

HR 500 GT high-performance reamers

HR 500 GT high-performance reamers for applications above Ø 40.00 mm

For diameters above 40.00 mm Guhring's HR 500 technology is the first choice for high-performance reaming, ensuring maximum production rates while maintaining extreme precision and hole quality.

Variety for perfect machining results

The HR 500 GT reamer heads are available in the semi-standard range with short delivery times in the diameter range > 40.0 to 76.2 mm for the following material ranges:

- Carbide-tipped with nano-A coating for stainless steels, GGG 60, GG, special alloys and non-ferrous metals
- Carbide-tipped with nano-Si coating for the highest surface quality requirements in GG and GGG 60
- Carbide-tipped with Carbo-coating for Al machining
- Cermet-tipped for steels and GGG 40/50

In addition, we manufacture special tools to customer specific requirements on request.

Optimal cooling lubrication

Thanks to the newly developed, patent-pending, coolant directing screw at the face side of the HR 500 GT reamer heads, the coolant is accurately directed to the cutting edge, and it is impossible for chips to clog in the coolant ports. Thanks to the special design of the coolant directing screw it is possible to machine blind holes right up to the bottom of the hole. If necessary, the coolant directing screw can be completely removed for the machining of blind holes.



HR 500 GT high-performance reamers

High-performance reamers



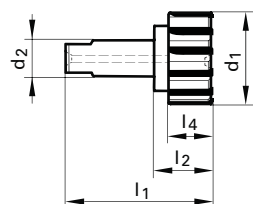
HR 500 GT as semi-standard

Straight shank ~ DIN 6535 HA tol. H6 with tang for optimal holding in extra length, slender hydraulic chuck Guhring no. 4290, but also in conventional hydraulic chucks or shrink fit chucks.

Minimum order quantity is 2.

When applying long hydraulic chucks with tang:

Eliminate play between chuck and reamer by rotating to stop prior to clamping.



HR 500 reamers are stocked in Germany

d1 mm	d2 h6 mm	l1 mm	l2 mm	l4 mm		Code no.
41.000	25.000	90.00	34.00	25.00	8	41.000
42.000	25.000	90.00	34.00	25.00	8	42.000
44.000	25.000	90.00	34.00	25.00	8	44.000
46.000	25.000	90.00	34.00	25.00	8	46.000
47.000	25.000	90.00	34.00	25.00	8	47.000
48.000	25.000	90.00	34.00	25.00	8	48.000
50.000	25.000	90.00	34.00	25.00	8	50.000
52.000	25.000	90.00	34.00	25.00	8	52.000
53.000	25.000	90.00	34.00	25.00	8	53.000
54.000	25.000	90.00	34.00	25.00	8	54.000
56.000	25.000	90.00	34.00	25.00	8	56.000
58.000	25.000	90.00	34.00	25.00	8	58.000
59.000	32.000	95.00	35.00	25.00	8	59.000
60.000	32.000	95.00	35.00	25.00	8	60.000
62.000	32.000	95.00	35.00	25.00	8	62.000
64.000	32.000	95.00	35.00	25.00	8	64.000
65.000	32.000	95.00	35.00	25.00	8	65.000
66.000	32.000	95.00	35.00	25.00	10	66.000
68.000	32.000	95.00	35.00	25.00	10	68.000
70.000	32.000	95.00	35.00	25.00	10	70.000
71.000	32.000	95.00	35.00	25.00	10	71.000
72.000	32.000	95.00	35.00	25.00	10	72.000
74.000	32.000	95.00	35.00	25.00	10	74.000
76.000	32.000	95.00	35.00	25.00	10	76.000

Cermet Tipped



Series no.

1040

1041

Surface finish

○

○

Speeds & Feeds

p. 23

p. 23



EDP Number

9010400410000	9010410410000
9010400420000	9010410420000
9010400440000	9010410440000
9010400460000	9010410460000
9010400470000	9010410470000
9010400480000	9010410480000
9010400500000	9010410500000
9010400520000	9010410520000
9010400530000	9010410530000
9010400540000	9010410540000
9010400560000	9010410560000
9010400580000	9010410580000
9010400590000	9010410590000
9010400600000	9010410600000
9010400620000	9010410620000
9010400640000	9010410640000
9010400650000	9010410650000
9010400660000	9010410660000
9010400680000	9010410680000
9010400700000	9010410700000
9010400710000	9010410710000
9010400720000	9010410720000
9010400740000	9010410740000
9010400760000	9010410760000

TECHNICAL DATA

Series 1040 - 1041

Material group	Hardness		SFM	Feed Rate - IPR									
	HRc	Bhn		8 mm	10 mm	12.5 mm	16 mm	20 mm	25 mm	31.5 mm	40 mm	50 mm	> 50 mm
Common structural steels	-	≤ 150	330 - 590								0.0787	0.0866	0.0866
	≤ 32	≤ 301	330 - 590								0.0787	0.0866	0.0866
Free-cutting steels	≤ 25	≤ 255	330 - 590								0.0787	0.0866	0.0866
	≤ 32	≤ 301	330 - 590								0.0787	0.0866	0.0866
Unalloyed heat-treatable steels	≤ 20	≤ 220	330 - 590								0.0787	0.0866	0.0866
	≤ 25	≤ 255	330 - 590								0.0787	0.0866	0.0866
	≤ 32	≤ 301	330 - 590								0.0787	0.0866	0.0866
Alloyed heat-treatable steels	≤ 32	≤ 301	330 - 590								0.0787	0.0866	0.0866
	≤ 43	≤ 402	260 - 395								0.0472	0.0551	0.0630
Unalloyed case hardened steels	≤ 25	≤ 255	330 - 590								0.0787	0.0866	0.0866
Alloyed case hardened steels	≤ 32	≤ 301	330 - 590								0.0787	0.0866	0.0866
	≤ 43	≤ 402	260 - 395								0.0472	0.0551	0.0630
Nitriding steels	≤ 32	≤ 301	330 - 590								0.0787	0.0866	0.0866
	≤ 43	≤ 402	260 - 395								0.0472	0.0551	0.0630
Tool steels	≤ 25	≤ 255	330 - 590								0.0787	0.0866	0.0866
	≤ 43	≤ 402	260 - 395								0.0472	0.0551	0.0630
High speed steels	≤ 43	≤ 402											
Spring steels	≤ 38	≤ 354	330 - 395								0.0472	0.0551	0.0630
Stainless steels, sulphured	≤ 28	≤ 273											
austenitic	≤ 36	≤ 337	130 - 260										
martensitic	≤ 46	≤ 435	195 - 395										
Hardened steels	≤ 48	≤ 460											
	≤ 66	-											
Cast iron	≤ 23	≤ 242											
	≤ 38	≤ 354											
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	395 - 985								0.0248	0.0315	0.0394
	≤ 38	≤ 354											
Chilled cast iron	≤ 38	≤ 354											
New cast materials GGV	≤ 20	≤ 220											
	≤ 32	≤ 301											
New cast materials ADI	≤ 32	≤ 301											
	≤ 43	≤ 402											
Special alloys													
Ti and Ti-alloys													
Aluminium and Al-alloys	-	≤ 120											
Al wrought alloys	-	≤ 200											
Al cast alloys ≤ 10 % Si	-	≤ 180											
> 10 % Si	-	≤ 180											
Magnesium alloys	-	≤ 120											
Copper, low-alloyed	-	≤ 150											
Brass, short-chipping	-	≤ 180											
long-chipping	-	≤ 180											
Bronze, short-chipping	-	≤ 180											
	≤ 25	≤ 255											
Bronze, long-chipping	≤ 25	≤ 255											
	≤ 32	≤ 301											

Not recommended for these materials

Series 1548 - 1549

Material group	Hardness		SFM	Feed Rate - IPR									
	HRc	Bhn		8 mm	10 mm	12.5 mm	16 mm	20 mm	25 mm	31.5 mm	40 mm	50 mm	> 50 mm
Common structural steels	-	≤ 150	395 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
	≤ 32	≤ 301	395 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
Free-cutting steels	≤ 25	≤ 255	395 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
	≤ 32	≤ 301	395 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
Unalloyed heat-treatable steels	≤ 20	≤ 220	395 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
	≤ 25	≤ 255	395 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
	≤ 32	≤ 301	395 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
Alloyed heat-treatable steels	≤ 32	≤ 301	395 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
	≤ 43	≤ 402	395 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
Unalloyed case hardened steels	≤ 25	≤ 255	395 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
Alloyed case hardened steels	≤ 32	≤ 301	395 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
	≤ 43	≤ 402	395 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
Nitriding steels	≤ 32	≤ 301	395 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
	≤ 43	≤ 402	395 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
Tool steels	≤ 25	≤ 255	395 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
	≤ 43	≤ 402	395 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
High speed steels	≤ 43	≤ 402	195 - 395				0.0551	0.0551	0.0630	0.0787	0.0787		
Spring steels	≤ 38	≤ 354	100 - 195				0.0157	0.0197	0.0248	0.0248	0.0315		
Stainless steels, sulphured	≤ 28	≤ 273	195 - 395				0.0315	0.0315	0.0394	0.0394	0.0472		
austenitic	≤ 36	≤ 337	130 - 260				0.0315	0.0315	0.0394	0.0394	0.0472		
martensitic	≤ 46	≤ 435	195 - 395				0.0315	0.0315	0.0394	0.0394	0.0472		
Hardened steels	≤ 48	≤ 460	130 - 195				0.0157	0.0197	0.0248	0.0248	0.0315		
	≤ 66	-	100 - 195				0.0157	0.0197	0.0248	0.0248	0.0315		
Cast iron	≤ 23	≤ 242	195 - 460				0.0551	0.0551	0.0630	0.0787	0.0787		
	≤ 38	≤ 354	195 - 460				0.0551	0.0551	0.0630	0.0787	0.0787		
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	395 - 820				0.0315	0.0315	0.0394	0.0394	0.0472		
	≤ 38	≤ 354	195 - 395				0.0315	0.0315	0.0394	0.0394	0.0472		
Chilled cast iron	≤ 38	≤ 354	100 - 165				0.0315	0.0315	0.0394	0.0394	0.0472		
New cast materials GGV	≤ 20	≤ 220					0.0551	0.0551	0.0630	0.0787	0.0787		
	≤ 32	≤ 301	260										
New cast materials ADI	≤ 32	≤ 301					0.0551	0.0551	0.0630	0.0787	0.0787		
	≤ 43	≤ 402	260										
Special alloys	≤ 54	≤ 549	130 - 195				0.0315	0.0315	0.0394	0.0394	0.0472		
Ti and Ti-alloys	≤ 25	≤ 255	130 - 195				0.0315	0.0315	0.0394	0.0394	0.0472		
	≤ 43	≤ 402	130 - 195				0.0315	0.0315	0.0394	0.0394	0.0472		
Aluminium and Al-alloys	-	≤ 120											
Al wrought alloys	-	≤ 200											
Al cast alloys ≤ 10 % Si	-	≤ 180											
> 10 % Si	-	≤ 180											
Magnesium alloys	-	≤ 120	260 - 525				0.0551	0.0551	0.0630	0.0787	0.0787		
Copper, low-alloyed	-	≤ 150											
Brass, short-chipping	-	≤ 180	330 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
long-chipping	-	≤ 180											
Bronze, short-chipping	-	≤ 180	330 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
	≤ 25	≤ 255	330 - 820				0.0551	0.0551	0.0630	0.0787	0.0787		
Bronze, long-chipping	≤ 25	≤ 255											
	≤ 32	≤ 301											
Duroplastics			260 - 655				0.0551	0.0551	0.0630	0.0787	0.0787		
Thermoplastics			260 - 655				0.0551	0.0551	0.0630	0.0787	0.0787		
Kevlar			260				0.0098	0.0124	0.0157	0.0157	0.0197		
Glass, carbon concentrated plastics			260				0.0098	0.0124	0.0157	0.0157	0.0197		



HR 500

HR 500

Solid carbide high-performance reamers
up to Ø 20 mm for universal application

HR 500 T NEW

Solid carbide reamer head for Ø 16-38 mm

HR 500 Cast

Solid carbide high-performance reamers
for the machining of GG and GGG achieving
optimal surface quality and efficiency

HR 500 Alu

Solid carbide high-performance reamers
for the machining of aluminium and AlSi-alloys

HR 500 G

Carbide-tipped or cermet-tipped high-performance
reamers from Ø 6 mm up to 40 mm

HR 500 GT

Carbide-tipped or cermet-tipped high-performance
reamers from Ø 40 mm up to 76.2 mm

USA Edition 2018

EXCLUSIVELINE®

Made by Guhring

HR 500 high-performance reamers Pictograms

Tool material	Solid Carbide Carbide Tipped Cermet Tipped
	Solid carbide Carbide tipped Cermet tipped
Internal cooling	
Standard	G to Guhring standard
Type	HR 500 S HR 500 T S HR 500 Guss S HR 500 Alu S HR 500 G S HR 500 GT S HR 500 D HR 500 T D HR 500 Guss D HR 500 Alu D HR 500 G D HR 500 GT D
	Blind hole (S) Through hole (D)
Cutting direction	R Right hand
Tolerance	H7 +0,005
Hole type	Through hole Blind hole
No. of cutting edges	
Shank form	HA
Helix angle	straight-fluted
Spacing	EU extremely unequal

Possible misprints or any type of intermediate changes do not entitle to any claims. All DIN marked products can be supplied deviating from the catalog dimensions as long as they correspond to the specified DIN standard.

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EXCLUSIVE[®]LINE

HR 500 high-performance reamers Program summary

Standard	Type	Tool illustration	Tool material	Surface finish	d1 (mm)	Gühring Series	Standard range page
	HR 500 S		Solid carbide		2.000 - 20.000	1685	8
	HR 500 S		Solid carbide		1.970 - 12.030	1675	9
	HR 500 D		Solid carbide		2.000 - 20.000	1686	8
	HR 500 D		Solid carbide		1.970 - 12.030	1676	9
	HR 500 T S		Solid carbide		16.000 - 38.000	1548	11
	HR 500 T D		Solid carbide		16.000 - 38.000	1549	11
	HR 500 Guss S		Solid carbide		3.000 - 20.000	1036	13
	HR 500 Guss D		Solid carbide		3.000 - 20.000	1037	13
	HR 500 Alu S		Solid carbide		4.000 - 20.000	1678	14
	HR 500 Alu D		Solid carbide		4.000 - 20.000	1679	14
	HR 500 G S		Carbide Tipped		22.000 - 40.000	1680	15
	HR 500 G S		Cermet Tipped		6.000 - 40.000	1682	16
	HR 500 G D		Carbide Tipped		22.000 - 40.000	1681	15
	HR 500 G D		Cermet Tipped		6.000 - 40.000	1683	16

HR 500 reamers are stocked in Germany

HR 500 high-performance reamers Program summary

Standard	Type	Tool illustration	Tool material	Surface finish	d1 (mm)	Gühring Series	Standard range page
	HR 500 GT S	 Semi-standard	Carbide Tipped		41.000 - 76.200	1038	19
	HR 500 GT S	 Semi-standard	Cermet Tipped		41.000 - 76.200	1040	18
	HR 500 GT D	 Semi-standard	Carbide Tipped		41.000 - 76.200	1039	19
	HR 500 GT D	 Semi-standard	Cermet Tipped		41.000 - 76.200	1041	18

HSK-A hydraulic chucks, extra length, for HR 500 GT

		HSK-A 63	4290	20
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Shrink fit extension for HR 500 T

			4719	20
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Tool selection for optimal results

			Ø ≤ 20 mm				Ø > 20 mm	
			Solid carbide HR 500 Universal		Solid carbide HR500 Guss	Solid carbide HR500 Alu	Carbide tipped HR500	Cermet tipped HR500
			1675	1676	1036	1678	1680/1038	1682/1040
			1685	1686	1037	1679	1681/1039	1683/1041
Steel	P	up to 1200 N/mm ²	●	●			○	●
Stainless steel	M		●	●			●	
Cast iron	K	GG	○	○	●		●	
		GGG 40/50	○	○	●		○	●
		GGG 60/70	○	○	●		●	
Aluminium	N					●		
Ti-special alloys	S	Ti-Basis	●	●			●	
		Ni-Basis	●	●			●	
Hardened steel	H	up to 48 HRC	●	●			○	
		up to 63 HRC	●	●				

● optimal suitability ○ limited suitability

Optimal diameters of pre-drilled holes

Recommended stock allowance, in mm			up to Ø6	up to Ø10	up to Ø16	up to Ø25	up to Ø40	above Ø40
all materials			Ø 0.1 - 0.2	Ø 0.2	Ø 0.2 - 0.3	Ø 0.3	Ø 0.3 - 0.4	Ø 0.4 - 0.5
Hardened steel	H	up to 48 HRC	Ø 0.1 - 0.2	Ø 0.2	Ø 0.2	Ø 0.2	Ø 0.3	Ø 0.3
		up to 63 HRC	Ø 0.1	Ø 0.1	Ø 0.1 - 0.2	Ø 0.2	Ø 0.2	Ø 0.2