

GUHRING

AUSTRALIAN STOCK RANGE

8TH EDITION 2022-23



GUHRING

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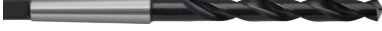
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GUHRING

AUSTRALIAN STOCK RANGE

2022 - 2023

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DRILLING

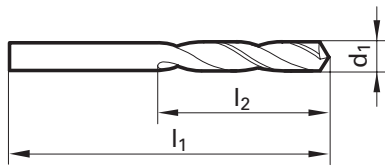




STUB DRILLS

DRILLS

Guhring no.	223	5524	5520	1228	659	5516	730	2463
Standard	DIN 1897				DIN 6539			
Tool material	HSS	HSCO				Solid carbide		
Surface	$\geq \varnothing$ 2,36							
Type	N	GU500DZ	GU500DZ	GT80	GV120	N	N	N
Cutting direction	right-hand							
Tolerance	h8	h8	h8	h8	h8	h7	h7	h7
Point angle	118°	118°	118°	130°	130°	118°	118°	118°



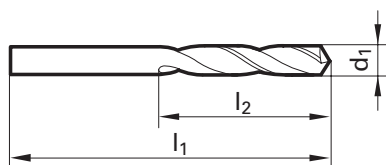
d1		l1	l2
mm	Inch	mm	mm
1.000		26.00	6.00
1.100		28.00	7.00
1.200		30.00	8.00
1.300		30.00	8.00
1.400		32.00	9.00
1.500		32.00	9.00
1.600		34.00	10.00
1.700		34.00	10.00
1.800		36.00	11.00
1.900		36.00	11.00
2.000		38.00	12.00
2.100		38.00	12.00
2.200		40.00	13.00
2.300		40.00	13.00
2.380	3/32	43.00	14.00
2.400		43.00	14.00
2.500		43.00	14.00
2.600		43.00	14.00
2.700		46.00	16.00
2.780	7/64	46.00	16.00
2.800		46.00	16.00
2.900		46.00	16.00
2.950		46.00	16.00
3.000		46.00	16.00
3.100		49.00	18.00
3.170	1/8	49.00	18.00
3.200		49.00	18.00
3.250		49.00	18.00
3.300		49.00	18.00
3.400		52.00	20.00
3.500		52.00	20.00
3.570	9/64	52.00	20.00
3.600		52.00	20.00
3.700		52.00	20.00
3.800		55.00	22.00
3.900		55.00	22.00
3.970	5/32	55.00	22.00
4.000		55.00	22.00
4.100		55.00	22.00

AVAILABILITY							
•	•	•		•			•
	◦	•					•
	◦	•		•			•
	◦	•				•	•
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	◦	•		•			•
	◦	•		•		•	•
•	•	•		•			•
	◦	•		•			•
	◦	•		•			•
•	•	•		•			•
	◦	•		•			•
	◦	•		•			•
•	•	•		•			•
	◦	•		•			•
	◦	•		•			•
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	◦	•		•			•
	◦	•		•			•
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	◦	•		•			•
	◦	•		•			•
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	◦	•		•			•
	◦	•		•			•
•	•	•		•			•
	◦	•		•			•
	◦	•		•			•
•	•	•		•			•
	◦	•		•			•
	◦	•		•			•

• Australian stock item ◦ German stock item

bright steam tempered nitrided lands S-TiN A-TiAlN C-TiCN F-FIRE/nanoFIRE a-TiAlN SuperA

Gühring no.	223	5524	5520	1228	659	5516	730	2463
Standard	DIN 1897				DIN 6539			
Tool material	HSS	HSCO				Solid carbide		
Surface								
Type	N	GU500DZ	GU500DZ	GT80	GV120	N	N	N
Cutting direction	right-hand							
Tolerance	h8	h8	h8	h8	h8	h7	h7	h7
Point angle	118°	118°	118°	130°	130°	118°	118°	118°

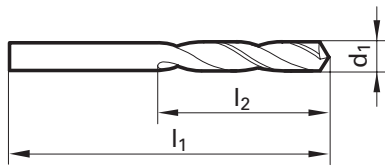


d1		l1	l2	AVAILABILITY				
mm	Inch	mm	mm					
4.200		55.00	22.00	•	○	•	•	•
4.300		58.00	24.00	•	○	•	•	•
4.370	11/64	58.00	24.00	•	○	•	•	•
4.400		58.00	24.00	•	○	•	•	•
4.500		58.00	24.00	•	•	•	•	•
4.570		58.00	24.00	•	○	•	•	•
4.600		58.00	24.00	•	○	•	•	•
4.700		58.00	24.00	•	○	•	•	•
4.760	3/16	62.00	26.00	•	○	•	•	•
4.800		62.00	26.00	•	○	•	•	•
4.900		62.00	26.00	•	○	•	•	•
5.000		62.00	26.00	•	•	•	•	•
5.100		62.00	26.00	•	○	•	•	•
5.160	13/64	62.00	26.00	•	○	•	•	•
5.200		62.00	26.00	•	○	•	•	•
5.300		62.00	26.00	•	○	•	•	•
5.400		66.00	28.00	•	○	•	•	•
5.500		66.00	28.00	•	•	•	•	•
5.560	7/32	66.00	28.00	•	○	•	•	•
5.600		66.00	28.00	•	○	•	•	•
5.700		66.00	28.00	•	○	•	•	•
5.800		66.00	28.00	•	○	•	•	•
5.900		66.00	28.00	•	○	•	•	•
5.950	15/64	66.00	28.00	•	○	•	•	•
6.000		66.00	28.00	•	•	•	•	•
6.100		70.00	31.00	•	○	•	•	•
6.200		70.00	31.00	•	○	•	•	•
6.300		70.00	31.00	•	○	•	•	•
6.350	1/4	70.00	31.00	•	○	•	•	•
6.400		70.00	31.00	•	○	•	•	•
6.500		70.00	31.00	•	•	•	•	•
6.600		70.00	31.00	•	○	•	•	•
6.700		70.00	31.00	•	○	•	•	•
6.800		74.00	34.00	•	○	•	•	•
6.900		74.00	34.00	•	○	•	•	•
7.000		74.00	34.00	•	•	•	•	•
7.100		74.00	34.00	•	○	•	•	•
7.140	9/32	74.00	34.00	•	○	•	•	•
7.200		74.00	34.00	•	○	•	•	•

• Australian stock item ○ German stock item



Guhring no.	223	5524	5520	1228	659	5516	730	2463
Standard	DIN 1897					DIN 6539		
Tool material	HSS	HSCO				Solid carbide		
Surface	>Ø 2,36							
Type	N	GU500DZ	GU500DZ	GT80	GV120	N	N	N
Cutting direction	right-hand							
Tolerance	h8	h8	h8	h8	h8	h7	h7	h7
Point angle	118°	118°	118°	130°	130°	118°	118°	118°

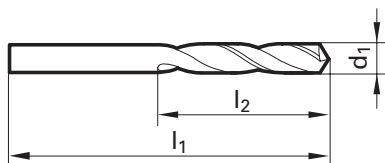


d1		l1	l2
mm	Inch	mm	mm
7.300		74.00	34.00
7.400		74.00	34.00
7.500		74.00	34.00
7.600		79.00	37.00
7.700		79.00	37.00
7.800		79.00	37.00
7.900		79.00	37.00
7.940	5/16	79.00	37.00
8.000		79.00	37.00
8.100		79.00	37.00
8.200		79.00	37.00
8.300		79.00	37.00
8.400		79.00	37.00
8.500		79.00	37.00
8.600		84.00	40.00
8.700	11/32	84.00	40.00
8.730		84.00	40.00
8.800		84.00	40.00
8.900		84.00	40.00
9.000		84.00	40.00
9.100		84.00	40.00
9.200		84.00	40.00
9.300		84.00	40.00
9.400		84.00	40.00
9.500		84.00	40.00
9.600		89.00	43.00
9.700		89.00	43.00
9.800		89.00	43.00
9.900		89.00	43.00
10.000		89.00	43.00
10.200		89.00	43.00
10.300		89.00	43.00
10.500		89.00	43.00
10.720	27/64	95.00	47.00
10.800		95.00	47.00
11.000		95.00	47.00
11.110	7/16	95.00	47.00
11.500		95.00	47.00
11.800		95.00	47.00

AVAILABILITY							
	○	●					
	○	●				●	
●	●	●		●	●		
	○	●		●		●	
	○	●				●	
	○	●				●	
●	○	●		●	●		
●	●	●		●	●		
	○	●		●		●	
	○	●				●	
	○	●				●	
●	●	●		●	●		
	○	●		●	●		
●	○	●		●	●		
●	○	●				●	
●	○	●				●	
	○	●		●	●		
	○	●		●	●		
	○	●		●	●		
●	●	●		●	●		
●	○	●				●	
●	○	●				●	
●	○	●				●	
	○	●		●	●		
	○	●		●	●		
	○	●		●	●		
	○	●		●	●		

● Australian stock item ○ German stock item

Guhring no.	223	5524	5520	1228	659	5516	730	2463
Standard	DIN 1897				DIN 6539			
Tool material	HSS	HSCO				Solid carbide		
Surface	$\geq \text{Ø } 2,36$							
Type	N	GU500DZ	GU500DZ	GT80	GV120	N	N	N
Cutting direction	right-hand							
Tolerance	h8	h8	h8	h8	h8	h7	h7	h7
Point angle	118°	118°	118°	130°	130°	118°	118°	118°



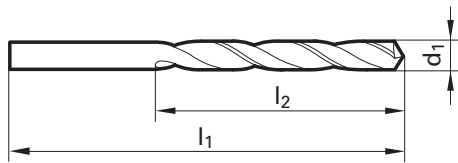
d1		l1	l2
mm	Inch	mm	mm
11.910	15/32	102.00	51.00
12.000		102.00	51.00
12.300	31/64	102.00	51.00
12.500		102.00	51.00
12.700		102.00	51.00
12.800		102.00	51.00
13.000		102.00	51.00
13.100	33/64	102.00	51.00
13.500		107.00	54.00
14.000		107.00	54.00
14.500		111.00	56.00
15.000		111.00	56.00
15.500		115.00	58.00
15.870	5/8	115.00	58.00
16.000		115.00	58.00
16.500		119.00	60.00
17.000		119.00	60.00
17.500		123.00	62.00
18.000		123.00	62.00
18.500		127.00	64.00
19.000		127.00	64.00
19.500		131.00	66.00
20.000		131.00	66.00

AVAILABILITY					
•	○	•		•	•
•	•	•		•	
	○				
•	•	•		•	
	○				
•	•	•		•	
	•	•		•	
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•			•		
			•		
•			•		

• Australian stock item ○ German stock item



Gühring no.	205	9500	9651	5523	5522	658	732	5517	2464
Standard	DIN 338						Gühring std.		
Tool material	HSS	HSS	HSS	HSCO	HSS-E-PM	HSCO	Solid carbide		
Surface	>Ø 2,36								
Type	N	N	N	GU500DZ	GU500DZ	GT 100	N	N	N
Cutting direction	right-hand								
Tolerance	h8	h8	h8	h8	h8	h8	h7	h7	h7
Point angle	118°	Step	118°	118°	130°	130°	118°	118°	118°



NEW



d1		l1	l2	AVAILABILITY					
mm	Inch	mm	mm						
0.400	1/64	20.00	5.00	•					
0.500		22.00	6.00	•					
0.600		24.00	7.00	•					
0.700		28.00	9.00	•					
0.800		30.00	10.00	•					
0.900		32.00	11.00	•					
1.000		34.00	12.00	•	•	•	•	•	•
1.100		36.00	14.00	•		•	•		•
1.200		38.00	16.00	•		•	•		•
1.300		38.00	16.00	•		•	•		•
1.400		40.00	18.00	•		•	•		•
1.500		40.00	18.00	•	•	•	•		•
1.590	1/16	43.00	20.00	•		•			•
1.600		43.00	20.00	•		•	•		•
1.700		43.00	20.00	•		•	•		•
1.800		46.00	22.00	•		•	•		•
1.900		46.00	22.00	•		•	•		•
1.980	5/64	49.00	24.00	•		•			•
2.000		49.00	24.00	•	•	•	•	•	•
2.100		49.00	24.00	•		•	•		•
2.200		53.00	27.00	•		•	•		•
2.300		53.00	27.00	•		•	•		•
2.380	3/32	57.00	30.00	•		•	•		•
2.400		57.00	30.00	•		•	•		•
2.500		57.00	30.00	•	•	•	•		•
2.600		57.00	30.00	•		•	•		•
2.700		61.00	33.00	•		•	•		•
2.780	7/64	61.00	33.00	•		•	•		•
2.800		61.00	33.00	•		•	•		•
2.900		61.00	33.00	•		•	•		•
3.000		61.00	33.00	•	•	•	•		•
3.100		65.00	36.00	•		•	•		•
3.170	1/8	65.00	36.00	•		•	•		•
3.200		65.00	36.00	•	•	•	•		•
3.300		65.00	36.00	•	•	•	•		•
3.400		70.00	39.00	•		•	•		•
3.500		70.00	39.00	•	•	•	•		•
3.570	9/64	70.00	39.00	•		•	•		•
3.600		70.00	39.00	•		•	•		•

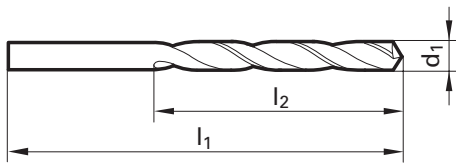
• Australian stock item ○ German stock item

bright steam tempered nitrided lands TiN TiAlN TiCN FIRE/nanoFIRE TiAlN SuperA



Gühring no.	205	9500	9651	5523	5522	658	732	5517	2464
Standard	DIN 338						Gühring std.		
Tool material	HSS	HSS	HSS	HSCO	HSS-E-PM	HSCO	Solid carbide		
Surface	>Ø 2,36								
Type	N	N	N	GU500DZ	GU500DZ	GT 100	N	N	N
Cutting direction	right-hand								
Tolerance	h8	h8	h8	h8	h8	h8	h7	h7	h7
Point angle	118°	Step	118°	118°	130°	130°	118°	118°	118°

NEW

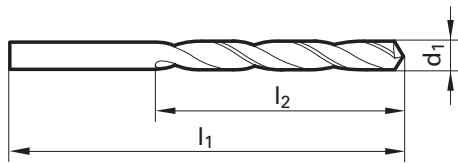


d1		l1	l2	AVAILABILITY					
mm	Inch	mm	mm						
3.700		70.00	39.00	•	•	•	•	•	•
3.800		75.00	43.00	•	•	•	•	•	•
3.900		75.00	43.00	•	•	•	•	•	•
3.970	5/32	75.00	43.00	•	•	•	•	•	•
4.000		75.00	43.00	•	•	•	•	•	•
4.100		75.00	43.00	•	•	•	•	•	•
4.200		75.00	43.00	•	•	•	•	•	•
4.300		80.00	47.00	•	•	•	•	•	•
4.370	11/64	80.00	47.00	•	•	•	•	•	•
4.400		80.00	47.00	•	•	•	•	•	•
4.500		80.00	47.00	•	•	•	•	•	•
4.600		80.00	47.00	•	•	•	•	•	•
4.700		80.00	47.00	•	•	•	•	•	•
4.760	3/16	86.00	52.00	•	•	•	•	•	•
4.800		86.00	52.00	•	•	•	•	•	•
4.900		86.00	52.00	•	•	•	•	•	•
5.000		86.00	52.00	•	•	•	•	•	•
5.100		86.00	52.00	•	•	•	•	•	•
5.160	13/64	86.00	52.00	•	•	•	•	•	•
5.200		86.00	52.00	•	•	•	•	•	•
5.300		86.00	52.00	•	•	•	•	•	•
5.400		93.00	57.00	•	•	•	•	•	•
5.500		93.00	57.00	•	•	•	•	•	•
5.560	7/32	93.00	57.00	•	•	•	•	•	•
5.600		93.00	57.00	•	•	•	•	•	•
5.700		93.00	57.00	•	•	•	•	•	•
5.800		93.00	57.00	•	•	•	•	•	•
5.900		93.00	57.00	•	•	•	•	•	•
5.950	15/64	93.00	57.00	•	•	•	•	•	•
6.000		93.00	57.00	•	•	•	•	•	•
6.100		101.00	63.00	•	•	•	•	•	•
6.200		101.00	63.00	•	•	•	•	•	•
6.300		101.00	63.00	•	•	•	•	•	•
6.350	1/4	101.00	63.00	•	•	•	•	•	•
6.400		101.00	63.00	•	•	•	•	•	•
6.500		101.00	63.00	•	•	•	•	•	•
6.600		101.00	63.00	•	•	•	•	•	•
6.700		101.00	63.00	•	•	•	•	•	•
6.750	17/64	109.00	69.00	•	•	•	•	•	•

• Australian stock item ◦ German stock item



Guhring no.	205	9500	9651	5523	5522	658	732	5517	2464
Standard	DIN 338						Guhring std.		
Tool material	HSS	HSS	HSS	HSCO	HSS-E-PM	HSCO	Solid carbide		
Surface	$\geq \varnothing$ 2,36								
Type	N	N	N	GU500DZ	GU500DZ	GT 100	N	N	N
Cutting direction	right-hand								
Tolerance	h8	h8	h8	h8	h8	h8	h7	h7	h7
Point angle	118°	Step	118°	118°	130°	130°	118°	118°	118°



NEW



d1		l1	l2	AVAILABILITY									
mm	Inch	mm	mm										
6.800		109.00	69.00	•	•	•	•	•	•			•	
6.900		109.00	69.00	•		•	•	•	•				
7.000		109.00	69.00	•	•	•	•	•	•			•	
7.100	9/32	109.00	69.00	•		•	•	•		•			
7.140		109.00	69.00	•		•	•	•				•	
7.200		109.00	69.00	•		•	•	•	•	•			
7.300		109.00	69.00	•		•	•	•		•			
7.400		109.00	69.00	•		•	•	•		•			
7.500		109.00	69.00	•	•	•	•	•				•	
7.540	19/64	117.00	75.00	•		•							
7.600		117.00	75.00	•		•		•		•			
7.700		117.00	75.00	•		•		•					
7.800		117.00	75.00	•		•		•		•			
7.900		117.00	75.00	•		•		•		•			
7.940		117.00	75.00	•		•		•				•	
8.000		117.00	75.00	•	•	•	•	•	•			•	
8.100		117.00	75.00	•		•		•		•			
8.200		117.00	75.00	•		•		•		•			
8.300	21/64	117.00	75.00	•		•	•	•	•	•			
8.330		117.00	75.00	•		•	•	•	•	•			
8.400		117.00	75.00	•		•		•	•	•			
8.500		117.00	75.00	•	•	•	•	•				•	
8.600		125.00	81.00	•		•		•		•			
8.700		125.00	81.00	•		•		•		•			
8.730	11/32	125.00	81.00	•		•	•					•	
8.800		125.00	81.00	•		•		•		•			
8.900		125.00	81.00	•		•		•		•			
9.000		125.00	81.00	•	•	•	•	•				•	
9.100		125.00	81.00	•		•		•		•			
9.130		125.00	81.00	•		•		•					
9.200	23/64	125.00	81.00	•		•	•	•		•			
9.300		125.00	81.00	•		•		•		•			
9.400		125.00	81.00	•		•		•		•			
9.500	3/8	125.00	81.00	•	•	•	•					•	
9.520		133.00	87.00	•		•				•			
9.600		133.00	87.00	•		•		•		•			
9.700		133.00	87.00	•		•		•		•			
9.800		133.00	87.00	•		•		•		•			
9.900		133.00	87.00	•		•		•		•			

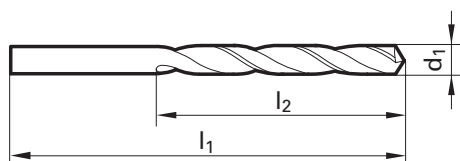
• Australian stock item ○ German stock item

○ bright ● steam tempered ● nitrided lands ● TiN ● TiAlN ● TiCN ● FIRE/nanoFIRE ● TiAlN SuperA



Gühring no.	205	9500	9651	5523	5522	658	732	5517	2464
Standard	DIN 338						Gühring std.		
Tool material	HSS	HSS	HSS	HSCO	HSS-E-PM	HSCO	Solid carbide		
Surface	>Ø 2,36								
Type	N	N	N	GU500DZ	GU500DZ	GT 100	N	N	N
Cutting direction	right-hand								
Tolerance	h8	h8	h8	h8	h8	h8	h7	h7	h7
Point angle	118°	Step	118°	118°	130°	130°	118°	118°	118°

NEW



d1		l1	l2	AVAILABILITY					
mm	Inch	mm	mm						
9.920	25/64	133.00	87.00	•		•			
10.000		133.00	87.00	•	•	•	•		•
10.100		133.00	87.00	•		•	•		
10.200		133.00	87.00	•	•	•	•		•
10.300		133.00	87.00	•		•	•		
10.320	13/32	133.00	87.00	•		•			
10.400		133.00	87.00	•		•	•		
10.500		133.00	87.00	•	•	•	•		•
10.600		133.00	87.00	•					
10.700		142.00	94.00	•			•		
10.720	27/64	142.00	94.00	•		•			
10.800		142.00	94.00	•		•	•		
10.900		142.00	94.00	•					
11.000		142.00	94.00	•	•	•	•		•
11.100		142.00	94.00	•					
11.110	7/16	142.00	94.00	•		•	•		•
11.200		142.00	94.00	•			•		
11.300		142.00	94.00	•					
11.400		142.00	94.00	•					
11.500		142.00	94.00	•	•	•	•		•
11.510	29/64	142.00	94.00	•		•			
11.600		142.00	94.00	•					
11.700		142.00	94.00	•			•		
11.800		142.00	94.00	•		•	•		
11.900		151.00	101.00	•					
11.910	15/32	151.00	101.00	•		•			
12.000		151.00	101.00	•	•	•	•		•
12.100		151.00	101.00	•					
12.200		151.00	101.00	•					
12.300	31/64	151.00	101.00	•		•			
12.400		151.00	101.00	•		•			
12.500		151.00	101.00	•	•	•	•		
12.600		151.00	101.00	•					
12.700	1/2	151.00	101.00	•		•			
12.800		151.00	101.00	•		•			
12.900		151.00	101.00	•					
13.000		151.00	101.00	•	•	•	•		
13.500		160.00	108.00	•		•	•		
14.000		160.00	108.00	•		•	•		

• Australian stock item ◯ German stock item



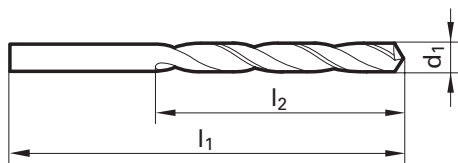
Cutting direction	right-hand
-------------------	------------



- Australian stock item
- German stock item



Guhring no.	217	336	5537
Standard	DIN 340		
Tool material	HSS	HSCO	
Surface	>Ø 2,36	>Ø 2,36	S
Type	N	GT 100	GU 500 DZ
Cutting direction	right-hand		
Point angle	118°	130°	118°



d1	l1	l2	AVAILABILITY		
mm	Inch	mm	mm		
1.000		56.00	33.00	•	•
1.500		70.00	45.00	•	•
2.000		85.00	56.00	•	•
2.500		95.00	62.00	•	•
2.700		100.00	66.00	•	•
2.800		100.00	66.00	•	•
3.000		100.00	66.00	•	•
3.170	1/8	106.00	69.00	•	•
3.300		106.00	69.00	•	•
3.400		112.00	73.00	•	•
3.500		112.00	73.00	•	•
3.570	9/64	112.00	73.00	•	•
3.800		119.00	78.00	•	•
3.900		119.00	78.00	•	•
3.970	5/32	119.00	78.00	•	•
4.000		119.00	78.00	•	•
4.200		119.00	78.00	•	•
4.300		126.00	82.00	•	•
4.370	11/64	126.00	82.00	•	•
4.500		126.00	82.00	•	•
4.700		126.00	82.00	•	•
4.760	3/16	132.00	87.00	•	•
4.800		132.00	87.00	•	•
4.900		132.00	87.00	•	•
5.000		132.00	87.00	•	•
5.100		132.00	87.00	•	•
5.160	13/64	132.00	87.00	•	•
5.200		132.00	87.00	•	•
5.300		132.00	87.00	•	•
5.400		139.00	91.00	•	•
5.500		139.00	91.00	•	•
5.560	7/32	139.00	91.00	•	•
5.700		139.00	91.00	•	•
5.800		139.00	91.00	•	•
5.950	15/64	139.00	91.00	•	•
6.000		139.00	91.00	•	•
6.300		148.00	97.00	•	•
6.350	1/4	148.00	97.00	•	•
6.500		148.00	97.00	•	•

• Australian stock item ○ German stock item



d1		l1	l2	AVAILABILITY		
mm	Inch	mm	mm			
6.700	17/64	148.00	97.00	○	●	○
6.750		156.00	102.00	●	●	
6.800		156.00	102.00	●	●	○
6.900	19/64	156.00	102.00	○	●	○
7.000		156.00	102.00	●	●	○
7.200		156.00	102.00	○	●	○
7.500		156.00	102.00	●	●	○
7.540		165.00	109.00	○	●	
7.940		165.00	109.00	●	●	
8.000	5/16	165.00	109.00	●	●	○
8.100		165.00	109.00	○	●	○
8.500		165.00	109.00	●	●	○
8.700	11/32	175.00	115.00	○	●	○
8.730		175.00	115.00	○	●	
9.000		175.00	115.00	●	●	○
9.500	3/8	175.00	115.00	●	●	○
9.520		184.00	121.00	○	●	
9.700		184.00	121.00	○	●	○
9.800		184.00	121.00	○	●	○
9.900	1/2	184.00	121.00	○	●	○
10.000		184.00	121.00	●	●	○
10.200		184.00	121.00	●	●	○
10.300		184.00	121.00	●		○
10.500		184.00	121.00	●	●	○
11.000		195.00	128.00	●	●	○
11.500	1/2	195.00	128.00	●	●	○
12.000		205.00	134.00	●	●	○
12.500		205.00	134.00	●	●	○
12.700		205.00	134.00	●		
13.000		205.00	134.00	●	●	○
13.500		214.00	140.00	●	●	○
14.000		214.00	140.00	●	○	○

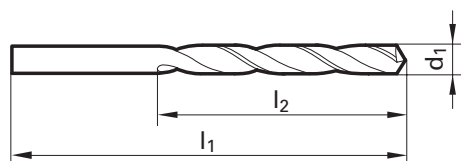
- Australian stock item
- German stock item





- Australian stock item
- German stock item

Guhring no.	504
Standard	DIN 1869
Tool material	HSS
Surface	
Type	GT 100
Cutting direction	right-hand
Point angle	130°



d1		l1	l2	AVAILABILITY
mm	Inch	mm	mm	
3.000		240.00	160.00	•
3.170	1/8	250.00	170.00	•
3.500		265.00	180.00	•
3.970	5/32	280.00	190.00	•
4.000		280.00	190.00	•
4.370	11/64	295.00	200.00	•
4.760	3/16	315.00	210.00	•
5.000		315.00	210.00	•
5.500		330.00	225.00	•
6.000		330.00	225.00	•
6.350	1/4	350.00	235.00	•
6.500		350.00	235.00	•
6.750	17/64	370.00	250.00	•
7.000		370.00	250.00	•
7.140	9/32	370.00	250.00	•
7.500		370.00	250.00	•
7.940	5/16	390.00	265.00	•
8.000		390.00	265.00	•
8.330	21/64	390.00	265.00	•
8.730	11/32	410.00	280.00	•
9.000		410.00	280.00	•
9.520	3/8	430.00	295.00	•
10.000		430.00	295.00	•
10.320	13/32	430.00	295.00	•
10.500		430.00	295.00	•
11.000		455.00	310.00	•
11.110	7/16	455.00	310.00	•
12.000		480.00	330.00	•
13.000		480.00	330.00	•

• Australian stock item ◦ German stock item



Technical drawing of a drill bit. The drawing shows a side view of the drill bit with a double-flute design. The total length of the drill bit is labeled l_1 . The length of the cutting edge (the part that is fluted) is labeled l_2 . The diameter of the drill bit is labeled d_1 .



- *Australian stock item*
- *German stock item*

GUHRING

MICRO-PRECISION TOOLS



21

- *Australian stock item*
- *German stock item*

6408

Guhring std.

Solid Carbide

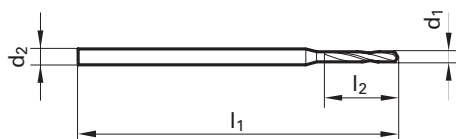
A

N

8xDright-hand

h7

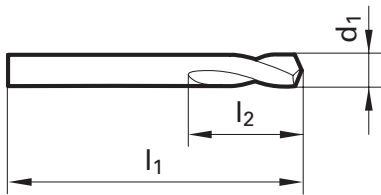
135°



AVAILABILITY

[illegible]

Gühring no.	557	568	557F	1133	723	723F	5649
Standard	Gühring std.						
Tool material	HSS			HSCO	Solid Carbide		
Surface	○	●S	●F	●F	○	●F	○
Type	N	N	N	N	N	N	N
Cutting direction	right-hand						
Tolerance	h6	h6	h6	h6	h6	h6	h6
Point angle	90°	90°	90°	90°	90°	90°	142°



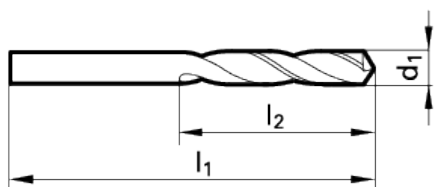
d1		l1	l2
mm	Inch	mm	mm
3.000		46.00	12.00
4.000		55.00	12.00
5.000		62.00	14.00
6.000		66.00	16.00
6.350	1/4	70.00	17.00
8.000		79.00	21.00
9.520	3/8	89.00	25.00
10.000		89.00	25.00
12.000		102.00	30.00
12.700	1/2	102.00	30.00
15.870	5/8	115.00	37.50
16.000		115.00	37.50
19.050	3/4	131.00	45.00
20.000		131.00	45.00
25.000	63/64	151.00	53.00
25.400	1	156.00	53.00

AVAILABILITY						
•	○		○			
•	○	●377003383	○	•		○
•	○		○	•		
•	•	●377003384	•	•	●377003928	•
•	○			○		
•	•	●377003385	•	•	●377003929	○
•	○			•		
•	•	●377003380	•	•	●377003925	•
•	•	●377003381	•	•	●377003926	•
•	•			•		
•				•		
•	•	●377003382	•	•	●377003927	○
•				•		
•	•		○	•		○
•	○					
•						

• Australian stock item ○ German stock item



Guhring no.	8926	8926F
Standard	In-house std.	In-house std.
Tool material	HSCO	HSCO
Surface		
Type		
Cutting direction	right-hand	right-hand
Tolerance	h8	h8



d1	l1	l2
mm	mm	mm
6.000	66.000	28.000
8.000	79.000	37.000

AVAILABILITY	
•	• 377016775
•	• 377016776

• Australian stock item ○ German stock item

25[illegible]

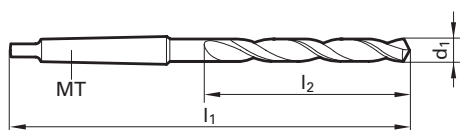
○ bright ● steam tempered ◐ nitrided lands ● s TiN ● A TiAlN ● C TiCN ● F FIRE/nanoFIRE ● a TiAlN SuperA



TAPER SHANK TWIST DRILLS

DRILLS

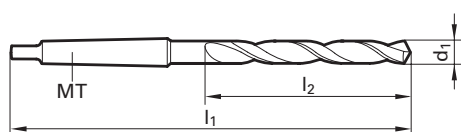
Guhring no.	245
Standard	DIN 345
Tool material	HSS
Surface	
Type	N
Cutting direction	right-hand
Tolerance	h8
Point angle	118°



d1		MT	l1	l2	AVAILABILITY
mm	inch		mm	mm	
13.000		1	182.00	101.00	•
13.500		1	189.00	108.00	•
14.000		1	189.00	108.00	•
14.250		2	212.00	114.00	•
14.290	9/16	2	212.00	114.00	•
14.500		2	212.00	114.00	•
15.000		2	212.00	114.00	•
15.080	19/32	2	218.00	120.00	•
15.500		2	218.00	120.00	•
15.750		2	218.00	120.00	•
15.800		2	218.00	120.00	•
15.870	5/8	2	218.00	120.00	•
16.000		2	218.00	120.00	•
16.270	41/64	2	223.00	125.00	•
16.500		2	223.00	125.00	•
16.750		2	223.00	125.00	•
17.000		2	223.00	125.00	•
17.460		2	228.00	130.00	•
17.500		2	228.00	130.00	•
17.860	45/64	2	228.00	130.00	○
18.000		2	228.00	130.00	•
18.250		2	233.00	135.00	•
18.500		2	233.00	135.00	•
18.650	47/64	2	233.00	135.00	•
19.000		2	233.00	135.00	•
19.050	3/4	2	238.00	140.00	•
19.500		2	238.00	140.00	•
19.840	25/32	2	238.00	140.00	○
20.000		2	238.00	140.00	•
20.500		2	243.00	145.00	•
20.640	13/16	2	243.00	145.00	○
21.000		2	243.00	145.00	•
21.430	27/32	2	248.00	150.00	○
21.500		2	248.00	150.00	•
22.000		2	248.00	150.00	•
22.220	7/8	2	248.00	150.00	•
22.250		2	248.00	150.00	•
22.500		2	253.00	155.00	•
23.000		2	253.00	155.00	•

• Australian stock item ○ German stock item

Guhring no.	245
Standard	DIN 345
Tool material	HSS
Surface	
Type	N
Cutting direction	right-hand
Tolerance	h8
Point angle	118°



d1		MT	l1	l2	AVAILABILITY
mm	inch		mm	mm	
23.500		3	276.00	155.00	•
23.810	15/16	3	281.00	160.00	○
24.000		3	281.00	160.00	•
24.500		3	281.00	160.00	•
25.000	63/64	3	281.00	160.00	•
25.400	1	3	286.00	165.00	•
25.500		3	286.00	165.00	•
26.000		3	286.00	165.00	•
26.190	1 1/32	3	286.00	165.00	○
26.500		3	286.00	165.00	•
27.000		3	291.00	170.00	•
27.500		3	291.00	170.00	•
28.000		3	291.00	170.00	•
28.500		3	296.00	175.00	•
28.570	1 1/8	3	296.00	175.00	○
29.000		3	296.00	175.00	•
29.500		3	296.00	175.00	•
30.000		3	296.00	175.00	•
30.160	1 3/16	3	301.00	180.00	○
30.500		3	301.00	180.00	•
31.000		3	301.00	180.00	•
31.500		3	301.00	180.00	•
31.750	1 1/4	3	306.00	185.00	•
32.000		4	334.00	185.00	•
33.000		4	334.00	185.00	•
34.000		4	339.00	190.00	•
35.000		4	339.00	190.00	•
36.000		4	344.00	195.00	•
37.310	1 15/32	4	344.00	195.00	○
38.000		4	349.00	200.00	•
38.100	1 1/2	4	349.00	200.00	○
40.000		4	349.00	200.00	•
41.000		4	354.00	205.00	○
42.000		4	354.00	205.00	•
43.000		4	359.00	210.00	•
44.000		4	359.00	210.00	•
45.000		4	359.00	210.00	•
48.000		4	369.00	220.00	•
50.000		4	369.00	220.00	•

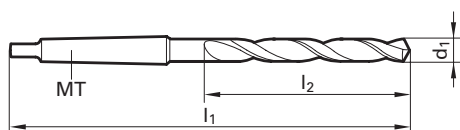
• Australian stock item ○ German stock item



TAPER SHANK LONG SERIES TWIST DRILLS

DRILLS

Guhring no.	257
Standard	DIN 341
Tool material	HSS
Surface	
Type	N
Cutting direction	right-hand
Tolerance	h8
Point angle	118°

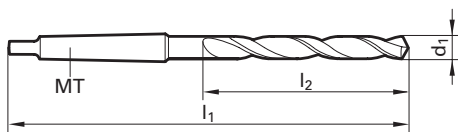


d1	MT	l1	l2	AVAILABILITY
mm		mm	mm	
13.00	1	215.00	134.00	•
13.50	1	223.00	142.00	○
14.00	1	223.00	142.00	•
14.50	2	245.00	147.00	○
15.00	2	245.00	147.00	•
15.50	2	251.00	153.00	○
16.00	2	251.00	153.00	•
16.50	2	257.00	159.00	○
17.00	2	257.00	159.00	•
17.50	2	263.00	165.00	○
18.00	2	263.00	165.00	•
18.50	2	269.00	171.00	○
19.00	2	269.00	171.00	•
19.50	2	275.00	177.00	○
20.00	2	275.00	177.00	○
21.00	2	282.00	184.00	○
22.00	2	289.00	191.00	○
22.22	2	289.00	191.00	○
23.00	2	296.00	198.00	○
24.00	3	327.00	206.00	○
25.00	3	327.00	206.00	○
26.00	3	335.00	214.00	○
27.00	3	343.00	222.00	○
28.00	3	343.00	222.00	○
29.00	3	351.00	230.00	○
30.00	3	351.00	230.00	○
35.00	4	406.00	257.00	○
36.00	4	416.00	267.00	○
38.00	4	426.00	277.00	○
40.00	4	426.00	277.00	○

• Australian stock item ○ German stock item



Guhring no.	526	527	565
Standard	DIN 1870		
Tool material	HSS		
Surface	 >Ø 16,0	 >Ø 16,0	 >Ø 16,0
Type	GT 100	GT 100	GT 100
Cutting direction	right-hand	right-hand	right-hand
Tolerance	h8	h8	h8
Point angle	130°	130°	130°



d1	MT	l1	l2	AVAILABILITY	
mm		mm	mm		
12.000	1	310.00	205.00	•	
13.000	1	310.00	205.00	•	
14.000	1	325.00	220.00	•	
15.000	2	340.00	220.00	•	
16.000	2	355.00	230.00	•	
17.000	2	355.00	230.00	•	
18.000	2	370.00	245.00	•	
19.000	2	370.00	245.00	•	
20.000	2	385.00	260.00	•	
12.000	1	395.00	260.00	•	
13.000	1	395.00	260.00	•	
14.000	1	410.00	275.00	•	
15.000	2	425.00	275.00	•	
16.000	2	445.00	295.00	•	
17.000	2	445.00	295.00	•	
18.000	2	465.00	310.00	•	
19.000	2	465.00	310.00	•	
20.000	2	490.00	325.00	•	
10.000	1	425.00	345.00		•
11.000	1	425.00	345.00		•
12.000	1	425.00	345.00		•
13.000	1	425.00	345.00		•
14.000	1	425.00	345.00		•
15.000	2	425.00	325.00		•
16.000	2	425.00	325.00		•
17.000	2	425.00	325.00		•

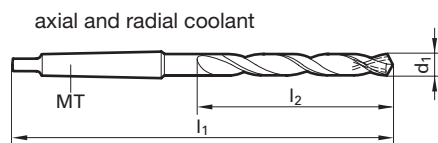
• Australian stock item ◦ German stock item



- *Australian stock item*
- *German stock item*



Guhring no.	255
Standard	WN
Tool material	HSS
Surface	
Type	N
Cutting direction	right-hand
Tolerance	h8
Point angle	170°



d1	S	l1	l2	AVAILABILITY
mm		mm	mm	
8.000	2	268.00	116.00	○
9.000	2	268.00	116.00	○
10.000	3	268.00	116.00	○
10.500	3	268.00	116.00	○
11.000	3	278.00	125.00	○
12.000	3	287.00	134.00	●
13.000	3	287.00	134.00	○
13.500	3	285.00	142.00	○
14.000	3	285.00	142.00	●
15.000	3	300.00	147.00	○
16.000	3	306.00	153.00	●
17.000	3	311.00	159.00	○
17.500	3	318.00	165.00	○
18.000	3	318.00	165.00	●
19.000	3	324.00	171.00	○
20.000	3	330.00	177.00	●
21.000	3	343.00	184.00	○
22.000	3	350.00	191.00	●
23.000	3	357.00	198.00	○
24.000	3	365.00	206.00	●
25.000	3	365.00	206.00	○
26.000	3	373.00	214.00	●
27.000	4	375.00	193.00	○
28.000	4	375.00	193.00	●
29.000	4	375.00	193.00	○
30.000	4	375.00	193.00	●
31.000	4	375.00	193.00	○
32.000	4	375.00	193.00	●
33.000	4	375.00	193.00	○
34.000	4	375.00	193.00	●
35.000	4	375.00	193.00	○
36.000	4	375.00	193.00	○
37.000	4	375.00	193.00	○
38.000	4	375.00	193.00	○
39.000	4	375.00	193.00	○
40.000	4	375.00	193.00	○
41.000	4	375.00	193.00	○
42.000	4	375.00	193.00	○

● Australian stock item ○ German stock item



5514

5510

5526

6498

Standard

DIN 6537 K

Tool material

Solid carbide

Surface

F

F

F

F

Type

100 U

RT 100 U

RT 100 VA

RT 100 XF

Cutting direction

right-hand

right-hand

right-hand

right-hand

Tolerance

m7

m7

m7

m7

Drilling depth

3 x D

3 x D

3 x D

3 x D

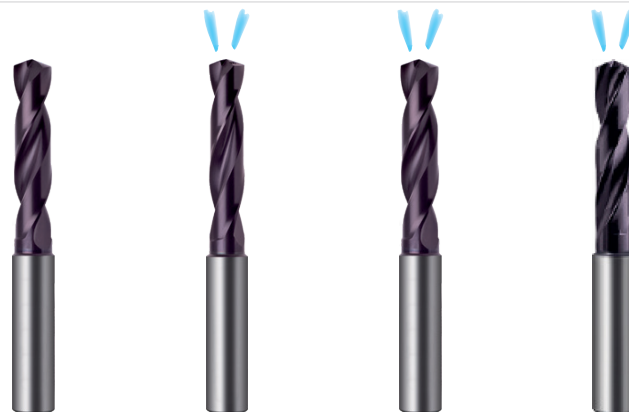
Point angle

140°

140°

140°

140°



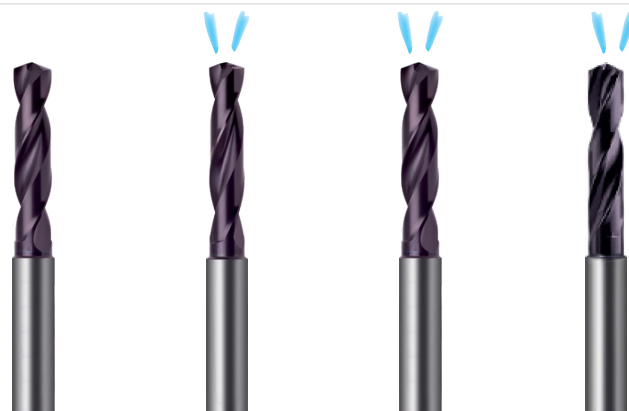
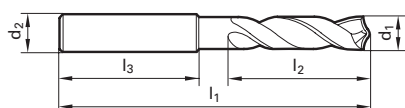
AVAILABILITY

[illegible]

- *Australian stock item*
- *German stock item*



Guhring no.	5514	5510	5526	6498
Standard	DIN 6537 K			
Tool material	Solid carbide			
Surface	F	F	F	F
Type	RT 100 U	RT 100 U	RT 100 VA	RT 100 XF
Cutting direction	right-hand	right-hand	right-hand	right-hand
Tolerance	m7	m7	m7	m7
Drilling depth	3 x D	3 x D	3 x D	3 x D
Point angle	140°	140°	140°	140°



d1	d2	l1	l2	l3	AVAILABILITY			
mm	inch	mm	mm	mm	mm			
5.900		6.000	66.00	28.00	36.00	•	○	○
5.950	15/64	6.000	66.00	28.00	36.00	•	○	○
6.000		6.000	66.00	28.00	36.00	•	•	○
6.100		8.000	79.00	34.00	36.00	•	○	○
6.200		8.000	79.00	34.00	36.00	•	○	○
6.300		8.000	79.00	34.00	36.00	•	•	○
6.350	1/4	8.000	79.00	34.00	36.00	•	•	○
6.400		8.000	79.00	34.00	36.00	•	•	○
6.500		8.000	79.00	34.00	36.00	•	•	○
6.600		8.000	79.00	34.00	36.00	•	○	○
6.700		8.000	79.00	34.00	36.00	•	○	○
6.750	17/64	8.000	79.00	34.00	36.00	•	○	○
6.800		8.000	79.00	34.00	36.00	•	○	○
6.900		8.000	79.00	34.00	36.00	•	○	○
7.000		8.000	79.00	34.00	36.00	•	•	○
7.100		8.000	79.00	41.00	36.00	•	○	○
7.140	9/32	8.000	79.00	41.00	36.00	•	○	○
7.200		8.000	79.00	41.00	36.00	•	○	○
7.300		8.000	79.00	41.00	36.00	•	○	○
7.400		8.000	79.00	41.00	36.00	•	•	○
7.500		8.000	79.00	41.00	36.00	•	○	○
7.540	19/64	8.000	79.00	41.00	36.00	•	○	○
7.600		8.000	79.00	41.00	36.00	•	○	○
7.700		8.000	79.00	41.00	36.00	•	○	○
7.800		8.000	79.00	41.00	36.00	•	○	○
7.900		8.000	79.00	41.00	36.00	•	○	○
7.940	5/16	8.000	79.00	41.00	36.00	•	○	○
8.000		8.000	79.00	41.00	36.00	•	•	○
8.100		10.000	89.00	47.00	40.00	•	○	○
8.200		10.000	89.00	47.00	40.00	•	•	○
8.300		10.000	89.00	47.00	40.00	•	○	○
8.330	21/64	10.000	89.00	47.00	40.00	•	○	○
8.400		10.000	89.00	47.00	40.00	•	○	○
8.500		10.000	89.00	47.00	40.00	•	•	○
8.600		10.000	89.00	47.00	40.00	•	•	○
8.700		10.000	89.00	47.00	40.00	•	○	○
8.730	11/32	10.000	89.00	47.00	40.00	•	○	○
8.800		10.000	89.00	47.00	40.00	•	•	○
8.900		10.000	89.00	47.00	40.00	•	•	○

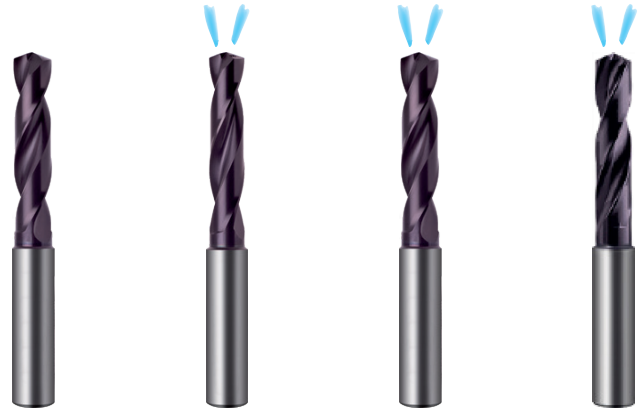
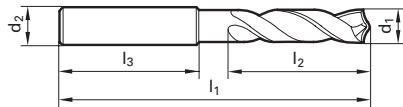
• Australian stock item ○ German stock item



HIGH-PERFORMANCE RATIO DRILLS, 3 X D

DRILLS

Gühring no.	5514	5510	5526	6498
Standard	DIN 6537 K			
Tool material	Solid carbide			
Surface	F	F	F	F
Type	RT 100 U	RT 100 U	RT 100 VA	RT 100 XF
Cutting direction	right-hand	right-hand	right-hand	right-hand
Tolerance	m7	m7	m7	m7
Drilling depth	3 x D	3 x D	3 x D	3 x D
Point angle	140°	140°	140°	140°



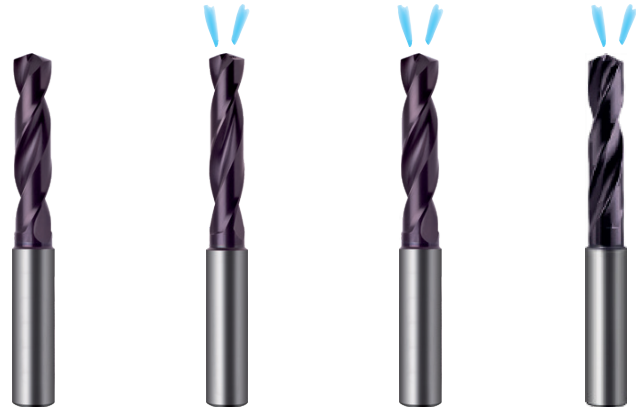
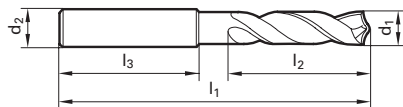
d1	d2	l1	l2	l3	AVAILABILITY			
mm	inch	mm	mm	mm	mm			
9.000		10.000	89.00	47.00	40.00	•	•	○
9.100		10.000	89.00	47.00	40.00	•	○	○
9.130	23/64	10.000	89.00	47.00	40.00	•	○	○
9.200		10.000	89.00	47.00	40.00	•	○	○
9.250		10.000	89.00	47.00	40.00	•	○	○
9.300		10.000	89.00	47.00	40.00	•	○	○
9.400		10.000	89.00	47.00	40.00	•	○	○
9.500		10.000	89.00	47.00	40.00	•	○	○
9.520	3/8	10.000	89.00	47.00	40.00	•	•	○
9.600		10.000	89.00	47.00	40.00	•	○	○
9.700		10.000	89.00	47.00	40.00	•	○	○
9.800		10.000	89.00	47.00	40.00	•	•	○
9.900		10.000	89.00	47.00	40.00	•	○	○
9.920	25/64	10.000	89.00	47.00	40.00	•	○	○
10.000		10.000	89.00	47.00	40.00	•	•	○
10.100		12.000	102.00	55.00	45.00	•	•	○
10.200		12.000	102.00	55.00	45.00	•	○	○
10.300		12.000	102.00	55.00	45.00	•	○	○
10.320	13/32	12.000	102.00	55.00	45.00	•	○	○
10.400		12.000	102.00	55.00	45.00	•	○	○
10.500		12.000	102.00	55.00	45.00	•	○	○
10.600		12.000	102.00	55.00	45.00	•	○	○
10.700		12.000	102.00	55.00	45.00	○	•	○
10.800		12.000	102.00	55.00	45.00	•	•	○
10.900		12.000	102.00	55.00	45.00	○	○	○
11.000		12.000	102.00	55.00	45.00	•	•	○
11.100		12.000	102.00	55.00	45.00	•	○	○
11.110	7/16	12.000	102.00	55.00	45.00	•	○	○
11.200		12.000	102.00	55.00	45.00	•	○	○
11.300		12.000	102.00	55.00	45.00	•	○	○
11.400		12.000	102.00	55.00	45.00	•	○	○
11.500		12.000	102.00	55.00	45.00	•	○	○
11.600		12.000	102.00	55.00	45.00	○	○	○
11.700		12.000	102.00	55.00	45.00	•	•	○
11.800		12.000	102.00	55.00	45.00	•	○	○
11.900		12.000	102.00	55.00	45.00	•	○	○
11.910	15/32	12.000	102.00	55.00	45.00	○	○	○
12.000		12.000	102.00	55.00	45.00	•	•	○
12.200		14.000	107.00	60.00	45.00	•	○	○

• Australian stock item ○ German stock item

○ bright ● steam tempered ● nitrided lands ● TiN ● TiAlN ● TiCN ● FIRE/nanoFIRE ● TiAlN SuperA



Gühring no.	5514	5510	5526	6498
Standard	DIN 6537 K			
Tool material	Solid carbide			
Surface	F	F	F	F
Type	RT 100 U	RT 100 U	RT 100 VA	RT 100 XF
Cutting direction	right-hand	right-hand	right-hand	right-hand
Tolerance	m7	m7	m7	m7
Drilling depth	3 x D	3 x D	3 x D	3 x D
Point angle	140°	140°	140°	140°



d1	d2	l1	l2	l3
mm	inch	mm	mm	mm
12.500	1/2	14.000	107.00	60.00
12.700		14.000	107.00	60.00
12.800		14.000	107.00	60.00
13.000		14.000	107.00	60.00
13.500	9/16	14.000	107.00	60.00
13.700		14.000	107.00	60.00
14.000		14.000	107.00	60.00
14.200		16.000	115.00	65.00
14.290	1	16.000	115.00	65.00
14.500		16.000	115.00	65.00
14.700		16.000	115.00	65.00
15.000		16.000	115.00	65.00
15.100	1 1/8	16.000	115.00	65.00
15.200		16.000	115.00	65.00
15.500		16.000	115.00	65.00
15.700		16.000	115.00	65.00
15.870	1 1/4	16.000	115.00	65.00
16.000		16.000	115.00	65.00
16.100		18.000	123.00	73.00
16.500		18.000	123.00	73.00
16.900	1 1/2	18.000	123.00	73.00
17.000		18.000	123.00	73.00
17.500		18.000	123.00	73.00
18.000		18.000	123.00	73.00
18.500	1 3/4	20.000	131.00	79.00
19.000		20.000	131.00	79.00
19.500		20.000	131.00	79.00
20.000		20.000	131.00	79.00

AVAILABILITY			
•	○	○	○
•	○	○	○
•	○	○	○
•	•	○	○
•	○	○	○
○	○	○	○
•	•	○	○
○	○	○	○
•	○	○	○
•	•	○	○
•	○	○	○
•	○	○	○
○	○	○	○
•	•	○	○
•	•	○	○
○	○	○	○
○	○	○	○
○	•	○	○
○	○	○	○
○	•	○	○
○	○	○	○
○	○	○	○
○	•	○	○



Scan to Download
Speed & Feed
(Ref: pg. 141 Gühring Superline)

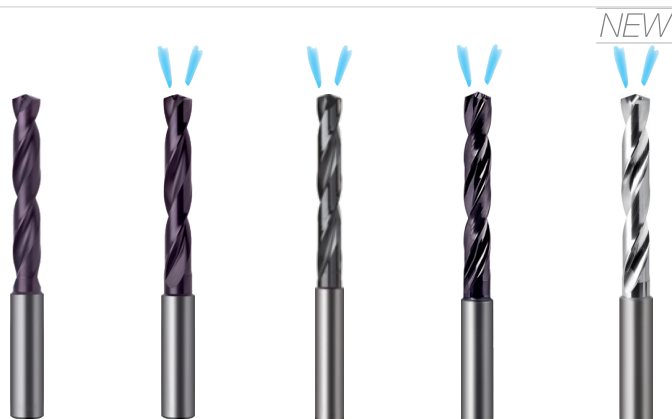
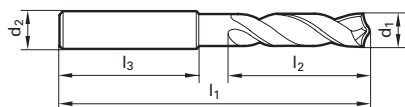
• Australian stock item ○ German stock item



HIGH-PERFORMANCE RATIO DRILLS, 5 X D

DRILLS

Guhring no.	5515	5511	5580	5498	5768
Standard	DIN 6537 L				
Tool material	Solid carbide				
Surface					
Type	RT 100 U	RT 100 U	RT 100 VA	RT 100 XF	RT 100 AI
Cutting direction	right-hand	right-hand	right-hand	right-hand	right-hand
Tolerance	m7	m7	m7	m7	m7
Drilling depth	5 x D	5 x D	5 x D	5 x D	5 x D
Point angle	140°	140°	140°	140°	140°

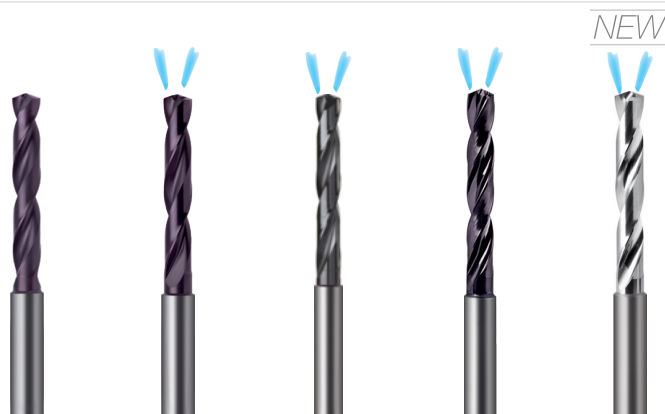
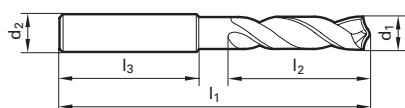


d1	d2	l1	l2	l3	AVAILABILITY				
mm	inch	mm	mm	mm	mm				
3.000		6.000	66.00	28.00	36.00	•	•	•	•
3.100		6.000	66.00	28.00	36.00	•	•	•	•
3.170	1/8	6.000	66.00	28.00	36.00	•	•	•	•
3.200		6.000	66.00	28.00	36.00	•	•	•	•
3.250		6.000	66.00	28.00	36.00	•	•	•	•
3.300		6.000	66.00	28.00	36.00	•	•	•	•
3.400		6.000	66.00	28.00	36.00	•	•	•	•
3.500		6.000	66.00	28.00	36.00	•	•	•	•
3.570	9/64	6.000	66.00	28.00	36.00	•	•	•	•
3.600		6.000	66.00	28.00	36.00	•	•	•	•
3.700		6.000	66.00	28.00	36.00	•	•	•	•
3.800		6.000	74.00	36.000	36.00	•	•	•	•
3.900		6.000	74.00	36.000	36.00	•	•	•	•
3.970	5/32	6.000	74.00	36.000	36.00	•	•	•	•
4.000		6.000	74.00	36.000	36.00	•	•	•	•
4.100		6.000	74.00	36.000	36.00	•	•	•	•
4.200		6.000	74.00	36.000	36.00	•	•	•	•
4.300		6.000	74.00	36.000	36.00	•	•	•	•
4.370	11/64	6.000	74.00	36.000	36.00	•	•	•	•
4.400		6.000	74.00	36.000	36.00	•	•	•	•
4.500		6.000	74.00	36.000	36.00	•	•	•	•
4.600		6.000	74.00	36.000	36.00	•	•	•	•
4.650		6.000	74.00	36.000	36.00	•	•	•	•
4.700		6.000	74.00	36.000	36.00	•	•	•	•
4.760	3/16	6.000	82.00	44.00	36.00	•	•	•	•
4.800		6.000	82.00	44.00	36.00	•	•	•	•
4.900		6.000	82.00	44.00	36.00	•	•	•	•
5.000		6.000	82.00	44.00	36.00	•	•	•	•
5.100		6.000	82.00	44.00	36.00	•	•	•	•
5.160	13/64	6.000	82.00	44.00	36.00	•	•	•	•
5.200		6.000	82.00	44.00	36.00	•	•	•	•
5.300		6.000	82.00	44.00	36.00	•	•	•	•
5.400		6.000	82.00	44.00	36.00	•	•	•	•
5.500		6.000	82.00	44.00	36.00	•	•	•	•
5.550		6.000	82.00	44.00	36.00	•	•	•	•
5.560	7/32	6.000	82.00	44.00	36.00	•	•	•	•
5.600		6.000	82.00	44.00	36.00	•	•	•	•
5.700		6.000	82.00	44.00	36.00	•	•	•	•
5.800		6.000	82.00	44.00	36.00	•	•	•	•

• Australian stock item ◯ German stock item



Guhring no.	5515	5511	5580	5498	5768
Standard	DIN 6537 L				
Tool material	Solid carbide				
Surface	F	F	A	F	O
Type	RT 100 U	RT 100 U	RT 100 VA	RT 100 XF	RT 100 AI
Cutting direction	right-hand	right-hand	right-hand	right-hand	right-hand
Tolerance	m7	m7	m7	m7	m7
Drilling depth	5 x D	5 x D	5 x D	5 x D	5 x D
Point angle	140°	140°	140°	140°	140°



d1	d2	l1	l2	l3	AVAILABILITY				
mm	inch	mm	mm	mm	mm				
5.900		6.000	82.00	44.00	36.00	○	●	○	○
5.950	15/64	6.000	82.00	44.00	36.00	●	●	○	○
6.000		6.000	82.00	44.00	36.00	●	●	●	○
6.100		8.000	91.00	53.00	36.00	○	●	○	○
6.200		8.000	91.00	53.00	36.00	●	●	○	○
6.300		8.000	91.00	53.00	36.00	○	●	○	○
6.350	1/4	8.000	91.00	53.00	36.00	●	●	○	○
6.400		8.000	91.00	53.00	36.00	○	●	○	○
6.500		8.000	91.00	53.00	36.00	●	●	●	○
6.600		8.000	91.00	53.00	36.00	●	●	●	○
6.700		8.000	91.00	53.00	36.00	○	●	○	○
6.750	17/64	8.000	91.00	53.00	36.00	●	●	○	○
6.800		8.000	91.00	53.00	36.00	●	●	●	○
6.900		8.000	91.00	53.00	36.00	○	●	○	○
7.000		8.000	91.00	53.00	36.00	●	●	●	○
7.100		8.000	91.00	53.00	36.00	○	●	○	○
7.140	9/32	8.000	91.00	53.00	36.00	●	●	○	○
7.200		8.000	91.00	53.00	36.00	●	●	○	○
7.300		8.000	91.00	53.00	36.00	●	●	○	○
7.400		8.000	91.00	53.00	36.00	●	●	○	○
7.500		8.000	91.00	53.00	36.00	●	●	●	○
7.540	19/64	8.000	91.00	53.00	36.00	●	●	○	○
7.600		8.000	91.00	53.00	36.00	○	●	○	○
7.700		8.000	91.00	53.00	36.00	○	●	●	○
7.800		8.000	91.00	53.00	36.00	●	●	○	○
7.900		8.000	91.00	53.00	36.00	○	●	○	○
7.940	5/16	8.000	91.00	53.00	36.00	●	●	○	○
8.000		8.000	91.00	53.00	36.00	●	●	●	○
8.100		10.000	103.00	61.00	40.00	○	●	○	○
8.200		10.000	103.00	61.00	40.00	○	●	○	○
8.300		10.000	103.00	61.00	40.00	○	●	○	○
8.330	21/64	10.000	103.00	61.00	40.00	●	●	○	○
8.400		10.000	103.00	61.00	40.00	○	●	○	○
8.500		10.000	103.00	61.00	40.00	●	●	●	○
8.600		10.000	103.00	61.00	40.00	●	●	○	○
8.700		10.000	103.00	61.00	40.00	○	●	●	○
8.730	11/32	10.000	103.00	61.00	40.00	●	●	○	○
8.800		10.000	103.00	61.00	40.00	●	●	○	○
8.900		10.000	103.00	61.00	40.00	○	●	●	○

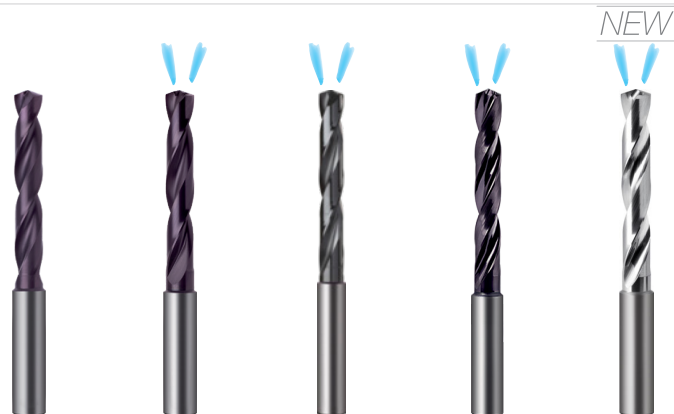
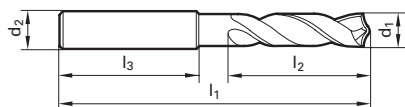
● Australian stock item ○ German stock item



HIGH-PERFORMANCE RATIO DRILLS, 5 X D

DRILLS

Gühring no.	5515	5511	5580	5498	5768
Standard	DIN 6537 L				
Tool material	Solid carbide				
Surface					
Type	RT 100 U	RT 100 U	RT 100 VA	RT 100 XF	RT 100 AI
Cutting direction	right-hand	right-hand	right-hand	right-hand	right-hand
Tolerance	m7	m7	m7	m7	m7
Drilling depth	5 x D	5 x D	5 x D	5 x D	5 x D
Point angle	140°	140°	140°	140°	140°

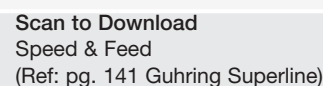


d1	d2	l1	l2	l3	AVAILABILITY				
mm	inch	mm	mm	mm	mm				
9.000		10.000	103.00	61.00	40.00	•	•	•	•
9.100		10.000	103.00	61.00	40.00	○	•	○	○
9.130	23/64	10.000	103.00	61.00	40.00	○	•	○	○
9.200		10.000	103.00	61.00	40.00	○	•	○	○
9.250		10.000	103.00	61.00	40.00	○	•	○	○
9.300		10.000	103.00	61.00	40.00	•	•	○	○
9.400		10.000	103.00	61.00	40.00	○	•	○	○
9.500		10.000	103.00	61.00	40.00	•	•	•	○
9.520	3/8	10.000	103.00	61.00	40.00	•	•	○	○
9.600		10.000	103.00	61.00	40.00	•	•	○	○
9.700		10.000	103.00	61.00	40.00	○	•	○	○
9.800		10.000	103.00	61.00	40.00	•	•	○	○
9.900		10.000	103.00	61.00	40.00	○	•	○	○
9.920	25/64	10.000	103.00	61.00	40.00	○	•	○	○
10.000		10.000	103.00	61.00	40.00	•	•	•	○
10.100		12.000	118.00	71.00	45.00	○	•	○	○
10.200		12.000	118.00	71.00	45.00	•	•	○	•
10.300		12.000	118.00	71.00	45.00	○	•	•	○
10.320	13/32	12.000	118.00	71.00	45.00	•	•	○	○
10.400		12.000	118.00	71.00	45.00	○	•	○	○
10.500		12.000	118.00	71.00	45.00	•	•	•	○
10.600		12.000	118.00	71.00	45.00	○	•	○	○
10.700		12.000	118.00	71.00	45.00	○	•	○	○
10.800		12.000	118.00	71.00	45.00	•	•	○	○
10.900		12.000	118.00	71.00	45.00	○	•	○	○
11.000		12.000	118.00	71.00	45.00	•	•	○	•
11.100		12.000	118.00	71.00	45.00	○	•	○	○
11.110	7/16	12.000	118.00	71.00	45.00	•	•	○	•
11.200		12.000	118.00	71.00	45.00	•	•	○	○
11.300		12.000	118.00	71.00	45.00	○	•	○	○
11.400		12.000	118.00	71.00	45.00	○	•	○	○
11.500		12.000	118.00	71.00	45.00	•	•	○	•
11.600		12.000	118.00	71.00	45.00	○	•	○	○
11.700		12.000	118.00	71.00	45.00	○	•	○	○
11.800		12.000	118.00	71.00	45.00	•	•	•	○
11.900		12.000	118.00	71.00	45.00	○	•	○	○
11.910	15/32	12.000	118.00	71.00	45.00	○	•	○	○
12.000		12.000	118.00	71.00	45.00	•	•	•	•
12.100		14.000	124.00	77.00	45.00	•	○	•	○

• Australian stock item ○ German stock item



AVAILABILITY				
☐	☒	☐	☐	☐
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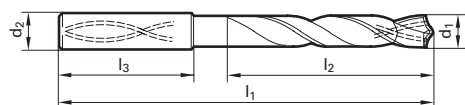
39



HIGH-PERFORMANCE RATIO DRILLS, 7 X D

DRILLS

Gühring no.	5512	5499
Standard	Gühring std.	Gühring std.
Tool Material	Solid carbide	Solid carbide
Surface		
Type	RT 100 U	RT 100 XF
Cutting Direction	right-hand	right-hand
Tolerance	m7	m7
Drilling depth	7 x D	7 x D
Point angle	140°	140°

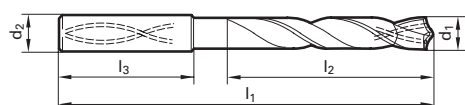


d1	d2	l1	l2	l3	AVAILABILITY
mm	inch	mm	mm	mm	
3.000		6.000	70.00	30.00	• ○
3.300		6.000	70.00	30.00	
4.000		6.000	75.00	36.00	
4.600		6.000	85.00	45.00	• ○
5.000		6.000	90.00	50.00	
5.200		6.000	90.00	50.00	
5.500		6.000	97.00	57.00	• ○
5.560		6.000	97.00	57.00	
5.800		6.000	97.00	57.00	
5.950		6.000	97.00	57.00	• ○
6.000		6.000	97.00	57.00	
6.350	1/4	8.000	106.00	66.00	
6.500		8.000	106.00	66.00	• ○
6.750		8.000	106.00	66.00	
6.800		8.000	106.00	66.00	
7.000		8.000	116.00	76.00	• ○
7.140		8.000	116.00	76.00	
7.500		8.000	116.00	76.00	
7.540		8.000	116.00	76.00	• ○
7.800		8.000	116.00	76.00	
7.940		8.000	116.00	76.00	
8.000		8.000	116.00	76.00	• ○
8.330		10.000	131.00	87.00	
8.500		10.000	131.00	87.00	
8.730		10.000	131.00	87.00	• ○
9.000		10.000	131.00	87.00	
9.130		10.000	131.00	87.00	
9.500		10.000	139.00	95.00	• ○
9.520	3/8	10.000	139.00	95.00	
9.800		10.000	139.00	95.00	
10.000		10.000	139.00	95.00	• ○
10.200		12.000	155.00	106.00	
10.320		12.000	155.00	106.00	
10.500		12.000	155.00	106.00	• ○
11.000		12.000	155.00	106.00	
11.110		12.000	163.00	114.00	
11.500		12.000	163.00	114.00	• ○
11.910		12.000	163.00	114.00	
12.000		12.000	163.00	114.00	

• Australian stock item ○ German stock item



Guhring no.	5512	5499
Standard	Guhring std.	Guhring std.
Tool material	Solid carbide	Solid carbide
Surface	F	F
Type	RT 100 U	RT 100 XF
Cutting direction	right-hand	right-hand
Tolerance	m7	m7
Drilling depth	7 x D	7 x D
Point angle	140°	140°



d1	d2	l1	l2	l3
mm	inch	mm	mm	mm
12.500	1/2	14.000	182.00	133.00
12.700		14.000	182.00	133.00
13.000		14.000	182.00	133.00
13.500		14.000	182.00	133.00
14.000	1/2	14.000	182.00	133.00
14.200		16.000	204.00	152.00
14.500		16.000	204.00	152.00
15.000		16.000	204.00	152.00
15.500	3/4	16.000	204.00	152.00
16.000		16.000	204.00	152.00
16.500		18.000	223.00	171.00
17.000		18.000	223.00	171.00
17.500	3/4	18.000	223.00	171.00
18.000		18.000	223.00	171.00
18.500		20.000	244.00	190.00
19.000		20.000	244.00	190.00
19.050	3/4	20.000	244.00	190.00
19.500		20.000	244.00	190.00
20.000	3/4	20.000	244.00	190.00

AVAILABILITY	
•	○
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○	○

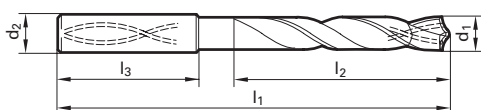


Scan to Download
Speed & Feed
(Ref: pg. 141 Guhring Superline)

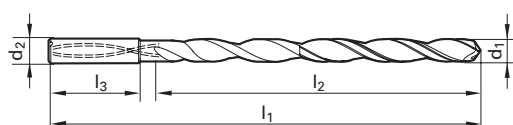
• Australian stock item ○ German stock item



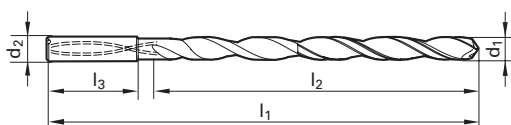
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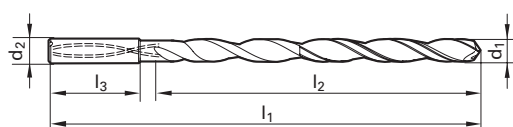
- *Australian stock item*
- *German stock item*



- *Australian stock item*
- *German stock item*



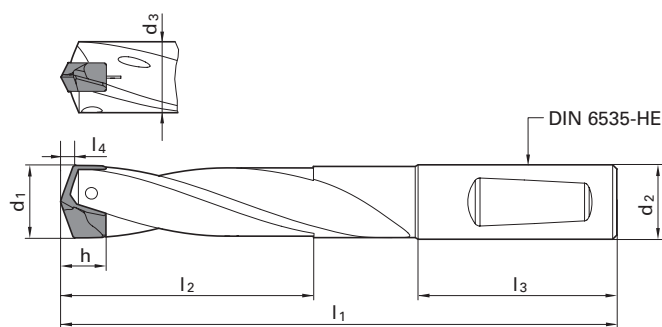
44



- *Australian stock item*
- *German stock item*



TOOL HOLDERS FOR INTERCHANGEABLE INSERTS HT 800, 3 X D



Code no.	Holder Size	d1	d2	d3	incl. WP l1*	l2 max	l3	AVAILABILITY
		mm	mm	mm	mm	mm	mm	
11,000	110	11.00 - 11.49	12.00	10.70	101.00	36.60	45.00	•
11,005	110	11.00 - 11.49	12.70	10.70	101.00	36.60	45.00	○
11,500	115	11.50 - 11.99	12.00	11.20	103.00	38.10	45.00	•
11,505	115	11.50 - 11.99	12.70	11.20	103.00	38.10	45.00	○
12,000	120	12.00 - 12.49	12.00	11.70	106.00	39.70	45.00	•
12,005	120	12.00 - 12.49	12.70	11.70	106.00	39.70	45.00	○
12,500	125	12.50 - 12.99	14.00	12.20	108.00	41.30	45.00	•
12,505	125	12.50 - 12.99	15.875	12.20	108.00	41.30	45.00	○
13,000	130	13.00 - 13.49	14.00	12.70	110.00	42.90	45.00	•
13,005	130	13.00 - 13.49	15.875	12.70	110.00	42.90	45.00	○
13,500	135	13.50 - 13.99	14.00	13.20	113.00	44.60	45.00	•
13,505	135	13.50 - 13.99	15.875	13.20	113.00	44.60	45.00	○
14,000	140	14.00 - 14.49	14.00	13.70	115.00	46.20	45.00	•
14,005	140	14.00 - 14.49	15.875	13.70	115.00	46.20	48.00	○
14,500	145	14.50 - 14.99	16.00	14.20	120.00	47.80	48.00	•
14,505	145	14.50 - 14.99	15.875	14.20	120.00	47.80	48.00	○
15,000	150	15.00 - 15.49	16.00	14.70	123.00	49.30	48.00	•
15,005	150	15.00 - 15.49	15.875	14.70	123.00	49.30	48.00	○
15,500	155	15.50 - 15.99	16.00	15.20	125.00	50.90	48.00	•
15,505	155	15.50 - 15.99	15.875	15.20	125.00	59.90	48.00	○
16,000	160	16.00 - 16.49	16.00	15.70	127.00	52.90	48.00	•
16,005	160	16.00 - 16.49	15.875	15.70	127.00	52.90	48.00	○
16,500	165	16.50 - 16.99	18.00	16.20	130.00	54.10	48.00	•
16,505	165	16.50 - 16.99	19.05	16.20	130.00	54.10	48.00	○
17,000	170	17.00 - 17.49	18.00	16.70	132.00	55.80	48.00	•
17,005	170	17.00 - 17.49	19.05	16.70	132.00	55.80	48.00	○
17,500	175	17.50 - 17.99	18.00	17.20	134.00	57.40	48.00	•
17,505	175	17.50 - 17.99	19.05	17.20	134.00	57.40	48.00	○
18,000	180	18.00 - 18.49	18.00	17.70	137.00	58.90	48.00	•
18,005	180	18.00 - 18.49	19.05	17.70	137.00	58.90	48.00	○
18,500	185	18.50 - 18.99	20.00	18.20	141.00	60.50	50.00	•
18,505	185	18.50 - 18.99	19.05	18.20	141.00	60.50	50.00	○
19,000	190	19.00 - 19.49	20.00	18.70	143.00	62.10	50.00	•
19,005	190	19.00 - 19.49	19.05	18.70	143.00	62.10	50.00	○
19,500	195	19.50 - 19.99	20.00	19.20	146.00	63.70	50.00	•
19,505	195	19.50 - 19.99	19.05	19.20	146.00	63.70	50.00	○
20,000	200	20.00 - 20.49	20.00	19.70	148.00	65.30	50.00	•
20,005	200	20.00 - 20.49	19.05	19.70	148.00	65.30	50.00	○
20,500	205	20.50 - 20.99	25.00	20.20	159.00	67.00	56.00	•

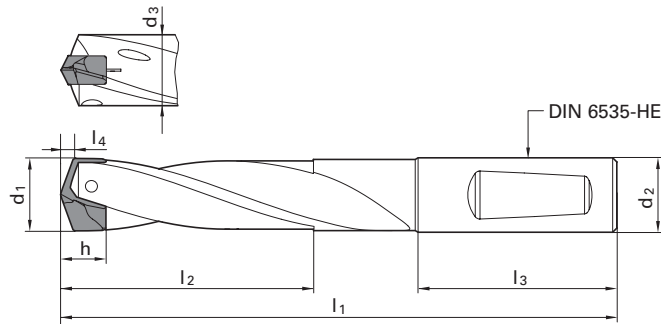
• Australian stock item ○ German stock item



Guhring no.

4107

DRILLS



Code no.	Holder Size	d1	d2	d3	incl. WP l1*	l2 max	l3	AVAILABILITY
		mm	mm	mm	mm	mm	mm	
20,505	205	20.50 - 20.99	25.40	20.20	159.00	67.00	56.00	○
21,000	210	21.00 - 21.49	25.00	20.70	161.00	68.60	56.00	●
21,005	210	21.00 - 21.49	25.40	20.70	161.00	68.60	56.00	○
21,500	215	21.50 - 21.99	25.00	21.20	163.00	70.10	56.00	●
21,505	215	21.50 - 21.99	25.40	21.20	163.00	70.10	56.00	○
22,000	220	22.00 - 22.49	25.00	21.70	165.00	71.70	56.00	●
22,005	220	22.00 - 22.49	25.40	21.70	165.00	71.70	56.00	○
22,500	225	22.50 - 22.99	25.00	22.20	168.00	73.30	56.00	●
22,505	225	22.50 - 22.99	25.40	22.20	168.00	73.30	56.00	○
23,000	230	23.00 - 23.49	25.00	22.70	170.00	74.9	56.00	●
23,005	230	23.00 - 23.49	25.40	22.70	170.00	74.90	56.00	○
23,500	235	23.50 - 23.99	25.00	23.20	173.00	76.50	56.00	●
23,505	235	23.50 - 23.99	25.40	23.20	173.00	76.50	56.00	○
24,000	240	24.00 - 24.49	25.00	23.70	175.00	78.10	56.00	●
24,005	240	24.00 - 24.49	25.40	23.70	175.00	78.10	56.00	○
24,500	245	24.50 - 24.99	25.00	24.20	177.00	79.70	56.00	●
24,505	245	24.50 - 24.99	25.40	24.20	177.00	79.70	56.00	○
25,000	250	25.00 - 25.49	25.00	24.70	180.00	81.30	56.00	●
25,005	250	25.00 - 25.49	25.40	24.70	180.00	81.30	56.00	○
25,500	255	25.50 - 25.99	32.00	25.20	187.00	82.9	60.00	○
25,505	255	25.50 - 25.99	31.75	25.20	187.00	82.90	60.00	○
26,000	260	26.00 - 26.49	32.00	25.70	191.00	84.00	60.00	●
26,005	260	26.00 - 26.49	31.75	25.70	191.00	84.00	60.00	○
26,500	265	26.50 - 26.99	32.00	26.20	193.00	86.10	60.00	○
26,505	265	26.50 - 26.99	31.75	26.20	193.00	86.10	60.00	○
27,000	270	27.00 - 27.49	32.00	26.70	196.00	87.20	60.00	●
27,005	270	27.00 - 27.49	31.75	26.70	196.00	87.20	60.00	○
27,500	275	27.50 - 27.99	32.00	27.20	198.00	88.90	60.00	○
27,505	275	27.50 - 27.99	31.75	27.20	198.00	88.90	60.00	○
28,000	280	28.00 - 28.49	32.00	27.70	200.00	90.40	60.00	●
28,005	280	28.00 - 28.49	31.75	27.70	200.00	90.40	60.00	○
28,500	285	28.50 - 28.99	32.00	28.20	202.00	92.50	60.00	○
28,505	285	28.50 - 28.99	31.75	28.20	202.00	92.50	60.00	○
29,000	290	29.00 - 29.49	32.00	28.70	205.00	94.60	60.00	●
29,005	290	29.00 - 29.49	31.75	28.70	205.00	94.60	60.00	○
29,500	295	29.50 - 29.99	32.00	29.20	207.00	95.10	60.00	○
29,505	295	29.50 - 29.99	31.75	29.20	207.00	95.10	60.00	○
30,000	300	30.00 - 30.49	32.00	29.70	210.00	96.70	60.00	●
30,005	300	30.00 - 30.49	31.75	29.70	210.00	96.70	60.00	○

● Australian stock item ○ German stock item

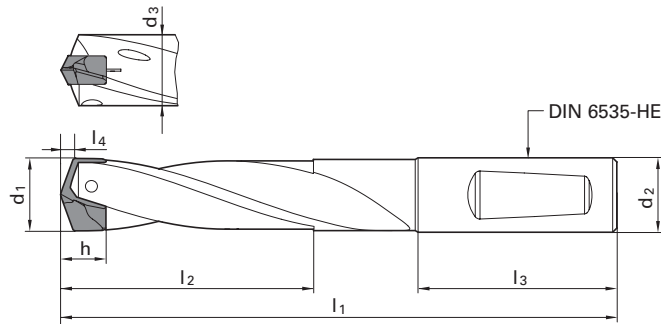


TOOL HOLDERS FOR INTERCHANGEABLE INSERTS HT 800, 3 X D

DRILLS

Guhring no.

4107



Code no.	Holder Size	d1	d2	d3	incl. WP l1*	l2 max	l3	AVAILABILITY
		mm	mm	mm	mm	mm	mm	
30,500	305	30.50 - 30.99	32.00	30.20	212.00	98.30	60.00	○
30,505	305	30.50 - 30.99	31.75	30.20	212.00	98.30	60.00	○
31,000	310	31.00 - 31.49	32.00	30.70	214.00	99.80	60.00	●
31,005	310	31.00 - 31.49	31.75	30.70	214.00	99.80	60.00	○
31,500	315	31.50 - 31.99	32.00	31.20	216.00	101.40	60.00	○
31,505	315	31.50 - 31.99	31.75	31.20	216.00	101.40	60.00	○
32,000	320	32.00 - 32.99	32.00	31.70	221.00	104.60	60.00	●
32,005	320	32.00 - 32.99	31.75	31.70	221.00	104.60	60.00	○
33,000	330	33.00 - 33.99	32.00	32.70	226.00	107.80	60.00	●
33,005	330	33.00 - 33.99	31.75	32.70	226.00	107.80	60.00	○
34,000	340	34.00 - 34.99	32.00	33.70	230.00	111.00	60.00	○
34,005	340	34.00 - 34.99	31.75	33.70	230.00	111.00	60.00	○
35,000	350	35.00 - 35.99	32.00	34.70	235.00	114.20	60.00	○
35,005	350	35.00 - 35.99	31.75	34.70	235.00	114.20	60.00	○
36,000	360	36.00 - 36.99	32.00	35.70	240.00	117.30	60.00	○
36,005	360	36.00 - 36.99	31.75	35.70	240.00	117.30	60.00	○
37,000	370	37.00 - 37.99	32.00	36.70	245.00	120.50	60.00	○
37,005	370	37.00 - 37.99	31.75	36.70	245.00	120.50	60.00	○
38,000	380	38.00 - 38.99	32.00	37.70	249.00	123.70	60.00	○
38,005	380	38.00 - 38.99	31.75	37.70	249.00	123.70	60.00	○
39,000	390	39.00 - 40.00	32.00	38.70	254.00	126.90	60.00	○
39,005	390	39.00 - 40.00	31.75	38.70	254.00	126.90	60.00	○

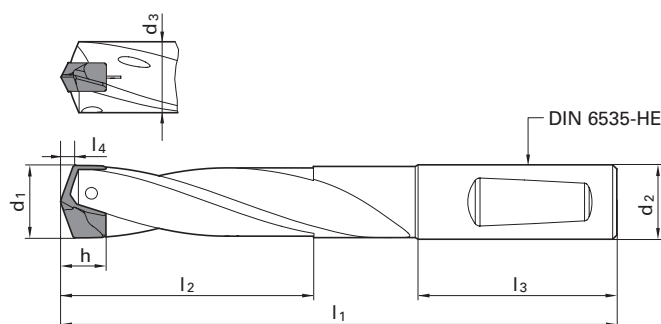
● Australian stock item ○ German stock item



Gühring no.

4108

DRILLS

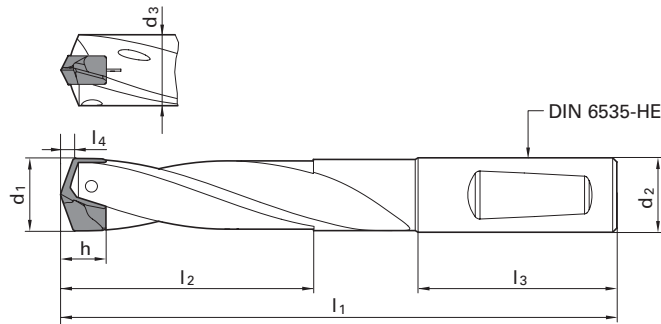


Code no.	Holder Size	d1	d2	d3	incl. WP l1*	l2 max	l3	AVAILABILITY
		mm	mm	mm	mm	mm	mm	
11,000	110	11.00 - 11.49	12.00	10.70	124.00	59.60	45.00	•
11,005	110	11.00 - 11.49	12.70	10.70	124.00	59.60	45.00	○
11,500	115	11.50 - 11.99	12.00	11.20	127.00	62.10	45.00	•
11,505	115	11.50 - 11.99	12.70	110.20	127.00	62.10	45.00	○
12,000	120	12.00 - 12.49	12.00	11.70	131.00	64.70	45.00	•
12,005	120	12.00 - 12.49	12.70	11.70	131.00	64.70	45.00	○
12,500	125	12.50 - 12.99	14.00	12.20	134.00	67.30	45.00	•
12,505	125	12.50 - 12.99	15.875	12.20	134.00	67.30	45.00	○
13,000	130	13.00 - 13.49	14.00	12.70	137.00	69.90	45.00	•
13,005	130	13.00 - 13.49	15.875	12.70	137.00	69.90	45.00	○
13,500	135	13.50 - 13.99	14.00	13.20	141.00	72.60	45.00	•
13,505	135	13.50 - 13.99	15.875	13.20	141.00	72.60	45.00	○
14,000	140	14.00 - 14.49	14.00	13.70	144.00	75.20	45.00	•
14,005	140	14.00 - 14.49	15.875	13.70	144.00	75.20	45.00	○
14,500	145	14.50 - 14.99	16.00	14.20	150.00	77.80	48.00	•
14,505	145	14.50 - 14.99	15.875	14.20	150.00	77.80	48.00	○
15,000	150	15.00 - 15.49	16.00	14.70	154.00	80.30	48.00	•
15,005	150	15.00 - 15.49	15.875	14.70	154.00	80.30	48.00	○
15,500	155	15.50 - 15.99	16.00	15.20	157.00	82.90	48.00	•
15,505	155	15.50 - 15.99	15.875	15.20	157.00	82.90	48.00	○
16,000	160	16.00 - 16.49	16.00	15.70	160.00	85.90	48.00	•
16,005	160	16.00 - 16.49	15.875	15.70	160.00	85.90	48.00	○
16,500	165	16.50 - 16.99	18.00	16.20	164.00	88.10	48.00	•
16,505	165	16.50 - 16.99	19.05	16.20	164.00	88.10	48.00	○
17,000	170	17.00 - 17.49	18.00	16.70	167.00	90.80	48.00	•
17,005	170	17.00 - 17.49	19.05	16.70	167.00	90.80	48.00	○
17,500	175	17.50 - 17.99	18.00	17.20	170.00	93.40	48.00	•
17,505	175	17.50 - 17.99	19.05	17.20	170.00	93.40	48.00	○
18,000	180	18.00 - 18.49	18.00	17.70	174.00	95.90	48.00	•
18,005	180	18.00 - 18.49	19.05	17.70	174.00	95.90	48.00	○
18,500	185	18.50 - 18.99	20.00	18.20	179.00	98.50	50.00	•
18,505	185	18.50 - 18.99	19.05	18.20	179.00	98.50	50.00	○
19,000	190	19.00 - 19.49	20.00	18.70	182.00	101.10	50.00	•
19,005	190	19.00 - 19.49	19.05	18.70	182.00	101.10	50.00	○
19,500	195	19.50 - 19.99	20.00	19.20	186.00	103.70	50.00	•
19,505	195	19.50 - 19.99	19.05	19.20	186.00	103.70	50.00	○
20,000	200	20.00 - 20.49	20.00	19.70	189.00	106.30	50.00	•
20,005	200	20.00 - 20.49	19.05	19.70	189.00	106.30	50.00	○
20,500	205	20.50 - 20.99	25.00	20.20	201.00	109.00	56.00	•

• Australian stock item ○ German stock item



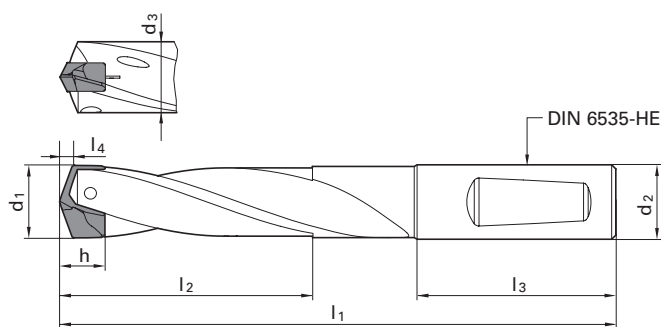
TOOL HOLDERS FOR INTERCHANGEABLE INSERTS HT 800, 5 X D



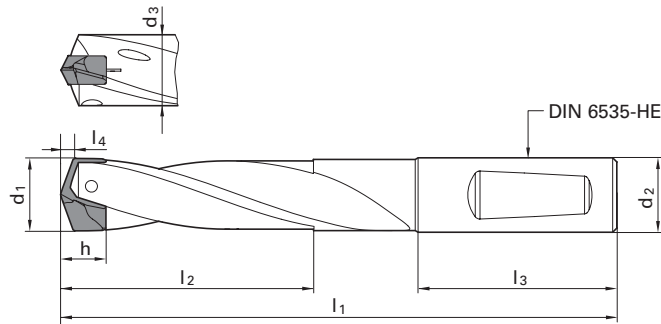
Code no.	Holder Size	d1	d2	d3	incl. WP l1*	l2 max	l3	AVAILABILITY
		mm	mm	mm	mm	mm	mm	
20,505	205	20.50 - 20.99	25.40	20.20	201.00	109.00	56.00	○
21,000	210	21.00 - 21.49	25.00	20.70	204.00	111.60	56.00	●
21,005	210	21.00 - 21.49	25.40	20.70	204.00	111.60	56.00	○
21,500	215	21.50 - 21.99	25.00	21.20	207.00	114.10	56.00	●
21,505	215	21.50 - 21.99	25.40	21.20	207.00	114.10	56.00	○
22,000	220	22.00 - 22.49	25.00	21.70	210.00	116.70	56.00	●
22,005	220	22.00 - 22.49	25.40	21.70	210.00	116.70	56.00	○
22,500	225	22.50 - 22.99	25.00	22.20	214.00	119.30	56.00	●
22,505	225	22.50 - 22.99	25.40	22.20	214.00	119.30	56.00	○
23,000	230	23.00 - 23.49	25.00	22.70	217.00	121.90	56.00	●
23,005	230	23.00 - 23.49	25.40	22.70	217.00	121.90	56.00	○
23,500	235	23.50 - 23.99	25.00	23.20	221.00	124.50	56.00	●
23,505	235	23.50 - 23.99	25.40	23.20	221.00	124.50	56.00	○
24,000	240	24.00 - 24.49	25.00	23.70	224.00	127.10	56.00	●
24,005	240	24.00 - 24.49	25.40	23.70	224.00	127.10	56.00	○
24,500	245	24.50 - 24.99	25.00	24.20	227.00	129.70	56.00	●
24,505	245	24.50 - 24.99	25.40	24.20	227.00	129.70	56.00	○
25,000	250	25.00 - 25.49	25.00	24.70	231.00	132.30	56.00	●
25,005	250	25.00 - 25.49	25.40	24.70	231.00	132.30	56.00	○
25,500	255	25.50 - 25.99	32.00	25.20	239.00	134.90	60.00	○
25,505	255	25.50 - 25.99	31.75	25.20	239.00	134.90	60.00	○
26,000	260	26.00 - 26.49	32.00	25.70	244.00	137.00	60.00	●
26,500	265	26.50 - 26.99	32.00	26.20	247.00	140.00	60.00	○
27,000	270	27.00 - 27.49	32.00	26.70	251.00	142.20	60.00	●
27,500	275	27.50 - 27.99	32.00	27.20	254.00	144.80	60.00	○
28,000	280	28.00 - 28.49	32.00	27.70	257.00	147.40	60.00	●
28,500	285	28.50 - 28.99	32.00	28.20	260.00	150.40	60.00	○
29,000	290	29.00 - 29.49	32.00	28.70	264.00	153.50	60.00	●
29,500	295	29.50 - 29.99	32.00	29.20	267.00	155.10	60.00	○
30,000	300	30.00 - 30.49	32.00	29.70	271.00	157.60	60.00	●
30,500	305	30.50 - 30.99	32.00	30.20	274.00	160.20	60.00	○
31,000	310	31.00 - 31.49	32.00	30.70	277.00	162.80	60.00	●
31,500	315	31.50 - 31.99	32.00	31.20	280.00	165.40	60.00	○
32,000	320	32.00 - 32.99	32.00	31.70	287.00	170.60	60.00	●
33,000	330	33.00 - 33.99	32.00	32.70	294.00	175.80	60.00	○
34,000	340	34.00 - 34.99	32.00	33.70	300.00	181.00	60.00	○
35,000	350	35.00 - 35.99	32.00	34.70	307.00	186.20	60.00	○
36,000	360	36.00 - 36.99	32.00	35.70	314.00	191.30	60.00	○
37,000	370	37.00 - 37.99	32.00	36.70	321.00	196.50	60.00	○

● Australian stock item ○ German stock item

4108



- Australian stock item
- German stock item



Code no.	Holder Size	d1	d2	d3	incl. WP l1*	l2 max	l3	AVAILABILITY
		mm	mm	mm	mm	mm	mm	
11,000	110	11.00 - 11.49	12.00	10.70	147.00	82.60	45.00	•
11,005	110	11.00 - 11.49	12.70	10.70	147.00	82.60	45.00	○
11,500	115	11.50 - 11.99	12.00	11.20	151.00	86.10	45.00	•
11,505	115	11.50 - 11.99	12.70	11.20	151.00	86.10	45.00	○
12,000	120	12.00 - 12.49	12.00	11.70	156.00	89.70	45.00	•
12,005	120	12.00 - 12.49	12.70	11.70	156.00	89.70	45.00	○
12,500	125	12.50 - 12.99	14.00	12.20	160.00	93.30	45.00	•
12,505	125	12.50 - 12.99	15.875	12.20	160.00	93.30	45.00	○
13,000	130	13.00 - 13.49	14.00	12.70	164.00	96.90	45.00	•
13,005	130	13.00 - 13.49	15.875	12.70	164.00	96.90	45.00	○
13,500	135	13.50 - 13.99	14.00	12.20	169.00	100.60	45.00	•
13,505	135	13.50 - 13.99	15.875	13.20	169.00	100.60	45.00	○
14,000	140	14.00 - 14.49	14.00	13.70	173.00	104.20	45.00	•
14,005	140	14.00 - 14.49	15.875	13.70	173.00	104.20	45.00	○
14,500	145	14.50 - 14.99	16.00	14.20	180.00	107.80	48.00	•
14,505	145	14.50 - 14.99	15.875	14.20	180.00	107.80	48.00	○
15,000	150	15.00 - 15.49	16.00	14.70	185.00	111.30	48.00	•
15,005	150	15.00 - 15.49	15.875	14.70	185.00	111.30	48.00	○
15,500	155	15.50 - 15.99	16.00	15.20	189.00	114.90	48.00	•
15,505	155	15.50 - 15.99	15.875	15.20	189.00	114.90	48.00	○
16,000	160	16.00 - 16.49	16.00	15.70	193.00	118.90	48.00	•
16,005	160	16.00 - 16.49	15.875	15.70	193.00	118.90	48.00	○
16,500	165	16.50 - 16.99	18.00	16.20	198.00	122.10	48.00	•
16,505	165	16.50 - 16.99	19.05	16.20	198.00	122.10	48.00	○
17,000	170	17.00 - 17.49	18.00	16.70	202.00	125.80	48.00	•
17,005	170	17.00 - 17.49	19.05	16.70	202.00	125.80	48.00	○
17,500	175	17.50 - 17.99	18.00	17.20	206.00	129.40	48.00	•
17,505	175	17.50 - 17.99	19.05	17.20	206.00	129.40	48.00	○
18,000	180	18.00 - 18.49	18.00	17.70	211.00	132.90	48.00	•
18,005	180	18.00 - 18.49	19.05	17.70	211.00	132.90	48.00	○
18,500	185	18.50 - 18.99	20.00	18.20	217.00	136.50	50.00	•
18,505	185	18.50 - 18.99	19.05	18.20	217.00	136.50	50.00	○
19,000	190	19.00 - 19.49	20.00	18.70	221.00	140.10	50.00	•
19,005	190	19.00 - 19.49	19.05	18.70	222.00	140.10	50.00	○
19,500	195	19.50 - 19.99	20.00	19.20	226.00	143.70	50.00	•
19,505	195	19.50 - 19.99	19.05	19.20	226.00	143.70	50.00	○
20,000	200	20.00 - 20.49	20.00	19.70	230.00	147.30	50.00	•
20,005	200	20.00 - 20.49	19.05	19.70	230.00	147.30	50.00	○
20,500	205	20.50 - 20.99	25.00	20.20	243.00	151.00	56.00	•

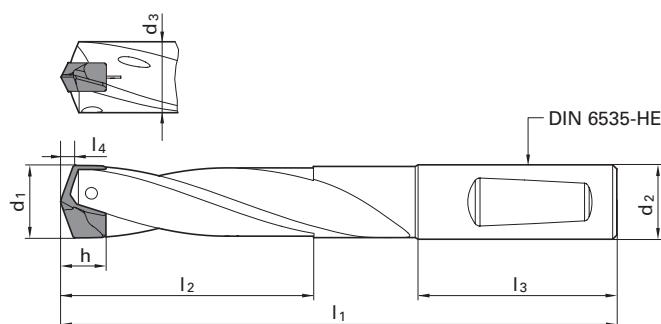
• Australian stock item ○ German stock item



Gühring no.

4109

DRILLS



Code no.	Holder Size	d1	d2	d3	incl. WP l1*	l2 max	l3	AVAILABILITY
		mm	mm	mm	mm	mm	mm	
20,505	205	20.50 - 20.99	25.40	20.20	243.00	151.00	56.00	○
21,000	210	21.00 - 21.49	25.00	20.70	247.00	154.60	56.00	●
21,005	210	21.00 - 21.49	25.40	20.70	247.00	154.60	56.00	○
21,500	215	21.50 - 21.99	25.00	21.20	251.00	158.10	56.00	●
21,505	215	21.50 - 21.99	25.40	21.20	251.00	158.10	56.00	○
22,000	220	22.00 - 22.49	25.00	21.70	255.00	161.70	56.00	●
22,005	220	22.00 - 22.49	25.40	21.70	255.00	161.70	56.00	○
22,500	225	22.50 - 22.99	25.00	22.20	260.00	165.30	56.00	●
22,505	225	22.50 - 22.99	25.40	22.20	260.00	165.30	56.00	○
23,000	230	23.00 - 23.49	25.00	22.70	264.00	168.90	56.00	●
23,005	230	23.00 - 23.49	25.40	22.70	264.00	168.90	56.00	○
23,500	235	23.50 - 23.99	25.00	23.20	269.00	172.50	56.00	●
23,505	235	23.50 - 23.99	25.40	23.20	269.00	172.50	56.00	○
24,000	240	24.00 - 24.49	25.00	23.70	273.00	176.10	56.00	●
24,005	240	24.00 - 24.49	25.40	23.70	273.00	176.10	56.00	○
24,500	245	24.50 - 24.99	25.00	24.20	277.00	179.70	56.00	●
24,505	245	24.50 - 24.99	25.40	24.20	277.00	179.70	56.00	○
25,000	250	25.00 - 25.49	25.00	24.70	282.00	183.30	56.00	●
25,005	250	25.00 - 25.49	25.40	24.70	282.00	183.30	56.00	○
25,500	255	25.50 - 25.99	32.00	25.20	291.00	186.90	60.00	○
25,505	255	25.50 - 25.99	31.75	25.20	291.00	186.90	60.00	○
26,000	260	26.00 - 26.49	32.00	25.70	297.00	190.00	60.00	●
26,005	260	26.00 - 26.49	31.75	25.70	297.00	190.00	60.00	○
26,500	265	26.50 - 26.99	32.00	26.20	301.00	194.00	60.00	○
26,505	265	26.50 - 26.99	31.75	26.20	301.00	194.00	60.00	○
27,000	270	27.00 - 27.49	32.00	26.70	306.00	197.20	60.00	●
27,005	270	27.00 - 27.49	31.75	26.70	306.00	197.20	60.00	○
27,500	275	27.50 - 27.99	32.00	27.20	310.00	200.80	60.00	○
27,505	275	27.50 - 27.99	31.75	27.20	310.00	200.80	60.00	○
28,000	280	28.00 - 28.49	32.00	27.70	314.00	204.40	60.00	●
28,005	280	28.00 - 28.49	31.75	27.70	314.00	204.40	60.00	○
28,500	285	28.50 - 28.99	32.00	28.20	318.00	208.40	60.00	○
28,505	285	28.50 - 28.99	31.75	28.20	318.00	208.40	60.00	○
29,000	290	29.00 - 29.49	32.00	28.70	323.00	212.50	60.00	●
29,005	290	29.00 - 29.49	31.75	28.70	323.00	212.50	60.00	○
29,500	295	29.50 - 29.99	32.00	29.20	327.00	215.10	60.00	○
29,505	295	29.50 - 29.99	31.75	29.20	327.00	215.10	60.00	○
30,000	300	30.00 - 30.49	32.00	29.70	332.00	218.60	60.00	●
30,005	300	30.00 - 30.49	31.75	29.70	332.00	218.60	60.00	○

● Australian stock item ○ German stock item



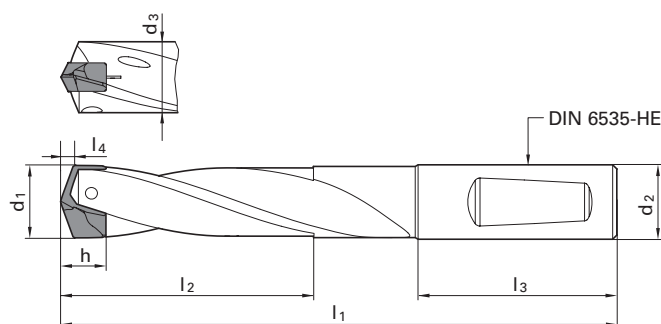
- *Australian stock item* ○ *German stock item*



Gühring no.

4110

DRILLS



Code no.	Holder Size	d1	d2	d3	incl. WP l1*	l2 max	l3	AVAILABILITY
		mm	mm	mm	mm	mm	mm	
11.000	110	11.00 - 11.49	12.00	10.70	182.00	117.10	45.00	•
11.005	110	11.00 - 11.49	12.70	10.70	182.00	117.10	45.00	○
11.500	115	11.50 - 11.99	12.00	11.20	187.00	122.10	45.00	•
11.505	115	11.50 - 11.99	12.70	11.20	187.00	122.10	45.00	○
12.000	120	12.00 - 12.49	12.00	11.70	194.00	127.20	45.00	•
12.005	120	12.00 - 12.49	12.70	11.70	194.00	127.20	45.00	○
12.500	125	12.50 - 12.99	14.00	12.20	199.00	132.30	45.00	•
12.505	125	12.50 - 12.99	15.875	12.20	199.00	132.30	45.00	○
13.000	130	13.00 - 13.49	14.00	12.70	205.00	137.50	45.00	•
13.005	130	13.00 - 13.49	15.875	12.70	205.00	137.50	45.00	○
13.500	135	13.50 - 13.99	14.00	13.20	211.00	142.50	45.00	•
13.505	135	13.50 - 13.99	15.875	13.20	211.00	142.50	45.00	○
14.000	140	14.00 - 14.49	14.00	13.70	217.00	147.70	45.00	•
14.005	140	14.00 - 14.49	15.875	13.70	217.00	147.70	45.00	○
14.500	145	14.50 - 14.99	16.00	14.20	225.00	152.80	48.00	○
14.505	145	14.50 - 14.99	15.875	14.20	225.00	152.80	48.00	○
15.000	150	15.00 - 15.49	16.00	14.70	232.00	157.80	48.00	○
15.005	150	15.00 - 15.49	15.875	14.70	232.00	157.80	48.00	○
15.500	155	15.50 - 15.99	16.00	15.20	237.00	162.90	48.00	○
15.505	155	15.50 - 15.99	15.875	15.20	237.00	162.90	48.00	○
16.000	160	16.00 - 16.49	16.00	15.70	243.00	168.00	48.00	○
16.005	160	16.00 - 16.49	15.875	15.70	243.00	168.00	48.00	○
16.500	165	16.50 - 16.99	18.00	16.20	249.00	173.10	48.00	•
16.505	165	16.50 - 16.99	19.05	16.20	249.00	173.10	48.00	○
17.000	170	17.00 - 17.49	18.00	16.70	255.00	178.30	48.00	○
17.005	170	17.00 - 17.49	19.05	16.70	255.00	178.30	48.00	○
17.500	175	17.50 - 17.99	18.00	17.20	260.00	183.50	48.00	○
17.505	175	17.50 - 17.99	19.05	17.20	260.00	183.50	48.00	○
18.000	180	18.00 - 18.49	18.00	17.70	267.00	188.40	48.00	○
18.005	180	18.00 - 18.49	19.05	17.70	267.00	188.40	48.00	○
18.500	185	18.50 - 18.99	20.00	18.20	274.00	193.50	50.00	○
18.505	185	18.50 - 18.99	19.05	18.20	274.00	193.50	50.00	○
19.000	190	19.00 - 19.49	20.00	18.70	280.00	198.70	50.00	○
19.005	190	19.00 - 19.49	19.05	18.70	280.00	198.70	50.00	○
19.500	195	19.50 - 19.99	20.00	19.20	286.00	203.70	50.00	○
19.505	195	19.50 - 19.99	19.05	19.20	286.00	203.70	50.00	○
20.000	200	20.00 - 20.49	20.00	19.70	292.00	208.90	50.00	○
20.005	200	20.00 - 20.49	19.05	19.70	292.00	208.90	50.00	○
20.500	205	20.50 - 20.99	25.00	20.20	306.00	214.00	56.00	○

• Australian stock item ○ German stock item

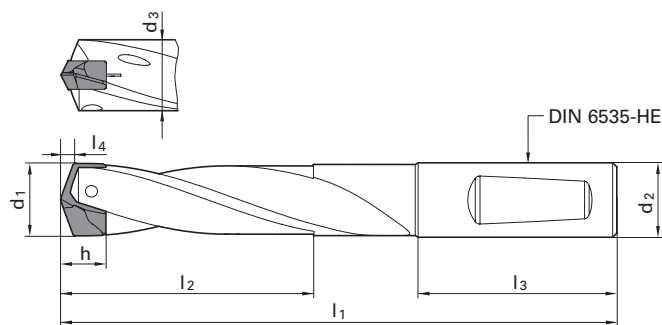


TOOL HOLDERS FOR INTERCHANGEABLE INSERTS HT 800, 10 X D

DRILLS

Guhring no.

4110

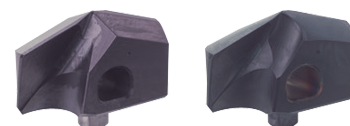
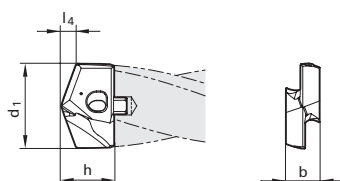


Code no.	Holder Size	d1	d2	d3	incl. WP l1*	l2 max	l3	AVAILABILITY
		mm	mm	mm	mm	mm	mm	
20.505	205	20.50 - 20.99	25.40	20.20	306.00	214.00	56.00	○
21.000	210	21.00 - 21.49	25.00	20.70	312.00	219.10	56.00	○
21.005	210	21.00 - 21.49	25.40	20.70	312.00	219.10	56.00	○
21.500	215	21.50 - 21.99	25.00	21.20	317.00	224.20	56.00	○
21.505	215	21.50 - 21.99	25.40	21.20	317.00	224.20	56.00	○
22.000	220	22.00 - 22.49	25.00	21.70	323.00	229.30	56.00	○
22.005	220	22.00 - 22.49	25.40	21.70	323.00	229.30	56.00	○
22.500	225	22.50 - 22.99	25.00	22.20	329.00	234.40	56.00	○
23.000	230	23.00 - 23.49	25.00	22.70	335.00	239.50	56.00	○
23.500	235	23.50 - 23.99	25.00	23.20	341.00	244.60	56.00	○
24.000	240	24.00 - 24.49	25.00	23.70	347.00	249.70	56.00	○
24.500	245	24.50 - 24.99	25.00	24.20	352.00	254.80	56.00	○
25.000	250	25.00 - 25.49	25.00	24.70	359.00	259.90	56.00	○
25.500	255	25.50 - 25.99	32.00	25.20	369.00	265.00	60.00	○
26.000	260	26.00 - 26.49	32.00	25.70	377.00	270.00	60.00	●
26.500	265	26.50 - 26.99	32.00	26.20	382.00	275.00	60.00	○
27.000	270	27.00 - 27.49	32.00	26.70	388.00	280.10	60.00	●
27.500	275	27.50 - 27.99	32.00	27.20	394.00	285.20	60.00	○
28.000	280	28.00 - 28.49	32.00	27.70	400.00	290.30	60.00	○
28.500	285	28.50 - 28.99	32.00	28.20	405.00	295.40	60.00	○
29.000	290	29.00 - 29.49	32.00	28.70	412.00	300.50	60.00	●
29.500	295	29.50 - 29.99	32.00	29.20	418.00	305.60	60.00	○
30.000	300	30.00 - 30.49	32.00	29.70	424.00	310.60	60.00	●
30.500	305	30.50 - 30.99	32.00	30.20	429.00	315.70	60.00	○
31.000	310	31.00 - 31.49	32.00	30.70	435.00	320.80	60.00	●
31.500	315	31.50 - 31.99	32.00	31.20	441.00	325.90	60.00	○

● Australian stock item ○ German stock item



Guhring no.	4112	4115
	Guhring std.	Guhring std.
Standard	Solid carbide	Solid carbide
Application	Steel	Stainless Steel
Surface finish	F	a
Tolerance	m7	m7
Point angle	140°	140°



Code no.	for drill.	for pilot.	d1	l4	b	h	AVAILABILITY	
	holder size	holder size	mm	mm	mm	mm		
11,000	110	110	11.00	2.10	4.50	7.50	•	•
11,200	110	110	11.20	2.10	4.50	7.50	•	○
11,500	115	110	11.50	2.10	4.50	7.50	•	•
11,510	115	110	11.51	2.10	4.50	7.50	○	○
11,700	115	110	11.70	2.10	4.50	7.50	○	○
11,800	115	110	11.80	2.10	4.50	7.50	•	○
11,910	115	110	11.91	2.20	4.50	7.50	•	○
12,000	120	120	12.00	2.20	5.00	7.70	•	•
12,100	120	120	12.10	2.20	5.00	7.70	○	○
12,200	120	120	12.20	2.20	5.00	7.70	•	○
12,300	120	120	12.30	2.20	5.00	7.70	○	○
12,500	125	120	12.50	2.30	5.00	7.70	•	•
12,600	125	120	12.60	2.30	5.00	7.70	○	○
12,700	125	120	12.70	2.30	5.00	7.70	•	○
12,800	125	120	12.80	2.30	5.00	7.70	•	○
12,900	125	120	12.90	2.30	5.00	7.70	○	○
13,000	130	130	13.00	2.40	5.50	8.50	•	•
13,100	130	130	13.10	2.40	5.50	8.50	•	○
13,490	130	130	13.49	2.40	5.50	8.50	○	○
13,500	140	130	13.50	2.40	5.50	8.50	•	•
13,600	140	130	13.60	2.40	5.50	8.50	○	○
13,700	140	130	13.70	2.40	5.50	8.50	○	○
13,800	140	130	13.80	2.50	5.50	8.50	•	○
13,890	140	130	13.89	2.50	5.50	8.50	○	○
14,000	140	140	14.00	2.50	6.00	9.60	•	•
14,100	140	140	14.10	2.50	6.00	9.60	○	○
14,290	140	140	14.29	2.60	6.00	9.60	○	○
14,400	140	140	14.40	2.60	6.00	9.60	○	○
14,500	140	140	14.50	2.60	6.00	9.60	•	•
14,600	145	140	14.60	2.70	6.00	9.60	○	•
14,680	145	140	14.68	2.70	6.00	9.60	○	○
14,700	145	140	14.70	2.70	6.00	9.60	○	•
14,800	145	140	14.80	2.70	6.00	9.60	•	○
15,000	150	140	15.00	2.70	6.00	9.80	•	•
15,080	150	140	15.08	2.70	6.00	9.80	○	○
15,100	150	140	15.10	2.70	6.00	9.80	•	○
15,200	150	140	15.20	2.80	6.00	9.80	•	○
15,300	150	140	15.30	2.80	6.00	9.80	○	○
15,480	150	140	15.48	2.80	6.00	9.80	○	○

• Australian stock item ○ German stock item



INTERCHANGEABLE INSERTS HT 800

DRILLS

Guhring no.

4112

4115

Standard

Guhring std.

Guhring std.

Tool material

Solid carbide

Solid carbide

Application

Steel

Stainless Steel

Surface finish

F

a

Tolerance

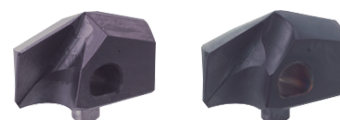
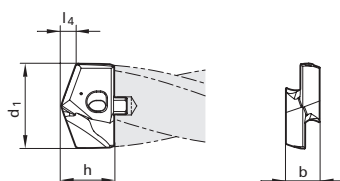
m7

m7

Point angle

140°

140°

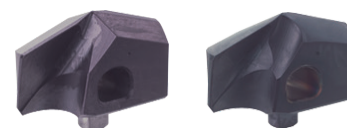
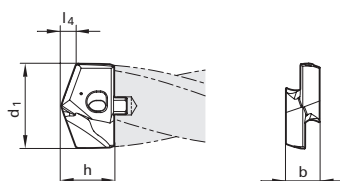


Code no.	for drill.	for pilot.	d1	l4	b	h	AVAILABILITY	
	holder size	holder size	mm	mm	mm	mm		
15,500	155	140	15.50	2.80	6.00	9.80	•	•
15,600	155	140	15.60	2.90	6.00	9.80	○	○
15,700	155	140	15.70	2.90	6.00	9.80	○	○
15,800	155	140	15.80	2.90	6.00	9.80	○	○
15,870	155	140	15.87	2.90	6.00	9.80	•	•
16,000	160	160	16.00	2.90	7.00	11.00	•	•
16,270	160	160	16.27	3.00	7.00	11.00	○	○
16,500	165	160	16.50	3.00	7.00	11.00	•	•
16,670	165	160	16.67	3.00	7.00	11.00	○	•
17,000	170	160	17.00	3.10	7.00	11.00	•	•
17,070	170	160	17.07	3.10	7.00	11.00	○	○
17,460	170	160	17.46	3.10	7.00	11.00	○	○
17,500	175	160	17.50	3.20	7.00	11.00	•	•
17,600	175	160	17.60	3.20	7.00	11.00	•	○
17,860	175	160	17.86	3.30	7.00	11.00	○	•
18,000	180	180	18.00	3.30	8.00	12.60	•	•
18,260	180	180	18.26	3.40	8.00	12.60	○	○
18,500	185	180	18.50	3.40	8.00	12.60	•	•
18,650	185	180	18.65	3.40	8.00	12.60	○	○
19,000	190	180	19.00	3.50	8.00	12.60	•	•
19,050	190	180	19.05	3.50	8.00	12.60	•	•
19,250	190	180	19.25	3.60	8.00	12.60	•	•
19,450	190	180	19.45	3.60	8.00	12.60	○	○
19,500	195	180	19.50	3.60	8.00	12.60	•	•
19,600	195	180	19.60	3.60	8.00	12.60	•	○
19,840	195	180	19.84	3.70	8.00	12.60	○	○
20,000	200	180	20.00	3.70	9.00	13.90	•	•
20,240	200	200	20.24	3.70	9.00	13.90	○	○
20,500	205	200	20.50	3.80	9.00	13.90	•	•
20,640	205	200	20.64	3.80	9.00	13.90	○	○
21,000	210	200	21.00	3.90	9.00	13.90	•	•
21,030	210	200	21.03	3.90	9.00	13.90	○	○
21,100	210	200	21.10	3.90	9.00	13.90	○	○
21,430	210	200	21.43	3.90	9.00	13.90	○	○
21,500	215	200	21.50	4.00	9.00	13.90	•	•
21,830	215	200	21.83	4.00	9.00	13.90	○	○
22,000	220	220	22.00	4.10	10.00	15.30	•	•
22,220	220	220	22.22	4.10	10.00	15.30	•	•
22,500	225	220	22.50	4.10	10.00	15.30	•	•

• Australian stock item ○ German stock item



Guhring no.	4112	4115
	Guhring std.	Guhring std.
	Solid carbide	Solid carbide
	Steel	Stainless Steel
	F	a
Application		
Surface finish		
Tolerance	m7	m7
Point angle	140°	140°



Code no.	for drill.	for pilot.	d1	l4	b	h	AVAILABILITY	
	holder size	holder size	mm	mm	mm	mm		
22,620	225	220	22.62	4.20	10.00	15.30	○	○
23,000	230	220	23.00	4.20	10.00	15.30	●	●
23,020	230	220	23.02	4.20	10.00	15.30	○	○
23,420	230	220	23.42	4.30	10.00	15.30	○	○
23,500	235	220	23.50	4.30	10.00	15.30	●	●
23,810	235	220	23.81	4.40	10.00	15.30	○	○
24,000	240	240	24.00	4.40	11.00	15.80	●	●
24,100	240	240	24.10	4.40	11.00	15.80	○	○
24,210	240	240	24.21	4.50	11.00	15.80	○	○
24,500	245	240	24.50	4.50	11.00	15.80	●	●
24,610	245	240	24.61	4.50	11.00	15.80	○	○
25,000	250	240	25.00	4.60	11.00	15.80	●	●
25,400	250	240	25.40	4.70	11.00	15.80	●	●
25,500	255	240	25.50	4.70	11.00	15.80	○	○
25,670	255	240	25.67	4.70	11.00	15.80	○	○
25,700	255	240	25.70	4.70	11.00	15.80	○	○
25,810	255	240	25.81	4.70	11.00	15.80	○	○
26,000	260	260	26.00	4.80	12.00	20.00	●	●
26,190	260	260	26.19	4.80	12.00	20.00	○	○
26,500	260	260	26.50	4.90	12.00	20.00	○	○
26,590	260	260	26.59	4.90	12.00	20.00	○	○
27,000	270	260	27.00	5.00	12.00	20.00	●	●
27,500	270	260	27.50	5.10	12.00	20.00	○	○
27,700	270	260	27.70	5.10	12.00	20.00	○	○
27,780	270	260	27.78	5.10	12.00	20.00	○	○
28,000	280	280	28.00	5.10	13.00	20.70	●	●
28,180	280	280	28.18	5.20	13.00	20.70	○	○
28,500	280	280	28.50	5.20	13.00	20.70	○	○
28,580	280	280	28.58	5.30	13.00	20.70	○	○
29,000	290	280	29.00	5.30	13.00	20.70	●	○
29,370	290	280	29.00	5.40	13.00	20.70	○	●
29,500	290	280	29.50	5.40	13.00	20.70	○	●
29,770	290	280	29.77	5.50	13.00	20.70	○	○
30,000	300	300	30.00	5.50	14.00	22.30	●	●
30,160	300	300	30.16	5.50	14.00	22.30	○	○
30,500	300	300	30.50	5.60	14.00	22.30	○	○
30,960	300	300	30.96	5.70	14.00	22.30	○	○
31,000	310	300	31.00	5.70	14.00	22.30	●	○
31,500	310	300	31.50	5.80	14.00	22.30	●	○

● Australian stock item ○ German stock item



INTERCHANGEABLE INSERTS HT 800

DRILLS

Guhring no.

4112

4115

Standard

Guhring std.

Guhring std.

Tool material

Solid carbide

Solid carbide

Application

Steel

Stainless Steel

Surface finish

F

a

Tolerance

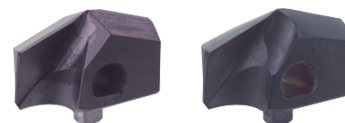
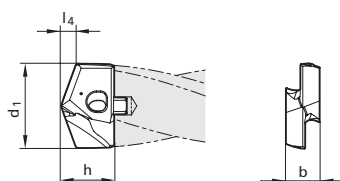
m7

m7

Point angle

140°

140°



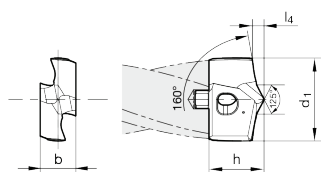
Code no.	for drill. holder size	for pilot. holder size	d1 mm	l4 mm	b mm	h mm	AVAILABILITY	
31,750	310	300	31.75	5.80	14.00	22.30	•	○
32,000	320	320	32.00	5.90	15.00	23.10	•	•
32,500	320	320	32.50	6.00	15.00	23.10	○	○
32,540	320	320	32.54	6.00	15.00	23.10	○	○
32,940	320	320	34.94	6.00	15.00	23.10	○	○
33,000	330	320	33.00	6.10	15.00	23.10	•	○
33,340	330	320	33.34	6.10	15.00	23.10	○	○
33,500	330	320	33.50	6.10	15.00	23.10	○	○
34,000	340	320	34.00	6.20	15.00	23.10	•	•
34,130	340	320	34.13	6.30	15.00	23.10	○	○
34,500	340	320	34.50	6.30	15.00	23.10	○	○
34,930	340	320	34.93	6.40	15.00	23.10	○	○
35,000	350	360	35.00	6.40	15.00	23.10	○	•
35,500	350	360	35.50	6.50	15.00	23.10	○	○
35,720	350	360	35.72	6.50	15.00	23.10	○	○
36,000	360	360	36.00	6.60	16.00	23.90	•	•
36,500	360	360	36.50	6.70	16.00	23.90	○	○
36,510	360	360	36.51	6.70	16.00	23.90	○	○
37,000	370	360	37.00	6.80	16.00	23.90	○	•
37,310	370	360	37.31	6.80	16.00	23.90	○	○
37,500	370	360	37.50	6.90	16.00	23.90	•	○
38,000	380	360	38.00	7.00	16.00	23.90	•	○
38,100	380	360	38.10	7.00	16.00	23.90	○	○
38,460	380	360	38.46	7.00	16.00	23.90	○	○
38,500	380	360	38.50	7.10	16.00	23.90	○	○
39,000	390	360	39.00	7.10	16.00	23.90	○	○
39,500	390	360	39.50	7.20	16.00	23.90	○	○
40,000	390	360	40.00	7.30	16.00	23.90	•	•
Heads for aluminium Cast Iron and 150° available								

• Australian stock item ○ German stock item



Guhring no.	4229
Standard	WN
Tool material	Solid carbide
Application	Steel
Surface finish	F
Tolerance	h7
Point angle	160° 125°

FOR BEAM DRILLING



Code no.	for drill. holder size	for pilot. holder size	d1 mm	l4 mm	b mm	h mm	AVAILABILITY
12,000	120	120	12.00	1.70	5.00	7.50	○
14,000	140	140	14.00	2.00	6.00	9.60	○
16,000	160	160	16.00	2.30	7.00	10.80	●
18,000	180	180	18.00	2.60	8.00	12.30	●
20,000	200	180	20.00	2.90	9.00	13.60	●
21,000	210	210	21.00	3.00	9.00	13.60	○
22,000	220	220	22.00	3.20	10.00	14.90	●
24,000	240	240	24.00	3.50	11.00	15.50	○
25,000	250	250	25.00	3.60	11.00	15.50	○
26,000	260	260	26.00	3.80	12.00	18.50	○
27,000	270	260	27.00	3.90	12.00	18.60	○
28,000	280	280	28.00	4.10	13.00	19.20	●
29,000	290	280	29.00	4.20	13.00	19.60	○
30,000	300	300	30.00	4.40	14.00	19.90	●
32,000	320	320	32.00	4.60	15.00	21.30	●
33,000	330	330	33.00	4.80	15.00	21.90	●
34,000	340	340	34.00	4.90	15.00	22.00	○
36,000	360	360	36.00	5.20	16.00	22.50	●
38,000	380	380	38.00	5.50	16.00	22.70	●
40,000	400	400	40.00	5.80	16.00	23.30	●

• Australian stock item ○ German stock item



CUTTING SPEED RECOMMENDATION FOR TWIST DRILLS

DRILLS

Drill Ø mm	Feed column no.								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0,50	0,004	0,006	0,007	0,008	0,010	0,012	0,014	0,016	0,019
1,00	0,006	0,008	0,012	0,014	0,016	0,018	0,020	0,023	0,025
2,00	0,020	0,025	0,032	0,040	0,050	0,063	0,080	0,100	0,125
2,50	0,025	0,032	0,040	0,050	0,063	0,080	0,100	0,125	0,160
3,15	0,032	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,160
4,00	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,200
5,00	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250
6,30	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315
8,00	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,315
10,00	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400
12,50	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500
16,00	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
20,00	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
25,00	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	0,800
31,50	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000
40,00	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250
50,00	0,250	0,310	0,400	0,500	0,630	0,800	1,000	1,250	1,250
63,00	0,315	0,400	0,500	0,630	0,800	1,000	1,250	1,600	1,600
80,00	0,400	0,500	0,630	0,800	1,000	1,250	1,600	1,600	2,000



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Gühring Optimising Apple Application

Coolant:
○ Air
● Neat oil
● Soluble oil

Material group	Material examples	Tensile strength MPa (N/mm²)	Hardness	Coolant
Common structural steels	S185, P275N, P235GH, P265GH, Mild steel, Grade 250 plate, Grade 350 plate	≤500		●
	E295, E360, P500NH	≤1000		●
Free-cutting steels	11SMnPb30, 11SMn37, 1020, S1214, S1213, S12L13, S12L14	≤850		●
	46S20, 46SPb20	≤1000		●
Unalloyed heat-treatable steels	C22, C30E, 1035, 1045, 1055, 1060, 1025	≤700		●
	C45, C45E	≤850		●
	C60, C60E	≤1000		●
Alloyed heat-treatable steels	50MnSi4, 38Cr2, 28Cr4, 3140, 4130, 4140, 4150, 4340, 6150, EN16, EN26	≤1000		●
	36NiCr6, 41Cr4, 42CrMo4	≤1400		●
Unalloyed case hardened steels	C10E, 1010, 1015	≤850		●
Alloyed case hardened steels	10CrMo11, 11MnSi6, 3310, 3415, 5115, 4615, 4620, 5120, 8617, 8620	≤1000		●
	15NiCr13, 16MnCr5, 20CrMo5, N33, EN36A	≤1400		●
Nitriding steels	34CrAl6	≤1000		●
	31CrMoV9, 34CrAlNi7	≤1400		●
Tool steels	C75W, 102Cr6, 29CrMoV9, H11, H13, P20, D2, D3	≤850		●
	X210Cr12, X42Cr13, 105WCr6, X45NiCrMo4	≤1400		●
High speed steels	S 6-5-2-5, S 6-5-2, S 6-5-3, M2, M3, M35, M45	≤1400		●
Spring steels	55Si7, 55Cr3, 51CrV4, 5155, 6150, 9255		≤350 HB	●
Stainless steels, sulphured	X12CrS13, X14CrMoS17, X6CrMoS17, X8CrNiS18-9, 410S, 430F, 630	≤900		●
austenitic	X5CrNi18-10, X6CrNiTi18-10, X6CrNiMoTi 17-12-2, 302, 303, 304, 310, 316, 316Ti, 321	≤1100		●
martensitic	X20CrNi172, X39CrMo17-1, X2CrMoTi18-2, 410, 410X, 416, 420, 420C, 431, 440C	≤1500		●
Hardened steels	-		≤48 HRC	●
			≤66 HRC	●
Special alloys	Nimonic, Inconel, Monel, Hastelloy, Bisalloy	≤2000		●
Cast iron	GG10, GG15, GG20		≤240 HB	●○
	GG25, GG30, GG35 GG40		≤350 HB	●○
Spheroidal graphite iron and	GGG40, GGG50, GGG60, 32510, GTW35		≤240 HB	●
Malleable cast iron	GGG70, GTS70, 50005, Nodular Iron		≤350 HB	●
Chilled cast iron	-		≤350 HB	●
Ti and Ti-alloys	Ti99,5, TiAl5Sn2,5, TiCu2	≤850		●
	TiAl6Zr5, TiAl6V4, TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
Aluminium and Al-alloys	Al99,5, AlMgSi1, AlMg1	≤400		●
Al wrought alloys	AlMgSiPb, AlCuMg1, AlMg3Si, AlZnMgCu1,5	≤650		●
Al cast alloys ≤ 10 % Si	G-AlSi5Cu1, G-AlSi7Cu3, G-AlSi9	≤600		●
≤ 24 % Si	G-AlSi12, G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
Magnesium alloys	MgMn2, G-MgAl8Zn1, G-MgAl6Zn1	≤400		○
Copper, low-alloyed	SE-Cu, CuSn6, G-CuSn5ZnPb	≤500		●
Brass, short-chipping	CuZn39Pb2, CuZn39Pb3, CuZn43Pb2	≤600		●
long-chipping	CuZn20, CuZn33, CuZn37Pb0,5	≤600		●
Bronze, short-chipping	CuSn7ZnPb, CuPb5Sn5, CuPb10Sn	≤600		●●
	CuNi18Zn19Pb	≤850		●
Bronze, long-chipping	CuAl5, CuAl9Mn, CuSn10	≤850		●
	CuAl11Ni, CuBe2	≤1000		●
Duroplastics	Bakelit, Resopal, Pertinax, Moltopren	≤150		○
Thermoplastics	Plexiglas, Hostalen, Novodur, Makralon	≤100		●○
New cast materials CGI	GGV25, GGV35		≤220 HB	●○
	GGV40, GGV50, SiMo 6		≤300 HB	●○
New cast materials ADI	ADI800, ADI1000	≤1000		●○
	ADI1200, ADI1400	≤1400		●○
Kevlar	Kevlar	≤1000		○
Glass, carbon concent. plastics	GRP/CFRP	≤1000		○

○ bright ● steam tempered ● nitrided lands ● TiN ● TiAlN ● TiCN ● FIRE/nanoFIRE ● TiAlN SuperA

[illegible]



CUTTING SPEED RECOMMENDATION FOR TWIST DRILLS

Drill Ø mm	Feed column no.								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0,50	0,004	0,006	0,007	0,008	0,010	0,012	0,014	0,016	0,019
1,00	0,006	0,008	0,012	0,014	0,016	0,018	0,020	0,023	0,025
2,00	0,020	0,025	0,032	0,040	0,050	0,063	0,080	0,100	0,125
2,50	0,025	0,032	0,040	0,050	0,063	0,080	0,100	0,125	0,160
3,15	0,032	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,160
4,00	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,200
5,00	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250
6,30	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315
8,00	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,315
10,00	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400
12,50	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500
16,00	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
20,00	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
25,00	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	0,800
31,50	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000
40,00	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250
50,00	0,250	0,310	0,400	0,500	0,630	0,800	1,000	1,250	1,250
63,00	0,315	0,400	0,500	0,630	0,800	1,000	1,250	1,600	1,600
80,00	0,400	0,500	0,630	0,800	1,000	1,250	1,600	1,600	2,000



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Coolant:

- Air
- Neat oil
- Soluble oil

Material group	Material examples	Tensile strength MPa (N/mm²)	Hardness	Coolant
Common structural steels	S185, P275N, P235GH, P265GH, Mild steel, Grade 250 plate, Grade 350 plate	≤500		●
	E295, E360, P500NH	≤1000		●
Free-cutting steels	11SMnPb30, 11SMn37, 1020, S1214, S1213, S12L13, S12L14	≤850		●
	46S20, 46SPb20	≤1000		●
Unalloyed heat-treatable steels	C22, C30E, 1035, 1045, 1055, 1060, 1025	≤700		●
	C45, C45E	≤850		●
	C60, C60E	≤1000		●
Alloyed heat-treatable steels	50MnSi4, 38Cr2, 28Cr4, 3140, 4130, 4140, 4150, 4340, 6150, EN16, EN26	≤1000		●
	36NiCr6, 41Cr4, 42CrMo4	≤1400		●
Unalloyed case hardened steels	C10E, 1010, 1015	≤850		●
Alloyed case hardened steels	10CrMo11, 11MnSi6, 3310, 3415, 5115, 4615, 4620, 5120, 8617, 8620	≤1000		●
	15NiCr13, 16MnCr5, 20CrMo5, N33, EN36A	≤1400		●
Nitriding steels	34CrAl6	≤1000		●
	31CrMoV9, 34CrAlNi7	≤1400		●
Tool steels	C75W, 102Cr6, 29CrMoV9, H11, H13, P20, D2, D3	≤850		●
	X210Cr12, X42Cr13, 105WCr6, X45NiCrMo4	≤1400		●
High speed steels	S 6-5-2-5, S 6-5-2, S 6-5-3, M2, M3, M35, M45	≤1400		●
Spring steels	55Si7, 55Cr3, 51CrV4, 5155, 6150, 9255		≤350 HB	●
Stainless steels, sulphured	X12CrS13, X14CrMoS17, X6CrMoS17, X8CrNiS18-9, 410S, 430F, 630	≤900		●
austenitic	X5CrNi18-10, X6CrNiTi18-10, X6CrNiMoTi 17-12-2, 302, 303, 304, 310, 316, 316Ti, 321	≤1100		●
martensitic	X20CrNi172, X39CrMo17-1, X2CrMoTi18-2, 410, 410X, 416, 420, 420C, 431, 440C	≤1500		●
Hardened steels	-		≤48 HRC	●
			≤66 HRC	●
Special alloys	Nimonic, Inconel, Monel, Hastelloy, Bisalloy	≤2000		●
Cast iron	GG10, GG15, GG20		≤240 HB	●○
	GG25, GG30, GG35 GG40		≤350 HB	●○
Spheroidal graphite iron and	GGG40, GGG50, GGG60, 32510, GTW35		≤240 HB	●
Malleable cast iron	GGG70, GTS70, 50005, Nodular Iron		≤350 HB	●
Chilled cast iron	-		≤350 HB	●
Ti and Ti-alloys	Ti99,5, TiAl5Sn2,5, TiCu2	≤850		●
	TiAl6Zr5, TiAl6V4, TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
Aluminium and Al-alloys	Al99,5, AlMgSi1, AlMg1	≤400		●
Al wrought alloys	AlMgSiPb, AlCuMg1, AlMg3Si, AlZnMgCu1,5	≤650		●
Al cast alloys ≤ 10 % Si	G-AlSi5Cu1, G-AlSi7Cu3, G-AlSi9	≤600		●
≤ 24 % Si	G-AlSi12, G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
Magnesium alloys	MgMn2, G-MgAl8Zn1, G-MgAl6Zn1	≤400		○
Copper, low-alloyed	SE-Cu, CuSn6, G-CuSn5ZnPb	≤500		●
Brass, short-chipping	CuZn39Pb2, CuZn39Pb3, CuZn43Pb2	≤600		●
long-chipping	CuZn20, CuZn33, CuZn37Pb0,5	≤600		●
Bronze, short-chipping	CuSn7ZnPb, CuPb5Sn5, CuPb10Sn	≤600		●●
	CuNi18Zn19Pb	≤850		●
Bronze, long-chipping	CuAl5, CuAl9Mn, CuSn10	≤850		●
	CuAl11Ni, CuBe2	≤1000		●
Duroplastics	Bakelit, Resopal, Pertinax, Moltopren	≤150		○
Thermoplastics	Plexiglas, Hostalen, Novodur, Makralon	≤100		●○
New cast materials CGI	GGV25, GGV35		≤220 HB	●○
	GGV40, GGV50, SiMo 6		≤300 HB	●○
New cast materials ADI	ADI800, ADI1000	≤1000		●○
	ADI1200, ADI1400	≤1400		●○
Kevlar	Kevlar	≤1000		○
Glass, carbon concent. plastics	GRP/CFRP	≤1000		○

≤3XD DRILLING DEPTH				≤5XD DRILLING DEPTH				≤10XD				MICRO-PRECISION DRILLS				≤4XD		≤8XD							
1228		659		5520		5524		658		5523		5522		336		5537		618 619		301		5652		6408	
1897		1897		1897		1897		338		338		338		340		340		1869		1899		G.S.		G.S.	
HSCO		HSCO		HSCO		HSCO		HSCO		HSCO		HSS-E-PM		HSCO		HSCO		HSCO		HSS-E-PM		Carbide		Carbide	
S		S		S		S		S		○		S		○		S		◐		○		○		A	
GT80		GV120		GU500 DZ		GU500 DZ		GT100		GU500 DZ		GT100		GU500 DZ		GU500 DZ		GT100		N		N		N	
Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.
38	6	38	5	45	6	35	6	42	6	35	6	40	6	29	6	32	6	30	4	21	106	100	62	105	58
33	5	33	4	35	5	30	5	36	5	30	5	32	5	22	5	25	5	25	4	18	105	100	62	100	58
44	6	44	5	50	6	40	6	48	5	40	6	45	6	32	6	35	6	33	4	18	106	100	62	105	59
38	5	38	5	40	6	30	6	42	5	30	6	40	5	25	6	28	6	30	4	16	105	90	61	90	59
44	6	44	5	42	6	32	6	32	6	32	6	42	6	25	6	28	6	33	4	20	105	90	62	95	58
44	5	44	5	35	6	28	6	48	5	28	6	40	5	22	6	25	6	33	4	18	105	90	62	95	58
38	4	38	4	22	5	20	5	42	4	20	5	28	4	13	5	15	5	20	3	14	104	90	61	90	58
27	4	27	4	18	4	15	4	30	4	15	4	25	4	12	4	13	4	14	3	14	104	90	61	90	58
22	3	22	3	15	3	13	3	34	3	13	3	20	3	11	3	12	3	10	2	12	103	70	60	70	58
44	4	44	4	40	6	30	6	48	4	30	6	40	4	25	6	28	6	29	4	18	106	100	61	100	57
22	4	22	4	20	4	16	4	24	4	16	4	22	4	12	4	14	4	14	3	14	104	85	61	85	58
18	3	18	3	15	3	12	3	20	3	12	3	18	3	11	3	12	3	10	2	12	103	70	60	70	58
22	4	22	4	18	4	15	4	24	4	15	4	20	4	12	4	13	4	10	3	14	104	70	60	70	57
18	3	18	3	12	3	10	3	20	3	10	3	15	3	7	3	8	3	8	2	12	103	60	60	60	57
19	4	19	4	18	4	15	4	21	4	15	4	25	4	12	4	13	4	11	3	16	104	50	60	50	58
14	3	14	3	13	3	10	3	16	3	10	3	15	3	9	3	10	3	8	2	14	103	60	60	50	58
14	3	14	3	13	3	10	3	17	3																



CUTTING SPEED RECOMMENDATION

DRILLS

Drill Ø mm	Feed column no.								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0,50	0,004	0,006	0,007	0,008	0,010	0,012	0,014	0,016	0,019
1,00	0,006	0,008	0,012	0,014	0,016	0,018	0,020	0,023	0,025
2,00	0,020	0,025	0,032	0,040	0,050	0,063	0,080	0,100	0,125
2,50	0,025	0,032	0,040	0,050	0,063	0,080	0,100	0,125	0,160
3,15	0,032	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,160
4,00	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,200
5,00	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250
6,30	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315
8,00	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,315
10,00	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400
12,50	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500
16,00	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
20,00	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
25,00	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	0,800
31,50	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000
40,00	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250
50,00	0,250	0,310	0,400	0,500	0,630	0,800	1,000	1,250	1,250
63,00	0,315	0,400	0,500	0,630	0,800	1,000	1,250	1,600	1,600
80,00	0,400	0,500	0,630	0,800	1,000	1,250	1,600	1,600	2,000



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Gühring Optimising Apple Application

Coolant:

- Air
- Neat oil
- Soluble oil

Material group	Material examples	Tensile strength MPa (N/mm²)	Hardness	Coolant
Common structural steels	S185, P275N, P235GH, P265GH, Mild steel, Grade 250 plate, Grade 350 plate	≤500		●
	E295, E360, P500NH	≤1000		●
Free-cutting steels	11SMnPb30, 11SMn37, 1020, S1214, S1213, S12L13, S12L14	≤850		●
	46S20, 46SPb20	≤1000		●
Unalloyed heat-treatable steels	C22, C30E, 1035, 1045, 1055, 1060, 1025	≤700		●
	C45, C45E	≤850		●
	C60, C60E	≤1000		●
Alloyed heat-treatable steels	50MnSi4, 38Cr2, 28Cr4, 3140, 4130, 4140, 4150, 4340, 6150, EN16, EN26	≤1000		●
	36NiCr6, 41Cr4, 42CrMo4	≤1400		●
Unalloyed case hardened steels	C10E, 1010, 1015	≤850		●
Alloyed case hardened steels	10CrMo11, 11MnSi6, 3310, 3415, 5115, 4615, 4620, 5120, 8617, 8620	≤1000		●
	15NiCr13, 16MnCr5, 20CrMo5, N33, EN36A	≤1400		●
Nitriding steels	34CrAl6	≤1000		●
	31CrMoV9, 34CrAlNi7	≤1400		●
Tool steels	C75W, 102Cr6, 29CrMoV9, H11, H13, P20, D2, D3	≤850		●
	X210Cr12, X42Cr13, 105WCr6, X45NiCrMo4	≤1400		●
High speed steels	S 6-5-2-5, S 6-5-2, S 6-5-3, M2, M3, M35, M45	≤1400		●
Spring steels	55Si7, 55Cr3, 51CrV4, 5155, 6150, 9255		≤350 HB	●
Stainless steels, sulphured	X12CrS13, X14CrMoS17, X6CrMoS17, X8CrNiS18-9, 410S, 430F, 630	≤900		●
austenitic	X5CrNi18-10, X6CrNiTi18-10, X6CrNiMoTi 17-12-2, 302, 303, 304, 310, 316, 316Ti, 321	≤1100		●
martensitic	X20CrNi172, X39CrMo17-1, X2CrMoTi18-2, 410, 410X, 416, 420, 420C, 431, 440C	≤1500		●
Hardened steels	-		≤48 HRC	●
			≤66 HRC	●
Special alloys	Nimonic, Inconel, Monel, Hastelloy, Bisalloy	≤2000		●
Cast iron	GG10, GG15, GG20		≤240 HB	●○
	GG25, GG30, GG35 GG40		≤350 HB	●○
Spheroidal graphite iron and	GGG40, GGG50, GGG60, 32510, GTW35		≤240 HB	●
Malleable cast iron	GGG70, GTS70, 50005, Nodular Iron		≤350 HB	●
Chilled cast iron	-		≤350 HB	●
Ti and Ti-alloys	Ti99,5, TiAl5Sn2,5, TiCu2	≤850		●
	TiAl6Zr5, TiAl6V4, TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
Aluminium and Al-alloys	Al99,5, AlMgSi1, AlMg1	≤400		●
Al wrought alloys	AlMgSiPb, AlCuMg1, AlMg3Si, AlZnMgCu1,5	≤650		●
Al cast alloys ≤ 10 % Si	G-AlSi5Cu1, G-AlSi7Cu3, G-AlSi9	≤600		●
≤ 24 % Si	G-AlSi12, G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
Magnesium alloys	MgMn2, G-MgAl8Zn1, G-MgAl6Zn1	≤400		○
Copper, low-alloyed	SE-Cu, CuSn6, G-CuSn5ZnPb	≤500		●
Brass, short-chipping	CuZn39Pb2, CuZn39Pb3, CuZn43Pb2	≤600		●
long-chipping	CuZn20, CuZn33, CuZn37Pb0,5	≤600		●
Bronze, short-chipping	CuSn7ZnPb, CuPb5Sn5, CuPb10Sn	≤600		●●
	CuNi18Zn19Pb	≤850		●
Bronze, long-chipping	CuAl5, CuAl9Mn, CuSn10	≤850		●
	CuAl11Ni, CuBe2	≤1000		●
Duroplastics	Bakelit, Resopal, Pertinax, Moltopren	≤150		○
Thermoplastics	Plexiglas, Hostalen, Novodur, Makralon	≤100		●○
New cast materials CGI	GGV25, GGV35		≤220 HB	●○
	GGV40, GGV50, SiMo 6		≤300 HB	●○
New cast materials ADI	ADI800, ADI1000	≤1000		●○
	ADI1200, ADI1400	≤1400		●○
Kevlar	Kevlar	≤1000		○
Glass, carbon concent. plastics	GRP/CFRP	≤1000		○

 bright
  steam tempered
  nitrided lands
  S TiN
  A TiAlN
  C TiCN
  F FIRE/nanoFIRE
  a TiAlN SuperA



CUTTING SPEED RECOMMENDATION

DRILLS

Drill Ø mm	Feed column no.								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0,50	0,004	0,006	0,007	0,008	0,010	0,012	0,014	0,016	0,019
1,00	0,006	0,008	0,012	0,014	0,016	0,018	0,020	0,023	0,025
2,00	0,020	0,025	0,032	0,040	0,050	0,063	0,080	0,100	0,125
2,50	0,025	0,032	0,040	0,050	0,063	0,080	0,100	0,125	0,160
3,15	0,032	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,160
4,00	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,200
5,00	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250
6,30	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315
8,00	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,315
10,00	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400
12,50	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500
16,00	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
20,00	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
25,00	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	0,800
31,50	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000
40,00	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250
50,00	0,250	0,310	0,400	0,500	0,630	0,800	1,000	1,250	1,250
63,00	0,315	0,400	0,500	0,630	0,800	1,000	1,250	1,600	1,600
80,00	0,400	0,500	0,630	0,800	1,000	1,250	1,600	1,600	2,000

Coolant:

- Air
- Neat oil
- Soluble oil

Material group	Material examples	Tensile strength MPa (N/mm²)	Hardness	Coolant
Common structural steels	S185, P275N, P235GH, P265GH, Mild steel, Grade 250 plate, Grade 350 plate	≤500		●
	E295, E360, P500NH	≤1000		●
Free-cutting steels	11SMnPb30, 11SMn37, 1020, S1214, S1213, S12L13, S12L14	≤850		●
	46S20, 46SPb20	≤1000		●
Unalloyed heat-treatable steels	C22, C30E, 1035, 1045, 1055, 1060, 1025	≤700		●
	C45, C45E	≤850		●
	C60, C60E	≤1000		●
Alloyed heat-treatable steels	50MnSi4, 38Cr2, 28Cr4, 3140, 4130, 4140, 4150, 4340, 6150, EN16, EN26	≤1000		●
	36NiCr6, 41Cr4, 42CrMo4	≤1400		●
Unalloyed case hardened steels	C10E, 1010, 1015	≤850		●
Alloyed case hardened steels	10CrMo11, 11MnSi6, 3310, 3415, 5115, 4615, 4620, 5120, 8617, 8620	≤1000		●
	15NiCr13, 16MnCr5, 20CrMo5, N33, EN36A	≤1400		●
Nitriding steels	34CrAl6	≤1000		●
	31CrMoV9, 34CrAlNi7	≤1400		●
Tool steels	C75W, 102Cr6, 29CrMoV9, H11, H13, P20, D2, D3	≤850		●
	X210Cr12, X42Cr13, 105WCr6, X45NiCrMo4	≤1400		●
High speed steels	S 6-5-2-5, S 6-5-2, S 6-5-3, M2, M3, M35, M45	≤1400		●
Spring steels	55Si7, 55Cr3, 51CrV4, 5155, 6150, 9255		≤350 HB	●
Stainless steels, sulphured	X12CrS13, X14CrMoS17, X6CrMoS17, X8CrNiS18-9, 410S, 430F, 630	≤900		●
austenitic	X5CrNi18-10, X6CrNiTi18-10, X6CrNiMoTi 17-12-2, 302, 303, 304, 310, 316, 316Ti, 321	≤1100		●
martensitic	X20CrNi172, X39CrMo17-1, X2CrMoTi18-2, 410, 410X, 416, 420, 420C, 431, 440C	≤1500		●
Hardened steels	-		≤48 HRC	●
			≤66 HRC	●
Special alloys	Nimonic, Inconel, Monel, Hastelloy, Bisalloy	≤2000		●
Cast iron	GG10, GG15, GG20		≤240 HB	●○
	GG25, GG30, GG35 GG40		≤350 HB	●○
Spheroidal graphite iron and	GGG40, GGG50, GGG60, 32510, GTW35		≤240 HB	●
Malleable cast iron	GGG70, GTS70, 50005, Nodular Iron		≤350 HB	●
Chilled cast iron	-		≤350 HB	●
Ti and Ti-alloys	Ti99,5, TiAl5Sn2,5, TiCu2	≤850		●
	TiAl6Zr5, TiAl6V4, TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
Aluminium and Al-alloys	Al99,5, AlMgSi1, AlMg1	≤400		●
Al wrought alloys	AlMgSiPb, AlCuMg1, AlMg3Si, AlZnMgCu1,5	≤650		●
Al cast alloys ≤ 10 % Si	G-AlSi5Cu1, G-AlSi7Cu3, G-AlSi9	≤600		●
≤ 24 % Si	G-AlSi12, G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
Magnesium alloys	MgMn2, G-MgAl8Zn1, G-MgAl6Zn1	≤400		○
Copper, low-alloyed	SE-Cu, CuSn6, G-CuSn5ZnPb	≤500		●
Brass, short-chipping	CuZn39Pb2, CuZn39Pb3, CuZn43Pb2	≤600		●
long-chipping	CuZn20, CuZn33, CuZn37Pb0,5	≤600		●
Bronze, short-chipping	CuSn7ZnPb, CuPb5Sn5, CuPb10Sn	≤600		●●
	CuNi18Zn19Pb	≤850		●
Bronze, long-chipping	CuAl5, CuAl9Mn, CuSn10	≤850		●
	CuAl11Ni, CuBe2	≤1000		●
Duroplastics	Bakelit, Resopal, Pertinax, Moltopren	≤150		○
Thermoplastics	Plexiglas, Hostalen, Novodur, Makralon	≤100		●○
New cast materials CGI	GGV25, GGV35		≤220 HB	●○
	GGV40, GGV50, SiMo 6		≤300 HB	●○
New cast materials ADI	ADI800, ADI1000	≤1000		●○
	ADI1200, ADI1400	≤1400		●○
Kevlar	Kevlar	≤1000		○
Glass, carbon concent. plastics	GRP/CFRP	≤1000		○

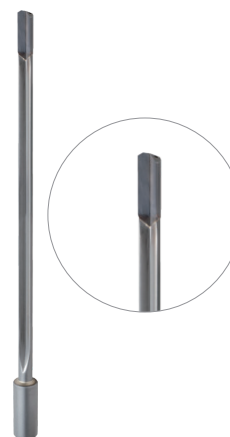
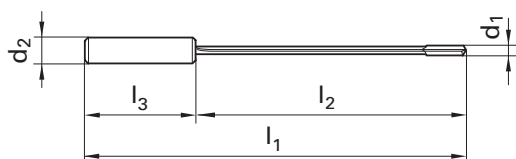
HT800WP INTERCHANGEABLE INSERTS																					
≤20XD		≤30XD		≤40XD		≤3XD		≤5XD				≤7XD				≤10XD					
6511		6513		6514		4112		4115		4112		4115		4112		4115		4112		4115	
G.S.		G.S.		G.S.		G.S.		G.S.		G.S.		G.S.		G.S.		G.S.		G.S.		G.S.	
Carbide		Carbide		Carbide		Carbide		Carbide		Carbide		Carbide		Carbide		Carbide		Carbide		Carbide	
K/P		K/P		K/P		K/P		K/P		K/P		K/P		K/P		K/P		K/P		K/P	
A		A		A		F		a		F		a		F		a		F		a	
RT100T		RT100T		RT100T																	
Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.
110	8	80	7	80	7	130	6			125	6			120	5			100	5		
110	8	80	7	80	7	110	5			105	5			105	4			95	4		
120	8	100	8	100	8	130	7			125	7			120	6			100	6		
120	8	100	8	100	8	110	6			105	6			105	5			95	5		
110	6	110	6	110	6	130	6			125	6			120	5			100	5		
110	8	80	7	80	7	125	6			120	6			110	5			95	5		
100	7	80	7	80	7	110	5			105	5			100	4			90	4		
110	7	80	7	80	6-7	110	6			105	6			100	5			90	5		
110	6	80	6	80	6	90	5			85	5			85	4			85	4		
110	8	80	7	80	7	130	7			125	7			120	6			100	6		
110	7	80	6	80	6	110	6			105	6			100	5			90	5		
110	6	80	6	80	6	70	4			70	4			70	4			70	4		
100	5	80	5	80	5	105	5			105	5			105	4			95	4		
80	5	60	5	60	5	70	4			70	4			70	3			70	3		
100	6	80	6	80	6-7	60	5			55	5			55	4			55	4		
80	5	70	4	70	4	55	4			50	4			50	3			50	3		
50	5	50	4	50	4	55	3			55	3			55	2			55	2		
50	5	50	4	50	4	50	2			50	2			50	2			50	2		
100	5	80	5	80	5			55	3			55	3			55	2			55	2
60	3	60	3	70	2-3			40	3			40	3			40	2			40	2
100	5	80	5	80	5			35	3			35	3			35	2			35	2
50	4	50	4	50	4			25	2			25	2			25	1			25	1



GUN DRILLS



Guhring no.	5639
Standard	Guhring std.
Tool material	Carbide
Surface	C
Drilling depth	20 x D
Cutting direction	right-hand
Tolerance	h5



d1		d2	l1	l2	l3
mm	inch	mm	mm	mm	mm
3.970	5/32	10.00	150.00	100.00	40.00
4.000		12.00	150.00	100.00	40.00
5.000		16.00	180.00	130.00	48.00
5.156	13/64	16.00	180.00	130.00	48.00
6.000		16.00	210.00	160.00	48.00
6.350	1/4	16.00	220.00	170.00	48.00
7.000		16.00	235.00	185.00	48.00
7.938	5/16	16.00	260.00	210.00	48.00
8.000		16.00	260.00	210.00	48.00
9.000		16.00	280.00	230.00	48.00
9.525	3/8	16.00	290.00	240.00	48.00
10.000		20.00	320.00	260.00	50.00
11.000		20.00	340.00	290.00	50.00
11.113	7/16	20.00	340.00	290.00	50.00
12.000		20.00	370.00	310.00	50.00
12.700	1/2	20.00	385.00	330.00	50.00
13.000		25.00	405.00	325.00	70.00
13.500		25.00	408.00	338.00	70.00
14.000		25.00	420.00	350.00	70.00
14.500		25.00	433.00	363.00	70.00
15.000		25.00	445.00	375.00	70.00
15.500		25.00	458.00	388.00	70.00
16.000		25.00	470.00	400.00	70.00
17.000		25.00	495.00	425.00	70.00
18.000		25.00	520.00	450.00	70.00
19.000		25.00	545.00	475.00	70.00
20.000		25.00	570.00	500.00	70.00
22.000		25.00	620.00	550.00	70.00
25.000		25.00	695.00	625.00	70.00
30.000		32.00	820.00	750.00	70.00
32.000		32.00	870.00	800.00	70.00

AVAILABILITY
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• 302633133
• 302633117
• 302633120
• 302633122
• 302633124
• 302633127
• 302633135
• 302633367
• 302633368
• 302633369
• 302633293
• 302633294
• 302633295
• 302633296
• 302633297

Sizes above Ø12.70 are uncoated

• Australian stock item ○ German stock item

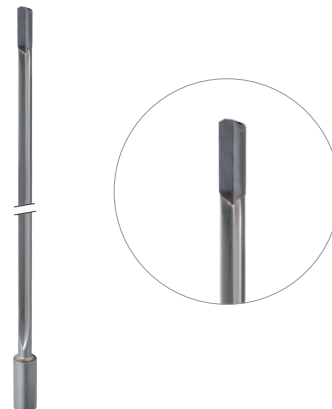
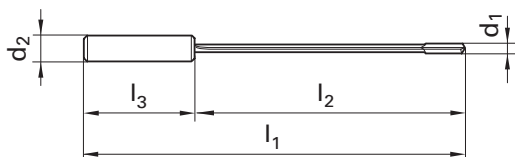


GUN DRILLS EB 80, 40 X D

GUN DRILLS

Guhring no.	5641
Standard	Guhring std.
Tool material	Carbide
Surface	
Drilling depth	40 x D
Cutting direction	right-hand
Tolerance	h5

*Sizes above dia 13mm all uncoated



d1		d2	l1	l2	l3
mm	inch	mm	mm	mm	mm
3.970	5/32	10.00	230.00	185.00	40.00
4.000		12.00	230.00	185.00	45.00
5.000		16.00	280.00	232.00	48.00
5.156	13/64	16.00	280.00	232.00	48.00
6.000		16.00	320.00	272.00	48.00
6.350	1/4	16.00	340.00	292.00	48.00
7.000		16.00	370.00	322.00	48.00
7.938	5/16	16.00	420.00	372.00	48.00
8.000		16.00	420.00	372.00	48.00
9.000		16.00	450.00	402.00	48.00
9.525	3/8	16.00	480.00	432.00	48.00
10.000		20.00	510.00	460.00	50.00
11.000		20.00	550.00	500.00	50.00
11.113	7/16	20.00	550.00	500.00	50.00
12.000		20.00	600.00	550.00	50.00
12.700	1/2	20.00	635.00	585.00	50.00
13.000		25.00	655.00	585.00	70.00
13.500		25.00	678.00	585.00	70.00
14.000		25.00	700.00	630.00	70.00
14.500		25.00	723.00	653.00	70.00
15.000		25.00	745.00	675.00	70.00
15.500		25.00	768.00	698.00	70.00
16.000		25.00	790.00	720.00	70.00
17.000		25.00	835.00	765.00	70.00
18.000		25.00	880.00	810.00	70.00
19.000		25.00	925.00	855.00	70.00
20.000		25.00	970.00	900.00	70.00
22.000		25.00	1060.00	990.00	70.00
25.000		25.00	1195.00	1125.00	70.00
30.000		32.00	1420.00	1350.00	70.00
32.000		32.00	1510.00	1440.00	70.00

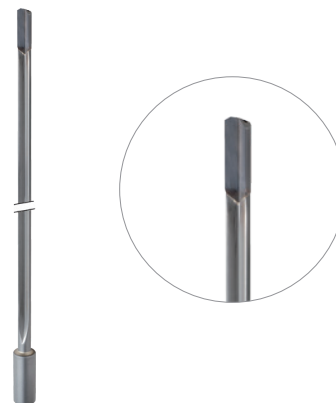
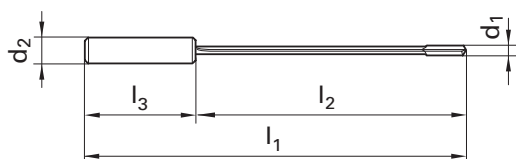
AVAILABILITY
○
●
●
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○
●
● 302633150
● 302633148
● 302633167
● 302633169
● 302633171
● 302633172
● 302633173
● 302633298
● 302633299
● 302633300
● 302633301
● 302633302
● 302633303
● 302633304
● 302633305

● Australian stock item ○ German stock item



Guhring no.	5642
Standard	Guhring std.
Tool material	Carbide
Surface	C
Drilling depth	80 x D
Cutting direction	right-hand
Tolerance	h5

*Sizes above dia 11.95mm all uncoated



d1		d2	l1	l2	l3
mm	inch	mm	mm	mm	mm
4.950		16.000	480.00	432.00	48.00
5.106		16.000	480.00	432.00	48.00
5.950	15/64	16.000	560.00	512.00	48.00
6.300		16.000	590.00	542.00	48.00
6.950		16.000	650.00	602.00	48.00
7.888		16.000	740.00	692.00	48.00
7.950		16.000	740.00	692.00	48.00
8.950		16.000	820.00	772.00	48.00
9.475		16.000	870.00	822.00	48.00
9.950		20.000	910.00	860.00	50.00
10.950		20.000	995.00	945.00	50.00
11.063		20.000	995.00	945.00	50.00
11.950		20.000	1080.00	1030.00	50.00
12.650		20.000	1140.00	1090.00	50.00
12.950		20.000	1170.00	1101.00	50.00
13.450		25.000	1215.00	1143.00	70.00
13.950		25.000	1255.00	1186.00	70.00
14.450		25.000	1300.00	1228.00	70.00
14.950		25.000	1340.00	1271.00	70.00
15.450		25.000	1383.00	1313.00	70.00
15.950		25.000	1425.00	1356.00	70.00
16.950		25.000	1510.00	1441.00	70.00
17.950		25.000	1600.00	1526.00	70.00
18.950		25.000	1680.00	1611.00	70.00
19.950		25.000	1765.00	1696.00	70.00
21.950		25.000	1940.00	1866.00	70.00
24.950		25.000	2190.00	2121.00	70.00

AVAILABILITY
•
○
•
○
○
○
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○
○
•
○
•
○
• 302633306
• 302633307
• 302633308
• 302633309
• 302633310
• 302633311
• 302633312
• 302633313
• 302633314
• 302633315
• 302633316
• 302633317
• 302633318

• Australian stock item ○ German stock item

EB 80 XXL

- up to 1,500x quicker machining times than with conventional spiral deep hole drills
- ideal for deep drilling machines
- optimal use in die and mould industry
- polished long flute for the application in steel and non-ferrous metals with excellent chip control and optimal wear protection
- TiN coating for long tool life
- including clamping sleeve for deep drilling machines

All gun drills must have support or the pilot hole.

Gun drills must never operate at full speed without support in the machine shop.





Guhring no.	5691	5692	5693	5694
Standard	Guhring std.			
Tool material	Solid carbide			
Surface	S	S	S	S
Drilling depth (l ₂)	700mm	1100mm	1500mm	1900mm
Cutting direction	right-hand	right-hand	right-hand	right-hand
Tolerance	h5	h5	h5	h5



d1	d2 h6	AVAILABILITY			
mm	mm				
4.000	25.00			o	
5.000	25.00	o	o	o	o
5.500	25.00			o	
6.000	25.00	o	o	o	o
6.500	25.00			o	
7.000	25.00	o	o	o	o
7.500	25.00			o	
8.000	25.00	o	o	o	o
9.000	25.00	o	o	o	o
9.500	25.00			o	
10.000	25.00	o	o	o	o
11.000	25.00			o	
11.500	25.00	o	o	o	o
12.000	25.00	o	o	o	o
13.000	25.00			o	
14.000	25.00			o	
15.000	25.00	o	o	o	o
16.000	25.00	o	o	o	o
17.000	25.00	o		o	
18.000	25.00	o	o	o	o
19.000	25.00	o	o	o	o
20.000	25.00	o	o	o	o
21.000	25.00	o			
22.000	25.00	o	o	o	o
25.000	25.00	o			

• Australian stock item o German stock item



CUTTING SPEED RECOMMENDATION FOR GUN DRILLS

GUN DRILLS

Drill Ø mm	Feed column no.									
	11	12	13	14	15	16	17	18	19	20
	f (mm/rev.)									
1.50	0.002	0.004	0.006	0.008	0.012	0.020	0.032	0.045	0.045	0.075
2.00	0.003	0.005	0.007	0.010	0.016	0.028	0.046	0.055	0.050	0.100
2.50	0.004	0.006	0.008	0.012	0.018	0.030	0.054	0.070	0.075	0.125
4.00	0.005	0.007	0.010	0.016	0.025	0.043	0.065	0.085	0.120	0.240
6.00	0.007	0.009	0.013	0.024	0.035	0.061	0.085	0.120	0.180	0.360
8.00	0.010	0.014	0.022	0.032	0.045	0.068	0.100	0.150	0.240	0.480
10.00	0.012	0.016	0.028	0.040	0.055	0.075	0.120	0.160	0.300	0.600
14.00	0.020	0.025	0.035	0.050	0.065	0.085	0.130	0.180	0.420	0.700
18.00	0.025	0.030	0.040	0.055	0.070	0.095	0.145	0.200		
20.00	0.026	0.035	0.045	0.060	0.080	0.110	0.180	0.250		
24.00	0.027	0.036	0.047	0.065	0.085	0.130	0.185	0.300		
28.00	0.028	0.038	0.049	0.068	0.090	0.140	0.195	0.350		
30.00	0.030	0.040	0.050	0.070	0.100	0.150	0.200	0.400		
35.00	0.035	0.045	0.055	0.075	0.120	0.180	0.250	0.450		
40.00	0.040	0.050	0.060	0.080	0.150	0.200	0.300	0.500		

*The feed rates always relate to tools with the recommended coating. In some cases the successful application of un-coated tools cannot be guaranteed.



All deep hole drills must have support for the pilot hole.
Deep hole drills must never operate at full speed without support in the machine shop.

Coolant:

- Air
- Neat oil
- Soluble oil

Guhring no.
Standard/DIN
Tool material
Carbide grade
Surface finish
Type

≤20XD

5639

G.S.

Carbide

K30/
K40

EB80

≤40XD

5641 5642

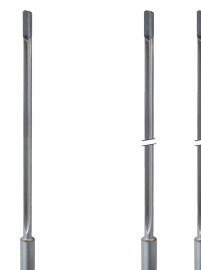
G.S.

Carbide

K30/
K40

EB80

EB80



Material group	Material examples	Tensile strength MPa (N/mm ²)	Coolant	Rec. coating	Vc m/ min	Feed col. no.	Vc m/ min	Feed col. no.	Feed col. no.
Common structural steels	S185, P275N, P235GH, P265GH, Mild steel, Grade 250 plate, Grade 350 plate, E295, E360, P500NH	≤500 ≤1000	●	S	100	14	95	13	13
Free-cutting steels	11SMnPb30, 11SMn37, 1020, S1214, S1213 S12L13, S12L14, 46S20, 46SPb20	≤850 ≤1000	●	S	90	14	85	13	13
Unalloyed heat-treatable steels	C22, C30E, 1035, 1045, 1055, 1060, 1025 C45, C45E C60, C60E	≤700 ≤850 ≤1000	●	S	90	13	85	12	12
Alloyed heat-treatable steels	50MnSi4, 38Cr2, 28Cr4, 3140, 4130, 4140, 4150, 4340, 6150, EN16, EN26, 36NiCr6, 41Cr4, 42CrMo4	≤1000 ≤1400	●	S	75	13	70	12	12
Unalloyed case hardened steels	C10E, 1010, 1015	≤850	●	S	80	14	75	13	13
Alloyed case hardened steels	10CrMo11, 11MnSi6, 3310, 3415, 5115, 4615, 4620, 5120, 8617, 8620, 15NiCr13, 16MnCr5, 20CrMo5, N33	≤1000 ≤1400	●	S	75	13	70	12	12
Nitriding steels	34CrAl6 31CrMoV9, 34CrAlNi7	≤1000 ≤1400	●	C	75	13	70	12	12
Tool steels	C75W, 102Cr6, 29CrMoV9, H11, H13, P20, D2, D3 X210Cr12, X42Cr13, 105WCr6, X45NiCrMo4	≤850 ≤1400	●	C	75	12	70	11	11
High speed steels	S 6-5-2-5, S 6-5-2, S 6-5-3, M2, M3, M35, M45	≤1400	●	C	55	11	50	11	11
Spring steels	55Si7, 55Cr3, 51CrV4, 5155, 6150, 9255	≤350 HB	●	C	65	12	60	12	12
Stainless steels, sulphured	X12CrS13, X14CrMoS17, X6CrMoS17, X8CrNiS18-9, 410S, 430F, 630	≤900	●	C	55	13	50	12	12
austenitic	X5CrNi18-10, X6CrNiTi18-10, X6CrNiMoTi 17-12-2, 302, 303, 321	≤1100	●	C	45	13	40	12	12
martensitic	X20CrNi172, X39CrMo17-1, X2CrMoTi18-2, 410, 410X, 416, 420,	≤1500	●	C	35	13	35	12	12
Hardened steels	-	≤48 HRC ≤66 HRC	●	C	30	12	25	11	11
Special alloys	Nimonic, Inconel, Monel, Hastelloy, Bisalloy	≤2000	●	C	25	11	20	11	11
Cast iron	GG10, GG15, GG20 GG25, GG30, GG35 GG40	≤240 HB ≤350 HB	●		35	11	30	11	11
Spheroidal graphite iron and malleable cast iron	GGG40, GGG50, GGG60, 32510, GTW35 GGG70, GTS70, 50005, Nodular Iron	≤240 HB ≤350 HB	●		85	15	80	14	14
Chilled cast iron	-	≤350 HB	●		80	15	75	14	14
Ti and Ti-alloys	Ti99.5, TiAl5Sn2.5, TiCu2 TiAl6Zr5, TiAl6V4, TiAl4Mo4Sn2.5, - TiAl8Mo1V1	≤850 ≤1400	●	C	80	14	75	13	13
Aluminium and Al-alloys	Al99.5, AlMgSi1, AlMg1	≤400	●		70	14	65	13	13
Al wrought alloys	AlMgSiPb, AlCuMg1, AlMg3Si, AlZnMgCu1.5	≤650	●		55	13	50	12	12
Al cast alloys ≤ 10 % Si	G-AlSi5Cu1, G-AlSi7Cu3, G-AlSi9	≤600	●		35	11	30	11	11
≤ 24 % Si	G-AlSi12, G-AlSi12Cu, - G-AlSi12CuNiMg	≤600	●		30	11	25	11	11
Magnesium alloys	MgMn2, G-MgAl8Zn1, G-MgAl6Zn1	≤400	●		150	16	140	14	14
Copper, low-alloyed	SE-Cu, CuSn6, G-CuSn5ZnPB	≤500	●	C	120	16	115	14	14
Brass, short-chipping	CuZn39Pb2, CuZn39Pb3, CuZn43Pb2	≤600	●		150	17	140	16	16
long-chipping	CuZn20, CuZn33, CuZn37Pb0.5	≤600	●		130	17	120	16	16
Bronze, short-chipping	CuSn7ZnPB, CuPb5Sn5, CuPb10Sn	≤600	●		95	16	90	15	15
	CuNi18Zn19Pb	≤850	●		75	16	70	15	15
Bronze, long-chipping	CuAl5, CuAl9Mn, CuSn10	≤850	●		70	16	65	15	15
	CuAl11Ni, CuBe2	≤1000	●		60	16	55	15	15
Duroplastics	Bakelit, Resopal, Pertinax, Moltopren	≤150	○		75	14	70	13	13
Thermoplastics	Plexiglas, Hostalen, Novodur, Makralon	≤100	○		70	14	65	13	13
New cast materials CGI	GGV25, GGV35 GGV40, GGV50, SiMo 6	≤220 HB ≤300 HB	●						
New cast materials ADI	ADI800, ADI1000 ADI1200, ADI1400	≤1000 ≤1400	●						
Kevlar	Kevlar	≤1000	○						
Glass, carbon concent. plastics	GRP/CFRP	≤1000	○		60	13	55	12	12



☐ Inquiry

☐ Order

☐ Repeat order, no. of initial order

Deep hole gun drill:

☐ EB 100



☐ EB 80



☐ ZB 80



☐ EB 800



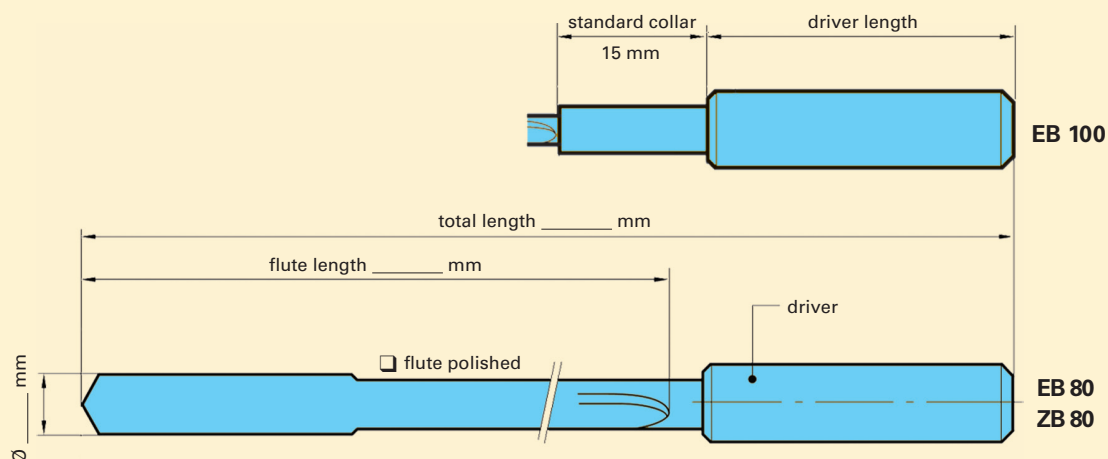
☐ polished
☐ fast service

Number required:

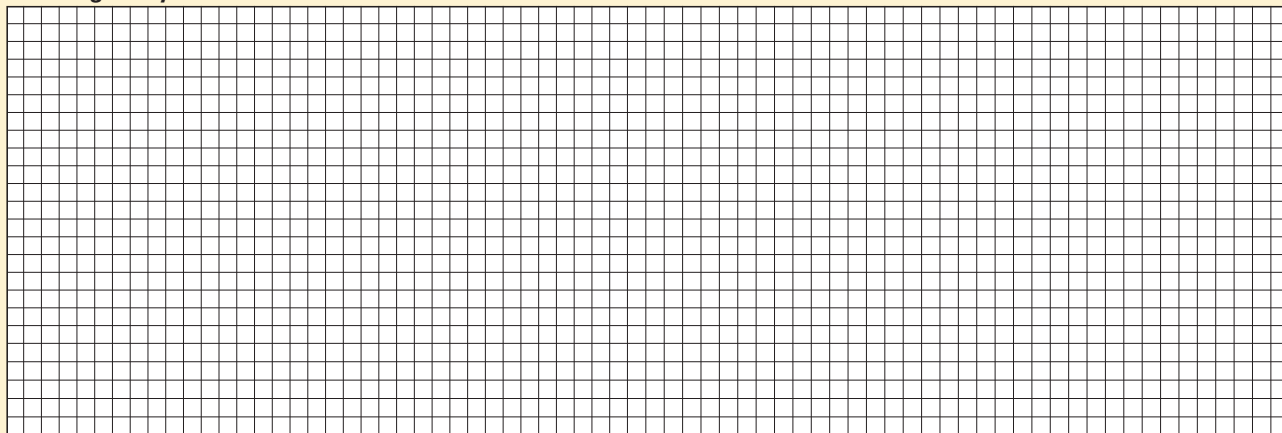
tool _____ items

insert _____ items

sup. strip _____ items



Drawing of lay-out



required in special cases only

Driver:

☐ no

☐ code-no.:

☐ to enclosed drawing

Coating:

☐ TiN

☐ Fire

☐ TiCN

☐ TiAlN

☐ SuperA

☐ _____

Workpiece:

drill. depth: _____

hole tolerance: _____

material/designation: _____

Machine type:

☐ deep hole drilling machine

☐ conventional machine tool

☐ pilot hole

☐ drilling bush

Coolant:

☐ deep hole drilling oil
pressure _____ bar

☐ soluble oil
quantity _____ l/min

Company:

Company stamp:

Telephone/fax:

Contact:

Signature: _____



THREADING

RECOMMENDATION CHART FOR TAPS



Colour Ring	Material Groups	Tens Strength Mpa (N/mm ²)	Hardness HB	Cutting Speed Vc m/min *		
				HSS-E	HSS-E-PM	Solid Carbide
	Structural steels - mild steel, 250 and 350 plate	≤ 850	-	10 - 15	15 - 20	30 - 50
	Free cutting steels - 1020, S1214, S1213, S12L13, S12L14	≤ 1000	-	10 - 20	15 - 25	30 - 50
	Unalloyed case hardened steels - 1010, 1015	≤ 750	-	10 - 15	15 - 20	30 - 50
	Un9/9/2008d Heat treatable steels - 1035, 1045, 1055, 1060, 1025	≤ 850	-	10 - 15	15 - 20	30 - 50
	Alloyed case hardened steels - 3310, 3415, 5115, 4615, 4620, 5120, 8617, 8620, N33, EN36A	850 - 1200	-	8 - 12	10 - 15	25 - 40
	Alloyed heat treatable steels - 3140, 4130, 4140, 4150, 4340, 6150, EN16, EN26	850 - 1200	-	8 - 12	10 - 15	25 - 40
	Alloyed tool steels - H11, H13, P20, D2, D3	≤ 1000	-	6 - 10	8 - 12	25 - 40
	High speed tool steels M2, M3, M35, M45	650 - 1000	-	6 - 10	8 - 12	25 - 40
	Stainless and acid resistant steels - Sulphured - 410S, 430F, 630	≤ 850	-	6 - 12	8 - 15	30 - 50
	- Austenitic - 302, 303, 304, 310, 316, 316Ti, 321	≤ 850	-	6 - 12	8 - 15	30 - 50
	- Martensitic - 410, 410X, 416, 420, 420C, 431, 440C	≤ 850	-	6 - 12	8 - 15	30 - 50
 	Structural steels - mild steel, 250 and 350 plate	≤ 800		10 - 15	15 - 20	30 - 50
	Free cutting steels - 1020, S1214, S1213, S12L13, S12L14	≤ 1000		10 - 20	15 - 25	30 - 50
	Case hardened steels	≤ 1000		10 - 15	15 - 20	30 - 50
	Heat treatable steels	≤ 1200		10 - 15	15 - 20	30 - 50
	Nitriding steels	≤ 1200		10 - 15	15 - 20	30 - 50
	Spheroidal graphite cast iron - GGG40, GGG50, GGG60, GGG70	-	≤ 240	10 - 20	15 - 25	30 - 50
	Aluminium and Al-Alloys	≤ 400	-	15 - 20	20 - 25	30 - 50
	Al wrought alloys	≤ 400	-	15 - 20	20 - 25	30 - 50
	Alcast alloys ≤ 10 % Si	≤ 600	-	15 - 20	20 - 25	30 - 50
	> 10 % Si	≤ 600	-	15 - 20	20 - 25	25 - 40
	Cast iron - GG10, GG15, GG20, GG25, GG30, GG35, GG40	-	≤ 240	15 - 20	20 - 25	30 - 40
	Spheroidal graphite cast iron - GGG40, GGG50, GGG60, GGG70	-	≤ 240	15 - 20	20 - 25	30 - 40
	Malleable cast iron - 32510, 50005, Nodular Iron	-	≤ 240	15 - 20	20 - 25	30 - 40
	Brass short chipping	≤ 600	-	10 - 15	15 - 20	25 - 30
	Brass long chipping	≤ 600	-	10 - 15	15 - 20	25 - 30
	Plastics	-	-	5 - 10	15 - 20	25 - 30
	Magnesium alloys	≤ 450	-	30 - 50		40 - 60
	Titanium and Ti-alloys	≤ 1200			2 - 8	
	Ni alloys				2 - 8	

* With coated tools cutting speed may be increased up to 50%

○ bright ● steam tempered ● nitrided ● AlCrN ● TiN ● TiCN ● Carbo

● ● universal ● general steel ● tool steel ● stainless steel ● Aluminium ● cast materials

TAPS



Technical drawing of a twist drill bit. The main view shows the bit with dimensions: d_2 (shank diameter), d_1 (flute diameter), l_1 (total length), and l_2 (flute length). A label 'SW' indicates the shank type. An inset shows the bit cutting into a workpiece, with d_k representing the cutting diameter.



AVAILABILITY

The diagram illustrates a grid of points. The grid is composed of horizontal bands of alternating white and gray background. Points are distributed across these bands, with some points in gray bands and others in white bands. The points are arranged in a way that suggests a subset of a larger set, with some points being highlighted in gray.

 universal
 general steel
 tool steel
 stainless steel
 Aluminium
 cast materials



5558	816	57	58	877	5559	879	4218	5557	817	805
DIN 371										
HSS-E		HSS-E-PM					HSS-E			
										
H	H	H	H	VA	VA	VA	VA	AI	AI	AI
B	B	B	B	B	B	B	B	B	B	B
right-hand										
ISO 2 / 6H										
										
8-12	8-12	8-12	8-12	6-12	6-12	6-12	10-15	10-15	10-15	10-15



AVAILABILITY

The diagram illustrates a grid of points (dots) arranged in a regular pattern. The grid is divided into horizontal bands of alternating light gray and white background. The points are arranged in a regular grid, with some points highlighted in white circles. The grid is composed of 10 columns and 10 rows of points. The points are arranged in a regular grid, with some points highlighted in white circles. The grid is composed of 10 columns and 10 rows of points. The points are arranged in a regular grid, with some points highlighted in white circles.

○ bright ● steam tempered ● nitrided P AlCrN S TiN C TiCN Cb Carbo S Sirius

 universal
 general steel
 tool steel
 stainless steel
 Aluminium
 cast materials



811	5552	823	5553	910	909	59	60	393	5551	824	812
DIN 371											
HSS-E		HSS-E		HSS-E-PM				HSS-E			
											
H	H	H	VA	VA	VA	VA	VA	VA	AI	AI	AI
C	C	C	C	C	C	C	C	C	C	C	C
right-hand											
ISO 2 / 6H											
											
8-12	8-12	8-12	6-12	6-12	6-12	6-12	6-12	10-15	10-15	10-15	10-15



AVAILABILITY

A 10x10 grid with alternating light gray and white rows. Black dots are placed at various intersections, and two open circles are in the 7th row, 7th and 8th columns.

Row \ Column	1	2	3	4	5	6	7	8	9	10
1	•									•
2	•				•					•
3	•	•		•			•			
4	•	•		•			•			
5	•	•		•			•			
6	•	•	•	•			•	•		
7	•	•	•	•			•	•	•	
8	•	•	•	•			•	•	•	
9	•	•	•	•			•	•	•	
10	•	•	•	•			•	•	•	

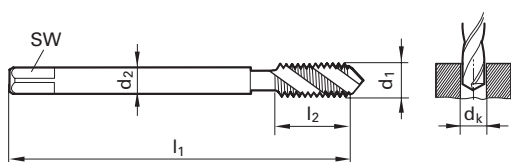
 bright
  steam tempered
  nitrided
  AlCrN
  TiN
  TiCN
  Carbo
  TiAlN

● ● universal
 ● general steel
 ● tool steel
 ● stainless steel
 ● Aluminium
 ● cast materials





Guhring no.	834	2864
Standard	DIN 374	
Tool material	HSS-E	
Surface		
Type	N	N
Form	C	C
Cutting direction	right-hand	right-hand
Tolerance	ISO 2 / 6H	ISO 2 / 6H
Application		
Cutting speed m/min	10-15	6-12



d1	P	d2	SW	dk	l1	l2	Code
mm	mm	mm	mm	mm	mm	mm	no.
M4	0.50	2.80	2.10	3.50	63.00	5.00	4.003
M5	0.50	3.50	2.70	4.50	70.00	5.00	5.003
M6	0.50	4.50	3.40	5.50	80.00	5.00	6.003
M6	0.75	4.50	3.40	5.25	80.00	8.00	6.004
M8	0.50	6.00	4.90	7.50	80.00	8.00	8.003
M8	0.75	6.00	4.90	7.25	80.00	8.00	8.004
M8	1.00	6.00	4.90	7.00	90.00	11.00	8.005
M10	1.00	7.00	5.50	9.00	90.00	11.00	10.005
M10	1.25	7.00	5.50	8.80	100.00	14.00	10.006
M12	1.00	9.00	7.00	11.00	100.00	11.00	12.005
M12	1.25	9.00	7.00	10.80	100.00	15.00	12.006
M12	1.50	9.00	7.00	10.50	100.00	15.00	12.007
M14	1.00	11.00	9.00	13.00	100.00	11.00	14.005
M14	1.25	11.00	9.00	12.80	100.00	15.00	14.006
M14	1.50	11.00	9.00	12.50	100.00	15.00	14.007
M16	1.00	12.00	9.00	15.00	100.00	11.00	16.005
M16	1.50	12.00	9.00	14.50	100.00	15.00	16.007
M18	1.00	14.00	11.00	17.00	110.00	12.00	18.005
M18	1.50	14.00	11.00	16.50	110.00	16.00	18.007
M20	1.50	16.00	12.00	18.50	125.00	16.00	20.007
M22	1.50	18.00	14.50	20.50	125.00	16.00	22.007
M24	1.50	18.00	14.50	22.50	140.00	16.00	24.007
M24	2.00	18.00	14.50	22.00	140.00	22.00	24.008
M30	1.50	22.00	18.00	28.50	150.00	20.00	30.007

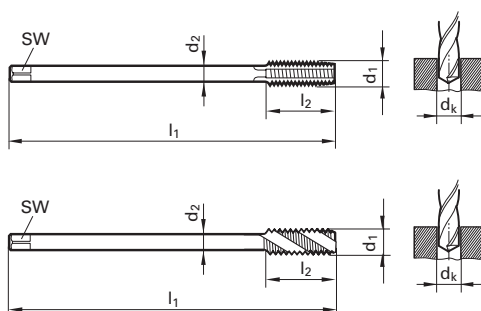
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○ bright ● steam tempered ● nitrided **P** AlCrN **S** TiN **C** TiCN **Cb** Carbo

 universal
  general steel
  tool steel
  stainless steel
  Aluminium
  cast materials



Guhring no.	998	5718
Standard	Guhring std.	
Tool material	HSS-E	
Surface		
Type	N	N
Form	B	C
Cutting direction	right-hand	right-hand
Tolerance	ISO 2 / 6H	ISO 2 / 6H
Application		
Cutting speed m/min	6-10	6-10



d1	P	d2	SW	dk	l1	l2
mm	mm	mm	mm	mm	mm	mm
M3	0.50	2.20		2.50	70.00	18.00
M4	0.70	2.80	2.10	3.30	90.00	22.00
M5	0.80	3.50	2.70	4.20	100.00	24.00
M6	1.00	4.50	3.40	5.00	110.00	25.00
M8	1.25	6.00	4.90	6.80	125.00	28.00
M10	1.50	7.00	5.50	8.50	140.00	30.00
M12	1.75	9.00	7.00	10.20	180.00	35.00
M14	2.00	11.00	9.00	12.00	200.00	35.00
M16	2.00	12.00	9.00	14.00	200.00	40.00
M20	2.50	16.00	12.00	17.50	250.00	45.00
M3	0.50	3.50	2.70	2.50	112.00	6.00
M4	0.70	2.80	2.10	3.30	112.00	7.50
M5	0.80	3.50	2.70	4.20	125.00	8.50
M6	1.00	4.50	3.40	5.00	125.00	11.00
M8	1.25	6.00	4.90	6.80	140.00	14.00
M10	1.50	7.00	5.50	8.50	160.00	16.00
M12	1.75	9.00	7.00	10.20	180.00	18.50
M16	2.00	12.00	9.00	14.00	220.00	20.00
M20	2.50	16.00	12.00	17.50	280.00	25.00

AVAILABILITY

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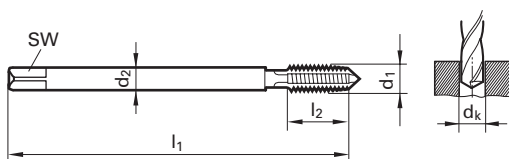
bright steam tempered nitrided AlCrN TiN TiCN Carbo

universal general steel tool steel stainless steel Aluminium cast materials



Guhring no.	5009
Standard	Guhring std.
Tool material	HSS-E
Surface	
Cutting direction	right-hand
Tolerance	ISO 2 / 6H
Application	
Cutting speed m/min	6-10

OVERSIZE TAP
+0.4mm



d1	P	d2	SW	dk	l1	l2
mm	mm	mm	mm	mm	mm	mm
M10	1.50	8.00	5.00	8.80	100.00	23.00
M12	1.75	9.00	7.00	10.40	110.00	24.00
M16	2.00	12.00	9.00	14.20	110.00	26.00
M20	2.50	16.00	12.00	17.70	140.00	32.00
M24	3.00	18.00	14.50	21.40	160.00	36.00

AVAILABILITY

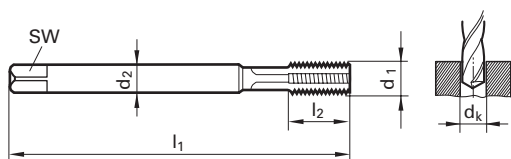
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bright steam tempered nitrided AlCrN TiN TiCN Carbo

universal general steel tool steel stainless steel Aluminium cast materials



Guhring no.	2944
Standard	Guhring std.
Tool material	Solid carbide
Surface	C
Type	H
Form	D
Cutting direction	right-hand
Tolerance	ISO 2 / 6H
Application	Hardened Materials
Cutting speed m/min	2-4



d1	P	d2	SW	dk	l1	l2
mm	mm	mm	mm	mm	mm	mm
M3	0.50	3.500	2.70	2.600	56.00	12.00
M4	0.70	4.500	3.40	3.400	63.00	14.00
M5	0.80	6.000	4.90	4.300	70.00	17.00
M6	1.00	6.000	4.90	5.100	80.00	20.00
M8	1.25	8.000	6.20	6.900	90.00	20.00
M10	1.50	10.000	8.00	8.600	100.00	24.00
M12	1.75	12.000	9.00	10.400	110.00	28.00
M16	2.00	16.00	12.00	14.00	110.00	40.00

AVAILABILITY

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○ bright ● steam tempered ● nitrided ● AlCrN ● TiN ● TiCN ● Carbo

● universal ● general steel ● tool steel ● stainless steel ● Aluminium ● cast materials



Recommendations for thread milling cutters



Scan to Download

CNC Guhro Threadmill Program / Software

Material group	Tensile strength MPa (N/mm ²)	Hardness HB	Cutting speed v _c (m/min)	Feed per tooth f _z (mm)	Feed for drill per revolution f _b (mm)
 Structural steels	≤ 850	–	80 - 120	0,02 - 0,10	–
 Free-cutting steels	≤ 1000	–	80 - 120	0,02 - 0,10	–
 Unalloyed case hardened steels	≤ 750	–	80 - 120	0,02 - 0,10	–
 Unalloyed heat-treatable steels	≤ 850	–	80 - 120	0,02 - 0,10	–
 Alloyed case hardened steels	≥ 850 ... 1200	–	60 - 80	0,01 - 0,08	–
 Alloyed heat-treatable steels	≥ 850 ... 1200	–	60 - 80	0,01 - 0,08	–
 Alloyed tool steels	≤ 1000	–	60 - 80	0,01 - 0,08	–
 High speed tool steels	≥ 650 ... 1000	–	60 - 80	0,01 - 0,08	–
 Stainless- and acid-resistant steels, sulphured	≤ 850	–	50 - 80	0,02 - 0,10	–
 austenitic	≤ 850	–	50 - 70	0,02 - 0,10	–
 martensitic	≤ 850	–	50 - 70	0,02 - 0,10	–
 Structural steels	≤ 800	–	80 - 100	0,02 - 0,10	–
 Free-cutting steels	≤ 1000	–	80 - 100	0,02 - 0,10	–
 Case hardened steels	≤ 1000	–	80 - 100	0,02 - 0,10	–
 Heat-treatable steels	≤ 1200	–	80 - 100	0,02 - 0,10	–
 Nitriding steels	≤ 1200	–	80 - 100	0,02 - 0,10	–
 Spheroidal graphite iron	–	≤ 240	80 - 120	0,02 - 0,10	0,05 - 0,20
 Aluminium and Al-alloys	≤ 400	–	150 - 300	0,05 - 0,20	0,05 - 0,25
 Al wrought alloys	≤ 400	–	150 - 300	0,05 - 0,20	0,05 - 0,25
 Al cast alloys ≤ 10 % Si	≤ 600	–	150 - 300	0,05 - 0,20	0,05 - 0,40
 > 10 % Si	≤ 600	–	100 - 200	0,05 - 0,20	0,05 - 0,30
 Cast iron	–	≤ 240	100 - 150	0,05 - 0,15	0,05 - 0,25
 Spheroidal graphite iron	–	≤ 240	80 - 120	0,05 - 0,15	0,05 - 0,20
 Malleable cast iron	–	< 300	80 - 120	0,05 - 0,15	0,05 - 0,20
 Brass, short-chipping	≤ 600	–	150 - 250	0,05 - 0,25	0,05 - 0,40
 long-chipping	≤ 600	–	150 - 250	–	0,05 - 0,25
 Plastics	–	–	100 - 200	0,05 - 0,25	0,05 - 0,40
 Magnesium-alloys	≤ 450	–	150 - 300	0,05 - 0,25	0,05 - 0,40
 Titanium and Ti-alloys	≤ 1200	–	40 - 60	0,01 - 0,08	–
 Ni-alloys	≤ 1200	–	40 - 60	0,01 - 0,08	–

The surface of a thread milling cutter does not influence the cutting data, but the suitability for materials:

-  easy-to-machine materials
-  steels and Ni-alloys
-  abrasive materials

Formula of calculation

$v_c = \frac{d \cdot \pi \cdot n}{1000} \quad [\text{m/min}]$
$n = \frac{v_c \cdot 1000}{d \cdot \pi} \quad [\text{min}^{-1}]$
$v_f = n \cdot z \cdot f_z \quad [\text{mm/min}]$
$v_m = \frac{v_f \cdot (D - d)}{D} \quad [\text{mm/min}]$
$v_b = n \cdot f_b \quad [\text{mm/min}]$

v_c = cutting speed
 v_f = contour feed
 v_m = centre point path feed
 n = revolutions
 z = number of teeth
 f_z = feed per tooth
 f_b = feed for drill per revolution*
 v_b = drill feed rate*
 D = Ø nom. of thread [mm]
 d = milling cutter nom. Ø [mm]
 * for drill/thread milling

Guhring Thread Mill CNC programming made easy

Guhring's Thread Mill software considerably simplifies CNC programming. With the assistance of a clear input mask, the user enters all the required data, i.e. thread mill type, thread type and diameter, machine parameters etc. and with this data produces the relevant CNC program.

TAPS

[illegible]



THREAD MILLING CUTTER FOR UNC-THREADS

TAPS

Guhring no.

4128

Standard

Guhring std.

Tool material

Solid carbide

Carbide grade

K/P

Surface

C

Cutting direction

right-hand

Type

TMSP

Thread length

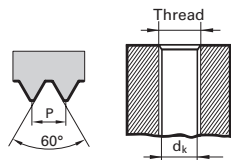
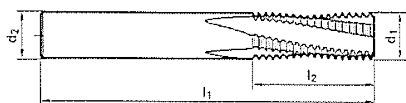
2 x D

Application

●

Cutting speed m/min

50-100



Thread	P	d1	d2	dk	l1	l2	z	Code
inch	inch	mm	mm	mm	mm	mm		no.
No. 10	24	3.45	6.35	3.91	63.50	11.09	3	4.826
No. 12	24	4.09	6.35	4.50	63.50	12.19	3	5.486
1/4	20	4.70	6.35	5.10	63.50	14.60	3	6.350
5/16	18	6.15	6.35	6.57	63.50	17.60	3	7.938
3/8	16	7.65	7.95	8.00	63.50	21.41	3	9.525
7/16	14	8.99	9.52	9.40	76.20	0.965	3	11.113
1/2	13	9.42	9.52	10.80	76.20	24.51	3	12.700
9/16	12	11.40	12.70	12.19	95.30	30.70	4	14.288
5/8	11	12.60	12.70	13.48	95.30	35.78	4	15.875
3/4	10	15.77	15.87	16.51	108.00	39.40	4	19.050
7/8	9	15.77	15.87	19.50	108.00	46.60	4	22.225
1"	8	15.77	15.87	22.25	108.00	49.19	4	25.400

AVAILABILITY

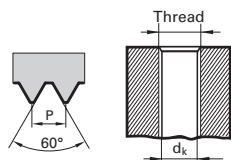
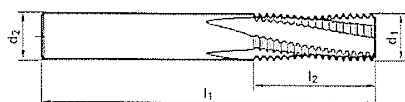
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○ bright ● steam tempered ● nitrided P AlCrN S TiN C TiCN Cb Carbo

● universal ● general steel ● tool steel ● stainless steel ● Aluminium ● cast materials



Guhring no.	4129
Standard	Guhring std.
Tool material	Solid carbide
Carbide grade	K/P
Surface	C
Cutting direction	right-hand
Type	TMSP
Thread length	2 x D
Application	●
Cutting speed m/min	50-100



Thread	P	d1	d2	dk	l1	l2	z	Code
inch	inch	mm	mm	mm	mm	mm		no.
No. 10	32	3.81	6.35	4.08	63.50	11.50	3	4.826
No. 12	28	4.29	6.35	4.60	63.50	12.19	3	5.486
1/4	28	5.15	6.35	5.51	63.50	14.09	3	6.350
5/16	24	6.14	6.35	6.88	63.50	17.50	3	7.938
3/8	24	7.84	7.95	8.50	63.50	20.60	3	9.525
7/16	20	9.42	9.52	9.90	76.20	24.79	3	11.113
1/2	20	9.42	9.52	11.50	76.20	27.30	3	12.700
9/16	18	11.40	12.70	12.90	95.30	30.30	4	14.288
5/8	18	12.60	12.70	14.50	108.00	33.19	4	15.875
3/4	16	15.77	15.87	17.50	108.00	38.88	4	19.050
7/8	14	15.77	15.87	20.40	108.00	46.30	4	22.225
1"	12	15.77	15.87	23.24	108.00	45.49	4	25.400

AVAILABILITY

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○ bright ● steam tempered ● nitrided P AlCrN S TiN C TiCN Cb Carbo

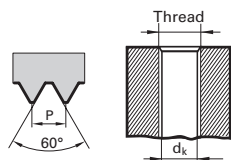
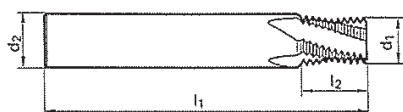
● universal ● general steel ● tool steel ● stainless steel ● Aluminium ● cast materials



THREAD MILLING CUTTER FOR NPT-THREADS

TAPS

Guhring no.	4130
Standard	Guhring std.
Tool material	Solid carbide
Carbide grade	K/P
Surface	
Cutting direction	right-hand
Type	TMSP
Thread length	2 x D
Application	
Cutting speed m/min	50-100



Thread	P	d1	d2	dk	l1	l2	z	Code
inch	inch	mm	mm	mm	mm	mm		no.
1/16	27	5.41	7.92	6.15	57.15	9.90	3	8.190
1/8	27	7.31	7.92	8.50	57.15	9.90	3	10.620
1/4	18	9.93	12.70	10.99	82.55	14.80	4	14.140
3/8	18	11.20	12.70	14.50	82.55	14.80	4	17.570
1/2	14	14.50	15.87	17.85	88.90	18.99	4	21.900
1"	11 1/2	17.50	19.05	29.00	95.25	23.19	5	34.180

AVAILABILITY

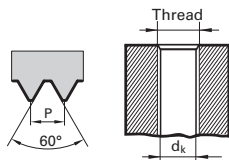
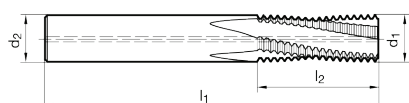
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○ bright ● steam tempered ● nitrided ● AlCrN ● TiN ● TiCN ● Carbo

● universal ● general steel ● tool steel ● stainless steel ● Aluminium ● cast materials



Guhring no.	3748
Standard	Guhring std.
Tool material	Solid carbide
Carbide grade	K/P
Surface	C
Cutting direction	right-hand
Type	TMSP
Thread length	2 x D
Application	●
Cutting speed m/min	50-100



Thread	P	d1	d2	dk	l1	l2	z	Code
inch	inch	mm	mm	mm	mm	mm		no.
G1/8	28.00	7.95	8.00	8.80	64.00	21.30	3	9.728
G1/4	19.00	10.50	12.00	11.80	90.00	28.70	4	13.157
G3/8	19.00	13.60	14.00	15.25	90.00	35.40	4	16.662

AVAILABILITY

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○ bright ● steam tempered ● nitrided ● AlCrN ● TiN ● TiCN ● Carbo

● universal ● general steel ● tool steel ● stainless steel ● Aluminium ● cast materials



Technical drawing of a screw. The main view shows a screw with a hexagonal head (SW) and a threaded section. Dimensions include d_1 (nominal diameter), d_2 (shank diameter), l_1 (total length), and l_2 (thread length). An inset shows a cross-section of the screw in a hole with diameter d_k .



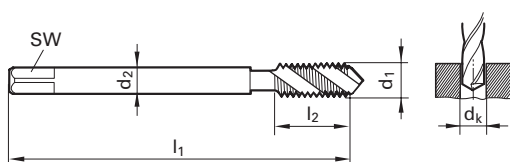
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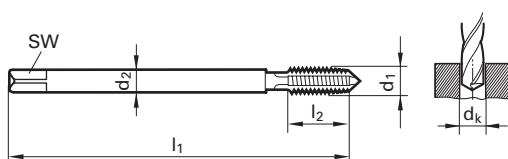


Guhring no.	876	5726	881	391	3993
Standard	DIN 371	DIN 371	DIN 376	DIN 371+376	DIN/ANSI
Tool material	HSS-E				HSS-E-PM
Surface					
Type	N	N	N	VA R45	N
Form	C	C	C	C	C
Cutting direction	right-hand	right-hand	right-hand	right-hand	right-hand
Tolerance	2B	2B	2B	2B	2B
Application					
Cutting speed m/min	10-15	10-15	10-15	6-12	6-12

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 bright
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  AlCrN
  TiN
  TiCN
  Carbo
  TiAlN

 universal
 general steel
 tool steel
 stainless steel
 Aluminium
 cast materials

NEW

AVAILABILITY

Table 1							
1/4	28	6.48	4.85	5.10	80.00	16.00	6.350
5/16	24	8.08	6.05	6.60	90.00	18.00	7.938
3/8	24	9.68	7.26	8.00	100.00	20.00	9.525
7/16	20	8.20	6.15	9.40	100.00	22.00	11.113
1/2	20	9.32	6.99	10.80	110.00	25.00	12.700
9/16	18	10.90	8.18	12.20	110.00	30.00	14.288
5/8	18	12.19	9.14	13.50	110.00	30.00	15.875
3/4	16	14.99	11.23	16.50	125.00	33.00	19.050
7/8	14	17.70	13.28	19.50	140.00	35.00	22.225

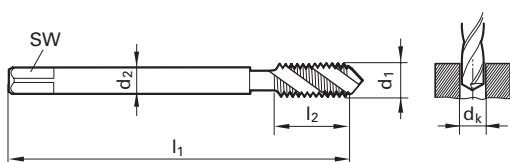
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  TiN
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● ● universal
 ● general steel
 ● tool steel
 ● stainless steel
 ● Aluminium
 ● cast materials



Guhring no.	5728	911	392	3995
Standard	DIN 374			DIN/ANSI
Tool material	HSS-E			HSS-E-PM
Surface				
Type	N	N	VA R45	N
Form	C	C	C	C
Cutting direction	right-hand	right-hand	right-hand	right-hand
Tolerance	2B	2B	2BX	2B
Application				
Cutting speed m/min	10-15	10-15	6-12	6-12

NEW



d1	P	d2	SW	dk	l1	l2	Code
inch	inch	mm	mm	mm	mm	mm	no.
No.4	48	2.20		2.40	56.00	6.00	2.845
No.6	40	2.50	2.10	2.95	56.00	11.00	3.505
No.8	36	2.80	2.10	3.50	63.00	10.00	4.166
No.10	32	3.50	2.70	4.10	70.00	12.00	4.826
No.12	28	6.00	4.90	4.60	80.00	9.50	5.486
1/4	28	4.50	3.40	5.50	80.00	14.00	6.350
5/16	24	6.00	4.90	6.90	90.00	18.00	7.938
3/8	24	7.00	5.50	8.50	90.00	18.00	9.525
7/16	20	8.00	6.20	9.90	90.00	18.00	11.113
1/2	20	9.00	7.00	11.50	100.00	20.00	12.700
9/16	18	11.00	9.00	12.90	100.00	22.00	14.288
5/8	18	12.00	9.00	14.50	100.00	22.00	15.875
3/4	16	14.00	11.00	17.50	110.00	25.00	19.050
7/8	14	18.00	14.50	20.40	125.00	25.00	22.225
1	12	18.00	14.50	23.25	140.00	28.00	25.400
1/4	28	6.48	4.85	5.10	80.00	16.00	6.350
5/16	24	8.08	6.05	6.60	90.00	18.00	7.938
3/8	24	9.68	7.26	8.00	100.00	20.00	9.525
7/16	20	8.20	6.15	9.40	100.00	22.00	11.113
1/2	20	9.32	6.99	10.80	110.00	25.00	12.700
9/16	18	10.90	8.18	12.20	110.00	30.00	14.288
5/8	18	12.19	9.14	13.50	110.00	30.00	15.875
3/4	16	14.99	11.23	16.50	125.00	33.00	19.050
7/8	14	17.70	13.28	19.50	140.00	35.00	22.225

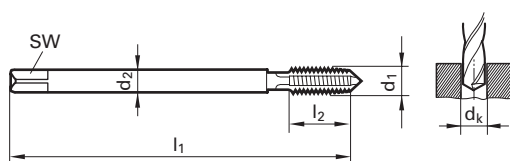
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bright steam tempered nitrided AlCrN TiN TiCN Carbo TiAlN

universal general steel tool steel stainless steel Aluminium cast materials



TAPS

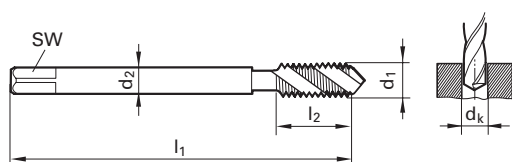
NEW

AVAILABILITY

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Guhring no.	965	395	5732
Standard	DIN 5156		
Tool material	HSS-E		
Surface			
Cutting direction	right-hand	right-hand	right-hand
Type	N	VA R45	N
Form	C	C	C
Application			
Cutting speed m/min	10-15	8-10	8-10



d1	P	d2	SW	dk	l1	l2	Code
inch	inch	mm	mm	mm	mm	mm	no.
G1/16	28	6.00	4.90	6.80	90.00	11.00	7.723
G1/8	28	7.00	5.50	8.80	90.00	11.00	9.728
G1/4	19	11.00	9.00	11.80	100.00	14.00	13.157
G3/8	19	12.00	9.00	15.25	100.00	14.00	16.662
G1/2	14	16.00	12.00	19.00	125.00	18.00	20.955
G5/8	14	18.00	14.50	21.00	125.00	18.00	22.911
G3/4	14	20.00	16.00	24.50	140.00	20.00	26.441
G7/8	14	22.00	18.00	28.25	150.00	22.00	30.201
G 1"	11	25.00	20.00	30.75	160.00	24.00	33.249

AVAILABILITY		
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The diagram illustrates the geometry and cutting action of a twist drill bit. The main view shows the bit with dimensions: l_1 (total length), d_2 (shaft diameter), l_2 (flute length), and d_1 (cutting edge diameter). A label 'SW' indicates the shank. An inset shows the bit cutting into a workpiece, with d_k representing the chip thickness.



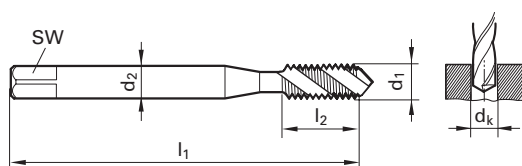
AVAILABILITY

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Guhring no.	2847	2848
Standard	DIN 371	DIN 376
Tool material	HSS-E	
Surface		
Type	N	N
Form	C	C
Cutting direction	right-hand	right-hand
Application		
Cutting speed m/min	10-15	10-15



d1	P	d2	SW	dk	l1	l2	Code
inch	inch	mm	mm	mm	mm	mm	no.
W1/8	40	3.50	2.70	2.50	56.00	7.00	3.175
W3/16	24	6.00	4.90	3.60	70.00	11.00	4.762
W1/4	20	7.00	5.50	5.10	80.00	13.00	6.350
W5/16	18	8.00	6.20	6.50	90.00	14.00	7.938
W3/8	16	10.00	8.00	7.90	100.00	16.00	9.525
W3/8	16	7.00	5.50	7.90	100.00	16.00	9.525
W7/16	14	8.00	9.20	9.20	100.00	18.00	11.113
W1/2	12	9.00	10.50	10.50	110.00	20.00	12.700
W9/16	12	11.00	12.00	12.00	110.00	21.00	14.287
W5/8	11	12.00	13.50	13.50	110.00	24.00	15.876
W3/4	10	14.00	16.25	16.25	125.00	25.00	19.051
W7/8	9	18.00	19.25	19.25	140.00	38.00	22.226
W1	8	18.00	22.00	22.00	160.00	32.00	25.401

AVAILABILITY

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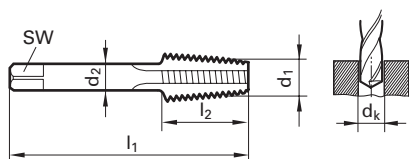
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 bright  steam tempered  nitrided  AlCrN  TiN  TiCN  Carbo

 universal  general steel  tool steel  stainless steel  Aluminium  cast materials



Guhring no.	5007
Standard	Guhring std.
Tool material	HSS-E
Surface	○
Cutting direction	right-hand
Tolerance	
Application	●
Cutting speed m/min	5-10



d1	P	d2	SW	dk	l1	l2	Code
inch	inch	mm	mm	mm	mm	mm	no.
1/8	28	7.00	5.50	8.40	63.00	15.00	9.728
1/4	19	11.00	9.00	11.20	63.00	21.00	13.157
3/8	19	12.00	9.00	14.75	70.00	21.00	16.662
1/2	14	16.00	12.00	18.25	80.00	27.00	20.955
3/4	14	20.00	16.00	23.75	100.00	27.00	26.441
1	11	25.00	20.00	30.00	110.00	32.00	33.249

AVAILABILITY

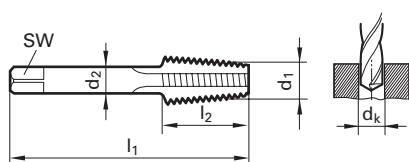
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- 302617275
- 302617276
- 302617277
- 302617278
- 302617279

○ bright ● steam tempered ● nitrided ● AlCrN ● TiN ● TiCN ● Carbo

● universal ● general steel ● tool steel ● stainless steel ● Aluminium ● cast materials



Guhring no.	973	1088
Standard	Guhring std.	
Tool material	HSS-E	
Surface	○	●S
Type	N	VA
Form	C	C
Cutting direction	right-hand	right-hand
Application	●	●
Cutting speed m/min	5-10	3-8



d1	P	d2	SW	dk	l1	l2	Code
inch	inch	mm	mm	mm	mm	mm	no.
1/16	27	6.00	4.90	6.15	56.00	14.00	8.190
1/8	27	7.00	5.50	8.40	63.00	15.00	10.620
1/4	18	11.00	9.00	11.10	63.00	21.00	14.140
3/8	18	12.00	9.00	14.30	70.00	21.00	17.570
1/2	14	16.00	12.00	17.90	80.00	27.00	21.900
3/4	14	20.00	16.00	23.30	100.00	27.00	27.230
1	11.5	25.00	20.00	29.00	110.00	32.00	34.180
1 1/4	11.5	32.00	24.00	37.70	125.00	33.00	42.900
1 1/2	11.5	36.00	29.00	43.70	140.00	33.00	48.940
2	11.5	36.00	29.00	55.60	160.00	33.00	61.000
1/16	27	8.00	6.20	6.25	90.00	14.00	8.190
1/8	27	11.00	9.00	8.50	90.00	15.00	10.620
1/4	18	14.00	11.00	11.20	100.00	21.00	14.140
3/8	18	16.00	12.00	14.40	110.00	21.00	17.570
1/2	14	18.00	14.50	18.00	125.00	27.00	21.900
3/4	14	22.00	18.00	23.40	140.00	27.00	27.230
1	11.5	25.00	20.00	29.10	170.00	32.00	34.180

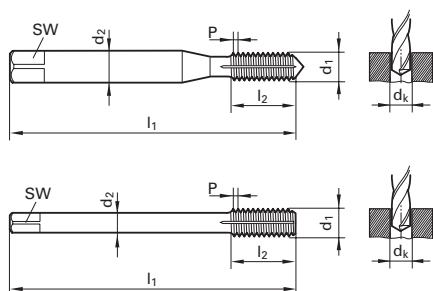
AVAILABILITY

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○ bright ● steam tempered ● nitrided ● AlCrN ●S TiN ● TiCN ● Carbo

● universal ● general steel ● tool steel ● stainless steel ● Aluminium ● cast materials



d1	P	d2	SW	dk	l1	l2
mm	mm	mm	mm	mm	mm	mm
M1	0.25	2.50	2.10	0.90	40.00	4.00
M1.2	0.25	2.50	2.10	1.10	40.00	4.80
M1.4	0.30	2.50	2.10	1.28	40.00	5.60
M1.6	0.35	2.50	2.10	1.46	40.00	6.40
M1.7	0.35	2.50	2.10	1.55	40.00	6.80
M1.8	0.35	2.50	2.10	1.66	40.00	7.20
M2	0.40	2.80	2.10	1.80	45.00	8.00
M2.5	0.45	2.80	2.10	2.30	50.00	9.00
M3	0.50	3.50	2.70	2.80	56.00	10.00
M3.5	0.60	4.00	3.00	3.25	56.00	12.00
M4	0.70	4.50	3.40	3.70	63.00	12.00
M5	0.80	6.00	4.90	4.65	70.00	14.00
M6	1.00	6.00	4.90	5.55	80.00	16.00
M8	1.25	8.00	6.20	7.40	90.00	18.00
M10	1.50	10.00	8.00	9.25	100.00	20.00
M12	1.75	9.00	7.00	11.25	110.00	24.00
M14	2.00	11.00	9.00	13.10	110.00	26.00
M16	2.00	12.00	9.00	15.10	110.00	26.00

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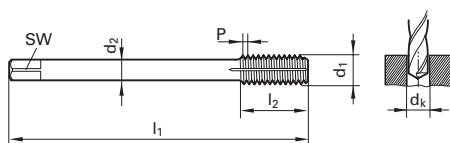
○ bright ● steam tempered ● nitrided **P** AlCrN **S** TiN **C** TiCN **Cb** Carbo

 universal
 general steel
 tool steel
 stainless steel
 Aluminium
 cast materials

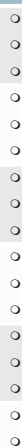
TAPS

[illegible]

 universal
 general steel
 tool steel
 stainless steel
 Aluminium
 cast materials



AVAILABILITY



TAPS

[illegible]

 universal
 general steel
 tool steel
 stainless steel
 Aluminium
 cast materials



FLUTELESS MACHINE TAPS FOR UNF THREADS (THREAD FORMERS)



TAPS

Guhring no.

4492

Standard

DIN 371 / DIN 374

Tool material

HSS-E-PM

Surface

C

Type

N

Form

C

Cutting direction

right-hand

Tolerance

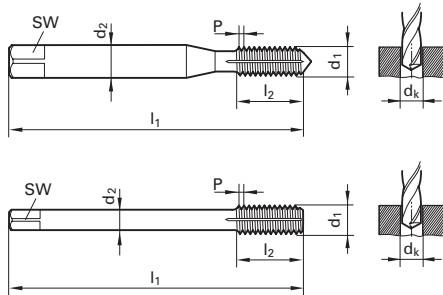
2BX

Application

●

Cutting speed m/min

6-30



d1	P	d2	SW	dk	l1	l2	Code
inch	inch	mm	mm	mm	mm	mm	no.
No.4	48	3.50	2.70	2.60	56.00	10.00	2.845
No.6	40	4.00	3.00	3.20	56.00	11.00	3.505
No.8	36	4.50	3.40	3.85	63.00	12.00	4.166
No.10	32	6.00	4.90	4.45	70.00	14.00	4.826
No.12	28	6.00	4.90	5.10	80.00	16.00	5.486
1/4	28	7.00	5.50	5.95	80.00	16.00	6.350
5/16	24	8.00	6.20	7.45	90.00	18.00	7.938
3/8	24	10.00	8.00	9.05	100.00	18.00	9.525
7/16	20	8.00	6.20	10.55	100.00	22.00	11.113
1/2	20	9.00	7.00	12.10	100.00	20.00	12.700
9/16	18	11.00	9.00	13.65	100.00	22.00	14.288
5/8	18	12.00	9.00	15.25	100.00	22.00	15.875
3/4	16	14.00	11.00	18.35	110.00	25.00	19.050

AVAILABILITY

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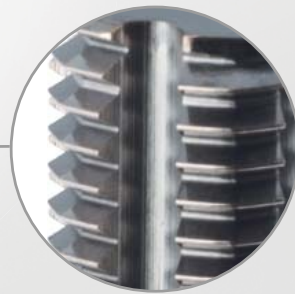
○ bright ● steam tempered ● nitrided ● AlCrN ● TiN ● TiCN ● Carbo

● universal ● general steel ● tool steel ● stainless steel ● Aluminium ● cast materials

Pionex

the new generation **FLUTELESS MACHINE TAPS**

A special surface finish treatment in combination with the TiCN-coating ensures increased wear-resistance.



Optimised polygon form

Based to a geometric modification the contact surface between tool and functionality area could be optimised. This reduced torque by up to 30 %.

Tool material

Increased wear-resistance thanks to the application of a new powder metallurgical base material.

Shank tolerance h6

Due to the shank tolerance h6 the new fluteless tap generation can be applied in all standard clamping chucks.

New lubricating groove geometry

Thanks to the optimised lubricating grooves the lubricating effect has been clearly improved in the forming lead area.





HAND TAPS FOR METRIC THREADS (SERIES TAPS)



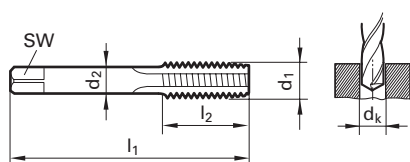
TAPS

Guhring no.	861	862	863	864
Standard	DIN 352			
Tool material	HSS			
Surface				
Type	N	N	N	N
Description	Set of taps	First	Second	Bottoming
Cutting direction	right-hand	right-hand	right-hand	right-hand
Tolerance	ISO 2 / 6H	ISO 2 / 6H	ISO 2 / 6H	ISO 2 / 6H

FIRST AND
SECOND TAP IS
UNDERSIZE

UNDERSIZE

UNDERSIZE



d1	P	d2	SW	dk	l1	l2
mm	mm	mm	mm	mm	mm	mm
M3	0.50	3.50	2.70	2.50	40.00	10.00
M4	0.70	4.50	3.40	3.30	45.00	12.00
M5	0.80	6.00	4.90	4.20	50.00	14.00
M6	1.00	6.00	4.90	5.00	56.00	16.00
M8	1.25	6.00	4.90	6.80	63.00	17.00
M10	1.50	7.00	5.50	8.50	70.00	20.00
M12	1.75	9.00	7.00	10.20	75.00	24.00
M14	2.00	11.00	9.00	12.00	80.00	26.00
M16	2.00	12.00	9.00	14.00	80.00	26.00
M18	2.50	14.00	11.00	15.50	95.00	30.00
M20	2.50	16.00	12.00	17.50	95.00	32.00
M24	3.00	18.00	14.50	21.00	110.00	36.00

AVAILABILITY

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bright steam tempered nitrided AlCrN TiN TiCN Carbo

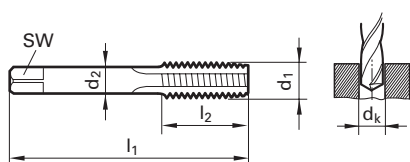
universal general steel tool steel stainless steel Aluminium cast materials



Guhring no.	981	984
Standard	DIN 352	
Tool material	HSS	
Surface		
Type	N	N
Description	Set of taps	Bottoming
Cutting direction	right-hand	right-hand
Tolerance	2B	2B

TAPS

FIRST AND SECOND TAP IS UNDERSIZE



d1	P	d2	SW	dk	l1	l2	Code
inch	inch	mm	mm	mm	mm	mm	no.
No.4	40	3.50	2.70	2.35	40.00	11.00	2.845
No.5	40	4.00	3.00	2.65	40.00	11.00	3.175
No.6	32	4.00	3.00	2.85	45.00	12.00	3.505
No.8	32	4.50	3.40	3.50	45.00	13.00	4.166
No.10	24	6.00	4.90	3.90	50.00	14.00	4.826
1/4	20	6.00	4.90	5.10	56.00	16.00	6.350
5/16	18	6.00	4.90	6.60	63.00	18.00	7.938
3/8	16	7.00	5.50	8.00	70.00	20.00	9.525
7/16	14	8.00	6.20	9.40	70.00	22.00	11.113
1/2	13	9.00	7.00	10.80	75.00	25.00	12.700
9/16	12	11.00	9.00	12.20	80.00	30.00	14.288
5/8	11	12.00	9.00	13.50	80.00	30.00	15.875
3/4	10	16.00	12.00	16.50	95.00	33.00	19.050
7/8	9	18.00	14.50	19.50	100.00	25.00	22.225
1	8	18.00	14.50	22.25	110.00	38.00	25.400
1 1/8	7	22.00	18.00	25.00	125.00	44.00	28.575
2	4.5	40.00	32.00	45.00	180.00	65.00	50.800

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○ bright ● steam tempered ● nitrided **P** AlCrN **S** TiN **C** TiCN **Cb** Carbo

 universal
 general steel
 tool steel
 stainless steel
 Aluminium
 cast materials



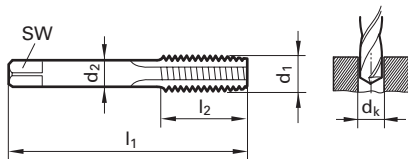
HAND TAPS FOR UNF THREADS (SERIES TAPS)

THROUGH
HOLEBLIND
HOLE

TAPS

Guhring no.	985	987
Standard	DIN 2181	
Tool material	HSS	
Surface		
Type	N	N
Description	Set of taps	Bottoming
Cutting direction	right-hand	right-hand
Tolerance	2B	2B

FIRST TAP IS UNDERSIZE



d1	P	d2	SW	dk	l1	l2	Code
inch	inch	mm	mm	mm	mm	mm	no.
No.10	32	6.00	4.90	4.10	50.00	14.00	4.826
1/4	28	6.00	4.90	5.50	56.00	17.00	6.350
5/16	24	6.00	4.90	6.90	63.00	17.00	7.938
3/8	24	7.00	5.50	8.50	63.00	18.00	9.525
7/16	20	8.00	6.20	9.90	70.00	20.00	11.113
1/2	20	9.00	7.00	11.50	70.00	20.00	12.700
5/8	18	12.00	9.00	14.50	70.00	20.00	15.875

AVAILABILITY

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bright
 steam tempered
 nitrided
 AlCrN
 TiN
 TiCN
 Carbo

universal
 general steel
 tool steel
 stainless steel
 Aluminium
 cast materials

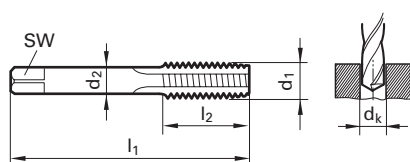
HAND TAPS FOR BSW THREADS (SERIES TAPS)



Guhring no.	954	957
Standard	DIN 352	
Tool material	HSS	
Surface	○	○
Type	N	N
Description	Set of taps	Bottoming
Cutting direction	right-hand	right-hand
Tolerance		

TAPS

FIRST AND SECOND
TAP IS UNDERSIZE



d1	P	d2	SW	dk	l1	l2	Code
inch	inch	mm	mm	mm	mm	mm	no.
W3/16	24	6.00	4.90	3.60	50.00	14.00	4.762
W1/4	20	6.00	4.90	5.10	56.00	16.00	6.350
W5/16	18	6.00	4.90	6.50	63.00	18.00	7.938
W3/8	16	7.00	5.50	7.90	70.00	20.00	9.525
W1/2	12	9.00	7.00	10.50	75.00	25.00	12.700

AVAILABILITY

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○ bright ● steam tempered ● nitrided ● AlCrN ● TiN ● TiCN ● Carbo

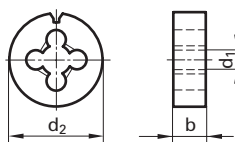
● universal ● general steel ● tool steel ● stainless steel ● Aluminium ● cast materials



DIES FOR METRIC AND UNC THREADS

TAPS

Guhring no.	151	182
Standard	DIN EN 22568	DIN EN 22568
Tool material	HSS	HSS
Surface		
Spiral entry	without	with
Chamfer lead	1.75xP	1.75xP
Cutting direction	right-hand	right-hand
Tolerance	6g	2a
Application		
Cutting speed m/min	6-10	6-10



d1	P	d2	b	workpiece Ø	Code
mm	mm	mm	mm	mm	no.
M2	0.40	16.00	5.00	1.940	
M3	0.50	20.00	5.00	2.920	
M4	0.70	20.00	5.00	3.910	
M5	0.80	20.00	7.00	4.900	
M6	1.00	20.00	7.00	5.880	
M8	1.25	25.00	9.00	7.870	
M10	1.50	30.00	11.00	9.850	
M12	1.75	38.00	14.00	11.830	
M16	2.00	45.00	18.00	15.820	
M18	2.50	45.00	18.00	17.790	
M20	2.50	45.00	18.00	19.790	
M24	3.00	55.00	22.00	23.770	

AVAILABILITY

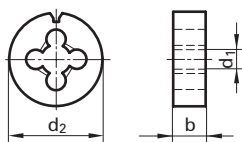
1/4	20	20.00	7.00	6.220	6.350	•
5/16	18	25.00	9.00	7.800	7.938	•
3/8	16	30.00	11.00	9.370	9.525	•
7/16	14	30.00	11.00	10.950	11.113	•
1/2	13	38.00	14.00	12.520	12.700	•
5/8	11	45.00	18.00	15.680	15.875	•
3/4	10	45.00	18.00	18.840	19.050	•

bright steam tempered nitrided AlCrN TiN TiCN Carbo

universal general steel tool steel stainless steel Aluminium cast materials



Guhring no.	185	172
Standard	DIN EN 22568	DIN EN 22568
Tool material	HSS	HSS
Surface		
Spiral entry	with	with
Chamfer lead	1.75 x P	1.75xP
Cutting direction	right-hand	right-hand
Tolerance	2a	
Application		
Cutting speed m/min	6-10	6-10



d1	P	d2	b	workpiece Ø	Code
inch	inch	mm	mm	mm	no.
1/4	28	20.00	7.00	6.240	6.350
5/16	24	25.00	9.00	7.820	7.938
3/8	24	30.00	11.00	9.410	9.525
7/16	20	30.00	11.00	10.980	11.113
1/2	20	38.00	10.00	12.560	12.700
9/16	18	38.00	10.00	14.140	14.288
5/8	18	45.00	14.00	15.730	15.875
3/4	16	45.00	14.00	18.890	19.050

AVAILABILITY

W 1/4	20.00	20.00	7.00	6.180	6.350
W 3/8	16.00	30.00	11.00	9.350	9.525
W 1/2	12.00	38.00	14.00	12.470	12.700

bright
 steam tempered
 nitrided
 AlCrN
 TiN
 TiCN
 Carbo

universal
 general steel
 tool steel
 stainless steel
 Aluminium
 cast materials



MILLING





- *Australian stock item*
- *German stock item*



SLOT DRILLS (3-FLUTED)

Guhring no.

Standard

Tool material

Surface

Type

Length

Helix angle

Tolerance

3459

DIN 844 K

M 42



N

standard

30°

e8/h10

3460

DIN 844 L

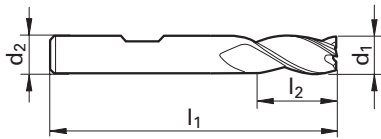


N

long

30°

h10



AVAILABILITY

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• Australian stock item ○ German stock item

○ bright

● steam tempered

◐ nitrided lands

● TiN

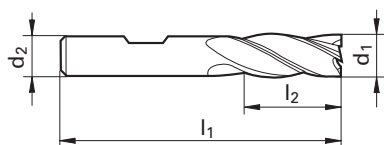
● TiAlN

● TiCN

● FIRE/nanoFIRE

● TiAlN SuperA

MILLING CUTTERS



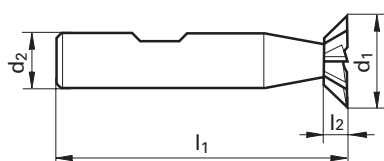
 bright
 steam tempered
 nitrided lands
 S TiN
 A TiAlN
 C TiCN
 F FIRE/nanoFIRE
 a TiAlN SuperA



- Australian stock item
- German stock item



Guhring no.	3572	3574
Standard	DIN 1833	
Tool material	HSCO	
Surface	○	○
Type	H	H
Profile angle	45°	60°
Tolerance	js16	js16



Code	d1	d2	l1	l2	z
no.	mm	mm	mm	mm	
16.000	16.000	12.00	60.00	4.00	8
20.000	20.000	12.00	63.00	5.00	10
25.000	25.000	12.00	67.00	6.30	10
32.000	32.000	16.00	71.00	8.00	12

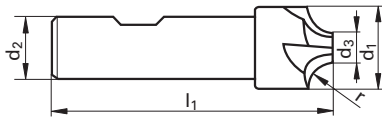
AVAILABILITY	
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• Australian stock item ○ German stock item



CORNER ROUNDING CUTTERS

Guhring no.	3176	6788
Standard	DIN 6518	
Tool material	M42	Solid Carbide
Surface	○	●
Type	N	N
Helix angle	5°	7°
Shank Form		HA

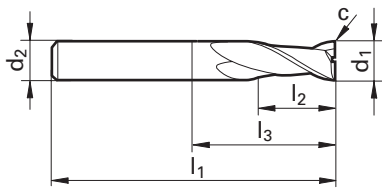


Code	r	d1	d2	d3	l1	z	AVAILABILITY	
no.	mm	mm	mm	mm	mm			
2.000	2.00	10.000	10.000	6.000	60.00	4	•	
2.500	2.50	11.000	10.000	6.000	60.00	4	•	
3.000	3.00	12.000	12.000	6.000	60.00	4	•	
4.000	4.00	14.000	12.000	6.000	60.00	4	•	
5.000	5.00	16.000	12.000	6.000	60.00	4	•	
6.000	6.00	20.000	16.000	8.000	67.00	4	•	
8.000	8.00	24.000	16.000	8.000	71.00	4	•	
10.000	10.00	28.000	25.000	8.000	85.00	4	•	
12.000	12.00	34.000	25.000	10.000	90.00	4	•	
16.000	16.00	48.000	25.000	16.000	100.00	6	•	
20.000	20.00	56.000	32.000	16.000	112.00	6	•	
6.005	0.50	6.000	6.00	5.000	50.00	4		•
6.010	1.00	6.000	6.00	4.000	50.00	4		•
8.015	1.50	8.000	8.00	5.000	58.00	4		•
10.020	2.00	10.000	10.00	6.000	66.00	4		•
10.025	2.50	10.000	10.00	5.000	66.00	4		•
12.030	3.00	12.000	12.00	6.000	73.00	4		•
14.035	3.50	14.000	14.00	7.000	75.00	4		•
14.040	4.00	14.000	14.00	6.000	75.00	4		•
16.045	4.50	16.000	16.00	7.000	76.00	4		•
16.050	5.00	16.000	16.00	6.000	76.00	4		•
20.055	5.50	20.000	20.00	9.000	92.00	4		•
20.060	6.00	20.000	20.00	8.000	92.00	4		•

• Australian stock item ○ German stock item



Gühring no.	3676	5549
Standard	DIN 6528	Gühring std.
Tool material	Solid carbide	
Surface	F	F
Type	N	N
Length	standard	long
Helix angle	30°	30°
Tolerance	h10	h10



d1	d2	l1	l2	l3	c
mm	mm	mm	mm	mm	mm x 45°
3.000	3.000	38.00	7.00	11.00	0.05
4.000	4.000	50.00	8.00	22.00	0.05
5.000	5.000	50.00	10.00	22.00	0.05
6.000	6.000	57.00	10.00	21.00	0.05
8.000	8.000	63.00	16.00	27.00	0.10
10.000	10.000	72.00	19.00	32.00	0.10
12.000	12.000	83.00	22.00	38.00	0.10
16.000	16.000	92.00	26.00	44.00	0.15
20.000	20.000	104.00	32.00	54.00	0.15

3.000	3.000	75.00	20.00	47.00	0.05
4.000	4.000	75.00	25.00	47.00	0.05
5.000	5.000	75.00	30.00	47.00	0.05
6.000	6.000	75.00	30.00	39.00	0.05
8.000	8.000	100.00	40.00	64.00	0.10
10.000	10.000	100.00	40.00	60.00	0.10
12.000	12.000	150.00	45.00	105.00	0.10
16.000	16.000	150.00	65.00	102.00	0.15
20.000	20.000	150.00	65.00	100.00	0.15

AVAILABILITY

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• Australian stock item ◦ German stock item

[illegible]

- *Australian stock item*
- *German stock item*



AVAILABILITY

○ bright ● steam tempered ◐ nitrided lands ● S TiN ● A TiAlN ● C TiCN ● F FIRE/nanoFIRE ● Cb Carbo



RATIO END MILLS FOR ALUMINIUM (3-FLUTED)

Guhring no.

3599

Standard

Guhring std.

Tool material

Solid carbide

Surface



Type

W

Length

long

Helix angle

39° / 40° / 41°

Tolerance

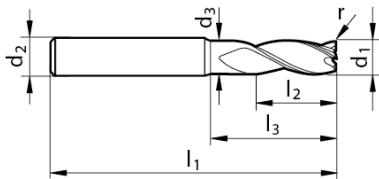
e8

Form

HA

RF 100 A

NEW



d1	d2	d3	l1	l2	l3	r	code no.
mm	mm	mm	mm	mm	mm	mm	
6.000	6.000	5.70	57.00	13.00	20.00	0.5	6.005
6.000	6.000	5.70	57.00	13.00	20.00	1.0	6.010
8.000	8.000	7.70	63.00	19.00	26.00	0.5	8.005
8.000	8.000	7.70	63.00	19.00	26.00	1.0	8.010
10.000	10.000	9.50	72.00	22.00	30.00	0.5	10.005
10.000	10.000	9.50	72.00	22.00	30.00	1.0	10.010
10.000	10.000	9.50	72.00	22.00	30.00	1.5	10.015
12.000	12.000	11.50	83.00	26.00	36.00	0.5	12.005
12.000	12.000	11.50	83.00	26.00	36.00	1.0	12.010
12.000	12.000	11.50	83.00	26.00	36.00	1.5	12.015
12.000	12.000	11.50	83.00	26.00	36.00	2.0	12.020
12.000	12.000	11.50	83.00	26.00	36.00	2.5	12.025
12.000	12.000	11.50	83.00	26.00	36.00	3.0	12.030
12.000	12.000	11.50	83.00	26.00	36.00	4.0	12.040
16.000	16.000	15.50	83.00	32.00	42.00	1.0	16.010
16.000	16.000	15.50	92.00	32.00	42.00	2.0	16.020
16.000	16.000	15.50	92.00	32.00	42.00	2.5	16.025
16.000	16.000	15.50	92.00	32.00	42.00	3.0	16.030
16.000	16.000	15.50	104.00	32.00	42.00	4.0	16.040
20.000	20.000	19.50	104.00	38.00	52.00	1.0	20.010
20.000	20.000	19.50	104.00	38.00	52.00	2.0	20.020
20.000	20.000	19.50	104.00	38.00	52.00	2.5	20.025
20.000	20.000	19.50	104.00	38.00	52.00	3.0	20.030
20.000	20.000	19.50	104.00	38.00	52.00	4.0	20.040
25.000	25.000	24.00	121.00	45.00	63.00	2.0	25.020
25.000	25.000	24.00	121.00	45.00	63.00	3.0	25.030
25.000	25.000	24.00	121.00	45.00	63.00	4.0	25.040

AVAILABILITY

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● Australian stock item ○ German stock item

○ bright

● steam tempered

● nitrided lands

● TiN

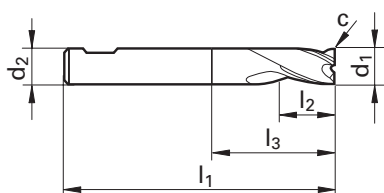
● TiAlN

● TiCN

● FIRE/nanoFIRE

● Carbo

MILLING CUTTERS



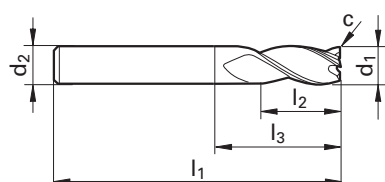
○ bright ● steam tempered ◐ nitrided lands ● S TiN ● A TiAlN ● C TiCN ● F FIRE/nanoFIRE ● Cb Carbo

[illegible]



Guhring no.	19978	5556
Standard	Guhring std.	Guhring std.
Tool material	Solid carbide	
Surface	F	F
Type	N	N
Length	standard	long
Helix angle	30°	30°
Tolerance	h10	h10

NEW



d1	d2	l1	l2	l3	c
mm	mm	mm	mm	mm	mm x 45°
2.000	2.000	32.000	8.000	10.000	0.025
3.000	3.000	38.000	12.000	15.000	0.050
4.000	4.000	40.000	12.000	16.000	0.050
5.000	5.000	50.000	15.000	20.000	0.050
6.000	6.000	57.000	16.000	21.000	0.050
7.000	8.000	60.000	16.000	23.900	0.100
8.000	8.000	68.000	22.000	32.000	0.050
9.000	10.000	72.000	22.000	28.400	0.100
10.000	10.000	72.000	25.000	32.000	0.100
11.000	12.000	83.000	26.000	27.600	0.100
12.000	12.000	83.000	28.000	38.000	0.100
14.000	14.000	83.000	28.000	38.000	0.150
16.000	16.000	92.000	35.000	44.000	0.100
18.000	18.000	92.000	35.000	44.000	0.150
20.000	20.000	104.000	40.000	54.000	0.150

AVAILABILITY

3.000	3.000	75.00	20.00		0.05
4.000	4.000	75.00	25.00		0.05
5.000	5.000	75.00	30.00		0.05
6.000	6.000	75.00	30.00		0.05
8.000	8.000	100.00	40.00		0.10
10.000	10.000	100.00	40.00		0.10
12.000	12.000	150.00	45.00		0.10
14.000	14.000	150.00	45.00		0.15
16.000	16.000	150.00	65.00		0.15
18.000	18.000	150.00	65.00		0.15
20.000	20.000	150.00	65.00		0.15

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• Australian stock item ◯ German stock item



END MILLS WITH CORNER RADIUS (4-FLUTED)

Guhring no.

3872

Standard

DIN 6527 L

Tool material

Solid carbide

Surface

F

Type

N

Length

standard

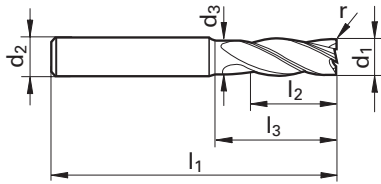
Helix angle

35°/38°

Tolerance

h10

NEW



d1	d2	d3	l1	l2	l3	r	Code
mm	mm	mm	mm	mm	mm	mm	no.
6.000	6.000	5.700	57.00	13.00	20.00	0.50	6.005
6.000	6.000	5.700	57.00	13.00	20.00	1.00	6.010
8.000	8.000	7.700	63.00	19.00	26.00	0.50	8.005
8.000	8.000	7.700	63.00	19.00	26.00	1.00	8.010
8.000	8.000	7.700	63.00	19.00	26.00	1.50	8.015
8.000	8.000	7.700	63.00	19.00	26.00	2.00	8.020
10.000	10.000	9.500	72.00	22.00	32.00	0.50	10.005
10.000	10.000	9.500	72.00	22.00	32.00	0.80	10.008
10.000	10.000	9.500	72.00	22.00	32.00	1.00	10.010
10.000	10.000	9.500	72.00	22.00	32.00	1.50	10.015
10.000	10.000	9.500	72.00	22.00	32.00	2.00	10.020
12.000	12.000	11.500	83.00	26.00	38.00	0.50	12.005
12.000	12.000	11.500	83.00	26.00	38.00	0.80	12.008
12.000	12.000	11.500	83.00	26.00	38.00	1.00	12.010
12.000	12.000	11.500	83.00	26.00	38.00	1.50	12.015
12.000	12.000	11.500	83.00	26.00	38.00	2.00	12.020
16.000	16.000	15.500	92.00	32.00	42.00	1.00	16.010
16.000	16.000	15.500	92.00	32.00	42.00	1.50	16.015
16.000	16.000	15.500	92.00	32.00	42.00	2.00	16.020
20.000	20.000	19.500	104.00	38.00	52.00	1.00	20.010
20.000	20.000	19.500	104.00	38.00	52.00	1.50	20.015
20.000	20.000	19.500	104.00	38.00	52.00	2.00	20.020
25.000	25.000	24.000	121.00	45.00	63.00	2.00	25.020
25.000	25.000	24.000	121.00	45.00	63.00	3.00	25.030

AVAILABILITY

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• Australian stock item ◯ German stock item

○ bright

● steam tempered

◐ nitrided lands

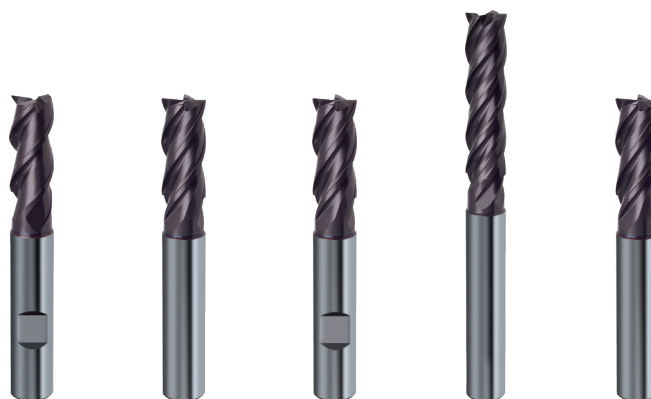
● TiN

● TiAlN

● TiCN

● FIRE/nanoFIRE

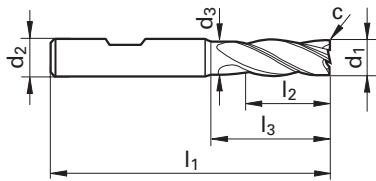
● TiAlN SuperA

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RATIO END MILLS FOR STAINLESS STEEL (4-FLUTED)

Guhring no.	3803	6736	6737
Standard	DIN 6527 L	DIN 6527	DIN 6527 L
Tool material	Solid carbide		
Surface			
Type	N	N	A
Length	standard	standard	standard
Helix angle	36°/38°	36°/38°/37°	36°/38°/37°
Tolerance	h10	h10	h10
	RF 100 VA	RF 100 DIVER	RF 100 DIVER



d1	d2	d3	l1	l2	l3	c
mm	mm	mm	mm	mm	mm	mm x 45°
3.000	6.000	2.800	57.00	8.00	15.00	0.10
4.000	6.000	3.800	57.00	11.00	18.00	0.15
5.000	6.000	4.800	57.00	13.00	18.00	0.15
6.000	6.000	5.700	57.00	13.00	20.00	0.20
8.000	8.000	7.700	63.00	19.00	26.00	0.25
10.000	10.000	9.500	72.00	22.00	30.00	0.30
12.000	12.000	11.500	83.00	26.00	36.00	0.35
16.000	16.000	15.500	92.00	32.00	42.00	0.50
20.000	20.000	19.500	104.00	38.00	52.00	0.60

4.000	6.000	3.800	57.00	11.00	18.00	0.04
5.000	6.000	4.800	57.00	13.00	18.00	0.05
5.700	6.000	5.500	57.00	13.00	19.60	0.06
6.000	6.000	5.700	57.00	13.00	20.00	0.06
7.700	8.000	7.400	63.00	19.00	25.50	0.08
8.000	8.000	7.700	63.00	19.00	26.00	0.08
9.700	10.000	9.400	72.00	22.00	30.50	0.10
10.000	10.000	9.500	72.00	22.00	30.00	0.10
11.700	12.000	11.200	83.00	26.00	35.30	0.12
12.000	12.000	11.500	83.00	26.00	36.00	0.12
13.700	14.000	13.200	83.00	26.00	35.30	0.14
14.000	14.000	13.500	83.00	26.00	36.00	0.14
15.600	16.000	15.100	92.00	32.00	41.20	0.16
16.000	16.000	15.500	92.00	32.00	42.00	0.16
19.500	20.000	19.000	104.00	38.00	51.10	0.20
20.000	20.000	19.500	104.00	38.00	52.00	0.20

AVAILABILITY

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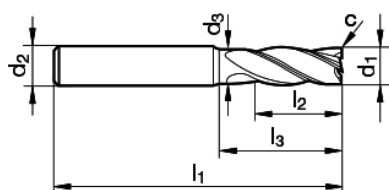
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• Australian stock item ○ German stock item



Guhring no.	6478	6480
Standard	Guhring std.	Guhring std.
Tool material	Solid carbide	
Surface	P	P
Type	N	N
Length	standard	long
Helix angle	38°/40°	38°/40°
Tolerance	h10	h10

NEW

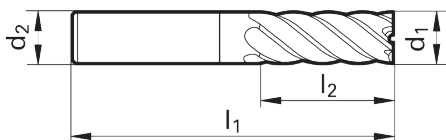


d1	d2	d3	l1	l2	l3	c
mm	mm	mm	mm	mm	mm	mm x 45°
1.000	4.000	0.920	50.000	3.000	4.000	0.020
1.500	4.000	1.400	50.000	4.500	6.000	0.030
2.000	6.000	1.900	50.000	6.000	8.000	0.040
2.500	6.000	2.400	50.000	7.500	10.000	0.050
3.000	6.000	2.900	57.000	10.000	15.000	0.060
4.000	6.000	3.800	57.000	14.000	18.000	0.080
5.000	6.000	4.800	57.000	15.000	20.000	0.100
6.000	6.000	5.700	57.000	16.000	20.000	0.120
8.000	8.000	7.700	63.000	21.000	26.000	0.160
10.000	10.000	9.500	72.000	25.000	31.000	0.200
12.000	12.000	11.500	83.000	28.000	37.000	0.240
14.000	14.000	13.500	83.000	28.000	37.000	0.280
16.000	16.000	15.500	92.000	36.000	43.000	0.320
20.000	20.000	19.500	104.000	41.000	53.000	0.400

AVAILABILITY

1.000	4.000	0.920	50.000	3.000	5.500	0.020
1.500	4.000	1.400	50.000	4.500	8.500	0.030
2.000	6.000	1.900	57.000	6.000	11.500	0.040
2.500	6.000	2.400	65.000	7.500	14.500	0.050
3.000	6.000	2.900	65.000	10.000	20.000	0.060
4.000	6.000	3.800	65.000	14.000	27.000	0.080
5.000	6.000	4.800	65.000	15.000	28.000	0.100
6.000	6.000	5.700	75.000	19.000	38.000	0.120
8.000	8.000	7.700	80.000	21.000	43.000	0.160
10.000	10.000	9.500	93.000	26.000	52.000	0.200
12.000	12.000	11.500	100.000	28.000	54.000	0.240
14.000	14.000	13.500	100.000	28.000	54.000	0.280
16.000	16.000	15.500	123.000	38.000	74.000	0.320
20.000	20.000	19.500	126.000	41.000	74.000	0.400

• Australian stock item ◦ German stock item

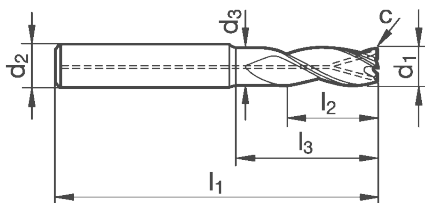


AVAILABILITY	
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ISO	Hardness	VC	fz (mm/z) / Ø							VC	fz (mm/z) / Ø						
			3	6	8	10	12	16	20		3	6	8	10	12	16	20
			ap = 12					ae max = 0,05 x D			ap = 12			ae max = 0,01 x D			
P	≥ 1000 N/mm²	180	0,029	0,057	0,076	0,105	0,13	0,17	0,21	180	0,013	0,025	0,033	0,046	0,06	0,07	0,09
K	≥ 300 HB	180	0,029	0,057	0,076	0,105	0,13	0,17	0,21	180	0,013	0,025	0,033	0,046	0,06	0,07	0,09
H	≤ 55 HRC	100	0,024	0,048	0,064	0,088	0,11	0,14	0,18	110	0,010	0,019	0,026	0,035	0,04	0,06	0,07
	≥ 55 HRC	70	0,019	0,038	0,050	0,070	0,08	0,11	0,14	80	0,007	0,014	0,018	0,025	0,03	0,04	0,05

○ bright ● steam tempered ◐ nitrided lands ● S TiN ● A TiAlN ● C TiCN ● F FIRE/nanoFIRE ● Y Signum

Gühring no.	6799	6801
Standard	Gühring std.	Gühring std.
Tool material	Solid carbide	
Surface		
Type	N	N
Length	standard	long
Helix angle	41°/43°/45°	36°/ 38°/37°
Tolerance	h10	h10



d1	d2	d3	l1	l2	l3	c
mm	mm	mm	mm	mm	mm	mm x 45°
6.000	6.000	5.70	57.00	13.00	20.00	0.090
8.000	8.000	7.70	63.00	19.00	26.00	0.120
10.000	10.000	9.50	72.00	22.00	30.00	0.150
12.000	12.000	11.50	83.00	26.00	36.00	0.180
16.000	16.000	15.50	92.00	32.00	42.00	0.190

6.000	6.000	5.70	57.00	13.00	20.00	0.060
8.000	8.000	7.70	63.00	19.00	26.00	0.080
10.000	10.000	9.50	72.00	22.00	30.00	0.100
12.000	12.000	11.50	83.00	26.00	36.00	0.120
16.000	16.000	15.50	92.00	32.00	42.00	0.160
20.000	20.000	19.50	104.00	38.00	52.00	0.200
25.000	25.000	24.00	121.00	45.00	63.00	0.250

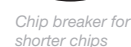
AVAILABILITY

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ISO	Hardness	VC	fz (mm/z) / Ø							VC	fz (mm/z) / Ø						
			4	6	8	10	12	16	20		4	6	8	10	12	16	20
			ap = 1,0 x D				ae = 1,0 x D				ap = 1,0 x D						ae = 1,0 x D
P	≤ 850 N/mm²	270	0.017	0.025	0.034	0.050	0.060	0.080	0.100	270	0.014	0.021	0.028	0.040	0.048	0.064	0.080
	≥ 850 N/mm²	180	0.014	0.021	0.028	0.045	0.054	0.072	0.090	180	0.008	0.012	0.016	0.025	0.030	0.040	0.050
M	≤ 750 N/mm²	120	0.014	0.021	0.028	0.045	0.054	0.072	0.090	90	0.007	0.011	0.014	0.023	0.027	0.036	0.045
	≥ 750 N/mm²	80	0.013	0.019	0.026	0.040	0.048	0.064	0.080	60	0.006	0.010	0.013	0.020	0.024	0.032	0.040
S	Ti-based	60	0.013	0.019	0.026	0.040	0.048	0.064	0.080	50	0.006	0.010	0.013	0.020	0.024	0.032	0.040
K	≤ 240 HB	150	0.017	0.025	0.034	0.050	0.060	0.080	0.100	150	0.014	0.021	0.028	0.040	0.048	0.064	0.080
N	> 7% Si	340	0.018	0.027	0.036	0.055	0.066	0.088	0.110	340	0.014	0.021	0.028	0.040	0.048	0.064	0.080

- Australian stock item
- German stock item



3.000	6.000	57.00	12.00	21.00	4	3.000
4.000	6.000	65.00	16.00	29.00	4	4.000
5.000	6.000	65.00	20.00	29.00	4	5.000
6.000	6.000	65.00	24.00	29.00	4	6.000
8.000	8.000	75.00	32.00	39.00	4	8.000
10.000	10.000	90.00	40.00	50.00	4	10.000
12.000	12.000	100.00	46.00	55.00	4	12.000
16.000	16.000	108.00	55.00	60.00	4	16.000
20.000	20.000	126.00	65.00	76.00	4	20.000

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These milling strategies belong to the state-of-the-art and most effective application methods for current solid carbide milling tools. When applied, an enormously high metal removal rate ensures a considerable increase in productivity. Very high cutting parameters can be achieved even with less powerful machines or unstable machining conditions. With difficult-to-machine materials or unfavourable diameter-length-ratios of the tools a massive increase of process reliability can be achieved.



-  bright
  steam tempered
  nitrided lands
  s TiN
  A TiAlN
  C TiCN
  F FIRE/nanoFIRE
  a TiAlN SuperA

[illegible]

○ bright ● steam tempered ◐ nitrided lands ● s TiN ● A TiAlN ● C TiCN ● F FIRE/nanoFIRE ● a TiAlN SuperA



DIAMOND COATED TRIMMING CUTTERS

MILLING
CUTTERS

Guhring no.

6769

Standard

Guhring std.

Tool material

Solid carbide

Surface

Ⓓ

Type

FR 100

Length

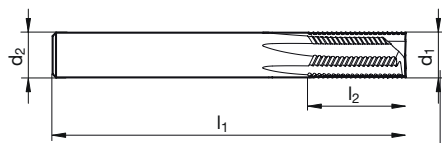
Standard

Helix angle

0°

Tolerance

h10



d1	d2	l1	l2	z	Code no.
mm	mm	mm	mm		
4.00	6.00	66	15.0	4	4.000
4.76	4.76	63	15.0	4	4.762
6.00	6.00	70	20.0	4	6.000
6.35	6.35	63	15.0	4	6.350
8.00	8.00	75	25.0	6	8.000
9.52	9.52	76	18.0	6	9.525
12.70	12.70	88	25.4	8	12.700

AVAILABILITY

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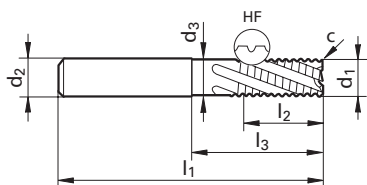
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● Australian stock item ○ German stock item

[illegible]

- bright ● steam tempered ◐ nitrided lands ● s TiN ● A TiAlN ● C TiCN ● F FIRE/nanoFIRE ● a TiAlN SuperA



BALL NOSE SLOT DRILLS (2-FLUTED)

Guhring no.

3466

Standard

DIN 327 D

Tool material

M 42

Surface



Type

N

Length

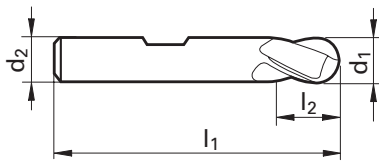
short

Helix angle

30°

Tolerance

e8/h10



d1	d1	d2	l1	l2
mm	tolerance	mm	mm	mm
2.000	e8	6.000	48.00	4.00
3.000	e8	6.000	49.00	5.00
4.000	e8	6.000	51.00	7.00
5.000	e8	6.000	52.00	8.00
6.000	e8	6.000	52.00	8.00
7.000	e8	10.000	60.00	10.00
8.000	e8	10.000	61.00	11.00
9.000	h10	10.000	61.00	11.00
10.000	e8	10.000	63.00	13.00
12.000	e8	12.000	73.00	16.00
13.000	h10	12.000	73.00	16.00
14.000	e8	12.000	73.00	16.00
16.000	e8	16.000	79.00	19.00
19.000	h10	16.000	79.00	19.00
20.000	e8	20.000	88.00	22.00
22.000	e8	20.000	88.00	22.00
25.000	e8	25.000	102.00	26.00
28.000	e8	25.000	102.00	26.00

AVAILABILITY

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● Australian stock item ○ German stock item

○ bright

● steam tempered

● nitrided lands

● TiN

● TiAlN

● TiCN

● FIRE/nanoFIRE

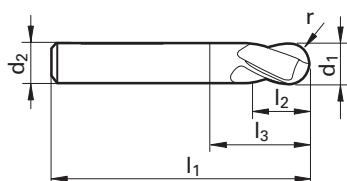
● TiAlN SuperA



Guhring no.	3308	6984	3679
Standard	DIN 6527	Guhring std.	Guhring std.
Tool material	Solid carbide		
Surface	○	Ⓢ	Ⓡ
Type	N	W	N
Length	standard	standard	standard
Helix angle	30°	35°	30°
Tolerance	h10	h10	h10

Aluminium

Aluminium



d1	d2	l1	l2	l3	r
mm	mm	mm	mm	mm	mm
0.500	3.000	38.00	1.00	2.10	0.25
0.800	3.000	38.00	1.00	2.10	0.40
1.000	3.000	38.00	2.00	3.90	0.50
1.500	3.000	38.00	3.00	6.40	0.75
2.000	6.000	57.00	6.00	9.40	1.00
3.000	6.000	57.00	7.00	11.90	1.50
4.000	6.000	57.00	8.00	13.40	2.00
5.000	6.000	57.00	10.00	16.90	2.50
6.000	6.000	57.00	10.00	21.00	3.00
8.000	8.000	63.00	16.00	27.00	4.00
10.000	10.000	72.00	19.00	32.00	5.00
12.000	12.000	83.00	22.00	38.00	6.00
14.000	14.000	83.00	22.00	38.00	7.00
16.000	16.000	92.00	26.00	44.00	8.00
18.000	18.000	92.00	26.00	44.00	9.00
20.000	20.000	104.00	32.00	54.00	10.00
3.000	6.000	57.00	4.00	15.00	1.50
4.000	6.000	57.00	5.00	18.00	2.00
5.000	6.000	57.00	6.00	18.00	2.50
6.000	6.000	57.00	7.00	20.00	3.00
8.000	8.000	63.00	9.00	26.00	4.00
10.000	10.000	72.00	11.00	30.00	5.00
12.000	12.000	83.00	12.00	36.00	6.00
16.000	16.000	92.00	16.00	42.00	8.00

AVAILABILITY

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• Australian stock item ○ German stock item



BALL NOSE HARD PROFILE <62 HRC CUTTERS (2-FLUTED)

Gühring no.

3359

3360

Standard

Gühring std.

Tool material

Solid carbide

Surface

Signum

Signum

Type

H

H

Length

standard

long

Helix angle

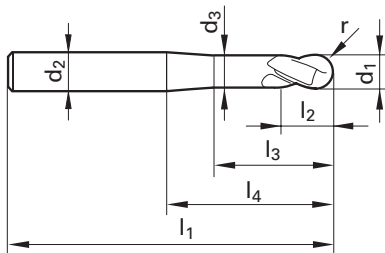
30°

30°

Tolerance

h8

h8



AVAILABILITY

d1	d2	d3	l1	l2	l3	l4	r
mm	mm	mm	mm	mm	mm	mm	mm
0.500	3.000	0.400	38.00	0.75	2.60	10.00	0.25
0.800	3.000	0.700	38.00	1.20	3.50	10.00	0.40
1.000	3.000	0.900	38.00	1.50	4.00	10.00	0.50
1.500	3.000	1.400	38.00	2.25	5.50	10.00	0.75
2.000	6.000	1.900	57.00	3.00	9.40	21.00	1.00
3.000	6.000	2.700	57.00	5.00	11.60	21.00	1.50
4.000	6.000	3.700	57.00	6.00	14.50	21.00	2.00
5.000	6.000	4.700	57.00	8.00	17.30	21.00	2.50
6.000	6.000	5.700	57.00	9.00	20.00	21.00	3.00
8.000	8.000	7.700	63.00	12.00	26.00	27.00	4.00
10.000	10.000	9.500	72.00	15.00	30.00	32.00	5.00
12.000	12.000	11.500	83.00	18.00	36.00	38.00	6.00
16.000	16.000	15.500	92.00	24.00	42.00	44.00	8.00
3.000	6.000	2.700	75.00	5.00	20.00	39.00	1.50
4.000	6.000	3.700	75.00	6.00	20.00	39.00	2.00
5.000	6.000	4.700	75.00	8.00	20.00	39.00	2.50
6.000	6.000	5.700	75.00	9.00	38.00	39.00	3.00
8.000	8.000	7.700	100.00	12.00	63.00	64.00	4.00
10.000	10.000	9.500	100.00	15.00	58.00	60.00	5.00
12.000	12.000	11.500	150.00	18.00	103.00	105.00	6.00
16.000	16.000	15.500	150.00	24.00	100.00	102.00	8.00

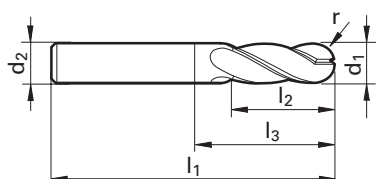
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• Australian stock item ◯ German stock item



Guhring no.	5584	3043
Standard	DIN 6527 L	Guhring std.
Tool material	Carbide	Carbide
Surface		
Type	N	N
Length	long	extra long
Helix angle	30°	30°
Tolerance	h10	h10



d1	d2	l1	l2	l3	r
mm	mm	mm	mm	mm	mm
3.000	6.000	57.00	8.00	12.40	1.50
4.000	6.000	50.00	11.00	15.90	2.00
5.000	6.000	50.00	13.00	19.40	2.50
6.000	6.000	57.00	13.00	21.00	3.00
8.000	8.000	63.00	19.00	27.00	4.00
10.000	10.000	72.00	22.00	32.00	5.00
12.000	12.000	83.00	26.00	38.00	6.00
20.000	20.000	104.00	38.00	54.00	10.00

AVAILABILITY

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• Australian stock item ◦ German stock item

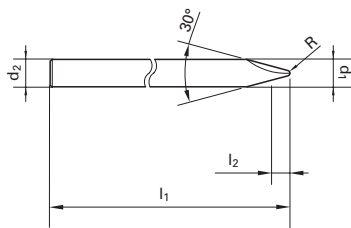


NEW



○ bright ● steam tempered ◐ nitrided lands ● s TiN ● A TiAlN ● C TiCN ● F FIRE/nanoFIRE ● a TiAlN SuperA

Gühring no.	5006
Standard	Gühring std.
Tool material	Solid carbide
Surface	F
Type	N
Length	standard
Angle	30°
Tolerance	h8



d1	d2	l1	l2	r
mm	mm	mm	mm	mm
3.000	3.000	38.00	0.70	0.30

AVAILABILITY

- 330050477

• Australian stock item ○ German stock item



HPC AND HSC - MILLING STRATEGIES WITH SOLID CARBIDE MILLING CUTTERS

Objectives: Higher efficiency through greater metal removal rate



HPC = High Performance Cutting:

max. machining volume / time; stable conditions;
short chip creation; high performance; good cooling

Milling with a tool contact angle of less than 70°
and cutting depths of 2-3 x tool diameter



i-machining, roughing, trochoid

- low cutting width (a_e): $<0.4 \times d$
- high depth of cut (a_p): up to 2-3 x d
- very high tooth feed rate (f_z)
- very high cutting speed (v_c)



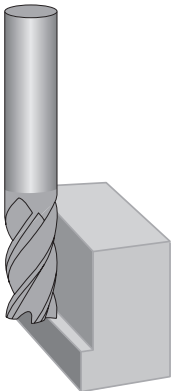
HSC = High Speed Cutting:

at higher cutting speed/ high feed;
low power; low feed function

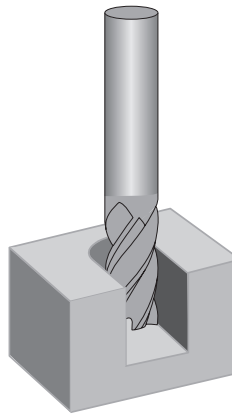
Milling with a tool contact angle of less than 37°
and cutting depths up to 3x tool diameter

Semi roughing, finishing and fine-finishing

- minimum cutting width (a_e): $0.15 \times d$
- high depth of cut (a_p): up to 3 x d
- high tooth feed rate (f_z)
- maximum cutting speed (v_c)



Tool Contact Angle



Tool Contact Angle

HPC Linear Milling

Milling internal and external contours with high axial depth (a_p) and low radial widths (a_e). Increasing the cutting parameters due to the tool contact angle.

HPC Milling – Trochoid / i-machining

Machining of grooves or complex contours with long lengths (a_p) and small radial depths (a_e). Increasing the cutting parameters due to the limited angle of contact. Programming cycles or CAM-program.

Operating Principals

- reducing the contact time of tool and workpiece results in less stress and greater thermal efficiency on the cutting edge
- the reduction of the pressure angle between the tool and workpiece reduces the average chip thickness
- less force on the tool, workpiece and machine

Benefits

- extreme increase in cutting speed
- significant increase in the feed rate per tooth
- significant increase in the removal rate
- process-reliable for difficult-to-machine materials
- increase in tool life
- machinery is conserved

Benchmarks for increasing the cutting values

Application	Radial feed in% from	* f_z Factor	* v_c Factor	Contact Angle
slotting	100%	1	1	180°
HPC roughing	33%	1,3	1,5	70°
HPC roughing	25%	1,5	1,6	60°
HPC roughing	20%	1,6	1,7	53°
HPC roughing	15%	1,9	1,7	46°
HSC roughing	10%	2,3	1,8	37°
HSC roughing	5%	3,3	1,9	26°
HSC finishing	3%	1,1	2,0	20°
HSC finishing	2%	1,4	2,0	18°
HSC finishing	1%	2,0	2,1	11°
Fine finishing	<1%	1	2	target: min R_z

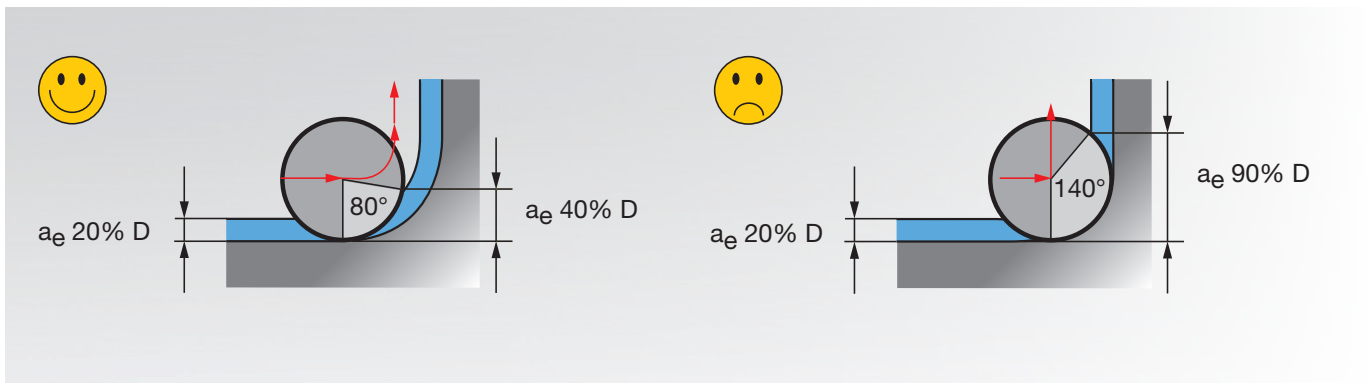
* Basis for the calculation with the v_c and f_z factors is provided within the Guhring Navigator section for „grooves“ in the appropriate material group.

Example: steel C45

Tools: Milling cutter Ø12 mm
Feed: Radial feed (a_p) 3 mm
% Calculation : a_p 3 mm = 25% of Ø 12 mm
Standard values: v_c slotting = 180 m/min, f_z slotting = 0.07 mm
Conversion: v_c factor = 1.6 $\rightarrow v_c$: 180 m/min x 1,6 = v_c 288 m/min
 f_z factor = 1.5 $\rightarrow f_z$: 0.07 mm x 1.5 = f_z 0.105 mm
Increased Values: v_c 288 m/min / f_z 0.105 mm
S: 7640 min⁻¹ / vf: 4580 mm/min
 a_p : 24 mm a_e : 3 mm $\rightarrow Q$: 330 cm³/min

$$Q_{(\text{cm}^3/\text{min})} = a_{p(\text{mm})} \times a_{e(\text{mm})} \times v_f(\text{m/min})$$

The increase in the corner contact angle overloads the milling cutters. Solution: the pocket radius must be much larger than the milling cutter radius to keep the contact angle less than 80° (max load).





CUTTING SPEED RECOMMENDATION

(HSCO UNIVERSAL MILLING CUTTERS)

Guhring no. 3451, 3453, 3459, 3460, 3428, 3431, 3433



HSCO

Application	vc factor	fz factor	Feed width (ae)	Feed depth (ap)
Slotting	1	1 (0.7 for ap = 2xd)	1xd	0.5 up to 1xd
Roughing	1	1 (0.7 for ap = 2xd)	0.4 up to 0.9xd	0.5 up to 1xd
Finishing	1	1	0.01 up to 0.1xd	1 up to 2xd
HPC-roughing	1.3	1.5	0.15 up to 0.4xd	1 up to 2xd
HSC-roughing	1.5	2	0.05 up to 0.15xd	1 up to 2xd

Material	Hardness	Type of application	cut Vc	fz(mm/z) with nom. ø							
				3	6	8	10	12	16	20	25
Structural + free-cutting steels, unalloyed heat-treatable + case hardened steels S185, P275N, P235GH, P265GH, Mild steel, Grade 250 plate, Grade 350 plate, E295, E360, P500NH	up to 850 N/mm2	Slotting	40	0.010	0.012	0.025	0.032	0.040	0.045	0.060	0.080
		Roughing	50	0.012	0.015	0.030	0.039	0.050	0.060	0.080	0.095
		Finishing	75	0.011	0.014	0.028	0.030	0.042	0.050	0.070	0.075
Free-cutting steels, unalloyed case hardened steels, nitriding steels 11SMnPb30, 11SMn37, 1020, S1214, S1213, S12L13, S12L14, 46S20, 46SPb20	850-1,200 N/mm2	Slotting	35	0.009	0.012	0.020	0.030	0.035	0.040	0.045	0.060
		Roughing	45	0.011	0.015	0.025	0.035	0.045	0.050	0.060	0.080
		Finishing	60	0.010	0.014	0.021	0.028	0.039	0.042	0.050	0.070
Alloyed heat-treatable, tool and high speed steels 50MnSi4, 38Cr2, 28Cr4, 3140, 4130, 4140, 4150, 4340, 6150, EN16, EN26, 36NiCr6, 41Cr4, 42CrMo4 Spring steel = 55Si7, 55Cr3, 51CrV4	850- 1,400 N/mm2	Slotting	25	0.008	0.010	0.015	0.025	0.032	0.040	0.045	0.060
		Roughing	35	0.010	0.012	0.020	0.030	0.039	0.050	0.060	0.080
		Finishing	50	0.009	0.011	0.015	0.028	0.030	0.042	0.050	0.070
Hardened steel Tool steel, heat-treatable steel, spring steel, high-speed steel, case hardened steel, etc. 10CrMo11, 11MnSi6, 3310, 3415, 5115, 4615, 4620, 5120, 8617, 8620, 15NiCr13, 16MnCr5, 20CrMo5, N33, EN36A	up to 54 HRC	Slotting									
		Roughing									
		Finishing									
	54-60 HRC	Slotting									
		Roughing									
		Finishing									
Stainless steel X12CrS13, X14CrMoS17, X6CrMoS17, X8CrNiS18-9, 410S, 430F, 630	up to 750 N/mm2	Slotting	30	0.008	0.009	0.018	0.024	0.030	0.036	0.042	0.054
		Roughing	40	0.010	0.011	0.021	0.027	0.036	0.042	0.054	0.060
		Finishing	55	0.009	0.010	0.018	0.024	0.033	0.039	0.048	0.057
Stainless steel X5CrNi18-10, X6CrNiTi18-10, X6CrNiMoTi 17-12-2, 302, 303, 304, 310, 316, 316Ti, 321	750-850 N/mm2	Slotting	25	0.007	0.009	0.015	0.021	0.027	0.030	0.039	0.048
		Roughing	35	0.009	0.010	0.018	0.024	0.033	0.039	0.048	0.057
		Finishing	50	0.008	0.009	0.018	0.024	0.030	0.036	0.042	0.054
Stainless steel X20CrNi172, X39CrMo17-1, X2CrMoTi18-2, 410, 410X, 416, 420, 420C, 431, 440C	above 850 N/mm2	Slotting	18	0.006	0.007	0.015	0.018	0.024	0.027	0.036	0.042
		Roughing	28	0.008	0.009	0.015	0.021	0.027	0.030	0.039	0.048
		Finishing	36	0.007	0.009	0.015	0.021	0.027	0.030	0.039	0.048
Special alloys (nickel based "Ni") Nimonic, Inconel, Monel, Hastelloy	up to 1,300 N/mm2	Slotting	8	0.006	0.009	0.012	0.015	0.018	0.024	0.030	0.036
		Roughing	10	0.006	0.012	0.018	0.021	0.024	0.033	0.039	0.048
		Finishing	15	0.009	0.015	0.021	0.027	0.030	0.039	0.048	0.072
Titanium alloys ("Ti") Ti99,5, TiAl5Sn2,5, TiCu2, TiAl6Zr5, TiAl6V4, TiAl4Mo4Sn2	up to 1,300 N/mm2	Slotting	18	0.009	0.015	0.021	0.027	0.030	0.039	0.048	0.072
		Roughing	25	0.010	0.018	0.024	0.033	0.039	0.048	0.057	0.084
		Finishing	45	0.010	0.018	0.024	0.033	0.039	0.048	0.057	0.084
Cast iron, grey cast iron, spheroidal graphite and malleable cast iron GG10, GG15, GG20, GG25, GG30, GG35 GG40 GGG40, GGG50, GGG60, 32510,GTW35	up to 240 HB 30	Slotting	40	0.009	0.012	0.024	0.030	0.039	0.048	0.057	0.066
		Roughing	50	0.011	0.012	0.024	0.033	0.042	0.051	0.060	0.072
		Finishing	60	0.010	0.011	0.021	0.027	0.036	0.042	0.054	0.060
Cast iron, grey cast iron, spheroidal graphite and malleable cast iron GG10, GG15, GG20, GG25, GG30, GG35 GG40 GGG40, GGG50, GGG60, 32510,GTW35	above 240 HB 30	Slotting	30	0.009	0.010	0.018	0.024	0.033	0.039	0.048	0.057
		Roughing	40	0.010	0.012	0.024	0.030	0.039	0.048	0.057	0.066
		Finishing	50	0.010	0.011	0.021	0.027	0.036	0.042	0.054	0.060
Aluminium, Al-wrought alloys, Al-alloys Al99,5, AlMgSi1, AlMg1 AlMgSiPb, AlCuMg1, AlMg3Si, AlZnMgCu1,5	up to 3% Si	Slotting	100	0.012	0.014	0.028	0.035	0.046	0.056	0.067	0.077
		Roughing	120	0.012	0.014	0.028	0.039	0.049	0.060	0.070	0.084
		Finishing	160	0.011	0.013	0.025	0.032	0.042	0.049	0.063	0.070
Aluminium-cast alloys G-AlSi5Cu1, G-AlSi7Cu3, G-AlSi9 G-AlSi12, G-AlSi12Cu, - G-AlSi12CuNiMg	above 3% Si	Slotting	70	0.011	0.021	0.028	0.039	0.046	0.056	0.067	0.098
		Roughing	90	0.014	0.028	0.035	0.046	0.056	0.067	0.077	0.112
		Finishing	130	0.013	0.025	0.032	0.042	0.049	0.063	0.070	0.105
Magnesium-alloys MgMn2, G-MgAl8Zn1, G-MgAl6Zn3 -	-	Slotting	65	0.011	0.021	0.028	0.039	0.046	0.056	0.067	0.098
		Roughing	90	0.014	0.028	0.035	0.046	0.056	0.067	0.077	0.112
		Finishing	110	0.013	0.025	0.032	0.042	0.049	0.063	0.070	0.105
Non-ferrous metals (copper, short- or long-chipping brass or bronze) SE-Cu, CuSn6, G-CuSn5ZnPb, CuZn39Pb2, CuZn39Pb3, CuZn43Pb2, CuZn20, CuZn33, CuZn37Pb0,5, CuSn7ZnPb, CuPb5Sn5, CuPb10Sn, CuAl5, CuAl9Mn, CuSn10	up to 850 N/mm2	Slotting	60	0.011	0.018	0.025	0.032	0.035	0.046	0.056	0.084
		Roughing	80	0.011	0.021	0.028	0.039	0.046	0.056	0.067	0.098
		Finishing	100	0.011	0.021	0.028	0.039	0.046	0.056	0.067	0.098

All recommendations are valid for coated tools. For bright milling cutters please vc - 40% and fz -25%!

CUTTING SPEED RECOMMENDATION

(CARBIDE UNIVERSAL END MILLS 2-/3-/4- FLUTED TYPE N)



Guhring no. 3676, 5549, 5573, 3680, 3649, 5556, 3562



CARBIDE

Application	vc factor	fz factor	Feed width (ae)	Feed depth (ap)
Slotting	1	1 (0.7 for ap = 2xd)	1xd	0.5 up to 1xd
Roughing	1	1 (0.7 for ap = 2xd)	0.4 up to 0.9xd	0.5 up to 1xd
Finishing	1	1	0.01 up to 0.1xd	1 up to 2xd
HPC-roughing	1.3	1.5	0.15 up to 0.4xd	1 up to 2xd
HSC-roughing	1.5	2	0.05 up to 0.15xd	1 up to 2xd

**MILLING
CUTTERS**

Material	Hardness	Recommended RF100 type	Type of application	cut Vc	fz(mm/z) with nom. ø							
					3	6	8	10	12	16	20	25
Structural + free-cutting steels, unalloyed heat-treatable + case hardened steels S185, P275N, P235GH, P265GH, Mild steel, Grade 250 plate, Grade 350 plate, E295, E360, P500NH	up to 850 N/mm ²	2-fluted	Slotting	125	0.013	0.025	0.032	0.042	0.049	0.063	0.070	0.105
		2-/3-fluted	Roughing	140	0.014	0.028	0.039	0.049	0.060	0.070	0.084	0.119
		4-fluted	Finishing	190	0.011	0.021	0.028	0.039	0.046	0.056	0.067	0.098
Free-cutting steels, unalloyed case hardened steels, nitriding steels 11SMnPb30, 11SMn37, 1020, S1214, S1213, S12L13, S12L14, 46S20, 46SPb20	850-1,200 N/mm ²	2-fluted	Slotting	110	0.013	0.025	0.032	0.042	0.049	0.063	0.070	0.105
		2-/3-fluted	Roughing	130	0.014	0.028	0.039	0.049	0.060	0.070	0.084	0.119
		4-fluted	Finishing	150	0.011	0.021	0.028	0.039	0.046	0.056	0.067	0.098
Alloyed heat-treatable, tool and high speed steels 50MnSi4, 38Cr2, 28Cr4, 3140, 4130, 4140, 4150, 4340, 6150, EN16, EN26, 36NiCr6, 41Cr4, 42CrMo4 Spring steel = 55Si7, 55Cr3, 51CrV4	850-1,400 N/mm ²	2-fluted	Slotting	95	0.011	0.021	0.028	0.039	0.046	0.056	0.067	0.098
		2-/3-fluted	Roughing	115	0.014	0.028	0.035	0.046	0.056	0.067	0.077	0.112
		4-fluted	Finishing	140	0.011	0.021	0.028	0.035	0.042	0.049	0.063	0.091
Hardened steel Tool steel, heat-treatable steel, spring steel, high-speed steel, case hardened steel, etc. 10CrMo11, 11MnSi6, 3310, 3415, 5115, 4615, 4620, 5120, 8617, 8620, 15NiCr13, 16MnCr5, 20CrMo5, N33, EN36A	up to 54 HRC	2-fluted	Slotting	50	0.007	0.015	0.018	0.024	0.027	0.036	0.042	0.060
		2-/3-fluted	Roughing	75	0.009	0.015	0.021	0.027	0.030	0.039	0.048	0.072
		4-fluted	Finishing	105	0.009	0.018	0.024	0.030	0.036	0.042	0.054	0.078
Stainless steel X12CrS13, X14CrMoS17, X6CrMoS17, X8CrNiS18-9, 410S, 430F, 630	up to 750 N/mm ²	2-fluted	Slotting	85	0.009	0.018	0.024	0.030	0.036	0.042	0.054	0.078
		2-/3-fluted	Roughing	100	0.011	0.021	0.027	0.036	0.042	0.054	0.060	0.090
		4-fluted	Finishing	125	0.010	0.018	0.024	0.033	0.039	0.048	0.057	0.084
Stainless steel X5CrNi18-10, X6CrNiTi18-10, X6CrNiMoTi 17-12-2, 302, 303, 304, 310, 316, 316Ti, 321	750-850 N/mm ²	2-fluted	Slotting	55	0.009	0.015	0.021	0.027	0.030	0.039	0.048	0.072
		2-/3-fluted	Roughing	85	0.010	0.018	0.024	0.033	0.039	0.048	0.057	0.084
		4-fluted	Finishing	100	0.009	0.018	0.024	0.030	0.036	0.042	0.054	0.078
Stainless steel X20CrNi172, X39CrMo17-1, X2CrMoTi18-2, 410, 410X, 416, 420, 420C, 431, 440C	above 850 N/mm ²	2-fluted	Slotting	50	0.007	0.015	0.018	0.024	0.027	0.036	0.042	0.060
		2-/3-fluted	Roughing	70	0.009	0.015	0.021	0.027	0.030	0.039	0.048	0.072
		4-fluted	Finishing	85	0.009	0.015	0.021	0.027	0.030	0.039	0.048	0.072
Special alloys (nickel based "Ni") Nimonic, Inconel, Monel, Hastelloy	up to 1,300 N/mm ²	2-fluted	Slotting	20	0.006	0.009	0.012	0.015	0.018	0.024	0.030	0.036
		2-/3-fluted	Roughing	25	0.006	0.012	0.018	0.021	0.024	0.033	0.039	0.048
		4-fluted	Finishing	30	0.009	0.015	0.021	0.027	0.030	0.039	0.048	0.072
Titanium alloys ("Ti") Ti99.5, TiAl5Sn2.5, TiCu2, TiAl6Zr5, TiAl6V4, TiAl4Mo4Sn2	up to 1,300 N/mm ²	2-fluted	Slotting	40	0.009	0.015	0.021	0.027	0.030	0.039	0.048	0.072
		2-/3-fluted	Roughing	60	0.010	0.018	0.024	0.033	0.039	0.048	0.057	0.084
		4-fluted	Finishing	90	0.010	0.018	0.024	0.033	0.039	0.048	0.057	0.084
Cast iron, grey cast iron, spheroidal graphite and malleable cast iron GG10, GG15, GG20, GG25, GG30, GG35 GG40 GGG40, GGG50, GGG60, 32510, GTW35	up to 240 HB 30	2-fluted	Slotting	115	0.012	0.024	0.030	0.039	0.048	0.057	0.066	0.096
		2-/3-fluted	Roughing	125	0.012	0.024	0.033	0.042	0.051	0.060	0.072	0.102
		4-fluted	Finishing	155	0.011	0.021	0.027	0.036	0.042	0.054	0.060	0.090
Cast iron, grey cast iron, spheroidal graphite and malleable cast iron GG10, GG15, GG20, GG25, GG30, GG35 GG40 GGG40, GGG50, GGG60, 32510, GTW35	above 240 HB 30	2-fluted	Slotting	100	0.010	0.018	0.024	0.033	0.039	0.048	0.057	0.084
		2-/3-fluted	Roughing	115	0.012	0.024	0.030	0.039	0.048	0.057	0.066	0.096
		4-fluted	Finishing	140	0.011	0.021	0.027	0.036	0.042	0.054	0.060	0.090
Aluminium, Al-wrought alloys, Al-alloys Al99.5, AlMgSi1, AlMg1 AlMgSiPb, AlCuMg1, AlMg3Si, AlZnMgCu1.5	up to 3% Si	2-fluted	Slotting	350	0.014	0.028	0.035	0.046	0.056	0.067	0.077	0.112
		2-/3-fluted	Roughing	420	0.014	0.028	0.039	0.049	0.060	0.070	0.084	0.119
		4-fluted	Finishing	700	0.013	0.025	0.032	0.042	0.049	0.063	0.070	0.105
Aluminium-cast alloys G-AlSi5Cu1, G-AlSi7Cu3, G-AlSi9 G-AlSi12, G-AlSi12Cu, - G-AlSi12CuNiMg	above 3% Si	2-fluted	Slotting	160	0.011	0.021	0.028	0.039	0.046	0.056	0.067	0.098
		2-/3-fluted	Roughing	200	0.014	0.028	0.035	0.046	0.056	0.067	0.077	0.112
		4-fluted	Finishing	245	0.013	0.025	0.032	0.042	0.049	0.063	0.070	0.105
Magnesium-alloys MgMn2, G-MgAl8Zn1, G-MgAl6Zn3 -		2-fluted	Slotting	125	0.011	0.021	0.028	0.039	0.046	0.056	0.067	0.098
		2-/3-fluted	Roughing	150	0.014	0.028	0.035	0.046	0.056	0.067	0.077	0.112
		4-fluted	Finishing	200	0.013	0.025	0.032	0.042	0.049	0.063	0.070	0.105
Non-ferrous metals (copper, short- or long-chipping brass or bronze) SE-Cu, CuSn6, G-CuSn5Zn5Pb, CuZn39Pb2, CuZn39Pb3, CuZn43Pb2, CuZn20, CuZn33, CuZn37Pb0.5, CuSn7Zn5Pb, CuPb5Sn5, CuPb10Sn, CuAl5, CuAl9Mn, CuSn10	up to 850 N/mm ²	2-fluted	Slotting	175	0.011	0.018	0.025	0.032	0.035	0.046	0.056	0.084
		2-/3-fluted	Roughing	210	0.011	0.021	0.028	0.039	0.046	0.056	0.067	0.098
		4-fluted	Finishing	280	0.011	0.021	0.028	0.039	0.046	0.056	0.067	0.098

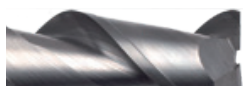
All recommendations are valid for coated tools. For bright milling cutters please vc - 40% and fz -25%!



CUTTING SPEED RECOMMENDATION

(CARBIDE SLOT DRILLS - 2 FLUTED TYPE W FOR ALUMINIUM)

Guhring no. 5743, 3358, 6793



CARBIDE

Application	vc factor	fz factor	Feed width (ae)	Feed depth (ap)
Slotting	1	1 (0.7 for ap = 2xd)	1xd	0.5 up to 1xd
Roughing	1	1 (0.7 for ap = 2xd)	0.4 up to 0.9xd	0.5 up to 1xd
Finishing	1	1	0.01 up to 0.1xd	1 up to 2xd
HPC-roughing	1.3	1.5	0.15 up to 0.4xd	1 up to 2xd
HSC-roughing	1.5	2	0.05 up to 0.15xd	1 up to 2xd

Material	Hardness	Recommended RF100 type	Type of application	cut Vc	fz(mm/z) with nom. ø							
					3	6	8	10	12	16	20	25
Structural + free-cutting steels, unalloyed heat-treatable + case hardened steels S185, P275N, P235GH, P265GH, Mild steel, Grade 250 plate, Grade 350 plate, E295, E360, P500NH	up to 850 N/mm2											
Free-cutting steels, unalloyed case hardened steels, nitriding steels 11SMnPb30, 11SMn37, 1020, S1214, S1213, S12L13, S12L14, 46S20, 46SPb20	850-1,200 N/mm2											
Alloyed heat-treatable, tool and high speed steels 50MnSi4, 38Cr2, 28Cr4, 3140, 4130, 4140, 4150, 4340, 6150, EN16, EN26, 36NiCr6, 41Cr4, 42CrMo4 Spring steel = 55Si7, 55Cr3, 51CrV4	850-1,400 N/mm2											
Hardened steel Tool steel, heat-treatable steel, spring steel, high-speed steel, case hardened steel, etc. 10CrMo11, 11MnSi6, 3310, 3415, 5115, 4615, 4620, 5120, 8617, 8620, 15NiCr13, 16MnCr5, 20CrMo5, N33, EN36A	up to 54 HRC											
	54-60 HRC											
Stainless steel X12CrS13, X14CrMoS17, X6CrMoS17, X8CrNiS18-9, 410S, 430F, 630	up to 750 N/mm2											
Stainless steel X5CrNi18-10, X6CrNiTi18-10, X6CrNiMoTi 17-12-2, 302, 303, 304, 310, 316, 316Ti, 321	750-850 N/mm2											
Stainless steel X20CrNi172, X39CrMo17-1, X2CrMoTi18-2, 410, 410X, 416, 420, 420C, 431, 440C	above 850 N/mm2											
Special alloys (nickel based "Ni") Nimonic, Inconel, Monel, Hastelloy	up to 1,300 N/mm2											
Titanium alloys ("Ti") Ti99,5, TiAl5Sn2,5, TiCu2, TiAl6Zr5, TiAl6V4, TiAl4Mo4Sn2	up to 1,300 N/mm2											
Cast iron, grey cast iron, spheroidal graphite and malleable cast iron GG10, GG15, GG20, GG25, GG30, GG35 GG40 GGG40, GGG50, GGG60, 32510,GTW35	up to 240 HB 30											
Cast iron, grey cast iron, spheroidal graphite and malleable cast iron GG10, GG15, GG20, GG25, GG30, GG35 GG40 GGG40, GGG50, GGG60, 32510,GTW35	above 240 HB 30											
Aluminium, Al-wrought alloys, Al-alloys Al99,5, AlMgSi1, AlMg1 AlMgSiPb, AlCuMg1, AlMg3Si, AlZnMgCu1,5	up to 3% Si	2-fluted	Slotting	350	0.014	0.028	0.035	0.046	0.056	0.067	0.077	0.112
		2-fluted	Roughing	420	0.014	0.028	0.039	0.049	0.060	0.070	0.084	0.119
		2-fluted	Finishing	700	0.013	0.025	0.032	0.042	0.049	0.063	0.070	0.105
Aluminium-cast alloys G-AlSi5Cu1, G-AlSi7Cu3, G-AlSi9 G-AlSi12, G-AlSi12Cu, - G-AlSi12CuNiMg	above 3% Si	2-fluted	Slotting	160	0.011	0.021	0.028	0.039	0.046	0.056	0.067	0.098
		2-fluted	Roughing	200	0.014	0.028	0.035	0.046	0.056	0.067	0.077	0.112
		2-fluted	Finishing	245	0.013	0.025	0.032	0.042	0.049	0.063	0.070	0.105
Magnesium-alloys MgMn2, G-MgAl8Zn1, G-MgAl6Zn3 -		2-fluted	Slotting	125	0.011	0.021	0.028	0.039	0.046	0.056	0.067	0.098
		2-fluted	Roughing	150	0.014	0.028	0.035	0.046	0.056	0.067	0.077	0.112
		2-fluted	Finishing	200	0.013	0.025	0.032	0.042	0.049	0.063	0.070	0.105
Non-ferrous metals (copper, short- or long-chipping brass or bronze) SE-Cu, CuSn6, G-CuSn5ZnPb, CuZn39Pb2, CuZn39Pb3, CuZn43Pb2, CuZn20, CuZn33, CuZn37Pb0,5, CuSn7ZnPb, CuPb5Sn5, CuPb10Sn, CuAl5, CuAl9Mn, CuSn10	up to 850 N/mm2	2-fluted	Slotting	175	0.011	0.018	0.025	0.032	0.035	0.046	0.056	0.084
		2-fluted	Roughing	210	0.011	0.021	0.028	0.039	0.046	0.056	0.067	0.098
		2-fluted	Finishing	280	0.011	0.021	0.028	0.039	0.046	0.056	0.067	0.098

All recommendations are valid for coated tools. For bright milling cutters please vc - 40% and fz -25%!

CUTTING SPEED RECOMMENDATION

(RF 100 U, F, VA, A, TI, H, CARBIDE MILLING CUTTERS FOR STABLE CONDITIONS)



Guhring no. 3472, 3473, 3892, 5735, 5535, 5582, 3114, 3803, 3499, 6978, 6478, 6480



Stable conditions:
- good cooling
- sufficient performance
- short-chipping

Application	vc factor	fz factor	Feed width (ae)	Feed depth (ap)
Slotting	1	1 (0.7 for ap = 2xd)	1xd	0.5 up to 1xd
Roughing	1	1 (0.7 for ap = 2xd)	0.4 up to 0.9xd	0.5 up to 1xd
Finishing	1	1	0.01 up to 0.1xd	1 up to 2xd
HPC-roughing	1.3	1.5	0.15 up to 0.4xd	1 up to 2xd
HSC-roughing	1.5	2	0.05 up to 0.15xd	1 up to 2xd

MILLING CUTTERS

Material	Hardness	Recommended RF100 type	Type of application	cut Vc	fz(mm/z) with nom. ø							
					3	6	8	10	12	16	20	25
Structural + free-cutting steels, unalloyed heat-treatable + case hardened steels S185, P275N, P235GH, P265GH, Mild steel, Grade 250 plate, Grade 350 plate, E295, E360, P500NH	up to 850 N/mm ²	F	Slotting	180	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
		F	Roughing	200	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
		SF	Finishing	280	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
Free-cutting steels, unalloyed case hardened steels, nitriding steels 11SMnPb30, 11SMn37, 1020, S1214, S1213, S12L13, S12L14, 46S20, 46SPb20	850-1,200 N/mm ²	F	Slotting	160	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
		F	Roughing	180	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
		SF	Finishing	220	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
Alloyed heat-treatable, tool and high speed steels 50MnSi4, 38Cr2, 28Cr4, 3140, 4130, 4140, 4150, 4340, 6150, EN16, EN26, 36NiCr6, 41Cr4, 42CrMo4 Spring steel = 55Si7, 55Cr3, 51CrV4	850-1,400 N/mm ²	U	Slotting	135	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
		U	Roughing	160	0.02	0.04	0.05	0.065	0.08	0.095	0.11	0.16
		SF	Finishing	200	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.13
Hardened steel Tool steel, heat-treatable steel, spring steel, high-speed steel, case hardened steel, etc. 10CrMo11, 11MnSi6, 3310, 3415, 5115, 4615, 4620, 5120, 8617, 8620, 15NiCr13, 16MnCr5, 20CrMo5, N33, EN36A	up to 54 HRC	U	Slotting	70	0.012	0.025	0.03	0.04	0.045	0.06	0.07	0.1
		U	Roughing	110	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
		SF	Finishing	150	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.13
	54-60 HRC		Slotting									
		H	Roughing									
		H	Finishing	110	0.01	0.015	0.025	0.035	0.042	0.05	0.08	0.09
Stainless steel X12CrS13, X14CrMoS17, X6CrMoS17, X8CrNiS18-9, 410S, 430F, 630	up to 750 N/mm ²	VA	Slotting	120	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.13
		VA	Roughing	140	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
		SF	Finishing	180	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
Stainless steel X5CrNi18-10, X6CrNiTi18-10, X6CrNiMoTi 17-12-2, 302, 303, 304, 310, 316, 316Ti, 321	750-850 N/mm ²	VA	Slotting	80	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
		VA	Roughing	120	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
		SF	Finishing	140	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.13
Stainless steel X20CrNi172, X39CrMo17-1, X2CrMoTi18-2, 410, 410X, 416, 420, 420C, 431, 440C	above 850 N/mm ²	VA/F	Slotting	70	0.012	0.025	0.03	0.04	0.045	0.06	0.07	0.1
		VA/F	Roughing	100	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
		SF	Finishing	120	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
Special alloys (nickel based "Ni") Nimonic, Inconel, Monel, Hastelloy	up to 1,300 N/mm ²	Ti/U	Slotting	30	0.01	0.015	0.02	0.025	0.03	0.04	0.05	0.06
		Ti/U	Roughing	35	0.01	0.02	0.03	0.035	0.04	0.055	0.065	0.08
		SF	Finishing	45	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
Titanium alloys ("Ti") Ti99,5, TiAl5Sn2,5, TiCu2, TiAl6Zr5, TiAl6V4, TiAl4Mo4Sn2	up to 1,300 N/mm ²	Ti/U	Slotting	60	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
		Ti/U	Roughing	90	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
		SF	Finishing	130	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
Cast iron, grey cast iron, spheroidal graphite and malleable cast iron GG10, GG15, GG20, GG25, GG30, GG35 GG40 GGG40, GGG50, GGG60, 32510, GTW35	up to 240 HB 30	F	Slotting	160	0.02	0.04	0.05	0.065	0.08	0.095	0.11	0.16
		F	Roughing	180	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
		SF	Finishing	220	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
Cast iron, grey cast iron, spheroidal graphite and malleable cast iron GG10, GG15, GG20, GG25, GG30, GG35 GG40 GGG40, GGG50, GGG60, 32510, GTW35	above 240 HB 30	U	Slotting	140	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
		U	Roughing	160	0.02	0.04	0.05	0.065	0.08	0.095	0.11	0.16
		SF	Finishing	200	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
Aluminium, Al-wrought alloys, Al-alloys Al99,5, AlMgSi1, AlMg1 AlMgSiPb, AlCuMg1, AlMg3Si, AlZnMgCu1,5	up to 3% Si	A	Slotting	500	0.02	0.04	0.05	0.065	0.08	0.095	0.11	0.16
		A	Roughing	600	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
		A	Finishing	1000	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
Aluminium-cast alloys G-AlSi5Cu1, G-AlSi7Cu3, G-AlSi9 G-AlSi12, G-AlSi12Cu, - G-AlSi12CuNiMg	above 3% Si	A	Slotting	230	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
		A	Roughing	280	0.02	0.04	0.05	0.065	0.08	0.095	0.11	0.16
		A	Finishing	350	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
Magnesium-alloys MgMn2, G-MgAl8Zn1, G-MgAl6Zn3 -		A	Slotting	180	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
		A	Roughing	220	0.02	0.04	0.05	0.065	0.08	0.095	0.11	0.16
		A	Finishing	280	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
Non-ferrous metals (copper, short- or long-chipping brass or bronze) SE-Cu, CuSn6, G-CuSn5ZnPb, CuZn39Pb2, CuZn39Pb3, CuZn-43Pb2, CuZn20, CuZn33, CuZn37Pb0,5, CuSn7ZnPb, CuPb5Sn5, CuPb10Sn, CuAl5, CuAl9Mn, CuSn10	up to 850 N/mm ²	A	Slotting	250	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
		A	Roughing	300	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
		SF	Finishing	400	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14

All recommendations are valid for coated tools. For bright milling cutters please vc - 40% and fz - 25%!



CUTTING SPEED RECOMMENDATION

(RF 100 DIVER, CARBIDE MILLING CUTTERS)



Guhring no. 6736, 6737



PLUNGING* AND RAMPING*

Material/ISO material	Hardness	Ramping depth* (a _p max.)	Ramping max. angle in °	Cutting speed (vc)	fz(mm/z) with nom. ø					
					5.7	7.7	9.7	11.7	15.6	19.5
Struct./free-cutting steels, unall. heat-treat./case hard. steels	up to 850 N/mm ²	1xd	45°	270	0.020	0.030	0.040	0.045	0.050	0.060
Free-cutting steels, unalloyed case hard. steels, nitr. steels	850 - 1200 N/mm ²	1xd	45°	240	0.015	0.020	0.035	0.040	0.045	0.050
Alloyed heat-treatable, tool and high speed steels	850 - 1400 N/mm ²	1xd	30°	200	0.010	0.015	0.025	0.030	0.035	0.040
Stainless steel - easy to machine / sulphured	up to 750 N/mm ²	1xd	10°	60	0.010	0.015	0.025	0.030	0.035	0.040
Stainless steel - moderately difficult to machine	over 750 - 950 N/mm ²	0.5xd	5°	50	0.010	0.015	0.020	0.025	0.030	0.035
Cast iron, grey cast iron, sph. graphite/malleable cast iron	over 240 HB 30	1xd	45°	150	0.020	0.030	0.040	0.045	0.050	0.060
Aluminium, Al-wrought alloys, Al-alloys	up to 3% Si	1xd	30°	180	0.015	0.020	0.035	0.040	0.045	0.050
Aluminium-cast alloys	over 3% Si	1xd	45°	140	0.020	0.030	0.040	0.045	0.050	0.060
Titanium, Titanium alloys	up to 1400 N/mm ²	0.5xd	10°	45	0.010	0.015	0.020	0.025	0.030	0.035

* peripheral cooling „Guhrojet“ recommended for optimal chip evacuation and tool life

SLOTING*

Material/ISO material	Hardness	Cutting depth* (a _p)	Cutting width (a _e)	Cutting speed (vc)	fz(mm/z) with nom. ø					
					5.7	7.7	9.7	11.7	15.6	19.5
Struct./free-cutting steels, unall. heat-treat./case hard. steels	up to 850 N/mm ²	1xd	1xd	270	0.025	0.035	0.050	0.060	0.080	0.100
Free-cutting steels, unalloyed case hard. steels, nitr. steels	850 - 1200 N/mm ²	1xd	1xd	240	0.025	0.035	0.050	0.060	0.080	0.100
Alloyed heat-treatable, tool and high speed steels	850 - 1400 N/mm ²	1xd	1xd	200	0.025	0.030	0.045	0.050	0.070	0.085
Stainless steel - easy to machine / sulphured	up to 750 N/mm ²	1xd	1xd	120	0.020	0.030	0.045	0.060	0.065	0.075
Stainless steel - moderately difficult to machine	over 750 - 950 N/mm ²	1xd	1xd	80	0.020	0.030	0.040	0.045	0.060	0.070
Cast iron, grey cast iron, sph. graphite/malleable cast iron	over 240 HB 30	1xd	1xd	160	0.025	0.035	0.050	0.060	0.080	0.100
Aluminium, Al-wrought alloys, Al-alloys	up to 3% Si	1xd	1xd	500	0.030	0.040	0.065	0.080	0.095	0.110
Aluminium-cast alloys	over 3% Si	1xd	1xd	340	0.020	0.030	0.055	0.065	0.080	0.100
Titanium, Titanium alloys	up to 1400 N/mm ²	1xd	1xd	60	0.020	0.030	0.040	0.045	0.060	0.070

* peripheral cooling „Guhrojet“ recommended for optimal chip evacuation and tool life

HPC-ROUGHING* AND HSC-FINISHING**

Material/ISO material	Hardness	Cutting depth* (a _p)	Cutting width (a _e)	Cutting speed (vc)	fz(mm/z) with nom. ø					
					5.7	7.7	9.7	11.7	15.6	19.5
Struct./free-cutting steels, unall. heat-treat./case hard. steels	up to 850 N/mm ²	2xd	0.4xd	350	0.030	0.045	0.060	0.075	0.090	0.110
Free-cutting steels, unalloyed case hard. steels, nitr. steels	850 - 1200 N/mm ²	2xd	0.4xd	290	0.030	0.045	0.060	0.075	0.090	0.110
Alloyed heat-treatable, tool and high speed steels	850 - 1400 N/mm ²	2xd	0.3xd	240	0.025	0.030	0.055	0.070	0.085	0.100
Stainless steel - easy to machine / sulphured	up to 750 N/mm ²	2xd	0.3xd	140	0.025	0.035	0.055	0.065	0.080	0.090
Stainless steel - moderately difficult to machine	over 750 - 950 N/mm ²	2xd	0.25xd	120	0.020	0.030	0.045	0.050	0.065	0.075
Cast iron, grey cast iron, sph. graphite/malleable cast iron	over 240 HB 30	2xd	0.4xd	180	0.030	0.045	0.060	0.075	0.090	0.110
Aluminium, Al-wrought alloys, Al-alloys	up to 3% Si	2xd	0.5xd	600	0.040	0.060	0.080	0.100	0.120	0.150
Aluminium-cast alloys	over 3% Si	2xd	0.4xd	420	0.030	0.045	0.060	0.075	0.090	0.110
Titanium, Titanium alloys	up to 1400 N/mm ²	2xd	0.4xd	120	0.020	0.030	0.045	0.050	0.065	0.075

* peripheral cooling „Guhrojet“ recommended for optimal chip evacuation and tool life

** for HSC machining the cutting speed can be increased by 50%, feed rate fz can be reduced depending on surface requirements.

*** for trochoidal milling and imachining with a_e = 0.1-0.2xd the cutting speed vc and the feed rate can be increased by 50 %.

DRILLING*

Material/ISO material	Hardness	Cutting depth** (a _p)	Cutting speed (vc)	fz(mm/z) with nom. ø					
				5.7	7.7	9.7	11.7	15.6	19.5
Struct./free-cutting steels, unall. heat-treat./case hard. steels	up to 850 N/mm ²	2xd	270	0.020	0.030	0.040	0.045	0.050	0.060
Free-cutting steels, unalloyed case hard. steels, nitr. steels	850 - 1200 N/mm ²	2xd	240	0.015	0.020	0.035	0.040	0.045	0.050
Alloyed heat-treatable, tool and high speed steels	850 - 1400 N/mm ²	1xd	200	0.010	0.015	0.025	0.030	0.035	0.040
Cast iron, grey cast iron, sph. graphite/malleable cast iron	over 240 HB 30	2xd	150	0.020	0.030	0.040	0.045	0.050	0.060
Aluminium, Al-wrought alloys, Al-alloys	up to 3% Si	1xd	180	0.015	0.020	0.035	0.040	0.045	0.050
Aluminium-cast alloys	over 3% Si	1xd	140	0.020	0.030	0.040	0.045	0.050	0.060

* pecking recommended from drilling depth 1XD

* peripheral cooling „Guhrojet“ recommended for optimal chip evacuation and tool life

CUTTING SPEED RECOMMENDATION

(CARBIDE UNIVERSAL SLOT DRILLS AND END MILLS WITH BALL NOSE)



Tool length/reach up to 3xD Vc and fz 100%
 Tool length/reach 3-5xD Vc and fz 80%
 Tool length/reach > 5-10xD Vc and fz 60%



**Guhring no. 3679, 3359,
 3360, 3050, 5584, 3043,
 6984**

Application	Width/depth		Nom. diameter (mm)							
			2	3	4	6	8	10	12	16
Roughing	ae	(mm)	0.1	0.15	0.2	0.4	0.6	0.75	1	1.2
	ap	(mm)	0.15	0.15	0.3	0.5	0.75	1	1.5	1.5
Finishing	ae	(mm)	0.05	0.07	0.1	0.14	0.16	0.18	0.2	0.3
	ap	(mm)	0.05	0.05	0.07	0.1	0.15	0.2	0.25	0.3

MILLING
CUTTERS

Material	Hard-ness	Recom-mended type	Type of application	cut Vc	fz(mm/z) with nom. ø							
					3	6	8	10	12	16	20	25
Structural + free-cutting steels, unalloyed heat-treatable + case hardened steels S185, P275N, P235GH, P265GH, Mild steel, Grade 250 plate, Grade 350 plate, E295, E360, P500NH	up to 850 N/mm ²	2-/4-fluted	Roughing	175	0.021	0.028	0.032	0.035	0.049	0.070	0.084	0.105
		2-/4-fluted	Finishing	350	0.021	0.028	0.032	0.035	0.049	0.070	0.084	0.105
Free-cutting steels, unalloyed case hardened steels, nitriding steels 11SMnPb30, 11SMn37, 1020, S1214, S1213, S12L13, S12L14, 46S20, 46SPb20	850-1,200 N/mm ²	2-/4-fluted	Roughing	175	0.021	0.028	0.032	0.035	0.049	0.070	0.084	0.105
		2-/4-fluted	Finishing	245	0.021	0.028	0.032	0.035	0.049	0.070	0.084	0.105
Alloyed heat-treatable, tool and high speed steels 50MnSi4, 38Cr2, 28Cr4, 3140, 4130, 4140, 4150, 4340, 6150, EN16, EN26, 36NiCr6, 41Cr4, 42CrMo4 Spring steel = 55Si7, 55Cr3, 51CrV4	850-1,400 N/mm ²	2-/4-fluted	Roughing	140	0.021	0.028	0.032	0.035	0.049	0.070	0.084	0.105
		2-/4-fluted	Finishing	210	0.021	0.028	0.032	0.035	0.049	0.070	0.084	0.105
Hardened steel Tool steel, heat-treatable steel, spring steel, high-speed steel, case hardened steel, etc. 10CrMo11, 11MnSi6, 3310, 3415, 5115, 4615, 4620, 5120, 8617, 8620, 15NiCr13, 16MnCr5, 20CrMo5, N33, EN36A	up to 54 HRC	Roughing										
		Finishing										
	54-60 HRC	Roughing										
		Finishing										
Stainless steel X12CrS13, X14CrMoS17, X6CrMoS17, X8CrNiS18-9, 410S, 430F, 630	up to 750 N/mm ²	2-/4-fluted	Roughing	126	0.021	0.028	0.032	0.035	0.049	0.070	0.084	0.105
		2-/4-fluted	Finishing	196	0.021	0.028	0.032	0.035	0.049	0.070	0.084	0.105
Stainless steel X5CrNi18-10, X6CrNiTi18-10, X6CrNiMoTi 17-12-2, 302, 303, 304, 310, 316, 316Ti, 321	750-850 N/mm ²	2-/4-fluted	Roughing	91	0.014	0.021	0.025	0.028	0.035	0.049	0.056	0.070
		2-/4-fluted	Finishing	140	0.018	0.021	0.028	0.032	0.035	0.049	0.070	0.084
Stainless steel X20CrNi172, X39CrMo17-1, X2CrMoTi18-2, 410, 410X, 416, 420, 420C, 431, 440C	above 850 N/mm ²	2-/4-fluted	Roughing	56	0.014	0.021	0.025	0.028	0.035	0.049	0.056	0.070
		2-/4-fluted	Finishing	91	0.018	0.021	0.028	0.032	0.035	0.049	0.070	0.084
Special alloys (nickel based "Ni") Nimonic, Inconel, Monel, Hastelloy	up to 1,300 N/mm ²	2-/4-fluted	Roughing	28	0.007	0.014	0.021	0.025	0.028	0.035	0.049	0.056
		2-/4-fluted	Finishing	42	0.014	0.018	0.021	0.028	0.032	0.042	0.056	0.063
Titanium alloys ("Ti") Ti99.5, TiAl5Sn2.5, TiCu2, TiAl6Zr5, TiAl6V4, TiAl4Mo4Sn2	up to 1,300 N/mm ²	2-/4-fluted	Roughing	56	0.014	0.021	0.025	0.028	0.035	0.049	0.056	0.070
		2-/4-fluted	Finishing	105	0.018	0.021	0.028	0.032	0.035	0.049	0.070	0.084
Cast iron, grey cast iron, spheroidal graphite and malleable cast iron GG10, GG15, GG20, GG25, GG30, GG35 GG40 GGG40, GGG50, GGG60, 32510, GTW35	up to 240 HB 30	2-/4-fluted	Roughing	140	0.021	0.028	0.032	0.035	0.049	0.070	0.084	0.105
		2-/4-fluted	Finishing	210	0.021	0.028	0.032	0.035	0.049	0.070	0.084	0.105
Cast iron, grey cast iron, spheroidal graphite and malleable cast iron GG10, GG15, GG20, GG25, GG30, GG35 GG40 GGG40, GGG50, GGG60, 32510, GTW35	above 240 HB 30	2-/4-fluted	Roughing	105	0.021	0.028	0.032	0.035	0.049	0.070	0.084	0.105
		2-/4-fluted	Finishing	161	0.021	0.028	0.032	0.035	0.049	0.070	0.084	0.105
Aluminium, Al-wrought alloys, Al-alloys Al99.5, AlMgSi1, AlMg1 AlMgSiPb, AlCuMg1, AlMg3Si, AlZnMgCu1.5	up to 3% Si											
Aluminium-cast alloys G-AlSi5Cu1, G-AlSi7Cu3, G-AlSi9 G-AlSi12, G-AlSi12Cu, - G-AlSi12CuNiMg	above 3% Si	2-/4-fluted	Roughing	196	0.021	0.028	0.032	0.035	0.049	0.070	0.084	0.105
		2-/4-fluted	Finishing	245	0.021	0.028	0.032	0.035	0.049	0.070	0.084	0.105
Magnesium-alloys MgMn2, G-MgAl8Zn1, G-MgAl6Zn3 -												
Non-ferrous metals (copper, short- or long-chipping brass or bronze) SE-Cu, CuSn6, G-CuSn5Zn5Pb, CuZn39Pb2, CuZn39Pb3, CuZn43Pb2, CuZn20, CuZn33, CuZn37Pb0.5, CuSn7Zn5Pb, CuPb5Sn5, CuPb10Sn, CuAl5, CuAl9Mn, CuSn10	up to 850 N/mm ²	2-/4-fluted	Roughing	175	0.021	0.028	0.032	0.035	0.049	0.070	0.084	0.105
		2-/4-fluted	Finishing	280	0.021	0.028	0.032	0.035	0.049	0.070	0.084	0.105

All recommendations are valid for coated tools. For bright milling cutters please vc - 40% and fz -25%!

GROOVING



SYSTEM OVERVIEW



SYSTEM 104

Micro-precision tools from Ø 0.7 mm
Broaching from Ø 1.5 mm



SYSTEM 106

Micro-precision tools from Ø 5 mm
Broaching from Ø 6 mm



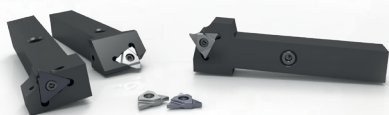
SYSTEM 108

Micro-precision tools from Ø 7 mm
Broaching from Ø 9 mm



SYSTEM 110

Micro-precision tools for special solutions



SYSTEM 305

Indexable inserts and tool holders
for grooving and parting off



SYSTEM 222

New system
for grooving and parting off



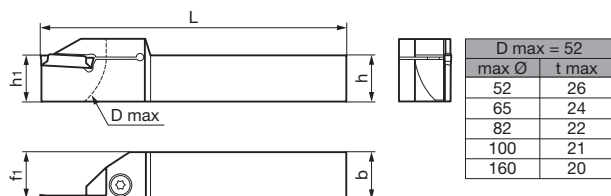
If you require further
information ask your
local rep for a full
Grooving Catalogue



Square shank holders straight, external machining, without IC

- **tmax:** maximum grooving depth before 2nd cutting edge engages
- without internal coolant supply

Type GH222



Right hand version shown
Left hand version mirror image



Article no. **26100**

Version right

Code no.	Description	t max	h	b	L	h1	f1	D max	Size
		mm	mm	mm	mm	mm	mm	mm	
22.020	GH222.1212.125.00.03.R.00.34	21.00	12.00	12.00	125.00	12.00	10.50	34.00	03
22.030	GH222.0500.500.00.03.R.00.34	21.00	12.70	12.70	127.00	12.70	11.20	34.00	03
22.040	GH222.0625.500.00.03.R.00.45	21.00	15.87	15.87	127.00	15.87	14.37	45.00	03
22.050	GH222.1616.125.00.03.R.00.45	21.00	16.00	16.00	125.00	16.00	14.50	45.00	03
22.060	GH222.0750.500.00.03.R.00.52	21.00	19.05	19.05	127.00	19.05	19.05	52.00	03
22.070	GH222.2020.125.00.03.R.00.52	21.00	20.00	20.00	125.00	20.00	20.00	52.00	03
22.080	GH222.2525.150.00.03.R.00.52	21.00	25.00	25.00	150.00	25.00	25.00	52.00	03
22.090	GH222.1000.600.00.03.R.00.52	21.00	25.40	25.40	152.40	25.40	25.40	52.00	03

Article no. **26101**

Version left

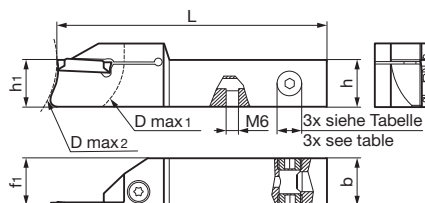
Code no.	Description	t max	h	b	L	h1	f1	D max	Size
		mm	mm	mm	mm	mm	mm	mm	
22.020	GH222.1212.125.00.03.L.00.34	21.00	12.00	12.00	125.00	12.00	10.50	34.00	03
22.030	GH222.0500.500.00.03.L.00.34	21.00	12.70	12.70	127.00	12.70	11.20	34.00	03
22.040	GH222.0625.500.00.03.L.00.45	21.00	15.87	15.87	127.00	15.87	14.37	45.00	03
22.050	GH222.1616.125.00.03.L.00.45	21.00	16.00	16.00	125.00	16.00	14.50	45.00	03
22.060	GH222.0750.500.00.03.L.00.52	21.00	19.05	19.05	127.00	19.05	19.05	52.00	03
22.070	GH222.2020.125.00.03.L.00.52	21.00	20.00	20.00	125.00	20.00	20.00	52.00	03
22.080	GH222.2525.150.00.03.L.00.52	21.00	25.00	25.00	150.00	25.00	25.00	52.00	03
22.090	GH222.1000.600.00.03.L.00.52	21.00	25.40	25.40	152.40	25.40	25.40	52.00	03



Square shank holders straight, external machining, with IC

- **t_{max}**: maximum grooving depth before 2nd cutting edge engages
- with internal coolant supply from above and below
- TL (tubeless): tubeless coolant supply from location face from shank size 19.05x19.05

Type GH222



12/12	M8x1
12,7/12,7	M8x1
15,87/15,87	G1/8
16/16	G1/8
19,05/19,05	G1/8
20/20	G1/8
25/25	G1/8
25,4/25,4	G1/8

D max 1 = 52	
max Ø	t max
52	26
65	24
82	22
100	21
120	20



Right hand version shown
Left hand version mirror image

Article no. **26102**

Version right

Code no.	Description	t max	h	b	L	h1	f1	TL	D max1	D max2	Size
		mm	mm	mm	mm	mm	mm		mm	mm	
22.020	GH222.1212.125.00.03.R.IK.34	21.00	12.00	12.00	125.00	12.00	10.50	-	34.00	65.00	03
22.030	GH222.0500.500.00.03.R.IK.34	21.00	12.70	12.70	127.00	12.70	11.20	-	34.00	65.00	03
22.040	GH222.0625.500.00.03.R.IK.45	21.00	15.87	15.87	127.00	15.87	14.37	-	45.00	82.00	03
22.050	GH222.1616.125.00.03.R.IK.45	21.00	16.00	16.00	125.00	16.00	14.50	-	45.00	82.00	03
22.060	GH222.0750.427.00.03.R.IK.52	21.00	19.05	19.05	108.50	19.05	19.05	M6	52.00	82.00	03
22.070	GH222.2020.109.00.03.R.IK.52	21.00	20.00	20.00	109.00	20.00	20.00	M6	52.00	82.00	03
22.080	GH222.2525.120.00.03.R.IK.52	21.00	25.00	25.00	120.50	25.00	25.00	M6	52.00	120.00	03
22.090	GH222.1000.474.00.03.R.IK.52	21.00	25.40	25.40	120.50	25.40	25.40	M6	52.00	120.00	03

Article no. **26103**

Version left

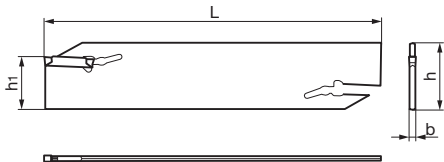
Code no.	Description	t max	h	b	L	h1	f1	TL	D max1	D max2	Size
		mm	mm	mm	mm	mm	mm		mm	mm	
22.020	GH222.1212.125.00.03.L.IK.34	21.00	12.00	12.00	125.00	12.00	10.50	-	34.00	65.00	03
22.030	GH222.0500.500.00.03.L.IK.34	21.00	12.70	12.70	127.00	12.70	11.20	-	34.00	65.00	03
22.040	GH222.0625.500.00.03.L.IK.45	21.00	15.87	15.87	127.00	15.87	14.37	-	45.00	82.00	03
22.050	GH222.1616.125.00.03.L.IK.45	21.00	16.00	16.00	125.00	16.00	14.50	-	45.00	82.00	03
22.060	GH222.0750.427.00.03.L.IK.52	21.00	19.05	19.05	108.50	19.05	19.05	M6	52.00	82.00	03
22.070	GH222.2020.109.00.03.L.IK.52	21.00	20.00	20.00	109.00	20.00	20.00	M6	52.00	82.00	03
22.080	GH222.2525.120.00.03.L.IK.52	21.00	25.00	25.00	120.50	25.00	25.00	M6	52.00	120.00	03
22.090	GH222.1000.474.00.03.L.IK.52	21.00	25.40	25.40	120.50	25.40	25.40	M6	52.00	120.00	03



Parting off blades, without IC

- without internal coolant supply

Type GS222



Article no. **26200**

Version neutral

Code no.	Description	t max	b	h	h1	L	Size
		mm	mm	mm	mm	mm	
22.002	GS222.0026.120.03.02.N	35.00	2.25	26.00	21.40	120.00	03
22.003	GS222.0032.150.03.02.N	45.00	2.25	32.00	25.00	150.00	03

Spare parts

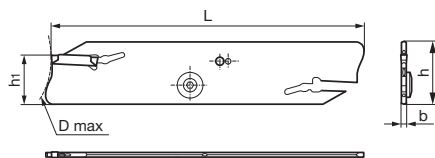
Article no.	Mounting key
25921	
Code 15.000	



Parting off blades, with IC

- with internal coolant supply from above and below

Type GS222



Article no. **26201**

Version neutral

Code no.	Description	t max	b	h	h1	L	D max	Size
		mm	mm	mm	mm	mm	mm	
22.002	GS222.0026.118.03.02.N.IK	35.00	2.25	26.00	21.40	118.00	70.00	03
22.003	GS222.0032.147.03.02.N.IK	45.00	2.25	32.00	25.00	147.50	90.00	03

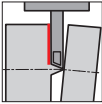
Spare parts

Article no.	Mounting key
25921	
Code 15.000	

Article no.	IC locking screw
25909	
Code 4.000	



Indexable inserts for parting off



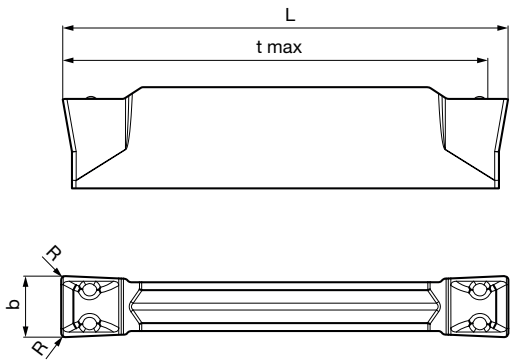
- with chip former

Tool material **Solid carbide**

Type GZ222

Surface **F**

FIRE



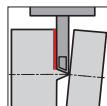
Article no. **26601**

Version neutral

Code no.	Description	t max	b ±0.025	L ±0.1	R	W2
		mm	mm	mm	mm	°
22.030	GZ222.0300.020.PP.02.N	21.00	3.00	22.00	0.20	0



Indexable inserts for parting off



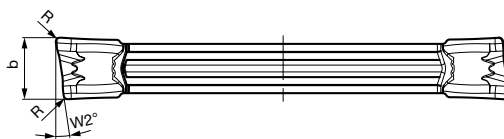
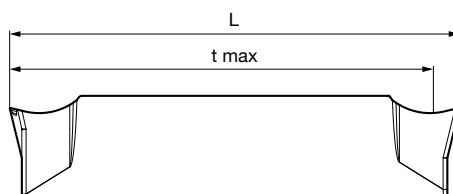
- with chip former

Tool material **Solid carbide**

Type GZ222

Surface **F**

FIRE



Right hand version shown
Left hand version mirror image



Article no. **26602**

Version right

Code no.	Description	t max	b ±0.025	L ±0.1	R	W2
		mm	mm	mm	mm	°
22.030	GZ222.0300.020.PM.01.R.08	21.00	3.00	22.00	0.20	8

Article no. **26603**

Version left

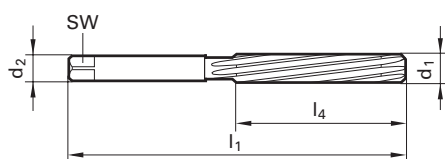
Code no.	Description	t max	b ±0.025	L ±0.1	R	W2
		mm	mm	mm	mm	°
22.030	GZ222.0300.020.PM.01.L.08	21.00	3.00	22.00	0.20	8



REAMERS



Guhring no.	413
Standard	DIN 206
Tool material	HSS
Surface	
Form	B
Cutting direction	right-hand
Tolerance	H7
Helix angle	8°
Hole type	through hole



d1	d2	l1	l4	SW	z	AVAILABILITY
mm	mm	mm	mm	mm		
5.000	5.000	87.00	44.00	3.80	6	•
5.500	5.500	93.00	47.00	4.30	6	○
6.000	6.000	93.00	47.00	4.90	6	•
6.500	6.500	100.00	50.00	4.90	6	○
7.000	7.000	107.00	54.00	5.50	6	•
7.500	7.500	107.00	54.00	6.20	6	○
8.000	8.000	115.00	58.00	6.20	6	•
8.500	8.500	115.00	58.00	7.00	6	○
9.000	9.000	124.00	62.00	7.00	6	•
9.500	9.500	124.00	62.00	8.00	6	○
10.000	10.000	133.00	66.00	8.00	6	•
10.500	10.500	133.00	66.00	8.00	6	○
11.000	11.000	142.00	71.00	9.00	6	•
11.500	11.500	142.00	71.00	9.00	6	○
12.000	12.000	152.00	76.00	9.00	6	•
12.500	12.500	152.00	76.00	10.00	6	○
13.000	13.000	152.00	76.00	10.00	6	•
14.000	14.000	163.00	81.00	11.00	8	•
15.000	15.000	163.00	81.00	12.00	8	•
16.000	16.000	175.00	87.00	12.00	8	•
16.500	16.500	175.00	87.00	13.00	8	○
17.000	17.000	175.00	87.00	13.00	8	•
18.000	18.000	188.00	93.00	14.50	8	•
19.000	19.000	188.00	93.00	14.50	8	•
20.000	20.000	201.00	100.00	16.00	8	•
21.000	21.000	201.00	100.00	16.00	8	○
22.000	22.000	215.00	107.00	18.00	8	○
24.000	24.000	231.00	115.00	18.00	8	○
25.000	25.000	231.00	115.00	20.00	8	○
28.000	28.000	247.00	124.00	22.00	10	○
30.000	30.000	247.00	124.00	24.00	10	○
31.000	31.000	265.00	133.00	24.00	10	○
32.000	32.000	265.00	133.00	24.00	10	○
33.000	33.000	265.00	133.00	26.00	10	○
34.000	34.000	284.00	142.00	26.00	10	○
35.000	35.000	284.00	142.00	29.00	10	○
38.000	38.000	305.00	152.00	29.00	10	○
40.000	40.000	305.00	152.00	32.00	10	○
43.000	43.000	326.00	163.00	35.00	12	○

• Australian stock item ○ German stock item

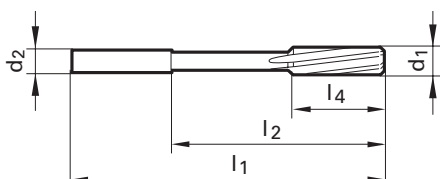


Technical drawing of a shaft with a keyway. The drawing shows a cross-section of the shaft with a keyway. The dimensions are labeled as follows: d_1 is the outer diameter of the shaft, d_2 is the inner diameter of the keyway, l_1 is the total length of the shaft, l_2 is the length of the keyway, and l_4 is the length of the key.



- *Australian stock item*
- *German stock item*

Available in 0.01mm increments on request



- *Australian stock item*
- *German stock item*



Technical drawing of a tapered shaft. The drawing shows a shaft with a diameter d_2 on the left and a diameter d_1 on the right. The total length of the shaft is l_1 . A section of the shaft with length l_2 is shown in a cross-section view. The length of the tapered section is l_4 .

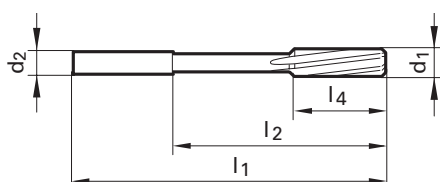


Available in **0.01mm** increments on request

- *Australian stock item*
- *German stock item*



Guhring no.	496
Standard	DIN 212
Tool material	HSS-E
Surface	
Form	B
Cutting direction	right-hand
Tolerance	+0.004/+0.005
Helix angle	8°
Hole type	through hole



d1		d2	l1	l2	l4	z	AVAILABILITY
mm	inch	mm	mm	mm	mm		
5.020		5.00	86.00	58.00	23.00	6	•
5.040		5.00	86.00	58.00	23.00	6	•
5.100		5.00	86.00	58.00	23.00	6	•
5.200		5.00	86.00	58.00	23.00	6	•
5.300		5.00	86.00	58.00	23.00	6	•
5.400		5.60	93.00	57.00	26.00	6	•
5.500		5.60	93.00	57.00	26.00	6	•
5.600		5.60	93.00	57.00	26.00	6	•
5.700		5.60	93.00	57.00	26.00	6	•
5.800		5.60	93.00	57.00	26.00	6	•
5.900		5.60	93.00	57.00	26.00	6	•
5.980		5.60	93.00	57.00	26.00	6	•
5.990		5.60	93.00	57.00	26.00	6	•
6.010		6.30	101.00	65.00	28.00	6	•
6.020		6.30	101.00	65.00	28.00	6	•
6.100		6.30	101.00	65.00	28.00	6	•
6.200		6.30	101.00	65.00	28.00	6	•
6.300		6.30	101.00	65.00	28.00	6	•
6.340	1/4	6.30	101.00	65.00	28.00	6	•
6.350		6.30	101.00	65.00	28.00	6	•
6.370		6.30	101.00	65.00	28.00	6	•
6.400		6.30	101.00	65.00	28.00	6	•
6.500		6.30	101.00	65.00	28.00	6	•
6.600		6.30	101.00	65.00	28.00	6	•
6.700		6.30	101.00	65.00	28.00	6	•
6.800		7.10	109.00	73.00	31.00	6	•
6.900		7.10	109.00	73.00	31.00	6	•
7.020	9/32	7.10	109.00	73.00	31.00	6	•
7.100		7.10	109.00	73.00	31.00	6	•
7.140		7.10	109.00	73.00	31.00	6	•
7.200		7.10	109.00	73.00	31.00	6	•
7.300		7.10	109.00	73.00	31.00	6	•
7.400		7.10	109.00	73.00	31.00	6	•
7.500		7.10	109.00	73.00	31.00	6	•
7.600		8.00	117.00	81.00	33.00	6	•
7.700		8.00	117.00	81.00	33.00	6	•
7.800		8.00	117.00	81.00	33.00	6	•
7.900		8.00	117.00	81.00	33.00	6	•
7.930		8.00	117.00	81.00	33.00	6	•

Available in 0.01mm increments on request

• Australian stock item ○ German stock item

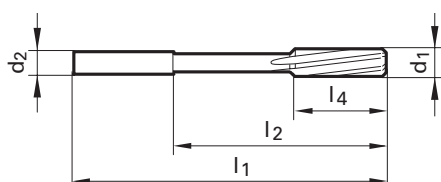


A schematic diagram of a tapered shaft. The shaft has a total length l_1 . The diameter at the left end is d_2 and at the right end is d_1 . A section of length l_2 is marked from the left end to the start of a tapered section. The tapered section has a length l_4 and tapers from diameter d_2 to d_1 .



Available in **0.01mm** increments on request

- *Australian stock item*
- *German stock item*



Available in **0.01mm** increments on request

- *Australian stock item*
- *German stock item*



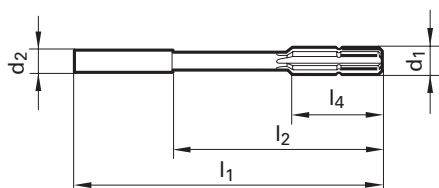
Figure 1 consists of two schematic diagrams, (a) and (b), illustrating the tool in different positions. Both diagrams show a tool with a cutting edge (MT) and dimensions l_1 , l_2 , l_4 , and d_1 . In diagram (a), the tool is in the initial position, and the dimensions are labeled as l_1 , l_2 , l_4 , and d_1 . In diagram (b), the tool is in the final position, and the dimensions are labeled as l_1 , l_2 , l_4 , and d_1 .

[illegible]

- *Australian stock item*
- *German stock item*



Guhring no.	1409
Standard	DIN 8093
Tool material	Carbide
Surface	
Form	B
Cutting direction	right-hand
Tolerance	H7
Helix angle	8°
Hole type	through hole



d1	d2	l1	l2	l4	z	AVAILABILITY	
mm	mm	mm	mm	mm			
1.000	1.000	34.00	15.50	5.50	3	•	
1.500	1.500	40.00	18.80	8.00	3	○	
2.000	2.000	49.00	25.00	11.00	4	•	
2.500	2.500	57.00	30.30	14.00	4	○	
3.000	3.000	61.00	34.50	15.00	6	•	
3.500	3.500	70.00	43.80	18.00	6	○	
4.000	4.000	75.00	43.00	19.00	6	•	
4.500	4.500	80.00	47.00	21.00	6	○	
5.000	5.000	86.00	52.00	23.00	6	•	
5.500	5.600	93.00	57.00	26.00	6	○	
6.000	5.600	93.00	57.00	26.00	6	•	
6.500	6.300	101.00	63.00	28.00	6	○	
7.000	7.100	109.00	69.00	31.00	6	•	
7.500	7.100	109.00	69.00	31.00	6	○	
8.000	8.000	117.00	75.00	33.00	6	•	
8.500	8.000	117.00	75.00	33.00	6	○	
9.000	9.000	125.00	81.00	36.00	6	•	
9.500	9.000	125.00	81.00	36.00	6	○	
10.000	10.000	133.00	87.00	38.00	6	•	
10.500	10.000	133.00	87.00	38.00	6	○	
11.000	10.000	142.00	96.00	41.00	6	•	
12.000	10.000	151.00	105.00	44.00	6	•	
13.000	10.000	151.00	105.00	44.00	6	○	
14.000	12.000	160.00	110.00	47.00	6	•	
15.000	12.000	162.00	112.00	50.00	6	○	
16.000	12.000	170.00	120.00	52.00	6	•	
18.000	14.000	182.00	130.00	56.00	6	○	
19.000	16.000	189.00	131.00	58.00	6	○	
20.000	16.000	195.00	137.00	60.00	6	•	

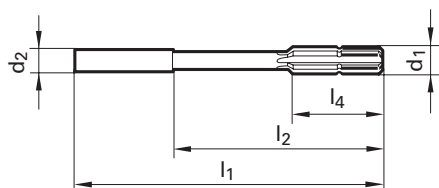
• Australian stock item ○ German stock item



CARBIDE REAMERS

REAMERS

Guhring no.	5527
Standard	Guhring std.
Tool material	Carbide
Surface	
Form	B
Cutting direction	right-hand
Tolerance	+0.004/+0.005
Helix angle	8°
Hole type	through hole



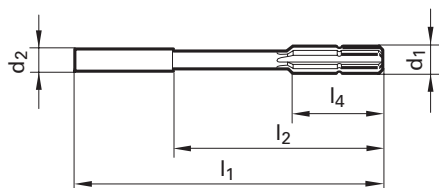
d1	d2	l1	l2	l4	z	AVAILABILITY
mm	mm	mm	mm	mm		
0.980	4.00	50.00	22.00	6.00	6	○
0.990	4.00	50.00	22.00	6.00	6	
1.000	4.00	50.00	22.00	6.00	6	
1.010	4.00	50.00	22.00	6.00	6	○
1.020	4.00	50.00	22.00	6.00	6	
1.030	4.00	50.00	22.00	9.00	6	
1.480	4.00	50.00	22.00	9.00	6	○
1.490	4.00	50.00	22.00	9.00	6	
1.500	4.00	50.00	22.00	9.00	6	
1.510	4.00	50.00	22.00	9.00	6	○
1.520	4.00	50.00	22.00	9.00	6	
1.530	4.00	50.00	22.00	9.00	6	
1.980	4.00	50.00	22.00	12.00	6	○
1.990	4.00	50.00	22.00	12.00	6	
2.000	4.00	50.00	22.00	12.00	6	
2.010	4.00	50.00	22.00	12.00	6	○
2.020	4.00	50.00	22.00	12.00	6	
2.030	4.00	50.00	22.00	12.00	6	
2.480	4.00	60.00	32.00	16.00	6	○
2.490	4.00	60.00	32.00	16.00	6	
2.500	4.00	60.00	32.00	16.00	6	
2.510	4.00	60.00	32.00	16.00	6	○
2.520	4.00	60.00	32.00	16.00	6	
2.530	4.00	60.00	32.00	16.00	6	
2.970	4.00	64.00	36.00	17.00	6	○
2.980	4.00	64.00	36.00	17.00	6	
2.990	4.00	60.00	36.00	17.00	6	
3.000	4.00	60.00	36.00	17.00	6	○
3.010	4.00	64.00	36.00	17.00	6	
3.020	4.00	64.00	36.00	17.00	6	
3.030	4.00	64.00	36.00	17.00	6	○
3.970	4.00	77.00	45.00	21.00	6	
3.980	4.00	77.00	45.00	21.00	6	
3.990	4.00	77.00	45.00	21.00	6	○
4.000	4.00	77.00	45.00	21.00	6	
4.010	4.00	77.00	45.00	21.00	6	
4.020	4.00	77.00	45.00	21.00	6	○
4.030	4.00	77.00	45.00	21.00	6	
4.970	6.00	93.00	59.00	26.00	6	

• Australian stock item ○ German stock item

○ bright ● steam tempered ● nitrided lands ● TiN ● TiAlN ● TiCN ● FIRE/nanoFIRE ● TiAlN SuperA



Guhring no.	5527
Standard	Guhring std.
Tool material	Carbide
Surface	
Form	B
Cutting direction	right-hand
Tolerance	+0.004/+0.005
Helix angle	8°
Hole type	through hole



d1	d2	l1	l2	l4	z	AVAILABILITY
mm	mm	mm	mm	mm		
4.980	6.00	93.00	59.00	26.00	6	o
4.990	6.00	93.00	59.00	26.00	6	
5.000	6.00	93.00	59.00	26.00	6	
5.010	6.00	93.00	59.00	26.00	6	o
5.020	6.00	93.00	59.00	26.00	6	
5.030	6.00	93.00	59.00	26.00	6	
5.970	6.00	93.00	57.00	26.00	6	o
5.980	6.00	93.00	57.00	26.00	6	
5.990	6.00	93.00	57.00	26.00	6	
6.000	6.00	93.00	57.00	26.00	6	o
6.010	6.00	93.00	57.00	26.00	6	
6.020	6.00	93.00	57.00	26.00	6	
6.030	6.00	93.00	57.00	26.00	6	o
7.000	8.00	109.00	69.00	31.00	6	
7.970	8.00	117.00	75.00	33.00	6	
7.980	8.00	117.00	75.00	33.00	6	o
7.990	8.00	117.00	75.00	33.00	6	
8.000	8.00	117.00	75.00	33.00	6	
8.010	8.00	117.00	75.00	33.00	6	o
8.020	8.00	117.00	75.00	33.00	6	
8.030	8.00	117.00	75.00	33.00	6	
8.040	8.00	117.00	75.00	33.00	6	o
9.000	10.00	125.00	81.00	36.00	6	
9.970	10.00	133.00	87.00	38.00	6	
9.980	10.00	133.00	87.00	38.00	6	o
9.990	10.00	133.00	87.00	38.00	6	
10.000	10.00	133.00	87.00	38.00	6	
10.010	10.00	133.00	87.00	38.00	6	o
10.020	10.00	133.00	87.00	38.00	6	
10.030	10.00	133.00	87.00	38.00	6	
10.040	10.00	133.00	87.00	38.00	6	o
10.050	10.00	133.00	87.00	38.00	6	
11.970	10.00	151.00	105.00	44.00	6	
11.980	10.00	151.00	105.00	44.00	6	o
11.990	10.00	151.00	105.00	44.00	6	
12.000	10.00	151.00	105.00	44.00	6	
12.010	10.00	151.00	105.00	44.00	6	o
12.020	10.00	151.00	105.00	44.00	6	
12.030	10.00	151.00	105.00	44.00	6	

• Australian stock item o German stock item



CUTTING SPEED RECOMMENDATION

REAMERS

Counter-sink Ø mm	Feed column no.						
	71	72	73	74	75	76	77
	f (mm/rev.)						
< 4.00	0.080	0.100	0.125	0.300	0.500	0.800	1.000
4.00	0.100	0.125	0.160	0.300	0.500	1.000	1.200
5.00	0.100	0.125	0.160	0.400	0.600	1.000	1.400
6.30	0.125	0.160	0.200	0.400	0.700	1.200	1.600
8.00	0.160	0.200	0.250	0.600	1.000	1.800	2.400
10.00	0.200	0.250	0.315	0.600	1.200	1.800	2.400
12.50	0.200	0.250	0.315	0.800	1.200	2.000	2.500
16.00	0.250	0.315	0.400	0.800	1.400	2.200	2.600
20.00	0.315	0.400	0.500	0.800	1.400	2.200	2.600
25.00	0.400	0.500	0.630	1.000	1.600	2.500	3.000
31.50	0.400	0.500	0.630	1.000	2.000	3.000	3.600
40.00	0.500	0.630	0.800	1.200	2.000	3.000	3.600
50.00	0.630	0.800	1.000	1.400	2.200	3.200	3.600
> 50.00	0.800	1.000	1.250	1.600	2.200	3.200	3.600

Coolant:

- Air
- Neat oil
- Soluble oil

Material group	Material examples	Tensile strength MPa (N/mm²)	Hardness	Coolant
Common structural steels	S185, P275N, P235GH, P265GH, Mild steel, Grade 250 plate, Grade 350 plate	≤500		○
	E295, E360, P500NH	≤1000		○
Free-cutting steels	11SMnPb30, 11SMn37, 1020, S1214, S1213, S12L13, S12L14	≤850		○
	46S20, 46SPb20	≤1000		○
Unalloyed heat-treatable steels	C22, C30E, 1035, 1045, 1055, 1060, 1025	≤700		○
	C45, C45E	≤850		○
	C60, C60E	≤1000		○
Alloyed heat-treatable steels	50MnSi4, 38Cr2, 28Cr4, 3140, 4130, 4140, 4150, 4340, 6150, EN16, EN26	≤1000		○
	36NiCr6, 41Cr4, 42CrMo4	≤1400		○
Unalloyed case hardened steels	C10E, 1010, 1015	≤850		○
Alloyed case hardened steels	10CrMo11, 11MnSi6, 3310, 3415, 5115, 4615, 4620, 5120, 8617, 8620	≤1000		●
	15NiCr13, 16MnCr5, 20CrMo5, N33, EN36A	≤1400		●
Nitriding steels	34CrAl6	≤1000		○
	31CrMoV9, 34CrAlNi7	≤1400		●
Tool steels	C75W, 102Cr6, 29CrMoV9, H11, H13, P20, D2, D3	≤850		○
	X210Cr12, X42Cr13, 105WCr6, X45NiCrMo4	≤1400		●
High speed steels	S 6-5-2-5, S 6-5-2, S 6-5-3, M2, M3, M35, M45	≤1400		●
Spring steels	55Si7, 55Cr3, 51CrV4, 5155, 6150, 9255		≤350 HB	●
Stainless steels, sulphured	X12CrS13, X14CrMoS17, X6CrMoS17, X8CrNiS18-9, 410S, 430F, 630	≤900		●
austenitic	X5CrNi18-10, X6CrNiTi18-10, X6CrNiMoTi 17-12-2, 302, 303, 304, 310, 316, 316Ti, 321	≤1100		●
martensitic	X20CrNi172, X39CrMo17-1, X2CrMoTi18-2, 410, 410X, 416, 420, 420C, 431, 440C	≤1500		●
Hardened steels	-		≤48 HRC	●
			≤66 HRC	●
Special alloys	Nimonic, Inconel, Monel, Hastelloy, Bisalloy	≤2000		●
Cast iron	GG10, GG15, GG20		≤240 HB	○
	GG25, GG30, GG35 GG40		≤350 HB	○
Spheroidal graphite iron and malleable cast iron	GGG40, GGG50, GGG60, 32510, GTW35		≤240 HB	○
Chilled cast iron	GGG70, GTS70, 50005, Nodular Iron		≤350 HB	○
Ti and Ti-alloys	Ti99.5, TiAl5Sn2.5, TiCu2	≤850		●
	TiAl6Zr5, TiAl6V4, TiAl4Mo4Sn2.5, - TiAl8Mo1V1	≤1400		●
Aluminium and Al-alloys	Al99.5, AlMgSi1, AlMg1	≤400		○
Al wrought alloys	AlMgSiPb, AlCuMg1, AlMg3Si, AlZnMgCu1.5	≤650		○
Al cast alloys ≤ 10 % Si	G-AlSi5Cu1, G-AlSi7Cu3, G-AlSi9	≤600		○
≤ 24 % Si	G-AlSi12, G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		○
Magnesium alloys	MgMn2, G-MgAl8Zn1, G-MgAl6Zn1	≤400		○
Copper, low-alloyed	SE-Cu, CuSn6, G-CuSn5ZnPb	≤500		○
Brass, short-chipping	CuZn39Pb2, CuZn39Pb3, CuZn43Pb2	≤600		○
long-chipping	CuZn20, CuZn33, CuZn37Pb0.5	≤600		○
Bronze, short-chipping	CuSn7ZnPb, CuPb5Sn5, CuPb10Sn	≤600		○
	CuNi18Zn19Pb	≤850		○
Bronze, long-chipping	CuAl5, CuAl9Mn, CuSn10	≤850		○
	CuAl11Ni, CuBe2	≤1000		○
Duroplastics	Bakelit, Resopal, Pertinax, Moltopren	≤150		○
Thermoplastics	Plexiglas, Hostalen, Novodur, Makralon	≤100		○
New cast materials CGI	GGV25, GGV35		≤220 HB	○
	GGV40, GGV50, SiMo 6		≤300 HB	○
New cast materials ADI	ADI800, ADI1000	≤1000		○
	ADI1200, ADI1400	≤1400		○
Kevlar	Kevlar	≤1000		○
Glass, carbon concent. plastics	GRP/CFRP	≤1000		○

MACHINE
REAMERS

496	468	405
212	212-2	208
HSS-E		



B



B



B

MACHINE
REAMERS

1409	720	5527
8093	8051	GS
Carbide		



B



B



B



Vc m/min	Feed col. no.			Vc m/min	Feed col. no.		
16	72	72	72	18	72	72	72
12	72	72	72	16	72	72	72
12	72	72	72	18	72	72	72
10	71	71	71	16	72	72	72
14	72	72	72	18	71	71	71
12	71	71	71	16	72	72	72
10	71	71	71	14	71	71	71
10	71	71	71	14	71	71	71
8	71	71	71	12	71	71	71
16	72	72	72	18	71	71	71
10	71	71	71	14	71	71	71
8	71	71	71	12	71	71	71
10	71	71	71	14	71	71	71
8	71	71	71	12	71	71	71
14	72	72	72	12	71	71	71
10	71	71	71	10	71	71	71
10	71	71	71	10	71	71	71
6	72	72	72	8	71	71	71
6	72	72	72	6	71	71	71
4	72	72	72	6	71	71	71
4	71	71	71	6	71	71	71
14	71	71	71	20	71	71	71
12	71	71	71	18	71	71	71
12	71	71	71	20	71	71	71
10	71	71	71	18	71	71	71
6	71	71	71	10	71	71	73
4	71	71	71	10	71	71	73
18	73	73	73	30	73	73	72
18	73	73	73	30	73	73	72
20	72	72	72	40	72	72	72
18	72	72	72	30	72	72	72
20	72	72	72	25	72	72	72
18	72	72	72	25	72	72	72
18	72	72	72	35	72	72	72
16	72	72	72	30	72	72	72
20	72	72	72	35	72	72	72
18	72	72	72	30	72	72	72
18	72	72	72	30	72	72	72
14	72	72	72	25	72	72	72
12	73	73	73	20	73	73	72
14	73	73	73	20	73	73	72
8	71	71	71	16	71	71	73
8	71	71	71	16	71	71	73

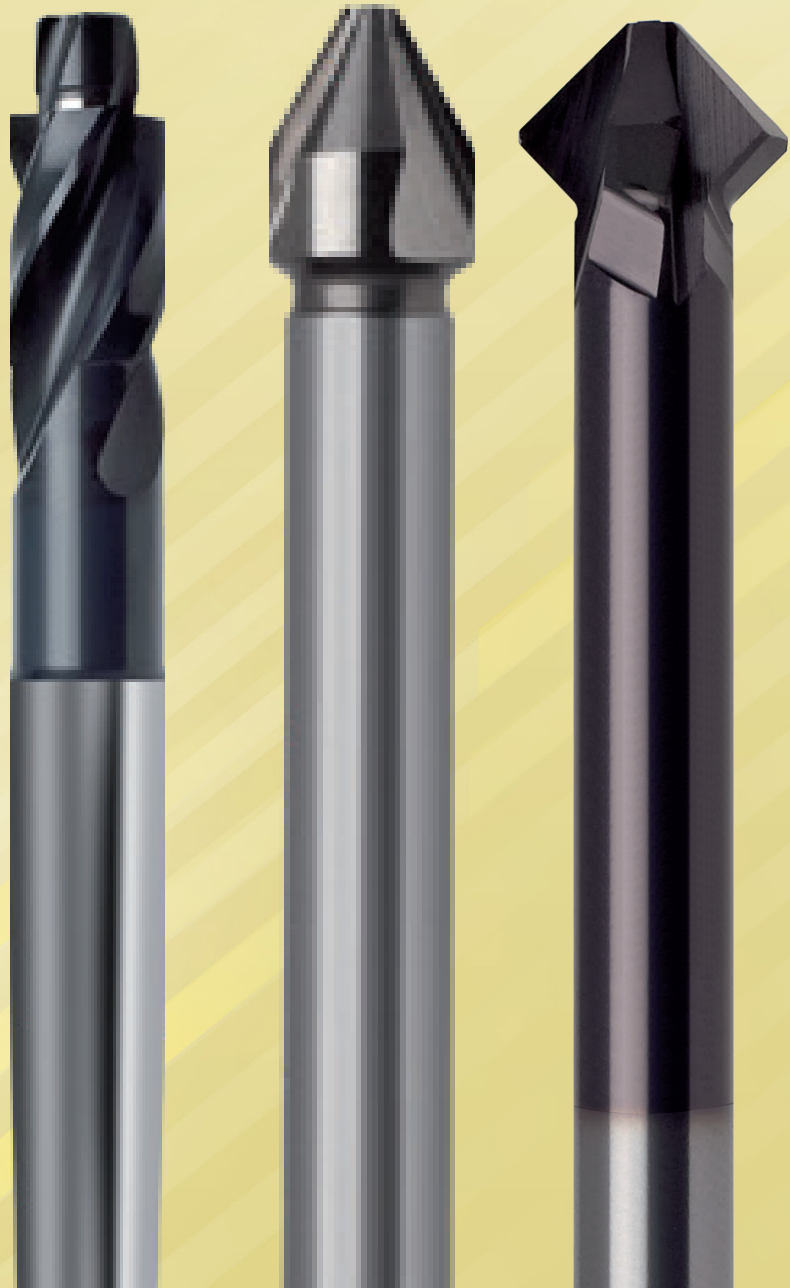
PERFECT
CLAMPING

HMC 3000 Hydraulic chucks
together with solid carbide
micro-precision drills or HR 500
High-performance reamers

- Direct hydraulic clamping
of shanks from $\varnothing 3$ mm
- Quick, simple and
accurate length setting
- Perfect concentricity
 $R < 3 \mu\text{m}$ with $10 \times d1$



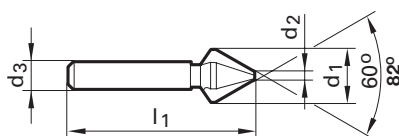
COUNTERSINKS & COUNTERBORES





Guhring no.	472	5670	5674
Standard	DIN 334	DIN 334	DIN 334
Tool material	HSS	HSS	HSS
Surface			
Cutting direction	right-hand	right-hand	right-hand
Form	C	C	C
	60°	60°	82°

NEW



d1	d3	l1	d2	z
mm	mm	mm	mm	
6.300	5.000	45.00	1.600	3
8.000	6.000	50.00	2.000	3
12.500	8.000	56.00	3.200	3
16.000	10.000	63.00	4.000	3
20.000	10.000	67.00	5.000	3
25.000	10.000	71.00	6.300	3

6.350	1.524	50.80	6.350	3
7.938	2.032	50.80	6.350	3
9.525	2.286	50.80	6.350	3
12.700	3.810	57.15	9.525	3
15.875	4.572	57.15	9.525	3
19.050	5.334	69.85	12.700	3
22.225	5.842	69.85	12.700	3
25.400	6.350	69.85	12.700	3
31.750	9.398	76.20	12.700	3

AVAILABILITY

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Coated also available on request.

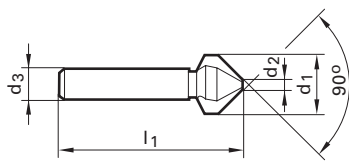
• Australian stock item ○ German stock item



90° COUNTERSINKS (3-FLUTED)

Guhring no.	476	476F	5500
Standard	DIN 335		
Tool material	HSS		HSCO
Surface			
Cutting direction	right-hand	right-hand	right-hand
Form	C	C	C

NEW



d1	d3	l1	d2	z
mm	mm	mm	mm	
4.300	4.000	40.00	1.300	3
5.000	4.000	40.00	1.500	3
5.300	4.000	40.00	1.500	3
5.800	5.000	45.00	1.500	3
6.000	5.000	45.00	1.500	3
6.300	5.000	45.00	1.500	3
7.000	6.000	50.00	1.800	3
7.300	6.000	50.00	1.800	3
8.000	6.000	50.00	2.000	3
8.300	6.000	50.00	2.000	3
9.400	6.000	50.00	2.200	3
10.000	6.000	50.00	2.500	3
10.400	6.000	50.00	2.500	3
11.500	8.000	56.00	2.800	3
12.400	8.000	56.00	2.800	3
13.400	8.000	56.00	2.900	3
15.000	10.000	60.00	3.200	3
16.500	10.000	60.00	3.200	3
19.000	10.000	63.00	3.500	3
20.500	10.000	63.00	3.500	3
23.000	10.000	67.00	3.800	3
25.000	10.000	67.00	3.800	3
26.000	10.000	67.00	3.800	3
28.000	12.000	71.00	4.000	3
30.000	12.000	71.00	4.200	3
31.000	12.000	71.00	4.200	3
40.000	12.000	75.00	10.00	3

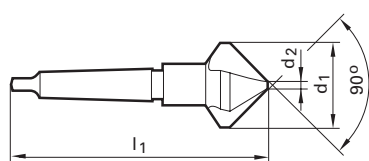
AVAILABILITY		
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•	• 377003325	•
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○		•
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•	○ 377003323	•
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Different coatings available on request.

• Australian stock item ○ German stock item



Guhring no.	477
Standard	DIN 335
Tool material	HSS
Surface	○
Cutting direction	right-hand
Form	D



d1	MT	l1	d2	z
mm		mm	mm	
31.000	2	112.00	4.200	3
34.000	2	118.00	4.500	3
37.000	2	118.00	4.800	3
40.000	3	140.00	10.000	3
50.000	3	150.00	14.000	3
63.000	4	180.00	16.000	3

AVAILABILITY

-
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-
-

Coated also available on request.

• Australian stock item ○ German stock item



90° COUNTERSINKS (3-FLUTED)

Guhring no.

5008

Standard

Guhring std.

Tool material

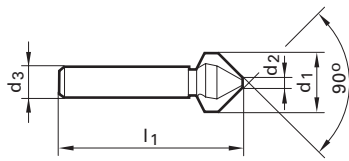
Carbide

Surface



Angle

90°



d1	d3	l1	d2	z
mm	mm	mm	mm	
8.000	8.000	50.00	2.00	3
12.000	12.000	56.00	2.80	3
16.000	16.000	60.00	3.20	3
20.000	20.000	63.00	3.50	3
25.000	25.000	80.00	3.80	3

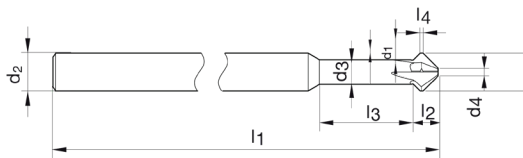
AVAILABILITY

- 302648362
- 302648363
- 302648364
- 302648365
- 302648366

82° also available on request

• Australian stock item ○ German stock item

Gühring no.	495
Standard	Gühring std.
Tool material	Carbide
Surface	
Cutting direction	right-hand



d1	d2	d3	d4	l1	l2	l3	l4	z
mm	mm	mm	mm	mm	mm	mm	mm	
3.00	4.00	2.20	0.60	75.00	5.00	9.30	2.10	4
4.00	4.00	2.90	0.80	75.00	6.00	12.30	2.70	4
5.00	5.00	3.90	1.00	75.00	7.00	15.00	3.00	4
6.00	6.00	3.90	1.20	100.0	8.00	14.30	3.50	4
8.00	6.00	3.90	1.60	100.0	12.00	-	4.70	4
10.00	6.00	6.00	2.00	100.0	12.00	-	6.50	4
12.00	6.00	6.00	2.40	100.0	13.00	-	8.30	4

AVAILABILITY	
	•
	•
	•
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	•

ISO	Hardness	VC	fz (mm/U)/Ø						
			3	6	8	10	12	16	20
P	≤ 850 N/mm²	180	0,08	0,12	0,20	0,20	0,25	0,25	0,25
	≥ 850 N/mm²	150	0,06	0,10	0,15	0,15	0,20	0,20	0,20
M	≤ 750 N/mm²	100	0,06	0,10	0,15	0,15	0,20	0,20	0,20
	≥ 750 N/mm²	80	0,05	0,08	0,12	0,12	0,15	0,15	0,15
K	≤ 350 HB	120	0,08	0,12	0,20	0,20	0,25	0,25	0,25
N*	≤ 3% Si	200	0,10	0,15	0,25	0,25	0,30	0,30	0,30
	≥ 3% Si	150	0,08	0,12	0,20	0,20	0,25	0,25	0,25
S	≤ 850 N/mm²	60	0,05	0,08	0,12	0,12	0,15	0,15	0,15
	≥ 1400 N/mm²	40	0,04	0,06	0,10	0,10	0,12	0,12	0,12
H	≤ 55 HRC	100	0,06	0,10	0,15	0,15	0,20	0,20	0,20
	≥ 63 HRC	40	0,04	0,05	0,06	0,06	0,08	0,08	0,08



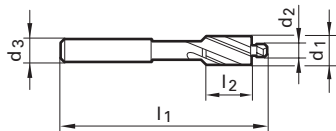
- *Australian stock item*
- *German stock item*

COUNTERBORES WITH FIXED PILOTS FOR FINE TOLERANCES (TAPER SHANK)



COUNTERSINKS &
COUNTERBORES

Guhring no.	485
Standard	Guhring std.
Tool material	HSS
Surface	
Cutting direction	right-hand



d1	d2	MT	l1	l2	for	z
mm	mm		mm	mm	thread	
26.000	17.00	3	192.00	35.00	M16	3
30.000	19.00	3	192.00	35.00	M18	3
33.000	21.00	3	204.00	40.00	M20	3
40.000	25.00	3	204.00	40.00	M24	3

AVAILABILITY
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• Australian stock item ○ German stock item



CUTTING SPEED RECOMMENDATION

Counter-sink Ø mm	Feed column no.					
	81	82	83	84	85	86
	f (mm/rev.)					
2.00	0.03	0.04	0.06	0.08	0.10	0.13
2.50	0.03	0.05	0.07	0.10	0.13	0.16
3.15	0.03	0.05	0.08	0.11	0.15	0.20
4.00	0.04	0.06	0.09	0.13	0.17	0.22
5.00	0.04	0.07	0.10	0.14	0.18	0.23
6.30	0.04	0.07	0.12	0.15	0.19	0.24
8.00	0.05	0.08	0.13	0.16	0.20	0.25
10.00	0.06	0.09	0.14	0.17	0.22	0.26
12.50	0.06	0.10	0.15	0.19	0.23	0.28
16.00	0.07	0.11	0.17	0.21	0.26	0.31
20.00	0.08	0.13	0.18	0.23	0.28	0.33
25.00	0.09	0.15	0.21	0.26	0.30	0.38
31.50	0.12	0.17	0.24	0.30	0.36	0.42
40.00	0.14	0.21	0.28	0.34	0.40	0.46
50.00	0.17	0.24	0.31	0.36	0.42	0.48
63.00	0.20	0.27	0.33	0.38	0.44	0.50
80.00	0.23	0.30	0.35	0.40	0.46	0.52
100.00	0.25	0.30	0.35	0.40	0.46	0.52

Coolant:

- Air
- Neat oil
- Soluble oil

Material group	Material examples	Tensile strength MPa (N/mm²)	Hardness	Coolant
Common structural steels	S185, P275N, P235GH, P265GH, Mild steel, Grade 250 plate, Grade 350 plate	≤500		●
	E295, E360, P500NH	≤1000		●
Free-cutting steels	11SMnPb30, 11SMn37, 1020, S1214, S1213, S12L13, S12L14	≤850		●
	46S20, 46SPb20	≤1000		●
Unalloyed heat-treatable steels	C22, C30E, 1035, 1045, 1055, 1060, 1025	≤700		●
	C45, C45E	≤850		●
	C60, C60E	≤1000		●
Alloyed heat-treatable steels	50MnSi4, 38Cr2, 28Cr4, 3140, 4130, 4140, 4150, 4340, 6150, EN16, EN26	≤1000		●
	36NiCr6, 41Cr4, 42CrMo4	≤1400		●
Unalloyed case hardened steels	C10E, 1010, 1015	≤850		●
Alloyed case hardened steels	10CrMo11, 11MnSi6, 3310, 3415, 5115, 4615, 4620, 5120, 8617, 8620	≤1000		●
	15NiCr13, 16MnCr5, 20CrMo5, N33, EN36A	≤1400		●
Nitriding steels	34CrAl6	≤1000		●
	31CrMoV9, 34CrAlNi7	≤1400		●
Tool steels	C75W, 102Cr6, 29CrMoV9, H11, H13, P20, D2, D3	≤850		●
	X210Cr12, X42Cr13, 105WCr6, X45NiCrMo4	≤1400		●
High speed steels	S 6-5-2-5, S 6-5-2, S 6-5-3, M2, M3, M35, M45	≤1400		●
Spring steels	55Si7, 55Cr3, 51CrV4, 5155, 6150, 9255		≤350 HB	●
Stainless steels, sulphured	X12CrS13, X14CrMoS17, X6CrMoS17, X8CrNiS18-9, 410S, 430F, 630	≤900		●
austenitic	X5CrNi18-10, X6CrNiTi18-10, X6CrNiMoTi 17-12-2, 302, 303, 304, 310, 316, 316Ti, 321	≤1100		●
martensitic	X20CrNi172, X39CrMo17-1, X2CrMoTi18-2, 410, 410X, 416, 420, 420C, 431, 440C	≤1500		●
Hardened steels	–		≤48 HRC	●
			≤66 HRC	●
Special alloys	Nimonic, Inconel, Monel, Hastelloy, Bisalloy	≤2000		●
Cast iron	GG10, GG15, GG20		≤240 HB	●○
	GG25, GG30, GG35 GG40		≤350 HB	●○
Spheroidal graphite iron and malleable cast iron	GGG40, GGG50, GGG60, 32510, GTW35		≤240 HB	●
Chilled cast iron	GGG70, GTS70, 50005, Nodular Iron		≤350 HB	●
Ti and Ti-alloys	Ti99,5, TiAl5Sn2,5, TiCu2	≤850		●
	TiAl6Zr5, TiAl6V4, TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
Aluminium and Al-alloys	Al99,5, AlMgSi1, AlMg1	≤400		●
Al wrought alloys	AlMgSiPb, AlCuMg1, AlMg3Si, AlZnMgCu1,5	≤650		●
Al cast alloys ≤ 10 % Si	G-AlSi5Cu1, G-AlSi7Cu3, G-AlSi9	≤600		●
≤ 24 % Si	G-AlSi12, G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
Magnesium alloys	MgMn2, G-MgAl8Zn1, G-MgAl6Zn1	≤400		○
Copper, low-alloyed	SE-Cu, CuSn6, G-CuSn5ZnPb	≤500		●
Brass, short-chipping	CuZn39Pb2, CuZn39Pb3, CuZn43Pb2	≤600		●
long-chipping	CuZn20, CuZn33, CuZn37Pb0,5	≤600		●
Bronze, short-chipping	CuSn7ZnPb, CuPb5Sn5, CuPb10Sn	≤600		●
	CuNi18Zn19Pb	≤850		●
Bronze, long-chipping	CuAl5, CuAl9Mn, CuSn10	≤850		●
	CuAl11Ni, CuBe2	≤1000		●
Duroplastics	Bakelit, Resopal, Pertinax, Moltopren	≤150		○
Thermoplastics	Plexiglas, Hostalen, Novodur, Makralon	≤100		●○
New cast materials CGI	GGV25, GGV35		≤220 HB	●○
	GGV40, GGV50, SiMo 6		≤300 HB	●○
New cast materials ADI	ADI800, ADI1000	≤1000		●○
	ADI1200, ADI1400	≤1400		●○
Kevlar	Kevlar	≤1000		○
Glass, carbon concent. plastics	GRP/CFRP	≤1000		○

Gühring no.

Standard/DIN

Tool material

Surface finish

Angle of taper

Type/Form

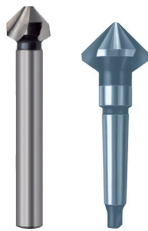


COUNTERSINKS

5670 / 5500
334
HSS HSCO
60° / 90°
C

472 / 476	477
334 / 335	335
HSS	HSS
60° / 90°	90°
C	D

482	485
373	G.S
HSS	HSS
with fixed pilot	
pilot	



Vc m/min	Feed col. no.
41	83
39	82
41	83
39	82
41	83
39	83
25	82
19	83
15	82
32	83
19	83
13	82
19	82
15	81
22	82
19	81
19	81
13	81
20	82
15	81
18	81
10	81
32	83
20	83
28	83
25	83
10	81
19	82
13	81
114	84
89	84
51	83
39	83
127	84
76	84
101	84
64	84
39	84
33	84
31	84
25	84
39	84
51	84
28	83
18	83

Vc m/min	Feed col. no.	
32	86	86
30	85	85
32	86	86
30	85	85
32	85	85
30	85	85
20	85	85
15	85	85
12	84	84
25	86	86
15	85	85
10	84	84
15	85	85
12	84	84
17	85	85
15	84	84
15	84	84
10	84	84
16	85	85
12	84	84
14	84	84
8	84	84
25	85	85
16	85	85
22	85	85
20	84	84
8	84	84
15	86	86
10	85	85
90	86	86
70	86	86
40	86	86
30	86	86
100	86	86
60	85	85
80	85	85
50	85	85
30	86	86
26	86	86
24	86	86
20	86	86
30	85	85
40	85	85
25	85	85
16	84	84
70	85	85

Vc m/min	Feed col. no.	
32	85	85
30	85	85
32	85	85
30	85	85
32	85	85
30	85	85
20	84	84
15	84	84
12	84	84
25	85	85
15	84	84
10	84	84
15	85	85
12	84	84
17	84	84
15	84	84
15	84	84
10	84	84
16	84	84
12	84	84
14	84	84
8	84	84
25	85	85
16	84	84
22	84	84
20	84	84
8	84	84
15	85	85
10	85	85
90	85	85
70	86	86
40	85	85
30	85	85
100	86	86
60	84	84
80	85	85
50	85	85
30	86	86
26	86	86
24	86	86
20	86	86
30	84	84
40	85	85
25	85	85
16	84	84
70	84	84

GSS
2000

Benefit from the advantages of GSS 2000

- ▷ high performance spindle, hence quick change time
- ▷ overheating protection for holder
- ▷ automatic mode possible error detection
- ▷ heating programs
- ▷ maximum rigidity
- ▷ highest cutting rates



COUNTERSINKS & COUNTERBORES

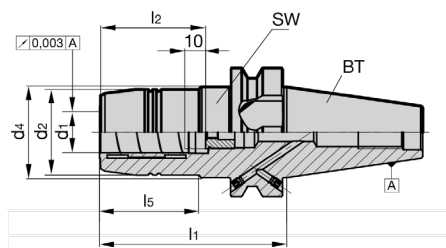
TOOLHOLDERS



Guhring no.

4221

HYDRAULIC CHUCK



Balancing quality: G2.5 / 25,000 rev./min



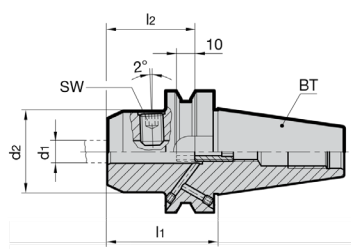
Code No.	d1 h6	d2	d4	l1	l2	l5	BT	SW
	mm	mm	mm	mm	mm	mm		
6.040	6	26.0	44.5	90.0	37	43.0	40	5
8.040	8	28.0	44.5	90.0	37	44.5	40	5
10.040	10	30.0	44.5	90.0	41	44.5	40	5
12.040	12	32.0	44.5	90.0	46	44.5	40	5
14.040	14	34.0	44.5	90.0	46	44.5	40	5
16.040	16	38.0	44.5	90.0	49	47.5	40	5
18.040	18	40.0	44.5	90.0	49	47.5	40	5
20.040	20	49.5	49.5	72.5	51	-	40	5
20.140	20	42.0	44.5	90.0	51	47.5	40	6
25.040	25	49.5	49.5	83.0	57	-	40	6
32.040	32	63.0	80.0	83.0	61	25.5	40	6

AVAILABILITY
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Guhring no.

4233

SIDE LOCK HOLDER



Balancing quality of G6.3 / 15,000 rev./min



Code No.	d1 h6	d2	l1	l2	BT	SW
	mm	mm	mm	mm		
6.040	6	25	50	36	40	3
8.040	8	28	50	36	40	4
10.040	10	35	63	40	40	5
12.040	12	42	63	45	40	6
14.040	14	44	63	45	40	6
16.040	16	48	63	48	40	6
18.040	18	50	63	48	40	6
20.040	20	52	63	50	40	8
25.040	25	63	90	56	40	10
32.040	32	72	100	60	40	10

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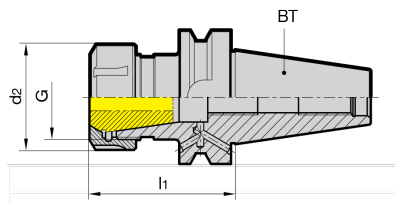
• Australian stock item ○ German stock item



Guhring no.

4245

BT40 ER COLLET HOLDER



Balancing quality of G6.3 / 15,000 rev./min

Code No.	clamping range	d2	G	l1	BT
		mm		mm	
16.040	ER16 1-10	32	M22X1.5	63	40
25.040	ER25 1-16	42	M32X1.5	60	40
32.040	ER32 2-20	50	M40X1.5	70	40
16.140	ER16 1-10	32	M22X1.5	160	40
25.140	ER25 1-16	42	M32X1.5	160	40
32.140	ER32 2-20	50	M40X1.5	160	40

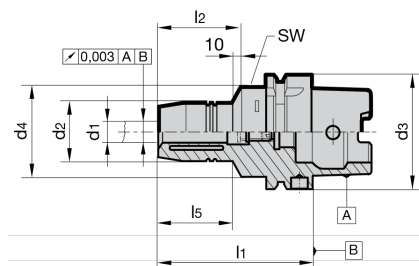
AVAILABILITY

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Guhring no.

4299

HSK-63 HYDRAULIC HOLDER



Balancing quality of G2.5/ 25,000 rev./min

Code No.	d1 h6	d2	d4	l1	l2	l5	HSK	SW
	mm	mm	mm	mm	mm	mm		
6.063	6	26.0	50.0	70.0	37	24.5	63	5
8.063	8	28.0	50.0	70.0	37	24.5	63	5
10.063	10	30.0	50.0	80.0	41	35.5	63	5
12.063	12	32.0	50.0	85.0	46	41.5	63	5
14.063	14	34.0	50.0	85.0	46	41.5	63	5
16.063	16	38.0	50.0	90.0	49	45.5	63	5
18.063	18	40.0	50.0	90.0	49	48.5	63	5
20.063	20	42.0	50.0	90.0	51	47.5	63	5
25.063	25	57.0	63.0	120.0	57	55.3	63	6
32.063	32	64.0	75.0	125.0	61	63	63	6

AVAILABILITY

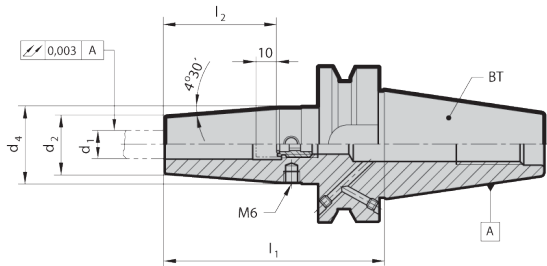
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• Australian stock item ○ German stock item

Guhring no.

4739

TOOLHOLDERS



Code No.	d1 h6	d2	d4	l1	l2	BT
	mm	mm	mm	mm	mm	
3.040	3	10.0	18.0	80.0	30	40
4.040	4	10.0	18.0	80.0	35	40
5.040	5	10.0	18.0	80.0	40	40
6.040	6	21.0	27.0	80.0	36	40
9.040	8	21.0	27.0	80.0	36	40
10.040	10	24.0	32.0	80.0	41	40
12.040	12	24.0	32.0	80.0	46	40
14.040	14	27.5	34.0	80.0	46	40
16.040	16	27.0	34.0	80.0	49	40
18.040	18	33.5	42.0	90.0	49	40
20.040	20	33.0	42.0	90.0	51	40
25.040	25	44.0	53.0	100.0	57	40
32.040	32	44.0	53.0	100.0	61	40

AVAILABILITY

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GSS 2000 Eco-Plus

Product information

- 1-place system

Scope of delivery

- incl. base system
- incl. induction coil article no. 4743 / version 2008
- incl. 1 limit stop collar set article no. 4769 / version 2008
- incl. SpeedCooler article no. 4747
- incl. 1 pair of gloves article no. 4750
- with integrated SpeedCooler-Manager
- order HSK-/ISO-holders article nos. 4761, 4762 separately!



AVAILABILITY

4752 10.000

• Australian stock item ○ German stock item

Power milling with PinLock

Drawout secure volume machining – with Guhrojet cooling

Perfect combination - HPC clamping chuck with PinLock drawout safety

- process reliable (no tool drawout, no component damage)
- long tool life and optimal surface finish
- simple handling
- standard milling tools therefore no licenses required

Thanks to the application of a PinLock clamping sleeve with securing pin any drawout of the applied standard milling tools with HB shank to DIN 6535 is safely prevented. The combination of HPC clamping technology with perfect concentricity and the efficient Guhrojet peripheral cooling achieves, until now, unachieved metal removal rates, tool life and surface quality. All this with standard tools and absolute protection against unwanted drawout effects.

SPARE PAGE

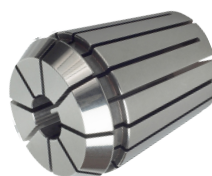
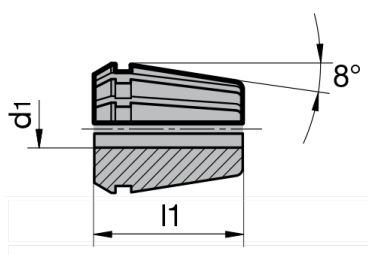
|GÜHROJET|

|PINLOCK|



Guhring no.	4307	4175
Standard	Guhring std.	Guhring std.
Tool material	HSS	HSS

ER-32 COLLETS



Metallic Sealed

Code No.	nom. size	clamping range d1	l1
		mm	mm
2.032	ER32 (470E)	2.0-1.0	40.0
2.532	ER32 (470E)	2.5-1.5	40.0
3.032	ER32 (470E)	3.0-2.0	40.0
4.032	ER32 (470E)	4.0-3.0	40.0
5.032	ER32 (470E)	5.0-4.0	40.0
6.032	ER32 (470E)	6.0-5.0	40.0
7.032	ER32 (470E)	7.0-6.0	40.0
8.032	ER32 (470E)	8.0-7.0	40.0
9.032	ER32 (470E)	9.0-8.0	40.0
10.032	ER32 (470E)	10.0-9.0	40.0
11.032	ER32 (470E)	11.0-10.0	40.0
12.032	ER32 (470E)	12.0-11.0	40.0
13.032	ER32 (470E)	13.0-12.0	40.0
14.032	ER32 (470E)	14.0-13.0	40.0
15.032	ER32 (470E)	15.0-14.0	40.0
16.032	ER32 (470E)	16.0-15.0	40.0
17.032	ER32 (470E)	17.0-16.0	40.0
18.032	ER32 (470E)	18.0-17.0	40.0
19.032	ER32 (470E)	19.0-18.0	40.0
20.032	ER32 (470E)	20.0-19.0	40.0

AVAILABILITY	
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ER-16, ER-20, ER-25 available on request

• Australian stock item ○ German stock item

DRILL SET

HSS JOBBER DRILL SET

Diameter 1.0 - 10.0 mm drill set in 0.1 mm increments
91pcs

JOBBER DRILLS: Part No. 205 0,000
377002081

TIN TIP COATED DRILLS: Part No. 9561 0,005
377005379



HSS JOBBER DRILL SET

Diameter 1.0 - 13.0 mm drill set in 0.5 mm increments
25pcs

JOBBER DRILLS: Part No. 8901 0,014

TIN TIP COATED DRILLS: Part No. 234 6,014



HSS JOBBER DRILL SET

Diameter 1/16 - 1/2 inch drill set in 1/64 inch increments
29pcs

JOBBER DRILLS: Part No. 201 0,021

TIN TIP COATED DRILLS: Part No. 234 0,021
322036485

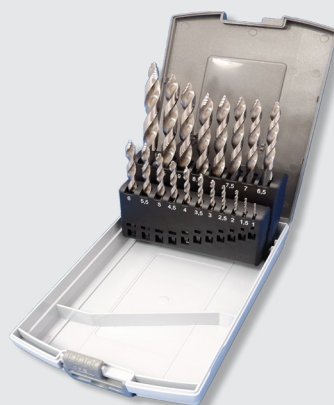


HSS STEP DRILL SET

Diameter 1.0 - 10.0 mm & 1.0 - 13.0 mm drill set
in 0.5 mm increments
19pcs & 25pcs

STEP DRILL SET 1.0 - 10.0 mm : Part No. 9501 0.013

STEP DRILL SET 1.0 - 13.0 mm: Part No. 9501 0.014



MILLING CUTTER SET

RATIO END MILLS SET

Diameter 6.0 - 12.0 mm & 6.0 - 16.0 mm End mill set

4pc SET: Part No. 5735 1,000
377003387

5pc SET: Part No. 5635 1,000



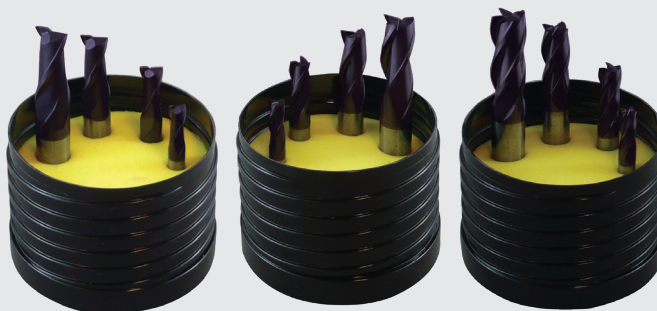
2,3 & 4 FLUTE END MILLS SET

Diameter 6.0 - 12.0 mm flute set

2 FLUTE SLOT DRILLS: Part No. 3676 0,001
377002907

3 FLUTE END MILLS: Part No. 3560 0,001
377002900

4 FLUTE END MILLS: Part No. 3799 1,000



3 FLUTE RF - 100A SET

Diameter 6.0 - 12.0 mm

4pc Set

For Aluminium

3 FLUTE RF 100A: Part No. 3472 0,001
377002897



DRILL AND TAP SETS

GUN TAPS, SPIRAL TAPS, TWIST DRILLS

M3 - M12 Taps 7pcs

Diameter 2.5 - 10.2 mm Drills 7pcs

GUN TAP: Part No. 5696 17,100

SPIRAL TAP: Part No. 5698 17,100

GUN TAPS, SPIRAL TAP, TWIST DRILLS, 90° COUNTERSINKS

M3 - M10 Taps 6pcs

Diameter 2.5 - 8.5 mm drills 6pcs

6.3 - 12.4 mm Countersinks 2pcs

GUN TAP: Part No. 8903 2,000
322036486

SPIRAL TAP: Part No. 8903 1,000



TAP SETS

HSS-E POWERTAPS, STEAM TEMPERED FINISH

Diameter M5, M6, M8, M10 & M12 5pcs

GUN NOSE TAP SET: Part No. 5695 17,000

SPIRAL FLUTE TAP SET: Part No. 5697 17,000



COUNTERBORE SET

COUNTERBORES SET

Straight shank HSS

Diameter M3 - M12 7pcs in plastic box

BRIGHT FINISH: Part No. 482 0,200
302425395



COUNTERSINK SETS

90° COUNTERSINK SET

Straight shank HSS

Diameter 6.3 - 20.5 mm (6 pcs) in plastic box

BRIGHT FINISH: Part No. 498 7,000

FIRE COATING FINISH: Part No. 498 8,000
377003332



82° & 90° SPYROTEC COUNTERSINK SET

Straight shank HSCO

Diameter 6.3 - 20.5 mm (6 pcs) in plastic box

82° TiAlN COATED: Part No. 5676 1,000

90° TiAlN COATED: Part No. 5538 1,000



MILLING SETS

RF 100 SPEED SET

Diameter 6 - 16 mm	5pcs	P/N 6778 1,000
Diameter 6 - 12 mm	4pcs	P/N 6778 2,000
Diameter 6 mm	5pcs	P/N 6778 6,000
Diameter 8 mm	5pcs	P/N 6778 8,000
Diameter 10 mm	3pcs	P/N 6778 10,000
Diameter 12 mm	3pcs	P/N 6778 12,000
Diameter 16mm	3pcs	P/N 6778 16,000



RF 100 DIVER SET

Diameter 6 - 16mm (5 pcs) in plastic box

Part No. 6755 2,000



RF 100 SHARP SET

Diameter 6 - 16mm (5 pcs) in plastic box

Part No. 6482 1,000

Diameter 6 - 12mm (4pcs) in plastic box

Part No. 6482 2,000





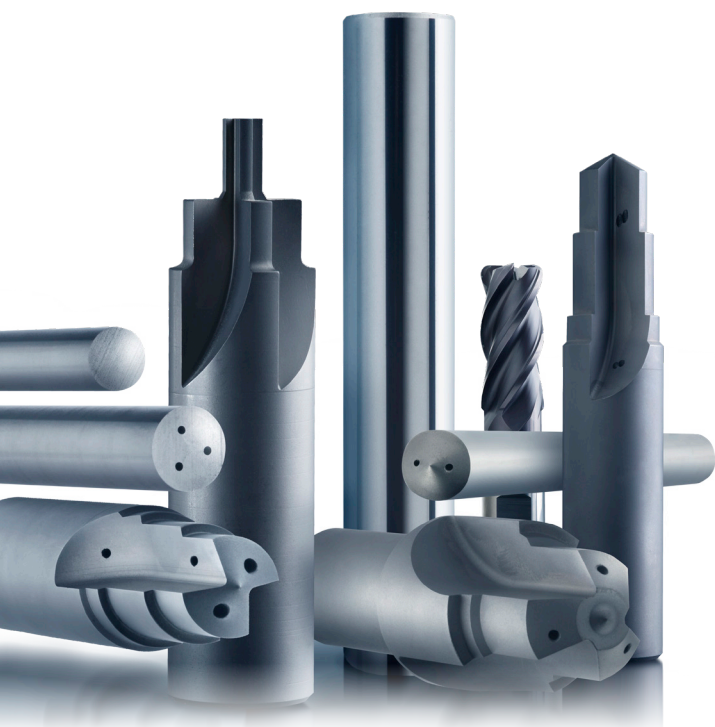
PRODUCTION & SERVICE



Guhring Australia has become a one-stop shop for offering a range of high performance cutting tool solutions, including a local Production and Service Division that manufactures solid carbide special tools in-house, from step drills and reamers to complex form tools and milling cutters. The local grinding division also offers a comprehensive resharpener service for both original Guhring tools as well as competitor products. The division is also equipped with its own in-house PVD coating centre for depositing a range of advanced ceramic coatings.

“THE SHORTEST DELIVERY TIMES FOR THE HIGHEST QUALITY SPECIAL TOOLS WITH PVD COATING!”

Guhring Australia draws on the wealth of knowledge and experience from our eleven years since setting up our special tools division. In addition, with support from our parent company in Germany, we are able to offer rapid delivery of custom-made special tools at highly competitive prices, complete with in-house coating facilities. If the need arises our highly experienced local team can deliver special coated carbide cutting tools within 48 hours. No other cutting tool company can offer such a rapid and complete solution in Australia.



High quality carbide

Guhring Australia uses only German-made Guhring carbide rods for the in-house production of special tools. A large range of carbide rods are kept in stock to meet the increasing demands from the machine-tool industry for the highest possible performance from specialist cutting tools.

Re-grinding

Worn tools don't belong on the scrap heap. Regrinding can offer a highly cost effective solution to reduce overall tooling costs by regrinding and recoating tools to near as-new condition. The service is not only for Guhring tools but also competitor products.

Get a quotation now

Quotation within 24 hours!
Tool delivery within 3 weeks!
Call us on 1800 639 991

For special applications it is desirable to increase the wear resistance of tools and improve the coefficient of friction between the tool and the workpiece material using special PVD coatings. Guhring offer a range of advanced wear-resistant coatings from an in-house PVD coating facility.

S S-coating or TiN coating (Titanium nitride)

Physical appearance: golden colour. Well proven, cost efficient all-round coating. Achieving performance increases. Surpassed in certain cases by other more advanced coatings.

A Super A-coating or AlTiN-coating (Aluminium titanium nitride)

Physical appearance: Black-violet colour. Guhring's well-proven A-coat has undergone continuous development by optimising the structural, chemical and mechanical properties of the coating. The result is the Super A-coating that has extremely high hot hardness, very good oxidation resistance as well as excellent coating adhesion. This coating is suitable for the machining of difficult-to-machine materials such as titanium-alloys, Inconel and hardened steels as well as for hard machining (>52HRC) and HSC.

F FIRE coating

Physical appearance: violet-black colour. Multilayer TiAlN-coating with a graded structure. All-round coating achieving at least twice the performance of TiN. Combines the advantages of TiN, TiAlN and TiCN. Excellent, near "fire resistant" heat resistance. High toughness.

C ICE coating (AlCrN-coat)

Physical appearance: metallic grey. The coating is specially adapted to satisfy the demands of high temperature and MQL machining applications. Our ICE-coat is based on aluminium chromium nitride (AlCrN) and possesses an extremely high oxidation resistance and hot hardness thanks to the high chromium content. The result is a high wear resistance and productivity in difficult to machine applications.

Z ZENIT coating

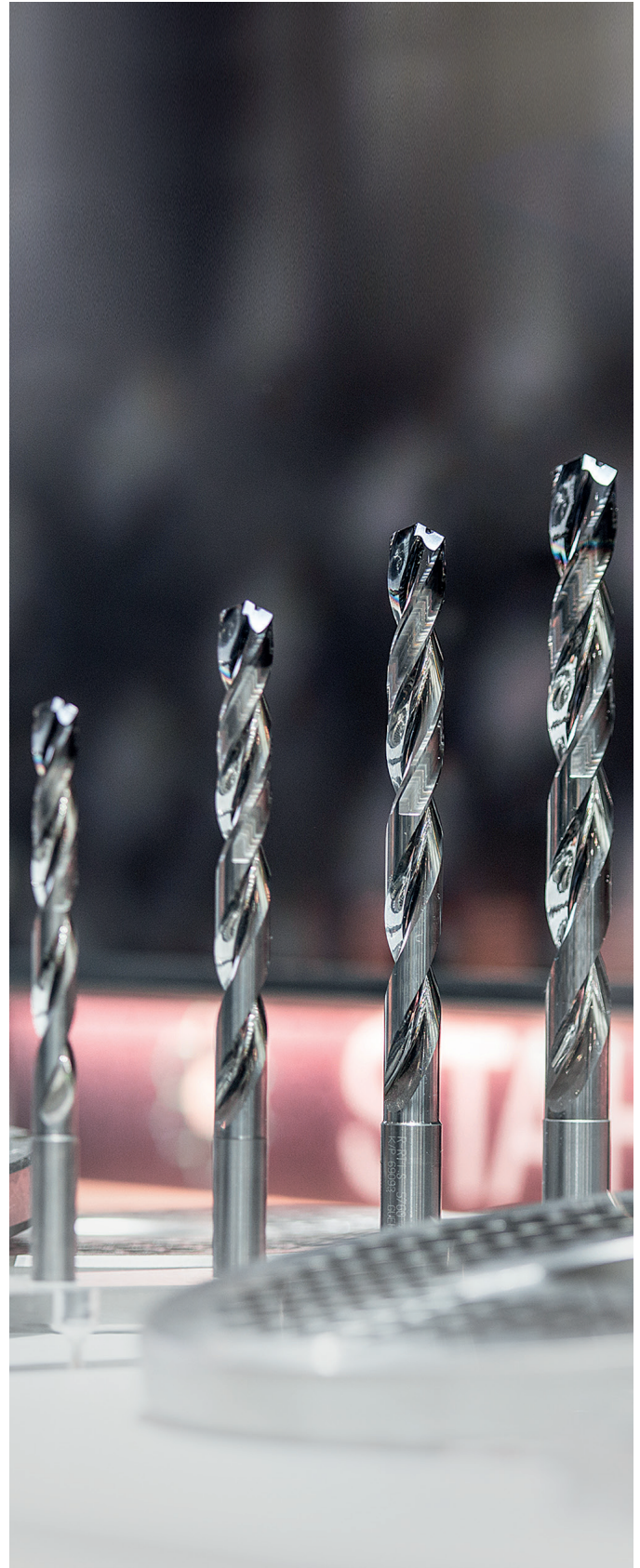
Physical appearance: pale yellow colour. The Zenit coating is specifically designed for non-ferrous applications, especially for milling of aerospace grade titanium alloys.

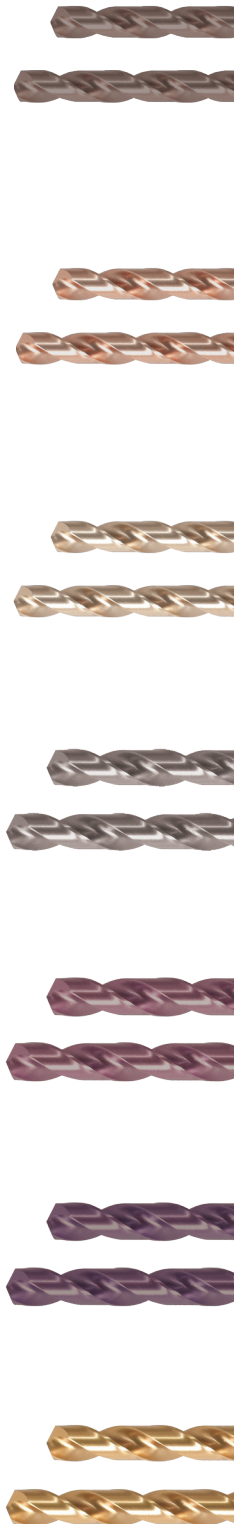
E Endurum coating

Physical appearance: copper. This coating is adapted for the drilling of low-alloyed steels such as carbon, free-cutting and manganese-alloyed steels.

Y Signum coating

Physical appearance: bronze. This signum coating has an extremely high hardness, that is retained even at high temperatures. The coating provides an especially high wear-resistance and at the same time, a high diffusion resistance.



							
	S-coating <i>TiN</i>	Super-A Coating <i>TiAlN</i>	FIRE Coating <i>TiN/TiAlN</i>	ICE Coating <i>TiAlCrN</i>	Zenit Coating <i>ZrN/AlTiN</i>	Endurum Coating <i>TiAl/TiSi</i>	Signum Coating <i>TiAlY/TiAlSiMoCr</i>
Colour	Gold	Grey Violet	Black Violet	Metallic Silver	Light Gold	Copper	Bronze Copper
Coating process	Physical Vapour Deposition	Physical Vapour Deposition	Physical Vapour Deposition	Physical Vapour Deposition	Physical Vapour Deposition	Physical Vapour Deposition	Physical Vapour Deposition
Layer structure	Monolayer	Monolayer	Graded Multilayer	Nanolayer	Nanolayer	Multilayered	Multilayered Nano Composite
Thickness [µm]	1.5 – 3.0	1.5 – 3.0	2.0 – 4.0	2.0 – 4.0	2.0 – 3.0	2.0 – 4.0	3.0 – 5.0
Hardness [HV 5g]	2300	3400	3300	3500	3000	4000	5500
Friction coefficient	0.4	0.6	0.6	0.5	0.3	0.6	0.5
Deposition temp. [°C]	400 – 500°C	400 – 500°C	400 – 500°C	400 – 500°C	400 – 500°C	400 – 500°C	400 – 500°C
Maximum operating temperature [°C]	600°C	900°C	800°C	1000°C	800°C	800°C	800°C+
Applications	General	High Performance	High Performance	High Performance	High Performance	High Performance	High performance
Workpiece materials	General	Hardened steels Cast irons AlSi alloys	Hardened steels Cast irons AlSi alloys	Hardened steels Cast irons, AlSi and Titanium alloys	Non ferrous, stainless steel	Carbon, free machining manganese, alloyed steel, low alloyed steel	Stainless steel, hardened high strength steels, cast iron

RECYCLING

Guhring recycling carbide protects the environment and conserves resources.

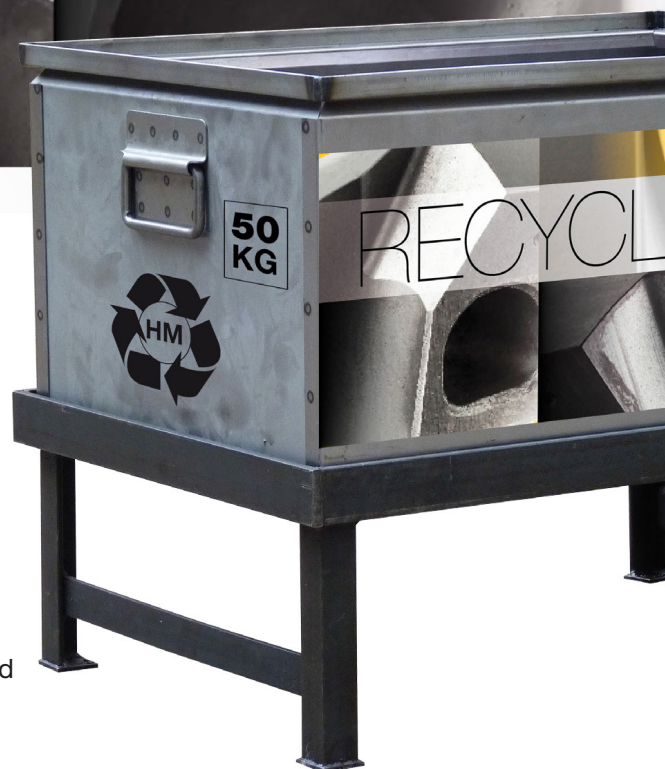
Throw away high quality used carbide? It's just too valuable.

We offer you an environment-friendly and economically attractive solution: Our Recycling Carbide Tools.

Thanks to our own carbide technology we are able to recycle this valuable raw material.

By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. You also earn extra money.

Please fill out the form below or call us on 1800-639-991 to obtain the latest price.



Company

Address

Name

Suburb

Postcode

Telephone

Fax

E-Mail

Approx. Weight of used carbide tools

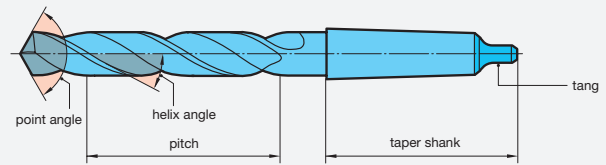
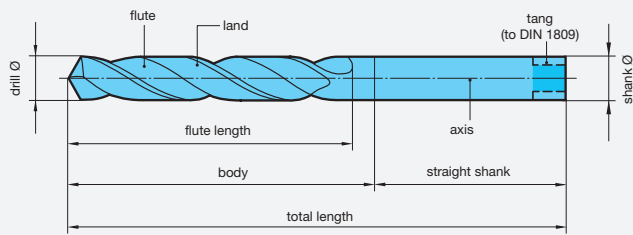
(e.g. carbide inserts, drills, taps, end mills, reamers, and milling cutters)

Kg

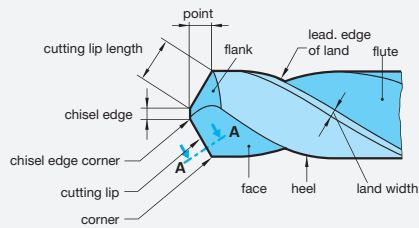
TECHNICAL INFORMATION



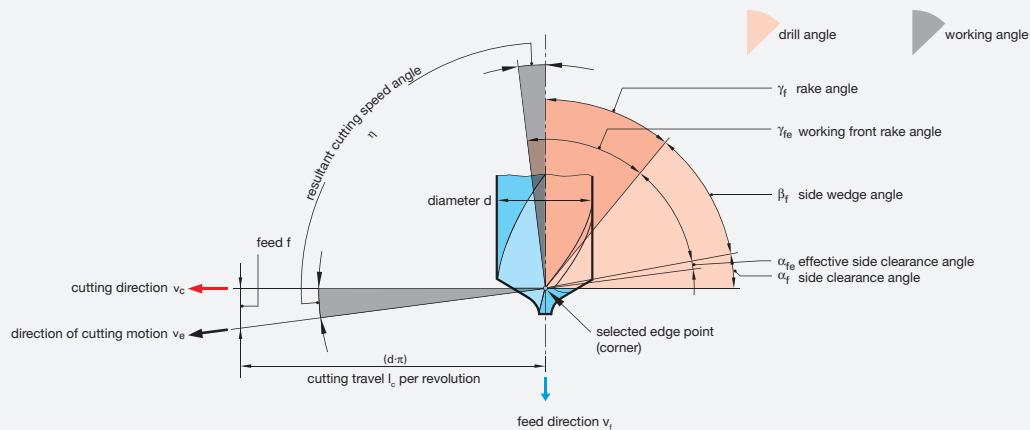
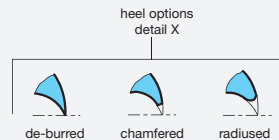
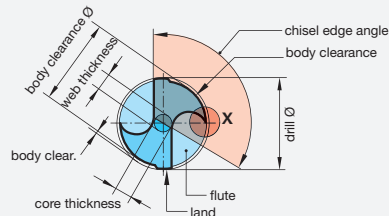
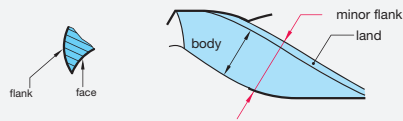
Twist drills with straight / Morse taper shank



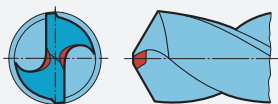
Cutting portion



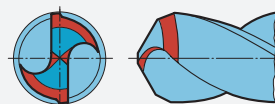
Cross section A-A
cutting wedge



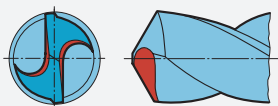
Special point geometry to DIN 1412 (extract; edition 03/01)



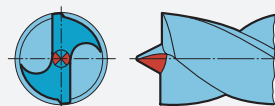
Form A
Thinned chisel edge



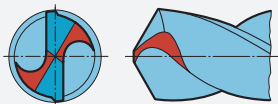
Form D
Point ground
for cast iron



Form B
Thinned chisel edge with
corrected cutting lips



Form E
Brad point
(center point)



Form C
Split point



Twist drill manufacturing tolerances to DIN ISO 286, part 2

diameter (nominal size) up to and incl. mm	tolerance range mm	
	h8	h7
0.38 ... 0.60	10	7
0.95	12	8
3.00	14	10
6.00	18	12
10.00	22	15
18.00	27	18
30.00	33	21
50.00	39	25
80.00	46	30
120.00	54	35

* If you need tolerances other than ISO h8 please let us know. Additional charges for closer diameter tolerance see additional charges at the end of chapter Drilling Tools.

Reference to other relevant standards

DIN 228	Part 1 machine tapers; Morse tapers and metric tapers, taper shank
DIN 1414-1	Directions for design and use for high speed steel twist drills
DIN 6580	Definitions of the metal-cutting industry; motions and geometry of the cutting process
DIN 6581	Definitions of the metal-cutting industry; Cutting portion reference systems and angles

The standard descriptions above are given with the permission from the German Standards Institute (Deutsches Institut für Normung). The most recent editions of the standard sheets apply and are available in DIN A 4 format from Beuth-Verlag GmbH, D-10787 Berlin.

Conversion table inch - millimetre (From 1/64 to 11 63/64)

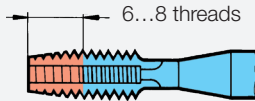
Fraction	mm	inch	Fraction	mm	inch	Fraction	mm	inch	Fraction	mm	inch	Fraction	mm	inch	Fraction	mm	inch
-	0.10	0.0039	66	0.84	0.0330	3/32	2.38	0.0938	10	4.91	0.1935	Q	8.43	0.3320	-	16.00	0.6299
97	0.15	0.0059	65	0.89	0.0350	41	2.44	0.0960	9	4.98	0.1960		8.50	0.3346	41/64	16.27	0.6406
96	0.16	0.0063	-	0.90	0.0354	40	2.50	0.0980	-	5.00	0.1968	R	8.61	0.3390		16.50	0.6496
95	0.17	0.0067	64	0.91	0.0360	39	2.53	0.0995	8	5.05	0.1990	11/32	8.73	0.3438	21/32	16.67	0.6562
94	0.18	0.0071	63	0.94	0.0370	38	2.58	0.1015	7	5.11	0.2010		8.75	0.3445	-	17.00	0.6693
93	0.19	0.0075	62	0.97	0.0380	37	2.64	0.1040	13/64	5.16	0.2031	S	8.84	0.3480	43/64	17.07	0.6719
92	0.20	0.0079	61	0.99	0.0390	36	2.71	0.1065	6	5.18	0.2040	-	9.00	0.3543	11/16	17.46	0.6875
91	0.21	0.0083	-	1.00	0.0394	7/64	2.78	0.1094	5	5.22	0.2055	T	9.09	0.3580		17.50	0.6890
90	0.22	0.0087	60	1.02	0.0400	35	2.79	0.1100		5.25	0.2067	23/64	9.13	0.3594	45/64	17.86	0.7031
89	0.23	0.0091	59	1.04	0.0410	34	2.82	0.1110	4	5.31	0.2090	U	9.35	0.3680	-	18.00	0.7087
88	0.24	0.0095	58	1.07	0.0420	33	2.87	0.1130	3	5.41	0.2130		9.50	0.3740	23/32	18.26	0.7188
-	0.25	0.0098	57	1.09	0.0430		2.90	0.1142		5.50	0.2165	3/8	9.53	0.3750		18.50	0.7283
87	0.25	0.0100	56	1.18	0.0465	32	2.95	0.1160	7/32	5.56	0.2188	V	9.56	0.3770	47/64	18.65	0.7344
	0.26	0.0102	3/64	1.19	0.0469	-	3.00	0.1181	2	5.61	0.2210	W	9.80	0.3860	-	19.00	0.7480
86	0.27	0.0105		1.20	0.0472	31	3.05	0.1200	1	5.79	0.2280	25/64	9.92	0.3906	3/4	19.05	0.7500
	0.27	0.0106		1.25	0.0492	1/8	3.18	0.1250	A	5.94	0.2340	-	10.00	0.3937	49/64	19.45	0.7656
85	0.28	0.0110		1.30	0.0512	30	3.26	0.1285	15/64	5.95	0.2344	X	10.08	0.3970		19.50	0.7677
	0.29	0.0114	55	1.32	0.0520		3.30	0.1299	-	6.00	0.2362	Y	10.26	0.4040	25/32	19.84	0.7812
84	0.29	0.0115	54	1.40	0.0550	29	3.45	0.1360	B	6.05	0.2380	13/32	10.32	0.4062	-	20.00	0.7874
-	0.30	0.0118		1.45	0.0571		3.50	0.1378	C	6.15	0.2420	Z	10.49	0.4130	51/64	20.24	0.7969
83	0.30	0.0120		1.50	0.0591	28	3.57	0.1405	D	6.25	0.2460		10.50	0.4134		20.50	0.8071
82	0.32	0.0125	53	1.51	0.0595	9/64	3.57	0.1406	1/4	6.35	0.2500	27/64	10.72	0.4219	13/16	20.64	0.8125
	0.32	0.0126		1.55	0.0610	27	3.66	0.1440	E	6.35	0.2500	-	11.00	0.4331	-	21.00	0.8268
81	0.33	0.0130	1/16	1.59	0.0625	26	3.73	0.1470		6.50	0.2559	7/16	11.11	0.4375	53/64	21.03	0.8281
80	0.34	0.0135		1.60	0.0630		3.75	0.1476	F	6.53	0.2570		11.50	0.4528	27/32	21.43	0.8438
79	0.37	0.0145	52	1.61	0.0635	25	3.80	0.1495	G	6.63	0.2610	29/64	11.51	0.4531		21.50	0.8465
1/64	0.40	0.0156		1.65	0.0650	24	3.86	0.1520	17/64	6.75	0.2656	15/32	11.91	0.4688	55/64	21.84	0.8594
78	0.41	0.0160	51	1.70	0.0670	23	3.91	0.1540		6.75	0.2657	-	12.00	0.4724	-	22.00	0.8661
77	0.46	0.0180		1.75	0.0689	5/32	3.97	0.1562	H	6.76	0.2660	31/64	12.30	0.4844	7/8	22.23	0.8750
-	0.50	0.0197	50	1.78	0.0700	22	3.99	0.1570	I	6.91	0.2720		12.50	0.4921		22.50	0.8858
76	0.51	0.0200		1.80	0.0709	-	4.00	0.1575	-	7.00	0.2756	1/2	12.70	0.5000	57/64	22.62	0.8906
75	0.53	0.0210	49	1.85	0.0730	21	4.04	0.1590	J	7.04	0.2772	-	13.00	0.5118	-	23.00	0.9055
74	0.57	0.0225		1.90	0.0748	20	4.09	0.1610	K	7.14	0.2810	33/64	13.10	0.5156	29/32	23.02	0.9062
-	0.60	0.0236	48	1.93	0.0760		4.20	0.1654	9/32	7.14	0.2812	17/32	13.49	0.5312	59/64	23.42	0.9219
73	0.61	0.0240		1.95	0.0768	19	4.22	0.1660	L	7.37	0.2900		13.50	0.5315		23.50	0.9252
72	0.64	0.0250	5/64	1.98	0.0781	18	4.31	0.1695	M	7.49	0.2949	35/64	13.89	0.5469	15/16	23.81	0.9375
71	0.66	0.0260	47	1.99	0.0785	11/64	4.37	0.1719		7.50	0.2953	-	14.00	0.5512	-	24.00	0.9449
-	0.70	0.0276	-	2.00	0.0787	17	4.39	0.1730	19/64	7.54	0.2969	9/16	14.29	0.5625	61/64	24.21	0.9531
70	0.71	0.0280		2.05	0.0807	16	4.50	0.1770	N	7.67	0.3020		14.50	0.5709		24.50	0.9646
69	0.74	0.0292	46	2.06	0.0810	15	4.57	0.1800		7.75	0.3051	37/64	14.68	0.5781	31/32	24.61	0.9688
-	0.75	0.0295	45	2.08	0.0820	14	4.62	0.1820	5/16	7.94	0.3125	-	15.00	0.5906	-	25.00	0.9843
68	0.79	0.0310		2.15	0.0846	13	4.70	0.1850	-	8.00	0.3150	19/32	15.08	0.5938	63/64	25.00	0.9844
1/32	0.79	0.0313	44	2.18	0.0860	3/16	4.76	0.1875	O	8.03	0.3160	39/64	15.48	0.6094	1	25.40	1.0000
-	0.80	0.0315	43	2.26	0.0890	12	4.80	0.1890	P	8.20	0.3230		15.50	0.6102			
67	0.81	0.0320	42	2.37	0.0935	11	4.85	0.1910	21/64	8.33	0.3281	5/8	15.88	0.6250			



CHAMFER FORMS, SELECTION AND APPLICATION

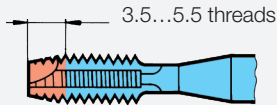
Chamfer forms to DIN 2197

Form A



long, 6 - 8 threads
for short through holes

Form B



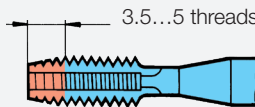
medium, 3.5 - 5.5 threads, with spiral point,
for all through holes and deep tapping holes in medium and long-chipping materials

Form C



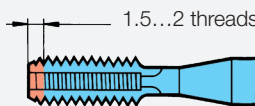
short, 2 - 3 threads
for blind holes and generally for aluminium, grey cast iron and brass

Form D



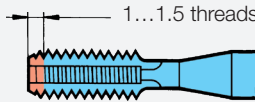
medium, 3.5 - 5 threads
for short through holes

Form E



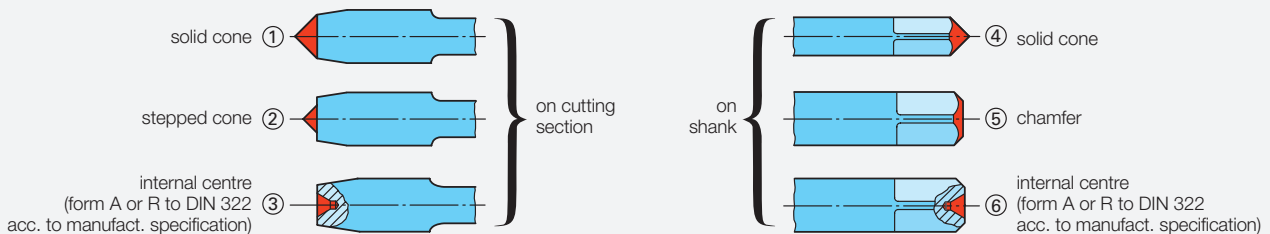
extremely short, 1.5-2 threads,
for blind holes with little run-out depth.

Form F



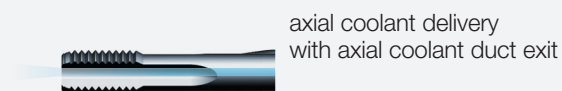
extremely short, 1-1.5 threads, for blind holes with little run-out depth.
Avoid use if possible.

Types of centres (standard, to DIN 2197/DIN 2175)

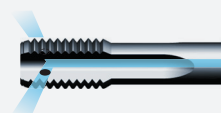


Thread dia. range mm	Centre on cutting section		Centre on shank
	with chamfer forms A, C, D, E	with chamfer form B	
≤ 4.2	1	1	5
> 4.2 ... 5.6	2	1	5
> 5.6 ... 10.0	3	3	5
> 10.0	3	3	6

Coolant duct geometries



axial coolant delivery
with axial coolant duct exit



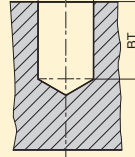
axial coolant delivery with radial
coolant duct exit in the flutes
at the chamfer

For thread forming

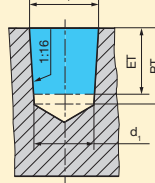
Std. ISO metric threads			ISO metric fine threads					
nom. Ø	pitch	tapp. size hole Ø	nom. Ø	pitch	tapp. size hole Ø	nom. Ø	pitch	tapp. size hole Ø
mm			mm			mm		
M1	0.25	0.90	M 2.5 x 0.35	2.35	M 14 x 1.50	13.30		
M1.2	0.25	1.10	M 3 x 0.35	2.85	M 15 x 1.00	14.55		
M1.4	0.30	1.28	M 4 x 0.35	3.85	M 16 x 1.50	14.30		
M1.6	0.35	1.46	M 4 x 0.50	3.80	M 16 x 1.00	15.55		
M1.7	0.35	1.56	M 5 x 0.50	4.80	M 16 x 1.50	15.35		
M1.8	0.35	1.66	M 5.5 x 0.50	5.30	M 17 x 1.00	16.55		
M 2	0.40	1.85	M 6 x 0.75	5.65	M 17 x 1.50	16.30		
M 2.2	0.45	2.00	M 7 x 0.75	6.65	M 18 x 1.00	17.55		
M 2.5	0.45	2.30	M 8 x 0.75	7.65	M 18 x 1.50	17.30		
M 3	0.50	2.80	M 8 x 1.00	7.55	M 18 x 2.00	17.10		
M 3.5	0.60	3.25	M 9 x 0.75	8.65	M 20 x 1.00	19.55		
M 4	0.70	3.70	M 9 x 1.00	8.55	M 20 x 1.50	19.30		
M 4.5	0.75	4.20	M 10 x 0.75	9.65	M 24 x 1.00	23.55		
M 5	0.80	4.65	M 10 x 1.00	9.55	M 24 x 1.50	23.30		
M 6	1.00	5.55	M 10 x 1.25	9.40	M 24 x 2.00	23.10		
M 7	1.00	6.55	M 11 x 0.75	10.65	M 27 x 1.50	26.30		
M 8	1.25	7.40	M 11 x 1.00	10.55	M 30 x 1.50	29.30		
M 9	1.25	8.40	M 12 x 1.00	11.55	M 33 x 1.50	32.30		
M 10	1.50	9.30	M 12 x 1.25	11.40	M 36 x 1.50	35.30		
M 11	1.50	10.30	M 12 x 1.50	11.30	M 39 x 1.50	38.30		
M 12	1.75	11.20	M 14 x 1.00	13.55	M 42 x 1.50	41.30		
M 14	2.00	13.10	M 14 x 1.25	13.40				
M 16	2.00	15.10						
M 18	2.50	16.90						
M 20	2.50	18.90						
M 22	2.50	20.90						
M 24	3.00	22.70						
M 27	3.00	25.70						
M 30	3.50	28.50						
M 33	3.50	31.50						
M 36	4.00	34.30						
M 39	4.00	37.30						
M 42	4.50	40.10						
BSP-threads			UNC-threads			UNF-threads		
nom. Ø	pitch	tapp. size hole Ø	nom. Ø	pitch	tapp. size hole Ø	nom. Ø	pitch	tapp. size hole Ø
inch per inch			per inch			per inch		
G 1/16	28	7.30	Nr. 1 - 64	1.68	Nr. 1 - 72	1.70		
G 1/8	28	9.30	Nr. 2 - 56	1.98	Nr. 2 - 64	2.00		
G 1/4	19	12.50	Nr. 3 - 48	2.28	Nr. 3 - 56	2.30		
			Nr. 4 - 40	2.55	Nr. 4 - 48	2.60		
G 3/8	19	16.00	Nr. 5 - 40	2.90	Nr. 5 - 44	2.90		
G 1/2	14	20.00	Nr. 6 - 32	3.15	Nr. 6 - 40	3.20		
G 5/8	14	22.00	Nr. 8 - 32	3.80	Nr. 8 - 36	3.85		
G 3/4	14	25.50	Nr. 10 - 24	4.35	Nr. 10 - 32	4.45		
G 7/8	14	29.25	Nr. 12 - 24	5.00	Nr. 12 - 28	5.10		
G 1	11	32.00	1/4 - 20	5.75	1/4 - 28	5.95		
			5/16 - 18	7.30	5/16 - 24	7.45		
			3/8 - 16	8.80	3/8 - 24	9.05		
			7/16 - 14	10.30	7/16 - 20	10.55		
			1/2 - 13	11.80	1/2 - 20	12.10		
			9/16 - 12	13.30	9/16 - 18	13.65		
			5/8 - 11	14.80	5/8 - 18	15.25		
			3/4 - 10	17.90	3/4 - 16	18.35		
			7/8 - 9	21.00	7/8 - 14	21.40		
			1 - 8	24.00	1 - 12	24.45		
G 1 1/4	11	40.75						

BSW threads					
nom. Ø	threads	tapping size hole Ø mm	nom. Ø	threads	tapping size hole Ø mm
inch	per inch		inch	per inch	
W 1/16	60	1.20	W 5/8	11	13.50
W 3/32	48	1.80	W 3/4	10	16.25
W 1/8	40	2.50	W 7/8	9	19.25
W 5/32	32	3.20	W 1	8	22.00
W 3/16	24	3.60	W 1 1/8	7	24.50
W 1/4	20	4.50	W 1 1/4	7	27.75
W 5/16	18	5.10	W 1 3/8	6	30.50
W 3/8	16	6.50	W 1 1/2	6	33.50
W 7/16	14	7.90	W 1 5/8	5	35.50
W 1/2	12	9.20	W 1 3/4	5	39.00
W 9/16	12	10.50	W 2	4.5	44.50
W 5/8	12	12.00			

Version A
(avoid if possible)



Version B

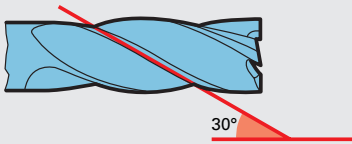


NPT ANSI B 2.1 American tapered pipe thread 1:16						
nom. Ø	threads per inch	tapp. size hole Ø cylindrical (A) d _i	tapp. size hole Ø conical (B) D _i	cutting depth ET mm	cutting depth BT (min) mm	
1/16	- 27	6.15	6.39	9.29	10.7	
1/8	- 27	8.40	8.74	9.32	10.8	
1/4	- 18	11.10	11.36	13.52	15.6	
3/8	- 18	14.30	14.80	13.83	16.0	
1/2	- 14	17.90	18.32	18.07	20.8	
3/4	- 14	23.30	23.67	18.55	21.3	
1	- 11.5	29.00	29.69	22.29	25.6	
1 1/4	- 11.5	37.70	38.45	22.80	26.1	
1 1/2	- 11.5	43.70	44.52	22.80	26.1	
2	- 11.5	55.60	56.56	23.20	26.5	
2 1/2	- 8	66.30	67.62	31.75	36.3	
3	- 8	82.30	83.52	33.74	38.5	

Due to the tensile strength it is not necessary to adhere to the tapping size hole diameter tolerance class 6H; tolerance class 7H satisfies the requirement that the flank coverage of external and internal threads should not fall below $0.32 \times P$. In addition, formed threads generally possess a higher tensile strength in comparison to cut threads thanks to an uninterrupted grain flow and subsequent work hardening.

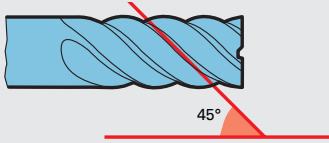


TYPES OF MILLING CUTTERS AND THEIR BASIC APPLICATION RANGE



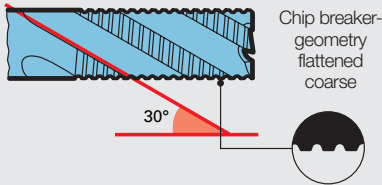
Type N

Quick spiral with 30° helical pitch, suitable for finish milling structural, case hardened and heat-treatable steels as well as short-chipping non-ferrous metals and materials up to
 •1200·N/mm²-tensile strength-applying high speed steel milling cutters
 •1600·N/mm²-tensile strength-applying solid carbide milling cutters



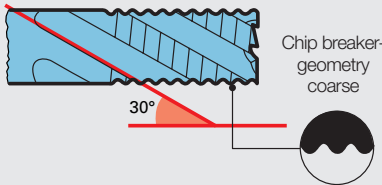
Type NH

Quick spiral with high 45° helical pitch, suitable for super fine finishing high-alloyed materials and grey cast iron up to appr.
 •1600·N/mm²-tensile strength



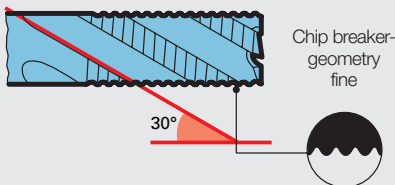
Type NF

Flat knuckle-type teeth/quick spiral, produces short chips and improved smoother surface quality in comparison to type NR or NRf. Suitable for milling standard materials up to appr.
 •1200·N/mm²-tensile strength-applying high speed steel milling cutters
 •1600·N/mm²-tensile strength applying solid carbide milling cutters



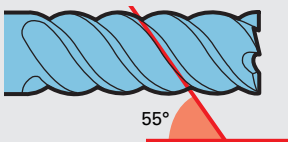
Type NR

Standard knuckle-type teeth, produces short chips and good chip evacuation. Suitable for milling standard materials up to appr.
 •1000·N/mm²-tensile strength-applying high speed steel milling cutters
 •1200·N/mm²-tensile strength-applying solid carbide milling cutters



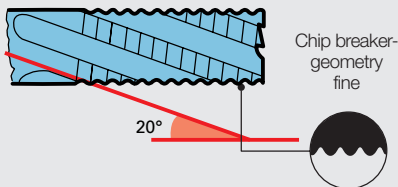
Type NRf

Fine knuckle-type teeth, produces short chips and good chip evacuation. Better feed rates possible than with type NR. Suitable for milling materials with a high tensile strength up to appr.
 •1400·N/mm²-tensile strength-applying high speed steel milling cutters
 •1600·N/mm²-tensile strength applying solid carbide milling cutters



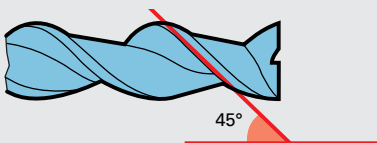
Type H

Quick spiral with high 55° helical pitch, suitable for super-fine finishing as well as HSC* machining of all hardened materials and chilled cast iron up to appr.
 •62·HRC-hardness



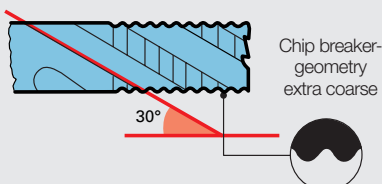
Type HR

Fine knuckle-type teeth, produces short chips with good chip evacuation. Suitable for milling hardened materials as well as grey and chilled cast iron with up to appr.
 •56 HRC hardness
 * High Speed Cutting



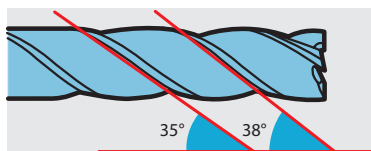
Type W

Quick spiral with 45° helical pitch, suitable for finish milling soft materials such as aluminium, Al-alloys and non-ferrous metals up to appr.
 •600·N/mm² tensile strength



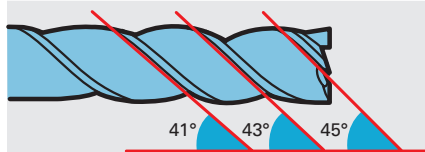
Type WR

Coarse knuckle-type teeth, produces short chips with good chip evacuation. Suitable for milling aluminium, non-ferrous metals as well as soft steels up to appr.
 •600·N/mm²-tensile strength.



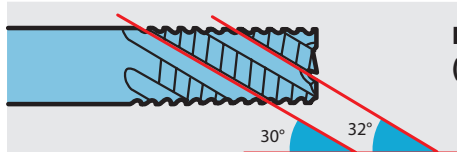
**RF 100 U
(type N)**

35°/38° helix. Suitable for slotting, roughing and finishing steel, high-alloyed steel and hardened steel up to
• 1600 N/mm² tensile strength (48 HRC)



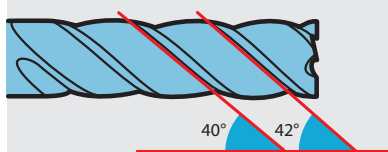
**RF 100 U
(type NH)
3-fluted**

41°/43°/45° helix. Suitable for slotting, roughing and finishing steel, high-alloyed steel and stainless steel up to
• 1400 N/mm² tensile strength (44 HRC)
3-fluted suitable for extreme cutting depths



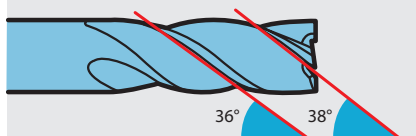
**RF 100 U/HF
(type HF)**

30°/32° helix and roughing and finishing geometry. Suitable for slotting and roughing with large cutting widths and depths in steel, high-alloyed steel and hardened steel up to
• 1600 N/mm² tensile strength (48 HRC)



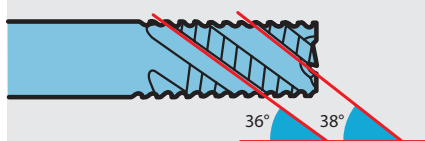
**RF 100 F
(type NH)**

40°/42° helix. Suitable for slotting, roughing and finishing as well as HPC-milling/imachining tough steels as well as other long-chipping materials up to
• 850 N/mm² tensile strength (25 HRC)



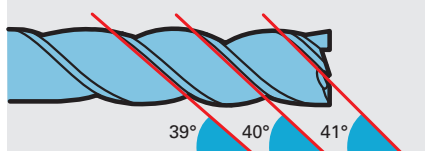
**RF 100 VA
(type N)**

36°/38° helix. Suitable for slotting, roughing and finishing VA steels and stainless materials



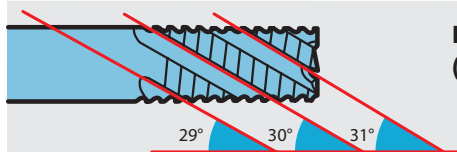
**RF 100 VA/NF
(type NF)**

36°/38° helix and roughing and finishing geometry. Suitable for slotting and roughing VA steels and stainless materials



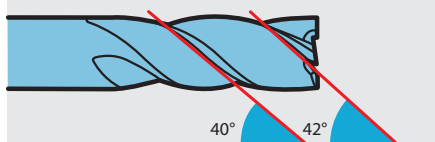
**RF 100 A
(type W)**

39°/40°/41° helix. Suitable for slotting, roughing and finishing aluminium and Al-alloys as well as long-chipping materials and non-ferrous metals



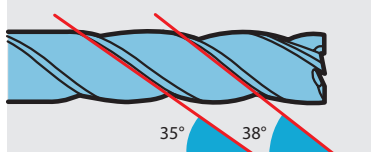
**RF 100 A/WF
(type WF)**

29°/30°/31° helix and roughing and finishing geometry. Suitable for slotting and roughing aluminium and Al-alloys



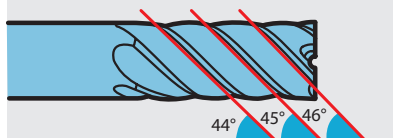
**RF 100 H
(type H)**

40°/42° helix and progressive core diameter. Suitable for roughing up to 1xD in materials up to 54 HRC, for finishing over the entire cutting edge length in materials over 63 HRC. With HPC strategy suitable for roughing materials > 63 HRC.



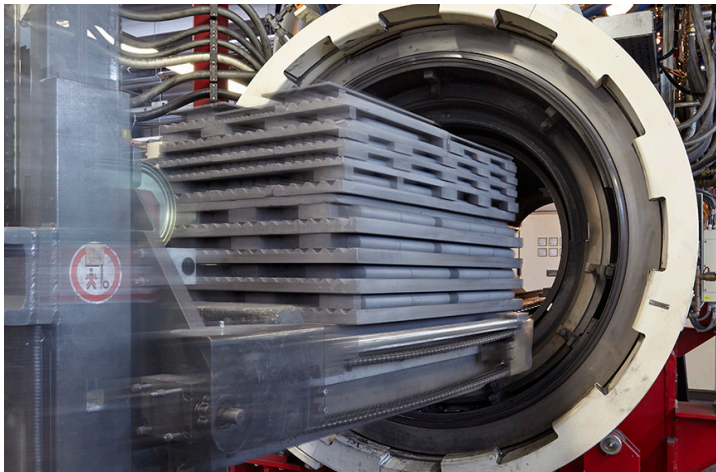
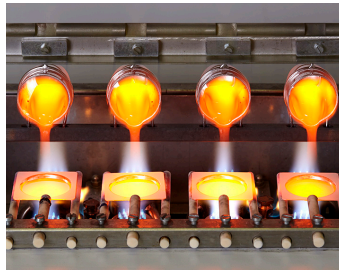
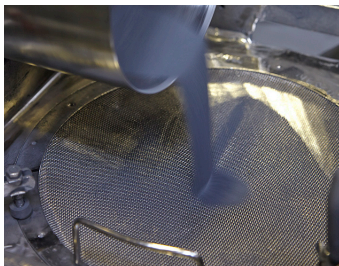
**RF 100 Ti
(type N)**

35°/38° helix with corner radius. Suitable for slotting and roughing of titanium alloys as well as difficult-to-cut alloys



**RF 100 SF
(type NH)**

44°/45°/46° helix. Suitable for HSC super fine finishing for semi-roughing with feed widths up to max. 0.3xD and HPC roughing over the entire cutting edge length for standard steels, cast iron, non-ferrous metals and high-alloyed materials



With an annual production of in excess of 1500 tons Guhring Hard Material division is one of the leading carbide manufacturers. Grade variety, manufacturing possibilities and capacities as well as quality set market standards – the same as expert advice and the development support for our customers. Contact us and involve us with your task. We are sure we can offer you an efficient and cost-effective solution.

CARBIDE BLANKS

- for punches, core pullers, drawing dies and much more for the forming technology
- for cutting, punching, drilling, milling, shredding etc. for the machining technology
- for grooved bushes, nozzles, pressure and skid plates for the wear protection technology
- for impact knives, stirring staffs or strainers for the food and pharmaceutical industry
- for the manufacture of rotary tools



High Speed Steels

Only high quality tool materials are used to produce HSS tools. Systematic selection of alloying elements ensure the tool possesses the optimal characteristics for the individual tasks.

Tungsten, Molybdenum: Increase tempering and wearing resistance.

Vanadium: Increases wear-resistance of finishing tools.

Cobalt: Enables increased hardening temperatures and improves heat-resistance.

Guhring description	German steel description	Material No. (steel code)	Range of application
HSS	HS 6-5-2 (DMo5)	1.3343	standard tool material for most common applications
HSCO HSS-E	HS 6-5-2-5 (EMo5Co5)	1.3243	high heat-resistance, especially suited for roughing or when coolant insufficient
HSS-E	HS 6-5-3 (EMo5V3)	1.3344	high friction resistance and cutting edge stability, especially important for reaming operations
M42 HSS-E	HS 2-9-1-8	1.3247	increased heat resistance and hardness, suitable for difficult-to-machine materials
HSS-E-PM	10-2-5-8, PM52 HS 6-5-3-8, PM30	1.3253 1.3294	high hardness, heat-resistance and cutting edge stability, very dense structure

Individual Guhring carbide grades

The following table lists the most important carbides that are available from Guhring ex=stock for general applications. In more than 80% of applications known to Guhring, the results of DK460UF carbide grade tools together with a specially adapted coating could not be surpassed by any other carbide grades, including coated tools. This and the availability of the material ex-stock simplify tool selection immensely. For further information regrading the application of other carbide grades please contact to our technical engineers.

Guhring Description	Co-content [M-%]	Tungsten carbide grain size [µm]	Hardness [HV]	ISO classification [ISO 513]	Characteristics
DK460UF	10	0.5	1620	K20-K40 coated: P, M20-M40, H, S, N25	A carbide grade with wide range of application possibilities. It is applied, mostly coated, for the machining of steel, soft Al alloys, cast iron as well as "super alloys" such as Inconel 718. This grade is the backbone of our carbide production.
DK500UF	12	0.5	1680	K25 coated: P, M, H, S, N25	The grade has been especially developed for hard machining. It possesses a higher hardness and deformation tolerance in comparison to DK460UF. Due to the high Co-content, a coated application is strongly recommended.
DK255F	8	0.7	1720	K20 coated: P, M, H, S, N20	The grade is recommended for hard machining, the machining of high tensile grey cast iron and hard AlSi-alloys. Dry machining is possible. A coated application is preferable.
DK120	6	1.3	1620	K15 coated: N15	The grade is especially suitable for the application with diamond coating.
DK120UF	7	0.5	1850	K05	Ultra fine grain type offering extreme wear resistance, suitable for absolutely rigid machines, preferred for reamers.
K555F	9	0.2 - 0.5	1920	K10-K30	For application with high wear resistant materials, stainless steels, composite materials such as Kevlar and GRP, high speed machining and dry machining.
DK400N	10	0.7	1580	K35M coated: P, M, S, N35M	An extremely tough grade for the machining of high heat resistant metals.

GUHRING

INTELLIGENT TOOL MANAGEMENT



FLEXIBLE
PROFESSIONAL
SUSTAINABLE



Tool Management
Powered by

GUHRING

GSS
3001

Work easily, quickly and efficiently with each application!

Fume extraction

Vapours produced during the shrink fit process are removed and filtered under controlled conditions by the fume extraction system.

Length setting

During the shrink fit process the tool is pre-set to the required length with the assistance of an adjustment rod.

Quick cooling

The water-cooled cooling elements cool down the shrink fit chuck quickly and safely. The shrink fit chuck remains clean and dry, so that it can be applied again without drying and without rusting. Hot spots remain safely screened during the cooling process in order to prevent burns.

Tool identification Balluff chip

The read and write function of the Balluff chip simplifies tool identification. Tool life can be managed.

User-friendly software

Intuitive menu navigation similar to the well-established Guhring TM-Software GTMS via touch-screen monitor (for details see page 5).

Safe shrink fitting

The minimal heating of the shrink fit chuck ensures maximum operating safety on the one hand, on the other the controlled heating ensures the long life of the shrink fit chuck.

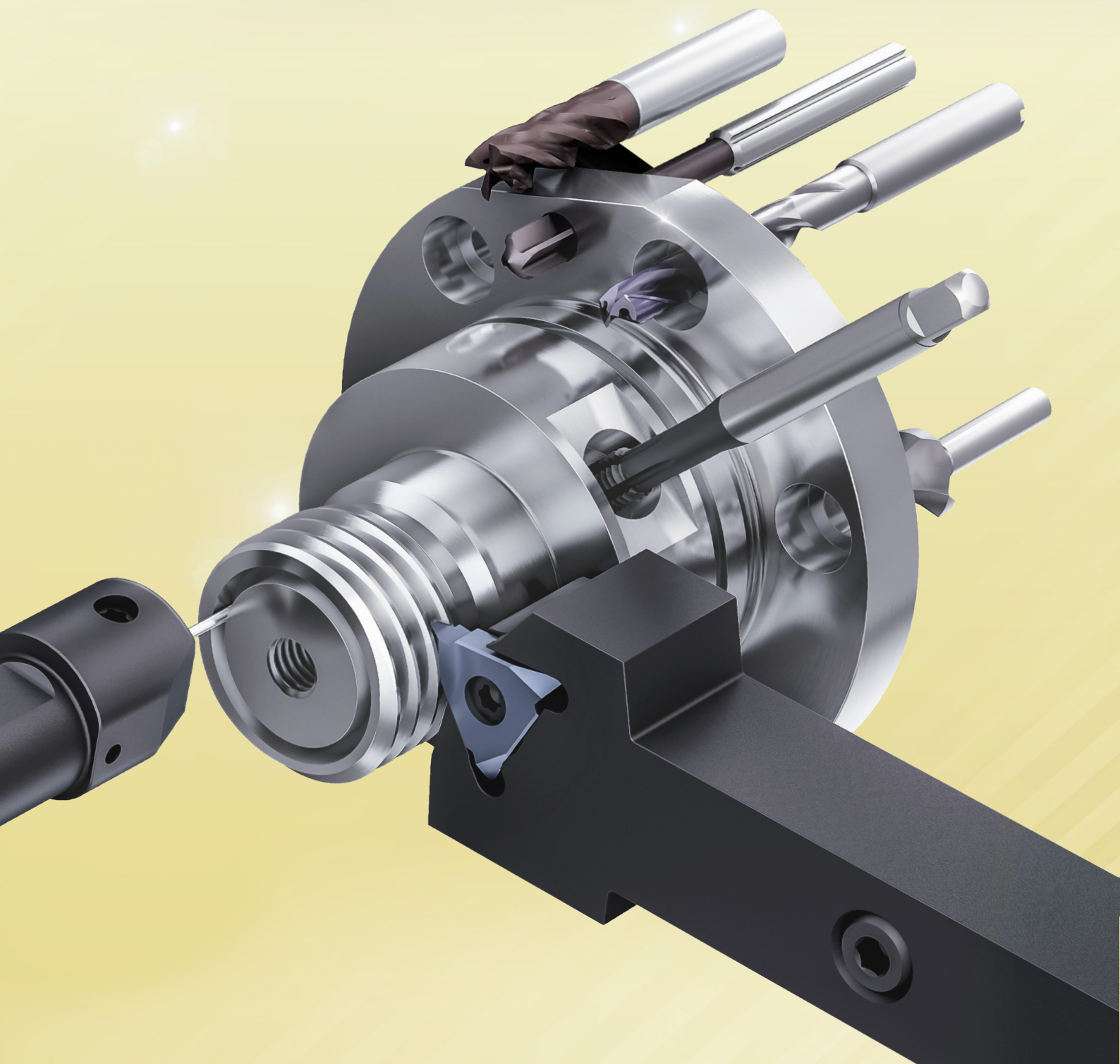
Label printer

Print data such as Guhring no., current setting dimension, date, operator etc. on an adhesive label for your pre-set tool.



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217	13	723	23	981	113	3676	125	5009	88	5693	75	9500	8
223	4	723F	23	984	113	3679	143	5498	36	5694	75	9651	8
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257	28	787	82	1088	105	3892	133	5512	40	5726	97	26200	160
280	19	789	80	1133	23	3992	96	5514	32	5727	98	26201	161
293	30	790	80	1228	4	3993	97	5515	36	5728	99	26601	162
298	30	793	106	1347	107	3994	98	5516	4	5731	100	26602	163
299	30	803	80	1409	173	3995	99	5517	8	5732	101	26603	163
301	21	804	80	1587	107	4107	46	5520	4	5733	80		
336	13	805	81	1589	107	4108	49	5522	8	5734	82		
380	25	810	82	2463	4	4109	52	5523	8	5735	133		
391	97	811	83	2464	8	4110	55	5524	4	5736	80		
392	99	812	83	2847	103	4112	57	5525	42	5743	126		
393	83	815	80	2848	103	4115	57	5526	32	5768	36		
395	101	816	81	2864	85	4128	92	5527	174	6408	22		
405	172	817	81	2871	84	4129	93	5535	133	6478	135		
413	165	822	82	2892	102	4130	94	5537	13	6480	135		
468	166	823	83	2893	102	4133	91	5549	125	6498	32		
472	179	824	83	2944	89	4175	193	5551	83	6511	43		
476	180	827	84	3043	145	4218	81	5552	83	6513	44		
476F	180	834	85	3114	133	4220	100	5553	83	6514	45		
477	181	861	112	3173	130	4221	189	5556	131	6713	146		
482	184	862	112	3176	124	4226	91	5557	81	6736	134		
485	185	863	112	3308	143	4229	61	5558	81	6737	134		
495	183	864	112	3358	126	4233	189	5559	81	6761	138		
496	167	873	96	3359	144	4245	190	5573	129	6765	138		
502	15	876	97	3360	144	4299	190	5574	129	6769	140		
503	16	877	81	3428	121	4307	193	5580	36	6788	124		
504	17	878	96	3431	121	4485	107	5582	133	6793	126		
526	29	879	81	3433	121	4487	107	5584	145	6799	137		
527	29	881	97	3451	119	4491	109	5598	106	6801	137		
557	23	908	98	3453	119	4492	110	5599	106	6810	146		



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