

Solid carbide
high-performance reamers

SuperR-HS

 **ISTOCK**

Chip – by Chip – to the Top

Supre

High-performance reamers
for virtually any application

- from $\varnothing 1.97$ up to 42.00mm as standard
- maximum cutting rates
- shortest machining times
- optimum hole qualities
- broad range of application



SuperR-HS

Maximum performance for all materials

With the SuperR-HS range Stock provides high-performance reamers for virtually any application. The perfect combination of special geometries, tool material and coatings provides optimal results for all reaming operations.

Perfect machining of through holes

The specially developed straight-flute geometry is unique with reamers for through holes:

- extremely high cutting rates also for deep holes
- exceptional coolant delivery due to longitudinal grooves in the shank or radial coolant exits directly at the cutting edge
- trouble-free chip evacuation ahead of the cutting edge
- chips do not return back within the flutes
- the excellent reamed surface remains optimally preserved

Maximum performance in blind holes

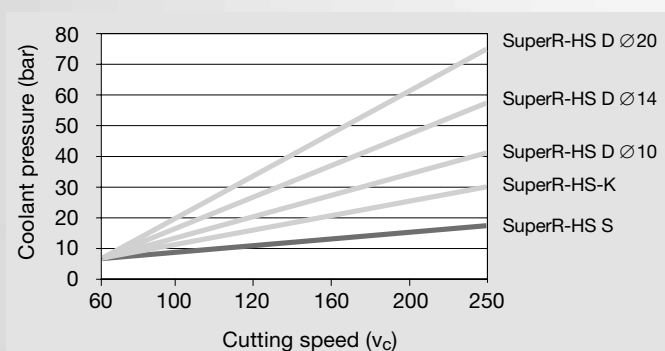
SuperR-HS high-performance reamers for the machining of blind holes are internally cooled with a central coolant duct:

- especially large cross-section ensures the optimal delivery of the coolant to the cutting edge of the tool
- straight-fluted tool geometry ensures the safe evacuation of the optimally formed chips
- excellent cutting rates and optimal surfaces

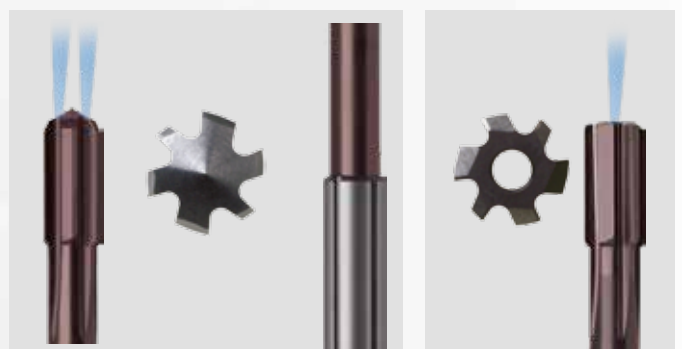
- For the machining of cast iron or aluminium, Stock provides solid carbide high-performance reamers in the semi-standard range for excellent surfaces.
- For highest requirements in machining steel, carbide or cermet tipped head reamers are available on request.

Please contact us, we will be glad to advise you (also see page 13).

Optimal coolant supply



Coolant pressure – cutting speed
valid for standard dimensions



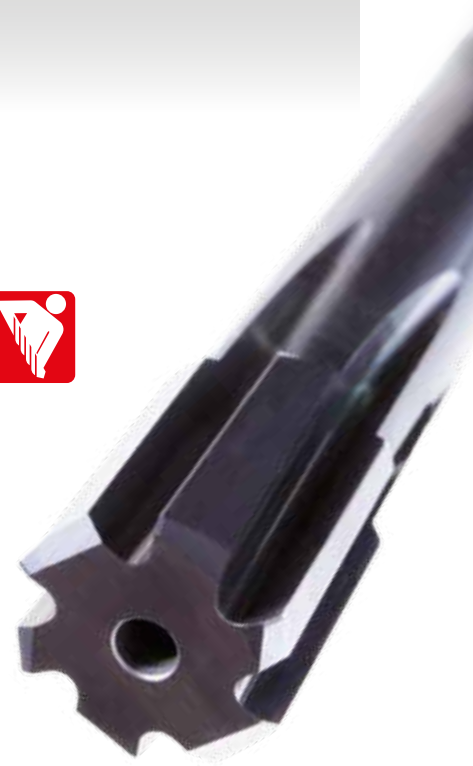


ISO-CODES

P	Steel, high-alloyed steel
M	Stainless steel
K	Grey cast iron, spheroidal and malleable cast iron
N	Aluminium and other non-ferrous metals
S	Special-, super- and Ti-alloys
H	Hardened steel and hard cast iron

Recommendations regarding tool suitability for the following application groups can be found on the following program pages:

- optimal suitability
- limited suitability



PICTOGRAMS

TOOL MATERIAL	VHM	Solid carbide
SURFACE FINISH	AlTiN nano	
Ø TOLERANCE	H7	+0,005
CUTTING DIRECTION	R	right-hand
SHANK FORM	HA	
HELIX ANGLE	0°	
STANDARD	WN	to Stock standard
TYPE	SuperR- HS-S SuperR- HS-D SuperR- HS-KS SuperR- HS-KD	

SuperR-HS high-performance reamers

Types

P	M	K	N	S	H	Type	Tool material	Surface finish	Standard	d1/mm	Catalogue no.
Solid carbide high-performance reamers											
•	•	○	•	•		SuperR-HS-S	Solid carbide	AlTiN nano	Stock std.	2.000 - 20.000	72870
•	•	○	•	•		SuperR-HS-D	Solid carbide	AlTiN nano	Stock std.	2.000 - 20.000	72871
•	•	○	•	•		SuperR-HS-S	Solid carbide	AlTiN nano	Stock std.	1.970 - 12.030	72872
•	•	○	•	•		SuperR-HS-D	Solid carbide	AlTiN nano	Stock std.	1.970 - 12.030	72873
•	•	○	•	•		SuperR-HS-KS	Solid carbide	AlTiN nano	Stock std.	14.000 - 42.000	72874
•	•	○	•	•		SuperR-HS-KD	Solid carbide	AlTiN nano	Stock std.	14.000 - 42.000	72875
Shrink fit extension									Stock std.		78719

Application examples for Stock's SuperR-HS-S and SuperR-HS-D solid carbide high-performance reamers with highest feed rates and tool life

Our solid carbide high-performance reamers have shown their performance in several applications, see following table:

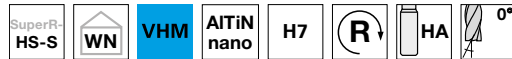
Tool type	SuperR-HS-S	SuperR-HS-D	SuperR-HS-D	SuperR-HS-S
catalogue no.	72870	72871	special reamer for tighter tolerances	72870
component machined	hinge	ring	valve body	ring
workpiece material	gen. steel	alloyed steel	gen. steel	alloyed steel
hole diameter (mm)	9	8	5.9	15
hole tolerance	H7	H7	H6	IT 5
reaming depth (mm)	30	25	48	20
cutting speed v_c (m/min.)	120	200	190	250
feed rate v_f (mm/min.)	4200	12700	6100	7200
tool life (m)	60	100	55	70

Carbide reamers

Solid carbide high-performance reamers

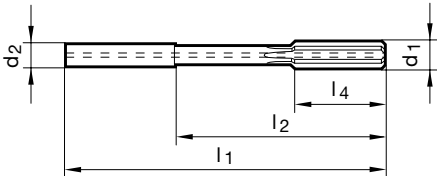


Catalogue no. 72870



P	M	K	N	S	H
•	•	○		•	•

- with axial coolant duct, for reaming blind holes
- for highest cutting rates and exceptional hole quality
- straight flutes, with extremely unequal flute spacing
- straight shank tol. h6 for clamping in hydraulic chucks and shrink fit chucks
- considerable process cost saving potential



d1 mm	d2 h6 mm	l1 mm	l2 mm	l4 mm	Z	Code no.
2.000	4.000	50.000	22.000	8.000	4	2.000
2.500	4.000	50.000	22.000	8.000	4	2.500
3.000	4.000	68.000	40.000	12.000	4	3.000
3.500	4.000	68.000	40.000	12.000	4	3.500
4.000	4.000	68.000	40.000	12.000	4	4.000
4.500	6.000	76.000	40.000	12.000	4	4.500
5.000	6.000	76.000	40.000	12.000	4	5.000
5.500	6.000	76.000	40.000	12.000	4	5.500
6.000	6.000	76.000	40.000	12.000	4	6.000
6.500	8.000	101.000	65.000	16.000	6	6.500
7.000	8.000	101.000	65.000	16.000	6	7.000
7.500	8.000	101.000	65.000	16.000	6	7.500
8.000	8.000	101.000	65.000	16.000	6	8.000
8.500	10.000	101.000	61.000	19.000	6	8.500
9.000	10.000	101.000	61.000	19.000	6	9.000
9.500	10.000	101.000	61.000	19.000	6	9.500
10.000	10.000	101.000	61.000	19.000	6	10.000
10.500	12.000	130.000	85.000	19.000	6	10.500

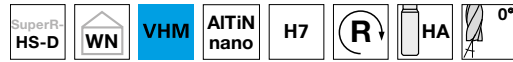
d1 mm	d2 h6 mm	l1 mm	l2 mm	l4 mm	Z	Code no.
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12.000	12.000	130.000	85.000	19.000	6	12.000
13.000	14.000	130.000	85.000	22.000	6	13.000
14.000	14.000	130.000	85.000	22.000	6	14.000
15.000	16.000	150.000	102.000	22.000	6	15.000
16.000	16.000	150.000	102.000	22.000	6	16.000
17.000	18.000	150.000	102.000	25.000	6	17.000
18.000	18.000	150.000	102.000	25.000	6	18.000
19.000	20.000	150.000	100.000	25.000	6	19.000
20.000	20.000	150.000	100.000	25.000	6	20.000

Carbide reamers

Solid carbide high-performance reamers

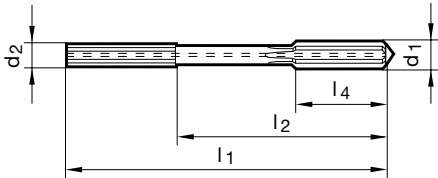


Catalogue no. 72871



P	M	K	N	S	H
●	●	○		●	●

- coolant supply through longitudinal grooves on shank, for reaming through holes
- straight flutes, with extremely unequal flute spacing
- for highest cutting rates and exceptional hole quality
- straight shank tol. h6 for clamping in hydraulic chucks and shrink fit chucks
- considerable process cost saving potential



d1 mm	d2 h6 mm	l1 mm	l2 mm	l4 mm	Z	Code no.
2.000	4.000	50.000	22.000	8.000	4	2.000
2.500	4.000	50.000	22.000	8.000	4	2.500
3.000	4.000	68.000	40.000	12.000	4	3.000
3.500	4.000	68.000	40.000	12.000	4	3.500
4.000	4.000	68.000	40.000	12.000	4	4.000
4.500	6.000	76.000	40.000	12.000	4	4.500
5.000	6.000	76.000	40.000	12.000	4	5.000
5.500	6.000	76.000	40.000	12.000	4	5.500
6.000	6.000	76.000	40.000	12.000	4	6.000
6.500	8.000	101.000	65.000	16.000	6	6.500
7.000	8.000	101.000	65.000	16.000	6	7.000
7.500	8.000	101.000	65.000	16.000	6	7.500
8.000	8.000	101.000	65.000	16.000	6	8.000
8.500	10.000	101.000	61.000	19.000	6	8.500
9.000	10.000	101.000	61.000	19.000	6	9.000
9.500	10.000	101.000	61.000	19.000	6	9.500
10.000	10.000	101.000	61.000	19.000	6	10.000
10.500	12.000	130.000	85.000	19.000	6	10.500

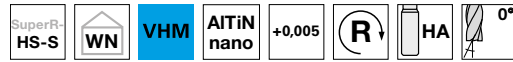
d1 mm	d2 h6 mm	l1 mm	l2 mm	l4 mm	Z	Code no.
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13.000	14.000	130.000	85.000	22.000	6	13.000
14.000	14.000	130.000	85.000	22.000	6	14.000
15.000	16.000	150.000	102.000	22.000	6	15.000
16.000	16.000	150.000	102.000	22.000	6	16.000
17.000	18.000	150.000	102.000	25.000	6	17.000
18.000	18.000	150.000	102.000	25.000	6	18.000
19.000	20.000	150.000	100.000	25.000	6	19.000
20.000	20.000	150.000	100.000	25.000	6	20.000

Carbide reamers

Solid carbide high-performance reamers

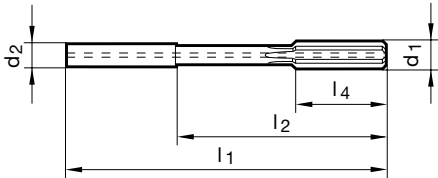


Catalogue no. 72872



P	M	K	N	S	H
●	●	○	●	●	●

- with axial coolant duct, for reaming blind holes
- for highest cutting rates and exceptional hole quality
- straight flutes, with extremely unequal flute spacing
- straight shank tol. h6 for clamping in hydraulic chucks and shrink fit chucks
- considerable process cost saving potential



d1 mm	d2 h6 mm	l1 mm	l2 mm	l4 mm	Z	Code no.
1.970	4.000	50.000	22.000	8.000	4	1.970
1.980	4.000	50.000	22.000	8.000	4	1.980
1.990	4.000	50.000	22.000	8.000	4	1.990
2.000	4.000	50.000	22.000	8.000	4	2.000
2.010	4.000	50.000	22.000	8.000	4	2.010
2.020	4.000	50.000	22.000	8.000	4	2.020
2.030	4.000	50.000	22.000	8.000	4	2.030
2.970	4.000	68.000	40.000	12.000	4	2.970
2.980	4.000	68.000	40.000	12.000	4	2.980
2.990	4.000	68.000	40.000	12.000	4	2.990
3.000	4.000	68.000	40.000	12.000	4	3.000
3.010	4.000	68.000	40.000	12.000	4	3.010
3.020	4.000	68.000	40.000	12.000	4	3.020
3.030	4.000	68.000	40.000	12.000	4	3.030
3.970	4.000	68.000	40.000	12.000	4	3.970
3.980	4.000	68.000	40.000	12.000	4	3.980
3.990	4.000	68.000	40.000	12.000	4	3.990
4.000	4.000	68.000	40.000	12.000	4	4.000
4.010	4.000	68.000	40.000	12.000	4	4.010
4.020	4.000	68.000	40.000	12.000	4	4.020
4.030	4.000	68.000	40.000	12.000	4	4.030
4.970	6.000	76.000	40.000	12.000	4	4.970
4.980	6.000	76.000	40.000	12.000	4	4.980
4.990	6.000	76.000	40.000	12.000	4	4.990
5.000	6.000	76.000	40.000	12.000	4	5.000
5.010	6.000	76.000	40.000	12.000	4	5.010
5.020	6.000	76.000	40.000	12.000	4	5.020
5.030	6.000	76.000	40.000	12.000	4	5.030
5.970	6.000	76.000	40.000	12.000	4	5.970
5.980	6.000	76.000	40.000	12.000	4	5.980

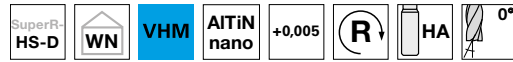
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6.010	6.000	76.000	40.000	12.000	4	6.010
6.020	6.000	76.000	40.000	12.000	4	6.020
6.030	6.000	76.000	40.000	12.000	4	6.030
7.000	8.000	101.000	65.000	16.000	6	7.000
7.970	8.000	101.000	65.000	16.000	6	7.970
7.980	8.000	101.000	65.000	16.000	6	7.980
7.990	8.000	101.000	65.000	16.000	6	7.990
8.000	8.000	101.000	65.000	16.000	6	8.000
8.010	8.000	101.000	65.000	16.000	6	8.010
8.020	8.000	101.000	65.000	16.000	6	8.020
8.030	8.000	101.000	65.000	16.000	6	8.030
9.000	10.000	101.000	61.000	19.000	6	9.000
9.970	10.000	101.000	61.000	19.000	6	9.970
9.980	10.000	101.000	61.000	19.000	6	9.980
9.990	10.000	101.000	61.000	19.000	6	9.990
10.000	10.000	101.000	61.000	19.000	6	10.000
10.010	10.000	101.000	61.000	19.000	6	10.010
10.020	10.000	101.000	61.000	19.000	6	10.020
10.030	10.000	101.000	61.000	19.000	6	10.030
11.000	12.000	130.000	85.000	19.000	6	11.000
11.970	12.000	130.000	85.000	19.000	6	11.970
11.980	12.000	130.000	85.000	19.000	6	11.980
11.990	12.000	130.000	85.000	19.000	6	11.990
12.000	12.000	130.000	85.000	19.000	6	12.000
12.010	12.000	130.000	85.000	19.000	6	12.010
12.020	12.000	130.000	85.000	19.000	6	12.020
12.030	12.000	130.000	85.000	19.000	6	12.030

Carbide reamers

Solid carbide high-performance reamers

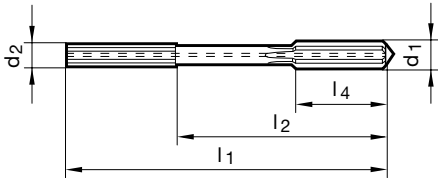


Catalogue no. 72873



P	M	K	N	S	H
●	●	○		●	●

- coolant supply through longitudinal grooves on shank, for reaming through holes
- straight flutes, with extremely unequal flute spacing
- for highest cutting rates and exceptional hole quality
- straight shank tol. h6 for clamping in hydraulic chucks and shrink fit chucks
- considerable process cost saving potential



d1 mm	d2 h6 mm	l1 mm	l2 mm	l4 mm	Z	Code no.
1.970	4.000	50.000	22.000	8.000	4	1.970
1.980	4.000	50.000	22.000	8.000	4	1.980
1.990	4.000	50.000	22.000	8.000	4	1.990
2.000	4.000	50.000	22.000	8.000	4	2.000
2.010	4.000	50.000	22.000	8.000	4	2.010
2.020	4.000	50.000	22.000	8.000	4	2.020
2.030	4.000	50.000	22.000	8.000	4	2.030
2.970	4.000	68.000	40.000	12.000	4	2.970
2.980	4.000	68.000	40.000	12.000	4	2.980
2.990	4.000	68.000	40.000	12.000	4	2.990
3.000	4.000	68.000	40.000	12.000	4	3.000
3.010	4.000	68.000	40.000	12.000	4	3.010
3.020	4.000	68.000	40.000	12.000	4	3.020
3.030	4.000	68.000	40.000	12.000	4	3.030
3.970	4.000	68.000	40.000	12.000	4	3.970
3.980	4.000	68.000	40.000	12.000	4	3.980
3.990	4.000	68.000	40.000	12.000	4	3.990
4.000	4.000	68.000	40.000	12.000	4	4.000
4.010	4.000	68.000	40.000	12.000	4	4.010
4.020	4.000	68.000	40.000	12.000	4	4.020
4.030	4.000	68.000	40.000	12.000	4	4.030
4.970	6.000	76.000	40.000	12.000	4	4.970
4.980	6.000	76.000	40.000	12.000	4	4.980
4.990	6.000	76.000	40.000	12.000	4	4.990
5.000	6.000	76.000	40.000	12.000	4	5.000
5.010	6.000	76.000	40.000	12.000	4	5.010
5.020	6.000	76.000	40.000	12.000	4	5.020
5.030	6.000	76.000	40.000	12.000	4	5.030
5.970	6.000	76.000	40.000	12.000	4	5.970
5.980	6.000	76.000	40.000	12.000	4	5.980

d1 mm	d2 h6 mm	l1 mm	l2 mm	l4 mm	Z	Code no.
5.990	6.000	76.000	40.000	12.000	4	5.990
6.000	6.000	76.000	40.000	12.000	4	6.000
6.010	6.000	76.000	40.000	12.000	4	6.010
6.020	6.000	76.000	40.000	12.000	4	6.020
6.030	6.000	76.000	40.000	12.000	4	6.030
7.000	8.000	101.000	65.000	16.000	6	7.000
7.970	8.000	101.000	65.000	16.000	6	7.970
7.980	8.000	101.000	65.000	16.000	6	7.980
7.990	8.000	101.000	65.000	16.000	6	7.990
8.000	8.000	101.000	65.000	16.000	6	8.000
8.010	8.000	101.000	65.000	16.000	6	8.010
8.020	8.000	101.000	65.000	16.000	6	8.020
8.030	8.000	101.000	65.000	16.000	6	8.030
9.000	10.000	101.000	61.000	19.000	6	9.000
9.970	10.000	101.000	61.000	19.000	6	9.970
9.980	10.000	101.000	61.000	19.000	6	9.980
9.990	10.000	101.000	61.000	19.000	6	9.990
10.000	10.000	101.000	61.000	19.000	6	10.000
10.010	10.000	101.000	61.000	19.000	6	10.010
10.020	10.000	101.000	61.000	19.000	6	10.020
10.030	10.000	101.000	61.000	19.000	6	10.030
11.000	12.000	130.000	85.000	19.000	6	11.000
11.970	12.000	130.000	85.000	19.000	6	11.970
11.980	12.000	130.000	85.000	19.000	6	11.980
11.990	12.000	130.000	85.000	19.000	6	11.990
12.000	12.000	130.000	85.000	19.000	6	12.000
12.010	12.000	130.000	85.000	19.000	6	12.010
12.020	12.000	130.000	85.000	19.000	6	12.020
12.030	12.000	130.000	85.000	19.000	6	12.030

Carbide reamers

Solid carbide high-performance reamers

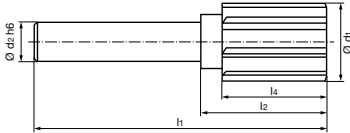


Catalogue no. 72874



P	M	K	N	S	H
●	●	○		●	●

- for highest cutting rates and exceptional hole quality
- with axial coolant duct, for reaming blind holes



d1 mm	d2 h6 mm	l1 mm	l2 mm	l4 mm	Z	Code no.
14.000	6.000	66.000	30.000	25.000	8	14.000
15.000	6.000	66.000	30.000	25.000	8	15.000
16.000	8.000	66.000	30.000	25.000	8	16.000
18.000	8.000	66.000	30.000	25.000	8	18.000
20.000	10.000	70.000	30.000	25.000	8	20.000
22.000	10.000	70.000	30.000	25.000	8	22.000
24.000	12.000	75.000	30.000	25.000	8	24.000
25.000	12.000	75.000	30.000	25.000	8	25.000
26.000	12.000	75.000	30.000	25.000	8	26.000
28.000	12.000	75.000	30.000	25.000	8	28.000
30.000	16.000	78.000	30.000	25.000	8	30.000
32.000	16.000	78.000	30.000	25.000	8	32.000
34.000	20.000	80.000	30.000	25.000	8	34.000
36.000	20.000	80.000	30.000	25.000	8	36.000
38.000	20.000	80.000	30.000	25.000	8	38.000
40.000	20.000	80.000	30.000	25.000	8	40.000
42.000	20.000	80.000	30.000	25.000	8	42.000

Carbide reamers

Solid carbide high-performance reamers

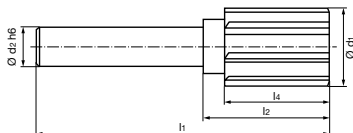


Catalogue no. 72875



P	M	K	N	S	H
●	●	○		●	●

- for highest cutting rates and exceptional hole quality
- with radial coolant supply and spiral point for optimal chip evacuation in feed direction when machining through holes



d1 mm	d2 h6 mm	l1 mm	l2 mm	l4 mm	Z	Code no.
14.000	6.000	66.000	30.000	25.000	8	14.000
15.000	6.000	66.000	30.000	25.000	8	15.000
16.000	8.000	66.000	30.000	25.000	8	16.000
18.000	8.000	66.000	30.000	25.000	8	18.000
20.000	10.000	70.000	30.000	25.000	8	20.000
22.000	10.000	70.000	30.000	25.000	8	22.000
24.000	12.000	75.000	30.000	25.000	8	24.000
25.000	12.000	75.000	30.000	25.000	8	25.000
26.000	12.000	75.000	30.000	25.000	8	26.000
28.000	12.000	75.000	30.000	25.000	8	28.000
30.000	16.000	78.000	30.000	25.000	8	30.000
32.000	16.000	78.000	30.000	25.000	8	32.000
34.000	20.000	80.000	30.000	25.000	8	34.000
36.000	20.000	80.000	30.000	25.000	8	36.000
38.000	20.000	80.000	30.000	25.000	8	38.000
40.000	20.000	80.000	30.000	25.000	8	40.000
42.000	20.000	80.000	30.000	25.000	8	42.000

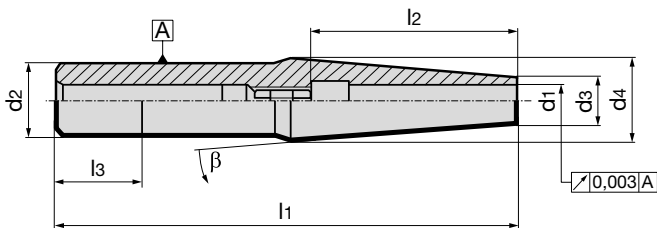
Shrink fit chucks

Shrink fit extensions



Catalogue no. 78719

- for clamping in hydraulic chucks or shrink fit chucks
- suitable for internal cooling
- for carbide tool shanks in tolerance h6 (from d1 14 mm also HSS possible)
- special designs on request



d1 h6 mm	d2 h6 mm	d3 mm	d4 mm	l1 mm	l2 ± mm	l3 mm	β °	Code no.
6.00	12.00	10.00	12.00	125.00	38.00	45.00	3	6.012
6.00	12.00	10.00	12.20	200.00	38.00	45.00	3	6.312
8.00	14.00	12.00	14.00	125.00	38.00	45.00	3	8.014
8.00	14.00	12.00	14.20	200.00	38.00	45.00	3	8.314
10.00	16.00	14.00	16.00	160.00	42.00	48.00	3	10.116
10.00	16.00	14.00	16.20	250.00	42.00	48.00	3	10.316
12.00	20.00	16.00	20.00	160.00	47.00	50.00	3	12.120
12.00	20.00	16.00	20.20	250.00	47.00	50.00	3	12.320
16.00	25.00	22.00	25.00	160.00	50.00	56.00	3	16.225
16.00	25.00	22.00	25.20	250.00	50.00	56.00	3	16.325
20.00	32.00	27.00	32.00	160.00	52.00	60.00	3	20.332
20.00	32.00	27.00	32.20	250.00	52.00	60.00	3	20.432

REAMERS

Questionnaire for special solutions

Quantity

_____ (minimum quantity 5 pieces)

similar to standard item _____

Material

Material to be cut _____

Tensile strength/hardness _____ N/mm² HRC

Workpiece


Reaming depth _____ mm

Hole diameter-Ø _____ mm

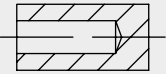
Hole tolerance _____

Hole type

through hole



blind hole



Coolant

external

internal

_____ coolant pressure in bar

Tool material

solid carbide

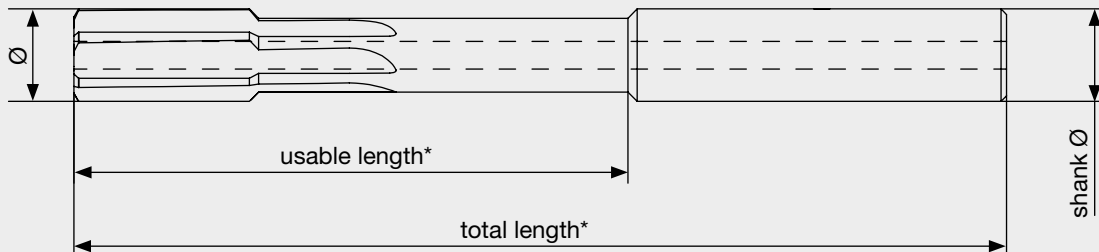
carbide head

HSS-E

cermet head

Super R-HS

Dimensions



Coating

no yes _____

special feature _____

*(deviation from standard)

Contact

Company: _____

Company stamp

Contact person: _____

Telephone/Fax: _____

Date: _____

Email address: _____

Signature: _____

SuperR-HS Reamers

Application recommendations

Feed column								
Code-letter	E	F	G	H	I	J		
Tool-Ø mm	3.15	0.080	0.100	0.125	0.300	0.500	0.800	f (mm/rev)
	4.00	0.100	0.125	0.160	0.300	0.500	1.000	
	5.00	0.100	0.125	0.160	0.400	0.600	1.000	
	6.30	0.125	0.160	0.200	0.400	0.700	1.200	
	8.00	0.160	0.200	0.250	0.600	1.000	1.800	
	10.00	0.200	0.250	0.315	0.600	1.200	1.800	
	12.50	0.200	0.250	0.315	0.800	1.200	2.000	
	16.00	0.250	0.315	0.400	0.800	1.400	2.200	
	20.00	0.315	0.400	0.500	0.800	1.400	2.200	
	25.00	0.400	0.500	0.630	1.000	1.600	2.500	
	31.50	0.400	0.500	0.630	1.000	2.000	3.000	
	40.00	0.500	0.630	0.800	1.200	2.000	3.000	
	50.00	0.630	0.800	1.000	1.400	2.200	3.200	

For an optimal cooling lubricant supply to SuperR-HS type D reamer cutting edges for through holes we recommend clamping in hydraulic or shrink fit chucks to the maximum clamping depth.

Tools with feed column no. in bold are preferred choices for listed material group.

Diameter	Recommended undersize
<6 mm	0.1-0.2 mm
<10 mm	0.2 mm
<16 mm	0.2-0.3 mm
<25 mm	0.3-0.4 mm
>25 mm	0.4 mm

- Lubricants:**
- cutting oil, highly activated, surface active lubricant with effective additives which chemically react and result in a special adhesive and abrasion reducing lubricant film.
 - soluble oil (emulsion)
 - without lubricant
 - air only

Material group	Materials examples, new designations (old designation in brackets) Figures in bold = material no. to DIN EN	Tensile strength MPa (N/mm ²)	Hardness	Coolant
General purpose steels	1.0035 S185(St33), 1.0486 P275N(StE285), 1.0345 P235GH(H1), 1.0425 P265GH(H2) 1.0050 E295 (St50-2), 1.0070 E360 (St70-2), 1.8937 P500NH (WStE500)	≤500 >500-850		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Free-cutting steels	1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36) 1.0727 46S20 (45S20), 1.0728 (60S20), 1.0757 46SPb20 (45SPb20)	≤850 850-1000		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Unalloyed tempering steels	1.0402 C22, 1.1178 C30E (Ck30) 1.0503 C45, 1.1191 C45E (Ck45) 1.0601 C60, 1.1221 C60E (Ck60)	≤ 700 700-850 850-1000		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Alloyed tempering steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	850-≤1000 1000-1200		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Unalloyed case hardened steels	1.0301 (C10), 1.1121 C10E (Ck10)	≤750		<input checked="" type="checkbox"/>
Alloyed case hardened steels	1.7043 38Cr4 1.5752 15NiCr13 (15NiCr13), 1.7131 16MnCr5, 1.7264 20CrMo5	850-≤1000 1000-1200		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Nitriding steels	1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	≥850-≤1000 >1000-1200		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4	≤850 >850-1000		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
High speed steels	1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3	≥650-1000		<input checked="" type="checkbox"/>
Spring steels	1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4 (51CrV4)		≤330 HB	<input checked="" type="checkbox"/>
Hardened steels	-		≤40-48 HRC >48-60 HRC	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Stainless steels, sulphured austenitic martensitic	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9 1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A) 1.4057 X20CrNi 17 2 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2	≤850 ≤850 ≤850		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Cast iron	0.6010 EN-GJL-100(GG10), 0.6020 EN-GJL-200(GG20) 0.6025 EN-GJL-250(GG25), 0.6035 EN-GJL-350(GG35)	850-≤1000 1000-1200		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Spheroidal graphite iron and malleable cast iron	0.7050 EN-GJS-500-7(GGG50), 0.8035 EN-GJMW-350-4(GTW35) 0.7070 EN-GJS-700-2(GGG70), 0.8170 EN-GJMB-700-2(GTS70)		≤240 HB <300 HB	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Chilled cast iron	-		≤350 HB	<input checked="" type="checkbox"/>
New Cast iron GGV	EN-GJV250 (GGV25), EN-GJV350 (GGV35) EN-GJV400 (GGV40), EN-GJV500 (GGV50), SiMo6			<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
New Cast iron ADI	EN-GJS-800-8 (ADI800), EN-GJS-1000-5 (ADI1000) EN-GJS-1200-2 (ADI1200), EN-GJS-1400-1 (ADI1400)	800-1000 1200-1400		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤1200		<input checked="" type="checkbox"/>
Ti and Ti-alloys	3.7024 Ti99,5, 3.7114 TiAl5Sn2,5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7165 TiAl6V4, 3.7184 TiAl4Mo4Sn2,5,-TiAl8Mo1V1	≤850 >850-1200		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Aluminium and Al-alloys	3.0255 Al99,5, 3.2315 AlMgSi1, 3.3515 AlMg1	≤400		<input checked="" type="checkbox"/>
Al wrought alloys	3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1,5	≤450		<input checked="" type="checkbox"/>
Al cast alloys ≤ 10 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9	≤600		<input checked="" type="checkbox"/>
> 10 % Si	3.2581 G-AlSi12, 3.2583 G-AlSi12Cu,-G-AlSi12CuNiMg	≤600		<input checked="" type="checkbox"/>
Magnesium alloys	3.5200 MgMn2, 3.5812.05 G-MgAl8Zn1, 3.5612.05 G-MgAl6Zn1	≤450		<input type="checkbox"/>
Copper, low alloyed	2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb	≤400		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Brass, short-chipping	2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2	≤600		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
long-chipping	2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5	≤600		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Bronze, short-chipping	2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn 2.0790 CuNi18Zn19Pb	≤600 >600-850		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2	≤850 >850-1000		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren		-	<input type="checkbox"/>
Thermoplastics	Plexiglas, Hostalen, Novodur, Makralon		-	<input checked="" type="checkbox"/>
Kevlar	Kevlar		-	<input type="checkbox"/>
Glass/carbon-concentr. plastics	GFK/CFK		-	<input type="checkbox"/>

since
1887



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