GÜHRING

Super Line

SUPER PRICE
SUPER QUALITY
SUPER AVAILABILITY

EDITION
2019

High-tech tools

at a

super price

- convincing **price-performance-ratio**
- exceptional **quality**
- immediate **availability**
- customer-friendly **service**

SuperLine

// Gühring's SuperLine is a selected programme of high-tech tools for the machining operations drilling, milling, threading and reaming. The carbide or selected high speed steel precision tools are optimised with state-of-the-art coatings. Thanks to innovative manufacturing processes, world-wide uniform quality standards and large manufacturing quantities, the SuperLine range is unique regarding economic efficiency, quality, delivery time and service.

// Immediate availability

The immediate availability of SuperLine tools is a pillar of the programme.

For you as the customer it means order today and apply tomorrow.
For us as manufacturer it means we can ensure an intelligent solution regarding raw materials, manufacture and delivery.
SL tools are available ex-stock. Put us to the test.

48
SALES COMPANIES

MORE THAN 70
PRODUCTION AND SERVICE CENTRES

// Service near to the customer

Gühring provides a re-grind and re-coating service to ensure a long tool life of SuperLine tools. The high-tech tools are refurbished with original coatings and geometries and subsequently regain their performance.

In addition, Gühring's own collection and delivery service ensures on schedule logistics for tool refurbishment.
Thanks to a global service network including re-grind centres as well as world-wide uniform manufacturing facilities we guarantee maximum quality standards close to the customer.

Further information regarding the re-grind and re-coating service can be found on page 146.

SuperLine

SL Drilling tools

SL Thread cutting tools

SL Milling cutters

SL Reamers & Countersinks

SL Re-grinding & re-coating

Article no. index

P	M	K	N	S	H	Tool illustration	Drilling depth	Shank form	Type	Standard	Tool material	Surface	d1/mm	Article no.	Cutting data page	Page
Ratio drills with internal coolant																
●	○	●	○	○	○		3xD	HA	RT 100 U	DIN 6537 K	VHM	F	3.000 - 20.000	5510	76	16
●	○	●	○	○	○		3xD	HE	RT 100 U	DIN 6537 K	VHM	F	3.000 - 20.000	5610	76	16
	●			●			3xD	HA	RT 100 VA	DIN 6537 K	VHM	a	3.000 - 20.000	5526	76	19
	●			●			3xD	HE	RT 100 VA	DIN 6537 K	VHM	a	3.000 - 20.000	5528	76	19
			●			NEW 	5xD	HA	RT 100 AI	DIN 6537 L	VHM	○	3.000 - 20.000	5768	76	22
●	○	●	○	○	○		5xD	HA	RT 100 U	DIN 6537 L	VHM	F	3.000 - 20.000	5511	76	26
●	○	●	○	○	○		5xD	HE	RT 100 U	DIN 6537 L	VHM	F	3.000 - 20.000	5611	76	26
●	○	●	○	○	○		5xD	HB	RT 100 U	DIN 6537 L	VHM	F	3.000 - 20.000	5650	76	26
	●			●			5xD	HA	RT 100 VA	DIN 6537 L	VHM	a	3.000 - 20.000	5580	76	30
	●			●			5xD	HE	RT 100 VA	DIN 6537 L	VHM	a	3.000 - 20.000	5581	76	30
●	○	●	○	○	○		7xD	HA	RT 100 U	WN	VHM	F	3.000 - 20.000	5512	76	33
●	○	●	○	○	○		7xD	HE	RT 100 U	WN	VHM	F	3.000 - 20.000	5612	76	33
●	○	●	○	○	○		12xD	HA	RT 100 U	WN	VHM	F	3.000 - 20.000	5525	76	36
		●	●				10xD	HA	RT 150 GG	WN	VHM	○	3.000 - 16.000	5513	76	39
Ratio drills without oil feed																
●	○	●	○	○	○		3xD	HA	RT 100 U	DIN 6537 K	VHM	F	3.000 - 20.000	5514	76	41
●	○	●	○	○	○		3xD	HE	RT 100 U	DIN 6537 K	VHM	F	3.000 - 20.000	5614	76	41
●	○	●	○	○	○		5xD	HA	RT 100 U	DIN 6537 L	VHM	F	3.000 - 20.000	5515	76	44
●	○	●	○	○	○		5xD	HE	RT 100 U	DIN 6537 L	VHM	F	3.000 - 20.000	5615	76	44
●	○	●	○	○	○		5xD	HB	RT 100 U	DIN 6537 L	VHM	F	3.000 - 20.000	5651	76	44
3-flute Ratio drills																
		●	●				5xD	HA	FT 200	DIN 6537 L	VHM	○	3.000 - 20.000	5518	76	47
Stub drills																
○	○	○	●	○			3xD	Cyl	N	DIN 6539	VHM	○	2.000 - 12.000	5516	78	49
●	●	●	●				~3xD	Cyl	GU 500 DZ	DIN 1897	HSCO	○	1.000 - 14.000	5524	78	51

P	M	K	N	S	H	Tool illustration	Drilling depth	Shank form	Type	Standard	Tool material	Surface	d1/mm	Article no.	Cutting data page	Page
Stub drills																
●	●	●	●				~3xD	Cyl	GU 500 DZ	DIN 1897	HSCO	S	1.000 - 14.000	5520	78	51
●	○	●	○	○	○		~3xD	Cyl	GT 500 DZ	DIN 1897	HSS-E-PM	S	1.000 - 14.000	5521	78	54
Jobber drills																
○	○	○	●	○			~5xD	Cyl	N	WN	VHM		2.000 - 12.000	5517	78	57
●	●	●	●				~5xD	Cyl	GU 500 DZ	DIN 338	HSCO		1.000 - 14.000	5523	78	59
●	●	●	●				~5xD	Cyl	GU 500 DZ	DIN 338	HSCO	S	1.000 - 14.000	5519	78	59
●	○	●	○	○	○		~5xD	Cyl	GT 500 DZ	DIN 338	HSS-E-PM	S	1.000 - 14.000	5522	78	62
●		●	●				~5xD	Cyl	N	DIN 338	HSS	S	1.000 - 16.000	9651	78	65
Long series twist drills																
●	●	●	●				~10xD	Cyl	GU 500 DZ	DIN 340	HSCO		1.000 - 14.000	5536	78	69
●	●	●	●				~10xD	Cyl	GU 500 DZ	DIN 340	HSCO	S	1.000 - 14.000	5537	78	69
Solid carbide micro-precision drills without coolant ducts																
●	○	●	○	○	○			Cyl	N	WN	VHM	A	0.100 - 3.000	5652	76	72
142° NC-spotting drills																
○	○	○	○	○	○			HB	N	WN	VHM		4.000 - 20.000	5649		73
Twist drill sets																
●	●	●	●				~5xD	Cyl	GU 500 DZ	DIN 338	HSCO			12		74
●		●	●				~5xD	Cyl	N	DIN 338	HSS	S		234		75

Machine taps for ISO metric threads

P	M	K	N	S	H	Tool illustration	Standard	Type	Form	Tolerance on Ø	Tool material	Surface	d1/mm	Article no.	Cutting data page	Page
≤ 800							DIN 371/376	N R40	C	ISO2/6H	HSS-E		M3 - M20	5554	98	82
≤ 800							DIN 371/376	N R40	C	ISO2/6H	HSS-E	S	M3 - M20	5592	98	82
≤ 1200							DIN 371/376	H R40	C	ISO2/6H	HSS-E		M3 - M20	5552	98	83
≤ 1200							DIN 371/376	H R40	C	ISO2/6H	HSS-E	C	M3 - M20	5591	98	83
	•						DIN 371/376	VA R40	C	ISO2/6H	HSS-E		M3 - M20	5553	98	84
	•						DIN 371/376	VA R40	C	ISO2/6H	HSS-E	S	M3 - M20	5596	98	84
≤ 1000	○	○					DIN 371/376	N R40	C	ISO2/6H	HSS-E		M3 - M20	5555	98	85
≤ 1000	○	○					DIN 371/376	N R40	C	ISO2/6H	HSS-E	S	M3 - M20	5594	98	85
			•				DIN 371/376	Al R45	C	ISO2/6H	HSS-E		M3 - M20	5551	98	86
		•	≥ 7				DIN 371/376	H	C	6HX	VHM		M4 - M20	5593	98	87
≤ 800							DIN 371/376	N	B	ISO2/6H	HSS-E		M3 - M20	5560	98	88
≤ 800							DIN 371/376	N	B	ISO2/6H	HSS-E	S	M3 - M20	5590	98	88
≤ 1200							DIN 371/376	H	B	ISO2/6H	HSS-E		M3 - M20	5558	98	89
≤ 1200							DIN 371/376	H	B	ISO2/6H	HSS-E	C	M3 - M20	5587	98	89
≤ 1000	•						DIN 371/376	VA	B	ISO2/6H	HSS-E	S	M3 - M20	5588	98	90
≤ 1000	•						DIN 371/376	VA	B	ISO2/6H	HSS-E		M3 - M20	5597	98	90
≤ 1000	•						DIN 371	VA	B	ISO2/6H	HSS-E-PM		M3 - M10	5559	98	91
≤ 1000	○						DIN 371/376	N	B	ISO2/6H	HSS-E		M3 - M20	5561	98	92
≤ 1000	○						DIN 371/376	N	B	ISO2/6H	HSS-E	S	M3 - M20	5586	98	92
			•				DIN 371/376	Al	B	ISO2/6H	HSS-E		M3 - M20	5557	98	93
		•					DIN 371/376	GG	C	6HX	HSS-E		M3 - M20	5550	98	94
		•					DIN 371/376	GG	C	6HX	HSS-E	F	M3 - M20	5595	98	94

Fluteless machine taps for ISO metric threads

P	M	K	N	S	H	Tool illustration	Standard	Type	Form	Tolerance on Ø	Tool material	Surface	d1/mm	Article no.	Cutting data page	Page
•	•		○	•			~DIN 371	N	C	6HX	HSS-E	S	M3 - M10	5598	98	95

P	M	K	N	S	H	Tool illustration	Standard	Type	Form	Tolerance on Ø	Tool material	Surface	d1/mm	Article no.	Cutting data page	Page
Fluteless machine taps for ISO metric threads																
•	•		○	•			~DIN 376	N	C	6HX	HSS-E	S	M12 - M16	5599	98	96
Thread milling cutters without chamfer for ISO metric threads																
•	○	•	•	•	≤ 55		WN	TM SP			VHM	C	M6 - M20	5547	98	97
•	○	•	•	•	≤ 55		WN	TM SP			VHM	C	M6 - M20	5548	98	97

P	M	K	N	S	H	Tool illustration	Z	Hard-ness	Shank form	Length	Tool material	Sur-face	d1/mm	Article no.	Cutting data page	Page
Standard Ratio end mills RF 100 U																
•	○	•		○			4		HB		VHM	F	6.000 - 20.000	5534	130	104
•	○	•		○			4		HA		VHM	F	4.000 - 25.000	5735	130	105
•	○	•		○	○		4		HB		VHM	F	4.000 - 25.000	5535	130	105
•	○	•		○			4		HA		VHM	F	10.000 - 25.000	5582	130	106
Ratio end mills RF 100 VA																
•	•		○	•			4		HA		VHM	a	3.000 - 25.000	5653	130	107
•	•		○	•			4		HB		VHM	a	3.000 - 25.000	5654	130	107
Ratio end mills Alu RF 100 A																
			•				3		HB		VHM	○	3.000 - 20.000	5655	130	108
Slot drills GH 100 U (3-fluted)																
•	•	•	•	○			3		HA		VHM	F	3.000 - 20.000	5505	128	109
•	•	•	•	○			3		HA		VHM	F	3.000 - 20.000	5506	128	110
•	•	•	•	○			3		HB		VHM	F	3.000 - 20.000	5546	128	110
Mini slot drills (3-fluted)																
•	•	○	•	○			3		HA/HB		VHM	F	1.000 - 10.000	5574	128	111
Roughing end mills GS 100 U (fine teeth)																
•	•	•	○				4		HB		VHM	F	6.000 - 20.000	5504	130	112
Hard roughing end mills GS 100 H (fine teeth)																
○		•			•		4		HB		VHM	Y	6.000 - 20.000	5583	130	113
Multi-tooth end mills GH 100 U																
•	•	•	•	•			6+		HA		VHM	F	3.000 - 25.000	5745	128	114
•	•	•	•	•			6+		HB		VHM	F	3.000 - 25.000	5545	128	114
•	•	•	•	•			6+		HA		VHM	F	6.000 - 20.000	5729	128	115
Slot drills (2-fluted)																
•	•	•	•				2		HA		VHM	F	2.000 - 20.000	5730	128	116
•	•	•	•				2		HB		VHM	F	2.000 - 20.000	5530	128	116

P	M	K	N	S	H	Tool illustration	Z	Hard-ness	Shank form	Length	Tool material	Sur-face	d1/mm	Article no.	Cutting data page	Page
XL slot drills (2-fluted)																
•	•	•	•				2		HA		VHM	F	3.000 - 20.000	5549	128	117
Al slot drills (2-fluted)																
			•				2		HB		VHM	○	3.000 - 20.000	5543	128	118
Slot drills (3-fluted)																
•	•	•	•				3		HA		VHM	F	2.000 - 20.000	5507	128	119
•	•	•	•				3		HB		VHM	F	2.000 - 20.000	5531	128	119
Mini slot drills (3-fluted)																
•	•	○	○	•			3		HA/ HB		VHM	F	0.500 - 20.000	5573	128	120
End mills (4-fluted)																
•	•	•	•				4		HB		VHM	F	2.000 - 20.000	5532	130	121
XL end mills (4-fluted)																
•	•	•	•				4		HA		VHM	F	3.000 - 20.000	5556	130	122
Ball nose slot drills (2-fluted)																
•	•	•	•	•	○		2		HB		VHM	F	0.500 - 20.000	5533	128	123
•	•	•	•	•	○		2		HA		VHM	F	0.500 - 20.000	5585	128	123
Ball nose end mills (4-fluted)																
•	•	•	•	•	○		4		HB		VHM	F	3.000 - 20.000	5584	128	124
Chamfering milling cutters																
•	•	•	•	•	○		4		HA		VHM	A	4.000 - 12.000	5578	130	125
•	•	•	•	•	○		4		HB		VHM	A	4.000 - 12.000	5579	130	125
Ratio end mill sets RF 100 U																
•	○	•		○	○		4		HB		VHM	F		5635		126

P	M	K	N	S	H	Tool illustration	Standard	Form	Cutting direction	Tool material	Surface	d1/mm	Article no.	Cutting data page	Page
NC machine reamers															
●	○	●	●	●	52		WN	B	R	VHM	◯	0.980 - 12.050	5527	141	134
90° Countersinks, spiral-fluted															
●	●	●	○	○			NEW DIN 335	C	R	HSCO	A	6.300 - 31.000	5500	142	136
●	●	●	○	○			NEW DIN 335	C	R	HSCO	A	6.300 - 31.000	5501	142	137
●	○	●	○	○			NEW WN	C	R	HSS	A	6.300 - 31.000	5503	142	138
90° Countersink sets, spiral-fluted															
●	●	●	○	○			NEW DIN 335	C	R	HSCO	A		5538	142	139
●	●	●	○	○			NEW DIN 335	C	R	HSCO	A		5539	142	140

Reaming recommendations for carbide NC reamers

Through hole or blind hole
Straight-fluted reamers are generally applied in blind holes as they, due to their cutting edge geometry, evacuate the chips from the hole against the direction of the feed.
Blind holes can be machined with this tool, if sufficient space at the bottom is available.

Interrupted holes
Spiral reamers are preferred for the application in interrupted holes because the cutting edge geometry, in comparison to straight-fluted tools, possesses a lesser tendency of grabbing on the oblique hole.

Article no. 5527

Drilling tools

Ratio drills with internal coolant

3xD | RT 100 U | DIN 6537 K | 140° | m7

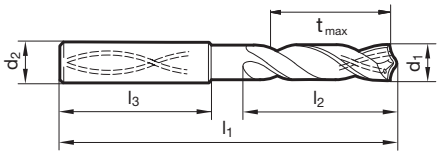
Tool material	Solid carbide	
Surface	F	F
Shank form	HA	HE

P	●	web thinning ≥ Ø 3.000 • facet point grinding • main cutting edge form straight • optimised cutting geometry
M	○	
K	●	
N	○	structural and case hardened steels • free-cutting steels, heat-treatable steels • steels (alloyed/unalloyed) up to 1200 N/mm² • cast materials • bronze, brass • high-alloyed AlSi-alloys
S	○	
H	○	

GÜHRINGNAVIGATOR

Cutting data page 76

$t_{max} = l_2 - 1{,}5 \times d_1$



Article no.	5510	5610
Discount group	155	155
Cutting direction	R	R

d1		d2 h6	l1	l2	l3	Availability	
mm	inch	mm	mm	mm	mm		
3.000		6.00	62.00	20.00	36.00	●	●
3.100		6.00	62.00	20.00	36.00	●	●
3.170	1/8	6.00	62.00	20.00	36.00	●	●
3.200		6.00	62.00	20.00	36.00	●	●
3.250		6.00	62.00	20.00	36.00	●	●
3.300		6.00	62.00	20.00	36.00	●	●
3.400		6.00	62.00	20.00	36.00	●	●
3.500		6.00	62.00	20.00	36.00	●	●
3.570	9/64	6.00	62.00	20.00	36.00	●	●
3.600		6.00	62.00	20.00	36.00	●	●
3.700		6.00	62.00	20.00	36.00	●	●
3.800		6.00	66.00	24.00	36.00	●	●
3.900		6.00	66.00	24.00	36.00	●	●
3.970	5/32	6.00	66.00	24.00	36.00	●	●
4.000		6.00	66.00	24.00	36.00	●	●
4.100		6.00	66.00	24.00	36.00	●	●
4.200		6.00	66.00	24.00	36.00	●	●
4.300		6.00	66.00	24.00	36.00	●	●
4.370	11/64	6.00	66.00	24.00	36.00	●	●
4.400		6.00	66.00	24.00	36.00	●	●
4.500		6.00	66.00	24.00	36.00	●	●
4.600		6.00	66.00	24.00	36.00	●	●
4.650		6.00	66.00	24.00	36.00	●	●
4.700		6.00	66.00	24.00	36.00	●	●
4.760	3/16	6.00	66.00	28.00	36.00	●	●
4.800		6.00	66.00	28.00	36.00	●	●
4.900		6.00	66.00	28.00	36.00	●	●
5.000		6.00	66.00	28.00	36.00	●	●
5.100		6.00	66.00	28.00	36.00	●	●
5.160	13/64	6.00	66.00	28.00	36.00	●	●
5.200		6.00	66.00	28.00	36.00	●	●
5.300		6.00	66.00	28.00	36.00	●	●
5.400		6.00	66.00	28.00	36.00	●	●
5.500		6.00	66.00	28.00	36.00	●	●
5.550		6.00	66.00	28.00	36.00	●	●
5.560	7/32	6.00	66.00	28.00	36.00	●	●

						Article no.	5510	5610
						Discount group	155	155
						Cutting direction	R	R
d1		d2 h6	l1	l2	l3	Availability		
mm	inch	mm	mm	mm	mm			
5.600		6.00	66.00	28.00	36.00		●	●
5.700		6.00	66.00	28.00	36.00		●	●
5.800		6.00	66.00	28.00	36.00		●	●
5.900		6.00	66.00	28.00	36.00		●	●
5.950	15/64	6.00	66.00	28.00	36.00		●	●
6.000		6.00	66.00	28.00	36.00		●	●
6.100		8.00	79.00	34.00	36.00		●	●
6.200		8.00	79.00	34.00	36.00		●	●
6.300		8.00	79.00	34.00	36.00		●	●
6.350	1/4	8.00	79.00	34.00	36.00		●	●
6.400		8.00	79.00	34.00	36.00		●	●
6.500		8.00	79.00	34.00	36.00		●	●
6.600		8.00	79.00	34.00	36.00		●	●
6.700		8.00	79.00	34.00	36.00		●	●
6.750	17/64	8.00	79.00	34.00	36.00		●	●
6.800		8.00	79.00	34.00	36.00		●	●
6.900		8.00	79.00	34.00	36.00		●	●
7.000		8.00	79.00	34.00	36.00		●	●
7.100		8.00	79.00	41.00	36.00		●	●
7.140	9/32	8.00	79.00	41.00	36.00		●	●
7.200		8.00	79.00	41.00	36.00		●	●
7.300		8.00	79.00	41.00	36.00		●	●
7.400		8.00	79.00	41.00	36.00		●	●
7.500		8.00	79.00	41.00	36.00		●	●
7.540	19/64	8.00	79.00	41.00	36.00		●	●
7.600		8.00	79.00	41.00	36.00		●	●
7.700		8.00	79.00	41.00	36.00		●	●
7.800		8.00	79.00	41.00	36.00		●	●
7.900		8.00	79.00	41.00	36.00		●	●
7.940	5/16	8.00	79.00	41.00	36.00		●	●
8.000		8.00	79.00	41.00	36.00		●	●
8.100		10.00	89.00	47.00	40.00		●	●
8.200		10.00	89.00	47.00	40.00		●	●
8.300		10.00	89.00	47.00	40.00		●	●
8.330	21/64	10.00	89.00	47.00	40.00		●	●
8.400		10.00	89.00	47.00	40.00		●	●
8.500		10.00	89.00	47.00	40.00		●	●
8.600		10.00	89.00	47.00	40.00		●	●
8.700		10.00	89.00	47.00	40.00		●	●
8.730	11/32	10.00	89.00	47.00	40.00		●	●
8.800		10.00	89.00	47.00	40.00		●	●
8.900		10.00	89.00	47.00	40.00		●	●
9.000		10.00	89.00	47.00	40.00		●	●
9.100		10.00	89.00	47.00	40.00		●	●
9.130	23/64	10.00	89.00	47.00	40.00		●	●
9.200		10.00	89.00	47.00	40.00		●	●
9.250		10.00	89.00	47.00	40.00		●	●
9.300		10.00	89.00	47.00	40.00		●	●
9.400		10.00	89.00	47.00	40.00		●	●
9.500		10.00	89.00	47.00	40.00		●	●
9.520	3/8	10.00	89.00	47.00	40.00		●	●
9.600		10.00	89.00	47.00	40.00		●	●
9.700		10.00	89.00	47.00	40.00		●	●
9.800		10.00	89.00	47.00	40.00		●	●
9.900		10.00	89.00	47.00	40.00		●	●
9.920	25/64	10.00	89.00	47.00	40.00		●	●
10.000		10.00	89.00	47.00	40.00		●	●
10.100		12.00	102.00	55.00	45.00		●	●
10.200		12.00	102.00	55.00	45.00		●	●
10.300		12.00	102.00	55.00	45.00		●	●

						Article no.	5510	5610
						Discount group	155	155
						Cutting direction	R	R
d1		d2 h6	l1	l2	l3	Availability		
mm	inch	mm	mm	mm	mm			
10.320	13/32	12.00	102.00	55.00	45.00		●	●
10.400		12.00	102.00	55.00	45.00		●	●
10.500		12.00	102.00	55.00	45.00		●	●
10.600		12.00	102.00	55.00	45.00		●	●
10.700		12.00	102.00	55.00	45.00		●	●
10.800		12.00	102.00	55.00	45.00		●	●
10.900		12.00	102.00	55.00	45.00		●	●
11.000		12.00	102.00	55.00	45.00		●	●
11.100		12.00	102.00	55.00	45.00		●	●
11.110	7/16	12.00	102.00	55.00	45.00		●	●
11.200		12.00	102.00	55.00	45.00		●	●
11.300		12.00	102.00	55.00	45.00		●	●
11.400		12.00	102.00	55.00	45.00		●	●
11.500		12.00	102.00	55.00	45.00		●	●
11.600		12.00	102.00	55.00	45.00		●	●
11.700		12.00	102.00	55.00	45.00		●	●
11.800		12.00	102.00	55.00	45.00		●	●
11.900		12.00	102.00	55.00	45.00		●	●
11.910	15/32	12.00	102.00	55.00	45.00		●	●
12.000		12.00	102.00	55.00	45.00		●	●
12.200		14.00	107.00	60.00	45.00		●	●
12.400		14.00	107.00	60.00	45.00		●	
12.500		14.00	107.00	60.00	45.00		●	●
12.700	1/2	14.00	107.00	60.00	45.00		●	●
12.800		14.00	107.00	60.00	45.00		●	
13.000		14.00	107.00	60.00	45.00		●	●
13.500		14.00	107.00	60.00	45.00		●	●
13.700		14.00	107.00	60.00	45.00		●	●
13.800		14.00	107.00	60.00	45.00		●	
14.000		14.00	107.00	60.00	45.00		●	●
14.200		16.00	115.00	65.00	48.00		●	●
14.290	9/16	16.00	115.00	65.00	48.00		●	●
14.300		16.00	115.00	65.00	48.00		●	
14.500		16.00	115.00	65.00	48.00		●	●
14.700		16.00	115.00	65.00	48.00		●	●
14.800		16.00	115.00	65.00	48.00		●	
15.000		16.00	115.00	65.00	48.00		●	●
15.200		16.00	115.00	65.00	48.00		●	●
15.500		16.00	115.00	65.00	48.00		●	●
15.700		16.00	115.00	65.00	48.00		●	●
16.000		16.00	115.00	65.00	48.00		●	●
16.500		18.00	123.00	73.00	48.00		●	●
17.000		18.00	123.00	73.00	48.00		●	●
17.500		18.00	123.00	73.00	48.00		●	●
17.700		18.00	123.00	73.00	48.00		●	
18.000		18.00	123.00	73.00	48.00		●	●
18.500		20.00	131.00	79.00	50.00		●	●
19.000		20.00	131.00	79.00	50.00		●	●
19.500		20.00	131.00	79.00	50.00		●	●
20.000		20.00	131.00	79.00	50.00		●	●

Ratio drills with internal coolant

3xD | RT 100 VA | DIN 6537 K | 140° | m7

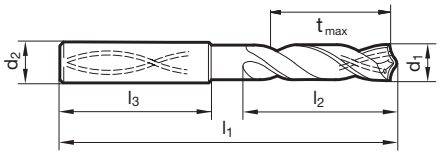
Tool material	Solid carbide	
Surface	a	a
Shank form	HA	HE

P	web thinning ≥ Ø 3.000 • facet point grinding • main cutting edge form straight • optimised cutting geometry
M •	
K	
N	stainless/acid-/heat-resistant steels • Titanium and Titanium alloys • Inconel, Hastelloy, Monel
S •	
H	

GÜHRINGNAVIGATOR

Cutting data page 76

$t_{max} = l_2 - 1{,}5 \times d_1$



Article no.	5526	5528
Discount group	155	155
Cutting direction	R	R

d1		d2 h6	l1	l2	l3	Availability	
mm	inch	mm	mm	mm	mm		
3.000		6.00	62.00	20.00	36.00	•	•
3.100		6.00	62.00	20.00	36.00	•	•
3.170	1/8	6.00	62.00	20.00	36.00	•	•
3.200		6.00	62.00	20.00	36.00	•	•
3.250		6.00	62.00	20.00	36.00	•	•
3.300		6.00	62.00	20.00	36.00	•	•
3.400		6.00	62.00	20.00	36.00	•	•
3.500		6.00	62.00	20.00	36.00	•	•
3.570	9/64	6.00	62.00	20.00	36.00	•	•
3.600		6.00	62.00	20.00	36.00	•	•
3.700		6.00	62.00	20.00	36.00	•	•
3.800		6.00	66.00	24.00	36.00	•	•
3.900		6.00	66.00	24.00	36.00	•	•
3.970	5/32	6.00	66.00	24.00	36.00	•	•
4.000		6.00	66.00	24.00	36.00	•	•
4.100		6.00	66.00	24.00	36.00	•	•
4.200		6.00	66.00	24.00	36.00	•	•
4.300		6.00	66.00	24.00	36.00	•	•
4.370	11/64	6.00	66.00	24.00	36.00	•	•
4.400		6.00	66.00	24.00	36.00	•	•
4.500		6.00	66.00	24.00	36.00	•	•
4.600		6.00	66.00	24.00	36.00	•	•
4.650		6.00	66.00	24.00	36.00	•	•
4.700		6.00	66.00	24.00	36.00	•	•
4.760	3/16	6.00	66.00	28.00	36.00	•	•
4.800		6.00	66.00	28.00	36.00	•	•
4.900		6.00	66.00	28.00	36.00	•	•
5.000		6.00	66.00	28.00	36.00	•	•
5.100		6.00	66.00	28.00	36.00	•	•
5.160	13/64	6.00	66.00	28.00	36.00	•	•
5.200		6.00	66.00	28.00	36.00	•	•
5.300		6.00	66.00	28.00	36.00	•	•
5.400		6.00	66.00	28.00	36.00	•	•
5.500		6.00	66.00	28.00	36.00	•	•
5.550		6.00	66.00	28.00	36.00	•	•
5.560	7/32	6.00	66.00	28.00	36.00	•	•

					Article no.	5526	5528
					Discount group	155	155
					Cutting direction	®	®
d1		d2 h6	l1	l2	l3	Availability	
mm	inch	mm	mm	mm	mm		
5.600		6.00	66.00	28.00	36.00	●	●
5.700		6.00	66.00	28.00	36.00	●	●
5.800		6.00	66.00	28.00	36.00	●	●
5.900		6.00	66.00	28.00	36.00	●	●
5.950	15/64	6.00	66.00	28.00	36.00	●	●
6.000		6.00	66.00	28.00	36.00	●	●
6.100		8.00	79.00	34.00	36.00	●	●
6.200		8.00	79.00	34.00	36.00	●	●
6.300		8.00	79.00	34.00	36.00	●	●
6.350	1/4	8.00	79.00	34.00	36.00	●	●
6.400		8.00	79.00	34.00	36.00	●	●
6.500		8.00	79.00	34.00	36.00	●	●
6.600		8.00	79.00	34.00	36.00	●	●
6.700		8.00	79.00	34.00	36.00	●	●
6.750	17/64	8.00	79.00	34.00	36.00	●	●
6.800		8.00	79.00	34.00	36.00	●	●
6.900		8.00	79.00	34.00	36.00	●	●
7.000		8.00	79.00	34.00	36.00	●	●
7.100		8.00	79.00	41.00	36.00	●	●
7.140	9/32	8.00	79.00	41.00	36.00	●	●
7.200		8.00	79.00	41.00	36.00	●	●
7.300		8.00	79.00	41.00	36.00	●	●
7.400		8.00	79.00	41.00	36.00	●	●
7.500		8.00	79.00	41.00	36.00	●	●
7.540	19/64	8.00	79.00	41.00	36.00	●	●
7.600		8.00	79.00	41.00	36.00	●	●
7.700		8.00	79.00	41.00	36.00	●	●
7.800		8.00	79.00	41.00	36.00	●	●
7.900		8.00	79.00	41.00	36.00	●	●
7.940	5/16	8.00	79.00	41.00	36.00	●	●
8.000		8.00	79.00	41.00	36.00	●	●
8.100		10.00	89.00	47.00	40.00	●	●
8.200		10.00	89.00	47.00	40.00	●	●
8.300		10.00	89.00	47.00	40.00	●	●
8.330	21/64	10.00	89.00	47.00	40.00	●	●
8.400		10.00	89.00	47.00	40.00	●	●
8.500		10.00	89.00	47.00	40.00	●	●
8.600		10.00	89.00	47.00	40.00	●	●
8.700		10.00	89.00	47.00	40.00	●	●
8.730	11/32	10.00	89.00	47.00	40.00	●	●
8.800		10.00	89.00	47.00	40.00	●	●
8.900		10.00	89.00	47.00	40.00	●	●
9.000		10.00	89.00	47.00	40.00	●	●
9.100		10.00	89.00	47.00	40.00	●	●
9.130	23/64	10.00	89.00	47.00	40.00	●	●
9.200		10.00	89.00	47.00	40.00	●	●
9.250		10.00	89.00	47.00	40.00	●	●
9.300		10.00	89.00	47.00	40.00	●	●
9.400		10.00	89.00	47.00	40.00	●	●
9.500		10.00	89.00	47.00	40.00	●	●
9.520	3/8	10.00	89.00	47.00	40.00	●	●
9.600		10.00	89.00	47.00	40.00	●	●
9.700		10.00	89.00	47.00	40.00	●	●
9.800		10.00	89.00	47.00	40.00	●	●
9.900		10.00	89.00	47.00	40.00	●	●
9.920	25/64	10.00	89.00	47.00	40.00	●	●
10.000		10.00	89.00	47.00	40.00	●	●
10.100		12.00	102.00	55.00	45.00	●	●
10.200		12.00	102.00	55.00	45.00	●	●
10.300		12.00	102.00	55.00	45.00	●	●

					Article no.	5526	5528
					Discount group	155	155
					Cutting direction	R	R
d1		d2 h6	l1	l2	l3	Availability	
mm	inch	mm	mm	mm	mm		
10.320	13/32	12.00	102.00	55.00	45.00	●	●
10.400		12.00	102.00	55.00	45.00	●	●
10.500		12.00	102.00	55.00	45.00	●	●
10.600		12.00	102.00	55.00	45.00	●	●
10.700		12.00	102.00	55.00	45.00	●	●
10.800		12.00	102.00	55.00	45.00	●	●
10.900		12.00	102.00	55.00	45.00	●	●
11.000		12.00	102.00	55.00	45.00	●	●
11.100		12.00	102.00	55.00	45.00	●	●
11.110	7/16	12.00	102.00	55.00	45.00	●	●
11.200		12.00	102.00	55.00	45.00	●	●
11.300		12.00	102.00	55.00	45.00	●	●
11.400		12.00	102.00	55.00	45.00	●	●
11.500		12.00	102.00	55.00	45.00	●	●
11.600		12.00	102.00	55.00	45.00	●	●
11.700		12.00	102.00	55.00	45.00	●	●
11.800		12.00	102.00	55.00	45.00	●	●
11.900		12.00	102.00	55.00	45.00	●	●
11.910	15/32	12.00	102.00	55.00	45.00	●	●
12.000		12.00	102.00	55.00	45.00	●	●
12.200		14.00	107.00	60.00	45.00	●	●
12.500		14.00	107.00	60.00	45.00	●	●
12.700	1/2	14.00	107.00	60.00	45.00	●	●
13.000		14.00	107.00	60.00	45.00	●	●
13.500		14.00	107.00	60.00	45.00	●	●
13.700		14.00	107.00	60.00	45.00	●	●
14.000		14.00	107.00	60.00	45.00	●	●
14.200		16.00	115.00	65.00	48.00	●	●
14.290	9/16	16.00	115.00	65.00	48.00	●	●
14.500		16.00	115.00	65.00	48.00	●	●
14.700		16.00	115.00	65.00	48.00	●	●
15.000		16.00	115.00	65.00	48.00	●	●
15.200		16.00	115.00	65.00	48.00	●	●
15.500		16.00	115.00	65.00	48.00	●	●
15.700		16.00	115.00	65.00	48.00	●	●
16.000		16.00	115.00	65.00	48.00	●	●
16.500		18.00	123.00	73.00	48.00	●	●
17.000		18.00	123.00	73.00	48.00	●	●
17.500		18.00	123.00	73.00	48.00	●	●
18.000		18.00	123.00	73.00	48.00	●	●
18.500		20.00	131.00	79.00	50.00	●	●
19.000		20.00	131.00	79.00	50.00	●	●
19.500		20.00	131.00	79.00	50.00	●	●
20.000		20.00	131.00	79.00	50.00	●	●

Ratio drills with internal coolant

5xD | RT 100 Al | DIN 6537 L | 140° | m7

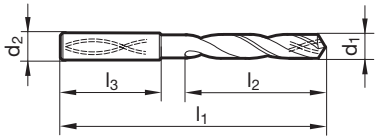
Tool material	Solid carbide
Surface	◯
Shank form	HA

NEW

P		relieved cone • main cutting edge is slightly concave • optimised cutting geometry • sharp cutting edges
M		
K		
N	•	aluminium and Al-alloys • Al materials with high Si-content
S		
H		

GÜHRINGNAVIGATOR

Cutting data page 76



Article no.	5768
Discount group	155
Cutting direction	®

d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
3.000		6.00	66.00	28.00	36.00	●
3.100		6.00	66.00	28.00	36.00	●
3.170	1/8	6.00	66.00	28.00	36.00	●
3.200		6.00	66.00	28.00	36.00	●
3.250		6.00	66.00	28.00	36.00	●
3.300		6.00	66.00	28.00	36.00	●
3.400		6.00	66.00	28.00	36.00	●
3.500		6.00	66.00	28.00	36.00	●
3.570	9/64	6.00	66.00	28.00	36.00	●
3.600		6.00	66.00	28.00	36.00	●
3.700		6.00	66.00	28.00	36.00	●
3.800		6.00	74.00	36.00	36.00	●
3.900		6.00	74.00	36.00	36.00	●
3.970	5/32	6.00	74.00	36.00	36.00	●
4.000		6.00	74.00	36.00	36.00	●
4.100		6.00	74.00	36.00	36.00	●
4.200		6.00	74.00	36.00	36.00	●
4.300		6.00	74.00	36.00	36.00	●
4.370	11/64	6.00	74.00	36.00	36.00	●
4.400		6.00	74.00	36.00	36.00	●
4.500		6.00	74.00	36.00	36.00	●
4.600		6.00	74.00	36.00	36.00	●
4.650		6.00	74.00	36.00	36.00	●
4.700		6.00	74.00	36.00	36.00	●
4.760	3/16	6.00	82.00	44.00	36.00	●
4.800		6.00	82.00	44.00	36.00	●
4.900		6.00	82.00	44.00	36.00	●
5.000		6.00	82.00	44.00	36.00	●
5.100		6.00	82.00	44.00	36.00	●
5.160	13/64	6.00	82.00	44.00	36.00	●
5.200		6.00	82.00	44.00	36.00	●
5.300		6.00	82.00	44.00	36.00	●
5.400		6.00	82.00	44.00	36.00	●
5.500		6.00	82.00	44.00	36.00	●
5.550		6.00	82.00	44.00	36.00	●
5.560	7/32	6.00	82.00	44.00	36.00	●

					Article no.	5768
					Discount group	155
					Cutting direction	®
d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
5.600		6.00	82.00	44.00	36.00	●
5.700		6.00	82.00	44.00	36.00	●
5.800		6.00	82.00	44.00	36.00	●
5.900		6.00	82.00	44.00	36.00	●
5.950	15/64	6.00	82.00	44.00	36.00	●
6.000		6.00	82.00	44.00	36.00	●
6.100		8.00	91.00	53.00	36.00	●
6.200		8.00	91.00	53.00	36.00	●
6.300		8.00	91.00	53.00	36.00	●
6.350	1/4	8.00	91.00	53.00	36.00	●
6.400		8.00	91.00	53.00	36.00	●
6.500		8.00	91.00	53.00	36.00	●
6.600		8.00	91.00	53.00	36.00	●
6.700		8.00	91.00	53.00	36.00	●
6.750	17/64	8.00	91.00	53.00	36.00	●
6.800		8.00	91.00	53.00	36.00	●
6.900		8.00	91.00	53.00	36.00	●
7.000		8.00	91.00	53.00	36.00	●
7.100		8.00	91.00	53.00	36.00	●
7.140	9/32	8.00	91.00	53.00	36.00	●
7.200		8.00	91.00	53.00	36.00	●
7.300		8.00	91.00	53.00	36.00	●
7.400		8.00	91.00	53.00	36.00	●
7.500		8.00	91.00	53.00	36.00	●
7.540	19/64	8.00	91.00	53.00	36.00	●
7.600		8.00	91.00	53.00	36.00	●
7.700		8.00	91.00	53.00	36.00	●
7.800		8.00	91.00	53.00	36.00	●
7.900		8.00	91.00	53.00	36.00	●
7.940	5/16	8.00	91.00	53.00	36.00	●
8.000		8.00	91.00	53.00	36.00	●
8.100		10.00	103.00	61.00	40.00	●
8.200		10.00	103.00	61.00	40.00	●
8.300		10.00	103.00	61.00	40.00	●
8.330	21/64	10.00	103.00	61.00	40.00	●
8.400		10.00	103.00	61.00	40.00	●
8.500		10.00	103.00	61.00	40.00	●
8.600		10.00	103.00	61.00	40.00	●
8.700		10.00	103.00	61.00	40.00	●
8.730	11/32	10.00	103.00	61.00	40.00	●
8.800		10.00	103.00	61.00	40.00	●
8.900		10.00	103.00	61.00	40.00	●
9.000		10.00	103.00	61.00	40.00	●
9.100		10.00	103.00	61.00	40.00	●
9.130	23/64	10.00	103.00	61.00	40.00	●
9.200		10.00	103.00	61.00	40.00	●
9.250		10.00	103.00	61.00	40.00	●
9.300		10.00	103.00	61.00	40.00	●
9.340		10.00	103.00	61.00	40.00	●
9.400		10.00	103.00	61.00	40.00	●
9.500		10.00	103.00	61.00	40.00	●
9.520	3/8	10.00	103.00	61.00	40.00	●
9.600		10.00	103.00	61.00	40.00	●
9.700		10.00	103.00	61.00	40.00	●
9.800		10.00	103.00	61.00	40.00	●
9.900		10.00	103.00	61.00	40.00	●
9.920	25/64	10.00	103.00	61.00	40.00	●
10.000		10.00	103.00	61.00	40.00	●
10.100		12.00	118.00	71.00	45.00	●
10.200		12.00	118.00	71.00	45.00	●

					Article no.	5768
					Discount group	155
					Cutting direction	®

d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
10.300		12.00	118.00	71.00	45.00	●
10.320	13/32	12.00	118.00	71.00	45.00	●
10.400		12.00	118.00	71.00	45.00	●
10.500		12.00	118.00	71.00	45.00	●
10.600		12.00	118.00	71.00	45.00	●
10.700		12.00	118.00	71.00	45.00	●
10.800		12.00	118.00	71.00	45.00	●
10.900		12.00	118.00	71.00	45.00	●
11.000		12.00	118.00	71.00	45.00	●
11.100		12.00	118.00	71.00	45.00	●
11.110	7/16	12.00	118.00	71.00	45.00	●
11.200		12.00	118.00	71.00	45.00	●
11.300		12.00	118.00	71.00	45.00	●
11.400		12.00	118.00	71.00	45.00	●
11.500		12.00	118.00	71.00	45.00	●
11.600		12.00	118.00	71.00	45.00	●
11.700		12.00	118.00	71.00	45.00	●
11.800		12.00	118.00	71.00	45.00	●
11.900		12.00	118.00	71.00	45.00	●
11.910	15/32	12.00	118.00	71.00	45.00	●
12.000		12.00	118.00	71.00	45.00	●
12.100		14.00	124.00	77.00	45.00	●
12.200		14.00	124.00	77.00	45.00	●
12.500		14.00	124.00	77.00	45.00	●
12.600		14.00	124.00	77.00	45.00	●
12.700	1/2	14.00	124.00	77.00	45.00	●
12.800		14.00	124.00	77.00	45.00	●
12.900		14.00	124.00	77.00	45.00	●
13.000		14.00	124.00	77.00	45.00	●
13.100	33/64	14.00	124.00	77.00	45.00	●
13.300		14.00	124.00	77.00	45.00	●
13.400		14.00	124.00	77.00	45.00	●
13.500		14.00	124.00	77.00	45.00	●
13.700		14.00	124.00	77.00	45.00	●
13.800		14.00	124.00	77.00	45.00	●
14.000		14.00	124.00	77.00	45.00	●
14.100		16.00	133.00	83.00	48.00	●
14.200		16.00	133.00	83.00	48.00	●
14.290	9/16	16.00	133.00	83.00	48.00	●
14.300		16.00	133.00	83.00	48.00	●
14.400		16.00	133.00	83.00	48.00	●
14.500		16.00	133.00	83.00	48.00	●
14.700		16.00	133.00	83.00	48.00	●
14.800		16.00	133.00	83.00	48.00	●
15.000		16.00	133.00	83.00	48.00	●
15.100		16.00	133.00	83.00	48.00	●
15.200		16.00	133.00	83.00	48.00	●
15.300		16.00	133.00	83.00	48.00	●
15.500		16.00	133.00	83.00	48.00	●
15.700		16.00	133.00	83.00	48.00	●
15.800		16.00	133.00	83.00	48.00	●
16.000		16.00	133.00	83.00	48.00	●
16.500		18.00	143.00	93.00	48.00	●
16.700		18.00	143.00	93.00	48.00	●
16.900		18.00	143.00	93.00	48.00	●
17.000		18.00	143.00	93.00	48.00	●
17.500		18.00	143.00	93.00	48.00	●
17.700		18.00	143.00	93.00	48.00	●
18.000		18.00	143.00	93.00	48.00	●
18.500		20.00	153.00	101.00	50.00	●

					Article no.	5768
					Discount group	155
					Cutting direction	®

d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
18.900		20.00	153.00	101.00	50.00	●
19.000		20.00	153.00	101.00	50.00	●
19.050	3/4	20.00	153.00	101.00	50.00	●
19.300		20.00	153.00	101.00	50.00	●
19.500		20.00	153.00	101.00	50.00	●
20.000		20.00	153.00	101.00	50.00	●

Ratio drills with internal coolant

5xD | RT 100 U | DIN 6537 L | 140° | m7

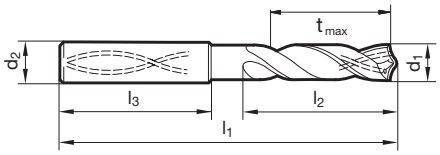
P	●	web thinning ≥ Ø 3.000 • facet point grinding • main cutting edge form straight • optimised cutting geometry
M	○	
K	●	
N	○	structural and case hardened steels • free-cutting steels, heat-treatable steels • steels (alloyed/unalloyed) up to 1200 N/mm² • cast materials • bronze, brass • high-alloyed AlSi-alloys
S	○	
H	○	

Tool material	Solid carbide		
Surface	F	F	F
Shank form	HA	HE	HB

GÜHRINGNAVIGATOR

Cutting data page 76

$t_{max} = l_2 - 1{,}5 \times d_1$



Article no.	5511	5611	5650
Discount group	155	155	155
Cutting direction	R	R	R

d1		d2 h6	l1	l2	l3	Availability		
mm	inch	mm	mm	mm	mm			
3.000		6.00	66.00	28.00	36.00	●	●	●
3.100		6.00	66.00	28.00	36.00	●	●	●
3.170	1/8	6.00	66.00	28.00	36.00	●	●	●
3.200		6.00	66.00	28.00	36.00	●	●	●
3.250		6.00	66.00	28.00	36.00	●	●	●
3.300		6.00	66.00	28.00	36.00	●	●	●
3.400		6.00	66.00	28.00	36.00	●	●	●
3.500		6.00	66.00	28.00	36.00	●	●	●
3.570	9/64	6.00	66.00	28.00	36.00	●	●	●
3.600		6.00	66.00	28.00	36.00	●	●	●
3.700		6.00	66.00	28.00	36.00	●	●	●
3.800		6.00	74.00	36.00	36.00	●	●	●
3.900		6.00	74.00	36.00	36.00	●	●	●
3.970	5/32	6.00	74.00	36.00	36.00	●	●	●
4.000		6.00	74.00	36.00	36.00	●	●	●
4.100		6.00	74.00	36.00	36.00	●	●	●
4.200		6.00	74.00	36.00	36.00	●	●	●
4.300		6.00	74.00	36.00	36.00	●	●	●
4.370	11/64	6.00	74.00	36.00	36.00	●	●	●
4.400		6.00	74.00	36.00	36.00	●	●	●
4.500		6.00	74.00	36.00	36.00	●	●	●
4.600		6.00	74.00	36.00	36.00	●	●	●
4.650		6.00	74.00	36.00	36.00	●	●	●
4.700		6.00	74.00	36.00	36.00	●	●	●
4.760	3/16	6.00	82.00	44.00	36.00	●	●	●
4.800		6.00	82.00	44.00	36.00	●	●	●
4.900		6.00	82.00	44.00	36.00	●	●	●
5.000		6.00	82.00	44.00	36.00	●	●	●
5.100		6.00	82.00	44.00	36.00	●	●	●
5.160	13/64	6.00	82.00	44.00	36.00	●	●	●
5.200		6.00	82.00	44.00	36.00	●	●	●
5.300		6.00	82.00	44.00	36.00	●	●	●
5.400		6.00	82.00	44.00	36.00	●	●	●
5.500		6.00	82.00	44.00	36.00	●	●	●
5.550		6.00	82.00	44.00	36.00	●	●	●
5.560	7/32	6.00	82.00	44.00	36.00	●	●	●

						Article no.	5511	5611	5650
						Discount group	155	155	155
						Cutting direction	R	R	R
d1		d2 h6	l1	l2	l3	Availability			
mm	inch	mm	mm	mm	mm				
5.600		6.00	82.00	44.00	36.00		●	●	●
5.700		6.00	82.00	44.00	36.00		●	●	●
5.800		6.00	82.00	44.00	36.00		●	●	●
5.900		6.00	82.00	44.00	36.00		●	●	●
5.950	15/64	6.00	82.00	44.00	36.00		●	●	●
6.000		6.00	82.00	44.00	36.00		●	●	●
6.100		8.00	91.00	53.00	36.00		●	●	●
6.200		8.00	91.00	53.00	36.00		●	●	●
6.300		8.00	91.00	53.00	36.00		●	●	●
6.350	1/4	8.00	91.00	53.00	36.00		●	●	●
6.400		8.00	91.00	53.00	36.00		●	●	●
6.500		8.00	91.00	53.00	36.00		●	●	●
6.600		8.00	91.00	53.00	36.00		●	●	●
6.700		8.00	91.00	53.00	36.00		●	●	●
6.750	17/64	8.00	91.00	53.00	36.00		●	●	●
6.800		8.00	91.00	53.00	36.00		●	●	●
6.900		8.00	91.00	53.00	36.00		●	●	●
7.000		8.00	91.00	53.00	36.00		●	●	●
7.100		8.00	91.00	53.00	36.00		●	●	●
7.140	9/32	8.00	91.00	53.00	36.00		●	●	●
7.200		8.00	91.00	53.00	36.00		●	●	●
7.300		8.00	91.00	53.00	36.00		●	●	●
7.400		8.00	91.00	53.00	36.00		●	●	●
7.500		8.00	91.00	53.00	36.00		●	●	●
7.540	19/64	8.00	91.00	53.00	36.00		●	●	●
7.600		8.00	91.00	53.00	36.00		●	●	●
7.700		8.00	91.00	53.00	36.00		●	●	●
7.800		8.00	91.00	53.00	36.00		●	●	●
7.900		8.00	91.00	53.00	36.00		●	●	●
7.940	5/16	8.00	91.00	53.00	36.00		●	●	●
8.000		8.00	91.00	53.00	36.00		●	●	●
8.100		10.00	103.00	61.00	40.00		●	●	●
8.200		10.00	103.00	61.00	40.00		●	●	●
8.300		10.00	103.00	61.00	40.00		●	●	●
8.330	21/64	10.00	103.00	61.00	40.00		●	●	●
8.400		10.00	103.00	61.00	40.00		●	●	●
8.500		10.00	103.00	61.00	40.00		●	●	●
8.600		10.00	103.00	61.00	40.00		●	●	●
8.700		10.00	103.00	61.00	40.00		●	●	●
8.730	11/32	10.00	103.00	61.00	40.00		●	●	●
8.800		10.00	103.00	61.00	40.00		●	●	●
8.900		10.00	103.00	61.00	40.00		●	●	●
9.000		10.00	103.00	61.00	40.00		●	●	●
9.100		10.00	103.00	61.00	40.00		●	●	●
9.130	23/64	10.00	103.00	61.00	40.00		●	●	●
9.200		10.00	103.00	61.00	40.00		●	●	●
9.250		10.00	103.00	61.00	40.00		●	●	●
9.300		10.00	103.00	61.00	40.00		●	●	●
9.340		10.00	103.00	61.00	40.00		●		
9.400		10.00	103.00	61.00	40.00		●	●	●
9.500		10.00	103.00	61.00	40.00		●	●	●
9.520	3/8	10.00	103.00	61.00	40.00		●	●	●
9.600		10.00	103.00	61.00	40.00		●	●	●
9.700		10.00	103.00	61.00	40.00		●	●	●
9.800		10.00	103.00	61.00	40.00		●	●	●
9.900		10.00	103.00	61.00	40.00		●	●	●
9.920	25/64	10.00	103.00	61.00	40.00		●	●	●
10.000		10.00	103.00	61.00	40.00		●	●	●
10.100		12.00	118.00	71.00	45.00		●	●	●
10.200		12.00	118.00	71.00	45.00		●	●	●

						Article no.	5511	5611	5650
						Discount group	155	155	155
						Cutting direction	R	R	R
d1		d2 h6	l1	l2	l3	Availability			
mm	inch	mm	mm	mm	mm				
10.300		12.00	118.00	71.00	45.00		●	●	●
10.320	13/32	12.00	118.00	71.00	45.00		●	●	●
10.400		12.00	118.00	71.00	45.00		●	●	●
10.500		12.00	118.00	71.00	45.00		●	●	●
10.600		12.00	118.00	71.00	45.00		●	●	●
10.700		12.00	118.00	71.00	45.00		●	●	●
10.800		12.00	118.00	71.00	45.00		●	●	●
10.900		12.00	118.00	71.00	45.00		●	●	●
11.000		12.00	118.00	71.00	45.00		●	●	●
11.100		12.00	118.00	71.00	45.00		●	●	●
11.110	7/16	12.00	118.00	71.00	45.00		●	●	●
11.200		12.00	118.00	71.00	45.00		●	●	●
11.300		12.00	118.00	71.00	45.00		●	●	●
11.400		12.00	118.00	71.00	45.00		●	●	●
11.500		12.00	118.00	71.00	45.00		●	●	●
11.600		12.00	118.00	71.00	45.00		●	●	●
11.700		12.00	118.00	71.00	45.00		●	●	●
11.800		12.00	118.00	71.00	45.00		●	●	●
11.900		12.00	118.00	71.00	45.00		●	●	●
11.910	15/32	12.00	118.00	71.00	45.00		●	●	●
12.000		12.00	118.00	71.00	45.00		●	●	●
12.100		14.00	124.00	77.00	45.00		●	●	
12.200		14.00	124.00	77.00	45.00		●	●	●
12.500		14.00	124.00	77.00	45.00		●	●	●
12.600		14.00	124.00	77.00	45.00		●		
12.700	1/2	14.00	124.00	77.00	45.00		●	●	●
12.800		14.00	124.00	77.00	45.00		●		
12.900		14.00	124.00	77.00	45.00		●		
13.000		14.00	124.00	77.00	45.00		●	●	●
13.300		14.00	124.00	77.00	45.00		●		
13.400		14.00	124.00	77.00	45.00		●		
13.500		14.00	124.00	77.00	45.00		●	●	●
13.700		14.00	124.00	77.00	45.00		●	●	●
13.800		14.00	124.00	77.00	45.00		●		
14.000		14.00	124.00	77.00	45.00		●	●	●
14.100		16.00	133.00	83.00	48.00		●	●	
14.200		16.00	133.00	83.00	48.00		●	●	●
14.290	9/16	16.00	133.00	83.00	48.00		●	●	●
14.400		16.00	133.00	83.00	48.00		●		
14.500		16.00	133.00	83.00	48.00		●	●	●
14.700		16.00	133.00	83.00	48.00		●	●	●
14.800		16.00	133.00	83.00	48.00		●		
15.000		16.00	133.00	83.00	48.00		●	●	●
15.100		16.00	133.00	83.00	48.00		●		
15.200		16.00	133.00	83.00	48.00		●	●	●
15.300		16.00	133.00	83.00	48.00		●		
15.500		16.00	133.00	83.00	48.00		●	●	●
15.700		16.00	133.00	83.00	48.00		●	●	●
15.800		16.00	133.00	83.00	48.00		●		
16.000		16.00	133.00	83.00	48.00		●	●	●
16.500		18.00	143.00	93.00	48.00		●	●	●
16.700		18.00	143.00	93.00	48.00		●		
17.000		18.00	143.00	93.00	48.00		●	●	●
17.500		18.00	143.00	93.00	48.00		●	●	●
17.700		18.00	143.00	93.00	48.00		●		
18.000		18.00	143.00	93.00	48.00		●	●	●
18.500		20.00	153.00	101.00	50.00		●	●	●
18.900		20.00	153.00	101.00	50.00		●		
19.000		20.00	153.00	101.00	50.00		●	●	●
19.050	3/4	20.00	153.00	101.00	50.00		●	●	●

						Article no.	5511	5611	5650
						Discount group	155	155	155
						Cutting direction	R	R	R
d1		d2 h6	l1	l2	l3	Availability			
mm	inch	mm	mm	mm	mm				
19.500		20.00	153.00	101.00	50.00		●	●	●
20.000		20.00	153.00	101.00	50.00		●	●	●

GM 300

Tool holders and clamping systems
for every application

An Overview and Selection Guide can be found on page 150.

Ratio drills with internal coolant

5xD | RT 100 VA | DIN 6537 L | 140° | m7

Tool material	Solid carbide	
Surface	a	a
Shank form	HA	HE

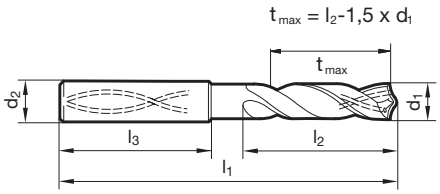
P	
M	•
K	
N	
S	•
H	

web thinning ≥ Ø 3.000 • facet point grinding • main cutting edge form straight • optimised cutting geometry

stainless/acid-/heat-resistant steels • Titanium and Titanium alloys • Inconel, Hastelloy, Monel

GÜHRINGNAVIGATOR

Cutting data page 76



Article no.	5580	5581
Discount group	155	155
Cutting direction	R	R

d1		d2 h6	l1	l2	l3	Availability	
mm	inch	mm	mm	mm	mm		
3.000		6.00	66.00	28.00	36.00	•	•
3.100		6.00	66.00	28.00	36.00	•	•
3.170	1/8	6.00	66.00	28.00	36.00	•	•
3.200		6.00	66.00	28.00	36.00	•	•
3.250		6.00	66.00	28.00	36.00	•	•
3.300		6.00	66.00	28.00	36.00	•	•
3.400		6.00	66.00	28.00	36.00	•	•
3.500		6.00	66.00	28.00	36.00	•	•
3.570	9/64	6.00	66.00	28.00	36.00	•	•
3.600		6.00	66.00	28.00	36.00	•	•
3.700		6.00	66.00	28.00	36.00	•	•
3.800		6.00	74.00	36.00	36.00	•	•
3.900		6.00	74.00	36.00	36.00	•	•
3.970	5/32	6.00	74.00	36.00	36.00	•	•
4.000		6.00	74.00	36.00	36.00	•	•
4.100		6.00	74.00	36.00	36.00	•	•
4.200		6.00	74.00	36.00	36.00	•	•
4.300		6.00	74.00	36.00	36.00	•	•
4.370	11/64	6.00	74.00	36.00	36.00	•	•
4.400		6.00	74.00	36.00	36.00	•	•
4.500		6.00	74.00	36.00	36.00	•	•
4.600		6.00	74.00	36.00	36.00	•	•
4.650		6.00	74.00	36.00	36.00	•	•
4.700		6.00	74.00	36.00	36.00	•	•
4.760	3/16	6.00	82.00	44.00	36.00	•	•
4.800		6.00	82.00	44.00	36.00	•	•
4.900		6.00	82.00	44.00	36.00	•	•
5.000		6.00	82.00	44.00	36.00	•	•
5.100		6.00	82.00	44.00	36.00	•	•
5.160	13/64	6.00	82.00	44.00	36.00	•	•
5.200		6.00	82.00	44.00	36.00	•	•
5.300		6.00	82.00	44.00	36.00	•	•
5.400		6.00	82.00	44.00	36.00	•	•
5.500		6.00	82.00	44.00	36.00	•	•
5.550		6.00	82.00	44.00	36.00	•	•
5.560	7/32	6.00	82.00	44.00	36.00	•	•

						Article no.	5580	5581
						Discount group	155	155
						Cutting direction	R	R
d1		d2 h6	l1	l2	l3	Availability		
mm	inch	mm	mm	mm	mm			
5.600		6.00	82.00	44.00	36.00		●	●
5.700		6.00	82.00	44.00	36.00		●	●
5.800		6.00	82.00	44.00	36.00		●	●
5.900		6.00	82.00	44.00	36.00		●	●
5.950	15/64	6.00	82.00	44.00	36.00		●	●
6.000		6.00	82.00	44.00	36.00		●	●
6.100		8.00	91.00	53.00	36.00		●	●
6.200		8.00	91.00	53.00	36.00		●	●
6.300		8.00	91.00	53.00	36.00		●	●
6.350	1/4	8.00	91.00	53.00	36.00		●	●
6.400		8.00	91.00	53.00	36.00		●	●
6.500		8.00	91.00	53.00	36.00		●	●
6.600		8.00	91.00	53.00	36.00		●	●
6.700		8.00	91.00	53.00	36.00		●	●
6.750	17/64	8.00	91.00	53.00	36.00		●	●
6.800		8.00	91.00	53.00	36.00		●	●
6.900		8.00	91.00	53.00	36.00		●	●
7.000		8.00	91.00	53.00	36.00		●	●
7.100		8.00	91.00	53.00	36.00		●	●
7.140	9/32	8.00	91.00	53.00	36.00		●	●
7.200		8.00	91.00	53.00	36.00		●	●
7.300		8.00	91.00	53.00	36.00		●	●
7.400		8.00	91.00	53.00	36.00		●	●
7.500		8.00	91.00	53.00	36.00		●	●
7.540	19/64	8.00	91.00	53.00	36.00		●	●
7.600		8.00	91.00	53.00	36.00		●	●
7.700		8.00	91.00	53.00	36.00		●	●
7.800		8.00	91.00	53.00	36.00		●	●
7.900		8.00	91.00	53.00	36.00		●	●
7.940	5/16	8.00	91.00	53.00	36.00		●	●
8.000		8.00	91.00	53.00	36.00		●	●
8.100		10.00	103.00	61.00	40.00		●	●
8.200		10.00	103.00	61.00	40.00		●	●
8.300		10.00	103.00	61.00	40.00		●	●
8.330	21/64	10.00	103.00	61.00	40.00		●	●
8.400		10.00	103.00	61.00	40.00		●	●
8.500		10.00	103.00	61.00	40.00		●	●
8.600		10.00	103.00	61.00	40.00		●	●
8.700		10.00	103.00	61.00	40.00		●	●
8.730	11/32	10.00	103.00	61.00	40.00		●	●
8.800		10.00	103.00	61.00	40.00		●	●
8.900		10.00	103.00	61.00	40.00		●	●
9.000		10.00	103.00	61.00	40.00		●	●
9.100		10.00	103.00	61.00	40.00		●	●
9.130	23/64	10.00	103.00	61.00	40.00		●	●
9.200		10.00	103.00	61.00	40.00		●	●
9.250		10.00	103.00	61.00	40.00		●	●
9.300		10.00	103.00	61.00	40.00		●	●
9.400		10.00	103.00	61.00	40.00		●	●
9.500		10.00	103.00	61.00	40.00		●	●
9.520	3/8	10.00	103.00	61.00	40.00		●	●
9.600		10.00	103.00	61.00	40.00		●	●
9.700		10.00	103.00	61.00	40.00		●	●
9.800		10.00	103.00	61.00	40.00		●	●
9.900		10.00	103.00	61.00	40.00		●	●
9.920	25/64	10.00	103.00	61.00	40.00		●	●
10.000		10.00	103.00	61.00	40.00		●	●
10.100		12.00	118.00	71.00	45.00		●	●
10.200		12.00	118.00	71.00	45.00		●	●
10.300		12.00	118.00	71.00	45.00		●	●

						Article no.	5580	5581
						Discount group	155	155
						Cutting direction	R	R
d1		d2 h6	l1	l2	l3	Availability		
mm	inch	mm	mm	mm	mm			
10.320	13/32	12.00	118.00	71.00	45.00		●	●
10.400		12.00	118.00	71.00	45.00		●	●
10.500		12.00	118.00	71.00	45.00		●	●
10.600		12.00	118.00	71.00	45.00		●	●
10.700		12.00	118.00	71.00	45.00		●	●
10.800		12.00	118.00	71.00	45.00		●	●
10.900		12.00	118.00	71.00	45.00		●	●
11.000		12.00	118.00	71.00	45.00		●	●
11.100		12.00	118.00	71.00	45.00		●	●
11.110	7/16	12.00	118.00	71.00	45.00		●	●
11.200		12.00	118.00	71.00	45.00		●	●
11.300		12.00	118.00	71.00	45.00		●	●
11.400		12.00	118.00	71.00	45.00		●	●
11.500		12.00	118.00	71.00	45.00		●	●
11.600		12.00	118.00	71.00	45.00		●	●
11.700		12.00	118.00	71.00	45.00		●	●
11.800		12.00	118.00	71.00	45.00		●	●
11.900		12.00	118.00	71.00	45.00		●	●
11.910	15/32	12.00	118.00	71.00	45.00		●	●
12.000		12.00	118.00	71.00	45.00		●	●
12.200		14.00	124.00	77.00	45.00		●	●
12.500		14.00	124.00	77.00	45.00		●	●
12.700	1/2	14.00	124.00	77.00	45.00		●	●
13.000		14.00	124.00	77.00	45.00		●	●
13.500		14.00	124.00	77.00	45.00		●	●
13.700		14.00	124.00	77.00	45.00		●	●
14.000		14.00	124.00	77.00	45.00		●	●
14.200		16.00	133.00	83.00	48.00		●	●
14.290	9/16	16.00	133.00	83.00	48.00		●	●
14.500		16.00	133.00	83.00	48.00		●	●
14.700		16.00	133.00	83.00	48.00		●	●
15.000		16.00	133.00	83.00	48.00		●	●
15.200		16.00	133.00	83.00	48.00		●	●
15.500		16.00	133.00	83.00	48.00		●	●
15.700		16.00	133.00	83.00	48.00		●	●
16.000		16.00	133.00	83.00	48.00		●	●
16.500		18.00	143.00	93.00	48.00		●	●
17.000		18.00	143.00	93.00	48.00		●	●
17.500		18.00	143.00	93.00	48.00		●	●
18.000		18.00	143.00	93.00	48.00		●	●
18.500		20.00	153.00	101.00	50.00		●	●
19.000		20.00	153.00	101.00	50.00		●	●
19.500		20.00	153.00	101.00	50.00		●	●
20.000		20.00	153.00	101.00	50.00		●	●

Ratio drills with internal coolant

7xD | RT 100 U | WN | 140° | m7

Tool material	Solid carbide	
Surface	F	F
Shank form	HA	HE

P ●	web thinning ≥ Ø 3.000 • facet point grinding • main cutting edge form straight • optimised cutting geometry
M ○	
K ●	
N ○	structural and case hardened steels • free-cutting steels, heat-treatable steels • steels (alloyed/unalloyed) up to 1200 N/mm² • cast materials • bronze, brass • high-alloyed AlSi-alloys
S ○	
H ○	

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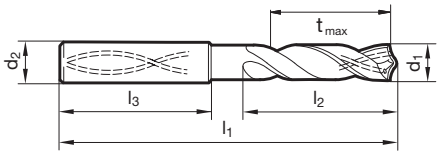
Cutting data page 76

$t_{max} = l_2 - 1{,}5 \times d_1$



Article no.	5512	5612
Discount group	155	155
Cutting direction	R	R

d1		d2 h6	l1	l2	l3	Availability	
mm	inch	mm	mm	mm	mm		
3.000		6.00	70.00	30.00	36.00	●	●
3.100		6.00	70.00	30.00	36.00	●	●
3.170	1/8	6.00	70.00	30.00	36.00	●	●
3.200		6.00	70.00	30.00	36.00	●	●
3.250		6.00	70.00	30.00	36.00	●	●
3.300		6.00	70.00	30.00	36.00	●	●
3.400		6.00	75.00	35.50	36.00	●	●
3.500		6.00	75.00	35.50	36.00	●	●
3.570	9/64	6.00	75.00	35.50	36.00	●	●
3.600		6.00	75.00	35.50	36.00	●	●
3.700		6.00	75.00	35.50	36.00	●	●
3.800		6.00	75.00	37.50	36.00	●	●
3.900		6.00	75.00	37.50	36.00	●	●
3.970	5/32	6.00	75.00	37.50	36.00	●	●
4.000		6.00	75.00	37.50	36.00	●	●
4.100		6.00	75.00	37.50	36.00	●	●
4.200		6.00	75.00	37.50	36.00	●	●
4.300		6.00	85.00	45.00	36.00	●	●
4.370	11/64	6.00	85.00	45.00	36.00	●	●
4.400		6.00	85.00	45.00	36.00	●	●
4.500		6.00	85.00	45.00	36.00	●	●
4.600		6.00	85.00	45.00	36.00	●	●
4.650		6.00	85.00	45.00	36.00	●	●
4.700		6.00	85.00	45.00	36.00	●	●
4.760	3/16	6.00	90.00	50.00	36.00	●	●
4.800		6.00	90.00	50.00	36.00	●	●
4.900		6.00	90.00	50.00	36.00	●	●
5.000		6.00	90.00	50.00	36.00	●	●
5.100		6.00	90.00	50.00	36.00	●	●
5.160	13/64	6.00	90.00	50.00	36.00	●	●
5.200		6.00	90.00	50.00	36.00	●	●
5.300		6.00	90.00	50.00	36.00	●	●
5.400		6.00	97.00	57.00	36.00	●	●
5.500		6.00	97.00	57.00	36.00	●	●
5.600		6.00	97.00	57.00	36.00	●	
5.700		6.00	97.00	57.00	36.00	●	●

						Article no.	5512	5612
						Discount group	155	155
						Cutting direction	®	®
d1		d2 h6	l1	l2	l3	Availability		
mm	inch	mm	mm	mm	mm			
5.800		6.00	97.00	57.00	36.00		●	●
5.900		6.00	97.00	57.00	36.00		●	●
6.000		6.00	97.00	57.00	36.00		●	●
6.100		8.00	106.00	66.00	36.00		●	
6.200		8.00	106.00	66.00	36.00		●	●
6.300		8.00	106.00	66.00	36.00		●	●
6.350	1/4	8.00	106.00	66.00	36.00		●	●
6.500		8.00	106.00	66.00	36.00		●	●
6.600		8.00	106.00	66.00	36.00		●	●
6.700		8.00	106.00	66.00	36.00		●	●
6.800		8.00	106.00	66.00	36.00		●	●
6.900		8.00	116.00	76.00	36.00		●	●
7.000		8.00	116.00	76.00	36.00		●	●
7.100		8.00	116.00	76.00	36.00		●	●
7.200		8.00	116.00	76.00	36.00		●	●
7.300		8.00	116.00	76.00	36.00		●	
7.400		8.00	116.00	76.00	36.00		●	
7.500		8.00	116.00	76.00	36.00		●	●
7.600		8.00	116.00	76.00	36.00		●	●
7.700		8.00	116.00	76.00	36.00		●	●
7.800		8.00	116.00	76.00	36.00		●	●
8.000		8.00	116.00	76.00	36.00		●	●
8.100		10.00	131.00	87.00	40.00		●	●
8.200		10.00	131.00	87.00	40.00		●	●
8.400		10.00	131.00	87.00	40.00		●	●
8.500		10.00	131.00	87.00	40.00		●	●
8.600		10.00	131.00	87.00	40.00		●	●
8.700		10.00	131.00	87.00	40.00		●	●
8.800		10.00	131.00	87.00	40.00		●	●
9.000		10.00	131.00	87.00	40.00		●	●
9.100		10.00	139.00	95.00	40.00		●	●
9.200		10.00	139.00	95.00	40.00		●	●
9.300		10.00	139.00	95.00	40.00		●	●
9.400		10.00	139.00	95.00	40.00		●	●
9.500		10.00	139.00	95.00	40.00		●	●
9.520	3/8	10.00	139.00	95.00	40.00		●	●
9.700		10.00	139.00	95.00	40.00		●	●
9.800		10.00	139.00	95.00	40.00		●	●
9.900		10.00	139.00	95.00	40.00		●	●
10.000		10.00	139.00	95.00	40.00		●	●
10.200		12.00	155.00	106.00	45.00		●	●
10.500		12.00	155.00	106.00	45.00		●	●
10.700		12.00	155.00	106.00	45.00		●	
10.800		12.00	155.00	106.00	45.00		●	●
11.000		12.00	155.00	106.00	45.00		●	●
11.200		12.00	163.00	114.00	45.00		●	●
11.500		12.00	163.00	114.00	45.00		●	●
11.800		12.00	163.00	114.00	45.00		●	●
12.000		12.00	163.00	114.00	45.00		●	●
12.200		14.00	182.00	133.00	45.00		●	●
12.500		14.00	182.00	133.00	45.00		●	●
12.700	1/2	14.00	182.00	133.00	45.00		●	●
13.000		14.00	182.00	133.00	45.00		●	●
13.500		14.00	182.00	133.00	45.00		●	●
14.000		14.00	182.00	133.00	45.00		●	●
14.200		16.00	204.00	152.00	48.00		●	●
14.500		16.00	204.00	152.00	48.00		●	●
15.000		16.00	204.00	152.00	48.00		●	●
15.500		16.00	204.00	152.00	48.00		●	●
16.000		16.00	204.00	152.00	48.00		●	●

					Article no.	5512	5612
					Discount group	155	155
					Cutting direction	R	R
d1		d2 h6	l1	l2	l3	Availability	
mm	inch	mm	mm	mm	mm		
16.500		18.00	223.00	171.00	48.00	●	●
17.000		18.00	223.00	171.00	48.00	●	●
17.500		18.00	223.00	171.00	48.00	●	●
18.000		18.00	223.00	171.00	48.00	●	●
18.500		20.00	244.00	190.00	50.00	●	●
19.000		20.00	244.00	190.00	50.00	●	●
19.050	3/4	20.00	244.00	190.00	50.00	●	●
19.500		20.00	244.00	190.00	50.00	●	●
20.000		20.00	244.00	190.00	50.00	●	●

Ratio drills with internal coolant

12xD | RT 100 U | WN | 135° | h7

Tool material	Solid carbide
Surface	F
Shank form	HA

P	●	web thinning ≥ Ø 3.000 • facet point grinding • main cutting edge form straight • optimised cutting geometry
M	○	
K	●	
N	○	structural and case hardened steels • free-cutting steels, heat-treatable steels • alloyed steels up to 1200 N/mm² • cast materials
S	○	• bronze, brass • high-alloyed AlSi-alloys
H	○	

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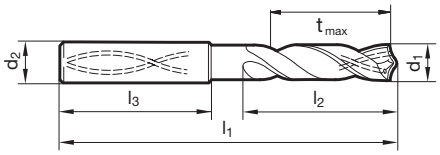
Cutting data page 76

$t_{max} = l_2 - 1{,}5 \times d_1$



Article no.	5525
Discount group	155
Cutting direction	R

d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
3.000		6.00	90.00	50.00	36.00	●
3.100		6.00	90.00	50.00	36.00	●
3.170	1/8	6.00	90.00	50.00	36.00	●
3.200		6.00	90.00	50.00	36.00	●
3.250		6.00	90.00	50.00	36.00	●
3.300		6.00	90.00	50.00	36.00	●
3.400		6.00	90.00	50.00	36.00	●
3.500		6.00	90.00	50.00	36.00	●
3.600		6.00	90.00	50.00	36.00	●
3.700		6.00	90.00	50.00	36.00	●
3.800		6.00	102.00	64.00	36.00	●
3.900		6.00	102.00	64.00	36.00	●
4.000		6.00	102.00	64.00	36.00	●
4.100		6.00	102.00	64.00	36.00	●
4.200		6.00	102.00	64.00	36.00	●
4.300		6.00	102.00	64.00	36.00	●
4.400		6.00	102.00	64.00	36.00	●
4.500		6.00	102.00	64.00	36.00	●
4.600		6.00	102.00	64.00	36.00	●
4.700		6.00	102.00	64.00	36.00	●
4.800		6.00	116.00	78.00	36.00	●
4.900		6.00	116.00	78.00	36.00	●
5.000		6.00	116.00	78.00	36.00	●
5.100		6.00	116.00	78.00	36.00	●
5.200		6.00	116.00	78.00	36.00	●
5.300		6.00	116.00	78.00	36.00	●
5.400		6.00	116.00	78.00	36.00	●
5.500		6.00	116.00	78.00	36.00	●
5.600		6.00	116.00	78.00	36.00	●
5.700		6.00	116.00	78.00	36.00	●
5.800		6.00	116.00	78.00	36.00	●
5.900		6.00	116.00	78.00	36.00	●
6.000		6.00	116.00	78.00	36.00	●
6.100		8.00	146.00	108.00	36.00	●
6.200		8.00	146.00	108.00	36.00	●
6.300		8.00	146.00	108.00	36.00	●

					Article no.	5525
					Discount group	155
					Cutting direction	®
d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
6.350	1/4	8.00	146.00	108.00	36.00	●
6.400		8.00	146.00	108.00	36.00	●
6.500		8.00	146.00	108.00	36.00	●
6.600		8.00	146.00	108.00	36.00	●
6.700		8.00	146.00	108.00	36.00	●
6.800		8.00	146.00	108.00	36.00	●
6.900		8.00	146.00	108.00	36.00	●
7.000		8.00	146.00	108.00	36.00	●
7.100		8.00	146.00	108.00	36.00	●
7.200		8.00	146.00	108.00	36.00	●
7.300		8.00	146.00	108.00	36.00	●
7.400		8.00	146.00	108.00	36.00	●
7.500		8.00	146.00	108.00	36.00	●
7.600		8.00	146.00	108.00	36.00	●
7.700		8.00	146.00	108.00	36.00	●
7.800		8.00	146.00	108.00	36.00	●
7.900		8.00	146.00	108.00	36.00	●
8.000		8.00	146.00	108.00	36.00	●
8.100		10.00	162.00	120.00	40.00	●
8.200		10.00	162.00	120.00	40.00	●
8.300		10.00	162.00	120.00	40.00	●
8.400		10.00	162.00	120.00	40.00	●
8.500		10.00	162.00	120.00	40.00	●
8.600		10.00	162.00	120.00	40.00	●
8.700		10.00	162.00	120.00	40.00	●
8.800		10.00	162.00	120.00	40.00	●
8.900		10.00	162.00	120.00	40.00	●
9.000		10.00	162.00	120.00	40.00	●
9.100		10.00	162.00	120.00	40.00	●
9.200		10.00	162.00	120.00	40.00	●
9.300		10.00	162.00	120.00	40.00	●
9.400		10.00	162.00	120.00	40.00	●
9.500		10.00	162.00	120.00	40.00	●
9.520	3/8	10.00	162.00	120.00	40.00	●
9.600		10.00	162.00	120.00	40.00	●
9.700		10.00	162.00	120.00	40.00	●
9.800		10.00	162.00	120.00	40.00	●
9.900		10.00	162.00	120.00	40.00	●
10.000		10.00	162.00	120.00	40.00	●
10.200		12.00	204.00	156.00	45.00	●
10.500		12.00	204.00	156.00	45.00	●
11.000		12.00	204.00	156.00	45.00	●
11.500		12.00	204.00	156.00	45.00	●
12.000		12.00	204.00	156.00	45.00	●
12.500		14.00	230.00	182.00	45.00	●
12.700	1/2	14.00	230.00	182.00	45.00	●
13.000		14.00	230.00	182.00	45.00	●
13.500		14.00	230.00	182.00	45.00	●
14.000		14.00	230.00	182.00	45.00	●
14.500		16.00	260.00	208.00	48.00	●
15.000		16.00	260.00	208.00	48.00	●
15.500		16.00	260.00	208.00	48.00	●
16.000		16.00	260.00	208.00	48.00	●
16.500		18.00	285.00	234.00	48.00	●
17.000		18.00	285.00	234.00	48.00	●
17.500		18.00	285.00	234.00	48.00	●
18.000		18.00	285.00	234.00	48.00	●
18.500		20.00	310.00	258.00	50.00	●
19.000		20.00	310.00	258.00	50.00	●
19.050	3/4	20.00	310.00	258.00	50.00	●

					Article no.	**5525**
					Discount group	**155**
					Cutting direction	®
d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
19.500		20.00	310.00	258.00	50.00	●
20.000		20.00	310.00	258.00	50.00	●

GM 300

Tool holders and clamping systems
for every application

An Overview and Selection Guide can be found on page 150.

Ratio drills with internal coolant

10xD | RT 150 GG | WN | 120° | m7

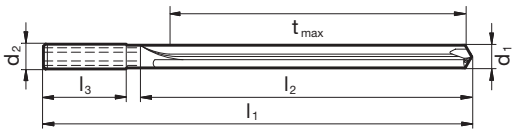
Tool material	**Solid carbide**
Surface	◯
Shank form	HA

P	web thinning ≥ Ø 3.000 • relieved cone • close diameter tolerances • very good surface quality of hole • observe coolant pressure
M	
K	•
N	• aluminium and Al-alloys • Al materials with high Si-content • grey cast iron, malleable and spheroidal iron
S	
H	

GÜHRINGNAVIGATOR

Cutting data page 76

$t_{max} = l_2 - 1{,}5 \times d_1$



Article no.	**5513**
Discount group	**155**
Cutting direction	®

d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
3.000		6.00	91.00	42.00	36.00	●
3.170	1/8	6.00	91.00	42.00	36.00	●
3.250		6.00	91.00	42.00	36.00	●
3.300		6.00	91.00	42.00	36.00	●
3.500		6.00	91.00	48.00	36.00	●
3.570	9/64	6.00	91.00	48.00	36.00	●
3.800		6.00	121.00	77.00	36.00	●
3.970	5/32	6.00	121.00	77.00	36.00	●
4.000		6.00	121.00	77.00	36.00	●
4.200		6.00	121.00	77.00	36.00	●
4.500		6.00	121.00	77.00	36.00	●
5.000		6.00	121.00	82.00	36.00	●
5.500		6.00	121.00	82.00	36.00	●
6.000		6.00	121.00	82.00	36.00	●
6.350	1/4	8.00	146.00	106.00	36.00	●
6.500		8.00	146.00	106.00	36.00	●
6.800		8.00	146.00	106.00	36.00	●
7.000		8.00	146.00	106.00	36.00	●
7.500		8.00	146.00	106.00	36.00	●
7.800		8.00	146.00	106.00	36.00	●
8.000		8.00	146.00	106.00	36.00	●
8.500		10.00	175.00	130.00	40.00	●
9.000		10.00	175.00	130.00	40.00	●
9.500		10.00	175.00	130.00	40.00	●
9.520	3/8	10.00	175.00	130.00	40.00	●
10.000		10.00	175.00	130.00	40.00	●
10.200		12.00	209.00	159.00	45.00	●
10.500		12.00	209.00	159.00	45.00	●
11.000		12.00	209.00	159.00	45.00	●
11.500		12.00	209.00	159.00	45.00	●
12.000		12.00	209.00	159.00	45.00	●
12.500		14.00	233.00	183.00	45.00	●
12.700	1/2	14.00	233.00	183.00	45.00	●
13.000		14.00	233.00	183.00	45.00	●
13.500		14.00	233.00	183.00	45.00	●
14.000		14.00	233.00	183.00	45.00	●

					Article no.	**5513**
					Discount group	**155**
					Cutting direction	®

d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
14.500		16.00	260.00	207.00	48.00	●
15.000		16.00	260.00	207.00	48.00	●
15.500		16.00	260.00	207.00	48.00	●
16.000		16.00	260.00	207.00	48.00	●

Ratio drills without oil feed

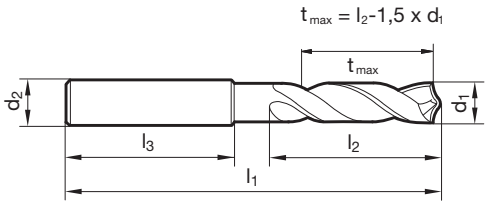
3xD | RT 100 U | DIN 6537 K | 140° | m7

Tool material	Solid carbide	
Surface	F	F
Shank form	HA	HE

P	●	web thinning ≥ Ø 3.000 • facet point grinding • main cutting edge form straight • optimised cutting geometry
M	○	
K	●	
N	○	structural and case hardened steels • free-cutting steels, heat-treatable steels • steels (alloyed/unalloyed) up to 1200 N/mm² • cast materials • bronze, brass • high-alloyed AlSi-alloys
S	○	
H	○	

GÜHRINGNAVIGATOR

Cutting data page 76



Article no.	5514	5614
Discount group	155	155
Cutting direction	R	R

d1		d2 h6	l1	l2	l3	Availability	
mm	inch	mm	mm	mm	mm		
3.000		6.00	62.00	20.00	36.00	●	●
3.100		6.00	62.00	20.00	36.00	●	●
3.170	1/8	6.00	62.00	20.00	36.00	●	●
3.200		6.00	62.00	20.00	36.00	●	●
3.250		6.00	62.00	20.00	36.00	●	●
3.300		6.00	62.00	20.00	36.00	●	●
3.400		6.00	62.00	20.00	36.00	●	●
3.500		6.00	62.00	20.00	36.00	●	●
3.570	9/64	6.00	62.00	20.00	36.00	●	●
3.600		6.00	62.00	20.00	36.00	●	●
3.700		6.00	62.00	20.00	36.00	●	●
3.800		6.00	66.00	24.00	36.00	●	●
3.900		6.00	66.00	24.00	36.00	●	●
3.970	5/32	6.00	66.00	24.00	36.00	●	●
4.000		6.00	66.00	24.00	36.00	●	●
4.100		6.00	66.00	24.00	36.00	●	●
4.200		6.00	66.00	24.00	36.00	●	●
4.300		6.00	66.00	24.00	36.00	●	●
4.370	11/64	6.00	66.00	24.00	36.00	●	●
4.400		6.00	66.00	24.00	36.00	●	●
4.500		6.00	66.00	24.00	36.00	●	●
4.600		6.00	66.00	24.00	36.00	●	●
4.650		6.00	66.00	24.00	36.00	●	●
4.700		6.00	66.00	24.00	36.00	●	●
4.760	3/16	6.00	66.00	28.00	36.00	●	●
4.800		6.00	66.00	28.00	36.00	●	●
4.900		6.00	66.00	28.00	36.00	●	●
5.000		6.00	66.00	28.00	36.00	●	●
5.100		6.00	66.00	28.00	36.00	●	●
5.160	13/64	6.00	66.00	28.00	36.00	●	●
5.200		6.00	66.00	28.00	36.00	●	●
5.300		6.00	66.00	28.00	36.00	●	●
5.400		6.00	66.00	28.00	36.00	●	●
5.500		6.00	66.00	28.00	36.00	●	●
5.550		6.00	66.00	28.00	36.00	●	●
5.560	7/32	6.00	66.00	28.00	36.00	●	●

						Article no.	5514	5614
						Discount group	155	155
						Cutting direction	®	®
d1		d2 h6	l1	l2	l3	Availability		
mm	inch	mm	mm	mm	mm			
5.600		6.00	66.00	28.00	36.00		●	●
5.700		6.00	66.00	28.00	36.00		●	●
5.800		6.00	66.00	28.00	36.00		●	●
5.900		6.00	66.00	28.00	36.00		●	●
5.950	15/64	6.00	66.00	28.00	36.00		●	●
6.000		6.00	66.00	28.00	36.00		●	●
6.100		8.00	79.00	34.00	36.00		●	●
6.200		8.00	79.00	34.00	36.00		●	●
6.300		8.00	79.00	34.00	36.00		●	●
6.350	1/4	8.00	79.00	34.00	36.00		●	●
6.400		8.00	79.00	34.00	36.00		●	●
6.500		8.00	79.00	34.00	36.00		●	●
6.600		8.00	79.00	34.00	36.00		●	●
6.700		8.00	79.00	34.00	36.00		●	●
6.750	17/64	8.00	79.00	34.00	36.00		●	●
6.800		8.00	79.00	34.00	36.00		●	●
6.900		8.00	79.00	34.00	36.00		●	●
7.000		8.00	79.00	34.00	36.00		●	●
7.100		8.00	79.00	41.00	36.00		●	●
7.140	9/32	8.00	79.00	41.00	36.00		●	●
7.200		8.00	79.00	41.00	36.00		●	●
7.300		8.00	79.00	41.00	36.00		●	●
7.400		8.00	79.00	41.00	36.00		●	●
7.500		8.00	79.00	41.00	36.00		●	●
7.540	19/64	8.00	79.00	41.00	36.00		●	●
7.600		8.00	79.00	41.00	36.00		●	●
7.700		8.00	79.00	41.00	36.00		●	●
7.800		8.00	79.00	41.00	36.00		●	●
7.900		8.00	79.00	41.00	36.00		●	●
7.940	5/16	8.00	79.00	41.00	36.00		●	●
8.000		8.00	79.00	41.00	36.00		●	●
8.100		10.00	89.00	47.00	40.00		●	●
8.200		10.00	89.00	47.00	40.00		●	●
8.300		10.00	89.00	47.00	40.00		●	●
8.330	21/64	10.00	89.00	47.00	40.00		●	●
8.400		10.00	89.00	47.00	40.00		●	●
8.500		10.00	89.00	47.00	40.00		●	●
8.600		10.00	89.00	47.00	40.00		●	●
8.700		10.00	89.00	47.00	40.00		●	●
8.730	11/32	10.00	89.00	47.00	40.00		●	●
8.800		10.00	89.00	47.00	40.00		●	●
8.900		10.00	89.00	47.00	40.00		●	●
9.000		10.00	89.00	47.00	40.00		●	●
9.100		10.00	89.00	47.00	40.00		●	●
9.130	23/64	10.00	89.00	47.00	40.00		●	●
9.200		10.00	89.00	47.00	40.00		●	●
9.250		10.00	89.00	47.00	40.00		●	●
9.300		10.00	89.00	47.00	40.00		●	●
9.400		10.00	89.00	47.00	40.00		●	●
9.500		10.00	89.00	47.00	40.00		●	●
9.520	3/8	10.00	89.00	47.00	40.00		●	●
9.600		10.00	89.00	47.00	40.00		●	●
9.700		10.00	89.00	47.00	40.00		●	●
9.800		10.00	89.00	47.00	40.00		●	●
9.900		10.00	89.00	47.00	40.00		●	●
9.920	25/64	10.00	89.00	47.00	40.00		●	●
10.000		10.00	89.00	47.00	40.00		●	●
10.100		12.00	102.00	55.00	45.00		●	●
10.200		12.00	102.00	55.00	45.00		●	●
10.300		12.00	102.00	55.00	45.00		●	●

					Article no.	5514	5614
					Discount group	155	155
					Cutting direction	R	R
d1		d2 h6	l1	l2	l3	Availability	
mm	inch	mm	mm	mm	mm		
10.320	13/32	12.00	102.00	55.00	45.00	●	●
10.400		12.00	102.00	55.00	45.00	●	●
10.500		12.00	102.00	55.00	45.00	●	●
10.600		12.00	102.00	55.00	45.00	●	●
10.700		12.00	102.00	55.00	45.00	●	●
10.800		12.00	102.00	55.00	45.00	●	●
10.900		12.00	102.00	55.00	45.00	●	●
11.000		12.00	102.00	55.00	45.00	●	●
11.100		12.00	102.00	55.00	45.00	●	●
11.110	7/16	12.00	102.00	55.00	45.00	●	●
11.200		12.00	102.00	55.00	45.00	●	●
11.300		12.00	102.00	55.00	45.00	●	●
11.400		12.00	102.00	55.00	45.00	●	●
11.500		12.00	102.00	55.00	45.00	●	●
11.600		12.00	102.00	55.00	45.00	●	●
11.700		12.00	102.00	55.00	45.00	●	●
11.800		12.00	102.00	55.00	45.00	●	●
11.900		12.00	102.00	55.00	45.00	●	●
11.910	15/32	12.00	102.00	55.00	45.00	●	●
12.000		12.00	102.00	55.00	45.00	●	●
12.200		14.00	107.00	60.00	45.00	●	●
12.500		14.00	107.00	60.00	45.00	●	●
12.700	1/2	14.00	107.00	60.00	45.00	●	●
12.800		14.00	107.00	60.00	45.00	●	
13.000		14.00	107.00	60.00	45.00	●	●
13.200		14.00	107.00	60.00	45.00	●	
13.500		14.00	107.00	60.00	45.00	●	●
13.700		14.00	107.00	60.00	45.00	●	●
14.000		14.00	107.00	60.00	45.00	●	●
14.200		16.00	115.00	65.00	48.00	●	●
14.290	9/16	16.00	115.00	65.00	48.00	●	●
14.500		16.00	115.00	65.00	48.00	●	●
14.700		16.00	115.00	65.00	48.00	●	●
15.000		16.00	115.00	65.00	48.00	●	●
15.200		16.00	115.00	65.00	48.00	●	●
15.500		16.00	115.00	65.00	48.00	●	●
15.700		16.00	115.00	65.00	48.00	●	●
16.000		16.00	115.00	65.00	48.00	●	●
16.500		18.00	123.00	73.00	48.00	●	●
17.000		18.00	123.00	73.00	48.00	●	●
17.500		18.00	123.00	73.00	48.00	●	●
18.000		18.00	123.00	73.00	48.00	●	●
18.500		20.00	131.00	79.00	50.00	●	●
19.000		20.00	131.00	79.00	50.00	●	●
19.500		20.00	131.00	79.00	50.00	●	●
20.000		20.00	131.00	79.00	50.00	●	●

Ratio drills without oil feed

5xD | RT 100 U | DIN 6537 L | 140° | m7

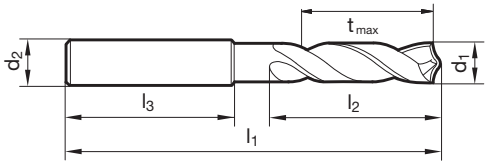
P	●	web thinning ≥ Ø 3.000 • facet point grinding • main cutting edge form straight • optimised cutting geometry
M	○	
K	●	
N	○	structural and case hardened steels • free-cutting steels, heat-treatable steels • steels (alloyed/unalloyed) up to 1200 N/mm² • cast materials • bronze, brass • high-alloyed AlSi-alloys
S	○	
H	○	

Tool material	Solid carbide		
Surface	F	F	F
Shank form	HA	HE	HB

GÜHRINGNAVIGATOR

Cutting data page 76

$t_{max} = l_2 - 1{,}5 \times d_1$



Article no.	5515	5615	5651
Discount group	155	155	155
Cutting direction	R	R	R

d1		d2 h6	l1	l2	l3	Availability		
mm	inch	mm	mm	mm	mm			
3.000		6.00	66.00	28.00	36.00	●	●	●
3.100		6.00	66.00	28.00	36.00	●	●	●
3.170	1/8	6.00	66.00	28.00	36.00	●	●	●
3.200		6.00	66.00	28.00	36.00	●	●	●
3.250		6.00	66.00	28.00	36.00	●	●	●
3.300		6.00	66.00	28.00	36.00	●	●	●
3.400		6.00	66.00	28.00	36.00	●	●	●
3.500		6.00	66.00	28.00	36.00	●	●	●
3.570	9/64	6.00	66.00	28.00	36.00	●	●	●
3.600		6.00	66.00	28.00	36.00	●	●	●
3.700		6.00	66.00	28.00	36.00	●	●	●
3.800		6.00	74.00	36.00	36.00	●	●	●
3.900		6.00	74.00	36.00	36.00	●	●	●
3.970	5/32	6.00	74.00	36.00	36.00	●	●	●
4.000		6.00	74.00	36.00	36.00	●	●	●
4.100		6.00	74.00	36.00	36.00	●	●	●
4.200		6.00	74.00	36.00	36.00	●	●	●
4.300		6.00	74.00	36.00	36.00	●	●	●
4.370	11/64	6.00	74.00	36.00	36.00	●	●	●
4.400		6.00	74.00	36.00	36.00	●	●	●
4.500		6.00	74.00	36.00	36.00	●	●	●
4.600		6.00	74.00	36.00	36.00	●	●	●
4.650		6.00	74.00	36.00	36.00	●	●	●
4.700		6.00	74.00	36.00	36.00	●	●	●
4.760	3/16	6.00	82.00	44.00	36.00	●	●	●
4.800		6.00	82.00	44.00	36.00	●	●	●
4.900		6.00	82.00	44.00	36.00	●	●	●
5.000		6.00	82.00	44.00	36.00	●	●	●
5.100		6.00	82.00	44.00	36.00	●	●	●
5.160	13/64	6.00	82.00	44.00	36.00	●	●	●
5.200		6.00	82.00	44.00	36.00	●	●	●
5.300		6.00	82.00	44.00	36.00	●	●	●
5.400		6.00	82.00	44.00	36.00	●	●	●
5.500		6.00	82.00	44.00	36.00	●	●	●
5.550		6.00	82.00	44.00	36.00	●	●	●
5.560	7/32	6.00	82.00	44.00	36.00	●	●	●

						Article no.	5515	5615	5651
						Discount group	155	155	155
						Cutting direction	R	R	R
d1		d2 h6	l1	l2	l3	Availability			
mm	inch	mm	mm	mm	mm				
5.600		6.00	82.00	44.00	36.00		●	●	●
5.700		6.00	82.00	44.00	36.00		●	●	●
5.800		6.00	82.00	44.00	36.00		●	●	●
5.900		6.00	82.00	44.00	36.00		●	●	●
5.950	15/64	6.00	82.00	44.00	36.00		●	●	●
6.000		6.00	82.00	44.00	36.00		●	●	●
6.100		8.00	91.00	53.00	36.00		●	●	●
6.200		8.00	91.00	53.00	36.00		●	●	●
6.300		8.00	91.00	53.00	36.00		●	●	●
6.350	1/4	8.00	91.00	53.00	36.00		●	●	●
6.400		8.00	91.00	53.00	36.00		●	●	●
6.500		8.00	91.00	53.00	36.00		●	●	●
6.600		8.00	91.00	53.00	36.00		●	●	●
6.700		8.00	91.00	53.00	36.00		●	●	●
6.750	17/64	8.00	91.00	53.00	36.00		●	●	●
6.800		8.00	91.00	53.00	36.00		●	●	●
6.900		8.00	91.00	53.00	36.00		●	●	●
7.000		8.00	91.00	53.00	36.00		●	●	●
7.100		8.00	91.00	53.00	36.00		●	●	●
7.140	9/32	8.00	91.00	53.00	36.00		●	●	●
7.200		8.00	91.00	53.00	36.00		●	●	●
7.300		8.00	91.00	53.00	36.00		●	●	●
7.400		8.00	91.00	53.00	36.00		●	●	●
7.500		8.00	91.00	53.00	36.00		●	●	●
7.540	19/64	8.00	91.00	53.00	36.00		●	●	●
7.600		8.00	91.00	53.00	36.00		●	●	●
7.700		8.00	91.00	53.00	36.00		●	●	●
7.800		8.00	91.00	53.00	36.00		●	●	●
7.900		8.00	91.00	53.00	36.00		●	●	●
7.940	5/16	8.00	91.00	53.00	36.00		●	●	●
8.000		8.00	91.00	53.00	36.00		●	●	●
8.100		10.00	103.00	61.00	40.00		●	●	●
8.200		10.00	103.00	61.00	40.00		●	●	●
8.300		10.00	103.00	61.00	40.00		●	●	●
8.330	21/64	10.00	103.00	61.00	40.00		●	●	●
8.400		10.00	103.00	61.00	40.00		●	●	●
8.500		10.00	103.00	61.00	40.00		●	●	●
8.600		10.00	103.00	61.00	40.00		●	●	●
8.700		10.00	103.00	61.00	40.00		●	●	●
8.730	11/32	10.00	103.00	61.00	40.00		●	●	●
8.800		10.00	103.00	61.00	40.00		●	●	●
8.900		10.00	103.00	61.00	40.00		●	●	●
9.000		10.00	103.00	61.00	40.00		●	●	●
9.100		10.00	103.00	61.00	40.00		●	●	●
9.130	23/64	10.00	103.00	61.00	40.00		●	●	●
9.200		10.00	103.00	61.00	40.00		●	●	●
9.250		10.00	103.00	61.00	40.00		●	●	●
9.300		10.00	103.00	61.00	40.00		●	●	●
9.400		10.00	103.00	61.00	40.00		●	●	●
9.500		10.00	103.00	61.00	40.00		●	●	●
9.520	3/8	10.00	103.00	61.00	40.00		●	●	●
9.600		10.00	103.00	61.00	40.00		●	●	●
9.700		10.00	103.00	61.00	40.00		●	●	●
9.800		10.00	103.00	61.00	40.00		●	●	●
9.900		10.00	103.00	61.00	40.00		●	●	●
9.920	25/64	10.00	103.00	61.00	40.00		●	●	●
10.000		10.00	103.00	61.00	40.00		●	●	●
10.100		12.00	118.00	71.00	45.00		●	●	●
10.200		12.00	118.00	71.00	45.00		●	●	●
10.300		12.00	118.00	71.00	45.00		●	●	●

						Article no.	5515	5615	5651
						Discount group	155	155	155
						Cutting direction	R	R	R
d1		d2 h6	l1	l2	l3	Availability			
mm	inch	mm	mm	mm	mm				
10.320	13/32	12.00	118.00	71.00	45.00		●	●	●
10.400		12.00	118.00	71.00	45.00		●	●	●
10.500		12.00	118.00	71.00	45.00		●	●	●
10.600		12.00	118.00	71.00	45.00		●	●	●
10.700		12.00	118.00	71.00	45.00		●	●	●
10.800		12.00	118.00	71.00	45.00		●	●	●
10.900		12.00	118.00	71.00	45.00		●	●	●
11.000		12.00	118.00	71.00	45.00		●	●	●
11.100		12.00	118.00	71.00	45.00		●	●	●
11.110	7/16	12.00	118.00	71.00	45.00		●	●	●
11.200		12.00	118.00	71.00	45.00		●	●	●
11.300		12.00	118.00	71.00	45.00		●	●	●
11.400		12.00	118.00	71.00	45.00		●	●	●
11.500		12.00	118.00	71.00	45.00		●	●	●
11.600		12.00	118.00	71.00	45.00		●	●	●
11.700		12.00	118.00	71.00	45.00		●	●	●
11.800		12.00	118.00	71.00	45.00		●	●	●
11.900		12.00	118.00	71.00	45.00		●	●	●
11.910	15/32	12.00	118.00	71.00	45.00		●	●	●
12.000		12.00	118.00	71.00	45.00		●	●	●
12.200		14.00	124.00	77.00	45.00		●	●	●
12.500		14.00	124.00	77.00	45.00		●	●	●
12.700	1/2	14.00	124.00	77.00	45.00		●	●	●
13.000		14.00	124.00	77.00	45.00		●	●	●
13.500		14.00	124.00	77.00	45.00		●	●	●
13.700		14.00	124.00	77.00	45.00		●	●	●
14.000		14.00	124.00	77.00	45.00		●	●	●
14.200		16.00	133.00	83.00	48.00		●	●	●
14.290	9/16	16.00	133.00	83.00	48.00		●	●	●
14.500		16.00	133.00	83.00	48.00		●	●	●
14.700		16.00	133.00	83.00	48.00		●	●	●
15.000		16.00	133.00	83.00	48.00		●	●	●
15.200		16.00	133.00	83.00	48.00		●	●	●
15.500		16.00	133.00	83.00	48.00		●	●	●
15.700		16.00	133.00	83.00	48.00		●	●	●
16.000		16.00	133.00	83.00	48.00		●	●	●
16.500		18.00	143.00	93.00	48.00		●	●	●
17.000		18.00	143.00	93.00	48.00		●	●	●
17.500		18.00	143.00	93.00	48.00		●	●	●
18.000		18.00	143.00	93.00	48.00		●	●	●
18.500		20.00	153.00	101.00	50.00		●	●	●
19.000		20.00	153.00	101.00	50.00		●	●	●
19.500		20.00	153.00	101.00	50.00		●	●	●
20.000		20.00	153.00	101.00	50.00		●	●	●

3-flute Ratio drills

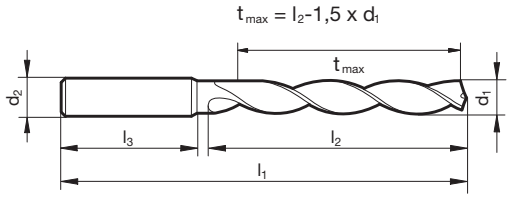
5xD | FT 200 | DIN 6537 L | 130° | m7

Tool material	**Solid carbide**
Surface	◯
Shank form	HA

P		web thinning ≥ Ø 3.000 • spiro-point • wide flutes • optimal centering • suitable for interrupted cutting
M		
K	•	
N	•	cast iron • long chipping Al-alloys • brass, bronzes
S		
H		

GÜHRINGNAVIGATOR

Cutting data page 76



Article no.	**5518**
Discount group	**155**
Cutting direction	®

d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
3.000		6.00	66.00	28.00	36.00	●
3.100		6.00	66.00	28.00	36.00	●
3.200		6.00	66.00	28.00	36.00	●
3.300		6.00	66.00	28.00	36.00	●
3.500		6.00	66.00	28.00	36.00	●
3.700		6.00	66.00	28.00	36.00	●
3.800		6.00	74.00	36.00	36.00	●
4.000		6.00	74.00	36.00	36.00	●
4.100		6.00	74.00	36.00	36.00	●
4.200		6.00	74.00	36.00	36.00	●
4.500		6.00	74.00	36.00	36.00	●
4.800		6.00	82.00	44.00	36.00	●
5.000		6.00	82.00	44.00	36.00	●
5.100		6.00	82.00	44.00	36.00	●
5.200		6.00	82.00	44.00	36.00	●
5.300		6.00	82.00	44.00	36.00	●
5.500		6.00	82.00	44.00	36.00	●
5.800		6.00	82.00	44.00	36.00	●
6.000		6.00	82.00	44.00	36.00	●
6.100		8.00	91.00	53.00	36.00	●
6.200		8.00	91.00	53.00	36.00	●
6.400		8.00	91.00	53.00	36.00	●
6.500		8.00	91.00	53.00	36.00	●
6.700		8.00	91.00	53.00	36.00	●
6.800		8.00	91.00	53.00	36.00	●
7.000		8.00	91.00	53.00	36.00	●
7.100		8.00	91.00	53.00	36.00	●
7.400		8.00	91.00	53.00	36.00	●
7.500		8.00	91.00	53.00	36.00	●
7.800		8.00	91.00	53.00	36.00	●
8.000		8.00	91.00	53.00	36.00	●
8.100		10.00	103.00	61.00	40.00	●
8.200		10.00	103.00	61.00	40.00	●
8.400		10.00	103.00	61.00	40.00	●
8.500		10.00	103.00	61.00	40.00	●
8.600		10.00	103.00	61.00	40.00	●

					Article no.	**5518**
					Discount group	**155**
					Cutting direction	®
d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
8.700		10.00	103.00	61.00	40.00	●
8.800		10.00	103.00	61.00	40.00	●
9.000		10.00	103.00	61.00	40.00	●
9.100		10.00	103.00	61.00	40.00	●
9.500		10.00	103.00	61.00	40.00	●
9.800		10.00	103.00	61.00	40.00	●
10.000		10.00	103.00	61.00	40.00	●
10.100		12.00	118.00	71.00	45.00	●
10.200		12.00	118.00	71.00	45.00	●
10.300		12.00	118.00	71.00	45.00	●
10.500		12.00	118.00	71.00	45.00	●
11.000		12.00	118.00	71.00	45.00	●
11.200		12.00	118.00	71.00	45.00	●
11.500		12.00	118.00	71.00	45.00	●
11.800		12.00	118.00	71.00	45.00	●
12.000		12.00	118.00	71.00	45.00	●
12.100		14.00	124.00	77.00	45.00	●
12.500		14.00	124.00	77.00	45.00	●
13.000		14.00	124.00	77.00	45.00	●
13.500		14.00	124.00	77.00	45.00	●
14.000		14.00	124.00	77.00	45.00	●
14.500		16.00	133.00	83.00	48.00	●
15.000		16.00	133.00	83.00	48.00	●
15.500		16.00	133.00	83.00	48.00	●
16.000		16.00	133.00	83.00	48.00	●
16.500		18.00	143.00	93.00	48.00	●
17.000		18.00	143.00	93.00	48.00	●
17.500		18.00	143.00	93.00	48.00	●
18.000		18.00	143.00	93.00	48.00	●
18.500		20.00	153.00	101.00	50.00	●
19.000		20.00	153.00	101.00	50.00	●
19.500		20.00	153.00	101.00	50.00	●
20.000		20.00	153.00	101.00	50.00	●

Stub drills

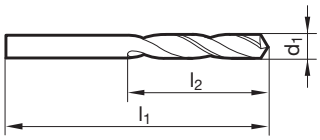
3xD | N | DIN 6539 | 118° | h7

Tool material	**Solid carbide**
Surface	◯
Shank form	cyl.

P	○	web thinning ≥ Ø 3.000 • facet point grinding • main cutting edge form straight
M	○	
K	○	
N	●	structural and case hardened steels • free-cutting steels, heat-treatable steels • grey cast iron • bronze, brass • aluminium and Al-alloys • magnesium and magnesium alloys • plastics and fiber reinforced plastics
S	○	
H		

GÜHRINGNAVIGATOR

Cutting data page 78



Article no.	**5516**
Discount group	**155**
Cutting direction	ⓡ

d1 mm	d1 inch	l1 mm	l2 mm	Availability
2.000		38.000	12.000	●
2.100		38.000	12.000	●
2.200		40.000	13.000	●
2.300		40.000	13.000	●
2.380	3/32	43.000	14.000	●
2.400		43.000	14.000	●
2.500		43.000	14.000	●
2.600		43.000	14.000	●
2.700		46.000	16.000	●
2.780	7/64	46.000	16.000	●
2.800		46.000	16.000	●
2.900		46.000	16.000	●
3.000		46.000	16.000	●
3.100		49.000	18.000	●
3.170	1/8	49.000	18.000	●
3.200		49.000	18.000	●
3.300		49.000	18.000	●
3.400		52.000	20.000	●
3.500		52.000	20.000	●
3.570	9/64	52.000	20.000	●
3.600		52.000	20.000	●
3.700		52.000	20.000	●
3.800		55.000	22.000	●
3.900		55.000	22.000	●
3.970	5/32	55.000	22.000	●
4.000		55.000	22.000	●
4.100		55.000	22.000	●
4.200		55.000	22.000	●
4.300		58.000	24.000	●
4.370	11/64	58.000	24.000	●
4.400		58.000	24.000	●
4.500		58.000	24.000	●
4.600		58.000	24.000	●
4.700		58.000	24.000	●
4.760	3/16	62.000	26.000	●
4.800		62.000	26.000	●

				Article no.	5516
				Discount group	155
				Cutting direction	R
d1		l1	l2	Availability	
mm	inch	mm	mm		
4.900		62.000	26.000	●	
5.000		62.000	26.000	●	
5.200		62.000	26.000	●	
5.500		66.000	28.000	●	
5.800		66.000	28.000	●	
6.000		66.000	28.000	●	
6.350	1/4	70.000	31.000	●	
6.500		70.000	31.000	●	
6.800		74.000	34.000	●	
7.000		74.000	34.000	●	
7.140	9/32	74.000	34.000	●	
7.500		74.000	34.000	●	
7.940	5/16	79.000	37.000	●	
8.000		79.000	37.000	●	
8.500		79.000	37.000	●	
8.730	11/32	84.000	40.000	●	
8.800		84.000	40.000	●	
9.000		84.000	40.000	●	
9.500		84.000	40.000	●	
10.000		89.000	43.000	●	
10.200		89.000	43.000	●	
10.500		89.000	43.000	●	
11.000		95.000	47.000	●	
11.110	7/16	95.000	47.000	●	
11.500		95.000	47.000	●	
11.910	15/32	102.000	51.000	●	
12.000		102.000	51.000	●	

Stub drills

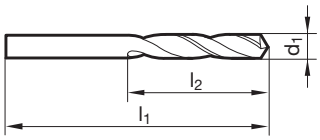
~3xD | GU 500 DZ | DIN 1897 | 118° | h8

Tool material	HSCO	
Surface	◯	Ⓢ
Shank form	cyl.	cyl.

P	•	web thinning ≥ Ø 1.000 • facet point grinding • Co-alloyed high speed steel • low feed force required • low torque required • for universal application
M	•	
K	•	
N	•	alloyed/unalloyed steels up to 800 N/mm² • cold/hot work steels • antifriction bearing steels • non-ferrous metals • cast materials • stainless steels • plastics
S		
H		

GÜHRINGNAVIGATOR

Cutting data page 78



				Article no.	5524	5520
				Discount group	159	159
				Cutting direction	Ⓡ	Ⓡ
d1		l1	l2	Availability	
mm	inch	mm	mm		
1.000		26.000	6.000	•	•
1.100		28.000	7.000	•	•
1.200		30.000	8.000	•	•
1.300		30.000	8.000	•	•
1.400		32.000	9.000	•	•
1.500		32.000	9.000	•	•
1.600		34.000	10.000	•	•
1.700		34.000	10.000	•	•
1.800		36.000	11.000	•	•
1.900		36.000	11.000	•	•
2.000		38.000	12.000	•	•
2.100		38.000	12.000	•	•
2.200		40.000	13.000	•	•
2.300		40.000	13.000	•	•
2.380	3/32	43.000	14.000	•	•
2.400		43.000	14.000	•	•
2.500		43.000	14.000	•	•
2.600		43.000	14.000	•	•
2.700		46.000	16.000	•	•
2.780	7/64	46.000	16.000	•	•
2.800		46.000	16.000	•	•
2.900		46.000	16.000	•	•
3.000		46.000	16.000	•	•
3.100		49.000	18.000	•	•
3.170	1/8	49.000	18.000	•	•
3.200		49.000	18.000	•	•
3.300		49.000	18.000	•	•
3.400		52.000	20.000	•	•
3.500		52.000	20.000	•	•
3.570	9/64	52.000	20.000	•	•
3.600		52.000	20.000	•	•
3.700		52.000	20.000	•	•
3.800		55.000	22.000	•	•
3.900		55.000	22.000	•	•
3.970	5/32	55.000	22.000	•	•
4.000		55.000	22.000	•	•

				Article no.	5524	5520
				Discount group	159	159
				Cutting direction	®	®
d1		l1	l2	Availability		
mm	inch	mm	mm			
4.100		55.000	22.000		●	●
4.200		55.000	22.000		●	●
4.300		58.000	24.000		●	●
4.370	11/64	58.000	24.000		●	●
4.400		58.000	24.000		●	●
4.500		58.000	24.000		●	●
4.600		58.000	24.000		●	●
4.700		58.000	24.000		●	●
4.760	3/16	62.000	26.000		●	●
4.800		62.000	26.000		●	●
4.900		62.000	26.000		●	●
5.000		62.000	26.000		●	●
5.100		62.000	26.000		●	●
5.160	13/64	62.000	26.000		●	●
5.200		62.000	26.000		●	●
5.300		62.000	26.000		●	●
5.400		66.000	28.000		●	●
5.500		66.000	28.000		●	●
5.560	7/32	66.000	28.000		●	●
5.600		66.000	28.000		●	●
5.700		66.000	28.000		●	●
5.800		66.000	28.000		●	●
5.900		66.000	28.000		●	●
5.950	15/64	66.000	28.000		●	●
6.000		66.000	28.000		●	●
6.100		70.000	31.000		●	●
6.200		70.000	31.000		●	●
6.300		70.000	31.000		●	●
6.350	1/4	70.000	31.000		●	●
6.400		70.000	31.000		●	●
6.500		70.000	31.000		●	●
6.600		70.000	31.000		●	●
6.700		70.000	31.000		●	●
6.800		74.000	34.000		●	●
6.900		74.000	34.000		●	●
7.000		74.000	34.000		●	●
7.100		74.000	34.000		●	●
7.140	9/32	74.000	34.000		●	●
7.200		74.000	34.000		●	●
7.300		74.000	34.000		●	●
7.400		74.000	34.000		●	●
7.500		74.000	34.000		●	●
7.600		79.000	37.000		●	●
7.700		79.000	37.000		●	●
7.800		79.000	37.000		●	●
7.900		79.000	37.000		●	●
7.940	5/16	79.000	37.000		●	●
8.000		79.000	37.000		●	●
8.100		79.000	37.000		●	●
8.200		79.000	37.000		●	●
8.300		79.000	37.000		●	●
8.400		79.000	37.000		●	●
8.500		79.000	37.000		●	●
8.600		84.000	40.000		●	●
8.700		84.000	40.000		●	●
8.730	11/32	84.000	40.000		●	●
8.800		84.000	40.000		●	●
8.900		84.000	40.000		●	●
9.000		84.000	40.000		●	●
9.100		84.000	40.000		●	●

			Article no.	5524	5520
			Discount group	159	159
			Cutting direction	R	R
d1		l1	l2	Availability	
mm	inch	mm	mm		
9.200		84.000	40.000	●	●
9.300		84.000	40.000	●	●
9.400		84.000	40.000	●	●
9.500		84.000	40.000	●	●
9.600		89.000	43.000	●	●
9.700		89.000	43.000	●	●
9.800		89.000	43.000	●	●
9.900		89.000	43.000	●	●
10.000		89.000	43.000	●	●
10.100		89.000	43.000	●	●
10.200		89.000	43.000	●	●
10.300		89.000	43.000	●	●
10.400		89.000	43.000	●	●
10.500		89.000	43.000	●	●
11.000		95.000	47.000	●	●
11.110	7/16	95.000	47.000	●	●
11.500		95.000	47.000	●	●
12.000		102.000	51.000	●	●
12.500		102.000	51.000	●	●
13.000		102.000	51.000	●	●
13.500		107.000	54.000	●	●
14.000		107.000	54.000	●	●

Stub drills

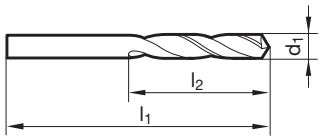
~3xD | GT 500 DZ | DIN 1897 | 130° | h8

Tool material	HSS-E-PM
Surface	S
Shank form	cyl.

P	●	web thinning ≥ Ø 1.000 • relieved cone • PM-Co-alloyed high speed steel • especially high rigidity • especially high wear resistance
M	○	
K	●	high-alloyed steels • heat treatable and case hardened steels • cast iron, brass, bronze
N	○	
S	○	
H	○	

GÜHRINGNAVIGATOR

Cutting data page 78



Article no.	5521
Discount group	159
Cutting direction	R

d1 mm	inch	l1 mm	l2 mm	Availability
1.000		26.000	6.000	●
1.100		28.000	7.000	●
1.200		30.000	8.000	●
1.300		30.000	8.000	●
1.400		32.000	9.000	●
1.500		32.000	9.000	●
1.600		34.000	10.000	●
1.700		34.000	10.000	●
1.800		36.000	11.000	●
1.900		36.000	11.000	●
2.000		38.000	12.000	●
2.100		38.000	12.000	●
2.200		40.000	13.000	●
2.300		40.000	13.000	●
2.380	3/32	43.000	14.000	●
2.400		43.000	14.000	●
2.500		43.000	14.000	●
2.600		43.000	14.000	●
2.700		46.000	16.000	●
2.780	7/64	46.000	16.000	●
2.800		46.000	16.000	●
2.900		46.000	16.000	●
3.000		46.000	16.000	●
3.100		49.000	18.000	●
3.170	1/8	49.000	18.000	●
3.200		49.000	18.000	●
3.300		49.000	18.000	●
3.400		52.000	20.000	●
3.500		52.000	20.000	●
3.570	9/64	52.000	20.000	●
3.600		52.000	20.000	●
3.700		52.000	20.000	●
3.800		55.000	22.000	●
3.900		55.000	22.000	●
3.970	5/32	55.000	22.000	●
4.000		55.000	22.000	●

			Article no.	5521
			Discount group	159
			Cutting direction	R

d1		l1	l2	Availability
mm	inch	mm	mm	
4.100		55.000	22.000	●
4.200		55.000	22.000	●
4.300		58.000	24.000	●
4.370	11/64	58.000	24.000	●
4.400		58.000	24.000	●
4.500		58.000	24.000	●
4.600		58.000	24.000	●
4.700		58.000	24.000	●
4.760	3/16	62.000	26.000	●
4.800		62.000	26.000	●
4.900		62.000	26.000	●
5.000		62.000	26.000	●
5.100		62.000	26.000	●
5.160	13/64	62.000	26.000	●
5.200		62.000	26.000	●
5.300		62.000	26.000	●
5.400		66.000	28.000	●
5.500		66.000	28.000	●
5.560	7/32	66.000	28.000	●
5.600		66.000	28.000	●
5.700		66.000	28.000	●
5.800		66.000	28.000	●
5.900		66.000	28.000	●
5.950	15/64	66.000	28.000	●
6.000		66.000	28.000	●
6.100		70.000	31.000	●
6.200		70.000	31.000	●
6.300		70.000	31.000	●
6.350	1/4	70.000	31.000	●
6.400		70.000	31.000	●
6.500		70.000	31.000	●
6.600		70.000	31.000	●
6.700		70.000	31.000	●
6.800		74.000	34.000	●
6.900		74.000	34.000	●
7.000		74.000	34.000	●
7.100		74.000	34.000	●
7.140	9/32	74.000	34.000	●
7.200		74.000	34.000	●
7.300		74.000	34.000	●
7.400		74.000	34.000	●
7.500		74.000	34.000	●
7.600		79.000	37.000	●
7.700		79.000	37.000	●
7.800		79.000	37.000	●
7.900		79.000	37.000	●
7.940	5/16	79.000	37.000	●
8.000		79.000	37.000	●
8.100		79.000	37.000	●
8.200		79.000	37.000	●
8.300		79.000	37.000	●
8.400		79.000	37.000	●
8.500		79.000	37.000	●
8.730	11/32	84.000	40.000	●
8.800		84.000	40.000	●
9.000		84.000	40.000	●
9.300		84.000	40.000	●
9.500		84.000	40.000	●
9.800		89.000	43.000	●
10.000		89.000	43.000	●

			Article no.	5521
			Discount group	159
			Cutting direction	R

d1		l1	l2	Availability
mm	inch	mm	mm	
10.200		89.000	43.000	●
10.500		89.000	43.000	●
11.000		95.000	47.000	●
11.110	7/16	95.000	47.000	●
11.500		95.000	47.000	●
12.000		102.000	51.000	●
12.500		102.000	51.000	●
13.000		102.000	51.000	●
13.500		107.000	54.000	●
14.000		107.000	54.000	●

GM 300

Tool holders and clamping systems
for every application

An Overview and Selection Guide can be found on page 150.

Jobber drills

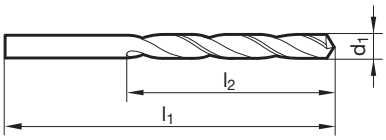
5xD | N | WN | 118° | h7

Tool material	**Solid carbide**
Surface	◯
Shank form	cyl.

P	○	web thinning ≥ Ø 2.100 • facet point grinding • main cutting edge form straight
M	○	
K	○	
N	●	structural and case hardened steels • free-cutting steels, heat-treatable steels • grey cast iron • bronze, brass • aluminium and Al-alloys • magnesium and magnesium alloys • plastics and fiber reinforced plastics
S	○	
H		

GÜHRINGNAVIGATOR

Cutting data page 78



Article no.	**5517**
Discount group	**155**
Cutting direction	®

d1		l1	l2	Availability
mm	inch	mm	mm	
2.000		49.000	24.000	●
2.100		49.000	24.000	●
2.200		53.000	27.000	●
2.300		53.000	27.000	●
2.380	3/32	57.000	30.000	●
2.400		57.000	30.000	●
2.500		57.000	30.000	●
2.600		57.000	30.000	●
2.700		61.000	33.000	●
2.780	7/64	61.000	33.000	●
2.800		61.000	33.000	●
2.900		61.000	33.000	●
3.000		61.000	33.000	●
3.100		65.000	36.000	●
3.170	1/8	65.000	36.000	●
3.200		65.000	36.000	●
3.300		65.000	36.000	●
3.400		70.000	39.000	●
3.500		70.000	39.000	●
3.570	9/64	70.000	39.000	●
3.600		70.000	39.000	●
3.700		70.000	39.000	●
3.800		75.000	43.000	●
3.900		75.000	43.000	●
3.970	5/32	75.000	43.000	●
4.000		75.000	43.000	●
4.100		75.000	43.000	●
4.200		75.000	43.000	●
4.300		80.000	47.000	●
4.370	11/64	80.000	47.000	●
4.400		80.000	47.000	●
4.500		80.000	47.000	●
4.600		80.000	47.000	●
4.700		80.000	47.000	●
4.760	3/16	86.000	52.000	●
4.800		86.000	52.000	●

			Article no.	5517
			Discount group	155
			Cutting direction	R

d1		l1	l2	Availability
mm	inch	mm	mm	
4.900		86.000	52.000	●
5.000		86.000	52.000	●
5.160	13/64	86.000	52.000	●
5.500		93.000	57.000	●
5.560	7/32	93.000	57.000	●
5.950	15/64	93.000	57.000	●
6.000		93.000	57.000	●
6.350	1/4	101.000	63.000	●
6.500		101.000	63.000	●
6.800		109.000	69.000	●
7.000		109.000	69.000	●
7.140	9/32	109.000	69.000	●
7.500		109.000	69.000	●
7.940	5/16	117.000	75.000	●
8.000		117.000	75.000	●
8.500		117.000	75.000	●
8.730	11/32	125.000	81.000	●
9.000		125.000	81.000	●
9.500		125.000	81.000	●
10.000		133.000	87.000	●
10.200		133.000	87.000	●
10.500		133.000	87.000	●
11.000		142.000	94.000	●
11.110	7/16	142.000	94.000	●
11.500		142.000	94.000	●
11.910	15/32	151.000	101.000	●
12.000		151.000	101.000	●

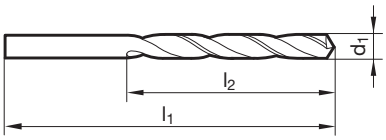
Jobber drills

~5xD | GU 500 DZ | DIN 338 | 118° | h8

P	•	web thinning ≥ Ø 1.000 • facet point grinding • Co-alloyed high speed steel • low feed force required • low torque required • for universal application
M	•	
K	•	
N	•	alloyed/unalloyed steels up to 800 N/mm² • cold/hot work steels • antifriction bearing steels • non-ferrous metals • cast materials • stainless steels • plastics
S		
H		

GÜHRINGNAVIGATOR

Cutting data page 78



	Tool material	HSCO	
	Surface	◯	Ⓢ
	Shank form	cyl.	cyl.
	Article no.	5523	5519
	Discount group	159	159
	Cutting direction	Ⓡ	Ⓡ

d1 mm	inch	l1 mm	l2 mm	Availability	
1.000		34.000	12.000	●	●
1.100		36.000	14.000	●	●
1.200		38.000	16.000	●	●
1.300		38.000	16.000	●	●
1.400		40.000	18.000	●	●
1.500		40.000	18.000	●	●
1.600		43.000	20.000	●	●
1.700		43.000	20.000	●	●
1.800		46.000	22.000	●	●
1.900		46.000	22.000	●	●
2.000		49.000	24.000	●	●
2.100		49.000	24.000	●	●
2.200		53.000	27.000	●	●
2.300		53.000	27.000	●	●
2.380	3/32	57.000	30.000	●	●
2.400		57.000	30.000	●	●
2.500		57.000	30.000	●	●
2.600		57.000	30.000	●	●
2.700		61.000	33.000	●	●
2.780	7/64	61.000	33.000	●	●
2.800		61.000	33.000	●	●
2.900		61.000	33.000	●	●
3.000		61.000	33.000	●	●
3.100		65.000	36.000	●	●
3.170	1/8	65.000	36.000	●	●
3.200		65.000	36.000	●	●
3.300		65.000	36.000	●	●
3.400		70.000	39.000	●	●
3.500		70.000	39.000	●	●
3.570	9/64	70.000	39.000	●	●
3.600		70.000	39.000	●	●
3.700		70.000	39.000	●	●
3.800		75.000	43.000	●	●
3.900		75.000	43.000	●	●
3.970	5/32	75.000	43.000	●	●
4.000		75.000	43.000	●	●

			Article no.	5523	5519
			Discount group	159	159
			Cutting direction	®	®
d1		l1	l2	Availability	
mm	inch	mm	mm		
4.100		75.000	43.000	●	●
4.200		75.000	43.000	●	●
4.300		80.000	47.000	●	●
4.370	11/64	80.000	47.000	●	●
4.400		80.000	47.000	●	●
4.500		80.000	47.000	●	●
4.600		80.000	47.000	●	●
4.700		80.000	47.000	●	●
4.760	3/16	86.000	52.000	●	●
4.800		86.000	52.000	●	●
4.900		86.000	52.000	●	●
5.000		86.000	52.000	●	●
5.100		86.000	52.000	●	●
5.160	13/64	86.000	52.000	●	●
5.200		86.000	52.000	●	●
5.300		86.000	52.000	●	●
5.400		93.000	57.000	●	●
5.500		93.000	57.000	●	●
5.560	7/32	93.000	57.000	●	●
5.600		93.000	57.000	●	●
5.700		93.000	57.000	●	●
5.800		93.000	57.000	●	●
5.900		93.000	57.000	●	●
5.950	15/64	93.000	57.000	●	●
6.000		93.000	57.000	●	●
6.100		101.000	63.000	●	●
6.200		101.000	63.000	●	●
6.300		101.000	63.000	●	●
6.350	1/4	101.000	63.000	●	●
6.400		101.000	63.000	●	●
6.500		101.000	63.000	●	●
6.600		101.000	63.000	●	●
6.700		101.000	63.000	●	●
6.800		109.000	69.000	●	●
6.900		109.000	69.000	●	●
7.000		109.000	69.000	●	●
7.100		109.000	69.000	●	●
7.140	9/32	109.000	69.000	●	●
7.200		109.000	69.000	●	●
7.300		109.000	69.000	●	●
7.400		109.000	69.000	●	●
7.500		109.000	69.000	●	●
7.600		117.000	75.000	●	●
7.700		117.000	75.000	●	●
7.800		117.000	75.000	●	●
7.900		117.000	75.000	●	●
7.940	5/16	117.000	75.000	●	●
8.000		117.000	75.000	●	●
8.100		117.000	75.000	●	●
8.200		117.000	75.000	●	●
8.300		117.000	75.000	●	●
8.400		117.000	75.000	●	●
8.500		117.000	75.000	●	●
8.600		125.000	81.000	●	●
8.700		125.000	81.000	●	●
8.730	11/32	125.000	81.000	●	●
8.800		125.000	81.000	●	●
8.900		125.000	81.000	●	
9.000		125.000	81.000	●	●
9.100		125.000	81.000	●	●

			Article no.	5523	5519
			Discount group	159	159
			Cutting direction	R	R
d1		l1	l2	Availability	
mm	inch	mm	mm		
9.200		125.000	81.000	●	●
9.300		125.000	81.000	●	●
9.400		125.000	81.000	●	●
9.500		125.000	81.000	●	●
9.600		133.000	87.000	●	●
9.700		133.000	87.000	●	●
9.800		133.000	87.000	●	●
9.900		133.000	87.000	●	●
10.000		133.000	87.000	●	●
10.100		133.000	87.000	●	●
10.200		133.000	87.000	●	●
10.300		133.000	87.000	●	●
10.400		133.000	87.000	●	●
10.500		133.000	87.000	●	●
11.000		142.000	94.000	●	●
11.110	7/16	142.000	94.000	●	●
11.500		142.000	94.000	●	●
12.000		151.000	101.000	●	●
12.500		151.000	101.000	●	●
13.000		151.000	101.000	●	●
13.500		160.000	108.000	●	●
14.000		160.000	108.000	●	●

Jobber drills

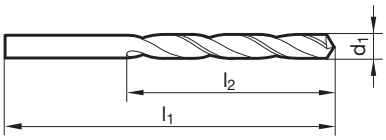
~5xD | GT 500 DZ | DIN 338 | 130° | h8

Tool material	HSS-E-PM
Surface	(S)
Shank form	cyl.

P	●	web thinning ≥ Ø 1.000 • relieved cone • PM-Co-alloyed high speed steel • especially high rigidity • especially high wear resistance
M	○	
K	●	
N	○	high-alloyed steels • heat treatable and case hardened steels • cast iron, brass, bronze
S	○	
H	○	

GÜHRINGNAVIGATOR

Cutting data page 78



Article no.	5522
Discount group	159
Cutting direction	(R)

d1 mm	inch	l1 mm	l2 mm	Availability
1.000		34.000	12.000	●
1.100		36.000	14.000	●
1.200		38.000	16.000	●
1.300		38.000	16.000	●
1.400		40.000	18.000	●
1.500		40.000	18.000	●
1.600		43.000	20.000	●
1.700		43.000	20.000	●
1.800		46.000	22.000	●
1.900		46.000	22.000	●
2.000		49.000	24.000	●
2.100		49.000	24.000	●
2.200		53.000	27.000	●
2.300		53.000	27.000	●
2.380	3/32	57.000	30.000	●
2.400		57.000	30.000	●
2.500		57.000	30.000	●
2.600		57.000	30.000	●
2.700		61.000	33.000	●
2.780	7/64	61.000	33.000	●
2.800		61.000	33.000	●
2.900		61.000	33.000	●
3.000		61.000	33.000	●
3.100		65.000	36.000	●
3.170	1/8	65.000	36.000	●
3.200		65.000	36.000	●
3.300		65.000	36.000	●
3.400		70.000	39.000	●
3.500		70.000	39.000	●
3.570	9/64	70.000	39.000	●
3.600		70.000	39.000	●
3.700		70.000	39.000	●
3.800		75.000	43.000	●
3.900		75.000	43.000	●
3.970	5/32	75.000	43.000	●
4.000		75.000	43.000	●

			Article no.	5522
			Discount group	159
			Cutting direction	R
d1		l1	l2	Availability
mm	inch	mm	mm	
4.100		75.000	43.000	●
4.200		75.000	43.000	●
4.300		80.000	47.000	●
4.370	11/64	80.000	47.000	●
4.400		80.000	47.000	●
4.500		80.000	47.000	●
4.600		80.000	47.000	●
4.700		80.000	47.000	●
4.760	3/16	86.000	52.000	●
4.800		86.000	52.000	●
4.900		86.000	52.000	●
5.000		86.000	52.000	●
5.100		86.000	52.000	●
5.160	13/64	86.000	52.000	●
5.200		86.000	52.000	●
5.300		86.000	52.000	●
5.400		93.000	57.000	●
5.500		93.000	57.000	●
5.560	7/32	93.000	57.000	●
5.600		93.000	57.000	●
5.700		93.000	57.000	●
5.800		93.000	57.000	●
5.900		93.000	57.000	●
5.950	15/64	93.000	57.000	●
6.000		93.000	57.000	●
6.100		101.000	63.000	●
6.200		101.000	63.000	●
6.300		101.000	63.000	●
6.350	1/4	101.000	63.000	●
6.400		101.000	63.000	●
6.500		101.000	63.000	●
6.600		101.000	63.000	●
6.700		101.000	63.000	●
6.800		109.000	69.000	●
6.900		109.000	69.000	●
7.000		109.000	69.000	●
7.100		109.000	69.000	●
7.140	9/32	109.000	69.000	●
7.200		109.000	69.000	●
7.300		109.000	69.000	●
7.400		109.000	69.000	●
7.500		109.000	69.000	●
7.600		117.000	75.000	●
7.700		117.000	75.000	●
7.800		117.000	75.000	●
7.900		117.000	75.000	●
7.940	5/16	117.000	75.000	●
8.000		117.000	75.000	●
8.100		117.000	75.000	●
8.200		117.000	75.000	●
8.300		117.000	75.000	●
8.400		117.000	75.000	●
8.500		117.000	75.000	●
8.730	11/32	125.000	81.000	●
8.800		125.000	81.000	●
9.000		125.000	81.000	●
9.300		125.000	81.000	●
9.500		125.000	81.000	●
9.800		133.000	87.000	●
10.000		133.000	87.000	●

			Article no.	5522
			Discount group	159
			Cutting direction	R

d1		l1	l2	Availability
mm	inch	mm	mm	
10.200		133.000	87.000	●
10.500		133.000	87.000	●
11.000		142.000	94.000	●
11.110	7/16	142.000	94.000	●
11.500		142.000	94.000	●
12.000		151.000	101.000	●
12.500		151.000	101.000	●
13.000		151.000	101.000	●
13.500		160.000	108.000	●
14.000		160.000	108.000	●

Jobber drills

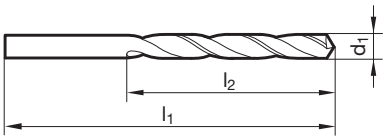
~5xD | N | DIN 338 | 118° | h8

Tool material	HSS
Surface	S
Shank form	cyl.

P	•	web thinning ≥ Ø 1.000 • relieved cone • tip coating
M		
K	•	
N	•	alloyed/unalloyed steel and cast steel • grey cast iron, malleable and spheroidal iron • sintered powder metal and graphite
S		
H		

GÜHRINGNAVIGATOR

Cutting data page 78



Article no.	9651
Discount group	159
Cutting direction	R

d1 mm	d1 inch	l1 mm	l2 mm	Availability
1.000		34.000	12.000	●
1.100		36.000	14.000	●
1.190	3/64	38.000	16.000	●
1.200		38.000	16.000	●
1.300		38.000	16.000	●
1.400		40.000	18.000	●
1.500		40.000	18.000	●
1.590	1/16	43.000	20.000	●
1.600		43.000	20.000	●
1.700		43.000	20.000	●
1.800		46.000	22.000	●
1.900		46.000	22.000	●
1.980	5/64	49.000	24.000	●
2.000		49.000	24.000	●
2.100		49.000	24.000	●
2.200		53.000	27.000	●
2.300		53.000	27.000	●
2.380	3/32	57.000	30.000	●
2.400		57.000	30.000	●
2.500		57.000	30.000	●
2.600		57.000	30.000	●
2.700		61.000	33.000	●
2.780	7/64	61.000	33.000	●
2.800		61.000	33.000	●
2.900		61.000	33.000	●
3.000		61.000	33.000	●
3.100		65.000	36.000	●
3.170	1/8	65.000	36.000	●
3.200		65.000	36.000	●
3.300		65.000	36.000	●
3.400		70.000	39.000	●
3.500		70.000	39.000	●
3.570	9/64	70.000	39.000	●
3.600		70.000	39.000	●
3.700		70.000	39.000	●
3.800		75.000	43.000	●

			Article no.	9651
			Discount group	159
			Cutting direction	R

d1		l1	l2	Availability
mm	inch	mm	mm	
3.900		75.000	43.000	●
3.970	5/32	75.000	43.000	●
4.000		75.000	43.000	●
4.100		75.000	43.000	●
4.200		75.000	43.000	●
4.300		80.000	47.000	●
4.370	11/64	80.000	47.000	●
4.400		80.000	47.000	●
4.500		80.000	47.000	●
4.600		80.000	47.000	●
4.700		80.000	47.000	●
4.760	3/16	86.000	52.000	●
4.800		86.000	52.000	●
4.900		86.000	52.000	●
5.000		86.000	52.000	●
5.100		86.000	52.000	●
5.160	13/64	86.000	52.000	●
5.200		86.000	52.000	●
5.300		86.000	52.000	●
5.400		93.000	57.000	●
5.500		93.000	57.000	●
5.560	7/32	93.000	57.000	●
5.600		93.000	57.000	●
5.700		93.000	57.000	●
5.800		93.000	57.000	●
5.900		93.000	57.000	●
5.950	15/64	93.000	57.000	●
6.000		93.000	57.000	●
6.100		101.000	63.000	●
6.200		101.000	63.000	●
6.300		101.000	63.000	●
6.350	1/4	101.000	63.000	●
6.400		101.000	63.000	●
6.500		101.000	63.000	●
6.600		101.000	63.000	●
6.700		101.000	63.000	●
6.750	17/64	109.000	69.000	●
6.800		109.000	69.000	●
6.900		109.000	69.000	●
7.000		109.000	69.000	●
7.100		109.000	69.000	●
7.140	9/32	109.000	69.000	●
7.200		109.000	69.000	●
7.300		109.000	69.000	●
7.400		109.000	69.000	●
7.500		109.000	69.000	●
7.540	19/64	117.000	75.000	●
7.600		117.000	75.000	●
7.700		117.000	75.000	●
7.800		117.000	75.000	●
7.900		117.000	75.000	●
7.940	5/16	117.000	75.000	●
8.000		117.000	75.000	●
8.100		117.000	75.000	●
8.200		117.000	75.000	●
8.300		117.000	75.000	●
8.330	21/64	117.000	75.000	●
8.400		117.000	75.000	●
8.500		117.000	75.000	●
8.600		125.000	81.000	●

			Article no.	9651
			Discount group	159
			Cutting direction	R

d1		l1	l2	Availability
mm	inch	mm	mm	
8.700		125.000	81.000	●
8.730	11/32	125.000	81.000	●
8.800		125.000	81.000	●
8.900		125.000	81.000	●
9.000		125.000	81.000	●
9.100		125.000	81.000	●
9.130	23/64	125.000	81.000	●
9.200		125.000	81.000	●
9.300		125.000	81.000	●
9.400		125.000	81.000	●
9.500		125.000	81.000	●
9.520	3/8	133.000	87.000	●
9.600		133.000	87.000	●
9.700		133.000	87.000	●
9.800		133.000	87.000	●
9.900		133.000	87.000	●
9.920	25/64	133.000	87.000	●
10.000		133.000	87.000	●
10.100		133.000	87.000	●
10.200		133.000	87.000	●
10.300		133.000	87.000	●
10.320	13/32	133.000	87.000	●
10.400		133.000	87.000	●
10.500		133.000	87.000	●
10.600		133.000	87.000	●
10.700		142.000	94.000	●
10.720	27/64	142.000	94.000	●
10.800		142.000	94.000	●
10.900		142.000	94.000	●
11.000		142.000	94.000	●
11.100		142.000	94.000	●
11.110	7/16	142.000	94.000	●
11.200		142.000	94.000	●
11.300		142.000	94.000	●
11.400		142.000	94.000	●
11.500		142.000	94.000	●
11.510	29/64	142.000	94.000	●
11.600		142.000	94.000	●
11.700		142.000	94.000	●
11.800		142.000	94.000	●
11.900		151.000	101.000	●
11.910	15/32	151.000	101.000	●
12.000		151.000	101.000	●
12.100		151.000	101.000	●
12.200		151.000	101.000	●
12.300	31/64	151.000	101.000	●
12.400		151.000	101.000	●
12.500		151.000	101.000	●
12.600		151.000	101.000	●
12.700	1/2	151.000	101.000	●
12.800		151.000	101.000	●
12.900		151.000	101.000	●
13.000		151.000	101.000	●
13.100	33/64	151.000	101.000	●
13.200		151.000	101.000	●
13.250		160.000	108.000	●
13.300		160.000	108.000	●
13.400		160.000	108.000	●
13.490	17/32	160.000	108.000	●
13.500		160.000	108.000	●

				Article no.	9651
				Discount group	159
				Cutting direction	R
d1		l1	l2	Availability	
mm	inch	mm	mm		
13.600		160.000	108.000	●	
13.700		160.000	108.000	●	
13.750		160.000	108.000	●	
13.800		160.000	108.000	●	
13.890	35/64	160.000	108.000	●	
13.900		160.000	108.000	●	
14.000		160.000	108.000	●	
14.250		169.000	114.000	●	
14.290	9/16	169.000	114.000	●	
14.500		169.000	114.000	●	
14.680	37/64	169.000	114.000	●	
14.750		169.000	114.000	●	
15.000		169.000	114.000	●	
15.080	19/32	178.000	120.000	●	
15.250		178.000	120.000	●	
15.480	39/64	178.000	120.000	●	
15.500		178.000	120.000	●	
15.750		178.000	120.000	●	
16.000		178.000	120.000	●	

Long series twist drills

~10xD | GU 500 DZ | DIN 340 | 118° | h8

Tool material	HSCO	
Surface	◯	Ⓢ
Shank form	cyl.	cyl.

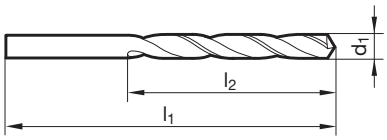
P	•
M	•
K	•
N	•
S	
H	

web thinning ≥ Ø 1.000 • facet point grinding • Co-alloyed high speed steel • low feed force required • low torque required • increased wear resistance • for universal application • only suitable for short drilling depths when used at full length for reach purposes

alloyed/unalloyed steels up to 800 N/mm² • cold/hot work steels • antifriction bearing steels • non-ferrous metals • cast materials • stainless steels • plastics

GÜHRINGNAVIGATOR

Cutting data page 78



Article no.	5536	5537
Discount group	159	159
Cutting direction	Ⓡ	Ⓡ

d1	l1	l2	Availability	
mm	mm	mm		
1.000	56.000	33.000	•	•
1.100	60.000	37.000	•	•
1.200	65.000	41.000	•	•
1.300	65.000	41.000	•	•
1.400	70.000	45.000	•	•
1.500	70.000	45.000	•	•
1.600	76.000	50.000	•	•
1.700	76.000	50.000	•	•
1.800	80.000	53.000	•	•
1.900	80.000	53.000	•	•
2.000	85.000	56.000	•	•
2.100	85.000	56.000	•	•
2.200	90.000	59.000	•	•
2.300	90.000	59.000	•	•
2.400	95.000	62.000	•	•
2.500	95.000	62.000	•	•
2.600	95.000	62.000	•	•
2.700	100.000	66.000	•	•
2.800	100.000	66.000	•	•
2.900	100.000	66.000	•	•
3.000	100.000	66.000	•	•
3.100	106.000	69.000	•	•
3.200	106.000	69.000	•	•
3.300	106.000	69.000	•	•
3.400	112.000	73.000	•	•
3.500	112.000	73.000	•	•
3.600	112.000	73.000	•	•
3.700	112.000	73.000	•	•
3.800	119.000	78.000	•	•
3.900	119.000	78.000	•	•
4.000	119.000	78.000	•	•
4.100	119.000	78.000	•	•
4.200	119.000	78.000	•	•
4.300	126.000	82.000	•	•
4.400	126.000	82.000	•	•
4.500	126.000	82.000	•	•

			Article no.	5536	5537
			Discount group	159	159
			Cutting direction	R	R
d1	l1	l2	Availability		
mm	mm	mm			
4.600	126.000	82.000		●	●
4.700	126.000	82.000		●	●
4.800	132.000	87.000		●	●
4.900	132.000	87.000		●	●
5.000	132.000	87.000		●	●
5.100	132.000	87.000		●	●
5.200	132.000	87.000		●	●
5.300	132.000	87.000		●	●
5.400	139.000	91.000		●	●
5.500	139.000	91.000		●	●
5.600	139.000	91.000		●	●
5.700	139.000	91.000		●	●
5.800	139.000	91.000		●	●
5.900	139.000	91.000		●	●
6.000	139.000	91.000		●	●
6.100	148.000	97.000		●	●
6.200	148.000	97.000		●	●
6.300	148.000	97.000		●	●
6.400	148.000	97.000		●	●
6.500	148.000	97.000		●	●
6.600	148.000	97.000		●	●
6.700	148.000	97.000		●	●
6.800	156.000	102.000		●	●
6.900	156.000	102.000		●	●
7.000	156.000	102.000		●	●
7.100	156.000	102.000		●	●
7.200	156.000	102.000		●	●
7.300	156.000	102.000		●	●
7.400	156.000	102.000		●	●
7.500	156.000	102.000		●	●
7.600	165.000	109.000		●	●
7.700	165.000	109.000		●	●
7.800	165.000	109.000		●	●
7.900	165.000	109.000		●	●
8.000	165.000	109.000		●	●
8.100	165.000	109.000		●	●
8.200	165.000	109.000		●	●
8.300	165.000	109.000		●	●
8.400	165.000	109.000		●	●
8.500	165.000	109.000		●	●
8.600	175.000	115.000		●	●
8.700	175.000	115.000		●	●
8.800	175.000	115.000		●	●
8.900	175.000	115.000		●	●
9.000	175.000	115.000		●	●
9.100	175.000	115.000		●	●
9.200	175.000	115.000		●	●
9.300	175.000	115.000		●	●
9.400	175.000	115.000		●	●
9.500	175.000	115.000		●	●
9.600	184.000	121.000		●	●
9.700	184.000	121.000		●	●
9.800	184.000	121.000		●	●
9.900	184.000	121.000		●	●
10.000	184.000	121.000		●	●
10.100	184.000	121.000		●	●
10.200	184.000	121.000		●	●
10.300	184.000	121.000		●	●
10.400	184.000	121.000		●	●
10.500	184.000	121.000		●	●

	Article no.	5536	5537
	Discount group	159	159
	Cutting direction	R	R

d1	l1	l2	Availability	
mm	mm	mm		
11.000	195.000	128.000	●	●
11.500	195.000	128.000	●	●
12.000	205.000	134.000	●	●
12.500	205.000	134.000	●	●
13.000	205.000	134.000	●	●
13.500	214.000	140.000	●	●
14.000	214.000	140.000	●	●

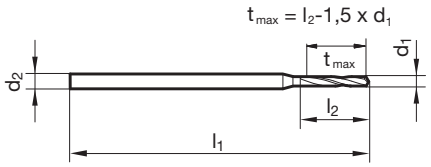
Solid carbide micro-precision drills without coolant ducts

Tool material	Solid carbide
Surface	A
Shank form	cyl.

P	●	web thinning ≥ Ø 0.800 • facet point grinding
M	○	
K	●	
N	○	structural and case hardened steels • free-cutting steels, heat-treatable steels • alloyed steels up to 1200 N/mm² • cast materials
S	○	
H	○	

GÜHRINGNAVIGATOR

Cutting data page 76



Article no.	5652
Discount group	155
Cutting direction	R

d1	d2 h6	l1	l2	Availability
mm	mm	mm	mm	
0.100	3.000	38.000	1.200	●
0.200	3.000	38.000	2.500	●
0.300	3.000	38.000	5.000	●
0.400	3.000	38.000	7.000	●
0.500	3.000	38.000	7.000	●
0.600	3.000	38.000	7.000	●
0.700	3.000	38.000	8.000	●
0.800	3.000	38.000	10.000	●
0.900	3.000	38.000	10.000	●
1.000	3.000	38.000	10.000	●
1.100	3.000	38.000	10.000	●
1.200	3.000	38.000	10.000	●
1.300	3.000	38.000	10.000	●
1.400	3.000	38.000	10.000	●
1.500	3.000	38.000	10.000	●
1.600	3.000	38.000	12.000	●
1.700	3.000	38.000	12.000	●
1.800	3.000	38.000	12.000	●
1.900	3.000	38.000	12.000	●
2.000	3.000	38.000	12.000	●
2.100	3.000	38.000	12.000	●
2.200	3.000	38.000	12.000	●
2.400	3.000	38.000	12.000	●
2.500	3.000	38.000	12.000	●
2.600	3.000	38.000	12.000	●
2.800	3.000	38.000	12.000	●
3.000	3.000	38.000	12.000	●

Solid carbide micro-precision drills with internal cooling

from Ø 1.4 mm for drilling depths up to 5xD, 8xD, 15xD can be found in our ExclusiveLine® programme.

EXCLUSIVELINE®

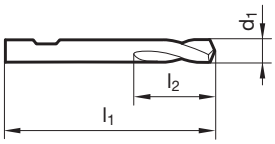
142° NC-spotting drills

N | WN | 142° | h6

Tool material	**Solid carbide**
Surface	◯
Shank form	HB

P	○	facet point grinding • only suitable for spotting • ≥ Ø 6.0 mm with clamping surface shank form HB
M	○	
K	○	
N	○	universal material suitability
S	○	
H	○	

GÜHRINGNAVIGATOR



Article no.	**5649**
Discount group	**155**
Cutting direction	R

d1		l1	l2	Availability
mm	inch	mm	mm	
4.000		55.000	12.000	●
6.000		66.000	16.000	●
8.000		79.000	21.000	●
10.000		89.000	25.000	●
12.000		102.000	30.000	●
16.000		115.000	37.500	●
20.000		131.000	45.000	●

NC spotting drills

NC spotting drills with 90° and 120° point angles in HSS, HSCO and solid carbide and with various coatings can be found in our main programme.

Twist drill sets

~5xD | GU 500 DZ | DIN 338 | 118° | h8

P	•
M	•
K	•
N	•
S	
H	

relieved cone • Drills are available in the sets of popular sizes as shown. For bench use the sets can be supplied in bakelite stands. For more portable use the box is recommended. Other drill set compositions on request.

Tool material	HSCO
Surface	◯
Shank form	cyl.

Article no.	12
Discount group	159
Cutting direction	®

d1	increasing by	supplement. sizes	Pieces/set	Code no.	Availability
mm	mm				
1.0-13.0	0,5		25	7.014	●
1.0-10.5	0,5	3,3/4,2/6,8/10,2	24	7.018	●

Twist drill sets

~5xD | N | DIN 338 | h8

Tool material	HSS
Surface	S
Shank form	cyl.

P	•
M	
K	•
N	•
S	
H	

relieved cone • tip coating • Drills are available in the sets of popular sizes as shown. For bench use the sets can be supplied in bakelite stands. For more portable use the box is recommended. Other drill set compositions on request.

Article no.	234
Discount group	159
Cutting direction	R

d1	increasing by	supplement. sizes	Pieces/set	Code no.	Availability
mm	mm				
1.0-13.0	0,5		25	6.014	●
1.0-10.0	0,5		19	6.013	●
1.0-5.9	0,1		50	6.015	●
6.0-10.0	0,1		41	6.016	●
1.0-10.5	0,5	3,3/4,2/6,8/10,2	24	6.018	●

GÜHRINGNAVIGATOR Ratio drills

Generally recommendations:
For safety reasons it is very important, that a drill does not exceed a speed of n = 6,000 rev./min when unsupported. The centrifugal forces can break these long tools before reaching the workpiece surface!

Application recommendations for 7xD, 10xD and 12xD drills: Pilot holes are necessary for extra length SL drills ≥7xD: 1.) the pilot hole can be produced with a short, rigid drill. The diameter should be 0.01 - 0.02 mm larger than the diameter of the SL drill, the drilling depth > 1xD.

2.) alternatively SL drills can produce their own pilot hole. Cutting speed and feed rate should be reduced by 30-40%.

The recommended minimum coolant pressure is 40 bar.

Article no. HA	
Article no. HE	
Article no. HB	
Standard/DIN	
Tool material	
Carbide grade	
Type	
Surface finish	
Cooling	
Std. range page	

Werkzeuge mit fett gedruckter Vorschubreihen-Nr. sind bevorzugt auszuwählen.

Bohrer-Ø mm	Vorschubreihen-Code								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
	f (mm/U)								
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

Cooling:
- without coolant ducts
- with coolant ducts

Coolant:
- Air
- Neat oil
- Soluble oil

Drill Ø mm	Feed column no. Art. no. 5652						
	60	**61**	**62**	**63**	**64**	**65**	**66**
	f (mm/rev.)						
0.50	0.030	0.035	0.040	0.045	0.050	0.050	0.055
0.80	0.040	0.050	0.060	0.070	0.080	0.080	0.080
1.00	0.060	0.070	0.080	0.090	0.100	0.100	0.110
1.50	0.090	0.100	0.120	0.130	0.150	0.150	0.160
2.00	0.120	0.140	0.160	0.180	0.200	0.210	0.220
2.50	0.150	0.170	0.200	0.220	0.250	0.260	0.270
3.00	0.180	0.210	0.240	0.270	0.300	0.310	0.330

Werkstoffgruppe	Werkstoffbeispiele, neue Bezeichnung (in Klammern alte Bezeichnung) Fettgedruckte Zahlen = Werkstoff-Nr. nach DIN EN	Zugfestigkeit MPa (N/mm²)	Härte	Kühlmittel
Allgemeine Baustähle	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		○
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		○
Automatenstähle	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		○
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		○
Unlegierte Vergütungsstähle	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		○
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		○
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		○
Legierte Vergütungsstähle	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		○
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		○
Unlegierte Einsatzstähle	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		○
Legierte Einsatzstähle	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
Nitrierstähle	**1.8504** 34CrAl6	≤1000		○
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
Werkzeugstähle	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		○
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
Schnellarbeitsstähle	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
Federstähle	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
Gehärtete Stähle	–		≤48 HRC	●
			≤66 HRC	●
Rostfreie Stähle, geschwefelt	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
austenitisch	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
martensitisch	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
Gusseisen	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
Kugelgraphit- und Temperguss	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	○
	0.7070 EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	○
Hartguss	–		≤350 HB	○
Neue Gusswerkstoffe GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
Neue Gusswerkstoffe ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
Sonderlegierungen	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
Titan und Titan-Legierungen	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
Aluminium und Al-Legierungen	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		○
Al-Knetlegierungen	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		○
Al-Gusslegierungen ≤ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		○
≤ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		○
Magnesium-Legierungen	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
Kupfer, niedriglegiert	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		○
Messing, kurzspanend	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		○
langspanend	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		○
Bronzen, kurzspanend	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		○ ●
	2.0790 CuNi18Zn19Pb	≤850		●
Bronzen, langspanend	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
Kunststoffe, duroplastisch	Bakelit, Resopal, Pertinax, Moltopren	≤150		○
thermoplastisch	Plexiglas, Hostalen, Novodur, Makralon	≤100		○ ○
aramidfaserverstärkt	Kevlar	≤1000		○
glas-/kohlefaserverstärkt	GFK/CFK	≤1000		○

≤3xD	≤3xD	≤5xD	≤3xD	≤5xD	≤3xD	≤5xD	≤5xD		≤7xD		≤10xD		≤12xD	
5652	5510	5511	5514	5515	5526	5580	5768	5518	5512		5513		5525	
	5610	5611	5614	5615	5528	5581			5612					
		5650		5651										
C. Std.	6537K	6537L	6537K	6537L	6537K	6537L	6537L	6537L	C. Std.		C. Std.		C. Std.	
Sol. carb.	Sol. carb.		Sol. carb.		Sol. carb.		Sol. carb.	Sol. carb.	Sol. carb.		Sol. carb.		Sol. carb.	
K/P	K/P		K/P		K/P		K/P	K	K/P		K		K/P	
N	RT100U		RT100U		RT100VA		RT100AI	FT200G	RT100U		RT100GG		RT100	
A	F		F		a		○	○	F		○		F	
⊠	▭		⊠		▭		▭	⊠	▭		▭		▭	
72	16	26	41	44	19	30	22	47	33		39		36	

v_c m/min	Feed col. no.	v_c m/min	Feed col. no.		v_c m/min	Feed col. no.		v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.		v_c m/min	Feed col. no.		v_c m/min	Feed col. no.	
100	62	145	7	7	130	7	7							145	6				110	6				
100	62	120	6	6	110	6	6							120	5				110	5				
100	62	170	8	8	145	8	8							170	7				110	7				
90	61	145	8	8	110	7	7							145	7				100	7				
90	62	130	8	8	120	7	7							130	7				110	7				
90	62	125	7	7	110	7	7							125	6				110	6				
90	61	120	7	7	105	7	7							120	6				100	6				
90	61	120	7	7	105	7	7							120	6				110	6				
70	60	105	7	7	100	6	6							105	6				105	6				
100	61	145	8	8	130	8	8							145	7				110	7				
85	61	120	7	7	120	7	7							120	6				110	6				
70	60	85	5	5	85	5	5							85	4				85	4				
70	60	110	7	7	100	6	6							110	6				100	6				
60	60	105	5	5	90	5	5							105	4				80	4				
50	60	80	6	6	65	6	6							80	5				80	5				
60	60	65	5	5	55	5	5							65	4				65	4				
		60	4	5										60	4				50	4				
		60	3	3	45	3	3							60	2				50	2				
		55	3	2	40	1	1							55	2									
		35	2	2	20	1	1							35	1									
		60	5	5	40	2	2	80	5	5				60	4				60	4				
		55	2	5	15	1	1	60	2-3	2-3				55	2				55	2				
		45	5	5	35	2	2	80	5	5				45	4				45	4				
130	66	210	9	9	210	8	8							100	6	195	8	120	6	120	8			
130	66	160	9	9	155	8	8							80	6	160	8	100	6	120	8			
130	66	140	9	9	155	7	7							80	6	140	8	90	6	100	8			
120	65	130	8	8	125	7	7							70	6	130	7	80	6	90	7			
		40	3	3	35	3	3									40	2	40	2					
		35	4	4	25	4	4	30	4	4						35	3							
		45	4	4	15	1	1	45	4	4						40	3							
		40	3	3	15	1	1	40	3	3						40	2							
		310	9	9	260	9	9				350	9		180	7	310	8	410	8	150	8			
		310	9	9	260	9	9				350	9		160	7	310	8	410	8	150	8			
		260	9	9	220	8	9				320	8		150	7	260	8	380	8	150	8			
		220	9	9	180	8	8				280	7		120	6	220	8	330	8	120	8			
		280	8	8	260	8	8				320	7		180	6	280	7			150	7			
		125	7	7	105	7	7				190	7				125	6			80	6			
		325	8	8	270	8	8				160	6		180	6	325	7	280	7	120	7			
		220	7	7	180	7	7				160	6				220	6			120	6			
		125	7	7	105	6	6				160	6				125	6	110	6	40	6			
		105	6	6	85	6	6				160	6				105	5	80	5					
		90	6	6	80	5	5				150	6				90	5							
		80	6	6	60	5	5				150	6				80	5			40	5			
											100	3												
											100	3												
											100	2												

GÜHRINGNAVIGATOR Twist drills

Generally recommendations:
For safety reasons it is very important, that a drill does not exceed a speed of n = 6,000 rev./min when unsupported. The centrifugal forces can break these long tools before reaching the workpiece surface!

Application recommendations for 7xD, 10xD and 12xD drills: Pilot holes are necessary for extra length SL drills ≥7xD: 1.) the pilot hole can be produced with a short, rigid drill. The diameter should be 0.01 - 0.02 mm larger than the diameter of the SL drill, the drilling depth > 1xD.

2.) alternatively SL drills can produce their own pilot hole. Cutting speed and feed rate should be reduced by 30-40%.

The recommended minimum coolant pressure is 40 bar.

Article no.
Standard/DIN
Tool material
Carbide grade
Type
Surface finish
Std. range page

Werkzeuge mit fett gedruckter Vorschubreihen-Nr. sind bevorzugt auszuwählen.

Bohrer-Ø mm	Vorschubreihen-Code 1	2	3	4	5	6	7	8	9
	f (mm/U)								
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

* TiN-tip coated

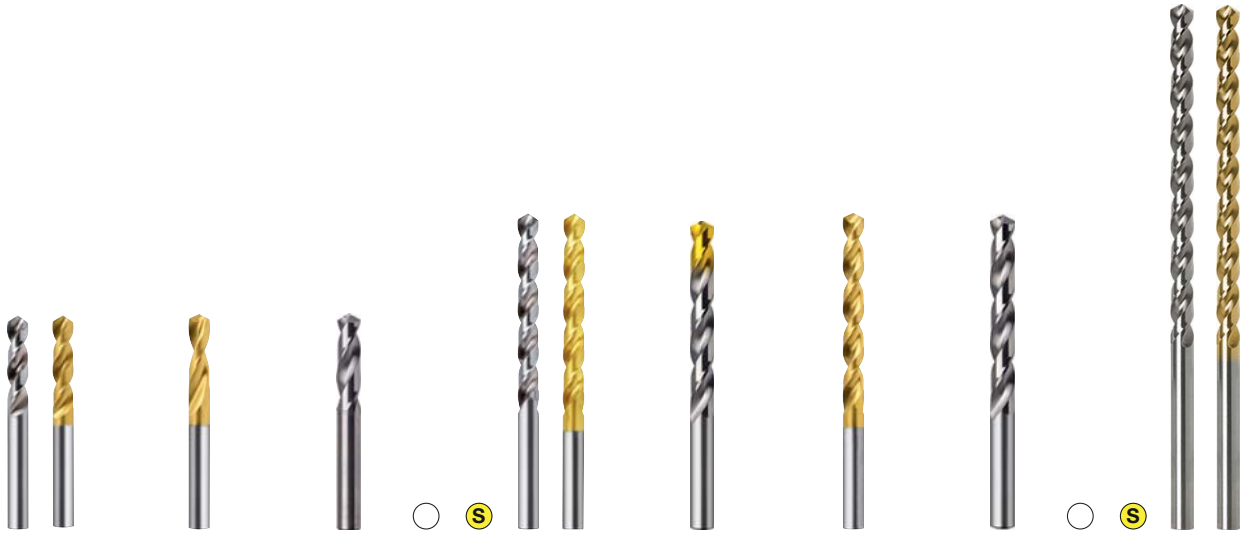
Werkstoffgruppe	Werkstoffbeispiele, neue Bezeichnung (in Klammern alte Bezeichnung) Fettgedruckte Zahlen = Werkstoff-Nr. nach DIN EN	Zugfestigkeit MPa (N/mm²)	Härte	Kühlmittel
Allgemeine Baustähle	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		◍
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		◍
Automatenstähle	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		◍
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		◍
Unlegierte Vergütungsstähle	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		◍
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		◍
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		◍
Legierte Vergütungsstähle	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		◍
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		◍
Unlegierte Einsatzstähle	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		◍
Legierte Einsatzstähle	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
Nitrierstähle	**1.8504** 34CrAl6	≤1000		◍
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
Werkzeugstähle	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		◍
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
Schnellarbeitsstähle	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
Federstähle	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
Gehärtete Stähle	–		≤48 HRC	●
			≤66 HRC	●
Rostfreie Stähle, geschwefelt	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
austenitisch	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
martensitisch	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
Gusseisen	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
Kugelgraphit- und Temperguss	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	◍
	0.7070 EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	◍
Hartguss	–		≤350 HB	◍
Neue Gusswerkstoffe GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	◍ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	◍ ○
Neue Gusswerkstoffe ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		◍ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		◍ ○
Sonderlegierungen	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
Titan und Titan-Legierungen	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
Aluminium und Al-Legierungen	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		◍
Al-Knetlegierungen	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		◍
Al-Gusslegierungen ≤ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		◍
≤ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		◍
Magnesium-Legierungen	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
Kupfer, niedriglegiert	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		◍
Messing, kurzspanend	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		◍
langspanend	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		◍
Bronzen, kurzspanend	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		◍ ●
	2.0790 CuNi18Zn19Pb	≤850		●
Bronzen, langspanend	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
Kunststoffe, duroplastisch	Bakelit, Resopal, Pertinax, Moltopren	≤150		○
thermoplastisch	Plexiglas, Hostalen, Novodur, Makralon	≤100		◍ ○
aramidfaserverstärkt	Kevlar	≤1000		○
glas-/kohlefaserverstärkt	GFK/CFK	≤1000		○

≤3xD

5524 5520	5521	5516
1897 1897	1897	6539
HSCO	HSS-E-PM	Sol. carb.
- -	-	K10/K20
GU 500	GU 500	N
○ Ⓢ	Ⓢ	○
51	54	49

≤5xD

5523 5519	9651	5522	5517	≤10xD 5536 5537
338 338	338	338	G. Std.	340 340
HSCO	HSCO	HSS-E-PM	Sol. carb.	HSCO
- -	-	-	K10/K20	- -
GU 500	GU 500	GT 500	N	GU 500
○ Ⓢ	Ⓢ	Ⓢ	○	○ Ⓢ
59	65	62	57	69



○	Ⓢ			5524 5520		5521		5516		○	Ⓢ	5523 5519				9651		5522		5517		○	Ⓢ	≤10xD 5536 5537			
				1897	1897	1897		6539				338	338			338		338		G. Std.				340	340		
				HSCO		HSS-E-PM		Sol. carb.				HSCO				HSCO		HSS-E-PM		Sol. carb.				HSCO			
				-	-	-		K10/K20				-	-			-		-		K10/K20				-	-		
				GU 500		GU 500		N				GU 500				GU 500		GT 500		N				GU 500			
○	Ⓢ					Ⓢ		○				○	Ⓢ			Ⓢ		Ⓢ		○				○	Ⓢ		
				51		54		49				59				65		62		57				69			
v_c m/min	v_c m/min	Feed col. no.																									
35	45	6	6	40	6	80	4	35	45	6	6	32	6	40	6	80	4	29	32	5	5
30	35	5	5	32	5	70	4	30	35	5	5	26	5	32	5	70	4	22	25	4	4
40	50	6	6	45	6	80	5	40	50	6	6	36	6	45	6	80	5	32	35	5	5
30	40	6	6	40	5	70	4	30	40	6	6	36	5	40	5	70	4	25	28	5	5
32	44	6	6	42	6	80	4	32	44	6	6	31	5	42	6	80	4	25	28	5	5
28	44	6	6	40	5	70	4	28	44	6	6	31	5	40	5	70	4	22	25	5	5
20	40	5	5	28	4	60	4	20	40	5	5	28	4	28	4	60	4	13	15	4	4
15	27	4	4	25	4	60	4	15	27	4	4	24	4	25	4	60	4	12	13	3	3
13	22	3	3	20	3			13	22	3	3			20	3			11	12	2	2
30	44	6	6	40	4	80	5	30	44	6	6	36	6	40	4	80	5	25	28	5	5
16	22	4	4	22	4	60	4	16	22	4	4	22	4	22	4	60	4	12	14	3	3
12	18	3	3	18	3			12	18	3	3			18	3			11	12	2	2
15	22	4	4	20	4	50	4	15	22	4	4	16	4	20	4	50	4	12	13	3	3
10	16	3	3	15	3			10	16	3	3			15	3			7	8	2	2
15	20	4	4	21	4	50	3	15	20	4	4	20	4	21	4	50	3	12	13	3	9
10	15	3	3	16	3			10	15	3	3			16	3			9	10	2	2
10	13	3	3	15	3			10	13	3	3			15	3			9	10	2	2
	9		2	12	2	25	2		9		2			12	2			25	2						
						20	3											20	3						
						10												10							
14	20	4	4	15	4	25	2	14	20	4	4			15	4			25	2	12	13	3	3
10	16	4	4	10	3	15	1	10	16	4	4			10	3			15	1	7	8	3	3
12	18	4	4	12	3	25	2	12	18	4	4			12	3			25	2	11	12	3	3
36	45	6	6	50	6	90	4	36	45	6	6	36	6	50	6	90	4	29	32	6	6
30	40	6	6	40	6	80	4	30	40	6	6	36	6	40	6	80	4	23	26	6	6
30	40	6	6	44	6	80	4	30	40	6	6	31	6	44	6	80	4	25	28	6	6
22	30	6	6	32	6	70	4	22	30	6	6	24	6	32	6	70	4	18	20	6	6
				8	3	10								8	3	10					
				5	2	15	2							5	2	15	2				
						15	1									15	1				
						15	1									15	1				
50	70	7	7			200	7	50	70	7	7					200	7	45	50	7	7
50	70	7	7			200	7	50	70	7	7					200	7	45	50	7	7
65	85	7	7			150	6	65	85	7	7					150	6	54	60	7	7
60	70	6	6			120	6	60	70	6	6					120	6	45	50	6	6
60	80	6	6			180	6	60	80	6	6	90	6			180	6	45	50	6	6
70	80	5	5	80	5	80	5	70	80	5	5	70	5	80	5	80	5	60	70	5	5
45	77	5	5			180	5	45	77	5	5	80	5			180	5	40	50	5	5
30	44	5	5	60	5	180	5	30	44	5	5	50	5	60	5	180	5	25	28	5	5
36	50	4	4	50	5	120	5	36	50	4	4	36	4	50	5	120	5	31	35	4	4
30	40	4	4	45	4	120	5	30	40	4	4	33	4	45	4	120	5	22	25	4	4
30	32	4	4	40	4	70	4	30	32	4	4	18	4	40	4	70	4	22	24	4	4
25	28	4	4	32	4	50	3	25	28	4	4	18	4	32	4	50	3	18	20	4	4
20	25	4	4	25	4	50	4	20	25	4	4	29	4	25	4	50	4	16	18	4	4
15	27	4	4			40	3	15	27	4	4	36	5			40	3	11	12	4	4
						80	3									80	3				

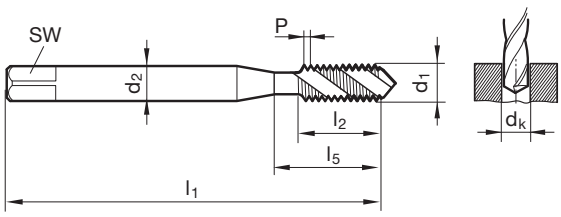
Thread cutting tools

Machine taps for ISO metric threads

P	≤ 800
M	
K	
N	
S	
H	

GÜHRINGNAVIGATOR
Cutting data page 100

Tool material	HSS-E	
Tolerance on Ø	ISO2/6H	ISO2/6H
Surface		S
Type	N R40	N R40
Form	C	C
Internal cooling		



DIN 2184-1 DIN 371/DIN 376

Article no.	5554	5592
Discount group	156	156

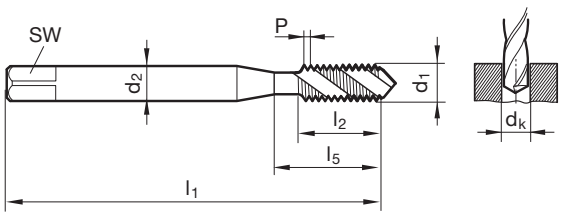
d1	P	d2	SW	dk	l1	l2	l5	Availability	
	mm	mm	mm	mm	mm	mm	mm		
M3	0.50	3.50	2.70	2.50	56.00	6.00	18.00	●	●
M4	0.70	4.50	3.40	3.30	63.00	7.50	21.00	●	●
M5	0.80	6.00	4.90	4.20	70.00	8.50	25.00	●	●
M6	1.00	6.00	4.90	5.00	80.00	11.00	30.00	●	●
M8	1.25	8.00	6.20	6.80	90.00	14.00	35.00	●	●
M10	1.50	10.00	8.00	8.50	100.00	16.00	39.00	●	●
M12	1.75	9.00	7.00	10.20	110.00	18.50	49.00	●	●
M16	2.00	12.00	9.00	14.00	110.00	20.00	54.00	●	●
M20	2.50	16.00	12.00	17.50	140.00	25.00	62.00	●	●

Machine taps for ISO metric threads

P	≤ 1200
M	
K	
N	
S	
H	

GÜHRINGNAVIGATOR
Cutting data page 100

Tool material	HSS-E	
Tolerance on Ø	ISO2/6H	ISO2/6H
Surface		C
Type	H R40	H R40
Form	C	C
Internal cooling		



DIN 2184-1 DIN 371/DIN 376

	Article no.	5552	5591
	Discount group	156	156

d1	P	d2	SW	dk	l1	l2	l5	Availability	
	mm	mm	mm	mm	mm	mm	mm		
M3	0.50	3.50	2.70	2.50	56.00	6.00	18.00	●	●
M4	0.70	4.50	3.40	3.30	63.00	7.50	21.00	●	●
M5	0.80	6.00	4.90	4.20	70.00	8.50	25.00	●	●
M6	1.00	6.00	4.90	5.00	80.00	11.00	30.00	●	●
M8	1.25	8.00	6.20	6.80	90.00	14.00	35.00	●	●
M10	1.50	10.00	8.00	8.50	100.00	16.00	39.00	●	●
M12	1.75	9.00	7.00	10.20	110.00	18.50	49.00	●	●
M16	2.00	12.00	9.00	14.00	110.00	20.00	54.00	●	●
M20	2.50	16.00	12.00	17.50	140.00	25.00	62.00	●	●

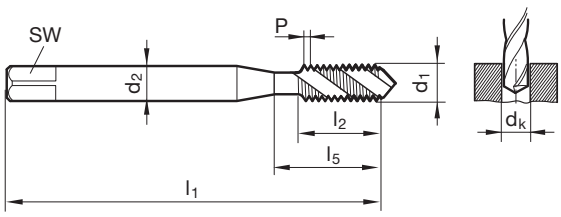
Machine taps for ISO metric threads

P	
M	•
K	
N	
S	
H	

GÜHRINGNAVIGATOR

Cutting data page 100

Tool material	HSS-E	
Tolerance on Ø	ISO2/6H	ISO2/6H
Surface	○	Ⓢ
Type	VA R40	VA R40
Form	C	C
Internal cooling	✗	✗



DIN 2184-1 DIN 371/DIN 376

	Article no.	5553	5596
	Discount group	156	156

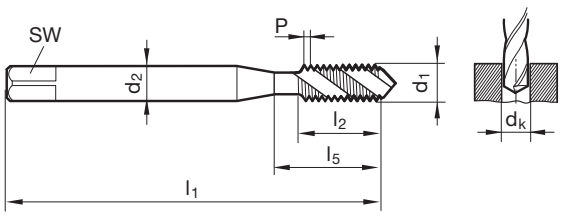
d1	P	d2	SW	dk	l1	l2	l5	Availability	
	mm	mm	mm	mm	mm	mm	mm		
M3	0.50	3.50	2.70	2.50	56.00	6.00	18.00	●	●
M4	0.70	4.50	3.40	3.30	63.00	7.50	21.00	●	●
M5	0.80	6.00	4.90	4.20	70.00	8.50	25.00	●	●
M6	1.00	6.00	4.90	5.00	80.00	11.00	30.00	●	●
M8	1.25	8.00	6.20	6.80	90.00	14.00	35.00	●	●
M10	1.50	10.00	8.00	8.50	100.00	16.00	39.00	●	●
M12	1.75	9.00	7.00	10.20	110.00	18.50	49.00	●	●
M16	2.00	12.00	9.00	14.00	110.00	20.00	54.00	●	●
M20	2.50	16.00	12.00	17.50	140.00	25.00	62.00	●	●

Machine taps for ISO metric threads

P	≤ 1000
M	○
K	○
N	
S	
H	

GÜHRINGNAVIGATOR
Cutting data page 100

Tool material	HSS-E	
Tolerance on Ø	ISO2/6H	ISO2/6H
Surface	●	Ⓢ
Type	N R40	N R40
Form	C	C
Internal cooling	✗	✗



DIN 2184-1 DIN 371/DIN 376

	Article no.	5555	5594
	Discount group	156	156

d1	P	d2	SW	dk	l1	l2	l5	Availability	
	mm	mm	mm	mm	mm	mm	mm		
M3	0.50	3.50	2.70	2.50	56.00	6.00	18.00	●	●
M4	0.70	4.50	3.40	3.30	63.00	7.50	21.00	●	●
M5	0.80	6.00	4.90	4.20	70.00	8.50	25.00	●	●
M6	1.00	6.00	4.90	5.00	80.00	11.00	30.00	●	●
M8	1.25	8.00	6.20	6.80	90.00	14.00	35.00	●	●
M10	1.50	10.00	8.00	8.50	100.00	16.00	39.00	●	●
M12	1.75	9.00	7.00	10.20	110.00	18.50	49.00	●	●
M16	2.00	12.00	9.00	14.00	110.00	20.00	54.00	●	●
M20	2.50	16.00	12.00	17.50	140.00	25.00	62.00	●	●

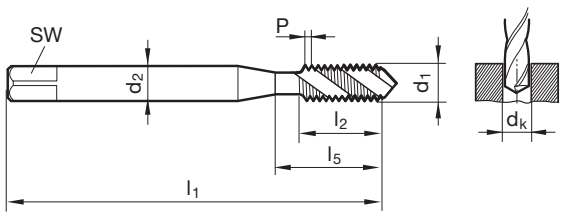
Machine taps for ISO metric threads

Tool material	HSS-E
Tolerance on Ø	ISO2/6H
Surface	◯
Type	Al R45
Form	C
Internal cooling	

P	
M	
K	
N	•
S	
H	

GÜHRINGNAVIGATOR

Cutting data page 100



DIN 2184-1 DIN 371/DIN 376

Article no. **5551**

Discount group **156**

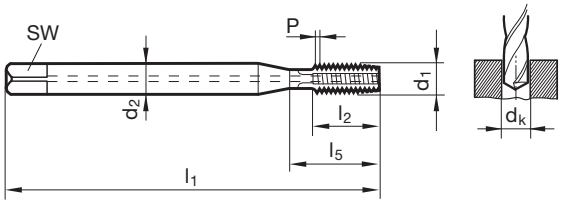
d1	P	d2	SW	dk	l1	l2	l5	Availability
	mm	mm	mm	mm	mm	mm	mm	
M3	0.50	3.50	2.70	2.50	56.00	6.00	18.00	●
M4	0.70	4.50	3.40	3.30	63.00	7.50	21.00	●
M5	0.80	6.00	4.90	4.20	70.00	8.50	25.00	●
M6	1.00	6.00	4.90	5.00	80.00	11.00	30.00	●
M8	1.25	8.00	6.20	6.80	90.00	14.00	35.00	●
M10	1.50	10.00	8.00	8.50	100.00	16.00	39.00	●
M12	1.75	9.00	7.00	10.20	110.00	18.50	49.00	●
M16	2.00	12.00	9.00	14.00	110.00	20.00	54.00	●
M20	2.50	16.00	12.00	17.50	140.00	25.00	62.00	●

Machine taps for ISO metric threads

P	
M	
K	•
N	≥ 7
S	
H	

GÜHRINGNAVIGATOR
Cutting data page 100

Tool material	**Solid carbide**
Tolerance on Ø	6HX
Surface	◯
Type	H
Form	C
Internal cooling	



DIN 2184-1 DIN 371/DIN 376

Article no. **5593**

Discount group **156**

d1	P	d2	SW	dk	l1	l2	l5	Availability
	mm	mm	mm	mm	mm	mm	mm	
M4	0.70	4.50	3.40	3.30	63.00	10.00	21.00	●
M5	0.80	6.00	4.90	4.20	70.00	10.00	25.00	●
M6	1.00	6.00	4.90	5.00	80.00	12.00	30.00	●
M8	1.25	8.00	6.20	6.80	90.00	16.00	35.00	●
M10	1.50	10.00	8.00	8.50	100.00	18.00	39.00	●
M12	1.75	9.00	7.00	10.20	110.00	24.00	49.00	●
M16	2.00	12.00	9.00	14.00	110.00	26.00	54.00	●
M20	2.50	16.00	12.00	17.50	140.00	32.00	62.00	●

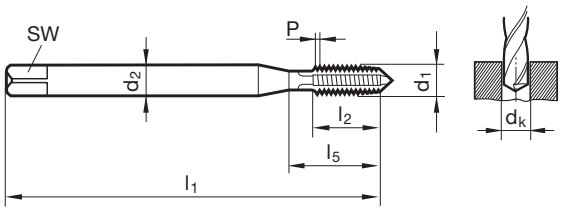
Machine taps for ISO metric threads

P	≤ 800	
M		
K		
N		
S		
H		

GÜHRINGNAVIGATOR

Cutting data page 98

Tool material	HSS-E	
Tolerance on Ø	ISO2/6H	ISO2/6H
Surface	●	Ⓢ
Type	N	N
Form	B	B
Internal cooling	⊘	⊘



DIN 2184-1 DIN 371/DIN 376

Article no.	5560	5590
Discount group	156	156

d1	P	d2	SW	dk	l1	l2	l5	Availability	
	mm	mm	mm	mm	mm	mm	mm		
M3	0.50	3.50	2.70	2.50	56.00	10.00	18.00	●	●
M4	0.70	4.50	3.40	3.30	63.00	12.00	21.00	●	●
M5	0.80	6.00	4.90	4.20	70.00	14.00	25.00	●	●
M6	1.00	6.00	4.90	5.00	80.00	16.00	30.00	●	●
M8	1.25	8.00	6.20	6.80	90.00	17.00	35.00	●	●
M10	1.50	10.00	8.00	8.50	100.00	20.00	39.00	●	●
M12	1.75	9.00	7.00	10.20	110.00	24.00	49.00	●	●
M16	2.00	12.00	9.00	14.00	110.00	26.00	54.00	●	●
M20	2.50	16.00	12.00	17.50	140.00	32.00	62.00	●	●

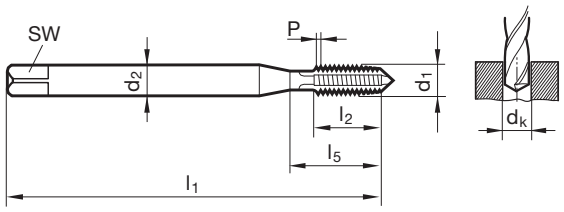
Machine taps for ISO metric threads

P	≤ 1200
M	
K	
N	
S	
H	

GÜHRINGNAVIGATOR

Cutting data page 98

Tool material	HSS-E	
Tolerance on Ø	ISO2/6H	ISO2/6H
Surface		C
Type	H	H
Form	B	B
Internal cooling		



DIN 2184-1 DIN 371/DIN 376

	Article no.	5558	5587
	Discount group	156	156

d1	P	d2	SW	dk	l1	l2	l5	Availability	
	mm	mm	mm	mm	mm	mm	mm		
M3	0.50	3.50	2.70	2.50	56.00	10.00	18.00	●	●
M4	0.70	4.50	3.40	3.30	63.00	12.00	21.00	●	●
M5	0.80	6.00	4.90	4.20	70.00	14.00	25.00	●	●
M6	1.00	6.00	4.90	5.00	80.00	16.00	30.00	●	●
M8	1.25	8.00	6.20	6.80	90.00	17.00	35.00	●	●
M10	1.50	10.00	8.00	8.50	100.00	20.00	39.00	●	●
M12	1.75	9.00	7.00	10.20	110.00	24.00	49.00	●	●
M16	2.00	12.00	9.00	14.00	110.00	26.00	54.00	●	●
M20	2.50	16.00	12.00	17.50	140.00	32.00	62.00	●	●

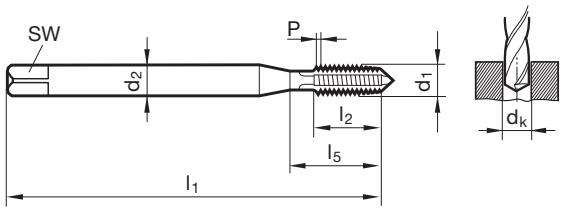
Machine taps for ISO metric threads

P	≤ 1000
M	•
K	
N	
S	
H	

GÜHRINGNAVIGATOR

Cutting data page 98

Tool material	HSS-E	
Tolerance on Ø	ISO2/6H	ISO2/6H
Surface	S	
Type	VA	VA
Form	B	B
Internal cooling		



DIN 2184-1 DIN 371/DIN 376

	Article no.	5588	5597
	Discount group	156	156

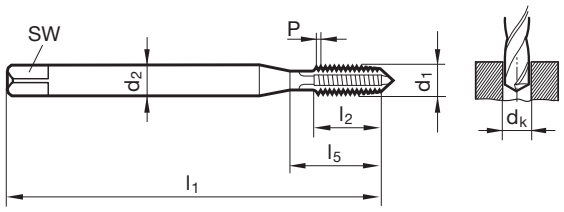
d1	P	d2	SW	dk	l1	l2	l5	Availability	
	mm	mm	mm	mm	mm	mm	mm		
M3	0.50	3.50	2.70	2.50	56.00	10.00	18.00	●	●
M4	0.70	4.50	3.40	3.30	63.00	12.00	21.00	●	●
M5	0.80	6.00	4.90	4.20	70.00	14.00	25.00	●	●
M6	1.00	6.00	4.90	5.00	80.00	16.00	30.00	●	●
M8	1.25	8.00	6.20	6.80	90.00	17.00	35.00	●	●
M10	1.50	10.00	8.00	8.50	100.00	20.00	39.00	●	●
M12	1.75	9.00	7.00	10.20	110.00	24.00	49.00	●	●
M16	2.00	12.00	9.00	14.00	110.00	26.00	54.00	●	●
M20	2.50	16.00	12.00	17.50	140.00	32.00	62.00	●	●

Machine taps for ISO metric threads

P	≤ 1000
M	•
K	
N	
S	
H	

GÜHRINGNAVIGATOR
Cutting data page 98

Tool material	**HSS-E-PM**
Tolerance on Ø	ISO2/6H
Surface	
Type	VA
Form	B
Internal cooling	



DIN 2184-1 DIN 371

Article no. **5559**

Discount group **156**

d1	P	d2	SW	dk	l1	l2	l5	Availability
	mm	mm	mm	mm	mm	mm	mm	
M3	0.50	3.50	2.70	2.50	56.00	10.00	18.00	●
M4	0.70	4.50	3.40	3.30	63.00	12.00	21.00	●
M5	0.80	6.00	4.90	4.20	70.00	14.00	25.00	●
M6	1.00	6.00	4.90	5.00	80.00	16.00	30.00	●
M8	1.25	8.00	6.20	6.80	90.00	17.00	35.00	●
M10	1.50	10.00	8.00	8.50	100.00	20.00	39.00	●

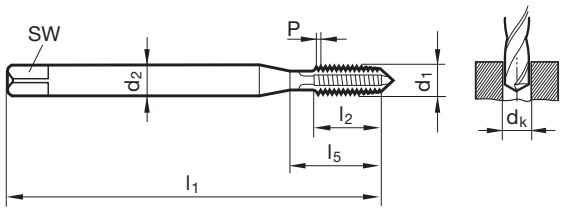
Machine taps for ISO metric threads

P	≤ 1000
M	○
K	
N	
S	
H	

GÜHRINGNAVIGATOR

Cutting data page 98

Tool material	HSS-E	
Tolerance on Ø	ISO2/6H	ISO2/6H
Surface	●	Ⓢ
Type	N	N
Form	B	B
Internal cooling	⊠	⊠



DIN 2184-1 DIN 371/DIN 376

	Article no.	5561	5586
	Discount group	156	156

d1	P	d2	SW	dk	l1	l2	l5	Availability	
	mm	mm	mm	mm	mm	mm	mm		
M3	0.50	3.50	2.70	2.50	56.00	10.00	18.00	●	●
M4	0.70	4.50	3.40	3.30	63.00	12.00	21.00	●	●
M5	0.80	6.00	4.90	4.20	70.00	14.00	25.00	●	●
M6	1.00	6.00	4.90	5.00	80.00	16.00	30.00	●	●
M8	1.25	8.00	6.20	6.80	90.00	17.00	35.00	●	●
M10	1.50	10.00	8.00	8.50	100.00	20.00	39.00	●	●
M12	1.75	9.00	7.00	10.20	110.00	24.00	49.00	●	●
M16	2.00	12.00	9.00	14.00	110.00	26.00	54.00	●	●
M20	2.50	16.00	12.00	17.50	140.00	32.00	62.00	●	●

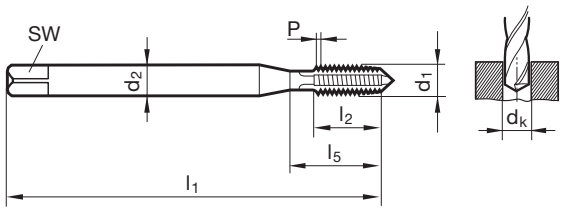
Machine taps for ISO metric threads

Tool material	HSS-E
Tolerance on Ø	ISO2/6H
Surface	◯
Type	AI
Form	B
Internal cooling	

P	
M	
K	
N	•
S	
H	

GÜHRINGNAVIGATOR

Cutting data page 98



DIN 2184-1 DIN 371/DIN 376

Article no. **5557**

Discount group **156**

d1	P	d2	SW	dk	l1	l2	l5	Availability
	mm	mm	mm	mm	mm	mm	mm	
M3	0.50	3.50	2.70	2.50	56.00	10.00	18.00	●
M4	0.70	4.50	3.40	3.30	63.00	12.00	21.00	●
M5	0.80	6.00	4.90	4.20	70.00	14.00	25.00	●
M6	1.00	6.00	4.90	5.00	80.00	16.00	30.00	●
M8	1.25	8.00	6.20	6.80	90.00	17.00	35.00	●
M10	1.50	10.00	8.00	8.50	100.00	20.00	39.00	●
M12	1.75	9.00	7.00	10.20	110.00	24.00	49.00	●
M16	2.00	12.00	9.00	14.00	110.00	26.00	54.00	●
M20	2.50	16.00	12.00	17.50	140.00	32.00	62.00	●

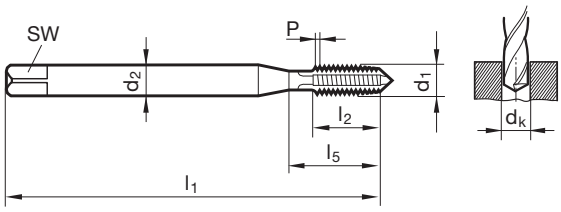
Machine taps for ISO metric threads

P	
M	
K	•
N	
S	
H	

GÜHRINGNAVIGATOR

Cutting data page 98

Tool material	HSS-E	
Tolerance on Ø	6HX	6HX
Surface	●	F
Type	GG	GG
Form	C	C
Internal cooling		



DIN 2184-1 DIN 371/DIN 376

	Article no.	5550	5595
	Discount group	156	156

d1	P	d2	SW	dk	l1	l2	l5	Availability	
	mm	mm	mm	mm	mm	mm	mm		
M3	0.50	3.50	2.70	2.50	56.00	10.00	18.00	●	●
M4	0.70	4.50	3.40	3.30	63.00	12.00	21.00	●	●
M5	0.80	6.00	4.90	4.20	70.00	14.00	25.00	●	●
M6	1.00	6.00	4.90	5.00	80.00	16.00	30.00	●	●
M8	1.25	8.00	6.20	6.80	90.00	17.00	35.00	●	●
M10	1.50	10.00	8.00	8.50	100.00	20.00	39.00	●	●
M12	1.75	9.00	7.00	10.20	110.00	24.00	49.00	●	●
M16	2.00	12.00	9.00	14.00	110.00	26.00	54.00	●	●
M20	2.50	16.00	12.00	17.50	140.00	32.00	62.00	●	●

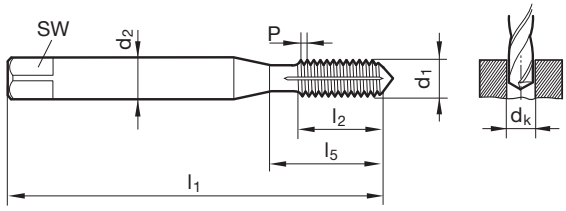
Fluteless machine taps for ISO metric threads

Tool material	HSS-E
Tolerance on Ø	6HX
Surface	S
Type	N
Form	C
Internal cooling	

P	•
M	•
K	
N	○
S	•
H	

GÜHRINGNAVIGATOR

Cutting data page 98



DIN 2174 ~DIN 371

Article no. **5598**

Discount group **156**

d1	P	d2	SW	dk	l1	l2	l5	Availability
	mm	mm	mm	mm	mm	mm	mm	
M3	0.50	3.50	2.70	2.80	56.00	10.00	18.00	●
M4	0.70	4.50	3.40	3.70	63.00	12.00	21.00	●
M5	0.80	6.00	4.90	4.65	70.00	14.00	25.00	●
M6	1.00	6.00	4.90	5.55	80.00	16.00	30.00	●
M8	1.25	8.00	6.20	7.40	90.00	17.00	35.00	●
M10	1.50	10.00	8.00	9.30	100.00	20.00	39.00	●

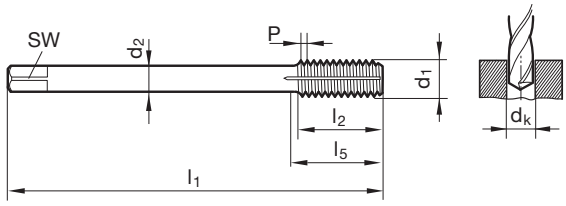
Fluteless machine taps for ISO metric threads

Tool material	HSS-E
Tolerance on Ø	6HX
Surface	S
Type	N
Form	C
Internal cooling	

P	•
M	•
K	
N	○
S	•
H	

GÜHRINGNAVIGATOR

Cutting data page 98



DIN 2174 ~DIN 376

Article no. **5599**

Discount group **156**

d1	P	d2	SW	dk	l1	l2	l5	Availability
	mm	mm	mm	mm	mm	mm	mm	
M12	1.75	9.00	7.00	11.20	110.00	24.00	49.00	●
M14	2.00	11.00	9.00	13.10	110.00	26.00	53.00	●
M16	2.00	12.00	9.00	15.10	110.00	26.00	54.00	●

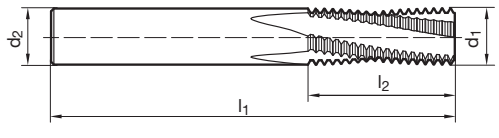
Thread milling cutters without chamfer for ISO metric threads

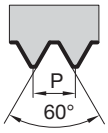
P	•
M	○
K	•
N	•
S	•
H	≤ 55

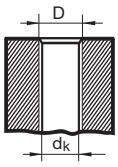
GÜHRINGNAVIGATOR

Cutting data page 100

Tool material	Solid carbide	
Tolerance on Ø		
Surface	C	C
Type	TM SP	TM SP
Shank form	HB	HA
Internal cooling		







Company std.

	Article no.	5547	5548
	Discount group	153	153

D	P	d1	d2	dk	l1	l2	Z	Code no.	Availability	
	mm	mm	mm	mm	mm	mm				
M6	1.000	4.800	6.000	5.00	54.000	13.500	3	6.000	●	●
M8	1.250	6.400	8.000	6.80	62.000	18.100	3	8.000	●	●
M10	1.500	7.950	10.000	8.50	74.000	21.800	3	10.000	●	●
M12	1.750	9.950	10.000	10.20	74.000	25.400	4	12.000	●	●
M14	2.000	11.200	12.000	12.00	90.000	31.000	4	14.000	●	●
M16	2.000	12.800	14.000	14.00	90.000	35.000	4	16.000	●	●
M20	2.500	14.950	16.000	17.50	102.000	41.300	4	20.000	●	●

GÜHRINGNAVIGATOR

Article no.
Thread type
Tolerance
Standard/DIN
Tool material
Type
Surface finish
Cooling
Shank tolerance
Std. range page

Cooling:
⊠ without coolant ducts

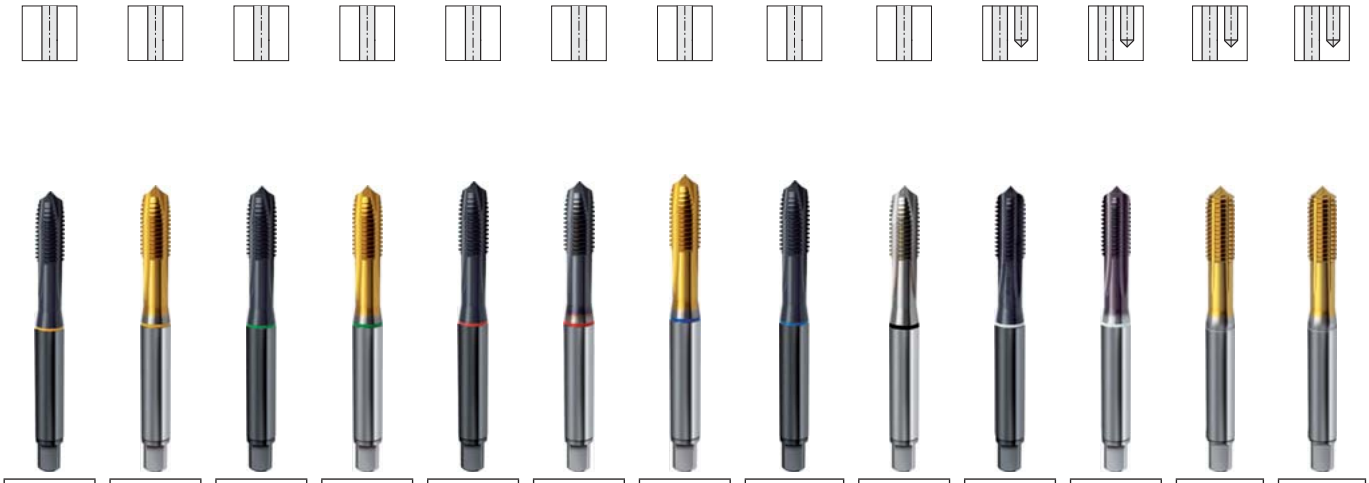
Coolant:
○ Air
● Neat oil
◍ Soluble oil
△ Paste

Material group	Material examples Figures in bold = material no. to DIN EN 10 027	Tensile strength N/mm²	Hardness	Coolant
Common structural steels	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		◍●△
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		◍●△
Free-cutting steels	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		◍●△
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		◍●△
Unalloyed heat-treatable steels	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		◍●△
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		◍●△
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		◍●△
Alloyed heat-treatable steels	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		◍●△
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		◍●△
Unalloyed case hard. steels	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		◍●△
Alloyed case hardened steels	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		◍●△
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		◍●△
Nitriding steels	**1.8504** 34CrAl6	≤1000		◍●△
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		◍●△
Tool steels	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		◍●△
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		◍●△
High speed steels	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		◍●△
Spring steels	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	◍●△
Hardened steels	–		≤48 HRC	●◍
			≤66 HRC	●◍
Stainless steels, sulphured	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.86681** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●△◍
austenitic	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●△◍
martensitic	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●△◍
Cast iron	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	◍●
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	◍●
Spheroidal graphite iron and	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	◍●
malleable cast iron	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	◍●
Chilled cast iron	–		≤350 HB	◍●
New cast materials GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	◍●
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	◍●
New cast materials ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		◍●
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		◍●
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤2000		●◍
Ti and Ti-alloys	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●◍
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●◍
Aluminium and Al-alloys	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		◍△●
Al wrought alloys	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		◍△●
Al cast alloys ≤ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		◍△●
≤ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		◍△●
Magnesium alloys	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		◍△●
Copper, low-alloyed	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		◍△●
Brass, short-chipping	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		◍△●
long-chipping	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		◍△●
Bronze, short-chipping	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		◍△●
	2.0790 CuNi18Zn19Pb	≤850		◍△●
Bronze, long-chipping	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		◍△●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		◍△●
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	≤150		◍
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		◍
Kevlar	Kevlar	≤1000		◍
Glass, carbon concentr. plastics	GFK/CFK	≤1000		◍

≤3xD

Fluteless taps

5560	5590	5561	5586	5558	5587	5588	5559	5557	5550	5595	5598	5599
M	M	M	M	M	M	M	M	M	M	M	M	M
6H	6H	6H	6H	6H	6H	6H	6H	6H	6HX	6HX	6HX	6HX
371/376	371/376	371/376	371/376	371/376	371/376	371/376	371/376	371/376	371/376	371/376	~371	~376
HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E-PM	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
N/B	N/B	N/B	N/B	H/B	H/B	VA/B	VA/B	Al/B	GG/C	GG/C	N/C	N/C
	S		S		C	S				F	S	S
												axial
h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9
88	88	92	92	89	89	90	91	93	94	94	95	96



v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min
10	12	12	15			10	12				15	15
8	10	12	15			10	12				15	15
8	10	10	12			8	10				15	15
6	8	10	12			8	10				15	15
10	12	12	15			10	12				15	15
10	12	12	15			10	12				15	15
		10	12			8	10				12	12
		6	8	10	12	4	6				12	12
				8	10						8	8
10	12	12	15			10	12				15	15
		6	8	10	12	4	6				15	15
				8	10						8	8
		6	8	10	12	4	6				15	15
				8	10						8	8
				10	12						12	12
				8	10						8	8
				8	10						8	8
				8	10						10	10
		4	6			10	8				6	6
		4	6			10	8				6	6
						8	6				4	4
									15	25		
									15	25		
									10	20		
									10	20		
									10	15		
									8	15		
									8	15		
									8	15		
										10		
								15			20	20
								15			20	20
											20	20
								15				
								15			20	20
								15			20	20
								15			20	20

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Article no.	
Thread type	
Tolerance	
Standard/DIN	
Tool material	
Type	
Surface finish	
Cooling	
Shank tolerance	
Std. range page	

Milling part diameter	Feed column no. 1	2	3	4	5	6
	f_z (mm/z) up-cut milling					
4.80	0.010	0.020	0.025	0.030	0.045	0.050
6.40	0.012	0.025	0.030	0.035	0.050	0.055
7.95	0.018	0.030	0.040	0.050	0.060	0.060
9.95	0.020	0.040	0.050	0.060	0.070	0.075
11.20	0.022	0.045	0.050	0.060	0.080	0.085
12.80	0.025	0.050	0.050	0.065	0.085	0.090
14.95	0.030	0.050	0.055	0.065	0.090	0.100

Cooling:
⊠ without coolant ducts

Coolant:
○ Air
● Neat oil
● Soluble oil
△ Paste

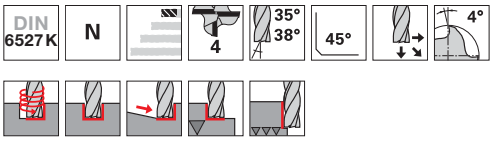
Material group	Material examples Figures in bold = material no. to DIN EN 10 027	Tensile strength N/mm²	Hardness	Coolant
Common structural steels	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●●△
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●●△
Free-cutting steels	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●●△
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●●△
Unalloyed heat-treatable steels	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●●△
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●●△
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●●△
Alloyed heat-treatable steels	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●●△
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●●△
Unalloyed case hard. steels	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●●△
Alloyed case hardened steels	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●●△
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●●△
Nitriding steels	**1.8504** 34CrAl6	≤1000		●●△
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●●△
Tool steels	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●●△
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●●△
High speed steels	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●●△
Spring steels	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●●△
Hardened steels	–		≤48 HRC	●●
			≤66 HRC	●●
Stainless steels, sulphured	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.86681** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●△●
austenitic	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●△●
martensitic	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●△●
Cast iron	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	●●
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	●●
Spheroidal graphite iron and	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	●●
malleable cast iron	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	●●
Chilled cast iron	–		≤350 HB	●●
New cast materials GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	●●
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	●●
New cast materials ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		●●
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		●●
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤2000		●●
Ti and Ti-alloys	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●●
Aluminium and Al-alloys	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		○△●
Al wrought alloys	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		○△●
Al cast alloys ≤ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		○△●
≤ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		○△●
Magnesium alloys	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○△●
Copper, low-alloyed	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		○△●
Brass, short-chipping	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		○△●
long-chipping	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		○△●
Bronze, short-chipping	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		○△●
	2.0790 CuNi18Zn19Pb	≤850		○△●
Bronze, long-chipping	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		○△●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		○△●
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	≤150		○
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		○
Kevlar	Kevlar	≤1000		○
Glass, carbon concentr. plastics	GFK/CFK	≤1000		○

≤3xD										≤2xD	
5554	5592	5555	5594	5552	5591	5596	5553	5551	5593	5547	5548
M	M	M	M	M	M	M	M	M	M	M	M
6H	6H	6H	6H	6H	6H	6H	6H	6H	6HX		
371/376	371/376	371/376	371/376	371/376	371/376	371/376	371/376	371/376	371/376		
HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	Sol. carb.	Sol. carb.	Sol. carb.
N R40/C	N R40/C	N R40/C	N R40/C	H R40/C	H R40/C	VA R40/C	VA R40/C	Al R45/C	H/C	TM SP/HB	TM SP/HA
○	S	○	S	○	C	S	○	○	○	C	C
⊠	⊠	⊠	⊠	⊠	⊠	⊠	⊠	⊠	axial	⊠	axial
h9	h9	h9	h9	h9	h9	h9	h9	h9	h6		
82	82	85	85	83	83	84	84	86	87	97	97

v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.
8	12	10	15							110	4	110	4
		10	15							110	4	110	4
		10	15							110	4	110	4
		8	10							110	4	110	4
8	12	10	15							110	4	110	4
8	12	10	15							110	4	110	4
		8	10							110	4	110	4
		4	6	8	10					90	3	90	3
				6	8					90	3	90	3
8	12	10	15							110	4	110	4
		4	6	8	10					90	3	90	3
				6	8					90	3	90	3
		4	6	8	10					90	3	90	3
				6	8					90	3	90	3
		4	6	8	10					90	3	90	3
				6	8					90	3	90	3
				6	8					90	3	90	3
										90	3	90	3
										25	1	25	1
						10	8			60	2	60	2
						10	8			60	2	60	2
						6	4			60	2	60	2
									45	120	4	120	4
									45	120	4	120	4
									35	120	4	120	4
									35	120	4	120	4
									30	100	3	100	3
									30	120	4	120	4
									30	120	4	120	4
									30	100	3	100	3
									30	100	3	100	3
										35	2	35	2
										35	2	35	2
										35	2	35	2
								15		250	5	250	5
								15		250	5	250	5
									50	250	5	250	5
									50	250	5	250	5
										250	5	250	5
								15		250	5	250	5
									50	250	5	250	5
								15		250	5	250	5
										250	5	250	5
										250	5	250	5
								15	15	250	5	250	5
								15	15	250	5	250	5
										350	5	350	5
										350	6	350	6

Milling cutters

Standard Ratio end mills RF 100 U



Tool material	**Solid carbide**
Surface	F
Type	N
Shank form	HB

P	•
M	○
K	•
N	
S	○
H	

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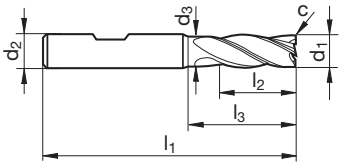
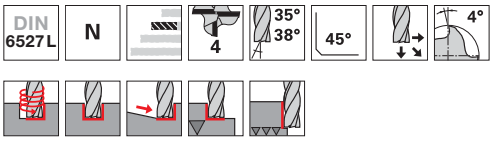
Cutting data page 130



Article no.	**5534**
Discount group	**157**

d1 h10	d2 h6	d3	l1	l2	l3	c	Z	Code no.	Availability
mm	mm	mm	mm	mm	mm	mm x 45°			
6.000	6.000	5.700	54.000	10.000	17.000	0.150	4	6.000	●
8.000	8.000	7.700	58.000	12.000	21.000	0.150	4	8.000	●
10.000	10.000	9.500	66.000	14.000	24.000	0.200	4	10.000	●
12.000	12.000	11.500	73.000	16.000	26.000	0.200	4	12.000	●
14.000	14.000	13.500	75.000	18.000	28.000	0.250	4	14.000	●
16.000	16.000	15.500	82.000	22.000	32.000	0.350	4	16.000	●
20.000	20.000	19.500	92.000	26.000	40.000	0.450	4	20.000	●

Standard Ratio end mills RF 100 U



Tool material	Solid carbide	
Surface	F	F
Type	N	N
Shank form	HA	HB

P	•
M	○
K	•
N	
S	○
H	

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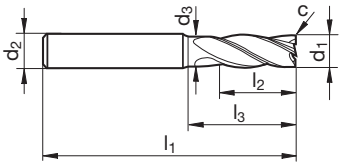
Cutting data page 130



Article no.	5735	5535
Discount group	157	157

d1 h10	d2 h6	d3	l1	l2	l3	c	Z	Code no.	Availability	
mm	mm	mm	mm	mm	mm	mm x 45°				
4.000	6.000	3.800	57.000	11.000	18.000	0.100	4	4.000	●	●
5.000	6.000	4.800	57.000	13.000	18.000	0.100	4	5.000	●	●
6.000	6.000	5.700	57.000	13.000	20.000	0.150	4	6.000	●	●
8.000	8.000	7.700	63.000	19.000	26.000	0.150	4	8.000	●	●
10.000	10.000	9.500	72.000	22.000	30.000	0.200	4	10.000	●	●
12.000	12.000	11.500	83.000	26.000	36.000	0.200	4	12.000	●	●
14.000	14.000	13.500	83.000	26.000	36.000	0.250	4	14.000	●	●
16.000	16.000	15.500	92.000	32.000	42.000	0.350	4	16.000	●	●
18.000	18.000	17.500	92.000	32.000	42.000	0.400	4	18.000		●
20.000	20.000	19.500	104.000	38.000	52.000	0.450	4	20.000	●	●
25.000	25.000	24.000	121.000	45.000	63.000	0.600	4	25.000	●	●

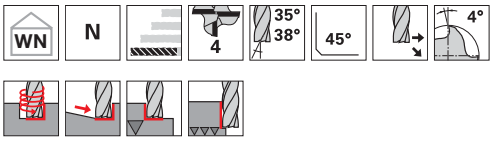
RF 100 U

set of Ratio end mills

can be found on page 126.

Article no. 5635 1,000 (page 126 in this brochure)
consisting of Article no. 5535,
1 piece each Ø 6 / 8 / 10 / 12 / 16 mm

Standard Ratio end mills RF 100 U

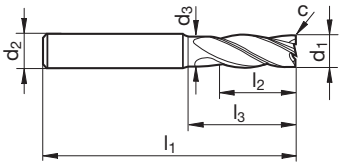


Tool material	**Solid carbide**
Surface	F
Type	N
Shank form	HA

P	•
M	○
K	•
N	
S	○
H	

GÜHRINGNAVIGATOR

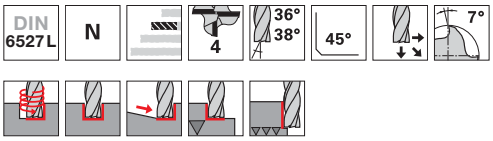
Cutting data page 130



Article no.	**5582**
Discount group	**157**

d1 h10	d2 h6	d3	l1	l2	l3	c	Z	Code no.	Availability
mm	mm	mm	mm	mm	mm	mm x 45°			
10.000	10.000	9.500	100.000	40.000	48.000	0.200	4	10.000	●
12.000	12.000	11.500	150.000	45.000	58.000	0.200	4	12.000	●
16.000	16.000	15.500	150.000	65.000	78.000	0.350	4	16.000	●
20.000	20.000	19.500	150.000	65.000	78.000	0.450	4	20.000	●
25.000	25.000	24.000	150.000	75.000	92.000	0.600	4	25.000	●

Ratio end mills RF 100 VA

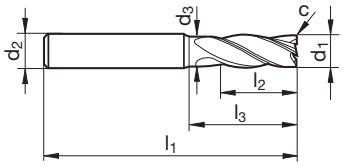


P	•
M	•
K	
N	○
S	•
H	

GÜHRINGNAVIGATOR

Cutting data page 130

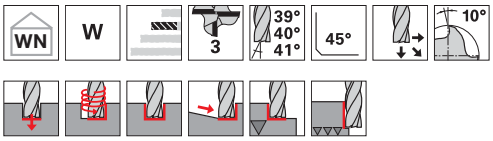
Tool material	Solid carbide	
Surface	a	a
Type	N	N
Shank form	HA	HB



Article no.	5653	5654
Discount group	157	157

d1 h10	d2 h6	d3	l1	l2	l3	c	Z	Code no.	Availability	
mm	mm	mm	mm	mm	mm	mm x 45°				
3.000	6.000	2.800	57.000	8.000	15.000	0.100	4	3.000	●	●
4.000	6.000	3.800	57.000	11.000	18.000	0.150	4	4.000	●	●
5.000	6.000	4.800	57.000	13.000	18.000	0.150	4	5.000	●	●
6.000	6.000	5.700	57.000	13.000	20.000	0.200	4	6.000	●	●
8.000	8.000	7.700	63.000	19.000	26.000	0.250	4	8.000	●	●
10.000	10.000	9.500	72.000	22.000	30.000	0.300	4	10.000	●	●
12.000	12.000	11.500	83.000	26.000	36.000	0.350	4	12.000	●	●
14.000	14.000	13.500	83.000	26.000	36.000	0.400	4	14.000	●	●
16.000	16.000	15.500	92.000	32.000	42.000	0.500	4	16.000	●	●
18.000	18.000	17.500	92.000	32.000	42.000	0.600	4	18.000	●	●
20.000	20.000	19.500	104.000	38.000	52.000	0.600	4	20.000	●	●
25.000	25.000	24.000	121.000	45.000	63.000	0.750	4	25.000	●	●

Ratio end mills Alu RF 100 A

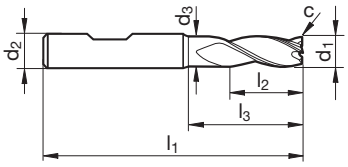


Tool material	**Solid carbide**
Surface	◯
Type	W
Shank form	HB

P	
M	
K	
N	•
S	
H	

GÜHRINGNAVIGATOR

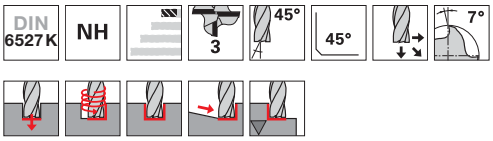
Cutting data page 130



Article no.	**5655**
Discount group	**157**

d1 e8	d2 h6	d3	l1	l2	l3	c	Z	Code no.	Availability
mm	mm	mm	mm	mm	mm	mm x 45°			
3.000	6.000	2.800	57.000	8.000	15.000	0.030	3	3.000	●
4.000	6.000	3.800	57.000	11.000	18.000	0.040	3	4.000	●
5.000	6.000	4.800	57.000	13.000	18.000	0.050	3	5.000	●
6.000	6.000	5.700	57.000	13.000	20.000	0.060	3	6.000	●
8.000	8.000	7.700	63.000	19.000	26.000	0.080	3	8.000	●
10.000	10.000	9.500	72.000	22.000	30.000	0.100	3	10.000	●
12.000	12.000	11.500	83.000	26.000	36.000	0.120	3	12.000	●
16.000	16.000	15.500	92.000	32.000	42.000	0.160	3	16.000	●
20.000	20.000	19.500	104.000	38.000	52.000	0.200	3	20.000	●

Slot drills GH 100 U (3-fluted)

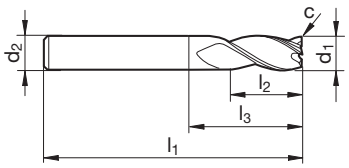


Tool material	**Solid carbide**
Surface	F
Type	NH
Shank form	HA

P	•
M	•
K	•
N	•
S	○
H	

GÜHRINGNAVIGATOR

Cutting data page 128



Article no.	**5505**
Discount group	**157**

d1 h10	d2 h6	l1	l2	l3	c	Z	Code no.	Availability
mm	mm	mm	mm	mm	mm x 45°			
3.000	6.000	50.000	4.000	7.900	0.050	3	3.000	●
4.000	6.000	54.000	5.000	8.900	0.060	3	4.000	●
5.000	6.000	54.000	6.000	11.400	0.080	3	5.000	●
6.000	6.000	54.000	7.000	18.000	0.090	3	6.000	●
8.000	8.000	58.000	9.000	22.000	0.120	3	8.000	●
9.000	10.000	66.000	10.000	19.400	0.140	3	9.000	●
10.000	10.000	66.000	11.000	26.000	0.150	3	10.000	●
12.000	12.000	73.000	12.000	28.000	0.180	3	12.000	●
16.000	16.000	82.000	16.000	34.000	0.190	3	16.000	●
20.000	20.000	92.000	20.000	42.000	0.240	3	20.000	●

Slot drills GH 100 U (3-fluted)

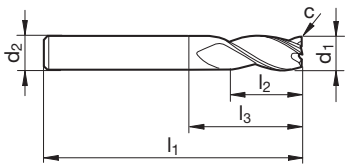
DIN 6527 L | NH | 3 | 45° | 45° | 7°

Tool material	Solid carbide	
Surface	F	F
Type	NH	NH
Shank form	HA	HB

P	•
M	•
K	•
N	•
S	○
H	

GÜHRINGNAVIGATOR

Cutting data page 128



	Article no.	5506	5546
	Discount group	157	157

d1 h10	d2 h6	l1	l2	l3	c	Z	Code no.	Availability	
mm	mm	mm	mm	mm	mm x 45°				
3.000	6.000	57.000	7.000	10.900	0.050	3	3.000	•	•
3.500	6.000	57.000	7.000	10.900	0.050	3	3.500	•	•
4.000	6.000	57.000	8.000	11.900	0.060	3	4.000	•	•
5.000	6.000	57.000	10.000	15.400	0.080	3	5.000	•	•
6.000	6.000	57.000	10.000	21.000	0.090	3	6.000	•	•
7.000	8.000	63.000	13.000	21.400	0.110	3	7.000	•	•
8.000	8.000	63.000	16.000	27.000	0.120	3	8.000	•	•
10.000	10.000	72.000	19.000	32.000	0.150	3	10.000	•	•
12.000	12.000	83.000	22.000	38.000	0.180	3	12.000	•	•
14.000	14.000	83.000	22.000	38.000	0.210	3	14.000	•	
16.000	16.000	92.000	26.000	44.000	0.190	3	16.000	•	•
18.000	18.000	92.000	26.000	44.000	0.220	3	18.000	•	
20.000	20.000	104.000	32.000	54.000	0.240	3	20.000	•	•

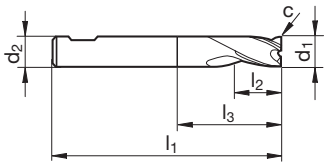
Mini slot drills (3-fluted)

Tool material	**Solid carbide**
Surface	F
Type	NH
Shank form	HA/HB

P	●
M	●
K	○
N	●
S	○
H	

GÜHRINGNAVIGATOR

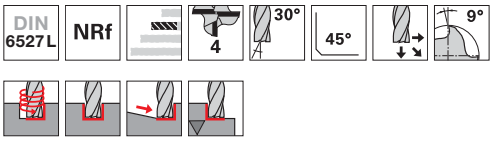
Cutting data page 128



Article no.	**5574**
Discount group	**157**

d1 e8	d2 h6	l1	l2	l3	c	Z	Code no.	Availability
mm	mm	mm	mm	mm	mm x 45°			
1.000	3.000	38.000	2.000	3.400	0.025	3	1.000	●
1.200	3.000	38.000	2.000	3.400	0.025	3	1.200	●
1.500	3.000	38.000	3.000	5.900	0.025	3	1.500	●
1.800	3.000	38.000	3.000	5.900	0.025	3	1.800	●
2.000	6.000	45.000	4.000	6.900	0.025	3	2.000	●
2.500	6.000	45.000	5.000	7.900	0.050	3	2.500	●
3.000	6.000	45.000	6.000	9.900	0.050	3	3.000	●
3.500	6.000	45.000	6.000	9.900	0.050	3	3.500	●
4.000	6.000	45.000	7.000	10.900	0.050	3	4.000	●
4.500	6.000	45.000	8.000	13.400	0.050	3	4.500	●
5.000	6.000	45.000	8.000	13.400	0.050	3	5.000	●
5.500	6.000	45.000	8.000	14.400	0.050	3	5.500	●
5.750	6.000	45.000	10.000	3.800	0.050	3	5.750	●
6.000	6.000	45.000	10.000	15.000	0.050	3	6.000	●
6.750	8.000	55.000	10.000	18.400	0.100	3	6.750	●
7.000	8.000	55.000	12.000	12.000	0.100	3	7.000	●
7.750	8.000	55.000	12.000	12.000	0.100	3	7.750	●
8.000	8.000	55.000	13.000	19.000	0.100	3	8.000	●
8.700	10.000	55.000	14.000	23.400	0.100	3	8.700	●
9.000	10.000	55.000	14.000	23.400	0.100	3	9.000	●
9.700	10.000	55.000	16.000	16.300	0.100	3	9.700	●
10.000	10.000	55.000	16.000	25.000	0.100	3	10.000	●

Roughing end mills GS 100 U (fine teeth)

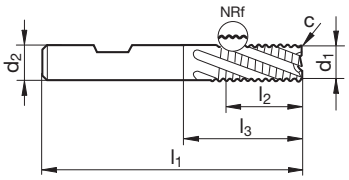


Tool material	**Solid carbide**
Surface	F
Type	NRf
Shank form	HB

P	•
M	•
K	•
N	○
S	
H	

GÜHRINGNAVIGATOR

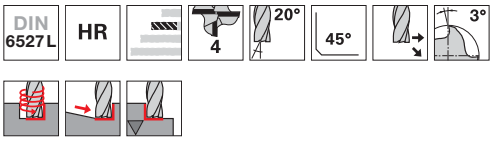
Cutting data page 130



Article no.	**5504**
Discount group	**157**

d1 h10	d2 h6	l1	l2	l3	c	Z	Code no.	Availability
mm	mm	mm	mm	mm	mm x 45°			
6.000	6.000	57.000	13.000	21.000	0.300	4	6.000	●
8.000	8.000	63.000	19.000	27.000	0.300	4	8.000	●
10.000	10.000	72.000	22.000	32.000	0.300	4	10.000	●
12.000	12.000	83.000	26.000	38.000	0.500	4	12.000	●
16.000	16.000	92.000	32.000	44.000	0.500	4	16.000	●
20.000	20.000	104.000	38.000	54.000	0.500	4	20.000	●

Hard roughing end mills GS 100 H (fine teeth)

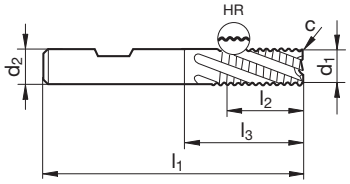


Tool material	**Solid carbide**
Surface	Y
Type	HR
Shank form	HB

P	○
M	
K	•
N	
S	
H	•

GÜHRINGNAVIGATOR

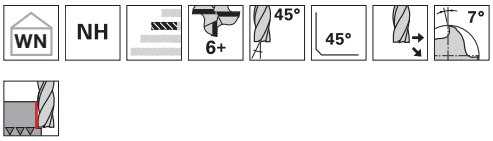
Cutting data page 130



Article no.	**5583**
Discount group	**157**

d1 h10	d2 h6	l1	l2	l3	c	Z	Code no.	Availability
mm	mm	mm	mm	mm	mm x 45°			
6.000	6.000	57.000	13.000	21.000	0.300	4	6.000	●
8.000	8.000	63.000	19.000	27.000	0.300	4	8.000	●
10.000	10.000	72.000	22.000	32.000	0.300	4	10.000	●
12.000	12.000	83.000	26.000	38.000	0.500	4	12.000	●
16.000	16.000	92.000	32.000	44.000	0.500	4	16.000	●
20.000	20.000	104.000	38.000	54.000	0.500	4	20.000	●

Multi-tooth end mills GH 100 U

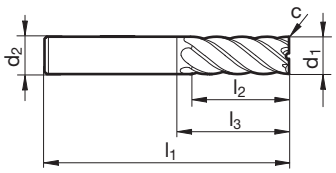


Tool material	Solid carbide	
Surface	F	F
Type	NH	NH
Shank form	HA	HB

P	•
M	•
K	•
N	•
S	•
H	

GÜHRINGNAVIGATOR

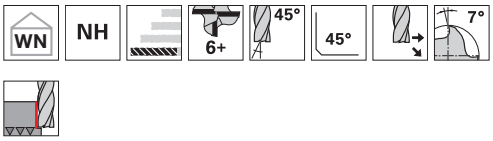
Cutting data page 128



Article no.	5745	5545
Discount group	157	157

d1 h10	d2 h6	l1	l2	l3	c	Z	Code no.	Availability	
mm	mm	mm	mm	mm	mm x 45°				
3.000	6.000	57.000	8.000	11.400	0.050	6	3.000	•	
4.000	6.000	57.000	11.000	15.900	0.050	6	4.000	•	
5.000	6.000	57.000	13.000	17.900	0.050	6	5.000	•	
6.000	6.000	57.000	13.000	21.000	0.050	6	6.000	•	•
8.000	8.000	63.000	19.000	27.000	0.100	6	8.000	•	•
10.000	10.000	72.000	22.000	32.000	0.100	6	10.000	•	•
12.000	12.000	83.000	26.000	38.000	0.100	6	12.000	•	•
16.000	16.000	92.000	32.000	44.000	0.150	6	16.000	•	•
20.000	20.000	104.000	38.000	54.000	0.150	8	20.000	•	•
25.000	25.000	121.000	45.000	65.000	0.200	10	25.000	•	

Multi-tooth end mills GH 100 U



Tool material	**Solid carbide**
Surface	F
Type	NH
Shank form	HA

P	•
M	•
K	•
N	•
S	•
H	

GÜHRINGNAVIGATOR

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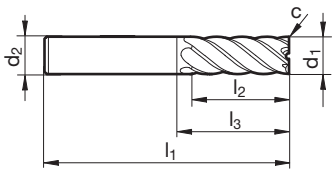


Article no.	**5729**
Discount group	**157**

d1 h10	d2 h6	l1	l2	l3	c	Z	Code no.	Availability
mm	mm	mm	mm	mm	mm x 45°			
6.000	6.000	75.000	30.000	39.000	0.050	6	6.000	●
8.000	8.000	100.000	40.000	64.000	0.100	6	8.000	●
10.000	10.000	100.000	40.000	60.000	0.100	6	10.000	●
12.000	12.000	150.000	45.000	105.000	0.100	6	12.000	●
16.000	16.000	150.000	65.000	102.000	0.150	6	16.000	●
20.000	20.000	150.000	65.000	100.000	0.150	8	20.000	●

Slot drills (2-fluted)

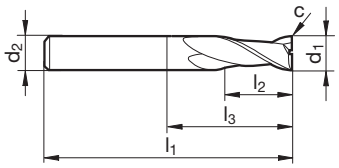
DIN 6527 L | N | 2 | 30° | 45° | 9°

Tool material	Solid carbide	
Surface	F	F
Type	N	N
Shank form	HA	HB

P	•
M	•
K	•
N	•
S	
H	

GÜHRINGNAVIGATOR

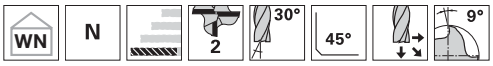
Cutting data page 128



Article no.	5730	5530
Discount group	157	157

d1 h10	d2 h6	l1	l2	l3	c	Z	Code no.	Availability	
mm	mm	mm	mm	mm	mm x 45°				
2.000	6.000	57.000	6.000	9.400	0.025	2	2.000	•	•
3.000	6.000	57.000	7.000	11.900	0.050	2	3.000	•	•
4.000	6.000	57.000	8.000	13.400	0.050	2	4.000	•	•
5.000	6.000	57.000	10.000	16.900	0.050	2	5.000	•	•
6.000	6.000	57.000	10.000	21.000	0.050	2	6.000	•	•
8.000	8.000	63.000	16.000	27.000	0.100	2	8.000	•	•
10.000	10.000	72.000	19.000	32.000	0.100	2	10.000	•	•
12.000	12.000	83.000	22.000	38.000	0.100	2	12.000	•	•
16.000	16.000	92.000	26.000	44.000	0.150	2	16.000		•
20.000	20.000	104.000	32.000	54.000	0.150	2	20.000		•

XL slot drills (2-fluted)

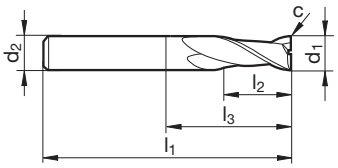


Tool material	**Solid carbide**
Surface	F
Type	N
Shank form	HA

P	•
M	•
K	•
N	•
S	
H	

GÜHRINGNAVIGATOR

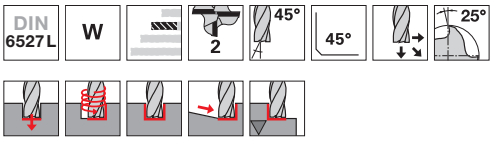
Cutting data page 128



Article no.	**5549**
Discount group	**157**

d1 h10	d2 h6	l1	l2	l3	c	Z	Code no.	Availability
mm	mm	mm	mm	mm	mm x 45°			
3.000	3.000	75.000	20.000	47.000	0.050	2	3.000	●
4.000	4.000	75.000	25.000	47.000	0.050	2	4.000	●
5.000	5.000	75.000	30.000	47.000	0.050	2	5.000	●
6.000	6.000	75.000	30.000	39.000	0.050	2	6.000	●
8.000	8.000	100.000	40.000	64.000	0.100	2	8.000	●
10.000	10.000	100.000	40.000	60.000	0.100	2	10.000	●
12.000	12.000	150.000	45.000	105.000	0.100	2	12.000	●
16.000	16.000	150.000	65.000	102.000	0.150	2	16.000	●
20.000	20.000	150.000	65.000	100.000	0.150	2	20.000	●

Al slot drills (2-fluted)

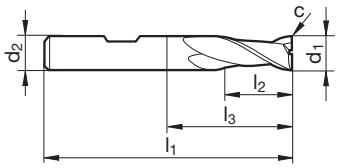


Tool material	**Solid carbide**
Surface	◯
Type	W
Shank form	HB

P	
M	
K	
N	•
S	
H	

GÜHRINGNAVIGATOR

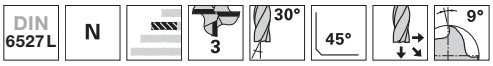
Cutting data page 128



Article no.	**5543**
Discount group	**157**

d1 e8	d2 h6	l1	l2	l3	c	Z	Code no.	Availability
mm	mm	mm	mm	mm	mm x 45°			
3.000	6.000	57.000	7.000	10.900	0.030	2	3.000	●
4.000	6.000	57.000	8.000	11.900	0.030	2	4.000	●
5.000	6.000	57.000	10.000	15.400	0.030	2	5.000	●
6.000	6.000	57.000	10.000	21.000	0.030	2	6.000	●
8.000	8.000	63.000	16.000	27.000	0.050	2	8.000	●
10.000	10.000	72.000	19.000	32.000	0.050	2	10.000	●
12.000	12.000	83.000	22.000	38.000	0.100	2	12.000	●
16.000	16.000	92.000	26.000	44.000	0.100	2	16.000	●
20.000	20.000	104.000	32.000	54.000	0.100	2	20.000	●

Slot drills (3-fluted)

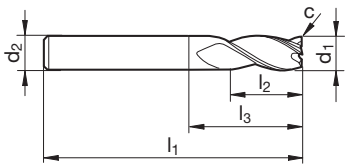


Tool material	Solid carbide	
Surface	F	F
Type	N	N
Shank form	HA	HB

P	•
M	•
K	•
N	•
S	
H	

GÜHRINGNAVIGATOR

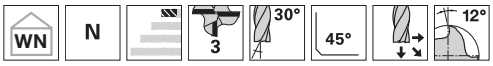
Cutting data page 128



Article no.	5507	5531
Discount group	157	157

d1 h10	d2 h6	l1	l2	l3	c	Z	Code no.	Availability	
mm	mm	mm	mm	mm	mm x 45°				
2.000	6.000	57.000	6.000	10.400	0.025	3	2.000	•	•
2.500	6.000	57.000	7.000	11.400	0.050	3	2.500	•	
3.000	6.000	57.000	7.000	11.400	0.050	3	3.000	•	•
3.500	6.000	57.000	7.000	11.400	0.050	3	3.500	•	
4.000	6.000	57.000	8.000	13.900	0.050	3	4.000	•	•
5.000	6.000	57.000	10.000	16.900	0.050	3	5.000	•	•
6.000	6.000	57.000	10.000	21.000	0.050	3	6.000	•	•
8.000	8.000	63.000	16.000	27.000	0.100	3	8.000	•	•
10.000	10.000	72.000	19.000	32.000	0.100	3	10.000	•	•
12.000	12.000	83.000	22.000	38.000	0.100	3	12.000	•	•
14.000	14.000	83.000	22.000	38.000	0.150	3	14.000	•	
16.000	16.000	92.000	26.000	44.000	0.150	3	16.000	•	•
20.000	20.000	104.000	32.000	54.000	0.150	3	20.000		•

Mini slot drills (3-fluted)

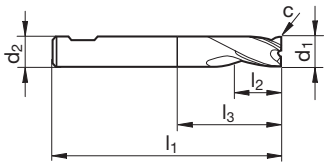


Tool material	**Solid carbide**
Surface	F
Type	N
Shank form	HA/HB

P	•
M	•
K	○
N	○
S	•
H	

GÜHRINGNAVIGATOR

Cutting data page 128



Article no.	**5573**
Discount group	**157**

d1 h10	d2 h6	l1	l2	l3	c	Z	Code no.	Availability
mm	mm	mm	mm	mm	mm x 45°			
0.500	3.000	38.000	1.500	3.400	0.025	3	0.500	●
0.600	3.000	38.000	1.500	3.400	0.025	3	0.600	●
0.800	3.000	38.000	2.000	3.900	0.025	3	0.800	●
1.000	3.000	38.000	2.000	3.900	0.025	3	1.000	●
1.200	3.000	38.000	2.000	3.900	0.025	3	1.200	●
1.500	3.000	38.000	2.000	3.900	0.025	3	1.500	●
1.800	3.000	38.000	2.000	3.900	0.025	3	1.800	●
2.000	6.000	38.000	4.000	7.400	0.025	3	2.000	●
2.500	6.000	38.000	5.000	8.400	0.050	3	2.500	●
3.000	6.000	38.000	5.000	8.400	0.050	3	3.000	●
3.500	6.000	38.000	6.000	9.400	0.050	3	3.500	●
4.000	6.000	38.000	7.000	10.400	0.050	3	4.000	●
4.500	6.000	38.000	8.000	12.400	0.050	3	4.500	●
5.000	6.000	38.000	8.000	12.400	0.050	3	5.000	●
5.500	6.000	38.000	8.000	12.400	0.050	3	5.500	●
5.750	6.000	38.000	8.000	12.400	0.050	3	5.750	●
6.000	6.000	38.000	8.000	14.000	0.050	3	6.000	●
6.750	8.000	42.000	10.000	15.400	0.100	3	6.750	●
7.000	8.000	42.000	10.000	16.400	0.100	3	7.000	●
7.750	8.000	42.000	10.000	16.400	0.100	3	7.750	●
8.000	8.000	43.000	11.000	19.000	0.100	3	8.000	●
8.700	10.000	48.000	11.000	17.400	0.100	3	8.700	●
9.000	10.000	48.000	11.000	17.400	0.100	3	9.000	●
9.700	10.000	48.000	11.000	17.400	0.100	3	9.700	●
10.000	10.000	50.000	13.000	23.000	0.100	3	10.000	●
12.000	12.000	55.000	15.000	24.500	0.100	3	12.000	●
14.000	14.000	58.000	15.000	27.500	0.150	3	14.000	●
16.000	16.000	62.000	18.000	29.000	0.150	3	16.000	●
20.000	20.000	75.000	22.000	41.000	0.150	3	20.000	●

End mills (4-fluted)

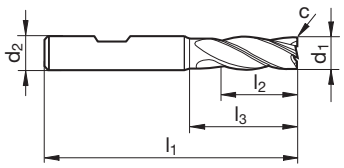
DIN 6527 L | N | 4 | 30° | 45° | 9°

Tool material	**Solid carbide**
Surface	F
Type	N
Shank form	HB

P	•
M	•
K	•
N	•
S	
H	

GÜHRINGNAVIGATOR

Cutting data page 130



Article no.	**5532**
Discount group	**157**

d1 h10	d2 h6	l1	l2	l3	c	Z	Code no.	Availability
mm	mm	mm	mm	mm	mm x 45°			
2.000	6.000	57.000	7.000	11.400	0.025	4	2.000	●
3.000	6.000	57.000	8.000	12.900	0.050	4	3.000	●
4.000	6.000	57.000	11.000	16.900	0.050	4	4.000	●
5.000	6.000	57.000	13.000	19.900	0.050	4	5.000	●
6.000	6.000	57.000	13.000	21.000	0.050	4	6.000	●
7.000	8.000	63.000	16.000		0.100	4	7.000	●
8.000	8.000	63.000	19.000	27.000	0.100	4	8.000	●
9.000	10.000	72.000	19.000	28.400	0.100	4	9.000	●
10.000	10.000	72.000	22.000	32.000	0.100	4	10.000	●
12.000	12.000	83.000	26.000	38.000	0.100	4	12.000	●
14.000	14.000	83.000	26.000	38.000	0.150	4	14.000	●
16.000	16.000	92.000	32.000	44.000	0.150	4	16.000	●
18.000	18.000	92.000	32.000	44.000	0.150	4	18.000	●
20.000	20.000	104.000	38.000	54.000	0.150	4	20.000	●

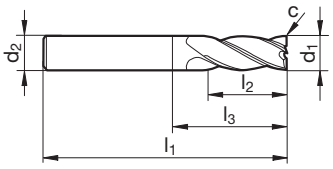
XL end mills (4-fluted)

Tool material	**Solid carbide**
Surface	F
Type	N
Shank form	HA

P	•
M	•
K	•
N	•
S	
H	

GÜHRINGNAVIGATOR

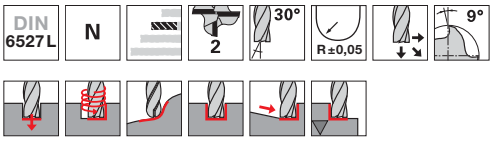
Cutting data page 130



Article no.	**5556**
Discount group	**157**

d1 h10	d2 h6	l1	l2	l3	c	Z	Code no.	Availability
mm	mm	mm	mm	mm	mm x 45°			
3.000	3.000	75.000	20.000	47.000	0.050	4	3.000	●
4.000	4.000	75.000	25.000	47.000	0.050	4	4.000	●
5.000	5.000	75.000	30.000	47.000	0.050	4	5.000	●
6.000	6.000	75.000	30.000	39.000	0.050	4	6.000	●
8.000	8.000	100.000	40.000	64.000	0.100	4	8.000	●
10.000	10.000	100.000	40.000	60.000	0.100	4	10.000	●
12.000	12.000	150.000	45.000	105.000	0.100	4	12.000	●
14.000	14.000	150.000	45.000	105.000	0.150	4	14.000	●
16.000	16.000	150.000	65.000	102.000	0.150	4	16.000	●
20.000	20.000	150.000	65.000	100.000	0.150	4	20.000	●

Ball nose slot drills (2-fluted)

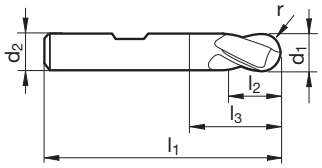


Tool material	Solid carbide	
Surface	F	F
Type	N	N
Shank form	HB	HA

P	•
M	•
K	•
N	•
S	•
H	○

GÜHRINGNAVIGATOR

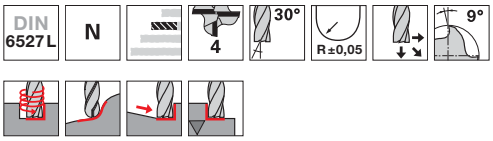
Cutting data page 128



Article no.	5533	5585
Discount group	157	157

d1 h10	d2 h6	l1	l2	l3	r	Z	Code no.	Availability	
mm	mm	mm	mm	mm	mm				
0.500	3.000	38.000	1.000	2.100	0.250	2	0.500		•
1.000	3.000	38.000	2.000	3.900	0.500	2	1.000		•
1.500	3.000	38.000	3.000	6.400	0.750	2	1.500		•
2.000	6.000	57.000	6.000	9.400	1.000	2	2.000		•
3.000	6.000	57.000	7.000	11.900	1.500	2	3.000		•
4.000	6.000	57.000	8.000	13.400	2.000	2	4.000	•	•
5.000	6.000	57.000	10.000	16.900	2.500	2	5.000	•	•
6.000	6.000	57.000	10.000	21.000	3.000	2	6.000	•	•
8.000	8.000	63.000	16.000	27.000	4.000	2	8.000	•	•
10.000	10.000	72.000	19.000	32.000	5.000	2	10.000	•	•
12.000	12.000	83.000	22.000	38.000	6.000	2	12.000	•	•
20.000	20.000	104.000	32.000	54.000	10.000	2	20.000		•

Ball nose end mills (4-fluted)

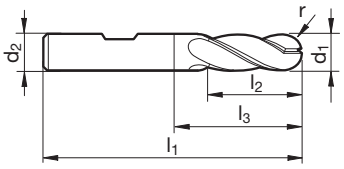


Tool material	**Solid carbide**
Surface	F
Type	N
Shank form	HB

P	•
M	•
K	•
N	•
S	•
H	○

GÜHRINGNAVIGATOR

Cutting data page 128



Article no.	**5584**
Discount group	**157**

d1 h10	d2 h6	l1	l2	l3	r	Z	Code no.	Availability
mm	mm	mm	mm	mm	mm			
3.000	6.000	57.000	8.000	12.400	1.500	4	3.000	●
4.000	6.000	57.000	11.000	15.900	2.000	4	4.000	●
5.000	6.000	57.000	13.000	19.400	2.500	4	5.000	●
6.000	6.000	57.000	13.000	21.000	3.000	4	6.000	●
8.000	8.000	63.000	19.000	27.000	4.000	4	8.000	●
10.000	10.000	72.000	22.000	32.000	5.000	4	10.000	●
12.000	12.000	83.000	26.000	38.000	6.000	4	12.000	●
20.000	20.000	104.000	38.000	54.000	10.000	4	20.000	●

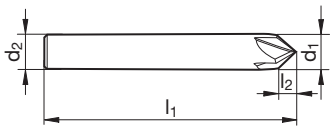
Chamfering milling cutters

Tool material	Solid carbide	
Surface	A	A
Type	N	N
Shank form	HA	HB

P	•
M	•
K	•
N	•
S	•
H	○

GÜHRINGNAVIGATOR

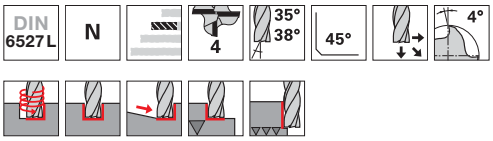
Cutting data page 130



Article no.	5578	5579
Discount group	157	157

d1 js9	d2 h6	l1	l2	Z	Code no.	Availability	
mm	mm	mm	mm				
4.000	4.000	50.000	2.000	4	4.000	●	
6.000	6.000	57.000	3.000	4	6.000	●	●
8.000	8.000	63.000	4.000	4	8.000	●	●
10.000	10.000	72.000	5.000	4	10.000	●	●
12.000	12.000	83.000	6.000	4	12.000	●	●

Ratio end mill sets RF 100 U



P	●
M	○
K	●
N	
S	○
H	○

Tool material	**Solid carbide**
Surface	F
Type	N
Shank form	HB

Article no.	**5635**
Discount group	**157**

Ø-range	Pieces/set	Code no.	Availability
mm			
6/8/10/12/16	5	1.000	●

Guhring GM 300

GÜHROJET

Tool holders with peripheral cooling

An Overview and Selection Guide can be found on page 150.

GÜHRINGNAVIGATOR Milling cutters

Tools with **bold** feed column no. (FC no.) are preferred choice.

ae = Width of cut

ap = Depth of cut

Slot milling

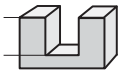
Art. no.		Tool material	Sol. carb.	Sol. carb.
		Type	N	N
	DIN 6527	HA	5730	5507
	DIN 6527	HB	5530	5531
	Company std.	HA		
	Company std.	HB		

* For large cutting depths on unstable machines fz and vc must be reduced or a 4-flute tool RF 100 (Guhring no. 5582) must be applied.

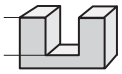
** To improve the surface quality, the milling angle should be 10°-15°.

a_e = 1xD

a_e = 1xD



a_p = 0.5 x D



a_p = 0.5 x D

Cutter-Ø mm	Feed column no. 37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
	f_z (mm/tooth)															
2,00	0,001	0,001	0,001	0,002	0,002	0,004	0,005	0,006	0,007	0,008	0,010	0,012	0,014	0,016	0,018	0,020
3,00	0,002	0,002	0,003	0,003	0,004	0,007	0,010	0,010	0,010	0,015	0,016	0,013	0,019	0,022	0,024	0,030
5,00	0,005	0,006	0,007	0,009	0,010	0,014	0,020	0,020	0,022	0,025	0,026	0,026	0,028	0,030	0,032	0,038
6,00	0,006	0,008	0,009	0,011	0,013	0,017	0,024	0,025	0,027	0,031	0,029	0,033	0,039	0,036	0,041	0,047
8,00	0,010	0,012	0,014	0,016	0,019	0,024	0,032	0,032	0,035	0,042	0,042	0,047	0,053	0,052	0,058	0,064
10,00	0,013	0,015	0,018	0,021	0,025	0,030	0,038	0,039	0,044	0,050	0,053	0,059	0,065	0,066	0,073	0,080
12,00	0,010	0,018	0,022	0,026	0,030	0,036	0,046	0,048	0,052	0,059	0,063	0,072	0,079	0,085	0,090	0,100
16,00	0,020	0,023	0,027	0,032	0,038	0,045	0,054	0,058	0,063	0,071	0,079	0,088	0,095	0,100	0,110	0,120
20,00	0,023	0,028	0,033	0,038	0,045	0,057	0,066	0,073	0,080	0,090	0,097	0,100	0,110	0,120	0,130	0,140
25,00	0,030	0,035	0,040	0,045	0,055	0,065	0,075	0,100	0,120	0,130	0,140	0,150	0,165	0,170	0,180	0,190

Material group	Material examples	Tensile str. N/mm²	Hard-ness	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.
Common structural steels	**1.0035** S185, **1.0486** P275N, **1.0345** P235GH, **1.0425** P265GH	≤500		85 - 105	42	85 - 105	42
	1.0050 E295, **1.0070** E360, **1.8937** P500NH	≤1000		81 - 99	41	81 - 99	41
Free-cutting steels	**1.0718** 11SMnPb30, **1.0736** 11SMn37	≤850		85 - 105	41	85 - 105	41
	1.0727 46 S20, **1.0728** 60 S20, **1.0757** 46SPb20	≤1000		63 - 77	42	63 - 77	42
Unalloyed heat-treatable steels	**1.0402** C22, **1.1178** C30E	≤700		85 - 105	41	85 - 105	41
	1.0503 C45, **1.1191** C45E	≤850		76 - 94	41	76 - 94	41
	1.0601 C60, **1.1221** C60E	≤1000		63 - 77	42	63 - 77	42
Alloyed heat-treatable steels	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		76 - 94	42	76 - 94	42
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		63 - 77	42	63 - 77	42
Unalloyed case hard. steels	**1.0301** C10, **1.1121** C10E	≤850		90 - 110	41	90 - 110	41
Alloyed case hardened steels	**1.7043** 38Cr4	≤1000		76 - 94	41	76 - 94	41
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		54 - 66	42	54 - 66	42
Nitriding steels	**1.8504** 34CrAl6	≤1000		85 - 105	41	85 - 105	41
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		76 - 94	40	76 - 94	40
Tool steels	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		76 - 94	41	76 - 94	41
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6	≤1400		63 - 77	40	63 - 77	40
High speed steels	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		45 - 55	42	45 - 55	42
Spring steels	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4		≤350 HB	45 - 55	40		
Hardened steels	–		≤48 HRC	45 - 55	40		
			≤66 HRC				
Stainless steels, sulphured	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17	≤900		45 - 55	42	45 - 55	42
austenitic	**1.4301** X5CrNi18-10, **1.4541** X6CrNiTi18-10	≤1100		40 - 50	40	40 - 50	40
martensitic	**1.4057** X20CrNi17-2, **1.4122** X39CrMo17-1	≤1500		36 - 44	41	36 - 44	41
Cast iron	**0.6010** EN-GJL-100(GG10), **0.6020** EN-GJL-200(GG20)		≤240 HB	108 - 132	41	108 - 132	41
	0.6025 EN-GJL-250(GG25), **0.6035** EN-GJL-350(GG35)		≤350 HB	99 - 121	40	99 - 121	40
Spheroidal graphite iron and	**0.7050** EN-GJS-500-7(GGG50), **0.8035** EN-GJMW-350-4(GTW35)		≤240 HB	90 - 110	41	90 - 110	41
malleable cast iron	**0.7070** EN-GJS-700-2(GGG70), **0.8170** EN-GJMB-700-2(GTS70)		≤350 HB	81 - 99	40	81 - 99	40
Chilled cast iron	–		≤350 HB	54 - 66	40	54 - 66	40
New cast materials GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB				
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB				
New cast materials ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000					
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400					
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤2000		27 - 33	40	27 - 33	40
Ti and Ti-alloys	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		45 - 55	40	45 - 55	40
	3.7154 TiAl6Zr5, **3.7164** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5	≤1400		36 - 44	40	36 - 44	40
Aluminium and Al-alloys	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		405 - 495	43		
Al wrought alloys	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si	≤650		495 - 605	43		
Al cast alloys ≤ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		198 - 242	42		
≤ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		162 - 198	43		
Magnesium alloys	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		225 - 275	44		
Copper, low-alloyed	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		108 - 132	43		
Brass, short-chipping	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		90 - 110	43		
long-chipping	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		81 - 99	42		
Bronze, short-chipping	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		90 - 110	42		
	2.0790 CuNi18Zn19Pb	≤850		72 - 88	41		
Bronze, long-chipping	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		72 - 88	42		
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		63 - 77	40		
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	≤150		108 - 132	40		
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		99 - 121	40		
Kevlar	Kevlar	≤1000					
Glass, carbon concentr. plastics	GFK/CFK	≤1000					
				1xD = 75% 1,5xD = 50%		1xD = 75% 1,5xD = 50%	

					Fine finishing		Copying	
Sol. carb.	Sol. carb.	Sol. carb.	Sol. carb.	Sol. carb.	Sol. carb.	Sol. carb.	Sol. carb.	Sol. carb.
N	NH	W	N	NH	NH	NH	N	N
5549	5505 5506						5585**	
	5546	5543					5533**	5584**
					5745	5729*		
			5573	5574	5545			

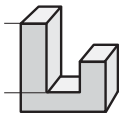
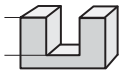
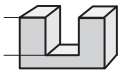
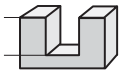
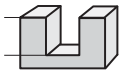


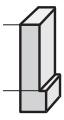


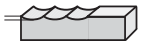




a_e = 1xD	a_e = 1xD	a_e = 1xD	a_e = 1xD	a_e = 1xD	a_e = 0.05xD	a_e = 0.05xD	a_e = 0.05xD	a_e = 0.05xD





a_p = 2 x D	a_p = 0.5 x D	a_p = 0.5 x D	a_p = 0.5 x D	a_p = 0.5 x D	a_p = 1.5 x D	a_p = 3 x D	a_p = 0.05 x D	a_p = 0.05 x D

v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.
72 - 88	39	94 - 116	**43**			85 - 105	**42**	94 - 116	**43**	171 - 209	**48**	136 - 168	**45**	153 - 187	**48**	153 - 187	**48**
67 - 83	38	89 - 109	**42**			81 - 99	**41**	89 - 109	**42**	157 - 193	**47**	126 - 154	**44**	144 - 176	**47**	144 - 176	**47**
72 - 88	38	94 - 116	**42**			85 - 105	**41**	94 - 116	**42**	171 - 209	**47**	136 - 168	**44**	153 - 187	**47**	153 - 187	**47**
54 - 66	39	69 - 85	**43**			63 - 77	42	69 - 85	43	126 - 154	**46**	100 - 124	**43**	153 - 187	**46**	153 - 187	**46**
72 - 88	38	94 - 116	**42**			85 - 105	**41**	94 - 116	**42**	171 - 209	**47**	136 - 168	**44**	135 - 165	**47**	135 - 165	**47**
63 - 77	38	84 - 104	**42**			76 - 94	**41**	84 - 104	**42**	153 - 187	**47**	122 - 150	**44**	135 - 165	**47**	135 - 165	**47**
54 - 66	39	69 - 85	**43**			63 - 77	42	69 - 85	43	126 - 154	**46**	100 - 124	**43**	117 - 143	**46**	117 - 143	**46**
63 - 77	39	84 - 104	**43**			76 - 94	42	84 - 104	43	153 - 187	**46**	122 - 150	**43**	126 - 154	**46**	126 - 154	**46**
54 - 66	39	69 - 85	43							126 - 154	**45**	100 - 124	**42**	153 - 187	**45**	153 - 187	**45**
67 - 83	38	99 - 121	**42**			90 - 110	**41**	99 - 121	**42**	189 - 231	**47**	151 - 185	**44**	198 - 242	**47**	198 - 242	**47**
63 - 77	38	84 - 104	**42**			76 - 94	41	84 - 104	42	153 - 187	**47**	122 - 150	**44**	171 - 209	**47**	171 - 209	**47**
45 - 55	39	59 - 73	43							117 - 143	**46**	93 - 115	**43**	108 - 132	**46**	108 - 132	**46**
72 - 88	38	94 - 116	**42**			85 - 105	41	94 - 116	42	171 - 209	**47**	136 - 168	**44**	144 - 176	**47**	144 - 176	**47**
63 - 77	37	84 - 104	41							153 - 187	**45**	122 - 150	**42**	135 - 165	**45**	135 - 165	**45**
63 - 77	38	84 - 104	**42**			76 - 94	**41**	84 - 104	**42**	153 - 187	**47**	122 - 150	**44**	135 - 165	**47**	135 - 165	**47**
54 - 66	37	69 - 85	**41**			63 - 77	40	69 - 85	41	126 - 154	**45**	100 - 124	**42**	117 - 143	**45**	117 - 143	**45**
40 - 50	39	49 - 61	**43**			45 - 55	42	49 - 61	43	94 - 116	**46**	75 - 93	**43**	85 - 105	**46**	85 - 105	**46**
		49 - 61	**41**							94 - 116	45	75 - 93	42	85 - 105	**45**	85 - 105	**45**
		49 - 61	**41**							49 - 61	43	39 - 49	41	49 - 61	**44**	49 - 61	**44**
		49 - 61	**43**			45 - 55	**42**	49 - 61	**43**	94 - 116	**46**	75 - 93	**43**	85 - 105	**46**	85 - 105	**46**
		45 - 55	**41**			40 - 50	**40**	45 - 55	**41**	81 - 99	**45**	64 - 80	**42**	76 - 94	**45**	76 - 94	**45**
		39 - 49	**42**			36 - 44	41	39 - 49	42	76 - 94	**46**	61 - 75	**43**	67 - 83	**46**	67 - 83	**46**
94 - 116	38	118 - 146	**42**			108 - 132	**41**	118 - 146	**42**	220 - 270	**47**	132 - 162	**44**	198 - 242	**47**	198 - 242	45
85 - 105	37	108 - 134	**41**			99 - 121	**40**	108 - 134	**41**	202 - 248	**46**	121 - 149	**43**	189 - 231	**46**	189 - 231	**47**
81 - 99	38	99 - 121	**42**			90 - 110	**41**	99 - 121	**42**	180 - 220	**47**	108 - 132	**44**	171 - 209	**47**	171 - 209	**46**
67 - 83	37	89 - 109	**41**			81 - 99	**40**	89 - 109	**41**	157 - 193	**46**	94 - 116	**41**	144 - 176	**46**	144 - 176	**47**
		59 - 73	**41**			54 - 66	**40**	59 - 73	**41**					99 - 121	44	99 - 121	**46**
																	44
		29 - 37	**41**					29 - 37	**41**	54 - 66	**45**	32 - 40	**42**	49 - 61	45	49 - 61	45
58 - 72	37	49 - 61	**41**			45 - 55	**40**	49 - 61	**41**	94 - 116	**45**	56 - 70	**42**				
31 - 39	37	39 - 49	**41**			36 - 44	**40**	39 - 49	**41**	76 - 94	**44**	45 - 57	**41**				
				297 - 363	**46**	297 - 363	**46**	297 - 363	**46**	810 - 990	50	486 - 594	41	720 - 880	50		
				360 - 440	**46**	360 - 440	**46**	360 - 440	**46**	720 - 880	50	432 - 528	41	855 - 1045	50		
		217 - 267	43	144 - 176	**45**	144 - 176	45	217 - 267	43	405 - 495	48	243 - 297	45	342 - 418	48		
		178 - 218	44	117 - 143	46	117 - 143	46	178 - 218	44	324 - 396	49	194 - 238	46	288 - 352	49		
				171 - 209	**47**	171 - 209	**47**	171 - 209	**47**	450 - 550	50			405 - 495	50		
		118 - 146	44	81 - 99	**46**	81 - 99	46	118 - 146	44	216 - 264	49			180 - 220	49		
		99 - 121	44	72 - 88	**46**	72 - 88	46	99 - 121	44	198 - 242	48	118 - 146	45	171 - 209	48		
				67 - 83	**45**	67 - 83	**45**	67 - 83	**45**	162 - 198	48			162 - 198	48		
		99 - 121	43	72 - 88	**45**	72 - 88	45	99 - 121	43	198 - 242	48	118 - 146	45	180 - 220	48		
		79 - 97	42	63 - 77	44	63 - 77	44	79 - 97	42	153 - 187	47	91 - 113	44	171 - 209	47		
				63 - 77	45	63 - 77	**45**	63 - 77	**45**	153 - 187	47			198 - 242	47		
				54 - 66	43	54 - 66	**43**	54 - 66	**43**	126 - 154	46	75 - 93	43	189 - 231	46		
				81 - 99	43	81 - 99	**43**	81 - 99	**43**	216 - 264	46						
				72 - 88	43	72 - 88	**43**	72 - 88	**43**	198 - 242	46						

3xD = 50%	1xD = 75% 1,5xD = 50%	1xD = 75% 1,5xD = 50%	1,5xD = 75%	1,5xD = 75%

GÜHRINGNAVIGATOR Milling cutters

Tools with **bold** feed column no. (FC no.) are preferred choice.

ae = Width of cut

ap = Depth of cut

Roughing

Article no.		Tool material	Sol. carb.	Sol. carb.
		Type	N	N
	DIN 6527	HA	5735*	5582
	DIN 6527	HB	5535* 5534*	
	Company std.	HA		

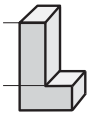
* With this application, optimal chip evacuation must be ensured. Slot milling only recommended > Ø 5 mm.

** In the event of excessive edge wear through vibration, the feed rate should be reduced by 30%.

a_e = 0.5-1.0xD

a_e = 0.25xD

a_p = 1xD



a_p = 2xD

Cutter-Ø mm	Feed column no. 37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
	f_z (mm/tooth)															
2,00	0,001	0,001	0,001	0,002	0,002	0,004	0,005	0,006	0,007	0,008	0,010	0,012	0,014	0,016	0,018	0,020
3,00	0,002	0,002	0,003	0,003	0,004	0,007	0,010	0,010	0,010	0,015	0,016	0,013	0,019	0,022	0,024	0,030
5,00	0,005	0,006	0,007	0,009	0,010	0,014	0,020	0,020	0,022	0,025	0,026	0,026	0,028	0,030	0,032	0,038
6,00	0,006	0,008	0,009	0,011	0,013	0,017	0,024	0,025	0,027	0,031	0,029	0,033	0,039	0,036	0,041	0,047
8,00	0,010	0,012	0,014	0,016	0,019	0,024	0,032	0,032	0,035	0,042	0,042	0,047	0,053	0,052	0,058	0,064
10,00	0,013	0,015	0,018	0,021	0,025	0,030	0,038	0,039	0,044	0,050	0,053	0,059	0,065	0,066	0,073	0,080
12,00	0,010	0,018	0,022	0,026	0,030	0,036	0,046	0,048	0,052	0,059	0,063	0,072	0,079	0,085	0,090	0,100
16,00	0,020	0,023	0,027	0,032	0,038	0,045	0,054	0,058	0,063	0,071	0,079	0,088	0,095	0,100	0,110	0,120
20,00	0,023	0,028	0,033	0,038	0,045	0,057	0,066	0,073	0,080	0,090	0,097	0,100	0,110	0,120	0,130	0,140
25,00	0,030	0,035	0,040	0,045	0,055	0,065	0,075	0,100	0,120	0,130	0,140	0,150	0,165	0,170	0,180	0,190

Material group	Material examples	Tensile str. N/mm²	Hard-ness	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.
Common structural steels	**1.0035** S185, **1.0486** P275N, **1.0345** P235GH, **1.0425** P265GH	≤500		*170 - 208*	51	*110 - 136*	**47**
	1.0050 E295, **1.0070** E360, **1.8937** P500NH	≤1000		*157 - 193*	50	*102 - 126*	**46**
Free-cutting steels	**1.0718** 11SMnPb30, **1.0736** 11SMn37	≤850		*170 - 208*	50	*110 - 136*	**46**
	1.0727 46 S20, **1.0728** 60 S20, **1.0757** 46SPb20	≤1000		*126 - 154*	**49**	*81 - 101*	**45**
Unalloyed heat-treatable steels	**1.0402** C22, **1.1178** C30E	≤700		*170 - 208*	50	*110 - 136*	**46**
	1.0503 C45, **1.1191** C45E	≤850		*151 - 185*	50	*98 - 120*	**46**
	1.0601 C60, **1.1221** C60E	≤1000		*126 - 154*	**49**	*81 - 101*	**45**
Alloyed heat-treatable steels	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		*151 - 185*	**49**	*98 - 120*	**45**
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		*126 - 154*	**48**	*81 - 101*	**44**
Unalloyed case hard. steels	**1.0301** C10, **1.1121** C10E	≤850		*189 - 231*	50	*123 - 151*	**46**
Alloyed case hardened steels	**1.7043** 38Cr4	≤1000		*151 - 185*	**50**	*98 - 120*	**46**
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		*113 - 139*	**49**	*73 - 91*	**45**
Nitriding steels	**1.8504** 34CrAl6	≤1000		*170 - 208*	**50**	*110 - 136*	**46**
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		*151 - 185*	**48**	*98 - 120*	44
Tool steels	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		*151 - 185*	50	*98 - 120*	**46**
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6	≤1400		*126 - 154*	**48**	*81 - 101*	**44**
High speed steels	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		*94 - 116*	**49**	*61 - 75*	45
Spring steels	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4		≤350 HB	*94 - 116*	**48**		
Hardened steels	–		≤48 HRC	*44 - 54*	**46**		
			≤66 HRC				
Stainless steels, sulphured	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17	≤900		*80 - 100*	49	*60 - 80*	45
austenitic	**1.4301** X5CrNi18-10, **1.4541** X6CrNiTi18-10	≤1100		*70 - 90*	48	*55 - 75*	44
martensitic	**1.4057** X20CrNi17-2, **1.4122** X39CrMo17-1	≤1500		*65 - 70*	**49**	*50 - 65*	45
Cast iron	**0.6010** EN-GJL-100(GG10), **0.6020** EN-GJL-200(GG20)		≤240 HB	*220 - 270*	50	*143 - 175*	46
	0.6025 EN-GJL-250(GG25), **0.6035** EN-GJL-350(GG35)		≤350 HB	*201 - 247*	**49**	*131 - 161*	45
Spheroidal graphite iron and	**0.7050** EN-GJS-500-7(GGG50), **0.8035** EN-GJMW-350-4(GTW35)		≤240 HB	*182 - 224*	50	*118 - 146*	46
malleable cast iron	**0.7070** EN-GJS-700-2(GGG70), **0.8170** EN-GJMB-700-2(GTS70)		≤350 HB	*157 - 193*	**49**	*102 - 126*	45
Chilled cast iron	–		≤350 HB	*107 - 131*	**47**	*69 - 85*	43
New cast materials GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB				
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB				
New cast materials ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000					
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400					
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤2000		*56 - 70*	**48**		
Ti and Ti-alloys	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		*54 - 86*	43	*61 - 75*	44
	3.7154 TiAl6Zr5, **3.7164** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5	≤1400		*44 - 72*	**42**	*49 - 61*	43
Aluminium and Al-alloys	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400				*300 - 380*	47
Al wrought alloys	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si	≤650				*370 - 440*	47
Al cast alloys ≤ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600				*150 - 185*	45
≤ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600				*115 - 145*	46
Magnesium alloys	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400				*175 - 215*	47
Copper, low-alloyed	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500				*80 - 100*	46
Brass, short-chipping	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600				*75 - 95*	45
long-chipping	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600				*60 - 75*	45
Bronze, short-chipping	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600				*75 - 95*	45
	2.0790 CuNi18Zn19Pb	≤850				*55 - 70*	44
Bronze, long-chipping	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850					
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000					
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	≤150					
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100					
Kevlar	Kevlar	≤1000					
Glass, carbon concentr. plastics	GFK/CFK	≤1000					

a_p 1,5xD = 50%
a_e 0,25xD = 150%

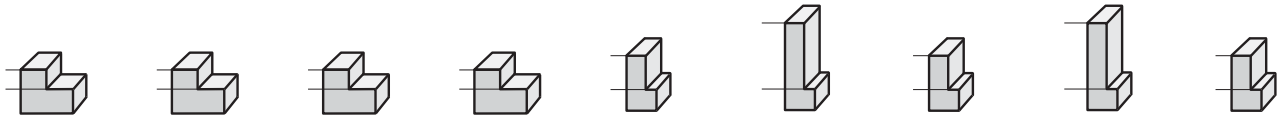
a_p 0,5xD = 75%
a_p 2xD = 50%

GÜHRING

Finishing

Sol. carb.	Sol. carb.	Sol. carb.	Sol. carb.	Sol. carb.	Sol. carb.	Sol. carb.	Sol. carb.	Sol. carb.
N	W	NRf	HR	N	N	N	N	N
5653				5735	5582		5556	
5654	5655	5504**	5583**	5535 5534		5532		5578
								5579
RF 100 VA	RF 100 Alu		54 HRC	RF 100 54 HRC	RF 100			

a_e = 0.5-1.0xD	a_e = 0.5-1.0xD	a_e = 0.5-1.0xD	a_e = 0.5-1.0xD	a_e = 0.1xD	a_e = 0.1xD	a_e = 0.1xD	a_e = 0.1xD	a_e = 0.1xD



a_p = 1xD	a_p = 1xD	a_p =1xD	a_p = 1xD	a_p = 1xD	a_p = 2xD	a_p = 1xD	a_p = 2xD	a_p = 1xD

v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.
170 - 208	49			97 - 119	43			212 - 260	49	139 - 171	44	157 - 193	48	103 - 127	43	170 - 208	51
157 - 193	48			90 - 110	42			194 - 238	48	127 - 157	43	144 - 176	47	94 - 116	42	157 - 193	50
170 - 208	48			97 - 119	42			212 - 260	48	139 - 171	43	157 - 193	47	103 - 127	42	170 - 208	50
126 - 154	47			72 - 88	41			158 - 194	47	109 - 135	42	117 - 143	46	81 - 99	41	126 - 154	49
170 - 208	48			97 - 119	42			212 - 260	48	139 - 171	43	157 - 193	47	103 - 127	42	170 - 208	50
151 - 185	48			86 - 106	42			194 - 238	48	121 - 149	43	144 - 176	47	90 - 110	42	151 - 185	50
126 - 154	47			72 - 88	41			158 - 194	47	103 - 127	42	117 - 143	46	76 - 94	41	126 - 154	49
151 - 185	47			86 - 106	41			188 - 230	47	121 - 149	42	139 - 171	46	90 - 110	41	151 - 185	49
126 - 154	46			72 - 88	40	72 - 88	39	158 - 194	46	103 - 127	41	117 - 143	45	76 - 94	40	126 - 154	48
189 - 231	48			108 - 132	42			236 - 290	48	134 - 164	43	175 - 215	47	99 - 121	42	189 - 231	50
151 - 185	48			86 - 106	42	86 - 106	41	188 - 230	48	121 - 149	43	139 - 171	47	90 - 110	42	151 - 185	50
113 - 139	47			64 - 80	41	64 - 80	40	139 - 171	47	90 - 112	42	103 - 127	46	67 - 83	41	113 - 139	49
170 - 208	48			97 - 119	42	97 - 119	41	212 - 260	48	139 - 171	43	157 - 193	47	103 - 127	42	170 - 208	50
151 - 185	46			86 - 106	40	86 - 106	39	194 - 238	46	121 - 149	41	144 - 176	45	90 - 110	40	151 - 185	48
151 - 185	48			86 - 106	42	86 - 106	41	188 - 230	48	121 - 149	43	139 - 171	47	90 - 110	42	151 - 185	50
126 - 154	46			72 - 88	40	72 - 88	39	158 - 194	46	103 - 127	41	117 - 143	45	76 - 94	40	126 - 154	48
94 - 116	47					54 - 66	47	121 - 149	47	79 - 97	42	90 - 110	46	58 - 72	41	94 - 116	49
67 - 83	46					54 - 66	26	121 - 149	46							94 - 116	48
31 - 39	44			25 - 31	38	25 - 31	38	61 - 75	44							44 - 54	46
						18 - 22	38										
80 - 120	47			54 - 66	41			121 - 149	47	72 - 90	44	90 - 110	46			80 - 100	49
70 - 90	46			46 - 58	40			103 - 127	46	62 - 75	43	76 - 94	45			70 - 90	48
50 - 70	47			43 - 53	41	43 - 53	40	97 - 119	47	58 - 72	44	72 - 88	46			65 - 70	49
				126 - 154	44	126 - 154	42	255 - 313	48	182 - 224	43	189 - 231	47	135 - 165	42	220 - 270	50
				115 - 141	43	115 - 141	41	255 - 313	47	163 - 201	42	189 - 231	46	121 - 149	41	201 - 247	49
				104 - 128	44	104 - 128	42	231 - 283	48	152 - 186	43	171 - 209	47	112 - 138	42	182 - 224	50
				90 - 110	43	90 - 110	41	194 - 238	47	127 - 157	42	144 - 176	46	94 - 116	41	157 - 193	49
						61 - 75	39	134 - 164	45			99 - 121	44			107 - 131	47
40 - 50	46			32 - 40	42			72 - 90	46			54 - 66	45			56 - 70	48
67 - 83	46			54 - 66	41			121 - 149	46	79 - 97	41	90 - 110	45	58 - 72	40	54 - 86	43
54 - 66	45			43 - 53	40			97 - 119	45	61 - 75	40	72 - 88	44	45 - 55	39	44 - 72	42
		810 - 990	50							220 - 280	46	765 - 935	50	450 - 550	45	342 - 418	51
		720 - 880	50							250 - 300	45					414 - 506	50
		405 - 495	48							220 - 250	44	373 - 457	48	225 - 275	43	165 - 203	49
117 - 143	45	324 - 396	49							200 - 240	45	306 - 374	49	180 - 220	44		
		450 - 550	50							210 - 260	46					197 - 241	51
		216 - 264	49							110 - 120	45	198 - 242	49	135 - 165	44	93 - 115	50
		198 - 242	48	117 - 143	44	117 - 143	42			100 - 120	44	180 - 220	48	108 - 132	43	82 - 102	49
		162 - 198	48	94 - 116	44					90 - 110	44	144 - 176	48	90 - 110	43	77 - 95	49
		198 - 242	48	117 - 143	44	117 - 143	42			100 - 120	44	180 - 220	48	108 - 132	43	82 - 102	49
63 - 77	43	153 - 187	47	87 - 107	43	87 - 107	41					135 - 165	47				
63 - 77	43	153 - 187	47	87 - 107	43											72 - 90	48
54 - 66	42	126 - 154	46	72 - 90	42												
81 - 99	42	216 - 264	46													93 - 115	47
72 - 88	42	198 - 242	46													82 - 102	47

a_p 0,5xD = 120% a_p 2xD = 50%	a_p 0,5xD = 120% a_p 2xD = 50%	a_p 1,5xD = 50% a_e 0,25xD = 140%	a_p 0,5xD = 120%	a_p 2xD = 50%	a_p 3xD = 50%	a_p 2xD = 50%	a_p 3xD = 50%	a_p 2xD = 50%

Reamers & Countersinks

NC machine reamers

WN | 8° | ≤Ø5,5=+0,004 >Ø5,5=+0,005

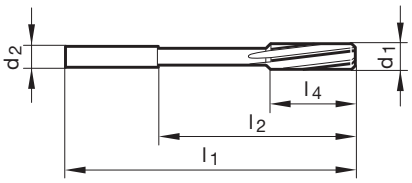
Tool material	**Solid carbide**
Surface	◯
Form	B
Shank form	HA

P	•
M	○
K	•
N	•
S	•
H	52

Ø > 3.75 mm with extremely unequal flute spacing

GÜHRINGNAVIGATOR

Cutting data page 141



Article no.	**5527**
Discount group	**154**

d1	d2 h6	l1	l2	l4	Z	Code no.	Availability
mm	mm	mm	mm	mm			
0.980	4.000	50.000	22.000	6.000	3	0.980	•
0.990	4.000	50.000	22.000	6.000	3	0.990	•
1.000	4.000	50.000	22.000	6.000	3	1.000	•
1.010	4.000	50.000	22.000	6.000	3	1.010	•
1.020	4.000	50.000	22.000	6.000	3	1.020	•
1.030	4.000	50.000	22.000	9.000	3	1.030	•
1.480	4.000	50.000	22.000	9.000	3	1.480	•
1.490	4.000	50.000	22.000	9.000	3	1.490	•
1.500	4.000	50.000	22.000	9.000	3	1.500	•
1.510	4.000	50.000	22.000	9.000	3	1.510	•
1.520	4.000	50.000	22.000	9.000	3	1.520	•
1.530	4.000	50.000	22.000	9.000	3	1.530	•
1.980	4.000	50.000	22.000	12.000	4	1.980	•
1.990	4.000	50.000	22.000	12.000	4	1.990	•
2.000	4.000	50.000	22.000	12.000	4	2.000	•
2.010	4.000	50.000	22.000	12.000	4	2.010	•
2.020	4.000	50.000	22.000	12.000	4	2.020	•
2.030	4.000	50.000	22.000	12.000	4	2.030	•
2.480	4.000	60.000	32.000	16.000	4	2.480	•
2.490	4.000	60.000	32.000	16.000	4	2.490	•
2.500	4.000	60.000	32.000	16.000	4	2.500	•
2.510	4.000	60.000	32.000	16.000	4	2.510	•
2.520	4.000	60.000	32.000	16.000	4	2.520	•
2.530	4.000	60.000	32.000	16.000	4	2.530	•
2.970	4.000	64.000	36.000	17.000	6	2.970	•
2.980	4.000	64.000	36.000	17.000	6	2.980	•
2.990	4.000	64.000	36.000	17.000	6	2.990	•
3.000	4.000	64.000	36.000	17.000	6	3.000	•
3.010	4.000	64.000	36.000	17.000	6	3.010	•
3.020	4.000	64.000	36.000	17.000	6	3.020	•
3.030	4.000	64.000	36.000	17.000	6	3.030	•
3.970	4.000	77.000	45.000	21.000	6	3.970	•
3.980	4.000	77.000	45.000	21.000	6	3.980	•
3.990	4.000	77.000	45.000	21.000	6	3.990	•
4.000	4.000	77.000	45.000	21.000	6	4.000	•
4.010	4.000	77.000	45.000	21.000	6	4.010	•

						Article no.	5527
						Discount group	154
d1	d2 h6	l1	l2	l4	Z	Code no.	Availability
mm	mm	mm	mm	mm			
4.020	4.000	77.000	45.000	21.000	6	4.020	●
4.030	4.000	77.000	45.000	21.000	6	4.030	●
4.970	6.000	93.000	59.000	26.000	6	4.970	●
4.980	6.000	93.000	59.000	26.000	6	4.980	●
4.990	6.000	93.000	59.000	26.000	6	4.990	●
5.000	6.000	93.000	59.000	26.000	6	5.000	●
5.010	6.000	93.000	59.000	26.000	6	5.010	●
5.020	6.000	93.000	59.000	26.000	6	5.020	●
5.030	6.000	93.000	59.000	26.000	6	5.030	●
5.970	6.000	93.000	57.000	26.000	6	5.970	●
5.980	6.000	93.000	57.000	26.000	6	5.980	●
5.990	6.000	93.000	57.000	26.000	6	5.990	●
6.000	6.000	93.000	57.000	26.000	6	6.000	●
6.010	6.000	93.000	57.000	26.000	6	6.010	●
6.020	6.000	93.000	57.000	26.000	6	6.020	●
6.030	6.000	93.000	57.000	26.000	6	6.030	●
7.000	8.000	109.000	69.000	31.000	6	7.000	●
7.970	8.000	117.000	75.000	33.000	6	7.970	●
7.980	8.000	117.000	75.000	33.000	6	7.980	●
7.990	8.000	117.000	75.000	33.000	6	7.990	●
8.000	8.000	117.000	75.000	33.000	6	8.000	●
8.010	8.000	117.000	75.000	33.000	6	8.010	●
8.020	8.000	117.000	75.000	33.000	6	8.020	●
8.030	8.000	117.000	75.000	33.000	6	8.030	●
8.040	8.000	117.000	75.000	33.000	6	8.040	●
9.000	10.000	125.000	81.000	36.000	6	9.000	●
9.970	10.000	133.000	87.000	38.000	6	9.970	●
9.980	10.000	133.000	87.000	38.000	6	9.980	●
9.990	10.000	133.000	87.000	38.000	6	9.990	●
10.000	10.000	133.000	87.000	38.000	6	10.000	●
10.010	10.000	133.000	87.000	38.000	6	10.010	●
10.020	10.000	133.000	87.000	38.000	6	10.020	●
10.030	10.000	133.000	87.000	38.000	6	10.030	●
10.040	10.000	133.000	87.000	38.000	6	10.040	●
10.050	10.000	133.000	87.000	38.000	6	10.050	●
11.970	12.000	151.000	105.000	44.000	6	11.970	●
11.980	12.000	151.000	105.000	44.000	6	11.980	●
11.990	12.000	151.000	105.000	44.000	6	11.990	●
12.000	12.000	151.000	105.000	44.000	6	12.000	●
12.010	12.000	151.000	105.000	44.000	6	12.010	●
12.020	12.000	151.000	105.000	44.000	6	12.020	●
12.030	12.000	151.000	105.000	44.000	6	12.030	●
12.040	12.000	151.000	105.000	44.000	6	12.040	●
12.050	12.000	151.000	105.000	44.000	6	12.050	●

Solid carbide reamer with
H7 tolerance

can be found in Gühring's main programme.

Article no. 1449

90° Countersinks, spiral-fluted

DIN 335 | 90° | C

Tool material	HSCO
Surface	A
Shank form	cyl.

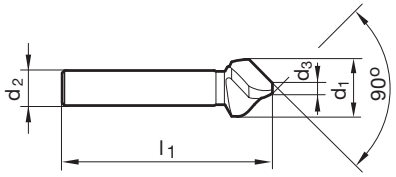
NEW

P	•
M	•
K	•
N	○
S	○
H	

- 3 different convex cutting edges
- low-vibration cutting processes
- for round and chatter-free countersinking
- considerably lower feed force required
- for universal application

GÜHRINGNAVIGATOR

Cutting data page 142



Article no.	5500
Discount group	159

d1	d2	d3	l1	Z	Code no.	Availability
mm	mm	mm	mm			
6.300	5.000	1.500	45.000	3	6.300	●
8.000	6.000	2.000	50.000	3	8.000	●
8.300	6.000	2.000	50.000	3	8.300	●
10.000	6.000	2.500	50.000	3	10.000	●
10.400	6.000	2.500	50.000	3	10.400	●
11.500	8.000	2.800	56.000	3	11.500	●
12.400	8.000	2.800	56.000	3	12.400	●
15.000	10.000	3.200	60.000	3	15.000	●
16.500	10.000	3.200	60.000	3	16.500	●
19.000	10.000	3.500	63.000	3	19.000	●
20.500	10.000	3.500	63.000	3	20.500	●
23.000	10.000	3.800	67.000	3	23.000	●
25.000	10.000	3.800	67.000	3	25.000	●
31.000	12.000	4.200	71.000	3	31.000	●

90° Countersinks, spiral-fluted

DIN 335 | 90° | C

Tool material	HSCO
Surface	A
Shank form	3-surface

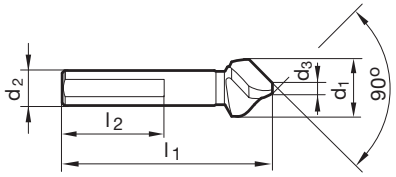
P	●
M	●
K	●
N	○
S	○
H	

- 3 different convex cutting edges
- 3-surface shank prevents slipping in the chuck
- perfect for hand drills
- low-vibration cutting processes
- for round and chatter-free countersinking
- considerably lower feed force required
- for universal application

NEW

GÜHRINGNAVIGATOR

Cutting data page 142



Article no.	5501
Discount group	159

d1	d2	d3	l1	l2	Z	Code no.	Availability
mm	mm	mm	mm	mm			
6.300	5.000	1.500	45.000	30.000	3	6.300	●
8.000	6.000	2.000	50.000	30.000	3	8.000	●
8.300	6.000	2.000	50.000	30.000	3	8.300	●
10.000	6.000	2.500	50.000	30.000	3	10.000	●
10.400	6.000	2.500	50.000	30.000	3	10.400	●
11.500	8.000	2.800	56.000	30.000	3	11.500	●
12.400	8.000	2.800	56.000	30.000	3	12.400	●
15.000	10.000	3.200	60.000	30.000	3	15.000	●
16.500	10.000	3.200	60.000	30.000	3	16.500	●
19.000	10.000	3.500	63.000	30.000	3	19.000	●
20.500	10.000	3.500	63.000	30.000	3	20.500	●
23.000	10.000	3.800	67.000	30.000	3	23.000	●
25.000	10.000	3.800	67.000	30.000	3	25.000	●
31.000	12.000	4.200	71.000	30.000	3	31.000	●

90° Countersinks, spiral-fluted

WN | 90° | C

Tool material	HSS
Surface	A
Shank form	cyl.

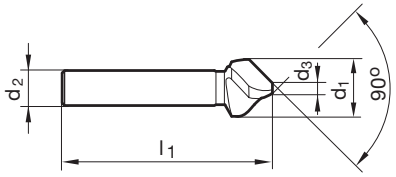
P	●
M	○
K	●
N	○
S	○
H	

- long version for recessed machining points
- 3 different convex cutting edges
- low-vibration cutting processes
- for round and chatter-free countersinking
- considerably lower feed force required
- for universal application

NEW

GÜHRINGNAVIGATOR

Cutting data page 142



Article no.	5503
Discount group	159

d1	d2	d3	l1	Z	Code no.	Availability
mm	mm	mm	mm			
6.300	5.000	1.500	104.000	3	6.300	●
8.300	6.000	2.000	105.000	3	8.300	●
10.400	6.000	2.500	107.000	3	10.400	●
12.400	8.000	2.800	108.000	3	12.400	●
16.500	10.000	3.200	111.000	3	16.500	●
20.500	10.000	3.500	114.000	3	20.500	●
25.000	10.000	3.800	118.000	3	25.000	●
31.000	12.000	4.200	140.000	3	31.000	●

90° Countersink sets, spiral-fluted

DIN 335 C

Tool material	HSCO
Surface	A
Shank form	cyl.

NEW

P	•
M	•
K	•
N	○
S	○
H	

- consisting of art. no. 5500
- 3 different convex cutting edges
- low-vibration cutting processes
- for round and chatter-free countersinking
- considerably lower feed force required
- for universal application

GÜHRINGNAVIGATOR

Cutting data page 142

Article no.	5538
Discount group	159

Ø-range mm	Pieces/set	Code no.	Availability
6,3/8,3/10,4/12,4/16,5/20,5	6	1.000	●

90° Countersink sets, spiral-fluted

DIN 335 C

P	•
M	•
K	•
N	○
S	○
H	

- consisting of art. no. 5501
- 3 different convex cutting edges
- 3-surface shank prevents slipping in the chuck
- perfect for hand drills
- low-vibration cutting processes
- for round and chatter-free countersinking
- considerably lower feed force required
- for universal application

GÜHRINGNAVIGATOR

Cutting data page 142

Tool material	HSCO
Surface	A
Shank form	3-surface

NEW

Article no.	5539
Discount group	159

Ø-range mm	Pieces/set	Code no.	Availability
6,3/8,3/10,4/12,4/16,5/20,5	6	1.000	●

GÜHRINGNAVIGATOR

NC machining reamers

Article no.	5527
Standard/DIN	Company std.
Tool material	Carbide
Carbide grade	K10
Shank form	HA
Surface	◯
Std. range page	134

Tools with **bold** feed column no. are preferred choice.

For blind holes with close diameter tolerances choose straight-fluted reamers.

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

◯ bright

Coolant:
◯ Air
● Neat oil
● Soluble oil

Material group	Material examples, new description (old description in brackets) Figures in bold = material no. to DIN EN	Tensile str. N/mm²	Hard-ness	Cool-ant	v_c m/min	Feed column no.
Common structural steels	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425**	≤500		●	18	**72**
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●	16	**72**
Free-cutting steels	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●	18	**72**
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●	16	**72**
Unalloyed heat-treatable steels	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●	18	**71**
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●	16	**72**
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●	14	**71**
Alloyed heat-treatable steels	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●	14	**71**
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●	12	**71**
Unalloyed case hard. steels	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●	18	**71**
Alloyed case hardened steels	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●	14	**71**
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●	12	**71**
Nitriding steels	**1.8504** 34CrAl6	≤1000		●	14	**71**
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●	12	**71**
Tool steels	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●	12	**71**
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●	10	**71**
High speed steels	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●	10	**71**
Spring steels	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●		
Hardened steels	–		≤48 HRC	●	6	**71**
			≤66 HRC	●		
Stainless steels, sulphured	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.86681** X6CrMoS17, **1.4305**	≤900		●	8	**71**
austenitic	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi	≤1100		●	6	**71**
martensitic	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521**	≤1500		●	6	**71**
Cast iron	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	◯	20	**71**
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	◯	18	**71**
Spheroidal graphite iron and	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	●	20	**71**
malleable cast iron	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	●	18	**71**
Chilled cast iron	–		≤350 HB	●		
New cast materials GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	◯	16	71
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	◯	16	71
New cast materials ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		◯	12	71
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		◯	12	71
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤2000		●	6	**71**
Ti and Ti-alloys	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●	10	**71**
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●	10	**71**
Aluminium and Al-alloys	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●	30	**73**
Al wrought alloys	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●	30	**73**
Al cast alloys ≤ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●	40	**72**
≤ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●	30	**72**
Magnesium alloys	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		◯	25	**72**
Copper, low-alloyed	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●	25	**72**
Brass, short-chipping	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●	35	**72**
long-chipping	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●	30	**72**
Bronze, short-chipping	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●	35	**72**
	2.0790 CuNi18Zn19Pb	≤850		●	30	**72**
Bronze, long-chipping	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●	30	**72**
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●	25	**72**
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	≤150		◯	20	**73**
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ◯	20	**73**
Kevlar	Kevlar	≤1000		◯		
Glass, carbon concentr. plastics	GFK/CFK	≤1000		◯		

GÜHRINGNAVIGATOR Countersinks, spiral-fluted

Tools with bold feed column no. are preferred choice.

To select the optimal tool and the recommended machining parameters for your application, please also use the electronic version of the GuhringNavigator on the internet: www.guehring.de.

Article no. ®
Standard/DIN
Tool material
Surface finish
Countersink angle
Shank form
Std. range page

Tool 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

Collant:
○ Air
● Oil
● Soluble oil

Material group	Material examples Figures in bold = material no. to DIN EN 10 027	Tensile strength N/mm²	Hardness	Coolant
Common structural steels	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
Free-cutting steels	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
Unalloyed heat-treatable steels	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
Alloyed heat-treatable steels	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
Unalloyed case hard. steels	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
Alloyed case hardened steels	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
Nitriding steels	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
Tool steels	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
High speed steels	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
Spring steels	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
Hardened steels	–		≤48 HRC	●
			≤66 HRC	●
Stainless steels, sulphured	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
austenitic	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
martensitic	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
Cast iron	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
Spheroidal graphite iron and malleable cast iron	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	○
	0.7070 EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	○
Chilled cast iron	–		≤350 HB	○
New cast materials GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
New cast materials ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
Ti and Ti-alloys	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
Aluminium and Al-alloys	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
Al wrought alloys	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
Al cast alloys ≤ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
≤ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
Magnesium alloys	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
Copper, low-alloyed	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
Brass, short-chipping	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
long-chipping	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
Bronze, short-chipping	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
Bronze, long-chipping	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	≤150		○
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar	Kevlar	≤1000		○
Glass, carbon concentr. plastics GFK/CFK	GFK/CFK	≤1000		○

5500	5538
DIN 335	DIN 335
HSS-E	HSS-E
A	A
90°	90°
cyl.	cyl.
136	139

5501	5539
DIN 335	DIN 335
HSS-E	HSS-E
A	A
90°	90°
3-surface	3-surface
137	140

5503
WN
HSS
A
90°
cyl.
138

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

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

v_c m/min	Feed column no.	
37	83	
35	82	
37	83	
35	82	
37	83	
35	83	
23	82	
17	83	
14	82	
29	83	
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92	84	
58	84	
35	84	
30	84	
28	84	
23	84	
35	84	
46	84	

Re-grinding & re-coating

SL re-grinding service

	SL Drilling tools			SL Reaming tools
	Sol. carbide Ratio drills up to 12xD*	Sol.carbide spotting drills	HSS/HSCO/ HSS-E twist drills	Solid carbide reamers
Diameter	€ / Item	€ / Item	€ / Item	€ / Item
2 - 6	●	●	-	●
> 6 - 8	●	●	-	●
> 8 - 10	●	●	●	●
> 10 - 12	●	●	●	●
> 12 - 14	●	●	●	●
> 14 - 16	●	●	●	●
> 16 - 18	●	●	●	●
> 18 - 20	●	●	●	●
> 20 - 30	●	-	●	●

	SL Thread cutting tools		
	HSS-E/ HSS-E-PM taps	Solid carbide taps	Solid carbide thread milling cutters
Diameter	€ / Item	€ / Item	€ / Item
up to 10	●	●	●
> 10 - 14	●	●	●
> 14 - 20	●	●	●
> 20 - 24	●	●	●
> 24 - 30	●	●	●
> 30 - 36	●	●	on request
> 36 - 40	●	●	on request
> 40 - 70	on request	on request	on request

*RT100U, RT100VA, RT150GG, FT200 & solid carbide twist drills

SL re-grinding service

	SL Solid carbide milling tools				SL Milling tools surcharge		
	End mills up to 4 flutes	Ratio end mills RF100 up to 4 flutes	Ball nose milling cutters	Chamfering mill. cutters	up to 5 flutes	Roughing cutters	Neck clearance
Diameter	€ / Item	€ / Item	€ / Item	€ / Item	€ / Item	€ / Item	€ / Item
6 - 8	●	●	●	●	●	●	●
> 8 - 10	●	●	●	●	●	●	●
> 10 - 12	●	●	●	●	●	●	●
> 12 - 14	●	●	●	●	●	●	●
> 14 - 16	●	●	●	●	●	●	●
> 16 - 18	●	●	●	●	●	●	●
> 18 - 20	●	●	●	●	●	●	●
> 20 - 25	●	●	●	-	●	●	●
> 25 - 40	●	●	●	-	●	●	-

SL re-coating service

	Pre- and post-treatment		Coating	
	De-coating	Polishing	Standard coatings**	Head coating up to 12xD**
Diameter	€ / Item	€ / Item	€ / Item	€ / Item
up to 6	●	●	●	●
> 6 - 8	●	●	●	●
> 8 - 10	●	●	●	●
> 10 - 12	●	●	●	●
> 12 - 14	●	●	●	●
> 14 - 16	●	●	●	●
> 16 - 18	●	●	●	●
> 18 - 20	●	●	●	●
> 20 - 30	●	●	●	-
> 30 - 40	●	●	●	-
> 40 - 50	●	●	●	-
> 50 - 60	on request	on request	on request	-
> 60 - 80	on request	on request	on request	-
> 80 - 100	on request	on request	on request	-

**TiN, TiCN, TiAlN, FIRE, nanoFIRE, SuperA, nanoA

Further information can be found in our brochure „Re-grinding and Re-coating Service“.

Re-grind and
re-coating centres

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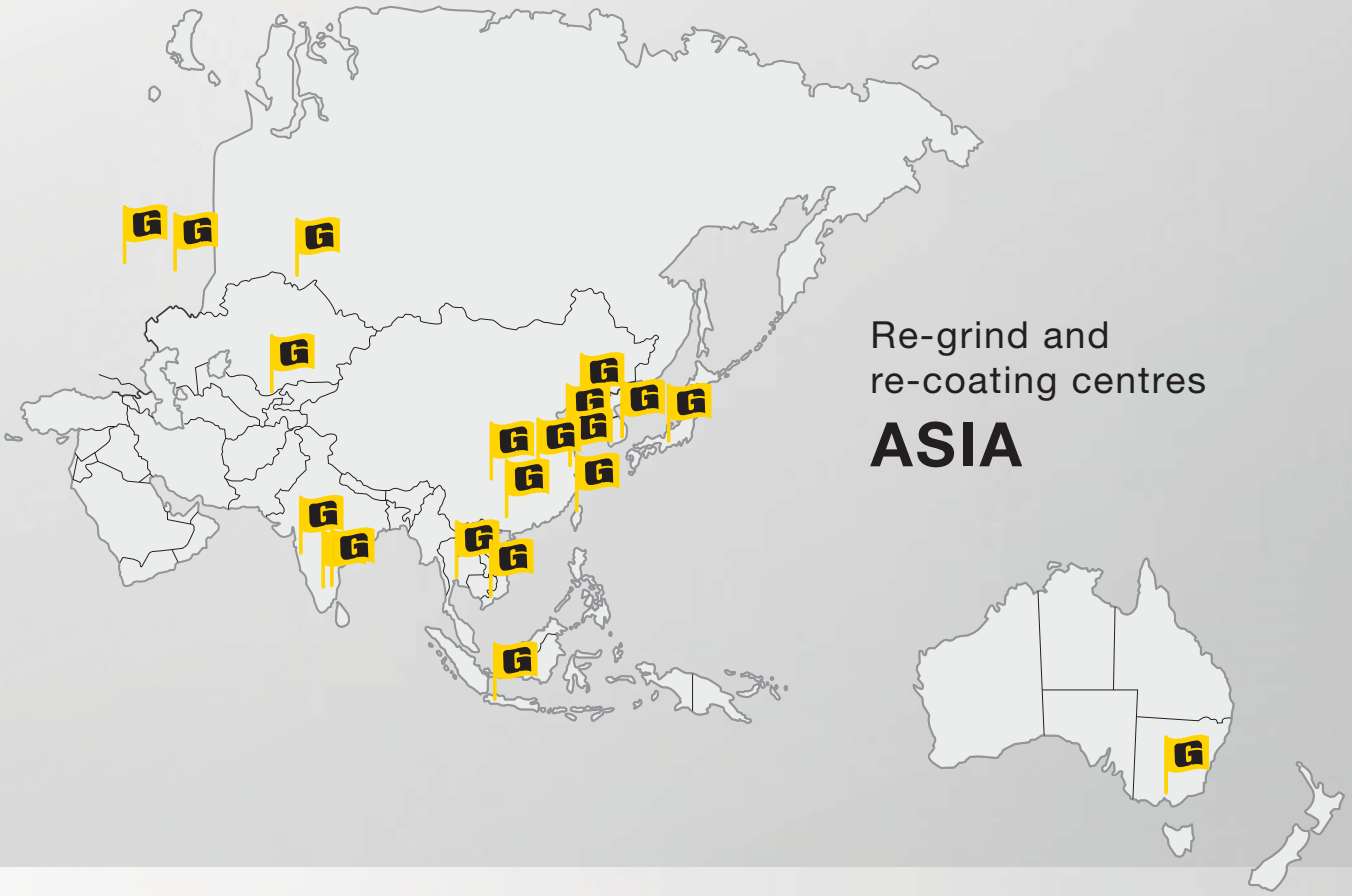

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Hydraulic chucks

Art. no.	Clamping chucks	Description	Clamping diameter range
4299		HSK-A hydraulic chuck with increased clamping force	6 - 32 mm
4296		4296 HSK-A hydraulic chuck with radial length setting	6 - 32 mm
4267		HSK-C hydraulic chuck with increased clamping force	6 - 32 mm
4295		HSK-C hydraulic chuck	6 - 32 mm
4213		ISO taper hydraulic chuck DIN 69871 AD/B with increased clamping force	6 - 32 mm
4221		MAS/BT hydraulic chuck with increased clamping force	6 - 32 mm
4368		Reduction bushes for hydraulic chucks without peripheral cooling	3 - 25 mm
4369		Reduction bushes for hydraulic chucks with peripheral cooling	3 - 25 mm

HPC chucks

Art. no.	Clamping chucks	Description	Clamping diameter range
4300		HSK precision clamping chuck	3 - 20 mm
4301		SK-A clamping chuck DIN 69871 AD	3 - 20 mm
4302		Clamping sleeves for precision clamping chucks without peripheral cooling	3 - 20 mm
4235		Clamping sleeves for precision clamping chucks with peripheral cooling	3 - 20 mm

Shrink fit chucks

Art. no.	Clamping chucks	Description	Clamping diameter range
4726		HSK-A shrink fit chuck TSG 3000	6 - 32 mm
4727		ISO taper shrink fit chuck DIN 69871 AD/B TSG 3000	6 - 32 mm
4728		MAS-BT shrink fit chuck TSG 3000	6 - 32 mm
4755		**GÜHRO**Jet HSK-A shrink fit chuck with peripheral cooling	6 - 20 mm
4729		**GÜHRO**Jet ISO taper shrink fit chuck DIN 69871 AD/B	6 - 20 mm
4736		HSK-A shrink fit chuck	6 - 32 mm
4758		HSK-C shrink fit chuck	6 - 32 mm
4737		HSK-E shrink fit chuck	3 - 32 mm
4738		ISO taper shrink fit chuck DIN 69871 AD	3 - 32 mm
4739		MAS-BT shrink fit chuck	3 - 32 mm
4719		Shrink fit extension	3 - 20 mm

Clamping chucks / tool holders for straight tool shanks		Characteristics	Main application	Main feature
TSG 3000 / shrink fit chucks / shrink fit extensions		maximum concentricity; very slender non-interference; good rigidity; high clamping force; modular lenghtening; patented dampening screw ensures concentricity	drilling, countersinking, milling, reaming, universal and HSC application	accurate and universal; slender; high clamping force
Hydraulic chucks / HMC 3000 / reduction bushes		high dampening with maximum concentricity; simple handling; flexible application thanks to reduction bushes also with GÜHROJET	reaming, drilling, countersinking, HSC application, light milling	simple handling
HPC precision power chucks / clamping sleeves		maximum clamping force and rigidity thanks to mechancal clamping transmission; high accuracy and balancing quality; flexible application thanks to clamping sleeves also with GÜHROJET	heavy HPC and fast accurate HSC milling, drilling, universal application	highest clamping force and rigidity
Straight shank holders “Weldon” / “Whistle-Notch”		robust, cost-efficient clamping chuck for heavy machining in the lower speed and accuracy range	roughing, milling, drilling	simple operation; secure clamping
Collet chucks ER		very flexible clamping chuck for various shank dimensions and tolerances; for lower level machining tasks	light machining, centering, chamfering, drilling, threading; intermediate shank dimensions	highly flexible

Concentricity	with 5xD	Clamping force	Rigidity	Dampening	Interference contour	Handling	Actuation
< 3µm	< 5µm	very high	very high	low	small / minimal	good	shrink fit device
< 3µm	< 5µm	very high	high	very high	medium	very good / very flexible	hexagon key
< 3µm	< 8µm	extremely high	extremely high	high	medium	very good / flexible	hexagon key / torque wrench
< 10µm	< 25µm	very safe	very high	low	large	good	hexagon key
< 10µm	< 20µm	medium	low	high	large (mini = small)	good	hook spanner

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Article no.	Page	Drilling depth	Standard	Description	Tool material	Type	Form
12	74	~5xD	DIN 338	Twist drill sets	HSCO	GU 500 DZ	
234	75	~5xD	DIN 338	Twist drill sets	HSS	N	
5500	136		DIN 335	90° Countersinks, spiral-fluted	HSCO		C
5501	137		DIN 335	90° Countersinks, spiral-fluted	HSCO		C
5503	138		Company std.	90° Countersinks, spiral-fluted	HSS		C
5504	112		DIN 6527L	Roughing end mills GS 100 U (fine teeth)	Solid carbide	NRf	B
5505	109		DIN 6527K	Slot drills GH 100 U (3-fluted)	Solid carbide	NH	A
5506	110		DIN 6527L	Slot drills GH 100 U (3-fluted)	Solid carbide	NH	A
5507	119		DIN 6527L	Slot drills (3-fluted)	Solid carbide	N	A
5510	16	3xD	DIN 6537K	Ratio drills with internal coolant	Solid carbide	RT 100 U	
5511	26	5xD	DIN 6537L	Ratio drills with internal coolant	Solid carbide	RT 100 U	
5512	33	7xD	Company std.	Ratio drills with internal coolant	Solid carbide	RT 100 U	
5513	39	10xD	Company std.	Ratio drills with internal coolant	Solid carbide	RT 150 GG	
5514	41	3xD	DIN 6537K	Ratio drills without oil feed	Solid carbide	RT 100 U	
5515	44	5xD	DIN 6537L	Ratio drills without oil feed	Solid carbide	RT 100 U	
5516	49	3xD	DIN 6539	Stub drills	Solid carbide	N	
5517	57	~5xD	Company std.	Jobber drills	Solid carbide	N	
5518	47	5xD	DIN 6537L	3-flute Ratio drills	Solid carbide	FT 200	
5519	59	~5xD	DIN 338	Jobber drills	HSCO	GU 500 DZ	
5520	51	~3xD	DIN 1897	Stub drills	HSCO	GU 500 DZ	
5521	54	~3xD	DIN 1897	Stub drills	HSS-E-PM	GT 500 DZ	
5522	62	~5xD	DIN 338	Jobber drills	HSS-E-PM	GT 500 DZ	
5523	59	~5xD	DIN 338	Jobber drills	HSCO	GU 500 DZ	
5524	51	~3xD	DIN 1897	Stub drills	HSCO	GU 500 DZ	
5525	36	12xD	Company std.	Ratio drills with internal coolant	Solid carbide	RT 100 U	
5526	19	3xD	DIN 6537K	Ratio drills with internal coolant	Solid carbide	RT 100 VA	
5527	134		Company std.	NC machine reamers	Solid carbide		B
5528	19	3xD	DIN 6537K	Ratio drills with internal coolant	Solid carbide	RT 100 VA	
5530	116		DIN 6527L	Slot drills (2-fluted)	Solid carbide	N	B
5531	119		DIN 6527L	Slot drills (3-fluted)	Solid carbide	N	B
5532	121		DIN 6527L	End mills (4-fluted)	Solid carbide	N	B
5533	123		DIN 6527L	Ball nose slot drills (2-fluted)	Solid carbide	N	B
5534	104		DIN 6527K	Standard Ratio end mills RF 100 U	Solid carbide	N	B
5535	105		DIN 6527L	Standard Ratio end mills RF 100 U	Solid carbide	N	B
5536	69	~10xD	DIN 340	Long series twist drills	HSCO	GU 500 DZ	
5537	69	~10xD	DIN 340	Long series twist drills	HSCO	GU 500 DZ	
5538	139		DIN 335	90° Countersink sets, spiral-fluted	HSCO		C
5539	140		DIN 335	90° Countersink sets, spiral-fluted	HSCO		C
5543	118		DIN 6527L	Al slot drills (2-fluted)	Solid carbide	W	B
5545	114		Company std.	Multi-tooth end mills GH 100 U	Solid carbide	NH	B
5546	110		DIN 6527L	Slot drills GH 100 U (3-fluted)	Solid carbide	NH	B
5547	97	2xD	Company std.	Thread milling cutters without chamfer for ISO metric threads	Solid carbide	TM SP	
5548	97	2xD	Company std.	Thread milling cutters without chamfer for ISO metric threads	Solid carbide	TM SP	
5549	117		Company std.	XL slot drills (2-fluted)	Solid carbide	N	A
5550	94	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	GG	C
5551	86	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	Al R45	C
5552	83	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	H R40	C
5553	84	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	VA R40	C
5554	82	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	N R40	C
5555	85	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	N R40	C
5556	122		Company std.	XL end mills (4-fluted)	Solid carbide	N	A
5557	93	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	Al	B
5558	89	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	H	B
5559	91	3xD	DIN 371	Machine taps for ISO metric threads	HSS-E-PM	VA	B
5560	88	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	N	B
5561	92	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	N	B
5573	120		Company std.	Mini slot drills (3-fluted)	Solid carbide	N	
5574	111		Company std.	Mini slot drills (3-fluted)	Solid carbide	NH	
5578	125		Company std.	Chamfering milling cutters	Solid carbide	N	
5579	125		Company std.	Chamfering milling cutters	Solid carbide	N	
5580	30	5xD	DIN 6537L	Ratio drills with internal coolant	Solid carbide	RT 100 VA	
5581	30	5xD	DIN 6537L	Ratio drills with internal coolant	Solid carbide	RT 100 VA	
5582	106		Company std.	Standard Ratio end mills RF 100 U	Solid carbide	N	
5583	113		DIN 6527L	Hard roughing end mills GS 100 H (fine teeth)	Solid carbide	HR	B
5584	124		DIN 6527L	Ball nose end mills (4-fluted)	Solid carbide	N	B
5585	123		DIN 6527L	Ball nose slot drills (2-fluted)	Solid carbide	N	A
5586	92	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	N	B
5587	89	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	H	B
5588	90	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	VA	B
5590	88	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	N	B
5591	83	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	H R40	C
5592	82	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	N R40	C

Article no.	Page	Drilling depth	Standard	Description	Tool material	Type	Form
5593	87	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	Solid carbide	H	C
5594	85	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	N R40	C
5595	94	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	GG	C
5596	84	3xD	DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	VA R40	C
5597	90		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	VA	B
5598	95	3xD	~DIN 371	Fluteless machine taps for ISO metric threads	HSS-E	N	C
5599	96	3xD	~DIN 376	Fluteless machine taps for ISO metric threads	HSS-E	N	C
5610	16	3xD	DIN 6537K	Ratio drills with internal coolant	Solid carbide	RT 100 U	
5611	26	5xD	DIN 6537L	Ratio drills with internal coolant	Solid carbide	RT 100 U	
5612	33	7xD	Company std.	Ratio drills with internal coolant	Solid carbide	RT 100 U	
5614	41	3xD	DIN 6537K	Ratio drills without oil feed	Solid carbide	RT 100 U	
5615	44	5xD	DIN 6537L	Ratio drills without oil feed	Solid carbide	RT 100 U	
5635	126		DIN 6527L	Ratio end mill sets RF 100 U	Solid carbide	N	B
5649	73		Company std.	142° NC-spotting drills	Solid carbide	N	
5650	26	5xD	DIN 6537L	Ratio drills with internal coolant	Solid carbide	RT 100 U	
5651	44	5xD	DIN 6537L	Ratio drills without oil feed	Solid carbide	RT 100 U	
5652	72		Company std.	Solid carbide micro-precision drills without coolant ducts	Solid carbide	N	
5653	107		DIN 6527L	Ratio end mills RF 100 VA	Solid carbide	N	A
5654	107		DIN 6527L	Ratio end mills RF 100 VA	Solid carbide	N	B
5655	108		Company std.	Ratio end mills Alu RF 100 A	Solid carbide	W	
5729	115		Company std.	Multi-tooth end mills GH 100 U	Solid carbide	NH	
5730	116		DIN 6527L	Slot drills (2-fluted)	Solid carbide	N	A
5735	105		DIN 6527L	Standard Ratio end mills RF 100 U	Solid carbide	N	A
5745	114		Company std.	Multi-tooth end mills GH 100 U	Solid carbide	NH	
5768	22		DIN 6537L	Ratio drills with internal coolant	Solid carbide	RT 100 Al	
9651	65	~5xD	DIN 338	Jobber drills	HSS	N	

ISO code

P	Steel, high-alloyed steel
M	Stainless steel Stainless
K	Grey cast iron, spher, graphite/mall. cast iron
N	Aluminium and other non-ferrous metals
S	Special, super and titanium alloys
H	Hardened steel and chilled cast iron

On the programme pages you will find for every tool recommendations regarding suitability for the application groups and details of max. tensile strength and hardness.

- ● optimal suitability
- ○ limited suitability

Coatings

- bright
- steam tempered
- nitrided
- A TiAlN
- C TiCN
- Cb Carbo
- P AlCrN
- S TiN
- M MolyGlide
- S Sirius
- F FIRE/nano FIRE
- a TiAlN nanoA
- Y Signum

Pictograms

Tool material

HSS · HSS-E · HSCO · HSS-E-PM — High-speed steel

VHM — Solid carbide finest grain (HM-UF)

Cutting depth

3xD · 5xD · 7xD · 10xD · 12xD · ~3xD · ~5xD · ~7xD · ~10xD

Ø-tolerance

m7 · h6 · h7 · h8 · 6HX · ISO2/6H

Shank form

to DIN 6535

Cylindrical

Standard

DIN 333 · DIN 338 · DIN 340 · DIN 371 · DIN 376 · DIN 371/376 · DIN 1897 · DIN 6527 K · DIN 6527 L · DIN 6537 K · DIN 6537 L · DIN 6539 · ~DIN 371 · ~DIN 376

to DIN

to Gühring standard

Type

N · H · W · Al · NH · RT 100 U · RT 150 GG · FT 200 · GU 500 DZ · GT 500 DZ

N R40 · Al R45 · H R40 · VA R40 · TM SP · GG · NRf · HR

Internal cooling

with Internal cooling

without Internal cooling

Cutting direction

right

Hole type

Through hole

Blind hole

Through/blind hole

Form

B · C

Application

Slotting

Roughing

Ramping

Helix

Drilling

Finishing

Copying

Length

short (DIIN)

long (DIN)

extra length

No. of cutting edges

2 · 3 · 4 · 6+

no. of major cutting edges

Helix angle

0° · 8° · 20° · 30° · 45° · 35° 38° · 36° 38° · 39° 40° 41°

Size of helix angle / no. of different helix angles

Rake angle

3° · 4° · 7° · 9° · 10° · 12° · 25°

Rake angle of circumference cutting edges

Cutting edge form

45°

Corner chamfer

R ±0,05

Radius with tolerance

90° · 120°

Chamfer end mill angles

130° · 135° · 140° · 118°

Point angle

Feed

for lateral feed

for lateral feed
and oblique plunging

for lateral feed,
oblique plunging and drilling

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