



# 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**

**EXCLUSIVE**LINE®

Made by Guhring

## HR 500 high-performance reamers Pictograms

<b>Tool material</b>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px; text-align: center;"> <b>Solid Carbide</b> </div> <div style="border: 1px solid black; padding: 2px; text-align: center;"> <b>Carbide Tipped</b> </div> <div style="border: 1px solid black; padding: 2px; text-align: center;"> <b>Cermet Tipped</b> </div> </div> <p>Solid carbide    Carbide tipped    Cermet tipped</p>																								
<b>Internal cooling</b>																									
<b>Standard</b>	<div style="border: 1px solid black; padding: 2px; text-align: center;">  </div> <p>to Guhring standard</p>																								
<b>Type</b>	<table border="1" style="width: 100%; text-align: center; font-size: small;"> <tr> <td>HR 500 S</td> <td>HR 500 T S</td> <td>HR 500 Guss S</td> <td>HR 500 Alu S</td> <td>HR 500 G S</td> <td>HR 500 GT S</td> <td>HR 500 D</td> <td>HR 500 T D</td> <td>HR 500 Guss D</td> <td>HR 500 Alu D</td> <td>HR 500 G D</td> <td>HR 500 GT D</td> </tr> <tr> <td colspan="6">Blind hole (S)</td> <td colspan="6">Through hole (D)</td> </tr> </table>	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)					
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)																			
<b>Cutting direction</b>	<div style="border: 1px solid black; padding: 2px; text-align: center;">  </div> <p>Right hand</p>																								
<b>Tolerance</b>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px; text-align: center;">H7</div> <div style="border: 1px solid black; padding: 2px; text-align: center;">+0,005</div> </div>																								
<b>Hole type</b>	<table style="width: 100%; text-align: center;"> <tr> <td style="width: 50%;"></td> <td style="width: 50%;"></td> </tr> <tr> <td>Through hole</td> <td>Blind hole</td> </tr> </table>			Through hole	Blind hole																				
																									
Through hole	Blind hole																								
<b>No. of cutting edges</b>	<div style="border: 1px solid black; padding: 2px; text-align: center;">  </div>																								
<b>Shank form</b>	<div style="border: 1px solid black; padding: 2px; text-align: center;">  </div>																								
<b>Helix angle</b>	<div style="border: 1px solid black; padding: 2px; text-align: center;">  </div> <p>straight-fluted</p>																								
<b>Spacing</b>	<div style="border: 1px solid black; padding: 2px; text-align: center;">  </div> <p>extremely unequal</p>																								

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.

Guhring, Inc.  
1445 Commerce Ave., Brookfield, WI 53045  
(800) 776-6170 (262) 784-6730  
[www.guhring.com](http://www.guhring.com)

# EXCLUSIVE LINE®

## HR 500 high-performance reamers



# HR 500 HIGH-PERFORMANCE REAMERS

## Precise reaming through a wide range of diameters

HR 500 high-performance reamers are the optimal tooling solution for all diameters from 1.97 to 76.2 mm.

To apply the optimally designed HR 500 high-performance reamer a range of various HR 500 options is available.

- Solid carbide reamers up to diameter 38.00 mm
- Carbide-tipped and cermet-tipped reamers up to diameter 76.2 mm
- Solid carbide reamers for intermediate dimensions and stepped tools in HR 500 Active program

# 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

# 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 GT S		Carbide Tipped		41.000 - 76.200	1038	19
	HR 500 GT S		Cermet Tipped		41.000 - 76.200	1040	18
	HR 500 GT D		Carbide Tipped		41.000 - 76.200	1039	19
	HR 500 GT D		Cermet Tipped		41.000 - 76.200	1041	18

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

		HSK-A 63	4290	20
--	--	----------	------	----

### Shrink fit extension for HR 500 T

		4719	20
--	--	------	----

### 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 <sup>2</sup>	●	●			○	●
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

# EXCLUSIVE LINE®

## HR 500 T – solid carbide head solution

now available  
as a standard tool

# HR 500 T

**With HR 500 T Guhring provides a solid carbide reamer head from 16 to 39.1 mm diameter.**

With HR 500 T reamers the successful solid carbide design of HR 500 T is being extended to 39.1 mm diameter. Its short and compact design offers an economical reaming solution while maintaining the high-performance benefits of the HR500 reamers..

Thanks to the universal HA shank HR 500 T can be flexibly combined with standard chucks and extension options. This unique advantage makes expensive special holders unnecessary, and offers a cost-efficient and reliable reaming operation.

### An overview of your advantages

- High-performance reamer ensures especially economical machining
- Flexible holder options thanks to HA shank
- Simple extension possible with shrink fit extension or hydraulic chuck
- Available as universal, cast iron or aluminium design options



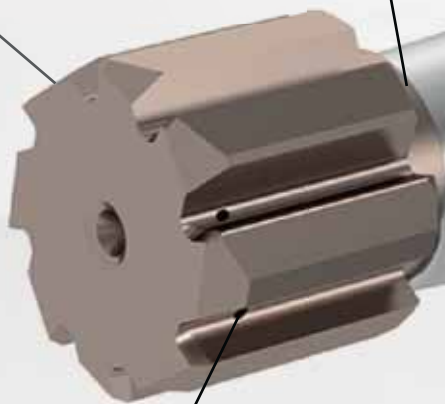
# EXCLUSIVE LINE®

## HR 500 T – versatile combination possibilities

### 3 options


- a** Standard option for universal application is nano-A coated
- K** Cast iron option with nano-Si coating is available as a special solution for the application in all cast irons
- N** With the Carbo-coated special solution for applications in aluminium, aluminium wrought alloys or AISi cast alloys can be machined.


### Concentricity check position



### Internal cooling



 **Blind hole design**  
with central  
coolant exit

 **Through hole design**  
with radial  
coolant delivery

### Wide-ranging extension possibilities

For applications with deep reaming depths and to provide clearance from the cutting diameter, HR 500 T can be combined with numerous extensions. For a cost-efficient price-to-performance ratio the **shrink fit extension (Guhring no. 4719)** can be used. When a slim holder is required and shrink fit is not an option, Guhring can provide the new **hydraulic chuck for clamping-Ø 10 mm**.

**NEW!**

Hydraulic chuck as  
a special holder from  
clamping-Ø 10 mm.



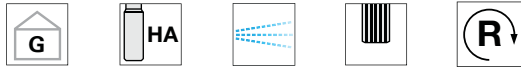
Shrink fit extension (Guhring no. 4719), p. 20)

### Flexible combination possibilities

For short reaming depths HR 500 T can be clamped in conventional hydraulic chucks, shrink fit chucks or other precision clamping chucks thanks to the standardized shank to DIN 6535-HA.

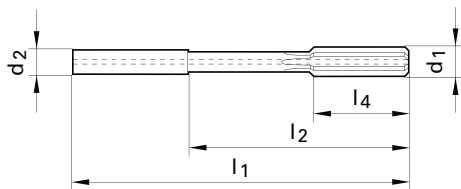
## HR 500 solid carbide high-performance reamers

### High-performance reamers



The solid carbide HR 500 reamer operates at unbelievably high cutting rates while producing extremely precise holes. Therefore, it offers considerable savings through process improvement and reliability.

Intermediate dimensions from Ø 2.0-20.1 mm can be produced as specials.



HR 500 reamers are stocked in Germany

d1	d2 h6	l1	l2	l4		Code no.
mm	mm	mm	mm	mm		
2.000	4.000	50.00	22.00	8.00	4	2.000
2.500	4.000	50.00	22.00	8.00	4	2.500
3.000	4.000	68.00	40.00	12.00	4	3.000
3.500	4.000	68.00	40.00	12.00	4	3.500
4.000	4.000	68.00	40.00	12.00	4	4.000
4.500	6.000	76.00	40.00	12.00	4	4.500
5.000	6.000	76.00	40.00	12.00	4	5.000
5.500	6.000	76.00	40.00	12.00	4	5.500
6.000	6.000	76.00	40.00	12.00	4	6.000
6.500	8.000	101.00	65.00	16.00	6	6.500
7.000	8.000	101.00	65.00	16.00	6	7.000
7.500	8.000	101.00	65.00	16.00	6	7.500
8.000	8.000	101.00	65.00	16.00	6	8.000
8.500	10.000	101.00	61.00	19.00	6	8.500
9.000	10.000	101.00	61.00	19.00	6	9.000
9.500	10.000	101.00	61.00	19.00	6	9.500
10.000	10.000	101.00	61.00	19.00	6	10.000
10.500	12.000	130.00	85.00	19.00	6	10.500
11.000	12.000	130.00	85.00	19.00	6	11.000
11.500	12.000	130.00	85.00	19.00	6	11.500
12.000	12.000	130.00	85.00	19.00	6	12.000
13.000	14.000	130.00	85.00	22.00	6	13.000
14.000	14.000	130.00	85.00	22.00	6	14.000
15.000	16.000	150.00	102.00	22.00	6	15.000
16.000	16.000	150.00	102.00	22.00	6	16.000
17.000	18.000	150.00	102.00	25.00	6	17.000
18.000	18.000	150.00	102.00	25.00	6	18.000
19.000	20.000	150.00	100.00	25.00	6	19.000
20.000	20.000	150.00	100.00	25.00	6	20.000

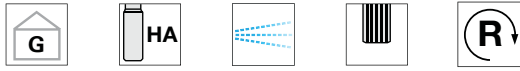
Solid carbide			
Series no.	1685	1686	
Surface finish			
Speeds & Feeds	p. 24 	p. 24 	



EDP Number	
<a href="#">9016850020000</a>	<a href="#">9016860020000</a>
<a href="#">9016850025000</a>	<a href="#">9016860025000</a>
<a href="#">9016850030000</a>	<a href="#">9016860030000</a>
<a href="#">9016850035000</a>	<a href="#">9016860035000</a>
<a href="#">9016850040000</a>	<a href="#">9016860040000</a>
<a href="#">9016850045000</a>	<a href="#">9016860045000</a>
<a href="#">9016850050000</a>	<a href="#">9016860050000</a>
<a href="#">9016850055000</a>	<a href="#">9016860055000</a>
<a href="#">9016850060000</a>	<a href="#">9016860060000</a>
<a href="#">9016850065000</a>	<a href="#">9016860065000</a>
<a href="#">9016850070000</a>	<a href="#">9016860070000</a>
<a href="#">9016850075000</a>	<a href="#">9016860075000</a>
<a href="#">9016850080000</a>	<a href="#">9016860080000</a>
<a href="#">9016850085000</a>	<a href="#">9016860085000</a>
<a href="#">9016850090000</a>	<a href="#">9016860090000</a>
<a href="#">9016850095000</a>	<a href="#">9016860095000</a>
<a href="#">9016850100000</a>	<a href="#">9016860100000</a>
<a href="#">9016850105000</a>	<a href="#">9016860105000</a>
<a href="#">9016850110000</a>	<a href="#">9016860110000</a>
<a href="#">9016850115000</a>	<a href="#">9016860115000</a>
<a href="#">9016850120000</a>	<a href="#">9016860120000</a>
<a href="#">9016850130000</a>	<a href="#">9016860130000</a>
<a href="#">9016850140000</a>	<a href="#">9016860140000</a>
<a href="#">9016850150000</a>	<a href="#">9016860150000</a>
<a href="#">9016850160000</a>	<a href="#">9016860160000</a>
<a href="#">9016850170000</a>	<a href="#">9016860170000</a>
<a href="#">9016850180000</a>	<a href="#">9016860180000</a>
<a href="#">9016850190000</a>	<a href="#">9016860190000</a>
<a href="#">9016850200000</a>	<a href="#">9016860200000</a>

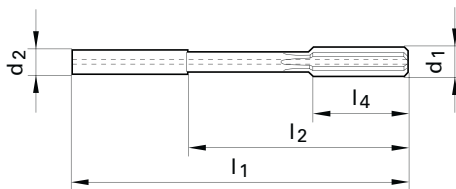
## HR 500 solid carbide high-performance reamers

### High-performance reamers



The solid carbide HR 500 reamer operates at unbelievably high cutting rates while producing extremely precise holes. Therefore, it offers considerable savings through process improvement and reliability.

Intermediate dimensions from Ø 2.0-20.1 mm can be produced as specials.



HR 500 reamers are stocked in Germany

d1	d2 h6	l1	l2	l4		Code no.
mm	mm	mm	mm	mm		
1.970	4.000	50.00	22.00	8.00	4	1.970
1.980	4.000	50.00	22.00	8.00	4	1.980
1.990	4.000	50.00	22.00	8.00	4	1.990
2.000	4.000	50.00	22.00	8.00	4	2.000
2.010	4.000	50.00	22.00	8.00	4	2.010
2.030	4.000	50.00	22.00	8.00	4	2.030
2.970	4.000	68.00	40.00	12.00	4	2.970
2.980	4.000	68.00	40.00	12.00	4	2.980
2.990	4.000	68.00	40.00	12.00	4	2.990
3.000	4.000	68.00	40.00	12.00	4	3.000
3.010	4.000	68.00	40.00	12.00	4	3.010
3.020	4.000	68.00	40.00	12.00	4	3.020
3.030	4.000	68.00	40.00	12.00	4	3.030
3.970	4.000	68.00	40.00	12.00	4	3.970
3.980	4.000	68.00	40.00	12.00	4	3.980
3.990	4.000	68.00	40.00	12.00	4	3.990
4.000	4.000	68.00	40.00	12.00	4	4.000
4.010	4.000	68.00	40.00	12.00	4	4.010
4.020	4.000	68.00	40.00	12.00	4	4.020
4.030	4.000	68.00	40.00	12.00	4	4.030
4.970	6.000	76.00	40.00	12.00	4	4.970
4.980	6.000	76.00	40.00	12.00	4	4.980
4.990	6.000	76.00	40.00	12.00	4	4.990
5.000	6.000	76.00	40.00	12.00	4	5.000
5.010	6.000	76.00	40.00	12.00	4	5.010
5.020	6.000	76.00	40.00	12.00	4	5.020
5.030	6.000	76.00	40.00	12.00	4	5.030
5.970	6.000	76.00	40.00	12.00	4	5.970
5.980	6.000	76.00	40.00	12.00	4	5.980
5.990	6.000	76.00	40.00	12.00	4	5.990

### Solid carbide



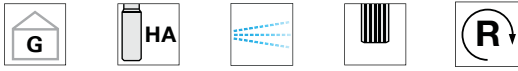
Series no.	1675	1676
Surface finish		
Speeds & Feeds	p. 24 	p. 24 



EDP Number	
<a href="#">9016750019700</a>	<a href="#">9016760019700</a>
<a href="#">9016750019800</a>	<a href="#">9016760019800</a>
<a href="#">9016750019900</a>	<a href="#">9016760019900</a>
<a href="#">9016750020000</a>	<a href="#">9016760020000</a>
<a href="#">9016750020100</a>	<a href="#">9016760020100</a>
<a href="#">9016750020200</a>	<a href="#">9016760020200</a>
<a href="#">9016750029700</a>	<a href="#">9016760029700</a>
<a href="#">9016750029800</a>	<a href="#">9016760029800</a>
<a href="#">9016750029900</a>	<a href="#">9016760029900</a>
<a href="#">9016750030000</a>	<a href="#">9016760030000</a>
<a href="#">9016750030100</a>	<a href="#">9016760030100</a>
<a href="#">9016750030200</a>	<a href="#">9016760030200</a>
<a href="#">9016750030300</a>	<a href="#">9016760030300</a>
<a href="#">9016750039700</a>	<a href="#">9016760039700</a>
<a href="#">9016750039800</a>	<a href="#">9016760039800</a>
<a href="#">9016750039900</a>	<a href="#">9016760039900</a>
<a href="#">9016750040000</a>	<a href="#">9016760040000</a>
<a href="#">9016750040100</a>	<a href="#">9016760040100</a>
<a href="#">9016750040200</a>	<a href="#">9016760040200</a>
<a href="#">9016750040300</a>	<a href="#">9016760040300</a>
<a href="#">9016750049700</a>	<a href="#">9016760049700</a>
<a href="#">9016750049800</a>	<a href="#">9016760049800</a>
<a href="#">9016750049900</a>	<a href="#">9016760049900</a>
<a href="#">9016750050000</a>	<a href="#">9016760050000</a>
<a href="#">9016750050100</a>	<a href="#">9016760050100</a>
<a href="#">9016750050200</a>	<a href="#">9016760050200</a>
<a href="#">9016750050300</a>	<a href="#">9016760050300</a>
<a href="#">9016750059700</a>	<a href="#">9016760059700</a>
<a href="#">9016750059800</a>	<a href="#">9016760059800</a>
<a href="#">9016750059900</a>	<a href="#">9016760059900</a>

## HR 500 solid carbide high-performance reamers

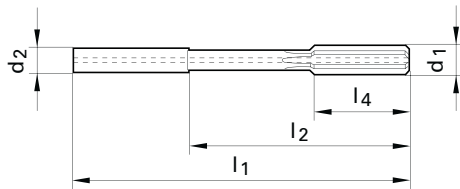
### High-performance reamers



### Solid carbide

The solid carbide HR 500 reamer operates at unbelievably high cutting rates while producing extremely precise holes. Therefore, it offers considerable savings through process improvement and reliability.

Intermediate dimensions from Ø 2.0-20.1 mm can be produced as specials.



HR 500 reamers are stocked in Germany

Surface finish  
Speeds & Feeds

HR 500 S



HR 500 D



1675

1676



p. 24

p. 24



+0,005



+0,005

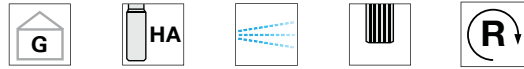


d1	d2 h6	l1	l2	l4		Code no.
mm	mm	mm	mm	mm		
6.000	6.000	76.00	40.00	12.00	4	6.000
6.010	6.000	76.00	40.00	12.00	4	6.010
6.020	6.000	76.00	40.00	12.00	4	6.020
6.030	6.000	76.00	40.00	12.00	4	6.030
7.000	8.000	101.00	65.00	16.00	6	7.000
7.970	8.000	101.00	65.00	16.00	6	7.970
7.980	8.000	101.00	65.00	16.00	6	7.980
7.990	8.000	101.00	65.00	16.00	6	7.990
8.000	8.000	101.00	65.00	16.00	6	8.000
8.010	8.000	101.00	65.00	16.00	6	8.010
8.020	8.000	101.00	65.00	16.00	6	8.020
8.030	8.000	101.00	65.00	16.00	6	8.030
9.000	10.000	101.00	61.00	19.00	6	9.000
9.970	10.000	101.00	61.00	19.00	6	9.970
9.980	10.000	101.00	61.00	19.00	6	9.980
9.990	10.000	101.00	61.00	19.00	6	9.990
10.000	10.000	101.00	61.00	19.00	6	10.000
10.010	10.000	101.00	61.00	19.00	6	10.010
10.020	10.000	101.00	61.00	19.00	6	10.020
10.030	10.000	101.00	61.00	19.00	6	10.030
11.000	12.000	130.00	85.00	19.00	6	11.000
11.970	12.000	130.00	85.00	19.00	6	11.970
11.980	12.000	130.00	85.00	19.00	6	11.980
11.990	12.000	130.00	85.00	19.00	6	11.990
12.000	12.000	130.00	85.00	19.00	6	12.000
12.010	12.000	130.00	85.00	19.00	6	12.010
12.020	12.000	130.00	85.00	19.00	6	12.020
12.030	12.000	130.00	85.00	19.00	6	12.030

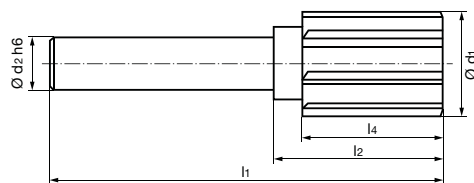
EDP Number	
<a href="#">9016750060000</a>	<a href="#">9016760060000</a>
<a href="#">9016750060100</a>	<a href="#">9016760060100</a>
<a href="#">9016750060200</a>	<a href="#">9016760060200</a>
<a href="#">9016750060300</a>	<a href="#">9016760060300</a>
<a href="#">9016750070000</a>	<a href="#">9016760070000</a>
<a href="#">9016750079700</a>	<a href="#">9016760079700</a>
<a href="#">9016750079800</a>	<a href="#">9016760079800</a>
<a href="#">9016750079900</a>	<a href="#">9016760079900</a>
<a href="#">9016750080000</a>	<a href="#">9016760080000</a>
<a href="#">9016750080100</a>	<a href="#">9016760080100</a>
<a href="#">9016750080200</a>	<a href="#">9016760080200</a>
<a href="#">9016750080300</a>	<a href="#">9016760080300</a>
<a href="#">9016750090000</a>	<a href="#">9016760090000</a>
<a href="#">9016750099700</a>	<a href="#">9016760099700</a>
<a href="#">9016750099800</a>	<a href="#">9016760099800</a>
<a href="#">9016750099900</a>	<a href="#">9016760099900</a>
<a href="#">9016750100000</a>	<a href="#">9016760100000</a>
<a href="#">9016750100100</a>	<a href="#">9016760100100</a>
<a href="#">9016750100200</a>	<a href="#">9016760100200</a>
<a href="#">9016750100300</a>	<a href="#">9016760100300</a>
<a href="#">9016750110000</a>	<a href="#">9016760110000</a>
<a href="#">9016750119700</a>	<a href="#">9016760119700</a>
<a href="#">9016750119800</a>	<a href="#">9016760119800</a>
<a href="#">9016750119900</a>	<a href="#">9016760119900</a>
<a href="#">9016750120000</a>	<a href="#">9016760120000</a>
<a href="#">9016750120100</a>	<a href="#">9016760120100</a>
<a href="#">9016750120200</a>	<a href="#">9016760120200</a>
<a href="#">9016750120300</a>	<a href="#">9016760120300</a>

## HR 500 T solid carbide high-performance reamers

### High-performance reamers



The solid carbide HR500 T reamer operates at maximum productivity. The blind hole design utilizes a central coolant hole, while the through hole design utilizes radial coolant holes and a spiral point to ensure proper chip evacuation. Intermediate dimensions from Ø 15.9 – 39.1 mm can be produced as specials.



HR 500 reamers are stocked in Germany

d1	d2 h6	l1	l2	l4		Code no.
mm	mm	mm	mm	mm		
16.000	8.000	66.00	30.00	25.00	8	16.000
18.000	8.000	66.00	30.00	25.00	8	18.000
20.000	10.000	70.00	30.00	25.00	8	20.000
22.000	10.000	70.00	30.00	25.00	8	22.000
24.000	12.000	75.00	30.00	25.00	8	24.000
25.000	12.000	75.00	30.00	25.00	8	25.000
26.000	12.000	75.00	30.00	25.00	8	26.000
28.000	12.000	75.00	30.00	25.00	8	28.000
30.000	16.000	78.00	30.00	25.00	8	30.000
32.000	16.000	78.00	30.00	25.00	8	32.000
34.000	20.000	80.00	30.00	25.00	8	34.000
36.000	20.000	80.00	30.00	25.00	8	36.000
38.000	20.000	80.00	30.00	25.00	8	38.000

### Solid carbide

HR 500 TS



HR 500 TD



Series no.

1548

1549

Surface finish

a

a

Speeds & Feeds

p. 23

p. 23



H7



H7



### EDP Number

<a href="#">9015480160000</a>	<a href="#">9015490160000</a>
<a href="#">9015480180000</a>	<a href="#">9015490180000</a>
<a href="#">9015480200000</a>	<a href="#">9015490200000</a>
<a href="#">9015480220000</a>	<a href="#">9015490220000</a>
<a href="#">9015480240000</a>	<a href="#">9015490240000</a>
<a href="#">9015480250000</a>	<a href="#">9015490250000</a>
<a href="#">9015480260000</a>	<a href="#">9015490260000</a>
<a href="#">9015480280000</a>	<a href="#">9015490280000</a>
<a href="#">9015480300000</a>	<a href="#">9015490300000</a>
<a href="#">9015480320000</a>	<a href="#">9015490320000</a>
<a href="#">9015480340000</a>	<a href="#">9015490340000</a>
<a href="#">9015480360000</a>	<a href="#">9015490360000</a>
<a href="#">9015480380000</a>	<a href="#">9015490380000</a>

HR 500 Cast – specialist for optimal surface finish

*Cast iron machining  
with only one tool*

## APPLICATION EXAMPLES

### **GG-30 brake housing**

Ø 18.00 mm H7  
Surface finish requirement  $R_a = 0.8$   
 $v_c = 200$  m/min  
 $f_u = 1.2$  mm/rev.

Tool life: 48 m

### **GGG-50 transmission housing**

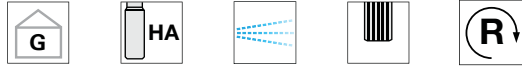
Ø 20.00 mm  
Surface finish requirement  $R_z = 10$   
 $v_c = 195$  m/min  
 $f_u = 1.1$  mm/rev.

Tool life: 66 m

The customer also machines GG-25 with the same tool and achieves optimal machining results.

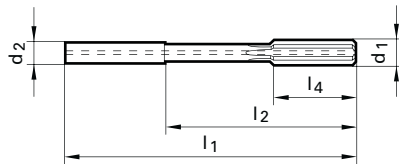
## HR 500 Cast solid carbide high-performance reamers

### High-performance reamers Cast



The solid carbide HR 500 reamer operates at unbelievably high cutting rates while producing extremely precise holes. Therefore, it offers considerable savings through process improvement and reliability.

Intermediate dimensions from Ø 2.0-20.1 mm can be produced as specials..



HR 500 reamers are stocked in Germany

d1	d2 h6	l1	l2	l4		Code no.
mm	mm	mm	mm	mm		
3.000	4.000	68.00	40.00	12.00	6	3.000
4.000	4.000	68.00	40.00	12.00	6	4.000
5.000	6.000	76.00	40.00	12.00	6	5.000
6.000	6.000	76.00	40.00	12.00	6	6.000
7.000	8.000	101.00	65.00	16.00	8	7.000
8.000	8.000	101.00	65.00	16.00	8	8.000
9.000	10.000	101.00	61.00	19.00	8	9.000
10.000	10.000	101.00	61.00	19.00	8	10.000
11.000	12.000	130.00	85.00	19.00	8	11.000
12.000	12.000	130.00	85.00	19.00	8	12.000
13.000	14.000	130.00	85.00	22.00	8	13.000
14.000	14.000	130.00	85.00	22.00	8	14.000
15.000	16.000	150.00	102.00	22.00	8	15.000
16.000	16.000	150.00	102.00	22.00	8	16.000
17.000	18.000	150.00	102.00	25.00	8	17.000
18.000	18.000	150.00	102.00	25.00	8	18.000
19.000	20.000	150.00	100.00	25.00	8	19.000
20.000	20.000	150.00	100.00	25.00	8	20.000

Solid carbide			
Series no.	1036	1037	
HR 500 Guss S		HR 500 Guss D	
Surface finish	Y	Y	
Speeds & Feeds	p. 22	p. 22	
			H7



EDP Number	
<a href="#">9010360030000</a>	<a href="#">9010370030000</a>
<a href="#">9010360040000</a>	<a href="#">9010370040000</a>
<a href="#">9010360050000</a>	<a href="#">9010370050000</a>
<a href="#">9010360060000</a>	<a href="#">9010370060000</a>
<a href="#">9010360070000</a>	<a href="#">9010370070000</a>
<a href="#">9010360080000</a>	<a href="#">9010370080000</a>
<a href="#">9010360090000</a>	<a href="#">9010370090000</a>
<a href="#">9010360100000</a>	<a href="#">9010370100000</a>
<a href="#">9010360110000</a>	<a href="#">9010370110000</a>
<a href="#">9010360120000</a>	<a href="#">9010370120000</a>
<a href="#">9010360130000</a>	<a href="#">9010370130000</a>
<a href="#">9010360140000</a>	<a href="#">9010370140000</a>
<a href="#">9010360150000</a>	<a href="#">9010370150000</a>
<a href="#">9010360160000</a>	<a href="#">9010370160000</a>
<a href="#">9010360170000</a>	<a href="#">9010370170000</a>
<a href="#">9010360180000</a>	<a href="#">9010370180000</a>
<a href="#">9010360190000</a>	<a href="#">9010370190000</a>
<a href="#">9010360200000</a>	<a href="#">9010370200000</a>

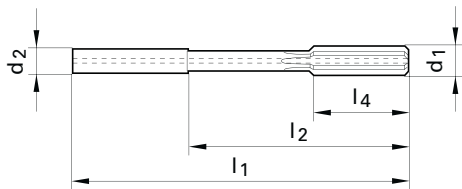
## HR 500 ALU solid carbide high-performance reamers

### High-performance reamers ALU



The solid carbide HR 500 reamer operates at unbelievably high cutting rates while producing extremely precise holes. Therefore, it offers considerable savings through process improvement and reliability.

Intermediate dimensions from Ø 2.0-20.1 mm can be produced as specials.



HR 500 reamers are stocked in Germany

d1 mm	d2 h6 mm	l1 mm	l2 mm	l4 mm		Code no.
4.000	4.000	68.00	40.00	12.00	4	4.000
5.000	6.000	76.00	40.00	12.00	4	5.000
6.000	6.000	76.00	40.00	12.00	4	6.000
7.000	8.000	101.00	65.00	16.00	6	7.000
8.000	8.000	101.00	65.00	16.00	6	8.000
10.000	10.000	101.00	61.00	19.00	6	10.000
12.000	12.000	130.00	85.00	19.00	6	12.000
14.000	14.000	130.00	85.00	22.00	6	14.000
16.000	16.000	150.00	102.00	22.00	6	16.000
18.000	18.000	150.00	102.00	25.00	6	18.000
20.000	20.000	150.00	100.00	25.00	6	20.000

Solid carbide			
Series no.	HR 500 Alu S	HR 500 Alu D	
1678			
1679			
Surface finish	ⓐ	ⓐ	
Speeds & Feeds	p. 24	p. 24	

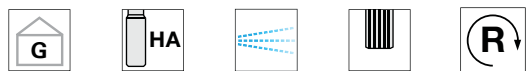


EDP Number	
<a href="#">9016780040000</a>	<a href="#">9016790040000</a>
<a href="#">9016780050000</a>	<a href="#">9016790050000</a>
<a href="#">9016780060000</a>	<a href="#">9016790060000</a>
<a href="#">9016780070000</a>	<a href="#">9016790070000</a>
<a href="#">9016780080000</a>	<a href="#">9016790080000</a>
<a href="#">9016780100000</a>	<a href="#">9016790100000</a>
<a href="#">9016780120000</a>	<a href="#">9016790120000</a>
<a href="#">9016780140000</a>	<a href="#">9016790140000</a>
<a href="#">9016780160000</a>	<a href="#">9016790160000</a>
<a href="#">9016780180000</a>	<a href="#">9016790180000</a>
<a href="#">9016780200000</a>	<a href="#">9016790200000</a>

# EXCLUSIVE LINE®

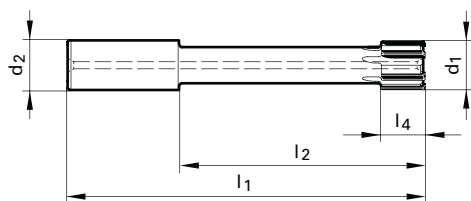
## HR 500 G high-performance reamers

### High-performance reamers



The carbide-tipped and cermet-tipped HR 500 G reamers operate at unbelievably high cutting rates while producing extremely precise holes. Therefore, it offers considerable savings through process improvement and reliability. Further advantages:

- Intermediate dimensions from Ø 20.1 mm can be supplied as specials
- Carbide-tipped tools with nano-Si coating for GG machining meet the highest hole quality requirements. (see cutting rates for Guhring series 1036/1037)



HR 500 reamers are stocked in Germany

d1	d2 h6	l1	l2	l4		Code no.
mm	mm	mm	mm	mm		
22.000	20.000	160.00	110.00	22.00	6	22.000
24.000	25.000	180.00	124.00	22.00	6	24.000
25.000	25.000	180.00	124.00	22.00	6	25.000
26.000	25.000	180.00	124.00	22.00	6	26.000
28.000	25.000	180.00	124.00	25.00	6	28.000
30.000	25.000	180.00	124.00	25.00	6	30.000
32.000	32.000	200.00	140.00	25.00	6	32.000
34.000	32.000	200.00	140.00	25.00	6	34.000
36.000	32.000	200.00	140.00	25.00	8	36.000
38.000	32.000	200.00	140.00	25.00	8	38.000
40.000	32.000	200.00	140.00	25.00	8	40.000

### Carbide Tipped

	HR 500 GS		HR 500 GD	
Series no.	1680		1681	
Surface finish	a		a	
Speeds & Feeds	p. 25		p. 25	
		H7		H7



### EDP Number

<a href="#">9016800220000</a>	<a href="#">9016810220000</a>
<a href="#">9016800240000</a>	<a href="#">9016810240000</a>
<a href="#">9016800250000</a>	<a href="#">9016810250000</a>
<a href="#">9016800260000</a>	<a href="#">9016810260000</a>
<a href="#">9016800280000</a>	<a href="#">9016810280000</a>
<a href="#">9016800300000</a>	<a href="#">9016810300000</a>
<a href="#">9016800320000</a>	<a href="#">9016810320000</a>
<a href="#">9016800340000</a>	<a href="#">9016810340000</a>
<a href="#">9016800360000</a>	<a href="#">9016810360000</a>
<a href="#">9016800380000</a>	<a href="#">9016810380000</a>
<a href="#">9016800400000</a>	<a href="#">9016810400000</a>

bright

steam tempered

nano-A

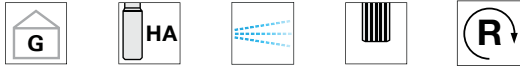
Carbo

nano-Si

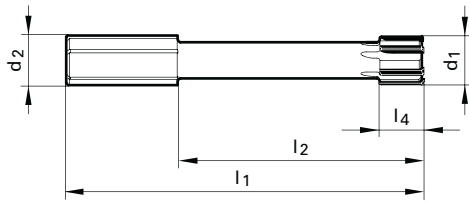
# EXCLUSIVE<sup>®</sup>LINE

## HR 500 G high-performance reamers

### High-performance reamers



The carbide-tipped and cermet-tipped HR 500 G reamers operate at unbelievably high cutting rates while producing extremely precise holes. Therefore, it offers considerable savings through process improvement and reliability.



HR 500 reamers are stocked in Germany

d1	d2 h6	l1	l2	l4		Code no.
mm	mm	mm	mm	mm		
6.000	6.000	76.00	40.00	12.00	4	6.000
8.000	8.000	101.00	65.00	16.00	4	8.000
10.000	10.000	101.00	61.00	16.00	4	10.000
12.000	12.000	130.00	85.00	16.00	4	12.000
14.000	14.000	130.00	85.00	16.00	6	14.000
16.000	16.000	150.00	102.00	19.00	6	16.000
18.000	18.000	150.00	102.00	19.00	6	18.000
20.000	20.000	150.00	100.00	19.00	6	20.000
22.000	20.000	160.00	110.00	22.00	6	22.000
24.000	25.000	180.00	124.00	22.00	6	24.000
25.000	25.000	180.00	124.00	22.00	6	25.000
26.000	25.000	180.00	124.00	22.00	6	26.000
28.000	25.000	180.00	124.00	25.00	6	28.000
30.000	25.000	180.00	124.00	25.00	6	30.000
32.000	32.000	200.00	140.00	25.00	6	32.000
34.000	32.000	200.00	140.00	25.00	6	34.000
36.000	32.000	200.00	140.00	25.00	8	36.000
38.000	32.000	200.00	140.00	25.00	8	38.000
40.000	32.000	200.00	140.00	25.00	8	40.000

Cermet Tipped			
Series no.	HR 500 G S	HR 500 G D	EU
1682			
Surface finish			
Speeds & Feeds	p. 25	p. 25	



EDP Number	
<a href="#">9016820060000</a>	<a href="#">9016830060000</a>
<a href="#">9016820080000</a>	<a href="#">9016830080000</a>
<a href="#">9016820100000</a>	<a href="#">9016830100000</a>
<a href="#">9016820120000</a>	<a href="#">9016830120000</a>
<a href="#">9016820140000</a>	<a href="#">9016830140000</a>
<a href="#">9016820160000</a>	<a href="#">9016830160000</a>
<a href="#">9016820180000</a>	<a href="#">9016830180000</a>
<a href="#">9016820200000</a>	<a href="#">9016830200000</a>
<a href="#">9016820220000</a>	<a href="#">9016830220000</a>
<a href="#">9016820240000</a>	<a href="#">9016830240000</a>
<a href="#">9016820250000</a>	<a href="#">9016830250000</a>
<a href="#">9016820260000</a>	<a href="#">9016830260000</a>
<a href="#">9016820280000</a>	<a href="#">9016830280000</a>
<a href="#">9016820300000</a>	<a href="#">9016830300000</a>
<a href="#">9016820320000</a>	<a href="#">9016830320000</a>
<a href="#">9016820340000</a>	<a href="#">9016830340000</a>
<a href="#">9016820360000</a>	<a href="#">9016830360000</a>
<a href="#">9016820380000</a>	<a href="#">9016830380000</a>
<a href="#">9016820400000</a>	<a href="#">9016830400000</a>

### 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.



# EXCLUSIVE LINE®

## HR 500 GT high-performance reamers

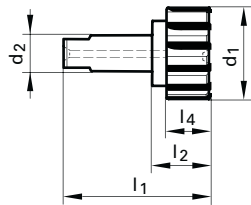
### High-performance reamers




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

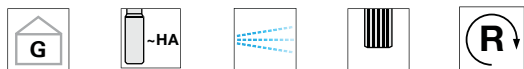
Cermet Tipped			
Series no.	1040	1041	
HR 500 GT S		HR 500 GT D	
Surface finish	○	○	
Speeds & Feeds	p. 23	p. 23	
			



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

## HR 500 GT high-performance reamers

### High-performance reamers



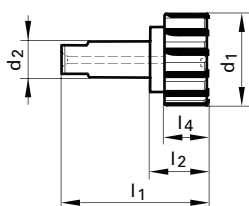
HR 500 GT as semi-standard  
Straight shank ~ DIN 6535 HA tol. H6 with tang for optimal holding in extra length hydraulic chuck series no. 4290, but also in conventional hydraulic chucks or shrink fit chucks.

Further advantages:

- Intermediate dimensions from Ø 40.0-76.2 mm can be produced as specials
- Carbide-tipped tools with nano-Si coating for GG machining meet the highest hole quality requirements (for cutting rates see Guhring series 1036/1037)

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

### Carbide Tipped

HR 500  
GT S



HR 500  
GT D



Series no.

1038

1039

Surface finish

a

a

Speeds & Feeds

p. 22

p. 22



### EDP Number

<a href="#">9010380410000</a>	<a href="#">9010390410000</a>
<a href="#">9010380420000</a>	<a href="#">9010390420000</a>
<a href="#">9010380440000</a>	<a href="#">9010390440000</a>
<a href="#">9010380460000</a>	<a href="#">9010390460000</a>
<a href="#">9010380470000</a>	<a href="#">9010390470000</a>
<a href="#">9010380480000</a>	<a href="#">9010390480000</a>
<a href="#">9010380500000</a>	<a href="#">9010390500000</a>
<a href="#">9010380520000</a>	<a href="#">9010390520000</a>
<a href="#">9010380530000</a>	<a href="#">9010390530000</a>
<a href="#">9010380540000</a>	<a href="#">9010390540000</a>
<a href="#">9010380560000</a>	<a href="#">9010390560000</a>
<a href="#">9010380580000</a>	<a href="#">9010390580000</a>
<a href="#">9010380590000</a>	<a href="#">9010390590000</a>
<a href="#">9010380600000</a>	<a href="#">9010390600000</a>
<a href="#">9010380620000</a>	<a href="#">9010390620000</a>
<a href="#">9010380640000</a>	<a href="#">9010390640000</a>
<a href="#">9010380650000</a>	<a href="#">9010390650000</a>
<a href="#">9010380660000</a>	<a href="#">9010390660000</a>
<a href="#">9010380680000</a>	<a href="#">9010390680000</a>
<a href="#">9010380700000</a>	<a href="#">9010390700000</a>
<a href="#">9010380710000</a>	<a href="#">9010390710000</a>
<a href="#">9010380720000</a>	<a href="#">9010390720000</a>
<a href="#">9010380740000</a>	<a href="#">9010390740000</a>
<a href="#">9010380760000</a>	<a href="#">9010390760000</a>

## HSK-A hydraulic chucks, extra length, for HR 500 GT Shrink fit extension

### HSK-A hydraulic chucks, extra length

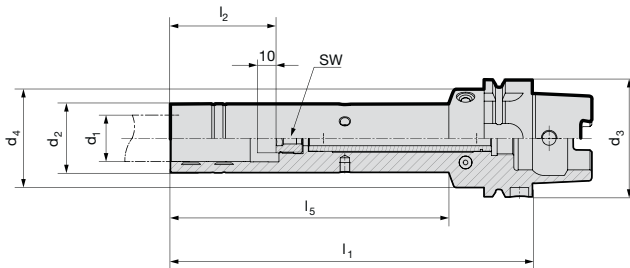
For high precision reamers HR 500 GT with tang.

Series no.

4290

Scope of delivery:

- incl. adjustment screw Guhring no. 4900
- incl. hexagon chuck key Guhring no. 4912
- order coolant delivery set Guhring no. 4949 separately



d3	f. d1 h6	d2	d4	l1	l2	l5	inc.	SW	kg	Code no.
HSK-A	mm	mm	mm	mm	mm	mm	4900 ...			
63	25	37	53	195	57	150	20.114	5.0	1.9	25.063
63	25	37	53	295	57	250	20.114	5.0	2.7	25.163
63	32	44	53	195	61	150	20.114	5.0	2.2	32.063
63	32	44	53	295	61	250	20.114	5.0	3.4	32.163

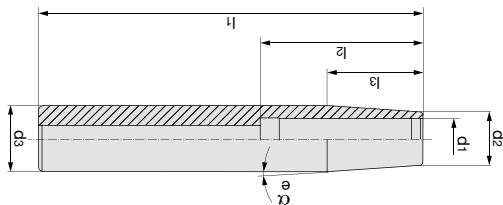
EDP Number
9042900250630
9042900251630
9042900320630
9042900321630

### Shrink fit extension for HR 500 T

Series no.

4719

For clamping in hydraulic or shrink fit chuck.



for shank-Ø	d2	d3 h6	l1	l2	l3	α	Code no.
d1 h6 mm	mm	mm	mm	mm	mm	e	
6	10	12	125	38	19.1	3	6.012
6	10	12	200	38	21	3	6.312
8	12	14	125	38	19.1	3	8.014
8	12	14	200	38	21	3	8.314
10	14	16	160	42	19.1	3	10.116
10	14	16	250	42	21	3	10.316
12	16	20	160	47	38.2	3	12.120
12	16	20	250	47	40	3	12.320
16	22	25	160	50	28.6	3	16.225
16	22	25	250	50	30.5	3	16.325
20	27	32	160	52	47.7	3	20.332
20	27	32	250	52	49.6	3	20.432

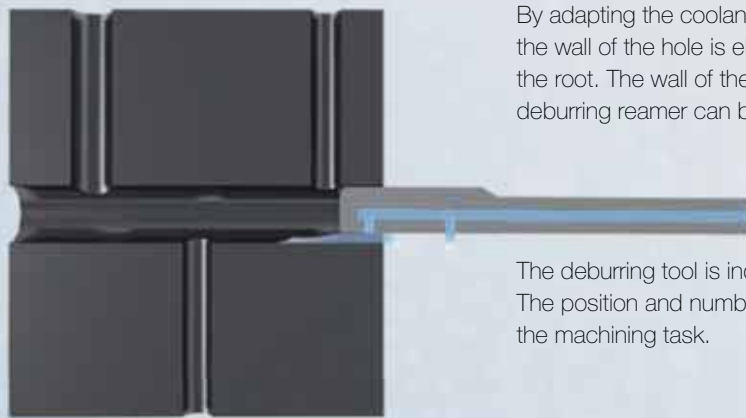
EDP Number
<a href="#">9047190060120</a>
<a href="#">9047190063120</a>
<a href="#">9047190080140</a>
<a href="#">9047190083140</a>
<a href="#">9047190101160</a>
<a href="#">9047190103160</a>
<a href="#">9047190121200</a>
<a href="#">9047190123200</a>
<a href="#">9047190162250</a>
<a href="#">9047190163250</a>
<a href="#">9047190203320</a>
<a href="#">9047190204320</a>

## EWR 500 de-burring reamer

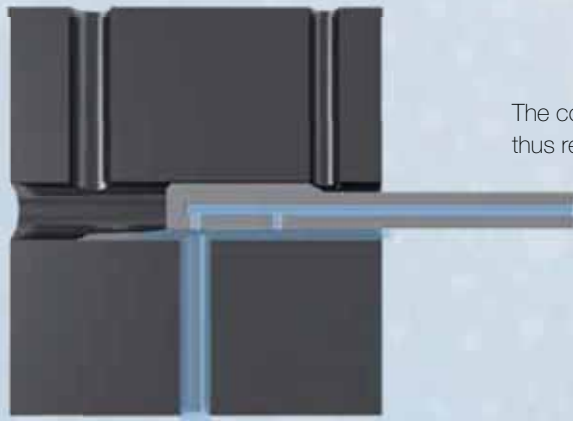
Simple and efficient

### > Deburring cross-holes with EWR 500

With conventional reamers the burr at the cross-hole is simply folded over rather than being cut off. The surface finish quality and hole quality is reduced. The new EWR 500 deburring reamer reliably deburrs cross-holes.



By adapting the coolant pressure, the gap between reamer and the wall of the hole is eliminated. This enables a clean cut of the burr at the root. The wall of the hole is not damaged during operation so the deburring reamer can be applied for precision fits.



The deburring tool is individually designed by Guhring. The position and number of coolant exits is determined based on the machining task.

The contact pressure is applied through several coolant exits thus reducing the drop in pressure.

# EWR 500



# TECHNICAL DATA

Series 1036 - 1037

Material group	Hardness		SFM	Feed Rate - IPR										
	HRC	Bhn		< 4 mm	4 mm	5 mm	6.3 mm	8 mm	10 mm	12.5 mm	16 mm	20 mm	25 mm	
Common structural steels	-	≤ 150												
	≤ 32	≤ 301												
Free-cutting steels	≤ 25	≤ 255												
	≤ 32	≤ 301												
Unalloyed heat-treatable steels	≤ 20	≤ 220												
	≤ 25	≤ 255												
	≤ 32	≤ 301												
Alloyed heat-treatable steels	≤ 32	≤ 301												
	≤ 43	≤ 402												
Unalloyed case hardened steels	≤ 25	≤ 255												
Alloyed case hardened steels	≤ 32	≤ 301												
	≤ 43	≤ 402												
Nitriding steels	≤ 32	≤ 301												
	≤ 43	≤ 402												
Tool steels	≤ 25	≤ 255												
	≤ 43	≤ 402												
High speed steels	≤ 43	≤ 402												
Spring steels	≤ 38	≤ 354												
Stainless steels, sulphured	≤ 28	≤ 273												
austenitic	≤ 36	≤ 337												
martensitic	≤ 46	≤ 435												
Hardened steels	≤ 48	≤ 460												
	≤ 66	-												
Cast iron	≤ 23	≤ 242	655	0.0315	0.0394	0.0394	0.0472	0.0709	0.0709	0.0787	0.0866	0.0866	0.0984	0.0984
	≤ 38	≤ 354	655	0.0315	0.0394	0.0394	0.0472	0.0709	0.0709	0.0787	0.0866	0.0866	0.0984	0.0984
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	395 - 985	0.0039	0.0049	0.0049	0.0063	0.0079	0.0098	0.0098	0.0124	0.0157	0.0197	0.0197
	≤ 38	≤ 354	260 - 395	0.0039	0.0049	0.0049	0.0063	0.0079	0.0098	0.0098	0.0124	0.0157	0.0197	0.0197
Chilled cast iron	≤ 38	≤ 354												
New cast materials GGV	≤ 20	≤ 220												
	≤ 32	≤ 301	655	0.0197	0.0197	0.0236	0.0276	0.0394	0.0472	0.0472	0.0551	0.0551	0.0630	0.0630
New cast materials ADI	≤ 32	≤ 301												
	≤ 43	≤ 402	655	0.0197	0.0197	0.0236	0.0276	0.0394	0.0472	0.0472	0.0551	0.0551	0.0630	0.0630
Special alloys	≤ 54	≤ 549												
Ti and Ti-alloys	≤ 25	≤ 255												
	≤ 43	≤ 402												
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

Not recommended for these materials

Series 1038 - 1039

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	80 - 130								0.0472	0.0551	0.0630	
	≤ 32	≤ 301	80 - 130								0.0472	0.0551	0.0630	
Free-cutting steels	≤ 25	≤ 255	80 - 130								0.0472	0.0551	0.0630	
	≤ 32	≤ 301	80 - 130								0.0472	0.0551	0.0630	
Unalloyed heat-treatable steels	≤ 20	≤ 220	80 - 130								0.0472	0.0551	0.0630	
	≤ 25	≤ 255	80 - 130								0.0472	0.0551	0.0630	
	≤ 32	≤ 301	80 - 130								0.0472	0.0551	0.0630	
Alloyed heat-treatable steels	≤ 32	≤ 301	80 - 130								0.0472	0.0551	0.0630	
	≤ 43	≤ 402	80 - 130								0.0472	0.0551	0.0630	
Unalloyed case hardened steels	≤ 25	≤ 255	80 - 130								0.0472	0.0551	0.0630	
Alloyed case hardened steels	≤ 32	≤ 301	80 - 130								0.0472	0.0551	0.0630	
	≤ 43	≤ 402	80 - 130								0.0472	0.0551	0.0630	
Nitriding steels	≤ 32	≤ 301	80 - 130								0.0472	0.0551	0.0630	
	≤ 43	≤ 402	80 - 130								0.0472	0.0551	0.0630	
Tool steels	≤ 25	≤ 255	80 - 130								0.0472	0.0551	0.0630	
	≤ 43	≤ 402	80 - 130								0.0472	0.0551	0.0630	
High speed steels	≤ 43	≤ 402	65 - 100								0.0472	0.0551	0.0630	
Spring steels	≤ 38	≤ 354	65 - 100								0.0472	0.0551	0.0630	
Stainless steels, sulphured	≤ 28	≤ 273	100 - 195								0.0472	0.0551	0.0630	
austenitic	≤ 36	≤ 337	65 - 100								0.0472	0.0551	0.0630	
martensitic	≤ 46	≤ 435	65 - 100								0.0472	0.0551	0.0630	
Hardened steels	≤ 48	≤ 460	35 - 65								0.0248	0.0315	0.0394	
	≤ 66	-												
Cast iron	≤ 23	≤ 242	130 - 330								0.0787	0.0866	0.0866	
	≤ 38	≤ 354	130 - 330								0.0787	0.0866	0.0866	
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	165 - 395								0.0787	0.0866	0.0866	
	≤ 38	≤ 354	165 - 330								0.0787	0.0866	0.0866	
Chilled cast iron	≤ 38	≤ 354	65 - 130								0.0472	0.0551	0.0630	
New cast materials GGV	≤ 20	≤ 220												
	≤ 32	≤ 301	195 - 260								0.0472	0.0551	0.0630	
New cast materials ADI	≤ 32	≤ 301												
	≤ 43	≤ 402	130 - 260								0.0472	0.0551	0.0630	
Special alloys	≤ 54	≤ 549	65 - 100											
Ti and Ti-alloys	≤ 25	≤ 255	65 - 130								0.0315	0.0394	0.0492	0.0492
	≤ 43	≤ 402	65 - 130								0.0315	0.0394	0.0492	0.0492
Aluminium and Al-alloys	-	≤ 120												
Al wrought alloys	-	≤ 200												
Al cast alloys ≤ 10 % Si	-	≤ 180												
> 10 % Si	-	≤ 180												
Magnesium alloys	-	≤ 120	260 - 525								0.0787	0.0866	0.0866	
Copper, low-alloyed	-	≤ 150												
Brass, short-chipping	-	≤ 180	130 - 395											
long-chipping	-	≤ 180									0.0472	0.0551	0.0630	
Bronze, short-chipping	-	≤ 180	165 - 395											
	≤ 25	≤ 255	165 - 395								0.0472	0.0551	0.0630	
Bronze, long-chipping	≤ 25	≤ 255												
	≤ 32	≤ 301												
Duroplastics			130 - 395								0.0472	0.0551	0.0630	
Thermoplastics			130 - 395								0.0472	0.0551	0.0630	
Kevlar			130 - 395								0.0197	0.0248	0.0315	
Glass, carbon concentrated plastics			130 - 395								0.0197	0.0248	0.0315	

# 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
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				0.0551	0.0551	0.0630	0.0787	0.0787	
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	



# TECHNICAL DATA

## Series 1680 - 1681

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	80 - 130					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
	≥ 32	≤ 301	80 - 130					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
Free-cutting steels	≥ 25	≤ 255	80 - 130					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
	≥ 32	≤ 301	80 - 130					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
Unalloyed heat-treatable steels	≥ 20	≤ 220	80 - 130					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
	≥ 25	≤ 255	80 - 130					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
	≥ 32	≤ 301	80 - 130					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
Alloyed heat-treatable steels	≥ 43	≤ 301	80 - 130					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
	≥ 43	≤ 402	80 - 130					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
Unalloyed case hardened steels	≥ 25	≤ 255	80 - 130					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
Alloyed case hardened steels	≥ 32	≤ 301	80 - 130					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
	≥ 43	≤ 402	80 - 130					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
Nitriding steels	≥ 32	≤ 301	80 - 130					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
	≥ 43	≤ 402	80 - 130					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
Tool steels	≥ 25	≤ 255	80 - 130					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
	≥ 43	≤ 402	80 - 130					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
High speed steels	≥ 43	≤ 402	65 - 100					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
Spring steels	≥ 38	≤ 354	65 - 100					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
Stainless steels, sulphured	≥ 28	≤ 273	100 - 195					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
austenitic	≥ 36	≤ 337	65 - 100					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
martensitic	≥ 46	≤ 435	65 - 100					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
Hardened steels	≥ 48	≤ 460	35 - 65					0.0157	0.0197	0.0197	0.0248	0.0315	0.0394
	≥ 66	-	-										
Cast iron	≥ 23	≤ 242	130 - 330					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
	≥ 38	≤ 354	130 - 330					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
Spheroidal graphite iron and malleable cast iron	≥ 23	≤ 242	165 - 395					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
	≥ 38	≤ 354	165 - 330					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
Chilled cast iron	≥ 38	≤ 354	65 - 130					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
New cast materials GGV	≥ 20	≤ 220	-										
	≥ 32	≤ 301	195 - 260					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
New cast materials ADI	≥ 32	≤ 301	-										
	≥ 43	≤ 402	130 - 260					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
Special alloys	≥ 54	≤ 549	65 - 100					0.0197	0.0248	0.0248	0.0315	0.0394	0.0492
Ti and Ti-alloys	≥ 25	≤ 255	65 - 130					0.0197	0.0248	0.0248	0.0315	0.0394	0.0492
	≥ 43	≤ 402	65 - 130					0.0197	0.0248	0.0248	0.0315	0.0394	0.0492
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	0.0630	0.0787	0.0787	0.0866	0.0866
Copper, low-alloyed	-	≤ 150	-										
Brass, short-chipping	-	≤ 180	130 - 395					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
long-chipping	-	≤ 180	-										
Bronze, short-chipping	-	≤ 180	165 - 395					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
long-chipping	≥ 25	≤ 255	165 - 395					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
	≥ 32	≤ 301	-										
Duroplastics			130 - 395					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
Thermoplastics			130 - 395					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
Kevlar			260					0.0124	0.0157	0.0157	0.0197	0.0248	0.0315
Glass, carbon concentrated plastics			260					0.0124	0.0157	0.0157	0.0197	0.0248	0.0315

## Series 1682 - 1683

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					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
	≥ 32	≤ 301	330 - 590					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
Free-cutting steels	≥ 25	≤ 255	330 - 590					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
	≥ 32	≤ 301	330 - 590					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
Unalloyed heat-treatable steels	≥ 20	≤ 220	330 - 590					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
	≥ 25	≤ 255	330 - 590					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
	≥ 32	≤ 301	330 - 590					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
Alloyed heat-treatable steels	≥ 32	≤ 301	330 - 590					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
	≥ 43	≤ 402	260 - 395					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
Unalloyed case hardened steels	≥ 25	≤ 255	330 - 590					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
Alloyed case hardened steels	≥ 32	≤ 301	330 - 590					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
	≥ 43	≤ 402	260 - 395					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
Nitriding steels	≥ 32	≤ 301	330 - 590					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
	≥ 43	≤ 402	260 - 395					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
Tool steels	≥ 25	≤ 255	330 - 590					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
	≥ 43	≤ 402	260 - 395					0.0551	0.0630	0.0787	0.0787	0.0866	0.0866
High speed steels	≥ 43	≤ 402	-										
Spring steels	≥ 38	≤ 354	330 - 395					0.0315	0.0394	0.0394	0.0472	0.0551	0.0630
Stainless steels, sulphured	≥ 28	≤ 273	-										
austenitic	≥ 36	≤ 337	-										
martensitic	≥ 46	≤ 435	-										
Hardened steels	≥ 48	≤ 460	-										
Cast iron	≥ 23	≤ 242	-										
	≥ 38	≤ 354	-										
Spheroidal graphite iron and malleable cast iron	≥ 23	≤ 242	395 - 985					0.0157	0.0197	0.0197	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	≥ 54	≤ 549	-										
Ti and Ti-alloys	≥ 25	≤ 255	-										
	≥ 43	≤ 402	-										
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	-	≤ 180	-										
Bronze	-	≤ 180	-										
Bronze, long-chipping	≥ 25	≤ 255	-										
	≥ 32	≤ 301	-										
Duroplastics			-										
Thermoplastics			-										
Kevlar			-										
Glass, carbon concentrated plastics													

## APPLICATION EXAMPLES

Application examples for Guhring's HR 500 S and HR 500 D solid carbide high-performance reamers with highest feed rates and tool life.



The HR 500 S and HR 500 D solid carbide high-performance reamers have shown their performance in several applications, see following table:

Tool type	HR 500 S	HR 500 D	HR 500 D	HR 500 S	HR 500 Cast D
Guhring no.	1685	1686	special reamer for tighter tolerances	1685	1037
component machined	hinge	ring	valve body	ring	cylinder head
workpiece material	gen. steel	alloyed steel	gen. steel	alloyed steel	GG 30
hole diameter (mm)	9	8	5,9	15	20.2
hole tolerance	H7	H7	H6	IT 5	H7
reaming depth (mm)	30	25	48	20	60
cutting speed $v_c$ (m/min.)	120	200	190	250	200
feed rate $v_f$ (mm/min.)	4200	12700	6100	7200	6300
tool life (m)	60	100	55	200	150

Application examples for Guhring special high-performance reamers HR 500 G



Carbide- or cermet-tipped special high-performance reamers HR 500 G S and HR 500 G D have already been able to demonstrate their efficiency in numerous applications. The following table contains some examples.

Tool type	HR 500 G D	HR 500 G D	HR 500 G D
Guhring no.	1683 (shortened)	1681	1683
tool material/coating	Cermet	HM + TiAlN nanoA	Cermet
component machined	universal joint	wheel flange	differential housing
workpiece material	steel	cast iron	cast iron
hole diameter (mm)	25	22	32
hole tolerance	F7	H8	H7
reaming depth (mm)	18	20	50
cutting speed $v_c$ (m/min.)	130	120	120
feed rate $v_f$ (mm/min.)	2000	2600	3000
tool life (m)	175	120	160

# EXCLUSIVE<sup>LINE</sup><sup>®</sup>

## HR 500 ACTIVE

Special range of HR 500 solid carbide high-performance reamers



Ever since their introduction, Guhring's solid carbide high-performance reamers HR 500 D for through holes and HR 500 S for blind holes have impressed customers with their outstanding performance. Even under difficult machining conditions such as interrupted cutting or unstable machines they ream holes at cutting rates higher than cermet levels with maximum tool life and optimal quality in almost all materials.

So the user can also fully utilize the advantages of HR 500 high-performance reamers for the machining of the special applications Guhring has developed the HR 500 ACTIVE range.

There is a choice of four HR 500 ACTIVE types:

- for cylindrical blind holes
- for cylindrical through holes
- for stepped blind holes
- for stepped through holes

The four HR 500 ACTIVE types are available in the following designs:

- with or without internal cooling
- short or long version
- with different coatings or bright finish
- to hole tolerance or reamer manufacturing tolerance

You have the choice of designing the optimal HR 500 reamer for your specific application! Simply complete the questionnaire.

# EXCLUSIVE<sup>®</sup>LINE

**Guhring, Inc. Main Office**

1445 Commerce Avenue  
Brookfield, WI 53045  
Tel (262) 784-6730 (800) 776-6170  
Fax (262) 784-9096

**East Coast Reconditioning Facility**

121 W Dudley Town Rd.  
Bloomfield, CT 06002

**West Coast Distribution Center and  
Reconditioning Facility**

15581 Computer Ln  
Huntington Beach, CA 92649

**Michigan Manufacturing and  
Reconditioning Facility**

29550 W.K. Smith Rd. Suite B  
New Hudson, MI 48165

**Guhring Corp. (Canada)**

20 Steckle Place, Unit #14  
Kitchener, ON N2E 2C3  
Tel (519) 748-9664 (800) 463-5555  
Fax (519) 748-2954

No liability can be accepted for printing errors or technical changes of any kind.  
Our Conditions of Sale and Terms of Payment apply. Available on request.