

GÜHRING

SuperLine
SUPER QUALITY · SUPER PRICE · SUPER AVAILABILITY

plus



PERFORMANCE
HIGHLIGHTS

RT 100 XF • RT 100 T • HT 800
Micro-precision drills • RF 100 Diver
Pionex • MTMH3-Z • HR 500



***Super**Line*

HIGH-TECH TOOLS AT A
SUPER PRICE

SL

Convincing **price-performance-ratio**.

Exceptional **quality**.

100% **ex-stock availability**.

NEW

RATIO DRILLS WITH COOLANT DUCTS

NEW WITH H8 SHAFT
IN 3xD AND 5xD

SL

NEW

NC SPOTTING DRILLS 90°/120°/142°

NOW WITH COATING AND
CLAMPING SURFACE IN
SOLID CARBIDE AND IN HSCG

SL

NEW

RATIO END MILLS RF 100 A

NOW WITH OR WITHOUT
CLAMPING SURFACE

SL

CENTRE DRILLS

NEW IN OUR
SL PROGRAMME

NEW

SL

NEW

CHAMFERING MILLING CUTTERS 60°/90°/120°

WITH EVEN MORE
DIMENSIONS

SL

NEW

NC MACHINE REAMERS

EXTENDED WITH
STANDARD DIMENSIONS
AND COATED VERSIONS

SL

NEW IN OUR
SL PROGRAMME

HYDRAULIC CHUCKS

NEW

SL



PERFORMANCE **HIGHLIGHTS**



You need more? More performance? Application specialists?

In addition to our SuperLine programme you will find selected performance highlights from Gühring in this catalogue. The right tool for every application and high efficiency.

All from a single source.

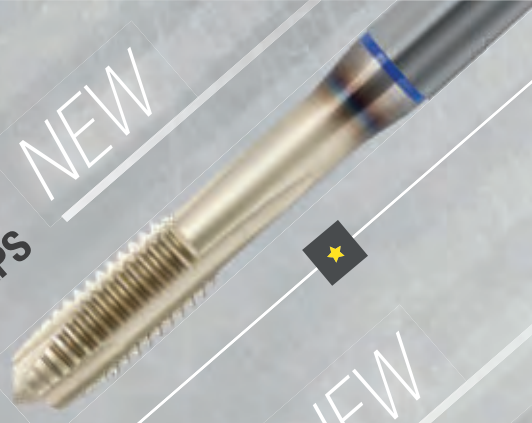
NEW

RT 100 XF SOLID CARBIDE DRILLING TOOL

FOR EXCEPTIONAL
METAL REMOVAL RATES



TAPS



NEW



UNIVERSAL
HIGH PERFORMANCE
PRODUCTION OF THREADS

NEW

HR 500 REAMER

PERFECT REAMING
IN STEEL



RF 100 DIVER SOLID CARBIDE MILLING CUTTER

DRILLING, RAMPING, ROUGHING,
FINISHING, SLOTTING



NEW

NEW

RT 100 T SOLID CARBIDE GUN DRILL

SOLID CARBIDE SPIRAL-
FLUTED DEEP HOLE DRILL



HT 800 INDEXABLE INSERT SYSTEM

FOR DEEP AND HIGHLY
ACCURATE DRILLING



NEW

MTMH3-Z DRILL THREAD MILLING CUTTER

UP TO
66 HRC





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Ratio drills with coolant ducts




•	○	•	○	○	○	_SL 	3xD	HA	RT 100 U	DIN 6537K	VHM	F	3.000 - 20.000	5510	22
•	○	•	○	○	○	_SL 	3xD	HE	RT 100 U	DIN 6537K	VHM	F	3.000 - 20.000	5610	22
•	○	•	○	○	○	_SL 	3xD	HB	RT 100 U	DIN 6537K	VHM	F	3.000 - 20.000	6023	22
•	○	•	○	○	○	_SL 	3xD	HA	RT 100 VA	DIN 6537K	VHM	a	3.000 - 20.000	5526	25
•	○	•	○	○	○	_SL 	3xD	HE	RT 100 VA	DIN 6537K	VHM	a	3.000 - 20.000	5528	25
•	○	•	○	○	○	_SL 	3xD	HB	RT 100 VA	DIN 6537K	VHM	a	3.000 - 20.000	6024	25
•	○	•	○	○	○	_SL 	5xD	HA	RT 100 AI	DIN 6537L	VHM	○	3.000 - 20.000	5768	28
•	○	•	○	○	○	_SL 	5xD	HA	RT 100 U	DIN 6537L	VHM	F	2.500 - 20.000	5511	32
•	○	•	○	○	○	_SL 	5xD	HE	RT 100 U	DIN 6537L	VHM	F	3.000 - 20.000	5611	32
•	○	•	○	○	○	_SL 	5xD	HB	RT 100 U	DIN 6537L	VHM	F	3.000 - 20.000	5650	32
•	○	•	○	○	○	_SL 	5xD	HA	RT 100 VA	DIN 6537L	VHM	a	3.000 - 20.000	5580	36
•	○	•	○	○	○	_SL 	5xD	HE	RT 100 VA	DIN 6537L	VHM	a	3.000 - 20.000	5581	36
•	○	•	○	○	○	_SL 	5xD	HB	RT 100 VA	DIN 6537L	VHM	a	3.000 - 20.000	6025	36
•	○	•	○	○	○	★ 	5xD	HA	RT 100 XF	DIN 6537L	VHM	F	3.000 - 20.000	5498	40
•	○	•	○	○	○	_SL 	7xD	HA	RT 100 U	WN	VHM	F	3.000 - 20.000	5512	44
•	○	•	○	○	○	_SL 	7xD	HE	RT 100 U	WN	VHM	F	3.000 - 20.000	5612	44
•	○	•	○	○	○	★ 	7xD	HA	RT 100 XF	WN	VHM	F	3.000 - 20.000	5499	47
•	○	•	○	○	○	_SL 	10xD	HA	RT 150 GG	WN	VHM	○	3.000 - 16.000	5513	51
•	○	•	○	○	○	_SL 	12xD	HA	RT 100 U	WN	VHM	F	3.000 - 20.000	5525	53
•	○	•	○	○	○	★ 	15xD	HA	RT 100 T	WN	VHM	A	3.000 - 16.000	6509	56
•	○	•	○	○	○	★ 	20xD	HA	RT 100 T	WN	VHM	A	3.000 - 16.000	6511	58
•	○	•	○	○	○	★ 	25xD	HA	RT 100 T	WN	VHM	A	3.000 - 16.000	6512	60
•	○	•	○	○	○	★ 	30xD	HA	RT 100 T	WN	VHM	A	3.000 - 14.000	6513	62

P	M	K	N	S	H	Tool illustration	Drilling depth	Shank form	Type	Standard	Tool material	Surface	d1/mm	Article no.	Page
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Ratio drills without coolant ducts

•	○	•	○	○	○	SL 	3xD	HA	RT 100 U	DIN 6537K	VHM	F	3.000 - 20.000	5514	66
•	○	•	○	○	○	SL 	3xD	HE	RT 100 U	DIN 6537K	VHM	F	3.000 - 20.000	5614	66
•	○	•	○	○	○	SL 	3xD	HB	RT 100 U	DIN 6537K	VHM	F	3.000 - 20.000	6026	66
•	○	•	○	○	○	SL 	5xD	HA	RT 100 U	DIN 6537L	VHM	F	2.500 - 20.000	5515	69
•	○	•	○	○	○	SL 	5xD	HE	RT 100 U	DIN 6537L	VHM	F	3.000 - 20.000	5615	69
•	○	•	○	○	○	SL 	5xD	HB	RT 100 U	DIN 6537L	VHM	F	3.000 - 20.000	5651	69

Tool holders for interchangeable inserts HT 800

★		3xD	HE	HT 800 WP	WN	Ni	4107	72
★		5xD	HE	HT 800 WP	WN	Ni	4108	75
★		7xD	HE	HT 800 WP	WN	Ni	4109	78



Interchangeable inserts HT 800

•	○	○	○	○	○	★ 	HT 800 WP	WN	VHM	F	11.000 - 40.000	4112	80
○	•	○	○	○	○	★ 	HT 800 WP	WN	VHM	Y	11.000 - 40.000	4113	83
○	•	○	○	○	○	★ 	HT 800 WP	WN	VHM	a	11.000 - 40.000	4115	86



Solid carbide micro-precision drills without coolant ducts

•	○	•	○	○	○	SL 	Cyl	N	WN	VHM	A	0.100 - 3.000	5652	89
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ExclusiveLine micro-precision drills without coolant ducts

•	•	•	○	○	○	★ 	4xD	Cyl	N	WN	VHM	A	0.500 - 3.000	6400	90
•	•	•	○	○	○	★ 	7xD	Cyl	N	WN	VHM	A	0.500 - 3.000	6401	92

ExclusiveLine micro-precision drills with coolant ducts

•	•	•	○	○	○	★ 	5xD	Cyl	N	WN	VHM	A	1.000 - 3.000	6405	94
•	•	•	○	○	○	★ 	8xD	Cyl	N	WN	VHM	A	1.000 - 3.000	6408	96
•	•	•	○	○	○	★ 	15xD	Cyl	N	WN	VHM	A	1.000 - 3.000	6412	98

3-flute Ratio drills





•	•	•	○	○	○	SL 	5xD	HA	FT 200	DIN 6537L	VHM	○	3.000 - 20.000	5518	99
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Twist drills with reinforced straight shank

• • • • ○	• • • • ○	• • • • ○	• • • • ○	• • • • ○	• • • • ○	-SL 	~3xD	HA	GU500 PM	WN	HSS-E-PM	F	1.000 - 20.000	6005	101
• • • • ○	• • • • ○	• • • • ○	• • • • ○	• • • • ○	• • • • ○	-SL 	~5xD	HA	GU500 PM	WN	HSS-E-PM	F	2.000 - 20.000	6006	105

Stub drills

○ ○ ○ • ○	○ ○ ○ • ○	○ ○ ○ • ○	○ ○ ○ • ○	○ ○ ○ • ○	○ ○ ○ • ○	-SL 	~3xD	Cyl	N	DIN 6539	VHM	○	1.500 - 12.000	5516	109
• • • •	• • • •	• • • •	• • • •	• • • •	• • • •	-SL 	~3xD	Cyl	GU500 DZ	DIN 1897	HSCO	○	1.000 - 14.000	5524	111
• • • •	• • • •	• • • •	• • • •	• • • •	• • • •	-SL 	~3xD	Cyl	GU500 DZ	DIN 1897	HSCO	S	1.000 - 14.000	5520	111
• ○ • ○ ○ ○	• ○ • ○ ○ ○	• ○ • ○ ○ ○	• ○ • ○ ○ ○	• ○ • ○ ○ ○	• ○ • ○ ○ ○	-SL 	~3xD	Cyl	GT 500 DZ	DIN 1897	HSS-E-PM	S	1.000 - 14.000	5521	114



Jobber drills

○ ○ ○ • ○	○ ○ ○ • ○	○ ○ ○ • ○	○ ○ ○ • ○	○ ○ ○ • ○	○ ○ ○ • ○	-SL 	~5xD	Cyl	N	WN	VHM	○	2.000 - 12.000	5517	117
• • • •	• • • •	• • • •	• • • •	• • • •	• • • •	-SL 	~5xD	Cyl	GU500 DZ	DIN 338	HSCO	○	1.000 - 14.000	5523	119
• • • •	• • • •	• • • •	• • • •	• • • •	• • • •	-SL 	~5xD	Cyl	GU500 DZ	DIN 338	HSCO	S	1.000 - 14.000	5519	119
• ○ • ○ ○ ○	• ○ • ○ ○ ○	• ○ • ○ ○ ○	• ○ • ○ ○ ○	• ○ • ○ ○ ○	• ○ • ○ ○ ○	-SL 	~5xD	Cyl	GT 500 DZ	DIN 338	HSS-E-PM	S	1.000 - 14.000	5522	122
• • • •	• • • •	• • • •	• • • •	• • • •	• • • •	-SL 	~5xD	Cyl	N	DIN 338	HSS	S	1.000 - 16.000	9651	125



Long series twist drills

• • • •	• • • •	• • • •	• • • •	• • • •	• • • •	-SL 	~10xD	Cyl	GU500 DZ	DIN 340	HSCO	○	1.000 - 14.000	5536	129
• • • •	• • • •	• • • •	• • • •	• • • •	• • • •	-SL 	~10xD	Cyl	GU500 DZ	DIN 340	HSCO	S	1.000 - 14.000	5537	129

90° NC spotting drills

• • • • ○	• • • • ○	• • • • ○	• • • • ○	• • • • ○	• • • • ○	-SL 		B	N	WN	HSCO	F	3.000 - 25.400	5678	132
○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	-SL 		HB	N	WN	VHM	F	4.000 - 20.000	6027	133

120° NC spotting drills

• • • • ○	• • • • ○	• • • • ○	• • • • ○	• • • • ○	• • • • ○	-SL 		B	N	WN	HSCO	F	3.000 - 25.400	5679	134
○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	-SL 		HB	N	WN	VHM	F	3.000 - 20.000	6028	135

142° NC spotting drills

○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	-SL 		HB	N	WN	VHM	F	1.000 - 20.000	6029	136
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Centre drills without flat

• • • • ○	• • • • ○	• • • • ○	• • • • ○	• • • • ○	• • • • ○	-SL 		Cyl	N	DIN 333	HSCO	F	0.500 - 4.000	5680	137
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Twist drill sets



-SL

~5xD

Cyl

GU500
DZ

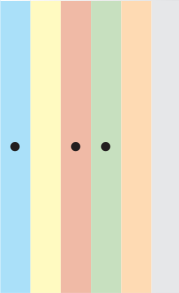
DIN
338

HSCO



12

138



-SL

~5xD

Cyl

N

DIN
338

HSS










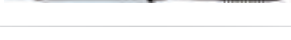





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Taps for ISO metric threads

≤ 1000	○					SL 	DIN 371/376	NR40	C	ISO2/6H	HSS-E	○	M3 - M20	5555	156
≤ 1000	○					SL 	DIN 371/376	NR40	C	ISO2/6H	HSS-E	Ⓢ	M3 - M20	5594	156
≤ 1200						SL 	DIN 371/376	HR40	C	ISO2/6H	HSS-E	○	M3 - M20	5552	157
≤ 1200						SL 	DIN 371/376	HR40	C	ISO2/6H	HSS-E	Ⓢ	M3 - M20	5591	157
	●					SL 	DIN 371/376	VA R40	C	ISO2/6H	HSS-E	○	M3 - M20	5553	158
	●					SL 	DIN 371/376	VA R40	C	ISO2/6H	HSS-E	Ⓢ	M3 - M20	5596	158
		●				SL 	DIN 371/376	AI R45	C	ISO2/6H	HSS-E	○	M3 - M20	5551	159
		●	≥ 7			SL 	DIN 371/376	H	C	6HX	VHM	○	M3 - M20	5593	160
≤ 1000	○					SL 	DIN 371/376	N	B	ISO2/6H	HSS-E	○	M3 - M20	5561	161
≤ 1000	○					SL 	DIN 371/376	N	B	ISO2/6H	HSS-E	Ⓢ	M3 - M20	5586	161
≤ 1200						SL 	DIN 371/376	H	B	ISO2/6H	HSS-E	○	M3 - M20	5558	162
≤ 1200						SL 	DIN 371/376	H	B	ISO2/6H	HSS-E	Ⓢ	M3 - M20	5587	162
≤ 1000	●					SL 	DIN 371/376	VA	B	ISO2/6H	HSS-E	○	M3 - M20	5597	163
≤ 1000	●					SL 	DIN 371/376	VA	B	ISO2/6H	HSS-E	Ⓢ	M3 - M20	5588	163
≤ 1000	●					SL 	DIN 371	VA	B	ISO2/6H	HSS-E-PM	○	M3 - M10	5559	164
		●				SL 	DIN 371/376	AI	B	ISO2/6H	HSS-E	○	M3 - M20	5557	165
		●				SL 	DIN 371/376	GG	C	6HX	HSS-E	●	M3 - M20	5550	166
		●				SL 	DIN 371/376	GG	C	6HX	HSS-E	Ⓢ	M3 - M20	5595	166
● ● ○ ○ ○						★ 	DIN 371/376	VA R45	C	6HX	HSS-E	Ⓢ	M2 - M42	393	167
● ● ○ ○ ○						★ 	DIN 371/376	VA	B	6HX	HSS-E	Ⓢ	M2 - M42	4218	168

Taps for ISO metric fine threads

● ● ○ ○ ○		★ 	DIN 374	VA R45	C	6HX	HSS-E	Ⓢ	M3 x 0,35 - M24 x 2	394	169
● ● ○ ○ ○		★ 	DIN 374	VA	B	6HX	HSS-E	Ⓢ	M3 x 0,35 - M24 x 2	4219	170

P	M	K	N	S	H	Tool illustration	Standard	Type	Form	Tolerance on Ø	Tool material	Surface	d1/mm	Article no.	Page
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Taps for UNC threads

• • ○ ○ ○	★		~DIN 371/376	VA R45	C	2BX	HSS-E	A	2 - 56 - 1 - 8	391	171
• • ○ ○ ○	★		~DIN 371/376	VA	B	2BX	HSS-E	S	2 - 56 - 1 - 8	4642	172

Taps for UNF threads

• • ○ ○ ○	★		~DIN 371/374	VA R45	C	2BX	HSS-E	A	2 - 64 - 1 - 12	392	173
• • ○ ○ ○	★		~DIN 371/374	VA	B	2BX	HSS-E	S	2 - 64 - 1 - 12	4643	174

Taps for BSP threads

• • ○ ○ ○	★		DIN 5156	VA R45	C		HSS-E	A	G1/16 - G1	395	175
• • ○ ○ ○	★		DIN 5156	VA	B		HSS-E	S	G1/16 - G1	4220	176

Fluteless taps for ISO metric threads

• • ○ • ○ ≤ 55	SL		~DIN 371	N	C	6HX	HSS-E	S	M1 - M10	5598	177
• • ○ • ○ ≤ 55	SL		~DIN 376	N	C	6HX	HSS-E	S	M12 - M16	5599	178
• • ○ • ○ ≤ 66	★		~DIN 371/376	N	C	4HX/6HX	HSS-E-PM	C	M1 - M20	4487	179

Micro thread milling cutters

• • • • • ≤ 55	★		WN	MTM3 SP			VHM	C	M1,6 - M16	4226	180
• • • • • ≤ 66	★		WN	MTMH3-Z			VHM		M2 - M20	4002	181

Thread milling cutters without chamfer for ISO metric threads

• ○ • • • ≤ 55	SL		WN	TM SP			VHM	C	M6 - M20	5547	182
• ○ • • • ≤ 55	SL		WN	TM SP			VHM	C	M6 - M20	5548	182

P	M	K	N	S	H	Tool illustration	Z	Hardness	Shank form	Length	Tool material	Surface	d1/mm	Article no.	Page
Standard Ratio end mills RF 100 U															
•	•	•	•	•	•	 		48 HRC	HB		VHM	F	6.000 - 20.000	5534	192
•	•	•	•	•	•	 		48 HRC	HA		VHM	F	4.000 - 25.000	5735	193
•	•	•	•	•	•	 		48 HRC	HB		VHM	F	4.000 - 25.000	5535	193
•	•	•	•	•	•	 		48 HRC	HA		VHM	F	10.000 - 25.000	5582	194
Ratio end mills RF 100 Speed M															
•	•	•	•	•	•	 			HB		VHM	A	3.000 - 20.000	6761	195
Ratio end mills RF 100 Diver															
•	•	•	•	•	•	 		48 HRC	HA		VHM	Y	3.000 - 20.000	6803	196
•	•	•	•	•	•	 		48 HRC	HB		VHM	Y	3.000 - 20.000	6804	196
•	•	•	•	•	•	 		48 HRC	HA		VHM	Y	4.000 - 20.000	6737	197
•	•	•	•	•	•	 		48 HRC	HB		VHM	Y	4.000 - 20.000	6736	197
Ratio end mills RF 100 iMill															
•	•	•	•	•	•	 			HA		VHM	Y	3.000 - 20.000	6964	198
•	•	•	•	•	•	 			HB		VHM	Y	3.000 - 20.000	6965	198
Ratio end mills RF 100 VA															
•	•	•	•	•	•	 			HA		VHM	a	3.000 - 25.000	5653	200
•	•	•	•	•	•	 			HB		VHM	a	3.000 - 25.000	5654	200
Ratio end mills Alu RF 100 A															
•	•	•	•	•	•	 			HA		VHM	○	3.000 - 20.000	6010	201
•	•	•	•	•	•	 			HB		VHM	○	3.000 - 20.000	5655	201
Slot drills GH 100 U (3-fluted)															
•	•	•	•	•	•	 			HA		VHM	F	3.000 - 20.000	5505	202
•	•	•	•	•	•	 			HA		VHM	F	3.000 - 20.000	5506	203
•	•	•	•	•	•	 			HB		VHM	F	3.000 - 20.000	5546	203
Mini slot drills (3-fluted)															
•	•	•	•	•	•	 			HA/ HB		VHM	F	1.000 - 10.000	5574	204

P	M	K	N	S	H	Tool illustration	Z	Hardness	Shank form	Length	Tool material	Surface	d1/mm	Article no.	Page
Roughing end mills GS 100 U (fine teeth)															
•	•	•	○			_SL							6.000 - 20.000	5504	205
Hard roughing end mills GS 100 H (fine teeth)															
○	•	•	•			_SL		55 HRC					6.000 - 20.000	5583	206
Multi-tooth end mills GH 100 U															
•	•	•	•	•	○	_SL		48 HRC					3.000 - 25.000	5745	207
•	•	•	•	•	○	_SL		48 HRC					3.000 - 25.000	5545	207
•	•	•	•	•	○	_SL		48 HRC					6.000 - 20.000	5729	208
Slot drills (2-fluted)															
•	•	•	•			_SL							2.000 - 20.000	5730	209
•	•	•	•			_SL							2.000 - 20.000	5530	209
XL slot drills (2-fluted)															
•	•	•	•			_SL							3.000 - 20.000	5549	210
Al slot drills (2-fluted)															
	•					_SL							3.000 - 20.000	5543	211
Slot drills (3-fluted)															
•	•	•	•			_SL							2.000 - 20.000	5507	212
•	•	•	•			_SL							2.000 - 20.000	5531	212
Mini slot drills (3-fluted)															
•	•	○	○	•		_SL							0.500 - 20.000	5573	213
End mills (4-fluted)															
•	•	•	•			_SL							2.000 - 20.000	5532	214
XL end mills (4-fluted)															
•	•	•	•			_SL							3.000 - 20.000	5556	215
Ball nose slot drills (2-fluted)															
•	•	•	•	•	○	_SL		48 HRC					0.500 - 20.000	5533	216
•	•	•	•	•	○	_SL		48 HRC					0.500 - 20.000	5585	216

P	M	K	N	S	H	Tool illustration	Z	Hardness	Shank form	Length	Tool material	Surface	d1/mm	Article no.	Page
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Ball nose end mills (4-fluted)

•	•	•	•	•	○	_SL 		48 HRC			VHM		3.000 - 20.000	5584	217
---	---	---	---	---	---	--	---	---------------	---	---	------------	---	----------------	-------------	-----

Chamfering milling cutters 60°

•	•	•	•	•	○	_SL 		55 HRC			VHM		4.000 - 12.000	6011	218
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•	•	•	•	•	○	_SL 		55 HRC			VHM		4.000 - 12.000	6012	218
---	---	---	---	---	---	--	---	---------------	---	---	------------	---	----------------	-------------	-----

Chamfering milling cutters 90°

•	•	•	•	•	○	_SL 		55 HRC			VHM		4.000 - 12.000	5578	219
---	---	---	---	---	---	--	---	---------------	---	---	------------	---	----------------	-------------	-----






•	•	•	•	•	○	_SL 		55 HRC			VHM		4.000 - 12.000	5579	219
---	---	---	---	---	---	--	---	---------------	---	---	------------	---	----------------	-------------	-----

Chamfering milling cutters 120°






•	•	•	•	•	○	_SL 		55 HRC			VHM		4.000 - 12.000	6014	220
---	---	---	---	---	---	--	---	---------------	---	---	------------	---	----------------	-------------	-----

•	•	•	•	•	○	_SL 		55 HRC			VHM		4.000 - 12.000	6015	220
---	---	---	---	---	---	--	---	---------------	---	---	------------	---	----------------	-------------	-----

Front/back deburrer 90°, sets



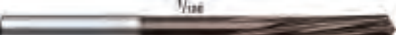
•	•	•	○	•	•	_SL 		55 HRC			VHM			6013	221
---	---	---	---	---	---	--	---	---------------	---	---	------------	---	--	-------------	-----

Ratio end mill sets RF 100 U

•	•	○	•	•	•	_SL 		48 HRC			VHM			5635	222
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P	M	K	N	S	H	Tool illustration	Shank form	Standard	Form	Cutting direction	Tool material	Surface	d1/mm	Article no.	Page
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NC machine reamers

•	○	•	•	○		SL 	HA	DIN 212-3	B	R	HSS-E	○	1.500 - 20.000	6019	232
•	○	•	•	○		SL 	HA	DIN 212-3	B	R	HSS-E	○	1.000 - 12.030	6020	233
•	○	•	•	○	52	SL 	HA	WN	B	R	VHM	○	3.000 - 20.000	6016	235
•	•	•	•	•	52	SL 	HA	WN	B	R	VHM	a	3.000 - 20.000	6017	236
•	○	•	•	○	52	SL 	HA	WN	B	R	VHM	○	0.980 - 12.050	5527	237
•	•	•	•	•	52	SL 	HA	WN	B	R	VHM	a	0.980 - 12.050	6018	239




High-performance reamers

•	•	•	•	•	63		HA	WN		R	VHM	a	2.000 - 20.000	1685	241
•	•	•	•	•	63		HA	WN		R	VHM	a	2.000 - 20.000	1686	242

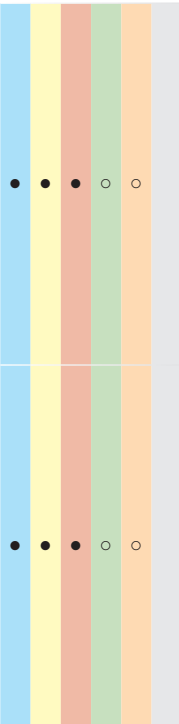
60° Countersinks, spiral-fluted

•	•	•	○	○		SL 	Cyl	DIN 334	C	R	HSS	A	6.300 - 25.000	5670	243
•	•	•	○	○		SL 	3	DIN 334	C	R	HSS	A	6.300 - 25.000	5671	244

90° Countersinks, spiral-fluted

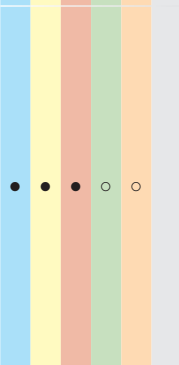
•	•	•	○	○		SL 	Cyl	DIN 335	C	R	HSCO	A	6.300 - 40.000	5500	245
•	•	•	○	○		SL 	3	DIN 335	C	R	HSCO	A	6.300 - 40.000	5501	246
•	•	•	○	○		SL 	Cyl	WN	C	R	HSS	A	6.300 - 31.000	5503	247

60° Countersink sets, spiral-fluted



Cyl
DIN 334
C
R
HSS
A

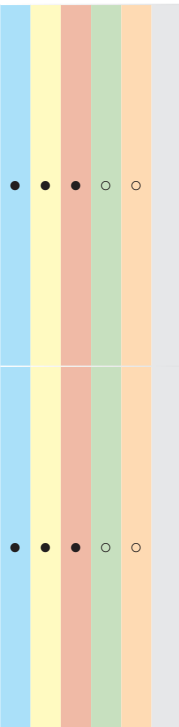
5672 248



3
DIN 334
C
R
HSS
A

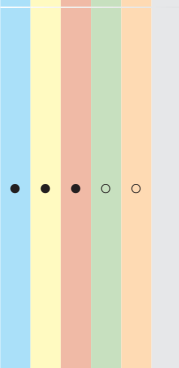
5673 249

90° Countersink sets, spiral-fluted











Cyl
DIN 335
C
R
HSCO
A

5538 250



3
DIN 335
C
R
HSCO
A

5539 251

Tool illustration	Standard	Article no.	Page
<p>HSK-A hydraulic chucks</p> 		4662	258
<p>ISO taper hydraulic chucks</p> 		4663	259
<p>MAS/BT hydraulic chucks</p> 		4664	260
<p>Tool dispensing system TM 226</p> 		506920	269



A close-up, high-angle photograph of a metal drill bit. The bit is dark and shows signs of use, with a textured surface. A white, geometric, angular shape is overlaid on the lower part of the image, partially covering the drill bit. The background is a light, textured surface with some yellow diagonal lines in the upper left corner.

DRILLING TOOLS



Ratio drills with coolant ducts



P ● web thinning ≥ Ø 3.000 • facet point grind • 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

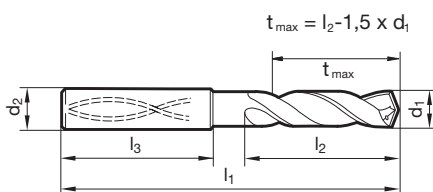
S ○

H ○

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

GÜHRING NAVIGATOR

Cutting data page 140



						Article no.	5510	5610	6023
						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	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	6023
						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	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	●	●	●	

Drilling tools



						Article no.	5510	5610	6023
						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	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 coolant ducts



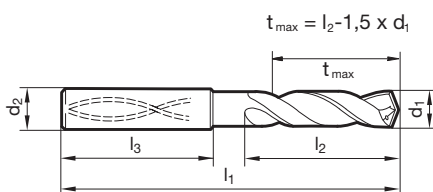
P	web thinning ≥ Ø 3.000 • facet point grind • main cutting edge form straight • optimised cutting geometry
M	•
K	
N	stainless/acid-/heat-resistant steels • Titanium and Titanium alloys
S	• Inconel, Hastelloy, Monel
H	

Tool material	Solid carbide		
Surface	a	a	a
Shank form	HA	HE	HB
	-SL	-SL	-SL

Drilling tools

GÜHRING NAVIGATOR

Cutting data page 140



						Article no.	5526	5528	6024
						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	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	6024
						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	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	6024
						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	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	●	●	●	

Drilling tools



Ratio drills with coolant ducts



P relieved cone • main cutting edge is slightly concave • optimised cutting geometry • sharp cutting edges

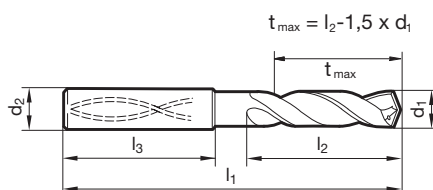
M**K****N** • aluminium and Al alloys • Al materials with high Si-content**S****H**Tool material **Solid carbide**

Surface ○

Shank form HA

SL**GÜHRING NAVIGATOR**

Cutting data page 140

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						(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.						5768
Discount group						155
Cutting direction						(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	●
13.100	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						(R)
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	●

Drilling tools



Ratio drills with coolant ducts



P ● web thinning $\geq \varnothing 3.000$ • facet point grind • 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 AISi alloys

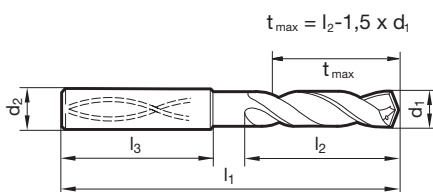
S ○

H ○

GÜHRING NAVIGATOR

Cutting data page 140

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



						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				
2.500		4.00	57.00	20.00	31.70	●			
2.800		4.00	57.00	22.00	29.90	●			
2.900		4.00	57.00	23.00	29.00	●			
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	●	●	●	



						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				
5.500		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	●	●	●	
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	●	●	●	

Drilling tools



						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				
10.000		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	●	●	●	
10.320	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	●	●	●	



						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				
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	●	●	●	
19.500		20.00	153.00	101.00	50.00	●	●	●	
20.000		20.00	153.00	101.00	50.00	●	●	●	

Drilling tools



Ratio drills with coolant ducts



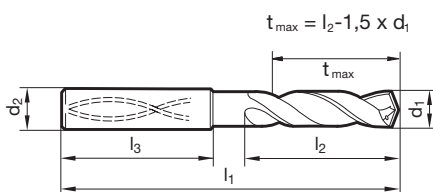
P web thinning $\geq \varnothing 3.000$ • facet point grind • main cutting edge form straight • optimised cutting geometry

- M** •
- K**
- N** stainless/acid-/heat-resistant steels • Titanium and Titanium alloys
- S** • Inconel, Hastelloy, Monel
- H**

GÜHRING NAVIGATOR

Cutting data page 140

Tool material	Solid carbide		
Surface	a	a	a
Shank form	HA	HE	HB
	-SL	-SL	-SL



						Article no.	5580	5581	6025
						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.	5580	5581	6025
						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	●	●	●	

Drilling tools



						Article no.	5580	5581	6025
						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	●	●	●	



RT 100 **XF**

TOUGH. EXTREME. **POWERFUL.**



Ratio drills with coolant ducts

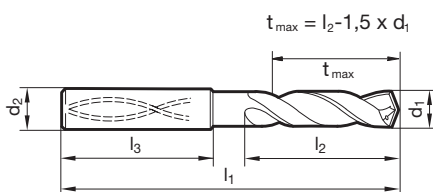


- P** ● web thinning $\geq \varnothing 3.000$ • relieved cone • main cutting edge form concave • optimised cutting geometry • maximum performance
- M** ○
- K** ○
- N** ● structural and case hardened steels • free-cutting steels, heat-treatable steels • steels (alloyed/unalloyed) up to 1400 N/mm²
- S** ○
- H** ○

Tool material	Solid carbide
Surface	F
Shank form	HA
	★

GÜHRING NAVIGATOR

Cutting data page 140



Article no. **5498**

Discount group **255**

Cutting direction **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	●
4.040		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	●
5.110		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	●
5.410		6.00	82.00	44.00	36.00	●



Article no. 5498						Availability
Discount group 255						
Cutting direction (R)						
d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
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	●
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	●
6.530		8.00	91.00	53.00	36.00	●
6.550		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	●
7.550		8.00	91.00	53.00	36.00	●
7.600		8.00	91.00	53.00	36.00	●
7.650		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	●
9.550		10.00	103.00	61.00	40.00	●

Drilling tools



Article no.						5498
Discount group						255
Cutting direction						(R)
d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
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	●
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	●
10.720	27/64	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	●
11.510	29/64	12.00	118.00	71.00	45.00	●
11.550		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	●
12.300	31/64	14.00	124.00	77.00	45.00	●
12.400		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	●
13.200		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	●
13.490	17/32	14.00	124.00	77.00	45.00	●
13.500		14.00	124.00	77.00	45.00	●
13.600		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	●
13.890	35/64	14.00	124.00	77.00	45.00	●
13.900		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	●



Article no. 5498						Availability
Discount group 255						
Cutting direction (R)						
d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
14.600		16.00	133.00	83.00	48.00	●
14.680	37/64	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	●
14.900		16.00	133.00	83.00	48.00	●
15.000		16.00	133.00	83.00	48.00	●
15.080	19/32	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	●
15.400		16.00	133.00	83.00	48.00	●
15.480	39/64	16.00	133.00	83.00	48.00	●
15.500		16.00	133.00	83.00	48.00	●
15.550		16.00	133.00	83.00	48.00	●
15.600		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	●
15.870	5/8	16.00	133.00	83.00	48.00	●
15.900		16.00	133.00	83.00	48.00	●
16.000		16.00	133.00	83.00	48.00	●
16.270	41/64	18.00	143.00	93.00	48.00	●
16.300		18.00	143.00	93.00	48.00	●
16.500		18.00	143.00	93.00	48.00	●
16.670	21/32	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	●
17.070	43/64	18.00	143.00	93.00	48.00	●
17.460	11/16	18.00	143.00	93.00	48.00	●
17.500		18.00	143.00	93.00	48.00	●
17.550		18.00	143.00	93.00	48.00	●
17.700		18.00	143.00	93.00	48.00	●
17.860	45/64	18.00	143.00	93.00	48.00	●
18.000		18.00	143.00	93.00	48.00	●
18.260	23/32	20.00	153.00	101.00	50.00	●
18.500		20.00	153.00	101.00	50.00	●
18.700		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	●
19.250		20.00	153.00	101.00	50.00	●
19.300		20.00	153.00	101.00	50.00	●
19.450	49/64	20.00	153.00	101.00	50.00	●
19.500		20.00	153.00	101.00	50.00	●
19.550		20.00	153.00	101.00	50.00	●
19.700		20.00	153.00	101.00	50.00	●
19.800		20.00	153.00	101.00	50.00	●
19.840	25/32	20.00	153.00	101.00	50.00	●
20.000		20.00	153.00	101.00	50.00	●

Drilling tools



Ratio drills with coolant ducts



P ● web thinning $\geq \varnothing 3.000$ • facet point grind • main cutting edge form straight • optimised cutting geometry

M ○

K ●

N ○

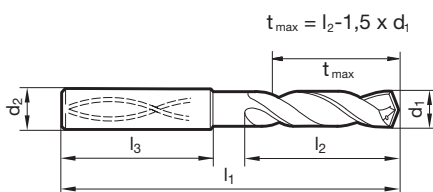
S ○

H ○

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

GÜHRING NAVIGATOR

Cutting data page 140



Tool material	Solid carbide	
Surface	F	F
Shank form	HA	HE



Article no. **5512** **5612**

Discount group **155** **155**

Cutting direction

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		
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 coolant ducts



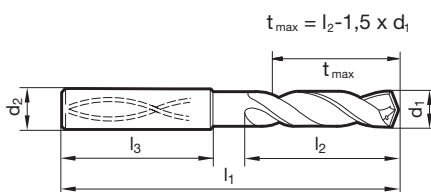
- P** ● web thinning ≥ Ø 3.000 • relieved cone • main cutting edge form concave • optimised cutting geometry • maximum performance
- M** ○
- K** ○
- N** ● structural and case hardened steels • free-cutting steels, heat-treatable steels • steels (alloyed/unalloyed) up to 1400 N/mm²
- S** ○
- H** ○

GÜHRING NAVIGATOR

Cutting data page 140

Tool material	Solid carbide
Surface	F
Shank form	HA
	★

Drilling tools



Article no.	5499
Discount group	255
Cutting direction	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	●
4.040		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	●
5.110		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	●
5.410		6.00	97.00	57.00	36.00	●



Article no.						5499
Discount group						255
Cutting direction						(R)
d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
5.500		6.00	97.00	57.00	36.00	●
5.550		6.00	97.00	57.00	36.00	●
5.560	7/32	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	●
5.800		6.00	97.00	57.00	36.00	●
5.900		6.00	97.00	57.00	36.00	●
5.950	15/64	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	●
6.400		8.00	106.00	66.00	36.00	●
6.500		8.00	106.00	66.00	36.00	●
6.530		8.00	106.00	66.00	36.00	●
6.550		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	●
6.750	17/64	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	●
7.140	9/32	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	●
7.540	19/64	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	●
7.900		8.00	116.00	76.00	36.00	●
7.940	5/16	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	●
8.300		10.00	131.00	87.00	40.00	●
8.330	21/64	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	●
8.730	11/32	10.00	131.00	87.00	40.00	●
8.800		10.00	131.00	87.00	40.00	●
8.900		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	●
9.130	23/64	10.00	139.00	95.00	40.00	●
9.200		10.00	139.00	95.00	40.00	●
9.250		10.00	139.00	95.00	40.00	●
9.300		10.00	139.00	95.00	40.00	●
9.340		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	●
9.600		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	●



Article no.						5499
Discount group						255
Cutting direction						(R)
d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
9.900		10.00	139.00	95.00	40.00	●
9.920	25/64	10.00	139.00	95.00	40.00	●
10.000		10.00	139.00	95.00	40.00	●
10.100		12.00	155.00	106.00	45.00	●
10.200		12.00	155.00	106.00	45.00	●
10.300		12.00	155.00	106.00	45.00	●
10.320	13/32	12.00	155.00	106.00	45.00	●
10.400		12.00	155.00	106.00	45.00	●
10.500		12.00	155.00	106.00	45.00	●
10.600		12.00	155.00	106.00	45.00	●
10.700		12.00	155.00	106.00	45.00	●
10.720	27/64	12.00	155.00	106.00	45.00	●
10.800		12.00	155.00	106.00	45.00	●
10.900		12.00	155.00	106.00	45.00	●
11.000		12.00	155.00	106.00	45.00	●
11.100		12.00	163.00	114.00	45.00	●
11.110	7/16	12.00	163.00	114.00	45.00	●
11.200		12.00	163.00	114.00	45.00	●
11.300		12.00	163.00	114.00	45.00	●
11.400		12.00	163.00	114.00	45.00	●
11.500		12.00	163.00	114.00	45.00	●
11.510	29/64	12.00	163.00	114.00	45.00	●
11.600		12.00	163.00	114.00	45.00	●
11.700		12.00	163.00	114.00	45.00	●
11.800		12.00	163.00	114.00	45.00	●
11.900		12.00	163.00	114.00	45.00	●
11.910	15/32	12.00	163.00	114.00	45.00	●
12.000		12.00	163.00	114.00	45.00	●
12.100		14.00	182.00	133.00	45.00	●
12.200		14.00	182.00	133.00	45.00	●
12.300	31/64	14.00	182.00	133.00	45.00	●
12.400		14.00	182.00	133.00	45.00	●
12.500		14.00	182.00	133.00	45.00	●
12.600		14.00	182.00	133.00	45.00	●
12.700	1/2	14.00	182.00	133.00	45.00	●
12.800		14.00	182.00	133.00	45.00	●
12.900		14.00	182.00	133.00	45.00	●
13.000		14.00	182.00	133.00	45.00	●
13.100	33/64	14.00	182.00	133.00	45.00	●
13.490	17/32	14.00	182.00	133.00	45.00	●
13.500		14.00	182.00	133.00	45.00	●
13.700		14.00	182.00	133.00	45.00	●
13.890	35/64	14.00	182.00	133.00	45.00	●
14.000		14.00	182.00	133.00	45.00	●
14.100		16.00	204.00	152.00	48.00	●
14.200		16.00	204.00	152.00	48.00	●
14.290	9/16	16.00	204.00	152.00	48.00	●
14.300		16.00	204.00	152.00	48.00	●
14.500		16.00	204.00	152.00	48.00	●
14.700		16.00	204.00	152.00	48.00	●
14.800		16.00	204.00	152.00	48.00	●
15.000		16.00	204.00	152.00	48.00	●
15.100		16.00	204.00	152.00	48.00	●
15.300		16.00	204.00	152.00	48.00	●
15.480	39/64	16.00	204.00	152.00	48.00	●
15.500		16.00	204.00	152.00	48.00	●
15.700		16.00	204.00	152.00	48.00	●
15.800		16.00	204.00	152.00	48.00	●
15.870	5/8	16.00	204.00	152.00	48.00	●
16.000		16.00	204.00	152.00	48.00	●

Drilling tools



						Article no.	5499
						Discount group	255
						Cutting direction	(R)
d1		d2 h6	l1	l2	l3	Availability	
mm	inch	mm	mm	mm	mm		
16.300		18.00	223.00	171.00	48.00	●	
16.500		18.00	223.00	171.00	48.00	●	
16.700		18.00	223.00	171.00	48.00	●	
16.900		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	●	
17.700		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	●	
18.900		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	●	
19.800		20.00	244.00	190.00	50.00	●	
20.000		20.00	244.00	190.00	50.00	●	



Ratio drills with coolant ducts



Tool material	Solid carbide
Surface	○
Shank form	HA

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

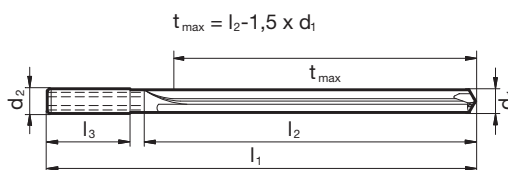
SL



Drilling tools

GÜHRING NAVIGATOR

Cutting data page 142



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	●
3.100		6.00	91.00	42.00	36.00	●
3.170	1/8	6.00	91.00	42.00	36.00	●
3.200		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	●
3.400		6.00	91.00	48.00	36.00	●
3.500		6.00	91.00	48.00	36.00	●
3.570	9/64	6.00	91.00	48.00	36.00	●
3.600		6.00	91.00	48.00	36.00	●
3.700		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	●



						Article no.	5513
						Discount group	155
						Cutting direction	(R)
d1		d2 h6	l1	l2	l3	Availability	
mm	inch	mm	mm	mm	mm		
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	●	
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 with coolant ducts



- P** ● web thinning ≥ Ø 3.000 • facet point grind • 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 AISi alloys
- H** ○

Tool material	Solid carbide
Surface	F
Shank form	HA

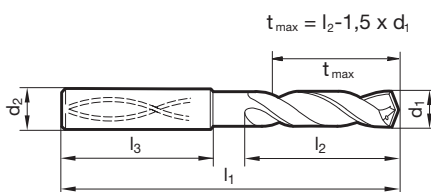
SL



Drilling tools

GÜHRING NAVIGATOR

Cutting data page 142



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	●
4.650		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	●
5.950	15/64	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	●



Article no.						5525
Discount group						155
Cutting direction						(R)
d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
6.200		8.00	146.00	108.00	36.00	●
6.300		8.00	146.00	108.00	36.00	●
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	●
6.750	17/64	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	●
9.250		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	●
10.100		12.00	204.00	156.00	45.00	●
10.200		12.00	204.00	156.00	45.00	●
10.300		12.00	204.00	156.00	45.00	●
10.500		12.00	204.00	156.00	45.00	●
10.600		12.00	204.00	156.00	45.00	●
10.700		12.00	204.00	156.00	45.00	●
10.800		12.00	204.00	156.00	45.00	●
10.900		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	●
12.300	31/64	14.00	230.00	182.00	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	●



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

Drilling tools



Ratio drills with coolant ducts

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

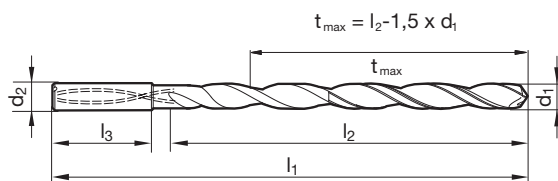
P ● web thinning $\geq \varnothing 3.000$ • main cutting edge form concave • optimised flute design • maximum diameter of coolant ducts • observe coolant pressure

M ●**K** ●**N** ○**S** ○**H** ○

structural and case hardened steels • free-cutting steels, heat-treatable steels • alloyed steels up to 1200 N/mm^2 • stainless steels • cast materials

GÜHRING NAVIGATOR

Cutting data page 142

Article no. **6509**Discount group **165**Cutting direction **R**

d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
3.000		6.00	95.00	55.00	36.00	●
3.100		6.00	106.00	66.00	36.00	●
3.170	1/8	6.00	106.00	66.00	36.00	●
3.200		6.00	106.00	66.00	36.00	●
3.300		6.00	106.00	66.00	36.00	●
3.500		6.00	116.00	76.00	36.00	●
3.570	9/64	6.00	116.00	76.00	36.00	●
3.700		6.00	116.00	76.00	36.00	●
3.800		6.00	116.00	76.00	36.00	●
3.970	5/32	6.00	116.00	76.00	36.00	●
4.000		6.00	116.00	76.00	36.00	●
4.100		6.00	133.00	93.00	36.00	●
4.200		6.00	133.00	93.00	36.00	●
4.300		6.00	133.00	93.00	36.00	●
4.370	11/64	6.00	133.00	93.00	36.00	●
4.500		6.00	133.00	93.00	36.00	●
4.600		6.00	133.00	93.00	36.00	●
4.760	3/16	6.00	133.00	93.00	36.00	●
4.800		6.00	133.00	93.00	36.00	●
5.000		6.00	133.00	93.00	36.00	●
5.100		6.00	150.00	110.00	36.00	●
5.160	13/64	6.00	150.00	110.00	36.00	●
5.410		6.00	150.00	110.00	36.00	●
5.500		6.00	150.00	110.00	36.00	●
5.560	7/32	6.00	150.00	110.00	36.00	●
5.600		6.00	150.00	110.00	36.00	●
5.800		6.00	150.00	110.00	36.00	●
5.950	15/64	6.00	150.00	110.00	36.00	●
6.000		6.00	150.00	110.00	36.00	●
6.300		8.00	167.00	127.00	36.00	●
6.350	1/4	8.00	167.00	127.00	36.00	●
6.500		8.00	167.00	127.00	36.00	●
6.750	17/64	8.00	167.00	127.00	36.00	●
6.800		8.00	167.00	127.00	36.00	●
7.000		8.00	167.00	127.00	36.00	●
7.140	9/32	8.00	183.00	143.00	36.00	●



Article no.						6509
Discount group						165
Cutting direction						(R)
d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
7.500		8.00	183.00	143.00	36.00	●
7.540	19/64	8.00	183.00	143.00	36.00	●
7.800		8.00	183.00	143.00	36.00	●
7.940	5/16	8.00	183.00	143.00	36.00	●
8.000		8.00	183.00	143.00	36.00	●
8.330	21/64	10.00	204.00	160.00	40.00	●
8.500		10.00	204.00	160.00	40.00	●
8.730	11/32	10.00	204.00	160.00	40.00	●
8.800		10.00	204.00	160.00	40.00	●
9.000		10.00	204.00	160.00	40.00	●
9.130	23/64	10.00	221.00	177.00	40.00	●
9.500		10.00	221.00	177.00	40.00	●
9.520	3/8	10.00	221.00	177.00	40.00	●
9.800		10.00	221.00	177.00	40.00	●
9.920	25/64	10.00	221.00	177.00	40.00	●
10.000		10.00	221.00	177.00	40.00	●
10.200		12.00	247.00	198.00	45.00	●
10.320	13/32	12.00	247.00	198.00	45.00	●
10.500		12.00	247.00	198.00	45.00	●
10.720	27/64	12.00	247.00	198.00	45.00	●
11.000		12.00	247.00	198.00	45.00	●
11.110	7/16	12.00	263.00	214.00	45.00	●
11.510	29/64	12.00	263.00	214.00	45.00	●
11.800		12.00	263.00	214.00	45.00	●
11.910	15/32	12.00	263.00	214.00	45.00	●
12.000		12.00	263.00	214.00	45.00	●
12.300	31/64	14.00	297.00	248.00	45.00	●
12.500		14.00	297.00	248.00	45.00	●
12.700	1/2	14.00	297.00	248.00	45.00	●
13.000		14.00	297.00	248.00	45.00	●
13.100	33/64	14.00	297.00	248.00	45.00	●
13.490	17/32	14.00	297.00	248.00	45.00	●
13.890	35/64	14.00	297.00	248.00	45.00	●
14.000		14.00	297.00	248.00	45.00	●
14.290	9/16	16.00	333.00	281.00	48.00	●
15.000		16.00	333.00	281.00	48.00	●
15.870	5/8	16.00	333.00	281.00	48.00	●
16.000		16.00	333.00	281.00	48.00	●

Drilling tools



Ratio drills with coolant ducts

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

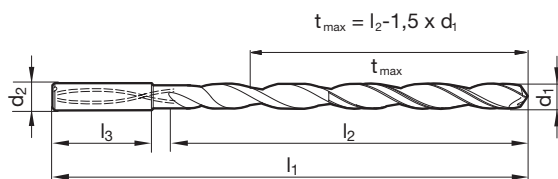
P ● web thinning $\geq \varnothing 3.000$ • main cutting edge form concave • optimised flute design • maximum diameter of coolant ducts • observe coolant pressure

M ●**K** ●**N** ○**S** ○**H** ○

structural and case hardened steels • free-cutting steels, heat-treatable steels • alloyed steels up to 1200 N/mm^2 • stainless steels • cast materials

GÜHRING NAVIGATOR

Cutting data page 142

Article no. **6511**Discount group **165**Cutting direction **R**

d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
3.000		6.00	110.00	70.00	36.00	●
3.100		6.00	123.00	83.00	36.00	●
3.170	1/8	6.00	123.00	83.00	36.00	●
3.200		6.00	123.00	83.00	36.00	●
3.300		6.00	123.00	83.00	36.00	●
3.500		6.00	136.00	96.00	36.00	●
3.570	9/64	6.00	136.00	96.00	36.00	●
3.700		6.00	136.00	96.00	36.00	●
3.800		6.00	136.00	96.00	36.00	●
3.970	5/32	6.00	136.00	96.00	36.00	●
4.000		6.00	136.00	96.00	36.00	●
4.100		6.00	158.00	118.00	36.00	●
4.200		6.00	158.00	118.00	36.00	●
4.300		6.00	158.00	118.00	36.00	●
4.370	11/64	6.00	158.00	118.00	36.00	●
4.500		6.00	158.00	118.00	36.00	●
4.600		6.00	158.00	118.00	36.00	●
4.760	3/16	6.00	158.00	118.00	36.00	●
4.800		6.00	158.00	118.00	36.00	●
5.000		6.00	158.00	118.00	36.00	●
5.100		6.00	180.00	140.00	36.00	●
5.160	13/64	6.00	180.00	140.00	36.00	●
5.410		6.00	180.00	140.00	36.00	●
5.500		6.00	180.00	140.00	36.00	●
5.560	7/32	6.00	180.00	140.00	36.00	●
5.800		6.00	180.00	140.00	36.00	●
5.950	15/64	6.00	180.00	140.00	36.00	●
6.000		6.00	180.00	140.00	36.00	●
6.300		8.00	202.00	162.00	36.00	●
6.350	1/4	8.00	202.00	162.00	36.00	●
6.500		8.00	202.00	162.00	36.00	●
6.750	17/64	8.00	202.00	162.00	36.00	●
6.800		8.00	202.00	162.00	36.00	●
7.000		8.00	202.00	162.00	36.00	●
7.140	9/32	8.00	223.00	183.00	36.00	●
7.500		8.00	223.00	183.00	36.00	●



Article no.						6511
Discount group						165
Cutting direction						(R)
d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
7.540	19/64	8.00	223.00	183.00	36.00	●
7.800		8.00	223.00	183.00	36.00	●
7.940	5/16	8.00	223.00	183.00	36.00	●
8.000		8.00	223.00	183.00	36.00	●
8.330	21/64	10.00	249.00	205.00	40.00	●
8.500		10.00	249.00	205.00	40.00	●
8.730	11/32	10.00	249.00	205.00	40.00	●
8.800		10.00	249.00	205.00	40.00	●
9.000		10.00	249.00	205.00	40.00	●
9.130	23/64	10.00	271.00	227.00	40.00	●
9.520	3/8	10.00	271.00	227.00	40.00	●
9.920	25/64	10.00	271.00	227.00	40.00	●
10.000		10.00	271.00	227.00	40.00	●
10.200		12.00	302.00	253.00	45.00	●
10.320	13/32	12.00	302.00	253.00	45.00	●
10.500		12.00	302.00	253.00	45.00	●
10.720	27/64	12.00	302.00	253.00	45.00	●
11.000		12.00	302.00	253.00	45.00	●
11.110	7/16	12.00	323.00	274.00	45.00	●
11.510	29/64	12.00	323.00	274.00	45.00	●
11.800		12.00	323.00	274.00	45.00	●
11.910	15/32	12.00	323.00	274.00	45.00	●
12.000		12.00	323.00	274.00	45.00	●
12.300	31/64	14.00	367.00	318.00	45.00	●
12.500		14.00	367.00	318.00	45.00	●
12.700	1/2	14.00	367.00	318.00	45.00	●
13.000		14.00	367.00	318.00	45.00	●
13.100	33/64	14.00	367.00	318.00	45.00	●
13.490	17/32	14.00	367.00	318.00	45.00	●
13.890	35/64	14.00	367.00	318.00	45.00	●
14.000		14.00	367.00	318.00	45.00	●
14.290	9/16	16.00	413.00	361.00	48.00	●
15.000		16.00	413.00	361.00	48.00	●
15.870	5/8	16.00	413.00	361.00	48.00	●
16.000		16.00	413.00	361.00	48.00	●

Drilling tools



Ratio drills with coolant ducts

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

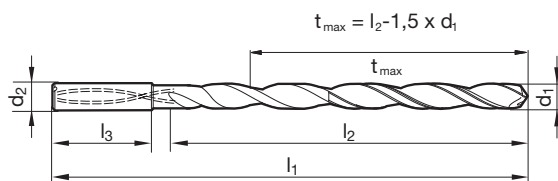
P ● web thinning $\geq \varnothing 3.000$ • main cutting edge form concave • optimised flute design • maximum diameter of coolant ducts • observe coolant pressure

M ●**K** ●**N** ○**S** ○**H** ○

structural and case hardened steels • free-cutting steels, heat-treatable steels • alloyed steels up to 1200 N/mm^2 • stainless steels • cast materials

GÜHRING NAVIGATOR

Cutting data page 142

Article no. **6512**Discount group **165**Cutting direction **R**

d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
3.000		6.00	125.00	85.00	36.00	●
3.100		6.00	141.00	101.00	36.00	●
3.170	1/8	6.00	141.00	101.00	36.00	●
3.200		6.00	141.00	101.00	36.00	●
3.300		6.00	141.00	101.00	36.00	●
3.500		6.00	156.00	116.00	36.00	●
3.570	9/64	6.00	156.00	116.00	36.00	●
3.700		6.00	156.00	116.00	36.00	●
3.800		6.00	156.00	116.00	36.00	●
3.970	5/32	6.00	156.00	116.00	36.00	●
4.000		6.00	156.00	116.00	36.00	●
4.100		6.00	183.00	143.00	36.00	●
4.200		6.00	183.00	143.00	36.00	●
4.300		6.00	183.00	143.00	36.00	●
4.370	11/64	6.00	183.00	143.00	36.00	●
4.500		6.00	183.00	143.00	36.00	●
4.600		6.00	183.00	143.00	36.00	●
4.760	3/16	6.00	183.00	143.00	36.00	●
4.800		6.00	183.00	143.00	36.00	●
5.000		6.00	183.00	143.00	36.00	●
5.100		6.00	210.00	170.00	36.00	●
5.160	13/64	6.00	210.00	170.00	36.00	●
5.410		6.00	210.00	170.00	36.00	●
5.500		6.00	210.00	170.00	36.00	●
5.560	7/32	6.00	210.00	170.00	36.00	●
5.800		6.00	210.00	170.00	36.00	●
5.950	15/64	6.00	210.00	170.00	36.00	●
6.000		6.00	210.00	170.00	36.00	●
6.300		8.00	237.00	197.00	36.00	●
6.350	1/4	8.00	237.00	197.00	36.00	●
6.500		8.00	237.00	197.00	36.00	●
6.750	17/64	8.00	237.00	197.00	36.00	●
6.800		8.00	237.00	197.00	36.00	●
7.000		8.00	237.00	197.00	36.00	●
7.140	9/32	8.00	263.00	223.00	36.00	●
7.500		8.00	263.00	223.00	36.00	●



Article no.						6512
Discount group						165
Cutting direction						(R)
d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
7.540	19/64	8.00	263.00	223.00	36.00	●
7.940	5/16	8.00	263.00	223.00	36.00	●
8.000		8.00	263.00	223.00	36.00	●
8.330	21/64	10.00	294.00	250.00	40.00	●
8.500		10.00	294.00	250.00	40.00	●
8.730	11/32	10.00	294.00	250.00	40.00	●
9.000		10.00	294.00	250.00	40.00	●
9.130	23/64	10.00	321.00	277.00	40.00	●
9.520	3/8	10.00	321.00	277.00	40.00	●
9.920	25/64	10.00	321.00	277.00	40.00	●
10.000		10.00	321.00	277.00	40.00	●
10.320	13/32	12.00	359.00	310.00	45.00	●
10.720	27/64	12.00	359.00	310.00	45.00	●
11.000		12.00	359.00	310.00	45.00	●
11.110	7/16	12.00	386.00	337.00	45.00	●
11.510	29/64	12.00	386.00	337.00	45.00	●
11.910	15/32	12.00	386.00	337.00	45.00	●
12.000		12.00	386.00	337.00	45.00	●
12.300	31/64	14.00	437.00	388.00	45.00	●
12.700	1/2	14.00	437.00	388.00	45.00	●
13.000		14.00	437.00	388.00	45.00	●
13.100	33/64	14.00	437.00	388.00	45.00	●
13.490	17/32	14.00	437.00	388.00	45.00	●
13.890	35/64	14.00	437.00	388.00	45.00	●
14.000		14.00	437.00	388.00	45.00	●
14.290	9/16	16.00	493.00	441.00	48.00	●
15.000		16.00	493.00	441.00	48.00	●
15.870	5/8	16.00	493.00	441.00	48.00	●
16.000		16.00	493.00	441.00	48.00	●



Ratio drills with coolant ducts



Tool material **Solid carbide**

Surface **A**

Shank form **HA**

P ● web thinning $\geq \varnothing 3.000$ • main cutting edge form concave • optimised flute design • maximum diameter of coolant ducts • observe coolant pressure

M ●

K ●

N ○ structural and case hardened steels • free-cutting steels, heat-treatable steels • alloyed steels up to 1200 N/mm² • stainless steels

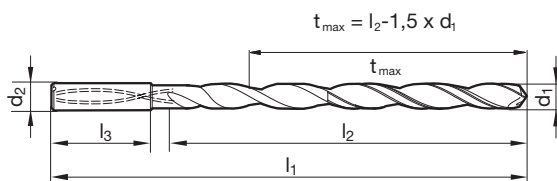
S ○

H ○



GÜHRING NAVIGATOR

Cutting data page 142



Article no. **6513**

Discount group **165**

Cutting direction **R**

d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
3.000		6.00	140.00	100.00	36.00	●
3.100		6.00	158.00	118.00	36.00	●
3.170	1/8	6.00	158.00	118.00	36.00	●
3.200		6.00	158.00	118.00	36.00	●
3.300		6.00	158.00	118.00	36.00	●
3.500		6.00	176.00	136.00	36.00	●
3.570	9/64	6.00	176.00	136.00	36.00	●
3.700		6.00	176.00	136.00	36.00	●
3.800		6.00	176.00	136.00	36.00	●
3.970	5/32	6.00	176.00	136.00	36.00	●
4.000		6.00	176.00	136.00	36.00	●
4.100		6.00	208.00	168.00	36.00	●
4.200		6.00	208.00	168.00	36.00	●
4.370	11/64	6.00	208.00	168.00	36.00	●
4.500		6.00	208.00	168.00	36.00	●
4.760	3/16	6.00	208.00	168.00	36.00	●
5.000		6.00	208.00	168.00	36.00	●
5.100		6.00	240.00	200.00	36.00	●
5.160	13/64	6.00	240.00	200.00	36.00	●
5.410		6.00	240.00	200.00	36.00	●
5.500		6.00	240.00	200.00	36.00	●
5.560	7/32	6.00	240.00	200.00	36.00	●
5.950	15/64	6.00	240.00	200.00	36.00	●
6.000		6.00	240.00	200.00	36.00	●
6.300		8.00	272.00	232.00	36.00	●
6.350	1/4	8.00	272.00	232.00	36.00	●
6.500		8.00	272.00	232.00	36.00	●
6.750	17/64	8.00	272.00	232.00	36.00	●
6.800		8.00	272.00	232.00	36.00	●
7.000		8.00	272.00	232.00	36.00	●
7.140	9/32	8.00	303.00	263.00	36.00	●
7.500		8.00	303.00	263.00	36.00	●
7.540	19/64	8.00	303.00	263.00	36.00	●
7.940	5/16	8.00	303.00	263.00	36.00	●
8.000		8.00	303.00	263.00	36.00	●
8.330	21/64	10.00	339.00	295.00	40.00	●



Article no.						6513
Discount group						165
Cutting direction						(R)
d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
8.500		10.00	339.00	295.00	40.00	●
8.730	11/32	10.00	339.00	295.00	40.00	●
8.800		10.00	339.00	295.00	40.00	●
9.000		10.00	339.00	295.00	40.00	●
9.130	23/64	10.00	371.00	327.00	40.00	●
9.520	3/8	10.00	371.00	327.00	40.00	●
9.920	25/64	10.00	371.00	327.00	40.00	●
10.000		10.00	371.00	327.00	40.00	●
10.320	13/32	12.00	412.00	363.00	45.00	●
10.720	27/64	12.00	412.00	363.00	45.00	●
11.000		12.00	412.00	363.00	45.00	●
11.110	7/16	12.00	443.00	394.00	45.00	●
11.510	29/64	12.00	443.00	394.00	45.00	●
11.910	15/32	12.00	443.00	394.00	45.00	●
12.000		12.00	443.00	394.00	45.00	●
12.300	31/64	14.00	507.00	458.00	45.00	●
12.700	1/2	14.00	507.00	458.00	45.00	●
13.000		14.00	507.00	458.00	45.00	●
13.100	33/64	14.00	507.00	458.00	45.00	●
13.490	17/32	14.00	507.00	458.00	45.00	●
13.890	35/64	14.00	507.00	458.00	45.00	●
14.000		14.00	507.00	458.00	45.00	●



EB 100 M: THE ROBUST

Solid carbide single-fluted
gun drills

EB 80: THE CONVENTIONAL

Brazed single-fluted gun drills

EB 800:
THE FLEXIBLE

Modular single-fluted gun drill

ZB 80:
THE SPECIALIST FOR CAST IRON

Brazed two-fluted gun drills

Drilling tools



CONVENTIONAL DEEP HOLE DRILLS

THE RIGHT TOOL
FOR EVERY APPLICATION.



Ratio drills without coolant ducts



P • web thinning $\geq \varnothing 3.000$ • facet point grind • 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

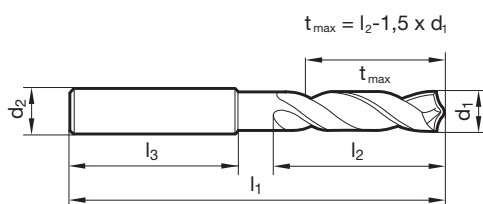
S ○

H ○

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

GÜHRING NAVIGATOR

Cutting data page 140



						Article no.	5514	5614	6026
						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	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	6026
						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	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	●	●	●	

Drilling tools



						Article no.	5514	5614	6026
						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	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 coolant ducts



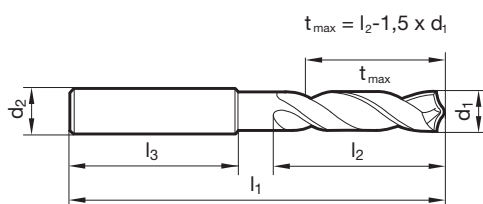
- P** ● web thinning ≥ Ø 3.000 • facet point grind • main cutting edge form straight • optimised cutting geometry
- M** ○
- K** ●
- N** ○ structural and case hardened steels • free-cutting steels, heat-treatable steels • steels (alloyed/unalloyed) up to 1200 N/mm² • cast materials • bronze, brass • high-alloyed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

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

Drilling tools

GÜHRING NAVIGATOR

Cutting data page 140



						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				
2.500		4.00	57.00	20.00	31.70	●			
2.800		4.00	57.00	22.00	29.90	●			
2.900		4.00	57.00	23.00	29.00	●			
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	●	●	●	



						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				
5.500		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	●	●	●	
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	●	●	●	



						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				
10.100		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	●	●	●	
10.320	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	●	●	●	

Drilling tools



Tool holders for interchangeable inserts HT 800



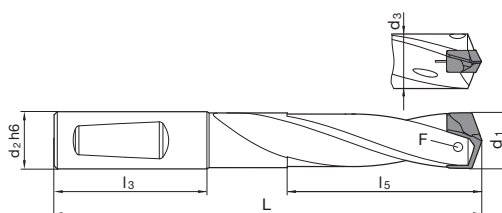
Surface

Ni

Shank form

HE

especially high wear resistance • optimised coolant duct exit • optimised flute design • nickel-plated • screwdriver art. no. 1612 included • clamping screws art. no. 4071 included



Article no.

4107

Discount group

140

Cutting direction

R

d1	d2 h6	d3	L	l3	l5	F	Code no.	Availability
	mm	mm	mm	mm	mm			
11.00-11.49	12.000	10.70	101.00	45.00	36.60	4071 2.200	11.000	●
11.00-11.49	12.700	10.70	101.00	45.00	36.60	4071 2.200	11.005	●
11.50-11.99	12.000	11.20	103.00	45.00	38.10	4071 2.200	11.500	●
11.50-11.99	12.700	11.20	103.00	45.00	38.10	4071 2.200	11.505	●
12.00-12.49	12.000	11.70	106.00	45.00	39.70	4071 2.201	12.000	●
12.00-12.49	12.700	11.70	106.00	45.00	39.70	4071 2.201	12.005	●
12.50-12.99	14.000	12.20	108.00	45.00	41.30	4071 2.201	12.500	●
12.50-12.99	15.875	12.20	108.00	45.00	41.30	4071 2.201	12.505	●
13.00-13.49	14.000	12.70	110.00	45.00	42.90	4071 2.500	13.000	●
13.00-13.49	15.875	12.70	110.00	45.00	42.90	4071 2.500	13.005	●
13.50-13.99	14.000	13.20	113.00	45.00	44.60	4071 2.500	13.500	●
13.50-13.99	15.875	13.20	113.00	45.00	44.60	4071 2.500	13.505	●
14.00-14.49	14.000	13.70	115.00	45.00	46.20	4071 3.000	14.000	●
14.00-14.49	15.875	13.70	115.00	45.00	46.20	4071 3.000	14.005	●
14.50-14.99	15.875	14.20	120.00	48.00	47.80	4071 3.000	14.505	●
14.50-14.99	16.000	14.20	120.00	48.00	47.80	4071 3.000	14.500	●
15.00-15.49	15.875	14.70	123.00	48.00	49.30	4071 3.001	15.005	●
15.00-15.49	16.000	14.70	123.00	48.00	49.30	4071 3.001	15.000	●
15.50-15.99	15.875	15.20	125.00	48.00	50.90	4071 3.001	15.505	●
15.50-15.99	16.000	15.20	125.00	48.00	50.90	4071 3.001	15.500	●
16.00-16.49	15.875	15.70	127.00	48.00	52.90	4071 3.500	16.005	●
16.00-16.49	16.000	15.70	127.00	48.00	52.90	4071 3.500	16.000	●
16.50-16.99	18.000	16.20	130.00	48.00	54.10	4071 3.500	16.500	●
16.50-16.99	19.050	16.20	130.00	48.00	54.10	4071 3.500	16.505	●
17.00-17.49	18.000	16.70	132.00	48.00	55.80	4071 3.500	17.000	●
17.00-17.49	19.050	16.70	132.00	48.00	55.80	4071 3.500	17.005	●
17.50-17.99	18.000	17.20	134.00	48.00	57.40	4071 3.500	17.500	●
17.50-17.99	19.050	17.20	134.00	48.00	57.40	4071 3.500	17.505	●
18.00-18.49	18.000	17.70	137.00	48.00	58.90	4071 4.000	18.000	●
18.00-18.49	19.050	17.70	137.00	48.00	58.90	4071 4.000	18.005	●
18.50-18.99	19.050	18.20	141.00	50.00	60.50	4071 4.000	18.505	●
18.50-18.99	20.000	18.20	141.00	50.00	60.50	4071 4.000	18.500	●
19.00-19.49	19.050	18.70	143.00	50.00	62.10	4071 4.000	19.005	●
19.00-19.49	20.000	18.70	143.00	50.00	62.10	4071 4.000	19.000	●
19.50-19.99	19.050	19.20	146.00	50.00	63.70	4071 4.000	19.505	●
19.50-19.99	20.000	19.20	146.00	50.00	63.70	4071 4.000	19.500	●



								Article no.	4107
								Discount group	140
								Cutting direction	(R)
d1	d2 h6	d3	L	l3	l5	F	Code no.	Availability	
	mm	mm	mm	mm	mm				
20.00-20.49	19.050	19.70	148.00	50.00	65.30	4071 4.500	20.005	●	
20.00-20.49	20.000	19.70	148.00	50.00	65.30	4071 4.500	20.000	●	
20.50-20.99	25.000	20.20	159.00	56.00	67.00	4071 4.500	20.500	●	
20.50-20.99	25.400	20.20	159.00	56.00	67.00	4071 4.500	20.505	●	
21.00-21.49	25.000	20.70	161.00	56.00	68.60	4071 4.500	21.000	●	
21.00-21.49	25.400	20.70	161.00	56.00	68.60	4071 4.500	21.005	●	
21.50-21.99	25.000	21.20	163.00	56.00	70.10	4071 4.500	21.500	●	
21.50-21.99	25.400	21.20	163.00	56.00	70.10	4071 4.500	21.505	●	
22.00-22.49	25.000	21.70	165.00	56.00	71.70	4071 5.000	22.000	●	
22.00-22.49	25.400	21.70	165.00	56.00	71.70	4071 5.000	22.005	●	
22.50-22.99	25.000	22.20	168.00	56.00	73.30	4071 5.000	22.500	●	
22.50-22.99	25.400	22.20	168.00	56.00	73.30	4071 5.000	22.505	●	
23.00-23.49	25.000	22.70	170.00	56.00	74.90	4071 5.000	23.000	●	
23.00-23.49	25.400	22.70	170.00	56.00	74.90	4071 5.000	23.005	●	
23.50-23.99	25.000	23.20	173.00	56.00	76.50	4071 5.000	23.500	●	
23.50-23.99	25.400	23.20	173.00	56.00	76.50	4071 5.000	23.505	●	
24.00-24.49	25.000	23.70	175.00	56.00	78.10	4071 5.001	24.000	●	
24.00-24.49	25.400	23.70	175.00	56.00	78.10	4071 5.001	24.005	●	
24.50-24.99	25.000	24.20	177.00	56.00	79.70	4071 5.001	24.500	●	
24.50-24.99	25.400	24.20	177.00	56.00	79.70	4071 5.001	24.505	●	
25.00-25.49	25.000	24.70	180.00	56.00	81.30	4071 5.001	25.000	●	
25.00-25.49	25.400	24.70	180.00	56.00	81.30	4071 5.001	25.005	●	
25.50-25.99	31.750	25.20	187.00	60.00	82.90	4071 5.001	25.505	●	
25.50-25.99	32.000	25.20	187.00	60.00	82.90	4071 5.001	25.500	●	
26.00-26.49	31.750	25.70	191.00	60.00	84.00	4071 5.003	26.005	●	
26.00-26.49	32.000	25.70	191.00	60.00	84.00	4071 5.003	26.000	●	
26.50-26.99	31.750	26.20	193.00	60.00	86.10	4071 5.003	26.505	●	
26.50-26.99	32.000	26.20	193.00	60.00	86.10	4071 5.003	26.500	●	
27.00-27.49	31.750	26.70	196.00	60.00	87.20	4071 5.003	27.005	●	
27.00-27.49	32.000	26.70	196.00	60.00	87.20	4071 5.003	27.000	●	
27.50-27.99	31.750	27.20	198.00	60.00	88.90	4071 5.003	27.505	●	
27.50-27.99	32.000	27.20	198.00	60.00	88.90	4071 5.003	27.500	●	
28.00-28.49	31.750	27.70	200.00	60.00	90.40	4071 5.003	28.005	●	
28.00-28.49	32.000	27.70	200.00	60.00	90.40	4071 5.003	28.000	●	
28.50-28.99	31.750	28.20	202.00	60.00	92.50	4071 5.003	28.505	●	
28.50-28.99	32.000	28.20	202.00	60.00	92.50	4071 5.003	28.500	●	
29.00-29.49	31.750	28.70	205.00	60.00	94.60	4071 5.003	29.005	●	
29.00-29.49	32.000	28.70	205.00	60.00	94.60	4071 5.003	29.000	●	
29.50-29.99	31.750	29.20	207.00	60.00	95.10	4071 5.003	29.505	●	
29.50-29.99	32.000	29.20	207.00	60.00	95.10	4071 5.003	29.500	●	
30.00-30.49	31.750	29.70	210.00	60.00	96.70	4071 6.000	30.005	●	
30.00-30.49	32.000	29.70	210.00	60.00	96.70	4071 6.000	30.000	●	
30.50-30.99	31.750	30.20	212.00	60.00	98.30	4071 6.000	30.505	●	
30.50-30.99	32.000	30.20	212.00	60.00	98.30	4071 6.000	30.500	●	
31.00-31.49	31.750	30.70	214.00	60.00	99.80	4071 6.000	31.005	●	
31.00-31.49	32.000	30.70	214.00	60.00	99.80	4071 6.000	31.000	●	
31.50-31.99	31.750	31.20	216.00	60.00	101.40	4071 6.000	31.505	●	
31.50-31.99	32.000	31.20	216.00	60.00	101.40	4071 6.000	31.500	●	
32.00-32.99	31.750	31.70	221.00	60.00	104.60	4071 6.001	32.005	●	
32.00-32.99	32.000	31.70	221.00	60.00	104.60	4071 6.001	32.000	●	
33.00-33.99	31.750	32.70	226.00	60.00	107.80	4071 6.001	33.005	●	
33.00-33.99	32.000	32.70	226.00	60.00	107.80	4071 6.001	33.000	●	
34.00-34.99	31.750	33.70	230.00	60.00	111.00	4071 6.001	34.005	●	
34.00-34.99	32.000	33.70	230.00	60.00	111.00	4071 6.001	34.000	●	
35.00-35.99	31.750	34.70	235.00	60.00	114.20	4071 6.001	35.005	●	
35.00-35.99	32.000	34.70	235.00	60.00	114.20	4071 6.001	35.000	●	
36.00-36.99	31.750	35.70	240.00	60.00	117.30	4071 6.002	36.005	●	
36.00-36.99	32.000	35.70	240.00	60.00	117.30	4071 6.002	36.000	●	
37.00-37.99	31.750	36.70	245.00	60.00	120.50	4071 6.002	37.005	●	
37.00-37.99	32.000	36.70	245.00	60.00	120.50	4071 6.002	37.000	●	



Article no. **4107**

Discount group **140**

Cutting direction **(R)**

d1	d2 h6	d3	L	l3	l5	F	Code no.	Availability
	mm	mm	mm	mm	mm			
38.00-38.99	31.750	37.70	249.00	60.00	123.70	4071 6.002	38.005	●
38.00-38.99	32.000	37.70	249.00	60.00	123.70	4071 6.002	38.000	●
39.00-40.00	31.750	38.70	254.00	60.00	126.90	4071 6.002	39.005	●
39.00-40.00	32.000	38.70	254.00	60.00	126.90	4071 6.002	39.000	●

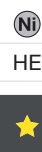


Tool holders for interchangeable inserts HT 800

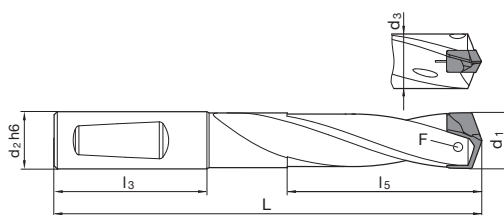


especially high wear resistance • optimised coolant duct exit • optimised flute design • nickel-plated • screwdriver art. no. 1612 included • clamping screws art. no. 4071 included

Surface
Shank form



Drilling tools



Article no. **4108**

Discount group **140**

Cutting direction

d1	d2 h6	d3	L	l3	l5	F	Code no.	Availability
	mm	mm	mm	mm	mm			
11.00-11.49	12.000	10.70	124.00	45.00	59.60	4071 2.200	11.000	●
11.00-11.49	12.700	10.70	124.00	45.00	59.60	4071 2.200	11.005	●
11.50-11.99	12.000	11.20	127.00	45.00	62.10	4071 2.200	11.500	●
11.50-11.99	12.700	11.20	127.00	45.00	62.10	4071 2.200	11.505	●
12.00-12.49	12.000	11.70	131.00	45.00	64.70	4071 2.201	12.000	●
12.00-12.49	12.700	11.70	131.00	45.00	64.70	4071 2.201	12.005	●
12.50-12.99	14.000	12.20	134.00	45.00	67.30	4071 2.201	12.500	●
12.50-12.99	15.875	12.20	134.00	45.00	67.30	4071 2.201	12.505	●
13.00-13.49	14.000	12.70	137.00	45.00	69.90	4071 2.500	13.000	●
13.00-13.49	15.875	12.70	137.00	45.00	69.90	4071 2.500	13.005	●
13.50-13.99	14.000	13.20	141.00	45.00	72.60	4071 2.500	13.500	●
13.50-13.99	15.875	13.20	141.00	45.00	72.60	4071 2.500	13.505	●
14.00-14.49	14.000	13.70	144.00	45.00	75.20	4071 3.000	14.000	●
14.00-14.49	15.875	13.70	144.00	45.00	75.20	4071 3.000	14.005	●
14.50-14.99	15.875	14.20	150.00	48.00	77.80	4071 3.000	14.505	●
14.50-14.99	16.000	14.20	150.00	48.00	77.80	4071 3.000	14.500	●
15.00-15.49	15.875	14.70	154.00	48.00	80.30	4071 3.001	15.005	●
15.00-15.49	16.000	14.70	154.00	48.00	80.30	4071 3.001	15.000	●
15.50-15.99	15.875	15.20	157.00	48.00	82.90	4071 3.001	15.505	●
15.50-15.99	16.000	15.20	157.00	48.00	82.90	4071 3.001	15.500	●
16.00-16.49	15.875	15.70	160.00	48.00	85.90	4071 3.500	16.005	●
16.00-16.49	16.000	15.70	160.00	48.00	85.90	4071 3.500	16.000	●
16.50-16.99	18.000	16.20	164.00	48.00	88.10	4071 3.500	16.500	●
16.50-16.99	19.050	16.20	164.00	48.00	88.10	4071 3.500	16.505	●
17.00-17.49	18.000	16.70	167.00	48.00	90.80	4071 3.500	17.000	●
17.00-17.49	19.050	16.70	167.00	48.00	90.80	4071 3.500	17.005	●
17.50-17.99	18.000	17.20	170.00	48.00	93.40	4071 3.500	17.500	●
17.50-17.99	19.050	17.20	170.00	48.00	93.40	4071 3.500	17.505	●
18.00-18.49	18.000	17.70	174.00	48.00	95.90	4071 4.000	18.000	●
18.00-18.49	19.050	17.70	174.00	48.00	95.90	4071 4.000	18.005	●
18.50-18.99	19.050	18.20	179.00	50.00	98.50	4071 4.000	18.505	●
18.50-18.99	20.000	18.20	179.00	50.00	98.50	4071 4.000	18.500	●
19.00-19.49	19.050	18.70	182.00	50.00	101.10	4071 4.000	19.005	●
19.00-19.49	20.000	18.70	182.00	50.00	101.10	4071 4.000	19.000	●
19.50-19.99	19.050	19.20	186.00	50.00	103.70	4071 4.000	19.505	●
19.50-19.99	20.000	19.20	186.00	50.00	103.70	4071 4.000	19.500	●



Article no. 4108								Availability
Discount group 140								
Cutting direction (R)								
d1	d2 h6	d3	L	l3	l5	F	Code no.	
	mm	mm	mm	mm	mm			
20.00-20.49	19.050	19.70	189.00	50.00	106.30	4071 4.500	20.005	●
20.00-20.49	20.000	19.70	189.00	50.00	106.30	4071 4.500	20.000	●
20.50-20.99	25.000	20.20	201.00	56.00	109.00	4071 4.500	20.500	●
20.50-20.99	25.400	20.20	201.00	56.00	109.00	4071 4.500	20.505	●
21.00-21.49	25.000	20.70	204.00	56.00	111.60	4071 4.500	21.000	●
21.00-21.49	25.400	20.70	204.00	56.00	111.60	4071 4.500	21.005	●
21.50-21.99	25.000	21.20	207.00	56.00	114.10	4071 4.500	21.500	●
21.50-21.99	25.400	21.20	207.00	56.00	114.10	4071 4.500	21.505	●
22.00-22.49	25.000	21.70	210.00	56.00	116.70	4071 5.000	22.000	●
22.00-22.49	25.400	21.70	210.00	56.00	116.70	4071 5.000	22.005	●
22.50-22.99	25.000	22.20	214.00	56.00	119.30	4071 5.000	22.500	●
22.50-22.99	25.400	22.20	214.00	56.00	119.30	4071 5.000	22.505	●
23.00-23.49	25.000	22.70	217.00	56.00	121.90	4071 5.000	23.000	●
23.00-23.49	25.400	22.70	217.00	56.00	121.90	4071 5.000	23.005	●
23.50-23.99	25.000	23.20	221.00	56.00	124.50	4071 5.000	23.500	●
23.50-23.99	25.400	23.20	221.00	56.00	124.50	4071 5.000	23.505	●
24.00-24.49	25.000	23.70	224.00	56.00	127.10	4071 5.001	24.000	●
24.00-24.49	25.400	23.70	224.00	56.00	127.10	4071 5.001	24.005	●
24.50-24.99	25.000	24.20	227.00	56.00	129.70	4071 5.001	24.500	●
24.50-24.99	25.400	24.20	227.00	56.00	129.70	4071 5.001	24.505	●
25.00-25.49	25.000	24.70	231.00	56.00	132.30	4071 5.001	25.000	●
25.00-25.49	25.400	24.70	231.00	56.00	132.30	4071 5.001	25.005	●
25.50-25.99	31.750	25.20	239.00	60.00	134.90	4071 5.001	25.505	●
25.50-25.99	32.000	25.20	239.00	60.00	134.90	4071 5.001	25.500	●
26.00-26.49	31.750	25.70	244.00	60.00	137.00	4071 5.003	26.005	●
26.00-26.49	32.000	25.70	244.00	60.00	137.00	4071 5.003	26.000	●
26.50-26.99	31.750	26.20	247.00	60.00	140.00	4071 5.003	26.505	●
26.50-26.99	32.000	26.20	247.00	60.00	140.00	4071 5.003	26.500	●
27.00-27.49	31.750	26.70	251.00	60.00	142.20	4071 5.003	27.005	●
27.00-27.49	32.000	26.70	251.00	60.00	142.20	4071 5.003	27.000	●
27.50-27.99	31.750	27.20	254.00	60.00	144.80	4071 5.003	27.505	●
27.50-27.99	32.000	27.20	254.00	60.00	144.80	4071 5.003	27.500	●
28.00-28.49	31.750	27.70	257.00	60.00	147.40	4071 5.003	28.005	●
28.00-28.49	32.000	27.70	257.00	60.00	147.40	4071 5.003	28.000	●
28.50-28.99	31.750	28.20	260.00	60.00	150.40	4071 5.003	28.505	●
28.50-28.99	32.000	28.20	260.00	60.00	150.40	4071 5.003	28.500	●
29.00-29.49	31.750	28.70	264.00	60.00	153.50	4071 5.003	29.005	●
29.00-29.49	32.000	28.70	264.00	60.00	153.50	4071 5.003	29.000	●
29.50-29.99	31.750	29.20	267.00	60.00	155.10	4071 5.003	29.505	●
29.50-29.99	32.000	29.20	267.00	60.00	155.10	4071 5.003	29.500	●
30.00-30.49	31.750	29.70	271.00	60.00	157.60	4071 6.000	30.005	●
30.00-30.49	32.000	29.70	271.00	60.00	157.60	4071 6.000	30.000	●
30.50-30.99	31.750	30.20	274.00	60.00	160.20	4071 6.000	30.505	●
30.50-30.99	32.000	30.20	274.00	60.00	160.20	4071 6.000	30.500	●
31.00-31.49	31.750	30.70	277.00	60.00	162.80	4071 6.000	31.005	●
31.00-31.49	32.000	30.70	277.00	60.00	162.80	4071 6.000	31.000	●
31.50-31.99	31.750	31.20	280.00	60.00	165.40	4071 6.000	31.505	●
31.50-31.99	32.000	31.20	280.00	60.00	165.40	4071 6.000	31.500	●
32.00-32.99	31.750	31.70	287.00	60.00	170.60	4071 6.001	32.005	●
32.00-32.99	32.000	31.70	287.00	60.00	170.60	4071 6.001	32.000	●
33.00-33.99	31.750	32.70	294.00	60.00	175.80	4071 6.001	33.005	●
33.00-33.99	32.000	32.70	294.00	60.00	175.80	4071 6.001	33.000	●
34.00-34.99	31.750	33.70	300.00	60.00	181.00	4071 6.001	34.005	●
34.00-34.99	32.000	33.70	300.00	60.00	181.00	4071 6.001	34.000	●
35.00-35.99	31.750	34.70	307.00	60.00	186.20	4071 6.001	35.005	●
35.00-35.99	32.000	34.70	307.00	60.00	186.20	4071 6.001	35.000	●
36.00-36.99	31.750	35.70	314.00	60.00	191.30	4071 6.002	36.005	●
36.00-36.99	32.000	35.70	314.00	60.00	191.30	4071 6.002	36.000	●
37.00-37.99	31.750	36.70	321.00	60.00	196.50	4071 6.002	37.005	●
37.00-37.99	32.000	36.70	321.00	60.00	196.50	4071 6.002	37.000	●



Article no. **4108**

Discount group **140**

Cutting direction **(R)**

d1	d2 h6	d3	L	l3	l5	F	Code no.	Availability
	mm	mm	mm	mm	mm			
38.00-38.99	31.750	37.70	327.00	60.00	201.70	4071 6.002	38.005	●
38.00-38.99	32.000	37.70	327.00	60.00	201.70	4071 6.002	38.000	●
39.00-40.00	31.750	38.70	334.00	60.00	206.90	4071 6.002	39.005	●
39.00-40.00	32.000	38.70	334.00	60.00	206.90	4071 6.002	39.000	●

Drilling tools



Tool holders for interchangeable inserts HT 800



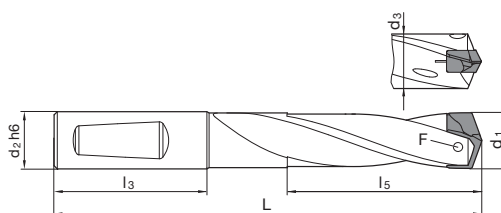
Surface

Ni

Shank form

HE

especially high wear resistance • optimised coolant duct exit • optimised flute design • nickel-plated • screwdriver art. no. 1612 included • clamping screws art. no. 4071 included



Article no.

4109

Discount group

140

Cutting direction

R

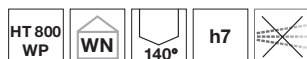
d1	d2 h6	d3	L	l3	l5	F	Code no.	Availability
	mm	mm	mm	mm	mm			
11.00-11.49	12.000	10.70	147.00	45.00	82.60	4071 2.200	11.000	●
11.00-11.49	12.700	10.70	147.00	45.00	82.60	4071 2.200	11.005	●
11.50-11.99	12.000	11.20	151.00	45.00	86.10	4071 2.200	11.500	●
11.50-11.99	12.700	11.20	151.00	45.00	86.10	4071 2.200	11.505	●
12.00-12.49	12.000	11.70	156.00	45.00	89.70	4071 2.201	12.000	●
12.00-12.49	12.700	11.70	156.00	45.00	89.70	4071 2.201	12.005	●
12.50-12.99	14.000	12.20	160.00	45.00	93.30	4071 2.201	12.500	●
12.50-12.99	15.875	12.20	160.00	45.00	93.30	4071 2.201	12.505	●
13.00-13.49	14.000	12.70	164.00	45.00	96.90	4071 2.500	13.000	●
13.00-13.49	15.875	12.70	164.00	45.00	96.90	4071 2.500	13.005	●
13.50-13.99	14.000	13.20	169.00	45.00	100.60	4071 2.500	13.500	●
13.50-13.99	15.875	13.20	169.00	45.00	100.60	4071 2.500	13.505	●
14.00-14.49	14.000	13.70	173.00	45.00	104.20	4071 3.000	14.000	●
14.00-14.49	15.875	13.70	173.00	45.00	104.20	4071 3.000	14.005	●
14.50-14.99	15.875	14.20	180.00	48.00	107.80	4071 3.000	14.505	●
14.50-14.99	16.000	14.20	180.00	48.00	107.80	4071 3.000	14.500	●
15.00-15.49	15.875	14.70	185.00	48.00	111.30	4071 3.001	15.005	●
15.00-15.49	16.000	14.70	185.00	48.00	111.30	4071 3.001	15.000	●
15.50-15.99	15.875	15.20	189.00	48.00	114.90	4071 3.001	15.505	●
15.50-15.99	16.000	15.20	189.00	48.00	114.90	4071 3.001	15.500	●
16.00-16.49	15.875	15.70	193.00	48.00	118.90	4071 3.500	16.005	●
16.00-16.49	16.000	15.70	193.00	48.00	118.90	4071 3.500	16.000	●
16.50-16.99	18.000	16.20	198.00	48.00	122.10	4071 3.500	16.500	●
16.50-16.99	19.050	16.20	198.00	48.00	122.10	4071 3.500	16.505	●
17.00-17.49	18.000	16.70	202.00	48.00	125.80	4071 3.500	17.000	●
17.00-17.49	19.050	16.70	202.00	48.00	125.80	4071 3.500	17.005	●
17.50-17.99	18.000	17.20	206.00	48.00	129.40	4071 3.500	17.500	●
17.50-17.99	19.050	17.20	206.00	48.00	129.40	4071 3.500	17.505	●
18.00-18.49	18.000	17.70	211.00	48.00	132.90	4071 4.000	18.000	●
18.00-18.49	19.050	17.70	211.00	48.00	132.90	4071 4.000	18.005	●
18.50-18.99	19.050	18.20	217.00	50.00	136.50	4071 4.000	18.505	●
18.50-18.99	20.000	18.20	217.00	50.00	136.50	4071 4.000	18.500	●
19.00-19.49	19.050	18.70	221.00	50.00	140.10	4071 4.000	19.005	●
19.00-19.49	20.000	18.70	221.00	50.00	140.10	4071 4.000	19.000	●
19.50-19.99	19.050	19.20	226.00	50.00	143.70	4071 4.000	19.505	●
19.50-19.99	20.000	19.20	226.00	50.00	143.70	4071 4.000	19.500	●

Article no. 4109								Availability
Discount group 140								
Cutting direction (R)								
d1	d2 h6	d3	L	l3	l5	F	Code no.	
	mm	mm	mm	mm	mm			
20.00-20.49	19.050	19.70	230.00	50.00	147.30	4071 4.500	20.005	●
20.00-20.49	20.000	19.70	230.00	50.00	147.30	4071 4.500	20.000	●
20.50-20.99	25.000	20.20	243.00	56.00	151.00	4071 4.500	20.500	●
20.50-20.99	25.400	20.20	243.00	56.00	151.00	4071 4.500	20.505	●
21.00-21.49	25.000	20.70	247.00	56.00	154.60	4071 4.500	21.000	●
21.00-21.49	25.400	20.70	247.00	56.00	154.60	4071 4.500	21.005	●
21.50-21.99	25.000	21.20	251.00	56.00	158.10	4071 4.500	21.500	●
21.50-21.99	25.400	21.20	251.00	56.00	158.10	4071 4.500	21.505	●
22.00-22.49	25.000	21.70	255.00	56.00	161.70	4071 5.000	22.000	●
22.00-22.49	25.400	21.70	255.00	56.00	161.70	4071 5.000	22.005	●
22.50-22.99	25.000	22.20	260.00	56.00	165.30	4071 5.000	22.500	●
22.50-22.99	25.400	22.20	260.00	56.00	165.30	4071 5.000	22.505	●
23.00-23.49	25.000	22.70	264.00	56.00	168.90	4071 5.000	23.000	●
23.00-23.49	25.400	22.70	264.00	56.00	168.90	4071 5.000	23.005	●
23.50-23.99	25.000	23.20	269.00	56.00	172.50	4071 5.000	23.500	●
23.50-23.99	25.400	23.20	269.00	56.00	172.50	4071 5.000	23.505	●
24.00-24.49	25.000	23.70	273.00	56.00	176.10	4071 5.001	24.000	●
24.00-24.49	25.400	23.70	273.00	56.00	176.10	4071 5.001	24.005	●
24.50-24.99	25.000	24.20	277.00	56.00	179.70	4071 5.001	24.500	●
24.50-24.99	25.400	24.20	277.00	56.00	179.70	4071 5.001	24.505	●
25.00-25.49	25.000	24.70	282.00	56.00	183.30	4071 5.001	25.000	●
25.00-25.49	25.400	24.70	282.00	56.00	183.30	4071 5.001	25.005	●
25.50-25.99	31.750	25.20	291.00	60.00	186.90	4071 5.001	25.505	●
25.50-25.99	32.000	25.20	291.00	60.00	186.90	4071 5.001	25.500	●
26.00-26.49	31.750	25.70	297.00	60.00	190.00	4071 5.003	26.005	●
26.00-26.49	32.000	25.70	297.00	60.00	190.00	4071 5.003	26.000	●
26.50-26.99	31.750	26.20	301.00	60.00	194.00	4071 5.003	26.505	●
26.50-26.99	32.000	26.20	301.00	60.00	194.00	4071 5.003	26.500	●
27.00-27.49	31.750	26.70	306.00	60.00	197.20	4071 5.003	27.005	●
27.00-27.49	32.000	26.70	306.00	60.00	197.20	4071 5.003	27.000	●
27.50-27.99	31.750	27.20	310.00	60.00	200.80	4071 5.003	27.505	●
27.50-27.99	32.000	27.20	310.00	60.00	200.80	4071 5.003	27.500	●
28.00-28.49	31.750	27.70	314.00	60.00	204.40	4071 5.003	28.005	●
28.00-28.49	32.000	27.70	314.00	60.00	204.40	4071 5.003	28.000	●
28.50-28.99	31.750	28.20	318.00	60.00	208.40	4071 5.003	28.505	●
28.50-28.99	32.000	28.20	318.00	60.00	208.40	4071 5.003	28.500	●
29.00-29.49	31.750	28.70	323.00	60.00	212.50	4071 5.003	29.005	●
29.00-29.49	32.000	28.70	323.00	60.00	212.50	4071 5.003	29.000	●
29.50-29.99	31.750	29.20	327.00	60.00	215.10	4071 5.003	29.505	●
29.50-29.99	32.000	29.20	327.00	60.00	215.10	4071 5.003	29.500	●
30.00-30.49	31.750	29.70	332.00	60.00	218.60	4071 6.000	30.005	●
30.00-30.49	32.000	29.70	332.00	60.00	218.60	4071 6.000	30.000	●
30.50-30.99	31.750	30.20	336.00	60.00	222.20	4071 6.000	30.505	●
30.50-30.99	32.000	30.20	336.00	60.00	222.20	4071 6.000	30.500	●
31.00-31.49	31.750	30.70	340.00	60.00	225.80	4071 6.000	31.005	●
31.00-31.49	32.000	30.70	340.00	60.00	225.80	4071 6.000	31.000	●
31.50-31.99	31.750	31.20	344.00	60.00	229.40	4071 6.000	31.505	●
31.50-31.99	32.000	31.20	344.00	60.00	229.40	4071 6.000	31.500	●
33.00-33.99	32.000	32.70	362.00	60.00	244.60	4071 6.001	33.000	●
36.00-36.99	32.000	35.70	387.00	60.00	265.80	4071 6.002	36.000	●
39.00-40.00	32.000	38.70	413.00	60.00	287.40	4071 6.002	39.000	●

Drilling tools



Interchangeable inserts HT 800

Tool material **Solid carbide**Surface **F**

Type HT 800 WP

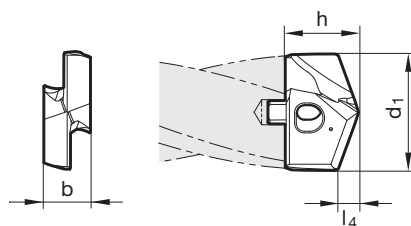
P ● web thinning $\geq \varnothing 11.000$ • facet point grind • main cutting edge form straight (after correction) • clamping screws art. no. 4071 included

M ○**K** ○**N** ●**S** ●**H** ●

free-cutting steels, heat-treatable steels • structural and case hardened steels • alloyed steels up to 1200 N/mm²

GÜHRING NAVIGATOR

Cutting data page 144

Article no. **4112**Discount group **141**Cutting direction **R**

d1		l4	b	h	Code no.	Availability
mm	inch	mm	mm	mm		
11.00		2.10	4.50	7.50	11.000	●
11.20		2.10	4.50	7.50	11.200	●
11.50		2.10	4.50	7.50	11.500	●
11.51	29/64	2.10	4.50	7.50	11.510	●
11.70		2.20	4.50	7.50	11.700	●
11.80		2.20	4.50	7.50	11.800	●
11.91	15/32	2.20	4.50	7.50	11.910	●
12.00		2.20	5.00	7.70	12.000	●
12.10		2.30	5.00	7.70	12.100	●
12.20		2.30	5.00	7.70	12.200	●
12.30	31/64	2.30	5.00	7.70	12.300	●
12.50		2.30	5.00	7.70	12.500	●
12.60		2.30	5.00	7.70	12.600	●
12.70	1/2	2.40	5.00	7.70	12.700	●
12.80		2.40	5.00	7.70	12.800	●
12.90		2.40	5.00	7.70	12.900	●
13.00		2.40	5.50	8.50	13.000	●
13.10	33/64	2.40	5.50	8.50	13.100	●
13.30		2.50	5.50	8.50	13.300	●
13.49	17/32	2.50	5.50	8.50	13.490	●
13.50		2.50	5.50	8.50	13.500	●
13.60		2.50	5.50	8.50	13.600	●
13.70		2.50	5.50	8.50	13.700	●
13.80		2.60	5.50	8.50	13.800	●
13.89	35/64	2.60	5.50	8.50	13.890	●
14.00		2.60	6.00	9.60	14.000	●
14.10		2.60	6.00	9.60	14.100	●
14.29	9/16	2.70	6.00	9.60	14.290	●
14.40		2.70	6.00	9.60	14.400	●
14.50		2.70	6.00	9.60	14.500	●
14.60		2.70	6.00	9.60	14.600	●
14.68	37/64	2.70	6.00	9.60	14.680	●
14.70		2.70	6.00	9.60	14.700	●
14.80		2.70	6.00	9.60	14.800	●
15.00		2.80	6.00	9.80	15.000	●
15.08	19/32	2.80	6.00	9.80	15.080	●



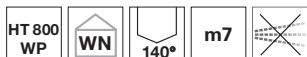
Article no. 4112						Availability
Discount group 141						
Cutting direction (R)						
d1		l4	b	h	Code no.	
mm	inch	mm	mm	mm		
15.10		2.80	6.00	9.80	15.100	●
15.20		2.80	6.00	9.80	15.200	●
15.30		2.80	6.00	9.80	15.300	●
15.48	39/64	2.90	6.00	9.80	15.480	●
15.50		2.90	6.00	9.80	15.500	●
15.60		2.90	6.00	9.80	15.600	●
15.70		2.90	6.00	9.80	15.700	●
15.80		2.90	6.00	9.80	15.800	●
15.87	5/8	2.90	6.00	9.80	15.870	●
16.00		3.00	7.00	11.00	16.000	●
16.27	41/64	3.00	7.00	11.00	16.270	●
16.50		3.10	7.00	11.00	16.500	●
16.67	21/32	3.10	7.00	11.00	16.670	●
17.00		3.10	7.00	11.00	17.000	●
17.07	43/64	3.20	7.00	11.00	17.070	●
17.25		3.20	7.00	11.00	17.250	●
17.30		3.20	7.00	11.00	17.300	●
17.46	11/16	3.20	7.00	11.00	17.460	●
17.50		3.20	7.00	11.00	17.500	●
17.60		3.30	7.00	11.00	17.600	●
17.86	45/64	3.30	7.00	11.00	17.860	●
18.00		3.30	8.00	12.60	18.000	●
18.26	23/32	3.40	8.00	12.60	18.260	●
18.50		3.40	8.00	12.60	18.500	●
18.65	47/64	3.40	8.00	12.60	18.650	●
18.90		3.50	8.00	12.60	18.900	●
19.00		3.50	8.00	12.60	19.000	●
19.05	3/4	3.50	8.00	12.60	19.050	●
19.25		3.60	8.00	12.60	19.250	●
19.30		3.60	8.00	12.60	19.300	●
19.45	49/64	3.60	8.00	12.60	19.450	●
19.50		3.60	8.00	12.60	19.500	●
19.60		3.60	8.00	12.60	19.600	●
19.84	25/32	3.70	8.00	12.60	19.840	●
20.00		3.70	9.00	13.90	20.000	●
20.24	51/64	3.70	9.00	13.90	20.240	●
20.50		3.80	9.00	13.90	20.500	●
20.64	13/16	3.80	9.00	13.90	20.640	●
20.90		3.90	9.00	13.90	20.900	●
21.00		3.90	9.00	13.90	21.000	●
21.03	53/64	3.90	9.00	13.90	21.030	●
21.10		3.90	9.00	13.90	21.100	●
21.43	27/32	3.90	9.00	13.90	21.430	●
21.50		4.00	9.00	13.90	21.500	●
21.70		4.00	9.00	13.90	21.700	●
21.83	55/64	4.00	9.00	13.90	21.830	●
22.00		4.10	10.00	15.30	22.000	●
22.22	7/8	4.10	10.00	15.30	22.220	●
22.50		4.10	10.00	15.30	22.500	●
22.62	57/64	4.20	10.00	15.30	22.620	●
22.70		4.20	10.00	15.30	22.700	●
23.00		4.20	10.00	15.30	23.000	●
23.02	29/32	4.20	10.00	15.30	23.020	●
23.42	59/64	4.30	10.00	15.30	23.420	●
23.50		4.30	10.00	15.30	23.500	●
23.70		4.40	10.00	15.30	23.700	●
23.81	15/16	4.40	10.00	15.30	23.810	●
24.00		4.40	11.00	15.80	24.000	●
24.10		4.40	11.00	15.80	24.100	●
24.21	61/64	4.50	11.00	15.80	24.210	●



Article no. 4112						Availability
Discount group 141						
Cutting direction (R)						
d1		l4	b	h	Code no.	
mm	inch	mm	mm	mm		
24.50		4.50	11.00	15.80	24.500	●
24.61	31/32	4.50	11.00	15.80	24.610	●
25.00	63/64	4.60	11.00	15.80	25.000	●
25.25		4.60	11.00	15.80	25.250	●
25.40	1	4.70	11.00	15.80	25.400	●
25.50		4.70	11.00	15.80	25.500	●
25.65		4.70	11.00	15.80	25.650	●
25.67		4.70	11.00	15.80	25.670	●
25.70		4.70	11.00	15.80	25.700	●
25.81		4.70	11.00	15.80	25.810	●
26.00		4.80	12.00	20.00	26.000	●
26.19	1 1/32	4.80	12.00	20.00	26.190	●
26.50		4.90	12.00	20.00	26.500	●
26.59	1 3/64	4.90	12.00	20.00	26.590	●
27.00		5.00	12.00	20.00	27.000	●
27.50		5.10	12.00	20.00	27.500	●
27.70		5.10	12.00	20.00	27.700	●
27.78	1 3/32	5.10	12.00	20.00	27.780	●
28.00		5.10	13.00	20.70	28.000	●
28.18	1 7/64	5.20	13.00	20.70	28.180	●
28.50		5.20	13.00	20.70	28.500	●
28.58		5.30	13.00	20.70	28.580	●
29.00		5.30	13.00	20.70	29.000	●
29.37	1 5/32	5.40	13.00	20.70	29.370	●
29.50		5.40	13.00	20.70	29.500	●
29.60		5.40	13.00	20.70	29.600	●
29.77	1 11/64	5.50	13.00	20.70	29.770	●
30.00		5.50	14.00	22.30	30.000	●
30.16	1 3/16	5.50	14.00	22.30	30.160	●
30.50		5.60	14.00	22.30	30.500	●
30.96	1 7/32	5.70	14.00	22.30	30.960	●
31.00		5.70	14.00	22.30	31.000	●
31.50		5.80	14.00	22.30	31.500	●
31.75	1 1/4	5.80	14.00	22.30	31.750	●
32.00		5.90	15.00	23.10	32.000	●
32.50		6.00	15.00	23.10	32.500	●
32.54	1 9/32	6.00	15.00	23.10	32.540	●
32.94	1 19/64	6.00	15.00	23.10	32.940	●
33.00		6.10	15.00	23.10	33.000	●
33.34	1 5/16	6.10	15.00	23.10	33.340	●
33.50		6.10	15.00	23.10	33.500	●
34.00		6.20	15.00	23.10	34.000	●
34.13	1 11/32	6.30	15.00	23.10	34.130	●
34.50		6.30	15.00	23.10	34.500	●
34.93		6.40	15.00	23.10	34.930	●
35.00		6.40	15.00	23.10	35.000	●
35.50		6.50	15.00	23.10	35.500	●
35.72	1 13/32	6.60	15.00	23.10	35.720	●
36.00		6.60	16.00	23.90	36.000	●
36.50		6.70	16.00	23.90	36.500	●
36.51	1 7/16	6.70	16.00	23.90	36.510	●
37.00		6.80	16.00	23.90	37.000	●
37.31	1 15/32	6.80	16.00	23.90	37.310	●
37.50		6.90	16.00	23.90	37.500	●
38.00		7.00	16.00	23.90	38.000	●
38.10	1 1/2	7.00	16.00	23.90	38.100	●
38.50	1 33/64	7.10	16.00	23.90	38.500	●
39.00		7.10	16.00	23.90	39.000	●
39.50		7.20	16.00	23.90	39.500	●
40.00		7.30	16.00	23.90	40.000	●



Interchangeable inserts HT 800



Tool material **Solid carbide**

Surface

Type HT 800 WP

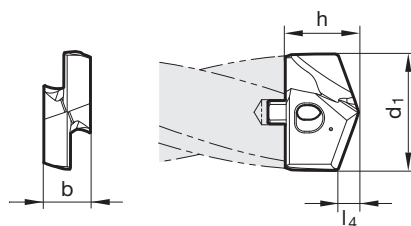
P ◦ web thinning ≥ Ø 11.000 • facet point grind • main cutting edge form straight (after correction) • clamping screws art. no. 4071 included

- M**
- K** •
- N**
- S**
- H**

N vermicular cast iron GGK • grey cast iron, malleable and spheroidal iron

GÜHRING NAVIGATOR

Cutting data page 144



Article no. **4113**

Discount group **141**

Cutting direction

d1		l4	b	h	Code no.	Availability
mm	inch	mm	mm	mm		
11.00		2.60	4.50	7.50	11.000	●
11.20		2.60	4.50	7.50	11.200	●
11.50		2.70	4.50	7.50	11.500	●
11.51	29/64	2.70	4.50	7.50	11.510	●
11.70		2.70	4.50	7.50	11.700	●
11.80		2.70	4.50	7.50	11.800	●
11.91	15/32	2.70	4.50	7.50	11.910	●
12.00		2.90	5.00	7.70	12.000	●
12.10		2.90	5.00	7.70	12.100	●
12.20		2.90	5.00	7.70	12.200	●
12.30	31/64	2.90	5.00	7.70	12.300	●
12.50		3.00	5.00	7.70	12.500	●
12.60		3.00	5.00	7.70	12.600	●
12.70	1/2	3.00	5.00	7.70	12.700	●
12.80		3.00	5.00	7.70	12.800	●
12.90		3.00	5.00	7.70	12.900	●
13.00		3.10	5.50	8.50	13.000	●
13.10	33/64	3.10	5.50	8.50	13.100	●
13.30		3.10	5.50	8.50	13.300	●
13.49	17/32	3.10	5.50	8.50	13.490	●
13.50		3.30	5.50	8.50	13.500	●
13.60		3.30	5.50	8.50	13.600	●
13.70		3.30	5.50	8.50	13.700	●
13.80		3.30	5.50	8.50	13.800	●
13.89	35/64	3.30	5.50	8.50	13.890	●
14.00		3.40	6.00	9.60	14.000	●
14.10		3.40	6.00	9.60	14.100	●
14.29	9/16	3.40	6.00	9.60	14.290	●
14.40		3.40	6.00	9.60	14.400	●
14.50		3.50	6.00	9.60	14.500	●
14.60		3.50	6.00	9.60	14.600	●
14.68	37/64	3.50	6.00	9.60	14.680	●
14.70		3.50	6.00	9.60	14.700	●
14.80		3.50	6.00	9.60	14.800	●
15.00		3.60	6.00	9.80	15.000	●
15.08	19/32	3.60	6.00	9.80	15.080	●



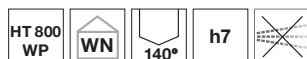
Article no.						4113
Discount group						141
Cutting direction						(R)
d1		l4	b	h	Code no.	Availability
mm	inch	mm	mm	mm		
15.10		3.60	6.00	9.80	15.100	●
15.20		3.60	6.00	9.80	15.200	●
15.30		3.60	6.00	9.80	15.300	●
15.48	39/64	3.60	6.00	9.80	15.480	●
15.50		3.80	6.00	9.80	15.500	●
15.60		3.80	6.00	9.80	15.600	●
15.70		3.80	6.00	9.80	15.700	●
15.80		3.80	6.00	9.80	15.800	●
15.87	5/8	3.80	6.00	9.80	15.870	●
16.00		3.80	7.00	11.00	16.000	●
16.27	41/64	3.80	7.00	11.00	16.270	●
16.50		4.00	7.00	11.00	16.500	●
16.67	21/32	4.00	7.00	11.00	16.670	●
17.00		4.10	7.00	11.00	17.000	●
17.07	43/64	4.10	7.00	11.00	17.070	●
17.30		4.10	7.00	11.00	17.300	●
17.46	11/16	4.10	7.00	11.00	17.460	●
17.50		4.20	7.00	11.00	17.500	●
17.60		4.20	7.00	11.00	17.600	●
17.86	45/64	4.20	7.00	11.00	17.860	●
18.00		4.30	8.00	12.60	18.000	●
18.26	23/32	4.30	8.00	12.60	18.260	●
18.50		4.40	8.00	12.60	18.500	●
18.65	47/64	4.40	8.00	12.60	18.650	●
18.90		4.40	8.00	12.60	18.900	●
19.00		4.60	8.00	12.60	19.000	●
19.05	3/4	4.60	8.00	12.60	19.050	●
19.25		4.60	8.00	12.60	19.250	●
19.30		4.60	8.00	12.60	19.300	●
19.45	49/64	4.60	8.00	12.60	19.450	●
19.50		4.70	8.00	12.60	19.500	●
19.60		4.70	8.00	12.60	19.600	●
19.84	25/32	4.70	8.00	12.60	19.840	●
20.00		4.80	9.00	13.90	20.000	●
20.24	51/64	4.80	9.00	13.90	20.240	●
20.50		5.00	9.00	13.90	20.500	●
20.64	13/16	5.00	9.00	13.90	20.640	●
20.90		5.00	9.00	13.90	20.900	●
21.00		5.10	9.00	13.90	21.000	●
21.03	53/64	5.10	9.00	13.90	21.030	●
21.10		5.10	9.00	13.90	21.100	●
21.43	27/32	5.10	9.00	13.90	21.430	●
21.50		5.20	9.00	13.90	21.500	●
21.70		5.20	9.00	13.90	21.700	●
21.83	55/64	5.20	9.00	13.90	21.830	●
22.00		5.30	10.00	15.30	22.000	●
22.22	7/8	5.30	10.00	15.30	22.220	●
22.50		5.40	10.00	15.30	22.500	●
22.62	57/64	5.40	10.00	15.30	22.620	●
22.70		5.40	10.00	15.30	22.700	●
23.00		5.60	10.00	15.30	23.000	●
23.02	29/32	5.60	10.00	15.30	23.020	●
23.42	59/64	5.60	10.00	15.30	23.420	●
23.50		5.70	10.00	15.30	23.500	●
23.70		5.70	10.00	15.30	23.700	●
23.81	15/16	5.70	10.00	15.30	23.810	●
24.00		5.80	11.00	15.80	24.000	●
24.10		5.80	11.00	15.80	24.100	●
24.21	61/64	5.80	11.00	15.80	24.210	●
24.50		6.00	11.00	15.80	24.500	●



Article no. 4113						Availability
Discount group 141						
Cutting direction (R)						
d1		l4	b	h	Code no.	
mm	inch	mm	mm	mm		
24.61	31/32	6.00	11.00	15.80	24.610	●
25.00	63/64	6.10	11.00	15.80	25.000	●
25.40	1	6.10	11.00	15.80	25.400	●
25.50		6.20	11.00	15.80	25.500	●
25.67		6.20	11.00	15.80	25.670	●
25.70		6.20	11.00	15.80	25.700	●
25.81		6.20	11.00	15.80	25.810	●
26.00		6.00	12.00	20.00	26.000	●
26.19	1 1/32	6.00	12.00	20.00	26.190	●
26.50		6.10	12.00	20.00	26.500	●
26.59	1 3/64	6.10	12.00	20.00	26.590	●
27.00		6.30	12.00	20.00	27.000	●
27.50		6.40	12.00	20.00	27.500	●
27.70		6.40	12.00	20.00	27.700	●
27.78	1 3/32	6.40	12.00	20.00	27.780	●
28.00		6.60	13.00	20.70	28.000	●
28.18	1 7/64	6.60	13.00	20.70	28.180	●
28.50		6.70	13.00	20.70	28.500	●
28.58		6.70	13.00	20.70	28.580	●
29.00		6.90	13.00	20.70	29.000	●
29.37	1 5/32	6.90	13.00	20.70	29.370	●
29.50		7.00	13.00	20.70	29.500	●
29.77	1 11/64	7.00	13.00	20.70	29.770	●
30.00		6.90	14.00	22.30	30.000	●
30.16	1 3/16	6.90	14.00	22.30	30.160	●
30.50		7.00	14.00	22.30	30.500	●
30.96	1 7/32	7.00	14.00	22.30	30.960	●
31.00		7.20	14.00	22.30	31.000	●
31.50		7.30	14.00	22.30	31.500	●
31.75	1 1/4	7.30	14.00	22.30	31.750	●
32.00		7.50	15.00	23.10	32.000	●
32.50		7.60	15.00	23.10	32.500	●
32.54	1 9/32	7.60	15.00	23.10	32.540	●
32.94	1 19/64	7.60	15.00	23.10	32.940	●
33.00		7.80	15.00	23.10	33.000	●
33.34	1 5/16	7.80	15.00	23.10	33.340	●
33.50		7.90	15.00	23.10	33.500	●
34.00		8.10	15.00	23.10	34.000	●
34.13	1 11/32	8.10	15.00	23.10	34.130	●
34.50		8.20	15.00	23.10	34.500	●
34.93		8.20	15.00	23.10	34.930	●
35.00		8.30	15.00	23.10	35.000	●
35.50		8.40	15.00	23.10	35.500	●
35.72	1 13/32	8.40	15.00	23.10	35.720	●
36.00		8.50	16.00	23.90	36.000	●
36.50		8.60	16.00	23.90	36.500	●
36.51	1 7/16	8.60	16.00	23.90	36.510	●
37.00		8.80	16.00	23.90	37.000	●
37.31	1 15/32	8.80	16.00	23.90	37.310	●
37.50		8.90	16.00	23.90	37.500	●
38.00		9.00	16.00	23.90	38.000	●
38.10	1 1/2	9.00	16.00	23.90	38.100	●
38.50	1 33/64	9.10	16.00	23.90	38.500	●
39.00		9.30	16.00	23.90	39.000	●
39.50		9.40	16.00	23.90	39.500	●
40.00		9.40	16.00	23.90	40.000	●



Interchangeable inserts HT 800



P ○ web thinning $\geq \varnothing 11.000$ • relieved cone • main cutting edge form straight (after correction) • clamping screws art. no. 4071 included

M ●

K ●

N ● stainless steels

S ○

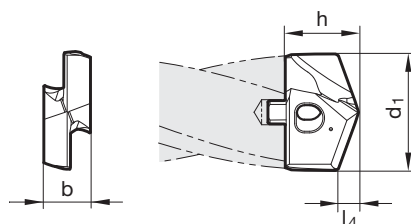
H ○

Tool material **Solid carbide**Surface **Ⓜ**

Type HT 800 WP

**GÜHRING** NAVIGATOR

Cutting data page 144

Article no. **4115**Discount group **141**Cutting direction **Ⓜ**

d1		l4	b	h	Code no.	Availability
mm	inch	mm	mm	mm		
11.00		2.10	4.50	7.50	11.000	●
11.20		2.10	4.50	7.50	11.200	●
11.50		2.10	4.50	7.50	11.500	●
11.51	29/64	2.10	4.50	7.50	11.510	●
11.70		2.20	4.50	7.50	11.700	●
11.80		2.20	4.50	7.50	11.800	●
11.91	15/32	2.20	4.50	7.50	11.910	●
12.00		2.20	5.00	7.70	12.000	●
12.10		2.30	5.00	7.70	12.100	●
12.20		2.30	5.00	7.70	12.200	●
12.30	31/64	2.30	5.00	7.70	12.300	●
12.50		2.30	5.00	7.70	12.500	●
12.60		2.30	5.00	7.70	12.600	●
12.70	1/2	2.40	5.00	7.70	12.700	●
12.80		2.40	5.00	7.70	12.800	●
12.90		2.40	5.00	7.70	12.900	●
13.00		2.40	5.50	8.50	13.000	●
13.10	33/64	2.40	5.50	8.50	13.100	●
13.49	17/32	2.50	5.50	8.50	13.490	●
13.50		2.50	5.50	8.50	13.500	●
13.60		2.50	5.50	8.50	13.600	●
13.70		2.50	5.50	8.50	13.700	●
13.80		2.60	5.50	8.50	13.800	●
13.89	35/64	2.60	5.50	8.50	13.890	●
14.00		2.60	6.00	9.60	14.000	●
14.10		2.60	6.00	9.60	14.100	●
14.29	9/16	2.70	6.00	9.60	14.290	●
14.40		2.70	6.00	9.60	14.400	●
14.50		2.70	6.00	9.60	14.500	●
14.60		2.70	6.00	9.60	14.600	●
14.68	37/64	2.70	6.00	9.60	14.680	●
14.70		2.70	6.00	9.60	14.700	●
14.80		2.70	6.00	9.60	14.800	●
15.00		2.80	6.00	9.80	15.000	●
15.08	19/32	2.80	6.00	9.80	15.080	●
15.10		2.80	6.00	9.80	15.100	●

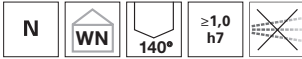
Article no. 4115						Availability
Discount group 141						
Cutting direction (R)						
d1		l4	b	h	Code no.	
mm	inch	mm	mm	mm		
15.20		2.80	6.00	9.80	15.200	●
15.30		2.80	6.00	9.80	15.300	●
15.48	39/64	2.90	6.00	9.80	15.480	●
15.50		2.90	6.00	9.80	15.500	●
15.60		2.90	6.00	9.80	15.600	●
15.70		2.90	6.00	9.80	15.700	●
15.80		2.90	6.00	9.80	15.800	●
15.87	5/8	2.90	6.00	9.80	15.870	●
16.00		3.00	7.00	11.00	16.000	●
16.27	41/64	3.00	7.00	11.00	16.270	●
16.50		3.10	7.00	11.00	16.500	●
16.67	21/32	3.10	7.00	11.00	16.670	●
17.00		3.10	7.00	11.00	17.000	●
17.07	43/64	3.20	7.00	11.00	17.070	●
17.25		3.20	7.00	11.00	17.250	●
17.46	11/16	3.20	7.00	11.00	17.460	●
17.50		3.20	7.00	11.00	17.500	●
17.60		3.30	7.00	11.00	17.600	●
17.86	45/64	3.30	7.00	11.00	17.860	●
18.00		3.30	8.00	12.60	18.000	●
18.26	23/32	3.40	8.00	12.60	18.260	●
18.50		3.40	8.00	12.60	18.500	●
18.65	47/64	3.40	8.00	12.60	18.650	●
19.00		3.50	8.00	12.60	19.000	●
19.05	3/4	3.50	8.00	12.60	19.050	●
19.25		3.60	8.00	12.60	19.250	●
19.45	49/64	3.60	8.00	12.60	19.450	●
19.50		3.60	8.00	12.60	19.500	●
19.60		3.60	8.00	12.60	19.600	●
19.84	25/32	3.70	8.00	12.60	19.840	●
20.00		3.70	9.00	13.90	20.000	●
20.24	51/64	3.70	9.00	13.90	20.240	●
20.50		3.80	9.00	13.90	20.500	●
20.64	13/16	3.80	9.00	13.90	20.640	●
21.00		3.90	9.00	13.90	21.000	●
21.03	53/64	3.90	9.00	13.90	21.030	●
21.10		3.90	9.00	13.90	21.100	●
21.43	27/32	3.90	9.00	13.90	21.430	●
21.50		4.00	9.00	13.90	21.500	●
21.83	55/64	4.00	9.00	13.90	21.830	●
22.00		4.10	10.00	15.30	22.000	●
22.22	7/8	4.10	10.00	15.30	22.220	●
22.50		4.10	10.00	15.30	22.500	●
22.62	57/64	4.20	10.00	15.30	22.620	●
23.00		4.20	10.00	15.30	23.000	●
23.02	29/32	4.20	10.00	15.30	23.020	●
23.42	59/64	4.30	10.00	15.30	23.420	●
23.50		4.30	10.00	15.30	23.500	●
23.81	15/16	4.40	10.00	15.30	23.810	●
24.00		4.40	11.00	15.80	24.000	●
24.10		4.40	11.00	15.80	24.100	●
24.21	61/64	4.50	11.00	15.80	24.210	●
24.50		4.50	11.00	15.80	24.500	●
24.61	31/32	4.50	11.00	15.80	24.610	●
25.00	63/64	4.60	11.00	15.80	25.000	●
25.25		4.60	11.00	15.80	25.250	●
25.40	1	4.70	11.00	15.80	25.400	●
25.50		4.70	11.00	15.80	25.500	●
25.65		4.70	11.00	15.80	25.650	●
25.70		4.70	11.00	15.80	25.700	●



Article no.						4115
Discount group						141
Cutting direction						(R)
d1		l4	b	h	Code no.	Availability
mm	inch	mm	mm	mm		
26.00		4.80	12.00	20.00	26.000	●
26.19	1 1/32	4.80	12.00	20.00	26.190	●
26.50		4.90	12.00	20.00	26.500	●
26.59	1 3/64	4.90	12.00	20.00	26.590	●
27.00		5.00	12.00	20.00	27.000	●
27.50		5.10	12.00	20.00	27.500	●
27.70		5.10	12.00	20.00	27.700	●
27.78	1 3/32	5.10	12.00	20.00	27.780	●
28.00		5.10	13.00	20.70	28.000	●
28.18	1 7/64	5.20	13.00	20.70	28.180	●
28.50		5.20	13.00	20.70	28.500	●
28.58		5.30	13.00	20.70	28.580	●
29.00		5.30	13.00	20.70	29.000	●
29.37	1 5/32	5.40	13.00	20.70	29.370	●
29.50		5.40	13.00	20.70	29.500	●
29.60		5.40	13.00	20.70	29.600	●
29.77	1 11/64	5.50	13.00	20.70	29.770	●
30.00		5.50	14.00	22.30	30.000	●
30.16	1 3/16	5.50	14.00	22.30	30.160	●
30.50		5.60	14.00	22.30	30.500	●
30.96	1 7/32	5.70	14.00	22.30	30.960	●
31.00		5.70	14.00	22.30	31.000	●
31.50		5.80	14.00	22.30	31.500	●
31.75	1 1/4	5.80	14.00	22.30	31.750	●
32.00		5.90	15.00	23.10	32.000	●
32.50		6.00	15.00	23.10	32.500	●
32.54	1 9/32	6.00	15.00	23.10	32.540	●
32.94	1 19/64	6.00	15.00	23.10	32.940	●
33.00		6.10	15.00	23.10	33.000	●
33.34	1 5/16	6.10	15.00	23.10	33.340	●
33.50		6.10	15.00	23.10	33.500	●
34.00		6.20	15.00	23.10	34.000	●
34.13	1 11/32	6.30	15.00	23.10	34.130	●
34.50		6.30	15.00	23.10	34.500	●
34.93		6.40	15.00	23.10	34.930	●
35.00		6.40	15.00	23.10	35.000	●
35.50		6.50	15.00	23.10	35.500	●
35.72	1 13/32	6.60	15.00	23.10	35.720	●
36.00		6.60	16.00	23.90	36.000	●
36.50		6.70	16.00	23.90	36.500	●
36.51	1 7/16	6.70	16.00	23.90	36.510	●
37.00		6.80	16.00	23.90	37.000	●
37.31	1 15/32	6.80	16.00	23.90	37.310	●
37.50		6.90	16.00	23.90	37.500	●
38.00		7.00	16.00	23.90	38.000	●
38.10	1 1/2	7.00	16.00	23.90	38.100	●
38.50	1 33/64	7.10	16.00	23.90	38.500	●
39.00		7.10	16.00	23.90	39.000	●
39.50		7.20	16.00	23.90	39.500	●
40.00		7.30	16.00	23.90	40.000	●



Solid carbide micro-precision drills without coolant ducts

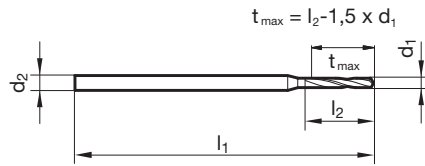


Tool material	Solid carbide
Surface	A
Shank form	cyl.
	SL

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

GÜHRING NAVIGATOR

Cutting data page 146



Drilling tools

Article no. **5652**

Discount group **155**

Cutting direction

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	●



ExclusiveLine micro-precision drills without coolant ducts



P • web thinning $\geq \varnothing 0.500$ • facet point grind • main cutting edge form straight • edge preparation

M •

K •

N ○ structural and case hardened steels • free-cutting steels, heat-treatable steels • alloyed steels up to 1200 N/mm²

S ○ stainless steels • cast materials

H

Tool material **Solid carbide**

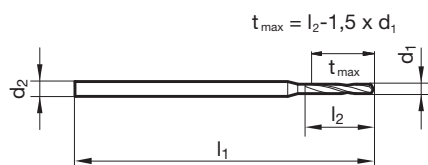
Surface **A**

Shank form cyl.



GÜHRING NAVIGATOR

Cutting data page 146



Article no. **6400**

Discount group **164**

Cutting direction

d1	d2	l1	l2	Availability
mm	mm	mm	mm	
0.500	3.000	47.000	3.000	●
0.550	3.000	47.000	3.300	●
0.600	3.000	47.000	3.600	●
0.650	3.000	47.000	3.900	●
0.700	3.000	47.000	4.200	●
0.750	3.000	47.000	4.500	●
0.800	3.000	47.000	4.800	●
0.850	3.000	47.000	5.100	●
0.900	3.000	47.000	5.400	●
0.950	3.000	47.000	5.700	●
1.000	3.000	47.000	6.000	●
1.050	3.000	47.000	6.300	●
1.100	3.000	47.000	6.600	●
1.150	3.000	47.000	6.900	●
1.200	3.000	47.000	7.200	●
1.250	3.000	47.000	7.500	●
1.300	3.000	47.000	7.800	●
1.350	3.000	47.000	8.100	●
1.400	3.000	47.000	8.400	●
1.450	3.000	47.000	8.700	●
1.500	3.000	47.000	9.000	●
1.550	3.000	47.000	9.300	●
1.590	3.000	47.000	9.600	●
1.600	3.000	47.000	9.600	●
1.650	3.000	47.000	9.900	●
1.700	3.000	47.000	10.200	●
1.750	3.000	47.000	10.500	●
1.800	3.000	52.000	10.800	●
1.850	3.000	52.000	11.100	●
1.900	3.000	52.000	11.400	●
1.950	3.000	52.000	11.700	●
1.980	4.000	59.000	12.000	●
2.000	4.000	59.000	12.000	●
2.050	4.000	59.000	12.300	●
2.100	4.000	59.000	12.600	●
2.150	4.000	59.000	12.900	●



Article no.				6400
Discount group				164
Cutting direction				
d1	d2	l1	l2	Availability
mm	mm	mm	mm	
2.200	4.000	59.000	13.200	●
2.250	4.000	59.000	13.500	●
2.300	4.000	59.000	13.800	●
2.350	4.000	59.000	14.100	●
2.380	4.000	59.000	14.400	●
2.400	4.000	59.000	14.400	●
2.450	4.000	59.000	14.700	●
2.500	4.000	59.000	15.000	●
2.550	4.000	59.000	15.300	●
2.600	4.000	59.000	15.600	●
2.650	4.000	59.000	15.900	●
2.700	4.000	59.000	16.200	●
2.750	4.000	59.000	16.500	●
2.780	4.000	59.000	16.800	●
2.800	4.000	59.000	16.800	●
2.850	4.000	59.000	17.100	●
2.900	4.000	59.000	17.400	●
2.950	4.000	59.000	17.700	●
3.000	4.000	59.000	18.000	●

Drilling tools



ExclusiveLine micro-precision drills without coolant ducts



P • web thinning $\geq \varnothing 0.500$ • facet point grind • main cutting edge form straight • edge preparation

M •

K •

N ○ structural and case hardened steels • free-cutting steels, heat-treatable steels • alloyed steels up to 1200 N/mm²

S ○ stainless steels • cast materials

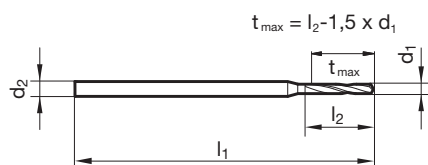
H

GÜHRING NAVIGATOR

Cutting data page 146

Tool material **Solid carbide**Surface **A**

Shank form cyl.

Article no. **6401**Discount group **164**

Cutting direction

d1	d2	l1	l2	Availability
mm	mm	mm	mm	
0.500	3.000	47.000	4.000	●
0.550	3.000	47.000	4.400	●
0.600	3.000	47.000	4.800	●
0.650	3.000	47.000	5.200	●
0.700	3.000	47.000	5.600	●
0.750	3.000	47.000	6.000	●
0.800	3.000	47.000	6.400	●
0.850	3.000	47.000	6.800	●
0.900	3.000	47.000	7.200	●
0.950	3.000	47.000	7.600	●
1.000	3.000	47.000	8.000	●
1.050	3.000	47.000	8.400	●
1.100	3.000	47.000	8.800	●
1.150	3.000	47.000	9.200	●
1.200	3.000	52.000	10.800	●
1.250	3.000	52.000	11.300	●
1.300	3.000	52.000	11.700	●
1.350	3.000	52.000	12.200	●
1.400	3.000	52.000	12.600	●
1.450	3.000	52.000	13.100	●
1.500	3.000	52.000	13.500	●
1.550	3.000	52.000	14.000	●
1.590	3.000	52.000	14.400	●
1.600	3.000	52.000	14.400	●
1.650	3.000	52.000	14.900	●
1.700	3.000	52.000	15.300	●
1.750	3.000	52.000	15.800	●
1.800	3.000	52.000	16.200	●
1.850	3.000	52.000	16.700	●
1.900	3.000	52.000	17.100	●
1.950	3.000	52.000	17.600	●
1.980	4.000	63.000	18.000	●
2.000	4.000	63.000	18.000	●
2.050	4.000	63.000	18.500	●
2.100	4.000	63.000	18.900	●
2.150	4.000	63.000	19.400	●



Article no.				6401
Discount group				164
Cutting direction				(R)
d1	d2	l1	l2	Availability
mm	mm	mm	mm	
2.200	4.000	63.000	19.800	●
2.250	4.000	63.000	20.300	●
2.300	4.000	63.000	20.700	●
2.350	4.000	63.000	21.200	●
2.380	4.000	63.000	21.600	●
2.400	4.000	63.000	21.600	●
2.450	4.000	63.000	22.100	●
2.500	4.000	63.000	22.500	●
2.550	4.000	63.000	23.000	●
2.600	4.000	67.000	23.400	●
2.650	4.000	67.000	23.900	●
2.700	4.000	67.000	24.300	●
2.750	4.000	67.000	24.800	●
2.780	4.000	67.000	25.200	●
2.800	4.000	67.000	25.200	●
2.850	4.000	67.000	25.700	●
2.900	4.000	67.000	26.100	●
2.950	4.000	67.000	26.600	●
3.000	4.000	67.000	27.000	●

Drilling tools



ExclusiveLine micro-precision drills with coolant ducts



P • web thinning $\geq \varnothing 1.400$ • facet point grind • main cutting edge form straight • edge preparation

M •

K •

N ○ structural and case hardened steels • free-cutting steels, heat-treatable steels • alloyed steels up to 1200 N/mm²

S ○ stainless steels • cast materials

H

Tool material **Solid carbide**

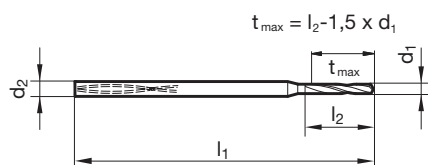
Surface **A**

Shank form cyl.



GÜHRING NAVIGATOR

Cutting data page 146




Article no. **6405**

Discount group **164**

Cutting direction **R**

d1	d2	l1	l2	Availability
mm	mm	mm	mm	
1.000	3.000	48.000	8.000	●
1.020	3.000	48.000	8.500	●
1.050	3.000	48.000	8.500	●
1.100	3.000	48.000	9.000	●
1.150	3.000	48.000	9.500	●
1.180	3.000	48.000	9.500	●
1.190	3.000	48.000	10.000	●
1.200	3.000	48.000	10.000	●
1.250	3.000	48.000	10.000	●
1.280	3.000	48.000	10.500	●
1.300	3.000	48.000	10.500	●
1.350	3.000	48.000	11.000	●
1.400	4.000	52.000	11.000	●
1.450	4.000	52.000	12.000	●
1.500	4.000	52.000	12.000	●
1.550	4.000	52.000	12.000	●
1.590	4.000	52.000	13.000	●
1.600	4.000	52.000	13.000	●
1.650	4.000	52.000	13.000	●
1.700	4.000	56.000	14.000	●
1.750	4.000	56.000	14.000	●
1.800	4.000	56.000	14.000	●
1.850	4.000	56.000	15.000	●
1.900	4.000	56.000	15.000	●
1.950	4.000	56.000	16.000	●
1.980	4.000	56.000	16.000	●
2.000	4.000	56.000	16.000	●
2.050	4.000	56.000	16.000	●
2.100	4.000	62.000	17.000	●
2.150	4.000	62.000	17.000	●
2.200	4.000	62.000	18.000	●
2.250	4.000	62.000	18.000	●
2.300	4.000	62.000	18.000	●
2.350	4.000	62.000	19.000	●
2.380	4.000	62.000	19.000	●
2.400	4.000	62.000	19.000	●



Article no.				6405
Discount group				164
Cutting direction				
d1	d2	l1	l2	Availability
mm	mm	mm	mm	
2.450	4.000	62.000	20.000	●
2.500	4.000	62.000	20.000	●
2.550	4.000	62.000	20.000	●
2.600	4.000	66.000	21.000	●
2.650	4.000	66.000	21.000	●
2.700	4.000	66.000	22.000	●
2.750	4.000	66.000	22.000	●
2.780	4.000	66.000	22.000	●
2.800	4.000	66.000	22.000	●
2.850	4.000	66.000	23.000	●
2.900	4.000	66.000	23.000	●
2.950	4.000	66.000	24.000	●
3.000	4.000	66.000	24.000	●

Drilling tools



ExclusiveLine micro-precision drills with coolant ducts



P • web thinning $\geq \varnothing 1.400$ • facet point grind • main cutting edge form straight • edge preparation

M •

K •

N ○ structural and case hardened steels • free-cutting steels, heat-treatable steels • alloyed steels up to 1200 N/mm²

S ○ stainless steels • cast materials

H

Tool material **Solid carbide**

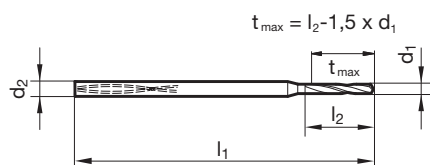
Surface **A**

Shank form cyl.



GÜHRING NAVIGATOR

Cutting data page 146




Article no. **6408**

Discount group **164**

Cutting direction

d1	d2	l1	l2	Availability
mm	mm	mm	mm	
1.000	3.000	56.000	11.000	●
1.020	3.000	56.000	11.500	●
1.050	3.000	56.000	12.000	●
1.100	3.000	56.000	12.500	●
1.150	3.000	56.000	13.000	●
1.180	3.000	56.000	13.000	●
1.190	3.000	56.000	13.500	●
1.200	3.000	56.000	13.500	●
1.250	3.000	56.000	14.000	●
1.280	3.000	56.000	14.500	●
1.300	3.000	56.000	14.500	●
1.350	3.000	56.000	15.000	●
1.400	4.000	62.000	15.000	●
1.450	4.000	62.000	16.000	●
1.500	4.000	62.000	17.000	●
1.550	4.000	62.000	17.000	●
1.590	4.000	62.000	18.000	●
1.600	4.000	62.000	18.000	●
1.650	4.000	62.000	18.000	●
1.700	4.000	70.000	19.000	●
1.750	4.000	70.000	19.000	●
1.800	4.000	70.000	20.000	●
1.850	4.000	70.000	20.000	●
1.900	4.000	70.000	21.000	●
1.950	4.000	70.000	21.000	●
1.980	4.000	70.000	22.000	●
2.000	4.000	70.000	22.000	●
2.050	4.000	70.000	23.000	●
2.100	4.000	78.000	23.000	●
2.150	4.000	78.000	24.000	●
2.200	4.000	78.000	24.000	●
2.250	4.000	78.000	25.000	●
2.300	4.000	78.000	25.000	●
2.320	4.000	78.000	26.000	●
2.350	4.000	78.000	26.000	●
2.380	4.000	78.000	26.000	●



Article no.				6408
Discount group				164
Cutting direction				
d1	d2	l1	l2	Availability
mm	mm	mm	mm	
2.400	4.000	78.000	26.000	●
2.450	4.000	78.000	27.000	●
2.500	4.000	78.000	28.000	●
2.550	4.000	78.000	28.000	●
2.600	4.000	87.000	29.000	●
2.650	4.000	87.000	29.000	●
2.700	4.000	87.000	30.000	●
2.750	4.000	66.000	30.000	●
2.780	4.000	87.000	31.000	●
2.800	4.000	87.000	31.000	●
2.850	4.000	87.000	31.000	●
2.900	4.000	87.000	32.000	●
2.950	4.000	87.000	32.000	●
3.000	4.000	87.000	33.000	●

Drilling tools



ExclusiveLine micro-precision drills with coolant ducts



P • web thinning $\geq \varnothing 1.400$ • facet point grind • main cutting edge form straight • edge preparation

M •

K •

N ○ structural and case hardened steels • free-cutting steels, heat-treatable steels • alloyed steels up to 1200 N/mm²

S ○ stainless steels • cast materials

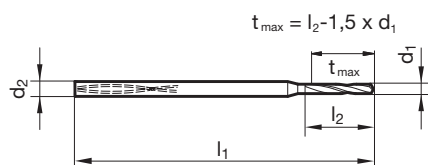
H

GÜHRING NAVIGATOR

Cutting data page 146

Tool material **Solid carbide**Surface **A**

Shank form cyl.

Article no. **6412**Discount group **164**

Cutting direction

d1	d2	l1	l2	Availability
mm	mm	mm	mm	
1.000	3.000	56.000	18.000	●
1.020	3.000	56.000	18.500	●
1.050	3.000	56.000	19.000	●
1.100	3.000	56.000	20.000	●
1.150	3.000	56.000	21.000	●
1.180	3.000	56.000	21.500	●
1.190	3.000	56.000	21.500	●
1.200	3.000	56.000	22.000	●
1.250	3.000	56.000	22.500	●
1.280	3.000	56.000	23.500	●
1.300	3.000	56.000	23.500	●
1.350	3.000	56.000	24.500	●
1.400	4.000	62.000	25.000	●
1.500	4.000	62.000	27.000	●
1.590	4.000	62.000	29.000	●
1.600	4.000	62.000	29.000	●
1.700	4.000	70.000	31.000	●
1.750	4.000	70.000	32.000	●
1.800	4.000	70.000	32.000	●
1.900	4.000	70.000	34.000	●
1.980	4.000	70.000	36.000	●
2.000	4.000	70.000	36.000	●
2.100	4.000	78.000	38.000	●
2.200	4.000	78.000	40.000	●
2.300	4.000	78.000	42.000	●
2.380	4.000	78.000	44.000	●
2.400	4.000	78.000	44.000	●
2.500	4.000	78.000	45.000	●
2.600	4.000	87.000	47.000	●
2.700	4.000	87.000	48.000	●
2.780	4.000	87.000	50.000	●
2.800	4.000	87.000	50.000	●
2.900	4.000	87.000	52.000	●
3.000	4.000	87.000	54.000	●



3-flute Ratio drills



Tool material **Solid carbide**

Surface ○

Shank form HA

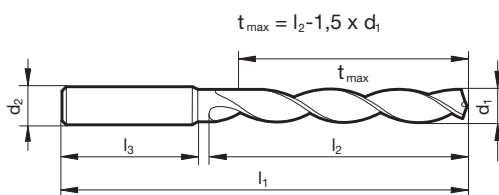
SL

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**

GÜHRING NAVIGATOR

Cutting data page 140



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	●
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	●
7.400		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	●

Drilling tools



Article no.						5518
Discount group						155
Cutting direction						(R)
d1		d2 h6	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
8.600		10.00	103.00	61.00	40.00	●
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	●
14.100		16.00	133.00	83.00	48.00	●
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	●



Twist drills with reinforced straight shank



- P** • web thinning $\geq \varnothing 1.000$ • high-performance twist drills
- M** • powder metallurgic steel • 4-facet point grind • low feed force required • low torque required • for universal application
- K** •
- N** •
- S** ○
- H**

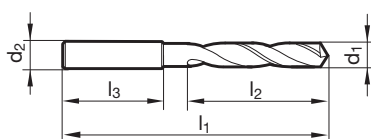
Tool material	HSS-E-PM
Surface	F
Shank form	HA



Drilling tools

GÜHRING NAVIGATOR

Cutting data page 150




Article no. **6005**


Discount group **159**

Cutting direction


d1	d2 h6	l1	l2	l3	Availability
mm	mm	mm	mm	mm	
1.000	3.00	38.00	6.00	28.00	●
1.100	3.00	39.00	7.00	28.00	●
1.200	3.00	40.00	8.00	28.00	●
1.300	3.00	40.00	8.00	28.00	●
1.400	3.00	41.00	9.00	28.00	●
1.500	3.00	41.00	9.00	28.00	●
1.600	3.00	42.00	10.00	28.00	●
1.700	3.00	42.00	10.00	28.00	●
1.800	3.00	43.00	11.00	28.00	●
1.900	3.00	43.00	11.00	28.00	●
2.000	3.00	44.00	12.00	28.00	●
2.100	3.00	44.00	12.00	28.00	●
2.200	3.00	45.00	13.00	28.00	●
2.300	3.00	45.00	13.00	28.00	●
2.380	3.00	46.00	14.00	28.00	●
2.400	3.00	46.00	14.00	28.00	●
2.500	3.00	46.00	14.00	28.00	●
2.600	3.00	46.00	14.00	28.00	●
2.700	3.00	48.00	16.00	28.00	●
2.780	3.00	48.00	16.00	28.00	●
2.800	3.00	48.00	16.00	28.00	●
2.900	3.00	48.00	16.00	28.00	●
3.000	3.00	48.00	16.00	28.00	●
3.100	4.00	50.00	18.00	28.00	●
3.170	4.00	50.00	18.00	28.00	●
3.200	4.00	50.00	18.00	28.00	●
3.300	4.00	50.00	18.00	28.00	●
3.400	4.00	52.00	20.00	28.00	●
3.500	4.00	52.00	20.00	28.00	●
3.570	4.00	52.00	20.00	28.00	●
3.600	4.00	52.00	20.00	28.00	●
3.700	4.00	52.00	20.00	28.00	●
3.800	4.00	54.00	22.00	28.00	●
3.900	4.00	54.00	22.00	28.00	●
3.970	4.00	54.00	22.00	28.00	●
4.000	4.00	54.00	22.00	28.00	●



Article no.					6005
Discount group					159
Cutting direction					
d1	d2 h6	l1	l2	l3	Availability
mm	mm	mm	mm	mm	
4.100	6.00	66.00	22.00	36.00	●
4.200	6.00	66.00	22.00	36.00	●
4.300	6.00	68.00	24.00	36.00	●
4.370	6.00	68.00	24.00	36.00	●
4.400	6.00	68.00	24.00	36.00	●
4.500	6.00	68.00	24.00	36.00	●
4.600	6.00	68.00	24.00	36.00	●
4.650	6.00	68.00	24.00	36.00	●
4.700	6.00	68.00	24.00	36.00	●
4.760	6.00	70.00	26.00	36.00	●
4.800	6.00	70.00	26.00	36.00	●
4.900	6.00	70.00	26.00	36.00	●
5.000	6.00	70.00	26.00	36.00	●
5.100	6.00	70.00	26.00	36.00	●
5.160	6.00	70.00	26.00	36.00	●
5.200	6.00	70.00	26.00	36.00	●
5.300	6.00	70.00	26.00	36.00	●
5.400	6.00	72.00	28.00	36.00	●
5.500	6.00	72.00	28.00	36.00	●
5.550	6.00	72.00	28.00	36.00	●
5.560	6.00	72.00	28.00	36.00	●
5.600	6.00	72.00	28.00	36.00	●
5.700	6.00	72.00	28.00	36.00	●
5.800	6.00	72.00	28.00	36.00	●
5.900	6.00	72.00	28.00	36.00	●
5.950	6.00	72.00	28.00	36.00	●
6.000	6.00	72.00	28.00	36.00	●
6.100	8.00	75.00	31.00	36.00	●
6.200	8.00	75.00	31.00	36.00	●
6.300	8.00	75.00	31.00	36.00	●
6.350	8.00	75.00	31.00	36.00	●
6.400	8.00	75.00	31.00	36.00	●
6.500	8.00	75.00	31.00	36.00	●
6.600	8.00	75.00	31.00	36.00	●
6.700	8.00	75.00	31.00	36.00	●
6.750	8.00	78.00	34.00	36.00	●
6.800	8.00	78.00	34.00	36.00	●
6.900	8.00	78.00	34.00	36.00	●
7.000	8.00	78.00	34.00	36.00	●
7.100	8.00	78.00	34.00	36.00	●
7.140	8.00	78.00	34.00	36.00	●
7.200	8.00	78.00	34.00	36.00	●
7.300	8.00	78.00	34.00	36.00	●
7.400	8.00	78.00	34.00	36.00	●
7.500	8.00	78.00	34.00	36.00	●
7.540	8.00	81.00	37.00	36.00	●
7.550	8.00	81.00	37.00	36.00	●
7.600	8.00	81.00	37.00	36.00	●
7.700	8.00	81.00	37.00	36.00	●
7.800	8.00	81.00	37.00	36.00	●
7.900	8.00	81.00	37.00	36.00	●
7.940	8.00	81.00	37.00	36.00	●
8.000	8.00	81.00	37.00	36.00	●
8.100	10.00	87.00	37.00	40.00	●
8.200	10.00	87.00	37.00	40.00	●
8.300	10.00	87.00	37.00	40.00	●
8.330	10.00	87.00	37.00	40.00	●
8.400	10.00	87.00	37.00	40.00	●
8.500	10.00	87.00	37.00	40.00	●
8.600	10.00	91.00	40.00	40.00	●

Article no.					6005
Discount group					159
Cutting direction					
d1	d2 h6	l1	l2	l3	Availability
mm	mm	mm	mm	mm	
8.700	10.00	91.00	40.00	40.00	●
8.730	10.00	91.00	40.00	40.00	●
8.800	10.00	91.00	40.00	40.00	●
8.900	10.00	91.00	40.00	40.00	●
9.000	10.00	91.00	40.00	40.00	●
9.100	10.00	91.00	40.00	40.00	●
9.130	10.00	91.00	40.00	40.00	●
9.200	10.00	91.00	40.00	40.00	●
9.300	10.00	91.00	40.00	40.00	●
9.400	10.00	91.00	40.00	40.00	●
9.500	10.00	91.00	40.00	40.00	●
9.520	10.00	93.00	43.00	40.00	●
9.550	10.00	93.00	43.00	40.00	●
9.600	10.00	93.00	43.00	40.00	●
9.700	10.00	93.00	43.00	40.00	●
9.800	10.00	93.00	43.00	40.00	●
9.900	10.00	93.00	43.00	40.00	●
9.920	10.00	93.00	43.00	40.00	●
10.000	10.00	93.00	43.00	40.00	●
10.100	12.00	100.00	43.00	45.00	●
10.200	12.00	100.00	43.00	45.00	●
10.300	12.00	100.00	43.00	45.00	●
10.320	12.00	100.00	43.00	45.00	●
10.400	12.00	100.00	43.00	45.00	●
10.500	12.00	100.00	43.00	45.00	●
10.600	12.00	100.00	43.00	45.00	●
10.700	12.00	104.00	47.00	45.00	●
10.720	12.00	104.00	47.00	45.00	●
10.800	12.00	104.00	47.00	45.00	●
10.900	12.00	104.00	47.00	45.00	●
11.000	12.00	104.00	47.00	45.00	●
11.100	12.00	104.00	47.00	45.00	●
11.110	12.00	104.00	47.00	45.00	●
11.200	12.00	104.00	47.00	45.00	●
11.300	12.00	104.00	47.00	45.00	●
11.400	12.00	104.00	47.00	45.00	●
11.500	12.00	104.00	47.00	45.00	●
11.510	12.00	104.00	47.00	45.00	●
11.600	12.00	104.00	47.00	45.00	●
11.700	12.00	104.00	47.00	45.00	●
11.800	12.00	104.00	47.00	45.00	●
11.900	12.00	108.00	51.00	45.00	●
11.910	12.00	108.00	51.00	45.00	●
12.000	12.00	108.00	51.00	45.00	●
12.100	16.00	111.00	51.00	48.00	●
12.200	16.00	111.00	51.00	48.00	●
12.300	16.00	111.00	51.00	48.00	●
12.400	16.00	111.00	51.00	48.00	●
12.500	16.00	111.00	51.00	48.00	●
12.600	16.00	111.00	51.00	48.00	●
12.700	16.00	111.00	51.00	48.00	●
12.800	16.00	111.00	51.00	48.00	●
12.900	16.00	111.00	51.00	48.00	●
13.000	16.00	111.00	51.00	48.00	●
13.100	16.00	111.00	51.00	48.00	●
13.490	16.00	114.00	54.00	48.00	●
13.500	16.00	114.00	54.00	48.00	●
13.890	16.00	114.00	54.00	48.00	●
14.000	16.00	114.00	54.00	48.00	●
14.290	16.00	116.00	56.00	48.00	●



Article no.					6005
Discount group					159
Cutting direction					
d1	d2 h6	l1	l2	l3	Availability
mm	mm	mm	mm	mm	
14.500	16.00	116.00	56.00	48.00	●
15.000	16.00	116.00	56.00	48.00	●
15.500	16.00	118.00	58.00	48.00	●
15.870	16.00	118.00	58.00	48.00	●
16.000	16.00	118.00	58.00	48.00	●
16.500	20.00	126.00	60.00	50.00	●
16.670	20.00	126.00	60.00	50.00	●
17.000	20.00	126.00	60.00	50.00	●
17.500	20.00	128.00	62.00	50.00	●
18.000	20.00	128.00	62.00	50.00	●
18.500	20.00	130.00	64.00	50.00	●
19.000	20.00	130.00	64.00	50.00	●
19.500	20.00	132.00	66.00	50.00	●
20.000	20.00	132.00	66.00	50.00	●



Twist drills with reinforced straight shank

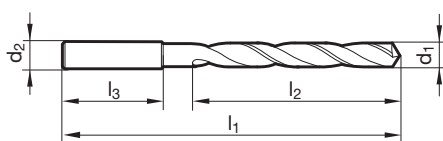


- P** • web thinning $\geq \varnothing 1.000$ • high-performance twist drills
- M** • powder metallurgic steel • 4-facet point grind • low feed force required • low torque required • for universal application
- K** •
- N** •
- S** ○
- H**

GÜHRING NAVIGATOR

Cutting data page 150

Tool material	HSS-E-PM
Surface	F
Shank form	HA



Article no. **6006**


Discount group **159**

Cutting direction

d1	d2 h6	l1	l2	l3	Availability
mm	mm	mm	mm	mm	
2.000	3.00	56.00	24.00	28.00	●
2.100	3.00	56.00	24.00	28.00	●
2.200	3.00	59.00	27.00	28.00	●
2.300	3.00	59.00	27.00	28.00	●
2.380	3.00	62.00	30.00	28.00	●
2.400	3.00	62.00	30.00	28.00	●
2.500	3.00	62.00	30.00	28.00	●
2.600	3.00	62.00	30.00	28.00	●
2.700	3.00	65.00	33.00	28.00	●
2.780	3.00	65.00	33.00	28.00	●
2.800	3.00	65.00	33.00	28.00	●
2.900	3.00	65.00	33.00	28.00	●
3.000	3.00	65.00	33.00	28.00	●
3.100	4.00	68.00	36.00	28.00	●
3.170	4.00	68.00	36.00	28.00	●
3.200	4.00	68.00	36.00	28.00	●
3.300	4.00	68.00	36.00	28.00	●
3.400	4.00	71.00	39.00	28.00	●
3.500	4.00	71.00	39.00	28.00	●
3.570	4.00	71.00	39.00	28.00	●
3.600	4.00	71.00	39.00	28.00	●
3.700	4.00	71.00	39.00	28.00	●
3.800	4.00	75.00	43.00	28.00	●
3.900	4.00	75.00	43.00	28.00	●
3.970	4.00	75.00	43.00	28.00	●
4.000	4.00	75.00	43.00	28.00	●
4.100	6.00	87.00	43.00	36.00	●
4.200	6.00	87.00	43.00	36.00	●
4.300	6.00	91.00	47.00	36.00	●
4.370	6.00	91.00	47.00	36.00	●
4.400	6.00	91.00	47.00	36.00	●
4.500	6.00	91.00	47.00	36.00	●
4.600	6.00	91.00	47.00	36.00	●
4.650	6.00	91.00	47.00	36.00	●
4.700	6.00	91.00	47.00	36.00	●
4.760	6.00	96.00	52.00	36.00	●

Drilling tools




Article no.					6006
Discount group					159
Cutting direction					
d1	d2 h6	l1	l2	l3	Availability
mm	mm	mm	mm	mm	
4.800	6.00	96.00	52.00	36.00	●
4.900	6.00	96.00	52.00	36.00	●
5.000	6.00	96.00	52.00	36.00	●
5.100	6.00	96.00	52.00	36.00	●
5.160	6.00	96.00	52.00	36.00	●
5.200	6.00	96.00	52.00	36.00	●
5.300	6.00	96.00	52.00	36.00	●
5.400	6.00	101.00	57.00	36.00	●
5.500	6.00	101.00	57.00	36.00	●
5.550	6.00	101.00	57.00	36.00	●
5.560	6.00	101.00	57.00	36.00	●
5.600	6.00	101.00	57.00	36.00	●
5.700	6.00	101.00	57.00	36.00	●
5.800	6.00	101.00	57.00	36.00	●
5.900	6.00	101.00	57.00	36.00	●
5.950	6.00	101.00	57.00	36.00	●
6.000	6.00	101.00	57.00	36.00	●
6.100	8.00	107.00	63.00	36.00	●
6.200	8.00	107.00	63.00	36.00	●
6.300	8.00	107.00	63.00	36.00	●
6.350	8.00	107.00	63.00	36.00	●
6.400	8.00	107.00	63.00	36.00	●
6.500	8.00	107.00	63.00	36.00	●
6.600	8.00	107.00	63.00	36.00	●
6.700	8.00	107.00	63.00	36.00	●
6.750	8.00	113.00	69.00	36.00	●
6.800	8.00	113.00	69.00	36.00	●
6.900	8.00	113.00	69.00	36.00	●
7.000	8.00	113.00	69.00	36.00	●
7.100	8.00	113.00	69.00	36.00	●
7.140	8.00	113.00	69.00	36.00	●
7.200	8.00	113.00	69.00	36.00	●
7.300	8.00	113.00	69.00	36.00	●
7.400	8.00	113.00	69.00	36.00	●
7.500	8.00	113.00	69.00	36.00	●
7.540	8.00	119.00	75.00	36.00	●
7.550	8.00	119.00	75.00	36.00	●
7.600	8.00	119.00	75.00	36.00	●
7.700	8.00	119.00	75.00	36.00	●
7.800	8.00	119.00	75.00	36.00	●
7.900	8.00	119.00	75.00	36.00	●
7.940	8.00	119.00	75.00	36.00	●
8.000	8.00	119.00	75.00	36.00	●
8.100	10.00	125.00	75.00	40.00	●
8.200	10.00	125.00	75.00	40.00	●
8.300	10.00	125.00	75.00	40.00	●
8.330	10.00	125.00	75.00	40.00	●
8.400	10.00	125.00	75.00	40.00	●
8.500	10.00	125.00	75.00	40.00	●
8.600	10.00	131.00	81.00	40.00	●
8.700	10.00	131.00	81.00	40.00	●
8.730	10.00	131.00	81.00	40.00	●
8.800	10.00	131.00	81.00	40.00	●
8.900	10.00	131.00	81.00	40.00	●
9.000	10.00	131.00	81.00	40.00	●
9.100	10.00	131.00	81.00	40.00	●
9.130	10.00	131.00	81.00	40.00	●
9.200	10.00	131.00	81.00	40.00	●
9.300	10.00	131.00	81.00	40.00	●
9.400	10.00	131.00	81.00	40.00	●



Article no.					6006
Discount group					159
Cutting direction					
d1	d2 h6	l1	l2	l3	Availability
mm	mm	mm	mm	mm	
9.500	10.00	131.00	81.00	40.00	●
9.520	10.00	137.00	87.00	40.00	●
9.550	10.00	137.00	87.00	40.00	●
9.600	10.00	137.00	87.00	40.00	●
9.700	10.00	137.00	87.00	40.00	●
9.800	10.00	137.00	87.00	40.00	●
9.900	10.00	137.00	87.00	40.00	●
9.920	10.00	137.00	87.00	40.00	●
10.000	10.00	137.00	87.00	40.00	●
10.100	12.00	144.00	87.00	45.00	●
10.200	12.00	144.00	87.00	45.00	●
10.300	12.00	144.00	87.00	45.00	●
10.320	12.00	144.00	87.00	45.00	●
10.400	12.00	144.00	87.00	45.00	●
10.500	12.00	144.00	87.00	45.00	●
10.600	12.00	144.00	87.00	45.00	●
10.700	12.00	151.00	94.00	45.00	●
10.720	12.00	151.00	94.00	45.00	●
10.800	12.00	151.00	94.00	45.00	●
10.900	12.00	151.00	94.00	45.00	●
11.000	12.00	151.00	94.00	45.00	●
11.100	12.00	151.00	94.00	45.00	●
11.110	12.00	151.00	94.00	45.00	●
11.200	12.00	151.00	94.00	45.00	●
11.300	12.00	151.00	94.00	45.00	●
11.400	12.00	151.00	94.00	45.00	●
11.500	12.00	151.00	94.00	45.00	●
11.510	12.00	151.00	94.00	45.00	●
11.600	12.00	151.00	94.00	45.00	●
11.700	12.00	151.00	94.00	45.00	●
11.800	12.00	151.00	94.00	45.00	●
11.900	12.00	158.00	101.00	45.00	●
11.910	12.00	158.00	101.00	45.00	●
12.000	12.00	158.00	101.00	45.00	●
12.100	16.00	161.00	101.00	48.00	●
12.200	16.00	161.00	101.00	48.00	●
12.300	16.00	161.00	101.00	48.00	●
12.400	16.00	161.00	101.00	48.00	●
12.500	16.00	161.00	101.00	48.00	●
12.600	16.00	161.00	101.00	48.00	●
12.700	16.00	161.00	101.00	48.00	●
12.800	16.00	161.00	101.00	48.00	●
12.900	16.00	161.00	101.00	48.00	●
13.000	16.00	161.00	101.00	48.00	●
13.100	16.00	161.00	101.00	48.00	●
13.490	16.00	166.00	106.00	48.00	●
13.500	16.00	166.00	106.00	48.00	●
13.890	16.00	166.00	106.00	48.00	●
14.000	16.00	166.00	106.00	48.00	●
14.290	16.00	169.00	109.00	48.00	●
14.500	16.00	169.00	109.00	48.00	●
15.000	16.00	169.00	109.00	48.00	●
15.500	16.00	172.00	112.00	48.00	●
15.870	16.00	172.00	112.00	48.00	●
16.000	16.00	172.00	112.00	48.00	●
16.500	20.00	181.00	115.00	50.00	●
16.670	20.00	181.00	115.00	50.00	●
17.000	20.00	181.00	115.00	50.00	●
17.460	20.00	184.00	118.00	50.00	●
17.500	20.00	184.00	118.00	50.00	●



Article no.					6006
Discount group					159
Cutting direction					
d1	d2 h6	l1	l2	l3	Availability
mm	mm	mm	mm	mm	
18.000	20.00	184.00	118.00	50.00	●
18.500	20.00	188.00	122.00	50.00	●
19.000	20.00	188.00	122.00	50.00	●
19.500	20.00	191.00	125.00	50.00	●
20.000	20.00	191.00	125.00	50.00	●



Stub drills



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

Tool material **Solid carbide**

Surface ○

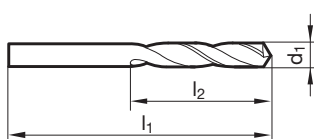
Shank form cyl.

SL

Drilling tools

GÜHRING NAVIGATOR

Cutting data page 150



Article no. **5516**

Discount group **155**

Cutting direction

d1		l1	l2	Availability
mm	inch	mm	mm	
1.500		32.000	9.000	●
1.600		34.000	10.000	●
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	●
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	●



Article no.				5516
Discount group				155
Cutting direction				(R)
d1		l1	l2	Availability
mm	inch	mm	mm	
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	●
5.200		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	●
6.400		70.000	31.000	●
6.500		70.000	31.000	●
6.800		74.000	34.000	●
6.900		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	●
8.600		84.000	40.000	●
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	●
10.300		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



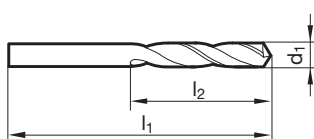
- P** • web thinning $\geq \varnothing 1.000$ • facet point grind • Co-alloyed high speed steel • low feed force required • low torque required
- M** • for universal application
- K** •
- N** • alloyed/unalloyed steels up to 800 N/mm² • cold/hot work steels • antifriction bearing steels • non-ferrous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

Tool material	HSCO	
Surface	○	Ⓢ
Shank form	cyl.	cyl.
	SL	SL

Drilling tools

GÜHRING NAVIGATOR

Cutting data page 150



				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	(R)	(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	●		●
8.600		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	●		●

Drilling tools



Stub drills



P ● web thinning $\geq \varnothing 1.000$ • 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 ○

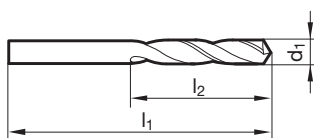
H ○

Tool material **HSS-E-PM**Surface **S**

Shank form cyl.

SL**GÜHRING NAVIGATOR**

Cutting data page 150

Article no. **5521**Discount group **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.				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				
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	●



Jobber drills



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

Tool material **Solid carbide**

Surface ○

Shank form cyl.

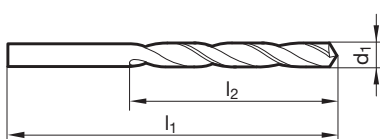
SL



Drilling tools

GÜHRING NAVIGATOR

Cutting data page 152



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	●
5.100		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	●
6.900		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	●
8.600		125.000	81.000	●
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	●
10.300		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



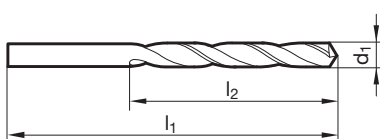
- P** • web thinning $\geq \varnothing 1.000$ • facet point grind • Co-alloyed high speed steel • low feed force required • low torque required
- M** • for universal application
- K** •
- N** • alloyed/unalloyed steels up to 800 N/mm² • cold/hot work steels • antifriction bearing steels • non-ferrous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

GÜHRING NAVIGATOR

Cutting data page 150

Tool material	HSCO	
Surface	○	Ⓢ
Shank form	cyl.	cyl.
	SL	SL

Drilling tools



				Article no.	5523	5519
				Discount group	159	159
				Cutting direction	Ⓡ	Ⓡ
d1		l1	l2	Availability		
mm	inch	mm	mm			
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	(R)	(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	●		●
8.600		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	●		●

Drilling tools



Jobber drills

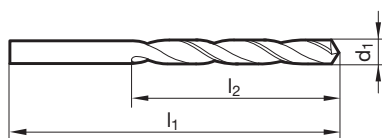


- P** ● web thinning $\geq \varnothing 1.000$ • relieved cone • PM-Co-alloyed high speed steel • especially high rigidity • especially high wear resistance
- M** ○
- K** ●
- N** ○ high-alloyed steels • heat treatable and case hardened steels • cast iron, brass, bronze
- S** ○
- H** ○

GÜHRING NAVIGATOR

Cutting data page 152

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



Article no. **5522**

Discount group **159**


Cutting direction

d1		l1	l2	Availability
mm	inch	mm	mm	
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				
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

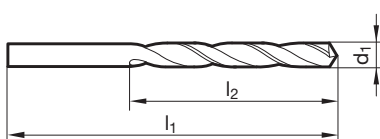


Tool material	HSS
Surface	S
Shank form	cyl.
	SL

- P** • web thinning $\geq \varnothing 1.000$ • 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**

GÜHRING NAVIGATOR

Cutting data page 152



Drilling tools

Article no. **9651**

Discount group **159**

Cutting direction

d1		l1	l2	Availability
mm	inch	mm	mm	
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	●
7.200		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	●
8.700		125.000	81.000	●



Article no.				9651
Discount group				159
Cutting direction				(R)
d1		l1	l2	Availability
mm	inch	mm	mm	
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	●
13.600		160.000	108.000	●



Article no.				9651
Discount group				159
Cutting direction				(R)
d1		l1	l2	Availability
mm	inch	mm	mm	
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

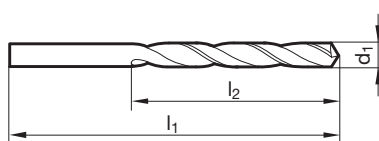


- P** • web thinning $\geq \varnothing 1.000$ • facet point grind • Co-alloyed high speed steel • low feed force required • low torque required • increased wear resistance • for universal application • only suitable for short drilling depths when used at full length for reach purposes or interferences
- M** •
- K** •
- N** •
- S** • alloyed/unalloyed steels up to 800 N/mm² • cold/hot work steels • antifriction bearing steels • non-ferrous metals • cast materials
- H** • stainless steels • plastics

GÜHRING NAVIGATOR

Cutting data page 152

Tool material	HSCO	
Surface	○	Ⓢ
Shank form	cyl.	cyl.
	-SL	-SL





			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	●	●	

Drilling tools



			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		
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	●	●	

Drilling tools



90° NC spotting drills

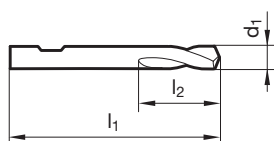


P • relieved cone • only suitable for spotting • $\geq \text{Ø } 6.0 \text{ mm}$ with driving face to DIN 1835-B • inch dimensions are without clamping surface • Co-alloyed high speed steel • increased wear resistance

M	•
K	•
N	•
S	○
H	

Tool material **HSCO**Surface **F**Shank form **B****SL****GÜHRING** NAVIGATOR

Cutting data page 148

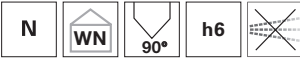
Article no. **5678**Discount group **159**

Cutting direction

d1		l1	l2	Availability
mm	inch	mm	mm	
3.000		46.000	12.000	•
4.000		55.000	12.000	•
5.000		62.000	14.000	•
6.000		66.000	16.000	•
6.350	1/4	70.000	17.000	•
8.000		79.000	21.000	•
9.520	3/8	89.000	25.000	•
10.000		89.000	25.000	•
12.000		102.000	30.000	•
12.700	1/2	102.000	30.000	•
14.000		107.000	33.500	•
15.870	5/8	115.000	37.500	•
16.000		115.000	37.500	•
19.050	3/4	131.000	45.000	•
20.000		131.000	45.000	•
25.000	63/64	151.000	53.000	•
25.400	1	156.000	53.000	•



90° NC spotting drills



- P** ○ facet point grind • only suitable for spotting • $\geq \varnothing 6.0$ mm with clamping surface shank form HB • inch dimensions are without clamping surface
- M** ○
- K** ○
- N** ○ universal material suitability
- S** ○
- H** ○

Tool material **Solid carbide**

Surface **F**

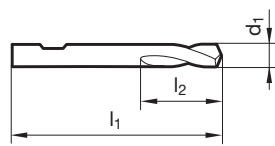
Shank form **HB**



Drilling tools

GÜHRING NAVIGATOR

Cutting data page 148



Article no. **6027**

Discount group **155**

Cutting direction

d1		l1		l2	Availability
mm	inch	mm	mm	mm	
4.000		55.000	12.000		●
5.000		62.000	14.000		●
6.000		66.000	16.000		●
6.350	1/4	70.000	17.000		●
8.000		79.000	21.000		●
9.520	3/8	89.000	25.000		●
10.000		89.000	25.000		●
12.000		102.000	30.000		●
12.700	1/2	102.000	30.000		●
15.870	5/8	115.000	37.500		●
16.000		115.000	37.500		●
19.050	3/4	131.000	45.000		●
20.000		131.000	45.000		●



120° NC spotting drills

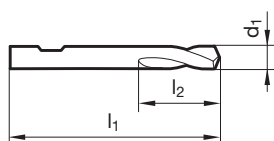


P • relieved cone • only suitable for spotting • $\geq \text{Ø } 6.0$ mm with driving face to DIN 1835-B • inch dimensions are without clamping surface • Co-alloyed high speed steel • increased wear resistance

M	•
K	•
N	•
S	○
H	

Tool material **HSCO**Surface **F**Shank form **B****SL****GÜHRING** NAVIGATOR

Cutting data page 148

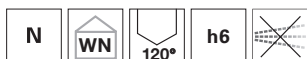
Article no. **5679**Discount group **159**

Cutting direction

d1		l1	l2	Availability
mm	inch	mm	mm	
3.000		46.000	12.000	•
4.000		55.000	12.000	•
5.000		62.000	14.000	•
6.000		66.000	16.000	•
6.350	1/4	70.000	17.000	•
8.000		79.000	21.000	•
9.520	3/8	89.000	25.000	•
10.000		89.000	25.000	•
12.000		102.000	30.000	•
12.700	1/2	102.000	30.000	•
15.870	5/8	115.000	37.500	•
16.000		115.000	37.500	•
19.050	3/4	131.000	45.000	•
20.000		131.000	45.000	•
25.000	63/64	151.000	53.000	•
25.400	1	156.000	53.000	•



120° NC spotting drills



- P** ○ facet point grind • only suitable for spotting • $\geq \varnothing 6.0$ mm with clamping surface shank form HB • inch dimensions are without clamping surface
- M** ○
- K** ○
- N** ○ universal material suitability
- S** ○
- H** ○

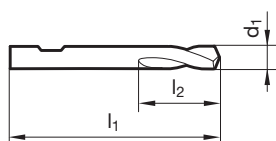
Tool material	Solid carbide
Surface	F
Shank form	HB



Drilling tools

GÜHRING NAVIGATOR

Cutting data page 148



Article no. **6028**

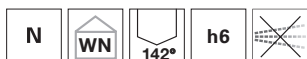
Discount group **155**

Cutting direction

d1		l1		l2	Availability
mm	inch	mm	mm	mm	
3.000		46.000	12.000		●
5.000		62.000	14.000		●
6.000		66.000	16.000		●
6.350	1/4	70.000	17.000		●
8.000		79.000	21.000		●
9.520	3/8	89.000	25.000		●
10.000		89.000	25.000		●
12.000		102.000	30.000		●
12.700	1/2	102.000	30.000		●
15.870	5/8	115.000	37.500		●
16.000		115.000	37.500		●
19.050	3/4	131.000	45.000		●
20.000		131.000	45.000		●



142° NC spotting drills



P ◦ facet point grind • only suitable for spotting • $\geq \varnothing 6.0$ mm with clamping surface shank form HB • inch dimensions are without clamping surface

M ◦

K ◦

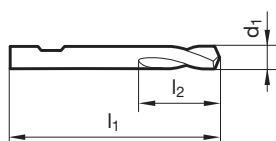
N ◦ universal material suitability

S ◦

H ◦

Tool material **Solid carbide**Surface **F**Shank form **HB****SL****GÜHRING** NAVIGATOR

Cutting data page 148

Article no. **6029**Discount group **155**

Cutting direction

d1		l1		l2		Availability
mm	inch	mm	mm	mm	mm	
1.000		50.000		3.000		●
2.000		50.000		6.000		●
3.000		50.000		9.000		●
4.000		55.000		12.000		●
5.000		62.000		14.000		●
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		●



Centre drills without flat



P	•	relieved cone • without protective countersink • for centre holes to DIN 332, part 1, form A • $d1 \leq 0.8$ mm: not double ended
M	•	
K	•	
N	○	
S	•	
H		

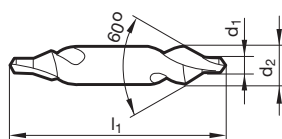
Tool material	HSCO
Surface	F
Shank form	cyl.



Drilling tools

GÜHRING NAVIGATOR

Cutting data page 148



Article no. **5680**

Discount group **159**

Cutting direction

d1	d2	l1	Availability
mm	mm	mm	
0.500	3.150	25.000	•
1.000	3.150	31.500	•
1.250	3.150	31.500	•
1.600	4.000	35.500	•
2.000	5.000	40.000	•
2.500	6.300	45.000	•
3.150	8.000	50.000	•
4.000	10.000	56.000	•



Twist drill sets



- P • web thinning $\geq \varnothing 1.000$ • Sets with the most common drill dimensions are available for fitters and craftsmen, which can be supplied with bakelite stands and cassettes. Other set combinations are possible on request. • facet point grind
- M •
- K •
- N •
- S
- H

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



- P** • web thinning $\geq \text{Ø } 1.000$ • relieved cone • tip coating • Sets with the most common drill dimensions are available for fitters and craftsmen, which can be supplied with bakelite stands and cassettes. Other set combinations are possible on request.
- M**
- K** •
- N** •
- S**
- H**

Tool material	HSS
Surface	S
Shank form	cyl.
	SL

Drilling tools



Article no. **234**

Discount group **159**

Cutting direction **R**

d1	increasing by	supplement. sizes	Pieces/set	Code no.	Availability
mm	mm				
1.0-5.9	0.1		50	6.015	●
6.0-10.0	0.1		41	6.016	●
1.0-10.0	0.5		19	6.013	●
1.0-13.0	0.5		25	6.014	●
1.0-10.5	0.5	3.3/4.2/6.8/10.2	24	6.018	●

**GUHRINGNAVIGATOR 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

Tools with bold feed column no. are preferred choice.

Drill Ø mm	Feed column no.								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
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

Cooling:

without coolant ducts
 with coolant ducts

Coolant:

Air
 Neat oil
 Soluble oil

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



≤3xD ≤5xD		≤3xD ≤5xD		≤3xD ≤5xD		≤5xD		≤5xD		≤5xD		≤7xD		≤7xD	
5510	5511	5514	5515	5526	5580	5768	5498	5518	5512	5499					
5610	5611	5614	5615	5528	5581				5612						
6023	5650	6026	5651	6024	6025				Co. std.	Co. std.					
6537K	6537L	6537K	6537L	6537K	6537L	6537L	6537L	6537L	Sol. carb.	Sol. carb.					
Solid carbide		Solid carbide		Solid carbide		Sol. carb.	Sol. carb.	Sol. carb.	Sol. carb.	Sol. carb.					
K/P		K/P		K/P		K/P	K/P	K	K/P	K/P					
RT 100 U		RT 100 U		RT 100 VA		RT 100 AI	RT 100 XF	FT 200	RT 100 U	RT 100 XF					
F		F		a		○	F	○	F	F					
□		⊗		□		□	□	⊗	□	□					
22	32	66	69	25	36	28	40	99	44	47					



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.		
145	7	7	130	7	7				200	8		145	6	180	8			
120	6	6	110	6	6				200	7		120	5	180	7			
170	8	8	145	8	8				200	8		170	7	180	8			
145	8	8	110	7	7				200	8		145	7	180	8			
130	8	8	120	7	7				180	8		130	7	160	8			
125	7	7	110	7	7				160	8		125	6	140	8			
120	7	7	105	7	7				130	8		120	6	120	8			
120	7	7	105	7	7				120	8		120	6	110	8			
105	7	7	100	6	6				120	7		105	6	110	7			
145	8	8	130	8	8				180	8		145	7	160	8			
120	7	7	120	7	7				120	8		120	6	110	8			
85	5	5	85	5	5				110	7		85	4	100	7			
110	7	7	100	6	6				110	7		110	6	100	7			
105	5	5	90	5	5				100	5		105	4	90	5			
80	6	6	65	6	6				90	7		80	5	80	7			
65	5	5	55	5	5				65	6		65	4	60	6			
60	4	5							60	5		60	4	55	5			
60	3	3	45	3	3				60	5		60	2	55	5			
55	3	2	40	1	1				55	3		55	2	45	3			
35	2	2	20	1	1							35	1					
60	5	5	40	2	2	80	5	5	80	5		60	4	70	5			
55	2	2	15	1	1	60	2-3	2-3				55	2					
45	5	5	35	2	2	80	5	5	60	5		45	4	50	5			
210	9	9	210	8	8				180	9	100	6	195	8	165	9		
160	9	9	155	8	8				160	9	80	6	160	8	145	9		
140	9	9	155	7	7				140	9	80	6	140	8	130	9		
130	8	8	125	7	7				140	8	70	6	130	7	130	8		
40	3	3	35	3	3							40	2					
									140	8								
									140	8								
									80	7								
									80	7								
35	4	4	25	4	4	30	4	4	30	4		35	3	25	4			
45	4	4	15	1	1	45	4	4	40	4		40	3	35	4			
40	3	3	15	1	1	40	3	3	35	3		40	2	30	3			
310	9	9	260	9	9				350	9		180	7	310	8			
310	9	9	260	9	9				350	9		160	7	310	8			
260	9	9	220	9	9				320	8		150	7	260	8			
220	9	9	180	8	8				280	7		120	6	220	8			
280	8	8	260	8	8				320	7		180	6	280	7			
125	7	7	105	7	7				190	7				125	6			
325	8	8	270	8	8				160	6		180	6	325	7			
220	7	7	180	7	7				160	6				220	6			
125	7	7	105	6	6				160	6				125	6			
105	6	6	85	6	6				160	6				105	5			
90	6	6	80	5	5				150	6				90	5			
80	6	6	60	5	5				150	6				80	5			
									100	3								
									100	3								
									100	2								

**GUHRINGNAVIGATOR 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

Tools with bold feed column no. are preferred choice.

Drill Ø mm	Feed column no.								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
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

Cooling:

without coolant ducts
 with coolant ducts

Coolant:

Air
 Neat oil
 Soluble oil

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



≤ 10xD	≤ 12xD	≤ 15xD	≤ 20xD	≤ 25xD	≤ 30xD
5513	5525	6509	6511	6512	6513
Comp. std.	Comp. std.	Company std.	Company std.	Company std.	Company std.
Solid carb.	Solid carb.	Solid carbide	Solid carbide	Solid carbide	Solid carbide
K	K/P	K/P	K/P	K/P	K/P
RT 100 GG	RT 100 U	RT 100 T	RT 100 T	RT 100 T	RT 100 T
40 bar	40 bar	40 bar	40 bar	40 bar	40 bar
MQL	MQL	MQL	MQL	MQL	MQL
51	53	56	58	60	62



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.
110	6	110	8	110	8	110	8	110	8	110	8	110	8	110	7	110	6
110	5	110	8	110	8	110	8	110	8	110	8	110	8	110	7	110	6
110	7	120	8	120	8	120	8	120	8	120	8	120	8	120	8	120	8
100	7	120	8	120	8	120	8	120	8	120	8	120	8	120	8	120	8
110	7	110	6	110	6	110	6	110	6	110	6	110	6	110	6	110	6
110	6	110	8	110	8	110	8	110	8	110	8	110	8	110	7	110	7
100	6	100	7	100	7	100	7	100	7	100	7	100	7	100	7	100	7
110	6	110	7	80	7	110	7	80	7	110	7	80	7	110	7	80	7
105	6	110	6	80	7	110	6	80	7	110	6	80	7	110	6	80	7
110	7	110	8	110	8	110	8	110	8	110	8	110	8	110	7	110	7
110	6	110	7	80	6-7	110	7	80	6-7	110	7	80	6-7	110	6	80	6-7
85	4	110	6	80	6-7	110	6	80	6-7	110	6	80	6-7	110	6	80	6-7
100	6	100	5	100	5	100	5	100	5	100	5	100	5	100	5	100	5
80	4	80	5	80	5	80	5	80	5	80	5	80	5	80	5	80	5
80	5	100	6-7	100	6-7	100	6-7	100	6-7	100	6-7	100	6-7	100	6-7	100	6-7
65	4	80	5	80	5	80	5	80	5	80	5	80	5	80	5	80	5
50	4	50	5	50	5	50	5	50	5	50	5	50	5	50	4	50	4
50	2	50	5	50	5	50	5	50	5	50	5	50	5	50	4	50	4
		40-50	2-4	40-50	2-4	40-50	2-4	40-50	2-4	40-50	2-4	40-50	2-4	40-50	2-4	40-50	2-4
		60	4	100	5	100	5	100	5	100	5	100	5	100	5	100	5
		55	2	60	2-3	60	2-3	60	2-3	60	2-3	60	2-3	60	2-3	60	2-3
		45	4	100	5	100	5	100	5	100	5	100	5	100	5	100	5
120	6	120	8	140	8	140	8	140	8	140	8	140	8	140	8	140	8
100	6	120	8	100	8	100	8	100	8	100	8	100	8	100	8	100	8
90	6	100	8	140	8	140	8	140	8	140	8	140	8	140	8	140	8
80	6	90	7	100	8	100	8	100	8	100	8	100	8	100	8	100	8
40	2																
				100	6	100	6	100	6	100	6	100	6	100	6	100	6
				100	6	100	6	100	6	100	6	100	6	100	6	100	6
				90	8	60	8-9	90	8	60	8-9	90	8	60	8-9	90	8
				30	2	30	2	30	2	30	2	30	2	30	2	30	2
410	8	150	8														
410	8	150	8														
380	8	150	8														
330	8	120	8														
		150	7														
		80	6	120	1	120	1	120	1	120	1	120	1	120	1	120	1
280	7	120	7	120	8	120	8	120	8	120	8	120	8	120	8	120	8
		120	6														
110	6	40	6														
80	5																
		40	5														

**GUHRINGNAVIGATOR HT 800 WP**

All data are approximate values. The actually achievable cutting speeds and feed rates depend on the respective machining conditions. We recommend suitable drilling trials.

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

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

Drill Ø mm	Feed column no.								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
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

Coolant:

- Air
- Neat oil
- ⊙ Soluble oil

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



≤3xD		≤3xD		≤3xD		≤5xD		≤5xD		≤5xD		≤7xD		≤7xD		≤7xD	
4112	4115	4113	4112	4115	4113	4112	4115	4113	4112	4115	4113	4112	4115	4113			
Co. std.	Co. std.	Co. std.	Co. std.	Co. std.	Co. std.	Co. std.	Co. std.	Co. std.	Co. std.	Co. std.	Co. std.	Co. std.	Co. std.	Co. std.			
Sol. carb.	Sol. carb.	Sol. carb.	Sol. carb.	Sol. carb.	Sol. carb.	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/P	K/P	K/P	K/P	K/P	K/P	K/P	K/P	K/P	K/P			
F	a	Y	F	a	Y	F	a	Y	F	a	Y	F	a	Y			
Steel	stainl. st.	Cast iron	Steel	stainl. st.	Cast iron	Steel	stainl. st.	Cast iron	Steel	stainl. st.	Cast iron	Steel	stainl. st.	Cast iron			
80	86	83	80	86	83	80	86	83	80	86	83	80	86	83			

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.	
130	6					125	6					120	5						
110	5					105	5					105	4						
130	7					125	7					120	6						
110	6					105	6					105	5						
130	6					125	6					120	5						
125	6					120	6					110	5						
110	5					105	5					100	4						
110	6					105	6					100	5						
90	5					85	5					85	4						
130	7					125	7					120	6						
110	6					105	6					100	5						
70	4					70	4					70	4						
105	5					105	5					105	4						
70	4					70	4					70	3						
60	5					55	5					55	4						
55	4					50	4					50	3						
55	3					55	3					55	2						
50	2					50	2					50	2						
		25	2					25	2					25	1				
		55	3					55	3					55	2				
		40	3					40	3					40	2				
		35	3					35	3					35	2				
				100	6					100	6							80	6
				90	6					90	6							70	6
				120	7					120	7							100	7
				100	6					100	6							80	6
		90	6					90	6					70	6				
				80	5					80	5							60	5
				80	5					80	5							60	5
				80	5					80	5							60	5
				80	5					80	5							60	5
		25	2					25	2					25	1				
		40	3					40	3					40	2				
		35	2					35	2					35	1				

**GUHRING NAVIGATOR Micro-precision drills**

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 GühringNavigator on the internet: www.guehring.com.

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

Drill Ø mm	Feed column no.												
	56	57	58	59	60	61	62	63	64	65	66	67	68
	f (mm/rev.)												
0.50	0.006	0.012	0.018	0.022	0.030	0.035	0.040	0.045	0.050	0.050	0.055	0.060	0.060
0.80	0.008	0.016	0.024	0.032	0.040	0.050	0.060	0.070	0.080	0.080	0.090	0.090	0.090
1.00	0.012	0.022	0.032	0.042	0.060	0.070	0.080	0.090	0.100	0.100	0.110	0.110	0.120
1.50	0.021	0.036	0.051	0.066	0.090	0.100	0.120	0.130	0.150	0.150	0.160	0.170	0.180
2.00	0.032	0.052	0.072	0.092	0.120	0.140	0.160	0.180	0.200	0.210	0.220	0.230	0.240
2.50	0.045	0.070	0.095	0.120	0.150	0.170	0.200	0.220	0.250	0.260	0.270	0.280	0.300
3.00	0.060	0.090	0.120	0.150	0.180	0.210	0.240	0.270	0.300	0.310	0.330	0.340	0.360

Coolant:

- Air
● Neat oil
⊙ Soluble oil

Cutting direction:

- Ⓜ right-hand cutting

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



	$\leq 4xD$	$\leq 7xD$	$\leq 5xD$	$\leq 8xD$	$\leq 15xD$
5652	6400	6401	6405	6408	6412
Company standard	Company standard	Company standard	Company standard	Company standard	Company standard
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
K/P	K/P	K/P	K/P	K/P	K/P
N	N	N	N	N	N
89	90	92	94	96	98



V_c m/min	Feed col. no.	V_c m/min	Feed col. no.		V_c m/min	Feed col. no.		
100	62	100	64	62	105	62	58	58
100	62	100	64	62	100	62	58	58
100	62	100	64	62	105	62	59	59
90	61	90	63	61	90	61	59	59
90	62	90	64	62	95	62	58	58
90	62	90	64	62	95	62	58	58
90	61	90	63	61	90	61	58	58
90	61	90	63	61	90	61	58	58
70	60	70	62	60	70	60	58	58
100	61	100	63	61	100	61	57	57
85	61	85	63	61	85	61	58	58
70	60	70	62	60	70	60	58	58
70	60	70	62	60	70	60	57	57
60	60	60	62	60	60	60	57	57
50	60	50	62	60	60	60	58	58
60	60	60	62	60	60	60	58	58
		60	57	57	60	57	57	57
		60	57	57	60	57	57	57
		30	57	57	70	57	57	57
		15	56	56	60	56	56	56
		30	57	57	70	57	57	57
130	66	130	68	66	150	60	60	60
130	66	130	68	66	140	60	60	60
130	66	130	68	66	140	60	60	60
120	65	120	67	65	130	60	60	60
		10	56	56	25	56	56	56
		15	56	56	35	56	56	56
		15	56	56	35	56	56	56
		70	68	68	100	68	68	68
		70	68	68	100	68	68	68
		135	59	59	135	59	59	59
		135	59	59	135	59	59	59

GÜHRINGNAVIGATOR

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 GühringNavigator on the internet: www.guehring.com.

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

Drill Ø mm	Feed column no.								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250

- Coolant:
- Air
 - Neat oil
 - ◐ Soluble oil

Material group	Material examples Figures in bold = material no. to DIN EN 10 027	Tensile strength MPa (N/mm ²)	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 hardened 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	Bakelit, Resopal, Pertinax, Moltopren	≤150		○
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		○
Kevlar	Kevlar	≤1000		○
Glass, carbon concentr. plastics	GFK/CFK	≤1000		○



NC spotting drills

5678
Comp. std.
HSCO
F
N
90°
132

6027
Comp. std.
Solid carb.
K10/K20
F
N
90°
133

5679
Comp. std.
HSCO
F
N
120°
134

6028
Comp. std.
Solid carb.
K10/K20
F
N
120°
135

6029
Comp. std.
Solid carb.
K10/K20
F
N
142°
136

Centre drills

5680
333
HSCO
F
N
137



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.
42	6	100	6	42	6	100	6	100	6	37	4
36	5	85	5	36	5	85	5	85	5	32	4
48	6	105	6	48	6	105	6	105	6	37	4
42	6	100	5	42	6	100	5	100	5	37	4
44	6	85	5	44	6	85	5	85	5	32	4
44	6	85	5	44	6	85	5	85	5	27	4
40	5	70	4	40	5	70	4	70	4	24	3
27	4	55	4	27	4	55	4	55	4	18	4
22	3	45	3	22	3	45	3	45	3	11	3
37	6	100	6	37	6	100	6	100	6	32	5
22	4	55	4	22	4	55	4	55	4	19	4
18	3	30	3	18	3	30	3	30	3	11	3
19	4			19	4					14	4
15	3			15	3					11	3
21	4	55	4	21	4	55	4	55	4	14	3
16	3			16	3					9	3
12	3			12	3					9	3
10	2			10	2					9	2
		30	2			30	2				
18	3	35	3	18	3	35	3	35	3	16	3
15	3	25	3	15	3	25	3	25	3	11	3
12	3	30	3	12	3	30	3	30	3	9	3
38	6	100	6	38	6	100	6	100	6	27	6
35	6	100	6	35	6	100	6	100	6	27	5
33	6	85	6	33	6	85	6	85	6	32	6
28	6	70	6	28	6	70	6	70	6	27	5
7	1	25	2	7	1	25	2	25	2	6	1
10	2	25	1	10	2	25	1	25	1	6	2
8	2	25	1	8	2	25	1	25	1	5	2
		230	7			230	7			86	7
85	7	230	7	85	7	230	7	230	7	86	7
65	7	165	7	65	7	165	7	165	7	54	6
65	6	165	6	65	6	165	6	165	6	54	6
80	6	230	6	80	6	230	6	230	6	75	6
70	5	200	5	70	5	200	5	200	5	64	5
75	5	200	5	75	5	200	5	200	5	75	5
50	5	135	5	50	5	135	5	135	5	48	5
45	5	100	4	45	5	100	4	100	4	37	4
40	4	85	4	40	4	85	4	85	4	32	4
25	4	55	4	25	4	55	4	55	4	21	4
20	4	45	4	20	4	45	4	45	4	19	4
25	4	65	4	25	4	65	4	65	4	21	4
40	4	95	5	40	4	95	5	95	5	32	5



GUHRINGNAVIGATOR Twist drills

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 GühringNavigator on the internet: www.guehring.com.

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

Drill Ø mm	Feed column no.								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

Coolant:

- Air
● Neat oil
● Soluble oil

Material group	Material examples <small>Figures in bold = material no. to DIN EN 10 027</small>	Tensile strength MPa (N/mm ²)	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 hardened 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 X6CrNiMoTi17-12-2 (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	Bakelit, Resopal, Pertinax, Moltopren	≤150		○
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		○
Kevlar	Kevlar	≤1000		○
Glass, carbon concentr. plastics	GFK/CFK	≤1000		○



≤3xD	≤3xD	≤3xD	≤3xD	≤3xD	≤5xD	≤5xD	≤5xD
5524	5520	5521	6005	5516	5523	5519	6006
1897	1897	1897	Co. std.	6539	338	338	Co. std.
HSCO	HSCO	HSS-E-PM	HSS-E-PM	Sol. carb.	HSCO	HSCO	HSS-E-PM
○	Ⓢ	Ⓢ	ⓕ	K10/K20	○	Ⓢ	ⓕ
GU 500 DZ	GU 500 DZ	GT 500 DZ	GU 500 PM	N	GU 500 DZ	GU 500 DZ	GU 500 PM
111	111	114	101	109	119	119	105



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.
35	6	45	6	40	6	47	6	80	4	35	6	45	6	47	6
30	5	35	5	32	5	37	5	70	4	30	5	35	5	37	5
40	6	50	6	45	6	53	6	80	5	40	6	50	6	53	6
30	6	40	6	40	5	42	6	70	4	30	6	40	6	42	6
32	6	44	6	42	6	46	6	80	4	32	6	44	6	46	6
28	6	44	6	40	5	46	6	70	4	28	6	44	6	46	6
20	5	40	5	28	4	42	5	60	4	20	5	40	5	42	5
15	4	27	4	25	4	28	4	60	4	15	4	27	4	28	4
13	3	22	3	20	3	23	3	80	5	13	3	22	3	23	3
30	6	44	6	40	4	46	6	60	4	30	6	44	6	46	6
16	4	22	4	22	4	23	4	60	4	16	4	22	4	23	4
12	3	18	3	18	3	19	3	50	4	12	3	18	3	19	3
15	4	22	4	20	4	23	4	50	3	15	4	22	4	23	4
10	3	16	3	15	3	17	3	10	3	10	3	16	3	17	3
15	4	20	4	21	4	21	4	15	4	15	4	20	4	21	4
10	3	15	3	16	3	16	3	10	3	10	3	15	3	16	3
10	3	13	2	15	3	14	2	10	3	10	3	13	2	14	2
		9	2	12	2	9	2	25	2			9	2	9	2
								20	2						
14	4	20	4	15	4	21	4	25	2	14	4	20	4	21	4
10	4	16	4	10	3	17	4	15	1	10	4	16	4	17	4
12	4	18	4	12	3	19	4	25	2	12	4	18	4	19	4
36	6	45	6	50	6	47	6	90	4	36	6	45	6	47	6
30	6	40	6	40	6	42	6	80	4	30	6	40	6	42	6
30	6	40	6	44	6	42	6	80	4	30	6	40	6	42	6
22	6	30	6	32	6	32	6	70	4	22	6	30	6	32	6
				8	3										
				5	2										
								15	2						
								15	1					5	2
								15	1						
50	7	70	7			74	7	200	7	50	7	70	7	74	7
50	7	70	7			74	7	200	7	50	7	70	7	74	7
65	7	85	7			89	7	150	6	65	7	85	7	89	7
60	6	70	6			74	6	120	6	60	6	70	6	74	6
60	6	80	6			84	6	180	6	60	6	80	6	84	6
70	5	80	5	80	5	84	5	80	5	70	5	80	5	84	5
45	5	77	5			81	5	180	5	45	5	77	5	81	5
30	5	44	5	60	5	46	5	180	5	30	5	44	5	46	5
36	4	50	4	50	5	53	4	120	5	36	4	50	4	53	4
30	4	40	4	45	4	42	4	120	5	30	4	40	4	42	4
30	4	32	4	40	4	34	4	70	4	30	4	32	4	34	4
25	4	28	4	32	4	29	4	50	3	25	4	28	4	29	4
20	4	25	4	25	4	26	4	50	4	20	4	25	4	26	4
15	4	27	4			28	4	40	3	15	4	27	4	28	4
								80	3						



GÜHRINGNAVIGATOR Twist drills

Tools with bold feed column no. are preferred choice.

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Article no.

Standard/DIN

Tool material

Carbide grade

Surface finish

Type

Std. range page

Drill Ø mm	Feed column no.								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

Coolant:

 Air Neat oil Soluble oil

Material group	Material examples Figures in bold = material no. to DIN EN 10 027	Tensile strength MPa (N/mm ²)	Hardness	Coolant
Common structural steels	1.0035 S185(St33), 1.0486 P275N(StE285), 1.0345 P235GH(H1), 1.0425 P265GH(H2)	≤500		<input type="radio"/>
	1.0050 E295 (St50-2), 1.0070 E360 (St70-2), 1.8937 P500NH (WStE500)	≤1000		<input type="radio"/>
Free-cutting steels	1.0718 11SMnPB30 (9SMnPb28), 1.0736 11SMn37 (9SMn36)	≤850		<input type="radio"/>
	1.0727 46S20 (45S20), 1.0728 (60S20), 1.0757 46SPb20 (45SPb20)	≤1000		<input type="radio"/>
Unalloyed heat-treatable steels	1.0402 C22, 1.1178 C30E (Ck30)	≤700		<input type="radio"/>
	1.0503 C45, 1.1191 C45E (Ck45)	≤850		<input type="radio"/>
	1.0601 C60, 1.1221 C60E (Ck60)	≤1000		<input type="radio"/>
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4	≤1000		<input type="radio"/>
	1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	≤1400		<input type="radio"/>
Unalloyed case hardened steels	1.0301 (C10), 1.1121 C10E (Ck10)	≤850		<input type="radio"/>
Alloyed case hardened steels	1.7276 10CrMo11, 1.5125 11MnSi6	≤1000		<input checked="" type="radio"/>
	1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5	≤1400		<input checked="" type="radio"/>
Nitriding steels	1.8504 34CrAl6	≤1000		<input type="radio"/>
	1.8519 31CrMoV9, 1.8550 34CrAlNi7	≤1400		<input checked="" type="radio"/>
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9	≤850		<input type="radio"/>
	1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4	≤1400		<input checked="" type="radio"/>
High speed steels	1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3	≤1400		<input checked="" type="radio"/>
Spring steels	1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4 (51CrV4)		≤350 HB	<input checked="" type="radio"/>
Hardened steels	-		≤48 HRC	<input checked="" type="radio"/>
			≤66 HRC	<input checked="" type="radio"/>
Stainless steels, sulphured austenitic	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9	≤900		<input checked="" type="radio"/>
	1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A)	≤1100		<input checked="" type="radio"/>
	1.4057 X20CrNi172 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2	≤1500		<input checked="" type="radio"/>
Cast iron	0.6010 EN-GJL-100 (GG10), 0.6020 EN-GJL-200 (GG20)		≤240 HB	<input type="radio"/>
	0.6025 EN-GJL-250 (GG25), 0.6035 EN-GJL-350 (GG35)		≤350 HB	<input type="radio"/>
Spheroidal graphite iron and malleable cast iron	0.7050 EN-GJS-500-7 (GGG50), 0.8035 EN-GJMw-350-4 (GTW35)		≤240 HB	<input type="radio"/>
	0.7070 EN-GJS-700-2 (GGG70), 0.8170 EN-GJMB-700-2 (GTS70)		≤350 HB	<input type="radio"/>
Chilled cast iron	-		≤350 HB	<input type="radio"/>
New cast materials GGV	EN-GJV250 (GGV25), EN-GJV350 (GGV35)		≤220 HB	<input type="radio"/>
	EN-GJV400 (GGV40), EN-GJV500 (GGV50), SiMo 6		≤300 HB	<input type="radio"/>
New cast materials ADI	EN-GJS-800-8 (ADI800), EN-GJS-1000-5 (ADI1000)	≤1000		<input type="radio"/>
	EN-GJS-1200-2 (ADI1200), EN-GJS-1400-1 (ADI1400)	≤1400		<input type="radio"/>
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤2000		<input checked="" type="radio"/>
Ti and Ti alloys	3.7024 Ti99.5, 3.7114 TiAl5Sn2.5, 3.7124 TiCu2	≤850		<input checked="" type="radio"/>
	3.7154 TiAl6Zr5, 3.7165 TiAl6V4, 3.7184 TiAl4Mo4Sn2.5, - TiAl8Mo1V1	≤1400		<input checked="" type="radio"/>
Aluminium and Al alloys	3.0255 Al99.5, 3.2315 AlMgSi1, 3.3515 AlMg1	≤400		<input type="radio"/>
Al wrought alloys	3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1.5	≤650		<input type="radio"/>
Al cast alloys ≤ 10 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9	≤600		<input type="radio"/>
≤ 24 % Si	3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		<input type="radio"/>
Magnesium alloys	3.5200 MgMn2, 3.5812.05 G-MgAl8Zn1, 3.5612.05 G-MgAl6Zn1	≤400		<input type="radio"/>
Copper, low-alloyed	2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb	≤500		<input type="radio"/>
Brass, short-chipping	2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2	≤600		<input type="radio"/>
long-chipping	2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0.5	≤600		<input type="radio"/>
Bronze, short-chipping	2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn	≤600		<input type="radio"/>
	2.0790 CuNi18Zn19Pb	≤850		<input checked="" type="radio"/>
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10	≤850		<input checked="" type="radio"/>
	2.0980 CuAl11Ni, 2.1247 CuBe2	≤1000		<input checked="" type="radio"/>
Duroplastics	Bakelit, Resopal, Pertinax, Moltopren	≤150		<input type="radio"/>
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		<input type="radio"/>
Kevlar	Kevlar	≤1000		<input type="radio"/>
Glass, carbon concentr. plastics	GFK/CFK	≤1000		<input type="radio"/>



≤5xD		≤5xD		≤5xD		≤10xD		≤10xD	
9651	5522	5517	5536	5537					
338	338	Company standard	340	340					
HSS	HSS-E-PM	Solid carbide	HSC0	HSC0					
Ⓢ	Ⓢ	K10/K20	○	○					
N	GT 500 DZ	N	GU 500 DZ	GU 500 DZ					
125	122	117	129	129					



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.
32	6	40	6	80	4	29	5	32	5
26	5	32	5	70	4	22	4	25	4
36	6	45	6	80	5	32	5	35	5
36	5	40	5	70	4	25	5	28	5
31	5	42	6	80	4	25	5	28	5
31	5	40	5	70	4	22	5	25	5
28	4	28	4	60	4	13	4	15	4
24	4	25	4	60	4	12	3	13	3
		20	3			11	2	12	2
36	6	40	4	80	5	25	5	28	5
22	4	22	4	60	4	12	3	14	3
		18	3			11	2	12	2
16	4	20	4	50	4	12	3	13	3
		15	3			7	2	8	2
20	4	21	4	50	3	12	3	13	3
		16	3			9	2	10	2
		15	3			9	2	10	2
		12	2	25	2				
				20	2				
		15	4	25	2	12	3	13	3
		10	3	15	1	7	3	8	3
		12	3	25	2	11	3	12	3
36	6	50	6	90	4	29	6	32	6
36	6	40	6	80	4	23	6	26	6
31	6	44	6	80	4	25	6	28	6
24	6	32	6	70	4	18	6	20	6
		8	3						
		5	2	15	2				
				15	1				
				15	1				
				200	7	45	7	50	7
				200	7	45	7	50	7
				150	6	54	7	60	7
				120	6	45	6	50	6
90	6			180	6	45	6	50	6
70	5			80	5	60	5	70	5
80	5	80	5	180	5	40	5	50	5
50	5	60	5	180	5	25	5	28	5
36	4	50	5	120	5	31	4	35	4
33	4	45	4	120	5	22	4	25	4
18	4	40	4	70	4	22	4	24	4
18	4	32	4	50	3	18	4	20	4
29	4	25	4	50	4	16	4	18	4
36	5			40	3	11	4	12	4
				80	3			80	3





THREADING TOOLS

Taps for ISO metric threads



P ≤ 1000

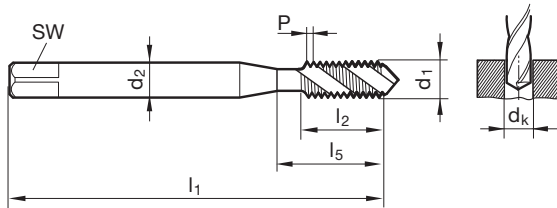
GÜHRING NAVIGATOR

Cutting data page 184

M	○
K	
N	
S	
H	

Threading tools

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



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	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	●	●



Taps for ISO metric threads

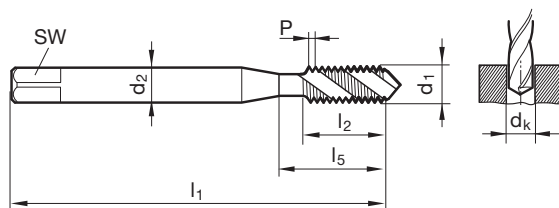


P	≤ 1200
M	
K	
N	
S	
H	

GÜHRING NAVIGATOR

Cutting data page 184

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



Threading tools

DIN 2184-1 DIN 371/DIN 376

Article no.

5552

5591

Discount group

156

156

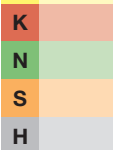
d1	P	d2	SW	dk	l1	l2	l5	Availability	
mm	mm	mm	mm	mm	mm	mm	mm		
M3	0.50	3.50	2.70	2.50	56.00	6.00	18.00	●	●
M4	0.70	4.50	3.40	3.30	63.00	7.50	21.00	●	●
M5	0.80	6.00	4.90	4.20	70.00	8.50	25.00	●	●
M6	1.00	6.00	4.90	5.00	80.00	11.00	30.00	●	●
M8	1.25	8.00	6.20	6.80	90.00	14.00	35.00	●	●
M10	1.50	10.00	8.00	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	●	●

Taps for ISO metric threads



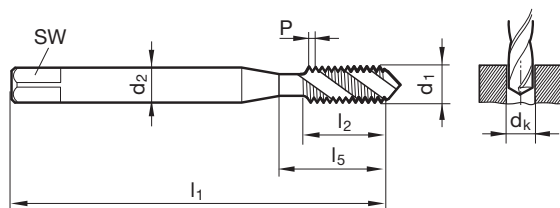
P **GÜHRING NAVIGATOR**

M • Cutting data page 184



Threading tools

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



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	●	●



Taps for ISO metric threads



P	
M	
K	
N	•
S	
H	

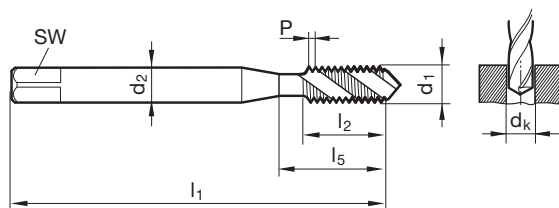
GÜHRING NAVIGATOR

Cutting data page 184

Tool material	HSS-E
Tolerance on Ø	ISO2/6H
Surface	○
Type	AI R45
Form	C
Internal cooling	☒

SL

Threading tools



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	●

Taps for ISO metric threads



P **GÜHRING NAVIGATOR**

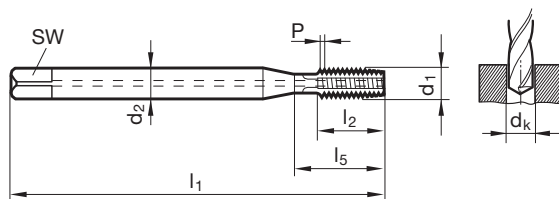
Cutting data page 184

M	
K	•
N	≥ 7
S	
H	

• with internal cooling ≥ M5

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

SL



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	
M3	0.50	3.50	2.70	2.50	56.00	8.00	18.00	•
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	18.00	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	•



Taps for ISO metric threads

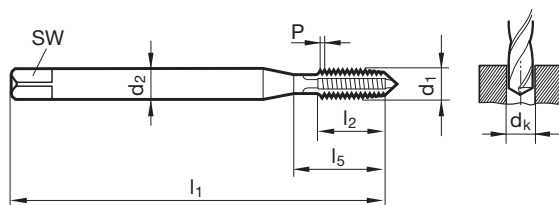


P	≤ 1000
M	○
K	
N	
S	
H	

GÜHRING NAVIGATOR

Cutting data page 186

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



Threading tools

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	●	●

Taps for ISO metric threads



P ≤ 1200

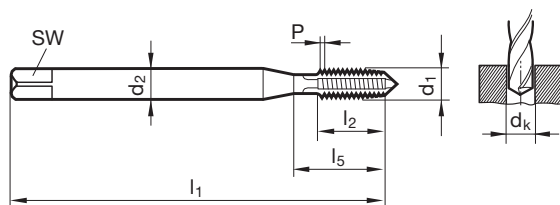
GÜHRING NAVIGATOR

Cutting data page 186

M	
K	
N	
S	
H	

Threading tools

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



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	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	●	●



Taps for ISO metric threads

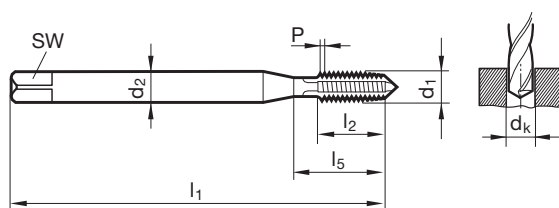


P	≤ 1000
M	•
K	
N	
S	
H	

GÜHRING NAVIGATOR

Cutting data page 186

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



Threading tools

DIN 2184-1 DIN 371/DIN 376

Article no.

5597

5588

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	●	●

Taps for ISO metric threads



P ≤ 1000

GÜHRING NAVIGATOR

M •

Cutting data page 186

K

N

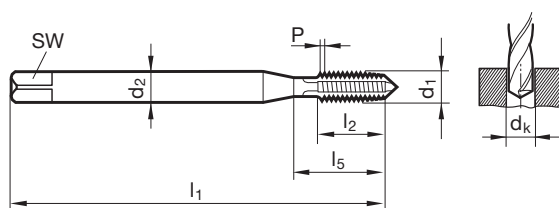
S

H

Threading tools

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

SL



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	●



Taps for ISO metric threads



P	
M	
K	
N	•
S	
H	

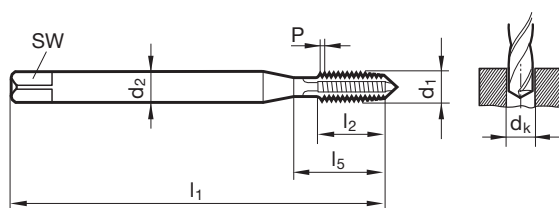
GÜHRING NAVIGATOR

Cutting data page 186

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

SL

Threading tools



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	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	●

Taps for ISO metric threads



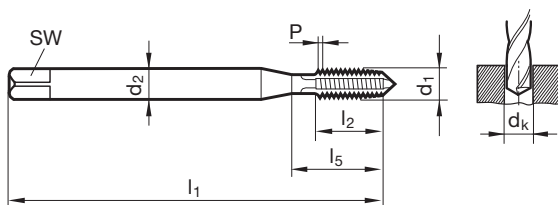
P	
M	
K	•
N	
S	
H	

GÜHRING NAVIGATOR

Cutting data page 186

Threading tools

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



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	●	●



Taps for ISO metric threads



P	•
M	•
K	○
N	○
S	○
H	

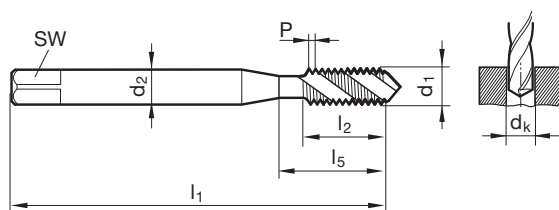
GÜHRING NAVIGATOR

Cutting data page 188

Tool material	HSS-E
Tolerance on Ø	6HX
Surface	A
Type	VA R45
Form	C
Internal cooling	



Threading tools



DIN 2184-1 DIN 371/DIN 376

Article no.

393

Discount group

103

d1	P	d2	SW	dk	l1	l2	l5	Availability
	mm	mm	mm	mm	mm	mm	mm	
M2	0.40	2.80	2.10	1.60	45.00	4.50	13.50	•
M2,5	0.45	2.80	2.10	2.05	50.00	5.00	14.50	•
M3	0.50	3.50	2.70	2.50	56.00	6.00	18.00	•
M3,5	0.60	4.00	3.00	2.90	56.00	7.00	20.00	•
M4	0.70	4.50	3.40	3.30	63.00	7.50	21.00	•
M4,5	0.75	6.00	4.90	3.70	70.00	8.50	25.00	•
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	•
M7	1.00	7.00	5.50	6.00	80.00	11.00	30.00	•
M8	1.25	8.00	6.20	6.80	90.00	14.00	35.00	•
M9	1.25	9.00	7.00	7.80	90.00	14.00	35.00	•
M10	1.50	10.00	8.00	8.50	100.00	16.00	39.00	•
M11	1.50	8.00	6.20	9.50	100.00	16.00	42.00	•
M12	1.75	9.00	7.00	10.20	110.00	18.50	49.00	•
M14	2.00	11.00	9.00	12.00	110.00	20.00	53.00	•
M16	2.00	12.00	9.00	14.00	110.00	20.00	54.00	•
M18	2.50	14.00	11.00	15.50	125.00	25.00	62.00	•
M20	2.50	16.00	12.00	17.50	140.00	25.00	62.00	•
M22	2.50	18.00	14.50	19.50	140.00	27.00	62.00	•
M24	3.00	18.00	14.50	21.00	160.00	30.00	73.00	•
M27	3.00	20.00	16.00	24.00	160.00	30.00	73.00	•
M30	3.50	22.00	18.00	26.50	180.00	35.00	85.00	•
M33	3.50	25.00	20.00	29.50	180.00	40.00	91.00	•
M36	4.00	28.00	22.00	32.00	200.00	40.00	102.00	•
M39	4.00	32.00	24.00	35.00	200.00	50.00	107.00	•
M42	4.50	32.00	24.00	37.50	200.00	45.00	112.00	•

Taps for ISO metric threads



P	•
M	•
K	○
N	○
S	○
H	

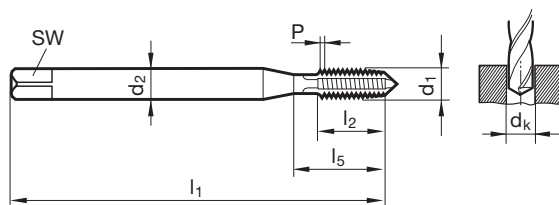
GÜHRING NAVIGATOR

Cutting data page 188

Tool material	HSS-E
Tolerance on Ø	6HX
Surface	S
Type	VA
Form	B
Internal cooling	☒



Threading tools



DIN 2184-1 DIN 371/DIN 376

Article no.

4218

Discount group

103

d1	P	d2	SW	dk	l1	l2	l5	Availability
	mm	mm	mm	mm	mm	mm	mm	
M2	0.40	2.80	2.10	1.60	45.00	8.00	13.50	•
M2,5	0.45	2.80	2.10	2.05	50.00	9.00	14.50	•
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	•
M4,5	0.75	6.00	4.90	3.70	70.00	14.00	25.00	•
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	•
M7	1.00	7.00	5.50	6.00	80.00	16.00	30.00	•
M8	1.25	8.00	6.20	6.80	90.00	17.00	35.00	•
M9	1.25	9.00	7.00	7.80	90.00	17.00	35.00	•
M10	1.50	10.00	8.00	8.50	100.00	20.00	39.00	•
M11	1.50	8.00	6.20	9.50	100.00	20.00	42.00	•
M12	1.75	9.00	7.00	10.20	110.00	24.00	49.00	•
M14	2.00	11.00	9.00	12.00	110.00	26.00	53.00	•
M16	2.00	12.00	9.00	14.00	110.00	26.00	54.00	•
M18	2.50	14.00	11.00	15.50	125.00	30.00	62.00	•
M20	2.50	16.00	12.00	17.50	140.00	32.00	62.00	•
M22	2.50	18.00	14.50	19.50	140.00	32.00	62.00	•
M24	3.00	18.00	14.50	21.00	160.00	36.00	73.00	•
M27	3.00	20.00	16.00	24.00	160.00	36.00	73.00	•
M30	3.50	22.00	18.00	26.50	180.00	40.00	85.00	•
M33	3.50	25.00	20.00	29.50	180.00	40.00	91.00	•
M36	4.00	28.00	22.00	32.00	200.00	50.00	102.00	•
M42	4.50	32.00	24.00	37.50	200.00	56.00	112.00	•



Taps for ISO metric fine threads



P	•
M	•
K	○
N	○
S	○
H	

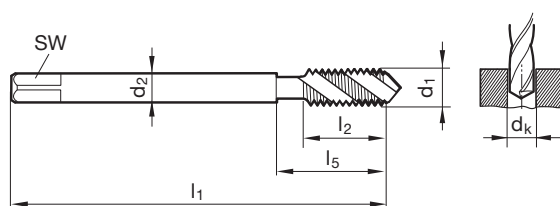
GÜHRING NAVIGATOR

Cutting data page 188

Tool material	HSS-E
Tolerance on Ø	6HX
Surface	A
Type	VA R45
Form	C
Internal cooling	



Threading tools



DIN 374 DIN 2184-1	Article no.	394
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Discount group **103**

d1	d2	SW	dk	l1	l2	l5	Code no.	Availability
	mm	mm	mm	mm	mm	mm		
M3 x 0,35	2.20	1.80	2.65	56.00	4.00	18.00	3.002	•
M4 x 0,35	2.80	2.10	3.65	63.00	5.00	21.00	4.002	•
M4 x 0,5	2.80	2.10	3.50	63.00	5.00	21.00	4.003	•
M5 x 0,5	3.50	2.70	4.50	70.00	5.00	25.00	5.003	•
M6 x 0,5	4.50	3.40	5.50	80.00	5.00	30.00	6.003	•
M6 x 0,75	4.50	3.40	5.20	80.00	8.00	30.00	6.004	•
M8 x 0,75	6.00	4.90	7.20	80.00	8.00	30.00	8.004	•
M8 x 1	6.00	4.90	7.00	90.00	11.00	35.00	8.005	•
M9 x 1	7.00	5.50	8.00	90.00	11.00	35.00	9.005	•
M10 x 0,75	7.00	5.50	9.20	90.00	11.00	35.00	10.004	•
M10 x 1	7.00	5.50	9.00	90.00	11.00	35.00	10.005	•
M10 x 1,25	7.00	5.50	8.80	100.00	14.00	39.00	10.006	•
M11 x 1	8.00	6.20	10.00	90.00	11.00	33.00	11.005	•
M12 x 1	9.00	7.00	11.00	100.00	11.00	40.00	12.005	•
M12 x 1,25	9.00	7.00	10.80	100.00	15.00	40.00	12.006	•
M12 x 1,5	9.00	7.00	10.50	100.00	15.00	40.00	12.007	•
M14 x 1	11.00	9.00	13.00	100.00	11.00	40.00	14.005	•
M14 x 1,25	11.00	9.00	12.80	100.00	15.00	40.00	14.006	•
M14 x 1,5	11.00	9.00	12.50	100.00	15.00	40.00	14.007	•
M16 x 1	12.00	9.00	15.00	100.00	11.00	44.00	16.005	•
M16 x 1,5	12.00	9.00	14.50	100.00	15.00	44.00	16.007	•
M18 x 1	14.00	11.00	17.00	110.00	12.00	44.00	18.005	•
M18 x 1,5	14.00	11.00	16.50	110.00	16.00	44.00	18.007	•
M18 x 2	14.00	11.00	16.00	125.00	20.00	58.00	18.008	•
M20 x 1	16.00	12.00	19.00	125.00	12.00	44.00	20.005	•
M20 x 1,5	16.00	12.00	18.50	125.00	16.00	44.00	20.007	•
M20 x 2	16.00	12.00	18.00	140.00	20.00	60.00	20.008	•
M22 x 1	18.00	14.50	21.00	125.00	12.00	44.00	22.005	•
M22 x 1,5	18.00	14.50	20.50	125.00	16.00	44.00	22.007	•
M22 x 2	18.00	14.50	20.00	140.00	22.00	62.00	22.008	•
M24 x 1	18.00	14.50	23.00	140.00	15.00	48.00	24.005	•
M24 x 1,5	18.00	14.50	22.50	140.00	16.00	48.00	24.007	•
M24 x 2	18.00	14.50	22.00	140.00	22.00	48.00	24.008	•

Taps for ISO metric fine threads



P	•
M	•
K	○
N	○
S	○
H	

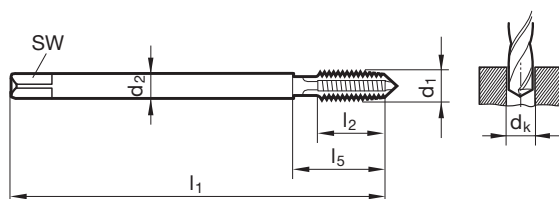
GÜHRING NAVIGATOR

Cutting data page 188

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



Threading tools



DIN 374 DIN 2184-1

Article no.

4219

Discount group

103

d1	d2	SW	dk	l1	l2	l5	Code no.	Availability
	mm	mm	mm	mm	mm	mm		
M3 x 0,35	2.20	1.80	2.65	56.00	7.00	18.00	3.002	•
M4 x 0,35	2.80	2.10	3.65	63.00	8.00	21.00	4.002	•
M4 x 0,5	2.80	2.10	3.50	63.00	8.00	21.00	4.003	•
M5 x 0,5	3.50	2.70	4.50	70.00	10.00	25.00	5.003	•
M6 x 0,5	4.50	3.40	5.50	80.00	13.00	30.00	6.003	•
M6 x 0,75	4.50	3.40	5.20	80.00	13.00	30.00	6.004	•
M8 x 0,75	6.00	4.90	7.20	80.00	14.00	30.00	8.004	•
M8 x 1	6.00	4.90	7.00	90.00	17.00	35.00	8.005	•
M9 x 1	7.00	5.50	8.00	90.00	16.00	35.00	9.005	•
M10 x 0,75	7.00	5.50	9.20	90.00	16.00	35.00	10.004	•
M10 x 1	7.00	5.50	9.00	90.00	16.00	35.00	10.005	•
M10 x 1,25	7.00	5.50	8.80	100.00	20.00	39.00	10.006	•
M11 x 1	8.00	6.20	10.00	90.00	20.00	33.00	11.005	•
M12 x 1	9.00	7.00	11.00	100.00	20.00	40.00	12.005	•
M12 x 1,25	9.00	7.00	10.80	100.00	20.00	40.00	12.006	•
M12 x 1,5	9.00	7.00	10.50	100.00	20.00	40.00	12.007	•
M14 x 1	11.00	9.00	13.00	100.00	20.00	40.00	14.005	•
M14 x 1,25	11.00	9.00	12.80	100.00	20.00	40.00	14.006	•
M14 x 1,5	11.00	9.00	12.50	100.00	20.00	40.00	14.007	•
M16 x 1	12.00	9.00	15.00	100.00	22.00	44.00	16.005	•
M16 x 1,5	12.00	9.00	14.50	100.00	22.00	44.00	16.007	•
M18 x 1	14.00	11.00	17.00	110.00	25.00	44.00	18.005	•
M18 x 1,5	14.00	11.00	16.50	110.00	25.00	44.00	18.007	•
M18 x 2	14.00	11.00	16.00	125.00	30.00	58.00	18.008	•
M20 x 1	16.00	12.00	19.00	125.00	25.00	44.00	20.005	•
M20 x 1,5	16.00	12.00	18.50	125.00	25.00	44.00	20.007	•
M20 x 2	16.00	12.00	18.00	140.00	32.00	60.00	20.008	•
M22 x 1	18.00	14.50	21.00	125.00	25.00	44.00	22.005	•
M22 x 1,5	18.00	14.50	20.50	125.00	25.00	44.00	22.007	•
M22 x 2	18.00	14.50	20.00	140.00	32.00	62.00	22.008	•
M24 x 1	18.00	14.50	23.00	140.00	28.00	48.00	24.005	•
M24 x 1,5	18.00	14.50	22.50	140.00	28.00	48.00	24.007	•
M24 x 2	18.00	14.50	22.00	140.00	28.00	48.00	24.008	•



Taps for UNC threads



P	•
M	•
K	○
N	○
S	○
H	

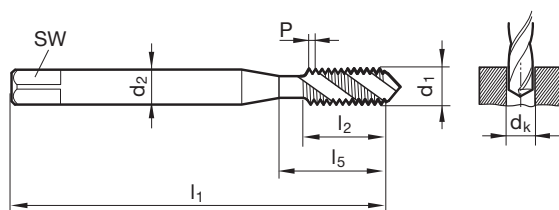
GÜHRING NAVIGATOR

Cutting data page 188

Tool material	HSS-E
Tolerance on Ø	2BX
Surface	A
Type	VA R45
Form	C
Internal cooling	



Threading tools



~DIN 371/~DIN 376 DIN 2184-1	Article no.	391
	Discount group	103

d1	d2	SW	dk	l1	l2	l5	Code no.	Availability
	mm	mm	mm	mm	mm	mm		
2 - 56	2.80	2.10	1.85	45.00	5.00	14.50	2.184	•
4 - 40	3.50	2.70	2.35	56.00	7.00	18.00	2.845	•
6 - 32	4.00	3.00	2.85	56.00	8.00	20.00	3.505	•
8 - 32	4.50	3.40	3.50	63.00	8.00	21.00	4.166	•
10 - 24	6.00	4.90	3.90	70.00	11.00	25.00	4.826	•
12 - 24	6.00	4.90	4.50	80.00	11.00	30.00	5.486	•
1/4 - 20	7.00	5.50	5.10	80.00	13.00	30.00	6.350	•
5/16 - 18	8.00	6.20	6.60	90.00	14.00	35.00	7.938	•
3/8 - 16	10.00	8.00	8.00	100.00	16.00	39.00	9.525	•
7/16 - 14	8.00	6.20	9.40	100.00	18.00	42.00	11.113	•
1/2 - 13	9.00	7.00	10.80	110.00	20.00	49.00	12.700	•
9/16 - 12	11.00	9.00	12.20	110.00	21.00	53.00	14.288	•
5/8 - 11	12.00	9.00	13.50	110.00	24.00	53.00	15.875	•
3/4 - 10	14.00	11.00	16.50	125.00	25.00	62.00	19.050	•
7/8 - 9	18.00	14.50	19.50	140.00	28.00	62.00	22.225	•
1 - 8	18.00	14.50	22.25	160.00	32.00	73.00	25.400	•

Taps for UNC threads



P	•
M	•
K	○
N	○
S	○
H	

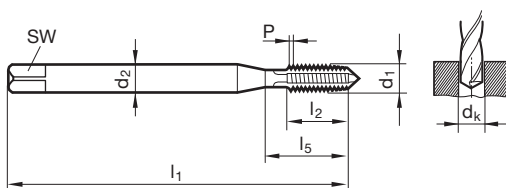
GÜHRING NAVIGATOR

Cutting data page 188

Tool material	HSS-E
Tolerance on Ø	2BX
Surface	S
Type	VA
Form	B
Internal cooling	



Threading tools



~DIN 371/~DIN 376 DIN 2184-1 Article no. **4642**

Discount group **103**

d1	d2	SW	dk	l1	l2	l5	Code no.	Availability
	mm	mm	mm	mm	mm	mm		
2 - 56	2.80	2.10	1.85	45.00	9.00	14.50	2.184	•
4 - 40	3.50	2.70	2.35	56.00	11.00	18.00	2.845	•
6 - 32	4.00	3.00	2.85	56.00	12.00	20.00	3.505	•
8 - 32	4.50	3.40	3.50	63.00	12.00	21.00	4.166	•
10 - 24	6.00	4.90	3.90	70.00	14.00	25.00	4.826	•
12 - 24	6.00	4.90	4.50	80.00	16.00	30.00	5.486	•
1/4 - 20	7.00	5.50	5.10	80.00	16.00	30.00	6.350	•
5/16 - 18	8.00	6.20	6.60	90.00	18.00	35.00	7.938	•
3/8 - 16	10.00	8.00	8.00	100.00	20.00	39.00	9.525	•
7/16 - 14	8.00	6.20	9.40	100.00	22.00	42.00	11.113	•
1/2 - 13	9.00	7.00	10.80	110.00	25.00	49.00	12.700	•
9/16 - 12	11.00	9.00	12.20	110.00	28.00	53.00	14.288	•
5/8 - 11	12.00	9.00	13.50	110.00	30.00	53.00	15.875	•
3/4 - 10	14.00	11.00	16.50	125.00	33.00	62.00	19.050	•
7/8 - 9	18.00	14.50	19.50	140.00	35.00	62.00	22.225	•
1 - 8	18.00	14.50	22.25	160.00	38.00	73.00	25.400	•



Taps for UNF threads



P	•
M	•
K	○
N	○
S	○
H	

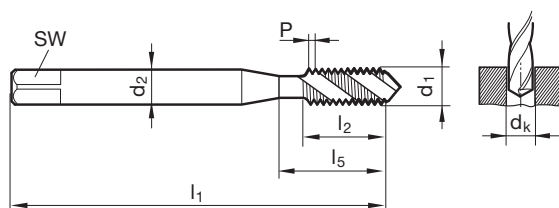
GÜHRING NAVIGATOR

Cutting data page 188

Tool material	HSS-E
Tolerance on Ø	2BX
Surface	A
Type	VA R45
Form	C
Internal cooling	



Threading tools



~DIN 371/~DIN 374 DIN 2184-1	Article no.	392
	Discount group	103

d1	d2	SW	dk	l1	l2	l5	Code no.	Availability
	mm	mm	mm	mm	mm	mm		
2 - 64	2.80	2.10	1.85	45.00	5.00	14.50	2.184	•
4 - 48	3.50	2.70	2.40	56.00	6.00	18.00	2.845	•
6 - 40	4.00	3.00	2.95	56.00	6.50	20.00	3.505	•
8 - 36	4.50	3.40	3.50	63.00	7.00	21.00	4.166	•
10 - 32	6.00	4.90	4.10	70.00	8.50	25.00	4.826	•
12 - 28	6.00	4.90	4.60	80.00	9.50	30.00	5.486	•
1/4 - 28	7.00	5.50	5.50	80.00	9.50	30.00	6.350	•
5/16 - 24	8.00	6.20	6.90	90.00	11.50	35.00	7.938	•
3/8 - 24	10.00	8.00	8.50	90.00	11.50	35.00	9.525	•
7/16 - 20	8.00	6.20	9.90	100.00	13.00	42.00	11.113	•
1/2 - 20	9.00	7.00	11.50	100.00	13.00	40.00	12.700	•
9/16 - 18	11.00	9.00	12.90	100.00	14.00	40.00	14.288	•
5/8 - 18	12.00	9.00	14.50	100.00	15.00	44.00	15.875	•
3/4 - 16	14.00	11.00	17.50	110.00	16.00	44.00	19.050	•
7/8 - 14	18.00	14.50	20.40	125.00	19.00	44.00	22.225	•
1 - 12	18.00	14.50	23.25	140.00	22.00	50.00	25.400	•

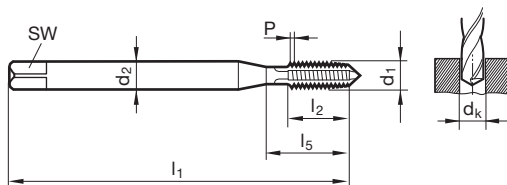
Taps for UNF threads



P • **GÜHRING NAVIGATOR**
M • Cutting data page 188
K ○
N ○
S ○
H

Threading tools

Tool material	HSS-E
Tolerance on Ø	2BX
Surface	S
Type	VA
Form	B
Internal cooling	



~DIN 371/~DIN 374 DIN 2184-1

Article no.

4643

Discount group

103

d1	d2	SW	dk	l1	l2	l5	Code no.	Availability
	mm	mm	mm	mm	mm	mm		
2 - 64	2.80	2.10	1.85	45.00	9.00	14.50	2.184	●
4 - 48	3.50	2.70	2.40	56.00	10.00	18.00	2.845	●
6 - 40	4.00	3.00	2.95	56.00	11.00	20.00	3.505	●
8 - 36	4.50	3.40	3.50	63.00	12.00	21.00	4.166	●
10 - 32	6.00	4.90	4.10	70.00	14.00	25.00	4.826	●
12 - 28	6.00	4.90	4.60	80.00	16.00	30.00	5.486	●
1/4 - 28	7.00	5.50	5.50	80.00	16.00	30.00	6.350	●
5/16 - 24	8.00	6.20	6.90	90.00	17.00	35.00	7.938	●
3/8 - 24	10.00	8.00	8.50	90.00	18.00	35.00	9.525	●
7/16 - 20	8.00	6.20	9.90	100.00	22.00	42.00	11.113	●
1/2 - 20	9.00	7.00	11.50	100.00	20.00	40.00	12.700	●
9/16 - 18	11.00	9.00	12.90	100.00	22.00	40.00	14.288	●
5/8 - 18	12.00	9.00	14.50	100.00	22.00	44.00	15.875	●
3/4 - 16	14.00	11.00	17.50	110.00	25.00	44.00	19.050	●
7/8 - 14	18.00	14.50	20.40	125.00	25.00	44.00	22.225	●
1 - 12	18.00	14.50	23.25	140.00	28.00	50.00	25.400	●



Taps for BSP threads



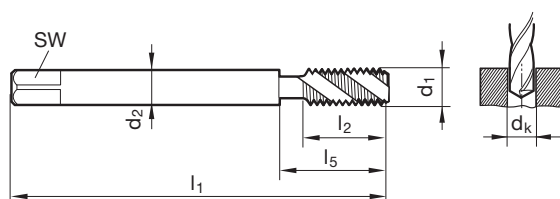
P	•
M	•
K	○
N	○
S	○
H	

GÜHRING NAVIGATOR

Cutting data page 188

Tool material	HSS-E
Tolerance on Ø	
Surface	A
Type	VA R45
Form	C
Internal cooling	
	★

Threading tools



DIN 5156 DIN 2184-1	Article no.	395
	Discount group	103

d1	P	d2	SW	dk	l1	l2	l5	Code no.	Availability
	G/inch	mm	mm	mm	mm	mm	mm		
G1/16	28	6.00	4.90	6.80	90.00	11.00	30.00	7.723	●
G1/8	28	7.00	5.50	8.80	90.00	11.00	35.00	9.728	●
G1/4	19	11.00	9.00	11.80	100.00	14.00	40.00	13.157	●
G3/8	19	12.00	9.00	15.25	100.00	14.00	44.00	16.662	●
G1/2	14	16.00	12.00	19.00	125.00	18.00	44.00	20.955	●
G5/8	14	18.00	14.50	21.00	125.00	18.00	48.00	22.911	●
G3/4	14	20.00	16.00	24.50	140.00	20.00	53.00	26.441	●
G7/8	14	22.00	18.00	28.25	150.00	22.00	53.00	30.201	●
G1	11	25.00	20.00	30.75	160.00	24.00	56.00	33.249	●

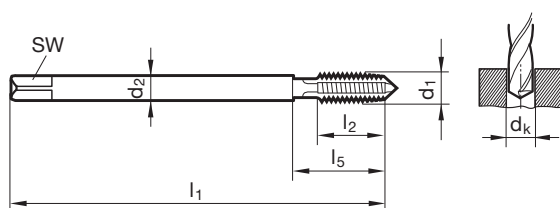
Taps for BSP threads



P • **GÜHRING NAVIGATOR**
M • Cutting data page 188
K ○
N ○
S ○
H ○

Threading tools

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



DIN 5156 DIN 2184-1

Article no.

4220

Discount group

103

d1	P	d2	SW	dk	l1	l2	l5	Code no.	Availability
	G/inch	mm	mm	mm	mm	mm	mm		
G1/16	28	6.00	4.90	6.80	90.00	18.00	30.00	7.723	●
G1/8	28	7.00	5.50	8.80	90.00	18.00	35.00	9.728	●
G1/4	19	11.00	9.00	11.80	100.00	20.00	40.00	13.157	●
G3/8	19	12.00	9.00	15.25	100.00	22.00	44.00	16.662	●
G1/2	14	16.00	12.00	19.00	125.00	25.00	44.00	20.955	●
G5/8	14	18.00	14.50	21.00	125.00	25.00	48.00	22.911	●
G3/4	14	20.00	16.00	24.50	140.00	28.00	53.00	26.441	●
G7/8	14	22.00	18.00	28.25	150.00	28.00	53.00	30.201	●
G1	11	25.00	20.00	30.75	160.00	30.00	56.00	33.249	●



Fluteless taps for ISO metric threads

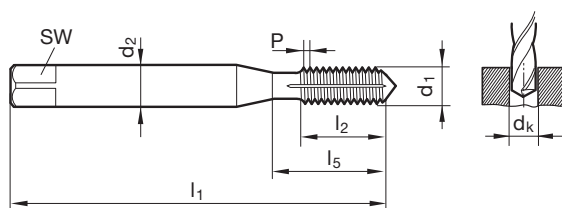


P • **GÜHRING NAVIGATOR**
M • Cutting data page 186
K
N ○
S •
H ≤ 55 • with oil grooves ≥ M3

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

SL

Threading tools



~DIN 371 DIN 2174 Article no. **5598**

Discount group **156**

d1	P	d2	SW	dk	l1	l2	l5	Code no.	Availability
mm	mm	mm	mm	mm	mm	mm	mm		
M1	0.250	2.50	2.10	0.90	40.00	4.00	4.00	1.000	●
M1,2	0.250	2.50	2.10	1.10	40.00	4.80	4.80	1.200	●
M1,4	0.300	2.50	2.10	1.25	40.00	5.60	5.60	1.400	●
M1,6	0.350	2.50	2.10	1.45	40.00	6.40	6.40	1.600	●
M1,7	0.350	2.50	2.10	1.55	40.00	6.80	6.80	1.700	●
M1,8	0.350	2.50	2.10	1.65	40.00	7.30	7.30	1.800	●
M2	0.400	2.80	2.10	1.85	45.00	8.00	13.50	2.000	●
M2,5	0.450	2.80	2.10	2.30	50.00	9.00	14.50	2.500	●
M3	0.500	3.50	2.70	2.80	56.00	10.00	18.00	3.000	●
M4	0.700	4.50	3.40	3.70	63.00	12.00	21.00	4.000	●
M5	0.800	6.00	4.90	4.65	70.00	14.00	25.00	5.000	●
M6	1.000	6.00	4.90	5.55	80.00	16.00	30.00	6.000	●
M8	1.250	8.00	6.20	7.40	90.00	17.00	35.00	8.000	●
M10	1.500	10.00	8.00	9.30	100.00	20.00	39.00	10.000	●

Fluteless taps for ISO metric threads



P	•
M	•
K	•
N	○
S	•
H	

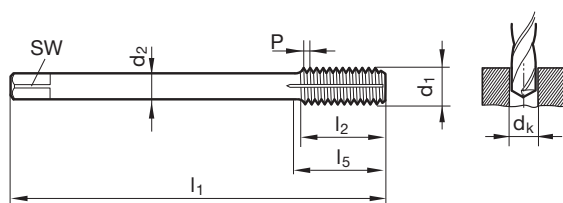
GÜHRING NAVIGATOR

Cutting data page 186

Threading tools

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

SL



~DIN 376 DIN 2174

Article no.

5599

Discount group

156

d1	P	d2	SW	dk	l1	l2	l5	Code no.
mm	mm	mm	mm	mm	mm	mm	mm	
M12	1.750	9.00	7.00	11.20	110.00	24.00	49.00	12.000
M14	2.000	11.00	9.00	13.10	110.00	26.00	53.00	14.000
M16	2.000	12.00	9.00	15.10	110.00	26.00	54.00	16.000

Availability

-
-
-



Fluteless taps for ISO metric threads



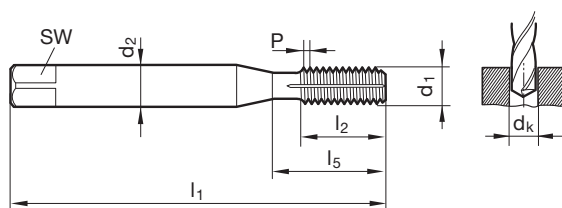
P • **GÜHRING NAVIGATOR**
M • Cutting data page 186
K •
N ○
S •
H •

- with oil grooves ≥ M2
- Ø tolerance ≤ M1.4 = 4HX

Tool material	HSS-E-PM
Tolerance on Ø	4HX/6HX
Surface	Ⓢ
Type	N
Form	C
Internal cooling	⊗



Threading tools



~DIN 371/~DIN 376 DIN 2174 Article no. **4487**

Discount group **208**

d1	P	d2	SW	dk	l1	l2	l5	Code no.	Availability
mm	mm	mm	mm	mm	mm	mm	mm		
M1	0.250	2.50	2.10	0.90	40.00	4.00	4.00	1.000	●
M1,2	0.250	2.50	2.10	1.10	40.00	4.80	4.80	1.200	●
M1,4	0.300	2.50	2.10	1.25	40.00	5.60	5.60	1.400	●
M1,6	0.350	2.50	2.10	1.45	40.00	6.40	6.40	1.600	●
M1,7	0.350	2.50	2.10	1.55	40.00	6.80	6.80	1.700	●
M1,8	0.350	2.50	2.10	1.65	40.00	7.30	7.30	1.800	●
M2	0.400	2.80	2.10	1.85	45.00	8.00	13.50	2.000	●
M2,5	0.450	2.80	2.10	2.30	50.00	9.00	14.50	2.500	●
M3	0.500	3.50	2.70	2.80	56.00	10.00	18.00	3.000	●
M3,5	0.600	4.00	3.00	3.25	56.00	12.00	20.00	3.500	●
M4	0.700	4.50	3.40	3.70	63.00	12.00	21.00	4.000	●
M4,5	0.750	6.00	4.90	4.20	70.00	14.00	25.00	4.500	●
M5	0.800	6.00	4.90	4.65	70.00	14.00	25.00	5.000	●
M6	1.000	6.00	4.90	5.55	80.00	16.00	30.00	6.000	●
M7	1.000	7.00	5.50	6.55	80.00	16.00	30.00	7.000	●
M8	1.250	8.00	6.20	7.40	90.00	17.00	35.00	8.000	●
M9	1.250	9.00	7.00	8.40	90.00	17.00	35.00	9.000	●
M10	1.500	10.00	8.00	9.30	100.00	20.00	39.00	10.000	●
M11	1.500	8.00	6.20	10.30	100.00	20.00	42.00	11.000	●
M12	1.750	9.00	7.00	11.20	110.00	24.00	49.00	12.000	●
M14	2.000	11.00	9.00	13.10	110.00	26.00	53.00	14.000	●
M16	2.000	12.00	9.00	15.10	110.00	26.00	54.00	16.000	●
M20	2.500	16.00	12.00	18.90	140.00	32.00	62.00	20.000	●

Micro thread milling cutters



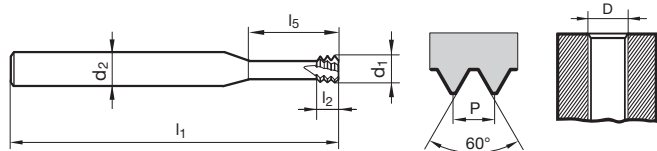
P	•
M	•
K	•
N	•
S	•
H	≤ 55

GÜHRING NAVIGATOR

Cutting data page 184

Threading tools

Tool material	Solid carbide
Tolerance on Ø	
Surface	
Type	MTM3 SP
Shank form	DIN 6535-HA
Internal cooling	



Article no. **4226**

Discount group **108**

D	P	d1	d2	l1	l2	l5	Z	Code no.	Availability
	mm	mm	mm	mm	mm	mm			
M1,6	0.350	1.200	3.00	39.00	1.10	4.800	3	1.600	•
M1,8	0.350	1.400	3.00	39.00	1.10	5.400	3	1.800	•
M2	0.400	1.550	3.00	39.00	1.20	6.000	4	2.000	•
M2,5	0.450	1.950	3.00	39.00	1.40	7.500	4	2.500	•
M3	0.500	2.400	6.00	58.00	1.50	9.500	4	3.000	•
M3,5	0.600	2.800	6.00	58.00	1.80	11.000	4	3.500	•
M4	0.700	3.200	6.00	58.00	2.10	12.500	4	4.000	•
M5	0.800	4.000	6.00	58.00	2.40	16.000	4	5.000	•
M6	1.000	4.800	6.00	58.00	3.00	20.000	4	6.000	•
M8	1.250	5.950	6.00	58.00	3.80	24.000	4	8.000	•
M10	1.500	7.800	8.00	73.00	4.50	33.000	4	10.000	•
M12	1.750	9.000	10.00	84.00	5.30	38.000	4	12.000	•
M16	2.000	11.800	12.00	84.00	6.00	35.000	5	16.000	•



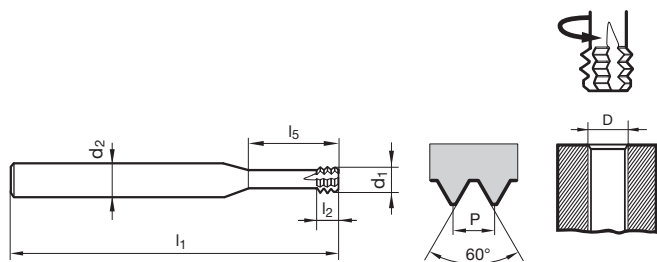
Micro thread milling cutters



P • **GÜHRING NAVIGATOR**
M • Cutting data page 184
K •
N •
S •
H ≤ 66

- with cooling grooves
- rotating direction left-hand

Tool material	Solid carbide
Tolerance on Ø	
Surface	
Type	MTMH3-Z
Shank form	~DIN 6535-HB
Internal cooling	



Threading tools

Article no. **4002**

Discount group **108**

D	P	d1	d2	l1	l2	l5	Z	Code no.	Availability
	mm	mm	mm	mm	mm	mm			
M2	0.400	1.400	3.00	39.00	1.20	5.000	4	2.000	●
M2,5	0.450	1.800	3.00	39.00	1.30	6.500	4	2.500	●
M3	0.500	2.400	6.00	58.00	1.50	7.500	4	3.000	●
M3,5	0.600	2.700	6.00	58.00	1.80	9.000	4	3.500	●
M4	0.700	3.100	6.00	58.00	2.10	10.000	4	4.000	●
M5	0.800	3.800	6.00	58.00	2.40	12.500	4	5.000	●
M6	1.000	4.600	8.00	64.00	3.00	15.000	4	6.000	●
M6 x 0,5	0.500	3.800	6.00	58.00	1.50	15.000	4	6.003	●
M8	1.250	6.200	8.00	64.00	3.60	20.000	4	8.000	●
M8 x 0,75	0.750	4.600	8.00	64.00	2.30	20.000	4	8.004	●
M10	1.500	7.500	10.00	73.00	4.50	25.000	4	10.000	●
M12	1.750	9.000	10.00	73.00	5.20	30.000	4	12.000	●
M12 x 1	1.000	7.500	8.00	64.00	3.00	25.000	4	12.005	●
M16	2.000	11.500	12.00	90.00	6.00	40.000	4	16.000	●
M16 x 1,5	1.500	11.500	12.00	90.00	4.50	40.000	4	16.007	●
M20	2.500	14.500	16.00	105.00	7.50	50.000	4	20.000	●

Thread milling cutters without chamfer for ISO metric threads



P	•
M	○
K	•
N	•
S	•
H	≤ 55

GÜHRING NAVIGATOR

Cutting data page 184

Threading tools

Tool material **Solid carbide**

Tolerance on Ø

Surface **C** **C**

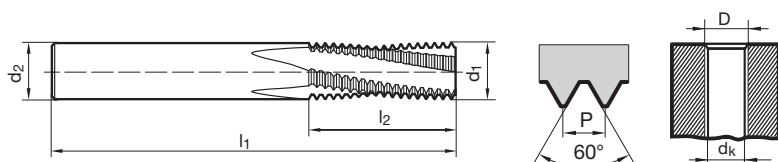
Type TM SP TM SP

Shank form HB HA

Internal cooling

SL

SL



Company std.

Article no.

5547

5548

Discount group

153

153

D	P	d1	d2	dk	l1	l2	Z	Code no.
	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

Availability	
•	•
•	•
•	•
•	•
•	•
•	•
•	•



Threading tools

Pionex

GUHRINGNAVIGATOR

Threading tools

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

Milling part Ø mm	Feed column no. art. no. 5547/5548					
	1	2	3	4	5	6
	f _z (mm/tooth) 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

Milling part Ø mm	Feed column no. art. no. 4002/4226							
	1	2	3	4	5	6	7	8
	f _z (mm/tooth)							
≤ 1.6	0.005	0.007	0.008	x	0.010	0.010	0.020	0.020
≤ 2.0	0.005	0.007	0.008	0.010	0.020	0.020	0.030	0.030
≤ 2.5	0.008	0.010	0.012	0.010	0.020	0.020	0.030	0.030
≤ 3.0	0.009	0.011	0.014	0.015	0.025	0.020	0.035	0.040
≤ 3.7	0.010	0.012	0.016	0.020	0.020	0.025	0.040	0.045
≤ 4.0	0.014	0.016	0.020	0.020	0.030	0.025	0.040	0.045
≤ 5.0	0.018	0.020	0.024	0.025	0.030	0.030	0.045	0.050
≤ 7.0	0.022	0.025	0.030	0.030	0.035	0.040	0.050	0.055
≤ 8.0	0.028	0.030	0.036	0.035	0.040	0.050	0.060	0.070
≤ 9.0	0.033	0.036	0.040	0.040	0.050	0.055	0.065	0.080
≤ 12.0	0.042	0.044	0.048	0.045	0.055	0.060	0.070	0.090

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 MPa (N/mm ²)	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 hardened 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	Bakelit, Resopal, Pertinax, Moltopren	≤150		●
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		●
Kevlar	Kevlar	≤1000		●
Glass, carbon concentr. plastics	GFK/CFK	≤1000		●

Article no.
Thread type
Tolerance
Standard/DIN
Tool material
Type/Form
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 MPa (N/mm ²)	Hardness	Coolant
Common structural steels	1.0035 S185(St33), 1.0486 P275N(StE285), 1.0345 P235GH(H1), 1.0425 P265GH(H2) 1.0050 E295 (St50-2), 1.0070 E360 (St70-2), 1.8937 P500NH (WStE500)	≤500 ≤1000		●●△
Free-cutting steels	1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36) 1.0727 46S20 (45S20), 1.0728 (60S20), 1.0757 46SPb20 (45SPb20)	≤850 ≤1000		●●△
Unalloyed heat-treatable steels	1.0402 C22, 1.1178 C30E (Ck30) 1.0503 C45, 1.1191 C45E (Ck45) 1.0601 C60, 1.1221 C60E (Ck60)	≤700 ≤850 ≤1000		●●△
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	≤1000 ≤1400		●●△
Unalloyed case hardened steels	1.0301 (C10), 1.1121 C10E (Ck10)	≤850		●●△
Alloyed case hardened steels	1.7276 10CrMo11, 1.5125 11MnSi6 1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5	≤1000 ≤1400		●●△
Nitriding steels	1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	≤1000 ≤1400		●●△
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4	≤850 ≤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 austenitic martensitic	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9 1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A) 1.4057 X20CrNi172 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2	≤900 ≤1100 ≤1500		●●△ ●●△ ●●△
Cast iron	0.6010 EN-GJL-100 (GG10), 0.6020 EN-GJL-200 (GG20) 0.6025 EN-GJL-250 (GG25), 0.6035 EN-GJL-350 (GG35)		≤240 HB ≤350 HB	●●● ●●●
Spheroidal graphite iron and malleable cast iron	0.7050 EN-GJS-500-7 (GGG50), 0.8035 EN-GJMW-350-4 (GTW35) 0.7070 EN-GJS-700-2 (GGG70), 0.8170 EN-GJMB-700-2 (GTS70)		≤240 HB ≤350 HB	●●● ●●●
Chilled cast iron	-		≤350 HB	●●●
New cast materials GGV	EN-GJV250 (GGV25), EN-GJV350 (GGV35) EN-GJV400 (GGV40), EN-GJV500 (GGV50), SiMo 6		≤220 HB ≤300 HB	●●● ●●●
New cast materials ADI	EN-GJS-800-8 (ADI800), EN-GJS-1000-5 (ADI1000) EN-GJS-1200-2 (ADI1200), EN-GJS-1400-1 (ADI1400)	≤1000 ≤1400		●●● ●●●
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤2000		●●●
Ti and Ti alloys	3.7024 Ti99,5, 3.7114 TiAl5Sn2,5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7165 TiAl6V4, 3.7184 TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤850 ≤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 ≤ 24 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≤600 ≤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 long-chipping	2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2 2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5	≤600 ≤600		●●△ ●●△
Bronze, short-chipping	2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn 2.0790 CuNi18Zn19Pb	≤600 ≤850		●●△ ●●△
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2	≤850 ≤1000		●●△ ●●△
Duroplastics	Bakelit, Resopal, Pertinax, Moltopren	≤150		●
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		●
Kevlar	Kevlar	≤1000		●
Glass, carbon concentr. plastics	GFK/CFK	≤1000		●



≤3xD	≤3xD	≤3xD	≤3xD	≤3xD	≤3xD	≤3xD	≤3xD	≤3xD	≤3xD	Former		
5561	5586	5558	5587	5597	5588	5559	5557	5550	5595	5598	5599	4487
M	M	M	M	M	M	M	M	M	M	M	M	M
6H	6H	6H	6H	6H	6H	6H	6H	6HX	6HX	6HX	6HX	6HX/6HX
371/376	371/376	371/376	371/376	371/376	371/376	371	371/376	371/376	371/376	~371	~376	~371/376
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	HSS-E-PM
N/B	N/B	H/B	H/B	VA/B	VA/B	VA/B	Al/B	GG/C	GG/C	N/C	N/C	N/C
h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9
161	161	162	162	163	163	164	165	166	166	177	178	179



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
12	15			8	10	12				15	15	25
12	15			8	10	12				15	15	25
10	12			6	8	10				15	15	25
10	12			6	8	10				15	15	25
12	15			8	10	12				15	15	25
12	15			6	10	12				15	15	25
10	12			6	8	10				12	12	25
6	8	10	12	4	4	6				12	12	15
		8	10							8	8	15
12	15			8	10	12				15	15	25
6	8	10	12		4	6				15	15	15
		8	10							8	8	15
6	8	10	12		4	6				15	15	25
		8	10							8	8	25
		10	12							12	12	15
		8	10							8	8	15
		8	10							8	8	15
		8	10							10	10	15
4	6			8	10	8				6	6	15
4	6			8	10	8				6	6	15
				6	8	6				4	4	10
								15	25			
								15	25			
								10	20			30
								10	20			30
								10	15			
								8	15			25
								8	15			25
								8	15			25
									10			
												8
												8
												8
							15			20	20	15
							15			20	20	15
										20	20	30
							15					30
							15			20	20	30
												30
												30
							15			20	20	30
							15			20	20	30

Threading tools

Article no.
Thread type
Tolerance
Standard/DIN
Tool material
Type/Form
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 MPa (N/mm ²)	Hardness	Coolant
Common structural steels	1.0035 S185(St33), 1.0486 P275N(StE285), 1.0345 P235GH(H1), 1.0425 P265GH(H2) 1.0050 E295 (St50-2), 1.0070 E360 (St70-2), 1.8937 P500NH (WStE500)	≤500 ≤1000		●●△
Free-cutting steels	1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36) 1.0727 46S20 (45S20), 1.0728 (60S20), 1.0757 46SPb20 (45SPb20)	≤850 ≤1000		●●△
Unalloyed heat-treatable steels	1.0402 C22, 1.1178 C30E (Ck30) 1.0503 C45, 1.1191 C45E (Ck45) 1.0601 C60, 1.1221 C60E (Ck60)	≤700 ≤850 ≤1000		●●△
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	≤1000 ≤1400		●●△
Unalloyed case hardened steels	1.0301 (C10), 1.1121 C10E (Ck10)	≤850		●●△
Alloyed case hardened steels	1.7276 10CrMo11, 1.5125 11MnSi6 1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5	≤1000 ≤1400		●●△
Nitriding steels	1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	≤1000 ≤1400		●●△
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4	≤850 ≤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 austenitic martensitic	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9 1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A) 1.4057 X20CrNi172 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2	≤900 ≤1100 ≤1500		●●△
Cast iron	0.6010 EN-GJL-100 (GG10), 0.6020 EN-GJL-200 (GG20) 0.6025 EN-GJL-250 (GG25), 0.6035 EN-GJL-350 (GG35)		≤240 HB ≤350 HB	●●
Spheroidal graphite iron and malleable cast iron	0.7050 EN-GJS-500-7 (GGG50), 0.8035 EN-GJMW-350-4 (GTW35) 0.7070 EN-GJS-700-2 (GGG70), 0.8170 EN-GJMB-700-2 (GTS70)		≤240 HB ≤350 HB	●●
Chilled cast iron	-		≤350 HB	●●
New cast materials GGV	EN-GJV250 (GGV25), EN-GJV350 (GGV35) EN-GJV400 (GGV40), EN-GJV500 (GGV50), SiMo 6		≤220 HB ≤300 HB	●●
New cast materials ADI	EN-GJS-800-8 (ADI800), EN-GJS-1000-5 (ADI1000) EN-GJS-1200-2 (ADI1200), EN-GJS-1400-1 (ADI1400)	≤1000 ≤1400		●●
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤2000		●●
Ti and Ti alloys	3.7024 Ti99,5, 3.7114 TiAl5Sn2,5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7165 TiAl6V4, 3.7184 TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤850 ≤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 ≤ 24 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≤600 ≤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 long-chipping	2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2 2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5	≤600 ≤600		●●△
Bronze, short-chipping	2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn 2.0790 CuNi18Zn19Pb	≤600 ≤850		●●△
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2	≤850 ≤1000		●●△
Duroplastics	Bakelit, Resopal, Pertinax, Moltopren	≤150		●
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		●
Kevlar	Kevlar	≤1000		●
Glass, carbon concentr. plastics	GFK/CFK	≤1000		●



≤ 3xD	≤ 3xD	≤ 3xD	≤ 3xD	≤ 3xD	≤ 3xD	≤ 3xD	≤ 3xD	≤ 3xD	≤ 3xD
393	394	391	392	395	4218	4219	4642	4643	4220
M	MF	UNC	UNF	BSP	M	MF	UNC	UNF	BSP
6HX	6HX	2BX	2BX		6HX	6HX	2BX	2BX	
371/376	374	~371/376	~371/374	5156	371/376	374	~371/376	~371/374	5156
HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
VA R45/C	VA R45/C	VA R45/C	VA R45/C	VA R45/C	VA/B	VA/B	VA/B	VA/B	VA/B
h9	h9	h9	h9	h9	h9	h9	h9	h9	h9
167	169	171	173	175	168	170	172	174	176

Threading tools



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
20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10
15	15	15	15	15	15	15	15	15	15
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10
15	15	15	15	15	15	15	15	15	15
15	15	15	15	15	15	15	15	15	15
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10
12	12	12	12	12	12	12	12	12	12
12	12	12	12	12	12	12	12	12	12
10	10	10	10	10	10	10	10	10	10
20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
3	3	3	3	3	3	3	3	3	3
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10
20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10
20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10

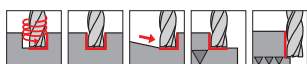




Milling cutters

MILLING CUTTERS

Standard Ratio end mills RF 100 U



P	•
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H	○

GÜHRING NAVIGATOR

Cutting data page 226

Tool material **Solid carbide**

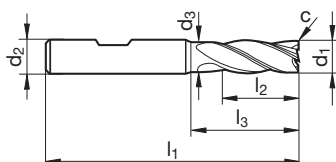
Surface **F**

Type **N**

Shank form **HB**

SL

Milling cutters



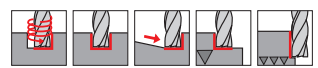
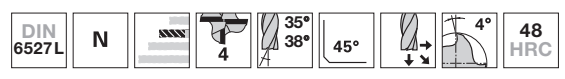
Article no. **5534**

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	●
18.000	18.000	17.500	84.000	24.000	34.000	0.400	4	18.000	●
20.000	20.000	19.500	92.000	26.000	40.000	0.450	4	20.000	●



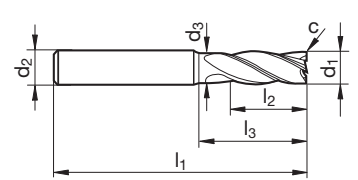
Standard Ratio end mills RF 100 U



P	•
M	
K	•
N	
S	
H	○

GÜHRING NAVIGATOR
Cutting data page 226

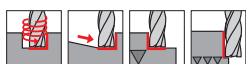
Tool material	Solid carbide	
Surface	F	F
Type	N	N
Shank form	HA	HB
	SL	SL



Milling cutters

										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°						
4.00	6.00	3.80	57	11.0	18.0	0.10	4	4.000	•		•	
5.00	6.00	4.80	57	13.0	18.0	0.10	4	5.000	•		•	
6.00	6.00	5.70	57	13.0	20.0	0.10	4	6.000	•		•	
8.00	8.00	7.70	63	19.0	26.0	0.15	4	8.000	•		•	
10.00	10.00	9.50	72	22.0	30.0	0.20	4	10.000	•		•	
12.00	12.00	11.50	83	26.0	36.0	0.20	4	12.000	•		•	
14.00	14.00	13.50	83	26.0	36.0	0.25	4	14.000	•		•	
16.00	16.00	15.50	92	32.0	42.0	0.35	4	16.000	•		•	
18.00	18.00	17.50	92	32.0	42.0	0.40	4	18.000	•		•	
20.00	20.00	19.50	104	38.0	52.0	0.45	4	20.000	•		•	
25.00	25.00	24.00	121	45.0	63.0	0.60	4	25.000	•		•	

Standard Ratio end mills RF 100 U



P	•
M	
K	•
N	
S	
H	○

GÜHRING NAVIGATOR

Cutting data page 226

Tool material **Solid carbide**

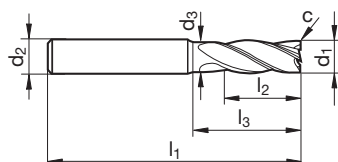
Surface **F**

Type **N**

Shank form **HA**

SL

Milling cutters



Article no. **5582**

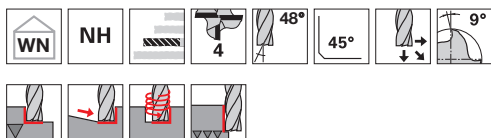
Discount group **157**

d1 h10	d2 h6	d3	l1	l2	l3	c	Z	Code no.
mm	mm	mm	mm	mm	mm	mm x 45°		
10.00	10.00	9.50	100	40.0	48.0	0.20	4	10.000
12.00	12.00	11.50	150	45.0	58.0	0.20	4	12.000
16.00	16.00	15.50	150	65.0	78.0	0.35	4	16.000
20.00	20.00	19.50	150	65.0	78.0	0.45	4	20.000
25.00	25.00	24.00	150	75.0	92.0	0.60	4	25.000

Availability
•
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•
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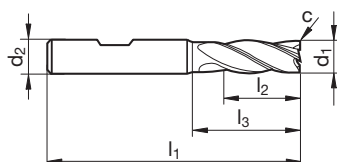
Ratio end mills RF 100 Speed M



P • **GÜHRING NAVIGATOR**
M • Cutting data page 229
K
N
S •
H

- with chip breaker
- re-inforced core from Ø 6 mm
- centre cutting

Tool material	Solid carbide
Surface	A
Type	NH
Shank form	HB
	★



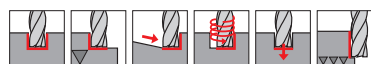
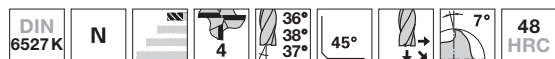
Milling cutters

Article no. **6761**

Discount group **106**

d1 h10	d2 h6	l1	l2	l3	c	Z	Code no.	Availability
mm	mm	mm	mm	mm	mm x 45°			
3.000	6.00	57.00	12.00	14.90	0.06	4	3.000	●
4.000	6.00	65.00	16.00	18.90	0.08	4	4.000	●
5.000	6.00	65.00	20.00	22.90	0.10	4	5.000	●
6.000	6.00	65.00	24.00	29.00	0.12	4	6.000	●
8.000	8.00	75.00	32.00	39.00	0.16	4	8.000	●
10.000	10.00	90.00	40.00	50.00	0.20	4	10.000	●
12.000	12.00	100.00	46.00	55.00	0.24	4	12.000	●
16.000	16.00	108.00	55.00	60.00	0.32	4	16.000	●
20.000	20.00	126.00	65.00	76.00	0.40	4	20.000	●

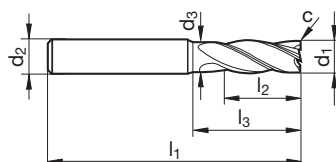
Ratio end mills RF 100 Diver



P • **GÜHRING NAVIGATOR**
M • Cutting data page 228
K •
N •
S •
H ○ • neck clearance
 • centre cutting

Tool material	Solid carbide	
Surface	Y	Y
Type	N	N
Shank form	HA	HB
	★	★

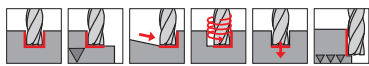
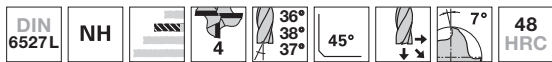
Milling cutters



									Article no.	6803	6804
									Discount group	106	106
d1 h10	d2 h6	d3	l1	l2	l3	c	Z	Code no.	Availability		
mm	mm	mm	mm	mm	mm	mm x 45°					
3.00	6.00	2.80	50	5.0	12.0	0.03	4	3.000	●	●	
3.70	6.00	3.50	54	8.0	12.0	0.04	4	3.700	●	●	
4.00	6.00	3.80	54	8.0	15.0	0.04	4	4.000	●	●	
4.70	6.00	4.50	54	9.0	15.0	0.05	4	4.700	●	●	
5.00	6.00	4.80	54	9.0	15.0	0.05	4	5.000	●	●	
5.70	6.00	5.50	54	10.0	16.6	0.06	4	5.700	●	●	
6.00	6.00	5.70	54	10.0	17.0	0.06	4	6.000	●	●	
7.00	8.00	6.70	58	11.0	19.9	0.07	4	7.000	●	●	
7.70	8.00	7.40	58	12.0	20.5	0.08	4	7.700	●	●	
8.00	8.00	7.70	58	12.0	21.0	0.08	4	8.000	●	●	
9.00	10.00	8.70	66	13.0	23.9	0.09	4	9.000	●	●	
9.70	10.00	9.40	66	14.0	24.5	0.10	4	9.700	●	●	
10.00	10.00	9.50	66	14.0	24.0	0.10	4	10.000	●	●	
11.70	12.00	11.20	73	16.0	25.3	0.12	4	11.700	●	●	
12.00	12.00	11.50	73	16.0	26.0	0.12	4	12.000	●	●	
15.60	16.00	15.10	82	22.0	31.2	0.16	4	15.600	●	●	
16.00	16.00	15.50	82	22.0	32.0	0.16	4	16.000	●	●	
19.00	20.00	18.50	92	26.0	38.7	0.19	4	19.000	●	●	
20.00	20.00	19.50	92	26.0	40.0	0.20	4	20.000	●	●	

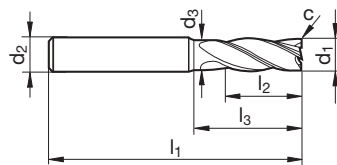


Ratio end mills RF 100 Diver



P • **GÜHRING NAVIGATOR**
M • Cutting data page 228
K •
N •
S •
H ○ • neck clearance
 • centre cutting

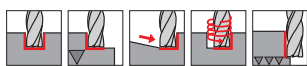
Tool material	Solid carbide	
Surface	Y	Y
Type	NH	NH
Shank form	HA	HB
	★	★



Milling cutters

									Article no.	6737	6736
									Discount group	106	106
d1 h10	d2 h6	d3	l1	l2	l3	c	Z	Code no.	Availability		
mm	mm	mm	mm	mm	mm	mm x 45°					
4.00	6.00	3.80	57	11.0	18.0	0.04	4	4.000	●	●	
5.00	6.00	4.80	57	13.0	18.0	0.05	4	5.000	●	●	
5.70	6.00	5.50	57	13.0	19.6	0.06	4	5.700	●	●	
6.00	6.00	5.70	57	13.0	20.0	0.06	4	6.000	●	●	
7.70	8.00	7.40	63	19.0	25.5	0.08	4	7.700	●	●	
8.00	8.00	7.70	63	19.0	26.0	0.08	4	8.000	●	●	
9.70	10.00	9.40	72	22.0	30.5	0.10	4	9.700	●	●	
10.00	10.00	9.50	72	22.0	30.0	0.10	4	10.000	●	●	
11.70	12.00	11.20	83	26.0	35.3	0.12	4	11.700	●	●	
12.00	12.00	11.50	83	26.0	36.0	0.12	4	12.000	●	●	
13.70	14.00	13.20	83	26.0	35.3	0.14	4	13.700	●	●	
14.00	14.00	13.50	83	26.0	36.0	0.14	4	14.000	●	●	
15.60	16.00	15.10	92	32.0	41.2	0.16	4	15.600	●	●	
16.00	16.00	15.50	92	32.0	42.0	0.16	4	16.000	●	●	
19.50	20.00	19.00	104	38.0	51.1	0.20	4	19.500	●	●	
20.00	20.00	19.50	104	38.0	52.0	0.20	4	20.000	●	●	

Ratio end mills RF 100 iMill



P	○
M	●
K	
N	●
S	●
H	

GÜHRING NAVIGATOR

Cutting data page 229

Tool material **Solid carbide**

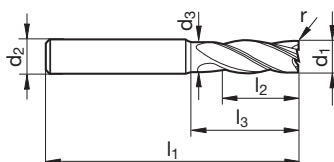
Surface **Y** **Y**

Type N N

Shank form HA HB



Milling cutters



Article no. **6964** **6965**

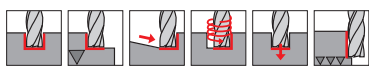
Discount group **106** **106**

d1 e8	d2 h6	d3	l1	l2	l3	r	Z	Code no.	Availability	
mm	mm	mm	mm	mm	mm	mm				
3.000	6.000	2.800	57.000	8.000	15.000	0.200	4	3.002	●	●
3.000	6.000	2.800	57.000	8.000	15.000	0.500	4	3.005	●	●
4.000	6.000	3.800	57.000	11.000	18.000	0.200	4	4.002	●	●
4.000	6.000	3.800	57.000	11.000	18.000	0.500	4	4.005	●	●
4.000	6.000	3.800	57.000	11.000	18.000	1.000	4	4.010	●	●
5.000	6.000	4.800	57.000	13.000	18.000	0.200	4	5.002	●	●
5.000	6.000	4.800	57.000	13.000	18.000	0.500	4	5.005	●	●
5.000	6.000	4.800	57.000	13.000	18.000	1.000	4	5.010	●	●
6.000	6.000	5.700	57.000	13.000	20.000	0.200	4	6.002	●	●
6.000	6.000	5.700	57.000	13.000	20.000	0.500	4	6.005	●	●
6.000	6.000	5.700	57.000	13.000	20.000	1.000	4	6.010	●	●
6.000	6.000	5.700	57.000	13.000	20.000	1.500	4	6.015	●	●
8.000	8.000	7.700	63.000	19.000	26.000	0.300	4	8.003	●	●
8.000	8.000	7.700	63.000	19.000	26.000	0.500	4	8.005	●	●
8.000	8.000	7.700	63.000	19.000	26.000	1.000	4	8.010	●	●
8.000	8.000	7.700	63.000	19.000	26.000	1.500	4	8.015	●	●
8.000	8.000	7.700	63.000	19.000	26.000	2.000	4	8.020	●	●
10.000	10.000	9.500	72.000	22.000	30.000	0.300	4	10.003	●	●
10.000	10.000	9.500	72.000	22.000	30.000	0.500	4	10.005	●	●
10.000	10.000	9.500	72.000	22.000	30.000	1.000	4	10.010	●	●
10.000	10.000	9.500	72.000	22.000	30.000	1.500	4	10.015	●	●
10.000	10.000	9.500	72.000	22.000	30.000	2.000	4	10.020	●	●
10.000	10.000	9.500	72.000	22.000	30.000	2.500	4	10.025	●	●
12.000	12.000	11.500	83.000	26.000	36.000	0.300	4	12.003	●	●
12.000	12.000	11.500	83.000	26.000	36.000	0.500	4	12.005	●	●
12.000	12.000	11.500	83.000	26.000	36.000	1.000	4	12.010	●	●
12.000	12.000	11.500	83.000	26.000	36.000	1.500	4	12.015	●	●
12.000	12.000	11.500	83.000	26.000	36.000	2.000	4	12.020	●	●
12.000	12.000	11.500	83.000	26.000	36.000	2.500	4	12.025	●	●
12.000	12.000	11.500	83.000	26.000	36.000	3.000	4	12.030	●	●



									Article no.	6964	6965
									Discount group	106	106
d1 e8	d2 h6	d3	l1	l2	l3	r	Z	Code no.	Availability		
mm	mm	mm	mm	mm	mm	mm					
16.000	16.000	15.500	92.000	32.000	42.000	0.500	4	16.005	●		●
16.000	16.000	15.500	92.000	32.000	42.000	1.000	4	16.010	●		●
16.000	16.000	15.500	92.000	32.000	42.000	1.500	4	16.015	●		●
16.000	16.000	15.500	92.000	32.000	42.000	2.000	4	16.020	●		●
16.000	16.000	15.500	92.000	32.000	42.000	2.500	4	16.025	●		●
16.000	16.000	15.500	92.000	32.000	42.000	3.000	4	16.030	●		●
16.000	16.000	15.500	92.000	32.000	42.000	4.000	4	16.040	●		●
20.000	20.000	19.500	104.000	38.000	52.000	0.500	4	20.005	●		●
20.000	20.000	19.500	104.000	38.000	52.000	1.000	4	20.010	●		●
20.000	20.000	19.500	104.000	38.000	52.000	1.500	4	20.015	●		●
20.000	20.000	19.500	104.000	38.000	52.000	2.000	4	20.020	●		●
20.000	20.000	19.500	104.000	38.000	52.000	2.500	4	20.025	●		●
20.000	20.000	19.500	104.000	38.000	52.000	3.000	4	20.030	●		●
20.000	20.000	19.500	104.000	38.000	52.000	4.000	4	20.040	●		●

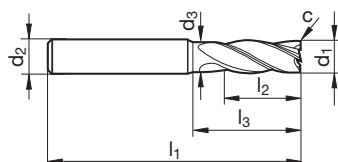
Ratio end mills RF 100 VA



P • **GÜHRING NAVIGATOR**
M • Cutting data page 226
K
N ○
S •
H

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

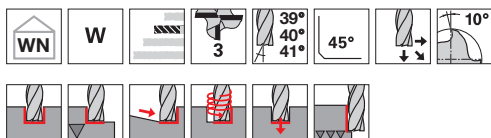
Milling cutters



									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°					
3.00	6.00	2.80	57	8.0	15.0	0.10	4	3.000	●	●	
4.00	6.00	3.80	57	11.0	18.0	0.15	4	4.000	●	●	
5.00	6.00	4.80	57	13.0	18.0	0.15	4	5.000	●	●	
6.00	6.00	5.70	57	13.0	20.0	0.20	4	6.000	●	●	
8.00	8.00	7.70	63	19.0	26.0	0.25	4	8.000	●	●	
10.00	10.00	9.50	72	22.0	30.0	0.30	4	10.000	●	●	
12.00	12.00	11.50	83	26.0	36.0	0.35	4	12.000	●	●	
14.00	14.00	13.50	83	26.0	36.0	0.40	4	14.000	●	●	
16.00	16.00	15.50	92	32.0	42.0	0.50	4	16.000	●	●	
18.00	18.00	17.50	92	32.0	42.0	0.60	4	18.000	●	●	
20.00	20.00	19.50	104	38.0	52.0	0.60	4	20.000	●	●	
25.00	25.00	24.00	121	45.0	63.0	0.75	4	25.000	●	●	



Ratio end mills Alu RF 100 A



P	
M	
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GÜHRING NAVIGATOR

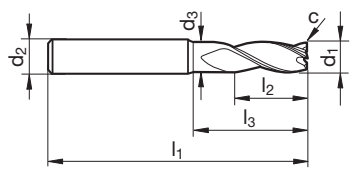
Cutting data page 226

- nano polished cutting edges
- neck clearance
- centre cutting

Tool material **Solid carbide**

Surface	○	○
Type	W	W
Shank form	HA	HB

SL **SL**



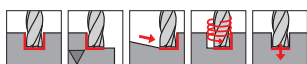
Milling cutters

Article no. **6010** **5655**
Discount group **157** **157**

d1 e8	d2 h6	d3	l1	l2	l3	c	Z	Code no.
mm	mm	mm	mm	mm	mm	mm x 45°		
3.00	6.00	2.80	57	8.0	15.0	0.03	3	3.000
4.00	6.00	3.80	57	11.0	18.0	0.04	3	4.000
5.00	6.00	4.80	57	13.0	18.0	0.05	3	5.000
6.00	6.00	5.70	57	13.0	20.0	0.06	3	6.000
8.00	8.00	7.70	63	19.0	26.0	0.08	3	8.000
10.00	10.00	9.50	72	22.0	30.0	0.10	3	10.000
12.00	12.00	11.50	83	26.0	36.0	0.12	3	12.000
16.00	16.00	15.50	92	32.0	42.0	0.16	3	16.000
20.00	20.00	19.50	104	38.0	52.0	0.20	3	20.000

Availability	
•	•
•	•
•	•
•	•
•	•
•	•
•	•
•	•
•	•

Slot drills GH 100 U (3-fluted)



P • **GÜHRING NAVIGATOR**
M • Cutting data page 224
K •
N ○
S ○
H

Tool material **Solid carbide**

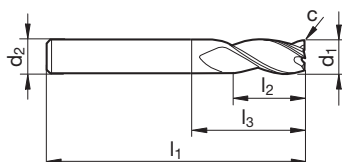
Surface **F**

Type **NH**

Shank form **HA**

SL

Milling cutters



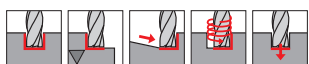
Article no. **5505**

Discount group **157**

d1 h10 mm	d2 h6 mm	l1 mm	l2 mm	l3 mm	c mm x 45°	Z	Code no.	Availability
3.000	6.00	50.00	4.00	7.90	0.05	3	3.000	●
4.000	6.00	54.00	5.00	8.90	0.06	3	4.000	●
5.000	6.00	54.00	6.00	11.40	0.08	3	5.000	●
6.000	6.00	54.00	7.00	18.00	0.09	3	6.000	●
8.000	8.00	58.00	9.00	22.00	0.12	3	8.000	●
9.000	10.00	66.00	10.00	19.40	0.14	3	9.000	●
10.000	10.00	66.00	11.00	26.00	0.15	3	10.000	●
12.000	12.00	73.00	12.00	28.00	0.18	3	12.000	●
16.000	16.00	82.00	16.00	34.00	0.19	3	16.000	●
20.000	20.00	92.00	20.00	42.00	0.24	3	20.000	●

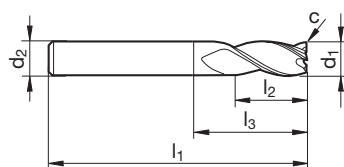


Slot drills GH 100 U (3-fluted)



P	•	GÜHRING NAVIGATOR Cutting data page 224
M	•	
K	•	
N	○	
S	○	
H		

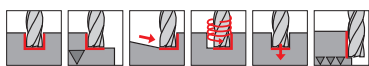
Tool material	Solid carbide	
Surface	F	F
Type	NH	NH
Shank form	HA	HB
	SL	SL



Milling cutters

								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	6.00	57.00	7.00	10.90	0.05	3	3.000	•	•	
3.500	6.00	57.00	7.00	10.90	0.05	3	3.500	•	•	
4.000	6.00	57.00	8.00	11.90	0.06	3	4.000	•	•	
4.500	6.00	57.00	8.00	13.40	0.07	3	4.500		•	
5.000	6.00	57.00	10.00	15.40	0.08	3	5.000	•	•	
6.000	6.00	57.00	10.00	21.00	0.09	3	6.000	•	•	
7.000	8.00	63.00	13.00	21.40	0.11	3	7.000	•	•	
8.000	8.00	63.00	16.00	27.00	0.12	3	8.000	•	•	
9.000	10.00	72.00	16.00	25.40	0.14	3	9.000		•	
10.000	10.00	72.00	19.00	32.00	0.15	3	10.000	•	•	
12.000	12.00	83.00	22.00	38.00	0.18	3	12.000	•	•	
14.000	14.00	83.00	22.00	38.00	0.21	3	14.000	•	•	
16.000	16.00	92.00	26.00	44.00	0.19	3	16.000	•	•	
18.000	18.00	92.00	26.00	44.00	0.22	3	18.000	•	•	
20.000	20.00	104.00	32.00	54.00	0.24	3	20.000	•	•	

Mini slot drills (3-fluted)

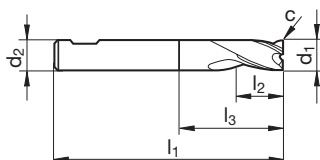


P • **GÜHRING NAVIGATOR**
M • Cutting data page 224
K ○
N •
S ○
H □

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

SL

Milling cutters



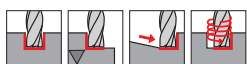
Article no. **5574**

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	3.00	38.00	2.00	3.40	0.02	3	1.000	●
1.200	3.00	38.00	2.00	3.40	0.02	3	1.200	●
1.500	3.00	38.00	3.00	5.90	0.02	3	1.500	●
1.800	3.00	38.00	3.00	5.90	0.02	3	1.800	●
2.000	6.00	45.00	4.00	6.90	0.02	3	2.000	●
2.500	6.00	45.00	5.00	7.90	0.05	3	2.500	●
3.000	6.00	45.00	6.00	9.90	0.05	3	3.000	●
3.500	6.00	45.00	6.00	9.90	0.05	3	3.500	●
4.000	6.00	45.00	7.00	10.90	0.05	3	4.000	●
4.500	6.00	45.00	8.00	13.40	0.05	3	4.500	●
5.000	6.00	45.00	8.00	13.40	0.05	3	5.000	●
5.500	6.00	45.00	8.00	14.40	0.05	3	5.500	●
5.750	6.00	45.00	10.00	17.00	0.05	3	5.750	●
6.000	6.00	45.00	10.00	15.00	0.05	3	6.000	●
6.750	8.00	55.00	10.00	18.40	0.10	3	6.750	●
7.000	8.00	55.00	12.00	12.00	0.10	3	7.000	●
7.750	8.00	55.00	12.00	12.00	0.10	3	7.750	●
8.000	8.00	55.00	13.00	18.90	0.10	3	8.000	●
8.700	10.00	55.00	14.00	23.40	0.10	3	8.700	●
9.000	10.00	55.00	14.00	23.40	0.10	3	9.000	●
9.700	10.00	55.00	16.00	16.30	0.10	3	9.700	●
10.000	10.00	55.00	16.00	25.00	0.10	3	10.000	●

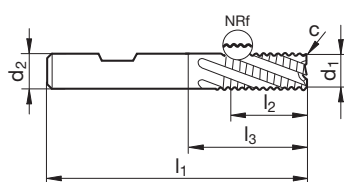


Roughing end mills GS 100 U (fine teeth)



P	•	GÜHRING NAVIGATOR Cutting data page 226
M	•	
K	•	
N	○	
S		
H		

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



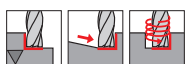
Milling cutters

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	6.00	57.00	13.00	21.00	0.30	4	6.000	●
8.000	8.00	63.00	19.00	27.00	0.30	4	8.000	●
10.000	10.00	72.00	22.00	32.00	0.30	4	10.000	●
12.000	12.00	83.00	26.00	38.00	0.50	4	12.000	●
16.000	16.00	92.00	32.00	44.00	0.50	4	16.000	●
20.000	20.00	104.00	38.00	54.00	0.50	4	20.000	●

Hard roughing end mills GS 100 H (fine teeth)



P	○
M	○
K	●
N	○
S	○
H	●

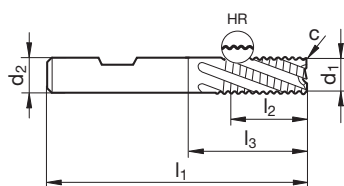
GÜHRING NAVIGATOR

Cutting data page 226

Tool material	Solid carbide
Surface	Y
Type	HR
Shank form	HB

SL

Milling cutters



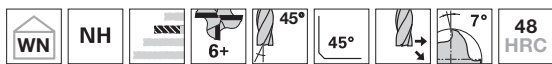
Article no. **5583**

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	6.00	57.00	13.00	21.00	0.30	4	6.000	●
8.000	8.00	63.00	19.00	27.00	0.30	4	8.000	●
10.000	10.00	72.00	22.00	32.00	0.30	4	10.000	●
12.000	12.00	83.00	26.00	38.00	0.50	4	12.000	●
16.000	16.00	92.00	32.00	44.00	0.50	4	16.000	●
20.000	20.00	104.00	38.00	54.00	0.50	4	20.000	●



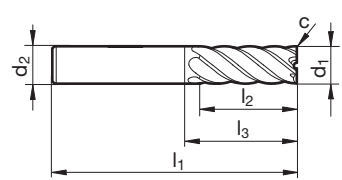
Multi-tooth end mills GH 100 U



- P** •
- M** •
- K** •
- N** •
- S** •
- H** ○

GÜHRING NAVIGATOR
Cutting data page 224

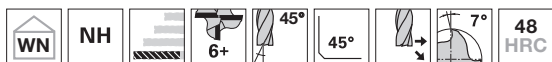
Tool material	Solid carbide	
Surface	F	F
Type	NH	NH
Shank form	HA	HB
	SL	SL



Milling cutters

								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	6.00	57.00	8.00	10.10	0.05	6	3.000	●		
4.000	6.00	57.00	11.00	15.90	0.05	6	4.000	●		
5.000	6.00	57.00	13.00	17.90	0.05	6	5.000	●		
6.000	6.00	57.00	13.00	21.00	0.05	6	6.000	●	●	
8.000	8.00	63.00	19.00	27.00	0.10	6	8.000	●	●	
10.000	10.00	72.00	22.00	32.00	0.10	6	10.000	●	●	
12.000	12.00	83.00	26.00	38.00	0.10	6	12.000	●	●	
14.000	14.00	83.00	26.00	38.00	0.15	6	14.000	●	●	
16.000	16.00	92.00	32.00	44.00	0.15	6	16.000	●	●	
18.000	18.00	92.00	32.00	44.00	0.15	8	18.000	●	●	
20.000	20.00	104.00	38.00	54.00	0.15	8	20.000	●	●	
25.000	25.00	121.00	45.00	65.00	0.20	10	25.000	●		

Multi-tooth end mills GH 100 U



P	•
M	•
K	•
N	•
S	•
H	○

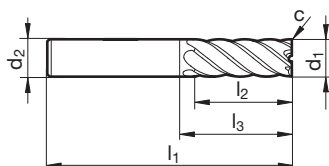
GÜHRING NAVIGATOR

Cutting data page 224

Tool material	Solid carbide
Surface	F
Type	NH
Shank form	HA

SL

Milling cutters



Article no. **5729**

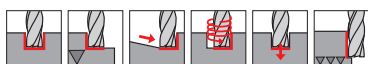
Discount group **157**

d1 h10	d2 h6	l1	l2	l3	c	Z	Code no.
mm	mm	mm	mm	mm	mm x 45°		
6.000	6.00	75.00	30.00	39.00	0.05	6	6.000
8.000	8.00	100.00	40.00	64.00	0.10	6	8.000
10.000	10.00	100.00	40.00	60.00	0.10	6	10.000
12.000	12.00	150.00	45.00	105.00	0.10	6	12.000
16.000	16.00	150.00	65.00	102.00	0.15	6	16.000
20.000	20.00	150.00	65.00	100.00	0.15	8	20.000

Availability
•
•
•
•
•
•

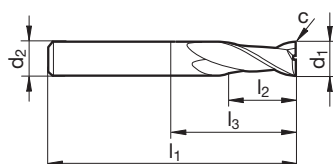


Slot drills (2-fluted)



P • **GÜHRING NAVIGATOR**
M • Cutting data page 224
K •
N •
S •
H •

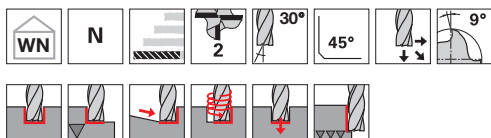
Tool material	Solid carbide	
Surface	F	F
Type	N	N
Shank form	HA	HB
	SL	SL



Milling cutters

								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	6.00	57.00	6.00	9.40	0.02	2	2.000	•	•	
3.000	6.00	57.00	7.00	11.90	0.05	2	3.000	•	•	
4.000	6.00	57.00	8.00	13.40	0.05	2	4.000	•	•	
5.000	6.00	57.00	10.00	16.90	0.05	2	5.000	•	•	
6.000	6.00	57.00	10.00	21.00	0.05	2	6.000	•	•	
7.000	8.00	63.00	13.00	22.40	0.10	2	7.000	•	•	
8.000	8.00	63.00	16.00	27.00	0.10	2	8.000	•	•	
9.000	10.00	72.00	16.00	27.40	0.10	2	9.000	•	•	
10.000	10.00	72.00	19.00	32.00	0.10	2	10.000	•	•	
12.000	12.00	83.00	22.00	38.00	0.10	2	12.000	•	•	
14.000	14.00	83.00	22.00	38.00	0.15	2	14.000	•	•	
16.000	16.00	92.00	26.00	44.00	0.15	2	16.000	•	•	
18.000	18.00	92.00	26.00	44.00	0.15	2	18.000	•	•	
20.000	20.00	104.00	32.00	54.00	0.15	2	20.000	•	•	

XL slot drills (2-fluted)



- P** •
- M** •
- K** •
- N** •
- S** •
- H** •

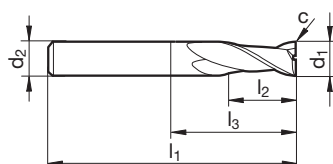
GÜHRING NAVIGATOR

Cutting data page 224

Tool material	Solid carbide
Surface	F
Type	N
Shank form	HA

SL

Milling cutters



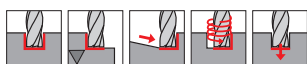
Article no. **5549**

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	3.00	75.00	20.00	47.00	0.05	2	3.000	●
4.000	4.00	75.00	25.00	47.00	0.05	2	4.000	●
5.000	5.00	75.00	30.00	47.00	0.05	2	5.000	●
6.000	6.00	75.00	30.00	39.00	0.05	2	6.000	●
8.000	8.00	100.00	40.00	64.00	0.10	2	8.000	●
10.000	10.00	100.00	40.00	60.00	0.10	2	10.000	●
12.000	12.00	150.00	45.00	105.00	0.10	2	12.000	●
14.000	14.00	150.00	45.00	105.00	0.15	2	14.000	●
16.000	16.00	150.00	65.00	102.00	0.15	2	16.000	●
18.000	18.00	150.00	65.00	102.00	0.15	2	18.000	●
20.000	20.00	150.00	65.00	100.00	0.15	2	20.000	●



Al slot drills (2-fluted)

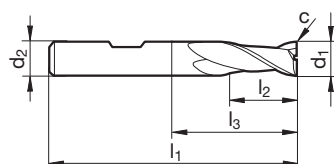


P	
M	
K	
N	•
S	
H	

GÜHRING NAVIGATOR

Cutting data page 224

Tool material	Solid carbide
Surface	○
Type	W
Shank form	HB
	SL



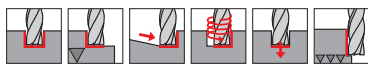
Milling cutters

Article no. **5543**

Discount group **157**

d1 e8 mm	d2 h6 mm	l1 mm	l2 mm	l3 mm	c mm x 45°	Z	Code no.	Availability
3.000	6.00	57.00	7.00	10.90	0.03	2	3.000	●
4.000	6.00	57.00	8.00	11.90	0.03	2	4.000	●
5.000	6.00	57.00	10.00	15.40	0.03	2	5.000	●
6.000	6.00	57.00	10.00	21.00	0.03	2	6.000	●
8.000	8.00	63.00	16.00	27.00	0.05	2	8.000	●
10.000	10.00	72.00	19.00	32.00	0.05	2	10.000	●
12.000	12.00	83.00	22.00	38.00	0.10	2	12.000	●
14.000	14.00	83.00	22.00	38.00	0.10	2	14.000	●
16.000	16.00	92.00	26.00	44.00	0.10	2	16.000	●
18.000	18.00	92.00	26.00	44.00	0.10	2	18.000	●
20.000	20.00	104.00	32.00	54.00	0.10	2	20.000	●

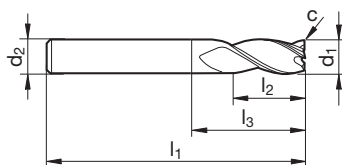
Slot drills (3-fluted)



P • **GÜHRING NAVIGATOR**
M • Cutting data page 224
K •
N •
S •
H •

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

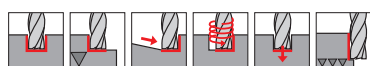
Milling cutters



								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	6.00	57.00	6.00	10.40	0.02	3	2.000	•	•	
2.500	6.00	57.00	7.00	11.40	0.05	3	2.500	•	•	
3.000	6.00	57.00	7.00	11.40	0.05	3	3.000	•	•	
3.500	6.00	57.00	7.00	11.40	0.05	3	3.500	•	•	
4.000	6.00	57.00	8.00	13.90	0.05	3	4.000	•	•	
4.500	6.00	57.00	8.00	13.90	0.05	3	4.500		•	
5.000	6.00	57.00	10.00	16.90	0.05	3	5.000	•	•	
6.000	6.00	57.00	10.00	21.00	0.05	3	6.000	•	•	
7.000	8.00	63.00	13.00	21.90	0.10	3	7.000		•	
8.000	8.00	63.00	16.00	27.00	0.10	3	8.000	•	•	
8.500	10.00	72.00	16.00	27.40	0.10	3	8.500		•	
9.000	10.00	72.00	16.00	27.40	0.10	3	9.000		•	
10.000	10.00	72.00	19.00	32.00	0.10	3	10.000	•	•	
12.000	12.00	83.00	22.00	38.00	0.10	3	12.000	•	•	
14.000	14.00	83.00	22.00	38.00	0.15	3	14.000	•	•	
16.000	16.00	92.00	26.00	44.00	0.15	3	16.000	•	•	
18.000	18.00	92.00	26.00	44.00	0.15	3	18.000		•	
20.000	20.00	104.00	32.00	54.00	0.15	3	20.000		•	



Mini slot drills (3-fluted)



P	•
M	•
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N	○
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H	

GÜHRING NAVIGATOR

Cutting data page 224

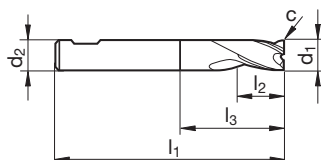
Tool material **Solid carbide**

Surface **F**

Type **N**

Shank form **HA/HB**

SL



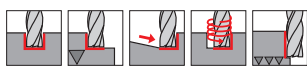
Milling cutters

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	3.00	38.00	1.50	3.40	0.02	3	0.500	●
0.600	3.00	38.00	1.50	3.40	0.02	3	0.600	●
0.800	3.00	38.00	2.00	3.90	0.02	3	0.800	●
1.000	3.00	38.00	2.00	3.90	0.02	3	1.000	●
1.200	3.00	38.00	2.00	3.90	0.02	3	1.200	●
1.500	3.00	38.00	2.00	3.90	0.02	3	1.500	●
1.800	3.00	38.00	2.00	3.90	0.02	3	1.800	●
2.000	6.00	38.00	4.00	7.40	0.02	3	2.000	●
2.500	6.00	38.00	5.00	8.40	0.05	3	2.500	●
3.000	6.00	38.00	5.00	8.40	0.05	3	3.000	●
3.500	6.00	38.00	6.00	9.40	0.05	3	3.500	●
4.000	6.00	38.00	7.00	10.40	0.05	3	4.000	●
4.500	6.00	38.00	8.00	12.40	0.05	3	4.500	●
5.000	6.00	38.00	8.00	12.40	0.05	3	5.000	●
5.500	6.00	38.00	8.00	12.40	0.05	3	5.500	●
5.750	6.00	38.00	8.00	12.40	0.05	3	5.750	●
6.000	6.00	38.00	8.00	14.00	0.05	3	6.000	●
6.750	8.00	42.00	10.00	15.40	0.10	3	6.750	●
7.000	8.00	42.00	10.00	16.40	0.10	3	7.000	●
7.750	8.00	42.00	10.00	16.40	0.10	3	7.750	●
8.000	8.00	43.00	11.00	19.00	0.10	3	8.000	●
8.700	10.00	48.00	11.00	17.40	0.10	3	8.700	●
9.000	10.00	48.00	11.00	17.40	0.10	3	9.000	●
9.700	10.00	48.00	11.00	17.40	0.10	3	9.700	●
10.000	10.00	50.00	13.00	23.00	0.10	3	10.000	●
12.000	12.00	55.00	15.00	24.50	0.10	3	12.000	●
14.000	14.00	58.00	15.00	27.50	0.15	3	14.000	●
16.000	16.00	62.00	18.00	29.00	0.15	3	16.000	●
18.000	18.00	70.00	20.00	37.00	0.15	3	18.000	●
20.000	20.00	75.00	22.00	41.00	0.15	3	20.000	●

End mills (4-fluted)

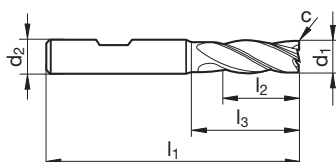


P • **GÜHRING NAVIGATOR**
M • Cutting data page 226
K •
N •
S •
H •

Tool material	Solid carbide
Surface	F
Type	N
Shank form	HB

SL

Milling cutters



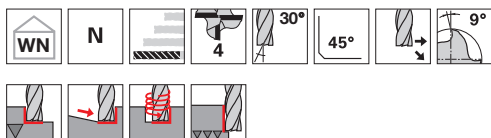
Article no. **5532**

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	6.00	57.00	7.00	9.90	0.02	4	2.000	●
3.000	6.00	57.00	8.00	11.90	0.05	4	3.000	●
4.000	6.00	57.00	11.00	15.90	0.05	4	4.000	●
5.000	6.00	57.00	13.00	18.90	0.05	4	5.000	●
6.000	6.00	57.00	13.00	21.00	0.05	4	6.000	●
7.000	8.00	63.00	16.00	24.40	0.10	4	7.000	●
8.000	8.00	63.00	19.00	27.00	0.10	4	8.000	●
9.000	10.00	72.00	19.00	29.40	0.10	4	9.000	●
10.000	10.00	72.00	22.00	32.00	0.10	4	10.000	●
12.000	12.00	83.00	26.00	38.00	0.10	4	12.000	●
14.000	14.00	83.00	26.00	38.00	0.15	4	14.000	●
16.000	16.00	92.00	32.00	44.00	0.15	4	16.000	●
18.000	18.00	92.00	32.00	44.00	0.15	4	18.000	●
20.000	20.00	104.00	38.00	54.00	0.15	4	20.000	●



XL end mills (4-fluted)



P	•
M	•
K	•
N	•
S	
H	

GÜHRING NAVIGATOR

Cutting data page 226

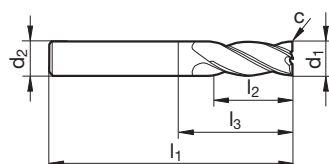
Tool material **Solid carbide**

Surface **F**

Type **N**

Shank form **HA**

SL



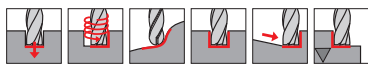
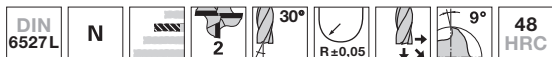
Milling cutters

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	3.00	75.00	20.00	47.00	0.05	4	3.000	●
4.000	4.00	75.00	25.00	47.00	0.05	4	4.000	●
5.000	5.00	75.00	30.00	47.00	0.05	4	5.000	●
6.000	6.00	75.00	30.00	39.00	0.05	4	6.000	●
8.000	8.00	100.00	40.00	64.00	0.10	4	8.000	●
10.000	10.00	100.00	40.00	60.00	0.10	4	10.000	●
12.000	12.00	150.00	45.00	105.00	0.10	4	12.000	●
14.000	14.00	150.00	45.00	105.00	0.15	4	14.000	●
16.000	16.00	150.00	65.00	102.00	0.15	4	16.000	●
18.000	18.00	150.00	65.00	102.00	0.15	4	18.000	●
20.000	20.00	150.00	65.00	100.00	0.15	4	20.000	●

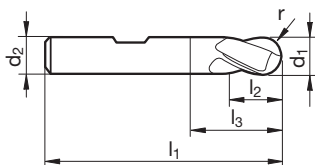
Ball nose slot drills (2-fluted)



P • **GÜHRING NAVIGATOR**
M • Cutting data page 224
K •
N •
S •
H ○

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

Milling cutters

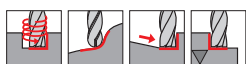


Article no. **5533** **5585**
 Discount group **157** **157**

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)



P	•
M	•
K	•
N	•
S	•
H	○

GÜHRING NAVIGATOR

Cutting data page 224

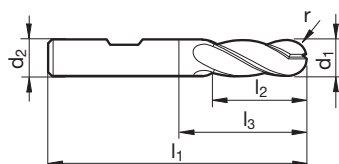
Tool material **Solid carbide**

Surface **F**

Type **N**

Shank form **HB**

SL



Milling cutters

Article no. **5584**

Discount group **157**

d1 h10 mm	d2 h6 mm	l1 mm	l2 mm	l3 mm	r mm	Z	Code no.	Availability
3.000	6.000	57.000	8.000	11.900	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	•
16.000	16.000	92.000	32.000	44.000	8.000	4	16.000	•
20.000	20.000	104.000	38.000	54.000	10.000	4	20.000	•

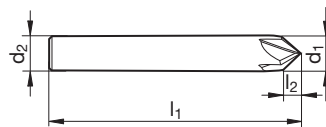
Chamfering milling cutters 60°



P • **GÜHRING NAVIGATOR**
M • Cutting data page 226
K •
N •
S •
H ○

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

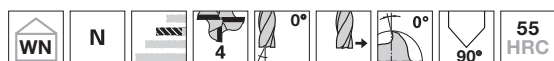
Milling cutters



						Article no.	6011	6012
						Discount group	157	157
d1 js9	d2 h6	l1	l2	Z	Code no.	Availability		
mm	mm	mm	mm					
4.000	4.000	50.000	3.500	4	4.000	•		
6.000	6.000	57.000	5.200	4	6.000	•	•	
8.000	8.000	63.000	7.000	4	8.000	•	•	
10.000	10.000	72.000	8.700	4	10.000	•	•	
12.000	12.000	83.000	10.400	4	12.000	•	•	



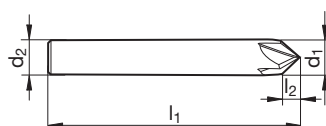
Chamfering milling cutters 90°



Tool material **Solid carbide**

Surface	A	A
Type	N	N
Shank form	HA	HB
	SL	SL

P • **GÜHRING NAVIGATOR**
M • Cutting data page 226
K •
N •
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Milling cutters

						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	•	•	

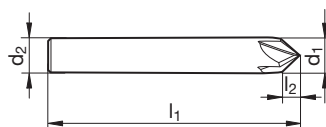
Chamfering milling cutters 120°



P • **GÜHRING NAVIGATOR**
M • Cutting data page 226
K •
N •
S •
H ○

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

Milling cutters



						Article no.	6014	6015
						Discount group	157	157
d1 js9	d2 h6	l1	l2	Z	Code no.	Availability		
mm	mm	mm	mm					
4.000	4.000	50.000	1.200	4	4.000	•		
6.000	6.000	57.000	1.800	4	6.000	•	•	
8.000	8.000	63.000	2.400	4	8.000	•	•	
10.000	10.000	72.000	2.900	4	10.000	•	•	
12.000	12.000	83.000	3.500	4	12.000	•	•	



Front/back deburrer 90°, sets



Tool material **Solid carbide**

Surface **a**

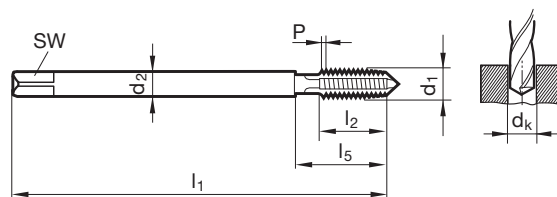
Type EW 100 VR

Shank form cyl.

SL

P	•
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- neck clearance <math>< \varnothing 6.0 \text{ mm}</math>
- without centre cutting
- consisting of art. no. 495



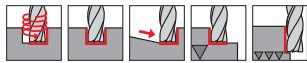
Milling cutters

Article no. **6013**

Discount group **157**

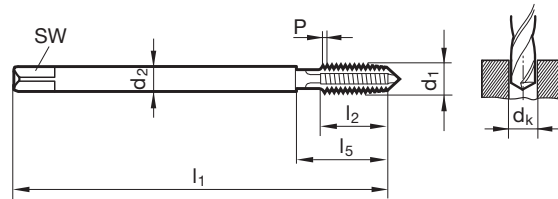
Ø-range mm	Pieces/set	Code no.	Availability
4/6/10	3	1.000	•
4/5/6/8/10	5	2.000	•

Ratio end mill sets RF 100 U



P • **GÜHRING NAVIGATOR**
M Cutting data page 226
K •
N
S • neck clearance
 • centre cutting
H ○ consisting of art. no. 5535

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



Milling cutters

			Article no.	5635
			Discount group	157
Ø-range	Pieces/set	Code no.	Availability	
mm				
6/8/10/12/16	5	1.000	•	



Milling cutters

RF 100 U

GUHRING NAVIGATOR

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

a_e = Width of cut

a_p = Depth of cut

Tool material

Art. no.

Type	Material
HA	DIN 6527
HB	DIN 6527
HA	Company standard
HB	Company standard

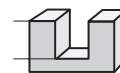
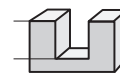
Slot milling

Tool material	Solid carbide	Solid carbide
Type	N	N
HA	5730	5507
HB	5530	5531
HA		
HB		

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

** To improve the surface quality, the milling angle should be $10^\circ-15^\circ$.


 $a_e = 1xD$

 $a_e = 1xD$

 $a_p = 0.5xD$

 $a_p = 0.5xD$

Milling 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 strength MPa (N/mm ²)	Hardness
Common structural steels	1.0035 S185, 1.0486 P275N, 1.0345 P235GH, 1.0425 P265GH	≤500	
	1.0050 E295, 1.0070 E360, 1.8937 P500NH	≤1000	
Free-cutting steels	1.0718 11SMnPb30, 1.0736 11SMn37	≤850	
	1.0727 46 S20, 1.0728 60 S20, 1.0757 46SPb20	≤1000	
Unalloyed heat-treatable steels	1.0402 C22, 1.1178 C30E	≤700	
	1.0503 C45, 1.1191 C45E	≤850	
	1.0601 C60, 1.1221 C60E	≤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 hardened steels	1.0301 C10, 1.1121 C10E	≤850	
Alloyed case hardened steels	1.7043 38Cr4	≤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	≤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		≤350 HB
Hardened steels	-		≤48 HRC
			≤66 HRC
Stainless steels, sulphured	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17	≤900	
austenitic	1.4301 X5CrNi18-10, 1.4541 X6CrNiTi18-10	≤1100	
martensitic	1.4057 X20CrNi17-2, 1.4122 X39CrMo17-1	≤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, 3.7164 TiAl6V4, 3.7184 TiAl4Mo4Sn2.5	≤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	≤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	≤600	
	2.0980 CuAl11Ni, 2.1247 CuBe2	≤1000	
Duroplastics	Bakelit, Resopal, Pertinax, Moltopren	≤150	
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100	
Kevlar	Kevlar	≤1000	
Glass, carbon concentr. plastics	GFK/CFK	≤1000	

1xD = 75 %
1.5xD = 50 %

1xD = 75 %
1.5xD = 50 %



GUHRINGNAVIGATOR

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

a_e = Width of cut

a_p = Depth of cut

Milling cutters

Milling 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 strength MPa (N/mm ²)	Hardness
Common structural steels	1.0035 S185, 1.0486 P275N, 1.0345 P235GH, 1.0425 P265GH 1.0050 E295, 1.0070 E360, 1.8937 P500NH	≤500 ≤1000	
Free-cutting steels	1.0718 11SMnPb30, 1.0736 11SMn37 1.0727 46 S20, 1.0728 60 S20, 1.0757 46SPb20	≤850 ≤1000	
Unalloyed heat-treatable steels	1.0402 C22, 1.1178 C30E 1.0503 C45, 1.1191 C45E 1.0601 C60, 1.1221 C60E	≤700 ≤850 ≤1000	
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	≤1000 ≤1400	
Unalloyed case hardened steels	1.0301 C10, 1.1121 C10E	≤850	
Alloyed case hardened steels	1.7043 38Cr4 1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5	≤1000 ≤1400	
Nitriding steels	1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	≤1000 ≤1400	
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6	≤850 ≤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		≤350 HB
Hardened steels	-		≤48 HRC ≤66 HRC
Stainless steels, sulphured austenitic	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17	≤900 ≤1100	
Stainless steels, martensitic	1.4057 X20CrNi17-2, 1.4122 X39CrMo17-1	≤1500	
Cast iron	0.6010 EN-GJL-100(GG10), 0.6020 EN-GJL-200(GG20) 0.6025 EN-GJL-250(GG25), 0.6035 EN-GJL-350(GG35)		≤240 HB ≤350 HB
Spheroidal graphite iron and malleable cast iron	0.7050 EN-GJS-500-7(GGG50), 0.8035 EN-GJMW-350-4(GTW35) 0.7070 EN-GJS-700-2(GGG70), 0.8170 EN-GJMB-700-2(GTS70)		≤240 HB ≤350 HB
Chilled cast iron	-		≤350 HB
New cast materials GGV	EN-GJV250 (GGV25), EN-GJV350 (GGV35) EN-GJV400 (GGV40), EN-GJV500 (GGV50), SiMo 6		≤220 HB ≤300 HB
New cast materials ADI	EN-GJS-800-8 (ADI800), EN-GJS-1000-5 (ADI1000) EN-GJS-1200-2 (ADI1200), EN-GJS-1400-1 (ADI1400)	≤1000 ≤1400	
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤2000	
Ti and Ti alloys	3.7024 Ti99.5, 3.7114 TiAl5Sn2.5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7164 TiAl6V4, 3.7184 TiAl4Mo4Sn2.5	≤850 ≤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	≤650	
Al cast alloys ≤ 10 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9	≤600	
Al cast alloys ≤ 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	
Brass, 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 2.0790 CuNi18Zn19Pb	≤600 ≤850	
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2	≤850 ≤1000	
Duroplastics	Bakelit, Resopal, Pertinax, Moltopren	≤150	
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100	
Kevlar	Kevlar	≤1000	
Glass, carbon concentr. plastics	GFK/CFK	≤1000	

Roughing

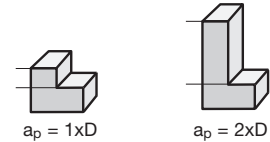
Tool material	Solid carbide	
	N	N
Type	N	
DIN 6527 HA	5735*	
DIN 6527 HB	5535*	5534*
Company standard HA	5582	
Company standard HB		

* 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%.



$a_e = 0.5-1.0x_D$ $a_e = 0.25x_D$

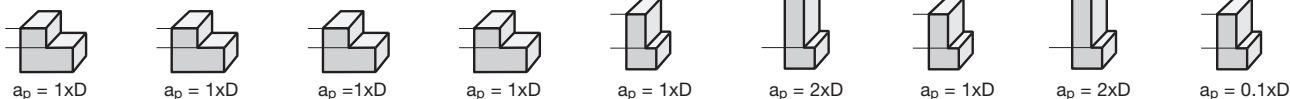
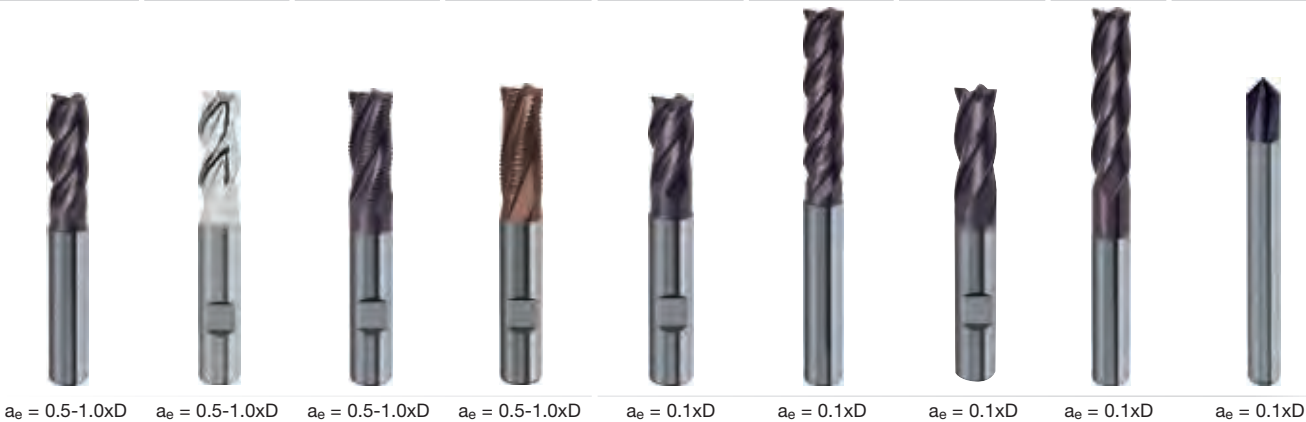


V_c m/min	Feed col. no.	V_c m/min	Feed col. no.
170 - 208	51	110 - 136	47
157 - 193	50	102 - 126	46
170 - 208	50	110 - 136	46
126 - 154	49	81 - 101	45
170 - 208	50	110 - 136	46
151 - 185	50	98 - 120	46
126 - 154	49	81 - 101	45
151 - 185	49	98 - 120	45
126 - 154	48	81 - 101	44
189 - 231	50	123 - 151	46
151 - 185	50	98 - 120	46
113 - 139	49	73 - 91	45
170 - 208	50	110 - 136	46
151 - 185	48	98 - 120	44
126 - 154	48	81 - 101	44
94 - 116	49	61 - 75	45
94 - 116	48		
44 - 54	46		
80 - 100	49	60 - 80	45
70 - 90	48	55 - 75	44
65 - 70	49	50 - 65	45
220 - 270	50	143 - 175	46
201 - 247	49	131 - 161	45
182 - 224	50	118 - 146	46
157 - 193	49	102 - 126	45
107 - 131	47	69 - 85	43
56 - 70	48		
54 - 86	43	61 - 75	44
44 - 72	42	49 - 61	43
		300 - 380	47
		370 - 440	47
		150 - 185	45
		115 - 145	46
		175 - 215	47
		80 - 100	46
		75 - 95	45
		60 - 75	45
		75 - 95	45
		55 - 70	44

$a_p 1.5xD = 50\%$ $a_p 0.5xD = 75\%$
 $a_e 0.25xD = 150\%$ $a_p 2xD = 50\%$



				Finishing							
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Sol. carb.	Solid carbide			
N	W	NRf	HR	N	NH	N	N	N			
5653				5735							
5654		5504**	5583**	5535	5534		5532				
	6010					5582		5556	6011	5578 6014	
	5655								6012	5579 6015	



Vc	Feed	Vc	Feed	Vc	Feed	Vc	Feed	Vc	Feed	Vc	Feed	Vc	Feed	Vc	Feed	Vc	Feed
m/min	col. no.	m/min	col. no.	m/min	col. no.	m/min	col. no.	m/min	col. no.	m/min	col. no.	m/min	col. no.	m/min	col. no.	m/min	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
				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

ap 0.5xD = 120% ap 0.5xD = 120% ap 1.5xD = 50% ap 0.5xD = 120% ap 2xD = 50% ap 3xD = 50% ap 2xD = 50% ap 3xD = 50% ap 3xD = 50%

ap 2xD = 50% ap 2xD = 50%

ae 0.25xD = 140%

Milling cutters



SLOTTING

Art. no. 6803/6804/6737/6736

Material/ISO material	Hardness	a _p max.	a _e max.	v _c	f _z (mm/tooth) with nom. Ø							
					4	5	6	8	10	12	16	20
Struct./free-cutting steels, unall. heat-treat./case hard. steels	≤ 850 N/mm ²	1xD	1xD	270	0.017	0.021	0.025	0.034	0.050	0.060	0.080	0.100
P Free-cutting steels, unalloyed case hard. steels, nitr. steels	850-1200 N/mm ²	1xD	1xD	230	0.017	0.021	0.025	0.034	0.050	0.060	0.080	0.100
Alloyed heat-treatable, tool and high speed steels	850-1400 N/mm ²	1xD	1xD	180	0.014	0.018	0.021	0.028	0.045	0.054	0.072	0.090
M Stainless steel - easy to machine/sulphured	≤ 750 N/mm ²	1xD	1xD	120	0.014	0.018	0.021	0.028	0.045	0.054	0.072	0.090
Stainless steel - moderately difficult to machine	750-950 N/mm ²	1xD	1xD	80	0.013	0.016	0.019	0.026	0.040	0.048	0.064	0.080
K Cast iron, grey cast iron, spher. graphite/malleable cast iron	≥ 240 HB	1xD	1xD	150	0.017	0.021	0.025	0.034	0.050	0.060	0.080	0.100
N Aluminium, Al-wrought alloys, Al alloys	≤ 7 % Si	1xD	1xD	500	0.022	0.028	0.033	0.044	0.065	0.078	0.104	0.130
Aluminium-cast alloys	≥ 7 % Si	1xD	1xD	340	0.018	0.023	0.027	0.036	0.055	0.066	0.088	0.110
S Titanium, Titanium alloys	≤ 1300 N/mm ²	1xD	1xD	60	0.013	0.016	0.019	0.026	0.040	0.048	0.064	0.080

HPC ROUGHING

Material/ISO material	Hardness	a _p max.	a _e max.	v _c	f _z (mm/tooth) with nom. Ø							
					4	5	6	8	10	12	16	20
Struct./free-cutting steels, unall. heat-treat./case hard. steels	≤ 850 N/mm ²	1.5xD	0.4xD	350	0.021	0.026	0.032	0.042	0.063	0.075	0.100	0.125
P Free-cutting steels, unalloyed case hard. steels, nitr. steels	850-1200 N/mm ²	1.5xD	0.4xD	290	0.021	0.026	0.032	0.042	0.063	0.075	0.100	0.125
Alloyed heat-treatable, tool and high speed steels	850-1400 N/mm ²	1.5xD	0.33xD	260	0.018	0.023	0.027	0.036	0.059	0.070	0.094	0.117
M Stainless steel - easy to machine/sulphured	≤ 750 N/mm ²	1.5xD	0.33xD	160	0.018	0.023	0.027	0.036	0.059	0.070	0.094	0.117
Stainless steel - moderately difficult to machine	750-950 N/mm ²	1.5xD	0.25xD	120	0.019	0.024	0.029	0.038	0.060	0.072	0.096	0.120
K Cast iron, grey cast iron, spher. graphite/malleable cast iron	≥ 240 HB	1.5xD	0.4xD	190	0.021	0.026	0.032	0.042	0.063	0.075	0.100	0.125
N Aluminium, Al-wrought alloys, Al alloys	≤ 7 % Si	1.5xD	0.4xD	600	0.028	0.034	0.041	0.055	0.081	0.098	0.130	0.163
Aluminium-cast alloys	≥ 7 % Si	1.5xD	0.4xD	440	0.023	0.028	0.034	0.045	0.069	0.083	0.110	0.138
S Titanium, Titanium alloys	≤ 1300 N/mm ²	1.5xD	0.33xD	110	0.017	0.021	0.025	0.033	0.052	0.062	0.083	0.104

HPC FINISHING

Material/ISO material	Hardness	a _p max.	a _e max.	v _c	f _z (mm/tooth) with nom. Ø							
					4	5	6	8	10	12	16	20
Struct./free-cutting steels, unall. heat-treat./case hard. steels	≤ 850 N/mm ²	2xD	0.02xD	540	0.018	0.023	0.028	0.037	0.055	0.066	0.088	0.110
P Free-cutting steels, unalloyed case hard. steels, nitr. steels	850-1200 N/mm ²	2xD	0.02xD	460	0.018	0.023	0.028	0.037	0.055	0.066	0.088	0.110
Alloyed heat-treatable, tool and high speed steels	850-1400 N/mm ²	2xD	0.02xD	350	0.015	0.019	0.023	0.031	0.050	0.059	0.079	0.099
M Stainless steel - easy to machine/sulphured	≤ 750 N/mm ²	2xD	0.02xD	220	0.015	0.019	0.023	0.031	0.050	0.059	0.079	0.099
Stainless steel - moderately difficult to machine	750-950 N/mm ²	2xD	0.02xD	160	0.014	0.018	0.021	0.028	0.044	0.053	0.070	0.088
K Cast iron, grey cast iron, spher. graphite/malleable cast iron	≥ 240 HB	2xD	0.02xD	300	0.018	0.023	0.028	0.037	0.055	0.066	0.088	0.110
N Aluminium, Al-wrought alloys, Al alloys	≤ 7 % Si	2xD	0.02xD	1000	0.024	0.030	0.036	0.048	0.072	0.086	0.114	0.143
Aluminium-cast alloys	≥ 7 % Si	2xD	0.02xD	680	0.020	0.025	0.030	0.040	0.061	0.073	0.097	0.121
S Titanium, Titanium alloys	≤ 1300 N/mm ²	2xD	0.02xD	130	0.014	0.018	0.021	0.028	0.044	0.053	0.070	0.088

RAMPING, HELIX, GROOVING

Material/ISO material	Hardness	a _p	max. ramping angle	v _c	f _z (mm/tooth) with nom. Ø							
					4	5	6	8	10	12	16	20
Struct./free-cutting steels, unall. heat-treat./case hard. steels	≤ 850 N/mm ²	1xD	45°	270	0.015	0.019	0.023	0.030	0.045	0.054	0.072	0.090
P Free-cutting steels, unalloyed case hard. steels, nitr. steels	850-1200 N/mm ²	1xD	45°	230	0.013	0.017	0.020	0.026	0.040	0.048	0.064	0.080
Alloyed heat-treatable, tool and high speed steels	850-1400 N/mm ²	1xD	30°	180	0.011	0.014	0.017	0.022	0.030	0.036	0.048	0.060
M Stainless steel - easy to machine/sulphured	≤ 750 N/mm ²	1xD	10°	120	0.009	0.012	0.014	0.018	0.030	0.036	0.048	0.060
Stainless steel - moderately difficult to machine	750-950 N/mm ²	1xD	5°	80	0.007	0.009	0.011	0.014	0.025	0.030	0.040	0.050
K Cast iron, grey cast iron, spher. graphite/malleable cast iron	≥ 240 HB	1xD	45°	150	0.015	0.019	0.023	0.030	0.045	0.054	0.072	0.090
N Aluminium, Al-wrought alloys, Al alloys	≤ 7 % Si	1xD	30°	500	0.013	0.017	0.020	0.026	0.040	0.048	0.064	0.080
Aluminium-cast alloys	≥ 7 % Si	1xD	45°	340	0.015	0.019	0.023	0.030	0.045	0.054	0.072	0.090
S Titanium, Titanium alloys	≤ 1300 N/mm ²	1xD	10°	60	0.007	0.009	0.011	0.014	0.025	0.030	0.040	0.050

DRILLING

Material/ISO material	Hardness	Drilling depth (a _p max.)	v _c	f _z (mm/tooth) with nom. Ø							
				4	5	6	8	10	12	16	20
Struct./free-cutting steels, unall. heat-treat./case hard. steels	≤ 850 N/mm ²	1.5xD	270	0.014	0.018	0.021	0.028	0.040	0.048	0.064	0.080
P Free-cutting steels, unalloyed case hard. steels, nitr. steels	850-1200 N/mm ²	1.5xD	230	0.012	0.015	0.018	0.024	0.035	0.042	0.056	0.070
Alloyed heat-treatable, tool and high speed steels	850-1400 N/mm ²	1.0xD	180	0.008	0.010	0.012	0.016	0.025	0.030	0.040	0.050
K Cast iron, grey cast iron, spher. graphite/malleable cast iron	≥ 240 HB	1.5xD	150	0.014	0.018	0.021	0.028	0.040	0.048	0.064	0.080
N Aluminium, Al-wrought alloys, Al alloys	≤ 7 % Si	1.0xD	500	0.012	0.015	0.018	0.024	0.035	0.042	0.056	0.070
Aluminium-cast alloys	≥ 7 % Si	1.0xD	340	0.014	0.018	0.021	0.028	0.040	0.048	0.064	0.080



RF 100
SPEED

Art. no. 6761

ROUGHING

Milling conditions	Material	Machinability	max. a_p	max. a_e	max. pressure angle	v_c	f_z (mm/tooth) with nom. \emptyset								
							3	4	5	6	8	10	12	16	20
HPC	P	light/medial	L2	0.15xD	46°	280	0.026	0.034	0.043	0.051	0.084	0.105	0.125	0.167	0.209
		difficult	L2	0.15xD	46°	220	0.026	0.034	0.043	0.051	0.076	0.095	0.114	0.152	0.190
	M	light/medial	L2	0.10xD	37°	160	0.024	0.032	0.040	0.048	0.064	0.081	0.097	0.129	0.161
		difficult	L2	0.10xD	37°	100	0.024	0.032	0.040	0.048	0.064	0.081	0.097	0.129	0.161
	S	medial/difficult	L2	0.08xD	31°	90	0.026	0.035	0.044	0.053	0.070	0.088	0.105	0.140	0.175
		very difficult	L2	0.08xD	31°	60	0.023	0.030	0.038	0.045	0.060	0.075	0.090	0.120	0.150

ROUGHING

Milling conditions	Material	Machinability	max. a_p	max. a_e	max. pressure angle	v_c	f_z (mm/tooth) with nom. \emptyset								
							3	4	5	6	8	10	12	16	20
HSC	P	light/medial	L2	0.10xD	37°	310	0.031	0.041	0.052	0.062	0.101	0.127	0.152	0.202	0.253
		difficult	L2	0.10xD	37°	240	0.031	0.041	0.052	0.062	0.092	0.115	0.138	0.184	0.230
	M	light/medial	L2	0.08xD	31°	170	0.026	0.035	0.044	0.053	0.070	0.088	0.105	0.140	0.175
		difficult	L2	0.08xD	31°	110	0.026	0.035	0.044	0.053	0.070	0.088	0.105	0.140	0.175
	S	medial/difficult	L2	0.05xD	26°	100	0.026	0.035	0.044	0.053	0.070	0.088	0.105	0.140	0.175
		very difficult	L2	0.05xD	26°	70	0.023	0.030	0.038	0.045	0.060	0.075	0.090	0.120	0.150

FINISHING

Milling conditions	Material	Machinability	max. a_p	max. a_e	max. pressure angle	v_c	f_z (mm/tooth) with nom. \emptyset								
							3	4	5	6	8	10	12	16	20
HSC	P	light/medial	L2	0.01xD	11°	340	0.024	0.032	0.041	0.049	0.079	0.099	0.119	0.158	0.198
		difficult	L2	0.01xD	11°	270	0.024	0.032	0.041	0.049	0.072	0.090	0.108	0.144	0.180
	M	light/medial	L2	0.01xD	11°	180	0.019	0.025	0.032	0.038	0.050	0.063	0.076	0.101	0.126
		difficult	L2	0.01xD	11°	120	0.019	0.025	0.032	0.038	0.050	0.063	0.076	0.101	0.126
	S	medial/difficult	L2	0.01xD	11°	100	0.019	0.025	0.032	0.038	0.050	0.063	0.076	0.101	0.126
		very difficult	L2	0.01xD	11°	70	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108



Art. no. 6964/6965

SLOTTING

Milling conditions	Material	Machinability	max. a_p	max. a_e	max. pressure angle	v_c	f_z (mm/tooth) with nom. \emptyset								
							3	4	5	6	8	10	12	16	20
HPC	P	light/medial	1xD	1xD	180°	180	0.016	0.022	0.026	0.031	0.042	0.060	0.070	0.100	0.120
		difficult	1xD	1xD	180°	135	0.014	0.018	0.022	0.027	0.036	0.050	0.060	0.080	0.100
	M	light/medial	1xD	1xD	180°	120	0.014	0.018	0.022	0.027	0.036	0.050	0.060	0.080	0.100
		difficult	1xD	1xD	180°	60	0.011	0.015	0.018	0.021	0.028	0.040	0.050	0.060	0.080
	S	medial/difficult	1xD	1xD	180°	60	0.012	0.016	0.020	0.024	0.032	0.045	0.050	0.070	0.090
		very difficult	1xD	1xD	180°	30	0.008	0.010	0.014	0.017	0.022	0.032	0.040	0.050	0.060

ROUGHING

Milling conditions	Material	Machinability	max. a_p	max. a_e	max. pressure angle	v_c	f_z (mm/tooth) with nom. \emptyset								
							3	4	5	6	8	10	12	16	20
HPC	P	light/medial	L2	0.2xD	53°	305	0.025	0.032	0.040	0.050	0.067	0.096	0.120	0.150	0.190
		difficult	L2	0.2xD	53°	230	0.022	0.028	0.034	0.043	0.058	0.080	0.100	0.130	0.160
	M	light/medial	L2	0.2xD	53°	205	0.022	0.028	0.034	0.043	0.058	0.080	0.100	0.130	0.160
		difficult	L2	0.2xD	53°	100	0.017	0.022	0.026	0.034	0.045	0.064	0.080	0.100	0.130
	S	medial/difficult	L2	0.2xD	53°	100	0.019	0.024	0.028	0.038	0.051	0.072	0.090	0.120	0.140
		very difficult	L2	0.2xD	53°	50	0.013	0.015	0.022	0.027	0.036	0.051	0.060	0.080	0.100

FINISHING

Milling conditions	Material	Machinability	max. a_p	max. a_e	max. pressure angle	v_c	f_z (mm/tooth) with nom. \emptyset								
							3	4	5	6	8	10	12	16	20
HSC	P	light/medial	L2	0.01xD	11°	340	0.024	0.032	0.041	0.049	0.079	0.099	0.119	0.158	0.198
		difficult	L2	0.01xD	11°	270	0.024	0.032	0.041	0.049	0.072	0.090	0.108	0.144	0.180
	M	light/medial	L2	0.01xD	11°	180	0.019	0.025	0.032	0.038	0.050	0.063	0.076	0.101	0.126
		difficult	L2	0.01xD	11°	120	0.019	0.025	0.032	0.038	0.050	0.063	0.076	0.101	0.126
	S	medial/difficult	L2	0.01xD	11°	100	0.019	0.025	0.032	0.038	0.050	0.063	0.076	0.101	0.126
		very difficult	L2	0.01xD	11°	70	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108





REAMERS AND COUNTERSINKS



NC machine reamers

DIN 212-3	H7
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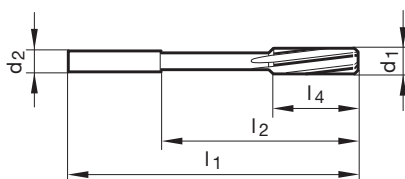
P	•	• ≤ Ø 3.75 mm with external centres on both ends
M	○	• > Ø 3.75 mm with internal centres on both ends
K	•	
N	•	
S	○	
H		

Tool material	HSS-E
Surface	○
Form	B
Shank form	HA

SL

GÜHRING NAVIGATOR

Cutting data page 252



Article no. 6019

Discount group 154

d1	d2 h6	l1	l2	l4	Z	Code no.	Availability
mm	mm	mm	mm	mm			
1.500	2.000	40.000	12.000	8.000	3	1.500	●
2.000	2.000	49.000	21.000	11.000	4	2.000	●
2.500	3.000	57.000	27.000	14.000	4	2.500	●
3.000	3.000	61.000	31.000	15.000	6	3.000	●
3.500	4.000	70.000	38.000	18.000	6	3.500	●
4.000	4.000	75.000	43.000	19.000	6	4.000	●
4.500	5.000	80.000	47.000	21.000	6	4.500	●
5.000	5.000	86.000	52.000	23.000	6	5.000	●
5.500	6.000	93.000	57.000	26.000	6	5.500	●
6.000	6.000	93.000	57.000	26.000	6	6.000	●
6.500	6.000	101.000	63.000	28.000	6	6.500	●
7.000	8.000	109.000	69.000	31.000	6	7.000	●
7.500	8.000	109.000	69.000	31.000	6	7.500	●
8.000	8.000	117.000	75.000	33.000	6	8.000	●
8.500	8.000	117.000	75.000	33.000	6	8.500	●
9.000	10.000	125.000	81.000	36.000	6	9.000	●
9.500	10.000	125.000	81.000	36.000	6	9.500	●
10.000	10.000	133.000	87.000	38.000	6	10.000	●
11.000	10.000	142.000	96.000	41.000	6	11.000	●
12.000	10.000	151.000	105.000	44.000	6	12.000	●
13.000	10.000	151.000	105.000	44.000	6	13.000	●
14.000	14.000	160.000	110.000	47.000	8	14.000	●
15.000	14.000	162.000	112.000	50.000	8	15.000	●
16.000	14.000	170.000	120.000	52.000	8	16.000	●
17.000	14.000	175.000	123.000	54.000	8	17.000	●
18.000	14.000	182.000	130.000	56.000	8	18.000	●
19.000	16.000	189.000	131.000	58.000	8	19.000	●
20.000	16.000	195.000	137.000	60.000	8	20.000	●

NC machine reamers

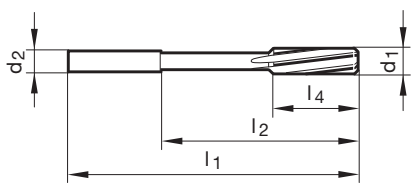
DIN 212-3	≤Ø5,5=+0,004
	>Ø5,5=+0,005

P	•	• ≤ Ø 3.75 mm with external centres on both ends
M	○	• > Ø 3.75 mm with internal centres on both ends
K	•	• ≤ Ø 5.50 mm: 0.000/+0.004
N	•	• > Ø 5.50 mm: 0.000/+0.005
S	○	
H		

Tool material	HSS-E
Surface	○
Form	B
Shank form	HA
	SL

GÜHRING NAVIGATOR

Cutting data page 252



Article no.	6020
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Discount group	154
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d1	d2 h6	l1	l2	l4	Z	Code no.	Availability
mm	mm	mm	mm	mm			
1.000	1.000	34.000	6.500	5.500	3	1.000	●
1.010	1.000	34.000	6.500	5.500	3	1.010	●
1.020	1.000	34.000	6.500	5.500	3	1.020	●
1.030	1.000	34.000	6.500	5.500	3	1.030	●
1.500	2.000	40.000	12.000	8.000	3	1.500	●
1.510	2.000	43.000	15.000	9.000	3	1.510	●
1.520	2.000	43.000	15.000	9.000	3	1.520	●
1.530	2.000	43.000	15.000	9.000	3	1.530	●
1.970	2.000	49.000	21.000	11.000	4	1.970	●
1.980	2.000	49.000	21.000	11.000	4	1.980	●
1.990	2.000	49.000	21.000	11.000	4	1.990	●
2.000	2.000	49.000	21.000	11.000	4	2.000	●
2.010	2.000	49.000	21.000	11.000	4	2.010	●
2.020	2.000	49.000	21.000	11.000	4	2.020	●
2.030	2.000	49.000	21.000	11.000	4	2.030	●
2.470	3.000	57.000	27.000	14.000	4	2.470	●
2.480	3.000	57.000	27.000	14.000	4	2.480	●
2.490	3.000	57.000	27.000	14.000	4	2.490	●
2.500	3.000	57.000	27.000	14.000	4	2.500	●
2.510	3.000	57.000	27.000	14.000	4	2.510	●
2.520	3.000	57.000	27.000	14.000	4	2.520	●
2.530	3.000	57.000	27.000	14.000	4	2.530	●
2.970	3.000	61.000	31.000	15.000	6	2.970	●
2.980	3.000	61.000	31.000	15.000	6	2.980	●
2.990	3.000	61.000	31.000	15.000	6	2.990	●
3.000	3.000	61.000	31.000	15.000	6	3.000	●
3.010	4.000	65.000	34.000	16.000	6	3.010	●
3.020	4.000	65.000	34.000	16.000	6	3.020	●
3.030	4.000	65.000	34.000	16.000	6	3.030	●
3.970	4.000	75.000	43.000	19.000	6	3.970	●
3.980	4.000	75.000	43.000	19.000	6	3.980	●
3.990	4.000	75.000	43.000	19.000	6	3.990	●
4.000	4.000	75.000	43.000	19.000	6	4.000	●
4.010	4.000	75.000	43.000	19.000	6	4.010	●
4.020	4.000	75.000	43.000	19.000	6	4.020	●
4.030	4.000	75.000	43.000	19.000	6	4.030	●

Reamers



Article no. 6020							Availability
Discount group 154							
d1	d2 h6	l1	l2	l4	Z	Code no.	
mm	mm	mm	mm	mm			
4.970	5.000	86.000	52.000	23.000	6	4.970	●
4.980	5.000	86.000	52.000	23.000	6	4.980	●
4.990	5.000	86.000	52.000	23.000	6	4.990	●
5.000	5.000	86.000	52.000	23.000	6	5.000	●
5.010	5.000	86.000	52.000	23.000	6	5.010	●
5.020	5.000	86.000	52.000	23.000	6	5.020	●
5.030	5.000	86.000	52.000	23.000	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	101.000	63.000	28.000	6	6.010	●
6.020	6.000	101.000	63.000	28.000	6	6.020	●
6.030	6.000	101.000	63.000	28.000	6	6.030	●
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	●
9.000	10.000	125.000	81.000	36.000	6	9.000	●
9.010	10.000	125.000	81.000	36.000	6	9.010	●
9.020	10.000	125.000	81.000	36.000	6	9.020	●
9.030	10.000	125.000	81.000	36.000	6	9.030	●
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	●
11.970	10.000	151.000	105.000	44.000	6	11.970	●
11.980	10.000	151.000	105.000	44.000	6	11.980	●
11.990	10.000	151.000	105.000	44.000	6	11.990	●
12.000	10.000	151.000	105.000	44.000	6	12.000	●
12.010	10.000	151.000	105.000	44.000	6	12.010	●
12.020	10.000	151.000	105.000	44.000	6	12.020	●
12.030	10.000	151.000	105.000	44.000	6	12.030	●



NC machine reamers



P	•	• > Ø 3.75 mm with extremely unequal flute spacing
M	○	
K	•	
N	•	
S	○	
H	52	

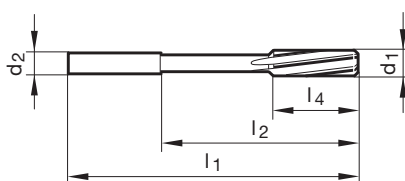
Tool material	Solid carbide
Surface	○
Form	B
Shank form	HA

SL



GÜHRING NAVIGATOR

Cutting data page 252



Article no. **6016**

Discount group **154**

d1	d2 h6	l1	l2	l4	Z	Code no.	Availability
mm	mm	mm	mm	mm			
3.000	4.000	64.000	36.000	17.000	6	3.000	●
3.500	4.000	74.000	46.000	20.000	6	3.500	●
4.000	4.000	77.000	45.000	21.000	6	4.000	●
4.500	6.000	82.000	50.000	23.000	6	4.500	●
5.000	6.000	93.000	59.000	26.000	6	5.000	●
5.500	6.000	93.000	57.000	26.000	6	5.500	●
6.000	6.000	93.000	57.000	26.000	6	6.000	●
6.500	8.000	101.000	63.000	28.000	6	6.500	●
7.000	8.000	109.000	69.000	31.000	6	7.000	●
7.500	8.000	109.000	69.000	31.000	6	7.500	●
8.000	8.000	117.000	75.000	33.000	6	8.000	●
8.500	10.000	117.000	75.000	33.000	6	8.500	●
9.000	10.000	125.000	81.000	36.000	6	9.000	●
9.500	10.000	125.000	81.000	36.000	6	9.500	●
10.000	10.000	133.000	87.000	38.000	6	10.000	●
10.500	10.000	133.000	87.000	38.000	6	10.500	●
11.000	10.000	142.000	96.000	41.000	6	11.000	●
11.500	10.000	142.000	96.000	41.000	6	11.500	●
12.000	12.000	151.000	105.000	44.000	6	12.000	●
13.000	14.000	160.000	114.000	44.000	6	13.000	●
14.000	14.000	160.000	110.000	47.000	6	14.000	●
15.000	16.000	170.000	120.000	50.000	6	15.000	●
16.000	16.000	170.000	120.000	52.000	6	16.000	●
17.000	18.000	182.000	130.000	52.000	6	17.000	●
18.000	18.000	182.000	130.000	52.000	6	18.000	●
19.000	20.000	195.000	137.000	52.000	6	19.000	●
20.000	20.000	195.000	137.000	52.000	6	20.000	●

Reamers

NC machine reamers



P	•	• > Ø 3.75 mm with extremely unequal flute spacing
M	•	
K	•	
N		
S	•	
H	52	

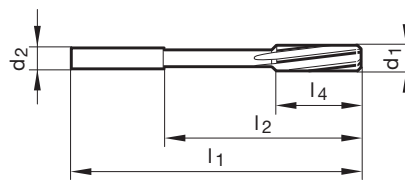
Tool material **Solid carbide**

Surface **a**

Form **B**

Shank form **HA**

SL



Article no. **6017**

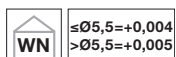
Discount group **154**

d1	d2 h6	l1	l2	l4	Z	Code no.	Availability
mm	mm	mm	mm	mm			
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3.500	4.000	74.000	74.000	20.000	6	3.500	•
4.000	4.000	77.000	45.000	21.000	6	4.000	•
4.500	6.000	82.000	50.000	23.000	6	4.500	•
5.000	6.000	93.000	59.000	26.000	6	5.000	•
5.500	6.000	93.000	57.000	26.000	6	5.500	•
6.000	6.000	93.000	57.000	26.000	6	6.000	•
6.500	8.000	101.000	63.000	28.000	6	6.500	•
7.000	8.000	109.000	69.000	31.000	6	7.000	•
7.500	8.000	109.000	69.000	31.000	6	7.500	•
8.000	8.000	117.000	75.000	33.000	6	8.000	•
8.500	10.000	117.000	75.000	33.000	6	8.500	•
9.000	10.000	125.000	81.000	36.000	6	9.000	•
9.500	10.000	125.000	81.000	36.000	6	9.500	•
10.000	10.000	133.000	87.000	38.000	6	10.000	•
10.500	10.000	133.000	87.000	38.000	6	10.500	•
11.000	10.000	142.000	96.000	41.000	6	11.000	•
11.500	10.000	142.000	96.000	41.000	6	11.500	•
12.000	12.000	151.000	105.000	44.000	6	12.000	•
13.000	14.000	160.000	114.000	44.000	6	13.000	•
14.000	14.000	160.000	110.000	47.000	6	14.000	•
15.000	16.000	170.000	120.000	50.000	6	15.000	•
16.000	16.000	170.000	120.000	52.000	6	16.000	•
17.000	18.000	182.000	130.000	52.000	6	17.000	•
18.000	18.000	182.000	130.000	52.000	6	18.000	•
19.000	20.000	195.000	137.000	52.000	6	19.000	•
20.000	20.000	195.000	137.000	52.000	6	20.000	•

Reamers



NC machine reamers



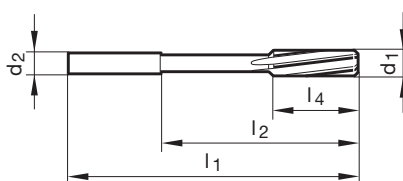
P	•	• > Ø 3.75 mm with extremely unequal flute spacing
M	○	• ≤ Ø 5.50 mm: 0.000/+0.004
K	•	• > Ø 5.50 mm: 0.000/+0.005
N	•	
S	○	
H	52	

GÜHRING NAVIGATOR

Cutting data page 252

Tool material **Solid carbide**

Surface ○

Form **B**Shank form **HA****SL**Article no. **5527**Discount group **154**

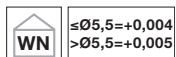
d1	d2 h6	l1	l2	l4	Z	Code no.	Availability
mm	mm	mm	mm	mm			
0.980	4.000	50.000	22.000	6.000	3	0.980	●
0.990	4.000	50.000	22.000	6.000	3	0.990	●
1.000	4.000	50.000	22.000	6.000	3	1.000	●
1.010	4.000	50.000	22.000	6.000	3	1.010	●
1.020	4.000	50.000	22.000	6.000	3	1.020	●
1.030	4.000	50.000	22.000	9.000	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							Availability
Discount group 154							
d1	d2 h6	l1	l2	l4	Z	Code no.	
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	●



NC machine reamers



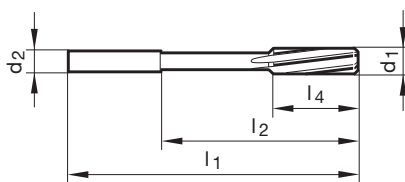
P	•	• > Ø 3.75 mm with extremely unequal flute spacing
M	•	• ≤ Ø 5.50 mm: 0.000/+0.004
K	•	• > Ø 5.50 mm: 0.000/+0.005
N		
S	•	
H	52	

Tool material	Solid carbide
Surface	a
Form	B
Shank form	HA



GÜHRING NAVIGATOR

Cutting data page 252



Article no. **6018**

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. 6018							Availability
Discount group 154							
d1	d2 h6	l1	l2	l4	Z	Code no.	
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	●

High-performance reamers



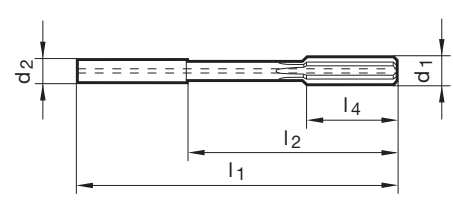
- P** • with axial coolant duct
- M** • for clamping in hydraulic chucks or shrink fit chucks
- K**
- N**
- S** •
- H** 63

Tool material	Solid carbide
Surface	a
Form	
Shank form	HA



GÜHRING NAVIGATOR

Cutting data page 252



Article no. 1685							Availability
Discount group 166							
d1	d2 h6	l1	l2	l4	Z	Code no.	
mm	mm	mm	mm	mm			
2.000	4.000	50.000	22.000	8.000	4	2.000	●
2.500	4.000	50.000	22.000	8.000	4	2.500	●
3.000	4.000	68.000	40.000	12.000	4	3.000	●
3.500	4.000	68.000	40.000	12.000	4	3.500	●
4.000	4.000	68.000	40.000	12.000	4	4.000	●
4.500	6.000	76.000	40.000	12.000	4	4.500	●
5.000	6.000	76.000	40.000	12.000	4	5.000	●
5.500	6.000	76.000	40.000	12.000	4	5.500	●
6.000	6.000	76.000	40.000	12.000	4	6.000	●
6.500	8.000	101.000	65.000	16.000	6	6.500	●
7.000	8.000	101.000	65.000	16.000	6	7.000	●
7.500	8.000	101.000	65.000	16.000	6	7.500	●
8.000	8.000	101.000	65.000	16.000	6	8.000	●
8.500	10.000	101.000	61.000	19.000	6	8.500	●
9.000	10.000	101.000	61.000	19.000	6	9.000	●
9.500	10.000	101.000	61.000	19.000	6	9.500	●
10.000	10.000	101.000	61.000	19.000	6	10.000	●
10.500	12.000	130.000	85.000	19.000	6	10.500	●
11.000	12.000	130.000	85.000	19.000	6	11.000	●
11.500	12.000	130.000	85.000	19.000	6	11.500	●
12.000	12.000	130.000	85.000	19.000	6	12.000	●
13.000	14.000	130.000	85.000	22.000	6	13.000	●
14.000	14.000	130.000	85.000	22.000	6	14.000	●
15.000	16.000	150.000	102.000	22.000	6	15.000	●
16.000	16.000	150.000	102.000	22.000	6	16.000	●
17.000	18.000	150.000	102.000	25.000	6	17.000	●
18.000	18.000	150.000	102.000	25.000	6	18.000	●
19.000	20.000	150.000	100.000	25.000	6	19.000	●
20.000	20.000	150.000	100.000	25.000	6	20.000	●

Reamers

High-performance reamers



P	•	• $\lt; \varnothing 2.950$ with axial, off-centre coolant ducts through the shank
M	•	• $\geq \varnothing 2.950$ with longitudinal flutes on the shank for coolant supply
K		• for clamping in hydraulic chucks or shrink fit chucks
N		
S	•	
H	63	

GÜHRING NAVIGATOR

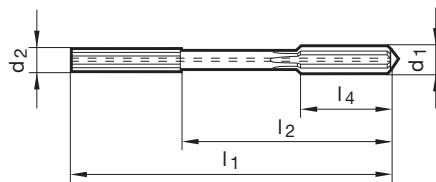
Cutting data page 252

Tool material **Solid carbide**

Surface **a**

Form

Shank form **HA**



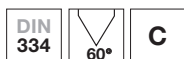
Article no. **1686**

Discount group **166**

d1	d2 h6	l1	l2	l4	Z	Code no.	Availability
mm	mm	mm	mm	mm			
2.000	4.000	50.000	22.000	8.000	4	2.000	●
2.500	4.000	50.000	22.000	8.000	4	2.500	●
3.000	4.000	68.000	40.000	12.000	4	3.000	●
3.500	4.000	68.000	40.000	12.000	4	3.500	●
4.000	4.000	68.000	40.000	12.000	4	4.000	●
4.500	6.000	76.000	40.000	12.000	4	4.500	●
5.000	6.000	76.000	40.000	12.000	4	5.000	●
5.500	6.000	76.000	40.000	12.000	4	5.500	●
6.000	6.000	76.000	40.000	12.000	4	6.000	●
6.500	8.000	101.000	65.000	16.000	6	6.500	●
7.000	8.000	101.000	65.000	16.000	6	7.000	●
7.500	8.000	101.000	65.000	16.000	6	7.500	●
8.000	8.000	101.000	65.000	16.000	6	8.000	●
8.500	10.000	101.000	61.000	19.000	6	8.500	●
9.000	10.000	101.000	61.000	19.000	6	9.000	●
9.500	10.000	101.000	61.000	19.000	6	9.500	●
10.000	10.000	101.000	61.000	19.000	6	10.000	●
10.500	12.000	130.000	85.000	19.000	6	10.500	●
11.000	12.000	130.000	85.000	19.000	6	11.000	●
11.500	12.000	130.000	85.000	19.000	6	11.500	●
12.000	12.000	130.000	85.000	19.000	6	12.000	●
13.000	14.000	130.000	85.000	22.000	6	13.000	●
14.000	14.000	130.000	85.000	22.000	6	14.000	●
15.000	16.000	150.000	102.000	22.000	6	15.000	●
16.000	16.000	150.000	102.000	22.000	6	16.000	●
17.000	18.000	150.000	102.000	25.000	6	17.000	●
18.000	18.000	150.000	102.000	25.000	6	18.000	●
19.000	20.000	150.000	100.000	25.000	6	19.000	●
20.000	20.000	150.000	100.000	25.000	6	20.000	●



60° Countersinks, spiral-fluted



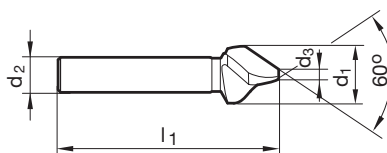
P	•	• 3 different convex cutting edges
M	•	• low-vibration cutting processes
K	•	• for round and chatter-free countersinking
N	○	• considerably lower feed force required
S	○	• for universal application
H		

Tool material **HSS**Surface **A**

Shank form cyl.

SL**GÜHRING** NAVIGATOR

Cutting data page 254

Article no. **5670**Discount group **159**

d1	d2	d3	l1	Z	Code no.	Availability
mm	mm	mm	mm			
6.300	5.000	1.600	45.000	3	6.300	•
8.000	6.000	2.000	50.000	3	8.000	•
10.000	6.000	3.200	56.000	3	10.000	•
12.500	8.000	3.200	56.000	3	12.500	•
16.000	10.000	4.000	63.000	3	16.000	•
20.000	10.000	5.000	67.000	3	20.000	•
25.000	10.000	6.300	71.000	3	25.000	•



60° Countersinks, spiral-fluted

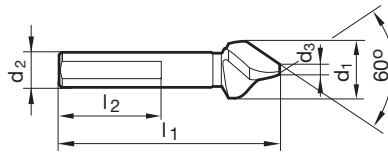


- P** ● • 3-flats on shank prevent slipping in the chuck
- 3 different convex cutting edges
- M** ● • perfect for hand drills
- low-vibration cutting processes
- K** ● • for round and chatter-free countersinking
- considerably lower feed force required
- N** ○ • for universal application
- S** ○
- H**

Tool material	HSS
Surface	A
Shank form	3-flats
	SL

GÜHRING NAVIGATOR

Cutting data page 254



Article no. **5671**
Discount group **159**

Countersinks

d1	d2	d3	l1	l2	Z	Code no.	Availability
mm	mm	mm	mm	mm			
6.300	5.000	1.600	45.000	30.000	3	6.300	●
8.000	6.000	2.000	50.000	30.000	3	8.000	●
10.000	6.000	3.200	56.000	30.000	3	10.000	●
12.500	8.000	3.200	56.000	30.000	3	12.500	●
16.000	10.000	4.000	63.000	30.000	3	16.000	●
20.000	10.000	5.000	67.000	30.000	3	20.000	●
25.000	10.000	6.300	71.000	30.000	3	25.000	●



90° Countersinks, spiral-fluted

Tool material **HSCO**Surface **A**

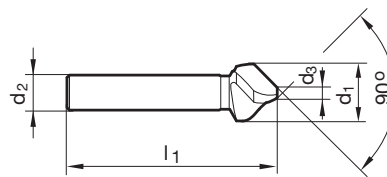
Shank form cyl.

SL

P	•	• 3 different convex cutting edges • low-vibration cutting processes
M	•	• for round and chatter-free countersinking • considerably lower feed force required
K	•	• for universal application
N	○	
S	○	
H		

GÜHRING NAVIGATOR

Cutting data page 254

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	●
40.000	12.000	10.000	75.000	3	40.000	●



90° Countersinks, spiral-fluted

Tool material **HSCO**Surface **A**

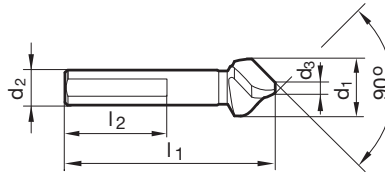
Shank form 3-flats

SL

P	•	• 3 different convex cutting edges
M	•	• 3-flats on shank prevent slipping in the chuck
K	•	• perfect for hand drills
N	○	• low-vibration cutting processes
S	○	• for round and chatter-free countersinking
H	○	• considerably lower feed force required
		• for universal application

GÜHRING NAVIGATOR

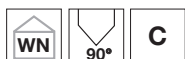
Cutting data page 254

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	●
40.000	12.000	10.000	75.000	30.000	3	40.000	●



90° Countersinks, spiral-fluted



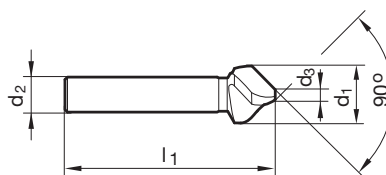
P	•	• long version for recessed machining points • 3 different convex cutting edges
M	○	• low-vibration cutting processes • for round and chatter-free countersinking
K	•	• considerably lower feed force required • for universal application
N	○	
S	○	
H		

GÜHRING NAVIGATOR

Cutting data page 254

Tool material **HSS**Surface **A**

Shank form cyl.

SLArticle 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	●



60° Countersink sets, spiral-fluted



- P** • • consisting of art. no. 5670
- M** • • 3 different convex cutting edges
- K** • • low-vibration cutting processes
- N** ○ • for round and chatter-free countersinking
- S** ○ • considerably lower feed force required
- H** ○ • for universal application

GÜHRING NAVIGATOR

Cutting data page 254

Tool material	HSS
Surface	A
Shank form	cyl.
	SL

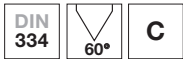


Countersinks

Article no.			5672
Discount group			159
Ø-range	Pieces/set	Code no.	Availability
mm			
6.3/8.0/10.0/12.5/16.0/20.0	6	1.000	•



60° Countersink sets, spiral-fluted



P	•	• consisting of art. no. 5671
M	•	• 3 different convex cutting edges
K	•	• 3-flats on shank prevent slipping in the chuck
N	○	• perfect for hand drills
S	○	• low-vibration cutting processes
H		• for round and chatter-free countersinking
		• considerably lower feed force required
		• for universal application

GÜHRING NAVIGATOR

Cutting data page 254

Tool material **HSS**Surface **A**

Shank form 3-flats

SLArticle no. **5673**Discount group **159**

Ø-range	Pieces/set	Code no.	Availability
mm			
6.3/8.0/10.0/12.5/16.0/20.0	6	1.000	●



90° Countersink sets, spiral-fluted



- P** • • consisting of art. no. 5500
- M** • • 3 different convex cutting edges
- K** • • low-vibration cutting processes
- N** ○ • for round and chatter-free countersinking
- S** ○ • considerably lower feed force required
- H** ○ • for universal application

GÜHRING NAVIGATOR

Cutting data page 254

Tool material	HSCO
Surface	A
Shank form	cyl.
	SL

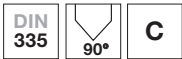


Countersinks

Article no.			5538
Discount group			159
Ø-range	Pieces/set	Code no.	Availability
mm			
6.3/8.3/10.4/12.4/16.5/20.5	6	1.000	•



90° Countersink sets, spiral-fluted



P	•	• consisting of art. no. 5501
M	•	• 3 different convex cutting edges
K	•	• 3-flats on shank prevent slipping in the chuck
N	○	• perfect for hand drills
S	○	• low-vibration cutting processes
H		• for round and chatter-free countersinking
		• considerably lower feed force required
		• for universal application

GÜHRING NAVIGATOR

Cutting data page 254

Tool material **HSCO**Surface **A**

Shank form 3-flats

SLArticle no. **5539**Discount group **159**

Ø-range	Pieces/set	Code no.
mm		
6.3/8.3/10.4/12.4/16.5/20.5	6	1.000

Availability
•

GÜHRING NAVIGATOR

Tools with bold feed column no. are preferred choice.
For blind holes with close diameter tolerances choose straight-fluted reamers.

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

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

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

- Coolant:
- Air
 - Neat oil
 - Soluble oil
- Cutting direction:
- right-hand cutting

Reamers

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



NC machine reamers

6019	6020
212-3	212-3
HSS-E	HSS-E
B	B
232	233

6016	5527
Comp. std.	Comp. std.
Solid carb.	Solid carb.
K10	K10
B	B
235	237

6017	6018
Comp. std.	Comp. std.
Solid carb.	Solid carb.
K10/K20	K10/K20
B	B
236	239

High-performance reamers

1685	1686
Comp. std.	Comp. std.
Solid carb.	Solid carb.
K10/K20	K10/K20
HR 500 S	HR 500 D
axial	axial
241	242



V _c m/min	Feed col. no.	
16	72	72
12	72	72
12	72	72
10	71	71
14	72	72
12	71	71
10	71	71
10	71	71
8	71	71
16	72	72
10	71	71
8	71	71
10	71	71
8	71	71
14	72	72
10	71	71
10	71	71
6	72	72
6	72	72
4	72	72
14	71	71
12	71	71
12	71	71
10	71	71
8	71	71
8	71	71
4	71	71
6	71	71
4	71	71
18	73	73
18	73	73
20	72	72
18	72	72
20	72	72
18	72	72
18	72	72
16	72	72
20	72	72
18	72	72
18	72	72
14	72	72
12	73	73
14	73	73

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

V _c m/min	Feed col. no.	
20	73	73
18	73	73
20	73	73
18	73	73
20	72	72
18	72	72
15	72	72
15	72	72
13	71	71
20	73	73
15	72	72
13	72	72
15	71	71
13	71	71
13	71	71
11	71	71
11	71	71
9	71	71
7	71	71
7	71	71
22	73	73
20	73	73
22	73	73
20	73	73
4	71	71
16	71	71
16	71	71
7	71	71
11	71	71
11	71	71
28	73	73
28	73	73
39	73	73
33	73	73
39	73	73
33	73	73
33	73	73
28	73	73
22	73	73
22	73	73

V _c m/min	Feed col. no.	
120-250	75-76	75-76
120-250	75-76	75-76
120-250	75-76	75-76
120-250	75-76	75-76
120-250	75-76	75-76
120-250	75-76	75-76
120-250	75-76	75-76
120-250	75-76	75-76
120-250	75-76	75-76
120-250	75-76	75-76
120-250	75-76	75-76
120-250	75-76	75-76
120-250	75-76	75-76
120-250	75-76	75-76
120-250	75-76	75-76
120-250	75-76	75-76
120-250	75-76	75-76
120-250	75-76	75-76
120-250	75-76	75-76
120-250	75-76	75-76
60-120	75-76	75-76
30-60	73-74	73-74
40-60	73-74	73-74
30-60	73-74	73-74
60-120	74-75	74-75
40-80	74-75	74-75
60-120	74-75	74-75
60-140	75-76	75-76
60-140	75-76	75-76
120-250	74-75	74-75
60-120	74-75	74-75
30-50	74-75	74-75
80	75-76	75-76
80	75-76	75-76
40-60	74-75	74-75
40-60	74	74
40-60	74	74
80-160	75-76	75-76
100-250	75-76	75-76
100-250	75-76	75-76
100-250	75-76	75-76
80-200	75-76	75-76
80-200	75-76	75-76
80	71	71
80	71	71



Reamers



GÜHRING NAVIGATOR

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 GühringNavigator on the internet: www.guehring.com.

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

Coolant:

- Air
- Neat oil
- Soluble oil

Countersinks

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



90° Countersinks, spiral-fluted

5500
DIN 335
HSCO
A
90°
cyl.
245

5501
DIN 335
HSCO
A
90°
3-surface
246

5503
Company standard
HSS
A
90°
cyl.
247

60° Countersinks, spiral-fluted

5670
DIN 334
HSS
A
60°
cyl.
243

5671
DIN 334
HSS
A
60°
3-surface
244



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

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

V _c m/min	Feed col. no.
37	83
35	82
37	83
35	82
37	83
35	83
23	82
17	83
14	82
29	83
17	83
12	82
17	82
14	81
20	82
17	81
17	81
12	81
18	82
14	81
16	81
29	83
18	83
25	83
23	83
9	81
25	83
16	83
9	81
17	82
12	81
104	84
81	84
46	83
35	83
115	84
69	84
92	84
58	84
35	84
30	84
28	84
23	84
35	84
46	84

V _c m/min	Feed col. no.
37	83
35	82
37	83
35	82
37	83
35	83
23	82
17	83
14	82
29	83
17	83
12	82
17	82
14	81
20	82
17	81
17	81
12	81
18	82
14	81
16	81
29	83
18	83
25	83
23	83
9	81
25	83
16	83
9	81
17	82
12	81
104	84
81	84
46	83
35	83
115	84
69	84
92	84
58	84
35	84
30	84
28	84
23	84
35	84
46	84

V _c m/min	Feed col. no.
37	83
35	82
37	83
35	82
37	83
35	83
23	82
17	83
14	82
29	83
17	83
12	82
17	82
14	81
20	82
17	81
17	81
12	81
18	82
14	81
16	81
29	83
18	83
25	83
23	83
9	81
25	83
16	83
9	81
17	82
12	81
104	84
81	84
46	83
35	83
115	84
69	84
92	84
58	84
35	84
30	84
28	84
23	84
35	84
46	84

Countersinks





Tool holders

TOOL HOLDERS



HSK-A hydraulic chucks

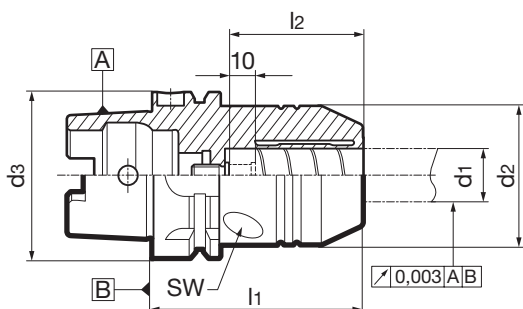


Product information:

- HSK-A to ISO 12164-1 / DIN 69893-1
- axial length adjustment
- for tool shank tolerance h6
- balancing quality: G 2.5 / 25,000 rev./min or rev. < 1 gmm

Scope of delivery:

- incl. setting screw art. no. 4900
- incl. clamping key art. no. 4912
- order coolant supply set, article no. 4949, separately



Article no. 4662

Discount group 158

HSK-A	d1	d2	l1	l2		SW	Code no.
d3	mm	mm	mm	mm	kg	mm	
HSK-A 63	20.00	52.50	80.00	51.00	1.310	5.0	20.063

Availability
●

Tool holders

ISO taper hydraulic chucks

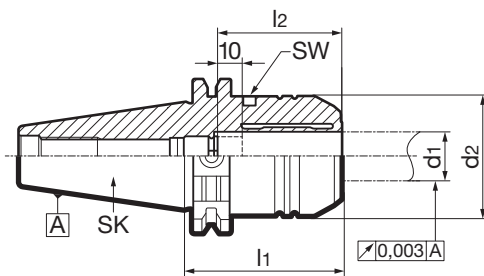


Product information:

- SK to DIN ISO 7388-1 form AD/AF
- axial length adjustment
- for tool shank tolerance h6
- balancing quality: G 2.5 / 25,000 rev./min or rev. < 1 gmm

Scope of delivery:

- incl. setting screw art. no. 4900
- incl. clamping key art. no. 4912
- for SK order pull studs art. no. 4925, 4926 separately

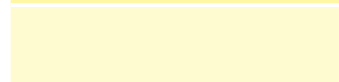


Article no. **4663**

Discount group **158**

SK	d1	d2	l1	l2		SW	Code no.
	mm	mm	mm	mm	kg	mm	
SK 40	20.00	49.30	64.50	51.00	1.250	5.0	20.040

Availability



Tool holders



MAS/BT hydraulic chucks

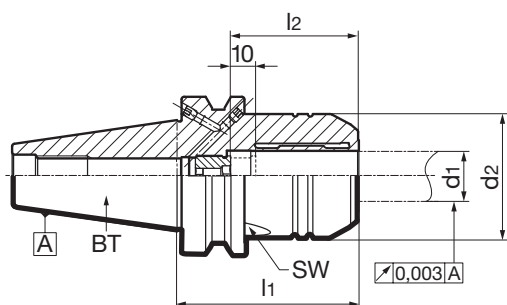


Product information:

- MAS/BT to DIN ISO 7388-2 Form JD/JF
- axial length adjustment
- for tool shank tolerance h6
- balancing quality: G 2.5 / 25,000 rev./min or rev. < 1 gmm

Scope of delivery:

- incl. setting screw art. no. 4900
- incl. clamping key art. no. 4912
- order pull studs for MAS/BT (art. no. 4927, 4928) separately



Article no. **4664**

Discount group **158**

BT	d1	d2	l1	l2		SW	Code no.
	mm	mm	mm	mm	kg	mm	
BT 40	20.00	49.30	72.50	51.00	1.250	5.0	20.040

Availability
●

Tool holders

Hydraulic chuck set



Product information:

- HSK-A to ISO 12164-1/DIN 69893
- SK to DIN ISO 7388-1, form AD/AF
- MAS/BT to DIN ISO 7388-2, form JD/JF
- for tool shank tolerance h6
- balance quality values G2.5/25,000 rev./min or rev. < 1 gmm
- axial length adjustment

Scope of delivery:

- 1 Hydraulic chuck + 5 Reduction bushes
- each set contains the clamping key art. no. 4912 and the adjustment screw art. no. 4900
- order coolant supply set for HSK-A (art. no. 4949) separately
- order pull studs for SK (art. no. 4925, 4926) separately
- order pull studs for MAS/BT (art. no. 4927, 4928) separately



							Article no.	4666
							Discount group	158
Variant	incl. hydraulic chuck			incl. reduction bushes		Code no.	Availability	
	Interface	for shank-Ø (mm)	Article no.	for shank-Ø (mm)	Article no.			
Set 1	HSK-A 63	20.00	4662	6.0 / 8.0 / 10.0 / 12.0 / 16.0	4665	20.063	●	
Set 2	SK 40	20.00	4663	6.0 / 8.0 / 10.0 / 12.0 / 16.0	4665	20.040	●	
Set 3	MAS/BT 40	20.00	4664	6.0 / 8.0 / 10.0 / 12.0 / 16.0	4665	20.140	●	

Reduction bushes

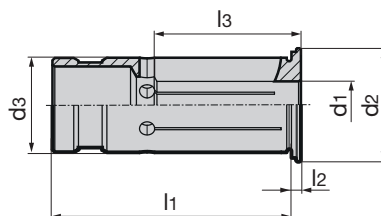


Product information:

- for clamping smaller shank-Ø in hydraulic chucks
- clamping-Ø for tool shank tolerance h6
- concentricity ≤ 5 µm
- coolant-proof

Scope of delivery:

- special dimensions available on request



							Article no.	4665
							Discount group	158
d3	for shank-Ø	d2	l1	l3	Code no.		Availability	
mm	mm	mm	mm	mm				
20	6	24	50.5	27.00	6.020		●	
20	8	24	50.5	27.00	8.020		●	
20	10	24	50.5	31.00	10.020		●	
20	12	24	50.5	35.00	12.020		●	
20	16	24	50.5	35.00	16.020		●	







Hydraulic chucks

Art. no.	Clamping chucks	Description	Clamping diameter range
4299	 ★	HSK-A hydraulic chuck with increased clamping force	6 - 32 mm
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

Tool holders

HPC chucks




4300	 ★	HSK precision clamping chuck	3 - 20 mm
4301	 ★	ISO taper 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
4755	 ★	GÜHROJet HSK-A shrink fit chuck with peripheral cooling	6 - 20 mm
4729	 ★	GÜHROJet 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

Tool holders

4232	 ★	GÜHROJet Side lock holder Weldon HSK-A	6 - 32 mm
4317	 ★	GÜHROJet Side lock holder Weldon SK	6 - 32 mm
4234	 ★	GÜHROJet Side lock holder Weldon MAS/BT	6 - 32 mm









Application-specific selection of tool holders

Shrink fit chucks/ shrink fit extensions	Hydraulic chucks/ HMC 3000/reduction bushes	GÜHROSYNC Hydraulic synchro tapping chucks
---	--	---



Main feature	For applications requiring slim interference contours and precision with good clamping force and rigidity at a moderate price.	Easy handling when stiffness and damping are required.	Combines the advantages of hydraulic expansion and synchro-clamping technology, compensates deviations of the machine optimally.
Main application	HSC – universal Drilling, countersinking, milling, reaming	Reaming and drilling Countersinking, HSC application, light milling	Synchronized thread cutting and thread forming
Characteristics	<ul style="list-style-type: none"> highest concentricity accuracy thanks to patented damping screw high stiffness and clamping force modularly extendable 	<ul style="list-style-type: none"> high damping with high concentricity accuracy simple handling flexible use thanks to reducing bushes also with GÜHROJet 	<ul style="list-style-type: none"> perfect combination of hydraulic expansion chuck and synchro tapping chuck simple handling flexible use thanks to reducing bushes also with GÜHROJet long-lasting axial and radial balancing
Interfaces			
Clamping diameter range	3 - 32 mm	3 - 32 mm	Holder Ø 12: M2 - M12 (Mt max.: 26 Nm) Holder Ø 20: M4.5 - M20 (Mt max.: 90 Nm)
Concentricity	< 3 µm	< 3 µm	< 50 µm
Balance quality	G 2.5 with 25,000 1/min or U < 1 gmm	G 2.5 with 25,000 1/min or U < 1 gmm	G 6.3 with 15,000 1/min
Concentricity with 5xD	< 5 µm	< 5 µm	-
Clamping force	very high	very high	very high
Rigidity	very high	high	medium
Dampening	low	very high	very high
Interference contour	small/minimal	medium	medium
Handling	good	very good/very flexible	very good/very flexible
Actuation	Shrink fit device e. g. GSS 2000 article no. 4742	Hexagon key e. g. article no. 4912	Hexagon key e. g. article no. 4912



	HPC precision power chucks / clamping sleeves	Collet chucks ER	Straight shank holders "Weldon" / "Whistle-Notch"
			
Main feature	Provides extreme clamping force and rigidity to compensate lateral forces acting on the tool during HPC milling.	All-rounder for universal use in the low accuracy range.	Simple handling with safe clamping for applications involving large machining volumes.
Main application	HPC milling heavy HPC and fast, accurate HSC milling, drilling, universal application	Flexible – universal light machining, centering, chamfering, drilling, threading; intermediate shank dimensions	Roughing Milling, drilling
Characteristics	<ul style="list-style-type: none"> extreme clamping force and stability thanks to mechanical clamping transmission high precision and balancing quality flexible use thanks to reducing bushes also with GÜHROJet 	<ul style="list-style-type: none"> flexible chuck for various shank dimensions and tolerances for conventional machining operations 	<ul style="list-style-type: none"> robust, low cost chuck for heavy machining in the lower speed and accuracy range
Interfaces			
Clamping diameter range	3-32 mm 1-6 mm (HPC extensions)	ER 11: 0.5-7.0 mm ER 16: 0.5-10.0 mm ER 20: 0.5-13.0 mm ER 25: 0.5-16.0 mm ER 32: 1.0-20.0 mm ER 40: 3.0-26.0 mm	6-40 mm
Concentricity	< 3 µm	< 10 µm	< 10 µm
Balance quality	G 2.5 with 20,000 1/min or U < 1.2 gmm	G 2.5 with 25,000 1/min or U < 1 gmm	G 6.3 with 15,000 1/min
Concentricity with 5xD	< 8 µm	< 20 µm	< 25 µm
Clamping force	extremely high	medium	very safe thanks to threaded pin
Rigidity	extremely high	medium	very high
Dampening	high	high	low
Interference contour	medium	large	large
Handling	very good/very flexible	good	good
Actuation	Hexagon key/torque wrench e. g. article no. 4987 + 4916 Type D	Hook spanner max. torque: information at GM 300 catalogue at clamping screw article no. 4903	Hexagon key max. torque: information at GM 300 catalogue at clamping screw article no. 4903





TOOL DISPENSING SYSTEMS



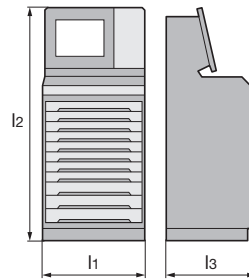
Tool dispensing systems

THE CORRECT SYSTEM FOR ANY APPLICATION.

Tool dispensing system TM 226



- TM 226 a starter model with an excellent price-performance ratio
- 11 drawers: 8 x 75 mm (partition set) and 3 x 100 mm (partition set)
- electronically locked dispensing system
- partition material per drawer 75 mm height:
 - 18 transverse partitions 50 mm and 8 transverse partitions 100 mm, 9 longitudinal partitions
- partition material per drawer 100 mm height:
 - 18 transverse partitions 50 mm and 8 transverse partitions 100 mm, 9 longitudinal partitions
- standard colours Gühring, RAL 7016 (housing), RAL 9006 (drawers), RAL 1003 (G-Pad and power supply channel)
- manually operated drawers with full pull-out (load capacity per drawer max. 200 kg)
- 21.5" HD touchscreen monitor
- PC with current WIN version 10, 64 Bit
- Gühring TM-Software GTMS Basic
- delivery at short notice from stock (subject to prior sale)
- plus installation and transport
- illustration similar
- barcode scanner, card reader and additional accessories available on request



Article no. **506920**

l1	l2	l3	kg	Availability
mm	mm	mm		
800	1700	750	320	●

GTMS Gühring Tool Management Software

GTMS

Everything in view

Process optimisation in a whole new dimension



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GÜHRING



GÜHRING DIGITAL SERVICES



»»»»» Reduce costs

»»»»» Identify areas with improvement potential

»»»»» Perfect your tools and processes

»»»»» Transparency in real time





RE-GRINDING AND RE-COATING

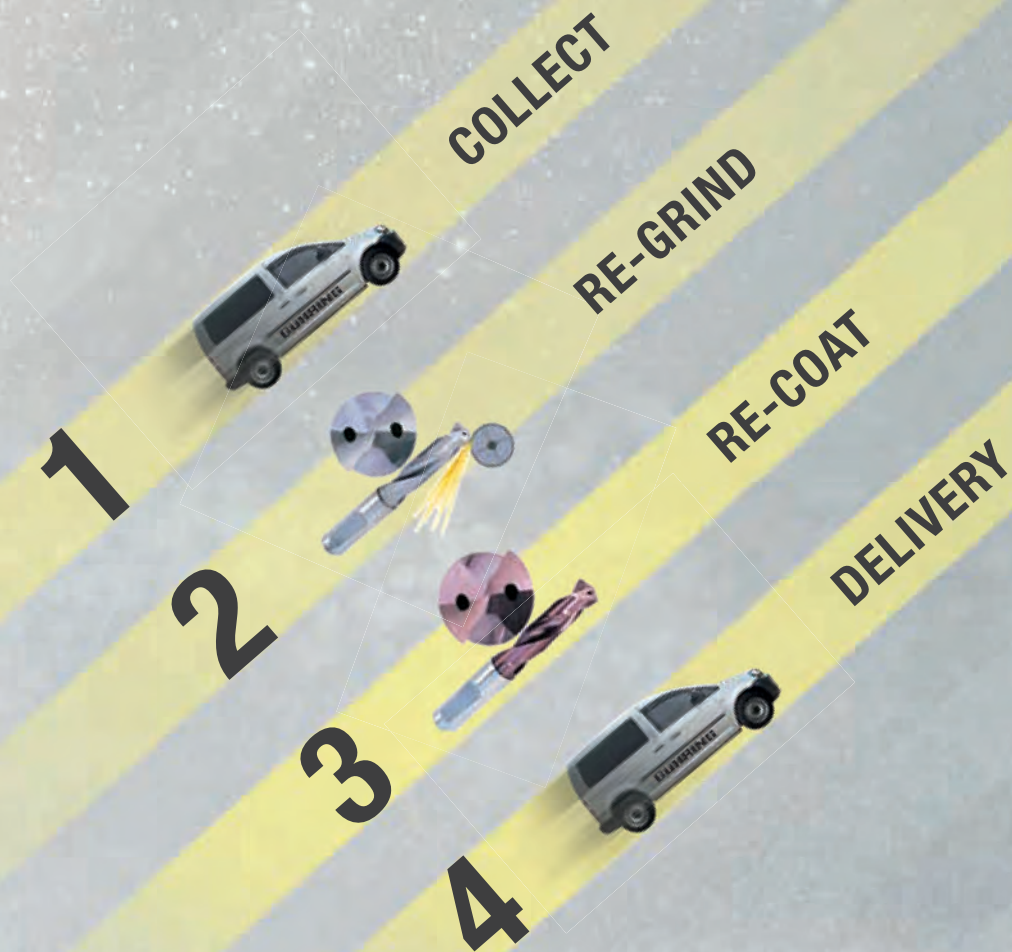


IMMEDIATE AVAILABILITY

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.

MAXIMUM EFFICIENCY

Gühring provides a re-grind and re-coating service to ensure a long tool life of SuperLine tools. Reprocessing in original quality restores the original performance. There are more than 50 service centers available worldwide for this. Each of them has its own pick-up and delivery service for on-time logistics.



SL Re-grind service

Diameter	SL Drilling tools			SL Reamers	Diameter	SL Threading tools		
	Solid carbide ratio drills up to 12xD*	Solid carbide NC spotting drills	HSS/HSCO/HSS-E twist drills	Solid carbide reamers		HSS-E/HSS-E-PM taps	Solid carbide taps	Solid carbide thread milling cutters
	€/ piece	€/ piece	€/ piece	€/ piece		€/ piece	€/ piece	€/ piece
2 - 6	●	●	-	●	up to 10	●	●	●
> 6 - 8	●	●	-	●	> 10 - 14	●	●	●
> 8 - 10	●	●	●	●	> 14 - 20	●	●	●
> 10 - 12	●	●	●	●	> 20 - 24	●	●	●
> 12 - 14	●	●	●	●	> 24 - 30	●	●	●
> 14 - 16	●	●	●	●	> 30 - 36	●	●	on request
> 16 - 18	●	●	●	●	> 36 - 40	●	●	on request
> 18 - 20	●	●	●	●	> 40 - 70	on request	on request	on request
> 20 - 30	●	-	●	●				

*RT 100 U, RT 100 VA, RT 150 GG, FT 200 & solid carbide twist drills

SL Re-grind service

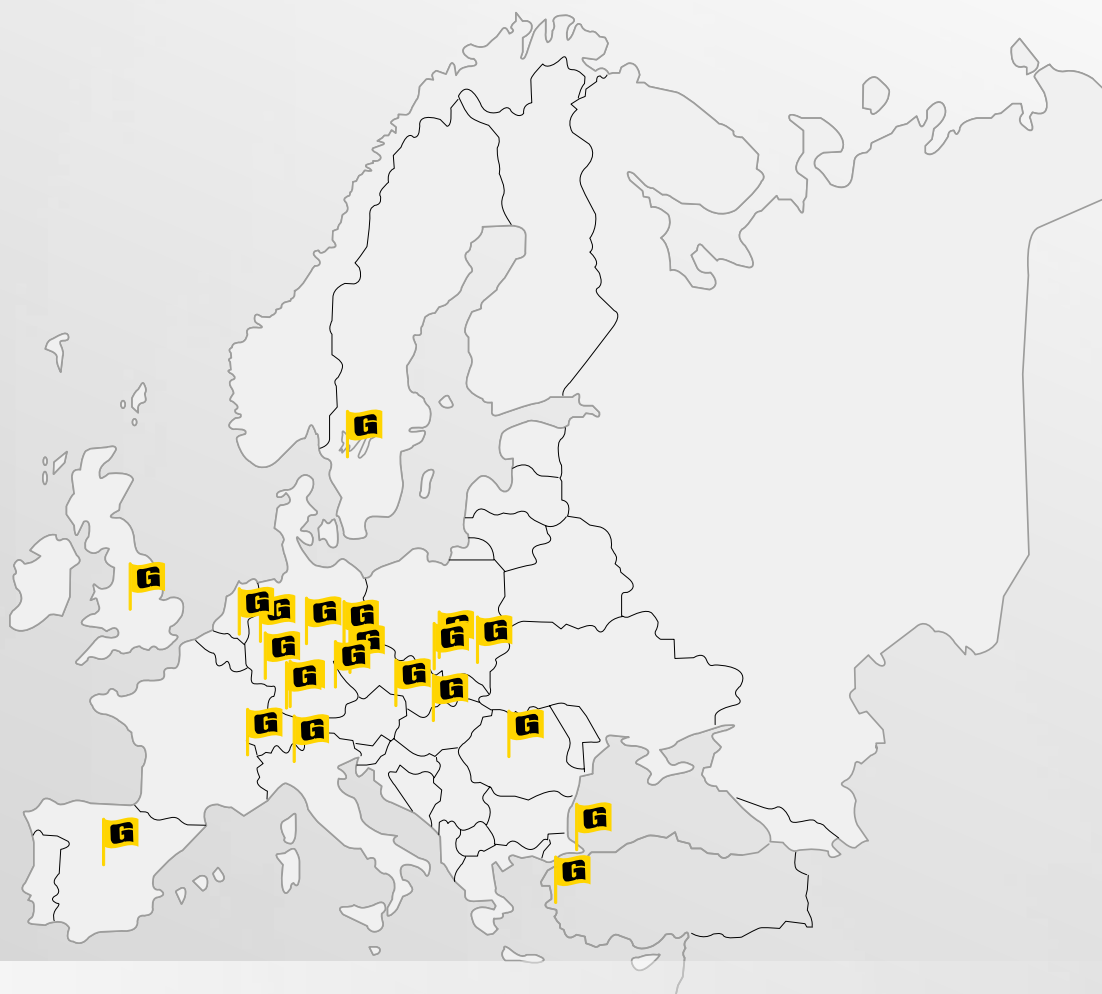
Diameter	SL Milling tools				SL Milling tools surcharge		
	Solid carbide end mills up to 4 cutting edges	Solid carbide ratio end mills RF 100 up to 4 cutting edges	Solid carbide ball nose milling cutters	Solid carbide chamfering milling cutters	from 5 cutting edges	Solid carbide roughing milling	Neck clearance
	€/ piece	€/ piece	€/ piece	€/ piece	€/ piece	€/ piece	€/ piece
6 - 8	●	●	●	●	●	●	●
> 8 - 10	●	●	●	●	●	●	●
> 10 - 12	●	●	●	●	●	●	●
> 12 - 14	●	●	●	●	●	●	●
> 14 - 16	●	●	●	●	●	●	●
> 16 - 18	●	●	●	●	●	●	●
> 18 - 20	●	●	●	●	●	●	●
> 20 - 25	●	●	on request	on request	●	●	●
> 25 - 40	●	●	on request	on request	●	●	-

SL Re-coating service

Diameter	Pre- and post treatment		Coating	
	De-coating	Polishing	Standard coatings**	Head coatings up to 12xD**
	€/ piece	€/ piece	€/ piece	€/ piece
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“.

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ARTICLE NO. INDEX

Article no.	Page	Drilling depth	Standard	Description	Tool material	Type	Form
12	138	~5xD	DIN 338	Twist drill sets	HSCO	GU 500 DZ	
234	139	~5xD	DIN 338	Twist drill sets	HSS	N	
391	171		~DIN 371/~DIN 376	Taps for UNC threads	HSS-E	VA R45	C
392	173		~DIN 371/~DIN 374	Taps for UNF threads	HSS-E	VA R45	C
393	167	3xD	DIN 371/DIN 376	Taps for ISO metric threads	HSS-E	VA R45	C
394	169	3xD	DIN 374	Taps for ISO metric fine threads	HSS-E	VA R45	C
395	175	3xD	DIN 5156	Taps for BSP threads	HSS-E	VA R45	C
1685	241		Company std.	High-performance reamers	Solid carbide	HR 500 S	
1686	242		Company std.	High-performance reamers	Solid carbide	HR 500 D	
4002	181	2.5xD	Company std.	Micro thread milling cutters	Solid carbide	MTMH3-Z	
4107	72	3xD	Company std.	Tool holders for interchangeable inserts HT 800		HT 800 WP	
4108	75	5xD	Company std.	Tool holders for interchangeable inserts HT 800		HT 800 WP	
4109	78	7xD	Company std.	Tool holders for interchangeable inserts HT 800		HT 800 WP	
4112	80		Company std.	Interchangeable inserts HT 800	Solid carbide	HT 800 WP	
4113	83		Company std.	Interchangeable inserts HT 800	Solid carbide	HT 800 WP	
4115	86		Company std.	Interchangeable inserts HT 800	Solid carbide	HT 800 WP	
4218	168	3xD	DIN 371/DIN 376	Taps for ISO metric threads	HSS-E	VA	B
4219	170	1.5xD	DIN 374	Taps for ISO metric fine threads	HSS-E	VA	B
4220	176	1.5xD	DIN 5156	Taps for BSP threads	HSS-E	VA	B
4226	180	3xD	Company std.	Micro thread milling cutters	Solid carbide	MTM3 SP	
4487	179		~DIN 371/~DIN 376	Fluteless taps for ISO metric threads	HSS-E-PM	N	C
4642	172		~DIN 371/~DIN 376	Taps for UNC threads	HSS-E	VA	B
4643	174		~DIN 371/~DIN 374	Taps for UNF threads	HSS-E	VA	B
4662	258		DIN 69882-7	HSK-A hydraulic chucks			
4663	259		Company std.	ISO taper hydraulic chucks			
4664	260		Company std.	MAS/BT hydraulic chucks			
5498	40	5xD	DIN 6537L	Ratio drills with coolant ducts	Solid carbide	RT 100 XF	
5499	47	7xD	Company std.	Ratio drills with coolant ducts	Solid carbide	RT 100 XF	
5500	245		DIN 335	90° Countersinks, spiral-fluted	HSCO		C
5501	246		DIN 335	90° Countersinks, spiral-fluted	HSCO		C
5503	247		Company std.	90° Countersinks, spiral-fluted	HSS		C
5504	205		DIN 6527L	Roughing end mills GS 100 U (fine teeth)	Solid carbide	Nrf	B
5505	202		DIN 6527K	Slot drills GH 100 U (3-fluted)	Solid carbide	NH	A
5506	203		DIN 6527L	Slot drills GH 100 U (3-fluted)	Solid carbide	NH	A
5507	212		DIN 6527L	Slot drills (3-fluted)	Solid carbide	N	A
5510	22	3xD	DIN 6537K	Ratio drills with coolant ducts	Solid carbide	RT 100 U	
5511	32	5xD	DIN 6537L	Ratio drills with coolant ducts	Solid carbide	RT 100 U	
5512	44	7xD	Company std.	Ratio drills with coolant ducts	Solid carbide	RT 100 U	
5513	51	10xD	Company std.	Ratio drills with coolant ducts	Solid carbide	RT 150 GG	
5514	66	3xD	DIN 6537K	Ratio drills without coolant ducts	Solid carbide	RT 100 U	
5515	69	5xD	DIN 6537L	Ratio drills without coolant ducts	Solid carbide	RT 100 U	
5516	109	~3xD	DIN 6539	Stub drills	Solid carbide	N	
5517	117	~5xD	Company std.	Jobber drills	Solid carbide	N	
5518	99	5xD	DIN 6537L	3-flute Ratio drills	Solid carbide	FT 200	
5519	119	~5xD	DIN 338	Jobber drills	HSCO	GU 500 DZ	
5520	111	~3xD	DIN 1897	Stub drills	HSCO	GU 500 DZ	
5521	114	~3xD	DIN 1897	Stub drills	HSS-E-PM	GT 500 DZ	
5522	122	~5xD	DIN 338	Jobber drills	HSS-E-PM	GT 500 DZ	
5523	119	~5xD	DIN 338	Jobber drills	HSCO	GU 500 DZ	
5524	111	~3xD	DIN 1897	Stub drills	HSCO	GU 500 DZ	
5525	53	12xD	Company std.	Ratio drills with coolant ducts	Solid carbide	RT 100 U	
5526	25	3xD	DIN 6537K	Ratio drills with coolant ducts	Solid carbide	RT 100 VA	
5527	237		Company std.	NC machine reamers	Solid carbide		B
5528	25	3xD	DIN 6537K	Ratio drills with coolant ducts	Solid carbide	RT 100 VA	
5530	209		DIN 6527L	Slot drills (2-fluted)	Solid carbide	N	B
5531	212		DIN 6527L	Slot drills (3-fluted)	Solid carbide	N	B
5532	214		DIN 6527L	End mills (4-fluted)	Solid carbide	N	B
5533	216		DIN 6527L	Ball nose slot drills (2-fluted)	Solid carbide	N	B
5534	192		DIN 6527K	Standard Ratio end mills RF 100 U	Solid carbide	N	B
5535	193		DIN 6527L	Standard Ratio end mills RF 100 U	Solid carbide	N	B
5536	129	~10xD	DIN 340	Long series twist drills	HSCO	GU 500 DZ	
5537	129	~10xD	DIN 340	Long series twist drills	HSCO	GU 500 DZ	
5538	250		DIN 335	90° Countersink sets, spiral-fluted	HSCO		C
5539	251		DIN 335	90° Countersink sets, spiral-fluted	HSCO		C
5543	211		DIN 6527L	Al slot drills (2-fluted)	Solid carbide	W	B
5545	207		Company std.	Multi-tooth end mills GH 100 U	Solid carbide	NH	B
5546	203		DIN 6527L	Slot drills GH 100 U (3-fluted)	Solid carbide	NH	B
5547	182	2xD	Company std.	Thread milling cutters without chamfer for ISO metric threads	Solid carbide	TM SP	
5548	182	2xD	Company std.	Thread milling cutters without chamfer for ISO metric threads	Solid carbide	TM SP	
5549	210		Company std.	XL slot drills (2-fluted)	Solid carbide	N	A
5550	166	3xD	DIN 371/DIN 376	Taps for ISO metric threads	HSS-E	GG	C
5551	159	3xD	DIN 371/DIN 376	Taps for ISO metric threads	HSS-E	Al R45	C

Article no.	Page	Drilling depth	Standard	Description	Tool material	Type	Form
5552	157	3xD	DIN 371/DIN 376	Taps for ISO metric threads	HSS-E	H R40	C
5553	158	3xD	DIN 371/DIN 376	Taps for ISO metric threads	HSS-E	VA R40	C
5555	156	3xD	DIN 371/DIN 376	Taps for ISO metric threads	HSS-E	N R40	C
5556	215		Company std.	XL end mills (4-fluted)	Solid carbide	N	A
5557	165	3xD	DIN 371/DIN 376	Taps for ISO metric threads	HSS-E	AI	B
5558	162	3xD	DIN 371/DIN 376	Taps for ISO metric threads	HSS-E	H	B
5559	164	3xD	DIN 371	Taps for ISO metric threads	HSS-E-PM	VA	B
5561	161	3xD	DIN 371/DIN 376	Taps for ISO metric threads	HSS-E	N	B
5573	213		Company std.	Mini slot drills (3-fluted)	Solid carbide	N	
5574	204		Company std.	Mini slot drills (3-fluted)	Solid carbide	NH	
5578	219		Company std.	Chamfering milling cutters 90°	Solid carbide	N	
5579	219		Company std.	Chamfering milling cutters 90°	Solid carbide	N	
5580	36	5xD	DIN 6537L	Ratio drills with coolant ducts	Solid carbide	RT 100 VA	
5581	36	5xD	DIN 6537L	Ratio drills with coolant ducts	Solid carbide	RT 100 VA	
5582	194		Company std.	Standard Ratio end mills RF 100 U	Solid carbide	NH	
5583	206		DIN 6527L	Hard roughing end mills GS 100 H (fine teeth)	Solid carbide	HR	B
5584	217		DIN 6527L	Ball nose end mills (4-fluted)	Solid carbide	N	B
5585	216		DIN 6527L	Ball nose slot drills (2-fluted)	Solid carbide	N	A
5586	161	3xD	DIN 371/DIN 376	Taps for ISO metric threads	HSS-E	N	B
5587	162	3xD	DIN 371/DIN 376	Taps for ISO metric threads	HSS-E	H	B
5588	163	3xD	DIN 371/DIN 376	Taps for ISO metric threads	HSS-E	VA	B
5591	157	3xD	DIN 371/DIN 376	Taps for ISO metric threads	HSS-E	H R40	C
5593	160	3xD	DIN 371/DIN 376	Taps for ISO metric threads	Solid carbide	H	C
5594	156	3xD	DIN 371/DIN 376	Taps for ISO metric threads	HSS-E	N R40	C
5595	166	3xD	DIN 371/DIN 376	Taps for ISO metric threads	HSS-E	GG	C
5596	158	3xD	DIN 371/DIN 376	Taps for ISO metric threads	HSS-E	VA R40	C
5597	163		DIN 371/DIN 376	Taps for ISO metric threads	HSS-E	VA	B
5598	177	3xD	~DIN 371	Fluteless taps for ISO metric threads	HSS-E	N	C
5599	178	3xD	~DIN 376	Fluteless taps for ISO metric threads	HSS-E	N	C
5610	22	3xD	DIN 6537K	Ratio drills with coolant ducts	Solid carbide	RT 100 U	
5611	32	5xD	DIN 6537L	Ratio drills with coolant ducts	Solid carbide	RT 100 U	
5612	44	7xD	Company std.	Ratio drills with coolant ducts	Solid carbide	RT 100 U	
5614	66	3xD	DIN 6537K	Ratio drills without coolant ducts	Solid carbide	RT 100 U	
5615	69	5xD	DIN 6537L	Ratio drills without coolant ducts	Solid carbide	RT 100 U	
5635	222		DIN 6527L	Ratio end mill sets RF 100 U	Solid carbide	N	B
5650	32	5xD	DIN 6537L	Ratio drills with coolant ducts	Solid carbide	RT 100 U	
5651	69	5xD	DIN 6537L	Ratio drills without coolant ducts	Solid carbide	RT 100 U	
5652	89		Company std.	Solid carbide micro-precision drills without coolant ducts	Solid carbide	N	
5653	200		DIN 6527L	Ratio end mills RF 100 VA	Solid carbide	N	A
5654	200		DIN 6527L	Ratio end mills RF 100 VA	Solid carbide	N	B
5655	201		Company std.	Ratio end mills Alu RF 100 A	Solid carbide	W	
5670	243		DIN 334	60° Countersinks, spiral-fluted	HSS		C
5671	244		DIN 334	60° Countersinks, spiral-fluted	HSS		C
5672	248		DIN 334	60° Countersink sets, spiral-fluted	HSS		C
5673	249		DIN 334	60° Countersink sets, spiral-fluted	HSS		C
5678	132		Company std.	90° NC spotting drills	HSCO	N	
5679	134		Company std.	120° NC spotting drills	HSCO	N	
5680	137		DIN 333	Centre drills without flat	HSCO	N	A
5729	208		Company std.	Multi-tooth end mills GH 100 U	Solid carbide	NH	
5730	209		DIN 6527L	Slot drills (2-fluted)	Solid carbide	N	A
5735	193		DIN 6527L	Standard Ratio end mills RF 100 U	Solid carbide	N	A
5745	207		Company std.	Multi-tooth end mills GH 100 U	Solid carbide	NH	
5768	28	5xD	DIN 6537L	Ratio drills with coolant ducts	Solid carbide	RT 100 AI	
6005	101	~3xD	Company std.	Twist drills with reinforced straight shank	HSS-E-PM	GU 500 PM	
6006	105	~5xD	Company std.	Twist drills with reinforced straight shank	HSS-E-PM	GU 500 PM	
6010	201		Company std.	Ratio end mills Alu RF 100 A	Solid carbide	W	
6011	218		Company std.	Chamfering milling cutters 60°	Solid carbide	N	
6012	218		Company std.	Chamfering milling cutters 60°	Solid carbide	N	
6013	221		Company std.	Front/back deburrer 90°, sets	Solid carbide	EW 100 VR	
6014	220		Company std.	Chamfering milling cutters 120°	Solid carbide	N	
6015	220		Company std.	Chamfering milling cutters 120°	Solid carbide	N	
6016	235		Company std.	NC machine reamers	Solid carbide		B
6017	236		Company std.	NC machine reamers	Solid carbide		B
6018	239		Company std.	NC machine reamers	Solid carbide		B
6019	232		DIN 212-3	NC machine reamers	HSS-E		B
6020	233		DIN 212-3	NC machine reamers	HSS-E		B
6023	22	3xD	DIN 6537K	Ratio drills with coolant ducts	Solid carbide	RT 100 U	
6024	25	3xD	DIN 6537K	Ratio drills with coolant ducts	Solid carbide	RT 100 VA	
6025	36	5xD	DIN 6537L	Ratio drills with coolant ducts	Solid carbide	RT 100 VA	
6026	66	3xD	DIN 6537K	Ratio drills without coolant ducts	Solid carbide	RT 100 U	
6027	133		Company std.	90° NC spotting drills	Solid carbide	N	
6028	135		Company std.	120° NC spotting drills	Solid carbide	N	

Article no.	Page	Drilling depth	Standard	Description	Tool material	Type	Form
6029	136		Company std.	142° NC spotting drills	Solid carbide	N	
6400	90	4xD	Company std.	ExclusiveLine micro-precision drills without coolant ducts	Solid carbide	N	
6401	92	7xD	Company std.	ExclusiveLine micro-precision drills without coolant ducts	Solid carbide	N	
6405	94	5xD	Company std.	ExclusiveLine micro-precision drills with coolant ducts	Solid carbide	N	
6408	96	8xD	Company std.	ExclusiveLine micro-precision drills with coolant ducts	Solid carbide	N	
6412	98	15xD	Company std.	ExclusiveLine micro-precision drills with coolant ducts	Solid carbide	N	
6509	56	15xD	Company std.	Ratio drills with coolant ducts	Solid carbide	RT 100 T	
6511	58	20xD	Company std.	Ratio drills with coolant ducts	Solid carbide	RT 100 T	
6512	60	25xD	Company std.	Ratio drills with coolant ducts	Solid carbide	RT 100 T	
6513	62	30xD	Company std.	Ratio drills with coolant ducts	Solid carbide	RT 100 T	
6736	197		DIN 6527L	Ratio end mills RF 100 Diver	Solid carbide	NH	B
6737	197		DIN 6527L	Ratio end mills RF 100 Diver	Solid carbide	NH	A
6761	195		Company std.	Ratio end mills RF 100 Speed M	Solid carbide	NH	B
6803	196		DIN 6527K	Ratio end mills RF 100 Diver	Solid carbide	N	
6804	196		DIN 6527K	Ratio end mills RF 100 Diver	Solid carbide	N	
6964	198		DIN 6527L	Ratio end mills RF 100 iMill	Solid carbide	N	
6965	198		DIN 6527L	Ratio end mills RF 100 iMill	Solid carbide	N	B
9651	125	~5xD	DIN 338	Jobber drills	HSS	N	
506920	269		Company std.	Tool dispensing system TM 226			

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ISO codes

P	Steel, high-alloyed steel
M	Stainless steel
K	Grey cast iron, spheroidal graphite iron and malleable 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

Surfaces

- | | | | | | |
|------------|--------------------|------------------|------------------|------------|------------|
| ○ bright | Ⓞ Carbo | ● steam tempered | ● FIRE/nanoFIRE | ● nitrided | ● Y Signum |
| ● S Sirius | ● A TiAlN | ● a TiAlN nanoA | ● A TiAlN SuperA | ● C TiCN | ● TiSiN |
| ● S TiN | ● Ni nickel-plated | | | | |

Pictograms

Tool material	HSS	HSS-E	HSCO	HSS-E-PM	VHM																			
	High-speed steel				Solid carbide																			
Machining depth	3xD	4xD	5xD	7xD	8xD	10xD	12xD	15xD	20xD	25xD	30xD	~3xD	~5xD	~10xD										
Tolerance on Ø	m7	h6	h7	H7	h8	6HX	ISO2/6H	±0,015	$\leq \text{Ø}5,5 = +0,004$ $> \text{Ø}5,5 = +0,005$															
Shank form	HA	HB	HE	Cyl			3																	
	to DIN 6535			cylindrical			3-flats on shank																	
Standard	DIN 333	DIN 338	DIN 340	DIN 371	DIN 376	DIN 371/376	DIN 1897	DIN 6527K	DIN 6527L	DIN 6537K	DIN 6537L	DIN 6539	~DIN 371	...										
	to DIN																							
	to Gühring Standard																							
Type	N	H	W	AI	NH	RT 100 U	RT 100 T	RT 100 VA	RT 100 XF	RT 150 GG	FT 200	GU 500 DZ	GT 500 DZ	HT 800 WP										
	N R40	AI R45	H R40	VA R40	TM SP	GG	NRf	HR	HR 500 S	HR 500 D	...													
Internal coolant																								
	with internal coolant			without internal coolant																				
Cutting direction																								
	right-hand																							
Hole type																								
	Through-hole threads			Blind-hole threads			Through-hole and blind-hole threads																	
Form	B	C																						
Application																								
	Slotting	Roughing	Ramping	Helix	Drilling	Finishing	Copying																	
Length																								
	short (DIN)		long (DIN)		medium length			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°		R±0,05			60°			90°			120°			130°			135°		140°		118°		...
	Corner chamfer		Radius with tolerance			Chamfer end mill angles			Point angle															
Feed																								
	for lateral feed			for lateral feed and oblique plunging					for lateral feed, oblique plunging and drilling															
Hardness	48 HRC		55 HRC																					
	workable material hardness in HRC																							

SuperLine



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