800	1200~1600	0.1~0.15	7~12	溝銑 (SLOTTING)
UER1220	35	75	2000~2400	250~450	24	0.1~0.15	側銑 (SIDE MILLING)
UER1220	35	170	4400~4800	1400~1800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1230	35	170	4400~4800	1200~1600	0.1~0.15	5~12	溝銑 (SLOTTING)
UER1230	35	75	2000~2400	250~450	24	0.1~0.15	側銑 (SIDE MILLING)
UER1230	35	170	4400~4800	1400~1800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1610	50	170	3200~3600	1100~1400	0.1~0.15	13~16	溝銑 (SLOTTING)
UER1610	50	75	1500~2000	200~400	32	0.1~0.15	側銑 (SIDE MILLING)
UER1610	50	170	3200~3600	1200~1600	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1620	50	170	3200~3600	1100~1400	0.1~0.15	11~16	溝銑 (SLOTTING)
UER1620	50	75	1500~2000	200~400	32	0.1~0.15	側銑 (SIDE MILLING)
UER1620	50	170	3200~3600	1200~1600	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1630	50	170	3200~3600	1100~1400	0.1~0.15	9~16	溝銑 (SLOTTING)
UER1630	50	75	1500~2000	200~400	32	0.1~0.15	側銑 (SIDE MILLING)
UER1630	50	170	3200~3600	1200~1600	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)

UER

< 適用於 RPM=24000(min^{-1}) 以下之機器 >

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UER0202	12	115	18000~20000	1600~2000	0.03~0.05	1~2	溝銑 (SLOTTING)
UER0202	12	65	10000~11000	850~1050	4	0.03~0.05	側銑 (SIDE MILLING)
UER0202	12	115	18000~20000	1600~2000	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UER0205	12	115	18000~20000	1600~2000	0.03~0.05	0.5~2	溝銑 (SLOTTING)
UER0205	12	65	10000~11000	850~1050	4	0.03~0.05	側銑 (SIDE MILLING)
UER0205	12	115	18000~20000	1600~2000	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UER0302S	12	135	14000~15000	1600~2000	0.03~0.06	1~3	溝銑 (SLOTTING)
UER0302S	12	60	6400~6800	700~900	6	0.03~0.06	側銑 (SIDE MILLING)
UER0302S	12	135	14000~15000	1600~2000	0.03~0.06	0.03~0.06	3D銑 (3D MILLING)
UER0305S	12	135	14000~15000	1600~2000	0.03~0.06	1~3	溝銑 (SLOTTING)
UER0305S	12	60	6400~6800	700~900	6	0.03~0.06	側銑 (SIDE MILLING)
UER0305S	12	135	14000~15000	1600~2000	0.03~0.06	0.03~0.06	3D銑 (3D MILLING)
UER0402	12	140	11000~12000	1800~2200	0.05~0.08	3~4	溝銑 (SLOTTING)
UER0402	12	65	5000~5400	600~800	8	0.05~0.08	側銑 (SIDE MILLING)
UER0402	12	140	11000~12000	2000~2400	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UER0405	12	140	11000~12000	1800~2200	0.05~0.08	2~4	溝銑 (SLOTTING)
UER0405	12	65	5000~5400	600~800	8	0.05~0.08	側銑 (SIDE MILLING)
UER0405	12	140	11000~12000	2000~2400	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UER0505	16	135	8600~9000	1200~1600	0.05~0.1	3~5	溝銑 (SLOTTING)
UER0505	16	70	4300~4800	600~800	10	0.05~0.1	側銑 (SIDE MILLING)
UER0505	16	135	8600~9000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0510	16	135	8600~9000	1200~1600	0.05~0.1	2~5	溝銑 (SLOTTING)
UER0510	16	70	4300~4800	600~800	10	0.05~0.1	側銑 (SIDE MILLING)
UER0510	16	135	8600~9000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0605	20	155	8000~8400	1400~1800	0.05~0.1	4~6	溝銑 (SLOTTING)
UER0605	20	70	3600~4000	400~600	12	0.05~0.1	側銑 (SIDE MILLING)
UER0605	20	160	8200~8600	1800~2200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0610	20	155	8000~8400	1400~1800	0.05~0.1	3~6	溝銑 (SLOTTING)
UER0610	20	70	3600~4000	400~600	12	0.05~0.1	側銑 (SIDE MILLING)
UER0610	20	160	8200~8600	1800~2200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0805	25	160	6200~6600	1400~1800	0.05~0.1	6~8	溝銑 (SLOTTING)
UER0805	25	75	3000~3400	400~600	16	0.05~0.1	側銑 (SIDE MILLING)
UER0805	25	170	6600~7000	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0810	25	160	6200~6600	1400~1800	0.05~0.1	5~8	溝銑 (SLOTTING)
UER0810	25	75	3000~3400	400~600	16	0.05~0.1	側銑 (SIDE MILLING)
UER0810	25	170	6600~7000	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1005	35	175	5600~6000	1300~1700	0.05~0.1	8~10	溝銑 (SLOTTING)
UER1005	35	90	2800~3200	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1005	35	185	5800~6200	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)

< 適用於 RPM=24000(min^{-1}) 以下之機器 >

UER

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UER1010	35	175	5600~6000	1300~1700	0.05~0.1	7~10	溝銑 (SLOTTING)
UER1010	35	90	2800~3200	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1010	35	185	5800~6200	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1020	35	175	5600~6000	1300~1700	0.05~0.1	5~10	溝銑 (SLOTTING)
UER1020	35	90	2800~3200	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1020	35	185	5800~6200	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1030	35	175	5600~6000	1300~1700	0.05~0.1	3~10	溝銑 (SLOTTING)
UER1030	35	90	2800~3200	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1030	35	185	5800~6200	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1210	35	170	4400~4800	1200~1600	0.1~0.15	9~12	溝銑 (SLOTTING)
UER1210	35	75	2000~2400	250~450	24	0.1~0.15	側銑 (SIDE MILLING)
UER1210	35	170	4400~4800	1400~1800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1220	35	170	4400~4800	1200~1600	0.1~0.15	7~12	溝銑 (SLOTTING)
UER1220	35	75	2000~2400	250~450	24	0.1~0.15	側銑 (SIDE MILLING)
UER1220	35	170	4400~4800	1400~1800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1230	35	170	4400~4800	1200~1600	0.1~0.15	5~12	溝銑 (SLOTTING)
UER1230	35	75	2000~2400	250~450	24	0.1~0.15	側銑 (SIDE MILLING)
UER1230	35	170	4400~4800	1400~1800	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1610	50	170	3200~3600	1100~1400	0.1~0.15	13~16	溝銑 (SLOTTING)
UER1610	50	75	1500~2000	200~400	32	0.1~0.15	側銑 (SIDE MILLING)
UER1610	50	170	3200~3600	1200~1600	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1620	50	170	3200~3600	1100~1400	0.1~0.15	11~16	溝銑 (SLOTTING)
UER1620	50	75	1500~2000	200~400	32	0.1~0.15	側銑 (SIDE MILLING)
UER1620	50	170	3200~3600	1200~1600	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1630	50	170	3200~3600	1100~1400	0.1~0.15	9~16	溝銑 (SLOTTING)
UER1630	50	75	1500~2000	200~400	32	0.1~0.15	側銑 (SIDE MILLING)
UER1630	50	170	3200~3600	1200~1600	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)

UER

< 適用於 RPM=10000(min^{-1}) 以下之機器 >

切削條件表 *Milling Conditions*

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UER0202	12	60	9600~10000	800~1200	0.03~0.05	1~2	溝銑 (SLOTTING)
UER0202	12	60	9600~10000	600~800	4	0.03~0.05	側銑 (SIDE MILLING)
UER0202	12	60	9600~10000	1000~1400	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UER0205	12	60	9600~10000	800~1200	0.03~0.05	0.5~2	溝銑 (SLOTTING)
UER0205	12	60	9600~10000	600~800	4	0.03~0.05	側銑 (SIDE MILLING)
UER0205	12	60	9600~10000	1000~1400	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UER0302S	12	85	9000~9500	800~1200	0.03~0.06	1~3	溝銑 (SLOTTING)
UER0302S	12	60	6400~6800	600~800	6	0.03~0.06	側銑 (SIDE MILLING)
UER0302S	12	85	9000~9500	1000~1400	0.03~0.06	0.03~0.06	3D銑 (3D MILLING)
UER0305S	12	85	9000~9500	800~1200	0.03~0.06	1~3	溝銑 (SLOTTING)
UER0305S	12	60	6400~6800	600~800	6	0.03~0.06	側銑 (SIDE MILLING)
UER0305S	12	85	9000~9500	1000~1400	0.03~0.06	0.03~0.06	3D銑 (3D MILLING)
UER0402	12	110	8600~9000	1000~1400	0.05~0.08	3~4	溝銑 (SLOTTING)
UER0402	12	65	5000~5400	600~800	8	0.05~0.08	側銑 (SIDE MILLING)
UER0402	12	110	8600~9000	1400~1800	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UER0405	12	110	8600~9000	1000~1400	0.05~0.08	2~4	溝銑 (SLOTTING)
UER0405	12	65	5000~5400	600~800	8	0.05~0.08	側銑 (SIDE MILLING)
UER0405	12	110	8600~9000	1400~1800	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UER0505	16	135	8600~9000	1000~1400	0.05~0.1	3~5	溝銑 (SLOTTING)
UER0505	16	70	4300~4800	400~600	10	0.05~0.1	側銑 (SIDE MILLING)
UER0505	16	135	8600~9000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0510	16	135	8600~9000	1000~1400	0.05~0.1	2~5	溝銑 (SLOTTING)
UER0510	16	70	4300~4800	400~600	10	0.05~0.1	側銑 (SIDE MILLING)
UER0510	16	135	8600~9000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0605	20	145	7600~8000	1200~1600	0.05~0.1	4~6	溝銑 (SLOTTING)
UER0605	20	70	3600~4000	400~600	12	0.05~0.1	側銑 (SIDE MILLING)
UER0605	20	150	8000~8400	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0610	20	145	7600~8000	1200~1600	0.05~0.1	3~6	溝銑 (SLOTTING)
UER0610	20	70	3600~4000	400~600	12	0.05~0.1	側銑 (SIDE MILLING)
UER0610	20	150	8000~8400	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0805	25	150	6000~6400	1200~1600	0.05~0.1	6~8	溝銑 (SLOTTING)
UER0805	25	75	3000~3400	400~600	16	0.05~0.1	側銑 (SIDE MILLING)
UER0805	25	155	6200~6600	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0810	25	150	6000~6400	1200~1600	0.05~0.1	5~8	溝銑 (SLOTTING)
UER0810	25	75	3000~3400	400~600	16	0.05~0.1	側銑 (SIDE MILLING)
UER0810	25	155	6200~6600	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1005	35	170	5400~5800	1200~1600	0.05~0.1	8~10	溝銑 (SLOTTING)
UER1005	35	75	2400~2800	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1005	35	185	5800~6200	1400~1900	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)

UER

< 適用於 RPM=10000(min^{-1}) 以下之機器 >

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UER1010	35	170	5400~5800	1200~1600	0.05~0.1	7~10	溝銑 (SLOTTING)
UER1010	35	75	2400~2800	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1010	35	185	5800~6200	1400~1900	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1020	35	170	5400~5800	1200~1600	0.05~0.1	5~10	溝銑 (SLOTTING)
UER1020	35	75	2400~2800	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1020	35	185	5800~6200	1400~1900	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1030	35	170	5400~5800	1200~1600	0.05~0.1	3~10	溝銑 (SLOTTING)
UER1030	35	75	2400~2800	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1030	35	185	5800~6200	1400~1900	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1210	35	150	4000~4400	1100~1500	0.1~0.15	9~12	溝銑 (SLOTTING)
UER1210	35	70	1800~2200	250~400	24	0.1~0.15	側銑 (SIDE MILLING)
UER1210	35	150	4000~4400	1300~1700	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1220	35	150	4000~4400	1100~1500	0.1~0.15	7~12	溝銑 (SLOTTING)
UER1220	35	70	1800~2200	250~400	24	0.1~0.15	側銑 (SIDE MILLING)
UER1220	35	150	4000~4400	1300~1700	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1230	35	150	4000~4400	1100~1500	0.1~0.15	5~12	溝銑 (SLOTTING)
UER1230	35	70	1800~2200	250~400	24	0.1~0.15	側銑 (SIDE MILLING)
UER1230	35	150	4000~4400	1300~1700	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1610	50	150	3000~3400	1000~1300	0.1~0.15	13~16	溝銑 (SLOTTING)
UER1610	50	75	1500~2000	200~400	32	0.1~0.15	側銑 (SIDE MILLING)
UER1610	50	150	3000~3400	1100~1500	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1620	50	150	3000~3400	1000~1300	0.1~0.15	11~16	溝銑 (SLOTTING)
UER1620	50	75	1500~2000	200~400	32	0.1~0.15	側銑 (SIDE MILLING)
UER1620	50	150	3000~3400	1100~1500	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1630	50	150	3000~3400	1000~1300	0.1~0.15	9~16	溝銑 (SLOTTING)
UER1630	50	75	1500~2000	200~400	32	0.1~0.15	側銑 (SIDE MILLING)
UER1630	50	150	3000~3400	1100~1500	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)

UER

< 適用於 RPM=24000(min^{-1}) 以下之機器 >

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UER0202	12	115	18000~20000	1600~2000	0.03~0.05	1~2	溝銑 (SLOTTING)
UER0202	12	65	10000~11000	700~900	4	0.03~0.05	側銑 (SIDE MILLING)
UER0202	12	115	18000~20000	1600~2000	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UER0205	12	115	18000~20000	1600~2000	0.03~0.05	0.5~2	溝銑 (SLOTTING)
UER0205	12	65	10000~11000	700~900	4	0.03~0.05	側銑 (SIDE MILLING)
UER0205	12	115	18000~20000	1600~2000	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UER0302S	12	135	14000~15000	1600~2000	0.03~0.06	1~3	溝銑 (SLOTTING)
UER0302S	12	60	6400~6800	600~800	6	0.03~0.06	側銑 (SIDE MILLING)
UER0302S	12	135	14000~15000	1600~2000	0.03~0.06	0.03~0.06	3D銑 (3D MILLING)
UER0305S	12	135	14000~15000	1600~2000	0.03~0.06	1~3	溝銑 (SLOTTING)
UER0305S	12	60	6400~6800	600~800	6	0.03~0.06	側銑 (SIDE MILLING)
UER0305S	12	135	14000~15000	1600~2000	0.03~0.06	0.03~0.06	3D銑 (3D MILLING)
UER0402	12	140	11000~12000	1800~2200	0.05~0.08	3~4	溝銑 (SLOTTING)
UER0402	12	65	5000~5400	600~800	8	0.05~0.08	側銑 (SIDE MILLING)
UER0402	12	140	11000~12000	2000~2400	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UER0405	12	140	11000~12000	1800~2200	0.05~0.08	2~4	溝銑 (SLOTTING)
UER0405	12	65	5000~5400	600~800	8	0.05~0.08	側銑 (SIDE MILLING)
UER0405	12	140	11000~12000	2000~2400	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UER0505	16	135	8600~9000	1000~1400	0.05~0.1	3~5	溝銑 (SLOTTING)
UER0505	16	70	4300~4800	400~600	10	0.05~0.1	側銑 (SIDE MILLING)
UER0505	16	135	8600~9000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0510	16	135	8600~9000	1000~1400	0.05~0.1	2~5	溝銑 (SLOTTING)
UER0510	16	70	4300~4800	400~600	10	0.05~0.1	側銑 (SIDE MILLING)
UER0510	16	135	8600~9000	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0605	20	145	7600~8000	1200~1600	0.05~0.1	4~6	溝銑 (SLOTTING)
UER0605	20	70	3600~4000	400~600	12	0.05~0.1	側銑 (SIDE MILLING)
UER0605	20	150	8000~8400	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0610	20	145	7600~8000	1200~1600	0.05~0.1	3~6	溝銑 (SLOTTING)
UER0610	20	70	3600~4000	400~600	12	0.05~0.1	側銑 (SIDE MILLING)
UER0610	20	150	8000~8400	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0805	25	150	6000~6400	1200~1600	0.05~0.1	6~8	溝銑 (SLOTTING)
UER0805	25	75	3000~3400	400~600	16	0.05~0.1	側銑 (SIDE MILLING)
UER0805	25	155	6200~6600	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0810	25	150	6000~6400	1200~1600	0.05~0.1	5~8	溝銑 (SLOTTING)
UER0810	25	75	3000~3400	400~600	16	0.05~0.1	側銑 (SIDE MILLING)
UER0810	25	155	6200~6600	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1005	35	170	5400~5800	1200~1600	0.05~0.1	8~10	溝銑 (SLOTTING)
UER1005	35	75	2400~2800	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1005	35	185	5800~6200	1400~1900	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)

UER

< 適用於 RPM=24000(min^{-1}) 以下之機器 >

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UER1010	35	170	5400~5800	1200~1600	0.05~0.1	7~10	溝銑 (SLOTTING)
UER1010	35	75	2400~2800	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1010	35	185	5800~6200	1400~1900	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1020	35	170	5400~5800	1200~1600	0.05~0.1	5~10	溝銑 (SLOTTING)
UER1020	35	75	2400~2800	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1020	35	185	5800~6200	1400~1900	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1030	35	170	5400~5800	1200~1600	0.05~0.1	3~10	溝銑 (SLOTTING)
UER1030	35	75	2400~2800	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1030	35	185	5800~6200	1400~1900	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1210	35	150	4000~4400	1100~1500	0.1~0.15	9~12	溝銑 (SLOTTING)
UER1210	35	70	1800~2200	250~400	24	0.1~0.15	側銑 (SIDE MILLING)
UER1210	35	150	4000~4400	1300~1700	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1220	35	150	4000~4400	1100~1500	0.1~0.15	7~12	溝銑 (SLOTTING)
UER1220	35	70	1800~2200	250~400	24	0.1~0.15	側銑 (SIDE MILLING)
UER1220	35	150	4000~4400	1300~1700	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1230	35	150	4000~4400	1100~1500	0.1~0.15	5~12	溝銑 (SLOTTING)
UER1230	35	70	1800~2200	250~400	24	0.1~0.15	側銑 (SIDE MILLING)
UER1230	35	150	4000~4400	1300~1700	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1610	50	150	3000~3400	1000~1300	0.1~0.15	13~16	溝銑 (SLOTTING)
UER1610	50	75	1500~2000	200~400	32	0.1~0.15	側銑 (SIDE MILLING)
UER1610	50	150	3000~3400	1100~1500	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1620	50	150	3000~3400	1000~1300	0.1~0.15	11~16	溝銑 (SLOTTING)
UER1620	50	75	1500~2000	200~400	32	0.1~0.15	側銑 (SIDE MILLING)
UER1620	50	150	3000~3400	1100~1500	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1630	50	150	3000~3400	1000~1300	0.1~0.15	9~16	溝銑 (SLOTTING)
UER1630	50	75	1500~2000	200~400	32	0.1~0.15	側銑 (SIDE MILLING)
UER1630	50	150	3000~3400	1100~1500	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)

UER

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式冷卻 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UER0202	12	90	14000~15000	800~1200	0.03~0.04	1~2	溝銑 (SLOTTING)
UER0202	12	60	9600~10000	400~600	4	0.03~0.04	側銑 (SIDE MILLING)
UER0202	12	70	14000~15000	1000~1400	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UER0205	12	90	14000~15000	800~1200	0.03~0.04	0.5~2	溝銑 (SLOTTING)
UER0205	12	60	9600~10000	400~600	4	0.03~0.04	側銑 (SIDE MILLING)
UER0205	12	70	14000~15000	1000~1400	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UER0302S	12	100	10000~11000	800~1200	0.03~0.05	1~3	溝銑 (SLOTTING)
UER0302S	12	60	6400~6800	400~600	6	0.03~0.05	側銑 (SIDE MILLING)
UER0302S	12	100	10000~11000	1000~1400	0.03~0.06	0.03~0.06	3D銑 (3D MILLING)
UER0305S	12	100	10000~11000	800~1200	0.03~0.05	1~3	溝銑 (SLOTTING)
UER0305S	12	60	6400~6800	400~600	6	0.03~0.05	側銑 (SIDE MILLING)
UER0305S	12	100	10000~11000	1000~1400	0.03~0.06	0.03~0.06	3D銑 (3D MILLING)
UER0402	12	100	7700~8200	1000~1400	0.05~0.08	3~4	溝銑 (SLOTTING)
UER0402	12	65	5000~5400	400~600	8	0.03~0.06	側銑 (SIDE MILLING)
UER0402	12	100	7700~8200	1400~1800	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UER0405	12	100	7700~8200	1000~1400	0.05~0.08	2~4	溝銑 (SLOTTING)
UER0405	12	65	5000~5400	400~600	8	0.03~0.06	側銑 (SIDE MILLING)
UER0405	12	100	7700~8200	1400~1800	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UER0505	16	110	7000~7400	800~1000	0.05~0.1	3~5	溝銑 (SLOTTING)
UER0505	16	70	4300~4800	400~600	10	0.05~0.1	側銑 (SIDE MILLING)
UER0505	16	110	7000~7400	800~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0510	16	110	7000~7400	800~1000	0.05~0.1	2~5	溝銑 (SLOTTING)
UER0510	16	70	4300~4800	400~600	10	0.05~0.1	側銑 (SIDE MILLING)
UER0510	16	110	7000~7400	800~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0605	20	125	6600~7000	800~1000	0.05~0.1	4~6	溝銑 (SLOTTING)
UER0605	20	70	3600~4000	400~600	12	0.05~0.1	側銑 (SIDE MILLING)
UER0605	20	125	6600~7000	800~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0610	20	125	6600~7000	800~1000	0.05~0.1	3~6	溝銑 (SLOTTING)
UER0610	20	70	3600~4000	400~600	12	0.05~0.1	側銑 (SIDE MILLING)
UER0610	20	125	6600~7000	800~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0805	25	145	5800~6200	800~1000	0.05~0.1	6~8	溝銑 (SLOTTING)
UER0805	25	75	3000~3400	400~600	16	0.05~0.1	側銑 (SIDE MILLING)
UER0805	25	150	6000~6400	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER0810	25	145	5800~6200	800~1000	0.05~0.1	5~8	溝銑 (SLOTTING)
UER0810	25	75	3000~3400	400~600	16	0.05~0.1	側銑 (SIDE MILLING)
UER0810	25	150	6000~6400	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1005	35	160	5000~5400	800~1000	0.05~0.1	8~10	溝銑 (SLOTTING)
UER1005	35	90	2800~3200	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1005	35	185	5800~6200	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)

UER

切削條件表 Milling Conditions

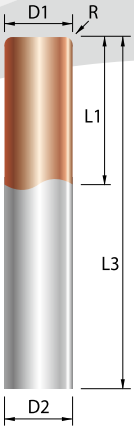
被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式冷卻 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UER1010	35	160	5000~5400	800~1000	0.05~0.1	7~10	溝銑 (SLOTTING)
UER1010	35	90	2800~3200	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1010	35	185	5800~6200	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1020	35	160	5000~5400	800~1000	0.05~0.1	5~10	溝銑 (SLOTTING)
UER1020	35	90	2800~3200	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1020	35	185	5800~6200	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1030	35	160	5000~5400	800~1000	0.05~0.1	3~10	溝銑 (SLOTTING)
UER1030	35	90	2800~3200	300~500	20	0.05~0.1	側銑 (SIDE MILLING)
UER1030	35	185	5800~6200	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UER1210	35	145	3800~4200	800~1200	0.1~0.15	9~12	溝銑 (SLOTTING)
UER1210	35	70	1800~2200	250~400	24	0.1~0.15	側銑 (SIDE MILLING)
UER1210	35	150	4000~4400	800~1200	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1220	35	145	3800~4200	800~1200	0.1~0.15	7~12	溝銑 (SLOTTING)
UER1220	35	70	1800~2200	250~400	24	0.1~0.15	側銑 (SIDE MILLING)
UER1220	35	150	4000~4400	800~1200	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1230	35	145	3800~4200	800~1200	0.1~0.15	5~12	溝銑 (SLOTTING)
UER1230	35	70	1800~2200	250~400	24	0.1~0.15	側銑 (SIDE MILLING)
UER1230	35	150	4000~4400	800~1200	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1610	50	140	2800~3200	800~1200	0.1~0.15	13~16	溝銑 (SLOTTING)
UER1610	50	70	1400~1800	200~300	32	0.1~0.15	側銑 (SIDE MILLING)
UER1610	50	150	3000~3400	800~1200	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1620	50	140	2800~3200	800~1200	0.1~0.15	11~16	溝銑 (SLOTTING)
UER1620	50	70	1400~1800	200~300	32	0.1~0.15	側銑 (SIDE MILLING)
UER1620	50	150	3000~3400	800~1200	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UER1630	50	140	2800~3200	800~1200	0.1~0.15	9~16	溝銑 (SLOTTING)
UER1630	50	70	1400~1800	200~300	32	0.1~0.15	側銑 (SIDE MILLING)
UER1630	50	150	3000~3400	800~1200	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)

ULR

END MILLS
極超微粒圓鼻角立銑刀





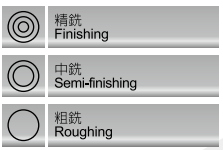
直徑 D1	R徑公差 R Tolerance	直徑公差 D1 Tolerance	柄徑 D2(h6)	柄徑公差 D2 Tolerance
6.0	+0.02 0	0 -0.02	Ø6	0 -0.008
8.0	+0.02 0	0 -0.025	Ø8	0 -0.009
10.0	+0.02 0	0 -0.03	Ø10	0 -0.009
12.0	+0.02 0	0 -0.035	Ø12	0 -0.011
16.0	+0.02 0	0 -0.04	Ø16	0 -0.011

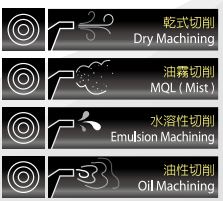
unit : mm

型號 Type No.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ULR0605	6.0	0.5	16	75	6
ULR0610	6.0	1.0	16	75	6
ULR0805	8.0	0.5	20	100	8
ULR0810	8.0	1.0	20	100	8
ULR1005	10.0	0.5	25	100	10
ULR1010	10.0	1.0	25	100	10
ULR1020	10.0	2.0	25	100	10
ULR1205	12.0	0.5	30	100	12
ULR1210	12.0	1.0	30	100	12
ULR1220	12.0	2.0	30	100	12
ULR1610	16.0	1.0	45	150	16
ULR1620	16.0	2.0	45	150	16

unit : mm







ULR

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ULR0605	40	65	3400~3800	600~800	0.05~0.1	4~6	溝銑 (SLOTTING)
ULR0605	40	50	2600~3000	400~600	12	0.05~0.1	側銑 (SIDE MILLING)
ULR0605	40	75	3800~4200	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR0610	40	65	3400~3800	600~800	0.05~0.1	3~6	溝銑 (SLOTTING)
ULR0610	40	50	2600~3000	400~600	12	0.05~0.1	側銑 (SIDE MILLING)
ULR0610	40	75	3800~4200	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR0805	50	60	2400~2800	800~1200	0.05~0.1	6~8	溝銑 (SLOTTING)
ULR0805	50	45	1800~2200	400~600	16	0.05~0.1	側銑 (SIDE MILLING)
ULR0805	50	75	3000~3400	1000~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR0810	50	60	2400~2800	800~1200	0.05~0.1	5~8	溝銑 (SLOTTING)
ULR0810	50	45	1800~2200	400~600	16	0.05~0.1	側銑 (SIDE MILLING)
ULR0810	50	75	3000~3400	1000~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1005	50	120	3800~4200	1000~1400	0.05~0.1	8~10	溝銑 (SLOTTING)
ULR1005	50	50	1600~2000	400~600	20	0.05~0.1	側銑 (SIDE MILLING)
ULR1005	50	125	4000~4400	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1010	50	120	3800~4200	1000~1400	0.05~0.1	7~10	溝銑 (SLOTTING)
ULR1010	50	50	1600~2000	400~600	20	0.05~0.1	側銑 (SIDE MILLING)
ULR1010	50	125	4000~4400	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1020	50	120	3800~4200	1000~1400	0.05~0.1	5~10	溝銑 (SLOTTING)
ULR1020	50	50	1600~2000	400~600	20	0.05~0.1	側銑 (SIDE MILLING)
ULR1020	50	125	4000~4400	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1205	60	105	2800~3200	1000~1400	0.05~0.1	10~12	溝銑 (SLOTTING)
ULR1205	60	30	800~1100	300~500	24	0.05~0.1	側銑 (SIDE MILLING)
ULR1205	60	115	3000~3400	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1210	60	105	2800~3200	1000~1400	0.05~0.1	9~12	溝銑 (SLOTTING)
ULR1210	60	30	800~1100	300~500	24	0.05~0.1	側銑 (SIDE MILLING)
ULR1210	60	115	3000~3400	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1220	60	105	2800~3200	1000~1400	0.05~0.1	7~12	溝銑 (SLOTTING)
ULR1220	60	30	800~1100	300~500	24	0.05~0.1	側銑 (SIDE MILLING)
ULR1220	60	115	3000~3400	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1610	100	105	2100~2500	1000~1400	0.07~0.12	13~16	溝銑 (SLOTTING)
ULR1610	100	30	800~1100	300~500	32	0.07~0.12	側銑 (SIDE MILLING)
ULR1610	100	115	2300~2700	1400~1800	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)
ULR1620	100	105	2100~2500	1000~1400	0.07~0.12	11~16	溝銑 (SLOTTING)
ULR1620	100	30	800~1100	300~500	32	0.07~0.12	側銑 (SIDE MILLING)
ULR1620	100	115	2300~2700	1400~1800	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)

ULR

切削條件表 *Milling Conditions*

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ULR0605	40	65	3400~3800	600~800	0.05~0.1	4~6	溝銑 (SLOTTING)
ULR0605	40	45	2400~2800	300~500	12	0.05~0.1	側銑 (SIDE MILLING)
ULR0605	40	75	3800~4200	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR0610	40	65	3400~3800	600~800	0.05~0.1	3~6	溝銑 (SLOTTING)
ULR0610	40	45	2400~2800	300~500	12	0.05~0.1	側銑 (SIDE MILLING)
ULR0610	40	75	3800~4200	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR0805	50	60	2400~2800	800~1200	0.05~0.1	6~8	溝銑 (SLOTTING)
ULR0805	50	40	1600~2000	400~600	16	0.05~0.1	側銑 (SIDE MILLING)
ULR0805	50	75	3000~3400	1000~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR0810	50	60	2400~2800	800~1200	0.05~0.1	5~8	溝銑 (SLOTTING)
ULR0810	50	40	1600~2000	400~600	16	0.05~0.1	側銑 (SIDE MILLING)
ULR0810	50	75	3000~3400	1000~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1005	50	120	3800~4200	1000~1200	0.05~0.1	8~10	溝銑 (SLOTTING)
ULR1005	50	50	1600~2000	400~600	20	0.05~0.1	側銑 (SIDE MILLING)
ULR1005	50	125	4000~4400	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1010	50	120	3800~4200	1000~1200	0.05~0.1	7~10	溝銑 (SLOTTING)
ULR1010	50	50	1600~2000	400~600	20	0.05~0.1	側銑 (SIDE MILLING)
ULR1010	50	125	4000~4400	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1020	50	120	3800~4200	1000~1200	0.05~0.1	5~10	溝銑 (SLOTTING)
ULR1020	50	50	1600~2000	400~600	20	0.05~0.1	側銑 (SIDE MILLING)
ULR1020	50	125	4000~4400	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1205	60	105	2800~3200	1000~1400	0.05~0.1	10~12	溝銑 (SLOTTING)
ULR1205	60	30	800~1100	300~500	24	0.05~0.1	側銑 (SIDE MILLING)
ULR1205	60	115	3000~3400	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1210	60	105	2800~3200	1000~1400	0.05~0.1	9~12	溝銑 (SLOTTING)
ULR1210	60	30	800~1100	300~500	24	0.05~0.1	側銑 (SIDE MILLING)
ULR1210	60	115	3000~3400	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1220	60	105	2800~3200	1000~1400	0.05~0.1	7~12	溝銑 (SLOTTING)
ULR1220	60	30	800~1100	300~500	24	0.05~0.1	側銑 (SIDE MILLING)
ULR1220	60	115	3000~3400	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1610	100	105	2100~2500	1000~1400	0.07~0.12	13~16	溝銑 (SLOTTING)
ULR1610	100	30	800~1100	300~500	32	0.07~0.12	側銑 (SIDE MILLING)
ULR1610	100	115	2300~2700	1200~1600	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)
ULR1620	100	105	2100~2500	1000~1400	0.07~0.12	11~16	溝銑 (SLOTTING)
ULR1620	100	30	800~1100	300~500	32	0.07~0.12	側銑 (SIDE MILLING)
ULR1620	100	115	2300~2700	1200~1600	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)

ULR

切削條件表 *Milling Conditions*

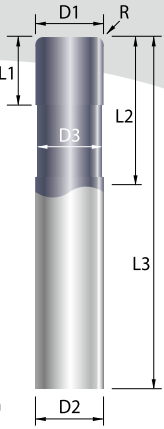
被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
ULR0605	40	45	2400~2800	300~500	0.05~0.1	4~6	溝銑 (SLOTTING)
ULR0605	40	45	2400~2800	300~500	12	0.05~0.1	側銑 (SIDE MILLING)
ULR0605	40	65	3400~3800	800~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR0610	40	45	2400~2800	300~500	0.05~0.1	3~6	溝銑 (SLOTTING)
ULR0610	40	45	2400~2800	300~500	12	0.05~0.1	側銑 (SIDE MILLING)
ULR0610	40	65	3400~3800	800~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR0805	50	55	2200~2600	800~1000	0.05~0.1	6~8	溝銑 (SLOTTING)
ULR0805	50	60	2400~2800	600~800	16	0.05~0.1	側銑 (SIDE MILLING)
ULR0805	50	75	3000~3400	800~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR0810	50	55	2200~2600	800~1000	0.05~0.1	5~8	溝銑 (SLOTTING)
ULR0810	50	60	2400~2800	600~800	16	0.05~0.1	側銑 (SIDE MILLING)
ULR0810	50	75	3000~3400	800~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1005	50	115	3600~4000	800~1000	0.05~0.1	8~10	溝銑 (SLOTTING)
ULR1005	50	65	2000~2400	400~600	20	0.05~0.1	側銑 (SIDE MILLING)
ULR1005	50	125	4000~4400	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1010	50	115	3600~4000	800~1000	0.05~0.1	7~10	溝銑 (SLOTTING)
ULR1010	50	65	2000~2400	400~600	20	0.05~0.1	側銑 (SIDE MILLING)
ULR1010	50	125	4000~4400	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1020	50	115	3600~4000	800~1000	0.05~0.1	5~10	溝銑 (SLOTTING)
ULR1020	50	65	2000~2400	400~600	20	0.05~0.1	側銑 (SIDE MILLING)
ULR1020	50	125	4000~4400	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1205	60	105	2800~3200	800~1200	0.05~0.1	10~12	溝銑 (SLOTTING)
ULR1205	60	70	1800~2200	400~600	24	0.05~0.1	側銑 (SIDE MILLING)
ULR1205	60	115	3000~3400	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1210	60	105	2800~3200	800~1200	0.05~0.1	9~12	溝銑 (SLOTTING)
ULR1210	60	70	1800~2200	400~600	24	0.05~0.1	側銑 (SIDE MILLING)
ULR1210	60	115	3000~3400	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1220	60	105	2800~3200	800~1200	0.05~0.1	7~12	溝銑 (SLOTTING)
ULR1220	60	70	1800~2200	400~600	24	0.05~0.1	側銑 (SIDE MILLING)
ULR1220	60	115	3000~3400	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
ULR1610	100	105	2100~2500	800~1200	0.07~0.12	13~16	溝銑 (SLOTTING)
ULR1610	100	70	1400~1800	400~600	32	0.07~0.12	側銑 (SIDE MILLING)
ULR1610	100	115	2300~2700	800~1200	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)
ULR1620	100	105	2100~2500	800~1200	0.07~0.12	11~16	溝銑 (SLOTTING)
ULR1620	100	70	1400~1800	400~600	32	0.07~0.12	側銑 (SIDE MILLING)
ULR1620	100	115	2300~2700	800~1200	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)



UPR

END MILLS
極超微粒圓鼻角立銑刀



直徑 D1	R徑公差 R Tolerance	直徑公差 D1 Tolerance
3.0	+0.02 0	0 -0.02
4.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.025
10.0	+0.02 0	0 -0.03
12.0	+0.02 0	0 -0.035

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

unit : mm





型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia.	R R角 Corner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UPR0305	3.0	2.90	0.5	3	12	50	6
UPR0405	4.0	3.90	0.5	4	12	50	6
UPR0605	6.0	5.80	0.5	6	15	50	6
UPR0610	6.0	5.80	1.0	6	15	50	6
UPR0805	8.0	7.70	0.5	8	20	60	8
UPR0810	8.0	7.70	1.0	8	20	60	8
UPR1010	10.0	9.60	1.0	10	25	75	10
UPR1020	10.0	9.60	2.0	10	25	75	10
UPR1030	10.0	9.60	3.0	10	25	75	10
UPR1210	12.0	11.5	1.0	12	30	75	12
UPR1220	12.0	11.5	2.0	12	30	75	12

unit : mm

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切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式冷卻 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPR0305	16	190	14000~15000	2600~3000	0.1~0.15	3	溝銑 (SLOTTING)
UPR0305	16	190	14000~15000	1300~1700	0.04~0.08	3	溝銑 (SLOTTING)
UPR0305	16	190	14000~15000	3000~3500	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UPR0305	16	190	14000~15000	2800~3200	0.04~0.08	0.04~0.08	3D銑 (3D MILLING)
UPR0405	20	190	14000~15000	2600~3000	0.1~0.15	2~4	溝銑 (SLOTTING)
UPR0405	20	190	14000~15000	1300~1700	0.04~0.08	2~4	溝銑 (SLOTTING)
UPR0405	20	190	14000~15000	3000~3500	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UPR0405	20	190	14000~15000	2800~3200	0.04~0.08	0.04~0.08	3D銑 (3D MILLING)
UPR0605	20	210	10000~11000	2600~3000	0.15~0.18	4~6	溝銑 (SLOTTING)
UPR0605	20	210	10000~11000	1300~1700	0.05~0.1	4~6	溝銑 (SLOTTING)
UPR0605	20	210	10000~11000	3000~3500	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
UPR0605	20	210	10000~11000	2800~3200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPR0610	20	210	10000~11000	2600~3000	0.15~0.18	3~6	溝銑 (SLOTTING)
UPR0610	20	210	10000~11000	1300~1700	0.05~0.1	3~6	溝銑 (SLOTTING)
UPR0610	20	210	10000~11000	3000~3500	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
UPR0610	20	210	10000~11000	2800~3200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPR0805	30	210	8500~9000	2000~2400	0.15~0.2	6~8	溝銑 (SLOTTING)
UPR0805	30	210	8500~9000	1200~1600	0.05~0.11	6~8	溝銑 (SLOTTING)
UPR0805	30	210	8500~9000	2800~3200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UPR0805	30	210	8500~9000	2800~3200	0.05~0.11	0.05~0.11	3D銑 (3D MILLING)
UPR0810	30	210	8500~9000	2000~2400	0.15~0.2	5~8	溝銑 (SLOTTING)
UPR0810	30	210	8500~9000	1200~1600	0.05~0.11	5~8	溝銑 (SLOTTING)
UPR0810	30	210	8500~9000	2800~3200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UPR0810	30	210	8500~9000	2800~3200	0.05~0.11	0.05~0.11	3D銑 (3D MILLING)
UPR1010	35	220	7000~7500	1800~2200	0.18~0.23	7~10	溝銑 (SLOTTING)
UPR1010	35	220	7000~7500	1200~1600	0.05~0.13	7~10	溝銑 (SLOTTING)
UPR1010	35	220	7000~7500	2400~2800	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UPR1010	35	220	7000~7500	2400~2800	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
UPR1020	35	220	7000~7500	1800~2200	0.18~0.23	5~10	溝銑 (SLOTTING)
UPR1020	35	220	7000~7500	1200~1600	0.05~0.13	5~10	溝銑 (SLOTTING)
UPR1020	35	220	7000~7500	2400~2800	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UPR1020	35	220	7000~7500	2400~2800	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
UPR1030	35	220	7000~7500	1800~2200	0.18~0.23	3~10	溝銑 (SLOTTING)
UPR1030	35	220	7000~7500	1200~1600	0.05~0.13	3~10	溝銑 (SLOTTING)
UPR1030	35	220	7000~7500	2400~2800	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UPR1030	35	220	7000~7500	2400~2800	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
UPR1210	40	190	4500~5000	1200~1600	0.15~0.2	9~12	溝銑 (SLOTTING)
UPR1210	40	190	4500~5000	1100~1400	0.05~0.15	9~12	溝銑 (SLOTTING)
UPR1210	40	190	4500~5000	2000~2400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UPR1210	40	190	4500~5000	1800~2200	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)

UPR

切削條件表 *Milling Conditions*

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式冷卻 Dry coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPR1220	40	190	4500~5000	1200~1600	0.15~0.2	7~12	溝銑 (SLOTTING)
UPR1220	40	190	4500~5000	1100~1400	0.05~0.15	7~12	溝銑 (SLOTTING)
UPR1220	40	190	4500~5000	2000~2400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UPR1220	40	190	4500~5000	1800~2200	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPR0305	16	130	13000~14000	1200~1600	0.03~0.07	1.8	溝銑 (SLOTTING)
UPR0305	16	130	13000~14000	3500~4000	0.1	1.8	溝銑 (SLOTTING)
UPR0305	16	120	12000~13000	3000~3500	0.1	3	溝銑 (SLOTTING)
UPR0305	16	120	12000~13000	1000~1400	3	0.03~0.07	側銑 (SIDE MILLING)
UPR0305	16	120	12000~13000	3000~3500	3	0.1	側銑 (SIDE MILLING)
UPR0305	16	110	11000~12000	1600~2000	0.03~0.07	0.03~0.07	3D銑 (3D MILLING)
UPR0405	18	135	10000~11000	1200~1600	0.03~0.07	2.8	溝銑 (SLOTTING)
UPR0405	18	135	10000~11000	4500~5000	0.1	2.8	溝銑 (SLOTTING)
UPR0405	18	125	9500~10500	4000~4500	0.1	4	溝銑 (SLOTTING)
UPR0405	18	125	9500~10500	1000~1400	4	0.03~0.07	側銑 (SIDE MILLING)
UPR0405	18	120	9000~10000	4000~4500	4	0.1	側銑 (SIDE MILLING)
UPR0405	18	120	9000~10000	2000~2400	4	0.1~0.2	側銑 (SIDE MILLING)
UPR0405	18	110	8700~9200	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPR0605	17	140	7000~8000	1200~1500	0.04~0.08	4.5	溝銑 (SLOTTING)
UPR0605	17	140	7000~8000	4500~5000	0.1	4.5	溝銑 (SLOTTING)
UPR0605	17	130	6000~7000	4000~4500	0.1	6	溝銑 (SLOTTING)
UPR0605	17	130	6000~7000	1000~1300	6	0.04~0.08	側銑 (SIDE MILLING)
UPR0605	17	130	6000~7000	4000~4500	6	0.1	側銑 (SIDE MILLING)
UPR0605	17	130	6000~7000	2000~2400	6	0.2~0.3	側銑 (SIDE MILLING)
UPR0605	17	130	6500~7000	1800~2200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)

UPR

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPR0610	17	140	7000~8000	1200~1500	0.04~0.08	4	溝銑 (SLOTTING)
UPR0610	17	140	7000~8000	4500~5000	0.1	4	溝銑 (SLOTTING)
UPR0610	17	130	6000~7000	4000~4500	0.1	6	溝銑 (SLOTTING)
UPR0610	17	130	6000~7000	1000~1300	6	0.04~0.08	側銑 (SIDE MILLING)
UPR0610	17	130	6000~7000	4000~4500	6	0.1	側銑 (SIDE MILLING)
UPR0610	17	130	6000~7000	2000~2400	6	0.2~0.3	側銑 (SIDE MILLING)
UPR0610	17	130	6500~7000	1800~2200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPR0805	26	150	5800~6300	1100~1400	0.05~0.1	6	溝銑 (SLOTTING)
UPR0805	26	150	5800~6300	4000~4500	0.1	6	溝銑 (SLOTTING)
UPR0805	26	130	5000~5500	3200~3800	0.1	8	溝銑 (SLOTTING)
UPR0805	26	130	5000~5500	700~900	8	0.05~0.1	側銑 (SIDE MILLING)
UPR0805	26	130	5000~5500	3000~3500	8	0.1	側銑 (SIDE MILLING)
UPR0805	26	120	4500~5000	1300~1600	8	0.3~0.5	側銑 (SIDE MILLING)
UPR0805	26	130	5000~5500	1800~2200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPR0810	26	150	5800~6300	1100~1400	0.05~0.1	5	溝銑 (SLOTTING)
UPR0810	26	150	5800~6300	4000~4500	0.1	5	溝銑 (SLOTTING)
UPR0810	26	130	5000~5500	3200~3800	0.1	8	溝銑 (SLOTTING)
UPR0810	26	130	5000~5500	700~900	8	0.05~0.1	側銑 (SIDE MILLING)
UPR0810	26	130	5000~5500	3000~3500	8	0.1	側銑 (SIDE MILLING)
UPR0810	26	120	4500~5000	1300~1600	8	0.3~0.5	側銑 (SIDE MILLING)
UPR0810	26	130	5000~5500	1800~2200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPR1010	32	155	4800~5300	900~1200	0.05~0.12	8	溝銑 (SLOTTING)
UPR1010	32	155	4800~5300	3300~3800	0.15	8	溝銑 (SLOTTING)
UPR1010	32	155	4800~5300	3300~3800	0.15	10	溝銑 (SLOTTING)
UPR1010	32	130	3900~4400	650~850	10	0.05~0.12	側銑 (SIDE MILLING)
UPR1010	32	155	4800~5300	2800~3200	10	0.15	側銑 (SIDE MILLING)
UPR1010	32	115	3400~3900	1000~1300	10	0.4~0.6	側銑 (SIDE MILLING)
UPR1010	32	155	4700~5200	1600~2000	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UPR1020	32	155	4800~5300	900~1200	0.05~0.12	6	溝銑 (SLOTTING)
UPR1020	32	155	4800~5300	3300~3800	0.15	6	溝銑 (SLOTTING)
UPR1020	32	155	4800~5300	3300~3800	0.15	10	溝銑 (SLOTTING)
UPR1020	32	130	3900~4400	650~850	10	0.05~0.12	側銑 (SIDE MILLING)
UPR1020	32	155	4800~5300	2800~3200	10	0.15	側銑 (SIDE MILLING)
UPR1020	32	115	3400~3900	1000~1300	10	0.4~0.6	側銑 (SIDE MILLING)
UPR1020	32	155	4700~5200	1600~2000	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)

UPR

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPR1030	32	155	4800~5300	900~1200	0.05~0.12	4	溝銑 (SLOTTING)
UPR1030	32	155	4800~5300	3300~3800	0.15	4	溝銑 (SLOTTING)
UPR1030	32	155	4800~5300	3300~3800	0.15	10	溝銑 (SLOTTING)
UPR1030	32	130	3900~4400	650~850	10	0.05~0.12	側銑 (SIDE MILLING)
UPR1030	32	155	4800~5300	2800~3200	10	0.15	側銑 (SIDE MILLING)
UPR1030	32	115	3400~3900	1000~1300	10	0.4~0.6	側銑 (SIDE MILLING)
UPR1030	32	155	4700~5200	1600~2000	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UPR1210	36	135	3400~3900	800~1000	0.05~0.15	8	溝銑 (SLOTTING)
UPR1210	36	150	3800~4300	3000~3500	0.15	8	溝銑 (SLOTTING)
UPR1210	36	130	3200~3700	2500~3000	0.15	12	溝銑 (SLOTTING)
UPR1210	36	130	3200~3700	650~850	12	0.05~0.15	側銑 (SIDE MILLING)
UPR1210	36	150	3800~4300	3000~3500	12	0.1	側銑 (SIDE MILLING)
UPR1210	36	130	3200~3700	700~1000	12	0.5~0.7	側銑 (SIDE MILLING)
UPR1210	36	160	4000~4500	1400~1800	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UPR1220	36	135	3400~3900	800~1000	0.05~0.15	8	溝銑 (SLOTTING)
UPR1220	36	150	3800~4300	3000~3500	0.15	8	溝銑 (SLOTTING)
UPR1220	36	130	3200~3700	2500~3000	0.15	12	溝銑 (SLOTTING)
UPR1220	36	130	3200~3700	650~850	12	0.05~0.15	側銑 (SIDE MILLING)
UPR1220	36	150	3800~4300	3000~3500	12	0.1	側銑 (SIDE MILLING)
UPR1220	36	130	3200~3700	700~1000	12	0.5~0.7	側銑 (SIDE MILLING)
UPR1220	36	160	4000~4500	1400~1800	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)

UPR

切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UPR0305	16	80	8000~8500	800~1000	0.03~0.05	1.8	溝銑 (SLOTTING)
UPR0305	16	70	7200~7600	700~900	3	0.03~0.05	側銑 (SIDE MILLING)
UPR0305	16	70	7200~7600	600~800	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UPR0405	18	70	5400~5800	800~1000	0.03~0.05	2.8	溝銑 (SLOTTING)
UPR0405	18	70	5400~5800	700~900	4	0.03~0.05	側銑 (SIDE MILLING)
UPR0405	18	70	5400~5800	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPR0605	17	80	4000~4500	800~1000	0.04~0.07	4.5	溝銑 (SLOTTING)
UPR0605	17	80	4000~4500	700~900	6	0.04~0.07	側銑 (SIDE MILLING)
UPR0605	17	80	4000~4500	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPR0610	17	80	4000~4500	800~1000	0.04~0.07	3.5	溝銑 (SLOTTING)
UPR0610	17	80	4000~4500	700~900	6	0.04~0.07	側銑 (SIDE MILLING)
UPR0610	17	80	4000~4500	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPR0805	26	85	3200~3700	700~900	0.04~0.08	6.5	溝銑 (SLOTTING)
UPR0805	26	70	2600~3000	500~700	8	0.04~0.08	側銑 (SIDE MILLING)
UPR0805	26	85	3200~3700	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPR0810	26	85	3200~3700	700~900	0.04~0.08	5	溝銑 (SLOTTING)
UPR0810	26	70	2600~3000	500~700	8	0.04~0.08	側銑 (SIDE MILLING)
UPR0810	26	85	3200~3700	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPR1010	32	75	2000~2500	500~700	0.05~0.1	7	溝銑 (SLOTTING)
UPR1010	32	70	1900~2400	400~500	10	0.05~0.1	側銑 (SIDE MILLING)
UPR1010	32	95	2800~3300	800~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPR1020	32	75	2000~2500	500~700	0.05~0.1	5	溝銑 (SLOTTING)
UPR1020	32	70	1900~2400	400~500	10	0.05~0.1	側銑 (SIDE MILLING)
UPR1020	32	95	2800~3300	800~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPR1030	32	75	2000~2500	500~700	0.05~0.1	3.5	溝銑 (SLOTTING)
UPR1030	32	70	1900~2400	400~500	10	0.05~0.1	側銑 (SIDE MILLING)
UPR1030	32	95	2800~3300	800~1000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPR1210	36	70	1600~2000	500~700	0.05~0.12	9	溝銑 (SLOTTING)
UPR1210	36	60	1400~1800	250~400	12	0.05~0.12	側銑 (SIDE MILLING)
UPR1210	36	95	2300~2700	700~900	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UPR1220	36	70	1600~2000	500~700	0.05~0.12	7	溝銑 (SLOTTING)
UPR1220	36	60	1400~1800	250~400	12	0.05~0.12	側銑 (SIDE MILLING)
UPR1220	36	95	2300~2700	700~900	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)

UGR

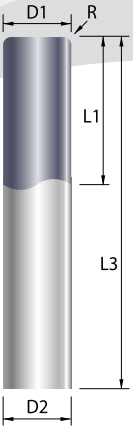
END MILLS
極超微粒圓鼻角立銑刀



直徑 D1	R徑公差 R Tolerance	直徑公差 D1 Tolerance
2.0	+0.02 0	0 -0.02
3.0	+0.02 0	0 -0.02
4.0	+0.02 0	0 -0.02
5.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.025
10.0	+0.02 0	0 -0.03
12.0	+0.02 0	0 -0.035
16.0	+0.02 0	0 -0.04

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø3	0 -0.006
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

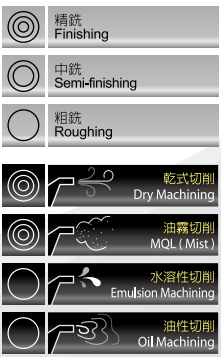
unit : mm



型號 Type No.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UGR0202	2.0	0.2	6	50	6
UGR0205	2.0	0.5	6	50	6
UGR0302S	3.0	0.2	8	50	3
UGR0305S	3.0	0.5	8	50	3
UGR0402	4.0	0.2	10	50	6
UGR0405	4.0	0.5	10	50	6
UGR0505	5.0	0.5	13	50	6
UGR0510	5.0	1.0	13	50	6
UGR0605	6.0	0.5	16	50	6
UGR0610	6.0	1.0	16	50	6
UGR0805	8.0	0.5	20	60	8
UGR0810	8.0	1.0	20	60	8
UGR1005	10.0	0.5	25	75	10
UGR1010	10.0	1.0	25	75	10
UGR1020	10.0	2.0	25	75	10
UGR1030	10.0	3.0	25	75	10
UGR1210	12.0	1.0	30	75	12
UGR1220	12.0	2.0	30	75	12
UGR1230	12.0	3.0	30	75	12
UGR1610	16.0	1.0	45	100	16
UGR1620	16.0	2.0	45	100	16
UGR1630	16.0	3.0	45	100	16

unit : mm





UGR

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UGR0202	12	105	16000~18000	800~1000	0.03~0.07	0.5~2	溝銑 (SLOTTING)
UGR0202	12	105	16000~18000	1100~1400	0.03~0.07	0.03~0.07	3D銑 (3D MILLING)
UGR0205	12	105	16000~18000	800~1000	0.03~0.07	0.5~2	溝銑 (SLOTTING)
UGR0205	12	105	16000~18000	1100~1400	0.03~0.07	0.03~0.07	3D銑 (3D MILLING)
UGR0302S	12	130	13000~14000	900~1200	0.03~0.07	1~3	溝銑 (SLOTTING)
UGR0302S	12	130	13000~14000	1200~1500	0.03~0.07	0.03~0.07	3D銑 (3D MILLING)
UGR0305S	12	130	13000~14000	900~1200	0.03~0.07	1~3	溝銑 (SLOTTING)
UGR0305S	12	130	13000~14000	1200~1500	0.03~0.07	0.03~0.07	3D銑 (3D MILLING)
UGR0402	20	120	9000~10000	2200~2600	0.05~0.1	2~4	溝銑 (SLOTTING)
UGR0402	20	120	9000~10000	1400~1800	0.05~0.1	2~4	溝銑 (SLOTTING)
UGR0402	20	120	9000~10000	1200~1600	8	0.05~0.1	側銑 (SIDE MILLING)
UGR0402	20	120	9000~10000	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0405	20	120	9000~10000	2200~2600	0.05~0.1	2~4	溝銑 (SLOTTING)
UGR0405	20	120	9000~10000	1400~1800	0.05~0.1	2~4	溝銑 (SLOTTING)
UGR0405	20	120	9000~10000	1200~1600	8	0.05~0.1	側銑 (SIDE MILLING)
UGR0405	20	120	9000~10000	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0505	20	135	8000~9000	2200~2600	0.05~0.1	3~5	溝銑 (SLOTTING)
UGR0505	20	135	8000~9000	1400~1800	0.05~0.1	3~5	溝銑 (SLOTTING)
UGR0505	20	135	8000~9000	1200~1600	10	0.05~0.1	側銑 (SIDE MILLING)
UGR0505	20	135	8000~9000	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0510	20	135	8000~9000	2200~2600	0.05~0.1	2~5	溝銑 (SLOTTING)
UGR0510	20	135	8000~9000	1400~1800	0.05~0.1	2~5	溝銑 (SLOTTING)
UGR0510	20	135	8000~9000	1200~1600	10	0.05~0.1	側銑 (SIDE MILLING)
UGR0510	20	135	8000~9000	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0605	23	140	7000~8000	2200~2600	0.05~0.1	4~6	溝銑 (SLOTTING)
UGR0605	23	140	7000~8000	1400~1800	0.05~0.1	4~6	溝銑 (SLOTTING)
UGR0605	23	140	7000~8000	1200~1600	12	0.05~0.1	側銑 (SIDE MILLING)
UGR0605	23	140	7000~8000	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0610	23	140	7000~8000	2200~2600	0.05~0.1	3~6	溝銑 (SLOTTING)
UGR0610	23	140	7000~8000	1400~1800	0.05~0.1	3~6	溝銑 (SLOTTING)
UGR0610	23	140	7000~8000	1200~1600	12	0.05~0.1	側銑 (SIDE MILLING)
UGR0610	23	140	7000~8000	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0805	25	130	5000~5500	1800~2200	0.05~0.1	6~8	溝銑 (SLOTTING)
UGR0805	25	130	5000~5500	1400~1800	0.05~0.1	6~8	溝銑 (SLOTTING)
UGR0805	25	125	4700~5200	800~1200	16	0.05~0.1	側銑 (SIDE MILLING)
UGR0805	25	130	5000~5500	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0810	25	130	5000~5500	1800~2200	0.05~0.1	5~8	溝銑 (SLOTTING)
UGR0810	25	130	5000~5500	1400~1800	0.05~0.1	5~8	溝銑 (SLOTTING)
UGR0810	25	125	4700~5200	800~1200	16	0.05~0.1	側銑 (SIDE MILLING)
UGR0810	25	130	5000~5500	1400~1800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)

UGR

切削條件表 *Milling Conditions*

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UGR1005	30	150	4500~5000	2200~2600	0.1~0.15	8~10	溝銑 (SLOTTING)
UGR1005	30	150	4500~5000	1000~1400	0.05~0.15	8~10	溝銑 (SLOTTING)
UGR1005	30	125	3800~4200	600~800	20	0.05~0.15	側銑 (SIDE MILLING)
UGR1005	30	155	4700~5200	1400~1800	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UGR1010	30	150	4500~5000	2200~2600	0.1~0.15	7~10	溝銑 (SLOTTING)
UGR1010	30	150	4500~5000	1000~1400	0.05~0.15	7~10	溝銑 (SLOTTING)
UGR1010	30	125	3800~4200	600~800	20	0.05~0.15	側銑 (SIDE MILLING)
UGR1010	30	155	4700~5200	1400~1800	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UGR1020	30	150	4500~5000	2200~2600	0.1~0.15	5~10	溝銑 (SLOTTING)
UGR1020	30	150	4500~5000	1000~1400	0.05~0.15	5~10	溝銑 (SLOTTING)
UGR1020	30	125	3800~4200	600~800	20	0.05~0.15	側銑 (SIDE MILLING)
UGR1020	30	155	4700~5200	1400~1800	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UGR1030	30	150	4500~5000	2200~2600	0.1~0.15	3~10	溝銑 (SLOTTING)
UGR1030	30	150	4500~5000	1000~1400	0.05~0.15	3~10	溝銑 (SLOTTING)
UGR1030	30	125	3800~4200	600~800	20	0.05~0.15	側銑 (SIDE MILLING)
UGR1030	30	155	4700~5200	1400~1800	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UGR1210	38	135	3400~3800	1800~2200	0.1~0.15	9~12	溝銑 (SLOTTING)
UGR1210	38	140	3500~4000	800~1200	0.05~0.15	9~12	溝銑 (SLOTTING)
UGR1210	38	115	2800~3300	600~800	24	0.05~0.15	側銑 (SIDE MILLING)
UGR1210	38	160	4000~4500	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UGR1220	38	135	3400~3800	1800~2200	0.1~0.15	7~12	溝銑 (SLOTTING)
UGR1220	38	140	3500~4000	900~1300	0.05~0.15	7~12	溝銑 (SLOTTING)
UGR1220	38	115	2800~3300	600~800	24	0.05~0.15	側銑 (SIDE MILLING)
UGR1220	38	160	4000~4500	1400~1800	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UGR1230	38	135	3400~3800	1800~2200	0.1~0.15	5~12	溝銑 (SLOTTING)
UGR1230	38	140	3500~4000	900~1300	0.05~0.15	5~12	溝銑 (SLOTTING)
UGR1230	38	115	2800~3300	600~800	24	0.05~0.15	側銑 (SIDE MILLING)
UGR1230	38	160	4000~4500	1400~1800	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UGR1610	50	135	2500~2900	1600~2000	0.1~0.2	13~16	溝銑 (SLOTTING)
UGR1610	50	140	2600~3000	800~1100	0.05~0.15	13~16	溝銑 (SLOTTING)
UGR1610	50	115	2100~2500	500~700	32	0.05~0.15	側銑 (SIDE MILLING)
UGR1610	50	160	3000~3400	1400~1700	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UGR1620	50	135	2500~2900	1600~2000	0.1~0.2	11~16	溝銑 (SLOTTING)
UGR1620	50	140	2600~3000	800~1100	0.05~0.15	11~16	溝銑 (SLOTTING)
UGR1620	50	115	2100~2500	500~700	32	0.05~0.15	側銑 (SIDE MILLING)
UGR1620	50	160	3000~3400	1400~1700	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UGR1630	50	135	2500~2900	1600~2000	0.1~0.2	9~16	溝銑 (SLOTTING)
UGR1630	50	140	2600~3000	800~1100	0.05~0.15	9~16	溝銑 (SLOTTING)
UGR1630	50	115	2100~2500	500~700	32	0.05~0.15	側銑 (SIDE MILLING)
UGR1630	50	160	3000~3400	1400~1700	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)

UGR

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UGR0202	12	105	16000~18000	700~900	0.03~0.07	0.5~2	溝銑 (SLOTTING)
UGR0202	12	105	16000~18000	900~1200	0.03~0.07	0.03~0.07	3D銑 (3D MILLING)
UGR0205	12	105	16000~18000	700~900	0.03~0.07	0.5~2	溝銑 (SLOTTING)
UGR0205	12	105	16000~18000	900~1200	0.03~0.07	0.03~0.07	3D銑 (3D MILLING)
UGR0302S	12	110	11000~12000	800~1000	0.03~0.07	1~3	溝銑 (SLOTTING)
UGR0302S	12	110	11000~12000	1000~1300	0.03~0.07	0.03~0.07	3D銑 (3D MILLING)
UGR0305S	12	110	11000~12000	800~1000	0.03~0.07	1~3	溝銑 (SLOTTING)
UGR0305S	12	110	11000~12000	1000~1300	0.03~0.07	0.03~0.07	3D銑 (3D MILLING)
UGR0402	20	110	8700~9200	2200~2600	0.05~0.1	2~4	溝銑 (SLOTTING)
UGR0402	20	110	8500~9000	1200~1600	0.05~0.1	2~4	溝銑 (SLOTTING)
UGR0402	20	105	8200~8700	1200~1600	8	0.05~0.1	側銑 (SIDE MILLING)
UGR0402	20	110	8700~9200	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0405	20	110	8700~9200	2200~2600	0.05~0.1	2~4	溝銑 (SLOTTING)
UGR0405	20	110	8500~9000	1200~1600	0.05~0.1	2~4	溝銑 (SLOTTING)
UGR0405	20	105	8200~8700	1200~1600	8	0.05~0.1	側銑 (SIDE MILLING)
UGR0405	20	110	8700~9200	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0505	20	125	7800~8300	1800~2200	0.05~0.1	3~5	溝銑 (SLOTTING)
UGR0505	20	120	7500~8000	1000~1400	0.05~0.1	3~5	溝銑 (SLOTTING)
UGR0505	20	115	7200~7700	1000~1400	10	0.05~0.1	側銑 (SIDE MILLING)
UGR0505	20	125	7800~8300	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0510	20	125	7800~8300	1800~2200	0.05~0.1	2~5	溝銑 (SLOTTING)
UGR0510	20	120	7500~8000	1000~1400	0.05~0.1	2~5	溝銑 (SLOTTING)
UGR0510	20	115	7200~7700	1000~1400	10	0.05~0.1	側銑 (SIDE MILLING)
UGR0510	20	125	7800~8300	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0605	23	130	6500~7000	1800~2200	0.05~0.1	4~6	溝銑 (SLOTTING)
UGR0605	23	120	6200~6700	1000~1400	0.05~0.1	4~6	溝銑 (SLOTTING)
UGR0605	23	115	6000~6500	1000~1400	12	0.05~0.1	側銑 (SIDE MILLING)
UGR0605	23	130	6500~7000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0610	23	130	6500~7000	1800~2200	0.05~0.1	3~6	溝銑 (SLOTTING)
UGR0610	23	120	6200~6700	1000~1400	0.05~0.1	3~6	溝銑 (SLOTTING)
UGR0610	23	115	6000~6500	1000~1400	12	0.05~0.1	側銑 (SIDE MILLING)
UGR0610	23	130	6500~7000	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0805	25	130	5000~5500	1800~2200	0.05~0.1	6~8	溝銑 (SLOTTING)
UGR0805	25	130	5000~5500	1000~1400	0.05~0.1	6~8	溝銑 (SLOTTING)
UGR0805	25	125	4700~5200	800~1200	16	0.05~0.1	側銑 (SIDE MILLING)
UGR0805	25	130	5000~5500	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0810	25	130	5000~5500	1800~2200	0.05~0.1	5~8	溝銑 (SLOTTING)
UGR0810	25	130	5000~5500	1000~1400	0.05~0.1	5~8	溝銑 (SLOTTING)
UGR0810	25	125	4700~5200	800~1200	16	0.05~0.1	側銑 (SIDE MILLING)
UGR0810	25	130	5000~5500	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)

UGR

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UGR1005	30	150	4500~5000	2200~2600	0.1~0.15	8~10	溝銑 (SLOTTING)
UGR1005	30	150	4500~5000	800~1200	0.05~0.15	8~10	溝銑 (SLOTTING)
UGR1005	30	125	3800~4200	600~800	20	0.05~0.15	側銑 (SIDE MILLING)
UGR1005	30	155	4700~5200	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UGR1010	30	150	4500~5000	2200~2600	0.1~0.15	7~10	溝銑 (SLOTTING)
UGR1010	30	150	4500~5000	800~1200	0.05~0.15	7~10	溝銑 (SLOTTING)
UGR1010	30	125	3800~4200	600~800	20	0.05~0.15	側銑 (SIDE MILLING)
UGR1010	30	155	4700~5200	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UGR1020	30	150	4500~5000	2200~2600	0.1~0.15	5~10	溝銑 (SLOTTING)
UGR1020	30	150	4500~5000	800~1200	0.05~0.15	5~10	溝銑 (SLOTTING)
UGR1020	30	125	3800~4200	600~800	20	0.05~0.15	側銑 (SIDE MILLING)
UGR1020	30	155	4700~5200	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UGR1030	30	150	4500~5000	2200~2600	0.1~0.15	3~10	溝銑 (SLOTTING)
UGR1030	30	150	4500~5000	800~1200	0.05~0.15	3~10	溝銑 (SLOTTING)
UGR1030	30	125	3800~4200	600~800	20	0.05~0.15	側銑 (SIDE MILLING)
UGR1030	30	155	4700~5200	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UGR1210	38	135	3400~3800	1800~2200	0.1~0.15	9~12	溝銑 (SLOTTING)
UGR1210	38	140	3500~4000	800~1200	0.05~0.15	9~12	溝銑 (SLOTTING)
UGR1210	38	115	2800~3300	600~800	24	0.05~0.15	側銑 (SIDE MILLING)
UGR1210	38	160	4000~4500	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UGR1220	38	135	3400~3800	1800~2200	0.1~0.15	7~12	溝銑 (SLOTTING)
UGR1220	38	140	3500~4000	800~1200	0.05~0.15	7~12	溝銑 (SLOTTING)
UGR1220	38	115	2800~3300	600~800	24	0.05~0.15	側銑 (SIDE MILLING)
UGR1220	38	160	4000~4500	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UGR1230	38	135	3400~3800	1800~2200	0.1~0.15	5~12	溝銑 (SLOTTING)
UGR1230	38	140	3500~4000	800~1200	0.05~0.15	5~12	溝銑 (SLOTTING)
UGR1230	38	115	2800~3300	600~800	24	0.05~0.15	側銑 (SIDE MILLING)
UGR1230	38	160	4000~4500	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UGR1610	50	135	2500~2900	1600~2000	0.1~0.2	13~16	溝銑 (SLOTTING)
UGR1610	50	140	2600~3000	600~1000	0.05~0.15	13~16	溝銑 (SLOTTING)
UGR1610	50	115	2100~2500	500~700	32	0.05~0.15	側銑 (SIDE MILLING)
UGR1610	50	160	3000~3400	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UGR1620	50	135	2500~2900	1600~2000	0.1~0.2	11~16	溝銑 (SLOTTING)
UGR1620	50	140	2600~3000	600~1000	0.05~0.15	11~16	溝銑 (SLOTTING)
UGR1620	50	115	2100~2500	500~700	32	0.05~0.15	側銑 (SIDE MILLING)
UGR1620	50	160	3000~3400	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UGR1630	50	135	2500~2900	1600~2000	0.1~0.2	9~16	溝銑 (SLOTTING)
UGR1630	50	140	2600~3000	600~1000	0.05~0.15	9~16	溝銑 (SLOTTING)
UGR1630	50	115	2100~2500	500~700	32	0.05~0.15	側銑 (SIDE MILLING)
UGR1630	50	160	3000~3400	1200~1600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)

UGR

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UGR0202	12	65	10000~11000	400~600	0.03~0.05	0.5~2	溝銑 (SLOTTING)
UGR0202	12	70	11000~12000	600~800	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UGR0205	12	65	10000~11000	400~600	0.03~0.05	0.5~2	溝銑 (SLOTTING)
UGR0205	12	70	11000~12000	600~800	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UGR0302S	12	65	6800~7300	400~600	0.03~0.05	1~3	溝銑 (SLOTTING)
UGR0302S	12	70	7200~7600	600~800	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UGR0305S	12	65	6800~7300	400~600	0.03~0.05	1~3	溝銑 (SLOTTING)
UGR0305S	12	70	7200~7600	600~800	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UGR0402	20	65	5200~5700	600~800	0.05~0.1	2~4	溝銑 (SLOTTING)
UGR0402	20	70	5400~5800	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0405	20	65	5200~5700	600~800	0.05~0.1	2~4	溝銑 (SLOTTING)
UGR0405	20	70	5400~5800	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0505	20	75	5000~5500	600~800	0.05~0.1	3~5	溝銑 (SLOTTING)
UGR0505	20	80	4800~5300	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0510	20	75	5000~5500	600~800	0.05~0.1	2~5	溝銑 (SLOTTING)
UGR0510	20	80	4800~5300	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0605	23	85	4200~4700	600~800	0.05~0.1	4~6	溝銑 (SLOTTING)
UGR0605	23	80	4000~4500	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0610	23	85	4200~4700	600~800	0.05~0.1	3~6	溝銑 (SLOTTING)
UGR0610	23	80	4000~4500	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0805	25	75	2800~3300	500~700	0.05~0.1	6~8	溝銑 (SLOTTING)
UGR0805	25	65	2400~2800	400~600	16	0.07	側銑 (SIDE MILLING)
UGR0805	25	85	3200~3700	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR0810	25	75	2800~3300	500~700	0.05~0.1	5~8	溝銑 (SLOTTING)
UGR0810	25	65	2400~2800	400~600	16	0.07	側銑 (SIDE MILLING)
UGR0810	25	85	3200~3700	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR1005	30	80	2400~2800	400~600	0.05~0.1	8~10	溝銑 (SLOTTING)
UGR1005	30	80	2400~2800	400~600	20	0.05~0.1	側銑 (SIDE MILLING)
UGR1005	30	95	2800~3300	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR1010	30	80	2400~2800	400~600	0.05~0.1	7~10	溝銑 (SLOTTING)
UGR1010	30	80	2400~2800	400~600	20	0.05~0.1	側銑 (SIDE MILLING)
UGR1010	30	95	2800~3300	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR1020	30	80	2400~2800	400~600	0.05~0.1	5~10	溝銑 (SLOTTING)
UGR1020	30	80	2400~2800	400~600	20	0.05~0.1	側銑 (SIDE MILLING)
UGR1020	30	95	2800~3300	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR1030	30	80	2400~2800	400~600	0.05~0.1	3~10	溝銑 (SLOTTING)
UGR1030	30	80	2400~2800	400~600	20	0.05~0.1	側銑 (SIDE MILLING)
UGR1030	30	95	2800~3300	800~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)

UGR

切削條件表 *Milling Conditions*

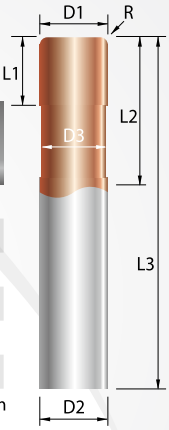
被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UGR1210	38	105	2600~3000	600~800	0.05~0.1	9~12	溝銑 (SLOTTING)
UGR1210	38	70	1600~2000	400~600	24	0.05~0.1	側銑 (SIDE MILLING)
UGR1210	38	105	2600~3000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR1220	38	105	2600~3000	600~800	0.05~0.1	7~12	溝銑 (SLOTTING)
UGR1220	38	70	1600~2000	400~600	24	0.05~0.1	側銑 (SIDE MILLING)
UGR1220	38	105	2600~3000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR1230	38	105	2600~3000	600~800	0.05~0.1	5~12	溝銑 (SLOTTING)
UGR1230	38	70	1600~2000	400~600	24	0.05~0.1	側銑 (SIDE MILLING)
UGR1230	38	105	2600~3000	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR1610	50	105	1900~2300	600~800	0.05~0.1	13~16	溝銑 (SLOTTING)
UGR1610	50	70	1200~1600	300~500	32	0.05~0.1	側銑 (SIDE MILLING)
UGR1610	50	105	1900~2300	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR1620	50	105	1900~2300	600~800	0.05~0.1	11~16	溝銑 (SLOTTING)
UGR1620	50	70	1200~1600	300~500	32	0.05~0.1	側銑 (SIDE MILLING)
UGR1620	50	105	1900~2300	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UGR1630	50	105	1900~2300	600~800	0.05~0.1	9~16	溝銑 (SLOTTING)
UGR1630	50	70	1200~1600	300~500	32	0.05~0.1	側銑 (SIDE MILLING)
UGR1630	50	105	1900~2300	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)



UVR

END MILLS
高硬度圓鼻立銑刀



直徑 D1	R徑公差 R Tolerance	直徑公差 D1 Tolerance	柄徑 D2(h6)	柄徑公差 D2 Tolerance
6.0	+0.02 0	0 -0.02	Ø6	0 -0.008
8.0	+0.02 0	0 -0.025	Ø8	0 -0.009
10.0	+0.02 0	0 -0.03	Ø10	0 -0.009
12.0	+0.02 0	0 -0.035	Ø12	0 -0.011
16.0	+0.02 0	0 -0.04	Ø16	0 -0.011
20.0	+0.02 0	0 -0.04	Ø20	0 -0.013

unit : mm



精銑 Finishing

中銑 Semi-finishing

粗銑 Roughing

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia.	R R角 Corner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UVR0606	6.0	5.80	0.3	8	20	50	6
UVR0806	8.0	7.70	0.3	10	25	60	8
UVR1006	10.0	9.60	0.5	12	30	75	10
UVR1206	12.0	11.5	0.5	15	36	75	12
UVR1606	16.0	15.4	1.0	24	40	100	16
UVR2006	20.0	19.4	1.0	30	50	100	20

unit : mm

UVR

切削條件表 *Milling Conditions*

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式冷卻 Wet coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UVR0606	20	210	10000~11000	2600~3000	0.15~0.18	4~6	溝銑 (SLOTTING)
UVR0606	20	210	10000~11000	1300~1700	0.05~0.1	4~6	溝銑 (SLOTTING)
UVR0606	20	210	10000~11000	3000~3500	0.15~0.18	0.15~0.18	3D銑 (3D MILLING)
UVR0606	20	210	10000~11000	2800~3200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UVR0806	30	210	8500~9000	2000~2400	0.15~0.2	7~8	溝銑 (SLOTTING)
UVR0806	30	210	8500~9000	1200~1600	0.05~0.11	7~8	溝銑 (SLOTTING)
UVR0806	30	210	8500~9000	2800~3200	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UVR0806	30	210	8500~9000	2800~3200	0.05~0.11	0.05~0.11	3D銑 (3D MILLING)
UVR1006	35	220	7000~7500	1800~2200	0.18~0.23	8~10	溝銑 (SLOTTING)
UVR1006	35	220	7000~7500	1200~1600	0.05~0.13	8~10	溝銑 (SLOTTING)
UVR1006	35	220	7000~7500	2400~2800	0.18~0.23	0.18~0.23	3D銑 (3D MILLING)
UVR1006	35	220	7000~7500	2400~2800	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
UVR1206	40	190	4500~5000	1200~1600	0.15~0.2	10~12	溝銑 (SLOTTING)
UVR1206	40	190	4500~5000	1100~1400	0.05~0.15	10~12	溝銑 (SLOTTING)
UVR1206	40	190	4500~5000	2000~2400	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UVR1206	40	190	4500~5000	1800~2200	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UVR1606	60	140	2400~2800	700~1000	0.25~0.3	13~16	溝銑 (SLOTTING)
UVR1606	60	200	3500~4000	800~1000	0.05~0.18	13~16	溝銑 (SLOTTING)
UVR1606	60	160	2700~3200	1400~1800	0.25~0.3	0.25~0.3	3D銑 (3D MILLING)
UVR1606	60	215	3700~4200	1400~1800	0.05~0.18	0.05~0.18	3D銑 (3D MILLING)
UVR2006	60	165	2400~2800	700~1000	0.25~0.3	17~20	溝銑 (SLOTTING)
UVR2006	60	200	3000~3400	800~1000	0.05~0.18	17~20	溝銑 (SLOTTING)
UVR2006	60	165	2400~2800	1400~1800	0.25~0.3	0.05~0.2	3D銑 (3D MILLING)
UVR2006	60	200	3000~3400	1400~1800	0.05~0.18	0.05~0.2	3D銑 (3D MILLING)

UVR

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UVR0606	23	110	5800~6300	1800~2200	0.05~0.1	4~6	溝銑 (SLOTTING)
UVR0606	23	120	6000~6500	1200~1600	0.05~0.1	4~6	溝銑 (SLOTTING)
UVR0606	23	120	6200~6700	1000~1400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UVR0806	27	105	4000~4500	1600~2000	0.05~0.1	6~8	溝銑 (SLOTTING)
UVR0806	27	105	4000~4500	1000~1400	0.05~0.1	6~8	溝銑 (SLOTTING)
UVR0806	27	125	4700~5200	1200~1600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UVR1006	35	140	4200~4700	1800~2200	0.1~0.15	8~10	溝銑 (SLOTTING)
UVR1006	35	140	4200~4700	1000~1400	0.05~0.15	8~10	溝銑 (SLOTTING)
UVR1006	35	130	4000~4500	1400~1800	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UVR1206	39	140	3600~4000	1600~2000	0.1~0.15	10~12	溝銑 (SLOTTING)
UVR1206	39	150	3800~4300	1000~1400	0.05~0.15	10~12	溝銑 (SLOTTING)
UVR1206	39	170	4200~4700	1000~1400	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UVR1606	45	140	2600~3000	1600~2000	0.1~0.2	13~16	溝銑 (SLOTTING)
UVR1606	45	150	2800~3300	800~1200	0.05~0.15	13~16	溝銑 (SLOTTING)
UVR1606	45	165	3100~3500	800~1200	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)
UVR2006	60	140	2000~2400	1200~1600	0.15~0.25	17~20	溝銑 (SLOTTING)
UVR2006	60	150	2200~2700	600~1000	0.05~0.2	17~20	溝銑 (SLOTTING)
UVR2006	60	165	2400~2800	600~1000	0.05~0.2	0.05~0.2	3D銑 (3D MILLING)

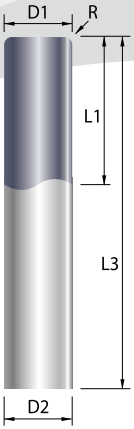
被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UVR0606	23	90	4600~5000	700~1000	0.05~0.1	4~6	溝銑 (SLOTTING)
UVR0606	23	100	5000~5500	700~1100	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UVR0806	27	100	3800~4300	800~1200	0.05~0.1	6~8	溝銑 (SLOTTING)
UVR0806	27	105	4000~4500	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UVR1006	35	100	3000~3500	800~1200	0.05~0.1	8~10	溝銑 (SLOTTING)
UVR1006	35	105	3200~3600	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UVR1206	39	105	2600~3000	600~1000	0.05~0.1	10~12	溝銑 (SLOTTING)
UVR1206	39	110	2700~3200	800~1200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UVR1606	45	105	1900~2300	600~900	0.05~0.1	13~16	溝銑 (SLOTTING)
UVR1606	45	110	2000~2400	600~900	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UVR2006	60	105	1500~1900	600~800	0.05~0.1	17~20	溝銑 (SLOTTING)
UVR2006	60	110	1600~2000	600~800	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)

UVTR

END MILLS
高硬度圓鼻立銑刀





直徑 D1	R徑公差 R Tolerance	直徑公差 D1 Tolerance	柄徑 D2(h6)	柄徑公差 D2 Tolerance
6.0	+0.02 0	0 -0.02	Ø6	0 -0.008
8.0	+0.02 0	0 -0.025	Ø8	0 -0.009
10.0	+0.02 0	0 -0.03	Ø10	0 -0.009
12.0	+0.02 0	0 -0.035	Ø12	0 -0.011
16.0	+0.02 0	0 -0.04	Ø16	0 -0.011
20.0	+0.02 0	0 -0.04	Ø20	0 -0.013

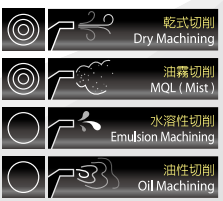
unit : mm

型號 Type No.	D1 直徑 Diameter	R R角 Corner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UVTR0605	6.0	0.5	16	50	6
UVTR0610	6.0	1.0	16	50	6
UVTR0805	8.0	0.5	20	60	8
UVTR0810	8.0	1.0	20	60	8
UVTR1010	10.0	1.0	25	75	10
UVTR1210	12.0	1.0	30	75	12
UVTR1610	16.0	1.0	40	100	16
UVTR1620	16.0	2.0	40	100	16
UVTR2020	20.0	2.0	45	100	20

unit : mm







UVTR6T

切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UVTR0605	20	90	4800~5200	1800~2200	0.1~0.2	4~6	溝銑 (SLOTTING)
UVTR0605	20	170	9000~10000	1600~2000	0.05~0.1	4~6	溝銑 (SLOTTING)
UVTR0605	20	75	4000~4400	800~1200	6~12	0.1~0.2	側銑 (SIDE MILLING)
UVTR0605	20	75	4000~4400	600~800	6~12	0.05~0.1	側銑 (SIDE MILLING)
UVTR0605	20	135	7000~7400	1800~2200	0.1~0.2	0.1~0.2	3D銑 (3D MILLING)
UVTR0605	20	170	9000~10000	3000~3400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UVTR0610	20	90	4800~5200	1800~2200	0.1~0.2	3~6	溝銑 (SLOTTING)
UVTR0610	20	170	9000~10000	1600~2000	0.05~0.1	3~6	溝銑 (SLOTTING)
UVTR0610	20	75	4000~4400	800~1200	6~12	0.1~0.2	側銑 (SIDE MILLING)
UVTR0610	20	75	4000~4400	600~800	6~12	0.05~0.1	側銑 (SIDE MILLING)
UVTR0610	20	135	7000~7400	1800~2200	0.1~0.2	0.1~0.2	3D銑 (3D MILLING)
UVTR0610	20	170	9000~10000	3000~3400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UVTR0805	25	115	4500~5000	1400~1600	0.2~0.3	6~8	溝銑 (SLOTTING)
UVTR0805	25	175	7000~8000	1600~2000	0.05~0.11	6~8	溝銑 (SLOTTING)
UVTR0805	25	65	2600~3000	1000~1400	8~16	0.2~0.3	側銑 (SIDE MILLING)
UVTR0805	25	85	3300~3600	600~800	8~16	0.05~0.11	側銑 (SIDE MILLING)
UVTR0805	25	140	5500~6000	2000~2400	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
UVTR0805	25	175	7000~8000	3000~3400	0.05~0.11	0.05~0.11	3D銑 (3D MILLING)
UVTR0810	25	115	4500~5000	1400~1600	0.2~0.3	5~8	溝銑 (SLOTTING)
UVTR0810	25	175	7000~8000	1600~2000	0.05~0.11	5~8	溝銑 (SLOTTING)
UVTR0810	25	65	2600~3000	1000~1400	8~16	0.2~0.3	側銑 (SIDE MILLING)
UVTR0810	25	85	3300~3600	600~800	8~16	0.05~0.11	側銑 (SIDE MILLING)
UVTR0810	25	140	5500~6000	2000~2400	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
UVTR0810	25	175	7000~8000	3000~3400	0.05~0.11	0.05~0.11	3D銑 (3D MILLING)
UVTR1010	35	135	4300~4800	1400~1800	0.2~0.3	7~10	溝銑 (SLOTTING)
UVTR1010	35	190	6000~7000	1600~2000	0.05~0.13	7~10	溝銑 (SLOTTING)
UVTR1010	35	100	3200~3600	1000~1400	10~20	0.3~0.5	側銑 (SIDE MILLING)
UVTR1010	35	120	3800~4200	600~800	10~20	0.05~0.13	側銑 (SIDE MILLING)
UVTR1010	35	145	4500~5000	1800~2200	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
UVTR1010	35	190	6000~7000	2800~3200	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
UVTR1210	40	105	2700~3200	1000~1400	0.2~0.3	9~12	溝銑 (SLOTTING)
UVTR1210	40	180	4700~5200	1600~2000	0.05~0.15	9~12	溝銑 (SLOTTING)
UVTR1210	40	115	3000~3400	1000~1400	12~24	0.3~0.5	側銑 (SIDE MILLING)
UVTR1210	40	115	3000~3400	600~800	12~24	0.05~0.15	側銑 (SIDE MILLING)
UVTR1210	40	105	2700~3200	1000~1400	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
UVTR1210	40	180	4700~5200	2200~2600	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)

UVTR6T

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UVTR1610	60	100	2000~2500	500~700	0.25~0.35	13~16	溝銑 (SLOTTING)
UVTR1610	60	185	3700~4200	1400~1800	0.05~0.18	13~16	溝銑 (SLOTTING)
UVTR1610	60	90	1800~2200	1000~1400	16~32	0.4~0.6	側銑 (SIDE MILLING)
UVTR1610	60	90	1800~2200	600~800	16~32	0.05~0.18	側銑 (SIDE MILLING)
UVTR1610	60	135	2700~3200	1600~2000	0.25~0.35	0.25~0.35	3D銑 (3D MILLING)
UVTR1610	60	185	3700~4200	1800~2200	0.05~0.18	0.05~0.18	3D銑 (3D MILLING)
UVTR1620	60	100	2000~2500	500~700	0.25~0.35	11~16	溝銑 (SLOTTING)
UVTR1620	60	185	3700~4200	1400~1800	0.05~0.18	11~16	溝銑 (SLOTTING)
UVTR1620	60	90	1800~2200	1000~1400	16~32	0.4~0.6	側銑 (SIDE MILLING)
UVTR1620	60	90	1800~2200	600~800	16~32	0.05~0.18	側銑 (SIDE MILLING)
UVTR1620	60	135	2700~3200	1600~2000	0.25~0.35	0.25~0.35	3D銑 (3D MILLING)
UVTR1620	60	185	3700~4200	1800~2200	0.05~0.18	0.05~0.18	3D銑 (3D MILLING)
UVTR2020	60	100	1600~2000	400~600	0.25~0.35	15~20	溝銑 (SLOTTING)
UVTR2020	60	265	4200~4700	1100~1500	0.05~0.2	15~20	溝銑 (SLOTTING)
UVTR2020	60	50	800~1000	400~600	20~40	0.4~0.6	側銑 (SIDE MILLING)
UVTR2020	60	50	800~1100	400~600	20~40	0.05~0.2	側銑 (SIDE MILLING)
UVTR2020	60	115	1800~2200	800~1200	0.25~0.35	0.25~0.35	3D銑 (3D MILLING)
UVTR2020	60	285	4500~5000	1600~2000	0.05~0.2	0.05~0.2	3D銑 (3D MILLING)

UVTR6T

切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UVTR0605	20	125	6500~7500	1200~1600	0.04~0.07	4~6	溝銑 (SLOTTING)
UVTR0605	20	60	3000~3400	400~600	6~12	0.05~0.07	側銑 (SIDE MILLING)
UVTR0605	20	125	6500~7500	1800~2200	0.04~0.07	0.04~0.07	3D銑 (3D MILLING)
UVTR0610	20	125	6500~7500	1200~1600	0.04~0.07	3~6	溝銑 (SLOTTING)
UVTR0610	20	60	3000~3400	400~600	6~12	0.05~0.07	側銑 (SIDE MILLING)
UVTR0610	20	125	6500~7500	1800~2200	0.04~0.07	0.04~0.07	3D銑 (3D MILLING)
UVTR0805	25	115	4500~5500	1200~1600	0.05~0.09	4~6	溝銑 (SLOTTING)
UVTR0805	25	70	2800~3300	400~600	8~16	0.07~0.09	側銑 (SIDE MILLING)
UVTR0805	25	115	4500~5500	1800~2200	0.05~0.09	0.05~0.09	3D銑 (3D MILLING)
UVTR0810	25	115	4500~5500	1200~1600	0.05~0.09	4~6	溝銑 (SLOTTING)
UVTR0810	25	70	2800~3300	400~600	8~16	0.07~0.09	側銑 (SIDE MILLING)
UVTR0810	25	115	4500~5500	1800~2200	0.05~0.09	0.05~0.09	3D銑 (3D MILLING)
UVTR1010	35	95	3000~4000	1000~1400	0.05~0.11	5~7	溝銑 (SLOTTING)
UVTR1010	35	85	2600~3000	400~600	10~20	0.08~0.11	側銑 (SIDE MILLING)
UVTR1010	35	95	3000~4000	1000~1400	0.05~0.11	0.05~0.11	3D銑 (3D MILLING)
UVTR1210	40	105	2700~3200	1000~1400	0.05~0.13	7~9	溝銑 (SLOTTING)
UVTR1210	40	75	2000~2400	400~600	12~24	0.1~0.13	側銑 (SIDE MILLING)
UVTR1210	40	105	2700~3200	1000~1400	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
UVTR1610	60	120	2400~2800	600~1000	0.05~0.13	11~13	溝銑 (SLOTTING)
UVTR1610	60	70	1400~1800	400~600	16~32	0.1~0.13	側銑 (SIDE MILLING)
UVTR1610	60	120	2000~2400	800~1200	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
UVTR1620	60	120	2400~2800	600~1000	0.05~0.13	11~16	溝銑 (SLOTTING)
UVTR1620	60	70	1400~1800	400~600	16~32	0.1~0.13	側銑 (SIDE MILLING)
UVTR1620	60	120	2000~2400	800~1200	0.05~0.13	0.05~0.13	3D銑 (3D MILLING)
UVTR2020	60	150	2400~2800	600~1000	0.05~0.15	15~17	溝銑 (SLOTTING)
UVTR2020	60	50	800~1000	150~300	20~40	0.05~0.15	側銑 (SIDE MILLING)
UVTR2020	60	150	2400~2800	600~1000	0.05~0.15	0.05~0.15	3D銑 (3D MILLING)



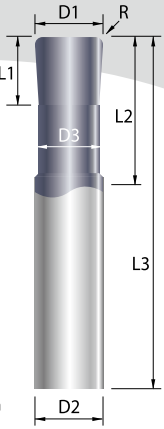
UOR

END MILLS
直刃圓鼻角立銑刀

直徑 D1	R徑公差 R Tolerance
2.0	+0.02 0
3.0	+0.02 0
4.0	+0.02 0
6.0	+0.02 0
8.0	+0.02 0
10.0	+0.02 0
12.0	+0.02 0

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011

unit : mm



Super MG
0.2 µm
0°
R
4 Flutes
HRc ▶60
G15

- 精銑 Finishing
- 中銑 Semi-finishing
- 粗銑 Roughing
- 乾式切削 Dry Machining
- 油霧切削 MQL (Mist)
- 水溶性切削 Emulsion Machining
- 油性切削 Oil Machining

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia.	R R角 Corner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UOR0203	2.0	1.8	0.3	0.8	5	50	6
UOR0205	2.0	1.8	0.5	0.8	5	50	6
UOR0308	3.0	2.7	0.8	1.2	8	50	6
UOR0310	3.0	2.7	1.0	1.2	8	50	6
UOR0405	4.0	3.6	0.5	1.6	10	50	6
UOR0405L	4.0	3.6	0.5	1.6	10	75	6
UOR0410	4.0	3.6	1.0	1.6	10	50	6
UOR0410L	4.0	3.6	1.0	1.6	10	75	6
UOR0610	6.0	5.4	1.0	2.5	13	50	6
UOR0610M	6.0	5.4	1.0	2.5	13	75	6
UOR0610L	6.0	5.4	1.0	2.5	13	100	6
UOR0615	6.0	5.4	1.5	2.5	13	50	6
UOR0615M	6.0	5.4	1.5	2.5	13	75	6
UOR0615L	6.0	5.4	1.5	2.5	13	100	6

unit : mm

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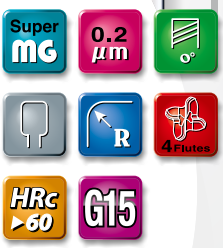
END MILLS
直刃圓鼻角立銑刀



型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia.	R R角 Corner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UOR0810	8.0	7.2	1.0	3.5	16	60	8
UOR0810L	8.0	7.2	1.0	3.5	16	100	8
UOR0820	8.0	7.2	2.0	3.5	16	60	8
UOR0820L	8.0	7.2	2.0	3.5	16	100	8
UOR1010	10.0	9.0	1.0	4.0	20	75	10
UOR1010L	10.0	9.0	1.0	4.0	20	100	10
UOR1020	10.0	9.0	2.0	4.0	20	75	10
UOR1020L	10.0	9.0	2.0	4.0	20	100	10
UOR1220	12.0	11.0	2.0	5.0	25	75	12
UOR1220L	12.0	11.0	2.0	5.0	25	100	12
UOR1230	12.0	11.0	3.0	5.0	25	75	12
UOR1230L	12.0	11.0	3.0	5.0	25	100	12

unit : mm





UOR

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UOR0203	11	170	26000~27000	10000~11000	0.07	1.3	溝銑 (SLOTTING)
UOR0203	11	145	22000~23000	4500~5000	0.12	1.3	溝銑 (SLOTTING)
UOR0205	11	170	26000~27000	10000~11000	0.07	0.9	溝銑 (SLOTTING)
UOR0205	11	145	22000~23000	4500~5000	0.12	0.9	溝銑 (SLOTTING)
UOR0308	15	170	17000~18000	10000~11000	0.1	1.3	溝銑 (SLOTTING)
UOR0308	15	145	15000~16000	4500~5000	0.16	1.3	溝銑 (SLOTTING)
UOR0310	15	170	17000~18000	10000~11000	0.1	1	溝銑 (SLOTTING)
UOR0310	15	145	15000~16000	4500~5000	0.16	1	溝銑 (SLOTTING)
UOR0405	18	180	14000~15000	10000~11000	0.1	2.8	溝銑 (SLOTTING)
UOR0405	18	145	11000~12000	6000~7000	0.18	2.8	溝銑 (SLOTTING)
UOR0405L	35	130	10000~11000	8000~9000	0.1	2.8	溝銑 (SLOTTING)
UOR0405L	35	120	9000~10000	5000~6000	0.18	2.8	溝銑 (SLOTTING)
UOR0410	18	180	14000~15000	10000~11000	0.1	1.8	溝銑 (SLOTTING)
UOR0410	18	145	11000~12000	6000~7000	0.18	1.8	溝銑 (SLOTTING)
UOR0410L	35	130	10000~11000	8000~9000	0.1	1.8	溝銑 (SLOTTING)
UOR0410L	35	120	9000~10000	5000~6000	0.18	1.8	溝銑 (SLOTTING)
UOR0610	15	200	10000~11000	10000~11000	0.1	3	溝銑 (SLOTTING)
UOR0610	15	145	7000~8000	5000~6000	0.2	3	溝銑 (SLOTTING)
UOR0610M	25	145	7000~8000	7000~8000	0.1	3	溝銑 (SLOTTING)
UOR0610M	25	130	6500~7500	4000~5000	0.2	3	溝銑 (SLOTTING)
UOR0610L	40	100	5000~6000	5500~6500	0.1	3	溝銑 (SLOTTING)
UOR0610L	40	95	4500~5500	3000~3500	0.2	3	溝銑 (SLOTTING)
UOR0610L	50	65	3000~4000	2500~3000	0.1	3	溝銑 (SLOTTING)
UOR0615	15	200	10000~11000	10000~11000	0.1	2.8	溝銑 (SLOTTING)
UOR0615	15	145	7000~8000	5000~6000	0.2	2.8	溝銑 (SLOTTING)
UOR0615M	25	145	7000~8000	7000~8000	0.1	2.8	溝銑 (SLOTTING)
UOR0615M	25	130	6500~7500	4000~5000	0.2	2.8	溝銑 (SLOTTING)
UOR0615L	40	100	5000~6000	5500~6500	0.1	2.8	溝銑 (SLOTTING)
UOR0615L	40	95	4500~5500	3000~3500	0.2	2.8	溝銑 (SLOTTING)
UOR0615L	50	65	3000~4000	2500~3000	0.1	2.8	溝銑 (SLOTTING)
UOR0810	20	200	7500~8500	10000~11000	0.12	4	溝銑 (SLOTTING)
UOR0810	20	170	6500~7500	4000~5000	0.25	4	溝銑 (SLOTTING)
UOR0810L	35	170	6500~7500	5500~6500	0.12	4	溝銑 (SLOTTING)
UOR0810L	35	170	6500~7500	3500~4000	0.25	4	溝銑 (SLOTTING)
UOR0820	20	200	7500~8500	10000~11000	0.12	3.8	溝銑 (SLOTTING)
UOR0820	20	170	6500~7500	4000~5000	0.25	3.8	溝銑 (SLOTTING)
UOR0820L	35	170	6500~7500	5500~6500	0.12	3.8	溝銑 (SLOTTING)
UOR0820L	35	170	6500~7500	3500~4000	0.25	3.8	溝銑 (SLOTTING)
UOR1010	25	230	7000~8000	10000~11000	0.15	6	溝銑 (SLOTTING)
UOR1010	25	230	7000~8000	4000~5000	0.25	6	溝銑 (SLOTTING)

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切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UOR1010L	45	200	6000~7000	6000~7000	0.15	6	溝銑 (SLOTTING)
UOR1010L	45	150	4500~5500	3000~3500	0.25	6	溝銑 (SLOTTING)
UOR1020	25	230	7000~8000	10000~11000	0.15	5	溝銑 (SLOTTING)
UOR1020	25	230	7000~8000	4000~5000	0.25	5	溝銑 (SLOTTING)
UOR1020L	45	200	6000~7000	6000~7000	0.15	5	溝銑 (SLOTTING)
UOR1020L	45	150	4500~5500	3000~3500	0.25	5	溝銑 (SLOTTING)
UOR1220	30	275	7000~8000	10000~11000	0.15	7	溝銑 (SLOTTING)
UOR1220	30	275	7000~8000	5000~6000	0.3	7	溝銑 (SLOTTING)
UOR1220L	50	250	6000~7000	8000~9000	0.15	7	溝銑 (SLOTTING)
UOR1220L	50	250	6000~7000	4000~5000	0.3	7	溝銑 (SLOTTING)
UOR1230	30	275	7000~8000	10000~11000	0.15	5.8	溝銑 (SLOTTING)
UOR1230	30	275	7000~8000	5000~6000	0.3	5.8	溝銑 (SLOTTING)
UOR1230L	50	250	6000~7000	8000~9000	0.15	5.8	溝銑 (SLOTTING)
UOR1230L	50	250	6000~7000	4000~5000	0.3	5.8	溝銑 (SLOTTING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UOR0203	11	155	23000~24000	7000~8000	0.07	1.3	溝銑 (SLOTTING)
UOR0203	11	135	20000~21000	3500~4000	0.12	1.3	溝銑 (SLOTTING)
UOR0205	11	155	23000~24000	7000~8000	0.07	0.9	溝銑 (SLOTTING)
UOR0205	11	135	20000~21000	3500~4000	0.12	0.9	溝銑 (SLOTTING)
UOR0308	15	155	16000~17000	7000~8000	0.1	1.3	溝銑 (SLOTTING)
UOR0308	15	135	14000~15000	3500~4000	0.16	1.3	溝銑 (SLOTTING)
UOR0310	15	155	16000~17000	7000~8000	0.1	1	溝銑 (SLOTTING)
UOR0310	15	135	14000~15000	3500~4000	0.16	1	溝銑 (SLOTTING)
UOR0405	18	170	13000~14000	7000~8000	0.1	2.8	溝銑 (SLOTTING)
UOR0405	18	140	10000~11000	4000~4500	0.18	2.8	溝銑 (SLOTTING)
UOR0405L	35	125	9000~10000	6000~7000	0.1	2.8	溝銑 (SLOTTING)
UOR0405L	35	110	8000~9000	3500~4000	0.18	2.8	溝銑 (SLOTTING)
UOR0410	18	170	13000~14000	7000~8000	0.1	1.8	溝銑 (SLOTTING)
UOR0410	18	140	10000~11000	4000~4500	0.18	1.8	溝銑 (SLOTTING)

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切削條件表 *Milling Conditions*

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UOR0410L	35	125	9000~10000	6000~7000	0.1	1.8	溝銑 (SLOTTING)
UOR0410L	35	110	8000~9000	3500~4000	0.18	1.8	溝銑 (SLOTTING)
UOR0610	15	170	8500~9500	7000~8000	0.1	3	溝銑 (SLOTTING)
UOR0610	15	145	7000~8000	4000~4500	0.2	3	溝銑 (SLOTTING)
UOR0610M	25	135	6500~7500	6000~7000	0.1	3	溝銑 (SLOTTING)
UOR0610M	25	135	6500~7500	3500~4000	0.2	3	溝銑 (SLOTTING)
UOR0610L	40	90	4500~5000	3500~4000	0.1	3	溝銑 (SLOTTING)
UOR0610L	40	75	3800~4300	2500~3000	0.2	3	溝銑 (SLOTTING)
UOR0610L	50	65	3300~3800	2000~2500	0.1	3	溝銑 (SLOTTING)
UOR0615	15	170	8500~9500	7000~8000	0.1	2.8	溝銑 (SLOTTING)
UOR0615	15	145	7000~8000	4000~4500	0.2	2.8	溝銑 (SLOTTING)
UOR0615M	25	135	6500~7500	6000~7000	0.1	2.8	溝銑 (SLOTTING)
UOR0615M	25	135	6500~7500	3500~4000	0.2	2.8	溝銑 (SLOTTING)
UOR0615L	40	90	4500~5000	3500~4000	0.1	2.8	溝銑 (SLOTTING)
UOR0615L	40	75	3800~4300	2500~3000	0.2	2.8	溝銑 (SLOTTING)
UOR0615L	50	65	3300~3800	2000~2500	0.1	2.8	溝銑 (SLOTTING)
UOR0810	20	190	7000~8000	7000~8000	0.12	4	溝銑 (SLOTTING)
UOR0810	20	160	6000~7000	3500~4000	0.25	4	溝銑 (SLOTTING)
UOR0810L	35	160	6000~7000	4500~5500	0.12	4	溝銑 (SLOTTING)
UOR0810L	35	160	6000~7000	3000~3500	0.25	4	溝銑 (SLOTTING)
UOR0820	20	190	7000~8000	7000~8000	0.12	3.8	溝銑 (SLOTTING)
UOR0820	20	160	6000~7000	3500~4000	0.25	3.8	溝銑 (SLOTTING)
UOR0820L	35	160	6000~7000	4500~5500	0.12	3.8	溝銑 (SLOTTING)
UOR0820L	35	160	6000~7000	3000~3500	0.25	3.8	溝銑 (SLOTTING)
UOR1010	25	210	6000~7000	6000~7000	0.15	6	溝銑 (SLOTTING)
UOR1010	25	210	6000~7000	3500~4000	0.25	6	溝銑 (SLOTTING)
UOR1010L	45	190	5500~6500	5000~6000	0.15	6	溝銑 (SLOTTING)
UOR1010L	45	150	4500~5000	2500~3000	0.25	6	溝銑 (SLOTTING)
UOR1020	25	210	6000~7000	6000~7000	0.15	5	溝銑 (SLOTTING)
UOR1020	25	210	6000~7000	3500~4000	0.25	5	溝銑 (SLOTTING)
UOR1020L	45	190	5500~6500	5000~6000	0.15	5	溝銑 (SLOTTING)
UOR1020L	45	150	4500~5000	2500~3000	0.25	5	溝銑 (SLOTTING)
UOR1220	30	260	6000~7000	6000~7000	0.15	7	溝銑 (SLOTTING)
UOR1220	30	260	6000~7000	3500~4000	0.3	7	溝銑 (SLOTTING)
UOR1220L	50	225	5200~6000	5000~6000	0.15	7	溝銑 (SLOTTING)
UOR1220L	50	225	5200~6000	3000~3500	0.3	7	溝銑 (SLOTTING)
UOR1230	30	260	6000~7000	6000~7000	0.15	5.8	溝銑 (SLOTTING)
UOR1230	30	260	6000~7000	3500~4000	0.3	5.8	溝銑 (SLOTTING)
UOR1230L	50	225	5200~6000	5000~6000	0.15	5.8	溝銑 (SLOTTING)
UOR1230L	50	225	5200~6000	3000~3500	0.3	5.8	溝銑 (SLOTTING)

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切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UOR0203	11	130	20000~21000	5000~6000	0.05	1.3	溝銑 (SLOTTING)
UOR0203	11	130	20000~21000	3000~3500	0.1	1.3	溝銑 (SLOTTING)
UOR0205	11	130	20000~21000	5000~6000	0.05	0.9	溝銑 (SLOTTING)
UOR0205	11	130	20000~21000	3000~3500	0.1	0.9	溝銑 (SLOTTING)
UOR0308	15	150	15000~16000	5000~6000	0.06	1.3	溝銑 (SLOTTING)
UOR0308	15	130	13000~14000	3000~3500	0.12	1.3	溝銑 (SLOTTING)
UOR0310	15	150	15000~16000	5000~6000	0.06	1	溝銑 (SLOTTING)
UOR0310	15	130	13000~14000	3000~3500	0.12	1	溝銑 (SLOTTING)
UOR0405	18	160	12000~13000	4500~5000	0.08	2.8	溝銑 (SLOTTING)
UOR0405	18	130	9000~10000	3500~4000	0.14	2.8	溝銑 (SLOTTING)
UOR0405L	35	120	9000~10000	4000~4500	0.08	2.8	溝銑 (SLOTTING)
UOR0405L	35	110	8000~9000	3000~3500	0.14	2.8	溝銑 (SLOTTING)
UOR0410	18	160	12000~13000	4500~5000	0.08	1.8	溝銑 (SLOTTING)
UOR0410	18	130	9000~10000	3500~4000	0.14	1.8	溝銑 (SLOTTING)
UOR0410L	35	120	9000~10000	4000~4500	0.08	1.8	溝銑 (SLOTTING)
UOR0410L	35	110	8000~9000	3000~3500	0.14	1.8	溝銑 (SLOTTING)
UOR0610	15	160	8000~9000	4500~5000	0.1	3	溝銑 (SLOTTING)
UOR0610	15	130	6500~7000	2400~2800	0.18	3	溝銑 (SLOTTING)
UOR0610M	25	130	6500~7000	4000~4500	0.1	3	溝銑 (SLOTTING)
UOR0610M	25	130	6500~7000	2000~2400	0.18	3	溝銑 (SLOTTING)
UOR0610L	40	75	3800~4300	2500~3000	0.1	3	溝銑 (SLOTTING)
UOR0610L	40	55	2800~3300	1200~1600	0.18	3	溝銑 (SLOTTING)
UOR0610L	50	55	2800~3300	1000~1400	0.1	3	溝銑 (SLOTTING)
UOR0615	15	160	8000~9000	4500~5000	0.1	2.8	溝銑 (SLOTTING)
UOR0615	15	130	6500~7000	2400~2800	0.18	2.8	溝銑 (SLOTTING)
UOR0615M	25	130	6500~7000	4000~4500	0.1	2.8	溝銑 (SLOTTING)
UOR0615M	25	130	6500~7000	2000~2400	0.18	2.8	溝銑 (SLOTTING)
UOR0615L	40	75	3800~4300	2500~3000	0.1	2.8	溝銑 (SLOTTING)
UOR0615L	40	55	2800~3300	1200~1600	0.18	2.8	溝銑 (SLOTTING)
UOR0615L	50	55	2800~3300	1000~1400	0.1	2.8	溝銑 (SLOTTING)
UOR0810	20	160	6000~7000	4500~5000	0.1	4	溝銑 (SLOTTING)
UOR0810	20	160	6000~7000	2000~2500	0.2	4	溝銑 (SLOTTING)
UOR0810L	35	145	5500~6000	3500~4000	0.1	4	溝銑 (SLOTTING)
UOR0810L	35	145	5500~6000	1800~2200	0.2	4	溝銑 (SLOTTING)
UOR0820	20	160	6000~7000	4500~5000	0.1	3.8	溝銑 (SLOTTING)
UOR0820	20	160	6000~7000	2000~2500	0.2	3.8	溝銑 (SLOTTING)
UOR0820L	35	145	5500~6000	3500~4000	0.1	3.8	溝銑 (SLOTTING)
UOR0820L	35	130	5500~6000	1800~2200	0.2	3.8	溝銑 (SLOTTING)
UOR1010	25	160	5000~5500	4000~4500	0.12	5	溝銑 (SLOTTING)
UOR1010	25	160	5000~5500	2000~2400	0.22	5	溝銑 (SLOTTING)

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切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UOR1010L	45	130	4000~4500	3000~3500	0.12	5	溝銑 (SLOTTING)
UOR1010L	45	130	4000~4500	1500~2000	0.22	5	溝銑 (SLOTTING)
UOR1020	25	160	5000~5500	4000~4500	0.12	5	溝銑 (SLOTTING)
UOR1020	25	160	5000~5500	2000~2400	0.22	5	溝銑 (SLOTTING)
UOR1020L	45	130	4000~4500	3000~3500	0.12	5	溝銑 (SLOTTING)
UOR1020L	45	130	4000~4500	1500~2000	0.22	5	溝銑 (SLOTTING)
UOR1220	30	200	5000~5500	4500~5000	0.13	6	溝銑 (SLOTTING)
UOR1220	30	185	4500~5000	2400~2800	0.25	6	溝銑 (SLOTTING)
UOR1220L	50	185	4500~5000	4000~4500	0.13	6	溝銑 (SLOTTING)
UOR1220L	50	185	4500~5000	2000~2400	0.25	6	溝銑 (SLOTTING)
UOR1230	30	200	5000~5500	4500~5000	0.13	5.8	溝銑 (SLOTTING)
UOR1230	30	185	4500~5000	2400~2800	0.25	5.8	溝銑 (SLOTTING)
UOR1230L	50	185	4500~5000	4000~4500	0.13	5.8	溝銑 (SLOTTING)
UOR1230L	50	185	4500~5000	2000~2400	0.25	5.8	溝銑 (SLOTTING)



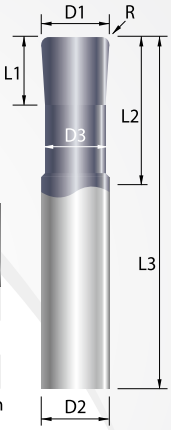
UEYR

END MILLS
高硬度用圓鼻角立銑刀

直徑 D1	R徑公差 R Tolerance	直徑公差 D1 Tolerance
2.0	+0.02 0	0 -0.02
2.5	+0.02 0	0 -0.02
3.0	+0.02 0	0 -0.02
4.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.025
10.0	+0.02 0	0 -0.03

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009

unit : mm







型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia.	R R角 Corner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UEYR0202	2.0	1.92	0.2	2.0	6	50	6
UEYR0205	2.0	1.92	0.5	2.0	6	50	6
UEYR0252	2.5	2.40	0.2	2.5	8	50	6
UEYR0255	2.5	2.40	0.5	2.5	8	50	6
UEYR0302	3.0	2.90	0.2	3.0	8	50	6
UEYR0305	3.0	2.90	0.5	3.0	8	50	6
UEYR0402	4.0	3.90	0.2	4.0	11	50	6
UEYR0403	4.0	3.90	0.3	4.0	11	50	6
UEYR0405	4.0	3.90	0.5	4.0	11	50	6
UEYR0602	6.0	5.80	0.2	6.0	16	50	6
UEYR0603	6.0	5.80	0.3	6.0	16	50	6
UEYR0605	6.0	5.80	0.5	6.0	16	50	6
UEYR0610	6.0	5.80	1.0	6.0	16	50	6
UEYR0615	6.0	5.80	1.5	6.0	16	50	6

unit : mm

UEYR

< 適用於 RPM=10000(min^{-1}) 以下之機器 >

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UEYR0202	15	60	9500~10000	2000~2400	0.04~0.06	0.5~2	溝銑 (SLOTTING)
UEYR0202	15	60	9500~10000	2000~2400	2	0.04~0.09	側銑 (SIDE MILLING)
UEYR0202	15	60	9500~10000	2200~2600	0.04~0.09	0.04~0.09	3D銑 (3D MILLING)
UEYR0205	15	60	9500~10000	2000~2400	0.04~0.06	0.5~2	溝銑 (SLOTTING)
UEYR0205	15	60	9500~10000	2000~2400	2	0.04~0.09	側銑 (SIDE MILLING)
UEYR0205	15	60	9500~10000	2200~2600	0.04~0.09	0.04~0.09	3D銑 (3D MILLING)
UEYR0252	15	75	9500~10000	2000~2400	0.04~0.08	1~2.5	溝銑 (SLOTTING)
UEYR0252	15	75	9500~10000	2000~2400	2.5	0.05~0.1	側銑 (SIDE MILLING)
UEYR0252	15	75	9500~10000	2200~2600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UEYR0255	15	75	9500~10000	2000~2400	0.04~0.08	1~2.5	溝銑 (SLOTTING)
UEYR0255	15	75	9500~10000	2000~2400	2.5	0.05~0.1	側銑 (SIDE MILLING)
UEYR0255	15	75	9500~10000	2200~2600	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UEYR0302	17	90	9400~9800	2600~3000	0.05~0.1	1~3	溝銑 (SLOTTING)
UEYR0302	17	90	9400~9800	2600~3000	3	0.07~0.12	側銑 (SIDE MILLING)
UEYR0302	17	90	9400~9800	2800~3200	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)
UEYR0305	17	90	9400~9800	2600~3000	0.05~0.1	1~3	溝銑 (SLOTTING)
UEYR0305	17	90	9400~9800	2600~3000	3	0.07~0.12	側銑 (SIDE MILLING)
UEYR0305	17	90	9400~9800	2800~3200	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)
UEYR0402	20	115	9000~9400	3000~3400	0.1~0.15	2~4	溝銑 (SLOTTING)
UEYR0402	20	115	9000~9400	3000~3400	4	0.1~0.15	側銑 (SIDE MILLING)
UEYR0402	20	115	9000~9400	3200~3600	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UEYR0403	20	115	9000~9400	3000~3400	0.1~0.15	2~4	溝銑 (SLOTTING)
UEYR0403	20	115	9000~9400	3000~3400	4	0.1~0.15	側銑 (SIDE MILLING)
UEYR0403	20	115	9000~9400	3200~3600	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UEYR0405	20	115	9000~9400	3000~3400	0.1~0.15	2~4	溝銑 (SLOTTING)
UEYR0405	20	115	9000~9400	3000~3400	4	0.1~0.15	側銑 (SIDE MILLING)
UEYR0405	20	115	9000~9400	3200~3600	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UEYR0602	20	165	8700~9200	3400~3800	0.15~0.2	4~6	溝銑 (SLOTTING)
UEYR0602	20	165	8700~9200	3000~3400	6	0.3~0.4	側銑 (SIDE MILLING)
UEYR0602	20	165	8700~9200	4000~4500	6	0.15~0.2	側銑 (SIDE MILLING)
UEYR0602	20	165	8700~9200	4000~4500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UEYR0603	20	165	8700~9200	3400~3800	0.15~0.2	4~6	溝銑 (SLOTTING)
UEYR0603	20	165	8700~9200	3000~3400	6	0.3~0.4	側銑 (SIDE MILLING)
UEYR0603	20	165	8700~9200	4000~4500	6	0.15~0.2	側銑 (SIDE MILLING)
UEYR0603	20	165	8700~9200	4000~4500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UEYR0605	20	165	8700~9200	3400~3800	0.15~0.2	4~6	溝銑 (SLOTTING)
UEYR0605	20	165	8700~9200	3000~3400	6	0.3~0.4	側銑 (SIDE MILLING)
UEYR0605	20	165	8700~9200	4000~4500	6	0.15~0.2	側銑 (SIDE MILLING)
UEYR0605	20	165	8700~9200	4000~4500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)

UEYR

< 適用於 RPM=10000(min^{-1}) 以下之機器 >

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UEYR0610	20	165	8700~9200	3400~3800	0.15~0.2	3~6	溝銑 (SLOTTING)
UEYR0610	20	165	8700~9200	3000~3400	6	0.3~0.4	側銑 (SIDE MILLING)
UEYR0610	20	165	8700~9200	4000~4500	6	0.15~0.2	側銑 (SIDE MILLING)
UEYR0610	20	165	8700~9200	4000~4500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UEYR0615	20	165	8700~9200	3400~3800	0.15~0.2	2~6	溝銑 (SLOTTING)
UEYR0615	20	165	8700~9200	3000~3400	6	0.3~0.4	側銑 (SIDE MILLING)
UEYR0615	20	165	8700~9200	4000~4500	6	0.15~0.2	側銑 (SIDE MILLING)
UEYR0615	20	165	8700~9200	4000~4500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UEYR0803	25	170	6800~7200	3000~3400	0.2~0.25	6~8	溝銑 (SLOTTING)
UEYR0803	25	170	6800~7200	3000~3400	8	0.4~0.5	側銑 (SIDE MILLING)
UEYR0803	25	170	6800~7200	4500~5000	8	0.2~0.25	側銑 (SIDE MILLING)
UEYR0803	25	170	6800~7200	4500~5000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
UEYR0805	25	170	6800~7200	3000~3400	0.2~0.25	6~8	溝銑 (SLOTTING)
UEYR0805	25	170	6800~7200	3000~3400	8	0.4~0.5	側銑 (SIDE MILLING)
UEYR0805	25	170	6800~7200	4500~5000	8	0.2~0.25	側銑 (SIDE MILLING)
UEYR0805	25	170	6800~7200	4500~5000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
UEYR0810	25	170	6800~7200	3000~3400	0.2~0.25	5~8	溝銑 (SLOTTING)
UEYR0810	25	170	6800~7200	3000~3400	8	0.4~0.5	側銑 (SIDE MILLING)
UEYR0810	25	170	6800~7200	4500~5000	8	0.2~0.25	側銑 (SIDE MILLING)
UEYR0810	25	170	6800~7200	4500~5000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
UEYR0820	25	170	6800~7200	3000~3400	0.2~0.25	3~8	溝銑 (SLOTTING)
UEYR0820	25	170	6800~7200	3000~3400	8	0.4~0.5	側銑 (SIDE MILLING)
UEYR0820	25	170	6800~7200	4500~5000	8	0.2~0.25	側銑 (SIDE MILLING)
UEYR0820	25	170	6800~7200	4500~5000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
UEYR1003	30	255	8000~8600	5500~6000	0.2~0.3	8~10	溝銑 (SLOTTING)
UEYR1003	30	205	6600~7000	3600~4000	0.2~0.3	8~10	溝銑 (SLOTTING)
UEYR1003	30	255	8000~8600	5500~6000	10	0.5~0.6	側銑 (SIDE MILLING)
UEYR1003	30	205	6600~7000	3000~3400	10	0.5~0.6	側銑 (SIDE MILLING)
UEYR1003	30	205	6600~7000	4700~5200	10	0.2~0.3	側銑 (SIDE MILLING)
UEYR1003	30	255	8000~8600	5500~6000	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
UEYR1003	30	205	6600~7000	4700~5200	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
UEYR1005	30	255	8000~8600	5500~6000	0.2~0.3	8~10	溝銑 (SLOTTING)
UEYR1005	30	205	6600~7000	3600~4000	0.2~0.3	8~10	溝銑 (SLOTTING)
UEYR1005	30	255	8000~8600	5500~6000	10	0.5~0.6	側銑 (SIDE MILLING)
UEYR1005	30	205	6600~7000	3000~3400	10	0.5~0.6	側銑 (SIDE MILLING)
UEYR1005	30	205	6600~7000	4700~5200	10	0.2~0.3	側銑 (SIDE MILLING)
UEYR1005	30	255	8000~8600	5500~6000	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
UEYR1005	30	205	6600~7000	4700~5200	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)

UEYR

< 適用於 RPM=10000(min^{-1}) 以下之機器 >

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UEYR1010	30	255	8000~8600	5500~6000	0.2~0.3	7~10	溝銑 (SLOTTING)
UEYR1010	30	205	6600~7000	3600~4000	0.2~0.3	7~10	溝銑 (SLOTTING)
UEYR1010	30	255	8000~8600	5500~6000	10	0.5~0.6	側銑 (SIDE MILLING)
UEYR1010	30	205	6600~7000	3000~3400	10	0.5~0.6	側銑 (SIDE MILLING)
UEYR1010	30	205	6600~7000	4700~5200	10	0.2~0.3	側銑 (SIDE MILLING)
UEYR1010	30	255	8000~8600	5500~6000	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
UEYR1010	30	205	6600~7000	4700~5200	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
UEYR1020	30	255	8000~8600	5500~6000	0.2~0.3	5~10	溝銑 (SLOTTING)
UEYR1020	30	205	6600~7000	3600~4000	0.2~0.3	5~10	溝銑 (SLOTTING)
UEYR1020	30	255	8000~8600	5500~6000	10	0.5~0.6	側銑 (SIDE MILLING)
UEYR1020	30	205	6600~7000	3000~3400	10	0.5~0.6	側銑 (SIDE MILLING)
UEYR1020	30	205	6600~7000	4700~5200	10	0.2~0.3	側銑 (SIDE MILLING)
UEYR1020	30	255	8000~8600	5500~6000	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
UEYR1020	30	205	6600~7000	4700~5200	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)

< 適用於 RPM=24000(min^{-1}) 以下之機器 >

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UEYR0202	15	145	22000~24000	2400~2800	0.04~0.06	0.5~2	溝銑 (SLOTTING)
UEYR0202	15	145	22000~24000	2800~3200	2	0.04~0.09	側銑 (SIDE MILLING)
UEYR0202	15	145	22000~24000	2800~3200	0.04~0.09	0.04~0.09	3D銑 (3D MILLING)
UEYR0205	15	145	22000~24000	2400~2800	0.04~0.06	0.5~2	溝銑 (SLOTTING)
UEYR0205	15	145	22000~24000	2800~3200	2	0.04~0.09	側銑 (SIDE MILLING)
UEYR0205	15	145	22000~24000	2800~3200	0.04~0.09	0.04~0.09	3D銑 (3D MILLING)
UEYR0252	15	145	18000~20000	2400~2800	0.04~0.08	1~2.5	溝銑 (SLOTTING)
UEYR0252	15	145	18000~20000	2800~3200	2.5	0.05~0.1	側銑 (SIDE MILLING)
UEYR0252	15	145	18000~20000	2800~3200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UEYR0255	15	145	18000~20000	2400~2800	0.04~0.08	1~2.5	溝銑 (SLOTTING)
UEYR0255	15	145	18000~20000	2800~3200	2.5	0.05~0.1	側銑 (SIDE MILLING)
UEYR0255	15	145	18000~20000	2800~3200	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UEYR0302	17	145	15000~16000	3000~3400	0.05~0.1	1~3	溝銑 (SLOTTING)
UEYR0302	17	145	15000~16000	3400~3800	3	0.07~0.12	側銑 (SIDE MILLING)
UEYR0302	17	145	15000~16000	3400~3800	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)

< 適用於 RPM=24000(min^{-1}) 以下之機器 >

UEYR

切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UEYR0305	17	145	15000~16000	3000~3400	0.05~0.1	1~3	溝銑 (SLOTTING)
UEYR0305	17	145	15000~16000	3400~3800	3	0.07~0.12	側銑 (SIDE MILLING)
UEYR0305	17	145	15000~16000	3400~3800	0.07~0.12	0.07~0.12	3D銑 (3D MILLING)
UEYR0402	20	150	12000~13000	3600~4000	0.1~0.15	2~4	溝銑 (SLOTTING)
UEYR0402	20	150	12000~13000	4000~4500	4	0.1~0.15	側銑 (SIDE MILLING)
UEYR0402	20	150	12000~13000	4000~4500	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UEYR0403	20	150	12000~13000	3600~4000	0.1~0.15	2~4	溝銑 (SLOTTING)
UEYR0403	20	150	12000~13000	4000~4500	4	0.1~0.15	側銑 (SIDE MILLING)
UEYR0403	20	150	12000~13000	4000~4500	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UEYR0405	20	150	12000~13000	3600~4000	0.1~0.15	2~4	溝銑 (SLOTTING)
UEYR0405	20	150	12000~13000	4000~4500	4	0.1~0.15	側銑 (SIDE MILLING)
UEYR0405	20	150	12000~13000	4000~4500	0.1~0.15	0.1~0.15	3D銑 (3D MILLING)
UEYR0602	20	165	8700~9200	3400~3800	0.15~0.2	4~6	溝銑 (SLOTTING)
UEYR0602	20	165	8700~9200	3000~3400	6	0.3~0.4	側銑 (SIDE MILLING)
UEYR0602	20	165	8700~9200	4000~4500	6	0.15~0.2	側銑 (SIDE MILLING)
UEYR0602	20	165	8700~9200	4000~4500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UEYR0603	20	165	8700~9200	3400~3800	0.15~0.2	4~6	溝銑 (SLOTTING)
UEYR0603	20	165	8700~9200	3000~3400	6	0.3~0.4	側銑 (SIDE MILLING)
UEYR0603	20	165	8700~9200	4000~4500	6	0.15~0.2	側銑 (SIDE MILLING)
UEYR0603	20	165	8700~9200	4000~4500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UEYR0605	20	165	8700~9200	3400~3800	0.15~0.2	4~6	溝銑 (SLOTTING)
UEYR0605	20	165	8700~9200	3000~3400	6	0.3~0.4	側銑 (SIDE MILLING)
UEYR0605	20	165	8700~9200	4000~4500	6	0.15~0.2	側銑 (SIDE MILLING)
UEYR0605	20	165	8700~9200	4000~4500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UEYR0610	20	165	8700~9200	3400~3800	0.15~0.2	3~6	溝銑 (SLOTTING)
UEYR0610	20	165	8700~9200	3000~3400	6	0.3~0.4	側銑 (SIDE MILLING)
UEYR0610	20	165	8700~9200	4000~4500	6	0.15~0.2	側銑 (SIDE MILLING)
UEYR0610	20	165	8700~9200	4000~4500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UEYR0615	20	165	8700~9200	3400~3800	0.15~0.2	2~6	溝銑 (SLOTTING)
UEYR0615	20	165	8700~9200	3000~3400	6	0.3~0.4	側銑 (SIDE MILLING)
UEYR0615	20	165	8700~9200	4000~4500	6	0.15~0.2	側銑 (SIDE MILLING)
UEYR0615	20	165	8700~9200	4000~4500	0.15~0.2	0.15~0.2	3D銑 (3D MILLING)
UEYR0803	25	170	6800~7200	3000~3400	0.2~0.25	6~8	溝銑 (SLOTTING)
UEYR0803	25	170	6800~7200	3000~3400	8	0.4~0.5	側銑 (SIDE MILLING)
UEYR0803	25	170	6800~7200	4500~5000	8	0.2~0.25	側銑 (SIDE MILLING)
UEYR0803	25	170	6800~7200	4500~5000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
UEYR0805	25	170	6800~7200	3000~3400	0.2~0.25	6~8	溝銑 (SLOTTING)
UEYR0805	25	170	6800~7200	3000~3400	8	0.4~0.5	側銑 (SIDE MILLING)
UEYR0805	25	170	6800~7200	4500~5000	8	0.2~0.25	側銑 (SIDE MILLING)
UEYR0805	25	170	6800~7200	4500~5000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)

UEYR

< 適用於 RPM=24000(min^{-1}) 以下之機器 >

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UEYR0810	25	170	6800~7200	3000~3400	0.2~0.25	5~8	溝銑 (SLOTTING)
UEYR0810	25	170	6800~7200	3000~3400	8	0.4~0.5	側銑 (SIDE MILLING)
UEYR0810	25	170	6800~7200	4500~5000	8	0.2~0.25	側銑 (SIDE MILLING)
UEYR0810	25	170	6800~7200	4500~5000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
UEYR0820	25	170	6800~7200	3000~3400	0.2~0.25	3~8	溝銑 (SLOTTING)
UEYR0820	25	170	6800~7200	3000~3400	8	0.4~0.5	側銑 (SIDE MILLING)
UEYR0820	25	170	6800~7200	4500~5000	8	0.2~0.25	側銑 (SIDE MILLING)
UEYR0820	25	170	6800~7200	4500~5000	0.2~0.25	0.2~0.25	3D銑 (3D MILLING)
UEYR1003	30	255	8000~8600	5500~6000	0.2~0.3	8~10	溝銑 (SLOTTING)
UEYR1003	30	205	6600~7000	3600~4000	0.2~0.3	8~10	溝銑 (SLOTTING)
UEYR1003	30	255	8000~8600	5500~6000	10	0.5~0.6	側銑 (SIDE MILLING)
UEYR1003	30	205	6600~7000	3000~3400	10	0.5~0.6	側銑 (SIDE MILLING)
UEYR1003	30	205	6600~7000	4700~5200	10	0.2~0.3	側銑 (SIDE MILLING)
UEYR1003	30	255	8000~8600	5500~6000	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
UEYR1003	30	205	6600~7000	4700~5200	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
UEYR1005	30	255	8000~8600	5500~6000	0.2~0.3	8~10	溝銑 (SLOTTING)
UEYR1005	30	205	6600~7000	3600~4000	0.2~0.3	8~10	溝銑 (SLOTTING)
UEYR1005	30	255	8000~8600	5500~6000	10	0.5~0.6	側銑 (SIDE MILLING)
UEYR1005	30	205	6600~7000	3000~3400	10	0.5~0.6	側銑 (SIDE MILLING)
UEYR1005	30	205	6600~7000	4700~5200	10	0.2~0.3	側銑 (SIDE MILLING)
UEYR1005	30	255	8000~8600	5500~6000	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
UEYR1005	30	205	6600~7000	4700~5200	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
UEYR1010	30	255	8000~8600	5500~6000	0.2~0.3	7~10	溝銑 (SLOTTING)
UEYR1010	30	205	6600~7000	3600~4000	0.2~0.3	7~10	溝銑 (SLOTTING)
UEYR1010	30	255	8000~8600	5500~6000	10	0.5~0.6	側銑 (SIDE MILLING)
UEYR1010	30	205	6600~7000	3000~3400	10	0.5~0.6	側銑 (SIDE MILLING)
UEYR1010	30	205	6600~7000	4700~5200	10	0.2~0.3	側銑 (SIDE MILLING)
UEYR1010	30	255	8000~8600	5500~6000	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
UEYR1010	30	205	6600~7000	4700~5200	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
UEYR1020	30	255	8000~8600	5500~6000	0.2~0.3	5~10	溝銑 (SLOTTING)
UEYR1020	30	205	6600~7000	3600~4000	0.2~0.3	5~10	溝銑 (SLOTTING)
UEYR1020	30	255	8000~8600	5500~6000	10	0.5~0.6	側銑 (SIDE MILLING)
UEYR1020	30	205	6600~7000	3000~3400	10	0.5~0.6	側銑 (SIDE MILLING)
UEYR1020	30	205	6600~7000	4700~5200	10	0.2~0.3	側銑 (SIDE MILLING)
UEYR1020	30	255	8000~8600	5500~6000	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)
UEYR1020	30	205	6600~7000	4700~5200	0.2~0.3	0.2~0.3	3D銑 (3D MILLING)

UEYR

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UEYR0202	15	60	9500~10000	1000~1400	0.01~0.03	0.5~2	溝銑 (SLOTTING)
UEYR0202	15	60	9500~10000	800~1000	2	0.03~0.05	側銑 (SIDE MILLING)
UEYR0202	15	60	9500~10000	1000~1400	0.01~0.03	0.01~0.03	3D銑 (3D MILLING)
UEYR0205	15	60	9500~10000	1000~1400	0.01~0.03	0.5~2	溝銑 (SLOTTING)
UEYR0205	15	60	9500~10000	800~1000	2	0.03~0.05	側銑 (SIDE MILLING)
UEYR0205	15	60	9500~10000	1000~1400	0.01~0.03	0.01~0.03	3D銑 (3D MILLING)
UEYR0252	15	75	9500~10000	1000~1400	0.02~0.04	1~2.5	溝銑 (SLOTTING)
UEYR0252	15	75	9500~10000	800~1000	2.5	0.04~0.06	側銑 (SIDE MILLING)
UEYR0252	15	75	9500~10000	1000~1400	0.02~0.04	0.02~0.04	3D銑 (3D MILLING)
UEYR0255	15	75	9500~10000	1000~1400	0.02~0.04	1~2.5	溝銑 (SLOTTING)
UEYR0255	15	75	9500~10000	800~1000	2.5	0.04~0.06	側銑 (SIDE MILLING)
UEYR0255	15	75	9500~10000	1000~1400	0.02~0.04	0.02~0.04	3D銑 (3D MILLING)
UEYR0302	17	90	9200~9600	1000~1400	0.03~0.5	1~3	溝銑 (SLOTTING)
UEYR0302	17	90	9200~9600	800~1000	3	0.06~0.08	側銑 (SIDE MILLING)
UEYR0302	17	90	9200~9600	1000~1400	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UEYR0305	17	90	9200~9600	1000~1400	0.03~0.5	1~3	溝銑 (SLOTTING)
UEYR0305	17	90	9200~9600	800~1000	3	0.06~0.08	側銑 (SIDE MILLING)
UEYR0305	17	90	9200~9600	1000~1400	0.03~0.05	0.03~0.05	3D銑 (3D MILLING)
UEYR0402	20	90	7000~7500	1200~1600	0.04~0.06	2~4	溝銑 (SLOTTING)
UEYR0402	20	90	7000~7500	1000~1200	4	0.08~0.12	側銑 (SIDE MILLING)
UEYR0402	20	90	7000~7500	1200~1600	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
UEYR0403	20	90	7000~7500	1200~1600	0.04~0.06	2~4	溝銑 (SLOTTING)
UEYR0403	20	90	7000~7500	1000~1200	4	0.08~0.12	側銑 (SIDE MILLING)
UEYR0403	20	90	7000~7500	1200~1600	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
UEYR0405	20	90	7000~7500	1200~1600	0.04~0.06	2~4	溝銑 (SLOTTING)
UEYR0405	20	90	7000~7500	1000~1200	4	0.08~0.12	側銑 (SIDE MILLING)
UEYR0405	20	90	7000~7500	1200~1600	0.04~0.06	0.04~0.06	3D銑 (3D MILLING)
UEYR0602	20	90	4700~5200	1000~1200	0.05~0.08	4~6	溝銑 (SLOTTING)
UEYR0602	20	80	4200~4700	500~800	6	0.2~0.25	側銑 (SIDE MILLING)
UEYR0602	20	85	4500~5000	1000~1200	6	0.1~0.15	側銑 (SIDE MILLING)
UEYR0602	20	90	4700~5200	800~1000	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UEYR0603	20	90	4700~5200	1000~1200	0.05~0.08	4~6	溝銑 (SLOTTING)
UEYR0603	20	80	4200~4700	500~800	6	0.2~0.25	側銑 (SIDE MILLING)
UEYR0603	20	85	4500~5000	1000~1200	6	0.1~0.15	側銑 (SIDE MILLING)
UEYR0603	20	90	4700~5200	800~1000	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UEYR0605	20	90	4700~5200	1000~1200	0.05~0.08	4~6	溝銑 (SLOTTING)
UEYR0605	20	80	4200~4700	500~800	6	0.2~0.25	側銑 (SIDE MILLING)
UEYR0605	20	85	4500~5000	1000~1200	6	0.1~0.15	側銑 (SIDE MILLING)
UEYR0605	20	90	4700~5200	800~1000	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)

UEYR

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UEYR0610	20	90	4700~5200	1000~1200	0.05~0.08	3~6	溝銑 (SLOTTING)
UEYR0610	20	80	4200~4700	500~800	6	0.2~0.25	側銑 (SIDE MILLING)
UEYR0610	20	85	4500~5000	1000~1200	6	0.1~0.15	側銑 (SIDE MILLING)
UEYR0610	20	90	4700~5200	800~1000	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UEYR0615	20	90	4700~5200	1000~1200	0.05~0.08	2~6	溝銑 (SLOTTING)
UEYR0615	20	80	4200~4700	500~800	6	0.2~0.25	側銑 (SIDE MILLING)
UEYR0615	20	85	4500~5000	1000~1200	6	0.1~0.15	側銑 (SIDE MILLING)
UEYR0615	20	90	4700~5200	800~1000	0.05~0.08	0.05~0.08	3D銑 (3D MILLING)
UEYR0803	25	105	4200~4600	1800~2200	0.05~0.1	6~8	溝銑 (SLOTTING)
UEYR0803	25	105	4200~4600	600~900	8	0.3~0.4	側銑 (SIDE MILLING)
UEYR0803	25	105	4200~4600	1000~1400	8	0.15~0.25	側銑 (SIDE MILLING)
UEYR0803	25	105	4200~4600	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UEYR0805	25	105	4200~4600	1800~2200	0.05~0.1	6~8	溝銑 (SLOTTING)
UEYR0805	25	105	4200~4600	600~900	8	0.3~0.4	側銑 (SIDE MILLING)
UEYR0805	25	105	4200~4600	1000~1400	8	0.15~0.25	側銑 (SIDE MILLING)
UEYR0805	25	105	4200~4600	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UEYR0810	25	105	4200~4600	1800~2200	0.05~0.1	5~8	溝銑 (SLOTTING)
UEYR0810	25	105	4200~4600	600~900	8	0.3~0.4	側銑 (SIDE MILLING)
UEYR0810	25	105	4200~4600	1000~1400	8	0.15~0.25	側銑 (SIDE MILLING)
UEYR0810	25	105	4200~4600	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UEYR0820	25	105	4200~4600	1800~2200	0.05~0.1	3~8	溝銑 (SLOTTING)
UEYR0820	25	105	4200~4600	600~900	8	0.3~0.4	側銑 (SIDE MILLING)
UEYR0820	25	105	4200~4600	1000~1400	8	0.15~0.25	側銑 (SIDE MILLING)
UEYR0820	25	105	4200~4600	1600~2000	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UEYR1003	30	95	3000~3400	1000~1400	0.05~0.1	8~10	溝銑 (SLOTTING)
UEYR1003	30	90	2800~3200	600~900	10	0.4~0.5	側銑 (SIDE MILLING)
UEYR1003	30	95	3000~3400	1100~1500	10	0.2~0.3	側銑 (SIDE MILLING)
UEYR1003	30	100	3200~3600	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UEYR1005	30	95	3000~3400	2000~2400	0.05~0.1	8~10	溝銑 (SLOTTING)
UEYR1005	30	90	2800~3200	600~900	10	0.4~0.5	側銑 (SIDE MILLING)
UEYR1005	30	95	3000~3400	1100~1500	10	0.2~0.3	側銑 (SIDE MILLING)
UEYR1005	30	100	3200~3600	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UEYR1010	30	95	3000~3400	2000~2400	0.05~0.1	7~10	溝銑 (SLOTTING)
UEYR1010	30	90	2800~3200	600~900	10	0.4~0.5	側銑 (SIDE MILLING)
UEYR1010	30	95	3000~3400	1100~1500	10	0.2~0.3	側銑 (SIDE MILLING)
UEYR1010	30	100	3200~3600	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)
UEYR1020	30	95	3000~3400	2000~2400	0.05~0.1	5~10	溝銑 (SLOTTING)
UEYR1020	30	90	2800~3200	600~900	10	0.4~0.5	側銑 (SIDE MILLING)
UEYR1020	30	95	3000~3400	1100~1500	10	0.2~0.3	側銑 (SIDE MILLING)
UEYR1020	30	100	3200~3600	2000~2400	0.05~0.1	0.05~0.1	3D銑 (3D MILLING)

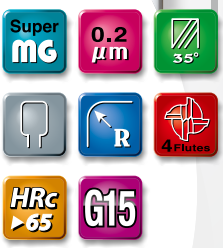
UEYR

END MILLS
高硬度用圓鼻角立銑刀



型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia.	R R角 Corner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UEYR0803	8.0	7.70	0.3	8.0	20	60	8
UEYR0805	8.0	7.70	0.5	8.0	20	60	8
UEYR0810	8.0	7.70	1.0	8.0	20	60	8
UEYR0820	8.0	7.70	2.0	8.0	20	60	8
UEYR1003	10.0	9.60	0.3	10.0	25	75	10
UEYR1005	10.0	9.60	0.5	10.0	25	75	10
UEYR1010	10.0	9.60	1.0	10.0	25	75	10
UEYR1020	10.0	9.60	2.0	10.0	25	75	10

unit : mm







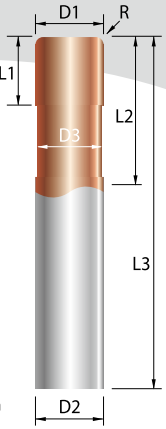
UNR

END MILLS
極超微粒圓鼻角立銑刀

直徑 D1	R徑公差 R Tolerance	直徑公差 D1 Tolerance
4.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.025
10.0	+0.02 0	0 -0.03
12.0	+0.02 0	0 -0.035
16.0	+0.02 0	0 -0.04

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

unit : mm



Super MG
0.4 µm
35°
R
2 Flutes
HRc ▸60
G12

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

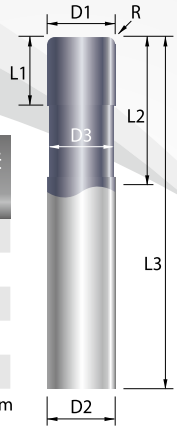
型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia.	R R角 Corner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UNR0402	4.0	3.90	0.2	6	12	50	6
UNR0405	4.0	3.90	0.5	6	12	50	6
UNR0602	6.0	5.80	0.2	8	18	50	6
UNR0605	6.0	5.80	0.5	8	18	50	6
UNR0610	6.0	5.80	1.0	8	18	50	6
UNR0802	8.0	7.70	0.2	10	24	60	8
UNR0805	8.0	7.70	0.5	10	24	60	8
UNR0810	8.0	7.70	1.0	10	24	60	8
UNR1003	10.0	9.60	0.3	12	30	75	10
UNR1005	10.0	9.60	0.5	12	30	75	10
UNR1010	10.0	9.60	1.0	12	30	75	10
UNR1020	10.0	9.60	2.0	12	30	75	10
UNR1210	12.0	11.5	1.0	15	36	75	12
UNR1220	12.0	11.5	2.0	15	36	75	12
UNR1605	16.0	15.4	0.5	24	40	100	16
UNR1610	16.0	15.4	1.0	24	40	100	16

unit : mm

UHR

END MILLS
極超微粒立銑刀





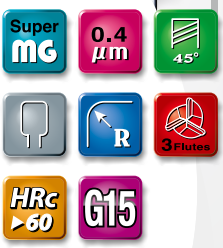
直徑 D1	R徑公差 R Tolerance	直徑公差 D1 Tolerance
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.025
10.0	+0.02 0	0 -0.03
12.0	+0.02 0	0 -0.035
16.0	+0.02 0	0 -0.04

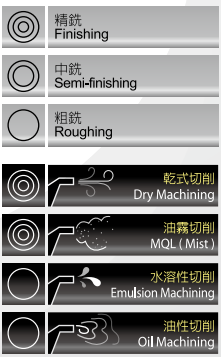
柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

unit : mm

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia.	R R角 Corner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UHR0605	6.0	5.80	0.5	8	30	75	6
UHR0805	8.0	7.70	0.5	10	40	100	8
UHR1005	10.0	9.60	0.5	12	50	100	10
UHR1010	10.0	9.60	1.0	12	50	100	10
UHR1205	12.0	11.6	0.5	15	50	100	12
UHR1610	16.0	15.4	1.0	24	50	150	16

unit : mm







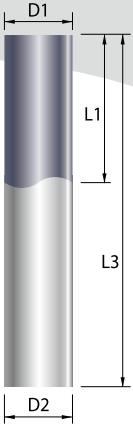
2T UET

BALL NOSE END MILLS
極超微粒立銑刀

直徑 D1	直徑公差 D1 Tolerance
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø3	0 -0.006
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011

unit : mm





型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UET0102S	1.0	3	50	3
UET0102	1.0	3	50	4
UET0152S	1.5	4	50	3
UET0152	1.5	4	50	4
UET0202S	2.0	6	50	3
UET0202	2.0	6	50	4
UET0302S	3.0	8	50	3
UET0302M	3.0	8	50	4
UET0302	3.0	8	50	6
UET0402M	4.0	11	50	4
UET0402	4.0	11	50	6
UET0502	5.0	13	50	6
UET0602	6.0	16	50	6
UET0802	8.0	20	60	8
UET1002	10.0	25	75	10
UET1202	12.0	30	75	12
UET1602	16.0	45	100	16

unit : mm



UET2T

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UET0102S	9	60	19000~20000	1100~1400	0.03~0.05	0.8	溝銑 (SLOTTING)
UET0102S	9	60	19000~20000	2000~2400	0.06	0.8~1	溝銑 (SLOTTING)
UET0102S	9	60	19000~20000	1200~1600	0.07~0.1	0.8~1	溝銑 (SLOTTING)
UET0102S	9	60	19000~20000	700~900	1~2	0.03~0.05	側銑 (SIDE MILLING)
UET0102S	9	60	19000~20000	1100~1400	1~2	0~0.1	側銑 (SIDE MILLING)
UET0102	10	60	19000~20000	1100~1400	0.03~0.05	0.8	溝銑 (SLOTTING)
UET0102	10	60	19000~20000	2000~2400	0.06	0.8~1	溝銑 (SLOTTING)
UET0102	10	60	19000~20000	1200~1600	0.07~0.1	0.8~1	溝銑 (SLOTTING)
UET0102	10	60	19000~20000	700~900	1~2	0.03~0.05	側銑 (SIDE MILLING)
UET0102	10	60	19000~20000	1100~1400	1~2	0~0.1	側銑 (SIDE MILLING)
UET0152S	10	90	18000~19000	1100~1400	0.04~0.07	1	溝銑 (SLOTTING)
UET0152S	10	90	18000~19000	2000~2400	0.08	1~1.5	溝銑 (SLOTTING)
UET0152S	10	90	18000~19000	1200~1600	0.1~0.13	1~1.5	溝銑 (SLOTTING)
UET0152S	10	90	18000~19000	700~900	1.5~3	0.04~0.07	側銑 (SIDE MILLING)
UET0152S	10	90	18000~19000	1100~1400	1.5~3	0.1~0.13	側銑 (SIDE MILLING)
UET0152	10	90	18000~19000	1100~1400	0.04~0.07	1	溝銑 (SLOTTING)
UET0152	10	90	18000~19000	2000~2400	0.08	1~1.5	溝銑 (SLOTTING)
UET0152	10	90	18000~19000	1200~1600	0.1~0.13	1~1.5	溝銑 (SLOTTING)
UET0152	10	90	18000~19000	700~900	1.5~3	0.04~0.07	側銑 (SIDE MILLING)
UET0152	10	90	18000~19000	1100~1400	1.5~3	0.1~0.13	側銑 (SIDE MILLING)
UET0202S	11	110	17000~18000	1000~1300	0.05~0.08	1.5	溝銑 (SLOTTING)
UET0202S	11	110	17000~18000	2000~2400	0.1	1~2	溝銑 (SLOTTING)
UET0202S	11	100	16000~17000	1200~1600	0.12~0.15	1~2	溝銑 (SLOTTING)
UET0202S	11	100	16000~17000	700~900	2~4	0.05~0.08	側銑 (SIDE MILLING)
UET0202S	11	100	16000~17000	1000~1300	2~4	0.12~0.15	側銑 (SIDE MILLING)
UET0202	12	110	17000~18000	1000~1300	0.05~0.08	1.5	溝銑 (SLOTTING)
UET0202	12	110	17000~18000	2000~2400	0.1	1~2	溝銑 (SLOTTING)
UET0202	12	100	16000~17000	1200~1600	0.12~0.15	1~2	溝銑 (SLOTTING)
UET0202	12	100	16000~17000	700~900	2~4	0.05~0.08	側銑 (SIDE MILLING)
UET0202	12	100	16000~17000	1000~1300	2~4	0.12~0.15	側銑 (SIDE MILLING)
UET0302S	13	130	14000~15000	1000~1300	0.05~0.1	2.5	溝銑 (SLOTTING)
UET0302S	13	130	14000~15000	2000~2400	0.1	2~3	溝銑 (SLOTTING)
UET0302S	13	120	12000~13000	1200~1500	0.15~0.2	2~3	溝銑 (SLOTTING)
UET0302S	13	120	12000~13000	700~900	3~6	0.05~0.1	側銑 (SIDE MILLING)
UET0302S	13	120	12000~13000	1100~1300	3~6	0.15~0.2	側銑 (SIDE MILLING)
UET0302M	14	130	14000~15000	1000~1300	0.05~0.1	2.5	溝銑 (SLOTTING)
UET0302M	14	130	14000~15000	2000~2400	0.1	2~3	溝銑 (SLOTTING)
UET0302M	14	120	12000~13000	1200~1500	0.15~0.2	2~3	溝銑 (SLOTTING)
UET0302M	14	120	12000~13000	700~900	3~6	0.05~0.1	側銑 (SIDE MILLING)
UET0302M	14	120	12000~13000	1200~1400	3~6	0.15~0.2	側銑 (SIDE MILLING)

UET2T

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UET0302	15	130	14000~15000	1000~1300	0.05~0.1	2.5	溝銑 (SLOTTING)
UET0302	15	130	14000~15000	2000~2400	0.1	2~3	溝銑 (SLOTTING)
UET0302	15	120	12000~13000	1200~1500	0.15~0.2	2~3	溝銑 (SLOTTING)
UET0302	15	120	12000~13000	700~900	3~6	0.05~0.1	側銑 (SIDE MILLING)
UET0302	15	120	12000~13000	1300~1500	3~6	0.15~0.2	側銑 (SIDE MILLING)
UET0402M	16	130	10000~11000	1200~1500	0.05~0.1	3	溝銑 (SLOTTING)
UET0402M	16	130	10000~11000	2400~2800	0.1	3~4	溝銑 (SLOTTING)
UET0402M	16	120	9000~10000	1300~1500	0.15~0.2	3~4	溝銑 (SLOTTING)
UET0402M	16	120	9000~10000	700~900	4~8	0.05~0.1	側銑 (SIDE MILLING)
UET0402M	16	120	9000~10000	1000~1300	4~8	0.15~0.2	側銑 (SIDE MILLING)
UET0402	18	130	10000~11000	1200~1500	0.05~0.1	3	溝銑 (SLOTTING)
UET0402	18	130	10000~11000	2400~2800	0.1	3~4	溝銑 (SLOTTING)
UET0402	18	120	9000~10000	1300~1500	0.15~0.2	3~4	溝銑 (SLOTTING)
UET0402	18	120	9000~10000	700~900	4~8	0.05~0.1	側銑 (SIDE MILLING)
UET0402	18	120	9000~10000	1000~1300	4~8	0.15~0.2	側銑 (SIDE MILLING)
UET0502	19	130	8000~9000	1200~1500	0.05~0.12	4	溝銑 (SLOTTING)
UET0502	19	130	8000~9000	2400~2800	0.12	4~5	溝銑 (SLOTTING)
UET0502	19	120	7500~8000	1300~1500	0.15~0.25	4~5	溝銑 (SLOTTING)
UET0502	19	120	7500~8000	700~900	5~10	0.05~0.12	側銑 (SIDE MILLING)
UET0502	19	120	7500~8000	1000~1300	5~10	0.15~0.25	側銑 (SIDE MILLING)
UET0602	24	130	6800~7300	1200~1500	0.05~0.1	4	溝銑 (SLOTTING)
UET0602	24	130	6800~7300	2400~2800	0.15	4~6	溝銑 (SLOTTING)
UET0602	24	120	6000~6500	1100~1300	0.2~0.3	4~6	溝銑 (SLOTTING)
UET0602	24	120	6000~6500	500~700	6~12	0.05~0.1	側銑 (SIDE MILLING)
UET0602	24	120	6000~6500	1200~1500	6~12	0.3~0.4	側銑 (SIDE MILLING)
UET0802	29	150	5800~6300	1100~1400	0.05~0.12	6	溝銑 (SLOTTING)
UET0802	29	150	5800~6300	1800~2200	0.15	6~8	溝銑 (SLOTTING)
UET0802	29	120	4500~5000	800~1100	0.3~0.4	6~8	溝銑 (SLOTTING)
UET0802	29	120	4500~5000	400~600	8~16	0.05~0.12	側銑 (SIDE MILLING)
UET0802	29	120	4500~5000	800~1100	8~16	0.4~0.5	側銑 (SIDE MILLING)
UET1002	34	150	4500~5000	1100~1400	0.05~0.12	8	溝銑 (SLOTTING)
UET1002	34	150	4500~5000	1800~2200	0.2	8~10	溝銑 (SLOTTING)
UET1002	34	100	3000~3500	800~1100	0.3~0.5	8~10	溝銑 (SLOTTING)
UET1002	34	125	3700~4300	300~500	10~20	0.05~0.12	側銑 (SIDE MILLING)
UET1002	34	100	3000~3500	800~1100	10~20	0.4~0.5	側銑 (SIDE MILLING)
UET1202	38	150	3800~4300	700~1000	0.05~0.15	10	溝銑 (SLOTTING)
UET1202	38	150	3800~4300	1800~2200	0.2	10~12	溝銑 (SLOTTING)
UET1202	38	115	2800~3300	700~1000	0.3~0.5	10~12	溝銑 (SLOTTING)
UET1202	38	125	3000~3500	300~400	12~24	0.05~0.15	側銑 (SIDE MILLING)
UET1202	38	75	1800~2300	500~700	12~24	0.3~0.5	側銑 (SIDE MILLING)

UET2T

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UET1602	52	140	2400~2900	500~800	0.05~0.2	14	溝銑 (SLOTTING)
UET1602	52	140	2400~2900	1400~1700	0.25	14~16	溝銑 (SLOTTING)
UET1602	52	100	1800~2200	500~700	0.4~0.6	14~16	溝銑 (SLOTTING)
UET1602	52	125	2200~2700	200~300	16~32	0.05~0.2	側銑 (SIDE MILLING)
UET1602	52	85	1500~1900	200~400	16~32	0.4~0.6	側銑 (SIDE MILLING)

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UET0102S	9	60	19000~20000	1000~1200	0.03~0.05	0.8	溝銑 (SLOTTING)
UET0102S	9	60	19000~20000	1600~2000	0.06	0.8~1	溝銑 (SLOTTING)
UET0102S	9	60	19000~20000	1000~1300	0.07~0.1	0.8~1	溝銑 (SLOTTING)
UET0102S	9	60	19000~20000	600~800	1~2	0.03~0.05	側銑 (SIDE MILLING)
UET0102S	9	60	19000~20000	1000~1200	1~2	0~0.1	側銑 (SIDE MILLING)
UET0102	10	60	19000~20000	1000~1200	0.03~0.05	0.8	溝銑 (SLOTTING)
UET0102	10	60	19000~20000	1600~2000	0.06	0.8~1	溝銑 (SLOTTING)
UET0102	10	60	19000~20000	1000~1300	0.07~0.1	0.8~1	溝銑 (SLOTTING)
UET0102	10	60	19000~20000	600~800	1~2	0.03~0.05	側銑 (SIDE MILLING)
UET0102	10	60	19000~20000	1000~1200	1~2	0~0.1	側銑 (SIDE MILLING)
UET0152S	10	90	18000~19000	1000~1200	0.04~0.07	1	溝銑 (SLOTTING)
UET0152S	10	90	18000~19000	1600~2000	0.08	1~1.5	溝銑 (SLOTTING)
UET0152S	10	80	17000~18000	1000~1300	0.1~0.13	1~1.5	溝銑 (SLOTTING)
UET0152S	10	80	17000~18000	600~800	1.5~3	0.04~0.07	側銑 (SIDE MILLING)
UET0152S	10	80	17000~18000	1000~1200	1.5~3	0.1~0.13	側銑 (SIDE MILLING)
UET0152	10	90	18000~19000	1000~1200	0.04~0.07	1	溝銑 (SLOTTING)
UET0152	10	90	18000~19000	1600~2000	0.08	1~1.5	溝銑 (SLOTTING)
UET0152	10	80	17000~18000	1000~1300	0.1~0.13	1~1.5	溝銑 (SLOTTING)
UET0152	10	80	17000~18000	600~800	1.5~3	0.04~0.07	側銑 (SIDE MILLING)
UET0152	10	80	17000~18000	1000~1200	1.5~3	0.1~0.13	側銑 (SIDE MILLING)
UET0202S	11	100	16000~17000	1000~1200	0.05~0.08	1.5	溝銑 (SLOTTING)
UET0202S	11	100	16000~17000	1600~2000	0.1	1~2	溝銑 (SLOTTING)
UET0202S	11	90	14000~15000	1000~1300	0.12~0.15	1~2	溝銑 (SLOTTING)
UET0202S	11	90	14000~15000	600~800	2~4	0.05~0.08	側銑 (SIDE MILLING)
UET0202S	11	90	14000~15000	1000~1200	2~4	0.12~0.15	側銑 (SIDE MILLING)

UET2T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UET0202	12	100	16000~17000	1000~1200	0.05~0.08	1.5	溝銑 (SLOTTING)
UET0202	12	100	16000~17000	1600~2000	0.1	1~2	溝銑 (SLOTTING)
UET0202	12	90	14000~15000	1000~1300	0.12~0.15	1~2	溝銑 (SLOTTING)
UET0202	12	90	14000~15000	600~800	2~4	0.05~0.08	側銑 (SIDE MILLING)
UET0202	12	90	14000~15000	1000~1200	2~4	0.12~0.15	側銑 (SIDE MILLING)
UET0302S	13	125	13000~14000	900~1100	0.05~0.1	2.5	溝銑 (SLOTTING)
UET0302S	13	125	13000~14000	1600~2000	0.1	2~3	溝銑 (SLOTTING)
UET0302S	13	115	12000~13000	1100~1300	0.15~0.2	2~3	溝銑 (SLOTTING)
UET0302S	13	100	10000~11000	600~800	3~6	0.05~0.1	側銑 (SIDE MILLING)
UET0302S	13	100	10000~11000	1000~1200	3~6	0.15~0.2	側銑 (SIDE MILLING)
UET0302M	14	125	13000~14000	900~1100	0.05~0.1	2.5	溝銑 (SLOTTING)
UET0302M	14	125	13000~14000	1600~2000	0.1	2~3	溝銑 (SLOTTING)
UET0302M	14	115	12000~13000	1100~1300	0.15~0.2	2~3	溝銑 (SLOTTING)
UET0302M	14	100	10000~11000	600~800	3~6	0.05~0.1	側銑 (SIDE MILLING)
UET0302M	14	100	10000~11000	1000~1200	3~6	0.15~0.2	側銑 (SIDE MILLING)
UET0302	15	125	13000~14000	900~1100	0.05~0.1	2.5	溝銑 (SLOTTING)
UET0302	15	125	13000~14000	1600~2000	0.1	2~3	溝銑 (SLOTTING)
UET0302	15	115	12000~13000	1100~1300	0.15~0.2	2~3	溝銑 (SLOTTING)
UET0302	15	100	10000~11000	600~800	3~6	0.05~0.1	側銑 (SIDE MILLING)
UET0302	15	100	10000~11000	1000~1200	3~6	0.15~0.2	側銑 (SIDE MILLING)
UET0402M	16	125	9500~10500	900~1100	0.05~0.1	3	溝銑 (SLOTTING)
UET0402M	16	125	9500~10500	1600~2000	0.1	3~4	溝銑 (SLOTTING)
UET0402M	16	115	8500~9500	1100~1300	0.15~0.2	3~4	溝銑 (SLOTTING)
UET0402M	16	100	8000~9000	600~800	4~8	0.05~0.1	側銑 (SIDE MILLING)
UET0402M	16	90	7000~8000	1000~1200	4~8	0.15~0.2	側銑 (SIDE MILLING)
UET0402	18	125	9500~10500	900~1100	0.05~0.1	3	溝銑 (SLOTTING)
UET0402	18	125	9500~10500	1600~2000	0.1	3~4	溝銑 (SLOTTING)
UET0402	18	115	8500~9500	1100~1300	0.15~0.2	3~4	溝銑 (SLOTTING)
UET0402	18	100	8000~9000	600~800	4~8	0.05~0.1	側銑 (SIDE MILLING)
UET0402	18	90	7000~8000	1000~1200	4~8	0.15~0.2	側銑 (SIDE MILLING)
UET0502	19	125	7500~8500	1000~1200	0.05~0.12	4	溝銑 (SLOTTING)
UET0502	19	125	7500~8500	1800~2200	0.12	4~5	溝銑 (SLOTTING)
UET0502	19	115	7000~7500	1100~1300	0.15~0.25	4~5	溝銑 (SLOTTING)
UET0502	19	100	6000~6500	600~800	5~10	0.05~0.12	側銑 (SIDE MILLING)
UET0502	19	90	5500~6000	900~1200	5~10	0.15~0.25	側銑 (SIDE MILLING)
UET0602	24	125	6400~6900	1000~1200	0.05~0.1	4	溝銑 (SLOTTING)
UET0602	24	125	6400~6900	1800~2200	0.15	4~6	溝銑 (SLOTTING)
UET0602	24	115	5800~6300	1100~1300	0.2~0.3	4~6	溝銑 (SLOTTING)
UET0602	24	100	5200~5700	400~600	6~12	0.05~0.1	側銑 (SIDE MILLING)
UET0602	24	90	4500~5000	1000~1200	6~12	0.3~0.4	側銑 (SIDE MILLING)

UET2T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UET0802	29	140	5300~5800	1100~1400	0.05~0.12	6	溝銑 (SLOTTING)
UET0802	29	140	5300~5800	1400~1800	0.15	6~8	溝銑 (SLOTTING)
UET0802	29	110	4000~4500	800~1000	0.3~0.4	6~8	溝銑 (SLOTTING)
UET0802	29	100	3800~4300	400~600	8~16	0.05~0.12	側銑 (SIDE MILLING)
UET0802	29	100	3800~4300	800~1000	8~16	0.4~0.5	側銑 (SIDE MILLING)
UET1002	34	140	4300~4800	1100~1400	0.05~0.12	8	溝銑 (SLOTTING)
UET1002	34	140	4300~4800	1400~1800	0.2	8~10	溝銑 (SLOTTING)
UET1002	34	100	2900~3400	800~1100	0.3~0.5	8~10	溝銑 (SLOTTING)
UET1002	34	100	2900~3400	300~500	10~20	0.05~0.12	側銑 (SIDE MILLING)
UET1002	34	80	2000~2500	800~1100	10~20	0.4~0.5	側銑 (SIDE MILLING)
UET1202	38	140	3500~4000	700~1000	0.05~0.15	10	溝銑 (SLOTTING)
UET1202	38	140	3500~4000	1400~1800	0.2	10~12	溝銑 (SLOTTING)
UET1202	38	110	2700~3200	700~1000	0.3~0.5	10~12	溝銑 (SLOTTING)
UET1202	38	110	2700~3200	300~400	12~24	0.05~0.15	側銑 (SIDE MILLING)
UET1202	38	75	1800~2200	500~700	12~24	0.3~0.5	側銑 (SIDE MILLING)
UET1602	52	130	2300~2800	500~800	0.05~0.2	14	溝銑 (SLOTTING)
UET1602	52	130	2300~2800	1200~1500	0.25	14~16	溝銑 (SLOTTING)
UET1602	52	90	1600~2000	400~600	0.4~0.6	14~16	溝銑 (SLOTTING)
UET1602	52	70	1300~1700	200~300	16~32	0.05~0.2	側銑 (SIDE MILLING)
UET1602	52	70	1300~1700	200~400	16~32	0.4~0.6	側銑 (SIDE MILLING)

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UET0102S	10	60	19000~20000	600~800	0.02~0.03	0.8	溝銑 (SLOTTING)
UET0102S	10	60	19000~20000	600~800	0.03~0.04	0.8~1	溝銑 (SLOTTING)
UET0102S	10	60	19000~20000	400~600	1~2	0.02~0.03	側銑 (SIDE MILLING)
UET0102S	10	60	19000~20000	600~800	1~2	0.03~0.04	側銑 (SIDE MILLING)
UET0102	10	60	19000~20000	600~800	0.02~0.03	0.8	溝銑 (SLOTTING)
UET0102	10	60	19000~20000	600~800	0.03~0.04	0.8~1	溝銑 (SLOTTING)
UET0102	10	60	19000~20000	400~600	1~2	0.02~0.03	側銑 (SIDE MILLING)
UET0102	10	60	19000~20000	600~800	1~2	0.03~0.04	側銑 (SIDE MILLING)

UET2T

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UET0152S	10	80	17000~18000	600~800	0.03~0.04	1	溝銑 (SLOTTING)
UET0152S	10	80	17000~18000	900~1100	0.03~0.06	1~1.5	溝銑 (SLOTTING)
UET0152S	10	70	16000~17000	400~600	1.5~3	0.03~0.04	側銑 (SIDE MILLING)
UET0152S	10	70	16000~17000	700~900	1.5~3	0.03~0.06	側銑 (SIDE MILLING)
UET0152	10	80	17000~18000	600~800	0.03~0.04	1	溝銑 (SLOTTING)
UET0152	10	80	17000~18000	900~1100	0.03~0.06	1~1.5	溝銑 (SLOTTING)
UET0152	10	70	16000~17000	400~600	1.5~3	0.03~0.04	側銑 (SIDE MILLING)
UET0152	10	70	16000~17000	700~900	1.5~3	0.03~0.06	側銑 (SIDE MILLING)
UET0202S	11	80	12000~13000	600~800	0.04~0.05	1.5	溝銑 (SLOTTING)
UET0202S	11	80	12000~13000	900~1100	0.05~0.07	1~2	溝銑 (SLOTTING)
UET0202S	11	65	10000~11000	400~600	2~4	0.04~0.05	側銑 (SIDE MILLING)
UET0202S	11	65	10000~11000	700~900	2~4	0.05~0.1	側銑 (SIDE MILLING)
UET0202	11	80	12000~13000	600~800	0.04~0.05	1.5	溝銑 (SLOTTING)
UET0202	11	80	12000~13000	900~1100	0.05~0.07	1~2	溝銑 (SLOTTING)
UET0202	11	65	10000~11000	400~600	2~4	0.04~0.05	側銑 (SIDE MILLING)
UET0202	11	65	10000~11000	700~900	2~4	0.05~0.1	側銑 (SIDE MILLING)
UET0302S	12	80	8000~9000	600~800	0.04~0.06	2.5	溝銑 (SLOTTING)
UET0302S	12	80	8000~9000	800~1000	0.05~0.08	2~3	溝銑 (SLOTTING)
UET0302S	12	65	6500~7500	400~600	3~6	0.04~0.06	側銑 (SIDE MILLING)
UET0302S	12	65	6500~7500	800~1000	3~6	0.05~0.1	側銑 (SIDE MILLING)
UET0302M	13	80	8000~9000	600~800	0.04~0.06	2.5	溝銑 (SLOTTING)
UET0302M	13	80	8000~9000	800~1000	0.05~0.08	2~3	溝銑 (SLOTTING)
UET0302M	13	65	6500~7500	400~600	3~6	0.04~0.06	側銑 (SIDE MILLING)
UET0302M	13	65	6500~7500	800~1000	3~6	0.05~0.1	側銑 (SIDE MILLING)
UET0302	15	80	8000~9000	600~800	0.04~0.06	2.5	溝銑 (SLOTTING)
UET0302	15	80	8000~9000	800~1000	0.05~0.08	2~3	溝銑 (SLOTTING)
UET0302	15	65	6500~7500	400~600	3~6	0.04~0.06	側銑 (SIDE MILLING)
UET0302	15	65	6500~7500	800~1000	3~6	0.05~0.1	側銑 (SIDE MILLING)
UET0402M	15	80	6500~7000	600~800	0.04~0.06	3	溝銑 (SLOTTING)
UET0402M	15	80	6500~7000	800~1000	0.05~0.09	3~4	溝銑 (SLOTTING)
UET0402M	15	65	5000~5500	400~600	4~8	0.04~0.06	側銑 (SIDE MILLING)
UET0402M	15	65	5000~5500	700~900	4~8	0.05~0.1	側銑 (SIDE MILLING)
UET0402	15	80	6500~7000	600~800	0.04~0.06	3	溝銑 (SLOTTING)
UET0402	15	80	6500~7000	800~1000	0.05~0.09	3~4	溝銑 (SLOTTING)
UET0402	15	65	5000~5500	400~600	4~8	0.04~0.06	側銑 (SIDE MILLING)
UET0402	15	65	5000~5500	700~900	4~8	0.05~0.1	側銑 (SIDE MILLING)
UET0502	16	80	5000~5500	600~800	0.04~0.07	4	溝銑 (SLOTTING)
UET0502	16	80	5000~5500	800~1000	0.05~0.1	4~5	溝銑 (SLOTTING)
UET0502	16	65	4000~4500	400~600	5~10	0.04~0.07	側銑 (SIDE MILLING)
UET0502	16	65	4000~4500	700~900	5~10	0.15~0.2	側銑 (SIDE MILLING)

UET2T

切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UET0602	19	80	4000~4500	600~800	0.05~0.08	4	溝銑 (SLOTTING)
UET0602	19	80	4000~4500	700~900	0.05~0.1	4~6	溝銑 (SLOTTING)
UET0602	19	65	3300~3800	400~600	6~12	0.05~0.08	側銑 (SIDE MILLING)
UET0602	19	65	3300~3800	700~900	6~12	0.15~0.2	側銑 (SIDE MILLING)
UET0802	23	80	2900~3400	600~800	0.05~0.1	6	溝銑 (SLOTTING)
UET0802	23	80	2900~3400	600~800	0.05~0.1	6~8	溝銑 (SLOTTING)
UET0802	23	65	2400~2800	400~600	8~16	0.05~0.1	側銑 (SIDE MILLING)
UET0802	23	65	2400~2800	600~800	8~16	0.2~0.3	側銑 (SIDE MILLING)
UET1002	30	80	2300~2700	600~800	0.05~0.1	8	溝銑 (SLOTTING)
UET1002	30	80	2300~2700	500~700	0.05~0.12	8~10	溝銑 (SLOTTING)
UET1002	30	65	1800~2200	300~400	10~20	0.05~0.1	側銑 (SIDE MILLING)
UET1002	30	65	1800~2200	600~800	10~20	0.3~0.4	側銑 (SIDE MILLING)
UET1202	40	80	1900~2300	400~600	0.05~0.1	10	溝銑 (SLOTTING)
UET1202	40	80	1900~2300	400~600	0.1~0.15	10~12	溝銑 (SLOTTING)
UET1202	40	65	1600~2000	200~300	12~24	0.05~0.15	側銑 (SIDE MILLING)
UET1202	40	65	1600~2000	400~600	12~24	0.3~0.5	側銑 (SIDE MILLING)
UET1602	50	80	1400~1800	300~500	0.05~0.1	14	溝銑 (SLOTTING)
UET1602	50	80	1400~1800	300~500	0.1~0.15	14~16	溝銑 (SLOTTING)
UET1602	50	65	1400~1800	150~250	16~32	0.05~0.15	側銑 (SIDE MILLING)
UET1602	50	65	1400~1800	300~500	16	0.3~0.5	側銑 (SIDE MILLING)

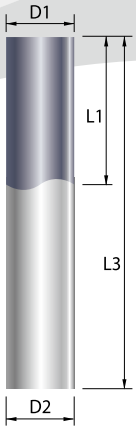
4T UET

BALL NOSE END MILLS
極超微粒立銑刀

直徑 D1	直徑公差 D1 Tolerance
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø3	0 -0.006
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm

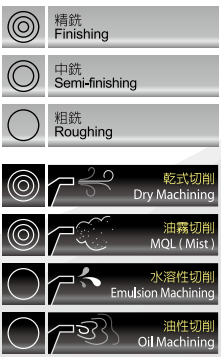




型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UET0104	1.0	3	50	4
UET0154	1.5	4	50	4
UET0204	2.0	6	50	4
UET0304S	3.0	8	50	3
UET0304M	3.0	8	50	4
UET0304	3.0	8	50	6
UET0404S	4.0	11	50	4
UET0404	4.0	11	50	6
UET0504	5.0	13	50	6
UET0604	6.0	16	50	6
UET0804	8.0	20	60	8
UET1004	10.0	25	75	10
UET1204	12.0	30	75	12
UET1604	16.0	45	100	16
UET2004	20.0	45	100	20

unit : mm





UET4T

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UET0104	10	60	19000~20000	1300~1600	0.03~0.05	0.8	溝銑 (SLOTTING)
UET0104	10	60	19000~20000	3600~4000	0.06	0.8~1	溝銑 (SLOTTING)
UET0104	10	60	19000~20000	1400~1800	0.07~0.1	0.8~1	溝銑 (SLOTTING)
UET0104	10	60	19000~20000	900~1100	1~2	0.03~0.05	側銑 (SIDE MILLING)
UET0104	10	60	19000~20000	1100~1400	1~2	0~0.1	側銑 (SIDE MILLING)
UET0154	10	90	18000~19000	1300~1600	0.04~0.06	1	溝銑 (SLOTTING)
UET0154	10	90	18000~19000	3600~4000	0.07	1~1.5	溝銑 (SLOTTING)
UET0154	10	90	18000~19000	1400~1800	0.1~0.12	1~1.5	溝銑 (SLOTTING)
UET0154	10	90	18000~19000	900~1100	1.5~3	0.04~0.06	側銑 (SIDE MILLING)
UET0154	10	90	18000~19000	1100~1400	1.5~3	0.1~0.12	側銑 (SIDE MILLING)
UET0204	11	110	17000~18000	1300~1600	0.05~0.07	1.5	溝銑 (SLOTTING)
UET0204	11	110	17000~18000	3600~4000	0.1	1~2	溝銑 (SLOTTING)
UET0204	11	100	16000~17000	1400~1800	0.1~0.15	1~2	溝銑 (SLOTTING)
UET0204	11	100	16000~17000	900~1100	2~4	0.05~0.05	側銑 (SIDE MILLING)
UET0204	11	100	16000~17000	1100~1400	2~4	0.12~0.2	側銑 (SIDE MILLING)
UET0304S	12	130	14000~15000	1300~1600	0.05~0.1	2.5	溝銑 (SLOTTING)
UET0304S	12	130	14000~15000	3200~3600	0.12	2~3	溝銑 (SLOTTING)
UET0304S	12	120	12000~13000	1600~2000	0.1~0.15	2~3	溝銑 (SLOTTING)
UET0304S	12	120	12000~13000	900~1100	3~6	0.05~0.1	側銑 (SIDE MILLING)
UET0304S	12	120	12000~13000	1100~1400	3~6	0.12~0.2	側銑 (SIDE MILLING)
UET0304M	13	130	14000~15000	1300~1600	0.05~0.1	2.5	溝銑 (SLOTTING)
UET0304M	13	130	14000~15000	3600~4000	0.12	2~3	溝銑 (SLOTTING)
UET0304M	13	120	12000~13000	1600~2000	0.1~0.15	2~3	溝銑 (SLOTTING)
UET0304M	13	120	12000~13000	900~1100	3~6	0.05~0.1	側銑 (SIDE MILLING)
UET0304M	13	120	12000~13000	1300~1500	3~6	0.12~0.2	側銑 (SIDE MILLING)
UET0304	15	130	14000~15000	1300~1600	0.05~0.1	2.5	溝銑 (SLOTTING)
UET0304	15	130	14000~15000	3600~4000	0.12	2~3	溝銑 (SLOTTING)
UET0304	15	120	12000~13000	1600~2000	0.1~0.15	2~3	溝銑 (SLOTTING)
UET0304	15	120	12000~13000	900~1100	3~6	0.05~0.1	側銑 (SIDE MILLING)
UET0304	15	120	12000~13000	1300~1500	3~6	0.12~0.2	側銑 (SIDE MILLING)
UET0404S	15	130	10000~11000	1300~1600	0.05~0.1	3	溝銑 (SLOTTING)
UET0404S	15	130	10000~11000	3600~4000	0.13	3~4	溝銑 (SLOTTING)
UET0404S	15	120	9000~10000	1400~1800	0.15~0.2	3~4	溝銑 (SLOTTING)
UET0404S	15	120	9000~10000	900~1100	4~8	0.05~0.1	側銑 (SIDE MILLING)
UET0404S	15	120	9000~10000	1200~1500	4~8	0.15~0.25	側銑 (SIDE MILLING)
UET0404	15	130	10000~11000	1400~1700	0.05~0.1	3	溝銑 (SLOTTING)
UET0404	15	130	10000~11000	3800~4200	0.13	3~4	溝銑 (SLOTTING)
UET0404	15	120	9000~10000	1600~2000	0.15~0.2	3~4	溝銑 (SLOTTING)
UET0404	15	120	9000~10000	900~1100	4~8	0.05~0.1	側銑 (SIDE MILLING)
UET0404	15	120	9000~10000	1200~1500	4~8	0.15~0.25	側銑 (SIDE MILLING)

UET4T

切削條件表 Milling Conditions

被切削材 Work Material	合金工具鋼 / 碳工具鋼 : *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UET0504	16	130	8000~9000	1400~1700	0.05~0.12	4	溝銑 (SLOTTING)
UET0504	16	130	8000~9000	3800~4200	0.15	4~5	溝銑 (SLOTTING)
UET0504	16	120	7500~8000	1600~1800	0.2~0.3	4~5	溝銑 (SLOTTING)
UET0504	16	120	7500~8000	900~1100	5~10	0.05~0.1	側銑 (SIDE MILLING)
UET0504	16	120	7500~8000	1400~1700	5~10	0.3~0.4	側銑 (SIDE MILLING)
UET0604	19	130	6800~7300	1400~1700	0.05~0.12	4	溝銑 (SLOTTING)
UET0604	19	130	6800~7300	3800~4200	0.16	4~6	溝銑 (SLOTTING)
UET0604	19	120	6000~6500	1400~1600	0.2~0.4	4~6	溝銑 (SLOTTING)
UET0604	19	120	6000~6500	900~1100	6~12	0.05~0.1	側銑 (SIDE MILLING)
UET0604	19	120	6000~6500	1400~1700	6~12	0.4~0.6	側銑 (SIDE MILLING)
UET0804	23	150	5800~6300	1300~1600	0.05~0.15	6	溝銑 (SLOTTING)
UET0804	23	150	5800~6300	3800~4200	0.2	6~8	溝銑 (SLOTTING)
UET0804	23	120	4500~5000	1400~1600	0.3~0.5	6~8	溝銑 (SLOTTING)
UET0804	23	120	4500~5000	700~900	8~16	0.05~0.15	側銑 (SIDE MILLING)
UET0804	23	120	4500~5000	1200~1500	8~16	0.5~0.7	側銑 (SIDE MILLING)
UET1004	30	150	4500~5000	1200~1400	0.05~0.15	8	溝銑 (SLOTTING)
UET1004	30	150	4500~5000	3600~4000	0.2	8~10	溝銑 (SLOTTING)
UET1004	30	100	3000~3500	900~1200	0.3~0.5	8~10	溝銑 (SLOTTING)
UET1004	30	125	3700~4300	600~800	10~20	0.05~0.15	側銑 (SIDE MILLING)
UET1004	30	100	3000~3500	1000~1300	10~20	0.6~0.8	側銑 (SIDE MILLING)
UET1204	40	150	3800~4300	900~1200	0.05~0.15	10	溝銑 (SLOTTING)
UET1204	40	150	3800~4300	3000~3400	0.2	10~12	溝銑 (SLOTTING)
UET1204	40	115	2800~3300	900~1200	0.3~0.6	10~12	溝銑 (SLOTTING)
UET1204	40	125	3000~3500	600~800	12~24	0.05~0.15	側銑 (SIDE MILLING)
UET1204	40	75	1800~2300	1000~1300	12~24	0.8~1	側銑 (SIDE MILLING)
UET1604	50	140	2400~2900	700~900	0.05~0.2	14	溝銑 (SLOTTING)
UET1604	50	140	2400~2900	1300~1600	0.25	14~16	溝銑 (SLOTTING)
UET1604	50	100	1800~2200	600~850	0.4~0.7	14~16	溝銑 (SLOTTING)
UET1604	50	125	2200~2700	350~550	16~32	0.05~0.2	側銑 (SIDE MILLING)
UET1604	50	85	1500~1900	200~400	16~32	1~1.3	側銑 (SIDE MILLING)
UET1604	50	85	1500~1900	200~400	16~32	1~1.3	側銑 (SIDE MILLING)
UET2004	50	140	2000~2500	600~800	0.05~0.2	18	溝銑 (SLOTTING)
UET2004	50	140	2000~2500	1100~1400	0.25	18~20	溝銑 (SLOTTING)
UET2004	50	100	1400~1800	450~650	0.5~0.8	18~20	溝銑 (SLOTTING)
UET2004	50	125	1800~2200	250~450	20~40	0.05~0.2	側銑 (SIDE MILLING)
UET2004	50	85	1200~1600	200~400	20	1.2~1.6	側銑 (SIDE MILLING)
UET2004	50	85	1200~1600	200~400	30	1.2~1.6	側銑 (SIDE MILLING)

UET4T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UET0104	10	60	19000~20000	1100~1400	0.03~0.05	0.8	溝銑 (SLOTTING)
UET0104	10	60	19000~20000	3000~3400	0.06	0.8~1	溝銑 (SLOTTING)
UET0104	10	60	19000~20000	1300~1500	0.07~0.1	0.8~1	溝銑 (SLOTTING)
UET0104	10	60	19000~20000	800~1000	1~2	0.03~0.05	側銑 (SIDE MILLING)
UET0104	10	60	19000~20000	1000~1200	1~2	0~0.1	側銑 (SIDE MILLING)
UET0154	10	90	18000~19000	1100~1400	0.04~0.07	1	溝銑 (SLOTTING)
UET0154	10	90	18000~19000	3000~3400	0.08	1~1.5	溝銑 (SLOTTING)
UET0154	10	80	17000~18000	1300~1500	0.1~0.12	1~1.5	溝銑 (SLOTTING)
UET0154	10	80	17000~18000	800~1000	1.5~3	0.04~0.06	側銑 (SIDE MILLING)
UET0154	10	80	17000~18000	1000~1200	1.5~3	0.1~0.12	側銑 (SIDE MILLING)
UET0204	11	100	16000~17000	1100~1400	0.05~0.08	1.5	溝銑 (SLOTTING)
UET0204	11	100	16000~17000	3000~3400	0.1	1~2	溝銑 (SLOTTING)
UET0204	11	90	14000~15000	1300~1500	0.1~0.15	1~2	溝銑 (SLOTTING)
UET0204	11	90	14000~15000	800~1000	2~4	0.05~0.05	側銑 (SIDE MILLING)
UET0204	11	90	14000~15000	1000~1200	2~4	0.12~0.2	側銑 (SIDE MILLING)
UET0304S	12	125	13000~14000	1200~1500	0.05~0.1	2.5	溝銑 (SLOTTING)
UET0304S	12	125	13000~14000	3000~3400	0.12	2~3	溝銑 (SLOTTING)
UET0304S	12	115	12000~13000	1300~1500	0.1~0.15	2~3	溝銑 (SLOTTING)
UET0304S	12	100	10000~11000	800~1000	3~6	0.05~0.1	側銑 (SIDE MILLING)
UET0304S	12	100	10000~11000	10000~11000	3~6	0.12~0.2	側銑 (SIDE MILLING)
UET0304M	13	125	13000~14000	1200~1500	0.05~0.1	2.5	溝銑 (SLOTTING)
UET0304M	13	125	13000~14000	3600~4000	0.12	2~3	溝銑 (SLOTTING)
UET0304M	13	115	12000~13000	1300~1500	0.1~0.15	2~3	溝銑 (SLOTTING)
UET0304M	13	100	10000~11000	800~1000	3~6	0.05~0.1	側銑 (SIDE MILLING)
UET0304M	13	100	10000~11000	1200~1400	3~6	0.12~0.2	側銑 (SIDE MILLING)
UET0304	15	125	13000~14000	1200~1500	0.05~0.1	2.5	溝銑 (SLOTTING)
UET0304	15	125	13000~14000	3600~4000	0.12	2~3	溝銑 (SLOTTING)
UET0304	15	115	12000~13000	1300~1500	0.1~0.15	2~3	溝銑 (SLOTTING)
UET0304	15	100	10000~11000	800~1000	3~6	0.05~0.1	側銑 (SIDE MILLING)
UET0304	15	100	10000~11000	1200~1400	3~6	0.12~0.2	側銑 (SIDE MILLING)
UET0404S	15	125	9500~10500	1200~1500	0.05~0.1	3	溝銑 (SLOTTING)
UET0404S	15	125	9500~10500	3600~4000	0.13	3~4	溝銑 (SLOTTING)
UET0404S	15	115	8500~9500	1300~1500	0.15~0.2	3~4	溝銑 (SLOTTING)
UET0404S	15	100	8000~9000	800~1000	4~8	0.05~0.1	側銑 (SIDE MILLING)
UET0404S	15	90	7000~8000	1000~1300	4~8	0.15~0.25	側銑 (SIDE MILLING)
UET0404	15	125	9500~10500	1200~1500	0.05~0.1	3	溝銑 (SLOTTING)
UET0404	15	125	9500~10500	3600~4000	0.13	3~4	溝銑 (SLOTTING)
UET0404	15	115	8500~9500	1300~1500	0.15~0.2	3~4	溝銑 (SLOTTING)
UET0404	15	100	8000~9000	800~1000	4~8	0.05~0.1	側銑 (SIDE MILLING)
UET0404	15	90	7000~8000	1000~1300	4~8	0.15~0.25	側銑 (SIDE MILLING)

UET4T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UET0504	16	125	7500~8500	1200~1500	0.05~0.12	4	溝銑 (SLOTTING)
UET0504	16	125	7500~8500	3600~4000	0.15	4~5	溝銑 (SLOTTING)
UET0504	16	115	7000~7500	1300~1500	0.2~0.3	4~5	溝銑 (SLOTTING)
UET0504	16	100	6000~6500	800~1000	5~10	0.05~0.12	側銑 (SIDE MILLING)
UET0504	16	90	5500~6000	1000~1300	5~8	0.3~0.4	側銑 (SIDE MILLING)
UET0604	19	125	6400~6900	1200~1500	0.05~0.12	4	溝銑 (SLOTTING)
UET0604	19	125	6400~6900	3600~4000	0.16	4~6	溝銑 (SLOTTING)
UET0604	19	115	5800~6300	1300~1500	0.2~0.3	4~6	溝銑 (SLOTTING)
UET0604	19	100	5200~5700	800~1000	6~12	0.05~0.12	側銑 (SIDE MILLING)
UET0604	19	90	4500~5000	1000~1300	6~9	0.3~0.4	側銑 (SIDE MILLING)
UET0804	23	140	5300~5800	1100~1400	0.05~0.15	6	溝銑 (SLOTTING)
UET0804	23	140	5300~5800	3600~4000	0.2	6~8	溝銑 (SLOTTING)
UET0804	23	110	4000~4500	1300~1600	0.3~0.4	6~8	溝銑 (SLOTTING)
UET0804	23	100	3800~4300	700~900	8~16	0.05~0.15	側銑 (SIDE MILLING)
UET0804	23	100	3800~4300	900~1200	8~16	0.4~0.6	側銑 (SIDE MILLING)
UET1004	30	140	4300~4800	1100~1400	0.05~0.15	8	溝銑 (SLOTTING)
UET1004	30	140	4300~4800	3600~4000	0.2	8~10	溝銑 (SLOTTING)
UET1004	30	100	2900~3400	900~1200	0.3~0.5	8~10	溝銑 (SLOTTING)
UET1004	30	100	2900~3400	500~700	10~20	0.05~0.15	側銑 (SIDE MILLING)
UET1004	30	80	2000~2500	900~1200	10~20	0.6~0.8	側銑 (SIDE MILLING)
UET1204	40	140	3500~4000	900~1200	0.05~0.15	10	溝銑 (SLOTTING)
UET1204	40	140	3500~4000	3000~3400	0.2	10~12	溝銑 (SLOTTING)
UET1204	40	110	2700~3200	900~1200	0.3~0.6	10~12	溝銑 (SLOTTING)
UET1204	40	110	2700~3200	500~700	12~24	0.05~0.15	側銑 (SIDE MILLING)
UET1204	40	75	1800~2200	900~1200	12~24	0.7~0.9	側銑 (SIDE MILLING)
UET1604	50	130	2300~2800	700~900	0.05~0.2	14	溝銑 (SLOTTING)
UET1604	50	130	2300~2800	1300~1600	0.25	14~16	溝銑 (SLOTTING)
UET1604	50	90	1600~2000	600~850	0.4~0.6	14~16	溝銑 (SLOTTING)
UET1604	50	70	1300~1700	350~550	16~32	0.05~0.2	側銑 (SIDE MILLING)
UET1604	50	70	1300~1700	200~400	16	0.8~1.1	側銑 (SIDE MILLING)
UET1604	50	70	1300~1700	200~400	24	0.8~1.1	側銑 (SIDE MILLING)
UET2004	50	130	1800~2200	600~800	0.05~0.2	18	溝銑 (SLOTTING)
UET2004	50	130	1800~2200	1100~1400	0.25	18~20	溝銑 (SLOTTING)
UET2004	50	90	1300~1700	450~650	0.5~0.8	18~20	溝銑 (SLOTTING)
UET2004	50	70	900~1300	250~450	20~40	0.05~0.2	側銑 (SIDE MILLING)
UET2004	50	70	900~1300	200~400	20	1~1.4	側銑 (SIDE MILLING)
UET2004	50	70	900~1300	200~400	30	1~1.4	側銑 (SIDE MILLING)

UET4T

切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UET0104	10	60	19000~20000	800~1000	0.02~0.03	0.8	溝銑 (SLOTTING)
UET0104	10	60	19000~20000	1000~1200	0.03~0.04	0.8~1	溝銑 (SLOTTING)
UET0104	10	60	19000~20000	600~800	1~2	0.02~0.03	側銑 (SIDE MILLING)
UET0104	10	60	19000~20000	1000~1200	1~2	0.03~0.04	側銑 (SIDE MILLING)
UET0154	10	80	17000~18000	800~1000	0.03~0.04	1	溝銑 (SLOTTING)
UET0154	10	80	17000~18000	1100~1300	0.03~0.06	1~1.5	溝銑 (SLOTTING)
UET0154	10	70	16000~17000	600~800	1.5~3	0.03~0.04	側銑 (SIDE MILLING)
UET0154	10	70	16000~17000	1200~1500	1.5~3	0.03~0.06	側銑 (SIDE MILLING)
UET0204	11	80	12000~13000	800~1000	0.04~0.05	1.5	溝銑 (SLOTTING)
UET0204	11	80	12000~13000	1100~1300	0.05~0.07	1~2	溝銑 (SLOTTING)
UET0204	11	65	10000~11000	600~800	2~4	0.04~0.05	側銑 (SIDE MILLING)
UET0204	11	65	10000~11000	1200~1500	2~4	0.05~0.1	側銑 (SIDE MILLING)
UET0304S	12	80	8000~9000	800~1000	0.04~0.06	2.5	溝銑 (SLOTTING)
UET0304S	12	80	8000~9000	900~1100	0.05~0.08	2~3	溝銑 (SLOTTING)
UET0304S	12	65	6500~7500	600~800	3~6	0.04~0.06	側銑 (SIDE MILLING)
UET0304S	12	65	6500~7500	1200~1500	3~6	0.05~0.1	側銑 (SIDE MILLING)
UET0304M	13	80	8000~9000	800~1000	0.04~0.06	2.5	溝銑 (SLOTTING)
UET0304M	13	80	8000~9000	1100~1300	0.05~0.08	2~3	溝銑 (SLOTTING)
UET0304M	13	65	6500~7500	600~800	3~6	0.04~0.06	側銑 (SIDE MILLING)
UET0304M	13	65	6500~7500	1200~1500	3~6	0.05~0.1	側銑 (SIDE MILLING)
UET0304	15	80	8000~9000	800~1000	0.04~0.06	2.5	溝銑 (SLOTTING)
UET0304	15	80	8000~9000	1100~1300	0.05~0.08	2~3	溝銑 (SLOTTING)
UET0304	15	65	6500~7500	600~800	3~6	0.04~0.06	側銑 (SIDE MILLING)
UET0304	15	65	6500~7500	1200~1500	3~6	0.05~0.1	側銑 (SIDE MILLING)
UET0404S	15	80	6500~7000	800~1000	0.04~0.06	3	溝銑 (SLOTTING)
UET0404S	15	80	6500~7000	1100~1300	0.05~0.09	3~4	溝銑 (SLOTTING)
UET0404S	15	65	5000~5500	500~700	4~8	0.04~0.06	側銑 (SIDE MILLING)
UET0404S	15	65	5000~5500	800~1000	4~8	0.05~0.1	側銑 (SIDE MILLING)
UET0404	15	80	6500~7000	800~1000	0.04~0.06	3	溝銑 (SLOTTING)
UET0404	15	80	6500~7000	1100~1300	0.05~0.09	3~4	溝銑 (SLOTTING)
UET0404	15	65	5000~5500	500~700	4~8	0.04~0.06	側銑 (SIDE MILLING)
UET0404	15	65	5000~5500	800~1000	4~8	0.05~0.1	側銑 (SIDE MILLING)
UET0504	16	80	5000~5500	800~1000	0.04~0.07	4	溝銑 (SLOTTING)
UET0504	16	80	5000~5500	1000~1200	0.05~0.1	4~5	溝銑 (SLOTTING)
UET0504	16	65	4000~4500	500~700	5~10	0.04~0.07	側銑 (SIDE MILLING)
UET0504	16	65	4000~4500	800~1000	5~10	0.15~0.2	側銑 (SIDE MILLING)
UET0604	19	80	4000~4500	800~1000	0.05~0.08	4	溝銑 (SLOTTING)
UET0604	19	80	4000~4500	800~1000	0.05~0.1	4~6	溝銑 (SLOTTING)
UET0604	19	65	3300~3800	500~700	6~12	0.05~0.08	側銑 (SIDE MILLING)
UET0604	19	65	3300~3800	800~1000	6~12	0.15~0.2	側銑 (SIDE MILLING)

UET4T

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UET0804	23	80	2900~3400	800~1000	0.05~0.1	6	溝銑 (SLOTTING)
UET0804	23	80	2900~3400	700~900	0.05~0.1	6~8	溝銑 (SLOTTING)
UET0804	23	65	2400~2800	400~600	8~16	0.05~0.1	側銑 (SIDE MILLING)
UET0804	23	65	2400~2800	700~900	8~16	0.2~0.3	側銑 (SIDE MILLING)
UET1004	30	80	2300~2700	800~1000	0.05~0.1	8	溝銑 (SLOTTING)
UET1004	30	80	2300~2700	600~800	0.05~0.12	8~10	溝銑 (SLOTTING)
UET1004	30	65	1800~2200	300~500	10~20	0.05~0.1	側銑 (SIDE MILLING)
UET1004	30	65	1800~2200	700~900	10~20	0.3~0.4	側銑 (SIDE MILLING)
UET1204	40	80	1900~2300	600~800	0.05~0.1	10	溝銑 (SLOTTING)
UET1204	40	80	1900~2300	600~800	0.1~0.15	10~12	溝銑 (SLOTTING)
UET1204	40	65	1600~2000	250~350	12~24	0.05~0.15	側銑 (SIDE MILLING)
UET1204	40	65	1600~2000	600~800	12~24	0.3~0.5	側銑 (SIDE MILLING)
UET1604	50	80	1400~1800	450~650	0.05~0.1	14	溝銑 (SLOTTING)
UET1604	50	80	1400~1800	450~650	0.1~0.15	14~16	溝銑 (SLOTTING)
UET1604	50	65	1400~1800	200~300	16~32	0.05~0.15	側銑 (SIDE MILLING)
UET1604	50	65	1400~1800	400~600	16	0.3~0.5	側銑 (SIDE MILLING)
UET2004	50	80	1100~1500	350~550	0.05~0.15	18	溝銑 (SLOTTING)
UET2004	50	80	1100~1500	350~550	0.1~0.15	18~20	溝銑 (SLOTTING)
UET2004	50	65	800~1200	200~300	20~40	0.05~0.15	側銑 (SIDE MILLING)
UET2004	50	65	800~1200	200~300	20~40	0.3~0.5	側銑 (SIDE MILLING)



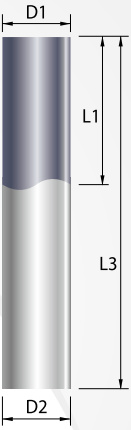
UEX

END MILLS
無敵高硬度立銑刀

直徑 D1	直徑公差 D1 Tolerance
1.0	0 -0.02
1.5	0 -0.02
2.0	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø4	0 -0.008
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm



Super MG | 0.2 µm | 45° | 4 Flutes | HRc ▶65 | G15

精銑 Finishing

中銑 Semi-finishing

粗銑 Roughing

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UEX0104S	1.0	3	50	4
UEX0104	1.0	3	50	6
UEX0154S	1.5	4	50	4
UEX0154	1.5	4	50	6
UEX0204S	2.0	6	50	4
UEX0204	2.0	6	50	6
UEX0304S	3.0	8	50	4
UEX0304	3.0	8	50	6
UEX0404S	4.0	11	50	4
UEX0404	4.0	11	50	6
UEX0504	5.0	13	50	6
UEX0604	6.0	16	50	6
UEX0804	8.0	20	60	8
UEX1004	10.0	22	75	10
UEX1204	12.0	26	75	12
UEX1604	16.0	36	100	16
UEX2004	20.0	40	100	20

unit : mm

UEX4T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UEX0104S	10	60	19000~20000	1100~1400	0.03~0.05	0.8	溝銑 (SLOTTING)
UEX0104S	10	60	19000~20000	2600~3000	0.06	0.8~1	溝銑 (SLOTTING)
UEX0104S	10	60	19000~20000	1100~1400	0.07~0.1	0.8~1	溝銑 (SLOTTING)
UEX0104S	10	60	19000~20000	800~1000	1~2	0.03~0.05	側銑 (SIDE MILLING)
UEX0104S	10	60	19000~20000	1000~1200	1~2	0~0.1	側銑 (SIDE MILLING)
UEX0104	10	60	19000~20000	1100~1400	0.03~0.05	0.8	溝銑 (SLOTTING)
UEX0104	10	60	19000~20000	3000~3400	0.06	0.8~1	溝銑 (SLOTTING)
UEX0104	10	60	19000~20000	1300~1500	0.07~0.1	0.8~1	溝銑 (SLOTTING)
UEX0104	10	60	19000~20000	800~1000	1~2	0.03~0.05	側銑 (SIDE MILLING)
UEX0104	10	60	19000~20000	1100~1300	1~2	0~0.1	側銑 (SIDE MILLING)
UEX0154S	10	90	18000~19000	1100~1400	0.04~0.07	1	溝銑 (SLOTTING)
UEX0154S	10	90	18000~19000	2600~3000	0.08	1~1.5	溝銑 (SLOTTING)
UEX0154S	10	80	17000~18000	1300~1500	0.1~0.12	1~1.5	溝銑 (SLOTTING)
UEX0154S	10	80	17000~18000	800~1000	1.5~3	0.04~0.06	側銑 (SIDE MILLING)
UEX0154S	10	80	17000~18000	1000~1200	1.5~3	0.1~0.12	側銑 (SIDE MILLING)
UEX0154	10	90	18000~19000	1100~1400	0.04~0.07	1	溝銑 (SLOTTING)
UEX0154	10	90	18000~19000	3000~3400	0.08	1~1.5	溝銑 (SLOTTING)
UEX0154	10	80	17000~18000	1400~1600	0.1~0.12	1~1.5	溝銑 (SLOTTING)
UEX0154	10	80	17000~18000	800~1000	1.5~3	0.04~0.06	側銑 (SIDE MILLING)
UEX0154	10	80	17000~18000	1100~1300	1.5~3	0.1~0.12	側銑 (SIDE MILLING)
UEX0204S	11	100	16000~17000	1100~1400	0.05~0.08	1.5	溝銑 (SLOTTING)
UEX0204S	11	100	16000~17000	3000~3400	0.1	1~2	溝銑 (SLOTTING)
UEX0204S	11	90	14000~15000	1300~1500	0.1~0.15	1~2	溝銑 (SLOTTING)
UEX0204S	11	90	14000~15000	800~1000	2~4	0.05~0.05	側銑 (SIDE MILLING)
UEX0204S	11	90	14000~15000	1000~1200	2~4	0.12~0.2	側銑 (SIDE MILLING)
UEX0204	11	100	16000~17000	1100~1400	0.05~0.08	1.5	溝銑 (SLOTTING)
UEX0204	11	100	16000~17000	3000~3400	0.1	1~2	溝銑 (SLOTTING)
UEX0204	11	90	14000~15000	1400~1600	0.1~0.15	1~2	溝銑 (SLOTTING)
UEX0204	11	90	14000~15000	800~1000	2~4	0.05~0.05	側銑 (SIDE MILLING)
UEX0204	11	90	14000~15000	1100~1300	2~4	0.12~0.2	側銑 (SIDE MILLING)
UEX0304S	13	125	13000~14000	1200~1500	0.05~0.1	2.5	溝銑 (SLOTTING)
UEX0304S	13	125	13000~14000	3600~4000	0.12	2~3	溝銑 (SLOTTING)
UEX0304S	13	115	12000~13000	1300~1500	0.1~0.15	2~3	溝銑 (SLOTTING)
UEX0304S	13	100	10000~11000	800~1000	3~6	0.05~0.1	側銑 (SIDE MILLING)
UEX0304S	13	100	10000~11000	1200~1400	3~6	0.12~0.2	側銑 (SIDE MILLING)
UEX0304	15	125	13000~14000	1200~1500	0.05~0.1	2.5	溝銑 (SLOTTING)
UEX0304	15	125	13000~14000	3600~4000	0.12	2~3	溝銑 (SLOTTING)
UEX0304	15	115	12000~13000	1300~1500	0.1~0.15	2~3	溝銑 (SLOTTING)
UEX0304	15	100	10000~11000	800~1000	3~6	0.05~0.1	側銑 (SIDE MILLING)
UEX0304	15	100	10000~11000	1200~1400	3~6	0.12~0.2	側銑 (SIDE MILLING)

UEX4T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UEX0404S	15	125	9500~10500	1200~1500	0.05~0.1	3	溝銑 (SLOTTING)
UEX0404S	15	125	9500~10500	3600~4000	0.13	3~4	溝銑 (SLOTTING)
UEX0404S	15	115	8500~9500	1300~1500	0.15~0.2	3~4	溝銑 (SLOTTING)
UEX0404S	15	100	8000~9000	800~1000	4~8	0.05~0.1	側銑 (SIDE MILLING)
UEX0404S	15	90	7000~8000	1000~1300	4~8	0.15~0.25	側銑 (SIDE MILLING)
UEX0404	15	125	9500~10500	1200~1500	0.05~0.1	3	溝銑 (SLOTTING)
UEX0404	15	125	9500~10500	3600~4000	0.13	3~4	溝銑 (SLOTTING)
UEX0404	15	115	8500~9500	1300~1500	0.15~0.2	3~4	溝銑 (SLOTTING)
UEX0404	15	100	8000~9000	800~1000	4~8	0.05~0.1	側銑 (SIDE MILLING)
UEX0404	15	90	7000~8000	1000~1300	4~8	0.15~0.25	側銑 (SIDE MILLING)
UEX0504	16	125	7500~8500	1200~1500	0.05~0.12	4	溝銑 (SLOTTING)
UEX0504	16	125	7500~8500	3600~4000	0.15	4~5	溝銑 (SLOTTING)
UEX0504	16	115	7000~7500	1300~1500	0.2~0.3	4~5	溝銑 (SLOTTING)
UEX0504	16	100	6000~6500	800~1000	5~10	0.05~0.12	側銑 (SIDE MILLING)
UEX0504	16	90	5500~6000	1000~1300	5~8	0.3~0.4	側銑 (SIDE MILLING)
UEX0604	19	125	6400~6900	1200~1500	0.05~0.12	4	溝銑 (SLOTTING)
UEX0604	19	125	6400~6900	3600~4000	0.16	4~6	溝銑 (SLOTTING)
UEX0604	19	115	5800~6300	1300~1500	0.2~0.3	4~6	溝銑 (SLOTTING)
UEX0604	19	100	5200~5700	800~1000	6~12	0.05~0.12	側銑 (SIDE MILLING)
UEX0604	19	90	4500~5000	1000~1300	6~9	0.3~0.4	側銑 (SIDE MILLING)
UEX0804	23	140	5300~5800	1100~1400	0.05~0.15	6	溝銑 (SLOTTING)
UEX0804	23	140	5300~5800	3600~4000	0.2	6~8	溝銑 (SLOTTING)
UEX0804	23	110	4000~4500	1300~1600	0.3~0.4	6~8	溝銑 (SLOTTING)
UEX0804	23	100	3800~4300	700~900	8~16	0.05~0.15	側銑 (SIDE MILLING)
UEX0804	23	100	3800~4300	900~1200	8~16	0.4~0.6	側銑 (SIDE MILLING)
UEX1004	30	140	4300~4800	1100~1400	0.05~0.15	8	溝銑 (SLOTTING)
UEX1004	30	140	4300~4800	3600~4000	0.2	8~10	溝銑 (SLOTTING)
UEX1004	30	100	2900~3400	900~1200	0.3~0.5	8~10	溝銑 (SLOTTING)
UEX1004	30	100	2900~3400	500~700	10~20	0.05~0.15	側銑 (SIDE MILLING)
UEX1004	30	80	2000~2500	900~1200	10~20	0.6~0.8	側銑 (SIDE MILLING)
UEX1204	40	140	3500~4000	900~1200	0.05~0.15	10	溝銑 (SLOTTING)
UEX1204	40	140	3500~4000	3000~3400	0.2	10~12	溝銑 (SLOTTING)
UEX1204	40	110	2700~3200	900~1200	0.3~0.6	10~12	溝銑 (SLOTTING)
UEX1204	40	110	2700~3200	500~700	12~24	0.05~0.15	側銑 (SIDE MILLING)
UEX1204	40	75	1800~2200	900~1200	12~24	0.7~0.9	側銑 (SIDE MILLING)

UEX4T

切削條件表 *Milling Conditions*

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UEX1604	50	130	2300~2800	700~900	0.05~0.2	14	溝銑 (SLOTTING)
UEX1604	50	130	2300~2800	1300~1600	0.25	14~16	溝銑 (SLOTTING)
UEX1604	50	90	1600~2000	600~850	0.4~0.6	14~16	溝銑 (SLOTTING)
UEX1604	50	70	1300~1700	350~550	16~32	0.05~0.2	側銑 (SIDE MILLING)
UEX1604	50	70	1300~1700	200~400	16	0.8~1.1	側銑 (SIDE MILLING)
UEX1604	50	70	1300~1700	200~400	24	0.8~1.1	側銑 (SIDE MILLING)
UEX2004	50	130	1800~2200	600~800	0.05~0.2	18	溝銑 (SLOTTING)
UEX2004	50	130	1800~2200	1100~1400	0.25	18~20	溝銑 (SLOTTING)
UEX2004	50	90	1300~1700	450~650	0.5~0.8	18~20	溝銑 (SLOTTING)
UEX2004	50	70	900~1300	250~450	20~40	0.05~0.2	側銑 (SIDE MILLING)
UEX2004	50	70	900~1300	200~400	20	1~1.4	側銑 (SIDE MILLING)
UEX2004	50	70	900~1300	200~400	30	1~1.4	側銑 (SIDE MILLING)

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UEX0104S	10	60	19000~20000	900~1100	0.03~0.04	0.8	溝銑 (SLOTTING)
UEX0104S	10	60	19000~20000	1000~1300	0.05	0.8~1	溝銑 (SLOTTING)
UEX0104S	10	60	19000~20000	500~750	1~2	0.03~0.05	側銑 (SIDE MILLING)
UEX0104S	10	60	19000~20000	700~900	1~2	0~0.06	側銑 (SIDE MILLING)
UEX0104	10	60	19000~20000	900~1100	0.03~0.04	0.8	溝銑 (SLOTTING)
UEX0104	10	60	19000~20000	1200~1500	0.05	0.8~1	溝銑 (SLOTTING)
UEX0104	10	60	19000~20000	600~800	1~2	0.03~0.05	側銑 (SIDE MILLING)
UEX0104	10	60	19000~20000	800~1000	1~2	0~0.06	側銑 (SIDE MILLING)
UEX0154S	10	80	17000~18000	900~1100	0.03~0.05	1	溝銑 (SLOTTING)
UEX0154S	10	80	17000~18000	1000~1300	0.06	1~1.5	溝銑 (SLOTTING)
UEX0154S	10	75	16000~17000	500~750	1.5~3	0.03~0.06	側銑 (SIDE MILLING)
UEX0154S	10	75	16000~17000	700~900	1.5~3	0~0.08	側銑 (SIDE MILLING)
UEX0154	10	80	17000~18000	900~1100	0.03~0.05	1	溝銑 (SLOTTING)
UEX0154	10	80	17000~18000	1200~1500	0.06	1~1.5	溝銑 (SLOTTING)
UEX0154	10	75	16000~17000	600~800	1.5~3	0.03~0.06	側銑 (SIDE MILLING)
UEX0154	10	75	16000~17000	800~1000	1.5~3	0~0.08	側銑 (SIDE MILLING)

UEX4T

切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UEX0204S	11	95	14000~15000	900~1100	0.04~0.06	1.5	溝銑 (SLOTTING)
UEX0204S	11	95	14000~15000	1000~1300	0.07	1~2	溝銑 (SLOTTING)
UEX0204S	11	80	12000~13000	500~750	2~4	0.04~0.07	側銑 (SIDE MILLING)
UEX0204S	11	80	12000~13000	700~900	2~4	0~0.1	側銑 (SIDE MILLING)
UEX0204	11	95	14000~15000	900~1100	0.04~0.06	1.5	溝銑 (SLOTTING)
UEX0204	11	95	14000~15000	1200~1500	0.07	1~2	溝銑 (SLOTTING)
UEX0204	11	80	12000~13000	600~800	2~4	0.04~0.07	側銑 (SIDE MILLING)
UEX0204	11	80	12000~13000	800~1000	2~4	0~0.1	側銑 (SIDE MILLING)
UEX0304S	12	95	9800~10000	900~1100	0.05~0.07	2.5	溝銑 (SLOTTING)
UEX0304S	12	95	9800~10000	1000~1300	0.08	2~3	溝銑 (SLOTTING)
UEX0304S	12	80	8000~8500	500~750	3~6	0.05~0.08	側銑 (SIDE MILLING)
UEX0304S	12	80	8000~8500	700~900	3~6	0~0.15	側銑 (SIDE MILLING)
UEX0304	15	95	9800~10000	900~1100	0.05~0.07	2.5	溝銑 (SLOTTING)
UEX0304	15	95	9800~10000	1200~1500	0.08	2~3	溝銑 (SLOTTING)
UEX0304	15	80	8000~8500	600~800	3~6	0.05~0.08	側銑 (SIDE MILLING)
UEX0304	15	80	8000~8500	800~1000	3~6	0~0.15	側銑 (SIDE MILLING)
UEX0404S	15	95	7400~7600	900~1100	0.05~0.08	3	溝銑 (SLOTTING)
UEX0404S	15	95	7400~7600	1000~1300	0.09	3~4	溝銑 (SLOTTING)
UEX0404S	15	80	6300~6500	500~750	4~8	0.05~0.09	側銑 (SIDE MILLING)
UEX0404S	15	80	6300~6500	700~900	4~8	0~0.18	側銑 (SIDE MILLING)
UEX0404	15	95	7400~7600	900~1100	0.05~0.08	3	溝銑 (SLOTTING)
UEX0404	15	95	7400~7600	1200~1500	0.09	3~4	溝銑 (SLOTTING)
UEX0404	15	80	6300~6500	600~800	4~8	0.05~0.09	側銑 (SIDE MILLING)
UEX0404	15	80	6300~6500	800~1000	4~8	0~0.2	側銑 (SIDE MILLING)
UEX0504	16	95	6000~6200	900~1100	0.05~0.09	4	溝銑 (SLOTTING)
UEX0504	16	95	6000~6200	1200~1500	0.1~0.12	4~5	溝銑 (SLOTTING)
UEX0504	16	80	5000~5200	600~800	5~10	0.05~0.1	側銑 (SIDE MILLING)
UEX0504	16	80	5000~5200	800~1000	5~10	0~0.2	側銑 (SIDE MILLING)
UEX0604	20	95	4900~5100	900~1100	0.05~0.1	4	溝銑 (SLOTTING)
UEX0604	20	95	4900~5100	1200~1500	0.1~0.15	4~6	溝銑 (SLOTTING)
UEX0604	20	80	4000~4200	600~800	6~12	0.05~0.1	側銑 (SIDE MILLING)
UEX0604	20	85	4200~4500	800~1000	6~12	0.1~0.2	側銑 (SIDE MILLING)
UEX0804	24	95	3800~4000	800~1000	0.05~0.1	6	溝銑 (SLOTTING)
UEX0804	24	95	3800~4000	1000~1400	0.1~0.15	6~8	溝銑 (SLOTTING)
UEX0804	24	80	3000~3400	500~700	8~16	0.05~0.15	側銑 (SIDE MILLING)
UEX0804	24	75	3000~3200	900~1300	8~16	0.1~0.25	側銑 (SIDE MILLING)
UEX1004	30	95	3000~3200	800~1000	0.05~0.1	8	溝銑 (SLOTTING)
UEX1004	30	95	3000~3200	900~1200	0.1~0.15	8~10	溝銑 (SLOTTING)
UEX1004	30	80	2500~2800	400~600	10~20	0.05~0.15	側銑 (SIDE MILLING)
UEX1004	30	65	1900~2200	900~1300	10~20	0.2~0.4	側銑 (SIDE MILLING)

UEX4T

切削條件表 Milling Conditions

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UEX1204	37	95	2400~2600	700~900	0.05~0.12	10	溝銑 (SLOTTING)
UEX1204	37	95	2400~2600	800~1000	0.12~0.2	10~12	溝銑 (SLOTTING)
UEX1204	37	80	2000~2300	300~500	12~24	0.05~0.15	側銑 (SIDE MILLING)
UEX1204	37	65	1600~1800	800~1000	12~24	0.3~0.5	側銑 (SIDE MILLING)
UEX1604	45	95	1800~2000	600~800	0.05~0.15	14	溝銑 (SLOTTING)
UEX1604	45	95	1800~2000	700~900	0.15~0.2	14~16	溝銑 (SLOTTING)
UEX1604	45	80	1500~1700	300~500	16~32	0.05~0.2	側銑 (SIDE MILLING)
UEX1604	45	65	1200~1400	700~900	16	0.4~0.6	側銑 (SIDE MILLING)
UEX2004	50	95	1400~1600	400~600	0.05~0.15	18	溝銑 (SLOTTING)
UEX2004	50	95	1400~1600	500~700	0.15~0.2	18~20	溝銑 (SLOTTING)
UEX2004	50	80	1200~1400	200~300	20~40	0.05~0.2	側銑 (SIDE MILLING)
UEX2004	50	65	950~1150	500~700	20~40	0.4~0.7	側銑 (SIDE MILLING)

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UEX0104S	10	60	19000~20000	600~800	0.02~0.03	0.8	溝銑 (SLOTTING)
UEX0104S	10	60	19000~20000	400~600	1~2	0.02~0.03	側銑 (SIDE MILLING)
UEX0104S	10	50	15000~16000	400~600	1~2	0.03~0.04	側銑 (SIDE MILLING)
UEX0104	10	60	19000~20000	600~800	0.02~0.03	0.8	溝銑 (SLOTTING)
UEX0104	10	60	19000~20000	400~600	1~2	0.02~0.03	側銑 (SIDE MILLING)
UEX0104	10	50	15000~16000	400~600	1~2	0.03~0.04	側銑 (SIDE MILLING)
UEX0154S	10	75	16000~17000	600~800	0.02~0.03	1	溝銑 (SLOTTING)
UEX0154S	10	65	13500~14000	400~600	1.5~3	0.02~0.03	側銑 (SIDE MILLING)
UEX0154S	10	50	10000~10600	400~600	1.5~3	0.04~0.05	側銑 (SIDE MILLING)
UEX0154	10	75	16000~17000	600~800	0.02~0.03	1	溝銑 (SLOTTING)
UEX0154	10	65	13500~14000	400~600	1.5~3	0.02~0.03	側銑 (SIDE MILLING)
UEX0154	10	50	10000~10600	400~600	1.5~3	0.04~0.05	側銑 (SIDE MILLING)

UEX4T

切削條件表 Milling Conditions

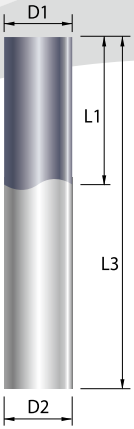
被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UEX0204S	11	80	12000~13000	600~800	0.02~0.04	1.5	溝銑 (SLOTTING)
UEX0204S	11	65	10000~15000	400~600	2~4	0.02~0.04	側銑 (SIDE MILLING)
UEX0204S	11	50	7800~8200	400~600	2~4	0.05~0.06	側銑 (SIDE MILLING)
UEX0204	11	80	12000~13000	600~800	0.02~0.04	1.5	溝銑 (SLOTTING)
UEX0204	11	65	10000~15000	400~600	2~4	0.02~0.04	側銑 (SIDE MILLING)
UEX0204	11	50	7800~8200	400~600	2~4	0.05~0.06	側銑 (SIDE MILLING)
UEX0304S	12	80	8000~8500	600~800	0.03~0.05	2.5	溝銑 (SLOTTING)
UEX0304S	12	65	6800~7000	400~600	3~6	0.03~0.05	側銑 (SIDE MILLING)
UEX0304S	12	50	5200~5400	400~600	3~6	0.06~0.08	側銑 (SIDE MILLING)
UEX0304	15	80	8000~8500	600~800	0.03~0.05	2.5	溝銑 (SLOTTING)
UEX0304	15	65	6800~7000	400~600	3~6	0.03~0.05	側銑 (SIDE MILLING)
UEX0304	15	50	5200~5400	400~600	3~6	0.06~0.08	側銑 (SIDE MILLING)
UEX0404S	15	80	6300~6500	600~800	0.04~0.05	3	溝銑 (SLOTTING)
UEX0404S	15	65	5100~5300	400~600	4~8	0.04~0.05	側銑 (SIDE MILLING)
UEX0404S	15	50	3900~4100	400~600	4~8	0.05~0.1	側銑 (SIDE MILLING)
UEX0404	15	80	6300~6500	600~800	0.04~0.05	3	溝銑 (SLOTTING)
UEX0404	15	65	5100~5300	400~600	4~8	0.04~0.05	側銑 (SIDE MILLING)
UEX0404	15	50	3900~4100	400~600	4~8	0.05~0.1	側銑 (SIDE MILLING)
UEX0504	16	80	5000~5200	600~800	0.04~0.05	4	溝銑 (SLOTTING)
UEX0504	16	65	4000~4200	300~500	5~10	0.04~0.05	側銑 (SIDE MILLING)
UEX0504	16	50	3100~3300	300~500	5~10	0.05~0.1	側銑 (SIDE MILLING)
UEX0604	20	80	4100~4300	600~800	0.04~0.06	4	溝銑 (SLOTTING)
UEX0604	20	65	3400~3600	300~500	6	0.04~0.06	側銑 (SIDE MILLING)
UEX0604	20	40	2000~2200	300~500	6	0.06~0.11	側銑 (SIDE MILLING)
UEX0804	24	80	3100~3300	500~700	0.04~0.08	6	溝銑 (SLOTTING)
UEX0804	24	75	2900~3100	400~600	8~16	0.04~0.08	側銑 (SIDE MILLING)
UEX0804	24	60	2300~2500	450~700	8~16	0.08~0.13	側銑 (SIDE MILLING)
UEX1004	30	80	2500~2700	500~700	0.05~0.1	9	溝銑 (SLOTTING)
UEX1004	30	75	2200~2500	300~500	10~20	0.05~0.1	側銑 (SIDE MILLING)
UEX1004	30	60	1800~2000	400~600	10~20	0.1~0.15	側銑 (SIDE MILLING)
UEX1204	37	80	2000~2300	500~700	0.05~0.1	10	溝銑 (SLOTTING)
UEX1204	37	75	1900~2100	250~450	12~24	0.05~0.1	側銑 (SIDE MILLING)
UEX1204	37	60	1500~1700	300~500	12~24	0.1~0.2	側銑 (SIDE MILLING)
UEX1604	45	80	1500~1700	400~500	0.05~0.1	14	溝銑 (SLOTTING)
UEX1604	45	75	1400~1600	200~400	16~32	0.05~0.1	側銑 (SIDE MILLING)
UEX1604	45	60	1100~1300	250~450	16~32	0.15~0.25	側銑 (SIDE MILLING)
UEX2004	50	80	1200~1400	300~400	0.05~0.15	18	溝銑 (SLOTTING)
UEX2004	50	75	1100~1300	150~350	20~40	0.05~0.15	側銑 (SIDE MILLING)
UEX2004	50	60	850~1050	200~350	20~40	0.2~0.3	側銑 (SIDE MILLING)

UVT

END MILLS
高硬度立銑刀





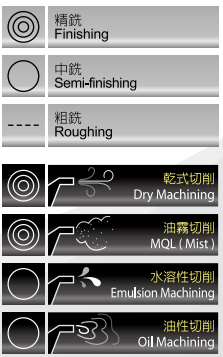
直徑 D1	直徑公差 D1 Tolerance	柄徑 D2(h6)	柄徑公差 D2 Tolerance
6.0	0 -0.02	Ø6	0 -0.008
8.0	0 -0.025	Ø8	0 -0.009
10.0	0 -0.03	Ø10	0 -0.009
12.0	0 -0.035	Ø12	0 -0.011
16.0	0 -0.04	Ø16	0 -0.011
20.0	0 -0.04	Ø20	0 -0.013

unit : mm

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UVT0606	6.0	16	50	6
UVT0606L	6.0	16	75	6
UVT0806	8.0	20	60	8
UVT0806L	8.0	20	100	8
UVT1006	10.0	25	75	10
UVT1006L	10.0	25	100	10
UVT1206	12.0	30	75	12
UVT1206L	12.0	30	100	12
UVT1606	16.0	40	100	16
UVT2006	20.0	45	100	20

unit : mm





UVT6T

切削條件表 Milling Conditions

被切削材 Work Material	調質鋼 / 預硬鋼 : *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UVT0606	20	130	6700~7200	1300~1500	0.1~0.2	4~6	溝銑 (SLOTTING)
UVT0606	20	130	6700~7200	1000~1300	0.05~0.1	4~6	溝銑 (SLOTTING)
UVT0606	20	85	4000~4500	1000~1200	6~12	0.15~0.25	側銑 (SIDE MILLING)
UVT0606	20	85	4000~4500	800~1000	6~12	0.05~0.12	側銑 (SIDE MILLING)
UVT0806	25	130	4800~5300	1300~1600	0.1~0.2	6~8	溝銑 (SLOTTING)
UVT0806	25	130	4800~5300	1000~1300	0.05~0.1	6~8	溝銑 (SLOTTING)
UVT0806	25	85	3200~3500	1200~1500	8~16	0.2~0.3	側銑 (SIDE MILLING)
UVT0806	25	85	3200~3500	700~900	8~16	0.05~0.15	側銑 (SIDE MILLING)
UVT1006	30	130	4000~4500	1300~1600	0.15~0.25	8~10	溝銑 (SLOTTING)
UVT1006	30	130	4000~4500	1000~1300	0.05~0.15	8~10	溝銑 (SLOTTING)
UVT1006	30	85	2500~3000	1100~1400	10~20	0.2~0.3	側銑 (SIDE MILLING)
UVT1006	30	85	2500~3000	650~850	10~20	0.05~0.15	側銑 (SIDE MILLING)
UVT1206	35	130	3200~3700	1100~1400	0.15~0.25	10~12	溝銑 (SLOTTING)
UVT1206	35	130	3200~3700	900~1200	0.05~0.15	10~12	溝銑 (SLOTTING)
UVT1206	35	85	2000~2500	900~1200	12~24	0.2~0.3	側銑 (SIDE MILLING)
UVT1206	35	85	2000~2500	600~800	12~24	0.05~0.15	側銑 (SIDE MILLING)
UVT1606	50	130	2400~2900	900~1200	0.15~0.25	14~16	溝銑 (SLOTTING)
UVT1606	50	130	2400~2900	700~900	0.05~0.15	14~16	溝銑 (SLOTTING)
UVT1606	50	85	1500~2000	800~1000	16~32	0.2~0.4	側銑 (SIDE MILLING)
UVT1606	50	85	1500~2000	500~700	16~32	0.05~0.2	側銑 (SIDE MILLING)
UVT2006	50	130	1800~2200	700~900	0.2~0.4	18	溝銑 (SLOTTING)
UVT2006	50	130	1800~2200	600~800	0.05~0.15	18~20	溝銑 (SLOTTING)
UVT2006	50	85	1300~1500	600~800	20~40	0.3~0.5	側銑 (SIDE MILLING)
UVT2006	50	85	1300~1500	300~450	20~40	0.05~0.2	側銑 (SIDE MILLING)

UVT6T

切削條件表 *Milling Conditions*

被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

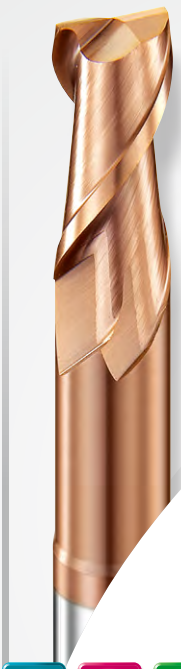
型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UVT0606	20	105	5400~5600	1000~1300	0.05~0.1	4	溝銑 (SLOTTING)
UVT0606	20	95	4900~5100	1200~1500	0.1~0.18	4~6	溝銑 (SLOTTING)
UVT0606	20	80	4000~4200	600~850	6~12	0.05~0.1	側銑 (SIDE MILLING)
UVT0606	20	80	4000~4200	900~1200	6~12	0.1~0.2	側銑 (SIDE MILLING)
UVT0806	24	115	4500~4700	1000~1300	0.05~0.1	6	溝銑 (SLOTTING)
UVT0806	24	115	4500~4700	1300~1600	0.1~0.2	6~8	溝銑 (SLOTTING)
UVT0806	24	85	3300~3600	600~850	8~16	0.05~0.15	側銑 (SIDE MILLING)
UVT0806	24	75	3000~3200	1000~1400	8~16	0.15~0.3	側銑 (SIDE MILLING)
UVT1006	30	95	3000~3200	900~1200	0.05~0.1	8	溝銑 (SLOTTING)
UVT1006	30	95	3000~3200	1100~1400	0.1~0.2	8~10	溝銑 (SLOTTING)
UVT1006	30	80	2500~2800	600~850	10~20	0.05~0.15	側銑 (SIDE MILLING)
UVT1006	30	75	2400~2600	1000~1400	10~20	0.3~0.5	側銑 (SIDE MILLING)
UVT1206	37	95	2400~2600	800~1100	0.05~0.12	10	溝銑 (SLOTTING)
UVT1206	37	95	2400~2600	900~1200	0.12~0.25	10~12	溝銑 (SLOTTING)
UVT1206	37	80	2000~2300	500~700	12~24	0.05~0.15	側銑 (SIDE MILLING)
UVT1206	37	70	1700~1900	900~1100	12~24	0.3~0.5	側銑 (SIDE MILLING)
UVT1606	45	95	1800~2000	700~900	0.05~0.15	14	溝銑 (SLOTTING)
UVT1606	45	95	1800~2000	800~1000	0.15~0.25	14~16	溝銑 (SLOTTING)
UVT1606	45	80	1500~1700	350~550	16~32	0.05~0.2	側銑 (SIDE MILLING)
UVT1606	45	70	1300~1500	700~900	16	0.4~0.6	側銑 (SIDE MILLING)
UVT2006	50	95	1400~1600	600~800	0.05~0.15	18	溝銑 (SLOTTING)
UVT2006	50	95	1400~1600	600~800	0.15~0.25	18~20	溝銑 (SLOTTING)
UVT2006	50	80	1200~1400	300~450	20~40	0.05~0.2	側銑 (SIDE MILLING)
UVT2006	50	70	1000~1300	600~800	20~40	0~0.6	側銑 (SIDE MILLING)

UVT6T

切削條件表 Milling Conditions

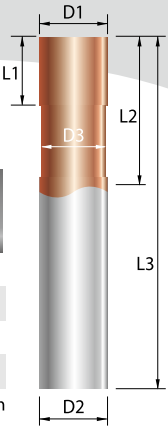
被切削材 Work Material	熱處理鋼 : *Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	乾式 / 油霧冷卻 Dry/MQL coolant

型號 Type NO.	刀具伸長量 Extension Length(mm)	切削速度 (m/min) Cutting Speed	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UVT0606	20	85	4400~4600	800~1000	0.05~0.08	4	溝銑 (SLOTTING)
UVT0606	20	65	3400~3600	400~600	6	0.05~0.1	側銑 (SIDE MILLING)
UVT0606	20	60	3000~3200	500~700	6	0.1~0.15	側銑 (SIDE MILLING)
UVT0806	24	80	3100~3300	700~900	0.05~0.1	6	溝銑 (SLOTTING)
UVT0806	24	85	3300~3500	500~750	8~16	0.05~0.1	側銑 (SIDE MILLING)
UVT0806	24	85	3300~3500	600~800	8~16	0.1~0.2	側銑 (SIDE MILLING)
UVT1006	30	80	2500~2700	600~800	0.05~0.1	9	溝銑 (SLOTTING)
UVT1006	30	80	2400~2600	500~700	10~20	0~0.15	側銑 (SIDE MILLING)
UVT1006	30	80	2400~2600	600~800	10~20	0.15~0.3	側銑 (SIDE MILLING)
UVT1206	37	80	2000~2300	600~800	0.05~0.1	10	溝銑 (SLOTTING)
UVT1206	37	80	2000~2300	400~550	12~24	0.05~0.15	側銑 (SIDE MILLING)
UVT1206	37	80	2000~2300	450~650	12~24	0.15~0.3	側銑 (SIDE MILLING)
UVT1606	45	80	1500~1700	500~650	0.05~0.12	14	溝銑 (SLOTTING)
UVT1606	45	80	1500~1700	300~450	16~32	0.05~0.15	側銑 (SIDE MILLING)
UVT1606	45	70	1300~1500	300~450	16~32	0.15~0.3	側銑 (SIDE MILLING)
UVT2006	50	80	1200~1400	350~450	0.05~0.15	18	溝銑 (SLOTTING)
UVT2006	50	80	1200~1400	250~350	20	0.05~0.2	側銑 (SIDE MILLING)
UVT2006	50	70	1000~1200	250~350	20	0.2~0.35	側銑 (SIDE MILLING)



2T ULE

END MILLS
極超微粒長柄立銑刀



直徑 D1	直徑公差 D1 Tolerance	柄徑 D2(h6)	柄徑公差 D2 Tolerance
6.0	0 -0.02	Ø6	0 -0.008
8.0	0 -0.025	Ø8	0 -0.009
10.0	0 -0.03	Ø10	0 -0.009
12.0	0 -0.035	Ø12	0 -0.011

unit : mm

Super MG | 0.4 µm | 35° | 2 Flutes | HRc ▶60 | G12

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia.	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ULE0602	6.0	5.80	16	40	100	6
ULE0602X	6.0	5.80	16	40	150	6
ULE0802	8.0	7.70	20	50	100	8
ULE0802X	8.0	7.70	20	50	150	8
ULE1002	10.0	9.60	25	50	100	10
ULE1002X	10.0	9.60	25	50	150	10
ULE1202	12.0	11.5	30	50	100	12
ULE1202X	12.0	11.5	30	50	150	12

unit : mm

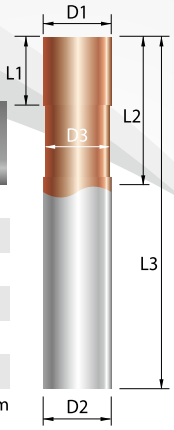
精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing

乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

4T ULE

END MILLS
極超微粒長柄立銑刀





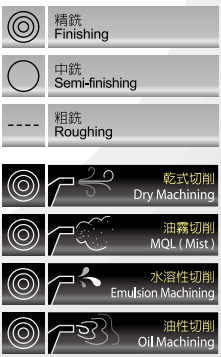
直徑 D1	直徑公差 D1 Tolerance	柄徑 D2(h6)	柄徑公差 D2 Tolerance
6.0	$^{0}_{-0.02}$	Ø6	$^{0}_{-0.008}$
8.0	$^{0}_{-0.025}$	Ø8	$^{0}_{-0.009}$
10.0	$^{0}_{-0.03}$	Ø10	$^{0}_{-0.009}$
12.0	$^{0}_{-0.035}$	Ø12	$^{0}_{-0.011}$
16.0	$^{0}_{-0.04}$	Ø16	$^{0}_{-0.011}$
20.0	$^{0}_{-0.04}$	Ø20	$^{0}_{-0.013}$

unit : mm

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia.	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
ULE0604	6.0	5.80	16	40	100	6
ULE0604X	6.0	5.80	16	40	150	6
ULE0804	8.0	7.70	20	50	100	8
ULE0804X	8.0	7.70	20	50	150	8
ULE1004	10.0	9.60	25	50	100	10
ULE1004X	10.0	9.60	25	50	150	10
ULE1204	12.0	11.5	30	50	100	12
ULE1204X	12.0	11.5	30	50	150	12
ULE1604X	16.0	15.5	40	65	150	16
ULE2004X	20.0	19.0	45	70	150	20

unit : mm





DHF高速、高硬度系列刀具推薦表

SELECTION OF DHF High Speed & High Hard Cutting Series

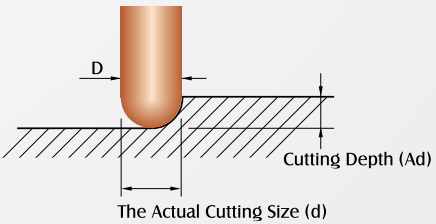
被切削材 Work Material	平刀 End Mills			圓鼻刀 Corner Radius End Mills			球刀 Ball Nose End Mills		
	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection
合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2** (HRc 23~32)	UET	-	-	UOR UXR ULXR	UER ULR	-	UBX UHBX	UBG UHBG	UB UHB
調質鋼/預硬鋼 *Prehardened Steels* **NAK80 : 1.2083 : AISI420 : M310** (HRc36~45)	UEX	UVT	UET	UOR UXR ULXR	UER ULR	-	UBG UHBG	UBX UHBX	UB UHB
熱處理鋼 *Hardened Steels* **SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420** (HRc48~54)	UVT	UEX	UET	UEYR UVTR ULXR	UOR UVR UPR UGR ULR	UXR UER UKR	UOB	UBT UQB UHBT	UBX UHBX
熱處理鋼 *Hardened Steels* **SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2** (HRc55~62)	UVT	UEX	UET	UEYR UVTR	UVR UPR	UGR	UOB	UBT UQB UHBT	-
沃斯田鐵系不銹鋼 *Stainless Steels* **SUS304 : 1.4301 : AISI 304** (HRc 28~32)	UET	-	-	UVR	UXR	UER	UB UHB	UBX UHBX	UBG UHBG
(麻田散鐵, 析出硬化) 系不銹鋼 *Stainless Steels* **SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH** (HRc 28~32)	UET	-	-	UVR	UXR	UER	UB UHB	UBX UHBX	UBG UHBG

球刀實際切削直徑 BALL NOSE REAL CUTTING DIAMETER

球徑 R Ball R (mm)	直徑 Ø Mill Dia. (mm)	切削深度 (Ad) Depth of Cut (mm/min)														
		0.01	0.02	0.03	0.04	0.05	0.08	0.1	0.15	0.2	0.3	0.5	0.8	1.0	2.0	3.0
0.1	0.2	0.087	0.12	0.143	0.16	0.173	0.196	0.2	----	----	----	----	----	----	----	----
0.2	0.4	0.125	0.174	0.211	0.24	0.265	0.32	0.35	0.39	0.4	----	----	----	----	----	----
0.3	0.6	0.154	0.215	0.262	0.299	0.332	0.41	0.45	0.52	0.57	0.6	----	----	----	----	----
0.4	0.8	0.178	0.25	0.304	0.349	0.387	0.48	0.53	0.62	0.63	0.77	0.77	----	----	----	----
0.5	1	0.199	0.28	0.341	0.392	0.436	0.54	0.6	0.71	0.8	0.92	1	----	----	----	----
1	2	0.282	0.398	0.486	0.56	0.624	0.78	0.87	1.05	1.2	1.43	1.73	1.96	2	----	----
1.5	3	0.346	0.488	0.597	0.688	0.768	0.97	1.08	1.31	1.5	1.8	2.24	2.65	2.83	2.83	----
2	4	0.399	0.564	0.69	0.796	0.889	1.12	1.25	1.52	1.74	2.11	2.65	3.2	3.46	4	----
2.5	5	0.447	0.631	0.772	0.891	0.995	1.25	1.4	1.71	1.96	2.37	3	3.67	4	4.9	4.9
3	6	0.489	0.692	0.846	0.977	1.091	1.38	1.54	1.87	2.15	2.62	3.32	4.08	4.47	5.66	6
4	8	0.565	0.799	0.978	1.129	1.261	1.59	1.78	2.17	2.5	3.04	3.87	4.8	5.29	6.93	7.75
5	10	0.632	0.894	1.094	1.262	1.411	1.78	1.99	2.43	2.8	3.41	4.36	5.43	6	8	9.17
6	12	0.693	0.979	1.198	1.383	1.546	1.95	2.18	2.67	3.07	3.75	4.8	5.99	6.63	8.94	10.39
7	14	0.748	1.058	1.295	1.495	1.67	2.11	2.36	2.88	3.32	4.05	5.2	66.5	7.21	9.8	11.49
8	16	0.8	1.131	1.384	1.598	1.786	2.26	2.52	3.08	3.56	4.34	5.57	6.97	7.75	10.58	12.49
9	18	0.848	1.199	1.468	1.695	1.895	2.39	2.68	3.27	3.77	4.61	5.92	7.42	8.25	11.31	13.42
10	20	0.894	1.264	1.548	1.787	1.997	2.52	2.82	3.45	3.98	4.86	6.24	7.84	8.72	12	14.28

實際直徑計算 CALCULATION OF REAL DIA.

$$d = 2\sqrt{Ad\ (D\text{-}Ad)}$$



HPC
破壞王

DESIGN . HONESTY . FUTURE

DHF

HIGH PERFORMANCE CUTTING

超級龍捲風系列



高效率（重切削）加工的專家！

HPC破壞王

HIGHPERFORMANCECUTTING 超級龍捲風系列

- 抗震性好、穩定性佳。
  Low vibration and high stability.
- 斷屑效果、排屑順暢。
  Smooth chip removal.
- 高移除率、不易黏屑。
  High removal rate and low stickness.
- 高速暴走、削鐵如泥。
  High speed cutting.
- **1 D** 進給、無與倫比。
  Superb 1D feed.
- 專剋難切削材：
  Special for Difficult-to-Cut materials:
  1. 不鏽鋼(S136)
     Stainless steels
  2. 鈦合金
     Titanium alloy
  3. 鎳基合金
     Nickel alloy
  4. 耐熱合金
     High Temperature alloys
  5. Inconel 718
     Inconel 718



Contents 目錄

產品說明 Product Explanation	品名 Product	切削條件 Milling Conditions
P.05	UEW	
P.16	WWB	
P.21	WUB	
P.25	UPS	
P.38	UPZ	

產品說明 Product Explanation	品名 Product	切削條件 Milling Conditions
P.49	UPA	
P.50	UPW	
P.63	UPE	
P.76	UPER	
P.97	UPG	
P.106	UPJ	

冷卻性能 Coolant Type

因破壞王全系列皆為相同塗層，
故冷卻性能標示亦全部相同，敬請參考以下資訊：

All items from HPC series are same coating and thus the coolant way is applied to all items.
Please see the following information.

乾式切削 Dry Machining | 油霧切削 MQL (Mist) | 水溶性切削 Emulsion Machining | 油性切削 Oil Machining

Guide Lines to Icons 圖示說明

鎢鋼種類 Carbide



超微粒。
Micro grain.



極超微粒。
Super micro grain.

顆粒大小 Grain Size



粉末顆粒是0.4μm
Grain size is 0.4 μm



粉末顆粒是0.6μm
Grain size is 0.6 μm

螺旋角 Helix Angle















螺旋角度50°、45°、40°、35~38°、37°、35°
20°。
Helix Angle is 50°, 45°, 40°, 35~38°, 37°, 35°, 20°.

刀柄 Shank



適用於熱縮刀柄系統。
Suitable for the shrink fit holder System.

縮頸 Shrink Neck



被切削材硬度 Work Material Hardness





被切削工件硬度可達HRc55、HRc60。
Work material hardness is up to HRc55, HRc60.

鍍層 Coating



適用於難切削材和一般鋼材。濕式、油霧切削。
Good at hard cutting material and general steel material. For wet cutting and MQL cutting.

圓隅角 Conner R



圓隅角。
Corner Radius.

齒形 Roughing



中粗齒。
Middle Roughing.



細粗齒。
Small Roughing.

刃數 Flute











UEW

END MILLS 龍捲風立銑刀

NEW

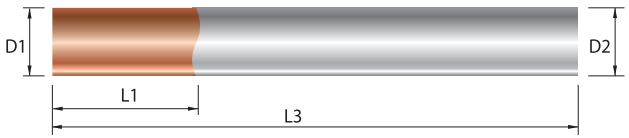


Super MG | 0.4 μm | 35° | FIT | 4 Flutes | HRc 55 | G10

直徑 D1	直徑公差 D1 Tolerance
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm



精銑 Finishing | 中銑 Semi-finishing | 粗銑 Roughing

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UEW0604	6.0	16	50	6
UEW0804	8.0	20	60	8
UEW1004	10.0	22	75	10
UEW1204	12.0	26	75	12
UEW1604	16.0	45	100	16
UEW2004	20.0	55	120	20

unit : mm

UEW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UEW0604	20	140	7200~7700	2000~2400	0~0.5	6	溝銑 SLOTTING
UEW0604	20	140	7200~7700	800~1200	1~2	6	溝銑 SLOTTING
UEW0604	20	135	7000~7500	700~1000	3~4	6	溝銑 SLOTTING
UEW0604	20	140	7300~7800	2000~2400	6	0~0.5	側銑 SIDE MILLING
UEW0604	20	135	7000~7500	1200~1600	6	1~2	側銑 SIDE MILLING
UEW0604	20	135	7000~7500	700~1000	6	3~4	側銑 SIDE MILLING
UEW0604	20	130	6800~7300	1400~1800	12	0~0.5	側銑 SIDE MILLING
UEW0604	20	130	6800~7300	500~800	12	1~2	側銑 SIDE MILLING
UEW0804	25	150	5700~6200	2400~2800	0~0.5	8	溝銑 SLOTTING
UEW0804	25	150	5700~6200	1600~2000	1~2	8	溝銑 SLOTTING
UEW0804	25	150	5700~6200	1000~1400	3~4	8	溝銑 SLOTTING
UEW0804	25	150	5800~6300	1000~1400	7~8	8	溝銑 SLOTTING
UEW0804	25	150	5800~6300	500~800	10~12	8	溝銑 SLOTTING
UEW0804	25	160	6000~6500	2400~2800	8	0~0.5	側銑 SIDE MILLING
UEW0804	25	145	5500~6000	1200~1600	8	1~2	側銑 SIDE MILLING
UEW0804	25	130	5000~5500	700~1000	8	3~4	側銑 SIDE MILLING
UEW0804	25	140	5300~5800	700~1000	8	6~7	側銑 SIDE MILLING
UEW0804	25	135	5200~5600	500~800	12	5~6	側銑 SIDE MILLING
UEW0804	25	150	5700~6200	1600~2000	16	0~0.5	側銑 SIDE MILLING
UEW0804	25	135	5200~5600	400~700	16	3~4	側銑 SIDE MILLING
UEW1004	30	155	4700~5200	2200~2600	0~0.6	10	溝銑 SLOTTING
UEW1004	30	155	4700~5200	1400~1800	1~2	10	溝銑 SLOTTING
UEW1004	30	155	4700~5200	1000~1400	4~5	10	溝銑 SLOTTING
UEW1004	30	170	5200~5700	700~1100	7~8	10	溝銑 SLOTTING
UEW1004	30	155	4700~5200	500~800	13~15	10	溝銑 SLOTTING
UEW1004	30	155	4700~5200	2200~2600	10	0~0.6	側銑 SIDE MILLING
UEW1004	30	155	4700~5200	1000~1400	10	1~2	側銑 SIDE MILLING
UEW1004	30	150	4500~5000	800~1200	10	4~5	側銑 SIDE MILLING
UEW1004	30	155	4700~5200	700~1000	10	8~9	側銑 SIDE MILLING
UEW1004	30	155	4700~5200	700~1000	15	8~9	側銑 SIDE MILLING
UEW1004	30	155	4700~5200	2000~2400	20	0~0.6	側銑 SIDE MILLING
UEW1004	30	150	4500~5000	700~1100	20	1~2	側銑 SIDE MILLING
UEW1004	30	140	4200~4700	500~800	20	4~5	側銑 SIDE MILLING
UEW1204	35	150	3800~4300	1800~2200	0~0.7	12	溝銑 SLOTTING
UEW1204	35	170	4300~4800	1200~1600	2~3	12	溝銑 SLOTTING
UEW1204	35	160	4000~4500	800~1200	5~7	12	溝銑 SLOTTING
UEW1204	35	160	4000~4500	500~800	9~11	12	溝銑 SLOTTING

UEW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UEW1204	35	150	3800~4300	500~800	16~18	12	溝銑 SLOTTING
UEW1204	35	150	3800~4300	1600~2000	12	0~0.7	側銑 SIDE MILLING
UEW1204	35	165	4200~4700	1000~1400	12	2~3	側銑 SIDE MILLING
UEW1204	35	180	4500~5000	800~1200	12	5~7	側銑 SIDE MILLING
UEW1204	35	180	4500~5000	700~1000	12	9~11	側銑 SIDE MILLING
UEW1204	35	160	4000~4500	800~1200	18	9~11	側銑 SIDE MILLING
UEW1204	35	150	3800~4300	1400~1800	24	0~0.7	側銑 SIDE MILLING
UEW1204	35	150	3800~4300	500~800	24	2~3	側銑 SIDE MILLING
UEW1204	35	160	4000~4500	700~1000	24	5~7	側銑 SIDE MILLING
UEW1604	50	160	3000~3400	1200~1600	0~0.7	16	溝銑 SLOTTING
UEW1604	50	150	2800~3300	700~1000	3~4	16	溝銑 SLOTTING
UEW1604	50	150	2800~3300	300~600	7~8	16	溝銑 SLOTTING
UEW1604	50	160	3000~3400	1200~1600	16	0~0.8	側銑 SIDE MILLING
UEW1604	50	150	2800~3300	700~1000	16	3~4	側銑 SIDE MILLING
UEW1604	50	150	2800~3300	400~700	16	7~8	側銑 SIDE MILLING
UEW1604	50	150	2800~3300	300~600	24	5~6	側銑 SIDE MILLING
UEW1604	50	160	3000~3400	1000~1400	32	0~0.7	側銑 SIDE MILLING
UEW1604	50	150	2800~3300	500~800	32	3~4	側銑 SIDE MILLING
UEW2004	60	150	2200~2600	1000~1400	0~0.8	20	溝銑 SLOTTING
UEW2004	60	140	2000~2400	400~600	5~7	20	溝銑 SLOTTING
UEW2004	60	140	2000~2400	200~350	9~11	20	溝銑 SLOTTING
UEW2004	60	150	2200~2600	800~1200	20	0~0.8	側銑 SIDE MILLING
UEW2004	60	140	2000~2400	400~600	20	5~7	側銑 SIDE MILLING
UEW2004	60	140	2000~2400	200~350	20	9~11	側銑 SIDE MILLING
UEW2004	60	140	2000~2400	300~500	30	4~5	側銑 SIDE MILLING
UEW2004	60	150	2200~2600	800~1100	40	0~0.8	側銑 SIDE MILLING
UEW2004	60	140	2000~2400	400~600	40	3~4	側銑 SIDE MILLING

UEW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UEW0604	20	125	6500~7000	1800~2200	0~0.5	6	溝銑 SLOTTING
UEW0604	20	125	6500~7000	800~1200	1~2	6	溝銑 SLOTTING
UEW0604	20	125	6500~7000	500~800	3~4	6	溝銑 SLOTTING
UEW0604	20	130	6800~7300	1800~2200	6	0~0.5	側銑 SIDE MILLING
UEW0604	20	130	6800~7300	1000~1400	6	1~2	側銑 SIDE MILLING
UEW0604	20	130	6800~7300	500~800	6	3~4	側銑 SIDE MILLING
UEW0604	20	120	6000~6500	1200~1600	12	0~0.5	側銑 SIDE MILLING
UEW0604	20	120	6000~6500	400~700	12	1~2	側銑 SIDE MILLING
UEW0804	25	130	5000~5500	2000~2400	0~0.5	8	溝銑 SLOTTING
UEW0804	25	130	5000~5500	1200~1600	1~2	8	溝銑 SLOTTING
UEW0804	25	130	5000~5500	700~1000	3~4	8	溝銑 SLOTTING
UEW0804	25	130	5000~5500	500~800	7~8	8	溝銑 SLOTTING
UEW0804	25	130	5000~5500	300~600	10~12	8	溝銑 SLOTTING
UEW0804	25	150	5700~6200	2000~2400	8	0~0.5	側銑 SIDE MILLING
UEW0804	25	125	4800~5300	1000~1400	8	1~2	側銑 SIDE MILLING
UEW0804	25	125	4800~5300	500~800	8	3~4	側銑 SIDE MILLING
UEW0804	25	120	4500~5000	500~800	8	6~7	側銑 SIDE MILLING
UEW0804	25	120	4500~5000	300~600	12	5~6	側銑 SIDE MILLING
UEW0804	25	125	4700~5200	1800~2200	16	0~0.5	側銑 SIDE MILLING
UEW0804	25	125	4700~5200	300~600	16	3~4	側銑 SIDE MILLING
UEW1004	30	150	4500~5000	1800~2200	0~0.6	10	溝銑 SLOTTING
UEW1004	30	150	4500~5000	1000~1400	1~2	10	溝銑 SLOTTING
UEW1004	30	150	4500~5000	800~1200	4~5	10	溝銑 SLOTTING
UEW1004	30	150	4500~5000	500~800	7~8	10	溝銑 SLOTTING
UEW1004	30	135	4000~4500	300~600	13~15	10	溝銑 SLOTTING
UEW1004	30	140	4200~4700	1800~2200	10	0~0.6	側銑 SIDE MILLING
UEW1004	30	140	4200~4700	800~1200	10	1~2	側銑 SIDE MILLING
UEW1004	30	140	4200~4700	700~1000	10	4~5	側銑 SIDE MILLING
UEW1004	30	140	4200~4700	500~800	10	8~9	側銑 SIDE MILLING
UEW1004	30	140	4200~4700	300~600	15	8~9	側銑 SIDE MILLING
UEW1004	30	135	4000~4500	1400~1800	20	0~0.6	側銑 SIDE MILLING
UEW1004	30	135	4000~4500	700~1000	20	1~2	側銑 SIDE MILLING
UEW1004	30	135	4000~4500	400~700	20	4~5	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	1400~1800	0~0.7	12	溝銑 SLOTTING
UEW1204	35	145	3700~4200	800~1200	2~3	12	溝銑 SLOTTING
UEW1204	35	145	3700~4200	400~700	5~7	12	溝銑 SLOTTING
UEW1204	35	145	3700~4200	400~700	9~11	12	溝銑 SLOTTING

UEW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UEW1204	35	145	3700~4200	300~600	16~18	12	溝銑 SLOTTING
UEW1204	35	135	3400~3800	1400~1800	12	0~0.7	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	700~1100	12	2~3	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	400~700	12	5~7	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	300~600	12	9~11	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	500~800	18	9~11	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	1000~1400	24	0~0.7	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	300~600	24	2~3	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	400~700	24	5~7	側銑 SIDE MILLING
UEW1604	50	150	2700~3200	800~1200	0~0.7	16	溝銑 SLOTTING
UEW1604	50	150	2700~3200	600~800	3~4	16	溝銑 SLOTTING
UEW1604	50	150	2700~3200	200~400	7~8	16	溝銑 SLOTTING
UEW1604	50	140	2500~3000	1000~1400	16	0~0.8	側銑 SIDE MILLING
UEW1604	50	150	2700~3200	600~800	16	3~4	側銑 SIDE MILLING
UEW1604	50	150	2700~3200	200~400	16	7~8	側銑 SIDE MILLING
UEW1604	50	150	2700~3200	300~600	24	5~6	側銑 SIDE MILLING
UEW1604	50	150	2700~3200	900~1200	32	0~0.7	側銑 SIDE MILLING
UEW1604	50	150	2700~3200	300~600	32	3~4	側銑 SIDE MILLING
UEW2004	60	140	2000~2400	900~1200	0~0.8	20	溝銑 SLOTTING
UEW2004	60	130	1800~2200	300~500	5~7	20	溝銑 SLOTTING
UEW2004	60	130	1800~2200	200~300	9~11	20	溝銑 SLOTTING
UEW2004	60	140	2000~2400	800~1000	20	0~0.8	側銑 SIDE MILLING
UEW2004	60	130	1800~2200	300~500	20	5~7	側銑 SIDE MILLING
UEW2004	60	130	1800~2200	200~300	20	9~11	側銑 SIDE MILLING
UEW2004	60	130	1800~2200	300~500	30	4~5	側銑 SIDE MILLING
UEW2004	60	140	2000~2400	700~1000	40	0~0.8	側銑 SIDE MILLING
UEW2004	60	130	1800~2200	300~500	40	3~4	側銑 SIDE MILLING

UEW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UEW0604	20	125	6500~7000	1800~2200	0~0.5	6	溝銑 SLOTTING
UEW0604	20	125	6500~7000	800~1200	1~2	6	溝銑 SLOTTING
UEW0604	20	125	6500~7000	500~800	3~4	6	溝銑 SLOTTING
UEW0604	20	130	6800~7300	1800~2200	6	0~0.5	側銑 SIDE MILLING
UEW0604	20	130	6800~7300	1000~1400	6	1~2	側銑 SIDE MILLING
UEW0604	20	130	6800~7300	500~800	6	3~4	側銑 SIDE MILLING
UEW0604	20	120	6000~6500	1200~1600	12	0~0.5	側銑 SIDE MILLING
UEW0604	20	120	6000~6500	400~700	12	1~2	側銑 SIDE MILLING
UEW0804	25	130	5000~5500	2000~2400	0~0.5	8	溝銑 SLOTTING
UEW0804	25	130	5000~5500	1200~1600	1~2	8	溝銑 SLOTTING
UEW0804	25	130	5000~5500	700~1000	3~4	8	溝銑 SLOTTING
UEW0804	25	130	5000~5500	500~800	7~8	8	溝銑 SLOTTING
UEW0804	25	130	5000~5500	300~600	10~12	8	溝銑 SLOTTING
UEW0804	25	150	5700~6200	2000~2400	8	0~0.5	側銑 SIDE MILLING
UEW0804	25	125	4800~5300	1000~1400	8	1~2	側銑 SIDE MILLING
UEW0804	25	125	4800~5300	500~800	8	3~4	側銑 SIDE MILLING
UEW0804	25	120	4500~5000	500~800	8	6~7	側銑 SIDE MILLING
UEW0804	25	120	4500~5000	300~600	12	5~6	側銑 SIDE MILLING
UEW0804	25	125	4700~5200	1800~2200	16	0~0.5	側銑 SIDE MILLING
UEW0804	25	125	4700~5200	300~600	16	3~4	側銑 SIDE MILLING
UEW1004	30	150	4500~5000	1800~2200	0~0.6	10	溝銑 SLOTTING
UEW1004	30	150	4500~5000	1000~1400	1~2	10	溝銑 SLOTTING
UEW1004	30	150	4500~5000	800~1200	4~5	10	溝銑 SLOTTING
UEW1004	30	150	4500~5000	500~800	7~8	10	溝銑 SLOTTING
UEW1004	30	135	4000~4500	300~600	13~15	10	溝銑 SLOTTING
UEW1004	30	140	4200~4700	1800~2200	10	0~0.6	側銑 SIDE MILLING
UEW1004	30	140	4200~4700	800~1200	10	1~2	側銑 SIDE MILLING
UEW1004	30	140	4200~4700	700~1000	10	4~5	側銑 SIDE MILLING
UEW1004	30	140	4200~4700	500~800	10	8~9	側銑 SIDE MILLING
UEW1004	30	140	4200~4700	300~600	15	8~9	側銑 SIDE MILLING
UEW1004	30	135	4000~4500	1400~1800	20	0~0.6	側銑 SIDE MILLING
UEW1004	30	135	4000~4500	700~1000	20	1~2	側銑 SIDE MILLING
UEW1004	30	135	4000~4500	400~700	20	4~5	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	1400~1800	0~0.7	12	溝銑 SLOTTING
UEW1204	35	145	3700~4200	800~1200	2~3	12	溝銑 SLOTTING
UEW1204	35	145	3700~4200	400~700	5~7	12	溝銑 SLOTTING
UEW1204	35	145	3700~4200	400~700	9~11	12	溝銑 SLOTTING

UEW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UEW1204	35	145	3700~4200	300~600	16~18	12	溝銑 SLOTTING
UEW1204	35	135	3400~3800	1400~1800	12	0~0.7	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	700~1100	12	2~3	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	300~600	12	5~7	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	300~600	12	9~11	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	500~800	18	9~11	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	1000~1400	24	0~0.7	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	300~600	24	2~3	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	400~700	24	5~7	側銑 SIDE MILLING
UEW1604	50	150	2700~3200	800~1200	0~0.7	16	溝銑 SLOTTING
UEW1604	50	140	2500~3000	600~800	3~4	16	溝銑 SLOTTING
UEW1604	50	140	2500~3000	200~400	7~8	16	溝銑 SLOTTING
UEW1604	50	150	2700~3200	1000~1400	16	0~0.8	側銑 SIDE MILLING
UEW1604	50	140	2500~3000	600~800	16	3~4	側銑 SIDE MILLING
UEW1604	50	140	2500~3000	200~400	16	6~7	側銑 SIDE MILLING
UEW1604	50	140	2500~3000	300~600	24	4~5	側銑 SIDE MILLING
UEW1604	50	140	2500~3000	900~1200	32	0~0.7	側銑 SIDE MILLING
UEW1604	50	140	2500~3000	300~600	32	3~4	側銑 SIDE MILLING
UEW2004	60	140	2000~2400	900~1200	0~0.8	20	溝銑 SLOTTING
UEW2004	60	130	1800~2200	300~500	5~6	20	溝銑 SLOTTING
UEW2004	60	130	1800~2200	200~300	7~8	20	溝銑 SLOTTING
UEW2004	60	140	2000~2400	800~1000	20	0~0.8	側銑 SIDE MILLING
UEW2004	60	130	1800~2200	300~500	20	5~6	側銑 SIDE MILLING
UEW2004	60	130	1800~2200	200~300	20	7~8	側銑 SIDE MILLING
UEW2004	60	130	1800~2200	300~500	30	4~5	側銑 SIDE MILLING
UEW2004	60	140	2000~2400	700~1000	40	0~0.8	側銑 SIDE MILLING
UEW2004	60	130	1800~2200	300~500	40	3~4	側銑 SIDE MILLING

UEW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼/預硬鋼 *Prehardened Steels* : **NAK80 : 1.2083 : AISI420 : M310** (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UEW0604	20	125	6500~7000	1200~1600	0~0.5	6	溝銑 SLOTTING
UEW0604	20	125	6500~7000	700~1000	1~2	6	溝銑 SLOTTING
UEW0604	20	125	6500~7000	300~600	3~4	6	溝銑 SLOTTING
UEW0604	20	130	6800~7300	1200~1600	6	0~0.5	側銑 SIDE MILLING
UEW0604	20	130	6800~7300	700~1000	6	1~2	側銑 SIDE MILLING
UEW0604	20	130	6800~7300	300~600	6	3~4	側銑 SIDE MILLING
UEW0604	20	120	6000~6500	700~1000	12	0~0.5	側銑 SIDE MILLING
UEW0604	20	120	6000~6500	300~500	12	1~2	側銑 SIDE MILLING
UEW0804	25	130	5000~5500	1600~2000	0~0.5	8	溝銑 SLOTTING
UEW0804	25	130	5000~5500	800~1200	1~2	8	溝銑 SLOTTING
UEW0804	25	130	5000~5500	400~700	3~4	8	溝銑 SLOTTING
UEW0804	25	130	5000~5500	300~600	7~8	8	溝銑 SLOTTING
UEW0804	25	130	5000~5500	300~500	10~12	8	溝銑 SLOTTING
UEW0804	25	150	5700~6200	1600~2000	8	0~0.5	側銑 SIDE MILLING
UEW0804	25	125	4800~5300	700~1000	8	1~2	側銑 SIDE MILLING
UEW0804	25	125	4800~5300	300~600	8	3~4	側銑 SIDE MILLING
UEW0804	25	120	4500~5000	300~600	8	6~7	側銑 SIDE MILLING
UEW0804	25	120	4500~5000	300~500	12	5~6	側銑 SIDE MILLING
UEW0804	25	125	4700~5200	1400~1800	16	0~0.5	側銑 SIDE MILLING
UEW0804	25	120	4500~5000	300~500	16	3~4	側銑 SIDE MILLING
UEW1004	30	150	4500~5000	1400~1800	0~0.6	10	溝銑 SLOTTING
UEW1004	30	150	4500~5000	800~1200	1~2	10	溝銑 SLOTTING
UEW1004	30	150	4500~5000	700~1000	4~5	10	溝銑 SLOTTING
UEW1004	30	150	4500~5000	400~700	7~8	10	溝銑 SLOTTING
UEW1004	30	135	4000~4500	300~500	13~15	10	溝銑 SLOTTING
UEW1004	30	140	4200~4700	1400~1800	10	0~0.6	側銑 SIDE MILLING
UEW1004	30	140	4200~4700	700~1000	10	1~2	側銑 SIDE MILLING
UEW1004	30	140	4200~4700	500~800	10	4~5	側銑 SIDE MILLING
UEW1004	30	140	4200~4700	400~700	10	8~9	側銑 SIDE MILLING
UEW1004	30	140	4200~4700	300~500	15	8~9	側銑 SIDE MILLING
UEW1004	30	135	4000~4500	1200~1600	20	0~0.6	側銑 SIDE MILLING
UEW1004	30	135	4000~4500	500~800	20	1~2	側銑 SIDE MILLING
UEW1004	30	135	4000~4500	300~500	20	4~5	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	1200~1600	0~0.7	12	溝銑 SLOTTING
UEW1204	35	145	3700~4200	700~1000	2~3	12	溝銑 SLOTTING
UEW1204	35	145	3700~4200	300~600	5~7	12	溝銑 SLOTTING
UEW1204	35	145	3700~4200	300~600	9~11	12	溝銑 SLOTTING

UEW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼/預硬鋼 *Prehardened Steels :* **NAK80 : 1.2083 : AISI420 : M310** (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UEW1204	35	145	3700~4200	300~500	16~18	12	溝銑 SLOTTING
UEW1204	35	135	3400~3800	1200~1600	12	0~0.7	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	700~1000	12	2~3	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	300~500	12	5~7	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	300~500	12	9~11	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	300~600	18	9~11	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	800~1200	24	0~0.7	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	300~500	24	2~3	側銑 SIDE MILLING
UEW1204	35	145	3700~4200	300~600	24	5~7	側銑 SIDE MILLING
UEW1604	50	140	2500~3000	700~1100	0~0.7	16	溝銑 SLOTTING
UEW1604	50	130	2400~2800	500~700	3~4	16	溝銑 SLOTTING
UEW1604	50	130	2400~2800	200~400	6~7	16	溝銑 SLOTTING
UEW1604	50	140	2500~3000	900~1200	16	0~0.8	側銑 SIDE MILLING
UEW1604	50	130	2400~2800	500~700	16	3~4	側銑 SIDE MILLING
UEW1604	50	130	2400~2800	200~400	16	6~7	側銑 SIDE MILLING
UEW1604	50	130	2400~2800	300~500	24	4~5	側銑 SIDE MILLING
UEW1604	50	140	2500~3000	800~1100	32	0~0.7	側銑 SIDE MILLING
UEW1604	50	130	2400~2800	300~500	32	3~4	側銑 SIDE MILLING
UEW2004	60	130	1800~2200	900~1100	0~0.8	20	溝銑 SLOTTING
UEW2004	60	120	1700~2100	300~400	5~6	20	溝銑 SLOTTING
UEW2004	60	120	1700~2100	150~250	7~8	20	溝銑 SLOTTING
UEW2004	60	130	1800~2200	800~1000	20	0~0.8	側銑 SIDE MILLING
UEW2004	60	120	1700~2100	300~400	20	5~6	側銑 SIDE MILLING
UEW2004	60	120	1700~2100	150~250	20	7~8	側銑 SIDE MILLING
UEW2004	60	120	1700~2100	300~500	30	3~4	側銑 SIDE MILLING
UEW2004	60	130	1800~2200	700~900	40	0~0.8	側銑 SIDE MILLING
UEW2004	60	120	1700~2100	200~400	40	3~4	側銑 SIDE MILLING

UEW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】: **SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UEW0604	19	100	5300~5600	1400~1600	0~0.4	6	溝銑 SLOTTING
UEW0604	19	100	5300~5600	700~900	0.5~1	6	溝銑 SLOTTING
UEW0604	19	100	5300~5600	400~500	1~1.5	6	溝銑 SLOTTING
UEW0604	19	100	5300~5600	1400~1600	6	0~0.5	側銑 SIDE MILLING
UEW0604	19	100	5300~5600	800~1000	6	1~1.5	側銑 SIDE MILLING
UEW0604	19	100	5300~5600	700~900	6	1.5~2	側銑 SIDE MILLING
UEW0604	19	100	5300~5600	600~800	6	2~3	側銑 SIDE MILLING
UEW0804	23	125	5000	1400~1600	0~0.7	8	溝銑 SLOTTING
UEW0804	23	125	5000	700~900	2	8	溝銑 SLOTTING
UEW0804	23	125	5000	500~700	2~3	8	溝銑 SLOTTING
UEW0804	23	125	5000	1400~1600	8	0~0.5	側銑 SIDE MILLING
UEW0804	23	125	5000	900~1100	8	2	側銑 SIDE MILLING
UEW0804	23	125	5000	700~900	8	2~3	側銑 SIDE MILLING
UEW0804	23	125	5000	450~600	8	3~4	側銑 SIDE MILLING
UEW1004	30	145	4400~4700	1400~1600	0~0.7	10	溝銑 SLOTTING
UEW1004	30	115	3700~3900	650~800	2	10	溝銑 SLOTTING
UEW1004	30	145	4400~4700	800~1000	2~3	10	溝銑 SLOTTING
UEW1004	30	115	3700~3900	500~650	3~4	10	溝銑 SLOTTING
UEW1004	30	145	4400~4700	600~800	3~4	10	溝銑 SLOTTING
UEW1004	30	145	4400~4700	400~600	4~5	10	溝銑 SLOTTING
UEW1004	30	85	2500~2700	900~1100	10~20	0~0.6	側銑 SIDE MILLING
UEW1004	30	145	4200~4500	1500~1700	10~20	0~0.6	側銑 SIDE MILLING
UEW1004	30	145	4400~4700	600~800	10	3~4	側銑 SIDE MILLING
UEW1004	30	145	4400~4700	500~700	10	4~5	側銑 SIDE MILLING
UEW1204	34	110	2800~3000	900~1200	0~0.7	12	溝銑 SLOTTING
UEW1204	34	110	2800~3000	600~800	1.5~2	12	溝銑 SLOTTING
UEW1204	34	110	2800~3000	500~600	3~4	12	溝銑 SLOTTING
UEW1204	34	110	2800~3000	400~500	5~6	12	溝銑 SLOTTING
UEW1204	34	135	3400~3800	1100~1400	12	0~0.7	側銑 SIDE MILLING
UEW1204	34	110	2800~3000	800~1000	12	1~1.5	側銑 SIDE MILLING
UEW1204	34	110	2800~3000	700~900	12	2~3	側銑 SIDE MILLING
UEW1204	34	110	2800~3000	500~700	12	3~4	側銑 SIDE MILLING
UEW1204	34	110	2800~3000	400~600	12	5~6	側銑 SIDE MILLING
UEW1604	50	110	2100~2400	800~1000	0~0.7	16	溝銑 SLOTTING
UEW1604	50	110	2100~2400	500~700	1.5~2	16	溝銑 SLOTTING
UEW1604	50	110	2100~2400	400~500	3~4	16	溝銑 SLOTTING
UEW1604	50	110	2100~2400	900~1200	16	0~0.7	側銑 SIDE MILLING

UEW

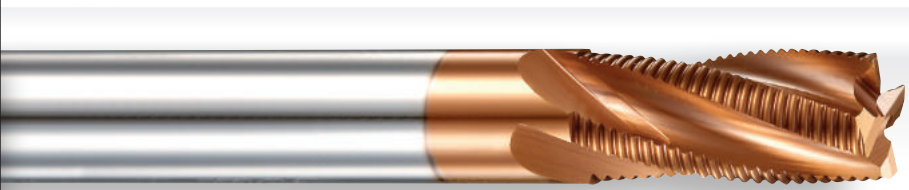
切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】:**SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UEW1604	50	110	2100~2400	600~800	16	1~1.5	側銑 SIDE MILLING
UEW1604	50	110	2100~2400	500~600	16	2~3	側銑 SIDE MILLING
UEW1604	50	110	2100~2400	400~500	16	3~4	側銑 SIDE MILLING
UEW2004	60	110	1600~1800	700~850	0~0.7	20	溝銑 SLOTTING
UEW2004	60	110	1600~1800	400~550	1.5~2	20	溝銑 SLOTTING
UEW2004	60	110	1600~1800	200~350	3~4	20	溝銑 SLOTTING
UEW2004	60	110	1600~1800	800~1000	20	0~0.7	側銑 SIDE MILLING
UEW2004	60	110	1600~1800	500~700	20	1~1.5	側銑 SIDE MILLING
UEW2004	60	110	1600~1800	300~500	20	2~3	側銑 SIDE MILLING
UEW2004	60	110	1600~1800	200~400	20	3~4	側銑 SIDE MILLING

WWB

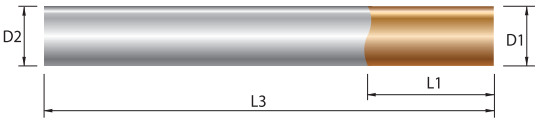
END MILLS 抗震粗齒細目銑刀



NEW

MG | 0.6 μm | Roughing | 20° | FIT | 4 Flutes | HRc 55 | G10





直徑 D1	直徑公差 D1 Tolerance
6.0	0 -0.04
8.0	0 -0.04
10.0	0 -0.045
12.0	0 -0.045
14.0	0 -0.045
16.0	0 -0.05
18.0	0 -0.05
20.0	0 -0.05

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø14	0 -0.011
Ø16	0 -0.011
Ø18	0 -0.011
Ø20	0 -0.013

unit : mm

精銑 Finishing | 中銑 Semi-finishing | 粗銑 Roughing

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
WWB0604	6.0	16	50	6
WWB0804	8.0	20	60	8
WWB1004	10.0	25	75	10
WWB1204	12.0	30	75	12
WWB1404	14.0	35	100	16
WWB1604	16.0	40	100	16
WWB1804	18.0	40	100	20
WWB2004	20.0	45	100	20

unit : mm

WWB

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
WWB0604	22	90	4500~5000	400~700	2	6	溝銑 SLOTTING
WWB0604	22	90	4500~5000	400~700	4	6	溝銑 SLOTTING
WWB0604	22	90	4500~5000	300~450	6	6	溝銑 SLOTTING
WWB0604	22	90	4500~5000	200~400	12	6	溝銑 SLOTTING
WWB0604	22	90	4500~5000	300~500	6	5.5	側銑 SIDE MILLING
WWB0804	30	100	3800~4300	400~700	2	8	溝銑 SLOTTING
WWB0804	30	100	3800~4300	700~1000	4	8	溝銑 SLOTTING
WWB0804	30	100	3800~4300	400~700	8	8	溝銑 SLOTTING
WWB0804	30	100	3800~4300	300~500	16	8	溝銑 SLOTTING
WWB0804	30	100	3700~4200	300~600	8	7.5	側銑 SIDE MILLING
WWB1004	33	95	2800~3300	400~700	2	10	溝銑 SLOTTING
WWB1004	33	95	2800~3300	400~700	4	10	溝銑 SLOTTING
WWB1004	33	95	2800~3300	500~800	8	10	溝銑 SLOTTING
WWB1004	33	95	2800~3300	300~500	10	10	溝銑 SLOTTING
WWB1004	33	95	2800~3300	300~600	20	10	溝銑 SLOTTING
WWB1004	33	95	2800~3300	300~600	10	9.5	側銑 SIDE MILLING
WWB1204	40	90	2200~2600	400~700	3	12	溝銑 SLOTTING
WWB1204	40	90	2200~2600	300~500	6	12	溝銑 SLOTTING
WWB1204	40	90	2200~2600	300~500	9	12	溝銑 SLOTTING
WWB1204	40	90	2200~2600	300~500	12	12	溝銑 SLOTTING
WWB1204	40	90	2200~2600	200~400	18	12	溝銑 SLOTTING
WWB1204	40	90	2200~2600	300~500	12	11.5	側銑 SIDE MILLING
WWB1404	45	90	1800~2200	300~400	5~6	14	溝銑 SLOTTING
WWB1404	45	90	1800~2200	200~350	7~8	14	溝銑 SLOTTING
WWB1404	45	90	1800~2200	250~400	14	5~6	側銑 SIDE MILLING
WWB1404	45	90	1800~2200	200~300	14	7~8	側銑 SIDE MILLING
WWB1604	50	90	1600~2000	200~300	5~6	16	溝銑 SLOTTING
WWB1604	50	90	1600~2000	150~250	7~8	16	溝銑 SLOTTING
WWB1604	50	90	1600~2000	200~300	16	5~6	側銑 SIDE MILLING
WWB1604	50	90	1600~2000	150~250	16	7~8	側銑 SIDE MILLING
WWB1804	50	90	1400~1800	180~250	4~5	18	溝銑 SLOTTING
WWB1804	50	90	1400~1800	150~250	6~7	18	溝銑 SLOTTING
WWB1804	50	90	1400~1800	180~250	18	4~5	側銑 SIDE MILLING
WWB1804	50	90	1400~1800	130~200	18	6~7	側銑 SIDE MILLING
WWB2004	55	90	1200~1600	150~250	4~5	20	溝銑 SLOTTING
WWB2004	55	90	1200~1600	120~200	6~7	20	溝銑 SLOTTING
WWB2004	55	90	1200~1600	150~250	20	4~5	側銑 SIDE MILLING
WWB2004	55	90	1200~1600	100~150	20	6~7	側銑 SIDE MILLING

WWB

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
WWB0604	22	85	4200~4700	300~500	2	6	溝銑 SLOTTING
WWB0604	22	85	4200~4700	300~500	4	6	溝銑 SLOTTING
WWB0604	22	85	4200~4700	150~300	6	6	溝銑 SLOTTING
WWB0604	22	85	4200~4700	100~200	12	6	溝銑 SLOTTING
WWB0604	22	85	4200~4700	200~400	6	5.5	側銑 SIDE MILLING
WWB0804	30	95	3500~4000	300~500	2	8	溝銑 SLOTTING
WWB0804	30	95	3500~4000	400~700	4	8	溝銑 SLOTTING
WWB0804	30	95	3500~4000	300~500	8	8	溝銑 SLOTTING
WWB0804	30	95	3500~4000	150~300	16	8	溝銑 SLOTTING
WWB0804	30	95	3500~4000	200~400	8	7.5	側銑 SIDE MILLING
WWB1004	33	80	2400~2800	300~500	2	10	溝銑 SLOTTING
WWB1004	33	80	2400~2800	300~600	4	10	溝銑 SLOTTING
WWB1004	33	80	2400~2800	300~600	8	10	溝銑 SLOTTING
WWB1004	33	80	2400~2800	200~350	10	10	溝銑 SLOTTING
WWB1004	33	80	2400~2800	150~300	20	10	溝銑 SLOTTING
WWB1004	33	80	2400~2800	200~400	10	9.5	側銑 SIDE MILLING
WWB1204	40	75	1800~2200	300~500	3	12	溝銑 SLOTTING
WWB1204	40	75	1800~2200	200~400	6	12	溝銑 SLOTTING
WWB1204	40	75	1800~2200	150~300	9	12	溝銑 SLOTTING
WWB1204	40	75	1800~2200	150~300	12	12	溝銑 SLOTTING
WWB1204	40	75	1800~2200	70~130	18	12	溝銑 SLOTTING
WWB1204	40	75	1800~2200	100~200	12	11.5	側銑 SIDE MILLING
WWB1404	45	80	1600~2000	200~300	5~6	14	溝銑 SLOTTING
WWB1404	45	80	1600~2000	150~250	7~8	14	溝銑 SLOTTING
WWB1404	45	80	1600~2000	200~300	14	5~6	側銑 SIDE MILLING
WWB1404	45	80	1600~2000	150~250	14	7~8	側銑 SIDE MILLING
WWB1604	50	80	1400~1800	170~270	5~6	16	溝銑 SLOTTING
WWB1604	50	80	1400~1800	120~220	7~8	16	溝銑 SLOTTING
WWB1604	50	80	1400~1800	170~270	16	5~6	側銑 SIDE MILLING
WWB1604	50	80	1400~1800	120~220	16	7~8	側銑 SIDE MILLING
WWB1804	50	80	1200~1600	150~250	4~5	18	溝銑 SLOTTING
WWB1804	50	80	1200~1600	100~200	6~7	18	溝銑 SLOTTING
WWB1804	50	80	1200~1600	150~250	18	4~5	側銑 SIDE MILLING
WWB1804	50	80	1200~1600	100~200	18	6~7	側銑 SIDE MILLING
WWB2004	55	80	1000~1400	120~220	4~5	20	溝銑 SLOTTING
WWB2004	55	80	1000~1400	100~150	6~7	20	溝銑 SLOTTING
WWB2004	55	80	1000~1400	120~220	20	4~5	側銑 SIDE MILLING
WWB2004	55	80	1000~1400	80~130	20	6~7	側銑 SIDE MILLING

WWB

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
WWB0604	22	85	4200~4700	300~500	2	6	溝銑 SLOTTING
WWB0604	22	85	4200~4700	300~500	4	6	溝銑 SLOTTING
WWB0604	22	85	4200~4700	150~300	6	6	溝銑 SLOTTING
WWB0604	22	85	4200~4700	100~200	9~12	6	溝銑 SLOTTING
WWB0604	22	85	4200~4700	200~400	6	5.5	側銑 SIDE MILLING
WWB0804	30	95	3500~4000	300~500	2	8	溝銑 SLOTTING
WWB0804	30	95	3500~4000	400~700	4	8	溝銑 SLOTTING
WWB0804	30	95	3500~4000	300~500	8	8	溝銑 SLOTTING
WWB0804	30	95	3500~4000	150~300	12~16	8	溝銑 SLOTTING
WWB0804	30	95	3500~4000	200~400	8	7.5	側銑 SIDE MILLING
WWB1004	33	80	2400~2800	300~500	2	10	溝銑 SLOTTING
WWB1004	33	80	2400~2800	300~600	4	10	溝銑 SLOTTING
WWB1004	33	80	2400~2800	300~600	8	10	溝銑 SLOTTING
WWB1004	33	80	2400~2800	200~350	10	10	溝銑 SLOTTING
WWB1004	33	80	2400~2800	150~300	15~20	10	溝銑 SLOTTING
WWB1004	33	80	2400~2800	200~400	10	9.5	側銑 SIDE MILLING
WWB1204	40	80	1900~2300	300~500	3	12	溝銑 SLOTTING
WWB1204	40	80	1900~2300	200~400	6	12	溝銑 SLOTTING
WWB1204	40	80	1900~2300	150~300	9	12	溝銑 SLOTTING
WWB1204	40	80	1900~2300	150~300	12	12	溝銑 SLOTTING
WWB1204	40	80	1900~2300	70~130	14~18	12	溝銑 SLOTTING
WWB1204	40	80	1900~2300	100~200	12	11.5	側銑 SIDE MILLING
WWB1404	45	80	1600~2000	200~300	5~6	14	溝銑 SLOTTING
WWB1404	45	80	1600~2000	150~250	7~8	14	溝銑 SLOTTING
WWB1404	45	80	1600~2000	200~300	14	5~6	側銑 SIDE MILLING
WWB1404	45	80	1600~2000	150~250	14	7~8	側銑 SIDE MILLING
WWB1604	50	80	1400~1800	170~270	5~6	16	溝銑 SLOTTING
WWB1604	50	80	1400~1800	120~220	7~8	16	溝銑 SLOTTING
WWB1604	50	80	1400~1800	170~270	16	5~6	側銑 SIDE MILLING
WWB1604	50	80	1400~1800	120~220	16	7~8	側銑 SIDE MILLING
WWB1804	50	80	1200~1600	150~250	4~5	18	溝銑 SLOTTING
WWB1804	50	80	1200~1600	100~200	6~7	18	溝銑 SLOTTING
WWB1804	50	80	1200~1600	150~250	18	4~5	側銑 SIDE MILLING
WWB1804	50	80	1200~1600	100~200	18	6~7	側銑 SIDE MILLING
WWB2004	55	80	1000~1400	120~220	4~5	20	溝銑 SLOTTING
WWB2004	55	80	1000~1400	100~150	6~7	20	溝銑 SLOTTING
WWB2004	55	80	1000~1400	120~220	20	4~5	側銑 SIDE MILLING
WWB2004	55	80	1000~1400	80~130	20	6~7	側銑 SIDE MILLING

WWB

切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】: **SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
WWB0604	22	80	4000~4500	400~550	1	6	溝銑 SLOTTING
WWB0604	22	80	4000~4500	350~450	1.5	6	溝銑 SLOTTING
WWB0604	22	80	4000~4500	300~420	3	6	溝銑 SLOTTING
WWB0604	22	80	4000~4500	200~270	6	6	溝銑 SLOTTING
WWB0604	22	80	4000~4500	200~270	6	5.7	側銑 SIDE MILLING
WWB0804	28	80	3000~3500	350~480	2	8	溝銑 SLOTTING
WWB0804	28	80	3000~3500	270~360	4	8	溝銑 SLOTTING
WWB0804	28	80	3000~3500	240~320	6	8	溝銑 SLOTTING
WWB0804	28	80	3000~3500	200~260	8	8	溝銑 SLOTTING
WWB0804	28	80	3000~3500	200~260	8	7.7	側銑 SIDE MILLING
WWB1004	32	80	2400~2800	350~500	2	10	溝銑 SLOTTING
WWB1004	32	80	2400~2800	300~400	3.5	10	溝銑 SLOTTING
WWB1004	32	80	2400~2800	250~320	5	10	溝銑 SLOTTING
WWB1004	32	80	2400~2800	200~260	10	10	溝銑 SLOTTING
WWB1004	32	80	2400~2800	200~260	10	9.7	側銑 SIDE MILLING
WWB1204	38	80	1900~2300	260~420	2	12	溝銑 SLOTTING
WWB1204	38	80	1900~2300	200~300	4	12	溝銑 SLOTTING
WWB1204	38	80	1900~2300	180~260	6	12	溝銑 SLOTTING
WWB1204	38	80	1900~2300	150~210	10	12	溝銑 SLOTTING
WWB1204	38	80	1900~2300	120~200	12	12	溝銑 SLOTTING
WWB1204	38	80	1900~2300	100~190	12	11.7	側銑 SIDE MILLING
WWB1404	42	80	1600~2000	200~360	1~2	14	溝銑 SLOTTING
WWB1404	42	80	1600~2000	150~250	3~4	14	溝銑 SLOTTING
WWB1404	42	80	1600~2000	120~200	5~6	14	溝銑 SLOTTING
WWB1404	42	80	1600~2000	100~150	14	3~4	溝銑 SLOTTING
WWB1404	42	80	1600~2000	70~130	14	5~6	側銑 SIDE MILLING
WWB1604	47	80	1400~1800	200~280	1~2	16	溝銑 SLOTTING
WWB1604	47	80	1400~1800	130~200	3~4	16	溝銑 SLOTTING
WWB1604	47	80	1400~1800	100~170	5~6	16	溝銑 SLOTTING
WWB1604	47	80	1400~1800	50~100	16	5~6	側銑 SIDE MILLING
WWB1804	50	80	1200~1600	200~250	1~2	18	溝銑 SLOTTING
WWB1804	50	80	1200~1600	130~180	3~4	18	溝銑 SLOTTING
WWB1804	50	80	1200~1600	100~150	5~6	18	溝銑 SLOTTING
WWB1804	50	80	1200~1600	50~100	18	5~6	側銑 SIDE MILLING
WWB2004	50	80	1000~1400	180~230	1~2	20	溝銑 SLOTTING
WWB2004	50	80	1000~1400	120~160	3~4	20	溝銑 SLOTTING
WWB2004	50	80	1000~1400	100~140	5~6	20	溝銑 SLOTTING
WWB2004	50	80	1000~1400	50~100	20	5~6	側銑 SIDE MILLING

WUB

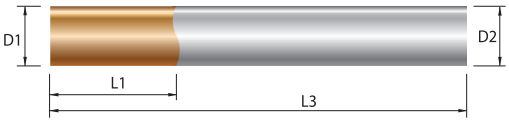
END MILLS 抗震粗齒中目銑刀

NEW









直徑 D1	直徑公差 D1 Tolerance
6.0	0 -0.04
8.0	0 -0.04
10.0	0 -0.045
12.0	0 -0.045
14.0	0 -0.045
16.0	0 -0.05
18.0	0 -0.05
20.0	0 -0.05

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø14	0 -0.011
Ø16	0 -0.011
Ø18	0 -0.011
Ø20	0 -0.013

unit : mm

精銑 Finishing | 中銑 Semi-finishing | 粗銑 Roughing

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
WUB0604	6.0	16	50	6
WUB0804	8.0	20	60	8
WUB1004	10.0	25	75	10
WUB1204	12.0	30	75	12
WUB1404	14.0	35	100	16
WUB1604	16.0	40	100	16
WUB1804	18.0	40	100	20
WUB2004	20.0	45	100	20

unit : mm

WUB

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
WUB0604	20	90	4500~5000	400~700	2	6	溝銑 SLOTTING
WUB0604	20	90	4500~5000	400~700	4	6	溝銑 SLOTTING
WUB0604	20	90	4500~5000	300~500	6	6	溝銑 SLOTTING
WUB0604	20	90	4500~5000	150~300	12	6	溝銑 SLOTTING
WUB0604	20	90	4500~5000	300~500	6	5.5	側銑 SIDE MILLING
WUB0804	30	100	3800~4300	500~800	2	8	溝銑 SLOTTING
WUB0804	30	100	3800~4300	500~800	4	8	溝銑 SLOTTING
WUB0804	30	100	3800~4300	250~400	8	8	溝銑 SLOTTING
WUB0804	30	100	3800~4300	150~350	16	8	溝銑 SLOTTING
WUB0804	30	100	3700~4200	250~400	8	7.5	側銑 SIDE MILLING
WUB1004	30	95	2800~3300	400~700	2	10	溝銑 SLOTTING
WUB1004	30	95	2800~3300	400~700	4	10	溝銑 SLOTTING
WUB1004	30	95	2800~3300	400~600	8	10	溝銑 SLOTTING
WUB1004	30	95	2800~3300	250~450	10	10	溝銑 SLOTTING
WUB1004	30	95	2800~3300	300~500	20	10	溝銑 SLOTTING
WUB1004	30	95	2800~3300	300~500	10	9.5	側銑 SIDE MILLING
WUB1204	40	90	2200~2600	300~600	3	12	溝銑 SLOTTING
WUB1204	40	90	2200~2600	300~600	6	12	溝銑 SLOTTING
WUB1204	40	90	2200~2600	300~500	9	12	溝銑 SLOTTING
WUB1204	40	90	2200~2600	200~400	12	12	溝銑 SLOTTING
WUB1204	40	90	2200~2600	150~350	18	12	溝銑 SLOTTING
WUB1204	40	90	2200~2600	200~400	12	11.5	側銑 SIDE MILLING
WUB1404	45	90	1800~2200	200~300	5~6	14	溝銑 SLOTTING
WUB1404	45	90	1800~2200	160~260	7~8	14	溝銑 SLOTTING
WUB1404	45	90	1800~2200	200~300	14	5~6	側銑 SIDE MILLING
WUB1404	45	90	1800~2200	160~260	14	7~8	側銑 SIDE MILLING
WUB1604	50	90	1600~2000	170~270	5~6	16	溝銑 SLOTTING
WUB1604	50	90	1600~2000	120~220	7~8	16	溝銑 SLOTTING
WUB1604	50	90	1600~2000	170~270	16	5~6	側銑 SIDE MILLING
WUB1604	50	90	1600~2000	120~220	16	7~8	側銑 SIDE MILLING
WUB1804	50	90	1400~1800	150~250	4~5	18	溝銑 SLOTTING
WUB1804	50	90	1400~1800	130~230	6~7	18	溝銑 SLOTTING
WUB1804	50	90	1400~1800	150~250	18	4~5	側銑 SIDE MILLING
WUB1804	50	90	1400~1800	100~200	18	6~7	側銑 SIDE MILLING
WUB2004	55	90	1200~1600	130~230	4~5	20	溝銑 SLOTTING
WUB2004	55	90	1200~1600	80~130	6~7	20	溝銑 SLOTTING
WUB2004	55	90	1200~1600	130~230	20	4~5	側銑 SIDE MILLING
WUB2004	55	90	1200~1600	80~130	20	6~7	側銑 SIDE MILLING

WUB

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
WUB0604	20	85	4200~4700	300~600	2	6	溝銑 SLOTTING
WUB0604	20	85	4200~4700	300~600	4	6	溝銑 SLOTTING
WUB0604	20	85	4200~4700	200~400	6	6	溝銑 SLOTTING
WUB0604	20	85	4200~4700	100~250	12	6	溝銑 SLOTTING
WUB0604	20	85	4200~4700	200~350	6	5.5	側銑 SIDE MILLING
WUB0804	30	95	3500~4000	300~500	2	8	溝銑 SLOTTING
WUB0804	30	95	3500~4000	300~600	4	8	溝銑 SLOTTING
WUB0804	30	95	3500~4000	150~300	8	8	溝銑 SLOTTING
WUB0804	30	95	3500~4000	100~250	16	8	溝銑 SLOTTING
WUB0804	30	95	3500~4000	150~300	8	7.5	側銑 SIDE MILLING
WUB1004	30	80	2400~2800	300~600	2	10	溝銑 SLOTTING
WUB1004	30	80	2400~2800	300~600	4	10	溝銑 SLOTTING
WUB1004	30	80	2400~2800	300~500	8	10	溝銑 SLOTTING
WUB1004	30	80	2400~2800	200~400	10	10	溝銑 SLOTTING
WUB1004	30	80	2400~2800	150~250	20	10	溝銑 SLOTTING
WUB1004	30	80	2400~2800	200~350	10	9.5	側銑 SIDE MILLING
WUB1204	40	75	1800~2200	150~350	3	12	溝銑 SLOTTING
WUB1204	40	75	1800~2200	200~400	6	12	溝銑 SLOTTING
WUB1204	40	75	1800~2200	150~300	9	12	溝銑 SLOTTING
WUB1204	40	75	1800~2200	100~250	12	12	溝銑 SLOTTING
WUB1204	40	75	1800~2200	70~130	18	12	溝銑 SLOTTING
WUB1204	40	75	1800~2200	100~250	12	11.5	側銑 SIDE MILLING
WUB1404	45	80	1600~2000	170~270	5~6	14	溝銑 SLOTTING
WUB1404	45	80	1600~2000	130~230	7~8	14	溝銑 SLOTTING
WUB1404	45	80	1600~2000	170~270	14	5~6	側銑 SIDE MILLING
WUB1404	45	80	1600~2000	130~230	14	7~8	側銑 SIDE MILLING
WUB1604	50	80	1400~1800	140~240	5~6	16	溝銑 SLOTTING
WUB1604	50	80	1400~1800	100~200	7~8	16	溝銑 SLOTTING
WUB1604	50	80	1400~1800	140~240	16	5~6	側銑 SIDE MILLING
WUB1604	50	80	1400~1800	100~200	16	7~8	側銑 SIDE MILLING
WUB1804	50	80	1200~1600	130~230	4~5	18	溝銑 SLOTTING
WUB1804	50	80	1200~1600	100~170	6~7	18	溝銑 SLOTTING
WUB1804	50	80	1200~1600	130~230	18	4~5	側銑 SIDE MILLING
WUB1804	50	80	1200~1600	100~170	18	6~7	側銑 SIDE MILLING
WUB2004	55	80	1000~1400	100~200	4~5	20	溝銑 SLOTTING
WUB2004	55	80	1000~1400	70~110	6~7	20	溝銑 SLOTTING
WUB2004	55	80	1000~1400	100~200	20	4~5	側銑 SIDE MILLING
WUB2004	55	80	1000~1400	70~110	20	6~7	側銑 SIDE MILLING

WUB

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
WUB0604	20	85	4200~4700	300~600	2	6	溝銑 SLOTTING
WUB0604	20	85	4200~4700	300~600	4	6	溝銑 SLOTTING
WUB0604	20	85	4200~4700	200~400	6	6	溝銑 SLOTTING
WUB0604	20	85	4200~4700	100~250	12	6	溝銑 SLOTTING
WUB0604	20	85	4200~4700	200~350	6	5.5	側銑 SIDE MILLING
WUB0804	30	95	3500~4000	300~500	2	8	溝銑 SLOTTING
WUB0804	30	95	3500~4000	300~600	4	8	溝銑 SLOTTING
WUB0804	30	95	3500~4000	150~300	8	8	溝銑 SLOTTING
WUB0804	30	95	3500~4000	100~250	16	8	溝銑 SLOTTING
WUB0804	30	95	3500~4000	150~300	8	7.5	側銑 SIDE MILLING
WUB1004	30	80	2400~2800	300~600	2	10	溝銑 SLOTTING
WUB1004	30	80	2400~2800	300~600	4	10	溝銑 SLOTTING
WUB1004	30	80	2400~2800	300~500	8	10	溝銑 SLOTTING
WUB1004	30	80	2400~2800	200~400	10	10	溝銑 SLOTTING
WUB1004	30	80	2400~2800	150~250	20	10	溝銑 SLOTTING
WUB1004	30	80	2400~2800	200~350	10	9.5	側銑 SIDE MILLING
WUB1204	40	75	1800~2200	150~350	3	12	溝銑 SLOTTING
WUB1204	40	75	1800~2200	200~400	6	12	溝銑 SLOTTING
WUB1204	40	75	1800~2200	150~300	9	12	溝銑 SLOTTING
WUB1204	40	75	1800~2200	100~250	12	12	溝銑 SLOTTING
WUB1204	40	75	1800~2200	70~130	14~16	12	溝銑 SLOTTING
WUB1204	40	75	1800~2200	100~250	12	11.5	側銑 SIDE MILLING
WUB1404	45	80	1600~2000	170~270	5~6	14	溝銑 SLOTTING
WUB1404	45	80	1600~2000	130~230	7~8	14	溝銑 SLOTTING
WUB1404	45	80	1600~2000	170~270	14	5~6	側銑 SIDE MILLING
WUB1404	45	80	1600~2000	130~230	14	7~8	側銑 SIDE MILLING
WUB1604	50	80	1400~1800	140~240	5~6	16	溝銑 SLOTTING
WUB1604	50	80	1400~1800	100~200	7~8	16	溝銑 SLOTTING
WUB1604	50	80	1400~1800	140~240	16	5~6	側銑 SIDE MILLING
WUB1604	50	80	1400~1800	100~200	16	7~8	側銑 SIDE MILLING
WUB1804	50	80	1200~1600	130~230	4~5	18	溝銑 SLOTTING
WUB1804	50	80	1200~1600	100~170	6~7	18	溝銑 SLOTTING
WUB1804	50	80	1200~1600	130~230	18	4~5	側銑 SIDE MILLING
WUB1804	50	80	1200~1600	100~170	18	6~7	側銑 SIDE MILLING
WUB2004	55	80	1000~1400	100~200	4~5	20	溝銑 SLOTTING
WUB2004	55	80	1000~1400	70~110	6~7	20	溝銑 SLOTTING
WUB2004	55	80	1000~1400	100~200	20	4~5	側銑 SIDE MILLING
WUB2004	55	80	1000~1400	70~110	20	6~7	側銑 SIDE MILLING

UPS

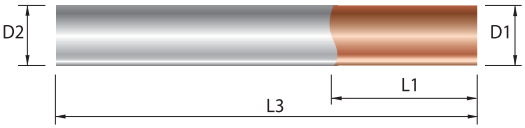
END MILLS 無敵高效能立銑刀



NEW

精銑 Finishing | 中銑 Semi-finishing | 粗銑 Roughing

Super MG | 0.4 μm | 45° | FIT | 4 Flutes | G10 | HRc 60



直徑 D1	直徑公差 D1 Tolerance
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
18.0	0 -0.04
20.0	0 -0.04

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø18	0 -0.011
Ø20	0 -0.013

unit : mm

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UPS0304	3.0	8	50	6
UPS0304L	3.0	12	60	6
UPS0404	4.0	11	50	6
UPS0404L	4.0	16	60	6
UPS0504	5.0	13	50	6
UPS0604	6.0	16	50	6
UPS0604L	6.0	20	60	6
UPS0804	8.0	20	60	8
UPS0804L	8.0	25	75	8
UPS1004	10.0	22	75	10
UPS1004L	10.0	30	80	10
UPS1204	12.0	26	75	12
UPS1204L	12.0	35	100	12
UPS1604	16.0	36	100	16
UPS1604L	16.0	50	110	16
UPS1804	18 0	40	100	18
UPS2004	20.0	40	100	20
UPS2004L	20.0	50	120	20

unit : mm

UPS

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPS0304	16	90	9000~9500	700~1000	0.02~0.07	3	溝銑 SLOTTING
UPS0304	16	90	9000~9500	1200~1600	0~0.2	3	溝銑 SLOTTING
UPS0304	16	90	9000~9500	700~1000	0.5~0.8	3	溝銑 SLOTTING
UPS0304	16	90	9000~9500	700~1000	3	0.02~0.07	側銑 SIDE MILLING
UPS0304	16	90	9000~9500	1200~1600	3	0~0.2	側銑 SIDE MILLING
UPS0304	16	90	9000~9500	700~1000	3	0.5~1	側銑 SIDE MILLING
UPS0304	16	90	9000~9500	500~800	6	0.02~0.07	側銑 SIDE MILLING
UPS0304	16	90	9000~9500	1000~1400	6	0~0.2	側銑 SIDE MILLING
UPS0304	16	90	9000~9500	500~800	6	0.5~1	側銑 SIDE MILLING
UPS0304L	25	80	8500~9000	500~800	9	0.02~0.07	側銑 SIDE MILLING
UPS0304L	25	80	8500~9000	700~1100	9	0~0.2	側銑 SIDE MILLING
UPS0404	18	95	7500~8000	700~1000	0.03~0.08	4	溝銑 SLOTTING
UPS0404	18	95	7500~8000	1200~1600	0~0.3	4	溝銑 SLOTTING
UPS0404	18	95	7500~8000	500~800	0.8~1.3	4	溝銑 SLOTTING
UPS0404	18	95	7500~8000	700~1000	4	0.03~0.08	側銑 SIDE MILLING
UPS0404	18	95	7500~8000	1200~1600	4	0~0.3	側銑 SIDE MILLING
UPS0404	18	95	7500~8000	400~700	4	0.8~1.3	側銑 SIDE MILLING
UPS0404	18	95	7500~8000	700~1000	8	0.03~0.08	側銑 SIDE MILLING
UPS0404	18	95	7500~8000	700~1100	8	0~0.3	側銑 SIDE MILLING
UPS0404	18	95	7500~8000	400~600	8	0.8~1.3	側銑 SIDE MILLING
UPS0404L	25	85	6500~7000	500~800	12	0.03~0.08	側銑 SIDE MILLING
UPS0404L	25	85	6500~7000	700~1100	12	0~0.3	側銑 SIDE MILLING
UPS0504	20	100	6200~6700	700~1000	0.05~0.1	5	溝銑 SLOTTING
UPS0504	20	100	6200~6700	1000~1400	0~0.4	5	溝銑 SLOTTING
UPS0504	20	100	6200~6700	400~700	2~2.5	5	溝銑 SLOTTING
UPS0504	20	100	6200~6700	700~1000	5	0.05~0.1	側銑 SIDE MILLING
UPS0504	20	100	6200~6700	1000~1400	5	0~0.4	側銑 SIDE MILLING
UPS0504	20	100	6200~6700	400~700	5	2~2.5	側銑 SIDE MILLING
UPS0504	20	100	6200~6700	500~800	10	0.05~0.1	側銑 SIDE MILLING
UPS0504	20	100	6200~6700	700~1000	10	0~0.4	側銑 SIDE MILLING
UPS0504	20	100	6200~6700	300~600	10	1~1.5	側銑 SIDE MILLING
UPS0604	20	100	5200~5700	700~1000	0.05~0.1	6	溝銑 SLOTTING
UPS0604	20	100	5200~5700	1200~1600	0~0.4	6	溝銑 SLOTTING
UPS0604	20	100	5200~5700	300~600	3~4	6	溝銑 SLOTTING
UPS0604	20	110	5500~6000	700~1000	6	0.05~0.1	側銑 SIDE MILLING
UPS0604	20	110	5500~6000	1200~1600	6	0~0.4	側銑 SIDE MILLING
UPS0604	20	110	5500~6000	300~600	6	3~4	側銑 SIDE MILLING
UPS0604	20	110	5500~6000	500~800	12	0.05~0.1	側銑 SIDE MILLING

UPS

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPS0604	20	110	5500~6000	700~1000	12	0~0.4	側銑 SIDE MILLING
UPS0604	20	110	5500~6000	300~600	12	2~3	側銑 SIDE MILLING
UPS0604L	30	90	4500~5000	400~700	16	0.05~0.1	側銑 SIDE MILLING
UPS0604L	30	90	4500~5000	700~1000	16	0~0.4	側銑 SIDE MILLING
UPS0604L	30	70	3500~4000	300~500	16	0.7~1.2	側銑 SIDE MILLING
UPS0804	25	120	4500~5000	700~1100	0.05~0.1	8	溝銑 SLOTTING
UPS0804	25	120	4500~5000	1600~2000	0~0.5	8	溝銑 SLOTTING
UPS0804	25	120	4500~5000	400~700	3~4	8	溝銑 SLOTTING
UPS0804	25	120	4500~5000	700~1100	8	0.05~0.1	側銑 SIDE MILLING
UPS0804	25	110	4200~4700	1200~1600	8	0~0.5	側銑 SIDE MILLING
UPS0804	25	105	4000~4500	500~800	8	3~4	側銑 SIDE MILLING
UPS0804	25	105	4000~4500	300~500	8	6~7	側銑 SIDE MILLING
UPS0804	25	110	4200~4700	500~800	16	0.05~0.1	側銑 SIDE MILLING
UPS0804	25	115	4300~4800	800~1200	16	0~0.5	側銑 SIDE MILLING
UPS0804	25	115	4300~4800	400~700	16	3~4	側銑 SIDE MILLING
UPS0804L	35	95	3500~4000	400~700	20	0.05~0.1	側銑 SIDE MILLING
UPS0804L	35	95	3500~4000	800~1200	20	0~0.5	側銑 SIDE MILLING
UPS0804L	35	75	2700~3200	500~800	20	1~1.5	側銑 SIDE MILLING
UPS1004	30	120	3600~4000	700~1000	0.05~0.1	10	溝銑 SLOTTING
UPS1004	30	110	3400~3800	1200~1600	0~0.5	10	溝銑 SLOTTING
UPS1004	30	110	3400~3800	400~700	4~5	10	溝銑 SLOTTING
UPS1004	30	110	3400~3800	300~600	8	10	溝銑 SLOTTING
UPS1004	30	125	3700~4200	700~1000	10	0.05~0.1	側銑 SIDE MILLING
UPS1004	30	125	3700~4200	1400~1800	10	0~0.5	側銑 SIDE MILLING
UPS1004	30	110	3400~3800	400~700	10	4~5	側銑 SIDE MILLING
UPS1004	30	110	3400~3800	250~400	10	7~8	側銑 SIDE MILLING
UPS1004	30	120	3600~4000	500~800	20	0.05~0.1	側銑 SIDE MILLING
UPS1004	30	110	3400~3800	1200~1600	20	0~0.5	側銑 SIDE MILLING
UPS1004	30	90	2700~3200	300~600	20	1~2	側銑 SIDE MILLING
UPS1004	30	90	2700~3200	300~500	20	4~5	側銑 SIDE MILLING
UPS1004L	40	90	2700~3200	300~600	25	0.05~0.1	側銑 SIDE MILLING
UPS1004L	40	90	2700~3200	800~1200	25	0~0.5	側銑 SIDE MILLING
UPS1004L	40	75	2200~2600	400~700	25	1~1.5	側銑 SIDE MILLING
UPS1204	33	110	2700~3200	500~800	0.1~0.15	12	溝銑 SLOTTING
UPS1204	33	110	2700~3200	1200~1600	0~0.5	12	溝銑 SLOTTING
UPS1204	33	110	2700~3200	300~500	2~3	12	溝銑 SLOTTING
UPS1204	33	110	2700~3200	300~500	5~6	12	溝銑 SLOTTING
UPS1204	33	110	2700~3200	700~1000	12	0.1~0.15	側銑 SIDE MILLING

UPS

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPS1204	33	110	2700~3200	1400~1800	12	0~0.5	側銑 SIDE MILLING
UPS1204	33	110	2700~3200	500~800	12	2~3	側銑 SIDE MILLING
UPS1204	33	110	2700~3200	300~400	12	5~6	側銑 SIDE MILLING
UPS1204	33	110	2700~3200	500~800	24	0.1~0.15	側銑 SIDE MILLING
UPS1204	33	110	2700~3200	1200~1600	24	0~0.5	側銑 SIDE MILLING
UPS1204	33	110	2700~3200	300~600	24	2~3	側銑 SIDE MILLING
UPS1204L	50	90	2200~2700	500~800	30	0.1~0.15	側銑 SIDE MILLING
UPS1204L	50	90	2200~2700	800~1200	30	0~0.5	側銑 SIDE MILLING
UPS1204L	50	85	2000~2500	400~700	30	1~2	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	500~800	0.1~0.15	16	溝銑 SLOTTING
UPS1604	45	110	2000~2500	800~1200	0~0.6	16	溝銑 SLOTTING
UPS1604	45	110	2000~2500	300~500	3~4	16	溝銑 SLOTTING
UPS1604	45	110	2000~2500	300~500	5~6	16	溝銑 SLOTTING
UPS1604	45	110	2000~2500	500~800	16	0.1~0.15	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	800~1200	16	0~0.6	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	400~700	16	3~4	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	300~400	16	5~6	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	500~800	32	0.1~0.15	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	800~1200	32	0~0.6	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	300~600	32	2~3	側銑 SIDE MILLING
UPS1804	50	90	1300~1800	300~500	0.1~0.15	18	溝銑 SLOTTING
UPS1804	50	90	1300~1800	500~800	0~0.7	18	溝銑 SLOTTING
UPS1804	50	90	1300~1800	300~500	3~4	18	溝銑 SLOTTING
UPS1804	50	90	1300~1800	300~500	18	0.1~0.15	側銑 SIDE MILLING
UPS1804	50	90	1300~1800	500~800	18	0~0.7	側銑 SIDE MILLING
UPS1804	50	90	1300~1800	300~600	18	3~4	側銑 SIDE MILLING
UPS1804	50	90	1300~1800	300~500	36	0.1~0.15	側銑 SIDE MILLING
UPS1804	50	90	1300~1800	400~700	36	0~0.7	側銑 SIDE MILLING
UPS1804	50	90	1300~1800	300~500	36	2~3	側銑 SIDE MILLING
UPS2004	50	65	800~1300	200~400	0.1~0.15	20	溝銑 SLOTTING
UPS2004	50	65	800~1300	200~400	0~0.6	20	溝銑 SLOTTING
UPS2004	50	65	800~1300	150~300	3~4	20	溝銑 SLOTTING
UPS2004	50	65	800~1300	200~400	20	0.1~0.15	側銑 SIDE MILLING
UPS2004	50	65	800~1300	200~400	20	0~0.6	側銑 SIDE MILLING
UPS2004	50	65	800~1300	150~300	20	3~4	側銑 SIDE MILLING
UPS2004	50	65	800~1300	200~400	40	0.1~0.15	側銑 SIDE MILLING
UPS2004	50	65	800~1300	200~400	40	0~0.6	側銑 SIDE MILLING
UPS2004L	70	50	600~1100	200~400	45	0.1~0.15	側銑 SIDE MILLING
UPS2004L	70	50	600~1100	150~350	45	0~0.4	側銑 SIDE MILLING

UPS

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPS0304	16	90	9000~9500	400~700	0.02~0.07	3	溝銑 SLOTTING
UPS0304	16	90	9000~9500	1200~1600	0~0.2	3	溝銑 SLOTTING
UPS0304	16	90	9000~9500	700~1000	0.5~0.8	3	溝銑 SLOTTING
UPS0304	16	90	9000~9500	500~800	3	0.02~0.07	側銑 SIDE MILLING
UPS0304	16	90	9000~9500	1200~1600	3	0~0.2	側銑 SIDE MILLING
UPS0304	16	90	9000~9500	700~1000	3	0.5~1	側銑 SIDE MILLING
UPS0304	16	90	9000~9500	500~800	6	0.02~0.07	側銑 SIDE MILLING
UPS0304	16	90	9000~9500	1000~1400	6	0~0.2	側銑 SIDE MILLING
UPS0304	16	90	9000~9500	500~800	6	0.5~1	側銑 SIDE MILLING
UPS0304L	25	80	8500~9000	500~800	9	0.02~0.07	側銑 SIDE MILLING
UPS0304L	25	80	8500~9000	500~800	9	0~0.2	側銑 SIDE MILLING
UPS0404	18	95	7500~8000	500~800	0.03~0.08	4	溝銑 SLOTTING
UPS0404	18	95	7500~8000	1200~1600	0~0.3	4	溝銑 SLOTTING
UPS0404	18	95	7500~8000	500~800	0.8~1.3	4	溝銑 SLOTTING
UPS0404	18	95	7500~8000	700~1000	4	0.03~0.08	側銑 SIDE MILLING
UPS0404	18	95	7500~8000	1200~1600	4	0~0.3	側銑 SIDE MILLING
UPS0404	18	95	7500~8000	400~700	4	0.8~1.3	側銑 SIDE MILLING
UPS0404	18	95	7500~8000	700~1000	8	0.03~0.08	側銑 SIDE MILLING
UPS0404	18	95	7500~8000	700~1100	8	0~0.3	側銑 SIDE MILLING
UPS0404	18	95	7500~8000	400~600	8	0.8~1.3	側銑 SIDE MILLING
UPS0404L	25	85	6500~7000	500~800	12	0.03~0.08	側銑 SIDE MILLING
UPS0404L	25	85	6500~7000	500~800	12	0~0.3	側銑 SIDE MILLING
UPS0504	20	100	6200~6700	700~1000	0.05~0.1	5	溝銑 SLOTTING
UPS0504	20	100	6200~6700	700~1100	0~0.4	5	溝銑 SLOTTING
UPS0504	20	100	6200~6700	300~600	2~2.5	5	溝銑 SLOTTING
UPS0504	20	100	6200~6700	700~1000	5	0.05~0.1	側銑 SIDE MILLING
UPS0504	20	100	6200~6700	700~1100	5	0~0.4	側銑 SIDE MILLING
UPS0504	20	100	6200~6700	300~600	5	2~2.5	側銑 SIDE MILLING
UPS0504	20	100	6200~6700	500~800	10	0.05~0.1	側銑 SIDE MILLING
UPS0504	20	100	6200~6700	500~800	10	0~0.4	側銑 SIDE MILLING
UPS0504	20	100	6200~6700	300~500	10	1~1.5	側銑 SIDE MILLING
UPS0604	20	100	5200~5700	500~800	0.05~0.1	6	溝銑 SLOTTING
UPS0604	20	100	5200~5700	1200~1600	0~0.4	6	溝銑 SLOTTING
UPS0604	20	100	5200~5700	300~500	3~4	6	溝銑 SLOTTING
UPS0604	20	110	5500~6000	500~800	6	0.05~0.1	側銑 SIDE MILLING
UPS0604	20	110	5500~6000	1200~1600	6	0~0.4	側銑 SIDE MILLING
UPS0604	20	110	5500~6000	300~600	6	3~4	側銑 SIDE MILLING
UPS0604	20	110	5500~6000	500~800	12	0.05~0.1	側銑 SIDE MILLING

UPS

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPS0604	20	110	5500~6000	700~1000	12	0~0.4	側銑 SIDE MILLING
UPS0604	20	100	5000~5500	200~400	12	2~3	側銑 SIDE MILLING
UPS0604L	30	90	4500~5000	400~700	16	0.05~0.1	側銑 SIDE MILLING
UPS0604L	30	90	4500~5000	500~800	16	0~0.4	側銑 SIDE MILLING
UPS0604L	30	70	3500~4000	200~400	16	0.7~1.2	側銑 SIDE MILLING
UPS0804	25	120	4500~5000	700~1100	0.05~0.1	8	溝銑 SLOTTING
UPS0804	25	120	4500~5000	1600~2000	0~0.5	8	溝銑 SLOTTING
UPS0804	25	120	4500~5000	400~700	3~4	8	溝銑 SLOTTING
UPS0804	25	120	4500~5000	700~1100	8	0.05~0.1	側銑 SIDE MILLING
UPS0804	25	110	4200~4700	1200~1600	8	0~0.5	側銑 SIDE MILLING
UPS0804	25	105	4000~4500	500~800	8	3~4	側銑 SIDE MILLING
UPS0804	25	105	4000~4500	300~500	8	6~7	側銑 SIDE MILLING
UPS0804	25	110	4200~4700	500~800	16	0.05~0.1	側銑 SIDE MILLING
UPS0804	25	115	4300~4800	800~1200	16	0~0.5	側銑 SIDE MILLING
UPS0804	25	105	4000~4500	400~700	16	3~4	側銑 SIDE MILLING
UPS0804L	35	95	3500~4000	400~700	20	0.05~0.1	側銑 SIDE MILLING
UPS0804L	35	95	3500~4000	800~1200	20	0~0.5	側銑 SIDE MILLING
UPS0804L	35	70	2500~3000	500~800	20	1~1.5	側銑 SIDE MILLING
UPS1004	30	120	3600~4000	700~1000	0.05~0.1	10	溝銑 SLOTTING
UPS1004	30	110	3400~3800	1200~1600	0~0.5	10	溝銑 SLOTTING
UPS1004	30	95	2800~3300	400~700	4~5	10	溝銑 SLOTTING
UPS1004	30	95	2800~3300	300~500	8	10	溝銑 SLOTTING
UPS1004	30	125	3700~4200	700~1000	10	0.05~0.1	側銑 SIDE MILLING
UPS1004	30	125	3700~4200	1400~1800	10	0~0.5	側銑 SIDE MILLING
UPS1004	30	85	2500~3000	400~700	10	4~5	側銑 SIDE MILLING
UPS1004	30	85	2500~3000	250~400	10	7~8	側銑 SIDE MILLING
UPS1004	30	120	3600~4000	500~800	20	0.05~0.1	側銑 SIDE MILLING
UPS1004	30	110	3400~3800	1200~1600	20	0~0.5	側銑 SIDE MILLING
UPS1004	30	90	2700~3200	300~600	20	1~2	側銑 SIDE MILLING
UPS1004	30	70	2000~2500	300~500	20	4~5	側銑 SIDE MILLING
UPS1004L	40	90	2700~3200	300~600	25	0.05~0.1	側銑 SIDE MILLING
UPS1004L	40	90	2700~3200	800~1200	25	0~0.5	側銑 SIDE MILLING
UPS1004L	40	70	2000~2500	400~700	25	1~1.5	側銑 SIDE MILLING
UPS1204	33	110	2700~3200	500~800	0.1~0.15	12	溝銑 SLOTTING
UPS1204	33	110	2700~3200	1200~1600	0~0.5	12	溝銑 SLOTTING
UPS1204	33	110	2700~3200	300~500	2~3	12	溝銑 SLOTTING
UPS1204	33	75	1800~2300	300~500	5~6	12	溝銑 SLOTTING
UPS1204	33	110	2700~3200	700~1000	12	0.1~0.15	側銑 SIDE MILLING

UPS

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPS1204	33	110	2700~3200	1400~1800	12	0~0.5	側銑 SIDE MILLING
UPS1204	33	110	2700~3200	500~800	12	2~3	側銑 SIDE MILLING
UPS1204	33	85	2000~2500	300~400	12	5~6	側銑 SIDE MILLING
UPS1204	33	110	2700~3200	500~800	24	0.1~0.15	側銑 SIDE MILLING
UPS1204	33	110	2700~3200	1200~1600	24	0~0.5	側銑 SIDE MILLING
UPS1204	33	85	2000~2500	300~500	24	2~3	側銑 SIDE MILLING
UPS1204L	50	90	2200~2700	500~800	30	0.1~0.15	側銑 SIDE MILLING
UPS1204L	50	90	2200~2700	700~1000	30	0~0.5	側銑 SIDE MILLING
UPS1204L	50	85	2000~2500	300~600	30	1~2	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	300~600	0.1~0.15	16	溝銑 SLOTTING
UPS1604	45	110	2000~2500	700~1000	0~0.6	16	溝銑 SLOTTING
UPS1604	45	110	2000~2500	200~400	3~4	16	溝銑 SLOTTING
UPS1604	45	110	2000~2500	200~400	5~6	16	溝銑 SLOTTING
UPS1604	45	110	2000~2500	300~600	16	0.1~0.15	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	700~1000	16	0~0.6	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	300~500	16	3~4	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	300~500	16	5~6	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	300~600	32	0.1~0.15	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	700~1000	32	0~0.6	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	300~500	32	2~3	側銑 SIDE MILLING
UPS1804	50	90	1300~1800	300~500	0.1~0.15	18	溝銑 SLOTTING
UPS1804	50	90	1300~1800	300~600	0~0.7	18	溝銑 SLOTTING
UPS1804	50	90	1300~1800	150~300	3~4	18	溝銑 SLOTTING
UPS1804	50	90	1300~1800	300~500	18	0.1~0.15	側銑 SIDE MILLING
UPS1804	50	90	1300~1800	300~600	18	0~0.7	側銑 SIDE MILLING
UPS1804	50	90	1300~1800	200~400	18	3~4	側銑 SIDE MILLING
UPS1804	50	90	1300~1800	300~500	36	0.1~0.15	側銑 SIDE MILLING
UPS1804	50	90	1300~1800	300~600	36	0~0.7	側銑 SIDE MILLING
UPS1804	50	90	1300~1800	150~300	36	2~3	側銑 SIDE MILLING
UPS2004	50	65	800~1300	200~400	0.1~0.15	20	溝銑 SLOTTING
UPS2004	50	65	800~1300	150~300	0~0.6	20	溝銑 SLOTTING
UPS2004	50	65	800~1300	100~200	3~4	20	溝銑 SLOTTING
UPS2004	50	65	800~1300	200~400	20	0.1~0.15	側銑 SIDE MILLING
UPS2004	50	65	800~1300	150~300	20	0~0.6	側銑 SIDE MILLING
UPS2004	50	65	800~1300	100~200	20	3~4	側銑 SIDE MILLING
UPS2004	50	65	800~1300	200~400	40	0.1~0.15	側銑 SIDE MILLING
UPS2004	50	65	800~1300	150~300	40	0~0.6	側銑 SIDE MILLING
UPS2004L	70	50	600~1100	200~400	45	0.1~0.15	側銑 SIDE MILLING
UPS2004L	70	50	600~1100	100~200	45	0~0.4	側銑 SIDE MILLING

UPS

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPS0304	16	85	8700~9200	700~1000	0.02~0.07	3	溝銑 SLOTTING
UPS0304	16	85	8700~9200	1000~1400	0~0.2	3	溝銑 SLOTTING
UPS0304	16	85	8700~9200	500~800	0.5~0.8	3	溝銑 SLOTTING
UPS0304	16	85	9000~9500	700~1000	3	0.02~0.07	側銑 SIDE MILLING
UPS0304	16	85	8700~9200	1000~1400	3	0~0.2	側銑 SIDE MILLING
UPS0304	16	85	8700~9200	500~800	3	0.5~0.8	側銑 SIDE MILLING
UPS0304	16	85	8700~9200	500~800	6	0.02~0.07	側銑 SIDE MILLING
UPS0304	16	85	8700~9200	700~1100	6	0~0.2	側銑 SIDE MILLING
UPS0304	16	85	8700~9200	400~700	6	0.5~0.8	側銑 SIDE MILLING
UPS0304L	25	80	8500~9000	500~800	9	0.02~0.07	側銑 SIDE MILLING
UPS0304L	25	80	8500~9000	500~800	9	0~0.2	側銑 SIDE MILLING
UPS0404	18	90	7000~7500	700~1000	0.03~0.08	4	溝銑 SLOTTING
UPS0404	18	90	7000~7500	800~1200	0~0.3	4	溝銑 SLOTTING
UPS0404	18	90	7000~7500	400~700	0.7~1	4	溝銑 SLOTTING
UPS0404	18	90	7000~7500	700~1000	4	0.03~0.08	側銑 SIDE MILLING
UPS0404	18	90	7000~7500	700~1000	4	0~0.3	側銑 SIDE MILLING
UPS0404	18	90	7000~7500	300~600	4	0.7~1	側銑 SIDE MILLING
UPS0404	18	90	7000~7500	700~1000	8	0.03~0.08	側銑 SIDE MILLING
UPS0404	18	90	7000~7500	500~800	8	0~0.3	側銑 SIDE MILLING
UPS0404	18	90	7000~7500	300~500	8	0.7~1	側銑 SIDE MILLING
UPS0404L	25	85	6500~7000	500~800	12	0.03~0.08	側銑 SIDE MILLING
UPS0404L	25	85	6500~7000	500~800	12	0~0.3	側銑 SIDE MILLING
UPS0504	20	90	5500~6000	700~1000	0.05~0.1	5	溝銑 SLOTTING
UPS0504	20	90	5500~6000	700~1100	0~0.4	5	溝銑 SLOTTING
UPS0504	20	90	5500~6000	300~600	2~2.5	5	溝銑 SLOTTING
UPS0504	20	90	5500~6000	700~1000	5	0.05~0.1	側銑 SIDE MILLING
UPS0504	20	90	5500~6000	700~1100	5	0~0.4	側銑 SIDE MILLING
UPS0504	20	90	5500~6000	300~600	5	2~2.5	側銑 SIDE MILLING
UPS0504	20	90	5500~6000	500~800	10	0.05~0.1	側銑 SIDE MILLING
UPS0504	20	90	5500~6000	500~800	10	0~0.4	側銑 SIDE MILLING
UPS0504	20	90	5500~6000	300~500	10	1~1.5	側銑 SIDE MILLING
UPS0604	20	95	4800~5300	500~800	0.05~0.1	6	溝銑 SLOTTING
UPS0604	20	95	4800~5300	800~1200	0~0.4	6	溝銑 SLOTTING
UPS0604	20	95	4800~5300	300~500	3~4	6	溝銑 SLOTTING
UPS0604	20	95	4800~5300	500~800	6	0.05~0.1	側銑 SIDE MILLING
UPS0604	20	95	4800~5300	800~1200	6	0~0.4	側銑 SIDE MILLING
UPS0604	20	95	4800~5300	300~500	6	3~4	側銑 SIDE MILLING
UPS0604	20	95	4800~5300	500~800	12	0.05~0.1	側銑 SIDE MILLING

UPS

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPS0604	20	95	4800~5300	500~800	12	0~0.4	側銑 SIDE MILLING
UPS0604	20	95	4800~5300	300~500	12	2~3	側銑 SIDE MILLING
UPS0604L	30	90	4500~5000	400~700	16	0.05~0.1	側銑 SIDE MILLING
UPS0604L	30	90	4500~5000	500~800	16	0~0.4	側銑 SIDE MILLING
UPS0604L	30	70	3500~4000	200~400	16	0.7~1.2	側銑 SIDE MILLING
UPS0804	25	105	4000~4500	700~1100	0.05~0.1	8	溝銑 SLOTTING
UPS0804	25	105	4000~4500	1200~1600	0~0.5	8	溝銑 SLOTTING
UPS0804	25	105	4000~4500	300~600	3~4	8	溝銑 SLOTTING
UPS0804	25	105	4000~4500	700~1100	8	0.05~0.1	側銑 SIDE MILLING
UPS0804	25	105	4000~4500	1000~1400	8	0~0.5	側銑 SIDE MILLING
UPS0804	25	105	4000~4500	400~700	8	3~4	側銑 SIDE MILLING
UPS0804	25	140	4200~4700	500~800	16	0.05~0.1	側銑 SIDE MILLING
UPS0804	25	140	4200~4700	700~1100	16	0~0.5	側銑 SIDE MILLING
UPS0804	25	140	4200~4700	300~600	16	3~4	側銑 SIDE MILLING
UPS0804L	35	95	3500~4000	400~700	20	0.05~0.1	側銑 SIDE MILLING
UPS0804L	35	95	3500~4000	700~1000	20	0~0.5	側銑 SIDE MILLING
UPS0804L	35	75	2700~3200	400~700	20	1~1.5	側銑 SIDE MILLING
UPS1004	30	100	3000~3500	500~800	0.05~0.1	10	溝銑 SLOTTING
UPS1004	30	95	2800~3300	800~1200	0~0.5	10	溝銑 SLOTTING
UPS1004	30	95	2800~3300	300~600	4~5	10	溝銑 SLOTTING
UPS1004	30	95	2800~3300	300~500	8	10	溝銑 SLOTTING
UPS1004	30	100	3000~3500	500~800	10	0.05~0.1	側銑 SIDE MILLING
UPS1004	30	95	2800~3300	1000~1400	10	0~0.5	側銑 SIDE MILLING
UPS1004	30	95	2800~3300	300~600	10	4~5	側銑 SIDE MILLING
UPS1004	30	95	2800~3300	400~700	20	0.05~0.1	側銑 SIDE MILLING
UPS1004	30	95	2800~3300	800~1200	20	0~0.5	側銑 SIDE MILLING
UPS1004	30	95	2800~3300	300~500	20	1~2	側銑 SIDE MILLING
UPS1004	30	95	2800~3300	200~400	20	4~5	側銑 SIDE MILLING
UPS1004L	40	90	2700~3200	300~600	25	0.05~0.1	側銑 SIDE MILLING
UPS1004L	40	90	2700~3200	700~1000	25	0~0.5	側銑 SIDE MILLING
UPS1004L	40	75	2200~2600	300~500	25	1~1.5	側銑 SIDE MILLING
UPS1204	33	110	2700~3200	300~600	0.1~0.15	10~12	溝銑 SLOTTING
UPS1204	33	110	2700~3200	1000~1400	0~0.5	12	溝銑 SLOTTING
UPS1204	33	110	2700~3200	300~450	2~3	12	溝銑 SLOTTING
UPS1204	33	110	2700~3200	500~800	12	0.1~0.15	側銑 SIDE MILLING
UPS1204	33	110	2700~3200	1100~1500	12	0~0.5	側銑 SIDE MILLING
UPS1204	33	110	2700~3200	300~600	12	2~3	側銑 SIDE MILLING
UPS1204	33	110	2700~3200	400~700	24	0.1~0.15	側銑 SIDE MILLING

UPS

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPS1204	33	110	2700~3200	800~1200	24	0~0.5	側銑 SIDE MILLING
UPS1204	33	110	2700~3200	300~500	24	2~3	側銑 SIDE MILLING
UPS1204L	50	90	2200~2700	600~800	30	0.1~0.15	側銑 SIDE MILLING
UPS1204L	50	90	2200~2700	700~1000	30	0~0.5	側銑 SIDE MILLING
UPS1204L	50	85	2000~2500	300~600	30	1~2	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	300~600	0.1~0.15	16	溝銑 SLOTTING
UPS1604	45	110	2000~2500	700~1000	0~0.6	16	溝銑 SLOTTING
UPS1604	45	110	2000~2500	200~400	3~4	16	溝銑 SLOTTING
UPS1604	45	110	2000~2500	300~600	16	0.1~0.15	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	700~1000	16	0~0.6	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	300~500	16	3~4	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	300~600	32	0.1~0.15	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	700~1000	32	0~0.6	側銑 SIDE MILLING
UPS1604	45	110	2000~2500	300~500	32	1~2	側銑 SIDE MILLING
UPS1804	50	90	1300~1800	300~500	0.1~0.15	18	溝銑 SLOTTING
UPS1804	50	90	1300~1800	300~600	0~0.7	18	溝銑 SLOTTING
UPS1804	50	90	1300~1800	200~350	3~4	18	溝銑 SLOTTING
UPS1804	50	90	1300~1800	300~500	18	0.1~0.15	側銑 SIDE MILLING
UPS1804	50	90	1300~1800	300~600	18	0~0.7	側銑 SIDE MILLING
UPS1804	50	90	1300~1800	250~400	18	3~4	側銑 SIDE MILLING
UPS1804	50	90	1300~1800	300~500	36	0.1~0.15	側銑 SIDE MILLING
UPS1804	50	90	1300~1800	300~600	36	0~0.7	側銑 SIDE MILLING
UPS1804	50	90	1300~1800	150~300	36	2~3	側銑 SIDE MILLING
UPS2004	50	65	800~1300	200~400	0.1~0.15	20	溝銑 SLOTTING
UPS2004	50	65	800~1300	150~300	0~0.6	20	溝銑 SLOTTING
UPS2004	50	65	800~1300	150~250	3~4	20	溝銑 SLOTTING
UPS2004	50	65	800~1300	200~400	20	0.1~0.15	側銑 SIDE MILLING
UPS2004	50	65	800~1300	150~300	20	0~0.6	側銑 SIDE MILLING
UPS2004	50	65	800~1300	150~250	20	3~4	側銑 SIDE MILLING
UPS2004	50	65	800~1300	200~400	40	0.1~0.15	側銑 SIDE MILLING
UPS2004	50	65	800~1300	150~300	40	0~0.6	側銑 SIDE MILLING
UPS2004L	70	50	600~1100	200~400	45	0.1~0.15	側銑 SIDE MILLING
UPS2004L	70	50	600~1100	100~200	45	0~0.4	側銑 SIDE MILLING

UPS

切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】: **SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPS0304	16	85	8700~9200	500~800	0.02~0.07	3	溝銑 SLOTTING
UPS0304	16	85	8700~9200	700~1100	0~0.2	3	溝銑 SLOTTING
UPS0304	16	85	8700~9200	300~600	0.5~0.8	3	溝銑 SLOTTING
UPS0304	16	85	9000~9500	500~800	3	0.02~0.07	側銑 SIDE MILLING
UPS0304	16	85	8700~9200	700~1100	3	0~0.2	側銑 SIDE MILLING
UPS0304	16	85	8700~9200	300~600	3	0.5~0.8	側銑 SIDE MILLING
UPS0304	16	85	8700~9200	400~700	6	0.02~0.07	側銑 SIDE MILLING
UPS0304	16	85	8700~9200	500~800	6	0~0.2	側銑 SIDE MILLING
UPS0304	16	85	8700~9200	300~500	6	0.5~0.8	側銑 SIDE MILLING
UPS0304L	25	80	8500~9000	400~700	9	0.02~0.07	側銑 SIDE MILLING
UPS0304L	25	80	8500~9000	300~600	9	0~0.2	側銑 SIDE MILLING
UPS0404	18	90	7000~7500	500~800	0.03~0.08	4	溝銑 SLOTTING
UPS0404	18	90	7000~7500	700~1000	0~0.3	4	溝銑 SLOTTING
UPS0404	18	90	7000~7500	300~600	0.7~1	4	溝銑 SLOTTING
UPS0404	18	90	7000~7500	500~800	4	0.03~0.08	側銑 SIDE MILLING
UPS0404	18	90	7000~7500	700~1000	4	0~0.3	側銑 SIDE MILLING
UPS0404	18	90	7000~7500	300~500	4	0.7~1	側銑 SIDE MILLING
UPS0404	18	90	7000~7500	400~700	8	0.03~0.08	側銑 SIDE MILLING
UPS0404	18	90	7000~7500	300~600	8	0~0.3	側銑 SIDE MILLING
UPS0404	18	90	7000~7500	200~400	8	0.7~1	側銑 SIDE MILLING
UPS0404L	25	85	6500~7000	400~700	12	0.03~0.08	側銑 SIDE MILLING
UPS0404L	25	85	6500~7000	300~600	12	0~0.3	側銑 SIDE MILLING
UPS0504	20	90	5500~6000	500~800	0.05~0.1	5	溝銑 SLOTTING
UPS0504	20	90	5500~6000	700~1000	0~0.4	5	溝銑 SLOTTING
UPS0504	20	90	5500~6000	300~500	1.7~2.2	5	溝銑 SLOTTING
UPS0504	20	90	5500~6000	500~800	5	0.05~0.1	側銑 SIDE MILLING
UPS0504	20	90	5500~6000	700~1000	5	0~0.4	側銑 SIDE MILLING
UPS0504	20	90	5500~6000	300~600	5	1.7~2.2	側銑 SIDE MILLING
UPS0504	20	90	5500~6000	400~700	10	0.05~0.1	側銑 SIDE MILLING
UPS0504	20	90	5500~6000	400~700	10	0~0.4	側銑 SIDE MILLING
UPS0504	20	90	5500~6000	300~600	10	1~1.5	側銑 SIDE MILLING
UPS0604	20	95	4800~5300	400~700	0.05~0.1	6	溝銑 SLOTTING
UPS0604	20	95	4800~5300	700~1000	0~0.4	6	溝銑 SLOTTING
UPS0604	20	95	4800~5300	200~400	3~4	6	溝銑 SLOTTING
UPS0604	20	95	4800~5300	400~700	6	0.05~0.1	側銑 SIDE MILLING
UPS0604	20	95	4800~5300	700~1000	6	0~0.4	側銑 SIDE MILLING
UPS0604	20	95	4800~5300	300~500	6	3~4	側銑 SIDE MILLING
UPS0604	20	95	4800~5300	400~700	12	0.05~0.1	側銑 SIDE MILLING

UPS

切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】:**SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPS0604	20	95	4800~5300	400~700	12	0~0.4	側銑 SIDE MILLING
UPS0604	20	95	4800~5300	300~500	12	1~2	側銑 SIDE MILLING
UPS0604L	30	90	4500~5000	300~600	16	0.05~0.1	側銑 SIDE MILLING
UPS0604L	30	90	4500~5000	400~700	16	0~0.4	側銑 SIDE MILLING
UPS0604L	30	70	3500~4000	200~400	16	0.7~1	側銑 SIDE MILLING
UPS0804	25	105	4000~4500	500~800	0.05~0.1	8	溝銑 SLOTTING
UPS0804	25	105	4000~4500	1000~1400	0~0.5	8	溝銑 SLOTTING
UPS0804	25	105	4000~4500	300~600	3~4	8	溝銑 SLOTTING
UPS0804	25	105	4000~4500	500~800	8	0.05~0.1	側銑 SIDE MILLING
UPS0804	25	105	4000~4500	700~1000	8	0~0.5	側銑 SIDE MILLING
UPS0804	25	105	4000~4500	300~600	8	3~4	側銑 SIDE MILLING
UPS0804	25	140	4200~4700	400~700	16	0.05~0.1	側銑 SIDE MILLING
UPS0804	25	140	4200~4700	500~800	16	0~0.5	側銑 SIDE MILLING
UPS0804	25	140	4200~4700	300~500	16	3~4	側銑 SIDE MILLING
UPS0804L	35	95	3500~4000	300~600	20	0.05~0.1	側銑 SIDE MILLING
UPS0804L	35	95	3500~4000	500~800	20	0~0.5	側銑 SIDE MILLING
UPS0804L	35	75	2700~3200	300~600	20	1~1.5	側銑 SIDE MILLING
UPS1004	30	100	3000~3500	500~800	0.05~0.1	10	溝銑 SLOTTING
UPS1004	30	95	2800~3300	700~1000	0~0.5	10	溝銑 SLOTTING
UPS1004	30	95	2800~3300	300~500	4~5	10	溝銑 SLOTTING
UPS1004	30	95	2800~3300	300~500	8	10	溝銑 SLOTTING
UPS1004	30	100	3000~3500	500~800	10	0.05~0.1	側銑 SIDE MILLING
UPS1004	30	95	2800~3300	800~1200	10	0~0.5	側銑 SIDE MILLING
UPS1004	30	95	2800~3300	300~500	10	4~5	側銑 SIDE MILLING
UPS1004	30	95	2800~3300	400~700	20	0.05~0.1	側銑 SIDE MILLING
UPS1004	30	95	2800~3300	700~1000	20	0~0.5	側銑 SIDE MILLING
UPS1004	30	95	2800~3300	300~500	20	1~2	側銑 SIDE MILLING
UPS1004	30	95	2800~3300	200~400	20	4~5	側銑 SIDE MILLING
UPS1004L	40	90	2700~3200	300~500	25	0.05~0.1	側銑 SIDE MILLING
UPS1004L	40	90	2700~3200	500~800	25	0~0.5	側銑 SIDE MILLING
UPS1004L	40	75	2200~2600	200~400	25	1~1.5	側銑 SIDE MILLING
UPS1204	33	95	2300~2800	300~500	0.1~0.15	10~12	溝銑 SLOTTING
UPS1204	33	95	2300~2800	800~1200	0~0.5	12	溝銑 SLOTTING
UPS1204	33	95	2300~2800	200~400	2~3	12	溝銑 SLOTTING
UPS1204	33	95	2300~2800	500~700	12	0.1~0.15	側銑 SIDE MILLING
UPS1204	33	95	2300~2800	1000~1400	12	0~0.5	側銑 SIDE MILLING
UPS1204	33	95	2300~2800	300~500	12	2~3	側銑 SIDE MILLING
UPS1204	33	95	2300~2800	400~600	24	0.1~0.15	側銑 SIDE MILLING

UPS

切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】: **SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPS1204	33	95	2300~2800	800~1000	24	0~0.5	側銑 SIDE MILLING
UPS1204	33	95	2300~2800	300~500	24	1.5~2.5	側銑 SIDE MILLING
UPS1204L	50	85	2000~2500	500~700	30	0.1~0.15	側銑 SIDE MILLING
UPS1204L	50	85	2000~2500	700~900	30	0~0.5	側銑 SIDE MILLING
UPS1204L	50	80	1900~2300	300~500	30	1~1.5	側銑 SIDE MILLING
UPS1604	45	95	1700~2100	300~500	0.1~0.15	16	溝銑 SLOTTING
UPS1604	45	95	1700~2100	700~900	0~0.5	16	溝銑 SLOTTING
UPS1604	45	95	1700~2100	200~350	3~4	16	溝銑 SLOTTING
UPS1604	45	95	1700~2100	300~500	16	0.1~0.15	側銑 SIDE MILLING
UPS1604	45	95	1700~2100	700~900	16	0~0.4	側銑 SIDE MILLING
UPS1604	45	95	1700~2100	300~400	16	3~4	側銑 SIDE MILLING
UPS1604	45	95	1700~2100	300~500	32	0.1~0.15	側銑 SIDE MILLING
UPS1604	45	95	1700~2100	700~900	32	0~0.6	側銑 SIDE MILLING
UPS1604	45	95	1700~2100	300~500	32	1~1.5	側銑 SIDE MILLING
UPS1804	50	80	1200~1600	300~500	0.1~0.15	18	溝銑 SLOTTING
UPS1804	50	80	1200~1600	300~600	0~0.5	18	溝銑 SLOTTING
UPS1804	50	80	1200~1600	150~300	3~4	18	溝銑 SLOTTING
UPS1804	50	80	1200~1600	300~500	18	0.1~0.15	側銑 SIDE MILLING
UPS1804	50	80	1200~1600	300~600	18	0~0.5	側銑 SIDE MILLING
UPS1804	50	80	1200~1600	200~350	18	2~3	側銑 SIDE MILLING
UPS1804	50	80	1200~1600	300~500	36	0.1~0.15	側銑 SIDE MILLING
UPS1804	50	80	1200~1600	300~600	36	0~0.5	側銑 SIDE MILLING
UPS1804	50	80	1200~1600	150~300	36	1.5~2.5	側銑 SIDE MILLING
UPS2004	50	60	750~1150	200~400	0.1~0.15	20	溝銑 SLOTTING
UPS2004	50	60	750~1150	150~300	0~0.5	20	溝銑 SLOTTING
UPS2004	50	60	750~1150	100~200	3~4	20	溝銑 SLOTTING
UPS2004	50	60	750~1150	200~400	20	0.1~0.15	側銑 SIDE MILLING
UPS2004	50	60	750~1150	150~300	20	0~0.6	側銑 SIDE MILLING
UPS2004	50	60	750~1150	100~200	20	3~4	側銑 SIDE MILLING
UPS2004	50	60	750~1150	200~400	40	0.1~0.15	側銑 SIDE MILLING
UPS2004	50	60	750~1150	150~300	40	0~0.5	側銑 SIDE MILLING
UPS2004L	70	50	600~1100	200~400	45	0.1~0.15	側銑 SIDE MILLING
UPS2004L	70	50	600~1100	100~200	45	0~0.3	側銑 SIDE MILLING

UPZ

END MILLS 抗震高效能立銑刀

NEW



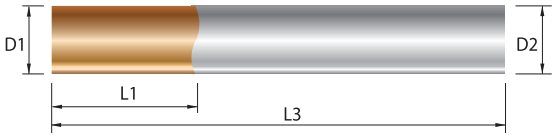
Super mg | 0.4 μm | 45° | FIT | 4 Flutes | HRc 60 | G10

直徑 D1	直徑公差 D1 Tolerance
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm





精銑 Finishing | 中銑 Semi-finishing | 粗銑 Roughing

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UPZ0304	3.0	8	50	6
UPZ0404	4.0	11	50	6
UPZ0504	5.0	13	50	6
UPZ0604	6.0	16	50	6
UPZ0804	8.0	20	60	8
UPZ1004	10.0	22	75	10
UPZ1204	12.0	26	75	12
UPZ1604	16.0	36	100	16
UPZ2004	20.0	40	100	20

unit : mm

UPZ

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPZ0304	16	85	8800~9300	1200~1600	0~0.2	3	溝銑 SLOTTING
UPZ0304	16	85	8800~9300	500~800	0.5~1	3	溝銑 SLOTTING
UPZ0304	16	85	8800~9300	1200~1600	3	0~0.2	側銑 SIDE MILLING
UPZ0304	16	85	8800~9300	500~800	3	0.5~1	側銑 SIDE MILLING
UPZ0304	16	85	8800~9300	800~1200	6	0~0.2	側銑 SIDE MILLING
UPZ0404	20	100	7800~8300	1600~2000	0~0.3	4	溝銑 SLOTTING
UPZ0404	20	100	7800~8300	800~1200	0.5~0.8	4	溝銑 SLOTTING
UPZ0404	20	100	7800~8300	400~700	1~2	4	溝銑 SLOTTING
UPZ0404	20	100	7800~8300	1600~2000	4	0~0.3	側銑 SIDE MILLING
UPZ0404	20	100	7800~8300	800~1200	4	0.5~0.8	側銑 SIDE MILLING
UPZ0404	20	100	7800~8300	500~800	4	1~2	側銑 SIDE MILLING
UPZ0404	20	100	7800~8300	1200~1600	8	0~0.3	側銑 SIDE MILLING
UPZ0504	20	110	6700~7200	1800~2200	0~0.4	5	溝銑 SLOTTING
UPZ0504	20	110	6700~7200	1000~1400	1~2	5	溝銑 SLOTTING
UPZ0504	20	110	6700~7200	500~800	3~4	5	溝銑 SLOTTING
UPZ0504	20	110	6700~7200	1800~2200	5	0~0.4	側銑 SIDE MILLING
UPZ0504	20	110	6700~7200	1000~1400	5	1~2	側銑 SIDE MILLING
UPZ0504	20	110	6700~7200	500~800	5	3~4	側銑 SIDE MILLING
UPZ0504	20	110	6700~7200	1200~1600	10	0~0.4	側銑 SIDE MILLING
UPZ0504	20	110	6700~7200	500~800	10	1~2	側銑 SIDE MILLING
UPZ0504	20	110	6700~7200	400~700	10	3~4	側銑 SIDE MILLING
UPZ0604	20	115	5800~6300	2000~2400	0~0.5	6	溝銑 SLOTTING
UPZ0604	20	115	5800~6300	1200~1600	1~2	6	溝銑 SLOTTING
UPZ0604	20	115	5800~6300	500~800	4~5	6	溝銑 SLOTTING
UPZ0604	20	115	5800~6300	700~1000	7~9	6	溝銑 SLOTTING
UPZ0604	20	115	5800~6300	1800~2200	6	0~0.5	側銑 SIDE MILLING
UPZ0604	20	115	5800~6300	1200~1600	6	1~2	側銑 SIDE MILLING
UPZ0604	20	115	5800~6300	700~1000	6	4~5	側銑 SIDE MILLING
UPZ0604	20	115	5800~6300	1400~1800	12	0~0.5	側銑 SIDE MILLING
UPZ0604	20	115	5800~6300	700~1000	12	1~2	側銑 SIDE MILLING
UPZ0604	20	115	5800~6300	500~800	12	4~5	側銑 SIDE MILLING
UPZ0804	25	125	4700~5200	2200~2600	0~0.5	8	溝銑 SLOTTING
UPZ0804	25	125	4700~5200	1200~1600	1~2	8	溝銑 SLOTTING
UPZ0804	25	125	4700~5200	700~1100	3~4	8	溝銑 SLOTTING
UPZ0804	25	125	4700~5200	1000~1400	7~8	8	溝銑 SLOTTING
UPZ0804	25	125	4700~5200	700~1000	10~12	8	溝銑 SLOTTING
UPZ0804	25	125	4700~5200	2200~2600	8	0~0.5	側銑 SIDE MILLING
UPZ0804	25	125	4700~5200	1200~1600	8	1~2	側銑 SIDE MILLING
UPZ0804	25	125	4700~5200	800~1200	8	3~4	側銑 SIDE MILLING

UPZ

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPZ0804	25	125	4700~5200	700~1100	8	6~7	側銑 SIDE MILLING
UPZ0804	25	125	4700~5200	2200~2600	16	0~0.5	側銑 SIDE MILLING
UPZ0804	25	125	4700~5200	1000~1400	16	1~2	側銑 SIDE MILLING
UPZ0804	25	125	4700~5200	700~1000	16	3~4	側銑 SIDE MILLING
UPZ0804	25	125	4700~5200	500~800	16	6~7	側銑 SIDE MILLING
UPZ1004	30	100	3000~3500	1600~2000	0~0.6	10	溝銑 SLOTTING
UPZ1004	30	95	2800~3300	800~1200	1~2	10	溝銑 SLOTTING
UPZ1004	30	95	2800~3300	500~800	4~5	10	溝銑 SLOTTING
UPZ1004	30	95	2800~3300	800~1200	8~10	10	溝銑 SLOTTING
UPZ1004	30	95	2800~3300	400~700	13~15	10	溝銑 SLOTTING
UPZ1004	30	135	4000~4500	2600~3000	10	0~0.6	側銑 SIDE MILLING
UPZ1004	30	90	2700~3200	700~1000	10	1~2	側銑 SIDE MILLING
UPZ1004	30	100	3000~3400	800~1200	10	4~5	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	800~1200	10	8~9	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	800~1200	20	0~0.6	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	500~800	20	1~2	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	500~800	20	4~5	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	400~700	20	8~9	側銑 SIDE MILLING
UPZ1204	33	110	2700~3200	1000~1400	0~0.7	12	溝銑 SLOTTING
UPZ1204	33	110	2700~3200	500~800	2~3	12	溝銑 SLOTTING
UPZ1204	33	110	2700~3200	500~800	5~7	12	溝銑 SLOTTING
UPZ1204	33	110	2700~3200	1200~1600	12	0~0.7	側銑 SIDE MILLING
UPZ1204	33	110	2700~3200	500~800	12	2~3	側銑 SIDE MILLING
UPZ1204	33	110	2700~3200	500~800	12	5~7	側銑 SIDE MILLING
UPZ1204	33	90	2200~2600	800~1200	24	0~0.7	側銑 SIDE MILLING
UPZ1204	33	90	2200~2600	500~800	24	2~3	側銑 SIDE MILLING
UPZ1604	45	110	2000~2500	700~1100	0~1	16	溝銑 SLOTTING
UPZ1604	45	110	2000~2500	300~500	4~5	16	溝銑 SLOTTING
UPZ1604	45	110	2000~2500	200~400	6~7	16	溝銑 SLOTTING
UPZ1604	45	110	2000~2500	800~1200	16	0~1	側銑 SIDE MILLING
UPZ1604	45	110	2000~2500	400~600	16	4~5	側銑 SIDE MILLING
UPZ1604	45	110	2000~2500	250~450	16	6~7	側銑 SIDE MILLING
UPZ1604	45	90	1600~2000	700~900	32	0~1	側銑 SIDE MILLING
UPZ2004	50	110	1500~2000	400~700	1~2	20	溝銑 SLOTTING
UPZ2004	50	110	1500~2000	300~600	4~5	20	溝銑 SLOTTING
UPZ2004	50	110	1500~2000	200~400	6~7	20	溝銑 SLOTTING
UPZ2004	50	110	1500~2000	500~800	20	1~2	側銑 SIDE MILLING
UPZ2004	50	110	1500~2000	300~600	20	4~5	側銑 SIDE MILLING
UPZ2004	50	110	1500~2000	200~400	20	6~7	側銑 SIDE MILLING

UPZ

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPZ0304	16	80	8000~8500	1000~1400	0~0.2	3	溝銑 SLOTTING
UPZ0304	16	80	8000~8500	400~700	0.5~1	3	溝銑 SLOTTING
UPZ0304	16	80	8000~8500	1000~1400	3	0~0.2	側銑 SIDE MILLING
UPZ0304	16	80	8000~8500	400~700	3	0.5~1	側銑 SIDE MILLING
UPZ0304	16	80	8000~8500	700~1000	6	0~0.2	側銑 SIDE MILLING
UPZ0404	20	90	7000~7500	1400~1800	0~0.3	4	溝銑 SLOTTING
UPZ0404	20	90	7000~7500	700~1000	0.5~0.8	4	溝銑 SLOTTING
UPZ0404	20	90	7000~7500	300~600	1~2	4	溝銑 SLOTTING
UPZ0404	20	90	7000~7500	1400~1800	4	0~0.3	側銑 SIDE MILLING
UPZ0404	20	90	7000~7500	700~1000	4	0.5~0.8	側銑 SIDE MILLING
UPZ0404	20	90	7000~7500	400~700	4	1~2	側銑 SIDE MILLING
UPZ0404	20	90	7000~7500	800~1200	8	0~0.3	側銑 SIDE MILLING
UPZ0504	20	95	5800~6300	1600~2000	0~0.4	5	溝銑 SLOTTING
UPZ0504	20	95	5800~6300	800~1200	1~2	5	溝銑 SLOTTING
UPZ0504	20	95	5800~6300	400~700	3~4	5	溝銑 SLOTTING
UPZ0504	20	95	5800~6300	1600~2000	5	0~0.4	側銑 SIDE MILLING
UPZ0504	20	95	5800~6300	800~1200	5	1~2	側銑 SIDE MILLING
UPZ0504	20	95	5800~6300	400~700	5	3~4	側銑 SIDE MILLING
UPZ0504	20	95	5800~6300	1000~1400	10	0~0.4	側銑 SIDE MILLING
UPZ0504	20	95	5800~6300	400~700	10	1~2	側銑 SIDE MILLING
UPZ0504	20	95	5800~6300	300~600	10	3~4	側銑 SIDE MILLING
UPZ0604	20	100	5200~5700	1800~2200	0~0.5	6	溝銑 SLOTTING
UPZ0604	20	100	5200~5700	1000~1400	1~2	6	溝銑 SLOTTING
UPZ0604	20	100	5200~5700	400~700	4~5	6	溝銑 SLOTTING
UPZ0604	20	100	5200~5700	500~800	7~9	6	溝銑 SLOTTING
UPZ0604	20	100	5200~5700	1600~2000	6	0~0.5	側銑 SIDE MILLING
UPZ0604	20	100	5200~5700	1000~1400	6	1~2	側銑 SIDE MILLING
UPZ0604	20	100	5200~5700	500~800	6	4~5	側銑 SIDE MILLING
UPZ0604	20	100	5200~5700	1200~1600	12	0~0.5	側銑 SIDE MILLING
UPZ0604	20	100	5200~5700	500~800	12	1~2	側銑 SIDE MILLING
UPZ0604	20	100	5200~5700	400~700	12	4~5	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	2000~2400	0~0.5	8	溝銑 SLOTTING
UPZ0804	25	120	4500~5000	1000~1400	1~2	8	溝銑 SLOTTING
UPZ0804	25	120	4500~5000	500~800	3~4	8	溝銑 SLOTTING
UPZ0804	25	120	4500~5000	800~1200	7~8	8	溝銑 SLOTTING
UPZ0804	25	120	4500~5000	500~800	10~12	8	溝銑 SLOTTING
UPZ0804	25	120	4500~5000	2000~2400	8	0~0.5	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	1000~1400	8	1~2	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	700~1000	8	3~4	側銑 SIDE MILLING

UPZ

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPZ0804	25	120	4500~5000	700~1000	8	6~7	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	2000~2400	16	0~0.5	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	800~1200	16	1~2	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	500~800	16	3~4	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	400~700	16	6~7	側銑 SIDE MILLING
UPZ1004	30	100	3000~3500	1400~1800	0~0.6	10	溝銑 SLOTTING
UPZ1004	30	95	2800~3300	700~1000	1~2	10	溝銑 SLOTTING
UPZ1004	30	95	2800~3300	400~700	4~5	10	溝銑 SLOTTING
UPZ1004	30	95	2800~3300	700~1000	8~10	10	溝銑 SLOTTING
UPZ1004	30	95	2800~3300	300~600	13~15	10	溝銑 SLOTTING
UPZ1004	30	125	3700~4200	2400~2800	10	0~0.6	側銑 SIDE MILLING
UPZ1004	30	90	2700~3200	600~900	10	1~2	側銑 SIDE MILLING
UPZ1004	30	100	3000~3400	700~1100	10	4~5	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	700~1000	10	8~9	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	700~1000	20	0~0.6	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	400~700	20	1~2	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	400~700	20	4~5	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	300~600	20	8~9	側銑 SIDE MILLING
UPZ1204	33	110	2700~3200	800~1200	0~0.7	12	溝銑 SLOTTING
UPZ1204	33	110	2700~3200	400~700	2~3	12	溝銑 SLOTTING
UPZ1204	33	110	2700~3200	400~700	5~7	12	溝銑 SLOTTING
UPZ1204	33	110	2700~3200	1000~1400	12	0~0.7	側銑 SIDE MILLING
UPZ1204	33	110	2700~3200	400~700	12	2~3	側銑 SIDE MILLING
UPZ1204	33	110	2700~3200	400~700	12	5~7	側銑 SIDE MILLING
UPZ1204	33	90	2200~2600	700~1100	24	0~0.7	側銑 SIDE MILLING
UPZ1204	33	90	2200~2600	400~700	24	2~3	側銑 SIDE MILLING
UPZ1604	45	110	2000~2500	700~1000	0~1	16	溝銑 SLOTTING
UPZ1604	45	110	2000~2500	300~500	4~5	16	溝銑 SLOTTING
UPZ1604	45	110	2000~2500	200~400	6~7	16	溝銑 SLOTTING
UPZ1604	45	110	2000~2500	800~1000	16	0~1	側銑 SIDE MILLING
UPZ1604	45	110	2000~2500	400~600	16	4~5	側銑 SIDE MILLING
UPZ1604	45	110	2000~2500	250~450	16	6~7	側銑 SIDE MILLING
UPZ1604	45	90	1600~2000	600~800	32	0~1	側銑 SIDE MILLING
UPZ2004	50	110	1500~2000	400~600	1~2	20	溝銑 SLOTTING
UPZ2004	50	110	1500~2000	300~600	4~5	20	溝銑 SLOTTING
UPZ2004	50	110	1500~2000	200~400	6~7	20	溝銑 SLOTTING
UPZ2004	50	110	1500~2000	500~800	20	1~2	側銑 SIDE MILLING
UPZ2004	50	110	1500~2000	300~600	20	4~5	側銑 SIDE MILLING
UPZ2004	50	110	1500~2000	200~400	20	6~7	側銑 SIDE MILLING

UPZ

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPZ0304	16	80	8000~8500	1000~1400	0~0.2	3	溝銑 SLOTTING
UPZ0304	16	80	8000~8500	400~700	0.5~1	3	溝銑 SLOTTING
UPZ0304	16	80	8000~8500	1000~1400	3	0~0.2	側銑 SIDE MILLING
UPZ0304	16	80	8000~8500	400~700	3	0.5~1	側銑 SIDE MILLING
UPZ0304	16	80	8000~8500	700~1000	6	0~0.2	側銑 SIDE MILLING
UPZ0404	20	90	7000~7500	1400~1800	0~0.3	4	溝銑 SLOTTING
UPZ0404	20	90	7000~7500	700~1000	0.5~0.8	4	溝銑 SLOTTING
UPZ0404	20	90	7000~7500	300~600	1~2	4	溝銑 SLOTTING
UPZ0404	20	90	7000~7500	1400~1800	4	0~0.3	側銑 SIDE MILLING
UPZ0404	20	90	7000~7500	700~1000	4	0.5~0.8	側銑 SIDE MILLING
UPZ0404	20	90	7000~7500	400~700	4	1~2	側銑 SIDE MILLING
UPZ0404	20	90	7000~7500	800~1200	8	0~0.3	側銑 SIDE MILLING
UPZ0504	20	95	5800~6300	1600~2000	0~0.4	5	溝銑 SLOTTING
UPZ0504	20	95	5800~6300	800~1200	1~2	5	溝銑 SLOTTING
UPZ0504	20	95	5800~6300	400~700	3~4	5	溝銑 SLOTTING
UPZ0504	20	95	5800~6300	1600~2000	5	0~0.4	側銑 SIDE MILLING
UPZ0504	20	95	5800~6300	800~1200	5	1~2	側銑 SIDE MILLING
UPZ0504	20	95	5800~6300	400~700	5	3~4	側銑 SIDE MILLING
UPZ0504	20	95	5800~6300	1000~1400	10	0~0.4	側銑 SIDE MILLING
UPZ0504	20	95	5800~6300	400~700	10	1~2	側銑 SIDE MILLING
UPZ0504	20	95	5800~6300	300~600	10	3~4	側銑 SIDE MILLING
UPZ0604	20	100	5200~5700	1800~2200	0~0.5	6	溝銑 SLOTTING
UPZ0604	20	100	5200~5700	1000~1400	1~2	6	溝銑 SLOTTING
UPZ0604	20	100	5200~5700	400~700	4~5	6	溝銑 SLOTTING
UPZ0604	20	100	5200~5700	500~800	7~9	6	溝銑 SLOTTING
UPZ0604	20	100	5200~5700	1600~2000	6	0~0.5	側銑 SIDE MILLING
UPZ0604	20	100	5200~5700	1000~1400	6	1~2	側銑 SIDE MILLING
UPZ0604	20	100	5200~5700	500~800	6	4~5	側銑 SIDE MILLING
UPZ0604	20	100	5200~5700	1200~1600	12	0~0.5	側銑 SIDE MILLING
UPZ0604	20	100	5200~5700	500~800	12	1~2	側銑 SIDE MILLING
UPZ0604	20	100	5200~5700	400~700	12	4~5	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	2000~2400	0~0.5	8	溝銑 SLOTTING
UPZ0804	25	120	4500~5000	1000~1400	1~2	8	溝銑 SLOTTING
UPZ0804	25	120	4500~5000	500~800	3~4	8	溝銑 SLOTTING
UPZ0804	25	120	4500~5000	800~1200	7~8	8	溝銑 SLOTTING
UPZ0804	25	120	4500~5000	500~800	10~12	8	溝銑 SLOTTING
UPZ0804	25	120	4500~5000	2000~2400	8	0~0.5	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	1000~1400	8	1~2	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	700~1000	8	3~4	側銑 SIDE MILLING

UPZ

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPZ0804	25	120	4500~5000	700~1000	8	6~7	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	2000~2400	16	0~0.5	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	800~1200	16	1~2	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	500~800	16	3~4	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	400~700	16	6~7	側銑 SIDE MILLING
UPZ1004	30	100	3000~3500	1400~1800	0~0.6	10	溝銑 SLOTTING
UPZ1004	30	95	2800~3300	700~1000	1~2	10	溝銑 SLOTTING
UPZ1004	30	95	2800~3300	400~700	4~5	10	溝銑 SLOTTING
UPZ1004	30	95	2800~3300	700~1000	8~10	10	溝銑 SLOTTING
UPZ1004	30	95	2800~3300	300~600	13~15	10	溝銑 SLOTTING
UPZ1004	30	125	3700~4200	2400~2800	10	0~0.6	側銑 SIDE MILLING
UPZ1004	30	90	2700~3200	600~900	10	1~2	側銑 SIDE MILLING
UPZ1004	30	100	3000~3400	700~1100	10	4~5	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	700~1000	10	8~9	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	700~1000	20	0~0.6	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	400~700	20	1~2	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	400~700	20	4~5	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	300~600	20	8~9	側銑 SIDE MILLING
UPZ1204	33	110	2700~3200	800~1200	0~0.7	12	溝銑 SLOTTING
UPZ1204	33	110	2700~3200	400~700	2~3	12	溝銑 SLOTTING
UPZ1204	33	110	2700~3200	400~700	5~7	12	溝銑 SLOTTING
UPZ1204	33	110	2700~3200	1000~1400	12	0~0.7	側銑 SIDE MILLING
UPZ1204	33	110	2700~3200	400~700	12	2~3	側銑 SIDE MILLING
UPZ1204	33	110	2700~3200	400~700	12	5~7	側銑 SIDE MILLING
UPZ1204	33	90	2200~2600	700~1100	24	0~0.7	側銑 SIDE MILLING
UPZ1204	33	90	2200~2600	400~700	24	2~3	側銑 SIDE MILLING
UPZ1604	45	100	1800~2200	700~1000	0~1	16	溝銑 SLOTTING
UPZ1604	45	100	1800~2200	300~500	3~4	16	溝銑 SLOTTING
UPZ1604	45	100	1800~2200	200~400	5~6	16	溝銑 SLOTTING
UPZ1604	45	100	1800~2200	800~1000	16	0~1	側銑 SIDE MILLING
UPZ1604	45	100	1800~2200	400~600	16	3~4	側銑 SIDE MILLING
UPZ1604	45	100	1800~2200	250~450	16	5~6	側銑 SIDE MILLING
UPZ1604	45	100	1800~2200	600~800	32	0~1	側銑 SIDE MILLING
UPZ2004	50	100	1400~1800	400~600	1~2	20	溝銑 SLOTTING
UPZ2004	50	100	1400~1800	300~600	3~4	20	溝銑 SLOTTING
UPZ2004	50	100	1400~1800	200~400	5~6	20	溝銑 SLOTTING
UPZ2004	50	100	1400~1800	500~800	20	1~2	側銑 SIDE MILLING
UPZ2004	50	100	1400~1800	300~600	20	3~4	側銑 SIDE MILLING
UPZ2004	50	100	1400~1800	200~400	20	5~6	側銑 SIDE MILLING

UPZ

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼/預硬鋼 *Prehardened Steels :* **NAK80 : 1.2083 : AISI420 : M310** (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPZ0304	16	80	8000~8500	800~1200	0~0.2	3	溝銑 SLOTTING
UPZ0304	16	80	8000~8500	300~600	0.5~1	3	溝銑 SLOTTING
UPZ0304	16	80	8000~8500	800~1200	3	0~0.2	側銑 SIDE MILLING
UPZ0304	16	80	8000~8500	300~600	3	0.5~1	側銑 SIDE MILLING
UPZ0304	16	80	8000~8500	500~800	6	0~0.2	側銑 SIDE MILLING
UPZ0404	20	90	7000~7500	1200~1600	0~0.3	4	溝銑 SLOTTING
UPZ0404	20	90	7000~7500	500~800	0.5~0.8	4	溝銑 SLOTTING
UPZ0404	20	90	7000~7500	300~500	1~2	4	溝銑 SLOTTING
UPZ0404	20	90	7000~7500	1200~1600	4	0~0.3	側銑 SIDE MILLING
UPZ0404	20	90	7000~7500	500~800	4	0.5~0.8	側銑 SIDE MILLING
UPZ0404	20	90	7000~7500	300~600	4	1~2	側銑 SIDE MILLING
UPZ0404	20	90	7000~7500	700~1000	8	0~0.3	側銑 SIDE MILLING
UPZ0504	20	95	5800~6300	1400~1800	0~0.4	5	溝銑 SLOTTING
UPZ0504	20	95	5800~6300	700~100	1~2	5	溝銑 SLOTTING
UPZ0504	20	95	5800~6300	300~600	3~4	5	溝銑 SLOTTING
UPZ0504	20	95	5800~6300	1400~1800	5	0~0.4	側銑 SIDE MILLING
UPZ0504	20	95	5800~6300	700~100	5	1~2	側銑 SIDE MILLING
UPZ0504	20	95	5800~6300	300~600	5	3~4	側銑 SIDE MILLING
UPZ0504	20	95	5800~6300	800~1200	10	0~0.4	側銑 SIDE MILLING
UPZ0504	20	95	5800~6300	300~600	10	1~2	側銑 SIDE MILLING
UPZ0504	20	95	5800~6300	300~500	10	3~4	側銑 SIDE MILLING
UPZ0604	20	100	5200~5700	1600~2000	0~0.5	6	溝銑 SLOTTING
UPZ0604	20	100	5200~5700	800~1200	1~2	6	溝銑 SLOTTING
UPZ0604	20	100	5200~5700	300~600	4~5	6	溝銑 SLOTTING
UPZ0604	20	100	5200~5700	400~700	7~9	6	溝銑 SLOTTING
UPZ0604	20	100	5200~5700	1400~1800	6	0~0.5	側銑 SIDE MILLING
UPZ0604	20	100	5200~5700	800~1200	6	1~2	側銑 SIDE MILLING
UPZ0604	20	100	5200~5700	400~700	6	4~5	側銑 SIDE MILLING
UPZ0604	20	100	5200~5700	1000~1400	12	0~0.5	側銑 SIDE MILLING
UPZ0604	20	100	5200~5700	400~700	12	1~2	側銑 SIDE MILLING
UPZ0604	20	100	5200~5700	300~600	12	4~5	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	1800~2200	0~0.5	8	溝銑 SLOTTING
UPZ0804	25	120	4500~5000	800~1200	1~2	8	溝銑 SLOTTING
UPZ0804	25	120	4500~5000	400~700	3~4	8	溝銑 SLOTTING
UPZ0804	25	120	4500~5000	700~1000	7~8	8	溝銑 SLOTTING
UPZ0804	25	120	4500~5000	400~700	10~12	8	溝銑 SLOTTING
UPZ0804	25	120	4500~5000	1800~2200	8	0~0.5	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	800~1200	8	1~2	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	500~800	8	3~4	側銑 SIDE MILLING

UPZ

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼/預硬鋼 *Prehardened Steels* : **NAK80 : 1.2083 : AISI420 : M310** (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPZ0804	25	120	4500~5000	500~800	8	6~7	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	1800~2200	16	0~0.5	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	700~1000	16	1~2	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	400~700	16	3~4	側銑 SIDE MILLING
UPZ0804	25	120	4500~5000	300~600	16	6~7	側銑 SIDE MILLING
UPZ1004	30	100	3000~3500	1200~1600	0~0.6	10	溝銑 SLOTTING
UPZ1004	30	95	2800~3300	500~800	1~2	10	溝銑 SLOTTING
UPZ1004	30	95	2800~3300	300~600	4~5	10	溝銑 SLOTTING
UPZ1004	30	95	2800~3300	500~800	8~10	10	溝銑 SLOTTING
UPZ1004	30	95	2800~3300	300~500	13~15	10	溝銑 SLOTTING
UPZ1004	30	125	3700~4200	2200~2600	10	0~0.6	側銑 SIDE MILLING
UPZ1004	30	90	2700~3200	500~800	10	1~2	側銑 SIDE MILLING
UPZ1004	30	100	3000~3400	500~800	10	4~5	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	500~800	10	8~9	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	500~800	20	0~0.6	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	300~600	20	1~2	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	300~600	20	4~5	側銑 SIDE MILLING
UPZ1004	30	95	2800~3300	300~500	20	8~9	側銑 SIDE MILLING
UPZ1204	33	110	2700~3200	700~1000	0~0.7	12	溝銑 SLOTTING
UPZ1204	33	110	2700~3200	300~600	2~3	12	溝銑 SLOTTING
UPZ1204	33	110	2700~3200	300~600	5~7	12	溝銑 SLOTTING
UPZ1204	33	110	2700~3200	800~1200	12	0~0.7	側銑 SIDE MILLING
UPZ1204	33	110	2700~3200	300~600	12	2~3	側銑 SIDE MILLING
UPZ1204	33	110	2700~3200	300~600	12	5~7	側銑 SIDE MILLING
UPZ1204	33	90	2200~2600	500~800	24	0~0.7	側銑 SIDE MILLING
UPZ1204	33	90	2200~2600	300~600	24	2~3	側銑 SIDE MILLING
UPZ1604	45	90	1600~2000	700~900	0~1	16	溝銑 SLOTTING
UPZ1604	45	90	1600~2000	300~400	3~4	16	溝銑 SLOTTING
UPZ1604	45	90	1600~2000	200~350	5~6	16	溝銑 SLOTTING
UPZ1604	45	90	1600~2000	700~900	16	0~1	側銑 SIDE MILLING
UPZ1604	45	90	1600~2000	400~600	16	3~4	側銑 SIDE MILLING
UPZ1604	45	90	1600~2000	250~450	16	5~6	側銑 SIDE MILLING
UPZ1604	45	90	1600~2000	600~800	32	0~1	側銑 SIDE MILLING
UPZ2004	50	90	1200~1600	400~600	1~1.5	20	溝銑 SLOTTING
UPZ2004	50	90	1200~1600	300~600	2~3	20	溝銑 SLOTTING
UPZ2004	50	90	1200~1600	200~400	4~5	20	溝銑 SLOTTING
UPZ2004	50	90	1200~1600	500~800	20	1~1.5	側銑 SIDE MILLING
UPZ2004	50	90	1200~1600	300~600	20	2~3	側銑 SIDE MILLING
UPZ2004	50	90	1200~1600	200~400	20	4~5	側銑 SIDE MILLING

UPZ

切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】: **SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPZ0304	13	105	11000	700~900	0~0.7	3	溝銑 SLOTTING
UPZ0304	13	105	11000	450~650	0.7~1.5	3	溝銑 SLOTTING
UPZ0304	13	105	11000	1500~1700	3~6	0~0.3	側銑 SIDE MILLING
UPZ0304	13	105	11000	600~800	3	1~1.5	側銑 SIDE MILLING
UPZ0304	13	105	11000	500~700	6	1~1.5	側銑 SIDE MILLING
UPZ0304	13	105	11000	400~500	3	1.5~3	側銑 SIDE MILLING
UPZ0304	13	140	14800	500~700	3	1.5~3	側銑 SIDE MILLING
UPZ0404	16	105	8300	800~1000	0~1	4	溝銑 SLOTTING
UPZ0404	16	105	8300	500~700	1~2	4	溝銑 SLOTTING
UPZ0404	16	105	8300	1500~1700	4~8	0~0.4	側銑 SIDE MILLING
UPZ0404	16	105	8300	800~1000	4	1.6~2	側銑 SIDE MILLING
UPZ0404	16	105	8300	600~800	8	1.6~2	側銑 SIDE MILLING
UPZ0404	16	105	8300	500~700	4	2~4	側銑 SIDE MILLING
UPZ0404	16	140	11000	700~900	4	2~4	側銑 SIDE MILLING
UPZ0504	18	105	6700	900~1100	0~1.2	5	溝銑 SLOTTING
UPZ0504	18	105	6700	600~800	1.2~2.5	5	溝銑 SLOTTING
UPZ0504	18	105	6700	500~600	2.5~5	5	溝銑 SLOTTING
UPZ0504	18	140	8900	900~1100	2.5~5	5	溝銑 SLOTTING
UPZ0504	18	105	6700	1500~1700	5~10	0~0.5	側銑 SIDE MILLING
UPZ0504	18	105	6700	900~1100	5	1.8~2.5	側銑 SIDE MILLING
UPZ0504	18	105	6700	700~900	10	1.8~2.5	側銑 SIDE MILLING
UPZ0504	18	105	6700	600~800	5	2.5~5	側銑 SIDE MILLING
UPZ0504	18	140	8900	900~1100	5	2.5~5	側銑 SIDE MILLING
UPZ0604	20	105	5500	1000~1200	0~1.5	6	溝銑 SLOTTING
UPZ0604	20	105	5500	700~900	1.5~3	6	溝銑 SLOTTING
UPZ0604	20	105	5500	600~800	3~6	6	溝銑 SLOTTING
UPZ0604	20	140	7400	1000~1200	3~6	6	溝銑 SLOTTING
UPZ0604	20	105	5500	1600~1800	6~12	0~0.5	側銑 SIDE MILLING
UPZ0604	20	105	5500	1000~1200	6	2.2~3	側銑 SIDE MILLING
UPZ0604	20	105	5500	700~900	12	2.2~3	側銑 SIDE MILLING
UPZ0604	20	105	5500	700~900	6	3~6	側銑 SIDE MILLING
UPZ0604	20	140	7400	1000~1200	6	3~6	側銑 SIDE MILLING
UPZ0804	25	105	4200	1000~1200	0~1.8	8	溝銑 SLOTTING
UPZ0804	25	105	4200	800~1000	2~4	8	溝銑 SLOTTING
UPZ0804	25	105	4200	700~900	4~8	8	溝銑 SLOTTING
UPZ0804	25	140	5600	900~1100	4~8	8	溝銑 SLOTTING
UPZ0804	25	105	4200	1400~1600	8~16	0~0.5	側銑 SIDE MILLING
UPZ0804	25	105	4200	800~1000	8	3~4	側銑 SIDE MILLING

UPZ

切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】: **SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPZ0804	25	105	4200	600~800	16	3~4	側銑 SIDE MILLING
UPZ0804	25	105	4200	700~900	8	4~8	側銑 SIDE MILLING
UPZ0804	25	140	5600	900~1100	8	4~8	側銑 SIDE MILLING
UPZ1004	30	110	3500	1000~1200	0~2	10	溝銑 SLOTTING
UPZ1004	30	110	3500	800~1000	3~5	10	溝銑 SLOTTING
UPZ1004	30	110	3500	700~900	5~10	10	溝銑 SLOTTING
UPZ1004	30	155	5000	800~1000	5~10	10	溝銑 SLOTTING
UPZ1004	30	110	3500	1400~1600	10~20	0~0.6	側銑 SIDE MILLING
UPZ1004	30	110	3500	800~1000	10	3.6~5	側銑 SIDE MILLING
UPZ1004	30	110	3500	600~800	20	3.6~5	側銑 SIDE MILLING
UPZ1004	30	110	3500	700~900	10	5~10	側銑 SIDE MILLING
UPZ1004	30	155	5000	800~1000	10	5~10	側銑 SIDE MILLING
UPZ1204	34	110	2900	900~1100	0~2	12	溝銑 SLOTTING
UPZ1204	34	110	2900	600~800	2.5~5	12	溝銑 SLOTTING
UPZ1204	34	110	2900	500~700	5~9	12	溝銑 SLOTTING
UPZ1204	34	150	4000	650~850	5~9	12	溝銑 SLOTTING
UPZ1204	34	110	2900	1400~1600	12~24	0~0.7	側銑 SIDE MILLING
UPZ1204	34	110	2900	800~1000	12	4.3~5	側銑 SIDE MILLING
UPZ1204	34	110	2900	600~800	24	4.3~5	側銑 SIDE MILLING
UPZ1204	34	110	2900	500~700	12	5~9	側銑 SIDE MILLING
UPZ1204	34	150	4000	650~850	12	5~9	側銑 SIDE MILLING
UPZ1604	45	110	2200	700~900	0~1.5	16	溝銑 SLOTTING
UPZ1604	45	110	2200	500~700	2~3	16	溝銑 SLOTTING
UPZ1604	45	110	2200	350~550	4~5	16	溝銑 SLOTTING
UPZ1604	45	110	2200	900~1100	16~32	0~0.7	側銑 SIDE MILLING
UPZ1604	45	110	2200	700~900	16	0~1.5	側銑 SIDE MILLING
UPZ1604	45	110	2200	500~700	32	2~3	側銑 SIDE MILLING
UPZ1604	45	110	2200	350~550	16	4~5	側銑 SIDE MILLING
UPZ2004	50	110	1750	500~700	0~1.5	20	溝銑 SLOTTING
UPZ2004	50	110	1750	300~500	2~3	20	溝銑 SLOTTING
UPZ2004	50	110	1750	200~350	4~5	20	溝銑 SLOTTING
UPZ2004	50	110	1750	700~900	20~40	0~0.8	側銑 SIDE MILLING
UPZ2004	50	110	1750	500~700	20	0~1.5	側銑 SIDE MILLING
UPZ2004	50	110	1750	300~500	40	2~3	側銑 SIDE MILLING
UPZ2004	50	110	1750	200~400	20	4~5	側銑 SIDE MILLING

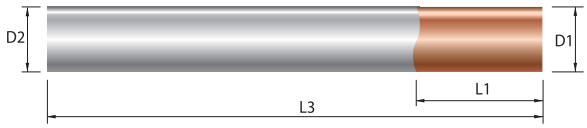
UPA

END MILLS 無敵高效能立銑刀



NEW

Super MG | 0.4 μm | 40° | FIT | 3 Flutes | HRc 55 | G10



精銑 Finishing　中銑 Semi-finishing　粗銑 Roughing

直徑 D1	直徑公差 D1 Tolerance
2.0	0 -0.02
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
20.0	0 -0.04

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UPA0203	2.0	6	50	6
UPA0303	3.0	8	50	6
UPA0403	4.0	11	50	6
UPA0503	5.0	13	50	6
UPA0603	6.0	16	50	6
UPA0803	8.0	20	60	8
UPA1003	10.0	25	75	10
UPA1203	12.0	30	75	12
UPA1603	16.0	50	120	16
UPA2003	20.0	60	120	20

unit : mm

UPW

END MILLS 無敵高效能立銑刀

NEW



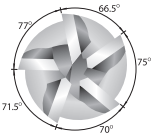
精銑 Finishing | 中銑 Semi-finishing | 粗銑 Roughing

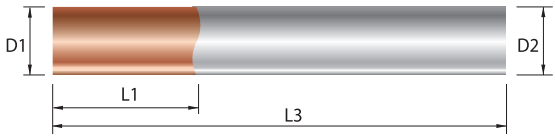
Super MG | 0.4 µm | 37° | FIT | 5 Flutes | HRC 60 | G10

直徑 D1	直徑公差 D1 Tolerance
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
14.0	0 -0.04
16.0	0 -0.04
18.0	0 -0.04
20.0	0 -0.04
25.0	0 -0.04

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø14	0 -0.011
Ø16	0 -0.011
Ø18	0 -0.011
Ø20	0 -0.013
Ø25	0 -0.013

unit : mm





型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UPW0305	3.0	8	50	6
UPW0405	4.0	11	50	6
UPW0505	5.0	13	50	6
UPW0605	6.0	16	50	6
UPW0805	8.0	20	60	8
UPW1005	10.0	22	75	10
UPW1205	12.0	26	75	12
UPW1405	14.0	30	80	14
UPW1605	16.0	36	100	16
UPW1805	18.0	40	100	18
UPW2005	20.0	40	100	20
UPW2505	25.0	45	100	25

unit : mm

UPW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPW0305	18	90	9000~10000	700~1000	0.02~0.07	3	溝銑 SLOTTING
UPW0305	18	90	9000~10000	1200~1600	0~0.2	3	溝銑 SLOTTING
UPW0305	18	90	9000~10000	500~800	0.7~1	3	溝銑 SLOTTING
UPW0305	18	90	9000~10000	500~800	3	3	溝銑 SLOTTING
UPW0305	18	90	9000~10000	800~1200	3	0.02~0.07	側銑 SIDE MILLING
UPW0305	18	90	9000~10000	1200~1600	3	0~0.2	側銑 SIDE MILLING
UPW0305	18	90	9000~10000	800~1200	6	0.02~0.07	側銑 SIDE MILLING
UPW0305	18	90	9000~10000	1000~1400	6	0~0.2	側銑 SIDE MILLING
UPW0405	18	100	7500~8000	700~1000	0.03~0.08	4	溝銑 SLOTTING
UPW0405	18	100	7500~8000	1200~1600	0~0.3	4	溝銑 SLOTTING
UPW0405	18	100	7500~8000	500~800	1~1.5	4	溝銑 SLOTTING
UPW0405	18	100	7500~8000	400~700	4	4	溝銑 SLOTTING
UPW0405	18	100	7500~8000	800~1200	4	0.03~0.08	側銑 SIDE MILLING
UPW0405	18	100	7500~8000	1200~1600	4	0~0.3	側銑 SIDE MILLING
UPW0405	18	100	7500~8000	800~1200	8	0.03~0.08	側銑 SIDE MILLING
UPW0405	18	100	7500~8000	1000~1400	8	0~0.3	側銑 SIDE MILLING
UPW0505	20	100	6300~6800	500~800	0.05~0.1	5	溝銑 SLOTTING
UPW0505	20	100	6300~6800	1800~2200	0~0.4	5	溝銑 SLOTTING
UPW0505	20	100	6300~6800	700~1000	2~2.5	5	溝銑 SLOTTING
UPW0505	20	100	6300~6800	500~800	5	5	溝銑 SLOTTING
UPW0505	20	100	6300~6800	700~1100	5	0.05~0.1	側銑 SIDE MILLING
UPW0505	20	100	6300~6800	1800~2200	5	0~0.4	側銑 SIDE MILLING
UPW0505	20	100	6300~6800	700~1100	10	0.05~0.1	側銑 SIDE MILLING
UPW0505	20	100	6300~6800	1200~1600	10	0~0.4	側銑 SIDE MILLING
UPW0605	20	100	5200~5700	500~800	0.05~0.1	6	溝銑 SLOTTING
UPW0605	20	100	5200~5700	2000~2400	0~0.4	6	溝銑 SLOTTING
UPW0605	20	100	5200~5700	700~1000	2~3	6	溝銑 SLOTTING
UPW0605	20	100	5200~5700	500~800	6	6	溝銑 SLOTTING
UPW0605	20	100	5200~5700	700~1100	6	0.05~0.1	側銑 SIDE MILLING
UPW0605	20	100	5200~5700	2000~2400	6	0~0.4	側銑 SIDE MILLING
UPW0605	20	100	5200~5700	700~1100	12	0.05~0.1	側銑 SIDE MILLING
UPW0605	20	100	5200~5700	1400~1800	12	0~0.4	側銑 SIDE MILLING
UPW0805	25	120	4500~5000	500~800	0.05~0.1	8	溝銑 SLOTTING
UPW0805	25	120	4500~5000	1800~2200	0~0.5	8	溝銑 SLOTTING
UPW0805	25	120	4500~5000	500~800	3~4	8	溝銑 SLOTTING
UPW0805	25	120	4500~5000	500~800	8	8	溝銑 SLOTTING
UPW0805	25	120	4500~5000	700~1100	8	0.05~0.1	側銑 SIDE MILLING
UPW0805	25	120	4500~5000	1800~2200	8	0~0.5	側銑 SIDE MILLING

UPW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPW0805	25	120	4500~5000	700~1100	16	0.05~0.1	側銑 SIDE MILLING
UPW0805	25	120	4500~5000	1400~1800	16	0~0.5	側銑 SIDE MILLING
UPW1005	30	130	3800~4300	500~800	0.05~0.1	10	溝銑 SLOTTING
UPW1005	30	130	3800~4300	2000~2400	0~0.5	10	溝銑 SLOTTING
UPW1005	30	130	3800~4300	700~1000	4~5	10	溝銑 SLOTTING
UPW1005	30	130	3800~4300	500~800	10	10	溝銑 SLOTTING
UPW1005	30	130	3800~4300	700~1100	10	0.05~0.1	側銑 SIDE MILLING
UPW1005	30	130	3800~4300	2000~2400	10	0~0.5	側銑 SIDE MILLING
UPW1005	30	130	3800~4300	1200~1600	10	1	側銑 SIDE MILLING
UPW1005	30	130	3800~4300	700~1100	20	0.05~0.1	側銑 SIDE MILLING
UPW1005	30	130	3800~4300	1400~1800	20	0~0.5	側銑 SIDE MILLING
UPW1005	30	130	3800~4300	800~1200	20	1	側銑 SIDE MILLING
UPW1205	35	105	2500~3000	500~800	0.1~0.15	12	溝銑 SLOTTING
UPW1205	35	105	2500~3000	1400~1800	0~0.5	12	溝銑 SLOTTING
UPW1205	35	105	2500~3000	500~800	2~3	12	溝銑 SLOTTING
UPW1205	35	105	2500~3000	500~800	5~6	12	溝銑 SLOTTING
UPW1205	35	105	2500~3000	700~1000	12	0.1~0.15	側銑 SIDE MILLING
UPW1205	35	105	2500~3000	1400~1800	12	0~0.5	側銑 SIDE MILLING
UPW1205	35	105	2500~3000	800~1200	12	1	側銑 SIDE MILLING
UPW1205	35	105	2500~3000	700~1000	24	0.1~0.15	側銑 SIDE MILLING
UPW1205	35	105	2500~3000	1200~1600	24	0~0.5	側銑 SIDE MILLING
UPW1205	35	105	2500~3000	700~1000	24	1	側銑 SIDE MILLING
UPW1405	40	100	2000~2500	500~800	0.1~0.15	14	溝銑 SLOTTING
UPW1405	40	100	2000~2500	1000~1400	0~0.6	14	溝銑 SLOTTING
UPW1405	40	100	2000~2500	500~800	2~3	14	溝銑 SLOTTING
UPW1405	40	100	2000~2500	400~700	5~6	14	溝銑 SLOTTING
UPW1405	40	100	2000~2500	700~1000	14	0.1~0.15	側銑 SIDE MILLING
UPW1405	40	100	2000~2500	1000~1400	14	0~0.6	側銑 SIDE MILLING
UPW1405	40	100	2000~2500	700~1000	14	1	側銑 SIDE MILLING
UPW1405	40	100	2000~2500	700~1000	28	0.1~0.15	側銑 SIDE MILLING
UPW1405	40	100	2000~2500	800~1200	28	0~0.6	側銑 SIDE MILLING
UPW1405	40	100	2000~2500	500~800	28	1	側銑 SIDE MILLING
UPW1605	50	100	1800~2300	500~800	0.1~0.15	16	溝銑 SLOTTING
UPW1605	50	100	1800~2300	1000~1400	0~0.6	16	溝銑 SLOTTING
UPW1605	50	100	1800~2300	500~800	2~3	16	溝銑 SLOTTING
UPW1605	50	100	1800~2300	400~700	5~6	16	溝銑 SLOTTING
UPW1605	50	100	1800~2300	700~1000	16	0.1~0.15	側銑 SIDE MILLING
UPW1605	50	100	1800~2300	1000~1400	16	0~0.6	側銑 SIDE MILLING

UPW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPW1605	50	100	1800~2300	700~1000	16	1	側銑 SIDE MILLING
UPW1605	50	100	1800~2300	700~1000	32	0.1~0.15	側銑 SIDE MILLING
UPW1605	50	100	1800~2300	800~1200	32	0~0.6	側銑 SIDE MILLING
UPW1605	50	100	1800~2300	500~800	32	1	側銑 SIDE MILLING
UPW1805	55	100	1500~1900	400~700	0.1~0.15	18	溝銑 SLOTTING
UPW1805	55	100	1500~1900	700~1000	0~0.6	18	溝銑 SLOTTING
UPW1805	55	100	1500~1900	300~450	3~4	18	溝銑 SLOTTING
UPW1805	55	100	1500~1900	400~600	18	0.1~0.15	側銑 SIDE MILLING
UPW1805	55	100	1500~1900	600~900	18	0~0.6	側銑 SIDE MILLING
UPW1805	55	100	1500~1900	400~600	36	0.1~0.15	側銑 SIDE MILLING
UPW1805	55	100	1500~1900	500~700	36	0~0.6	側銑 SIDE MILLING
UPW2005	60	100	1400~1800	300~600	0.1~0.15	20	溝銑 SLOTTING
UPW2005	60	100	1400~1800	600~900	0~0.6	20	溝銑 SLOTTING
UPW2005	60	100	1400~1800	250~400	3~4	20	溝銑 SLOTTING
UPW2005	60	100	1400~1800	300~500	20	0.1~0.15	側銑 SIDE MILLING
UPW2005	60	100	1400~1800	500~800	20	0~0.6	側銑 SIDE MILLING
UPW2005	60	100	1400~1800	300~500	40	0.1~0.15	側銑 SIDE MILLING
UPW2005	60	100	1400~1800	400~700	40	0~0.6	側銑 SIDE MILLING
UPW2505	60	100	1000~1400	300~500	0.1~0.15	25	溝銑 SLOTTING
UPW2505	60	100	1000~1400	500~700	0~0.6	25	溝銑 SLOTTING
UPW2505	60	100	1000~1400	200~300	3~4	25	溝銑 SLOTTING
UPW2505	60	100	1000~1400	200~350	25	0.1~0.15	側銑 SIDE MILLING
UPW2505	60	100	1000~1400	400~600	25	0~0.6	側銑 SIDE MILLING
UPW2505	60	100	1000~1400	200~350	40	0.1~0.15	側銑 SIDE MILLING
UPW2505	60	100	1000~1400	300~500	40	0~0.6	側銑 SIDE MILLING

UPW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPW0305	18	90	9000~10000	700~1000	0.02~0.07	3	溝銑 SLOTTING
UPW0305	18	90	9000~10000	1000~1400	0~0.2	3	溝銑 SLOTTING
UPW0305	18	90	9000~10000	400~700	0.7~1	3	溝銑 SLOTTING
UPW0305	18	90	9000~10000	400~700	3	3	溝銑 SLOTTING
UPW0305	18	90	9000~10000	800~1200	3	0.02~0.07	側銑 SIDE MILLING
UPW0305	18	90	9000~10000	1000~1400	3	0~0.2	側銑 SIDE MILLING
UPW0305	18	90	9000~10000	800~1200	6	0.02~0.07	側銑 SIDE MILLING
UPW0305	18	90	9000~10000	800~1200	6	0~0.2	側銑 SIDE MILLING
UPW0405	18	100	7500~8000	700~1000	0.03~0.08	4	溝銑 SLOTTING
UPW0405	18	100	7500~8000	1000~1400	0~0.3	4	溝銑 SLOTTING
UPW0405	18	100	7500~8000	400~700	1~1.5	4	溝銑 SLOTTING
UPW0405	18	100	7500~8000	300~600	4	4	溝銑 SLOTTING
UPW0405	18	100	7500~8000	800~1200	4	0.03~0.08	側銑 SIDE MILLING
UPW0405	18	100	7500~8000	1000~1400	4	0~0.3	側銑 SIDE MILLING
UPW0405	18	100	7500~8000	800~1200	8	0.03~0.08	側銑 SIDE MILLING
UPW0405	18	100	7500~8000	800~1200	8	0~0.3	側銑 SIDE MILLING
UPW0505	20	100	6300~6800	500~800	0.05~0.1	5	溝銑 SLOTTING
UPW0505	20	100	6300~6800	1600~2000	0~0.4	5	溝銑 SLOTTING
UPW0505	20	100	6300~6800	500~800	2~2.5	5	溝銑 SLOTTING
UPW0505	20	100	6300~6800	400~700	5	5	溝銑 SLOTTING
UPW0505	20	100	6300~6800	700~1100	5	0.05~0.1	側銑 SIDE MILLING
UPW0505	20	100	6300~6800	1600~2000	5	0~0.4	側銑 SIDE MILLING
UPW0505	20	100	6300~6800	700~1100	10	0.05~0.1	側銑 SIDE MILLING
UPW0505	20	100	6300~6800	1000~1400	10	0~0.4	側銑 SIDE MILLING
UPW0605	20	100	5200~5700	500~800	0.05~0.1	6	溝銑 SLOTTING
UPW0605	20	100	5200~5700	1800~2200	0~0.4	6	溝銑 SLOTTING
UPW0605	20	100	5200~5700	500~800	2~3	6	溝銑 SLOTTING
UPW0605	20	100	5200~5700	400~700	6	6	溝銑 SLOTTING
UPW0605	20	100	5200~5700	700~1100	6	0.05~0.1	側銑 SIDE MILLING
UPW0605	20	100	5200~5700	1800~2200	6	0~0.4	側銑 SIDE MILLING
UPW0605	20	100	5200~5700	700~1100	12	0.05~0.1	側銑 SIDE MILLING
UPW0605	20	100	5200~5700	1200~1600	12	0~0.4	側銑 SIDE MILLING
UPW0805	25	120	4500~5000	500~800	0.05~0.1	8	溝銑 SLOTTING
UPW0805	25	120	4500~5000	1600~2000	0~0.5	8	溝銑 SLOTTING
UPW0805	25	120	4500~5000	400~700	3~4	8	溝銑 SLOTTING
UPW0805	25	120	4500~5000	400~700	8	8	溝銑 SLOTTING
UPW0805	25	120	4500~5000	700~1100	8	0.05~0.1	側銑 SIDE MILLING
UPW0805	25	120	4500~5000	1600~2000	8	0~0.5	側銑 SIDE MILLING

UPW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPW0805	25	120	4500~5000	700~1100	16	0.05~0.1	側銑 SIDE MILLING
UPW0805	25	120	4500~5000	1200~1600	16	0~0.5	側銑 SIDE MILLING
UPW1005	30	130	3800~4300	500~800	0.05~0.1	10	溝銑 SLOTTING
UPW1005	30	130	3800~4300	1800~2200	0~0.5	10	溝銑 SLOTTING
UPW1005	30	130	3800~4300	500~800	4~5	10	溝銑 SLOTTING
UPW1005	30	130	3800~4300	500~800	10	10	溝銑 SLOTTING
UPW1005	30	130	3800~4300	700~1100	10	0.05~0.1	側銑 SIDE MILLING
UPW1005	30	130	3800~4300	1800~2200	10	0~0.5	側銑 SIDE MILLING
UPW1005	30	130	3800~4300	1000~1400	10	1	側銑 SIDE MILLING
UPW1005	30	130	3800~4300	700~1100	20	0.05~0.1	側銑 SIDE MILLING
UPW1005	30	130	3800~4300	1200~1600	20	0~0.5	側銑 SIDE MILLING
UPW1005	30	130	3800~4300	700~1100	20	1	側銑 SIDE MILLING
UPW1205	35	105	2500~3000	500~800	0.1~0.15	12	溝銑 SLOTTING
UPW1205	35	105	2500~3000	1200~1600	0~0.5	12	溝銑 SLOTTING
UPW1205	35	105	2500~3000	400~700	2~3	12	溝銑 SLOTTING
UPW1205	35	105	2500~3000	400~700	5~6	12	溝銑 SLOTTING
UPW1205	35	105	2500~3000	700~1000	12	0.1~0.15	側銑 SIDE MILLING
UPW1205	35	105	2500~3000	1200~1600	12	0~0.5	側銑 SIDE MILLING
UPW1205	35	105	2500~3000	700~1000	12	1	側銑 SIDE MILLING
UPW1205	35	105	2500~3000	700~1000	24	0.1~0.15	側銑 SIDE MILLING
UPW1205	35	105	2500~3000	1000~1400	24	0~0.5	側銑 SIDE MILLING
UPW1205	35	105	2500~3000	500~800	24	1	側銑 SIDE MILLING
UPW1405	40	100	2000~2500	500~800	0.1~0.15	14	溝銑 SLOTTING
UPW1405	40	100	2000~2500	800~1200	0~0.6	14	溝銑 SLOTTING
UPW1405	40	100	2000~2500	400~700	2~3	14	溝銑 SLOTTING
UPW1405	40	100	2000~2500	300~600	5~6	14	溝銑 SLOTTING
UPW1405	40	100	2000~2500	700~1000	14	0.1~0.15	側銑 SIDE MILLING
UPW1405	40	100	2000~2500	800~1200	14	0~0.6	側銑 SIDE MILLING
UPW1405	40	100	2000~2500	500~800	14	1	側銑 SIDE MILLING
UPW1405	40	100	2000~2500	700~1000	28	0.1~0.15	側銑 SIDE MILLING
UPW1405	40	100	2000~2500	700~1000	28	0~0.6	側銑 SIDE MILLING
UPW1405	40	100	2000~2500	400~700	28	1	側銑 SIDE MILLING
UPW1605	50	100	1800~2300	500~800	0.1~0.15	16	溝銑 SLOTTING
UPW1605	50	100	1800~2300	800~1200	0~0.6	16	溝銑 SLOTTING
UPW1605	50	100	1800~2300	400~700	2~3	16	溝銑 SLOTTING
UPW1605	50	100	1800~2300	300~600	5~6	16	溝銑 SLOTTING
UPW1605	50	100	1800~2300	700~1000	16	0.1~0.15	側銑 SIDE MILLING
UPW1605	50	100	1800~2300	800~1200	16	0~0.6	側銑 SIDE MILLING

UPW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPW1605	50	100	1800~2300	500~800	16	1	側銑 SIDE MILLING
UPW1605	50	100	1800~2300	700~1000	32	0.1~0.15	側銑 SIDE MILLING
UPW1605	50	100	1800~2300	700~1000	32	0~0.6	側銑 SIDE MILLING
UPW1605	50	100	1800~2300	400~700	32	1	側銑 SIDE MILLING
UPW1805	55	80	1200~1700	400~600	0.1~0.15	18	溝銑 SLOTTING
UPW1805	55	80	1200~1700	700~900	0~0.6	18	溝銑 SLOTTING
UPW1805	55	80	1200~1700	250~400	3~4	18	側銑 SIDE MILLING
UPW1805	55	80	1200~1700	300~500	18	0.1~0.15	側銑 SIDE MILLING
UPW1805	55	80	1200~1700	500~800	18	0~0.6	側銑 SIDE MILLING
UPW1805	55	80	1200~1700	300~500	36	0.1~0.15	側銑 SIDE MILLING
UPW1805	55	80	1200~1700	400~600	36	0~0.6	側銑 SIDE MILLING
UPW2005	60	80	1000~1500	300~600	0.1~0.15	20	溝銑 SLOTTING
UPW2005	60	80	1000~1500	600~800	0~0.6	20	溝銑 SLOTTING
UPW2005	60	80	1000~1500	200~350	3~4	20	側銑 SIDE MILLING
UPW2005	60	80	1000~1500	300~500	20	0.1~0.15	側銑 SIDE MILLING
UPW2005	60	80	1000~1500	500~700	20	0~0.6	側銑 SIDE MILLING
UPW2005	60	80	1000~1500	300~500	40	0.1~0.15	側銑 SIDE MILLING
UPW2005	60	80	1000~1500	400~600	40	0~0.6	側銑 SIDE MILLING
UPW2505	60	80	800~1300	250~450	0.1~0.15	25	溝銑 SLOTTING
UPW2505	60	80	800~1300	400~600	0~0.6	25	溝銑 SLOTTING
UPW2505	60	80	800~1300	170~270	3~4	25	側銑 SIDE MILLING
UPW2505	60	80	800~1300	200~300	25	0.1~0.15	側銑 SIDE MILLING
UPW2505	60	80	800~1300	300~500	25	0~0.6	側銑 SIDE MILLING
UPW2505	60	80	800~1300	200~300	40	0.1~0.15	側銑 SIDE MILLING
UPW2505	60	80	800~1300	300~500	40	0~0.6	側銑 SIDE MILLING

UPW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPW0305	18	90	9000~10000	700~1000	0.02~0.07	3	溝銑 SLOTTING
UPW0305	18	90	9000~10000	1000~1400	0~0.2	3	溝銑 SLOTTING
UPW0305	18	90	9000~10000	400~700	0.7~1	3	溝銑 SLOTTING
UPW0305	18	90	9000~10000	400~700	3	3	溝銑 SLOTTING
UPW0305	18	90	9000~10000	800~1200	3	0.02~0.07	側銑 SIDE MILLING
UPW0305	18	90	9000~10000	1000~1400	3	0~0.2	側銑 SIDE MILLING
UPW0305	18	90	9000~10000	800~1200	6	0.02~0.07	側銑 SIDE MILLING
UPW0305	18	90	9000~10000	800~1200	6	0~0.2	側銑 SIDE MILLING
UPW0405	18	100	7500~8000	700~1000	0~0.3	4	溝銑 SLOTTING
UPW0405	18	100	7500~8000	1000~1400	0~0.3	4	溝銑 SLOTTING
UPW0405	18	100	7500~8000	400~700	1~1.5	4	溝銑 SLOTTING
UPW0405	18	100	7500~8000	300~600	4	4	溝銑 SLOTTING
UPW0405	18	100	7500~8000	800~1200	4	0.03~0.08	側銑 SIDE MILLING
UPW0405	18	100	7500~8000	1000~1400	4	0~0.3	側銑 SIDE MILLING
UPW0405	18	100	7500~8000	800~1200	8	0.03~0.08	側銑 SIDE MILLING
UPW0405	18	100	7500~8000	800~1200	8	0~0.3	側銑 SIDE MILLING
UPW0505	20	100	6300~6800	500~800	0~0.4	5	溝銑 SLOTTING
UPW0505	20	100	6300~6800	1600~2000	0~0.4	5	溝銑 SLOTTING
UPW0505	20	100	6300~6800	500~800	2~2.5	5	溝銑 SLOTTING
UPW0505	20	100	6300~6800	400~700	5	5	溝銑 SLOTTING
UPW0505	20	100	6300~6800	700~1100	5	0.05~0.1	側銑 SIDE MILLING
UPW0505	20	100	6300~6800	1600~2000	5	0~0.4	側銑 SIDE MILLING
UPW0505	20	100	6300~6800	700~1100	10	0.05~0.1	側銑 SIDE MILLING
UPW0505	20	100	6300~6800	1000~1400	10	0~0.4	側銑 SIDE MILLING
UPW0605	20	100	5200~5700	500~800	0.05~0.1	6	溝銑 SLOTTING
UPW0605	20	100	5200~5700	1800~2200	0~0.4	6	溝銑 SLOTTING
UPW0605	20	100	5200~5700	500~800	2~3	6	溝銑 SLOTTING
UPW0605	20	100	5200~5700	400~700	6	6	溝銑 SLOTTING
UPW0605	20	100	5200~5700	700~1100	6	0.05~0.1	側銑 SIDE MILLING
UPW0605	20	100	5200~5700	1800~2200	6	0~0.4	側銑 SIDE MILLING
UPW0605	20	100	5200~5700	700~1100	12	0.05~0.1	側銑 SIDE MILLING
UPW0605	20	100	5200~5700	1200~1600	12	0~0.4	側銑 SIDE MILLING
UPW0805	25	120	4500~5000	500~800	0.05~0.1	8	溝銑 SLOTTING
UPW0805	25	120	4500~5000	1600~2000	0~0.5	8	溝銑 SLOTTING
UPW0805	25	120	4500~5000	400~700	3~4	8	溝銑 SLOTTING
UPW0805	25	120	4500~5000	400~700	8	8	溝銑 SLOTTING
UPW0805	25	120	4500~5000	700~1100	8	0.05~0.1	側銑 SIDE MILLING
UPW0805	25	120	4500~5000	1600~2000	8	0~0.5	側銑 SIDE MILLING

UPW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPW0805	25	120	4500~5000	700~1100	16	0.05~0.1	側銑 SIDE MILLING
UPW0805	25	120	4500~5000	1200~1600	16	0~0.5	側銑 SIDE MILLING
UPW1005	30	130	3800~4300	500~800	0.05~0.1	10	溝銑 SLOTTING
UPW1005	30	130	3800~4300	1800~2200	0~0.5	10	溝銑 SLOTTING
UPW1005	30	130	3800~4300	500~800	4~5	10	溝銑 SLOTTING
UPW1005	30	130	3800~4300	500~800	10	10	溝銑 SLOTTING
UPW1005	30	130	3800~4300	700~1100	10	0.05~0.1	側銑 SIDE MILLING
UPW1005	30	130	3800~4300	1800~2200	10	0~0.5	側銑 SIDE MILLING
UPW1005	30	130	3800~4300	1000~1400	10	1	側銑 SIDE MILLING
UPW1005	30	130	3800~4300	700~1100	20	0.05~0.1	側銑 SIDE MILLING
UPW1005	30	130	3800~4300	1200~1600	20	0~0.5	側銑 SIDE MILLING
UPW1005	30	130	3800~4300	700~1100	20	1	側銑 SIDE MILLING
UPW1205	35	105	2500~3000	500~800	0.1~0.15	12	溝銑 SLOTTING
UPW1205	35	105	2500~3000	1200~1600	0~0.5	12	溝銑 SLOTTING
UPW1205	35	105	2500~3000	400~700	2~3	12	溝銑 SLOTTING
UPW1205	35	105	2500~3000	400~700	5~6	12	溝銑 SLOTTING
UPW1205	35	105	2500~3000	700~1000	12	0.1~0.15	側銑 SIDE MILLING
UPW1205	35	105	2500~3000	1200~1600	12	0~0.5	側銑 SIDE MILLING
UPW1205	35	105	2500~3000	700~1000	12	1	側銑 SIDE MILLING
UPW1205	35	105	2500~3000	700~1000	24	0.1~0.15	側銑 SIDE MILLING
UPW1205	35	105	2500~3000	1000~1400	24	0~0.5	側銑 SIDE MILLING
UPW1205	35	105	2500~3000	500~800	24	1	側銑 SIDE MILLING
UPW1405	40	100	2000~2500	500~800	0.1~0.15	14	溝銑 SLOTTING
UPW1405	40	100	2000~2500	800~1200	0~0.6	14	溝銑 SLOTTING
UPW1405	40	100	2000~2500	400~700	2~3	14	溝銑 SLOTTING
UPW1405	40	100	2000~2500	300~600	5~6	14	溝銑 SLOTTING
UPW1405	40	100	2000~2500	700~1000	14	0.1~0.15	側銑 SIDE MILLING
UPW1405	40	100	2000~2500	800~1200	14	0~0.6	側銑 SIDE MILLING
UPW1405	40	100	2000~2500	500~800	14	1	側銑 SIDE MILLING
UPW1405	40	100	2000~2500	700~1000	28	0.1~0.15	側銑 SIDE MILLING
UPW1405	40	100	2000~2500	700~1000	28	0~0.6	側銑 SIDE MILLING
UPW1405	40	100	2000~2500	400~700	28	1	側銑 SIDE MILLING
UPW1605	50	100	1800~2300	500~800	0.1~0.15	16	溝銑 SLOTTING
UPW1605	50	100	1800~2300	800~1200	0~0.6	16	溝銑 SLOTTING
UPW1605	50	100	1800~2300	400~700	2~3	16	溝銑 SLOTTING
UPW1605	50	100	1800~2300	300~600	5~6	16	溝銑 SLOTTING
UPW1605	50	100	1800~2300	700~1000	16	0.1~0.15	側銑 SIDE MILLING
UPW1605	50	100	1800~2300	800~1200	16	0~0.6	側銑 SIDE MILLING

UPW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPW1605	50	100	1800~2300	500~800	16	1	側銑 SIDE MILLING
UPW1605	50	100	1800~2300	700~1000	32	0.1~0.15	側銑 SIDE MILLING
UPW1605	50	100	1800~2300	700~1000	32	0~0.6	側銑 SIDE MILLING
UPW1605	50	100	1800~2300	400~700	32	1	側銑 SIDE MILLING
UPW1805	55	90	1400~1800	400~600	0.1~0.15	18	溝銑 SLOTTING
UPW1805	55	90	1400~1800	700~900	0~0.6	18	溝銑 SLOTTING
UPW1805	55	90	1400~1800	250~400	3~4	18	溝銑 SLOTTING
UPW1805	55	90	1400~1800	300~500	18	0.1~0.15	側銑 SIDE MILLING
UPW1805	55	90	1400~1800	500~800	18	0~0.6	側銑 SIDE MILLING
UPW1805	55	90	1400~1800	300~500	36	0.1~0.15	側銑 SIDE MILLING
UPW1805	55	90	1400~1800	400~600	36	0~0.6	側銑 SIDE MILLING
UPW2005	60	90	1200~1600	300~600	0.1~0.15	20	溝銑 SLOTTING
UPW2005	60	90	1200~1600	600~800	0~0.6	20	溝銑 SLOTTING
UPW2005	60	90	1200~1600	200~350	3~4	20	溝銑 SLOTTING
UPW2005	60	90	1200~1600	300~500	20	0.1~0.15	側銑 SIDE MILLING
UPW2005	60	90	1200~1600	500~700	20	0~0.6	側銑 SIDE MILLING
UPW2005	60	90	1200~1600	300~500	40	0.1~0.15	側銑 SIDE MILLING
UPW2005	60	90	1200~1600	400~600	40	0~0.6	側銑 SIDE MILLING
UPW2505	60	90	900~1300	250~450	0.1~0.15	25	溝銑 SLOTTING
UPW2505	60	90	900~1300	400~600	0~0.6	25	溝銑 SLOTTING
UPW2505	60	90	900~1300	170~270	3~4	25	溝銑 SLOTTING
UPW2505	60	90	900~1300	200~300	25	0.1~0.15	側銑 SIDE MILLING
UPW2505	60	90	900~1300	300~500	25	0~0.6	側銑 SIDE MILLING
UPW2505	60	90	900~1300	200~300	40	0.1~0.15	側銑 SIDE MILLING
UPW2505	60	90	900~1300	300~500	40	0~0.6	側銑 SIDE MILLING

UPW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】: **SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPW0305	18	85	8700~9200	700~1000	0.02~0.07	3	溝銑 SLOTTING
UPW0305	18	85	8700~9200	800~1200	0~0.2	3	溝銑 SLOTTING
UPW0305	18	85	8700~9200	300~600	0.7~1	3	溝銑 SLOTTING
UPW0305	18	85	8700~9200	300~600	3	3	溝銑 SLOTTING
UPW0305	18	85	8700~9200	700~1000	3	0.02~0.07	側銑 SIDE MILLING
UPW0305	18	85	8700~9200	800~1200	3	0~0.2	側銑 SIDE MILLING
UPW0305	18	85	8700~9200	700~1000	6	0.02~0.07	側銑 SIDE MILLING
UPW0305	18	85	8700~9200	700~1000	6	0~0.2	側銑 SIDE MILLING
UPW0405	18	95	7200~7700	700~1000	0~0.3	4	溝銑 SLOTTING
UPW0405	18	95	7200~7700	800~1200	0~0.3	4	溝銑 SLOTTING
UPW0405	18	95	7200~7700	300~600	1~1.5	4	溝銑 SLOTTING
UPW0405	18	95	7200~7700	300~500	4	4	溝銑 SLOTTING
UPW0405	18	95	7200~7700	800~1200	4	0.03~0.08	側銑 SIDE MILLING
UPW0405	18	95	7200~7700	800~1200	4	0~0.3	側銑 SIDE MILLING
UPW0405	18	95	7200~7700	800~1200	8	0.03~0.08	側銑 SIDE MILLING
UPW0405	18	95	7200~7700	700~1000	8	0~0.3	側銑 SIDE MILLING
UPW0505	20	95	5800~6300	500~800	0~0.4	5	溝銑 SLOTTING
UPW0505	20	95	5800~6300	1400~1800	0~0.4	5	溝銑 SLOTTING
UPW0505	20	95	5800~6300	400~700	2~2.5	5	溝銑 SLOTTING
UPW0505	20	95	5800~6300	300~600	5	5	溝銑 SLOTTING
UPW0505	20	95	5800~6300	700~1100	5	0.05~0.1	側銑 SIDE MILLING
UPW0505	20	95	5800~6300	1400~1800	5	0~0.4	側銑 SIDE MILLING
UPW0505	20	95	5800~6300	700~1100	10	0.05~0.1	側銑 SIDE MILLING
UPW0505	20	95	5800~6300	800~1200	10	0~0.4	側銑 SIDE MILLING
UPW0605	20	95	4800~5300	500~800	0.05~0.1	6	溝銑 SLOTTING
UPW0605	20	95	4800~5300	1600~2000	0~0.4	6	溝銑 SLOTTING
UPW0605	20	95	4800~5300	400~700	2~3	6	溝銑 SLOTTING
UPW0605	20	95	4800~5300	300~600	6	6	溝銑 SLOTTING
UPW0605	20	95	4800~5300	700~1100	6	0.05~0.1	側銑 SIDE MILLING
UPW0605	20	95	4800~5300	1600~2000	6	0~0.4	側銑 SIDE MILLING
UPW0605	20	95	4800~5300	700~1100	12	0.05~0.1	側銑 SIDE MILLING
UPW0605	20	95	4800~5300	1000~1400	12	0~0.4	側銑 SIDE MILLING
UPW0805	25	115	4300~4800	500~800	0.05~0.1	8	溝銑 SLOTTING
UPW0805	25	115	4300~4800	1400~1800	0~0.5	8	溝銑 SLOTTING
UPW0805	25	115	4300~4800	300~600	3~4	8	溝銑 SLOTTING
UPW0805	25	115	4300~4800	300~600	8	8	溝銑 SLOTTING
UPW0805	25	115	4300~4800	700~1100	8	0.05~0.1	側銑 SIDE MILLING
UPW0805	25	115	4300~4800	1400~1800	8	0~0.5	側銑 SIDE MILLING

UPW

切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】: **SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPW0805	25	115	4300~4800	700~1100	16	0.05~0.1	側銑 SIDE MILLING
UPW0805	25	115	4300~4800	1000~1400	16	0~0.5	側銑 SIDE MILLING
UPW1005	30	125	3700~4200	500~800	0.05~0.1	10	溝銑 SLOTTING
UPW1005	30	125	3700~4200	1600~2000	0~0.5	10	溝銑 SLOTTING
UPW1005	30	125	3700~4200	400~700	4~5	10	溝銑 SLOTTING
UPW1005	30	125	3700~4200	400~700	10	10	溝銑 SLOTTING
UPW1005	30	125	3700~4200	700~1100	10	0.05~0.1	側銑 SIDE MILLING
UPW1005	30	125	3700~4200	1600~2000	10	0~0.5	側銑 SIDE MILLING
UPW1005	30	125	3700~4200	800~1200	10	1	側銑 SIDE MILLING
UPW1005	30	125	3700~4200	700~1100	20	0.05~0.1	側銑 SIDE MILLING
UPW1005	30	125	3700~4200	1000~1400	20	0~0.5	側銑 SIDE MILLING
UPW1005	30	125	3700~4200	500~800	20	1	側銑 SIDE MILLING
UPW1205	35	95	2300~2800	500~800	0.1~0.15	12	溝銑 SLOTTING
UPW1205	35	95	2300~2800	1000~1400	0~0.5	12	溝銑 SLOTTING
UPW1205	35	95	2300~2800	300~600	2~3	12	溝銑 SLOTTING
UPW1205	35	95	2300~2800	300~600	5~6	12	溝銑 SLOTTING
UPW1205	35	95	2300~2800	700~1000	12	0.1~0.15	側銑 SIDE MILLING
UPW1205	35	95	2300~2800	1000~1400	12	0~0.5	側銑 SIDE MILLING
UPW1205	35	95	2300~2800	500~800	12	1	側銑 SIDE MILLING
UPW1205	35	95	2300~2800	700~1000	24	0.1~0.15	側銑 SIDE MILLING
UPW1205	35	95	2300~2800	800~1200	24	0~0.5	側銑 SIDE MILLING
UPW1205	35	95	2300~2800	400~700	24	1	側銑 SIDE MILLING
UPW1405	40	90	1800~2300	500~800	0.1~0.15	14	溝銑 SLOTTING
UPW1405	40	90	1800~2300	700~1000	0~0.6	14	溝銑 SLOTTING
UPW1405	40	90	1800~2300	300~600	2~3	14	溝銑 SLOTTING
UPW1405	40	90	1800~2300	300~500	5~6	14	溝銑 SLOTTING
UPW1405	40	90	1800~2300	700~1000	14	0.1~0.15	側銑 SIDE MILLING
UPW1405	40	90	1800~2300	700~1000	14	0~0.6	側銑 SIDE MILLING
UPW1405	40	90	1800~2300	400~700	14	1	側銑 SIDE MILLING
UPW1405	40	90	1800~2300	700~1000	28	0.1~0.15	側銑 SIDE MILLING
UPW1405	40	90	1800~2300	500~800	28	0~0.6	側銑 SIDE MILLING
UPW1405	40	90	1800~2300	300~600	28	1	側銑 SIDE MILLING
UPW1605	50	90	1500~2000	500~800	0.1~0.15	16	溝銑 SLOTTING
UPW1605	50	90	1500~2000	700~1000	0~0.6	16	溝銑 SLOTTING
UPW1605	50	90	1500~2000	300~600	2~3	16	溝銑 SLOTTING
UPW1605	50	90	1500~2000	300~500	5~6	16	溝銑 SLOTTING
UPW1605	50	90	1500~2000	700~1000	16	0.1~0.15	側銑 SIDE MILLING
UPW1605	50	90	1500~2000	700~1000	16	0~0.6	側銑 SIDE MILLING

UPW

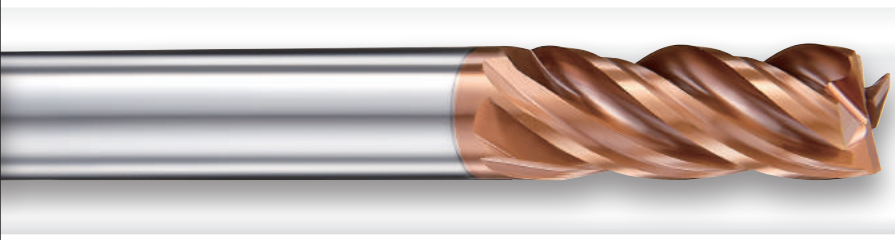
切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】: **SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPW1605	50	90	1500~2000	400~700	16	1	側銑 SIDE MILLING
UPW1605	50	90	1500~2000	700~1000	32	0.1~0.15	側銑 SIDE MILLING
UPW1605	50	90	1500~2000	500~800	32	0~0.6	側銑 SIDE MILLING
UPW1605	50	90	1500~2000	300~600	32	1	側銑 SIDE MILLING
UPW1805	55	70	1000~1500	300~550	0.1~0.15	18	溝銑 SLOTTING
UPW1805	55	70	1000~1500	600~800	0~0.5	18	溝銑 SLOTTING
UPW1805	55	70	1000~1500	250~350	2~3	18	溝銑 SLOTTING
UPW1805	55	70	1000~1500	300~500	18	0.1~0.15	側銑 SIDE MILLING
UPW1805	55	70	1000~1500	500~700	18	0~0.5	側銑 SIDE MILLING
UPW1805	55	70	1000~1500	300~500	36	0.1~0.15	側銑 SIDE MILLING
UPW1805	55	70	1000~1500	400~600	36	0~0.5	側銑 SIDE MILLING
UPW2005	60	70	900~1300	250~500	0.1~0.15	20	溝銑 SLOTTING
UPW2005	60	70	900~1300	400~600	0~0.5	20	溝銑 SLOTTING
UPW2005	60	70	900~1300	200~350	2~3	20	溝銑 SLOTTING
UPW2005	60	70	900~1300	250~400	20	0.1~0.15	側銑 SIDE MILLING
UPW2005	60	70	900~1300	400~600	20	0~0.5	側銑 SIDE MILLING
UPW2005	60	70	900~1300	250~400	40	0.1~0.15	側銑 SIDE MILLING
UPW2005	60	70	900~1300	300~500	40	0~0.5	側銑 SIDE MILLING
UPW2505	60	70	700~1100	250~400	0.1~0.15	25	溝銑 SLOTTING
UPW2505	60	70	700~1100	300~500	0~0.5	25	溝銑 SLOTTING
UPW2505	60	70	700~1100	150~250	2~3	25	溝銑 SLOTTING
UPW2505	60	70	700~1100	200~300	25	0.1~0.15	側銑 SIDE MILLING
UPW2505	60	70	700~1100	300~400	25	0~0.5	側銑 SIDE MILLING
UPW2505	60	70	700~1100	200~300	40	0.1~0.15	側銑 SIDE MILLING
UPW2505	60	70	700~1100	250~350	40	0~0.5	側銑 SIDE MILLING

UPE

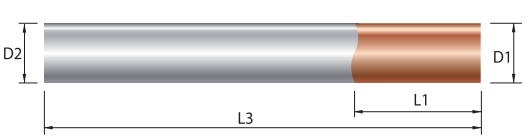
END MILLS 高效能立銑刀



NEW

精銑 Finishing | 中銑 Semi-finishing | 粗銑 Roughing

Super MG | 0.4 μm | 35° | FIT | 4 Flutes | HRc 60 | G10





直徑 D1	直徑公差 D1 Tolerance
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
14.0	0 -0.04
16.0	0 -0.04
18.0	0 -0.04
20.0	0 -0.04
25.0	0 -0.04

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø14	0 -0.011
Ø16	0 -0.011
Ø18	0 -0.011
Ø20	0 -0.013
Ø25	0 -0.013

unit : mm

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UPE0304	3.0	8	50	6
UPE0404	4.0	11	50	6
UPE0504	5.0	13	50	6
UPE0604	6.0	16	50	6
UPE0804	8.0	20	60	8
UPE1004	10.0	22	75	10
UPE1204	12.0	26	75	12
UPE1404	14.0	30	80	14
UPE1604	16.0	36	100	16
UPE1804	18.0	40	100	18
UPE2004	20.0	40	100	20
UPE2504	25.0	45	100	25

unit : mm

UPE

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPE0304	16	90	9200~9700	1600~2000	0~0.2	3	溝銑 SLOTTING
UPE0304	16	90	9200~9700	800~1200	0.7~1	3	溝銑 SLOTTING
UPE0304	16	90	9200~9700	400~700	3	3	溝銑 SLOTTING
UPE0304	16	90	9200~9700	800~1200	3	0.03~0.08	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	1600~2000	3	0~0.2	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	800~1200	3	1	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	500~800	3	2	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	800~1200	6	0.03~0.08	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	1400~1800	6	0~0.2	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	700~1000	6	0.7~1	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	1600~2000	0~0.3	4	溝銑 SLOTTING
UPE0404	16	105	8200~8700	800~1200	1~1.5	4	溝銑 SLOTTING
UPE0404	16	105	8200~8700	400~700	4	4	溝銑 SLOTTING
UPE0404	16	105	8200~8700	800~1200	4	0.03~0.08	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	1600~2000	4	0~0.3	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	800~1200	4	1	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	500~800	4	3	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	800~1200	8	0.03~0.08	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	1400~1800	8	0~0.3	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	700~1000	8	0.7~1	側銑 SIDE MILLING
UPE0504	18	115	7200~7700	1800~2200	0~0.4	5	溝銑 SLOTTING
UPE0504	18	110	6700~7200	700~1100	2~2.5	5	溝銑 SLOTTING
UPE0504	18	110	6700~7200	500~800	5	5	溝銑 SLOTTING
UPE0504	18	115	7200~7700	800~1200	5	0.05~0.1	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	1800~2200	5	0~0.4	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	800~1200	5	1	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	700~1100	5	3~4	側銑 SIDE MILLING
UPE0504	18	115	7200~7700	800~1200	10	0.05~0.1	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	1600~2000	10	0~0.4	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	800~1200	10	1~1.5	側銑 SIDE MILLING
UPE0604	20	120	6000~6500	2000~2400	0~0.4	6	溝銑 SLOTTING
UPE0604	20	110	5700~6200	800~1200	2~3	6	溝銑 SLOTTING
UPE0604	20	110	5700~6200	500~800	6	6	溝銑 SLOTTING
UPE0604	20	120	6200~6700	800~1200	6	0.05~0.1	側銑 SIDE MILLING
UPE0604	20	100	5000~5500	2000~2400	6	0~0.4	側銑 SIDE MILLING
UPE0604	20	100	5000~5500	700~1000	6	1~2	側銑 SIDE MILLING
UPE0604	20	100	5000~5500	700~1100	6	4~5	側銑 SIDE MILLING
UPE0604	20	120	6200~6700	800~1200	12	0.05~0.1	側銑 SIDE MILLING

UPE

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPE0604	20	100	5000~5500	1800~2200	12	0~0.4	側銑 SIDE MILLING
UPE0604	20	100	5000~5500	1000~1400	12	1~1.5	側銑 SIDE MILLING
UPE0804	25	110	4200~4700	1800~2200	0~0.5	8	溝銑 SLOTTING
UPE0804	25	110	4200~4700	800~1200	3~4	8	溝銑 SLOTTING
UPE0804	25	110	4200~4700	500~800	8	8	溝銑 SLOTTING
UPE0804	25	130	5000~5500	800~1200	8	0.05~0.1	側銑 SIDE MILLING
UPE0804	25	110	4200~4700	1400~1800	8	0~0.5	側銑 SIDE MILLING
UPE0804	25	100	3700~4200	800~1200	8	3~4	側銑 SIDE MILLING
UPE0804	25	100	3700~4200	700~1000	8	6~7	側銑 SIDE MILLING
UPE0804	25	130	5000~5500	800~1200	16	0.05~0.1	側銑 SIDE MILLING
UPE0804	25	110	4200~4700	1400~1800	16	0~0.5	側銑 SIDE MILLING
UPE0804	25	110	4200~4700	1000~1400	16	1~2	側銑 SIDE MILLING
UPE1004	30	110	3200~3700	1400~1800	0~0.5	10	溝銑 SLOTTING
UPE1004	30	110	3200~3700	500~800	4~5	10	溝銑 SLOTTING
UPE1004	30	110	3200~3700	700~1000	10	10	溝銑 SLOTTING
UPE1004	30	140	4200~4700	700~1100	10	0.05~0.1	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	1400~1800	10	0~0.5	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	700~1000	10	4~5	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	500~800	10	7~8	側銑 SIDE MILLING
UPE1004	30	140	4200~4700	700~1100	20	0.05~0.1	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	1200~1600	20	0~0.5	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	700~1000	20	1~2	側銑 SIDE MILLING
UPE1204	35	120	3000~3500	1200~1600	0~0.5	12	溝銑 SLOTTING
UPE1204	35	80	2000~2400	500~800	2~3	12	溝銑 SLOTTING
UPE1204	35	70	1700~2100	300~500	5~6	12	溝銑 SLOTTING
UPE1204	35	130	3300~3800	700~1100	12	0.1~0.15	側銑 SIDE MILLING
UPE1204	35	110	2700~3200	1200~1600	12	0~0.5	側銑 SIDE MILLING
UPE1204	35	80	2000~2400	700~1000	12	2~3	側銑 SIDE MILLING
UPE1204	35	70	1700~2100	300~600	12	5~6	側銑 SIDE MILLING
UPE1204	35	130	3300~3800	700~1100	24	0.1~0.15	側銑 SIDE MILLING
UPE1204	35	110	2700~3200	1200~1600	24	0~0.5	側銑 SIDE MILLING
UPE1204	35	75	1800~2200	500~800	24	2~3	側銑 SIDE MILLING
UPE1404	40	120	2500~3000	1200~1600	0~0.6	14	溝銑 SLOTTING
UPE1404	40	80	1700~2100	500~800	2~3	14	溝銑 SLOTTING
UPE1404	40	75	1500~2000	300~500	5~6	14	溝銑 SLOTTING
UPE1404	40	130	2700~3200	700~1100	14	0.1~0.15	側銑 SIDE MILLING
UPE1404	40	110	2300~2800	1200~1600	14	0~0.6	側銑 SIDE MILLING
UPE1404	40	80	1700~2100	700~1000	14	2~3	側銑 SIDE MILLING

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切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPE1404	40	75	1500~2000	300~600	14	5~6	側銑 SIDE MILLING
UPE1404	40	130	2700~3200	700~1100	28	0.1~0.15	側銑 SIDE MILLING
UPE1404	40	110	2300~2800	1200~1600	28	0~0.6	側銑 SIDE MILLING
UPE1404	40	75	1500~2000	500~800	28	2~3	側銑 SIDE MILLING
UPE1604	50	110	2000~2500	1000~1400	0~0.6	16	溝銑 SLOTTING
UPE1604	50	80	1400~1800	400~700	2~3	16	溝銑 SLOTTING
UPE1604	50	70	1200~1700	300~500	4~5	16	溝銑 SLOTTING
UPE1604	50	130	2300~2800	500~800	16	0.1~0.15	側銑 SIDE MILLING
UPE1604	50	110	2000~2500	1000~1400	16	0~0.6	側銑 SIDE MILLING
UPE1604	50	80	1400~1800	500~800	16	2~3	側銑 SIDE MILLING
UPE1604	50	70	1200~1700	300~500	16	4~5	側銑 SIDE MILLING
UPE1604	50	130	2300~2800	500~800	32	0.1~0.15	側銑 SIDE MILLING
UPE1604	50	110	2000~2500	1000~1400	32	0~0.6	側銑 SIDE MILLING
UPE1604	50	70	1200~1700	400~600	32	1.5~2	側銑 SIDE MILLING
UPE1804	55	110	1700~2200	800~1100	0.1~0.15	18	溝銑 SLOTTING
UPE1804	55	80	1200~1600	400~700	0~0.7	18	溝銑 SLOTTING
UPE1804	55	70	1000~1500	200~400	3~4	18	溝銑 SLOTTING
UPE1804	55	130	2000~2500	500~800	18	0.1~0.15	側銑 SIDE MILLING
UPE1804	55	110	1700~2200	700~1000	18	0~0.7	側銑 SIDE MILLING
UPE1804	55	80	1200~1600	400~500	18	3~4	側銑 SIDE MILLING
UPE1804	55	130	2000~2500	500~700	36	0.1~0.15	側銑 SIDE MILLING
UPE1804	55	110	1700~2200	600~900	36	0~0.7	側銑 SIDE MILLING
UPE1804	55	70	1000~1500	400~600	36	1~2	側銑 SIDE MILLING
UPE2004	60	110	1500~2000	600~900	0.1~0.15	20	溝銑 SLOTTING
UPE2004	60	75	1000~1400	400~600	0~0.6	20	溝銑 SLOTTING
UPE2004	60	65	800~1300	150~250	3~4	20	溝銑 SLOTTING
UPE2004	60	110	1500~2000	300~500	20	0.1~0.15	側銑 SIDE MILLING
UPE2004	60	110	1500~2000	400~600	20	0~0.6	側銑 SIDE MILLING
UPE2004	60	75	1000~1400	150~250	20	3~4	側銑 SIDE MILLING
UPE2004	60	110	1500~2000	300~500	40	0.1~0.15	側銑 SIDE MILLING
UPE2004	60	65	800~1300	300~500	40	0~0.6	側銑 SIDE MILLING
UPE2504	60	110	1200~1600	400~600	0.1~0.15	25	溝銑 SLOTTING
UPE2504	60	75	750~1150	300~400	0~0.6	25	溝銑 SLOTTING
UPE2504	60	65	700~1100	120~200	3~4	25	溝銑 SLOTTING
UPE2504	60	110	1200~1600	250~350	20	0.1~0.15	側銑 SIDE MILLING
UPE2504	60	110	1200~1600	250~400	20	0~0.6	側銑 SIDE MILLING
UPE2504	60	75	750~1150	120~200	20	3~4	側銑 SIDE MILLING
UPE2504	60	110	1200~1600	200~400	40	0.1~0.15	側銑 SIDE MILLING
UPE2504	60	65	700~1100	150~300	40	0~0.6	側銑 SIDE MILLING

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切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPE0304	16	90	9200~9700	1400~1800	0~0.2	3	溝銑 SLOTTING
UPE0304	16	90	9200~9700	700~1000	0.7~1	3	溝銑 SLOTTING
UPE0304	16	90	9200~9700	300~600	3	3	溝銑 SLOTTING
UPE0304	16	90	9200~9700	700~1000	3	0.03~0.08	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	1400~1800	3	0~0.2	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	700~1000	3	1	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	400~700	3	2	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	700~1000	6	0.03~0.08	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	1200~1600	6	0~0.2	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	500~800	6	0.7~1	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	1400~1800	0~0.3	4	溝銑 SLOTTING
UPE0404	16	105	8200~8700	700~1000	1~1.5	4	溝銑 SLOTTING
UPE0404	16	105	8200~8700	300~600	4	4	溝銑 SLOTTING
UPE0404	16	105	8200~8700	700~1000	4	0.03~0.08	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	1400~1800	4	0~0.3	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	700~1000	4	1	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	400~700	4	3	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	700~1000	8	0.03~0.08	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	1200~1600	8	0~0.3	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	500~800	8	0.7~1	側銑 SIDE MILLING
UPE0504	18	115	7200~7700	1600~2000	0~0.4	5	溝銑 SLOTTING
UPE0504	18	110	6700~7200	500~800	2~2.5	5	溝銑 SLOTTING
UPE0504	18	110	6700~7200	400~700	5	5	溝銑 SLOTTING
UPE0504	18	115	7200~7700	700~1000	5	0.05~0.1	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	1600~2000	5	0~0.4	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	700~1000	5	1	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	500~800	5	3~4	側銑 SIDE MILLING
UPE0504	18	115	7200~7700	700~1000	10	0.05~0.1	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	1400~1800	10	0~0.4	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	700~1000	10	1~1.5	側銑 SIDE MILLING
UPE0604	20	120	6000~6500	1800~2200	0~0.4	6	溝銑 SLOTTING
UPE0604	20	110	5700~6200	700~1000	2~3	6	溝銑 SLOTTING
UPE0604	20	110	5700~6200	400~700	6	6	溝銑 SLOTTING
UPE0604	20	120	6200~6700	700~1000	6	0.05~0.1	側銑 SIDE MILLING
UPE0604	20	100	5000~5500	1800~2200	6	0~0.4	側銑 SIDE MILLING
UPE0604	20	100	5000~5500	500~800	6	1~2	側銑 SIDE MILLING
UPE0604	20	100	5000~5500	500~800	6	4~5	側銑 SIDE MILLING
UPE0604	20	120	6200~6700	700~1000	12	0.05~0.1	側銑 SIDE MILLING

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切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPE0604	20	100	5000~5500	1600~2000	12	0~0.4	側銑 SIDE MILLING
UPE0604	20	100	5000~5500	800~1200	12	1~1.5	側銑 SIDE MILLING
UPE0804	25	110	4200~4700	1400~1800	0~0.5	8	溝銑 SLOTTING
UPE0804	25	110	4200~4700	700~1000	3~4	8	溝銑 SLOTTING
UPE0804	25	110	4200~4700	300~600	8	8	溝銑 SLOTTING
UPE0804	25	130	5000~5500	700~1000	8	0.05~0.1	側銑 SIDE MILLING
UPE0804	25	110	4200~4700	1200~1600	8	0~0.5	側銑 SIDE MILLING
UPE0804	25	100	3700~4200	700~1000	8	3~4	側銑 SIDE MILLING
UPE0804	25	100	3700~4200	500~800	8	6~7	側銑 SIDE MILLING
UPE0804	25	130	5000~5500	700~1000	16	0.05~0.1	側銑 SIDE MILLING
UPE0804	25	110	4200~4700	1200~1600	16	0~0.5	側銑 SIDE MILLING
UPE0804	25	110	4200~4700	800~1200	16	1~2	側銑 SIDE MILLING
UPE1004	30	110	3200~3700	1200~1600	0~0.5	10	溝銑 SLOTTING
UPE1004	30	110	3200~3700	400~700	4~5	10	溝銑 SLOTTING
UPE1004	30	110	3200~3700	500~800	10	10	溝銑 SLOTTING
UPE1004	30	140	4200~4700	500~800	10	0.05~0.1	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	1200~1600	10	0~0.5	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	500~800	10	4~5	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	300~600	10	7~8	側銑 SIDE MILLING
UPE1004	30	140	4200~4700	500~800	20	0.05~0.1	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	1000~1400	20	0~0.5	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	500~800	20	1~2	側銑 SIDE MILLING
UPE1204	35	120	3000~3500	1000~1400	0~0.5	12	溝銑 SLOTTING
UPE1204	35	80	2000~2400	400~700	2~3	12	溝銑 SLOTTING
UPE1204	35	130	3300~3800	500~800	12	0.1~0.15	側銑 SIDE MILLING
UPE1204	35	110	2700~3200	1000~1400	12	0~0.5	側銑 SIDE MILLING
UPE1204	35	80	2000~2400	500~800	12	2~3	側銑 SIDE MILLING
UPE1204	35	70	1700~2100	300~500	12	5~6	側銑 SIDE MILLING
UPE1204	35	130	3300~3800	500~800	24	0.1~0.15	側銑 SIDE MILLING
UPE1204	35	110	2700~3200	1000~1400	24	0~0.5	側銑 SIDE MILLING
UPE1204	35	75	1800~2200	300~600	24	2~3	側銑 SIDE MILLING
UPE1404	40	120	2500~3000	1000~1400	0~0.6	14	溝銑 SLOTTING
UPE1404	40	80	1700~2100	400~700	2~3	14	溝銑 SLOTTING
UPE1404	40	75	1500~2000	300~500	5~6	14	溝銑 SLOTTING
UPE1404	40	130	2700~3200	500~800	14	0.1~0.15	側銑 SIDE MILLING
UPE1404	40	110	2300~2800	1000~1400	14	0~0.6	側銑 SIDE MILLING
UPE1404	40	80	1700~2100	500~800	14	2~3	側銑 SIDE MILLING
UPE1404	40	75	1500~2000	300~500	14	5~6	側銑 SIDE MILLING

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切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPE1404	40	130	2700~3200	500~800	28	0.1~0.15	側銑 SIDE MILLING
UPE1404	40	110	2300~2800	1000~1400	28	0~0.6	側銑 SIDE MILLING
UPE1404	40	75	1500~2000	300~600	28	2~3	側銑 SIDE MILLING
UPE1604	50	110	2000~2500	700~1000	0~0.6	16	溝銑 SLOTTING
UPE1604	50	80	1400~1800	300~600	2~3	16	溝銑 SLOTTING
UPE1604	50	70	1200~1700	300~500	4~5	16	溝銑 SLOTTING
UPE1604	50	130	2300~2800	500~800	16	0.1~0.15	側銑 SIDE MILLING
UPE1604	50	110	2000~2500	700~1000	16	0~0.6	側銑 SIDE MILLING
UPE1604	50	80	1400~1800	400~700	16	2~3	側銑 SIDE MILLING
UPE1604	50	70	1200~1700	300~500	16	4~5	側銑 SIDE MILLING
UPE1604	50	130	2300~2800	500~800	32	0.1~0.15	側銑 SIDE MILLING
UPE1604	50	110	2000~2500	700~1000	32	0~0.6	側銑 SIDE MILLING
UPE1604	50	70	1200~1700	300~500	32	1.5~2	側銑 SIDE MILLING
UPE1804	55	110	1700~2200	700~1000	0.1~0.15	18	溝銑 SLOTTING
UPE1804	55	80	1200~1600	300~600	0~0.7	18	溝銑 SLOTTING
UPE1804	55	70	1000~1500	200~300	3~4	18	溝銑 SLOTTING
UPE1804	55	130	2000~2500	400~600	18	0.1~0.15	側銑 SIDE MILLING
UPE1804	55	110	1700~2200	700~900	18	0~0.7	側銑 SIDE MILLING
UPE1804	55	80	1200~1600	300~450	18	3~4	側銑 SIDE MILLING
UPE1804	55	130	2000~2500	400~600	36	0.1~0.15	側銑 SIDE MILLING
UPE1804	55	110	1700~2200	500~700	36	0~0.7	側銑 SIDE MILLING
UPE1804	55	70	1000~1500	300~450	36	1~2	側銑 SIDE MILLING
UPE2004	60	110	1500~2000	600~900	0.1~0.15	20	溝銑 SLOTTING
UPE2004	60	75	1000~1400	400~600	0~0.6	20	溝銑 SLOTTING
UPE2004	60	65	800~1300	150~250	3~4	20	溝銑 SLOTTING
UPE2004	60	110	1500~2000	300~500	20	0.1~0.15	側銑 SIDE MILLING
UPE2004	60	110	1500~2000	400~600	20	0~0.6	側銑 SIDE MILLING
UPE2004	60	75	1000~1400	150~250	20	3~4	側銑 SIDE MILLING
UPE2004	60	110	1500~2000	300~500	40	0.1~0.15	側銑 SIDE MILLING
UPE2004	60	65	800~1300	300~500	40	0~0.6	側銑 SIDE MILLING
UPE2504	60	110	1200~1600	400~600	0.1~0.15	25	溝銑 SLOTTING
UPE2504	60	75	750~1150	300~400	0~0.6	25	溝銑 SLOTTING
UPE2504	60	65	700~1100	120~200	3~4	25	溝銑 SLOTTING
UPE2504	60	110	1200~1600	250~350	20	0.1~0.15	側銑 SIDE MILLING
UPE2504	60	110	1200~1600	250~400	20	0~0.6	側銑 SIDE MILLING
UPE2504	60	75	750~1150	120~200	20	3~4	側銑 SIDE MILLING
UPE2504	60	110	1200~1600	200~400	40	0.1~0.15	側銑 SIDE MILLING
UPE2504	60	65	700~1100	150~300	40	0~0.6	側銑 SIDE MILLING

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切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPE0304	16	90	9200~9700	1400~1800	0~0.2	3	溝銑 SLOTTING
UPE0304	16	90	9200~9700	700~1000	0.7~1	3	溝銑 SLOTTING
UPE0304	16	90	9200~9700	300~600	3	3	溝銑 SLOTTING
UPE0304	16	90	9200~9700	700~1000	3	0.03~0.08	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	1400~1800	3	0~0.2	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	700~1000	3	1	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	400~700	3	2	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	700~1000	6	0.03~0.08	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	1200~1600	6	0~0.2	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	500~800	6	0.7~1	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	1400~1800	0~0.3	4	溝銑 SLOTTING
UPE0404	16	105	8200~8700	700~1000	1~1.5	4	溝銑 SLOTTING
UPE0404	16	105	8200~8700	300~600	4	4	溝銑 SLOTTING
UPE0404	16	105	8200~8700	700~1000	4	0.03~0.08	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	1400~1800	4	0~0.3	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	700~1000	4	1	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	400~700	4	3	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	700~1000	8	0.03~0.08	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	1200~1600	8	0~0.3	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	500~800	8	0.7~1	側銑 SIDE MILLING
UPE0504	18	115	7200~7700	1600~2000	0~0.4	5	溝銑 SLOTTING
UPE0504	18	110	6700~7200	500~800	2~2.5	5	溝銑 SLOTTING
UPE0504	18	110	6700~7200	400~700	5	5	溝銑 SLOTTING
UPE0504	18	115	7200~7700	700~1000	5	0.05~0.1	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	1600~2000	5	0~0.4	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	700~1000	5	1	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	500~800	5	3~4	側銑 SIDE MILLING
UPE0504	18	115	7200~7700	700~1000	10	0.05~0.1	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	1400~1800	10	0~0.4	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	700~1000	10	1~1.5	側銑 SIDE MILLING
UPE0604	20	120	6000~6500	1800~2200	0~0.4	6	溝銑 SLOTTING
UPE0604	20	110	5700~6200	700~1000	2~3	6	溝銑 SLOTTING
UPE0604	20	110	5700~6200	400~700	6	6	溝銑 SLOTTING
UPE0604	20	120	6200~6700	700~1000	6	0.05~0.1	側銑 SIDE MILLING
UPE0604	20	100	5000~5500	1800~2200	6	0~0.4	側銑 SIDE MILLING
UPE0604	20	100	5000~5500	500~800	6	1~2	側銑 SIDE MILLING
UPE0604	20	100	5000~5500	500~800	6	4~5	側銑 SIDE MILLING
UPE0604	20	120	6200~6700	700~1000	12	0.05~0.1	側銑 SIDE MILLING

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切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPE0604	20	100	5000~5500	1600~2000	12	0~0.4	側銑 SIDE MILLING
UPE0604	20	100	5000~5500	800~1200	12	1~1.5	側銑 SIDE MILLING
UPE0804	25	110	4200~4700	1400~1800	0~0.5	8	溝銑 SLOTTING
UPE0804	25	110	4200~4700	700~1000	3~4	8	溝銑 SLOTTING
UPE0804	25	110	4200~4700	300~600	8	8	溝銑 SLOTTING
UPE0804	25	130	5000~5500	700~1000	8	0.05~0.1	側銑 SIDE MILLING
UPE0804	25	110	4200~4700	1200~1600	8	0~0.5	側銑 SIDE MILLING
UPE0804	25	100	3700~4200	700~1000	8	3~4	側銑 SIDE MILLING
UPE0804	25	100	3700~4200	500~800	8	6~7	側銑 SIDE MILLING
UPE0804	25	130	5000~5500	700~1000	16	0.05~0.1	側銑 SIDE MILLING
UPE0804	25	110	4200~4700	1200~1600	16	0~0.5	側銑 SIDE MILLING
UPE0804	25	110	4200~4700	800~1200	16	1~2	側銑 SIDE MILLING
UPE1004	30	110	3200~3700	1200~1600	0~0.5	10	溝銑 SLOTTING
UPE1004	30	110	3200~3700	400~700	4~5	10	溝銑 SLOTTING
UPE1004	30	110	3200~3700	500~800	10	10	溝銑 SLOTTING
UPE1004	30	140	4200~4700	500~800	10	0.05~0.1	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	1200~1600	10	0~0.5	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	500~800	10	4~5	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	300~600	10	7~8	側銑 SIDE MILLING
UPE1004	30	140	4200~4700	500~800	20	0.05~0.1	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	1000~1400	20	0~0.5	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	500~800	20	1~2	側銑 SIDE MILLING
UPE1204	35	120	3000~3500	1000~1400	0~0.5	12	溝銑 SLOTTING
UPE1204	35	80	2000~2400	400~700	2~3	12	溝銑 SLOTTING
UPE1204	35	130	3300~3800	500~800	12	0.1~0.15	側銑 SIDE MILLING
UPE1204	35	110	2700~3200	1000~1400	12	0~0.5	側銑 SIDE MILLING
UPE1204	35	80	2000~2400	500~800	12	2~3	側銑 SIDE MILLING
UPE1204	35	70	1700~2100	300~500	12	5~6	側銑 SIDE MILLING
UPE1204	35	130	3300~3800	500~800	24	0.1~0.15	側銑 SIDE MILLING
UPE1204	35	110	2700~3200	1000~1400	24	0~0.5	側銑 SIDE MILLING
UPE1204	35	75	1800~2200	300~600	24	2~3	側銑 SIDE MILLING
UPE1404	40	120	2500~3000	1000~1400	0~0.6	14	溝銑 SLOTTING
UPE1404	40	80	1700~2100	400~700	2~3	14	溝銑 SLOTTING
UPE1404	40	75	1500~2000	300~500	5~6	14	溝銑 SLOTTING
UPE1404	40	130	2700~3200	500~800	14	0.1~0.15	側銑 SIDE MILLING
UPE1404	40	110	2300~2800	1000~1400	14	0~0.6	側銑 SIDE MILLING
UPE1404	40	80	1700~2100	500~800	14	2~3	側銑 SIDE MILLING
UPE1404	40	75	1500~2000	300~500	14	5~6	側銑 SIDE MILLING

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切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPE1404	40	130	2700~3200	500~800	28	0.1~0.15	側銑 SIDE MILLING
UPE1404	40	110	2300~2800	1000~1400	28	0~0.6	側銑 SIDE MILLING
UPE1404	40	75	1500~2000	300~600	28	2~3	側銑 SIDE MILLING
UPE1604	50	110	2000~2500	700~1000	0~0.6	16	溝銑 SLOTTING
UPE1604	50	80	1400~1800	300~600	3~4	16	溝銑 SLOTTING
UPE1604	50	70	1200~1700	300~500	6~7	16	溝銑 SLOTTING
UPE1604	50	130	2300~2800	500~800	16	0.1~0.15	側銑 SIDE MILLING
UPE1604	50	110	2000~2500	700~1000	16	0~0.6	側銑 SIDE MILLING
UPE1604	50	80	1400~1800	400~700	16	3~4	側銑 SIDE MILLING
UPE1604	50	70	1200~1700	300~500	16	6~7	側銑 SIDE MILLING
UPE1604	50	130	2300~2800	500~800	32	0.1~0.15	側銑 SIDE MILLING
UPE1604	50	110	2000~2500	700~1000	32	0~0.6	側銑 SIDE MILLING
UPE1604	50	70	1200~1700	300~500	32	3~4	側銑 SIDE MILLING
UPE1804	55	110	1700~2200	700~1000	0.1~0.15	18	溝銑 SLOTTING
UPE1804	55	80	1200~1600	300~600	0~0.7	18	溝銑 SLOTTING
UPE1804	55	70	1000~1500	200~300	3~4	18	溝銑 SLOTTING
UPE1804	55	130	2000~2500	400~600	18	0.1~0.15	側銑 SIDE MILLING
UPE1804	55	110	1700~2200	700~900	18	0~0.7	側銑 SIDE MILLING
UPE1804	55	80	1200~1600	300~450	18	3~4	側銑 SIDE MILLING
UPE1804	55	130	2000~2500	400~600	36	0.1~0.15	側銑 SIDE MILLING
UPE1804	55	110	1700~2200	500~700	36	0~0.7	側銑 SIDE MILLING
UPE1804	55	70	1000~1500	300~450	36	1~2	側銑 SIDE MILLING
UPE2004	60	110	1500~2000	600~900	0.1~0.15	20	溝銑 SLOTTING
UPE2004	60	75	1000~1400	400~600	0~0.6	20	溝銑 SLOTTING
UPE2004	60	65	800~1300	150~250	3~4	20	溝銑 SLOTTING
UPE2004	60	110	1500~2000	300~500	20	0.1~0.15	側銑 SIDE MILLING
UPE2004	60	110	1500~2000	400~600	20	0~0.6	側銑 SIDE MILLING
UPE2004	60	75	1000~1400	150~250	20	3~4	側銑 SIDE MILLING
UPE2004	60	110	1500~2000	300~500	40	0.1~0.15	側銑 SIDE MILLING
UPE2004	60	65	800~1300	300~500	40	0~0.6	側銑 SIDE MILLING
UPE2504	60	110	1200~1600	400~600	0.1~0.15	25	溝銑 SLOTTING
UPE2504	60	75	750~1150	300~400	0~0.6	25	溝銑 SLOTTING
UPE2504	60	65	700~1100	120~200	2~3	25	溝銑 SLOTTING
UPE2504	60	110	1200~1600	250~350	20	0.1~0.15	側銑 SIDE MILLING
UPE2504	60	110	1200~1600	250~400	20	0~0.6	側銑 SIDE MILLING
UPE2504	60	75	750~1150	120~200	20	2~3	側銑 SIDE MILLING
UPE2504	60	110	1200~1600	200~400	40	0.1~0.15	側銑 SIDE MILLING
UPE2504	60	65	700~1100	150~300	40	0~0.6	側銑 SIDE MILLING

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切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】: **SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPE0304	16	90	9200~9700	1200~1600	0~0.2	3	溝銑 SLOTTING
UPE0304	16	90	9200~9700	500~800	0.7~1	3	溝銑 SLOTTING
UPE0304	16	90	9200~9700	300~600	3	3	溝銑 SLOTTING
UPE0304	16	90	9200~9700	700~1000	3	0.02~0.07	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	1200~1600	3	0~0.2	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	500~800	3	1	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	400~700	3	2	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	700~1000	6	0.02~0.07	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	1000~1400	6	0~0.2	側銑 SIDE MILLING
UPE0304	16	90	9200~9700	500~800	6	0.7~1	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	1200~1600	0~0.3	4	溝銑 SLOTTING
UPE0404	16	105	8200~8700	500~800	1~1.5	4	溝銑 SLOTTING
UPE0404	16	105	8200~8700	300~600	4	4	溝銑 SLOTTING
UPE0404	16	105	8200~8700	700~1000	4	0.03~0.08	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	1200~1600	4	0~0.3	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	500~800	4	1	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	400~700	4	3	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	700~1000	8	0.03~0.08	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	1000~1400	8	0~0.3	側銑 SIDE MILLING
UPE0404	16	105	8200~8700	500~800	8	0.7~1	側銑 SIDE MILLING
UPE0504	18	115	7200~7700	1400~1800	0~0.4	5	溝銑 SLOTTING
UPE0504	18	110	6700~7200	400~700	2~2.5	5	溝銑 SLOTTING
UPE0504	18	110	6700~7200	400~700	5	5	溝銑 SLOTTING
UPE0504	18	115	7200~7700	700~1000	5	0.05~0.1	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	1400~1800	5	0~0.4	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	500~800	5	1	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	500~800	5	3~4	側銑 SIDE MILLING
UPE0504	18	115	7200~7700	700~1000	10	0.05~0.1	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	1200~1600	10	0~0.4	側銑 SIDE MILLING
UPE0504	18	100	6000~6500	500~800	10	1~1.5	側銑 SIDE MILLING
UPE0604	20	120	6000~6500	1600~2000	0~0.4	6	溝銑 SLOTTING
UPE0604	20	110	5700~6200	500~800	2~3	6	溝銑 SLOTTING
UPE0604	20	110	5700~6200	400~700	6	6	溝銑 SLOTTING
UPE0604	20	120	6200~6700	700~1000	6	0.05~0.1	側銑 SIDE MILLING
UPE0604	20	100	5000~5500	1600~2000	6	0~0.4	側銑 SIDE MILLING
UPE0604	20	100	5000~5500	500~800	6	1~2	側銑 SIDE MILLING
UPE0604	20	100	5000~5500	500~800	6	4~5	側銑 SIDE MILLING
UPE0604	20	120	6200~6700	700~1000	12	0.05~0.1	側銑 SIDE MILLING

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切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】:**SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPE0604	20	100	5000~5500	1400~1800	12	0~0.4	側銑 SIDE MILLING
UPE0604	20	100	5000~5500	700~1000	12	1~1.5	側銑 SIDE MILLING
UPE0804	25	110	4200~4700	1200~1600	0~0.5	8	溝銑 SLOTTING
UPE0804	25	110	4200~4700	500~800	3~4	8	溝銑 SLOTTING
UPE0804	25	110	4200~4700	300~600	8	8	溝銑 SLOTTING
UPE0804	25	130	5000~5500	700~1000	8	0.05~0.1	側銑 SIDE MILLING
UPE0804	25	110	4200~4700	1000~1400	8	0~0.5	側銑 SIDE MILLING
UPE0804	25	100	3700~4200	500~800	8	3~4	側銑 SIDE MILLING
UPE0804	25	100	3700~4200	500~800	8	6~7	側銑 SIDE MILLING
UPE0804	25	130	5000~5500	700~1000	16	0.05~0.1	側銑 SIDE MILLING
UPE0804	25	110	4200~4700	1000~1400	16	0~0.5	側銑 SIDE MILLING
UPE0804	25	110	4200~4700	700~1000	16	1~2	側銑 SIDE MILLING
UPE1004	30	110	3200~3700	1000~1400	0~0.5	10	溝銑 SLOTTING
UPE1004	30	110	3200~3700	400~700	4~5	10	溝銑 SLOTTING
UPE1004	30	110	3200~3700	500~800	10	10	溝銑 SLOTTING
UPE1004	30	140	4200~4700	500~800	10	0.05~0.1	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	1000~1400	10	0~0.5	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	500~800	10	4~5	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	300~600	10	7~8	側銑 SIDE MILLING
UPE1004	30	140	4200~4700	500~800	20	0.05~0.1	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	800~1200	20	0~0.5	側銑 SIDE MILLING
UPE1004	30	90	2700~3200	400~700	20	1~2	側銑 SIDE MILLING
UPE1204	35	120	3000~3500	800~1200	0~0.5	12	溝銑 SLOTTING
UPE1204	35	80	2000~2400	400~700	2~3	12	溝銑 SLOTTING
UPE1204	35	130	3300~3800	500~800	12	0.1~0.15	側銑 SIDE MILLING
UPE1204	35	110	2700~3200	800~1200	12	0~0.5	側銑 SIDE MILLING
UPE1204	35	80	2000~2400	500~800	12	2~3	側銑 SIDE MILLING
UPE1204	35	70	1700~2100	300~500	12	5~6	側銑 SIDE MILLING
UPE1204	35	130	3300~3800	500~800	24	0.1~0.15	側銑 SIDE MILLING
UPE1204	35	110	2700~3200	800~1200	24	0~0.5	側銑 SIDE MILLING
UPE1204	35	75	1800~2200	300~600	24	2~3	側銑 SIDE MILLING
UPE1404	40	120	2500~3000	800~1200	0~0.6	14	溝銑 SLOTTING
UPE1404	40	80	1700~2100	400~700	2~3	14	溝銑 SLOTTING
UPE1404	40	75	1500~2000	300~500	5~6	14	溝銑 SLOTTING
UPE1404	40	130	2700~3200	500~800	14	0.1~0.15	側銑 SIDE MILLING
UPE1404	40	110	2300~2800	800~1200	14	0~0.6	側銑 SIDE MILLING
UPE1404	40	80	1700~2100	500~800	14	2~3	側銑 SIDE MILLING
UPE1404	40	75	1500~2000	300~500	14	5~6	側銑 SIDE MILLING

UPE

切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】: **SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPE1404	40	130	2700~3200	500~800	28	0.1~0.15	側銑 SIDE MILLING
UPE1404	40	110	2300~2800	800~1200	28	0~0.6	側銑 SIDE MILLING
UPE1404	40	75	1500~2000	300~600	28	2~3	側銑 SIDE MILLING
UPE1604	50	110	2000~2500	500~800	0~0.6	16	溝銑 SLOTTING
UPE1604	50	80	1400~1800	300~600	3~4	16	溝銑 SLOTTING
UPE1604	50	70	1200~1700	300~500	6~7	16	溝銑 SLOTTING
UPE1604	50	130	2300~2800	500~800	16	0.1~0.15	側銑 SIDE MILLING
UPE1604	50	110	2000~2500	500~800	16	0~0.6	側銑 SIDE MILLING
UPE1604	50	80	1400~1800	400~700	16	3~4	側銑 SIDE MILLING
UPE1604	50	70	1200~1700	300~500	16	6~7	側銑 SIDE MILLING
UPE1604	50	130	2300~2800	500~800	32	0.1~0.15	側銑 SIDE MILLING
UPE1604	50	110	2000~2500	500~800	32	0~0.6	側銑 SIDE MILLING
UPE1604	50	70	1200~1700	300~500	32	3~4	側銑 SIDE MILLING
UPE1804	55	90	1400~1800	500~800	0.1~0.15	18	溝銑 SLOTTING
UPE1804	55	80	1200~1600	300~400	0~0.7	18	溝銑 SLOTTING
UPE1804	55	70	1000~1500	150~250	3~4	18	溝銑 SLOTTING
UPE1804	55	90	1400~1800	300~500	18	0.1~0.15	側銑 SIDE MILLING
UPE1804	55	90	1400~1800	500~700	18	0~0.7	側銑 SIDE MILLING
UPE1804	55	80	1200~1600	200~350	18	3~4	側銑 SIDE MILLING
UPE1804	55	90	1400~1800	300~500	36	0.1~0.15	側銑 SIDE MILLING
UPE1804	55	90	1400~1800	400~600	36	0~0.7	側銑 SIDE MILLING
UPE1804	55	70	1000~1500	200~350	36	2~3	側銑 SIDE MILLING
UPE2004	60	90	1200~1600	500~800	0.1~0.15	20	溝銑 SLOTTING
UPE2004	60	75	1000~1400	300~500	0~0.6	20	溝銑 SLOTTING
UPE2004	60	65	800~1300	150~250	2~3	20	溝銑 SLOTTING
UPE2004	60	90	1200~1600	300~400	20	0.1~0.15	側銑 SIDE MILLING
UPE2004	60	90	1200~1600	350~550	20	0~0.6	側銑 SIDE MILLING
UPE2004	60	75	1000~1400	150~250	20	3~4	側銑 SIDE MILLING
UPE2004	60	90	1200~1600	250~450	40	0.1~0.15	側銑 SIDE MILLING
UPE2004	60	65	800~1300	250~450	40	0~0.6	側銑 SIDE MILLING
UPE2504	60	90	1000~1400	300~500	0.1~0.15	25	溝銑 SLOTTING
UPE2504	60	75	750~1150	250~350	0~0.6	25	溝銑 SLOTTING
UPE2504	60	65	700~1100	100~180	2~3	25	溝銑 SLOTTING
UPE2504	60	90	1000~1400	200~300	20	0.1~0.15	側銑 SIDE MILLING
UPE2504	60	90	1000~1400	250~400	20	0~0.6	側銑 SIDE MILLING
UPE2504	60	75	750~1150	120~200	20	2~3	側銑 SIDE MILLING
UPE2504	60	90	1000~1400	200~300	40	0.1~0.15	側銑 SIDE MILLING
UPE2504	60	65	700~1100	150~300	40	0~0.6	側銑 SIDE MILLING

UPER END MILLS 高效能圓鼻角立銑刀

NEW



精銑 Finishing | 粗銑 Roughing | 中銑 Semi-finishing

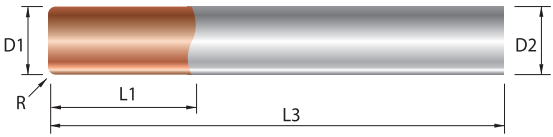
Super MG | 0.4 μm | 35° | FIT | R | 4 Flutes | HRc 60 | G10

直徑 D1	R徑公差 R Tolerance	直徑公差 D1 Tolerance
4.0	+0.02 0	0 -0.02
5.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.025
10.0	+0.02 0	0 -0.03
12.0	+0.02 0	0 -0.035
16.0	+0.02 0	0 -0.04
20.0	+0.02 0	0 -0.04

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm





型號 Type No.	D1 直徑 Diameter	R R角 Coner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UPER0405	4.0	0.5	11	50	6
UPER0502	5.0	0.2	13	50	6
UPER0505	5.0	0.5	13	50	6
UPER0605	6.0	0.5	16	50	6
UPER0610	6.0	1.0	16	50	6
UPER0805	8.0	0.5	20	60	8
UPER0810	8.0	1.0	20	60	8
UPER1005	10.0	0.5	22	75	10
UPER1010	10.0	1.0	22	75	10
UPER1020	10.0	2.0	22	75	10
UPER1210	12.0	1.0	26	75	12
UPER1220	12.0	2.0	26	75	12
UPER1610	16.0	1.0	36	100	16
UPER1620	16.0	2.0	36	100	16
UPER2010	20.0	1.0	40	100	20
UPER2020	20.0	2.0	40	100	20

unit : mm

UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER0405	18	110	8700~9200	1000~1400	0.03~0.08	4	溝銑 SLOTTING
UPER0405	18	110	8700~9200	1000~1400	0~0.3	4	溝銑 SLOTTING
UPER0405	18	110	8700~9200	500~800	1~1.5	4	溝銑 SLOTTING
UPER0405	18	110	8700~9200	400~700	4	4	溝銑 SLOTTING
UPER0405	18	110	8700~9200	1000~1400	4	0.03~0.08	側銑 SIDE MILLING
UPER0405	18	110	8700~9200	1000~1400	4	0~0.3	側銑 SIDE MILLING
UPER0405	18	110	8700~9200	1000~1400	8	0.03~0.08	側銑 SIDE MILLING
UPER0405	18	110	8700~9200	1200~1600	8	0~0.3	側銑 SIDE MILLING
UPER0405	18	130	10000~11000	1400~1800	0.03~0.08	0.03~0.08	3D銑 3D MILLING
UPER0405	18	120	9000~10000	1600~2000	0~0.25	0~0.25	3D銑 3D MILLING
UPER0502	18	110	7000~7500	800~1200	0.05~0.1	5	溝銑 SLOTTING
UPER0502	18	110	7000~7500	1400~1800	0~0.4	5	溝銑 SLOTTING
UPER0502	18	110	7000~7500	700~1000	2~2.5	5	溝銑 SLOTTING
UPER0502	18	110	7000~7500	400~700	5	5	溝銑 SLOTTING
UPER0502	18	110	7000~7500	800~1200	5	0.05~0.1	側銑 SIDE MILLING
UPER0502	18	110	7000~7500	1200~1600	5	0~0.4	側銑 SIDE MILLING
UPER0502	18	110	7000~7500	500~800	5	3~4	側銑 SIDE MILLING
UPER0502	18	110	7000~7500	800~1200	10	0.05~0.1	側銑 SIDE MILLING
UPER0502	18	110	7000~7500	1600~2000	10	0~0.4	側銑 SIDE MILLING
UPER0502	18	150	9000~10000	1200~1600	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0502	18	140	8700~9200	1800~2200	0~0.3	0~0.3	3D銑 3D MILLING
UPER0505	18	110	7000~7500	800~1200	0.05~0.1	5	溝銑 SLOTTING
UPER0505	18	110	7000~7500	1400~1800	0~0.4	5	溝銑 SLOTTING
UPER0505	18	110	7000~7500	700~1000	2~2.5	5	溝銑 SLOTTING
UPER0505	18	110	7000~7500	400~700	5	5	溝銑 SLOTTING
UPER0505	18	110	7000~7500	800~1200	5	0.05~0.1	側銑 SIDE MILLING
UPER0505	18	110	7000~7500	1200~1600	5	0~0.4	側銑 SIDE MILLING
UPER0505	18	110	7000~7500	500~800	5	3~4	側銑 SIDE MILLING
UPER0505	18	110	7000~7500	800~1200	10	0.05~0.1	側銑 SIDE MILLING
UPER0505	18	110	7000~7500	1600~2000	10	0~0.4	側銑 SIDE MILLING
UPER0505	18	150	9000~10000	1200~1600	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0505	18	140	8700~9200	1800~2200	0~0.3	0~0.3	3D銑 3D MILLING
UPER0605	20	120	6200~6700	800~1200	0.05~0.1	6	溝銑 SLOTTING
UPER0605	20	115	6000~6500	1600~2000	0~0.4	6	溝銑 SLOTTING
UPER0605	20	110	5700~6200	700~1000	2~3	6	溝銑 SLOTTING
UPER0605	20	110	5700~6200	400~700	6	6	溝銑 SLOTTING
UPER0605	20	120	6200~6700	800~1200	6	0.05~0.1	側銑 SIDE MILLING
UPER0605	20	100	5000~5500	1400~1800	6	0~0.4	側銑 SIDE MILLING

UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER0605	20	100	5000~5500	500~800	6	4~5	側銑 SIDE MILLING
UPER0605	20	120	6200~6700	800~1200	12	0.05~0.1	側銑 SIDE MILLING
UPER0605	20	100	5000~5500	1800~2200	12	0~0.4	側銑 SIDE MILLING
UPER0605	20	175	9000~9500	1400~1800	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0605	20	155	8000~8500	2000~2400	0~0.3	0~0.3	3D銑 3D MILLING
UPER0610	20	120	6200~6700	800~1200	0.05~0.1	6	溝銑 SLOTTING
UPER0610	20	115	6000~6500	1600~2000	0~0.4	6	溝銑 SLOTTING
UPER0610	20	110	5700~6200	700~1000	2~3	6	溝銑 SLOTTING
UPER0610	20	110	5700~6200	400~700	6	6	溝銑 SLOTTING
UPER0610	20	120	6200~6700	800~1200	6	0.05~0.1	側銑 SIDE MILLING
UPER0610	20	100	5000~5500	1400~1800	6	0~0.4	側銑 SIDE MILLING
UPER0610	20	100	5000~5500	500~800	6	4~5	側銑 SIDE MILLING
UPER0610	20	120	6200~6700	800~1200	12	0.05~0.1	側銑 SIDE MILLING
UPER0610	20	100	5000~5500	1800~2200	12	0~0.4	側銑 SIDE MILLING
UPER0610	20	175	9000~9500	1400~1800	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0610	20	155	8000~8500	2000~2400	0~0.3	0~0.3	3D銑 3D MILLING
UPER0805	25	130	5000~5500	800~1200	0.05~0.1	8	溝銑 SLOTTING
UPER0805	25	110	4200~4700	2000~2400	0~0.5	8	溝銑 SLOTTING
UPER0805	25	110	4200~4700	700~1100	3~4	8	溝銑 SLOTTING
UPER0805	25	110	4200~4700	500~800	8	8	溝銑 SLOTTING
UPER0805	25	130	5000~5500	800~1200	8	0.05~0.1	側銑 SIDE MILLING
UPER0805	25	85	3200~3700	1200~1600	8	0~0.5	側銑 SIDE MILLING
UPER0805	25	95	3500~4000	700~1000	8	3~4	側銑 SIDE MILLING
UPER0805	25	100	3700~4200	500~800	8	6~7	側銑 SIDE MILLING
UPER0805	25	130	5000~5500	800~1200	16	0.05~0.1	側銑 SIDE MILLING
UPER0805	25	110	4200~4700	1400~1800	16	0~0.5	側銑 SIDE MILLING
UPER0805	25	80	3000~3500	1000~1400	16	1~2	側銑 SIDE MILLING
UPER0805	25	175	6700~7200	1400~1800	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0805	25	165	6300~6800	2400~2800	0~0.3	0~0.3	3D銑 3D MILLING
UPER0810	25	130	5000~5500	800~1200	0.05~0.1	8	溝銑 SLOTTING
UPER0810	25	110	4200~4700	2000~2400	0~0.5	8	溝銑 SLOTTING
UPER0810	25	110	4200~4700	700~1100	3~4	8	溝銑 SLOTTING
UPER0810	25	110	4200~4700	500~800	8	8	溝銑 SLOTTING
UPER0810	25	130	5000~5500	800~1200	8	0.05~0.1	側銑 SIDE MILLING
UPER0810	25	85	3200~3700	1200~1600	8	0~0.5	側銑 SIDE MILLING
UPER0810	25	95	3500~4000	700~1000	8	3~4	側銑 SIDE MILLING
UPER0810	25	100	3700~4200	500~800	8	6~7	側銑 SIDE MILLING
UPER0810	25	130	5000~5500	800~1200	16	0.05~0.1	側銑 SIDE MILLING

UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER0810	25	110	4200~4700	1400~1800	16	0~0.5	側銑 SIDE MILLING
UPER0810	25	80	3000~3500	1000~1400	16	1~2	側銑 SIDE MILLING
UPER0810	25	175	6700~7200	1400~1800	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0810	25	165	6300~6800	2400~2800	0~0.3	0~0.3	3D銑 3D MILLING
UPER1005	30	140	4200~4700	800~1200	0.05~0.1	10	溝銑 SLOTTING
UPER1005	30	125	3700~4200	1400~1800	0~0.5	10	溝銑 SLOTTING
UPER1005	30	90	2700~3200	400~700	4~5	10	溝銑 SLOTTING
UPER1005	30	90	2700~3200	400~700	10	10	溝銑 SLOTTING
UPER1005	30	140	4200~4700	700~1100	10	0.05~0.1	側銑 SIDE MILLING
UPER1005	30	125	3700~4200	1200~1600	10	0~0.5	側銑 SIDE MILLING
UPER1005	30	125	3700~4200	500~800	10	1~2	側銑 SIDE MILLING
UPER1005	30	90	2700~3200	500~800	10	4~5	側銑 SIDE MILLING
UPER1005	30	90	2700~3200	300~600	10	7~8	側銑 SIDE MILLING
UPER1005	30	140	4200~4700	700~1100	20	0.05~0.1	側銑 SIDE MILLING
UPER1005	30	125	3700~4200	1000~1400	20	0~0.5	側銑 SIDE MILLING
UPER1005	30	165	5000~5500	800~1200	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER1005	30	135	4000~4500	1600~2000	0~0.4	0~0.4	3D銑 3D MILLING
UPER1010	30	140	4200~4700	800~1200	0.05~0.1	10	溝銑 SLOTTING
UPER1010	30	125	3700~4200	1400~1800	0~0.5	10	溝銑 SLOTTING
UPER1010	30	90	2700~3200	400~700	4~5	10	溝銑 SLOTTING
UPER1010	30	90	2700~3200	400~700	10	10	溝銑 SLOTTING
UPER1010	30	140	4200~4700	700~1100	10	0.05~0.1	側銑 SIDE MILLING
UPER1010	30	125	3700~4200	1200~1600	10	0~0.5	側銑 SIDE MILLING
UPER1010	30	125	3700~4200	500~800	10	1~2	側銑 SIDE MILLING
UPER1010	30	90	2700~3200	500~800	10	4~5	側銑 SIDE MILLING
UPER1010	30	90	2700~3200	300~600	10	7~8	側銑 SIDE MILLING
UPER1010	30	140	4200~4700	700~1100	20	0.05~0.1	側銑 SIDE MILLING
UPER1010	30	125	3700~4200	1000~1400	20	0~0.5	側銑 SIDE MILLING
UPER1010	30	165	5000~5500	800~1200	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER1010	30	135	4000~4500	1600~2000	0~0.4	0~0.4	3D銑 3D MILLING
UPER1020	30	140	4200~4700	800~1200	0.05~0.1	10	溝銑 SLOTTING
UPER1020	30	125	3700~4200	1400~1800	0~0.5	10	溝銑 SLOTTING
UPER1020	30	90	2700~3200	400~700	4~5	10	溝銑 SLOTTING
UPER1020	30	90	2700~3200	400~700	10	10	溝銑 SLOTTING
UPER1020	30	140	4200~4700	700~1100	10	0.05~0.1	側銑 SIDE MILLING
UPER1020	30	125	3700~4200	1200~1600	10	0~0.5	側銑 SIDE MILLING
UPER1020	30	125	3700~4200	500~800	10	1~2	側銑 SIDE MILLING
UPER1020	30	90	2700~3200	500~800	10	4~5	側銑 SIDE MILLING

UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER1020	30	90	2700~3200	300~600	10	7~8	側銑 SIDE MILLING
UPER1020	30	140	4200~4700	700~1100	20	0.05~0.1	側銑 SIDE MILLING
UPER1020	30	125	3700~4200	1000~1400	20	0~0.5	側銑 SIDE MILLING
UPER1020	30	165	5000~5500	800~1200	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER1020	30	135	4000~4500	1600~2000	0~0.4	0~0.4	3D銑 3D MILLING
UPER1210	35	130	3300~3800	800~1200	0.1~0.15	12	溝銑 SLOTTING
UPER1210	35	110	2700~3200	1200~1600	0~0.5	12	溝銑 SLOTTING
UPER1210	35	95	2300~2800	500~800	2~3	12	溝銑 SLOTTING
UPER1210	35	130	3300~3800	700~1100	12	0.1~0.15	側銑 SIDE MILLING
UPER1210	35	110	2700~3200	1000~1400	12	0~0.5	側銑 SIDE MILLING
UPER1210	35	80	2000~2400	700~1000	12	2~3	側銑 SIDE MILLING
UPER1210	35	80	2000~2400	300~500	12	5~6	側銑 SIDE MILLING
UPER1210	35	130	3300~3800	700~1100	24	0.1~0.15	側銑 SIDE MILLING
UPER1210	35	110	2700~3200	1200~1600	24	0~0.5	側銑 SIDE MILLING
UPER1210	35	80	2000~2400	300~500	24	1~2	側銑 SIDE MILLING
UPER1210	35	150	3800~4300	800~1100	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER1210	35	135	3400~3800	1400~1800	0~0.5	0~0.5	3D銑 3D MILLING
UPER1220	35	130	3300~3800	800~1200	0.1~0.15	12	溝銑 SLOTTING
UPER1220	35	110	2700~3200	1200~1600	0~0.5	12	溝銑 SLOTTING
UPER1220	35	95	2300~2800	500~800	2~3	12	溝銑 SLOTTING
UPER1220	35	130	3300~3800	700~1100	12	0.1~0.15	側銑 SIDE MILLING
UPER1220	35	110	2700~3200	1000~1400	12	0~0.5	側銑 SIDE MILLING
UPER1220	35	80	2000~2400	700~1000	12	2~3	側銑 SIDE MILLING
UPER1220	35	80	2000~2400	300~500	12	5~6	側銑 SIDE MILLING
UPER1220	35	130	3300~3800	700~1100	24	0.1~0.15	側銑 SIDE MILLING
UPER1220	35	110	2700~3200	1200~1600	24	0~0.5	側銑 SIDE MILLING
UPER1220	35	80	2000~2400	300~500	24	1~2	側銑 SIDE MILLING
UPER1220	35	150	3800~4300	800~1100	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER1220	35	135	3400~3800	1400~1800	0~0.5	0~0.5	3D銑 3D MILLING
UPER1610	50	130	2300~2800	700~1000	0.1~0.15	16	溝銑 SLOTTING
UPER1610	50	110	2000~2500	1000~1200	0~0.6	16	溝銑 SLOTTING
UPER1610	50	95	1700~2200	400~700	3~4	16	溝銑 SLOTTING
UPER1610	50	110	2000~2500	500~700	16	0.1~0.15	側銑 SIDE MILLING
UPER1610	50	110	2000~2500	800~1200	16	0~0.6	側銑 SIDE MILLING
UPER1610	50	85	1500~2000	500~700	16	3~4	側銑 SIDE MILLING
UPER1610	50	110	2000~2500	500~700	32	0.1~0.15	側銑 SIDE MILLING
UPER1610	50	110	2000~2500	800~1200	32	0~0.6	側銑 SIDE MILLING
UPER1610	50	85	1500~2000	300~500	32	1~2	側銑 SIDE MILLING

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切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER1610	50	150	2800~3300	800~1100	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER1610	50	140	2500~3000	1200~1600	0~0.5	0~0.5	3D銑 3D MILLING
UPER1620	50	130	2300~2800	700~1000	0.1~0.15	16	溝銑 SLOTTING
UPER1620	50	110	2000~2500	1000~1200	0~0.6	16	溝銑 SLOTTING
UPER1620	50	95	1700~2200	400~700	3~4	16	溝銑 SLOTTING
UPER1620	50	110	2000~2500	500~700	16	0.1~0.15	側銑 SIDE MILLING
UPER1620	50	110	2000~2500	800~1200	16	0~0.6	側銑 SIDE MILLING
UPER1620	50	85	1500~2000	500~700	16	3~4	側銑 SIDE MILLING
UPER1620	50	110	2000~2500	500~700	32	0.1~0.15	側銑 SIDE MILLING
UPER1620	50	110	2000~2500	800~1200	32	0~0.6	側銑 SIDE MILLING
UPER1620	50	85	1500~2000	300~500	32	1~2	側銑 SIDE MILLING
UPER1620	50	150	2800~3300	800~1100	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER1620	50	140	2500~3000	1200~1600	0~0.5	0~0.5	3D銑 3D MILLING
UPER2010	55	130	1900~2300	600~800	0.1~0.15	20	溝銑 SLOTTING
UPER2010	55	110	1600~2000	700~900	0~0.6	20	溝銑 SLOTTING
UPER2010	55	95	1300~1700	200~300	3~4	20	溝銑 SLOTTING
UPER2010	55	110	1600~2000	300~500	20	0.1~0.15	側銑 SIDE MILLING
UPER2010	55	110	1600~2000	600~800	20	0~0.6	側銑 SIDE MILLING
UPER2010	55	85	1200~1600	250~400	20	3~4	側銑 SIDE MILLING
UPER2010	55	110	1600~2000	300~500	36	0.1~0.15	側銑 SIDE MILLING
UPER2010	55	110	1600~2000	600~800	36	0~0.6	溝銑 SLOTTING
UPER2010	55	85	1200~1600	250~450	36	1~2	溝銑 SLOTTING
UPER2010	55	150	2300~2700	700~1000	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER2010	55	140	2200~2600	1000~1400	0~0.5	0~0.5	3D銑 3D MILLING
UPER2020	55	130	1900~2300	600~800	0.1~0.15	20	溝銑 SLOTTING
UPER2020	55	110	1600~2000	700~900	0~0.6	20	溝銑 SLOTTING
UPER2020	55	95	1300~1700	200~300	3~4	20	溝銑 SLOTTING
UPER2020	55	110	1600~2000	300~500	20	0.1~0.15	側銑 SIDE MILLING
UPER2020	55	110	1600~2000	600~800	20	0~0.6	側銑 SIDE MILLING
UPER2020	55	85	1200~1600	250~400	20	3~4	側銑 SIDE MILLING
UPER2020	55	110	1600~2000	300~500	36	0.1~0.15	側銑 SIDE MILLING
UPER2020	55	110	1600~2000	600~800	36	0~0.6	溝銑 SLOTTING
UPER2020	55	85	1200~1600	250~450	36	1~2	溝銑 SLOTTING
UPER2020	55	150	2300~2700	700~1000	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER2020	55	140	2200~2600	1000~1400	0~0.5	0~0.5	3D銑 3D MILLING

UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER0405	18	110	8700~9200	800~1200	0.03~0.08	4	溝銑 SLOTTING
UPER0405	18	110	8700~9200	800~1200	0~0.3	4	溝銑 SLOTTING
UPER0405	18	110	8700~9200	400~700	1~1.5	4	溝銑 SLOTTING
UPER0405	18	110	8700~9200	300~500	4	4	溝銑 SLOTTING
UPER0405	18	110	8700~9200	800~1200	4	0.03~0.08	側銑 SIDE MILLING
UPER0405	18	110	8700~9200	800~1200	4	0~0.3	側銑 SIDE MILLING
UPER0405	18	110	8700~9200	800~1200	8	0.03~0.08	側銑 SIDE MILLING
UPER0405	18	110	8700~9200	1000~1400	8	0~0.3	側銑 SIDE MILLING
UPER0405	18	130	10000~11000	1200~1600	0.03~0.08	0.03~0.08	3D銑 3D MILLING
UPER0405	18	120	9000~10000	1400~1800	0~0.25	0~0.25	3D銑 3D MILLING
UPER0502	18	110	7000~7500	700~1100	0.05~0.1	5	溝銑 SLOTTING
UPER0502	18	110	7000~7500	1200~1600	0~0.4	5	溝銑 SLOTTING
UPER0502	18	110	7000~7500	500~800	2~2.5	5	溝銑 SLOTTING
UPER0502	18	110	7000~7500	400~700	5	5	溝銑 SLOTTING
UPER0502	18	110	7000~7500	700~1100	5	0.05~0.1	側銑 SIDE MILLING
UPER0502	18	110	7000~7500	1000~1400	5	0~0.4	側銑 SIDE MILLING
UPER0502	18	110	7000~7500	500~800	5	3~4	側銑 SIDE MILLING
UPER0502	18	110	7000~7500	700~1100	10	0.05~0.1	側銑 SIDE MILLING
UPER0502	18	110	7000~7500	1400~1800	10	0~0.4	側銑 SIDE MILLING
UPER0502	18	150	9000~10000	1000~1400	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0502	18	140	8700~9200	1600~2000	0~0.3	0~0.3	3D銑 3D MILLING
UPER0505	18	110	7000~7500	700~1100	0.05~0.1	5	溝銑 SLOTTING
UPER0505	18	110	7000~7500	1200~1600	0~0.4	5	溝銑 SLOTTING
UPER0505	18	110	7000~7500	500~800	2~2.5	5	溝銑 SLOTTING
UPER0505	18	110	7000~7500	400~700	5	5	溝銑 SLOTTING
UPER0505	18	110	7000~7500	700~1100	5	0.05~0.1	側銑 SIDE MILLING
UPER0505	18	110	7000~7500	1000~1400	5	0~0.4	側銑 SIDE MILLING
UPER0505	18	110	7000~7500	500~800	5	3~4	側銑 SIDE MILLING
UPER0505	18	110	7000~7500	700~1100	10	0.05~0.1	側銑 SIDE MILLING
UPER0505	18	110	7000~7500	1400~1800	10	0~0.4	側銑 SIDE MILLING
UPER0505	18	150	9000~10000	1000~1400	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0505	18	140	8700~9200	1600~2000	0~0.3	0~0.3	3D銑 3D MILLING
UPER0605	20	120	6200~6700	700~1000	0.05~0.1	6	溝銑 SLOTTING
UPER0605	20	115	6000~6500	1400~1800	0~0.4	6	溝銑 SLOTTING
UPER0605	20	110	5700~6200	500~800	2~3	6	溝銑 SLOTTING
UPER0605	20	110	5700~6200	300~600	6	6	溝銑 SLOTTING
UPER0605	20	120	6200~6700	700~1000	6	0.05~0.1	側銑 SIDE MILLING
UPER0605	20	100	5000~5500	1200~1600	6	0~0.4	側銑 SIDE MILLING

UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER0605	20	120	6200~6700	700~1000	12	0.05~0.1	側銑 SIDE MILLING
UPER0605	20	100	5000~5500	1600~2000	12	0~0.4	側銑 SIDE MILLING
UPER0605	20	175	9000~9500	1200~1600	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0605	20	155	8000~8500	1800~2200	0~0.3	0~0.3	3D銑 3D MILLING
UPER0610	20	120	6200~6700	700~1000	0.05~0.1	6	溝銑 SLOTTING
UPER0610	20	115	6000~6500	1400~1800	0~0.4	6	溝銑 SLOTTING
UPER0610	20	110	5700~6200	500~800	2~3	6	溝銑 SLOTTING
UPER0610	20	110	5700~6200	300~600	6	6	溝銑 SLOTTING
UPER0610	20	120	6200~6700	700~1000	6	0.05~0.1	側銑 SIDE MILLING
UPER0610	20	100	5000~5500	1200~1600	6	0~0.4	側銑 SIDE MILLING
UPER0610	20	120	6200~6700	700~1000	12	0.05~0.1	側銑 SIDE MILLING
UPER0610	20	100	5000~5500	1600~2000	12	0~0.4	側銑 SIDE MILLING
UPER0610	20	175	9000~9500	1200~1600	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0610	20	155	8000~8500	1800~2200	0~0.3	0~0.3	3D銑 3D MILLING
UPER0805	25	130	5000~5500	700~1000	0.05~0.1	8	溝銑 SLOTTING
UPER0805	25	110	4200~4700	1800~2200	0~0.5	8	溝銑 SLOTTING
UPER0805	25	110	4200~4700	500~800	3~4	8	溝銑 SLOTTING
UPER0805	25	110	4200~4700	300~600	8	8	溝銑 SLOTTING
UPER0805	25	130	5000~5500	700~1000	8	0.05~0.1	側銑 SIDE MILLING
UPER0805	25	85	3200~3700	1000~1400	8	0~0.5	側銑 SIDE MILLING
UPER0805	25	95	3500~4000	500~800	8	3~4	側銑 SIDE MILLING
UPER0805	25	130	5000~5500	700~1000	16	0.05~0.1	側銑 SIDE MILLING
UPER0805	25	110	4200~4700	1200~1600	16	0~0.5	側銑 SIDE MILLING
UPER0805	25	175	6700~7200	1000~1400	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0805	25	165	6300~6800	2000~2400	0~0.3	0~0.3	3D銑 3D MILLING
UPER0810	25	130	5000~5500	700~1000	0.05~0.1	8	溝銑 SLOTTING
UPER0810	25	110	4200~4700	1800~2200	0~0.5	8	溝銑 SLOTTING
UPER0810	25	110	4200~4700	500~800	3~4	8	溝銑 SLOTTING
UPER0810	25	110	4200~4700	300~600	8	8	溝銑 SLOTTING
UPER0810	25	130	5000~5500	700~1000	8	0.05~0.1	側銑 SIDE MILLING
UPER0810	25	85	3200~3700	1000~1400	8	0~0.5	側銑 SIDE MILLING
UPER0810	25	95	3500~4000	500~800	8	3~4	側銑 SIDE MILLING
UPER0810	25	130	5000~5500	700~1000	16	0.05~0.1	側銑 SIDE MILLING
UPER0810	25	110	4200~4700	1200~1600	16	0~0.5	側銑 SIDE MILLING
UPER0810	25	175	6700~7200	1000~1400	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0810	25	165	6300~6800	2000~2400	0~0.3	0~0.3	3D銑 3D MILLING
UPER1005	30	140	4200~4700	700~1000	0.05~0.1	10	溝銑 SLOTTING
UPER1005	30	125	3700~4200	1200~1600	0~0.5	10	溝銑 SLOTTING

UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER1005	30	90	2700~3200	300~600	4~5	10	溝銑 SLOTTING
UPER1005	30	90	2700~3200	300~600	10	10	溝銑 SLOTTING
UPER1005	30	140	4200~4700	500~800	10	0.05~0.1	側銑 SIDE MILLING
UPER1005	30	125	3700~4200	1000~1400	10	0~0.5	側銑 SIDE MILLING
UPER1005	30	125	3700~4200	400~700	10	1~2	側銑 SIDE MILLING
UPER1005	30	90	2700~3200	400~700	10	4~5	側銑 SIDE MILLING
UPER1005	30	140	4200~4700	500~800	20	0.05~0.1	側銑 SIDE MILLING
UPER1005	30	125	3700~4200	800~1200	20	0~0.5	側銑 SIDE MILLING
UPER1005	30	165	5000~5500	700~1000	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER1005	30	135	4000~4500	1200~1600	0~0.4	0~0.4	3D銑 3D MILLING
UPER1010	30	140	4200~4700	700~1000	0.05~0.1	10	溝銑 SLOTTING
UPER1010	30	125	3700~4200	1200~1600	0~0.5	10	溝銑 SLOTTING
UPER1010	30	90	2700~3200	300~600	4~5	10	溝銑 SLOTTING
UPER1010	30	90	2700~3200	300~600	10	10	溝銑 SLOTTING
UPER1010	30	140	4200~4700	500~800	10	0.05~0.1	側銑 SIDE MILLING
UPER1010	30	125	3700~4200	1000~1400	10	0~0.5	側銑 SIDE MILLING
UPER1010	30	125	3700~4200	400~700	10	1~2	側銑 SIDE MILLING
UPER1010	30	90	2700~3200	400~700	10	4~5	側銑 SIDE MILLING
UPER1010	30	140	4200~4700	500~800	20	0.05~0.1	側銑 SIDE MILLING
UPER1010	30	125	3700~4200	800~1200	20	0~0.5	側銑 SIDE MILLING
UPER1010	30	165	5000~5500	700~1000	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER1010	30	135	4000~4500	1200~1600	0~0.4	0~0.4	3D銑 3D MILLING
UPER1020	30	140	4200~4700	700~1000	0.05~0.1	10	溝銑 SLOTTING
UPER1020	30	125	3700~4200	1200~1600	0~0.5	10	溝銑 SLOTTING
UPER1020	30	90	2700~3200	300~600	4~5	10	溝銑 SLOTTING
UPER1020	30	90	2700~3200	300~600	10	10	溝銑 SLOTTING
UPER1020	30	140	4200~4700	500~800	10	0.05~0.1	側銑 SIDE MILLING
UPER1020	30	125	3700~4200	1000~1400	10	0~0.5	側銑 SIDE MILLING
UPER1020	30	125	3700~4200	400~700	10	1~2	側銑 SIDE MILLING
UPER1020	30	90	2700~3200	400~700	10	4~5	側銑 SIDE MILLING
UPER1020	30	140	4200~4700	500~800	20	0.05~0.1	側銑 SIDE MILLING
UPER1020	30	125	3700~4200	800~1200	20	0~0.5	側銑 SIDE MILLING
UPER1020	30	165	5000~5500	700~1000	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER1020	30	135	4000~4500	1200~1600	0~0.4	0~0.4	3D銑 3D MILLING
UPER1210	35	130	3300~3800	700~1100	0.1~0.15	12	溝銑 SLOTTING
UPER1210	35	110	2700~3200	1000~1400	0~0.5	12	溝銑 SLOTTING
UPER1210	35	95	2300~2800	400~700	2~3	12	溝銑 SLOTTING
UPER1210	35	130	3300~3800	500~800	12	0.1~0.15	側銑 SIDE MILLING

UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER1210	35	110	2700~3200	800~1200	12	0~0.5	側銑 SIDE MILLING
UPER1210	35	80	2000~2400	500~800	12	2~3	側銑 SIDE MILLING
UPER1210	35	130	3300~3800	500~800	24	0.1~0.15	側銑 SIDE MILLING
UPER1210	35	110	2700~3200	1000~1400	24	0~0.5	側銑 SIDE MILLING
UPER1210	35	150	3800~4300	500~800	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER1210	35	135	3400~3800	1200~1600	0~0.5	0~0.5	3D銑 3D MILLING
UPER1220	35	130	3300~3800	700~1100	0.1~0.15	12	溝銑 SLOTTING
UPER1220	35	110	2700~3200	1000~1400	0~0.5	12	溝銑 SLOTTING
UPER1220	35	95	2300~2800	400~700	2~3	12	溝銑 SLOTTING
UPER1220	35	130	3300~3800	500~800	12	0.1~0.15	側銑 SIDE MILLING
UPER1220	35	110	2700~3200	800~1200	12	0~0.5	側銑 SIDE MILLING
UPER1220	35	80	2000~2400	500~800	12	2~3	側銑 SIDE MILLING
UPER1220	35	130	3300~3800	500~800	24	0.1~0.15	側銑 SIDE MILLING
UPER1220	35	110	2700~3200	1000~1400	24	0~0.5	側銑 SIDE MILLING
UPER1220	35	150	3800~4300	500~800	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER1220	35	135	3400~3800	1200~1600	0~0.5	0~0.5	3D銑 3D MILLING
UPER1610	50	130	2300~2800	600~900	0.1~0.15	16	溝銑 SLOTTING
UPER1610	50	110	2000~2500	800~1000	0~0.6	16	溝銑 SLOTTING
UPER1610	50	95	1700~2200	300~600	3~4	16	溝銑 SLOTTING
UPER1610	50	130	2300~2800	400~600	16	0.1~0.15	側銑 SIDE MILLING
UPER1610	50	110	2000~2500	700~1000	16	0~0.6	側銑 SIDE MILLING
UPER1610	50	85	1500~2000	400~600	16	3~4	側銑 SIDE MILLING
UPER1610	50	130	2300~2800	400~600	32	0.1~0.15	側銑 SIDE MILLING
UPER1610	50	110	2000~2500	700~1000	32	0~0.6	側銑 SIDE MILLING
UPER1610	50	150	2800~3300	700~1000	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER1610	50	140	2500~3000	1100~1500	0~0.5	0~0.5	3D銑 3D MILLING
UPER1620	50	130	2300~2800	600~900	0.1~0.15	16	溝銑 SLOTTING
UPER1620	50	110	2000~2500	800~1000	0~0.6	16	溝銑 SLOTTING
UPER1620	50	95	1700~2200	300~600	3~4	16	溝銑 SLOTTING
UPER1620	50	130	2300~2800	400~600	16	0.1~0.15	側銑 SIDE MILLING
UPER1620	50	110	2000~2500	700~1000	16	0~0.6	側銑 SIDE MILLING
UPER1620	50	85	1500~2000	400~600	16	3~4	側銑 SIDE MILLING
UPER1620	50	130	2300~2800	400~600	32	0.1~0.15	側銑 SIDE MILLING
UPER1620	50	110	2000~2500	700~1000	32	0~0.6	側銑 SIDE MILLING
UPER1620	50	150	2800~3300	700~1000	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER1620	50	140	2500~3000	1100~1500	0~0.5	0~0.5	3D銑 3D MILLING
UPER2010	55	130	1900~2300	600~800	0.1~0.15	20	溝銑 SLOTTING
UPER2010	55	100	1400~1800	600~800	0~0.6	20	溝銑 SLOTTING

UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER2010	55	95	1300~1700	180~280	3~4	20	溝銑 SLOTTING
UPER2010	55	100	1400~1800	300~400	20	0.1~0.15	側銑 SIDE MILLING
UPER2010	55	100	1400~1800	600~800	20	0~0.6	側銑 SIDE MILLING
UPER2010	55	85	1200~1600	200~350	20	3~4	側銑 SIDE MILLING
UPER2010	55	100	1400~1800	300~400	36	0.1~0.15	側銑 SIDE MILLING
UPER2010	55	100	1400~1800	600~800	36	0~0.6	溝銑 SLOTTING
UPER2010	55	150	2300~2700	700~1000	0.1~0.15	0.1~0.15	溝銑 SLOTTING
UPER2010	55	140	2200~2600	1000~1400	0~0.5	0~0.5	側銑 SIDE MILLING
UPER2020	55	130	1900~2300	600~800	0.1~0.15	20	溝銑 SLOTTING
UPER2020	55	100	1400~1800	600~800	0~0.6	20	溝銑 SLOTTING
UPER2020	55	95	1300~1700	180~280	3~4	20	溝銑 SLOTTING
UPER2020	55	100	1400~1800	300~400	20	0.1~0.15	側銑 SIDE MILLING
UPER2020	55	100	1400~1800	600~800	20	0~0.6	側銑 SIDE MILLING
UPER2020	55	85	1200~1600	200~350	20	3~4	側銑 SIDE MILLING
UPER2020	55	100	1400~1800	300~400	36	0.1~0.15	側銑 SIDE MILLING
UPER2020	55	100	1400~1800	600~800	36	0~0.6	溝銑 SLOTTING
UPER2020	55	150	2300~2700	700~1000	0.1~0.15	0.1~0.15	溝銑 SLOTTING
UPER2020	55	140	2200~2600	1000~1400	0~0.5	0~0.5	側銑 SIDE MILLING

UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER0405	18	110	8700~9200	800~1200	0.03~0.08	4	溝銑 SLOTTING
UPER0405	18	110	8700~9200	800~1200	0~0.3	4	溝銑 SLOTTING
UPER0405	18	110	8700~9200	400~700	1~1.5	4	溝銑 SLOTTING
UPER0405	18	110	8700~9200	300~500	4	4	溝銑 SLOTTING
UPER0405	18	110	8700~9200	800~1200	4	0.03~0.08	側銑 SIDE MILLING
UPER0405	18	110	8700~9200	800~1200	4	0~0.3	側銑 SIDE MILLING
UPER0405	18	110	8700~9200	800~1200	8	0.03~0.08	側銑 SIDE MILLING
UPER0405	18	110	8700~9200	1000~1400	8	0~0.3	側銑 SIDE MILLING
UPER0405	18	130	10000~11000	1200~1600	0.03~0.08	0.03~0.08	3D銑 3D MILLING
UPER0405	18	120	9000~10000	1400~1800	0~0.25	0~0.25	3D銑 3D MILLING
UPER0502	18	110	7000~7500	700~1100	0.05~0.1	5	溝銑 SLOTTING
UPER0502	18	110	7000~7500	1200~1600	0~0.4	5	溝銑 SLOTTING
UPER0502	18	110	7000~7500	500~800	2~2.5	5	溝銑 SLOTTING
UPER0502	18	110	7000~7500	400~700	5	5	溝銑 SLOTTING
UPER0502	18	110	7000~7500	700~1100	5	0.05~0.1	側銑 SIDE MILLING
UPER0502	18	110	7000~7500	1000~1400	5	0~0.4	側銑 SIDE MILLING
UPER0502	18	110	7000~7500	500~800	5	3~4	側銑 SIDE MILLING
UPER0502	18	110	7000~7500	700~1100	10	0.05~0.1	側銑 SIDE MILLING
UPER0502	18	110	7000~7500	1400~1800	10	0~0.4	側銑 SIDE MILLING
UPER0502	18	150	9000~10000	1000~1400	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0502	18	140	8700~9200	1600~2000	0~0.3	0~0.3	3D銑 3D MILLING
UPER0505	18	110	7000~7500	700~1100	0.05~0.1	5	溝銑 SLOTTING
UPER0505	18	110	7000~7500	1200~1600	0~0.4	5	溝銑 SLOTTING
UPER0505	18	110	7000~7500	500~800	2~2.5	5	溝銑 SLOTTING
UPER0505	18	110	7000~7500	400~700	5	5	溝銑 SLOTTING
UPER0505	18	110	7000~7500	700~1100	5	0.05~0.1	側銑 SIDE MILLING
UPER0505	18	110	7000~7500	1000~1400	5	0~0.4	側銑 SIDE MILLING
UPER0505	18	110	7000~7500	500~800	5	3~4	側銑 SIDE MILLING
UPER0505	18	110	7000~7500	700~1100	10	0.05~0.1	側銑 SIDE MILLING
UPER0505	18	110	7000~7500	1400~1800	10	0~0.4	側銑 SIDE MILLING
UPER0505	18	150	9000~10000	1000~1400	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0505	18	140	8700~9200	1600~2000	0~0.3	0~0.3	3D銑 3D MILLING
UPER0605	20	120	6200~6700	700~1000	0.05~0.1	6	溝銑 SLOTTING
UPER0605	20	115	6000~6500	1400~1800	0~0.4	6	溝銑 SLOTTING
UPER0605	20	110	5700~6200	500~800	2~3	6	溝銑 SLOTTING
UPER0605	20	110	5700~6200	300~600	6	6	溝銑 SLOTTING
UPER0605	20	120	6200~6700	700~1000	6	0.05~0.1	側銑 SIDE MILLING
UPER0605	20	100	5000~5500	1200~1600	6	0~0.4	側銑 SIDE MILLING

UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER0605	20	120	6200~6700	700~1000	12	0.05~0.1	側銑 SIDE MILLING
UPER0605	20	100	5000~5500	1600~2000	12	0~0.4	側銑 SIDE MILLING
UPER0605	20	175	9000~9500	1200~1600	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0605	20	155	8000~8500	1800~2200	0~0.3	0~0.3	3D銑 3D MILLING
UPER0610	20	120	6200~6700	700~1000	0.05~0.1	6	溝銑 SLOTTING
UPER0610	20	115	6000~6500	1400~1800	0~0.4	6	溝銑 SLOTTING
UPER0610	20	110	5700~6200	500~800	2~3	6	溝銑 SLOTTING
UPER0610	20	110	5700~6200	300~600	6	6	溝銑 SLOTTING
UPER0610	20	120	6200~6700	700~1000	6	0.05~0.1	側銑 SIDE MILLING
UPER0610	20	100	5000~5500	1200~1600	6	0~0.4	側銑 SIDE MILLING
UPER0610	20	120	6200~6700	700~1000	12	0.05~0.1	側銑 SIDE MILLING
UPER0610	20	100	5000~5500	1600~2000	12	0~0.4	側銑 SIDE MILLING
UPER0610	20	175	9000~9500	1200~1600	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0610	20	155	8000~8500	1800~2200	0~0.3	0~0.3	3D銑 3D MILLING
UPER0805	25	130	5000~5500	700~1000	0.05~0.1	8	溝銑 SLOTTING
UPER0805	25	110	4200~4700	1800~2200	0~0.5	8	溝銑 SLOTTING
UPER0805	25	110	4200~4700	500~800	3~4	8	溝銑 SLOTTING
UPER0805	25	110	4200~4700	300~600	8	8	溝銑 SLOTTING
UPER0805	25	130	5000~5500	700~1000	8	0.05~0.1	側銑 SIDE MILLING
UPER0805	25	85	3200~3700	1000~1400	8	0~0.5	側銑 SIDE MILLING
UPER0805	25	95	3500~4000	500~800	8	3~4	側銑 SIDE MILLING
UPER0805	25	130	5000~5500	700~1000	16	0.05~0.1	側銑 SIDE MILLING
UPER0805	25	110	4200~4700	1200~1600	16	0~0.5	側銑 SIDE MILLING
UPER0805	25	175	6700~7200	1000~1400	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0805	25	165	6300~6800	2000~2400	0~0.3	0~0.3	3D銑 3D MILLING
UPER0810	25	130	5000~5500	700~1000	0.05~0.1	8	溝銑 SLOTTING
UPER0810	25	110	4200~4700	1800~2200	0~0.5	8	溝銑 SLOTTING
UPER0810	25	110	4200~4700	500~800	3~4	8	溝銑 SLOTTING
UPER0810	25	110	4200~4700	300~600	8	8	溝銑 SLOTTING
UPER0810	25	130	5000~5500	700~1000	8	0.05~0.1	側銑 SIDE MILLING
UPER0810	25	85	3200~3700	1000~1400	8	0~0.5	側銑 SIDE MILLING
UPER0810	25	95	3500~4000	500~800	8	3~4	側銑 SIDE MILLING
UPER0810	25	130	5000~5500	700~1000	16	0.05~0.1	側銑 SIDE MILLING
UPER0810	25	110	4200~4700	1200~1600	16	0~0.5	側銑 SIDE MILLING
UPER0810	25	175	6700~7200	1000~1400	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0810	25	165	6300~6800	2000~2400	0~0.3	0~0.3	3D銑 3D MILLING
UPER1005	30	140	4200~4700	700~1000	0.05~0.1	10	溝銑 SLOTTING
UPER1005	30	125	3700~4200	1200~1600	0~0.5	10	溝銑 SLOTTING

UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER1005	30	90	2700~3200	300~600	4~5	10	溝銑 SLOTTING
UPER1005	30	90	2700~3200	300~600	10	10	溝銑 SLOTTING
UPER1005	30	140	4200~4700	500~800	10	0.05~0.1	側銑 SIDE MILLING
UPER1005	30	125	3700~4200	1000~1400	10	0~0.5	側銑 SIDE MILLING
UPER1005	30	125	3700~4200	400~700	10	1~2	側銑 SIDE MILLING
UPER1005	30	90	2700~3200	400~700	10	4~5	側銑 SIDE MILLING
UPER1005	30	140	4200~4700	500~800	20	0.05~0.1	側銑 SIDE MILLING
UPER1005	30	125	3700~4200	800~1200	20	0~0.5	側銑 SIDE MILLING
UPER1005	30	165	5000~5500	700~1000	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER1005	30	135	4000~4500	1200~1600	0~0.4	0~0.4	3D銑 3D MILLING
UPER1010	30	140	4200~4700	700~1000	0.05~0.1	10	溝銑 SLOTTING
UPER1010	30	125	3700~4200	1200~1600	0~0.5	10	溝銑 SLOTTING
UPER1010	30	90	2700~3200	300~600	4~5	10	溝銑 SLOTTING
UPER1010	30	90	2700~3200	300~600	10	10	溝銑 SLOTTING
UPER1010	30	140	4200~4700	500~800	10	0.05~0.1	側銑 SIDE MILLING
UPER1010	30	125	3700~4200	1000~1400	10	0~0.5	側銑 SIDE MILLING
UPER1010	30	125	3700~4200	400~700	10	1~2	側銑 SIDE MILLING
UPER1010	30	90	2700~3200	400~700	10	4~5	側銑 SIDE MILLING
UPER1010	30	140	4200~4700	500~800	20	0.05~0.1	側銑 SIDE MILLING
UPER1010	30	125	3700~4200	800~1200	20	0~0.5	側銑 SIDE MILLING
UPER1010	30	165	5000~5500	700~1000	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER1010	30	135	4000~4500	1200~1600	0~0.4	0~0.4	3D銑 3D MILLING
UPER1020	30	140	4200~4700	700~1000	0.05~0.1	10	溝銑 SLOTTING
UPER1020	30	125	3700~4200	1200~1600	0~0.5	10	溝銑 SLOTTING
UPER1020	30	90	2700~3200	300~600	4~5	10	溝銑 SLOTTING
UPER1020	30	90	2700~3200	300~600	10	10	溝銑 SLOTTING
UPER1020	30	140	4200~4700	500~800	10	0.05~0.1	側銑 SIDE MILLING
UPER1020	30	125	3700~4200	1000~1400	10	0~0.5	側銑 SIDE MILLING
UPER1020	30	125	3700~4200	400~700	10	1~2	側銑 SIDE MILLING
UPER1020	30	90	2700~3200	400~700	10	4~5	側銑 SIDE MILLING
UPER1020	30	140	4200~4700	500~800	20	0.05~0.1	側銑 SIDE MILLING
UPER1020	30	125	3700~4200	800~1200	20	0~0.5	側銑 SIDE MILLING
UPER1020	30	165	5000~5500	700~1000	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER1020	30	135	4000~4500	1200~1600	0~0.4	0~0.4	3D銑 3D MILLING
UPER1210	35	130	3300~3800	700~1100	0.1~0.15	12	溝銑 SLOTTING
UPER1210	35	110	2700~3200	1000~1400	0~0.5	12	溝銑 SLOTTING
UPER1210	35	95	2300~2800	400~700	2~3	12	溝銑 SLOTTING
UPER1210	35	130	3300~3800	500~800	12	0.1~0.15	側銑 SIDE MILLING

UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER1210	35	110	2700~3200	800~1200	12	0~0.5	側銑 SIDE MILLING
UPER1210	35	80	2000~2400	500~800	12	2~3	側銑 SIDE MILLING
UPER1210	35	130	3300~3800	500~800	24	0.1~0.15	側銑 SIDE MILLING
UPER1210	35	110	2700~3200	1000~1400	24	0~0.5	側銑 SIDE MILLING
UPER1210	35	150	3800~4300	700~1000	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER1210	35	135	3400~3800	1200~1600	0~0.5	0~0.5	3D銑 3D MILLING
UPER1220	35	130	3300~3800	700~1100	0.1~0.15	12	溝銑 SLOTTING
UPER1220	35	110	2700~3200	1000~1400	0~0.5	12	溝銑 SLOTTING
UPER1220	35	95	2300~2800	400~700	2~3	12	溝銑 SLOTTING
UPER1220	35	130	3300~3800	500~800	12	0.1~0.15	側銑 SIDE MILLING
UPER1220	35	110	2700~3200	800~1200	12	0~0.5	側銑 SIDE MILLING
UPER1220	35	80	2000~2400	500~800	12	2~3	側銑 SIDE MILLING
UPER1220	35	130	3300~3800	500~800	24	0.1~0.15	側銑 SIDE MILLING
UPER1220	35	110	2700~3200	1000~1400	24	0~0.5	側銑 SIDE MILLING
UPER1220	35	150	3800~4300	700~1000	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER1220	35	135	3400~3800	1200~1600	0~0.5	0~0.5	3D銑 3D MILLING
UPER1610	50	130	2300~2800	600~900	0.1~0.15	16	溝銑 SLOTTING
UPER1610	50	110	2000~2500	800~1000	0~0.6	16	溝銑 SLOTTING
UPER1610	50	95	1700~2200	300~600	3~4	16	溝銑 SLOTTING
UPER1610	50	100	1800~2200	400~600	16	0.1~0.15	側銑 SIDE MILLING
UPER1610	50	110	2000~2500	700~1000	16	0~0.6	側銑 SIDE MILLING
UPER1610	50	85	1500~2000	400~600	16	3~4	側銑 SIDE MILLING
UPER1610	50	100	1800~2200	400~600	32	0.1~0.15	側銑 SIDE MILLING
UPER1610	50	110	2000~2500	700~1000	32	0~0.6	側銑 SIDE MILLING
UPER1610	50	150	2800~3300	700~1000	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER1610	50	140	2500~3000	1100~1500	0~0.5	0~0.5	3D銑 3D MILLING
UPER1620	50	130	2300~2800	600~900	0.1~0.15	16	溝銑 SLOTTING
UPER1620	50	110	2000~2500	800~1000	0~0.6	16	溝銑 SLOTTING
UPER1620	50	95	1700~2200	300~600	3~4	16	溝銑 SLOTTING
UPER1620	50	100	1800~2200	400~600	16	0.1~0.15	側銑 SIDE MILLING
UPER1620	50	110	2000~2500	700~1000	16	0~0.6	側銑 SIDE MILLING
UPER1620	50	85	1500~2000	400~600	16	3~4	側銑 SIDE MILLING
UPER1620	50	100	1800~2200	400~600	32	0.1~0.15	側銑 SIDE MILLING
UPER1620	50	110	2000~2500	700~1000	32	0~0.6	側銑 SIDE MILLING
UPER1620	50	150	2800~3300	700~1000	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER1620	50	140	2500~3000	1100~1500	0~0.5	0~0.5	3D銑 3D MILLING
UPER2010	55	130	1900~2300	600~800	0.1~0.15	20	溝銑 SLOTTING
UPER2010	55	100	1400~1800	600~800	0~0.6	20	溝銑 SLOTTING

UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER2010	55	95	1300~1700	180~280	3~4	20	溝銑 SLOTTING
UPER2010	55	100	1400~1800	300~400	20	0.1~0.15	側銑 SIDE MILLING
UPER2010	55	100	1400~1800	600~800	20	0~0.6	側銑 SIDE MILLING
UPER2010	55	85	1200~1600	200~350	20	3~4	側銑 SIDE MILLING
UPER2010	55	100	1400~1800	300~400	36	0.1~0.15	側銑 SIDE MILLING
UPER2010	55	100	1400~1800	600~800	36	0~0.6	溝銑 SLOTTING
UPER2010	55	150	2300~2700	700~1000	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER2010	55	140	2200~2600	1000~1400	0~0.5	0~0.5	3D銑 3D MILLING
UPER2020	55	130	1900~2300	600~800	0.1~0.15	20	溝銑 SLOTTING
UPER2020	55	100	1400~1800	600~800	0~0.6	20	溝銑 SLOTTING
UPER2020	55	95	1300~1700	180~280	3~4	20	溝銑 SLOTTING
UPER2020	55	100	1400~1800	300~400	20	0.1~0.15	側銑 SIDE MILLING
UPER2020	55	100	1400~1800	600~800	20	0~0.6	側銑 SIDE MILLING
UPER2020	55	85	1200~1600	200~350	20	3~4	側銑 SIDE MILLING
UPER2020	55	100	1400~1800	300~400	36	0.1~0.15	側銑 SIDE MILLING
UPER2020	55	100	1400~1800	600~800	36	0~0.6	溝銑 SLOTTING
UPER2020	55	150	2300~2700	700~1000	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER2020	55	140	2200~2600	1000~1400	0~0.5	0~0.5	3D銑 3D MILLING

UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】: **SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER0405	18	110	8700~9200	800~1200	0.03~0.08	4	溝銑 SLOTTING
UPER0405	18	110	8700~9200	700~1100	0~0.3	4	溝銑 SLOTTING
UPER0405	18	110	8700~9200	400~700	1~1.5	4	溝銑 SLOTTING
UPER0405	18	110	8700~9200	300~500	4	4	溝銑 SLOTTING
UPER0405	18	110	8700~9200	800~1200	4	0.03~0.08	側銑 SIDE MILLING
UPER0405	18	110	8700~9200	700~1100	4	0~0.3	側銑 SIDE MILLING
UPER0405	18	110	8700~9200	800~1200	8	0.03~0.08	側銑 SIDE MILLING
UPER0405	18	110	8700~9200	800~1200	8	0~0.3	側銑 SIDE MILLING
UPER0405	18	130	10000~11000	1200~1600	0.03~0.08	0.03~0.08	3D銑 3D MILLING
UPER0405	18	120	9000~10000	1200~1600	0~0.25	0~0.25	3D銑 3D MILLING
UPER0502	18	110	7000~7500	700~1100	0.05~0.1	5	溝銑 SLOTTING
UPER0502	18	110	7000~7500	1000~1400	0~0.4	5	溝銑 SLOTTING
UPER0502	18	110	7000~7500	500~800	2~2.5	5	溝銑 SLOTTING
UPER0502	18	110	7000~7500	400~700	5	5	溝銑 SLOTTING
UPER0502	18	110	7000~7500	700~1100	5	0.05~0.1	側銑 SIDE MILLING
UPER0502	18	110	7000~7500	800~1200	5	0~0.4	側銑 SIDE MILLING
UPER0502	18	110	7000~7500	500~800	5	3~4	側銑 SIDE MILLING
UPER0502	18	110	7000~7500	700~1100	10	0.05~0.1	側銑 SIDE MILLING
UPER0502	18	110	7000~7500	1200~1600	10	0~0.4	側銑 SIDE MILLING
UPER0502	18	150	9000~10000	1000~1400	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0502	18	140	8700~9200	1400~1800	0~0.3	0~0.3	3D銑 3D MILLING
UPER0505	18	110	7000~7500	700~1100	0.05~0.1	5	溝銑 SLOTTING
UPER0505	18	110	7000~7500	1000~1400	0~0.4	5	溝銑 SLOTTING
UPER0505	18	110	7000~7500	500~800	2~2.5	5	溝銑 SLOTTING
UPER0505	18	110	7000~7500	400~700	5	5	溝銑 SLOTTING
UPER0505	18	110	7000~7500	700~1100	5	0.05~0.1	側銑 SIDE MILLING
UPER0505	18	110	7000~7500	800~1200	5	0~0.4	側銑 SIDE MILLING
UPER0505	18	110	7000~7500	500~800	5	3~4	側銑 SIDE MILLING
UPER0505	18	110	7000~7500	700~1100	10	0.05~0.1	側銑 SIDE MILLING
UPER0505	18	110	7000~7500	1200~1600	10	0~0.4	側銑 SIDE MILLING
UPER0505	18	150	9000~10000	1000~1400	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0505	18	140	8700~9200	1400~1800	0~0.3	0~0.3	3D銑 3D MILLING
UPER0605	20	120	6200~6700	700~1000	0.05~0.1	6	溝銑 SLOTTING
UPER0605	20	115	6000~6500	1200~1600	0~0.4	6	溝銑 SLOTTING
UPER0605	20	110	5700~6200	500~800	2~3	6	溝銑 SLOTTING
UPER0605	20	110	5700~6200	300~600	6	6	溝銑 SLOTTING
UPER0605	20	120	6200~6700	700~1000	6	0.05~0.1	側銑 SIDE MILLING
UPER0605	20	100	5000~5500	1000~1400	6	0~0.4	側銑 SIDE MILLING

UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】: **SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER0605	20	120	6200~6700	700~1000	12	0.05~0.1	側銑 SIDE MILLING
UPER0605	20	100	5000~5500	1400~1800	12	0~0.4	側銑 SIDE MILLING
UPER0605	20	175	9000~9500	1200~1600	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0605	20	155	8000~8500	1600~2000	0~0.3	0~0.3	3D銑 3D MILLING
UPER0610	20	120	6200~6700	700~1000	0.05~0.1	6	溝銑 SLOTTING
UPER0610	20	115	6000~6500	1200~1600	0~0.4	6	溝銑 SLOTTING
UPER0610	20	110	5700~6200	500~800	2~3	6	溝銑 SLOTTING
UPER0610	20	110	5700~6200	300~600	6	6	溝銑 SLOTTING
UPER0610	20	120	6200~6700	700~1000	6	0.05~0.1	側銑 SIDE MILLING
UPER0610	20	100	5000~5500	1000~1400	6	0~0.4	側銑 SIDE MILLING
UPER0610	20	120	6200~6700	700~1000	12	0.05~0.1	側銑 SIDE MILLING
UPER0610	20	100	5000~5500	1400~1800	12	0~0.4	側銑 SIDE MILLING
UPER0610	20	175	9000~9500	1200~1600	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0610	20	155	8000~8500	1600~2000	0~0.3	0~0.3	3D銑 3D MILLING
UPER0805	25	130	5000~5500	700~1000	0.05~0.1	8	溝銑 SLOTTING
UPER0805	25	110	4200~4700	1600~2000	0~0.5	8	溝銑 SLOTTING
UPER0805	25	110	4200~4700	500~800	3~4	8	溝銑 SLOTTING
UPER0805	25	110	4200~4700	300~600	8	8	溝銑 SLOTTING
UPER0805	25	130	5000~5500	700~1000	8	0.05~0.1	側銑 SIDE MILLING
UPER0805	25	85	3200~3700	800~1200	8	0~0.5	側銑 SIDE MILLING
UPER0805	25	95	3500~4000	500~800	8	3~4	側銑 SIDE MILLING
UPER0805	25	130	5000~5500	700~1000	16	0.05~0.1	側銑 SIDE MILLING
UPER0805	25	110	4200~4700	1000~1400	16	0~0.5	側銑 SIDE MILLING
UPER0805	25	175	6700~7200	1000~1400	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0805	25	165	6300~6800	1800~2200	0~0.3	0~0.3	3D銑 3D MILLING
UPER0810	25	130	5000~5500	700~1000	0.05~0.1	8	溝銑 SLOTTING
UPER0810	25	110	4200~4700	1600~2000	0~0.5	8	溝銑 SLOTTING
UPER0810	25	110	4200~4700	500~800	3~4	8	溝銑 SLOTTING
UPER0810	25	110	4200~4700	300~600	8	8	溝銑 SLOTTING
UPER0810	25	130	5000~5500	700~1000	8	0.05~0.1	側銑 SIDE MILLING
UPER0810	25	85	3200~3700	800~1200	8	0~0.5	側銑 SIDE MILLING
UPER0810	25	95	3500~4000	500~800	8	3~4	側銑 SIDE MILLING
UPER0810	25	130	5000~5500	700~1000	16	0.05~0.1	側銑 SIDE MILLING
UPER0810	25	110	4200~4700	1000~1400	16	0~0.5	側銑 SIDE MILLING
UPER0810	25	175	6700~7200	1000~1400	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER0810	25	165	6300~6800	1800~2200	0~0.3	0~0.3	3D銑 3D MILLING
UPER1005	30	140	4200~4700	700~1000	0.05~0.1	10	溝銑 SLOTTING
UPER1005	30	125	3700~4200	1000~1400	0~0.5	10	溝銑 SLOTTING

UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】: **SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER1005	30	90	2700~3200	300~600	4~5	10	溝銑 SLOTTING
UPER1005	30	90	2700~3200	300~600	10	10	溝銑 SLOTTING
UPER1005	30	140	4200~4700	500~800	10	0.05~0.1	側銑 SIDE MILLING
UPER1005	30	125	3700~4200	800~1200	10	0~0.5	側銑 SIDE MILLING
UPER1005	30	125	3700~4200	400~700	10	1~2	側銑 SIDE MILLING
UPER1005	30	90	2700~3200	400~700	10	4~5	側銑 SIDE MILLING
UPER1005	30	140	4200~4700	500~800	20	0.05~0.1	側銑 SIDE MILLING
UPER1005	30	125	3700~4200	700~1100	20	0~0.5	側銑 SIDE MILLING
UPER1005	30	165	5000~5500	700~1000	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER1005	30	135	4000~4500	1000~1400	0~0.4	0~0.4	3D銑 3D MILLING
UPER1010	30	140	4200~4700	700~1000	0.05~0.1	10	溝銑 SLOTTING
UPER1010	30	125	3700~4200	1000~1400	0~0.5	10	溝銑 SLOTTING
UPER1010	30	90	2700~3200	300~600	4~5	10	溝銑 SLOTTING
UPER1010	30	90	2700~3200	300~600	10	10	溝銑 SLOTTING
UPER1010	30	140	4200~4700	500~800	10	0.05~0.1	側銑 SIDE MILLING
UPER1010	30	125	3700~4200	800~1200	10	0~0.5	側銑 SIDE MILLING
UPER1010	30	125	3700~4200	400~700	10	1~2	側銑 SIDE MILLING
UPER1010	30	90	2700~3200	400~700	10	4~5	側銑 SIDE MILLING
UPER1010	30	140	4200~4700	500~800	20	0.05~0.1	側銑 SIDE MILLING
UPER1010	30	125	3700~4200	700~1100	20	0~0.5	側銑 SIDE MILLING
UPER1010	30	165	5000~5500	700~1000	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER1010	30	135	4000~4500	1000~1400	0~0.4	0~0.4	3D銑 3D MILLING
UPER1020	30	140	4200~4700	700~1000	0.05~0.1	10	溝銑 SLOTTING
UPER1020	30	125	3700~4200	1000~1400	0~0.5	10	溝銑 SLOTTING
UPER1020	30	90	2700~3200	300~600	4~5	10	溝銑 SLOTTING
UPER1020	30	90	2700~3200	300~600	10	10	溝銑 SLOTTING
UPER1020	30	140	4200~4700	500~800	10	0.05~0.1	側銑 SIDE MILLING
UPER1020	30	125	3700~4200	800~1200	10	0~0.5	側銑 SIDE MILLING
UPER1020	30	125	3700~4200	400~700	10	1~2	側銑 SIDE MILLING
UPER1020	30	90	2700~3200	400~700	10	4~5	側銑 SIDE MILLING
UPER1020	30	140	4200~4700	500~800	20	0.05~0.1	側銑 SIDE MILLING
UPER1020	30	125	3700~4200	700~1100	20	0~0.5	側銑 SIDE MILLING
UPER1020	30	165	5000~5500	700~1000	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPER1020	30	135	4000~4500	1000~1400	0~0.4	0~0.4	3D銑 3D MILLING
UPER1210	35	130	3300~3800	700~1100	0.1~0.15	12	溝銑 SLOTTING
UPER1210	35	110	2700~3200	800~1200	0~0.5	12	溝銑 SLOTTING
UPER1210	35	95	2300~2800	400~700	2~3	12	溝銑 SLOTTING
UPER1210	35	130	3300~3800	500~800	12	0.1~0.15	側銑 SIDE MILLING

UPER

切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】:**SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER1210	35	110	2700~3200	700~1100	12	0~0.5	側銑 SIDE MILLING
UPER1210	35	80	2000~2400	500~800	12	2~3	側銑 SIDE MILLING
UPER1210	35	130	3300~3800	500~800	24	0.1~0.15	側銑 SIDE MILLING
UPER1210	35	110	2700~3200	800~1200	24	0~0.5	側銑 SIDE MILLING
UPER1210	35	150	3800~4300	600~900	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER1210	35	135	3400~3800	1000~1400	0~0.5	0~0.5	3D銑 3D MILLING
UPER1220	35	130	3300~3800	700~1100	0.1~0.15	12	溝銑 SLOTTING
UPER1220	35	110	2700~3200	800~1200	0~0.5	12	溝銑 SLOTTING
UPER1220	35	95	2300~2800	400~700	2~3	12	溝銑 SLOTTING
UPER1220	35	130	3300~3800	500~800	12	0.1~0.15	側銑 SIDE MILLING
UPER1220	35	110	2700~3200	700~1100	12	0~0.5	側銑 SIDE MILLING
UPER1220	35	80	2000~2400	500~800	12	2~3	側銑 SIDE MILLING
UPER1220	35	130	3300~3800	500~800	24	0.1~0.15	側銑 SIDE MILLING
UPER1220	35	110	2700~3200	800~1200	24	0~0.5	側銑 SIDE MILLING
UPER1220	35	150	3800~4300	600~900	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER1220	35	135	3400~3800	1000~1400	0~0.5	0~0.5	3D銑 3D MILLING
UPER1610	50	130	2300~2800	500~800	0.1~0.15	16	溝銑 SLOTTING
UPER1610	50	100	1800~2200	600~900	0~0.6	16	溝銑 SLOTTING
UPER1610	50	95	1700~2200	300~600	2~3	16	溝銑 SLOTTING
UPER1610	50	95	1700~2200	300~500	16	0.1~0.15	側銑 SIDE MILLING
UPER1610	50	100	1800~2200	600~900	16	0~0.6	側銑 SIDE MILLING
UPER1610	50	85	1500~2000	400~700	16	2~3	側銑 SIDE MILLING
UPER1610	50	95	1700~2200	300~500	32	0.1~0.15	側銑 SIDE MILLING
UPER1610	50	100	1800~2200	600~900	32	0~0.6	側銑 SIDE MILLING
UPER1610	50	150	2800~3300	600~900	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER1610	50	140	2500~3000	800~1200	0~0.5	0~0.5	3D銑 3D MILLING
UPER1620	50	130	2300~2800	500~800	0.1~0.15	16	溝銑 SLOTTING
UPER1620	50	100	1800~2200	600~900	0~0.6	16	溝銑 SLOTTING
UPER1620	50	95	1700~2200	300~600	2~3	16	溝銑 SLOTTING
UPER1620	50	95	1700~2200	300~500	16	0.1~0.15	側銑 SIDE MILLING
UPER1620	50	100	1800~2200	600~900	16	0~0.6	側銑 SIDE MILLING
UPER1620	50	85	1500~2000	400~700	16	2~3	側銑 SIDE MILLING
UPER1620	50	95	1700~2200	300~500	32	0.1~0.15	側銑 SIDE MILLING
UPER1620	50	100	1800~2200	600~900	32	0~0.6	側銑 SIDE MILLING
UPER1620	50	150	2800~3300	600~900	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER1620	50	140	2500~3000	800~1200	0~0.5	0~0.5	3D銑 3D MILLING
UPER2010	55	130	1900~2300	600~800	0.1~0.15	20	溝銑 SLOTTING
UPER2010	55	95	1300~1700	600~800	0~0.6	20	溝銑 SLOTTING

UPER

切削條件表 MILLING CONDITIONS

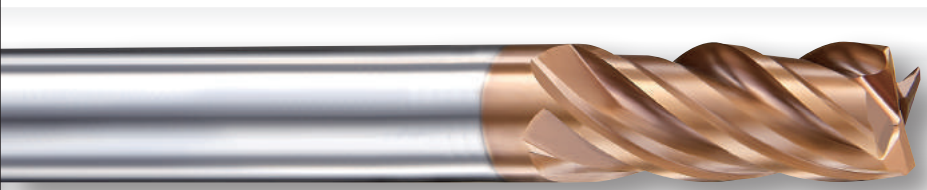
被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】: **SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPER2010	55	95	1300~1700	180~280	2~3	20	溝銑 SLOTTING
UPER2010	55	95	1300~1700	300~400	20	0.1~0.15	側銑 SIDE MILLING
UPER2010	55	95	1300~1700	600~800	20	0~0.6	側銑 SIDE MILLING
UPER2010	55	85	1200~1600	200~350	20	2~3	側銑 SIDE MILLING
UPER2010	55	95	1300~1700	300~400	36	0.1~0.15	側銑 SIDE MILLING
UPER2010	55	95	1300~1700	500~700	36	0~0.6	溝銑 SLOTTING
UPER2010	55	150	2300~2700	700~900	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER2010	55	140	2200~2600	1000~1200	0~0.5	0~0.5	3D銑 3D MILLING
UPER2020	55	130	1900~2300	600~800	0.1~0.15	20	溝銑 SLOTTING
UPER2020	55	95	1300~1700	600~800	0~0.6	20	溝銑 SLOTTING
UPER2020	55	95	1300~1700	180~280	2~3	20	溝銑 SLOTTING
UPER2020	55	95	1300~1700	300~400	20	0.1~0.15	側銑 SIDE MILLING
UPER2020	55	95	1300~1700	600~800	20	0~0.6	側銑 SIDE MILLING
UPER2020	55	85	1200~1600	200~350	20	2~3	側銑 SIDE MILLING
UPER2020	55	95	1300~1700	300~400	36	0.1~0.15	側銑 SIDE MILLING
UPER2020	55	95	1300~1700	500~700	36	0~0.6	溝銑 SLOTTING
UPER2020	55	150	2300~2700	700~900	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPER2020	55	140	2200~2600	1000~1200	0~0.5	0~0.5	3D銑 3D MILLING

UPG

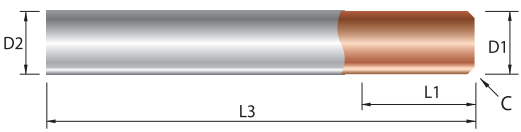
END MILLS 抗震高效能立銑刀

NEW



精銑 Finishing | 中銑 Semi-finishing | 粗銑 Roughing

Super MG | 0.4 μm | 35°~38° | FIT | 4 Flutes | HRc 60 | G10





直徑 D1	直徑公差 D1 Tolerance
3.0	0 -0.02
4.0	0 -0.02
5.0	0 -0.02
6.0	0 -0.02
8.0	0 -0.025
10.0	0 -0.03
12.0	0 -0.035
16.0	0 -0.04
18.0	0 -0.04
20.0	0 -0.04

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø18	0 -0.011
Ø20	0 -0.013

unit : mm

型號 Type No.	D1 直徑 Diameter	C 倒角 Chamfer	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UPG0304	3.0	0.15	8	50	6
UPG0404	4.0	0.15	11	50	6
UPG0504	5.0	0.2	13	50	6
UPG0604	6.0	0.2	16	50	6
UPG0604L	6.0	0.2	20	60	6
UPG0804	8.0	0.25	20	60	8
UPG0804L	8.0	0.25	25	75	8
UPG1004	10.0	0.3	22	75	10
UPG1004L	10.0	0.3	30	80	10
UPG1204	12.0	0.3	26	75	12
UPG1204L	12.0	0.3	35	100	12
UPG1604	16.0	0.4	40	100	16
UPG1604L	16.0	0.4	50	120	16
UPG1804	18.0	0.5	40	100	18
UPG2004	20.0	0.5	40	100	20
UPG2004L	20.0	0.5	50	120	20

unit : mm

UPG

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPG0304	16	90	9000~10000	1600~2000	0~0.2	3	溝銑 SLOTTING
UPG0304	16	90	9000~10000	700~1100	0.7~1	3	溝銑 SLOTTING
UPG0304	16	90	9000~10000	500~800	3	3	溝銑 SLOTTING
UPG0304	16	90	9000~10000	1600~2000	3	0~0.2	側銑 SIDE MILLING
UPG0304	16	90	9000~10000	800~1200	3	1	側銑 SIDE MILLING
UPG0304	16	90	9000~10000	700~1100	3	2	側銑 SIDE MILLING
UPG0304	16	90	9000~10000	1200~1600	6	0~0.2	側銑 SIDE MILLING
UPG0304	16	90	9000~10000	500~800	6	0.7~1	側銑 SIDE MILLING
UPG0404	18	105	8000~8500	1600~2000	0~0.3	4	溝銑 SLOTTING
UPG0404	18	105	8000~8500	700~1100	1~1.5	4	溝銑 SLOTTING
UPG0404	18	105	8000~8500	500~800	4	4	溝銑 SLOTTING
UPG0404	18	105	8000~8500	1600~2000	4	0~0.3	側銑 SIDE MILLING
UPG0404	18	105	8000~8500	800~1200	4	1	側銑 SIDE MILLING
UPG0404	18	105	8000~8500	700~1100	4	3	側銑 SIDE MILLING
UPG0404	18	105	8000~8500	1200~1600	8	0~0.3	側銑 SIDE MILLING
UPG0404	18	105	8000~8500	500~800	8	0.7~1	側銑 SIDE MILLING
UPG0504	20	110	6800~7300	1600~2000	0~0.4	5	溝銑 SLOTTING
UPG0504	20	110	6800~7300	500~800	2~2.5	5	溝銑 SLOTTING
UPG0504	20	110	6800~7300	500~800	5	5	溝銑 SLOTTING
UPG0504	20	110	6800~7300	1400~1800	5	0~0.4	側銑 SIDE MILLING
UPG0504	20	110	6800~7300	700~1100	5	1	側銑 SIDE MILLING
UPG0504	20	110	6800~7300	500~800	5	3~4	側銑 SIDE MILLING
UPG0504	20	110	6800~7300	1000~1400	10	0~0.4	側銑 SIDE MILLING
UPG0504	20	110	6800~7300	500~800	10	1~1.5	側銑 SIDE MILLING
UPG0604	20	110	5700~6200	1800~2200	0~0.4	6	溝銑 SLOTTING
UPG0604	20	110	5700~6200	700~1000	2~3	6	溝銑 SLOTTING
UPG0604	20	110	5700~6200	700~1000	6	6	溝銑 SLOTTING
UPG0604	20	110	5700~6200	1600~2000	6	0~0.4	側銑 SIDE MILLING
UPG0604	20	110	5700~6200	800~1200	6	1~2	側銑 SIDE MILLING
UPG0604	20	110	5700~6200	700~1000	6	4~5	側銑 SIDE MILLING
UPG0604	20	110	5700~6200	1200~1600	12	0~0.4	側銑 SIDE MILLING
UPG0604	20	110	5700~6200	700~1000	12	1~1.5	側銑 SIDE MILLING
UPG0604L	30	85	4200~4700	800~1200	16	0~0.4	側銑 SIDE MILLING
UPG0604L	30	85	4200~4700	500~800	16	0.8~1.2	側銑 SIDE MILLING
UPG0804	25	120	4500~5000	2000~2400	0~0.5	8	溝銑 SLOTTING
UPG0804	25	120	4500~5000	700~1000	3~4	8	溝銑 SLOTTING
UPG0804	25	120	4500~5000	500~800	8	8	溝銑 SLOTTING
UPG0804	25	120	4500~5000	1800~2200	8	0~0.5	側銑 SIDE MILLING
UPG0804	25	120	4500~5000	700~1000	8	3~4	側銑 SIDE MILLING
UPG0804	25	120	4500~5000	700~1000	8	6~7	側銑 SIDE MILLING
UPG0804	25	120	4500~5000	1400~1800	16	0~0.5	側銑 SIDE MILLING
UPG0804	25	120	4500~5000	800~1200	16	1~2	側銑 SIDE MILLING
UPG0804L	35	120	4500~5000	1000~1400	20	0~0.5	側銑 SIDE MILLING

UPG

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPG0804L	35	75	2700~3200	700~1000	20	1~1.5	側銑 SIDE MILLING
UPG1004	30	125	3700~4200	1600~2000	0~0.5	10	溝銑 SLOTTING
UPG1004	30	125	3700~4200	500~800	4~5	10	溝銑 SLOTTING
UPG1004	30	125	3700~4200	500~800	10	10	溝銑 SLOTTING
UPG1004	30	125	3700~4200	1400~1800	10	0~0.5	側銑 SIDE MILLING
UPG1004	30	95	2800~3300	700~1000	10	4~5	側銑 SIDE MILLING
UPG1004	30	125	3700~4200	700~1000	10	7~8	側銑 SIDE MILLING
UPG1004	30	125	3700~4200	1200~1600	20	0~0.5	側銑 SIDE MILLING
UPG1004	30	115	3400~3800	700~1100	20	1~2	側銑 SIDE MILLING
UPG1004L	40	125	3700~4200	1000~1400	25	0~0.5	側銑 SIDE MILLING
UPG1004L	40	75	2200~2600	600~900	25	1~1.5	側銑 SIDE MILLING
UPG1204	35	110	2700~3200	1800~2200	0~0.5	12	溝銑 SLOTTING
UPG1204	35	110	2700~3200	500~800	2~3	12	溝銑 SLOTTING
UPG1204	35	110	2700~3200	500~800	5~6	12	溝銑 SLOTTING
UPG1204	35	110	2700~3200	1400~1800	12	0~0.5	側銑 SIDE MILLING
UPG1204	35	110	2700~3200	800~1200	12	2~3	側銑 SIDE MILLING
UPG1204	35	110	2700~3200	700~1000	12	5~6	側銑 SIDE MILLING
UPG1204	35	110	2700~3200	1000~1400	24	0~0.5	側銑 SIDE MILLING
UPG1204	35	110	2200~2700	500~800	24	2~3	側銑 SIDE MILLING
UPG1204L	50	90	2200~2600	700~1000	30	0~0.5	側銑 SIDE MILLING
UPG1204L	50	75	1800~2200	500~800	30	1~2	側銑 SIDE MILLING
UPG1604	45	110	2000~2500	1200~1600	0~0.6	16	溝銑 SLOTTING
UPG1604	45	110	2000~2500	400~700	3~4	16	溝銑 SLOTTING
UPG1604	45	110	2000~2500	800~1200	16	0~0.6	側銑 SIDE MILLING
UPG1604	45	110	2000~2500	500~800	16	3~4	側銑 SIDE MILLING
UPG1604	45	110	2000~2500	700~1000	32	0~0.6	側銑 SIDE MILLING
UPG1604	45	110	2000~2500	400~700	32	3~4	側銑 SIDE MILLING
UPG1604L	65	90	1600~2000	500~800	40	0~0.6	側銑 SIDE MILLING
UPG1604L	65	75	1300~1800	400~700	40	1~2	側銑 SIDE MILLING
UPG1804	55	100	1500~2000	800~1100	0~0.6	18	溝銑 SLOTTING
UPG1804	55	100	1500~2000	400~600	2~3	18	溝銑 SLOTTING
UPG1804	55	100	1500~2000	700~1000	18	0~0.7	側銑 SIDE MILLING
UPG1804	55	100	1500~2000	500~800	18	2~3	側銑 SIDE MILLING
UPG1804	55	100	1500~2000	500~800	36	0~0.6	側銑 SIDE MILLING
UPG1804	55	100	1500~2000	400~700	36	2~3	側銑 SIDE MILLING
UPG2004	55	100	1400~1800	700~900	0~0.6	20	溝銑 SLOTTING
UPG2004	55	100	1400~1800	300~500	2~3	20	溝銑 SLOTTING
UPG2004	55	100	1400~1800	600~900	20	0~0.6	側銑 SIDE MILLING
UPG2004	55	100	1400~1800	300~500	20	2~3	側銑 SIDE MILLING
UPG2004	55	100	1400~1800	500~800	40	0~0.6	側銑 SIDE MILLING
UPG2004	55	100	1400~1800	200~400	40	2~3	側銑 SIDE MILLING
UPG2004L	70	90	1200~1600	500~700	40	0~0.6	側銑 SIDE MILLING
UPG2004L	70	75	1000~1400	300~500	40	1~2	側銑 SIDE MILLING

UPG

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPG0304	16	90	9000~10000	1400~1800	0~0.2	3	溝銑 SLOTTING
UPG0304	16	90	9000~10000	700~1000	0.7~1	3	溝銑 SLOTTING
UPG0304	16	90	9000~10000	400~700	3	3	溝銑 SLOTTING
UPG0304	16	90	9000~10000	1400~1800	3	0~0.2	側銑 SIDE MILLING
UPG0304	16	90	9000~10000	700~1100	3	1	側銑 SIDE MILLING
UPG0304	16	90	9000~10000	500~800	3	2	側銑 SIDE MILLING
UPG0304	16	90	9000~10000	1000~1400	6	0~0.2	側銑 SIDE MILLING
UPG0304	16	90	9000~10000	400~700	6	0.7~1	側銑 SIDE MILLING
UPG0404	18	105	8000~8500	1400~1800	0~0.3	4	溝銑 SLOTTING
UPG0404	18	105	8000~8500	700~1000	1~1.5	4	溝銑 SLOTTING
UPG0404	18	105	8000~8500	400~700	4	4	溝銑 SLOTTING
UPG0404	18	105	8000~8500	1400~1800	4	0~0.3	側銑 SIDE MILLING
UPG0404	18	105	8000~8500	700~1100	4	1	側銑 SIDE MILLING
UPG0404	18	105	8000~8500	500~800	4	3	側銑 SIDE MILLING
UPG0404	18	105	8000~8500	1000~1400	8	0~0.3	側銑 SIDE MILLING
UPG0404	18	105	8000~8500	400~700	8	0.7~1	側銑 SIDE MILLING
UPG0504	20	110	6800~7300	1400~1800	0~0.4	5	溝銑 SLOTTING
UPG0504	20	110	6800~7300	400~700	2~2.5	5	溝銑 SLOTTING
UPG0504	20	110	6800~7300	400~700	5	5	溝銑 SLOTTING
UPG0504	20	110	6800~7300	1200~1600	5	0~0.4	側銑 SIDE MILLING
UPG0504	20	110	6800~7300	500~800	5	1	側銑 SIDE MILLING
UPG0504	20	110	6800~7300	400~700	5	3~4	側銑 SIDE MILLING
UPG0504	20	110	6800~7300	800~1200	10	0~0.4	側銑 SIDE MILLING
UPG0504	20	110	6800~7300	400~700	10	1~1.5	側銑 SIDE MILLING
UPG0604	20	110	5700~6200	1600~2000	0~0.4	6	溝銑 SLOTTING
UPG0604	20	110	5700~6200	500~800	2~3	6	溝銑 SLOTTING
UPG0604	20	110	5700~6200	500~800	6	6	溝銑 SLOTTING
UPG0604	20	110	5700~6200	1400~1800	6	0~0.4	側銑 SIDE MILLING
UPG0604	20	110	5700~6200	700~1100	6	1~2	側銑 SIDE MILLING
UPG0604	20	110	5700~6200	500~800	6	4~5	側銑 SIDE MILLING
UPG0604	20	110	5700~6200	1000~1400	12	0~0.4	側銑 SIDE MILLING
UPG0604	20	110	5700~6200	500~800	12	1~1.5	側銑 SIDE MILLING
UPG0604L	30	85	4200~4700	700~1000	16	0~0.4	側銑 SIDE MILLING
UPG0604L	30	85	4200~4700	400~700	16	0.8~1.2	側銑 SIDE MILLING
UPG0804	25	120	4500~5000	1800~2200	0~0.5	8	溝銑 SLOTTING
UPG0804	25	120	4500~5000	500~800	3~4	8	溝銑 SLOTTING
UPG0804	25	120	4500~5000	400~700	8	8	溝銑 SLOTTING
UPG0804	25	120	4500~5000	1600~2000	8	0~0.5	側銑 SIDE MILLING
UPG0804	25	120	4500~5000	500~800	8	3~4	側銑 SIDE MILLING
UPG0804	25	120	4500~5000	500~800	8	6~7	側銑 SIDE MILLING
UPG0804	25	120	4500~5000	1200~1600	16	0~0.5	側銑 SIDE MILLING
UPG0804	25	120	4500~5000	700~1000	16	1~2	側銑 SIDE MILLING
UPG0804L	35	120	4500~5000	800~1200	20	0~0.5	側銑 SIDE MILLING

UPG

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPG0304	16	90	9000~10000	1400~1800	0~0.2	3	溝銑 SLOTTING
UPG0304	16	90	9000~10000	700~1000	0.7~1	3	溝銑 SLOTTING
UPG0304	16	90	9000~10000	400~700	3	3	溝銑 SLOTTING
UPG0304	16	90	9000~10000	1400~1800	3	0~0.2	側銑 SIDE MILLING
UPG0304	16	90	9000~10000	700~1100	3	1	側銑 SIDE MILLING
UPG0304	16	90	9000~10000	500~800	3	2	側銑 SIDE MILLING
UPG0304	16	90	9000~10000	1000~1400	6	0~0.2	側銑 SIDE MILLING
UPG0304	16	90	9000~10000	400~700	6	0.7~1	側銑 SIDE MILLING
UPG0404	18	105	8000~8500	1400~1800	0~0.3	4	溝銑 SLOTTING
UPG0404	18	105	8000~8500	700~1000	1~1.5	4	溝銑 SLOTTING
UPG0404	18	105	8000~8500	400~700	4	4	溝銑 SLOTTING
UPG0404	18	105	8000~8500	1400~1800	4	0~0.3	側銑 SIDE MILLING
UPG0404	18	105	8000~8500	700~1100	4	1	側銑 SIDE MILLING
UPG0404	18	105	8000~8500	500~800	4	3	側銑 SIDE MILLING
UPG0404	18	105	8000~8500	1000~1400	8	0~0.3	側銑 SIDE MILLING
UPG0404	18	105	8000~8500	400~700	8	0.7~1	側銑 SIDE MILLING
UPG0504	20	110	6800~7300	1400~1800	0~0.4	5	溝銑 SLOTTING
UPG0504	20	110	6800~7300	400~700	2~2.5	5	溝銑 SLOTTING
UPG0504	20	110	6800~7300	400~700	5	5	溝銑 SLOTTING
UPG0504	20	110	6800~7300	1200~1600	5	0~0.4	側銑 SIDE MILLING
UPG0504	20	110	6800~7300	500~800	5	1	側銑 SIDE MILLING
UPG0504	20	110	6800~7300	400~700	5	3~4	側銑 SIDE MILLING
UPG0504	20	110	6800~7300	800~1200	10	0~0.4	側銑 SIDE MILLING
UPG0504	20	110	6800~7300	400~700	10	1~1.5	側銑 SIDE MILLING
UPG0604	20	110	5700~6200	1600~2000	0~0.4	6	溝銑 SLOTTING
UPG0604	20	110	5700~6200	500~800	2~3	6	溝銑 SLOTTING
UPG0604	20	110	5700~6200	500~800	6	6	溝銑 SLOTTING
UPG0604	20	110	5700~6200	1400~1800	6	0~0.4	側銑 SIDE MILLING
UPG0604	20	110	5700~6200	700~1100	6	1~2	側銑 SIDE MILLING
UPG0604	20	110	5700~6200	500~800	6	4~5	側銑 SIDE MILLING
UPG0604	20	110	5700~6200	1000~1400	12	0~0.4	側銑 SIDE MILLING
UPG0604	20	110	5700~6200	500~800	12	1~1.5	側銑 SIDE MILLING
UPG0604L	30	85	4200~4700	700~1000	16	0~0.4	側銑 SIDE MILLING
UPG0604L	30	85	4200~4700	400~700	16	0.8~1.2	側銑 SIDE MILLING
UPG0804	25	120	4500~5000	1800~2200	0~0.5	8	溝銑 SLOTTING
UPG0804	25	120	4500~5000	500~800	3~4	8	溝銑 SLOTTING
UPG0804	25	120	4500~5000	400~700	8	8	溝銑 SLOTTING
UPG0804	25	120	4500~5000	1600~2000	8	0~0.5	側銑 SIDE MILLING
UPG0804	25	120	4500~5000	500~800	8	3~4	側銑 SIDE MILLING
UPG0804	25	120	4500~5000	500~800	8	6~7	側銑 SIDE MILLING
UPG0804	25	120	4500~5000	1200~1600	16	0~0.5	側銑 SIDE MILLING
UPG0804	25	120	4500~5000	700~1000	16	1~2	側銑 SIDE MILLING
UPG0804L	35	120	4500~5000	800~1200	20	0~0.5	側銑 SIDE MILLING

UPG

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPG0804L	35	75	2700~3200	500~800	20	1~1.5	側銑 SIDE MILLING
UPG1004	30	125	3700~4200	1400~1800	0~0.5	10	溝銑 SLOTTING
UPG1004	30	125	3700~4200	400~700	4~5	10	溝銑 SLOTTING
UPG1004	30	125	3700~4200	400~700	10	10	溝銑 SLOTTING
UPG1004	30	125	3700~4200	1200~1600	10	0~0.5	側銑 SIDE MILLING
UPG1004	30	95	2800~3300	500~800	10	4~5	側銑 SIDE MILLING
UPG1004	30	125	3700~4200	500~800	10	7~8	側銑 SIDE MILLING
UPG1004	30	125	3700~4200	1000~1400	20	0~0.5	側銑 SIDE MILLING
UPG1004	30	115	3400~3800	500~800	20	1~2	側銑 SIDE MILLING
UPG1004L	40	125	3700~4200	800~1200	25	0~0.5	側銑 SIDE MILLING
UPG1004L	40	75	2200~2600	500~800	25	1~1.5	側銑 SIDE MILLING
UPG1204	35	110	2700~3200	1600~2000	0~0.5	12	溝銑 SLOTTING
UPG1204	35	110	2700~3200	400~700	2~3	12	溝銑 SLOTTING
UPG1204	35	110	2700~3200	400~700	5~6	12	溝銑 SLOTTING
UPG1204	35	110	2700~3200	1200~1600	12	0~0.5	側銑 SIDE MILLING
UPG1204	35	110	2700~3200	700~1100	12	2~3	側銑 SIDE MILLING
UPG1204	35	110	2700~3200	500~800	12	5~6	側銑 SIDE MILLING
UPG1204	35	110	2700~3200	800~1200	24	0~0.5	側銑 SIDE MILLING
UPG1204	35	110	2200~2700	400~700	24	2~3	側銑 SIDE MILLING
UPG1204L	50	110	2700~3200	700~1000	30	0~0.5	側銑 SIDE MILLING
UPG1204L	50	75	1800~2200	400~700	30	1~2	側銑 SIDE MILLING
UPG1604	45	110	2000~2500	800~1200	0~0.6	16	溝銑 SLOTTING
UPG1604	45	110	2000~2500	300~600	3~4	16	溝銑 SLOTTING
UPG1604	45	110	2000~2500	700~1000	16	0~0.6	側銑 SIDE MILLING
UPG1604	45	110	2000~2500	400~700	16	3~4	側銑 SIDE MILLING
UPG1604	45	110	2000~2500	500~800	32	0~0.6	側銑 SIDE MILLING
UPG1604	45	110	2000~2500	300~600	32	3~4	側銑 SIDE MILLING
UPG1604L	65	110	2000~2500	400~700	40	0~0.6	側銑 SIDE MILLING
UPG1604L	65	75	1300~1800	300~600	40	1~2	側銑 SIDE MILLING
UPG1804	55	100	1500~2000	700~1000	0~0.6	18	溝銑 SLOTTING
UPG1804	55	100	1500~2000	300~600	2~3	18	溝銑 SLOTTING
UPG1804	55	100	1500~2000	500~800	18	0~0.7	側銑 SIDE MILLING
UPG1804	55	100	1500~2000	400~700	18	2~3	側銑 SIDE MILLING
UPG1804	55	100	1500~2000	400~700	36	0~0.6	側銑 SIDE MILLING
UPG1804	55	100	1500~2000	300~600	36	2~3	側銑 SIDE MILLING
UPG2004	55	100	1400~1800	600~800	0~0.6	20	溝銑 SLOTTING
UPG2004	55	100	1400~1800	300~400	2~3	20	側銑 SIDE MILLING
UPG2004	55	100	1400~1800	600~800	20	0~0.6	側銑 SIDE MILLING
UPG2004	55	100	1400~1800	250~450	20	2~3	溝銑 SLOTTING
UPG2004	55	100	1400~1800	500~700	40	0~0.6	側銑 SIDE MILLING
UPG2004	55	100	1400~1800	200~350	40	2~3	側銑 SIDE MILLING
UPG2004L	70	90	1200~1600	500~700	40	0~0.6	側銑 SIDE MILLING
UPG2004L	70	75	1000~1400	300~500	40	1~2	側銑 SIDE MILLING

UPG

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPG0804L	35	75	2700~3200	500~800	20	1~1.5	側銑 SIDE MILLING
UPG1004	30	125	3700~4200	1400~1800	0~0.5	10	溝銑 SLOTTING
UPG1004	30	125	3700~4200	400~700	4~5	10	溝銑 SLOTTING
UPG1004	30	125	3700~4200	400~700	10	10	溝銑 SLOTTING
UPG1004	30	125	3700~4200	1200~1600	10	0~0.5	側銑 SIDE MILLING
UPG1004	30	95	2800~3300	500~800	10	4~5	側銑 SIDE MILLING
UPG1004	30	125	3700~4200	500~800	10	7~8	側銑 SIDE MILLING
UPG1004	30	125	3700~4200	1000~1400	20	0~0.5	側銑 SIDE MILLING
UPG1004	30	115	3400~3800	500~800	20	1~2	側銑 SIDE MILLING
UPG1004L	40	125	3700~4200	800~1200	25	0~0.5	側銑 SIDE MILLING
UPG1004L	40	75	2200~2600	500~800	25	1~1.5	側銑 SIDE MILLING
UPG1204	35	110	2700~3200	1600~2000	0~0.5	12	溝銑 SLOTTING
UPG1204	35	110	2700~3200	400~700	2~3	12	溝銑 SLOTTING
UPG1204	35	110	2700~3200	400~700	5~6	12	溝銑 SLOTTING
UPG1204	35	110	2700~3200	1200~1600	12	0~0.5	側銑 SIDE MILLING
UPG1204	35	110	2700~3200	700~1100	12	2~3	側銑 SIDE MILLING
UPG1204	35	110	2700~3200	500~800	12	5~6	側銑 SIDE MILLING
UPG1204	35	110	2700~3200	800~1200	24	0~0.5	側銑 SIDE MILLING
UPG1204	35	110	2200~2700	400~700	24	2~3	側銑 SIDE MILLING
UPG1204L	50	90	2200~2600	600~900	30	0~0.5	側銑 SIDE MILLING
UPG1204L	50	75	1800~2200	400~700	30	1~2	側銑 SIDE MILLING
UPG1604	45	110	2000~2500	800~1200	0~0.6	16	溝銑 SLOTTING
UPG1604	45	110	2000~2500	300~600	3~4	16	溝銑 SLOTTING
UPG1604	45	110	2000~2500	700~1000	16	0~0.6	側銑 SIDE MILLING
UPG1604	45	110	2000~2500	400~700	16	3~4	側銑 SIDE MILLING
UPG1604	45	110	2000~2500	500~800	32	0~0.6	側銑 SIDE MILLING
UPG1604	45	110	2000~2500	300~600	32	3~4	側銑 SIDE MILLING
UPG1604L	65	90	1600~2000	400~700	40	0~0.6	側銑 SIDE MILLING
UPG1604L	65	75	1300~1800	300~600	40	1~2	側銑 SIDE MILLING
UPG1804	55	100	1500~2000	700~1000	0~0.6	18	溝銑 SLOTTING
UPG1804	55	100	1500~2000	300~500	2~3	18	溝銑 SLOTTING
UPG1804	55	100	1500~2000	500~800	18	0~0.7	側銑 SIDE MILLING
UPG1804	55	100	1500~2000	400~700	18	2~3	側銑 SIDE MILLING
UPG1804	55	100	1500~2000	400~700	36	0~0.6	側銑 SIDE MILLING
UPG1804	55	100	1500~2000	300~600	36	2~3	側銑 SIDE MILLING
UPG2004	55	100	1400~1800	600~800	0~0.6	20	溝銑 SLOTTING
UPG2004	55	100	1400~1800	300~400	2~3	20	溝銑 SLOTTING
UPG2004	55	100	1400~1800	600~800	20	0~0.6	側銑 SIDE MILLING
UPG2004	55	100	1400~1800	250~450	20	2~3	側銑 SIDE MILLING
UPG2004	55	100	1400~1800	500~700	40	0~0.6	側銑 SIDE MILLING
UPG2004	55	100	1400~1800	200~350	40	2~3	側銑 SIDE MILLING
UPG2004L	70	90	1200~1600	500~700	40	0~0.6	側銑 SIDE MILLING
UPG2004L	70	75	1000~1400	300~500	40	1~2	側銑 SIDE MILLING

UPG

切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】:**SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPG0304	16	85	8700~9200	1200~1600	0~0.2	3	溝銑 SLOTTING
UPG0304	16	85	8700~9200	500~800	0.7~1	3	溝銑 SLOTTING
UPG0304	16	85	8700~9200	300~600	3	3	溝銑 SLOTTING
UPG0304	16	85	8700~9200	1200~1600	3	0~0.2	側銑 SIDE MILLING
UPG0304	16	85	8700~9200	500~800	3	1	側銑 SIDE MILLING
UPG0304	16	85	8700~9200	400~700	3	2	側銑 SIDE MILLING
UPG0304	16	85	8700~9200	800~1200	6	0~0.2	側銑 SIDE MILLING
UPG0304	16	85	8700~9200	300~600	6	0.7~1	側銑 SIDE MILLING
UPG0404	18	100	7500~8000	1200~1600	0~0.3	4	溝銑 SLOTTING
UPG0404	18	100	7500~8000	500~800	1~1.5	4	溝銑 SLOTTING
UPG0404	18	100	7500~8000	300~600	4	4	溝銑 SLOTTING
UPG0404	18	100	7500~8000	1200~1600	4	0~0.3	側銑 SIDE MILLING
UPG0404	18	100	7500~8000	500~800	4	1	側銑 SIDE MILLING
UPG0404	18	100	7500~8000	400~700	4	3	側銑 SIDE MILLING
UPG0404	18	100	7500~8000	800~1200	8	0~0.3	側銑 SIDE MILLING
UPG0404	18	100	7500~8000	300~600	8	0.7~1	側銑 SIDE MILLING
UPG0504	20	100	6300~6800	1200~1600	0~0.4	5	溝銑 SLOTTING
UPG0504	20	100	6300~6800	300~600	2~2.5	5	溝銑 SLOTTING
UPG0504	20	100	6300~6800	300~600	5	5	溝銑 SLOTTING
UPG0504	20	100	6300~6800	1000~1400	5	0~0.4	側銑 SIDE MILLING
UPG0504	20	100	6300~6800	400~700	5	1	側銑 SIDE MILLING
UPG0504	20	100	6300~6800	300~600	5	3~4	側銑 SIDE MILLING
UPG0504	20	100	6300~6800	700~1000	10	0~0.4	側銑 SIDE MILLING
UPG0504	20	100	6300~6800	300~600	10	1~1.5	側銑 SIDE MILLING
UPG0604	20	100	5200~5700	1400~1800	0~0.4	6	溝銑 SLOTTING
UPG0604	20	100	5200~5700	400~700	2~3	6	溝銑 SLOTTING
UPG0604	20	100	5200~5700	400~700	6	6	溝銑 SLOTTING
UPG0604	20	100	5200~5700	1200~1600	6	0~0.4	側銑 SIDE MILLING
UPG0604	20	100	5200~5700	500~800	6	1~2	側銑 SIDE MILLING
UPG0604	20	100	5200~5700	400~700	6	4~5	側銑 SIDE MILLING
UPG0604	20	100	5200~5700	800~1200	12	0~0.4	側銑 SIDE MILLING
UPG0604	20	100	5200~5700	400~700	12	1~1.5	側銑 SIDE MILLING
UPG0604L	30	85	4200~4700	500~800	16	0~0.4	側銑 SIDE MILLING
UPG0604L	30	85	4200~4700	300~600	16	0.8~1.2	側銑 SIDE MILLING
UPG0804	25	95	3600~4000	1400~1800	0~0.5	8	溝銑 SLOTTING
UPG0804	25	95	3600~4000	400~700	3~4	8	溝銑 SLOTTING
UPG0804	25	95	3600~4000	300~600	8	8	溝銑 SLOTTING
UPG0804	25	95	3600~4000	1400~1800	8	0~0.5	側銑 SIDE MILLING
UPG0804	25	95	3600~4000	400~700	8	3~4	側銑 SIDE MILLING
UPG0804	25	95	3600~4000	400~700	8	6~7	側銑 SIDE MILLING
UPG0804	25	95	3600~4000	1000~1400	16	0~0.5	側銑 SIDE MILLING
UPG0804	25	95	3600~4000	500~800	16	1~2	側銑 SIDE MILLING
UPG0804L	35	115	4300~4800	700~1000	20	0~0.5	側銑 SIDE MILLING

UPG

切削條件表 MILLING CONDITIONS

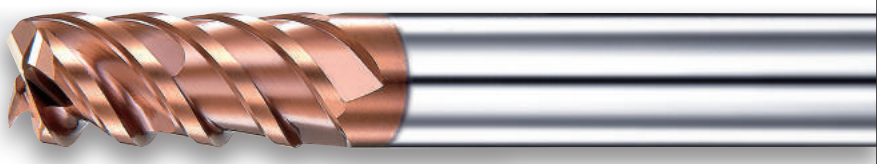
被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】: **SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPG0804L	35	75	2700~3200	400~700	20	1~1.5	側銑 SIDE MILLING
UPG1004	30	95	2800~3300	1200~1600	0~0.5	10	溝銑 SLOTTING
UPG1004	30	95	2800~3300	300~600	4~5	10	溝銑 SLOTTING
UPG1004	30	95	2800~3300	300~600	10	10	溝銑 SLOTTING
UPG1004	30	95	2800~3300	1000~1400	10	0~0.5	側銑 SIDE MILLING
UPG1004	30	95	2800~3300	400~700	10	4~5	側銑 SIDE MILLING
UPG1004	30	95	2800~3300	400~700	10	7~8	側銑 SIDE MILLING
UPG1004	30	95	2800~3300	800~1200	20	0~0.5	側銑 SIDE MILLING
UPG1004	30	90	2700~3200	400~700	20	1~2	側銑 SIDE MILLING
UPG1004L	40	125	3700~4200	700~1000	25	0~0.5	側銑 SIDE MILLING
UPG1004L	40	75	2200~2600	400~700	25	1~1.5	側銑 SIDE MILLING
UPG1204	35	95	2300~2700	1200~1600	0~0.5	12	溝銑 SLOTTING
UPG1204	35	95	2300~2700	300~600	2~3	12	溝銑 SLOTTING
UPG1204	35	95	2300~2700	300~600	5~6	12	溝銑 SLOTTING
UPG1204	35	95	2300~2700	1000~1400	12	0~0.5	側銑 SIDE MILLING
UPG1204	35	95	2300~2700	500~800	12	2~3	側銑 SIDE MILLING
UPG1204	35	95	2300~2700	400~700	12	5~6	側銑 SIDE MILLING
UPG1204	35	95	2300~2700	700~1000	24	0~0.5	側銑 SIDE MILLING
UPG1204	35	95	2300~2700	300~600	24	2~3	側銑 SIDE MILLING
UPG1204L	50	90	2200~2600	500~800	30	0~0.5	側銑 SIDE MILLING
UPG1204L	50	75	1800~2200	300~600	30	1~2	側銑 SIDE MILLING
UPG1604	45	90	1600~2000	600~800	0~0.6	16	溝銑 SLOTTING
UPG1604	45	90	1600~2000	300~500	2~3	16	溝銑 SLOTTING
UPG1604	45	90	1600~2000	500~800	16	0~0.6	側銑 SIDE MILLING
UPG1604	45	90	1600~2000	300~600	16	2~3	側銑 SIDE MILLING
UPG1604	45	90	1600~2000	400~700	32	0~0.6	側銑 SIDE MILLING
UPG1604	45	90	1600~2000	300~500	32	2~3	側銑 SIDE MILLING
UPG1604L	65	90	1600~2000	300~600	40	0~0.6	側銑 SIDE MILLING
UPG1604L	65	75	1300~1800	300~500	40	1~2	側銑 SIDE MILLING
UPG1804	55	80	1200~1700	500~800	0~0.6	18	溝銑 SLOTTING
UPG1804	55	80	1200~1700	300~500	2~3	18	溝銑 SLOTTING
UPG1804	55	80	1200~1700	400~700	18	0~0.7	側銑 SIDE MILLING
UPG1804	55	80	1200~1700	300~600	18	2~3	側銑 SIDE MILLING
UPG1804	55	80	1200~1700	300~600	36	0~0.6	側銑 SIDE MILLING
UPG1804	55	80	1200~1700	300~500	36	2~3	側銑 SIDE MILLING
UPG2004	55	75	1000~1400	500~700	0~0.6	20	溝銑 SLOTTING
UPG2004	55	75	1000~1400	300~400	1~2	20	溝銑 SLOTTING
UPG2004	55	75	1000~1400	500~700	20	0~0.6	側銑 SIDE MILLING
UPG2004	55	75	1000~1400	250~450	20	1~2	側銑 SIDE MILLING
UPG2004	55	75	1000~1400	400~600	40	0~0.6	側銑 SIDE MILLING
UPG2004	55	75	1000~1400	200~350	40	1~2	側銑 SIDE MILLING
UPG2004L	70	75	1000~1400	400~600	40	0~0.6	側銑 SIDE MILLING
UPG2004L	70	75	1000~1400	200~400	40	1~1.5	側銑 SIDE MILLING

UPJ

END MILLS 無敵高效能立銑刀

NEW

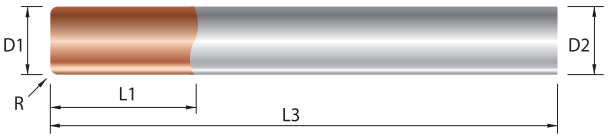


Super MG | 0.4 μm | 50° | FIT | R | 4 Flutes | HRc 60 | G10

直徑 D1	R徑公差 R Tolerance	直徑公差 D1 Tolerance
3.0	+0.02 0	0 -0.02
4.0	+0.02 0	0 -0.02
5.0	+0.02 0	0 -0.02
6.0	+0.02 0	0 -0.02
8.0	+0.02 0	0 -0.025
10.0	+0.02 0	0 -0.03
12.0	+0.02 0	0 -0.035
16.0	+0.02 0	0 -0.04
20.0	+0.02 0	0 -0.04

柄徑 D2(h6)	柄徑公差 D2 Tolerance
Ø6	0 -0.008
Ø8	0 -0.009
Ø10	0 -0.009
Ø12	0 -0.011
Ø16	0 -0.011
Ø20	0 -0.013

unit : mm



精銑 Finishing | 中銑 Semi-finishing | 粗銑 Roughing

型號 Type No.	D1 直徑 Diameter	R R角 Coner R	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia.
UPJ0304	3.0	0.2	8	50	6
UPJ0404	4.0	0.3	11	50	6
UPJ0504	5.0	0.3	13	50	6
UPJ0604	6.0	0.4	16	50	6
UPJ0804	8.0	0.5	20	60	8
UPJ1004	10.0	0.6	25	75	10
UPJ1204	12.0	0.6	30	75	12
UPJ1604	16.0	0.8	45	110	16
UPJ2004	20.0	1.0	50	110	20

unit : mm

UPJ

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPJ0304	16	90	9000~9500	1000~1400	0~0.3	3	溝銑 SLOTTING
UPJ0304	16	90	9000~9500	400~700	1~1.5	3	溝銑 SLOTTING
UPJ0304	16	90	9000~9500	300~600	3	3	溝銑 SLOTTING
UPJ0304	16	90	9000~9500	1200~1600	3	0~0.3	側銑 SIDE MILLING
UPJ0304	16	90	9000~9500	500~800	3	1~1.5	側銑 SIDE MILLING
UPJ0304	16	90	9000~9500	800~1200	6	0~0.3	側銑 SIDE MILLING
UPJ0304	16	90	9000~9500	400~700	6	1~1.5	側銑 SIDE MILLING
UPJ0304	16	110	11000~12000	2800~3200	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPJ0404	16	110	8500~9000	1200~1600	0~0.3	4	溝銑 SLOTTING
UPJ0404	16	110	8500~9000	500~800	1~2	4	溝銑 SLOTTING
UPJ0404	16	110	8500~9000	300~600	4	4	溝銑 SLOTTING
UPJ0404	16	110	8500~9000	1400~1800	4	0~0.3	側銑 SIDE MILLING
UPJ0404	16	110	8500~9000	500~800	4	1~2	側銑 SIDE MILLING
UPJ0404	16	110	8500~9000	1000~1400	8	0~0.3	側銑 SIDE MILLING
UPJ0404	16	110	8500~9000	400~700	8	1~2	側銑 SIDE MILLING
UPJ0404	16	130	10000~11000	3000~3400	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPJ0504	18	115	7200~7700	1400~1800	0~0.4	5	溝銑 SLOTTING
UPJ0504	18	115	7200~7700	700~1100	2~2.5	5	溝銑 SLOTTING
UPJ0504	18	115	7200~7700	400~700	5	5	溝銑 SLOTTING
UPJ0504	18	115	7200~7700	1800~2200	5	0~0.4	側銑 SIDE MILLING
UPJ0504	18	115	7200~7700	800~1200	5	2~2.5	側銑 SIDE MILLING
UPJ0504	18	115	7200~7700	500~800	5	4	側銑 SIDE MILLING
UPJ0504	18	115	7200~7700	1400~1800	10	0~0.4	側銑 SIDE MILLING
UPJ0504	18	115	7200~7700	700~1000	10	2~2.5	側銑 SIDE MILLING
UPJ0504	18	150	9000~10000	3200~3600	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPJ0604	20	120	6000~6500	1600~2000	0~0.5	6	溝銑 SLOTTING
UPJ0604	20	120	6000~6500	800~1200	2~3	6	溝銑 SLOTTING
UPJ0604	20	120	6000~6500	500~800	6	6	溝銑 SLOTTING
UPJ0604	20	120	6000~6500	2200~2600	6	0~0.5	側銑 SIDE MILLING
UPJ0604	20	120	6000~6500	1000~1400	6	2~3	側銑 SIDE MILLING
UPJ0604	20	120	6000~6500	500~800	6	5	側銑 SIDE MILLING
UPJ0604	20	120	6000~6500	1600~2000	12	0~0.5	側銑 SIDE MILLING
UPJ0604	20	120	6000~6500	700~1000	12	2~3	側銑 SIDE MILLING
UPJ0604	20	165	8500~9000	3400~3800	0.15~0.2	0.15~0.2	3D銑 3D MILLING
UPJ0804	25	120	4500~5000	1800~2200	0~0.5	8	溝銑 SLOTTING
UPJ0804	25	120	4500~5000	1000~1400	1~2	8	溝銑 SLOTTING
UPJ0804	25	120	4500~5000	700~1100	4~5	8	溝銑 SLOTTING
UPJ0804	25	120	4500~5000	500~800	8	8	溝銑 SLOTTING
UPJ0804	25	120	4500~5000	1400~1800	8	1~2	側銑 SIDE MILLING
UPJ0804	25	120	4500~5000	700~1100	8	4~5	側銑 SIDE MILLING

UPJ

切削條件表 MILLING CONDITIONS

被切削材 Work Material	碳素鋼 *Carbon Steels* : **S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45** (~HRc22)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPJ0804	25	120	4500~5000	500~800	8	7	側銑 SIDE MILLING
UPJ0804	25	120	4500~5000	2000~2400	16	0~0.5	側銑 SIDE MILLING
UPJ0804	25	120	4500~5000	800~1200	16	1~2	側銑 SIDE MILLING
UPJ0804	25	120	4500~5000	500~800	16	3~4	側銑 SIDE MILLING
UPJ0804	25	160	6200~6700	4000~4400	0.15~0.25	0.15~0.25	3D銑 3D MILLING
UPJ1004	30	130	4000~4500	1800~2200	0~0.6	10	溝銑 SLOTTING
UPJ1004	30	130	4000~4500	1200~1600	1~2	10	溝銑 SLOTTING
UPJ1004	30	130	4000~4500	800~1200	4~5	10	溝銑 SLOTTING
UPJ1004	30	130	4000~4500	500~800	10	10	溝銑 SLOTTING
UPJ1004	30	130	4000~4500	1400~1800	10	1~2	側銑 SIDE MILLING
UPJ1004	30	130	4000~4500	800~1200	10	4~5	側銑 SIDE MILLING
UPJ1004	30	130	4000~4500	500~800	10	8	側銑 SIDE MILLING
UPJ1004	30	130	4000~4500	2000~2400	20	0~0.6	側銑 SIDE MILLING
UPJ1004	30	130	4000~4500	1000~1400	20	1~2	側銑 SIDE MILLING
UPJ1004	30	130	4000~4500	500~800	20	4~5	側銑 SIDE MILLING
UPJ1004	30	160	4800~5300	4000~4400	0.2~0.3	0.2~0.3	3D銑 3D MILLING
UPJ1204	35	115	2800~3300	2000~2400	0~0.6	12	溝銑 SLOTTING
UPJ1204	35	115	2800~3300	1000~1400	1~2	12	溝銑 SLOTTING
UPJ1204	35	115	2800~3300	500~800	4~5	12	溝銑 SLOTTING
UPJ1204	35	115	2800~3300	1000~1400	12	1~2	側銑 SIDE MILLING
UPJ1204	35	115	2800~3300	700~1000	12	4~5	側銑 SIDE MILLING
UPJ1204	35	115	2800~3300	1800~2200	24	0~0.6	側銑 SIDE MILLING
UPJ1204	35	115	2800~3300	700~1100	24	2~3	側銑 SIDE MILLING
UPJ1204	35	150	3800~4300	3000~3400	0.2~0.3	0.2~0.3	3D銑 3D MILLING
UPJ1604	50	115	2000~2500	1200~1600	0~0.7	16	溝銑 SLOTTING
UPJ1604	50	115	2000~2500	700~1100	1.5~2	16	溝銑 SLOTTING
UPJ1604	50	115	2000~2500	500~700	5~6	16	溝銑 SLOTTING
UPJ1604	50	115	2000~2500	1200~1600	16	0~0.7	側銑 SIDE MILLING
UPJ1604	50	115	2000~2500	700~1100	16	2~3	側銑 SIDE MILLING
UPJ1604	50	115	2000~2500	500~700	16	5~6	側銑 SIDE MILLING
UPJ1604	50	115	2000~2500	1000~1400	32	0~0.7	側銑 SIDE MILLING
UPJ1604	50	115	2000~2500	500~800	32	2~3	側銑 SIDE MILLING
UPJ1604	50	150	2800~3300	2000~2400	0.3~0.4	0.3~0.4	3D銑 3D MILLING
UPJ2004	60	100	1400~1800	800~1200	0~0.7	20	溝銑 SLOTTING
UPJ2004	60	100	1400~1800	400~700	2~3	20	溝銑 SLOTTING
UPJ2004	60	100	1400~1800	800~1200	20	0~0.7	側銑 SIDE MILLING
UPJ2004	60	100	1400~1800	400~700	20	2~3	側銑 SIDE MILLING
UPJ2004	60	100	1400~1800	700~1000	40	0~0.7	側銑 SIDE MILLING
UPJ2004	60	130	1800~2300	1200~1600	0.4~0.5	0.4~0.5	3D銑 3D MILLING

UPJ

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPJ0304	16	85	8700~9200	800~1200	0~0.3	3	溝銑 SLOTTING
UPJ0304	16	85	8700~9200	300~600	1~1.5	3	溝銑 SLOTTING
UPJ0304	16	85	8700~9200	300~500	3	3	溝銑 SLOTTING
UPJ0304	16	85	8700~9200	1000~1400	3	0~0.3	側銑 SIDE MILLING
UPJ0304	16	85	8700~9200	400~700	3	1~1.5	側銑 SIDE MILLING
UPJ0304	16	85	8700~9200	700~1100	6	0~0.3	側銑 SIDE MILLING
UPJ0304	16	85	8700~9200	300~600	6	1~1.5	側銑 SIDE MILLING
UPJ0304	16	110	11000~12000	2200~2600	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPJ0404	16	105	8200~8700	1000~1400	0~0.3	4	溝銑 SLOTTING
UPJ0404	16	105	8200~8700	400~700	1~2	4	溝銑 SLOTTING
UPJ0404	16	105	8200~8700	300~500	4	4	溝銑 SLOTTING
UPJ0404	16	105	8200~8700	1200~1600	4	0~0.3	側銑 SIDE MILLING
UPJ0404	16	105	8200~8700	400~700	4	1~2	側銑 SIDE MILLING
UPJ0404	16	105	8200~8700	800~1200	8	0~0.3	側銑 SIDE MILLING
UPJ0404	16	105	8200~8700	300~600	8	1~2	側銑 SIDE MILLING
UPJ0404	16	130	10000~11000	2400~2800	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPJ0504	18	110	6700~7200	1200~1600	0~0.4	5	溝銑 SLOTTING
UPJ0504	18	110	6700~7200	700~1000	2~2.5	5	溝銑 SLOTTING
UPJ0504	18	110	6700~7200	300~600	5	5	溝銑 SLOTTING
UPJ0504	18	110	6700~7200	1400~1800	5	0~0.4	側銑 SIDE MILLING
UPJ0504	18	110	6700~7200	700~1100	5	2~2.5	側銑 SIDE MILLING
UPJ0504	18	110	6700~7200	400~700	5	4	側銑 SIDE MILLING
UPJ0504	18	110	6700~7200	1200~1600	10	0~0.4	側銑 SIDE MILLING
UPJ0504	18	110	6700~7200	500~800	10	2~2.5	側銑 SIDE MILLING
UPJ0504	18	150	9000~10000	2600~3000	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPJ0604	20	110	5700~6200	1400~1800	0~0.5	6	溝銑 SLOTTING
UPJ0604	20	110	5700~6200	700~1000	2~3	6	溝銑 SLOTTING
UPJ0604	20	110	5700~6200	300~600	6	6	溝銑 SLOTTING
UPJ0604	20	110	5700~6200	1800~2200	6	0~0.5	側銑 SIDE MILLING
UPJ0604	20	110	5700~6200	800~1200	6	2~3	側銑 SIDE MILLING
UPJ0604	20	110	5700~6200	400~700	6	5	側銑 SIDE MILLING
UPJ0604	20	110	5700~6200	1400~1800	12	0~0.5	側銑 SIDE MILLING
UPJ0604	20	110	5700~6200	500~800	12	2~3	側銑 SIDE MILLING
UPJ0604	20	165	8500~9000	2800~3200	0.15~0.2	0.15~0.2	3D銑 3D MILLING
UPJ0804	25	110	4200~4700	1600~2000	0~0.5	8	溝銑 SLOTTING
UPJ0804	25	110	4200~4700	800~1200	1~2	8	溝銑 SLOTTING
UPJ0804	25	110	4200~4700	500~800	4~5	8	溝銑 SLOTTING
UPJ0804	25	110	4200~4700	300~600	8	8	溝銑 SLOTTING
UPJ0804	25	110	4200~4700	1000~1400	8	1~2	側銑 SIDE MILLING
UPJ0804	25	110	4200~4700	500~800	8	4~5	側銑 SIDE MILLING

UPJ

切削條件表 MILLING CONDITIONS

被切削材 Work Material	鉻鉬合金鋼 **SCM440 : 1.7225 : 4140 : 42CrMoA** (HRc25~28)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPJ0804	25	110	4200~4700	300~600	8	7	側銑 SIDE MILLING
UPJ0804	25	110	4200~4700	1600~2000	16	0~0.5	側銑 SIDE MILLING
UPJ0804	25	110	4200~4700	700~1000	16	1~2	側銑 SIDE MILLING
UPJ0804	25	110	4200~4700	400~700	16	3~4	側銑 SIDE MILLING
UPJ0804	25	160	6200~6700	3400~3800	0.15~0.25	0.15~0.25	3D銑 3D MILLING
UPJ1004	30	125	3700~4200	1400~1800	0~0.6	10	溝銑 SLOTTING
UPJ1004	30	125	3700~4200	1000~1400	1~2	10	溝銑 SLOTTING
UPJ1004	30	125	3700~4200	700~1000	4~5	10	溝銑 SLOTTING
UPJ1004	30	125	3700~4200	300~600	10	10	溝銑 SLOTTING
UPJ1004	30	125	3700~4200	1200~1600	10	1~2	側銑 SIDE MILLING
UPJ1004	30	125	3700~4200	700~1000	10	4~5	側銑 SIDE MILLING
UPJ1004	30	125	3700~4200	400~700	10	8	側銑 SIDE MILLING
UPJ1004	30	125	3700~4200	1800~2200	20	0~0.6	側銑 SIDE MILLING
UPJ1004	30	125	3700~4200	800~1200	20	1~2	側銑 SIDE MILLING
UPJ1004	30	125	3700~4200	400~700	20	4~5	側銑 SIDE MILLING
UPJ1004	30	160	4800~5300	3400~3800	0.2~0.3	0.2~0.3	3D銑 3D MILLING
UPJ1204	35	110	2700~3200	1600~2000	0~0.6	12	溝銑 SLOTTING
UPJ1204	35	115	2800~3300	800~1200	1~2	12	溝銑 SLOTTING
UPJ1204	35	115	2800~3300	400~700	4~5	12	溝銑 SLOTTING
UPJ1204	35	115	2800~3300	800~1200	12	1~2	側銑 SIDE MILLING
UPJ1204	35	115	2800~3300	500~800	12	4~5	側銑 SIDE MILLING
UPJ1204	35	115	2800~3300	1400~1800	24	0~0.6	側銑 SIDE MILLING
UPJ1204	35	115	2800~3300	700~1000	24	2~3	側銑 SIDE MILLING
UPJ1204	35	150	3800~4300	2400~2800	0.2~0.3	0.2~0.3	3D銑 3D MILLING
UPJ1604	50	100	1800~2300	1000~1400	0~0.7	16	溝銑 SLOTTING
UPJ1604	50	100	1800~2300	700~1000	1.5~2	16	溝銑 SLOTTING
UPJ1604	50	100	1800~2300	400~700	5~6	16	溝銑 SLOTTING
UPJ1604	50	100	1800~2300	1000~1400	16	0~0.7	側銑 SIDE MILLING
UPJ1604	50	100	1800~2300	700~1000	16	2~3	側銑 SIDE MILLING
UPJ1604	50	100	1800~2300	400~700	16	5~6	側銑 SIDE MILLING
UPJ1604	50	100	1800~2300	800~1200	32	0~0.7	側銑 SIDE MILLING
UPJ1604	50	100	1800~2300	400~700	32	2~3	側銑 SIDE MILLING
UPJ1604	50	150	2800~3300	1800~2200	0.3~0.4	0.3~0.4	3D銑 3D MILLING
UPJ2004	60	80	1000~1500	700~1100	0~0.7	20	溝銑 SLOTTING
UPJ2004	60	80	1000~1500	300~600	2~3	20	溝銑 SLOTTING
UPJ2004	60	80	1000~1500	700~1100	20	0~0.7	側銑 SIDE MILLING
UPJ2004	60	80	1000~1500	300~600	20	2~3	側銑 SIDE MILLING
UPJ2004	60	80	1000~1500	500~800	40	0~0.7	側銑 SIDE MILLING
UPJ2004	60	130	1800~2300	1000~1400	0.4~0.5	0.4~0.5	3D銑 3D MILLING

UPJ

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPJ0304	16	85	8700~9200	800~1200	0~0.3	3	溝銑 SLOTTING
UPJ0304	16	85	8700~9200	300~600	1~1.5	3	溝銑 SLOTTING
UPJ0304	16	85	8700~9200	300~500	3	3	溝銑 SLOTTING
UPJ0304	16	85	8700~9200	1000~1400	3	0~0.3	側銑 SIDE MILLING
UPJ0304	16	85	8700~9200	400~700	3	1~1.5	側銑 SIDE MILLING
UPJ0304	16	85	8700~9200	700~1100	6	0~0.3	側銑 SIDE MILLING
UPJ0304	16	85	8700~9200	300~600	6	1~1.5	側銑 SIDE MILLING
UPJ0304	16	110	11000~12000	2200~2600	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPJ0404	16	105	8200~8700	1000~1400	0~0.3	4	溝銑 SLOTTING
UPJ0404	16	105	8200~8700	400~700	1~2	4	溝銑 SLOTTING
UPJ0404	16	105	8200~8700	300~500	4	4	溝銑 SLOTTING
UPJ0404	16	105	8200~8700	1200~1600	4	0~0.3	側銑 SIDE MILLING
UPJ0404	16	105	8200~8700	400~700	4	1~2	側銑 SIDE MILLING
UPJ0404	16	105	8200~8700	800~1200	8	0~0.3	側銑 SIDE MILLING
UPJ0404	16	105	8200~8700	300~600	8	1~2	側銑 SIDE MILLING
UPJ0404	16	130	10000~11000	2400~2800	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPJ0504	18	110	6700~7200	1200~1600	0~0.4	5	溝銑 SLOTTING
UPJ0504	18	110	6700~7200	700~1000	2~2.5	5	溝銑 SLOTTING
UPJ0504	18	110	6700~7200	300~600	5	5	溝銑 SLOTTING
UPJ0504	18	110	6700~7200	1400~1800	5	0~0.4	側銑 SIDE MILLING
UPJ0504	18	110	6700~7200	700~1100	5	2~2.5	側銑 SIDE MILLING
UPJ0504	18	110	6700~7200	400~700	5	4	側銑 SIDE MILLING
UPJ0504	18	110	6700~7200	1200~1600	10	0~0.4	側銑 SIDE MILLING
UPJ0504	18	110	6700~7200	500~800	10	2~2.5	側銑 SIDE MILLING
UPJ0504	18	150	9000~10000	2600~3000	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPJ0604	20	110	5700~6200	1400~1800	0~0.5	6	溝銑 SLOTTING
UPJ0604	20	110	5700~6200	700~1000	2~3	6	溝銑 SLOTTING
UPJ0604	20	110	5700~6200	400~700	6	6	溝銑 SLOTTING
UPJ0604	20	110	5700~6200	1800~2200	6	0~0.5	側銑 SIDE MILLING
UPJ0604	20	110	5700~6200	800~1200	6	2~3	側銑 SIDE MILLING
UPJ0604	20	110	5700~6200	400~700	6	5	側銑 SIDE MILLING
UPJ0604	20	110	5700~6200	1400~1800	12	0~0.5	側銑 SIDE MILLING
UPJ0604	20	110	5700~6200	500~800	12	2~3	側銑 SIDE MILLING
UPJ0604	20	165	8500~9000	2800~3200	0.15~0.2	0.15~0.2	3D銑 3D MILLING
UPJ0804	25	110	4200~4700	1600~2000	0~0.5	8	溝銑 SLOTTING
UPJ0804	25	110	4200~4700	800~1200	1~2	8	溝銑 SLOTTING
UPJ0804	25	110	4200~4700	500~800	4~5	8	溝銑 SLOTTING
UPJ0804	25	110	4200~4700	400~700	8	8	溝銑 SLOTTING
UPJ0804	25	110	4200~4700	1000~1400	8	1~2	側銑 SIDE MILLING
UPJ0804	25	110	4200~4700	500~800	8	4~5	側銑 SIDE MILLING

UPJ

切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* **P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2**(HRc23~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPJ0804	25	110	4200~4700	400~700	8	7	側銑 SIDE MILLING
UPJ0804	25	110	4200~4700	1800~2200	16	0~0.5	側銑 SIDE MILLING
UPJ0804	25	110	4200~4700	700~1000	16	1~2	側銑 SIDE MILLING
UPJ0804	25	110	4200~4700	400~700	16	3~4	側銑 SIDE MILLING
UPJ0804	25	160	6200~6700	3400~3800	0.15~0.25	0.15~0.25	3D銑 3D MILLING
UPJ1004	30	125	3700~4200	1600~2000	0~0.6	10	溝銑 SLOTTING
UPJ1004	30	125	3700~4200	1000~1400	1~2	10	溝銑 SLOTTING
UPJ1004	30	125	3700~4200	700~1000	4~5	10	溝銑 SLOTTING
UPJ1004	30	125	3700~4200	400~700	10	10	溝銑 SLOTTING
UPJ1004	30	125	3700~4200	1200~1600	10	1~2	側銑 SIDE MILLING
UPJ1004	30	125	3700~4200	700~1000	10	4~5	側銑 SIDE MILLING
UPJ1004	30	125	3700~4200	400~700	10	8	側銑 SIDE MILLING
UPJ1004	30	125	3700~4200	1800~2200	20	0~0.6	側銑 SIDE MILLING
UPJ1004	30	125	3700~4200	800~1200	20	1~2	側銑 SIDE MILLING
UPJ1004	30	125	3700~4200	400~700	20	4~5	側銑 SIDE MILLING
UPJ1004	30	160	4800~5300	3400~3800	0.2~0.3	0.2~0.3	3D銑 3D MILLING
UPJ1204	35	110	2700~3200	1800~2200	0~0.6	12	溝銑 SLOTTING
UPJ1204	35	110	2700~3200	800~1200	1~2	12	溝銑 SLOTTING
UPJ1204	35	110	2700~3200	400~700	4~5	12	溝銑 SLOTTING
UPJ1204	35	110	2700~3200	800~1200	12	1~2	側銑 SIDE MILLING
UPJ1204	35	110	2700~3200	500~800	12	4~5	側銑 SIDE MILLING
UPJ1204	35	110	2700~3200	1400~1800	24	0~0.6	側銑 SIDE MILLING
UPJ1204	35	110	2700~3200	700~1000	24	2~3	側銑 SIDE MILLING
UPJ1204	35	150	3800~4300	2400~2800	0.2~0.3	0.2~0.3	3D銑 3D MILLING
UPJ1604	50	100	1800~2300	1000~1400	0~0.7	16	溝銑 SLOTTING
UPJ1604	50	100	1800~2300	700~1000	1.5~2	16	溝銑 SLOTTING
UPJ1604	50	100	1800~2300	400~600	5~6	16	溝銑 SLOTTING
UPJ1604	50	100	1800~2300	1000~1400	16	0~0.7	側銑 SIDE MILLING
UPJ1604	50	100	1800~2300	700~1000	16	2~3	側銑 SIDE MILLING
UPJ1604	50	100	1800~2300	400~600	16	5~6	側銑 SIDE MILLING
UPJ1604	50	100	1800~2300	800~1200	32	0~0.7	側銑 SIDE MILLING
UPJ1604	50	100	1800~2300	400~700	32	2~3	側銑 SIDE MILLING
UPJ1604	50	150	2800~3300	1800~2200	0.3~0.4	0.3~0.4	3D銑 3D MILLING
UPJ2004	60	80	1000~1500	700~1100	0~0.7	20	溝銑 SLOTTING
UPJ2004	60	80	1000~1500	300~600	2~3	20	溝銑 SLOTTING
UPJ2004	60	80	1000~1500	700~1100	20	0~0.7	側銑 SIDE MILLING
UPJ2004	60	80	1000~1500	300~600	20	2~3	側銑 SIDE MILLING
UPJ2004	60	80	1000~1500	500~800	40	0~0.7	側銑 SIDE MILLING
UPJ2004	60	130	1800~2300	1000~1400	0.4~0.5	0.4~0.5	3D銑 3D MILLING

UPJ

切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】:**SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPJ0304	16	85	8700~9200	700~1100	0~0.3	3	溝銑 SLOTTING
UPJ0304	16	85	8700~9200	300~600	1~1.5	3	溝銑 SLOTTING
UPJ0304	16	85	8700~9200	300~500	3	3	溝銑 SLOTTING
UPJ0304	16	85	8700~9200	800~1200	3	0~0.3	側銑 SIDE MILLING
UPJ0304	16	85	8700~9200	400~700	3	1~1.5	側銑 SIDE MILLING
UPJ0304	16	85	8700~9200	700~1000	6	0~0.3	側銑 SIDE MILLING
UPJ0304	16	85	8700~9200	300~600	6	1~1.5	側銑 SIDE MILLING
UPJ0304	16	110	11000~12000	2000~2400	0.05~0.1	0.05~0.1	3D銑 3D MILLING
UPJ0404	16	105	8200~8700	800~1200	0~0.3	4	溝銑 SLOTTING
UPJ0404	16	105	8200~8700	400~700	1~2	4	溝銑 SLOTTING
UPJ0404	16	105	8200~8700	300~500	4	4	溝銑 SLOTTING
UPJ0404	16	105	8200~8700	1000~1400	4	0~0.3	側銑 SIDE MILLING
UPJ0404	16	105	8200~8700	400~700	4	1~2	側銑 SIDE MILLING
UPJ0404	16	105	8200~8700	700~1100	8	0~0.3	側銑 SIDE MILLING
UPJ0404	16	105	8200~8700	300~600	8	1~2	側銑 SIDE MILLING
UPJ0404	16	130	10000~11000	2200~2600	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPJ0504	18	110	6700~7200	1000~1400	0~0.4	5	溝銑 SLOTTING
UPJ0504	18	110	6700~7200	500~800	2~2.5	5	溝銑 SLOTTING
UPJ0504	18	110	6700~7200	300~500	5	5	溝銑 SLOTTING
UPJ0504	18	110	6700~7200	1200~1600	5	0~0.4	側銑 SIDE MILLING
UPJ0504	18	110	6700~7200	700~1000	5	2~2.5	側銑 SIDE MILLING
UPJ0504	18	110	6700~7200	400~700	5	4	側銑 SIDE MILLING
UPJ0504	18	110	6700~7200	1000~1400	10	0~0.4	側銑 SIDE MILLING
UPJ0504	18	110	6700~7200	500~800	10	2~2.5	側銑 SIDE MILLING
UPJ0504	18	150	9000~10000	2400~2800	0.1~0.15	0.1~0.15	3D銑 3D MILLING
UPJ0604	20	110	5700~6200	1200~1600	0~0.5	6	溝銑 SLOTTING
UPJ0604	20	110	5700~6200	700~1000	2~3	6	溝銑 SLOTTING
UPJ0604	20	110	5700~6200	300~600	6	6	溝銑 SLOTTING
UPJ0604	20	110	5700~6200	1600~2000	6	0~0.5	側銑 SIDE MILLING
UPJ0604	20	110	5700~6200	800~1200	6	2~3	側銑 SIDE MILLING
UPJ0604	20	110	5700~6200	400~700	6	5	側銑 SIDE MILLING
UPJ0604	20	110	5700~6200	1200~1600	12	0~0.5	側銑 SIDE MILLING
UPJ0604	20	110	5700~6200	500~800	12	2~3	側銑 SIDE MILLING
UPJ0604	20	165	8500~9000	2600~3000	0.15~0.2	0.15~0.2	3D銑 3D MILLING
UPJ0804	25	110	4200~4700	1400~1800	0~0.5	8	溝銑 SLOTTING
UPJ0804	25	110	4200~4700	800~1200	1~2	8	溝銑 SLOTTING
UPJ0804	25	110	4200~4700	500~800	4~5	8	溝銑 SLOTTING
UPJ0804	25	110	4200~4700	300~600	8	8	溝銑 SLOTTING
UPJ0804	25	110	4200~4700	1000~1400	8	1~2	側銑 SIDE MILLING
UPJ0804	25	110	4200~4700	500~800	8	4~5	側銑 SIDE MILLING

UPJ

切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 *Stainless Steels*【*Easy*】: **SUS304 : 1.4301 : AISI 304** (HRc28~32)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UPJ0804	25	110	4200~4700	300~600	8	7	側銑 SIDE MILLING
UPJ0804	25	110	4200~4700	1600~2000	16	0~0.5	側銑 SIDE MILLING
UPJ0804	25	110	4200~4700	700~1000	16	1~2	側銑 SIDE MILLING
UPJ0804	25	110	4200~4700	400~700	16	3~4	側銑 SIDE MILLING
UPJ0804	25	160	6200~6700	3000~3400	0.15~0.25	0.15~0.25	3D銑 3D MILLING
UPJ1004	30	115	3400~3800	1400~1800	0~0.6	10	溝銑 SLOTTING
UPJ1004	30	115	3400~3800	1000~1400	1~2	10	溝銑 SLOTTING
UPJ1004	30	115	3400~3800	700~1000	4~5	10	溝銑 SLOTTING
UPJ1004	30	115	3400~3800	300~600	10	10	溝銑 SLOTTING
UPJ1004	30	115	3400~3800	1200~1600	10	1~2	側銑 SIDE MILLING
UPJ1004	30	115	3400~3800	700~1000	10	4~5	側銑 SIDE MILLING
UPJ1004	30	115	3400~3800	400~700	10	8	側銑 SIDE MILLING
UPJ1004	30	115	3400~3800	1800~2200	20	0~0.6	側銑 SIDE MILLING
UPJ1004	30	115	3400~3800	700~1100	20	1~2	側銑 SIDE MILLING
UPJ1004	30	115	3400~3800	400~700	20	4~5	側銑 SIDE MILLING
UPJ1004	30	160	4800~5300	3000~3400	0.2~0.3	0.2~0.3	3D銑 3D MILLING
UPJ1204	35	110	2700~3200	1600~2000	0~0.6	12	溝銑 SLOTTING
UPJ1204	35	110	2700~3200	700~1100	1~2	12	溝銑 SLOTTING
UPJ1204	35	110	2700~3200	400~700	4~5	12	溝銑 SLOTTING
UPJ1204	35	110	2700~3200	700~1100	12	1~2	側銑 SIDE MILLING
UPJ1204	35	110	2700~3200	500~800	12	4~5	側銑 SIDE MILLING
UPJ1204	35	110	2700~3200	1200~1600	24	0~0.6	側銑 SIDE MILLING
UPJ1204	35	110	2700~3200	500~800	24	2~3	側銑 SIDE MILLING
UPJ1204	35	150	3800~4300	2200~2600	0.2~0.3	0.2~0.3	3D銑 3D MILLING
UPJ1604	50	100	1800~2300	800~1200	0~0.7	16	溝銑 SLOTTING
UPJ1604	50	100	1800~2300	500~800	1.5~2	16	溝銑 SLOTTING
UPJ1604	50	100	1800~2300	300~500	5~6	16	溝銑 SLOTTING
UPJ1604	50	100	1800~2300	800~1200	16	0~0.7	側銑 SIDE MILLING
UPJ1604	50	100	1800~2300	500~800	16	2~3	側銑 SIDE MILLING
UPJ1604	50	100	1800~2300	300~500	16	5~6	側銑 SIDE MILLING
UPJ1604	50	100	1800~2300	700~1000	32	0~0.7	側銑 SIDE MILLING
UPJ1604	50	100	1800~2300	400~700	32	2~3	側銑 SIDE MILLING
UPJ1604	50	150	2800~3300	1400~1800	0.3~0.4	0.3~0.4	3D銑 3D MILLING
UPJ2004	60	80	1000~1500	700~1000	0~0.7	20	溝銑 SLOTTING
UPJ2004	60	80	1000~1500	300~500	2~3	20	溝銑 SLOTTING
UPJ2004	60	80	1000~1500	700~1000	20	0~0.7	側銑 SIDE MILLING
UPJ2004	60	80	1000~1500	300~500	20	2~3	側銑 SIDE MILLING
UPJ2004	60	80	1000~1500	400~700	40	0~0.7	側銑 SIDE MILLING
UPJ2004	60	130	1800~2300	800~1200	0.4~0.5	0.4~0.5	3D銑 3D MILLING

破壞王系列切削條件表 HPC MILLING CONDITIONS

注意事項 Attention

- 請使用準確性與高剛性之機器與刀把。
- 當切削深度過大或機器剛性不足請調整轉速。
- 請使用有效抑制煙霧之流體。
- 在乾式切削時請使用吹氣去除切削範圍之碎屑。
- 本系列使用熱縮刀把，壽命可提高30%以上。

- Please use high rigidity and precision machine and holder.
- Please adjust the speed when the cutting depth is too much or the machine rigidity is less.
- Please use suitable fluid with high smoke retardant.
- For dry cutting, please use air blow to remove chips.
- Tool's life can extend over 30% when using thermal shrink holder.



德信發企業有限公司

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