NC Spot Drill >>

NC Spot Drill with indexable carbide insert.

High efficiency! Low cost!

CNC lathes, CNC turning centers and machining centers.

1 NC Spot Drill

Features

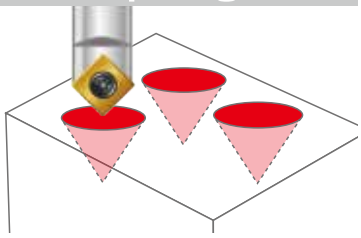
- **Spotting produces better hole position and geometrically uniform holes**
- **Available shank diameter- Ø5, Ø6, Ø8, Ø10, Ø12, Ø16, Ø20, Ø25mm, Ø3/8'', Ø1/2'', Ø5/8'', Ø1/4", Ø3/4'', M5, M6 and M8.**
- **One tool will perform multiple applications**
  - Long tool life.
  - Each insert has 2 or 4 cutting edges.
  - Suitable for spotting, chamfering, grooving and engraving.
  - 60° / 82° / 90° / 100° / 120° / 142° angle for different applications.
  - Increase cutting speed with coated carbide inserts.

▲Machining Center

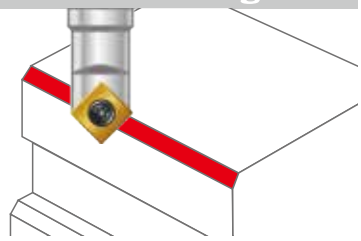
a Engraving
b Spotting
c Chamfering
d Grooving

▼ ALL IN ONE!!

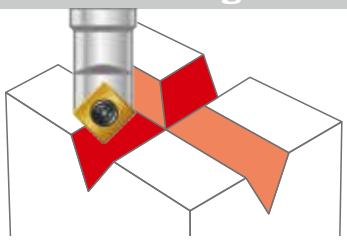
Spotting



Chamfering

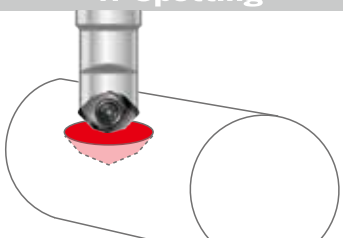


Grooving

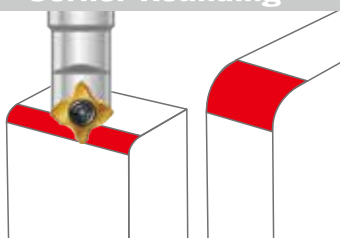


Engraving

W Spotting



Corner Rounding

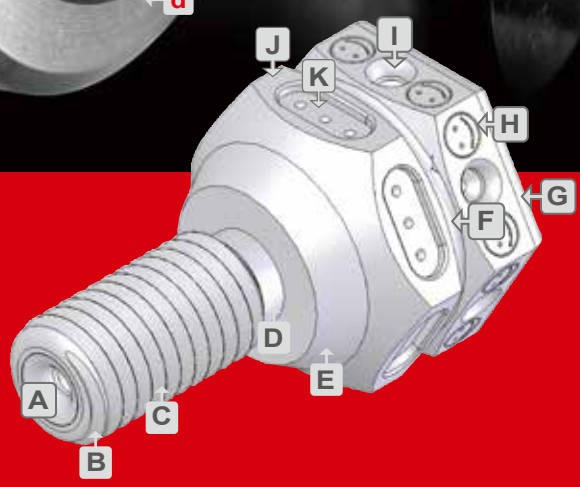


▲ CNC Lathes

- a External and internal chamfering
- b Grooving
- c Centering
- d Facing

1

NC Spot Drill

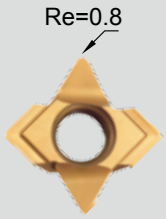


Multifunctional:

A I	Center Drilling	B G	Corner rounding
C	Thread turning	D	Grooving
E	Taper turning	F	V-grooving
H	Engraving	J	Face milling
K	Drilling & milling a groove		

* Some features produced with a special insert

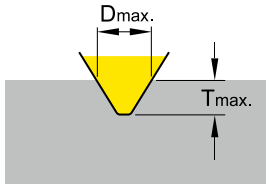
60° N9MT11T3P60

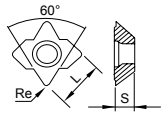


Inserts >>

• Fully ground spotting insert, for 60 degree spotting and engraving.

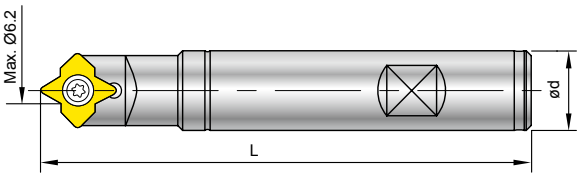
NC40: • Universal grade for all unhardened steel and cast iron.
• Each insert has 2 cutting edges.



Code	Parts No.	Coating	Grade		Dimensions			Dmax.	Tmax.
					L	S	Re		
014204	N9MT11T3P60-NC40	TiN	P35		11	3.97	0.8	6.2	4

Holder >>

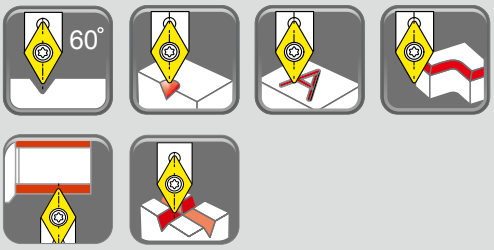
• A single cutting edge design creates higher precision and position when spotting.
• Applications: For spotting, engraving, small grooving on milling machines, machining centers.

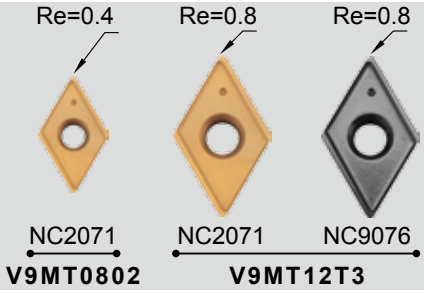


Code	Parts No.	Ød	L	Screw	Key
604002	00-99616-14-12	12	100	 NS-35080 2.5 Nm	 NK-T15
604004	00-99616-14	16	100		

V9MT0802 / V9MT12T3

60°



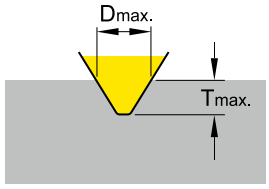


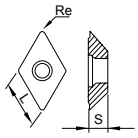
Inserts >>

- 60 degree indexable spotting insert, Dmax 13mm.
- Special geometry with supporting edges for using in high speed machining.
- Excellent tool for grooving. Saving machining time!

NC2071:
- Universal grade for all unhardened steel and cast iron.
- Each insert has 2 cutting edges.

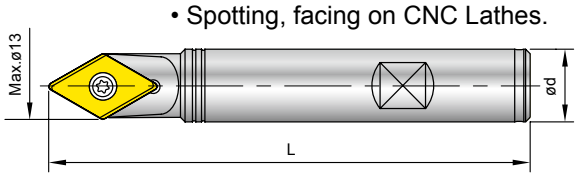
NC9076:
- For non-ferrous material such as aluminum, al-alloy, titanium brass, copper and long cutting chip metal.
- Produces excellent surface finish on non-ferrous metal.
- Each insert has 2 cutting edges.



Code	Parts No.		Coating	Grade		Dimensions L	Dimensions S	Dimensions Re	Dmax.	Tmax.
019201	V9MT0802CT	NC2071	TiN	K20F		8	2.38	0.4	9	7.3
015201	V9MT12T3CT	NC2071	TiN	K20F		12.7	3.97	0.8	13	10.3
015202		NC9076	DLC	K20F						

Holder >>

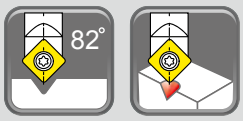
- A single cutting edge creates higher precision and position when spotting.
- Applications:
  - Spotting, engraving, grooving and chamfering on milling machines, machining centers.
  - Spotting, facing on CNC Lathes.

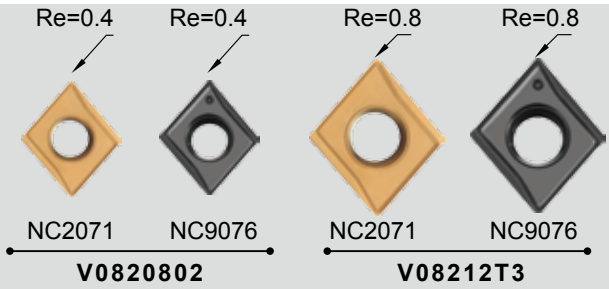


Code	Parts No.	Ød	L	Insert Type	Screw	Key
609001	00-99616-09V (Cylindrical shank)	8	60	V9MT08	*NS-25045 0.9 Nm	NK-T7
605001	00-99616-13V	16	100	V9MT12	NS-35080 2.5 Nm	NK-T15
615001	00-99616-13V-5/8	5/8”	100			

*Torque screwdriver is recommended, see page 6-4.

82° V0820802 / V08212T3



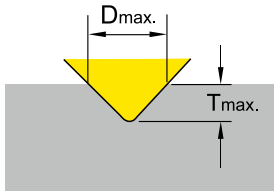


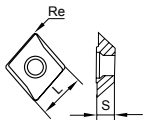
Inserts >>

- 82 degree indexable spotting insert, Dmax 14mm (0.551”)
- Match the geometry of Amercian standard flat head screw hole.
- Special geometry with supporting edges for high speed machining.

NC2071:
- Universal grade for all unhardened steel and cast iron.
- Each insert has 2 cutting edges.

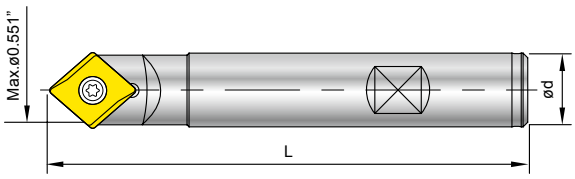
NC9076:
- For non-ferrous material such as aluminum, al-alloy, titanium brass, copper and long cutting chip metal.
- Produces excellent surface finish on non-ferrous metal.
- Each insert has 2 cutting edges.



Code	Parts No.		Coating	Grade		Dimensions			Dmax.	Tmax.
						L	S	Re		
0108201	V0820802	NC2071	TiN	K20F		8	2.38	0.4	9 (0.354”)	4.8 (0.189”)
0108202		NC9076	DLC							
0108211	V08212T3	NC2071	TiN	K20F		12.7	3.97	0.8	14 (0.551”)	7.5 (0.295”)
0108212		NC9076	DLC							

Holder >>

- Special cutting edge design gives higher precision and position when spotting.
- Applications : • Spotting, engraving, grooving and chamfering on milling machines, machining centers.
  • Spotting, facing on CNC Lathes.



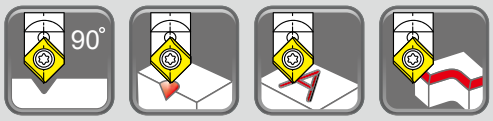
Ø3/8”

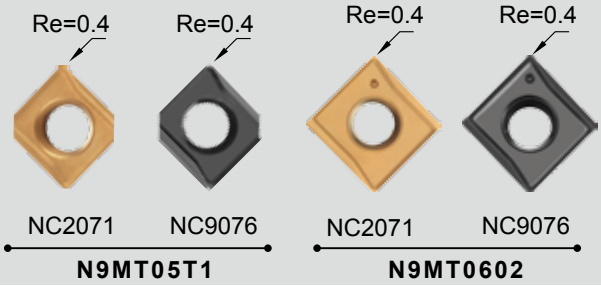
Ø5/8”

Code	Parts No.	Ød	L	Insert Type	Screw	Key
693001	00-99619-V082-3/8	3/8”	90	V0820802	NS-30055 2.0 Nm	NK-T8
693002	00-99619-V082-5/8	5/8”	100	V08212T3	NS-35080 2.5 Nm	NK-T15

N9MT05T1 / N9MT0602

90°



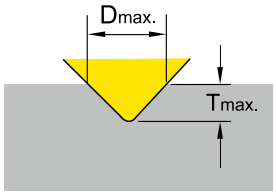


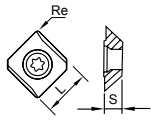
Inserts >>

- Mini spotting drill with indexable insert, low cutting power required.
- Especially good for Swiss type automatic lathes and CNC lathes.

NC2071:
- Universal grade for all unhardened steel and cast iron.
- Geometry with supporting edges to stabilize the cutting condition on low power machine.
- Each insert has 2 cutting edges.

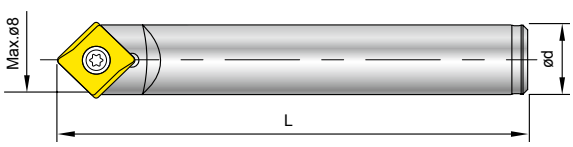
NC9076:
- For non-ferrous material such as aluminum, titanium, brass, copper and stainless steel.
- Produces excellent surface finish on non-ferrous metal.
- Each insert has 2 cutting edges.



Code	Parts No.		Coating	Grade		Dimensions L	Dimensions S	Dimensions Re	Dmax.	Tmax.
011201	N9MT05T1CT	NC2071	TiN	K20F		5	1.8	0.4	6	2.8
011202		NC9076	DLC	K20F						
012201	N9MT0602CT	NC2071	TiN	K20F		6.35	2.38	0.4	8	3.8
012202		NC9076	DLC	K20F						

Holder >>

- Smallest indexable spotting drill holder.
- Single cutting edge design gives higher precision when spotting.
- Applications : • Spotting, engraving, and chamfering on milling machines, machining centers.
  • Spotting, facing on CNC Lathes.

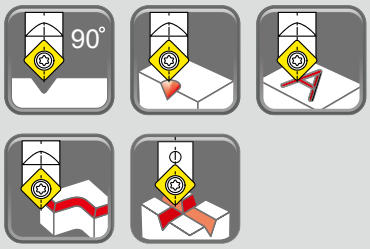


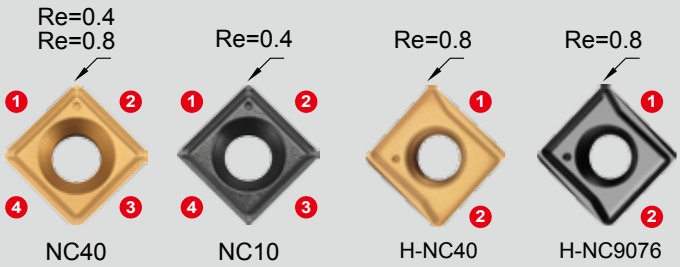
Code	Parts No.	Ød	L	Insert Type	Screw	Key
601001	00-99616-06-6	6	35	N9MT05	*NS-20036 0.6 Nm	NK-T6
601002	00-99616-06-5	5	35			
601003	00-99616-06-6L	6	60			
602001	00-99616-08-8	8	60	N9MT06	*NS-22044 0.9 Nm	NK-T7

Note:601003 is carbide shank holder.

*Torque screwdriver is recommended, see page 6-4.

90° N9MT0802





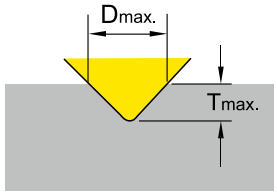
Inserts >>

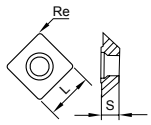
NC40:
- General purpose, universal grade for all unhardened steel.
- Each insert has 4 cutting edges.

NC10:
- High positive angle and fully ground cutting edge and relief angle.
- Universal grade for non-ferrous metal, cast iron and stainless steel.
- Each insert has 4 cutting edges.

H-NC40:
- Best choice for spotting application.
- Special geometry with supporting edges for use in high speed machining.
- Universal grade for all kind of steel and cast iron.
- Each insert has 2 cutting edges.

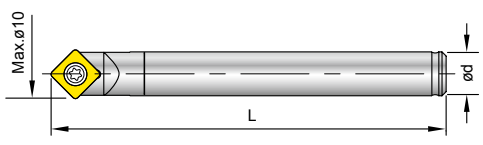
H-NC9076:
- High positive geometry and sharp edge.
- For non-ferrous material such as aluminum, titanium, brass, copper and long cutting chip metal.
- Produces excellent surface finish on non-ferrous metal.
- Each insert has 2 cutting edges.

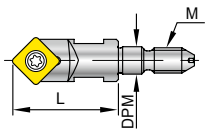


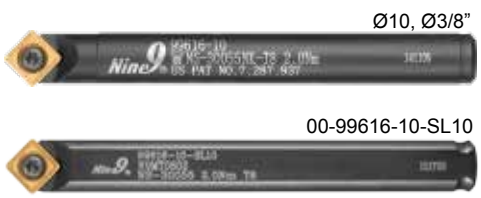
Code	Parts No.		Coating	Grade		Dimensions L	Dimensions S	Dimensions Re	Dmax.	Tmax.
013401	N9MT080208CT	NC40	TiN	K20F		8.31	2.38	0.8	10	4.5
013402	N9MT080204CT	NC40	TiN	K20F		8.31	2.38	0.4		
013403		NC10	TiAlN			8.31	2.38	0.4		
013201	N9MT0802CT2T	H-NC40	TiN	K20F		8.31	2.38	0.8		
013202		H-NC9076	DLC			8.31	2.38	0.8		

Holder >>

- Single cutting edge design gives higher precision when spotting.
- Applications : • Spotting, engraving, grooving and chamfering on milling machines, machining centers.
  • Spotting, facing, turning on CNC Lathes.







Code	Parts No.	Ød	L	M	DPM	Screw	Key
603001	00-99616-10	10	90	-	-	NS-30055 2.0 Nm	NK-T8
603003	00-99616-10-SL10 (Weldon)	10	90	-	-		
613001	00-99616-3/8	3/8”	90	-	-		
623001	00-99616-10-M5	-	25	M5xP0.8	5.5		
623002	00-99616-10-M6	-	25	M6xP1.0	6.5		

Note: • Balanced type holder is on request.
• Nine9 extension bar for M5, M6 screw fit holder, see page 6-3.

N9MT0802

90°

Single Set >>

• User friendly, each set is fitted with one complimentary insert.

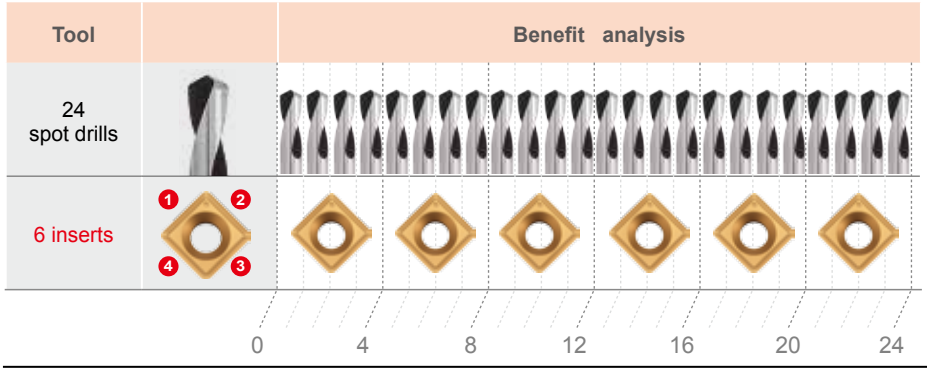
Code	Parts No.	Ød	Total Length	Insert fitted	Dmax.	Tmax.
603101-3401	00-99616-10-02S	10	90	N9MT080208CT-NC40	10	4.5
603101-3403	00-99616-10-02SAL	10	90	N9MT080204CT-NC10	10	4.5

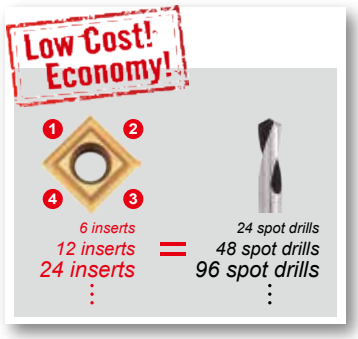
Starter Package >>

• Selected package for starter who wants to try NC Spot Drill.
• Included one insert on tool holder and five inserts in the pocket.
• Total 6 inserts are equal to 24 spot drills.

Code	Parts No.	Ød	Insert included	Content
603201-3401	00-99616-10-ME6	10	N9MT080208CT-NC40	1 tool holder + 6 inserts + 1 key
603201-3403	00-99616-10-ME6AL	10	N9MT080204CT-NC10	
613201-3401	00-99616-10-IN6	3/8”	N9MT080208CT-NC40	
613201-3403	00-99616-10-IN6AL	3/8”	N9MT080204CT-NC10	

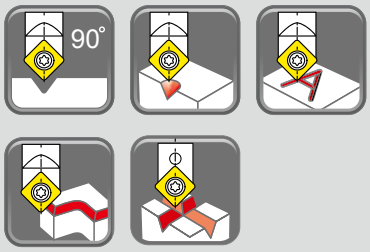
Comparison >>

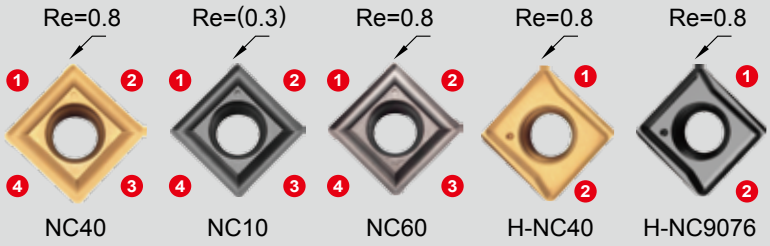




Note: N9MT080201W Engraving , see page 1-47.

90° N9MT11T3





Inserts >>

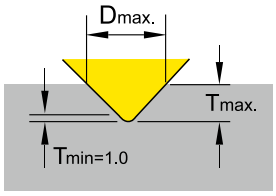
NC40: • Wiper design, universal grade for all unhardened steel.
• Each insert has 4 cutting edges.

NC10: • High positive angle and fully ground cutting edge and relief angle.
• Universal grade for non-ferrous metal, cast iron and stainless steel.
• Each insert has 4 cutting edges.

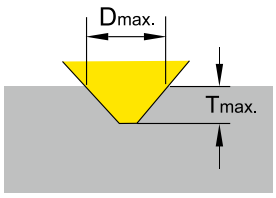
NC60: • Wiper design cermet insert, for hardened steel up to 56 HRC.
• Each insert has 4 cutting edges.

H-NC40: • Best choice for spotting application.
• Special geometry with supporting edges for use in high speed machining.
• Universal grade for all kind of steel and cast iron.
• Each insert has 2 cutting edges.

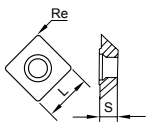
H-NC9076: • High positive geometry and sharp edge.
• For non-ferrous material such as aluminum, titanium, brass, copper and long cutting chip metal.
• Produces excellent surface finish on non-ferrous metal.
• Each insert has 2 cutting edges.



NC40 / Wiper design / NC60

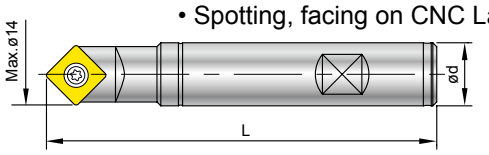


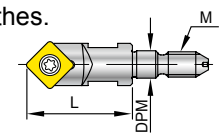
Other grade

Code	Parts No.		Coating	Grade		Dimensions L	Dimensions S	Dimensions Re	Dmax.	Tmax.
014401	N9MT11T3CT	NC40	TiN	P35		11.11	3.97	0.8	14	7
014402		NC10	TiAlN	K10F				(0.3)		
014403		NC60	CERMET					0.8		
014202	N9MT11T3CT2T	H-NC40	TiN	K20F				0.8		
014203		H-NC9076	DLC	K20F				0.8		

Holder >>

• Single cutting edge design gives higher precision when spotting.
• Applications : • Spotting, engraving, grooving and chamfering on milling machines, machining centers.
• Spotting, facing on CNC Lathes.





Code	Parts No.	Ød	L	M	DPM	Screw	Key
604002	00-99616-14-12	12	100	-	-		
604004	00-99616-14	16	100	-	-		
604007	00-99616-14-150L	16	150	-	-		
604009	00-99616-14-220L	20	220	-	-	NS-35080 2.5 Nm	NK-T15
614001	00-99616-14-1/2	1/2”	100	-	-		
614002	00-99616-14-5/8	5/8”	100	-	-		
624001	00-99616-14-M8	-	30	M8xP1.25	8.5		

Note: • Balanced type holder is on request.
• Nine9 extension bar for M8 screw fit holder, see page 6-3.

N9MT11T3

90°

Single Set >>

• User friendly, each set is fitted with one complimentary insert.

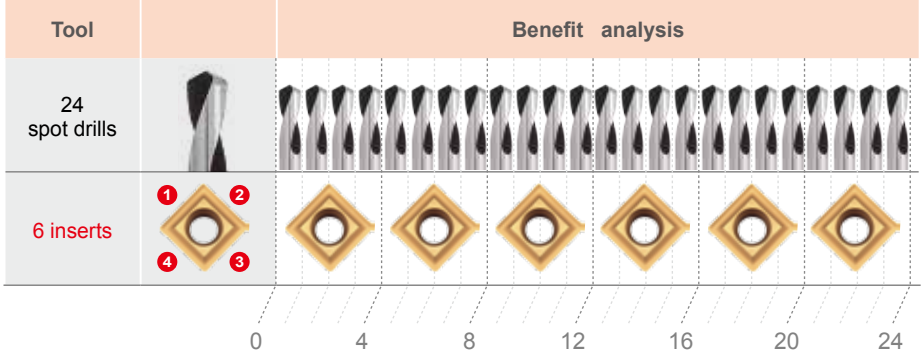
Code	Parts No.	Ød	Total Length	Insert fitted	Dmax.	Tmax.
604104-4401	00-99616-14-02S	16	100	N9MT11T3CT-NC40	14	7
604104-4402	00-99616-14-02SAL			N9MT11T3CT-NC10	14	7
614102-4401	00-99616-14-5/8-02S	5/8"	100	N9MT11T3CT-NC40	0.551"	0.276"
614102-4402	00-99616-14-5/8-02SAL			N9MT11T3CT-NC10	0.551"	0.276"

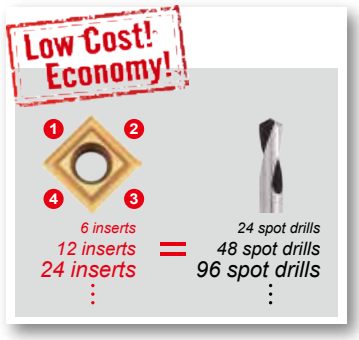
Starter Package >>

• Selected package for starter who wants to try NC Spot Drill.
• Included one insert on tool holder and five inserts in the pocket.
• Total 6 inserts are equal to 24 spot drills.

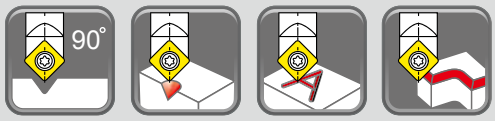
Code	Parts No.	Ød	Insert included	Content
604204-4401	00-99616-14-ME6	16	N9MT11T3CT-NC40	1 tool holder + 6 inserts + 1 key
604204-4402	00-99616-14-ME6AL		N9MT11T3CT-NC10	
614202-4401	00-99616-14-IN6	5/8"	N9MT11T3CT-NC40	
614202-4402	00-99616-14-IN6AL		N9MT11T3CT-NC10	

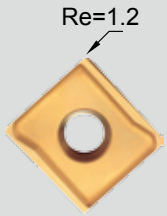
Comparison >>





90° N9MT1704

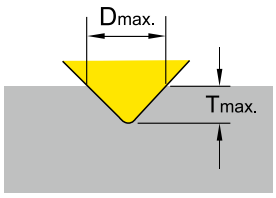


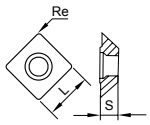


Inserts >>

• 90 degree indexable spot drill insert, Dmax 22mm.

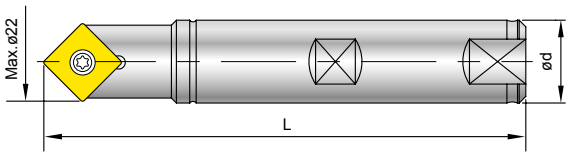
NC2071 : • High positive geometry,
fully ground cutting edge and relief angle.
• Universal grade for all unhardened steel and cast iron.
• Each insert has 2 cutting edges.



Code	Parts No.	Coating	Grade		Dimensions			Dmax.	Tmax.
					L	S	Re		
016201	N9MT1704CT-NC2071	TiN	K20F		17	4.76	1.2	22	10.4

Holder >>

• Single cutting edge design gives high precision when spotting.
• Applications : • Spotting, engraving, grooving and chamfering on milling machines, machining centers.
• Spotting, facing on CNC Lathes.



Ø20

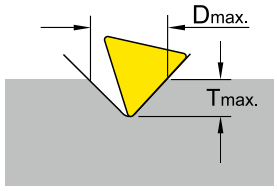
Code	Parts No.	Ød	L	Screw	Key
606001	00-99616-22	20	100	NS-50125 5.5 Nm	NK-T20
606002	00-99616-22-25	25	150		

N9MT220408

90°

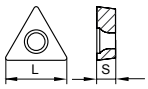
NC40

Inserts >>



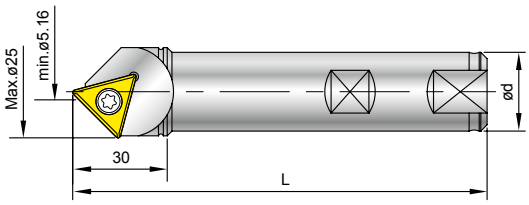
- For spotting diameter up to 25mm.
- Fully ground cutting edge and relief angle.

NC40: • Universal grade for carbon steel, alloy steel and cast iron.
• Each insert has 3 cutting edges.

Code	Parts No.	Coating	Grade		Dimensions			Dmax.	Tmax.
					L	S	Re		
017301	N9MT220408CT-NC40	TiN	P35		20.83	4.76	---	25	12.2

Holder >>

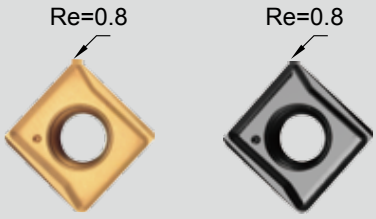
- Large spotting diameter with indexable insert.
- Single cutting edge design gives high precision when spotting.
- Applications : spotting and chamfering on milling machine, machining centers.

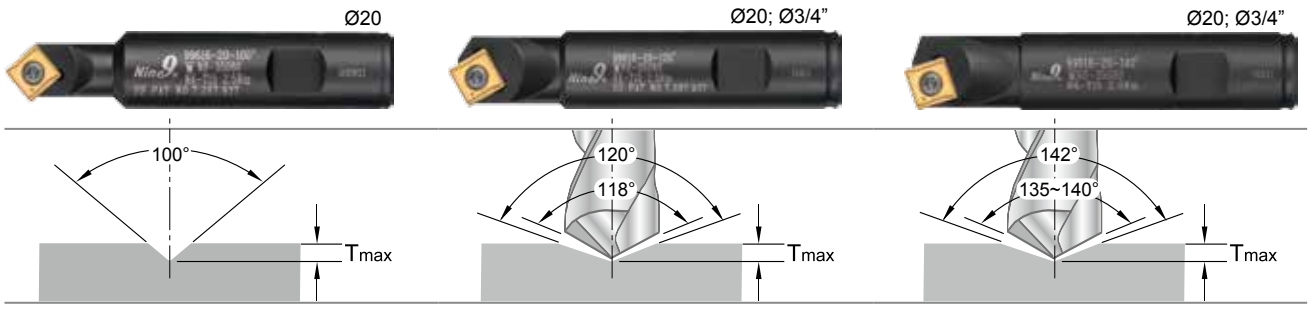


Ø25

Code	Parts No.	Ød	L	Screw	Key
607001	00-99616-25-CT28	25	120	 NS-40100 3.5 Nm	 NK-T15
617001	00-99616-1-CT28	1”	120		

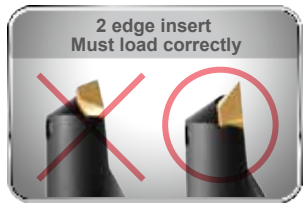
N9MT11T3CT2T-H





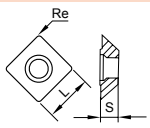
- For aircraft 100° normal rivet hole and screw hole.
- For spotting before drilling by 118° point angle drill.
- 60° chamfering.
- For spotting before drilling by 135°~140° point angle high performance drill.

Inserts >>



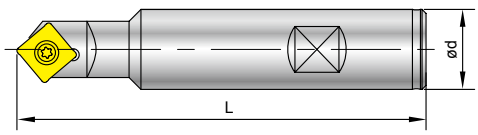
H-NC40:
- Universal grade for all kind of steel and cast iron.
- Each insert has 2 cutting edges.

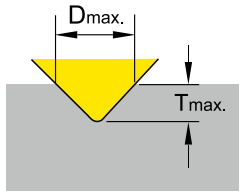
H-NC9076:
- High positive geometry and sharp edge.
- For non-ferrous material such as aluminum, titanium, brass, copper and long cutting chip metal.
- Produces excellent surface finish when chamfering non-ferrous metal.
- Each insert has 2 cutting edges.

Code	Parts No.		Coating	Grade		Dimensions		
						L	S	Re
014202	N9MT11T3CT2T	H-NC40	TiN	K20F		11	3.97	0.8
014203		H-NC9076	DLC					

Holder >>

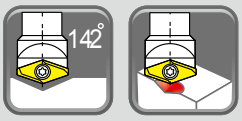
- Indexable insert spotting drill holders for 100°/120°/142° spotting.
- Spotting produces better hole position and geometrically uniform holes.
- Increase tool life of the next drilling operation.

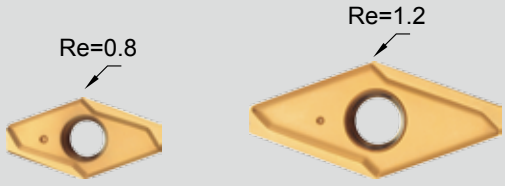


Code	Parts No.	Angle	Ød	L	Screw / Key	Dmax.	Tmax.	
604011	00-99616-20-100	100°	20	100	 NS-35080 2.5 Nm	16	6.3	
604013	00-99616-20-120	120°	20	100		17	4.76	
614003	00-99616-3/4-120	120°	3/4"	100		0.669"	0.187"	
604014	00-99616-20-142	142°	20	100	 NK-T15	18.5	3.16	
614004	00-99616-3/4-142	142°	3/4"	100		0.728"	0.124"	

V14208 / V14216

142°



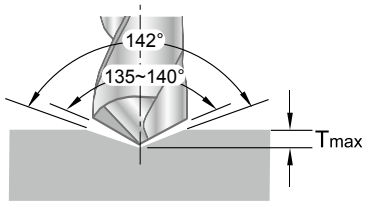


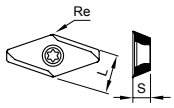
V1420803-NC2071 V1421604-NC2071

Inserts >>

- For spotting before drilling by 135° - 140° point angle high performance drill.
- 142 degree indexable spotting drills. Dmax 32mm.

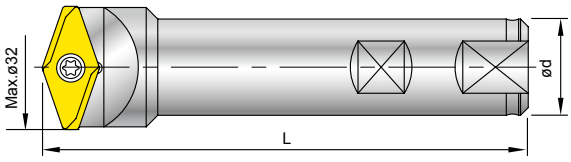
NC2071:
- High positive geometry, fully ground cutting edge and relief angle.
- Universal grade for all unhardened steel and cast iron.
- Each insert has 2 cutting edges.



Code	Parts No.	Coating	Grade		Dimensions			Dmax.	Tmax.
					L	S	Re		
0114201	V1420803-NC2071	TiN	K20F		8	2.38	0.8	16	2.8
0114211	V1421604-NC2071				14	4.76	1.2	32	5.5

Holder >>

- Using spotting first may increase higher speed and feed rate of the after drills.
- Extend your drill life with 142° spotting. Reduce your drilling cost.
- Higher accuracy of positioning and diameter tolerance !

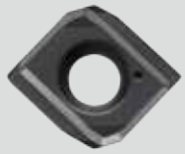


Ø16

Ø25

Code	Parts No.	Ød	L	Insert Type	Screw	Key
696001	00-99619-V142-16	16	100	V1420803	NS-30072 2.0 Nm	NK-T9
696002	00-99619-V142-32	25	120	V1421604	NS-50125 5.5 Nm	NK-T20

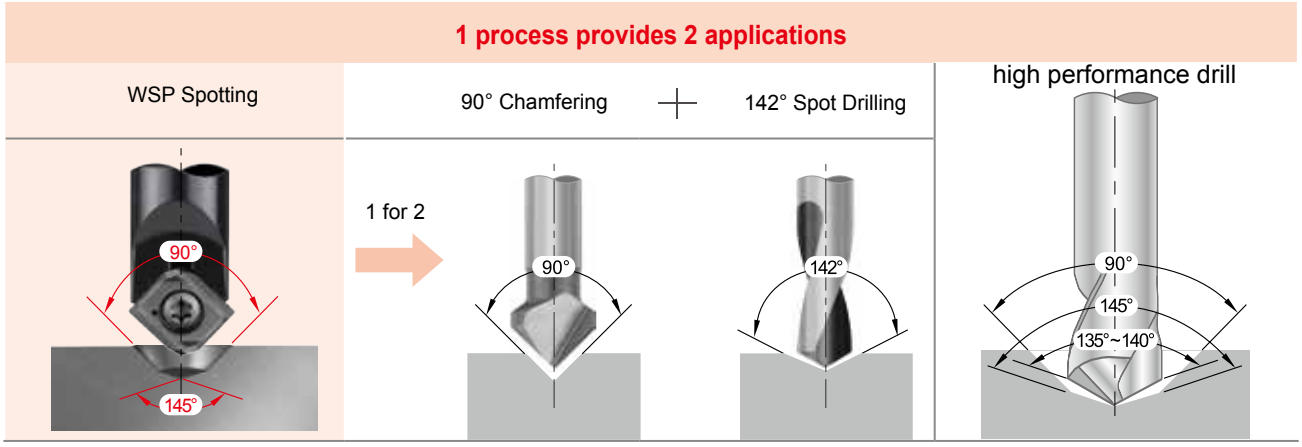
WSP Spotting New Geometry of Spotting Tool



NC2033

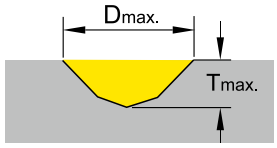
Combined spotting and chamfering 145° + 90° >>

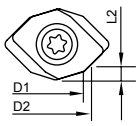
- Reduces process to one operation. Shorten cycle time.
- Use to spot prior to drilling with high performance drills for higher accuracy of hole position.
- Good support spotting process for round parts.



Inserts >>

NC2033:
- Fully ground cutting edge and relief angle.
- Universal grade for steel and cast iron.
- Each insert has 2 cutting edges.



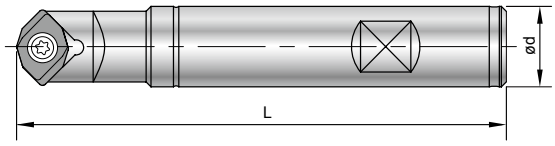
Code	Parts No.	Coating	Grade		Thread Size	*D1±0.05	D2	L2	Dmax.	Tmax.
013203	N9MT0802M04C-NC2033	TiAlN	K20F		M4x0.7	3.30	4.20	0.93	8	2.83
013204	N9MT0802M05C-NC2033				M5x0.8	4.20	5.25	1.14		2.52
013205	N9MT0802M06C-NC2033				M6x1.0	5.00	6.30	1.39		2.24
014219	N9MT11T3M08C-NC2033	TiAlN	K20F		M8x1.25	6.80	8.40	1.81	13	4.11
014220	N9MT11T3M10C-NC2033				M10x1.5	8.50	10.50	2.28		3.53
014221	N9MT11T3UNC25-NC2033	TiAlN	K20F		1/4-20 UNC	5.08	6.70	1.55	13	4.70
014222	N9MT11T3UNC31-NC2033				5/16-18 UNC	6.53	8.40	1.90		4.20
014223	N9MT11T3UNC38-NC2033				3/8-16 UNC	7.94	10.00	2.22		3.72
016205	N9MT1704M12C-NC2033	TiAlN	K20F		M12x1.75	10.25	12.60	2.91	20	6.61
016206	N9MT1704M14C-NC2033				M14x2.0	12.00	14.70	3.22		5.87
016207	N9MT1704M16C-NC2033				M16x2.0	14.00	16.80	3.51		5.11

Note: * D1 refer to the Tap Pre-drilling sizes.
* Technical information, please refer to page 1-25.

WSP Spotting New Geometry of Spotting Tool

Holder >>

- Utilizes standard ***NC Spot Drill*** holders.
- Holders and inserts are interchangeable.

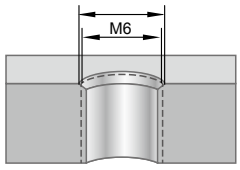
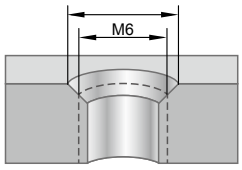


Code	Parts No.	Ød	L	Insert Type	Thread Size	Screw	Key
603001	00-99616-10	10	89.08±0.29	N9MT0802	M4~M6	NS-30055 2.0Nm	NK-T8
613001	00-99616-3/8	3/8”					
604004	00-99616-14	16	97.55±0.55	N9MT11T3	M8~M10	NS-35080 2.5Nm	NK-T15
614002	00-99616-14-5/8	5/8”			1/4~3/8 UNC		
606001	00-99616-22	20	96.24±0.64	N9MT1704	M12~M16	NS-50125 5.5Nm	NK-T20
616001	00-99616-22-3/4	3/4"					

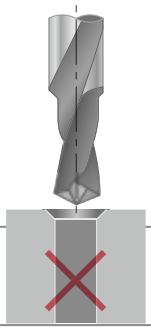
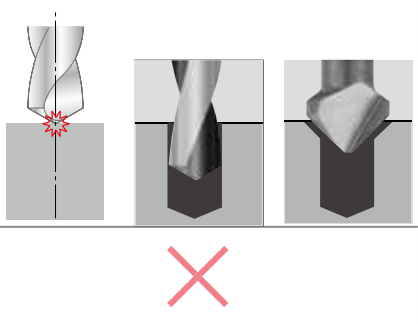
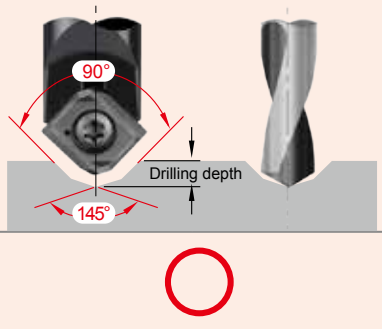
Example >>

- The recommended chamfering is 5% of the nominal diameter of the thread, for example 6.3 mm for M6 thread.
- If you need larger chamfer, it can be calculated the required depth of spotting. (see page 1-27)

Drilled hole for M6

M6+5% Chamfering	M6+1mm Chamfering
	

Comparison >>

Step Drill	Drill + Spotting	WSP Spotting + Drill
• Tool cost is high • Shorter tool life • Can't drill directly from solid on round parts. Bad position accuracy.	• Longer drilling time • Guided at the weakest corner of drill • Shorter tool life	• Shorter drilling time • Guided at the strongest corner of drill • Longer tool life • Good position accuracy
		

Corner Rounding » Type of RC

Various corner radius inserts can fit on same holder
Carbide insert can stand very long tool life
Produces smooth and excellent surface finish on workpiece.

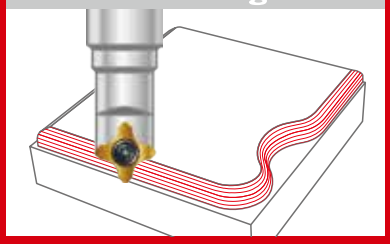
1 Corner Rounding

Features

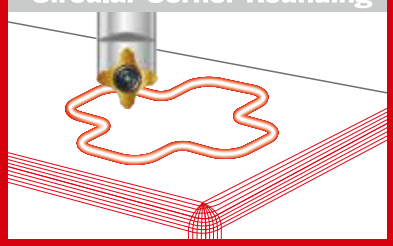
RC

- Each insert has 2 cutting edges.
- Combination corner rounding and 45° chamfering application on same insert.
- Higher cutting speed and feed rate.
- Very small X offset, good for contour chamfering.
- Utilizes standard NC Spot Drill holders 99616-06, 99616-14 & 99616-22.

Corner Rounding



Circular Corner Rounding



◀ Applications

- a Radius 0.5
- b Radius 1.0
- c Radius 2.0

N9MT05T1RC

RC0.5~RC1.0
All are interchangeable
on same holder

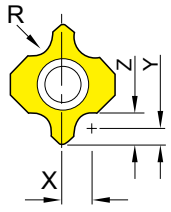
NC2071 NC9036

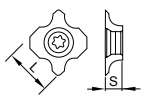
Inserts >>

- Various corner radius inserts can fit on same holder.
- Very small X offset 1.25mm for radius 0.5,
  the small x offset allows for profiling in small corners.

NC2071:
- Universal grade for all unhardened steel and cast iron.
- Inserts are CNC ground for precision radius location.
- Each insert has 2 cutting edges.

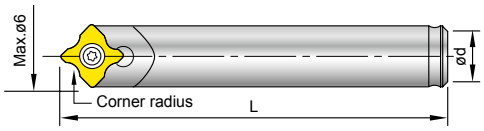
NC9036:
- For non-ferrous material such as aluminum, acrylic, titanium, brass, copper and stainless steel.
- High positive geometry and sharp edge produces excellent surface finish.
- Each insert has 2 cutting edges.



Insert Radius	Code	Parts No.		Coating	Grade	offset X	offset Y	offset Z		Dimensions L	Dimensions S
0.5	011203	N9MT05T1RC05	NC2071	TiN	K20F	1.25	0.75	1.25		5	1.8
	011206		NC9036	DLC							
0.75	011204	N9MT05T1RC075	NC2071	TiN	K20F	1.50	0.75	1.50			
	011207		NC9036	DLC							
1.0	011205	N9MT05T1RC10	NC2071	TiN	K20F	1.75	0.75	1.75			
	011208		NC9036	DLC							

Holder >>

- For corner rounding using ***NC Spot Drill*** shank.



Code	Parts No.	Ød	L	Screw	Key
601001	00-99616-06-6	6	35	*NS-20036 0.6 Nm	NK-T6
601002	00-99616-06-5	5	35		
601003	00-99616-06-6L	6	60		

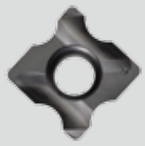
Note: 601003 is carbide shank holder.

*Torque screwdriver is recommended, see page 6-4.

RC N9MT11T3RC

RC1.0~RC3.0
All are interchangeable on same holder

NC40



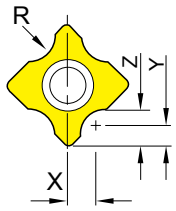
NC9036

Inserts >>

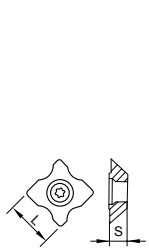
- Higher cutting speed and feed rate.
- Combination corner rounding and 45° chamfering application on same insert.
- Various corner radius inserts can fit on same holder.

NC40:
- Universal grade for all unhardened steel and cast iron.
- Inserts are CNC ground for precision radius location.
- Each insert has 2 cutting edges.

NC9036:
- For non-ferrous material such as aluminum, acrylic, titanium, brass, copper and stainless steel.
- High positive geometry and sharp edge produces excellent surface finish.
- Each insert has 2 cutting edges.



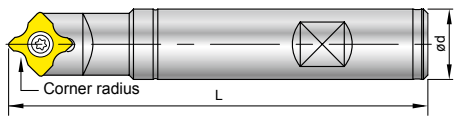
Insert Radius	Code	Parts No.		Coating	Grade	offset				Dimensions	
						X	Y	Z		L	S
1.0	014209	N9MT11T3RC10	NC40	TiN	K20F	2.75	1.5	2.5		11.11	3.97
	014224		NC9036	DLC							
1.5	014210	N9MT11T3RC15	NC40	TiN	K20F	3.25	1.5	3			
	014225		NC9036	DLC							
2.0	014211	N9MT11T3RC20	NC40	TiN	K20F	3.75	1.5	3.5			
	014226		NC9036	DLC							
2.5	014212	N9MT11T3RC25	NC40	TiN	K20F	4.25	1.5	4			
	014227		NC9036	DLC							
3.0	014213	N9MT11T3RC30	NC40	TiN	K20F	4.75	1.4	4.4			
	014228		NC9036	DLC							
1/64	014214	N9MT11T3RC1/64	NC40	TiN	K20F	0.086”	0.059”	0.0747”		0.437”	0.156”
	014229		NC9036	DLC							
1/32	014215	N9MT11T3RC1/32	NC40	TiN	K20F	0.101”	0.059”	0.090”			
	014230		NC9036	DLC							
1/16	014216	N9MT11T3RC1/16	NC40	TiN	K20F	0.133”	0.059”	0.122”			
	014231		NC9036	DLC							
3/32	014217	N9MT11T3RC3/32	NC40	TiN	K20F	0.164”	0.059”	0.153”			
	014232		NC9036	DLC							
1/8	014218	N9MT11T3RC 1/8	NC40	TiN	K20F	0.199”	0.055”	0.180”			
	014233		NC9036	DLC							



Holder >>

- For corner rounding using ***NC Spot Drill*** shank.

Code	Parts No.	Ød	L	Screw/ Key
604002	00-99616-14-12	12	100	NS-35080 2.5 Nm
604004	00-99616-14	16		
614001	00-99616-14-1/2	1/2”	100	NK-T15
614002	00-99616-14-5/8	5/8”		



Ø12, Ø16

N9MT1704RC

RC4.0~RC6.0
All are interchangeable on same holder


NC2071

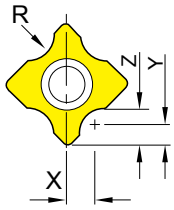

NC9036

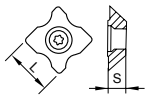
Inserts >>

- Higher cutting speed and feed rate.
- Combination corner rounding and 45° chamfering application on same insert.
- Various corner radius inserts can fit on same holder.

NC2071:
- Universal grade for all unhardened steel and cast iron.
- Inserts are CNC ground for precision radius location.
- Each insert has 2 cutting edges.

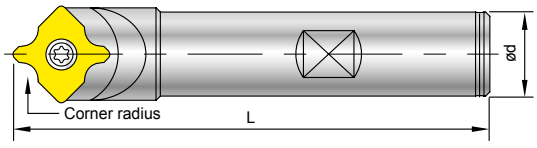
NC9036:
- For non-ferrous material such as aluminum, acrylic, titanium, brass, copper and stainless steel.
- High positive geometry and sharp edge produces excellent surface finish.
- Each insert has 2 cutting edges.



Corner radius(R)	Code	Parts No.		Coating	Grade	offset				Dimensions	
						X	Y	Z		L	S
4.0	016202	N9MT1704RC40	NC2071	TiN	K20F	6.15	2	6		17	4.76
	016208		NC9036	DLC							
5.0	016203	N9MT1704RC50	NC2071	TiN	K20F	7.1	2	7			
	016209		NC9036	DLC							
6.0	016204	N9MT1704RC60	NC2071	TiN	K20F	8.1	2	8			
	016210		NC9036	DLC							

Holder >>

- For corner rounding using ***NC Spot Drill*** shank.
- Good for small work pieces, which need large corner rounding.



Ø20 , Ø25

Code	Parts No.	Ød	L	Screw	Key
606001	00-99616-22	20	100	 NS-50125 5.5 Nm	 NK-T20
606002	00-99616-22-25	25	150		

Corner Rounding >> Type of R

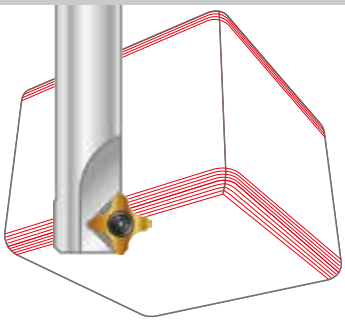
Various corner radius inserts can fit on same holder
Carbide insert can stand very long tool life
Produces smooth and excellent surface finish on workpiece.

1 Features

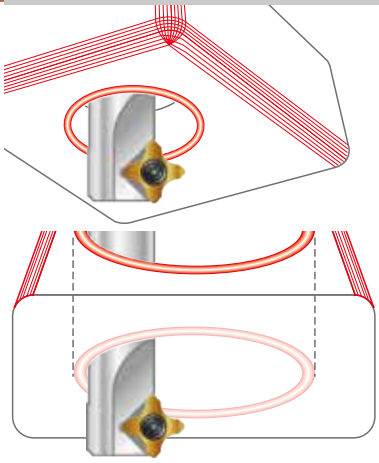
Corner Rounding

- Each insert has 4 cutting edges.
- R1.0 ~ R3.0 inserts are interchangeable on same holder.
- For front and back chamfering.
- Tool offset can be set after measuring tool length by tool presetter or Z-Zero Setter.
- **Inserts are CNC ground for precision radius and location.**
- **Optimizes the tool performance and reduces the cutting time.**

Front & Back Corner Rounding



Back Circular Corner Rounding



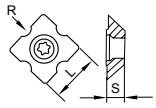
N9MT11T3R

R1.0~R3.0
All are interchangeable on same holder

Inserts >>

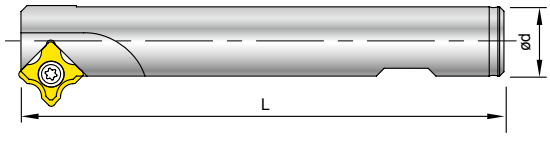
- For front and back corner rounding.
- Various corner radius inserts can fit on same holder.
- Coated carbide inserts for excellent tool life.
- Each insert has 4 cutting edges.

NC2071: • Universal grade for all unhardened steel and cast iron.
• Inserts are CNC ground for precision radius location.

Corner radius(R)	Code	Parts No.	Coating	Grade		Dimensions	
						L	S
1.0	014404	N9MT11T3R10-NC2071	TiN	P35		11.11	3.97
1.5	014405	N9MT11T3R15-NC2071	TiN	P35			
2.0	014406	N9MT11T3R20-NC2071	TiN	P35			
2.5	014407	N9MT11T3R25-NC2071	TiN	P35			
3.0	014408	N9MT11T3R30-NC2071	TiN	P35			

Holder >>

- Center of radius of each tool is dedicated.
- Tool offset can be set after measuring tool length by tool presetter or Z-Zero Setter.



Code	Parts No.	Ød	L	Z	Screw	Key
604015	00-99616-16-25R	16	100	1	 NS-35080 2.5 Nm	 NK-T15
604019	00-99616-16-30R	16	120	1		
604020	00-99616-25-40R	25	150	4		

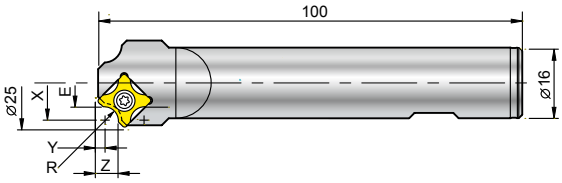
More >>

- Also can fit with N9MT11T308LA inserts for front and back chamfering. (Please see page 1-24)

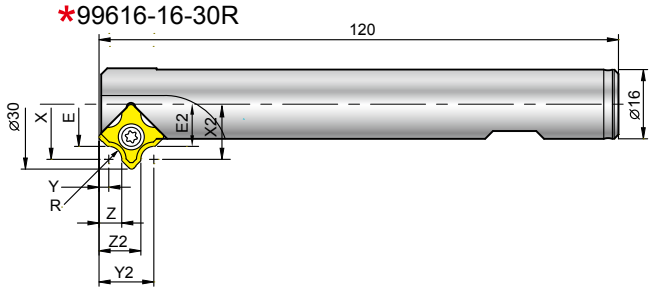
R N9MT11T3R

Cutting Position >>

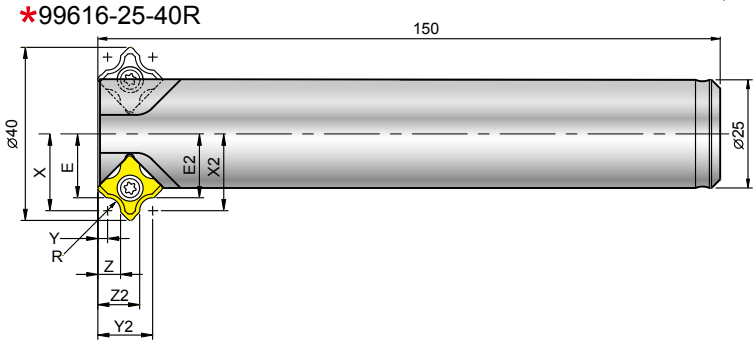
99616-16-25R



*99616-16-30R



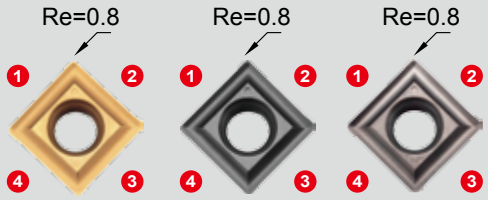
*99616-25-40R



99616-16-30R & 99616-25-40R
*For front and back corner rounding.
*Eliminates 2nd operation or deburring time.

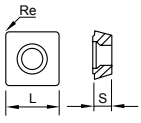
Insert Radius	Holder	Front Chamfering				Back Chamfering				Z
		E	X	Y	Z	E2	X2	Y2	Z2	
R1.0	00-99616-16-25R	8.25	9.25	3.25	4.25	---	---	---	---	1
	00-99616-16-30R	10.75	11.75	3.25	4.25	10.75	11.75	11.65	10.65	1
	00-99616-25-40R	15.75	16.75	3.25	4.25	15.75	16.75	11.65	10.65	4
R1.5	00-99616-16-25R	8	9.5	3	4.5	---	---	---	---	1
	00-99616-16-30R	10.5	12	3	4.5	10.5	12	11.9	10.4	1
	00-99616-25-40R	15.5	17	3	4.5	15.5	17	11.9	10.4	4
R2.0	00-99616-16-25R	7.75	9.75	2.75	4.75	---	---	---	---	1
	00-99616-16-30R	10.25	12.25	2.75	4.75	10.25	12.25	12.15	10.15	1
	00-99616-25-40R	15.25	17.25	2.75	4.75	15.25	17.25	12.15	10.15	4
R2.5	00-99616-16-25R	7.5	10	2.5	5	---	---	---	---	1
	00-99616-16-30R	10	12.5	2.5	5	10	12.5	12.4	9.9	1
	00-99616-25-40R	15	17.5	2.5	5	15	17.5	12.4	9.9	4
R3.0	00-99616-16-25R	7.25	10.25	2.25	5.25	---	---	---	---	1
	00-99616-16-30R	9.75	12.75	2.25	5.25	9.75	12.75	12.65	9.65	1
	00-99616-25-40R	14.75	17.75	2.25	5.25	14.75	17.75	12.65	9.65	4

N9MT11T308LA 45° Chamfering Tool



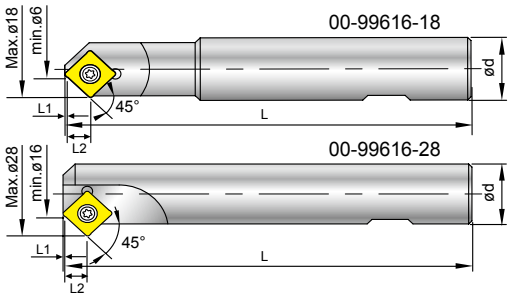
Inserts >>

NC40: • General purpose, universal grade for all unhardened steel.
• Each insert has 4 cutting edges.
NC10: • High positive angle and fully ground cutting edge and relief angle.
• Universal grade for Al, Al-alloy, non-ferrous metal, cast iron and stainless steel.
• Each insert has 4 cutting edges.
NC60: • Cermet insert, for hardened steel up to 56 HRC .
• Each insert has 4 cutting edges.

Code	Parts No.		Coating	Grade		Dimensions		
						L	S	Re
014409	N9MT11T308LA	NC40	TiN	P35		11.11	3.97	0.8
014410		NC10	TiAN	K10F				
014411		NC60	Cermet					

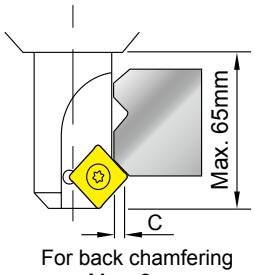
Holder >>

• 00-99616-28 can be applied for machining back chamfering and side grooving.

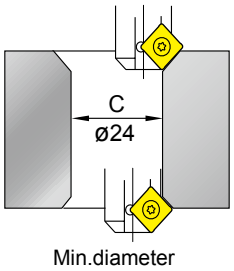


Code	Parts No.	Chamfering	Ød	L	L1	L2	Z	Insert type	Screw / Key
604017	00-99616-18	Ø6-Ø18	20	120	1.15	7.55	1	N9MT11T308LA	NS-35080 2.5 Nm
604018	00-99616-28	Ø16-Ø28	20	120	1.15	7.55	1		NK-T15

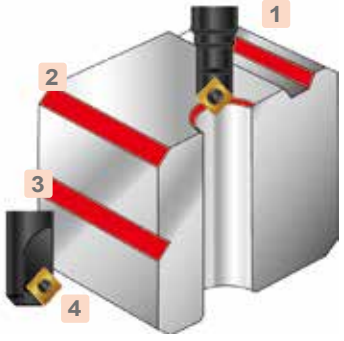
Example >>



For back chamfering
Max. 2mm



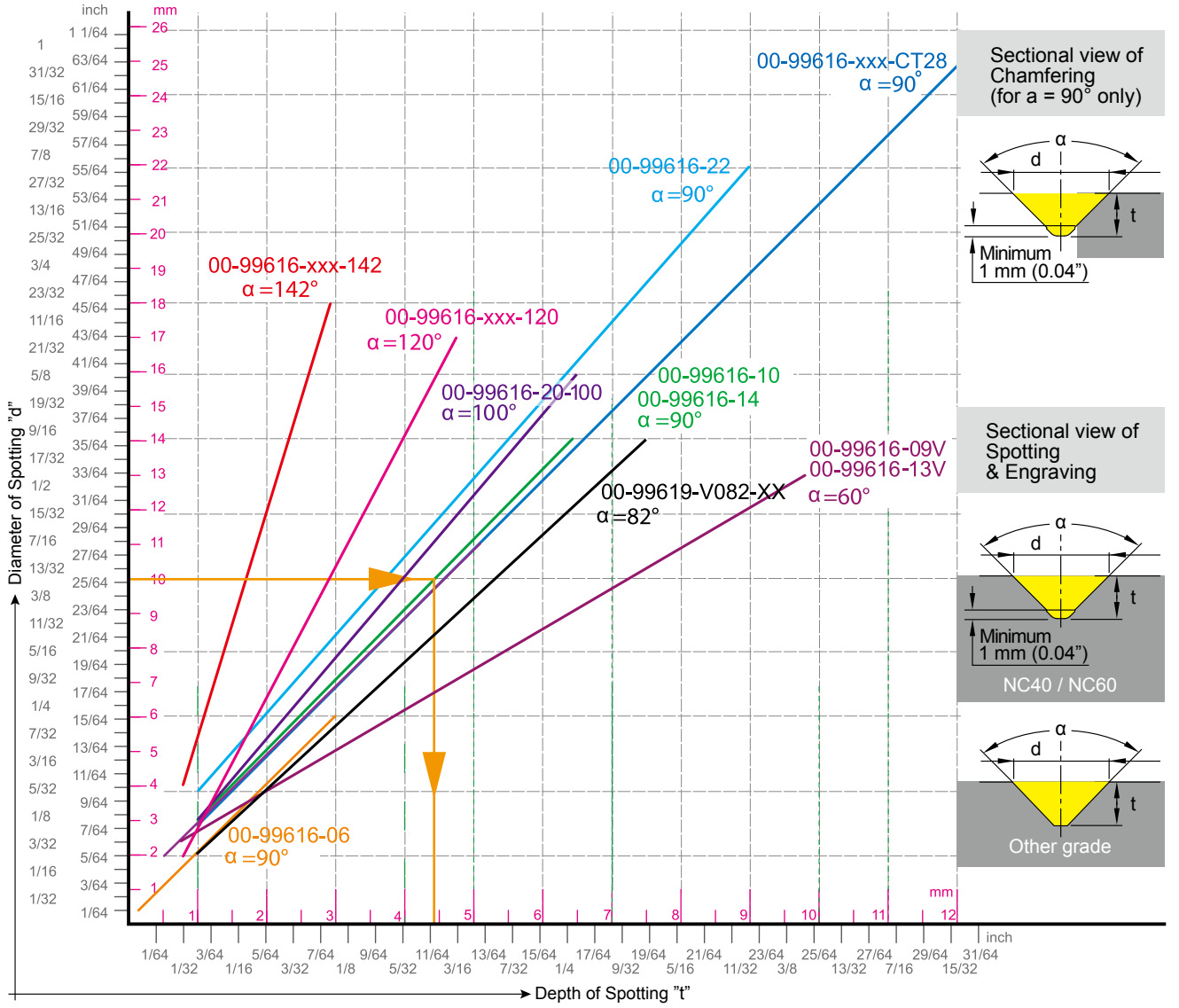
Min.diameter
for shift ø24mm.



Action	
1	External and internal chamfering
2	Side chamfering
3	Side grooving
4	Back chamfering

Cutting Data

Diameter / Depth Chart and Speed / Feed Rate Calculation of NC Spot Drill



Instruction of Use >>

1. From Spot diameter "d" to get drill depth " t ".
2. Point angle "α" is determined by which tool holder you use.
3. From "d" draw a horizontal line to get intersection of the line by point angle "α".
4. From the intersection draw a vertical line to the bottom to have depth of spotting " t ". " t " is the drill depth of the NC program.
5. The sectional view of spotting will depend on the shape of insert, NC40 and other grades of inserts have different sectional view.
6. For chamfering, do not use tip of insert, 1mm(0.04") minimum clearance is required for a smooth surface finish.

Calculate spindle speed and feed rate >>

1. Using your "d" value and cutting speed Vc from the data sheet, calculate spindle speed "S"(RPM).
2. " F" feed rate per minute F = f x S = RPM x IPR

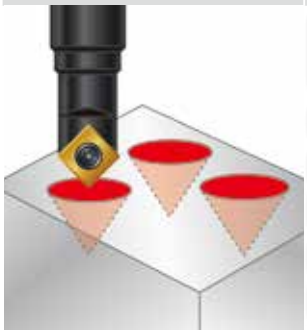
Metric		Inch	
$S = \frac{Vc \times 1000}{\pi \times d}$	**d =** diameter -mm	$S = \frac{(3.82 \times SFM)}{d}$	**d =** diameter-inch
	S = Spindle Speed -r.p.m.		**S =** Spindle Speed-r.p.m.
	Vc = Cutting Speed -m/min.		**SFM =** Surface Speed-ft./min. Vc (m/min.) x 3.28
F = S x f	**f =** mm/rev.	**F = f x S**	**f = IPR =** inch/rev.
	F = mm/min.		**F =** inch/min.

Cutting Data

N9MT-CT >> Insert Multi-function

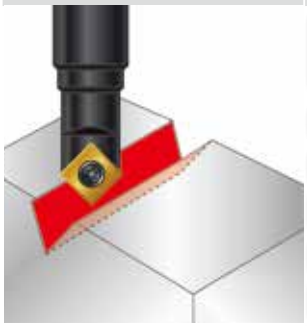
Determine spindle speed and feed rate:

- Choose spotting depth to decide spotting diameter according to the Diameter/Depth chart on page 1-25.
- The spindle speed should be calculated by the maximum diameter of spotting, chamfering and grooving.

Spotting	Work Material	Vc (m/min)	f (mm/rev.)	Grade of Insert
	Carbon steel	150~250	0.05~0.10	NC40, NC2071
	Alloy steel	100~200	0.04~0.08	NC40, NC2071
	Stainless steel	65~125	0.03~0.06	NC10, NC60, H-NC40, NC2071
	Casting iron	80-150	0.05~0.10	H-NC40, NC10, NC2071
	Non-ferrous metal (Al, Cu)	150~300	0.05~0.10	NC10, NC9076, NC2071
	Ti, Ti-alloy	40~80	0.03~0.08	NC9076
	Hardened steel 40~56 HRC	30~60	0.03~0.08	NC60

* For technical construction reasons, the insert is not located on the center of the holder.
* Inserts with supporting edges can increase feed rate 50%.

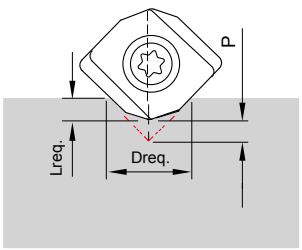
Chamfering	Work Material	Vc (m/min)	f (mm/rev.)	Grade of Insert
	Carbon steel	150~320	0.15~0.24	NC40, NC2071
	Alloy steel	100~250	0.12~0.20	NC40, NC2071
	Stainless steel	65~125	0.1~0.20	NC10, NC60, H-NC40, NC2071
	Casting iron	150-250	0.15~0.25	H-NC40, NC10, NC2071
	Non-ferrous metal (Al, Cu)	150~320	0.15~0.25	NC10, NC9076, NC2071
	Ti, Ti-alloy	40~80	0.03~0.08	NC9076
	Hardened steel 40~56 HRC	30~60	0.03~0.08	NC60

Grooving	Work Material	Vc (m/min)	f (mm/rev.)	Grade of Insert
	Carbon steel	150~250	0.05~0.10	NC40, NC2071
	Alloy steel	100~200	0.04~0.08	NC40, NC2071
	Stainless steel	65~125	0.03~0.06	NC10, NC60, H-NC40, NC2071
	Casting iron	80~150	0.05~0.08	H-NC40, NC10, NC2071
	Non-ferrous metal (Al, Cu)	150~320	0.05~0.08	NC10, NC9076, NC2071
	Ti, Ti-alloy	40~80	0.03~0.08	NC9076
	Hardened steel 40~56 HRC	30~60	0.03~0.08	NC60

Cutting Data

WSP Spotting >> 145°+90° W Spotting

WSP spotting	Formula



Lreq. = Dreq. x 0.5 - P

P = distance of theoretical intersection point to tip of insert.
0.5 = fixed factor for calculation
Lreq. = required drilling depth
Dreq. = required diameter

	M4	M5	M6	M8	M10	M12	M14	M16	1/4-20 UNC	5/16-18 UNC	3/8-16 UNC
P =	1.17	1.48	1.76	2.39	2.97	3.59	4.19	4.88	1.80	2.30	2.78

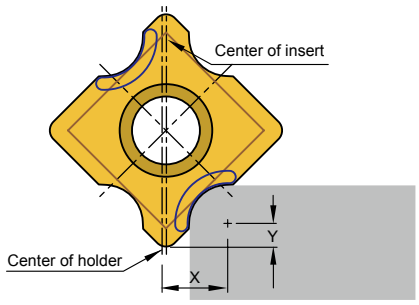
WSP spotting	Work Material	Vc (m/min)	f (mm/rev.)

Work Material	Vc (m/min)	f (mm/rev.)
Carbon steel	150 ~ 300	0.05 ~ 0.15
Alloy steel	120 ~ 250	0.05 ~ 0.10
Stainless steel	80 ~ 150	0.04 ~ 0.08
Casting iron	100 ~ 200	0.05 ~ 0.10

N9MT-RC Insert >> Corner Rounding

Determine spindle speed and feed:
To decide running speed of the tools and feed rate, please calculate spindle speed and feed rate according to the following formula and cutting data:

Corner Rounding	Calculate spindle speed



d = 2 x X mm

S = $\frac{Vc \times 1000}{d \times \pi}$ r.p.m.

F = S x f mm/min.

d = diameter of the tool for calculation purpose
X = tool radius offset (ref. page 1-18~20 for RC inserts)
Vc = Cutting Speed -m/min.
S = Spindle Speed -r.p.m.
F = mm/min.
f = mm/rev.

Calculate tool length offest on machining center

TL = TL'-Y,
H = X

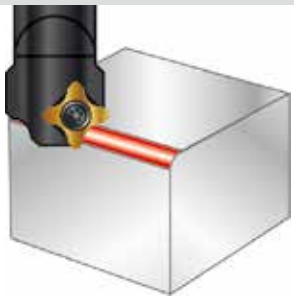
X = tool radius offset (ref. page 1-18~20 for RC inserts)
Y = distance to the center of radius. (ref. page 1-18~20 for RC inserts)
TL' = tool length
TL = tool length offset.
H = tool radius offset

RC Insert	Work Material	Vc (m/min)	f (mm/rev.)	Grade of Insert

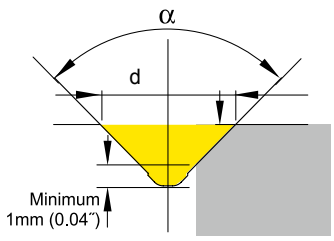
Work Material	Vc (m/min)	f (mm/rev.)	Grade of Insert
Carbon steel	150~320	0.05~0.10	NC40, NC2071
Alloy steel	100~250	0.05~0.10	NC40, NC2071
High alloy steel	80~150	0.04~0.08	NC40, NC2071
Stainless steel	65~125	0.05~0.10	NC9036
Casting iron	150~250	0.05~0.10	NC40, NC2071
Aluminum, Al-alloy Si < 12%	150~320	0.05~0.10	NC9036
Al-alloy Si >12%	100~300	0.05~0.10	NC9036
Cu	200~250	0.05~0.10	NC9036
Brass and Bronze	150~250	0.05~0.10	NC9036
Ti, Ti-alloy	40-80	0.03~0.08	NC9036

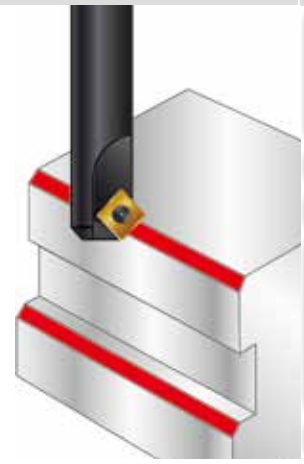
Cutting Data

N9MT-R Insert >> Corner Rounding (4 cutting edges)

R Insert	Work Material	Vc (m/min)	f (mm/rev.)	Grade of Insert
	Carbon steel	150~320	0.05~0.10	NC2071
	Alloy steel	100~250	0.04~0.08	NC2071
	High alloy steel	60~80	0.03~0.06	NC2071
	Casting iron	150~250	0.05~0.10	NC2071

LA Insert >> 45° Chamfering

45˚ Chamfering	Formula	
	$S = \frac{Vc \times 1000}{d \times \pi}$ r.p.m.	α = point angle 90°
		d = effective diameter
		Vc = cutting speed-m/min.or ft/min.
	F = S x f mm/min.	S = Spindle speed
		f = feed per rev.-mm/rev.

45˚ Chamfering	Work Material	Vc (m/min)	f (mm/rev.)	Grade of Insert
	Carbon steel	150-320	0.05~0.10	NC40
	Alloy steel	100-250	0.04~0.08	NC40
	High alloy steel	60-80	0.03~0.06	NC40
	Stainless steel	65-125	0.03~0.06	NC10
	Casting iron	150-250	0.05~0.10	NC10, NC40
	Aluminum, Al-alloy Si < 12%	150-320	0.05~0.10	NC10
	Al-alloy Si >12%	100-300	0.05~0.10	NC10
	Cu	200-250	0.05~0.10	NC10
	Brass and Bronze	150-250	0.05~0.10	NC10
	Hardened steel 40~56 HRC	60-80	0.05~0.10	NC60

Center Drill >> i-Center®

The “ i-Center ” is a trademark of Nine9,
the developer of the first indexable center drill in the world.(Patented)
Offering an indexable insert system for the 1st time, Nine9’s “i-Center ” design improves your process performance.

Features

World’s first indexable center drill
Shortens set up and center drilling time
Increases tool life and reduces tooling costs

High Speed, High Feed Rate

- The special ground insert and rigid holder design facilitate high performance speed and feed rates. For example, drilling alloy steel at 6000 rpm and feed rate of 600 mm/min. (0.1 mm/rev.)

Excellent Repeatability

- The positioning repeatability of the insert is within 0.02 mm (.0008”) in radial direction, thus ensuring conformity to any national standards.

Easy Tool Length Setting

- The axial position accuracy of the insert is 0.05 mm (.002”). It is not necessary to reset the tool length when changing the insert or cutting edge.

▲High pressure coolant can be supplied through center directly to tip of center drill insert.

Extended Tool Life

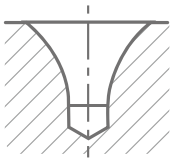
- Coolant can be supplied through the center of the holder to increase performance and extend tool life.
- Insert geometry, grades and coating process are specifically engineered for centering applications.

NC2033

NC5074 (IC08)

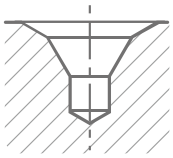
DIN 332 Form R

Ø1.0~Ø10



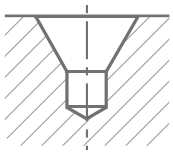
DIN 332 Form A + B

Ø1.0~Ø10



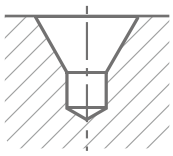
DIN 332 Form A

Ø2.0~Ø2.5

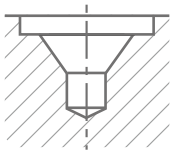


ANSI 60°

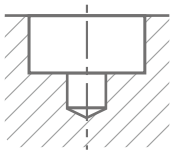
#2.0~#10



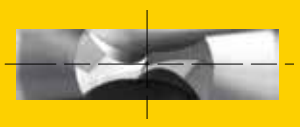
* C Type



* F Type



* special on request



▲ 2 cutting flutes design

Inserts:

- 2 cutting flutes design same as carbide center drill for high performance speed and feed rate.
- Each insert has 2 cutting edges.

NC2033:

- K20F grade, TiAlN coated, for carbon steel, alloy steel, high alloy steel and cast iron.

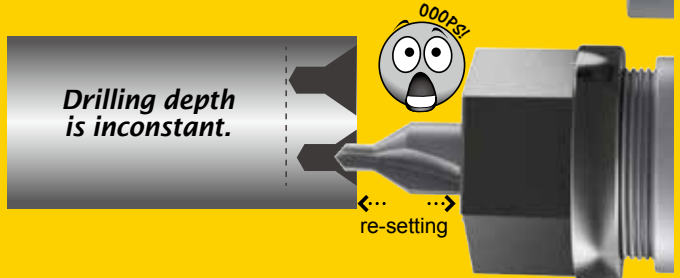
NC5074:

- P40 grade, Helica coated , design for small diameter center drill (IC08 inserts).

1

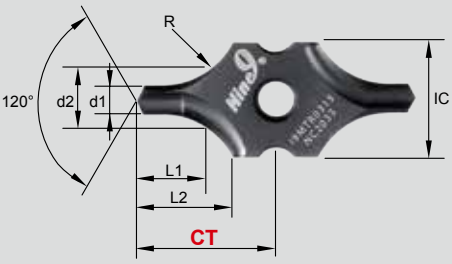
i-Center

▼ Excellent repeatability by insert type. No need tool length re-setting while changing insert or cutting edge.

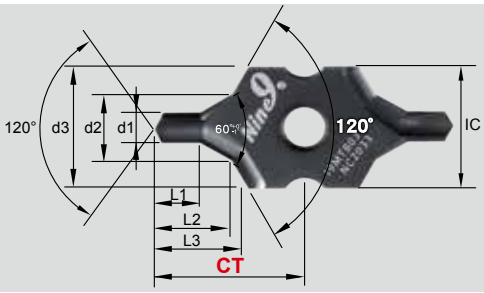


Insert of Indexable Center Drill

DIN332 Form R



DIN332 Form A+B



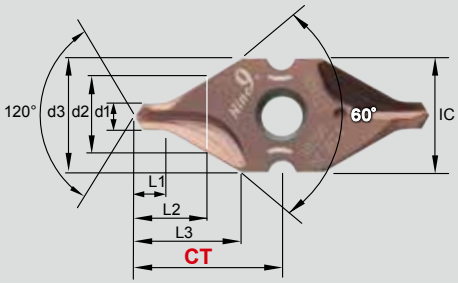
For DIN332 Form R Center Hole >>

IC	Code	Parts No.	Coating	Grade	d1		d2	L1	L2	R	CT ±0.025
08	032211	I9MT08T1R0100-NC5074	Helica	P40	1.00	+ 0.14 0	2.12	2.16	4.14	2.8	7.55
	032212	I9MT08T1R0125-NC5074			1.25		2.65	2.74	4.64	3.5	7.90
	032213	I9MT08T1R0160-NC5074			1.60		3.35	3.45	5.13	4.5	8.40
	032214	I9MT08T1R0200-NC5074			2.00		4.25	4.45	6.08	5.65	9.10
12	033201	I9MT12T2R0200-NC2033	TiAlN	K20F	2.00	+ 0.14 0	4.25	4.45	6.64	5.65	11.73
	033202	I9MT12T2R0250-NC2033			2.50		5.3	5.59	8.11	7.15	13.00
	033203	I9MT12T2R0315-NC2033			3.15	+ 0.18 0	6.7	7.21	9.63	9.0	14.00
16	034201	I9MT1603R0400-NC2033			4.00		8.5	9.06	12.23	11.0	19.40
	034202	I9MT1603R0500-NC2033			5.00		10.6	11.45	14.2	14.0	19.40
20	035201	I9MT2004R0630-NC2033			6.30	+ 0.22 0	13.2	14.63	18.2	18.0	28.40
	035202	I9MT2004R0800-NC2033			8.00		17.0	18.63	20.44	22.5	28.30
25	036201	I9MT2506R1000-NC2033			10.00		21.2	23.51	25.8	28.0	34.20

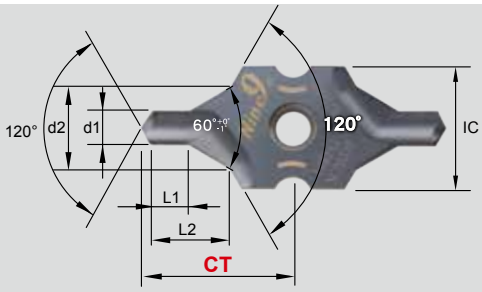
For DIN332 Form A+B Center Hole >>

IC	Code	Parts No.	Coating	Grade	d1		d2	d3	L1	L2	L3	CT ±0.025
08	032011	I9MT08T1B0100-NC5074	Helica	P40	1.00	+ 0.14 0	2.12	3.15	1.3	2.21	2.51	7.55
	032012	I9MT08T1B0125-NC5074			1.25		2.65	4.0	1.6	2.75	3.14	7.90
	032013	I9MT08T1B0160-NC5074			1.60		3.35	5.0	2.0	3.46	3.93	8.40
	032014	I9MT08T1B0200-NC5074			2.00		4.25	6.3	2.5	4.39	4.98	9.10
12	033001	I9MT12T2B0200-NC2033	TiAlN	K20F	2.00	+ 0.14 0	4.25	6.3	2.5	4.39	4.98	11.73
	033002	I9MT12T2B0250-NC2033			2.50		5.3	8.0	3.1	5.53	6.28	13.0
	033003	I9MT12T2B0315-NC2033			3.15	+ 0.18 0	6.7	10.0	3.9	6.90	7.85	14.0
16	034001	I9MT1603B0400-NC2033			4.00		8.5	12.5	5.0	8.9	10.03	19.4
	034002	I9MT1603B0500-NC2033			5.00		10.6	16.0	6.3	11.15	12.68	19.4
20	035001	I9MT2004B0630-NC2033			6.30	+ 0.22 0	13.2	18.0	8.0	13.98	15.33	28.4
	035002	I9MT2004B0800-NC2033			8.00		17.0	20	10.1	17.89	18.73	28.3
25	036001	I9MT2506B1000-NC2033			10.00		21.2	25	12.8	22.5	23.57	34.2

DIN332 Form A



ANSI 60 °



For DIN332 Form A Center Hole >>

IC	Code	Parts No.	Coating	Grade	d1		d2	d3	L1	L2	L3	CT ±0.025
08	032114	I9MT08T1A0200-NC5074	Helica	P40	2.0	+0.14 0	4.25	8	2.15	4.10	7.35	10.5
	032115	I9MT08T1A0250-NC5074			2.5		5.3		2.58	5.00	7.34	
	032116	I9MT08T1A0315-NC5074			3.15	+0.18 0	6.7		3.23	6.30	7.43	

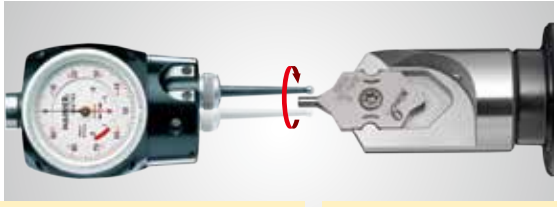
For ANSI 60° Center Hole >>

IC	Code	Parts No.	Coating	Grade	Size	d1			d2		L1		L2	CT ±0.025
							mm			mm		mm	mm	
12	033101	I9MT12T2A2-NC2033	TiAlN	K20F	#2	5/64	1.98	+0.14 0	3/16	4.76	5/64	1.98	4.4	12.6
	033102	I9MT12T2A3-NC2033			#3	7/64	2.78		1/4	6.35	7/64	2.78	5.9	13.8
	033103	I9MT12T2A4-NC2033			#4	1/8	3.18	+0.18 0	5/16	7.94	1/8	3.18	7.3	14.25
16	034101	I9MT1603A5-NC2033			#5	3/16	4.76		7/16	11.11	3/16	4.76	10.3	20.0
	035101	I9MT2004A6-NC2033			#6	7/32	5.56		1/2	12.7	7/32	5.56	11.8	27.75
20	035102	I9MT2004A7-NC2033			#7	1/4	6.35	+0.22 0	5/8	15.88	1/4	6.35	14.6	28.5
	035103	I9MT2004A8-NC2033			#8	5/16	7.94		3/4	19.05	5/16	7.94	17.6	29.0
25	036101	I9MT2506A10-NC2033			#10	3/8	9.53		0.98”	25.0	3/8	9.53	22.9	34.9

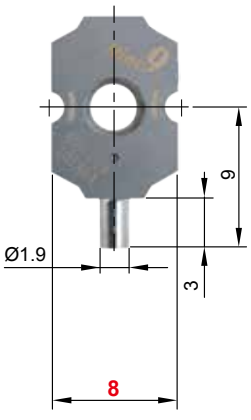
New

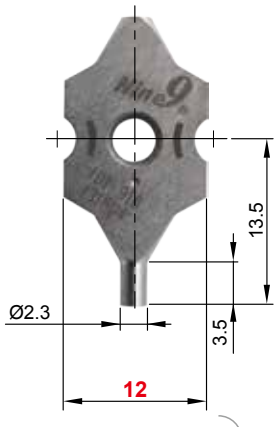
Measuring Master >>

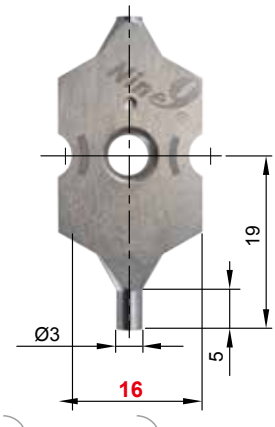
- Apply on lathe to align the center of work spindle and tool.
- Each insert has just one measuring tip.
- Concentricity: ±0.01mm

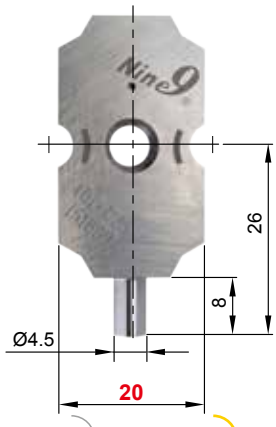


IC08	IC12	IC16	IC20
I9MT08T1-MM	I9MT12T2-MM	I9MT1603-MM	I9MT2004-MM





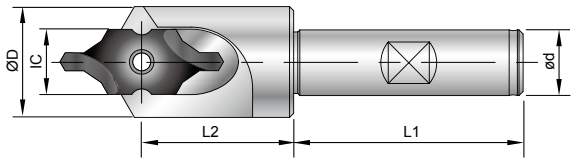




Holders of Indexable Center Drill

Weldon Shank >>

- Made of hardened high alloy steel, 58 HRC.
- IC08 shank is cylindrical shank.
  Other shanks are weldon shank.



IC08

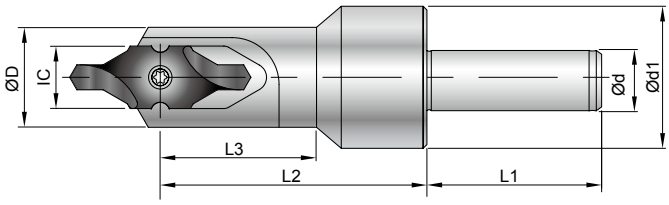
IC12, IC16, IC20, IC25

IC	Code	Parts No.	Type	ød	L1	L2	ØD	Screw	Key
08	802002	00-99616-IC08-10F	BC10-IC08F	10	30	18.5	12	*NS-25060 0.9 Nm	NK-T7
	812002	00-99616-IC08-3/8F	BC3/8"-IC08F	3/8"					
12	803002	00-99616-IC12-16F	SB16-IC12F	16	48	30.5	21	NS-30072 2.0 Nm	NK-T9
	813002	00-99616-IC12-5/8F	SB5/8"-IC12F	5/8"					
16	804002	00-99616-IC16-16F	SB16-IC16F	16	48	37	27	NS-35080 2.5 Nm	NK-T15
	814002	00-99616-IC16-5/8F	SB5/8"-IC16F	5/8"					
20	805002	00-99616-IC20-20F	SB20-IC20F	20	50	51	32	NS-50125 5.5 Nm	NK-T20
	815002	00-99616-IC20-3/4F	SB3/4"-IC20F	3/4"					
25	806002	00-99616-IC25-25F	SB25-IC25F	25	56	56	43	NS-50125 5.5 Nm	NK-T20
	816002	00-99616-IC25-1F	SB 1"-IC25F	1"					

*Torque screwdriver is recommended, see page 6-4.

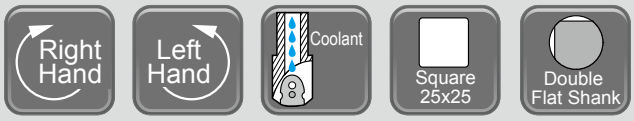
Cylindrical Shank with Pre-balanced >>

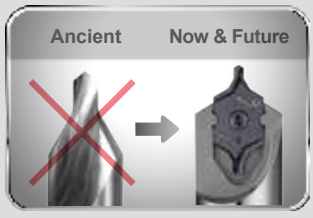
- Made of hardened high alloy steel, 58 HRC.
- G6.3 / 10,000 r.p.m.



IC	Code	Parts No.	Type	Ød	Ød1	L1	L2	L3	ØD	Screw	Key
08	802003	00-99616-IC08-10B	BC10-IC08B	10	22	30	33.5	19	12	*NS-25060 0.9 Nm	NK-T7
12	803003	00-99616-IC12-12B	BC12-IC12B	12	34	48	51	30	21	NS-30072 2.0 Nm	NK-T9
16	804003	00-99616-IC16-16B	BC16-IC16B	16	39	48	67	37	27	NS-35080 2.5 Nm	NK-T15
20	805003	00-99616-IC20-20B	BC20-IC20B	20	49	50	86	51	32	NS-50125 5.5 Nm	NK-T20
25	806003	00-99616-IC25-25B	BC25-IC25B	25	59	56	99	56	43	NS-50125 5.5 Nm	NK-T20

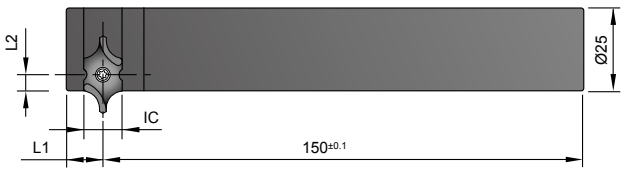
*Torque screwdriver is recommended, see page 6-4.





Square Shank 25 x 25 Right / Left Hand >>

- For used on lathe.
- Made of hardened alloy steel, 40 HRC.
- Other sizes are available on request.

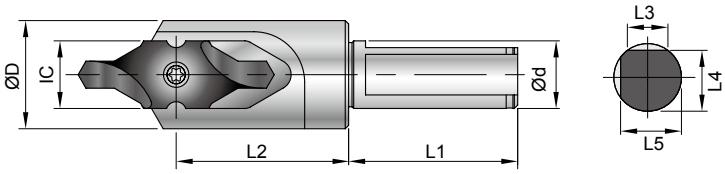


IC	Code	Parts No.	L1	L2	Screw	Key
08	822022	00-99616-IC08-R2525MF	8	3.25	*NS-25060 0.9 Nm	NK-T7
	822012	00-99616-IC08-L2525MF				
12	823022	00-99616-IC12-R2525MF	11	4.9	NS-30072 2.0 Nm	NK-T9
	823012	00-99616-IC12-L2525MF				
16	824022	00-99616-IC16-R2525MF	13	4.9	NS-35080 2.5 Nm	NK-T15
	824012	00-99616-IC16-L2525MF				

*Torque screwdriver is recommended, see page 6-4.

Double Flat Shank >> Non-Stock Item

- Made of hardened high alloy steel, 58 HRC.
- Double flat shank type for used on lathe.
- 180° for insert at top, 90° for insert at front.



IC	Code	Parts No.	Type	Ød	L1	L2	L3	L4	L5	ØD	Screw	Key
08	802004	00-99616-IC08-10S	SL10-IC08S	10	30	18.5	6	9	9	12	*NS-25060 0.9 Nm	NK-T7
12	803004	00-99616-IC12-16S	SL16-IC12S	16	48	30.5	9.33	14.5	14.5	21	NS-30072 2.0 Nm	NK-T9
16	804004	00-99616-IC16-16S	SL16-IC16S	16	48	37	9.33	14.5	14.5	27	NS-35080 2.5 Nm	NK-T15
20	805004	00-99616-IC20-20S	SL20-IC20S	20	50	51	12	18	18	32	NS-50125 5.5 Nm	NK-T20
25	806004	00-99616-IC25-25S	SL25-IC25S	25	56	56	13.57	23	23	43	NS-50125 5.5 Nm	NK-T20

*Torque screwdriver is recommended, see page 6-4.

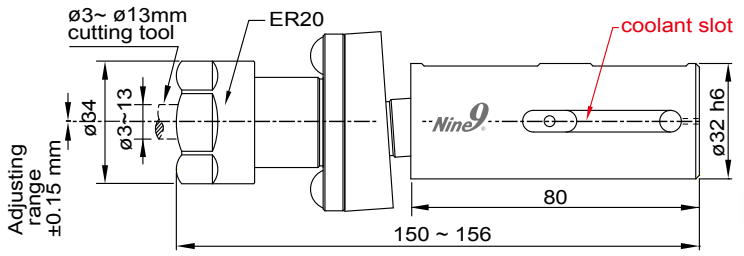
Center Height Adjusting Sleeve

Principle >>

- Designed for adjusting Center Height of center drills, NC spot drills, reamers and taps on the CNC lathes.
- The main body is made from two sleeves. The inner sleeve is to hold and lock the cutting tool.
- Its center is inclined to the outer sleeve. When the inner sleeve is pushed or pulled, the cutting tool's center height is adjusted to lower or higher position.

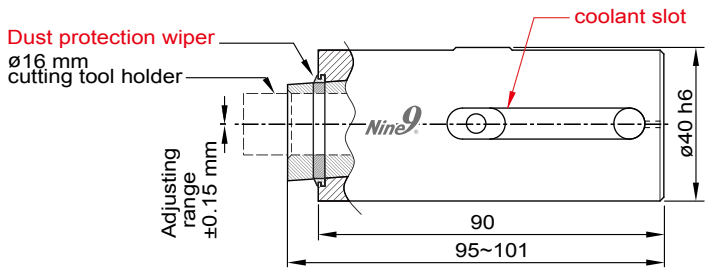
Parts No.:00-99600-320H >>

Type : SB32-IDER20



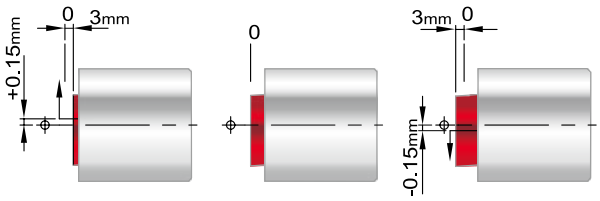
Parts No.:00-99600-400H >>

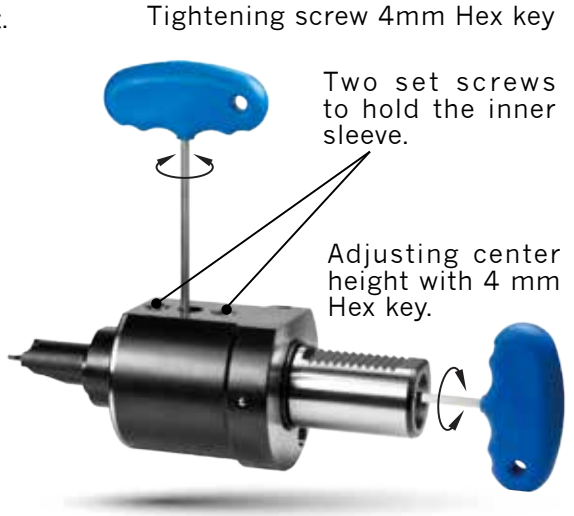
Type : SB32-ID16



Applications >>

- Used when the CNC lathes need to adjust the center height.
- This sleeve can be clamped by VDI 40, VDI 50 E2 tool holders,and other types internal turning tool holders.
- Center height adjusting range: ±0.15 mm(.006").
- Total axial movement is 6mm(.236").

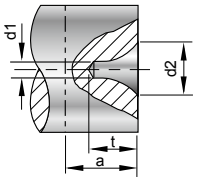




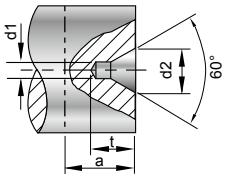
Technical Standard
ISO 2541-1972 / DIN332

60° Center holes

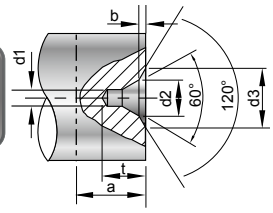
DIN332 Form R



DIN332 Form A



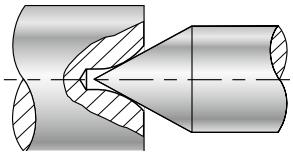
DIN332 Form B

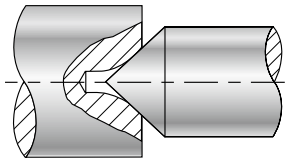


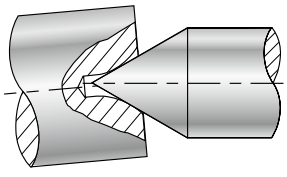
STD	DIN332 Form R ISO 2541-1972			DIN332 Form A ISO 866-1975			DIN332 Form B ISO 2540 1973				
d1	d2	t	a	d2	t	a	d2	b	d3	t	a
1	2.12	1.9	3	2.12	1.9	3	2.12	0.3	3.15	2.2	3.5
1.25	2.65	2.3	4	2.65	2.3	4	2.65	0.4	4	2.7	4.5
1.6	3.35	2.9	5	3.35	2.9	5	3.35	0.5	5	3.4	5.5
2	4.25	3.7	6	4.25	3.7	6	4.25	0.6	6.3	4.3	6.6
2.5	5.3	4.6	7	5.3	4.6	7	5.3	0.8	8	5.4	8.3
3.15	6.7	5.8	9	6.7	5.9	9	6.7	0.9	10	6.8	10
4	8.5	7.4	11	8.5	7.4	11	8.5	1.2	12.5	8.6	12.7
5	10.6	9.2	14	10.6	9.2	14	10.6	1.6	16	10.8	15.6
6.3	13.2	11.4	18	13.2	11.5	18	13.2	1.4	18	12.9	20
8	17	14.7	22	17	14.8	22	17	1.6	22.4	16.4	25
10	21.2	18.3	28	21.2	18.4	28	21.2	2	28	20.4	31

Advantage of Form R Center hole

60° Center of tail stock	90° Center of tail stock	Center hole and center are misaligned

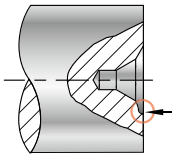


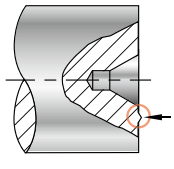


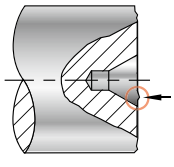


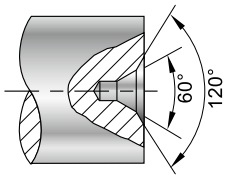
Advantage of Form B center hole

Avoid scar or distortion while transportation	Burr	Rough surface of workpiece	Total solution







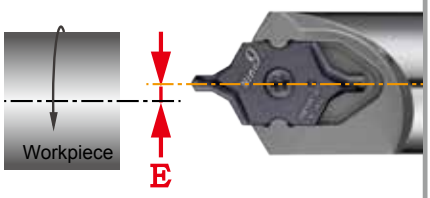


Technical Guide

Before you start, please pay attention the following conditions

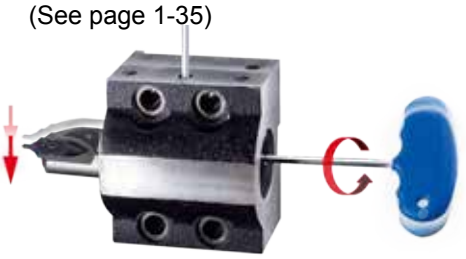
⚠ 1 Center misalignment

E must be < 0.02mm.



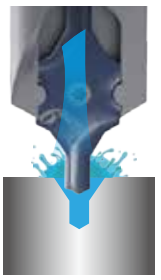
⚠ 2 Center height adjusting sleeve

When CNC lathe turret center is misaligned ≥ 0.15mm, please use center height adjusting sleeve.
(See page 1-35)



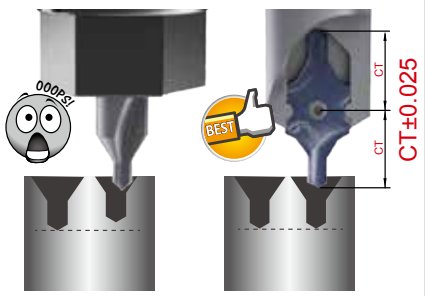
⚠ 3 Internal coolant

Internal coolant is recommended.

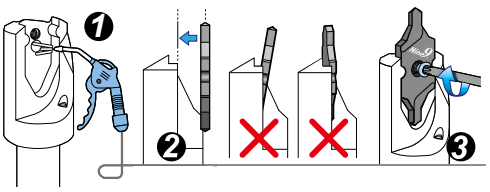


⚠ 4 No reset and regrind

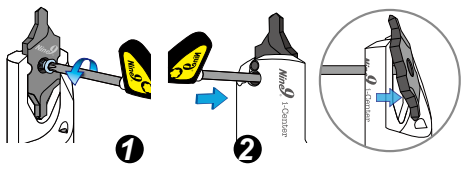
Tool length maintain while changing the insert or cutting edge.



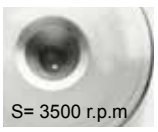
⚠ 5 Clamping insert



Loosen insert



⚠ 6 Possible to run on low r.p.m machine



Applications

Various centering applictions and products - shafts of engine, transmission gear boxes, bearings, motors, grinding parts, spindles, gear reducers, cooling fan, universal joints...