

GUHRING



Super Line

SUPER PRICE

SUPER QUALITY

SUPER AVAILABILITY

10th
Edition



High-tech tools

at a

super price



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



SuperLine

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



// Immediate availability

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

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



28

PRODUCTION CENTRES

48

SALES COMPANIES

47

SERVICE CENTRES

// Service near to the customer

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

In addition, Guhring's own collection and delivery service ensures on schedule logistics for tool refurbishment.

Thanks to a global service network including re-grind centres as well as world-wide uniform manufacturing facilities we guarantee maximum quality standards close to the customer.



Collect



Re-grind



Re-coat



Delivery

Superline





SL DRILLS

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STANDARD RANGE
GÜHRING NAVIGATOR

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SL MILLING CUTTERS

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SL TAPS AND FLUTELESS TAPS

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GÜHRING NAVIGATOR

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SL REAMERS

SUMMARY
STANDARD RANGE
GÜHRING NAVIGATOR

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TOOL HOLDERS

SUMMARY
STANDARD RANGE

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P	M	K	N	S	H	Tool illustration	Drilling depth	Shank form	Type	Standard	Tool material	Surface	d1/mm	Article no.	Cutting data page	Page
•	○	•	○	○	○		3xD	HA	RT 100 U	DIN 6537 K	VHM	F	3.000 - 20.000	5514	50	16
•	○	•	○	○	○		3xD	HE	RT 100 U	DIN 6537 K	VHM	F	3.000 - 20.000	5614	50	16
•	○	•	○	○	○		3xD	HA	RT 100 U	DIN 6537 K	VHM	F	3.000 - 20.000	5510	50	16
•	○	•	○	○	○		3xD	HE	RT 100 U	DIN 6537 K	VHM	F	3.000 - 20.000	5610	50	16
•	○	•	○	○	○		3xD	HA	RT 100 VA	DIN 6537 K	VHM	a	3.000 - 20.000	5526	50	16
•	○	•	○	○	○		3xD	HE	RT 100 VA	DIN 6537 K	VHM	a	3.000 - 20.000	5528	50	16
•	○	•	○	○	○		5xD	HA	RT 100 U	DIN 6537 L	VHM	F	3.000 - 20.000	5515	50	19
•	○	•	○	○	○		5xD	HE	RT 100 U	DIN 6537 L	VHM	F	3.000 - 20.000	5615	50	19
•	○	•	○	○	○		5xD	HA	RT 100 U	DIN 6537 L	VHM	F	3.000 - 20.000	5511	50	19
•	○	•	○	○	○		5xD	HE	RT 100 U	DIN 6537 L	VHM	F	3.000 - 20.000	5611	50	19
•	○	•	○	○	○		5xD	HA	RT 100 VA	DIN 6537 L	VHM	a	3.000 - 20.000	5580	50	19
•	○	•	○	○	○		5xD	HE	RT 100 VA	DIN 6537 L	VHM	a	3.000 - 20.000	5581	50	19
•	○	•	○	○	○		7xD	HA	RT 100 U	WN	VHM	F	3.000 - 20.000	5512	50	22
•	○	•	○	○	○		7xD	HE	RT 100 U	WN	VHM	F	3.000 - 20.000	5612	50	22
•	○	•	○	○	○		12xD	HA	RT 100 U	WN	VHM	F	3.000 - 20.000	5525	50	25
•	○	•	○	○	○		10xD	HA	RT 150 GG	WN	VHM	○	3.000 - 16.000	5513	50	28

3-flute Ratio drills

•	•	•	○	○	○		5xD	HA	FT 200	DIN 6537 L	VHM	○	3.000 - 20.000	5518	50	30
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Carbide twist drills

○	○	○	•	○	○		3xD	Cyl	N	DIN 6539	VHM	○	2.000 - 12.000	5516	52	32
○	○	○	•	○	○		5xD	Cyl	N	WN	VHM	○	2.000 - 12.000	5517	52	33

Stub drills

•	•	•	•	○	○		~3xD	Cyl	GU500 DZ	DIN 1897	HSCO	○	1.000 - 14.000	5524	52	34
•	•	•	•	○	○		~3xD	Cyl	GU500 DZ	DIN 1897	HSCO	S	1.000 - 14.000	5520	52	34
•	○	•	○	○	○		~3xD	Cyl	GT500 DZ	DIN 1897	HSS-E-PM	S	1.000 - 14.000	5521	52	34

P	M	K	N	S	H	Tool illustration	Drilling depth	Shank form	Type	Standard	Tool material	Surface	d1/mm	Article no.	Cutting data page	Page
Jobber drills																
•	•	•					~5xD	Cyl	N	DIN 338	HSS	S	1.000 - 16.000	9651	52	37
•	•	•	•				~5xD	Cyl	GU500 DZ	DIN 338	HSCO	○	1.000 - 16.000	5523	52	37
•	•	•	•				~5xD	Cyl	GU500 DZ	DIN 338	HSCO	S	1.000 - 16.000	5519	52	37
•	○	•	○	○	○		~5xD	Cyl	GT 500 DZ	DIN 338	HSS-E-PM	S	1.000 - 16.000	5522	52	37
Long series drills																
•	•	•	•				~10xD	Cyl	GU500 DZ	DIN 340	HSCO	○	1.000 - 14.000	5536	52	41
•	•	•	•				~10xD	Cyl	GU500 DZ	DIN 340	HSCO	S	1.000 - 14.000	5537	52	41
Solid carbide micro-precision drills without coolant ducts																
•	○	•	○	○	○	NEW		Cyl	N	WN	VHM	A	0.100 - 3.000	5652		43
NC-spotting drills																
○	○	○	○	○	○	90° NEW		Cyl	N	WN	VHM	F	3.000 - 12.000	5508		44
○	○	○	○	○	○	120° NEW		Cyl	N	WN	VHM	F	3.000 - 12.000	5509		45
○	○	○	○	○	○	142° NEW		HB	N	WN	VHM	○	4.000 - 20.000	5649		46
Set of jobber drills																
•	•	•	•				~5xD	Cyl	GU500 DZ	DIN 338	HSCO	○		12		47
•	•	•					~5xD	Cyl	N	DIN 338	HSS	S		234		48

P	M	K	N	S	H	Tool illustration	Z	Feed	Shank form	Length	Tool material	Surface	d1/mm	Article no.	Cutting data page	Page
Standard Ratio end mills RF 100 U																
•	○	•	○				4		HB		VHM	F	6.000 - 20.000	5534	80	54
•	○	•	○				4		HA		VHM	F	4.000 - 25.000	5735	80	55
•	○	•	○				4		HB		VHM	F	4.000 - 25.000	5535	80	55
•	○	•	○				4		HA		VHM	F	10.000 - 25.000	5582	80	56
Ratio end mills RF 100 VA																
•	•	○	•				4		HA		VHM	a	3.000 - 25.000	5653	80	57
•	•	○	•				4		HB		VHM	a	3.000 - 25.000	5654	80	57
Ratio end mills Alu RF 100 A																
		•					3		HB		VHM	○	3.000 - 20.000	5655	80	58
Slot drills GH 100 U (3-fluted)																
•	•	•	•	○			3		HA		VHM	F	3.000 - 20.000	5505	78	59
•	•	•	•	○			3		HA		VHM	F	3.000 - 20.000	5506	78	60
•	•	•	•	○			3		HB		VHM	F	3.000 - 20.000	5546	78	60
Roughing end mills GS 100 U (fine teeth)																
•	•	•	○				4		HB		VHM	F	6.000 - 20.000	5504	80	61
Hard roughing end mills GS 100 H (fine teeth)																
○	•	•	•	•			4		HB		VHM	Y	6.000 - 20.000	5583	80	62
Multi-tooth end mills GH 100 U																
•	•	•	•	•			6+		HA		VHM	F	3.000 - 25.000	5745	78	63
•	•	•	•	•			6+		HB		VHM	F	3.000 - 25.000	5545	78	63
•	•	•	•	•			6+		HA		VHM	F	6.000 - 20.000	5729	78	64
Slot drills (2-fluted)																
•	•	•	•				2		HA		VHM	F	2.000 - 20.000	5730	78	65
•	•	•	•				2		HB		VHM	F	2.000 - 20.000	5530	78	65
XL slot drills (2-fluted)																
•	•	•	•				2		HA		VHM	F	3.000 - 20.000	5549	78	66

P	M	K	N	S	H	Tool illustration	Z	Feed	Shank form	Length	Tool material	Surface	d1/mm	Article no.	Cutting data page	Page		
Al slot drills (2-fluted)																		
											VHM		3.000 - 20.000	5543	78	67		
Slot drills (3-fluted)																		
											VHM		2.000 - 20.000	5507	78	68		
											VHM		2.000 - 20.000	5531	78	68		
											VHM		8.000 - 20.000	5544		69		
Mini slot drills (3-fluted)																		
											VHM		1.000 - 10.000	5574	78	70		
											VHM		0.500 - 20.000	5573	78	71		
End mills (4-fluted)																		
											VHM		2.000 - 20.000	5532	80	72		
XL end mills (4-fluted)																		
											VHM		3.000 - 20.000	5556	80	73		
Ball nose slot drills (2-fluted)																		
											VHM		4.000 - 12.000	5533	78	74		
											VHM		0.500 - 20.000	5585	78	74		
Ball nose end mills (4-fluted)																		
											VHM		3.000 - 20.000	5584	78	75		
Chamfering milling cutters																		
													VHM		4.000 - 12.000	5578	80	76
													VHM		4.000 - 12.000	5579	80	76
Ratio end mill sets RF 100 U																		
												VHM		5635		77		

P	M	K	N	S	H	Tool illustration	Standard	Type	Form	Tolerance on Ø	Tool material	Surface	d1/mm	Article no.	Cutting data page	Page
≤ 800							DIN 371	N	B	ISO2/6H	HSS-E		M3 - M10	5560	100	82
≤ 800							DIN 371	N	B	ISO2/6H	HSS-E	S	M3 - M10	5590	100	82
≤ 1200							DIN 371	H	B	ISO2/6H	HSS-E		M3 - M10	5558	100	82
≤ 1200							DIN 371	H	B	ISO2/6H	HSS-E	C	M3 - M10	5587	100	82
≤ 1000	○						DIN 371	N	B	ISO2/6H	HSS-E		M3 - M10	5561	100	82
≤ 1000	○						DIN 371	N	B	ISO2/6H	HSS-E	S	M3 - M10	5586	100	82
≤ 1000	●						DIN 371/376	VA	B	ISO2/6H	HSS-E	S	M3 - M20	5588	100	83
≤ 1000	●						DIN 371/376	VA	B	ISO2/6H	HSS-E		M3 - M20	5597	100	83
≤ 1000	●						DIN 371/376	VA	B	ISO2/6H	HSS-E-PM		M3 - M20	5559	100	83
		●					DIN 371/376	AI	B	ISO2/6H	HSS-E		M3 - M20	5557	100	83
		●					DIN 371/376	GG	C	6HX	HSS-E		M3 - M20	5550	100	83
		●					DIN 371/376	GG	C	6HX	HSS-E	F	M3 - M20	5595	100	83
		●	≥ 7				DIN 371	H	C	6HX	VHM		M4 - M10	5593	102	84
≤ 1000	○						DIN 376	N	B	ISO2/6H	HSS-E		M12 - M20	5563	104	85
≤ 1000	●	●					DIN 374	N	B	ISO2/6H	HSS-E		M4 x 0,5 - M20 x 1,5	5723	104	86
≤ 1000	●	●					~DIN 371/376	N	B	2B	HSS-E		4 - 40 - 3/4 - 10	5725	104	87
≤ 1000	●	●					~DIN 374	N	B	2B	HSS-E		4 - 48 - 5/8 - 18	5727	104	88
≤ 1000	●	●					DIN 5156	N	B		HSS-E		G1/8 - G1	5731	104	89
≤ 800							DIN 371	NR40	C	ISO2/6H	HSS-E		M3 - M10	5554	102	90
≤ 800							DIN 371	NR40	C	ISO2/6H	HSS-E	S	M3 - M10	5592	102	90
≤ 1200							DIN 371	HR40	C	ISO2/6H	HSS-E		M3 - M10	5552	102	90
≤ 1200							DIN 371	HR40	C	ISO2/6H	HSS-E	C	M3 - M10	5591	102	90
	●						DIN 371	VA R40	C	ISO2/6H	HSS-E		M3 - M10	5553	102	91
	●						DIN 371	VA R40	C	ISO2/6H	HSS-E	S	M3 - M10	5596	102	91

P	M	K	N	S	H	Tool illustration	Standard	Type	Form	Tolerance on Ø	Tool material	Surface	d1/mm	Article no.	Cutting data page	Page
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Machine taps

≤ 1000	○	○					DIN 371	N R40	C	ISO2/6H	HSS-E	●	M3 - M10	5555	102	91
≤ 1000	○	○					DIN 371	N R40	C	ISO2/6H	HSS-E	●	M3 - M10	5594	102	91
			●				DIN 371	A1 R45	C	ISO2/6H	HSS-E	○	M3 - M10	5551	102	91
≤ 1000	○	○					DIN 371/376	N R40	C	ISO2/6H	HSS-E	●	M12 - M20	5589	104	92
≤ 1000	○	○	○				DIN 376	N R40	C	ISO2/6H	HSS-E	●	M3 - M20	5717	104	93
≤ 1000	○	○	○				~DIN 371/376	N R40	C	2B	HSS-E	●	4 - 40 - 3/4 - 10	5726	104	94
≤ 1000	○	○	○				~DIN 374	N R40	C	2B	HSS-E	●	4 - 48 - 5/8 - 18	5728	104	95
≤ 1000	○	○	○				DIN 5156	N R40	C		HSS-E	●	G1/8 - G1	5732	104	96

Fluteless machine taps for ISO metric threads

●	●	○	●				~DIN 371	N	C	6HX	HSS-E	●	M3 - M10	5598	100	97
●	●	○	●				~DIN 376	N	C	6HX	HSS-E	●	M12 - M16	5599	100	98

Thread milling cutters without chamfer for ISO metric threads

●	○	●	●	●	≤55		NEW	WN	TM SP		VHM	●	M6 - M20	5547	102	99
●	○	●	●	●	≤55		NEW	WN	TM SP		VHM	●	M6 - M20	5548	102	99

P	M	K	N	S	H	Tool illustration	Drilling depth	Standard	Form	Cutting direction	Tool material	Surface	d1/mm	Article no.	Cutting data page	Page
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NC machine reamers

•	○	•	•	•	52							0.980 - 12.050	5527	106	104
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Reaming recommendations for carbide NC reamers

Through hole or blind hole

Straight-fluted reamers are generally applied in blind holes as they, due to their cutting edge geometry, evacuate the chips from the hole against the direction of the feed.

Blind holes can be machined with this tool, if sufficient space at the bottom is available.

Interrupted holes

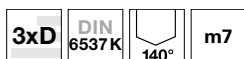
Spiral reamers are preferred for the application in interrupted holes because the cutting edge geometry, in comparison to straight-fluted tools, possesses a lesser tendency of grabbing on the oblique hole.

Article no. 5527



Tool illustration		Standard	d1/mm	Article no.	Page
Hydraulic chucks					
	NEW	DIN 69882-7	HSK-A 63	4299	109
	NEW	WN	SK 40	4213	110
	NEW	WN	BT 40	4221	111
	NEW	WN		4369	112
Shrink fit chucks					
	NEW	DIN 69882-8	HSK-A 63	4736	113
	NEW	WN	SK 40	4738	114
	NEW	WN	BT 40	4739	115
	NEW	WN		4719	116
Tool holders					
	NEW	DIN 69882-4	HSK-A 63	4232	117
	NEW	WN	SK 40	4317	118
	NEW	WN	SK 40	4318	119
	NEW	WN	BT 40	4234	120
	NEW	WN	HSK-A 63	4304	121
	NEW	WN	BT 40	4245	122
	NEW	DIN ISO 15488		4307	123

Ratio drills



Tool material

Surface

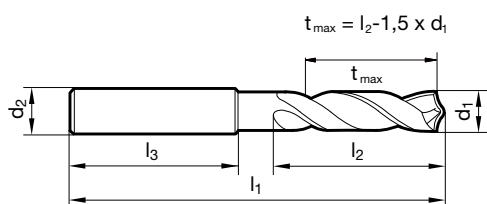
Shank form

Solid carbide

F	F	F	F	a	a
HA	HE	HA	HE	HA	HE



web thinning $\geq \varnothing 3.00$ • facet point grinding • main cutting edge form straight • optimised cutting geometry



Article no.

5514 5614 5510 5610 5526 5528

Type

RT 100 U RT 100 U RT 100 U RT 100 U RT 100 VA RT 100 VA

Cutting direction

(R) (R) (R) (R) (R) (R)

d1		d2 h6	l1	l2	l3	GBP					
mm	inch	mm	mm	mm	mm						
3.00	1/8	6.00	62.00	20.00	36.00	25.62	26.73	32.33	33.32	36.50	37.38
3.10		6.00	62.00	20.00	36.00	25.62	26.73	32.33	33.32	36.50	37.38
3.17		6.00	62.00	20.00	36.00	25.62	26.73	32.33	33.32	36.50	37.38
3.20		6.00	62.00	20.00	36.00	25.62	26.73	32.33	33.32	36.50	37.38
3.25		6.00	62.00	20.00	36.00	25.62	26.73	32.33	33.32	36.50	37.38
3.30	9/64	6.00	62.00	20.00	36.00	25.62	26.73	32.33	33.32	36.50	37.38
3.40		6.00	62.00	20.00	36.00	25.62	26.73	32.33	33.32	36.50	37.38
3.50		6.00	62.00	20.00	36.00	25.62	26.73	32.33	33.32	36.50	37.38
3.57		6.00	62.00	20.00	36.00	25.62	26.73	32.33	33.32	36.50	37.38
3.60		6.00	62.00	20.00	36.00	25.62	26.73	32.33	33.32	36.50	37.38
3.70	5/32	6.00	62.00	20.00	36.00	25.62	26.73	32.33	33.32	36.50	37.38
3.80		6.00	66.00	24.00	36.00	25.62	26.73	32.33	33.32	36.50	37.38
3.90		6.00	66.00	24.00	36.00	25.62	26.73	32.33	33.32	36.50	37.38
3.97		6.00	66.00	24.00	36.00	25.62	26.73	32.33	33.32	36.50	37.38
4.00		6.00	66.00	24.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
4.10	11/64	6.00	66.00	24.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
4.20		6.00	66.00	24.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
4.30		6.00	66.00	24.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
4.37		6.00	66.00	24.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
4.40		6.00	66.00	24.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
4.50	3/16	6.00	66.00	24.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
4.60		6.00	66.00	24.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
4.65		6.00	66.00	24.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
4.70		6.00	66.00	24.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
4.76		6.00	66.00	28.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
4.80	13/64	6.00	66.00	28.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
4.90		6.00	66.00	28.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
5.00		6.00	66.00	28.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
5.10		6.00	66.00	28.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
5.16		6.00	66.00	28.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
5.20	7/32	6.00	66.00	28.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
5.30		6.00	66.00	28.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
5.40		6.00	66.00	28.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
5.50		6.00	66.00	28.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
5.55		6.00	66.00	28.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78
5.56		6.00	66.00	28.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78

* for a min. quantity of 3 off,
< 3 off plus 50%

Article no.						5514	5614	5510	5610	5526	5528	▼ regrounding ▼ recoating
Type						RT 100 U	RT 100 U	RT 100 U	RT 100 U	RT 100 VA	RT 100 VA	
Cutting direction												
d1		d2 h6	I1	I2	I3	GBP						Unit price in £*
mm	inch	mm	mm	mm	mm							
5.60		6.00	66.00	28.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78	17.80
5.70		6.00	66.00	28.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78	17.80
5.80		6.00	66.00	28.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78	17.80
5.90	15/64	6.00	66.00	28.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78	17.80
5.95		6.00	66.00	28.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78	17.80
6.00		6.00	66.00	28.00	36.00	25.62	26.73	34.99	36.54	39.49	40.78	17.80
6.10		8.00	79.00	34.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
6.20		8.00	79.00	34.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
6.30		8.00	79.00	34.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
6.35	1/4	8.00	79.00	34.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
6.40		8.00	79.00	34.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
6.50		8.00	79.00	34.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
6.60		8.00	79.00	34.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
6.70		8.00	79.00	34.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
6.75		17/64	8.00	79.00	34.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83
6.80		8.00	79.00	34.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
6.90		8.00	79.00	34.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
7.00		8.00	79.00	34.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
7.10	9/32	8.00	79.00	41.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
7.14		8.00	79.00	41.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
7.20		8.00	79.00	41.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
7.30		8.00	79.00	41.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
7.40		8.00	79.00	41.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
7.50		8.00	79.00	41.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
7.54	19/64	8.00	79.00	41.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
7.60		8.00	79.00	41.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
7.70		8.00	79.00	41.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
7.80		8.00	79.00	41.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
7.90		8.00	79.00	41.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
7.94		5/16	8.00	79.00	41.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83
8.00		8.00	79.00	41.00	36.00	25.62	26.73	47.45	49.55	54.12	55.83	22.40
8.10		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
8.20		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
8.30	21/64	10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
8.33		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
8.40		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
8.50		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
8.60		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
8.70		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
8.73	11/32	10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
8.80		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
8.90		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
9.00		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
9.10		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
9.13		23/64	10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83
9.20		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
9.25		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
9.30		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
9.40		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
9.50		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
9.52		3/8	10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83
9.60		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
9.70		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
9.80		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
9.90	25/64	10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
9.92		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
10.00		10.00	89.00	47.00	40.00	28.72	30.39	53.20	55.30	60.15	61.83	22.40
10.10		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
10.20		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
10.30		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30

* for a min. quantity of 3 off,
< 3 off plus 50%

Article no.						5514	5614	5510	5610	5526	5528	▼ regrounding ▼ recoating
Type						RT 100 U	RT 100 U	RT 100 U	RT 100 U	RT 100 VA	RT 100 VA	
Cutting direction												Unit price in £*
d1		d2 h6	I1	I2	I3	GBP						
mm	inch	mm	mm	mm	mm							
10.32	13/32	12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	36.50	88.45	24.30
10.40		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	36.50	88.45	24.30
10.50		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
10.60		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
10.70		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
10.80		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
10.90		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
11.00		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
11.10		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
11.11	7/16	12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
11.20		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
11.30		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
11.40		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
11.50		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
11.60		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
11.70		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
11.80		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
11.90		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
11.91	15/32	12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
12.00		12.00	102.00	55.00	45.00	42.83	44.66	76.15	79.38	85.88	88.45	24.30
12.20		14.00	107.00	60.00	45.00	57.54	59.63	106.37	110.71	120.24	124.55	24.30
12.50	1/2	14.00	107.00	60.00	45.00	57.54	59.63	106.37	110.71	120.24	124.55	24.30
12.70		14.00	107.00	60.00	45.00	57.54	59.63	106.37	110.71	120.24	124.55	24.30
13.00		14.00	107.00	60.00	45.00	57.54	59.63	106.37	110.71	120.24	124.55	24.30
13.50		14.00	107.00	60.00	45.00	57.54	59.63	106.37	110.71	120.24	124.55	24.30
13.70		14.00	107.00	60.00	45.00	57.54	59.63	106.37	110.71	120.24	124.55	24.30
14.00		14.00	107.00	60.00	45.00	57.54	59.63	106.37	110.71	120.24	124.55	24.30
14.20	9/16	16.00	115.00	65.00	48.00	57.54	77.13	129.89	135.21	146.00	152.02	24.30
14.29		16.00	115.00	65.00	48.00	74.05	77.13	129.89	135.21	146.00	152.02	24.30
14.50		16.00	115.00	65.00	48.00	74.05	77.13	129.89	135.21	146.00	152.02	24.30
14.70		16.00	115.00	65.00	48.00	74.05	77.13	129.89	135.21	146.00	152.02	24.30
15.00		16.00	115.00	65.00	48.00	74.05	77.13	129.89	135.21	146.00	152.02	24.30
15.20		16.00	115.00	65.00	48.00	74.05	77.13	129.89	135.21	146.00	152.02	24.30
15.50		16.00	115.00	65.00	48.00	74.05	77.13	129.89	135.21	146.00	152.02	24.30
15.70		16.00	115.00	65.00	48.00	74.05	77.13	129.89	135.21	146.00	152.02	24.30
16.00		16.00	115.00	65.00	48.00	74.05	77.13	129.89	135.21	146.00	152.02	24.30
16.50		18.00	123.00	73.00	48.00	130.52	140.54	208.68	217.08	235.33	245.65	26.70
17.00		18.00	123.00	73.00	48.00	130.52	140.54	208.68	217.08	235.33	245.65	26.70
17.50		18.00	123.00	73.00	48.00	130.52	140.54	208.68	217.08	235.33	245.65	26.70
18.00		18.00	123.00	73.00	48.00	130.52	140.54	208.68	217.08	235.33	245.65	26.70
18.50		20.00	131.00	79.00	50.00	143.22	151.31	228.00	236.96	257.67	266.26	26.70
19.00		20.00	131.00	79.00	50.00	143.22	151.31	228.00	236.96	257.67	266.26	26.70
19.50		20.00	131.00	79.00	50.00	143.22	151.31	228.00	236.96	257.67	266.26	26.70
20.00		20.00	131.00	79.00	50.00	143.22	151.31	228.00	236.96	257.67	266.26	26.70

* for a min. quantity of 3 off,
< 3 off plus 50%

Article no.						5515	5615	5511	5611	5580	5581	▼ regrinding ▼ recoating
Type						RT 100 U	RT 100 U	RT 100 U	RT 100 U	RT 100 VA	RT 100 VA	
Cutting direction												
d1		d2 h6	I1	I2	I3	GBP						Unit price in £*
mm	inch	mm	mm	mm	mm							
5.60		6.00	82.00	44.00	36.00	29.27	30.94	44.78	47.02	50.66	53.23	17.80
5.70		6.00	82.00	44.00	36.00	29.27	30.94	44.78	47.02	50.66	53.23	17.80
5.80		6.00	82.00	44.00	36.00	29.27	30.94	44.78	47.02	50.66	53.23	17.80
5.90		6.00	82.00	44.00	36.00	29.27	30.94	44.78	47.02	50.66	53.23	17.80
5.95	15/64	6.00	82.00	44.00	36.00	29.27	30.94	44.78	47.02	50.66	53.23	17.80
6.00		6.00	82.00	44.00	36.00	29.27	30.94	44.78	47.02	50.66	53.23	17.80
6.10		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
6.20		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
6.30		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
6.35	1/4	8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
6.40		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
6.50		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
6.60		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
6.70		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
6.75	17/64	8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
6.80		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
6.90		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
7.00		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
7.10		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
7.14	9/32	8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
7.20		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
7.30		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
7.40		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
7.50		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
7.54	19/64	8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
7.60		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
7.70		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
7.80		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
7.90		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
7.94	5/16	8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
8.00		8.00	91.00	53.00	36.00	29.68	31.92	49.55	51.78	56.69	58.41	22.40
8.10		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
8.20		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
8.30		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
8.33	21/64	10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
8.40		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
8.50		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
8.60		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
8.70		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
8.73	11/32	10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
8.80		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
8.90		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
9.00		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
9.10		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
9.13	23/64	10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
9.20		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
9.25		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
9.30		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
9.40		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
9.50		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
9.52	3/8	10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
9.60		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
9.70		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
9.80		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
9.90		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
9.92	25/64	10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
10.00		10.00	103.00	61.00	40.00	32.91	35.44	56.83	59.49	64.40	67.00	22.40
10.10		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
10.20		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
10.30		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30

* for a min. quantity of 3 off,
< 3 off plus 50%

Article no.						5515	5615	5511	5611	5580	5581	▼ regrinding ▼ recoating
Type						RT 100 U	RT 100 U	RT 100 U	RT 100 U	RT 100 VA	RT 100 VA	
Cutting direction												
d1		d2 h6	I1	I2	I3	GBP						Unit price in £*
mm	inch	mm	mm	mm	mm							
10.32	13/32	12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
10.40		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
10.50		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
10.60		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
10.70		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
10.80		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
10.90		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
11.00		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
11.10		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
11.11	7/16	12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
11.20		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
11.30		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
11.40		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
11.50		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
11.60		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
11.70		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
11.80		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
11.90		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
11.91	15/32	12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
12.00		12.00	118.00	71.00	45.00	49.15	52.22	82.99	86.09	93.65	97.04	24.30
12.20		14.00	124.00	77.00	45.00	64.67	69.42	111.68	116.45	125.41	130.55	24.30
12.50	1/2	14.00	124.00	77.00	45.00	64.67	69.42	111.68	116.45	125.41	130.55	24.30
12.70		14.00	124.00	77.00	45.00	64.67	69.42	111.68	116.45	125.41	130.55	24.30
13.00		14.00	124.00	77.00	45.00	64.67	69.42	111.68	116.45	125.41	130.55	24.30
13.50		14.00	124.00	77.00	45.00	64.67	69.42	111.68	116.45	125.41	130.55	24.30
13.70		14.00	124.00	77.00	45.00	64.67	69.42	111.68	116.45	125.41	130.55	24.30
14.00		14.00	124.00	77.00	45.00	64.67	69.42	111.68	116.45	125.41	130.55	24.30
14.20	9/16	16.00	133.00	83.00	48.00	84.12	89.86	137.72	143.47	156.30	162.33	24.30
14.29		16.00	133.00	83.00	48.00	84.12	89.86	137.72	143.47	156.30	162.33	24.30
14.50		16.00	133.00	83.00	48.00	84.12	89.86	137.72	143.47	156.30	162.33	24.30
14.70		16.00	133.00	83.00	48.00	84.12	89.86	137.72	143.47	156.30	162.33	24.30
15.00		16.00	133.00	83.00	48.00	84.12	89.86	137.72	143.47	156.30	162.33	24.30
15.20		16.00	133.00	83.00	48.00	84.12	89.86	137.72	143.47	156.30	162.33	24.30
15.50		16.00	133.00	83.00	48.00	84.12	89.86	137.72	143.47	156.30	162.33	24.30
15.70		16.00	133.00	83.00	48.00	84.12	89.86	137.72	143.47	156.30	162.33	24.30
16.00		16.00	133.00	83.00	48.00	84.12	89.86	137.72	143.47	156.30	162.33	24.30
16.50		18.00	143.00	93.00	48.00	138.39	149.16	220.72	229.54	249.10	259.41	26.70
17.00		18.00	143.00	93.00	48.00	138.39	149.16	220.72	229.54	249.10	259.41	26.70
17.50		18.00	143.00	93.00	48.00	138.39	149.16	220.72	229.54	249.10	259.41	26.70
18.00		18.00	143.00	93.00	48.00	138.39	149.16	220.72	229.54	249.10	259.41	26.70
18.50		20.00	153.00	101.00	50.00	150.77	159.92	240.03	249.42	271.43	280.00	26.70
19.00		20.00	153.00	101.00	50.00	150.77	159.92	240.03	249.42	271.43	280.00	26.70
19.05	3/4	20.00	153.00	101.00	50.00			240.03	249.42			26.70
19.50		20.00	153.00	101.00	50.00	150.77	159.92	240.03	249.42	271.43	280.00	26.70
20.00		20.00	153.00	101.00	50.00	150.77	159.92	240.03	249.42	271.43	280.00	26.70

* for a min. quantity of 3 off,
< 3 off plus 50%

Ratio drills with oil feed



Tool material

Solid carbide

Surface

Shank form

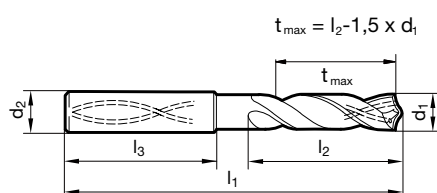
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F

HA

HE

web thinning $\geq \varnothing 3.00$ • facet point grinding • main cutting edge form straight
• optimised cutting geometry



Article no.						5512	5612	Unit price in £*
Type						RT 100 U	RT 100 U	
Cutting direction								
d1		d2 h6	I1	I2	I3	GBP		
mm	inch	mm	mm	mm	mm			
3.00	1/8	6.00	70.00	30.00	36.00	83.31	84.86	
3.10		6.00	70.00	30.00	36.00	83.31	84.86	
3.17		6.00	70.00	30.00	36.00	83.31	84.86	
3.20		6.00	70.00	30.00	36.00	83.31	84.86	
3.25		6.00	70.00	30.00	36.00	83.31	84.86	
3.30	9/64	6.00	70.00	30.00	36.00	83.31	84.86	
3.40		6.00	75.00	35.50	36.00	83.31	84.86	
3.50		6.00	75.00	35.50	36.00	83.31	84.86	
3.57		6.00	75.00	35.50	36.00	83.31	84.86	
3.60		6.00	75.00	35.50	36.00	83.31	84.86	
3.70	5/32	6.00	75.00	35.50	36.00	83.31	84.86	
3.80		6.00	75.00	37.50	36.00	83.31	84.86	
3.90		6.00	75.00	37.50	36.00	83.31	84.86	
3.97		6.00	75.00	37.50	36.00	83.31	84.86	
4.00		6.00	75.00	37.50	36.00	83.31	84.86	
4.10	11/64	6.00	75.00	37.50	36.00	83.31	84.86	
4.20		6.00	75.00	37.50	36.00	83.31	84.86	
4.30		6.00	85.00	45.00	36.00	83.31	84.86	
4.37		6.00	85.00	45.00	36.00	83.31	84.86	
4.40		6.00	85.00	45.00	36.00	83.31	84.86	
4.50	3/16	6.00	85.00	45.00	36.00	83.31	84.86	
4.60		6.00	85.00	45.00	36.00	83.31	84.86	
4.65		6.00	85.00	45.00	36.00	83.31	84.86	
4.70		6.00	85.00	45.00	36.00	83.31	84.86	
4.76		6.00	90.00	50.00	36.00	83.31	84.86	
4.80	13/64	6.00	90.00	50.00	36.00	83.31	84.86	
4.90		6.00	90.00	50.00	36.00	83.31	84.86	
5.00		6.00	90.00	50.00	36.00	83.31	84.86	
5.10		6.00	90.00	50.00	36.00	83.31	84.86	
5.16		6.00	90.00	50.00	36.00	83.31	84.86	
5.20		6.00	90.00	50.00	36.00	83.31	84.86	
5.30		6.00	90.00	50.00	36.00	83.31	84.86	
5.40		6.00	97.00	57.00	36.00	83.31	84.86	
5.50		6.00	97.00	57.00	36.00	83.31	84.86	
5.70		6.00	97.00	57.00	36.00	83.31	84.86	
5.80		6.00	97.00	57.00	36.00	83.31	84.86	

* for a min. quantity of 3 off,
 < 3 off plus 50%

Article no.						5512	5612	▼ regrinding ▼ recoating
Type						RT 100 U	RT 100 U	
Cutting direction								
d1		d2 h6	l1	l2	l3	GBP		Unit price in £*
mm	inch	mm	mm	mm	mm			
5.90	1/4	6.00	97.00	57.00	36.00	83.31	84.86	17.80
6.00		6.00	97.00	57.00	36.00	83.31	84.86	17.80
6.20		8.00	106.00	66.00	36.00	96.75	98.33	22.40
6.30		8.00	106.00	66.00	36.00	96.75	98.33	22.40
6.35		8.00	106.00	66.00	36.00	96.75	98.33	22.40
6.50		8.00	106.00	66.00	36.00	96.75	98.33	22.40
6.60		8.00	106.00	66.00	36.00	96.75	98.33	22.40
6.70		8.00	106.00	66.00	36.00	96.75	98.33	22.40
6.80		8.00	106.00	66.00	36.00	96.75	98.33	22.40
6.90		8.00	116.00	76.00	36.00	96.75	98.33	22.40
7.00		8.00	116.00	76.00	36.00	96.75	98.33	22.40
7.10		8.00	116.00	76.00	36.00	96.75	98.33	22.40
7.20		8.00	116.00	76.00	36.00	96.75	98.33	22.40
7.50		8.00	116.00	76.00	36.00	96.75	98.33	22.40
7.60		8.00	116.00	76.00	36.00	96.75	98.33	22.40
7.70		8.00	116.00	76.00	36.00	96.75	98.33	22.40
7.80		8.00	116.00	76.00	36.00	96.75	98.33	22.40
8.00		8.00	116.00	76.00	36.00	96.75	98.33	22.40
8.10		10.00	131.00	87.00	40.00	116.57	118.98	22.40
8.20		10.00	131.00	87.00	40.00	116.57	118.98	22.40
8.40		10.00	131.00	87.00	40.00	116.57	118.98	22.40
8.50		10.00	131.00	87.00	40.00	116.57	118.98	22.40
8.60		10.00	131.00	87.00	40.00	116.57	118.98	22.40
8.70		10.00	131.00	87.00	40.00	116.57	118.98	22.40
8.80		10.00	131.00	87.00	40.00	116.57	118.98	22.40
9.00		10.00	131.00	87.00	40.00	116.57	118.98	22.40
9.10		10.00	139.00	95.00	40.00	116.57	118.98	22.40
9.20		10.00	139.00	95.00	40.00	116.57	118.98	22.40
9.30		10.00	139.00	95.00	40.00	116.57	118.98	22.40
9.40		10.00	139.00	95.00	40.00	116.57	118.98	22.40
9.50	3/8	10.00	139.00	95.00	40.00	116.57	118.98	22.40
9.52		10.00	139.00	95.00	40.00	116.57	118.98	22.40
9.70		10.00	139.00	95.00	40.00	116.57	118.98	22.40
9.80		10.00	139.00	95.00	40.00	116.57	118.98	22.40
9.90		10.00	139.00	95.00	40.00	116.57	118.97	22.40
10.00		10.00	139.00	95.00	40.00	116.57	118.98	22.40
10.20		12.00	155.00	106.00	45.00	153.85	157.01	24.30
10.50		12.00	155.00	106.00	45.00	153.85	157.01	24.30
10.80		12.00	155.00	106.00	45.00	153.85	157.01	24.30
11.00		12.00	155.00	106.00	45.00	153.85	157.01	24.30
11.20		12.00	163.00	114.00	45.00	153.85	157.01	24.30
11.50		12.00	163.00	114.00	45.00	153.85	157.01	24.30
11.80		12.00	163.00	114.00	45.00	153.85	157.01	24.30
12.00		12.00	163.00	114.00	45.00	153.85	157.01	24.30
12.20		14.00	182.00	133.00	45.00	218.89	222.09	24.30
12.50	1/2	14.00	182.00	133.00	45.00	218.89	222.09	24.30
12.70		14.00	182.00	133.00	45.00	218.89	222.09	24.30
13.00		14.00	182.00	133.00	45.00	218.89	222.09	24.30
13.50		14.00	182.00	133.00	45.00	218.89	222.09	24.30
14.00		14.00	182.00	133.00	45.00	218.89	222.09	24.30
14.20		16.00	204.00	152.00	48.00	272.85	277.57	24.30
14.50		16.00	204.00	152.00	48.00	272.85	277.57	24.30
15.00		16.00	204.00	152.00	48.00	272.85	277.57	24.30
15.50		16.00	204.00	152.00	48.00	272.85	277.57	24.30
16.00		16.00	204.00	152.00	48.00	272.85	277.57	24.30
16.50		18.00	223.00	171.00	48.00	341.02	350.55	26.70
17.00		18.00	223.00	171.00	48.00	341.02	350.55	26.70
17.50		18.00	223.00	171.00	48.00	341.02	350.55	26.70
18.00		18.00	223.00	171.00	48.00	341.02	350.55	26.70
18.50		20.00	244.00	190.00	50.00	404.51	412.39	26.70

Article no.						5512	5612
Type						RT 100 U	RT 100 U
Cutting direction							
d1		d2 h6	l1	l2	l3	GBP	
mm	inch	mm	mm	mm	mm		
19.00		20.00	244.00	190.00	50.00	404.51	412.39
19.05	3/4	20.00	244.00	190.00	50.00	404.51	412.39
19.50		20.00	244.00	190.00	50.00	404.51	412.39
20.00		20.00	244.00	190.00	50.00	404.51	412.39

regrounding
 recoating

Unit price in £*
26.70
26.70
26.70
26.70

* for a min. quantity of 3 off,
< 3 off plus 50 %



GM 300

Toolholders and clamping devices
for every application

Ratio drills with oil feed



Tool material

Solid carbide

Surface



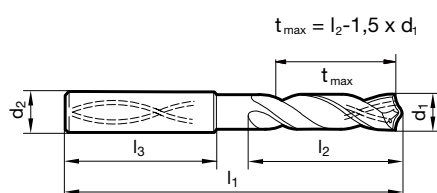
Shank form

HA



SL Drills

web thinning $\geq \varnothing 3.00$ • facet point grinding • main cutting edge form straight
• optimised cutting geometry



Article no.

5525

Type

RT 100 U

Cutting direction



d1		d2 h6	l1	l2	l3	GBP	Unit price in £*
mm	inch	mm	mm	mm	mm		
3.00		6.00	90.00	50.00	36.00	111.85	
3.10		6.00	90.00	50.00	36.00	111.85	
3.17	1/8	6.00	90.00	50.00	36.00	111.85	
3.20		6.00	90.00	50.00	36.00	111.85	
3.30		6.00	90.00	50.00	36.00	111.85	
3.40		6.00	90.00	50.00	36.00	111.85	
3.50		6.00	90.00	50.00	36.00	111.85	
3.60		6.00	90.00	50.00	36.00	111.85	
3.70		6.00	90.00	50.00	36.00	111.85	
3.80		6.00	102.00	64.00	36.00	111.85	
3.90		6.00	102.00	64.00	36.00	111.85	
4.00		6.00	102.00	64.00	36.00	111.85	19.30
4.10		6.00	102.00	64.00	36.00	111.85	19.30
4.20		6.00	102.00	64.00	36.00	111.85	19.30
4.30		6.00	102.00	64.00	36.00	111.85	19.30
4.40		6.00	102.00	64.00	36.00	111.85	19.30
4.50		6.00	102.00	64.00	36.00	111.85	19.30
4.60		6.00	102.00	64.00	36.00	111.85	19.30
4.70		6.00	102.00	64.00	36.00	111.85	19.30
4.80		6.00	116.00	78.00	36.00	111.85	19.30
4.90		6.00	116.00	78.00	36.00	111.85	19.30
5.00		6.00	116.00	78.00	36.00	111.85	19.30
5.10		6.00	116.00	78.00	36.00	111.85	19.30
5.20		6.00	116.00	78.00	36.00	111.85	19.30
5.30		6.00	116.00	78.00	36.00	111.85	19.30
5.40		6.00	116.00	78.00	36.00	111.85	19.30
5.50		6.00	116.00	78.00	36.00	111.85	19.30
5.60		6.00	116.00	78.00	36.00	111.85	19.30
5.70		6.00	116.00	78.00	36.00	111.85	19.30
5.80		6.00	116.00	78.00	36.00	111.85	19.30
5.90		6.00	116.00	78.00	36.00	111.85	19.30
6.00		6.00	116.00	78.00	36.00	111.85	19.30
6.10		8.00	146.00	108.00	36.00	130.87	23.80
6.20		8.00	146.00	108.00	36.00	130.87	23.80
6.30		8.00	146.00	108.00	36.00	130.87	23.80
6.35	1/4	8.00	146.00	108.00	36.00	130.87	23.80

* for a min. quantity of 3 off,
< 3 off plus 50%

Article no.						5525	▼ regrounding ▼ recoating	Unit price in £*
Type						RT 100 U		
Cutting direction								
d1		d2 h6	l1	l2	l3	GBP		
mm	inch	mm	mm	mm	mm			
6.40		8.00	146.00	108.00	36.00	130.87		23.80
6.50		8.00	146.00	108.00	36.00	130.87		23.80
6.60		8.00	146.00	108.00	36.00	130.87		23.80
6.70		8.00	146.00	108.00	36.00	130.87		23.80
6.80		8.00	146.00	108.00	36.00	130.87		23.80
6.90		8.00	146.00	108.00	36.00	130.87		23.80
7.00		8.00	146.00	108.00	36.00	130.87		23.80
7.10		8.00	146.00	108.00	36.00	130.87		23.80
7.20		8.00	146.00	108.00	36.00	130.87		23.80
7.30		8.00	146.00	108.00	36.00	130.87		23.80
7.40		8.00	146.00	108.00	36.00	130.87		23.80
7.50		8.00	146.00	108.00	36.00	130.87		23.80
7.60		8.00	146.00	108.00	36.00	130.87		23.80
7.70		8.00	146.00	108.00	36.00	130.87		23.80
7.80		8.00	146.00	108.00	36.00	130.87		23.80
7.90		8.00	146.00	108.00	36.00	130.87		23.80
8.00		8.00	146.00	108.00	36.00	130.87		23.80
8.10		10.00	162.00	120.00	40.00	164.96		23.80
8.20		10.00	162.00	120.00	40.00	164.96		23.80
8.30		10.00	162.00	120.00	40.00	164.96		23.80
8.40		10.00	162.00	120.00	40.00	164.96		23.80
8.50		10.00	162.00	120.00	40.00	164.96		23.80
8.60		10.00	162.00	120.00	40.00	164.96		23.80
8.70		10.00	162.00	120.00	40.00	164.96		23.80
8.80		10.00	162.00	120.00	40.00	164.96		23.80
8.90		10.00	162.00	120.00	40.00	164.96		23.80
9.00		10.00	162.00	120.00	40.00	164.96		23.80
9.10		10.00	162.00	120.00	40.00	164.96		23.80
9.20		10.00	162.00	120.00	40.00	164.96		23.80
9.30		10.00	162.00	120.00	40.00	164.96		23.80
9.40		10.00	162.00	120.00	40.00	164.96		23.80
9.50		10.00	162.00	120.00	40.00	164.96		23.80
9.52	3/8	10.00	162.00	120.00	40.00	164.96		23.80
9.60		10.00	162.00	120.00	40.00	164.96		23.80
9.70		10.00	162.00	120.00	40.00	164.96		23.80
9.80		10.00	162.00	120.00	40.00	164.96		23.80
9.90		10.00	162.00	120.00	40.00	164.96		23.80
10.00		10.00	162.00	120.00	40.00	164.96		23.80
10.20		12.00	204.00	156.00	45.00	218.89		26.00
10.50		12.00	204.00	156.00	45.00	218.89		26.00
11.00		12.00	204.00	156.00	45.00	218.89		26.00
11.50		12.00	204.00	156.00	45.00	218.89		26.00
12.00		12.00	204.00	156.00	45.00	218.89		26.00
12.50		14.00	230.00	182.00	45.00	271.20		26.00
12.70	1/2	14.00	230.00	182.00	45.00	271.20		26.00
13.00		14.00	230.00	182.00	45.00	271.20		26.00
13.50		14.00	230.00	182.00	45.00	271.20		26.00
14.00		14.00	230.00	182.00	45.00	271.20		26.00
14.50		16.00	260.00	208.00	48.00	383.87		26.00
15.00		16.00	260.00	208.00	48.00	383.87		26.00
15.50		16.00	260.00	208.00	48.00	383.87		26.00
16.00		16.00	260.00	208.00	48.00	383.87		26.00
16.50		18.00	285.00	234.00	48.00	428.28		28.10
17.00		18.00	285.00	234.00	48.00	428.28		28.10
17.50		18.00	285.00	234.00	48.00	428.28		28.10
18.00		18.00	285.00	234.00	48.00	428.28		28.10
18.50		20.00	310.00	258.00	50.00	610.67		28.10
19.00		20.00	310.00	258.00	50.00	610.67		28.10
19.05	3/4	20.00	310.00	258.00	50.00	610.67		28.10
19.50		20.00	310.00	258.00	50.00	610.67		28.10

* for a min. quantity of 3 off,
< 3 off plus 50%

Article no.						5525		▼ regrinding ▼ recoating
Type						RT 100 U		
Cutting direction								Unit price in £*
d1		d2 h6	l1	l2	l3	GBP		
mm	inch	mm	mm	mm	mm			
20.00		20.00	310.00	258.00	50.00	610.67		28.10



GM 300

Toolholders and
clamping devices
for every application

Ratio drills with oil feed



Tool material

Solid carbide

Surface



Shank form

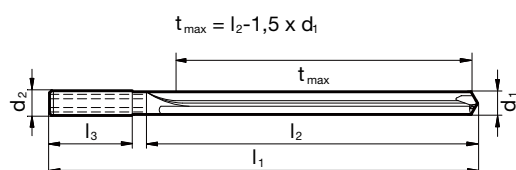
HA



regrinding



web thinning $\geq \varnothing 3.00$ • relieved cone • close diameter tolerances • very good surface quality of hole • observe coolant pressure



Article no.

5513

Type

RT 150 GG

Cutting direction



d1		d2 h6	l1	l2	l3
mm	inch	mm	mm	mm	mm
3.00		6.00	91.00	42.00	36.00
3.17	1/8	6.00	91.00	42.00	36.00
3.25		6.00	91.00	42.00	36.00
3.30		6.00	91.00	42.00	36.00
3.50		6.00	91.00	48.00	36.00
3.57	9/64	6.00	91.00	48.00	36.00
3.80		6.00	121.00	77.00	36.00
3.97	5/32	6.00	121.00	77.00	36.00
4.00		6.00	121.00	77.00	36.00
4.20		6.00	121.00	77.00	36.00
4.50		6.00	121.00	77.00	36.00
5.00		6.00	121.00	82.00	36.00
5.50		6.00	121.00	82.00	36.00
6.00		6.00	121.00	82.00	36.00
6.35	1/4	8.00	146.00	106.00	36.00
6.50		8.00	146.00	106.00	36.00
6.80		8.00	146.00	106.00	36.00
7.00		8.00	146.00	106.00	36.00
7.50		8.00	146.00	106.00	36.00
7.80		8.00	146.00	106.00	36.00
8.00		8.00	146.00	106.00	36.00
8.50		10.00	175.00	130.00	40.00
9.00		10.00	175.00	130.00	40.00
9.50		10.00	175.00	130.00	40.00
9.52	3/8	10.00	175.00	130.00	40.00
10.00		10.00	175.00	130.00	40.00
10.20		12.00	209.00	159.00	45.00
10.50		12.00	209.00	159.00	45.00
11.00		12.00	209.00	159.00	45.00
11.50		12.00	209.00	159.00	45.00
12.00		12.00	209.00	159.00	45.00
12.50		14.00	233.00	183.00	45.00
12.70	1/2	14.00	233.00	183.00	45.00
13.00		14.00	233.00	183.00	45.00
13.50		14.00	233.00	183.00	45.00
14.00		14.00	233.00	183.00	45.00

GBP

Unit price
in £*

43.24

43.24

43.24

43.24

43.24

43.24

43.24

43.24

53.76

14.70

53.76

14.70

53.76

14.70

53.76

14.70

53.76

14.70

70.27

15.10

70.27

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88.32

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88.32

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88.32

15.10

109.59

15.70

109.59

15.70

109.59

15.70

109.59

15.70

145.83

15.70

145.83

15.70

145.83

15.70

145.83

15.70

145.83

15.70

* for a min. quantity of 3 off,
< 3 off plus 50%

Article no.						5513	▼ regrinding
Type						RT 150 GG	
Cutting direction							
d1		d2 h6	l1	l2	l3	GBP	Unit price in £*
mm	inch	mm	mm	mm	mm		
14.50		16.00	260.00	207.00	48.00	184.60	15.70
15.00		16.00	260.00	207.00	48.00	184.60	15.70
15.50		16.00	260.00	207.00	48.00	184.60	15.70
16.00		16.00	260.00	207.00	48.00	184.60	15.70

* for a min. quantity of 3 off,
< 3 off plus 50%

GROOVING SYSTEMS

BY **GUHRING**

NEW

Boring out Grooving Internal threading Broaching Special tools

3-flute Ratio drills



Tool material

Solid carbide

Surface

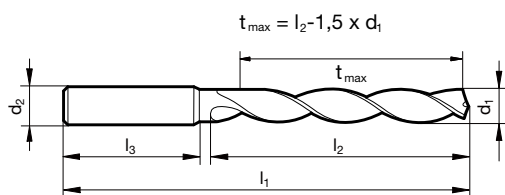


Shank form

HA



regrinding


web thinning $\geq \varnothing 3.00$ • spiro-point • wide flutes • optimal centering • suitable for interrupted cutting


Article no.

5518

Type

FT 200

Cutting direction



d1	d2 h6	l1	l2	l3
mm	mm	mm	mm	mm
3.00	6.00	66.00	28.00	36.00
3.10	6.00	66.00	28.00	36.00
3.20	6.00	66.00	28.00	36.00
3.30	6.00	66.00	28.00	36.00
3.50	6.00	66.00	28.00	36.00
3.70	6.00	66.00	28.00	36.00
3.80	6.00	74.00	36.00	36.00
4.00	6.00	74.00	36.00	36.00
4.10	6.00	74.00	36.00	36.00
4.20	6.00	74.00	36.00	36.00
4.50	6.00	74.00	36.00	36.00
4.80	6.00	82.00	44.00	36.00
5.00	6.00	82.00	44.00	36.00
5.10	6.00	82.00	44.00	36.00
5.20	6.00	82.00	44.00	36.00
5.30	6.00	82.00	44.00	36.00
5.50	6.00	82.00	44.00	36.00
5.80	6.00	82.00	44.00	36.00
6.00	6.00	82.00	44.00	36.00
6.10	8.00	91.00	53.00	36.00
6.20	8.00	91.00	53.00	36.00
6.40	8.00	91.00	53.00	36.00
6.50	8.00	91.00	53.00	36.00
6.70	8.00	91.00	53.00	36.00
6.80	8.00	91.00	53.00	36.00
7.00	8.00	91.00	53.00	36.00
7.10	8.00	91.00	53.00	36.00
7.40	8.00	91.00	53.00	36.00
7.50	8.00	91.00	53.00	36.00
7.80	8.00	91.00	53.00	36.00
8.00	8.00	91.00	53.00	36.00
8.10	10.00	103.00	61.00	40.00
8.20	10.00	103.00	61.00	40.00
8.40	10.00	103.00	61.00	40.00
8.50	10.00	103.00	61.00	40.00
8.60	10.00	103.00	61.00	40.00

GBP

Unit price
in £*

34.72

34.72

34.72

34.72

34.72

34.72

34.72

34.72

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34.72

41.70

41.70

41.70

41.70

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41.70

41.70

41.70

41.70

47.73

47.73

47.73

47.73

47.73

14.70

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14.70

15.10

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15.10

15.10

15.10

* for a min. quantity of 3 off,
< 3 off plus 50%

Article no.					5518	▼ regrinding	Unit price in £*
Type					FT 200		
Cutting direction							
d1	d2 h6	l1	l2	l3	GBP		
mm	mm	mm	mm	mm			
8.70	10.00	103.00	61.00	40.00	47.73		
8.80	10.00	103.00	61.00	40.00	47.73		15.10
9.00	10.00	103.00	61.00	40.00	47.73		15.10
9.10	10.00	103.00	61.00	40.00	47.73		15.10
9.50	10.00	103.00	61.00	40.00	47.73		15.10
9.80	10.00	103.00	61.00	40.00	47.73		15.10
10.00	10.00	103.00	61.00	40.00	47.73		15.10
10.10	12.00	118.00	71.00	45.00	70.13		15.70
10.20	12.00	118.00	71.00	45.00	70.13		15.70
10.30	12.00	118.00	71.00	45.00	70.13		15.70
10.50	12.00	118.00	71.00	45.00	70.13		15.70
11.00	12.00	118.00	71.00	45.00	70.13		15.70
11.20	12.00	118.00	71.00	45.00	70.13		15.70
11.50	12.00	118.00	71.00	45.00	70.13		15.70
11.80	12.00	118.00	71.00	45.00	70.13		15.70
12.00	12.00	118.00	71.00	45.00	70.13		15.70
12.10	14.00	124.00	77.00	45.00	91.97		15.70
12.50	14.00	124.00	77.00	45.00	91.97		15.70
13.00	14.00	124.00	77.00	45.00	91.97		15.70
13.50	14.00	124.00	77.00	45.00	91.97		15.70
14.00	14.00	124.00	77.00	45.00	91.97		15.70
14.50	16.00	133.00	83.00	48.00	113.51		15.70
15.00	16.00	133.00	83.00	48.00	113.51		15.70
15.50	16.00	133.00	83.00	48.00	113.51		15.70
16.00	16.00	133.00	83.00	48.00	113.51		15.70
16.50	18.00	143.00	93.00	48.00	175.94		16.10
17.00	18.00	143.00	93.00	48.00	175.94		16.10
17.50	18.00	143.00	93.00	48.00	175.94		16.10
18.00	18.00	143.00	93.00	48.00	175.94		16.10
18.50	20.00	153.00	101.00	50.00	237.64		16.10
19.00	20.00	153.00	101.00	50.00	237.64		16.10
19.50	20.00	153.00	101.00	50.00	237.64		16.10
20.00	20.00	153.00	101.00	50.00	237.64		16.10

* for a min. quantity of 3 off,
< 3 off plus 50%

Stub drills

3xD	N	DIN 6539	118°	h7
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Tool material

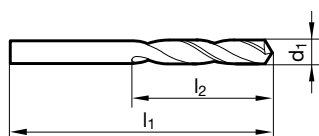
Solid carbide

Surface



Shank form

cyl.


web thinning $\geq \varnothing 2.10$ • facet point grinding • main cutting edge form straight


Article no. 5516				
Type N				
Cutting direction				
d1		l1	l2	GBP
mm	inch	mm	mm	
2.00		38.00	12.00	3.65
2.10		38.00	12.00	3.65
2.20		40.00	13.00	3.65
2.30		40.00	13.00	3.65
2.38	3/32	43.00	14.00	3.65
2.40		43.00	14.00	3.65
2.50		43.00	14.00	3.65
2.60		43.00	14.00	3.65
2.70		46.00	16.00	5.33
2.78	7/64	46.00	16.00	5.33
2.80		46.00	16.00	5.33
2.90		46.00	16.00	5.33
3.00		46.00	16.00	5.33
3.10		49.00	18.00	5.33
3.17	1/8	49.00	18.00	5.33
3.20		49.00	18.00	5.33
3.30		49.00	18.00	5.33
3.40		52.00	20.00	5.60
3.50		52.00	20.00	5.60
3.57	9/64	52.00	20.00	6.03
3.60		52.00	20.00	6.03
3.70		52.00	20.00	6.03
3.80		55.00	22.00	6.59
3.90		55.00	22.00	6.59
3.97	5/32	55.00	22.00	6.59
4.00		55.00	22.00	6.59
4.10		55.00	22.00	7.14
4.20		55.00	22.00	7.14
4.30		58.00	24.00	7.14
4.37	11/64	58.00	24.00	7.14
4.40		58.00	24.00	7.14
4.50		58.00	24.00	7.14
4.60		58.00	24.00	7.14
4.70		58.00	24.00	7.84
4.76	3/16	62.00	26.00	7.84
4.80		62.00	26.00	7.84

Article no. 5516				
Type N				
Cutting direction				
d1		l1	l2	GBP
mm	inch	mm	mm	
4.90		62.00	26.00	7.84
5.00		62.00	26.00	7.84
5.20		62.00	26.00	10.08
5.50		66.00	28.00	10.08
5.80		66.00	28.00	10.64
6.00		66.00	28.00	10.64
6.35	1/4	70.00	31.00	13.31
6.50		70.00	31.00	13.31
6.80		74.00	34.00	16.67
7.00		74.00	34.00	15.96
7.14	9/32	74.00	34.00	18.76
7.50		74.00	34.00	18.76
7.94	5/16	79.00	37.00	21.41
8.00		79.00	37.00	21.41
8.50		79.00	37.00	26.32
8.73	11/32	84.00	40.00	28.72
8.80		84.00	40.00	28.72
9.00		84.00	40.00	27.43
9.50		84.00	40.00	29.68
10.00		89.00	43.00	31.92
10.20		89.00	43.00	36.83
10.50		89.00	43.00	36.83
11.00		95.00	47.00	40.72
11.11	7/16	95.00	47.00	46.74
11.50		95.00	47.00	46.74
11.91	15/32	102.00	51.00	46.74
12.00		102.00	51.00	46.74

Jobber drills

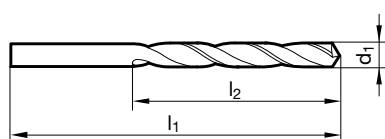
Tool material **Solid carbide**

Surface

Shank form cyl.



SL Drills

web thinning $\geq \varnothing 2.10$ • facet point grinding • main cutting edge form straight

Article no. 5517				
Type N				
Cutting direction				
d1		l1	l2	GBP
mm	inch	mm	mm	
2.00		49.00	24.00	4.48
2.10		49.00	24.00	5.18
2.20		53.00	27.00	5.60
2.30		53.00	27.00	5.60
2.38	3/32	57.00	30.00	5.60
2.40		57.00	30.00	5.60
2.50		57.00	30.00	5.60
2.60		57.00	30.00	7.84
2.70		61.00	33.00	7.84
2.78	7/64	61.00	33.00	7.84
2.80		61.00	33.00	7.84
2.90		61.00	33.00	7.84
3.00		61.00	33.00	7.14
3.10		65.00	36.00	7.14
3.17	1/8	65.00	36.00	7.14
3.20		65.00	36.00	7.14
3.30		65.00	36.00	7.14
3.40		70.00	39.00	8.28
3.50		70.00	39.00	7.84
3.57	9/64	70.00	39.00	8.84
3.60		70.00	39.00	8.84
3.70		70.00	39.00	8.84
3.80		75.00	43.00	8.84
3.90		75.00	43.00	8.84
3.97	5/32	75.00	43.00	8.84
4.00		75.00	43.00	8.84
4.10		75.00	43.00	9.25
4.20		75.00	43.00	9.25
4.30		80.00	47.00	12.05
4.37	11/64	80.00	47.00	12.05
4.40		80.00	47.00	12.05
4.50		80.00	47.00	11.07
4.60		80.00	47.00	12.73
4.70		80.00	47.00	12.73
4.76	3/16	86.00	52.00	12.73
4.80		86.00	52.00	12.73

Article no. 5517				
Type N				
Cutting direction				
d1		l1	l2	GBP
mm	inch	mm	mm	
4.90		86.00	52.00	12.73
5.00		86.00	52.00	12.05
5.16	13/64	86.00	52.00	16.67
5.50		93.00	57.00	16.67
5.56	7/32	93.00	57.00	17.08
5.95	15/64	93.00	57.00	17.08
6.00		93.00	57.00	17.08
6.35	1/4	101.00	63.00	21.41
6.50		101.00	63.00	21.41
6.80		109.00	69.00	25.36
7.00		109.00	69.00	25.36
7.14	9/32	109.00	69.00	28.72
7.50		109.00	69.00	25.36
7.94	5/16	117.00	75.00	32.48
8.00		117.00	75.00	29.68
8.50		117.00	75.00	34.72
8.73	11/32	125.00	81.00	39.47
9.00		125.00	81.00	35.70
9.50		125.00	81.00	39.47
10.00		133.00	87.00	43.95
10.20		133.00	87.00	52.78
10.50		133.00	87.00	50.95
11.00		142.00	94.00	62.02
11.11	7/16	142.00	94.00	65.78
11.50		142.00	94.00	65.78
11.91	15/32	151.00	101.00	65.78
12.00		151.00	101.00	71.81

Stub drills

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Tool material

HSCO

HSS-E-PM

Surface

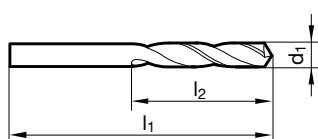


Shank form

cyl.

cyl.

cyl.


web thinning $\geq \varnothing 1.00$


Article no.

5524

5520

5521

Type

GU 500 DZ

GU 500 DZ

GT 500 DZ

Cutting direction



d1		l1	l2	GBP		
mm	inch	mm	mm			
1.00		26.00	6.00	1.55	3.86	7.45
1.10		28.00	7.00	1.55	3.86	7.45
1.20		30.00	8.00	1.55	4.12	7.59
1.30		30.00	8.00	1.55	4.37	7.97
1.40		32.00	9.00	1.55	3.86	7.45
1.50		32.00	9.00	1.55	3.73	7.07
1.60		34.00	10.00	1.55	3.86	7.19
1.70		34.00	10.00	1.55	3.86	7.19
1.80		36.00	11.00	1.55	3.86	7.19
1.90		36.00	11.00	1.55	3.86	7.19
2.00		38.00	12.00	1.55	3.23	6.17
2.10		38.00	12.00	1.55	3.86	6.81
2.20		40.00	13.00	1.55	3.86	7.45
2.30		40.00	13.00	1.55	3.34	7.45
2.38	3/32	43.00	14.00	1.55	3.73	7.45
2.40		43.00	14.00	1.55	4.12	7.71
2.50		43.00	14.00	1.55	3.47	6.56
2.60		43.00	14.00	1.55	4.24	7.71
2.70		46.00	16.00	1.69	4.37	7.33
2.78	7/64	46.00	16.00	1.69	4.24	6.17
2.80		46.00	16.00	1.69	4.12	7.97
2.90		46.00	16.00	1.69	4.37	7.07
3.00		46.00	16.00	1.55	3.73	6.81
3.10		49.00	18.00	1.69	3.86	7.07
3.17	1/8	49.00	18.00	1.69	3.86	7.07
3.20		49.00	18.00	1.69	3.73	7.59
3.30		49.00	18.00	1.69	3.73	7.71
3.40		52.00	20.00	1.80	4.37	6.94
3.50		52.00	20.00	1.80	3.73	7.45
3.57	9/64	52.00	20.00	1.80	4.24	7.07
3.60		52.00	20.00	1.80	4.64	6.17
3.70		52.00	20.00	1.80	4.24	6.56
3.80		55.00	22.00	1.93	4.50	7.45
3.90		55.00	22.00	1.93	5.14	8.36
3.97	5/32	55.00	22.00	1.93	4.64	7.45
4.00		55.00	22.00	1.93	4.24	6.94

Article no.				5524	5520	5521
Type				GU 500 DZ	GU 500 DZ	GT 500 DZ
Cutting direction						
d1		l1	l2	GBP		
mm	inch	mm	mm			
4.10		55.00	22.00	1.93	4.75	7.97
4.20		55.00	22.00	1.93	4.24	7.07
4.30		58.00	24.00	1.93	4.75	7.85
4.37	11/64	58.00	24.00	1.93	5.03	8.10
4.40		58.00	24.00	1.93	5.14	8.36
4.50		58.00	24.00	1.93	4.75	7.07
4.60		58.00	24.00	1.93	4.75	8.87
4.70		58.00	24.00	1.93	5.14	8.36
4.76	3/16	62.00	26.00	1.93	5.29	8.36
4.80		62.00	26.00	1.93	5.40	9.00
4.90		62.00	26.00	1.93	5.40	9.12
5.00		62.00	26.00	1.93	4.64	7.71
5.10		62.00	26.00	2.07	5.03	7.97
5.16	13/64	62.00	26.00	2.07	5.29	8.23
5.20		62.00	26.00	2.07	5.40	9.26
5.30		62.00	26.00	2.07	5.66	8.87
5.40		66.00	28.00	2.31	6.04	9.63
5.50		66.00	28.00	2.19	5.14	8.23
5.56	7/32	66.00	28.00	2.46	5.66	9.90
5.60		66.00	28.00	2.46	6.17	9.90
5.70		66.00	28.00	2.46	6.56	10.42
5.80		66.00	28.00	2.46	6.31	10.68
5.90		66.00	28.00	2.46	6.56	10.42
5.95	15/64	66.00	28.00	2.46	6.17	10.02
6.00		66.00	28.00	2.31	5.53	8.75
6.10		70.00	31.00	2.71	6.56	10.29
6.20		70.00	31.00	2.71	6.56	10.29
6.30		70.00	31.00	2.71	6.94	10.79
6.35	1/4	70.00	31.00	2.71	6.94	10.68
6.40		70.00	31.00	2.71	6.94	10.68
6.50		70.00	31.00	2.58	6.56	9.00
6.60		70.00	31.00	2.84	7.19	11.32
6.70		70.00	31.00	2.84	7.45	11.70
6.80		74.00	34.00	3.34	7.97	10.52
6.90		74.00	34.00	3.34	7.85	12.48
7.00		74.00	34.00	3.34	7.33	13.74
7.10		74.00	34.00	4.12	8.87	15.15
7.14	9/32	74.00	34.00	4.12	9.00	14.51
7.20		74.00	34.00	4.12	9.00	15.04
7.30		74.00	34.00	4.12	9.00	15.04
7.40		74.00	34.00	4.12	9.12	15.15
7.50		74.00	34.00	3.47	7.59	14.39
7.60		79.00	37.00	4.50	9.76	16.06
7.70		79.00	37.00	4.50	9.76	16.06
7.80		79.00	37.00	4.50	9.76	13.74
7.90		79.00	37.00	4.50	9.76	16.06
7.94	5/16	79.00	37.00	4.50	9.26	17.33
8.00		79.00	37.00	3.73	9.00	15.04
8.10		79.00	37.00	4.50	11.56	19.01
8.20		79.00	37.00	4.50	11.95	19.65
8.30		79.00	37.00	4.50	12.20	20.04
8.40		79.00	37.00	4.50	12.20	20.04
8.50		79.00	37.00	3.86	10.52	16.70
8.60		84.00	40.00	6.81	13.24	
8.70		84.00	40.00	5.28	16.44	
8.73	11/32	84.00	40.00	5.29	11.82	18.24
8.80		84.00	40.00	5.29	13.24	23.51
8.90		84.00	40.00	5.28	16.43	
9.00		84.00	40.00	4.50	10.68	18.38
9.10		84.00	40.00	5.65	15.48	

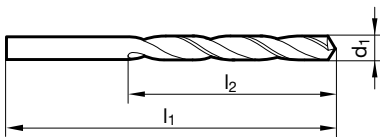
Article no.				5524	5520	5521
Type				GU 500 DZ	GU 500 DZ	GT 500 DZ
Cutting direction						
d1		l1	l2	GBP		
mm	inch	mm	mm			
9.20		84.00	40.00	5.65	16.43	
9.30		84.00	40.00	5.66	12.20	27.48
9.40		84.00	40.00	5.65	16.75	
9.50		84.00	40.00	5.03	11.82	22.10
9.60		89.00	43.00	9.55	18.02	
9.70		89.00	43.00	9.55	18.01	
9.80		89.00	43.00	6.31	14.00	23.76
9.90		89.00	43.00	9.55	18.02	
10.00		89.00	43.00	5.66	11.56	21.20
10.10		89.00	43.00	8.07	18.01	
10.20		89.00	43.00	7.33	14.65	31.22
10.30		89.00	43.00	7.33	14.65	
10.40		89.00	43.00	9.49	14.65	
10.50		89.00	43.00	7.33	13.89	30.19
11.00		95.00	47.00	8.48	15.55	30.19
11.11	7/16	95.00	47.00	9.76	16.58	35.57
11.50		95.00	47.00	9.76	17.87	31.85
12.00		102.00	51.00	10.15	17.33	36.61
12.50		102.00	51.00	12.48	19.14	39.93
13.00		102.00	51.00	14.65	19.14	39.93
13.50		107.00	54.00	15.15	20.44	42.52
14.00		107.00	54.00	15.81	25.29	52.79

Jobber drills

~5xD	DIN 338	h8
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Tool material	HSS	HSCO	HSS-E-PM
Surface			
Shank form	cyl.	cyl.	cyl.

SL Drills

web thinning $\geq \varnothing 1.00$ 

Article no.				9651	5523	5519	5522
Type				N	GU 500 DZ	GU 500 DZ	GT 500 DZ
Cutting direction							
d1		l1	l2	GBP			
mm	inch	mm	mm				
1.00		34.00	12.00	0.96	1.55	3.23	8.23
1.10		36.00	14.00	1.10	1.55	3.47	8.10
1.19	3/64	38.00	16.00	1.09			
1.20		38.00	16.00	1.01	1.55	3.34	8.36
1.30		38.00	16.00	0.96	1.55	3.47	8.87
1.40		40.00	18.00	0.92	1.55	3.47	8.10
1.50		40.00	18.00	0.73	1.55	3.23	7.85
1.59	1/16	43.00	20.00	0.72			
1.60		43.00	20.00	0.72	1.55	3.23	7.97
1.70		43.00	20.00	0.85	1.55	3.47	7.97
1.80		46.00	22.00	0.83	1.55	3.47	7.97
1.90		46.00	22.00	0.81	1.55	3.47	7.97
1.98	5/64	49.00	24.00	0.83			
2.00		49.00	24.00	0.66	1.55	3.34	6.81
2.10		49.00	24.00	0.78	1.55	3.47	7.45
2.20		53.00	27.00	0.78	1.55	3.73	8.10
2.30		53.00	27.00	0.78	1.55	3.61	8.10
2.38	3/32	57.00	30.00	0.65	1.55	3.61	8.23
2.40		57.00	30.00	0.78	1.55	3.34	8.36
2.50		57.00	30.00	0.65	1.55	3.47	7.33
2.60		57.00	30.00	0.78	1.55	3.61	8.87
2.70		61.00	33.00	0.78	1.69	3.73	8.36
2.78	7/64	61.00	33.00	0.77	1.69	3.73	7.19
2.80		61.00	33.00	0.80	1.69	3.73	9.26
2.90		61.00	33.00	0.69	1.69	3.73	8.10
3.00		61.00	33.00	0.67	1.55	3.61	7.71
3.10		65.00	36.00	0.85	1.69	4.12	8.10
3.17	1/8	65.00	36.00	0.67	1.69	3.86	8.10
3.20		65.00	36.00	0.83	1.69	3.86	8.87
3.30		65.00	36.00	0.72	1.69	4.12	8.87
3.40		70.00	39.00	0.89	1.80	4.37	7.97
3.50		70.00	39.00	0.73	1.80	4.37	8.36
3.57	9/64	70.00	39.00	0.87	1.80	4.37	8.10
3.60		70.00	39.00	0.91	1.80	4.37	7.07
3.70		70.00	39.00	0.78	1.80	4.37	7.59
3.80		75.00	43.00	0.96	1.93	4.64	8.36

Article no.				9651	5523	5519	5522
Type				N	GU 500 DZ	GU 500 DZ	GT 500 DZ
Cutting direction				(R)	(R)	(R)	(R)
d1		l1	l2	GBP			
mm	inch	mm	mm				
3.90		75.00	43.00	0.99	1.93	4.75	9.76
3.97	5/32	75.00	43.00	0.81	1.93	4.64	8.48
4.00		75.00	43.00	0.81	1.93	4.50	7.85
4.10		75.00	43.00	0.84	1.93	4.64	9.12
4.20		75.00	43.00	0.86	1.93	4.64	8.10
4.30		80.00	47.00	1.09	1.93	4.89	9.00
4.37	11/64	80.00	47.00	1.09	1.93	4.89	9.26
4.40		80.00	47.00	1.12	1.93	4.89	9.76
4.50		80.00	47.00	0.89	2.46	4.75	7.97
4.60		80.00	47.00	1.17	1.93	5.03	10.15
4.70		80.00	47.00	1.18	1.93	5.03	9.76
4.76	3/16	86.00	52.00	0.99	2.07	5.14	9.76
4.80		86.00	52.00	1.21	1.93	5.14	10.29
4.90		86.00	52.00	1.22	2.07	5.29	10.52
5.00		86.00	52.00	1.04	2.07	5.14	8.87
5.10		86.00	52.00	1.29	2.07	5.29	9.63
5.16	13/64	86.00	52.00	1.32	2.07	5.29	9.76
5.20		86.00	52.00	1.36	2.07	5.29	11.04
5.30		86.00	52.00	1.38	2.07	5.66	10.68
5.40		93.00	57.00	1.41	2.31	6.31	11.56
5.50		93.00	57.00	1.42	2.19	6.17	9.90
5.56	7/32	93.00	57.00	1.21	2.46	6.17	11.82
5.60		93.00	57.00	1.50	2.46	6.42	11.70
5.70		93.00	57.00	1.56	2.46	6.42	12.48
5.80		93.00	57.00	1.59	2.46	6.42	12.86
5.90		93.00	57.00	1.64	2.46	6.56	12.48
5.95	15/64	93.00	57.00	1.74	2.46	6.31	11.95
6.00		93.00	57.00	1.37	2.31	6.17	10.42
6.10		101.00	63.00	1.74	2.71	7.07	12.48
6.20		101.00	63.00	1.78	2.71	6.94	12.48
6.30		101.00	63.00	1.80	2.71	6.81	12.98
6.35	1/4	101.00	63.00	1.51	2.71	6.94	12.86
6.40		101.00	63.00	1.89	2.71	6.94	12.86
6.50		101.00	63.00	1.56	2.71	7.45	10.79
6.60		101.00	63.00	1.96	2.84	7.59	13.62
6.70		101.00	63.00	2.03	2.84	7.71	14.00
6.75	17/64	109.00	69.00	2.01			
6.80		109.00	69.00	1.69	3.47	8.36	13.74
6.90		109.00	69.00	2.14	3.47	8.36	14.90
7.00		109.00	69.00	1.77	3.34	8.36	16.44
7.10		109.00	69.00	2.24	4.12	9.26	18.24
7.14	9/32	109.00	69.00	1.90	4.12	9.26	17.33
7.20		109.00	69.00	2.29	4.12	9.26	17.99
7.30		109.00	69.00	2.38	4.12	9.76	17.99
7.40		109.00	69.00	2.43	4.12	9.76	18.11
7.50		109.00	69.00	2.03	3.47	8.87	17.33
7.54	19/64	117.00	75.00	2.63			
7.60		117.00	75.00	2.55	4.50	10.52	19.14
7.70		117.00	75.00	2.63	4.50	10.29	19.27
7.80		117.00	75.00	2.70	4.50	10.42	16.18
7.90		117.00	75.00	2.77	4.50	10.93	19.14
7.94	5/16	117.00	75.00	2.25	4.50	10.42	20.80
8.00		117.00	75.00	2.28	3.73	10.02	17.99
8.10		117.00	75.00	2.89	4.50	10.79	23.76
8.20		117.00	75.00	2.94	4.50	10.68	24.78
8.30		117.00	75.00	3.02	4.50	10.68	24.78
8.33	21/64	117.00	75.00	3.18			
8.40		117.00	75.00	3.12	4.50	11.18	24.78
8.50		117.00	75.00	2.60	3.86	10.15	21.06
8.60		125.00	81.00	3.29	6.81	11.04	

Article no.				9651	5523	5519	5522
Type				N	GU 500 DZ	GU 500 DZ	GT 500 DZ
Cutting direction				(R)	(R)	(R)	(R)
d1		l1	l2	GBP			
mm	inch	mm	mm				
8.70		125.00	81.00	3.35	5.29	14.92	
8.73	11/32	125.00	81.00	2.77	5.29	11.04	22.60
8.80		125.00	81.00	3.42	5.29	11.95	29.16
8.90		125.00	81.00	3.53	7.52		
9.00		125.00	81.00	2.92	4.50	11.18	23.26
9.10		125.00	81.00	3.69	6.03	11.32	
9.13	23/64	125.00	81.00	3.89			
9.20		125.00	81.00	3.76	6.03	12.20	
9.30		125.00	81.00	3.85	5.66	12.20	34.54
9.40		125.00	81.00	3.95	6.03	12.07	
9.50		125.00	81.00	3.28	5.03	11.82	27.48
9.52	3/8	133.00	87.00	3.30			
9.60		133.00	87.00	4.16	8.11	12.07	
9.70		133.00	87.00	4.19	8.11	13.74	
9.80		133.00	87.00	4.28	6.31	13.74	29.67
9.90		133.00	87.00	4.45	9.37	20.80	
9.92	25/64	133.00	87.00	4.67			
10.00		133.00	87.00	3.66	5.66	13.36	26.46
10.10		133.00	87.00	5.47	9.49	15.54	
10.20		133.00	87.00	5.57	7.45	15.42	40.46
10.30		133.00	87.00	5.81	9.49	15.55	
10.32	13/32	133.00	87.00	4.03			
10.40		133.00	87.00	6.03	9.49	15.54	
10.50		133.00	87.00	4.08	7.45	15.55	39.30
10.60		133.00	87.00	6.25			
10.70		142.00	94.00	6.40			
10.72	27/64	142.00	94.00	5.42			
10.80		142.00	94.00	6.50			
10.90		142.00	94.00	6.67			
11.00		142.00	94.00	4.56	8.48	16.06	39.30
11.10		142.00	94.00	6.99			
11.11	7/16	142.00	94.00	4.69	9.76	16.83	46.36
11.20		142.00	94.00	7.06			
11.30		142.00	94.00	7.23			
11.40		142.00	94.00	7.42			
11.50		142.00	94.00	5.02	9.76	17.87	41.49
11.51	29/64	142.00	94.00	6.58			
11.60		142.00	94.00	7.64			
11.70		142.00	94.00	7.76			
11.80		142.00	94.00	8.08			
11.90		151.00	101.00	8.08			
11.91	15/32	151.00	101.00	5.50			
12.00		151.00	101.00	5.64	10.15	18.89	47.38
12.10		151.00	101.00	10.61			
12.20		151.00	101.00	10.85			
12.30	31/64	151.00	101.00	7.59			
12.40		151.00	101.00	10.99			
12.50		151.00	101.00	6.20	12.48	19.53	51.76
12.60		151.00	101.00	11.69			
12.70	1/2	151.00	101.00	9.35			
12.80		151.00	101.00	12.13			
12.90		151.00	101.00	12.37			
13.00		151.00	101.00	6.85	14.65	20.95	51.76
13.10	33/64	151.00	101.00	10.99			
13.20		151.00	101.00	13.44			
13.25		160.00	108.00	14.46			
13.30		160.00	108.00	14.64			
13.40		160.00	108.00	15.06			
13.49	17/32	160.00	108.00	12.08			
13.50		160.00	108.00	11.53	16.58	24.28	54.96



Article no.				9651	5523	5519	5522
Type				N	GU 500 DZ	GU 500 DZ	GT 500 DZ
Cutting direction							
d1		l1	l2	GBP			
mm	inch	mm	mm				
13.60		160.00	108.00	15.48			
13.70		160.00	108.00	15.73			
13.75		160.00	108.00	15.69			
13.80		160.00	108.00	15.78			
13.89	35/64	160.00	108.00	13.11			
13.90		160.00	108.00	16.40			
14.00		160.00	108.00	11.83	17.33	25.29	68.97
14.25		169.00	114.00	17.00			
14.29	9/16	169.00	114.00	13.15			
14.50		169.00	114.00	17.00			
14.68	37/64	169.00	114.00	18.41			
14.75		169.00	114.00	18.71			
15.00		169.00	114.00	15.23			
15.08	19/32	178.00	120.00	16.22			
15.25		178.00	120.00	20.91			
15.48	39/64	178.00	120.00	21.76			
15.50		178.00	120.00	19.83			
15.75		178.00	120.00	22.86			
16.00		178.00	120.00	18.07			

Long series twist drills



Tool material

HSCO

Surface



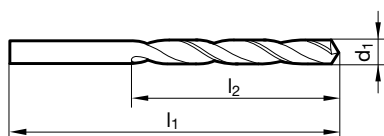
Shank form

cyl.

cyl.



web thinning $\geq \varnothing 1.00$ • facet point grinding • Co-alloyed high speed steel • low feed force required
• low torque required • increased wear resistance • universal application



Article no.			5536	5537
Type			GU 500 DZ	GU 500 DZ
Cutting direction				
d1	l1	l2	GBP	
mm	mm	mm		
1.00	56.00	33.00	3.96	7.11
1.10	60.00	37.00	5.36	8.04
1.20	65.00	41.00	4.90	8.97
1.30	65.00	41.00	5.02	8.86
1.40	70.00	45.00	5.36	8.75
1.50	70.00	45.00	4.20	7.57
1.60	76.00	50.00	5.26	8.97
1.70	76.00	50.00	5.13	9.78
1.80	80.00	53.00	5.13	9.45
1.90	80.00	53.00	4.78	10.02
2.00	85.00	56.00	3.85	7.46
2.10	85.00	56.00	4.32	8.62
2.20	90.00	59.00	4.32	8.75
2.30	90.00	59.00	4.32	8.62
2.40	95.00	62.00	4.43	7.92
2.50	95.00	62.00	3.96	7.57
2.60	95.00	62.00	4.55	8.75
2.70	100.00	66.00	4.78	9.22
2.80	100.00	66.00	5.13	8.86
2.90	100.00	66.00	4.67	9.22
3.00	100.00	66.00	4.08	8.16
3.10	106.00	69.00	4.90	9.78
3.20	106.00	69.00	4.67	9.09
3.30	106.00	69.00	5.13	9.67
3.40	112.00	73.00	4.90	10.02
3.50	112.00	73.00	5.02	9.78
3.60	112.00	73.00	5.26	10.13
3.70	112.00	73.00	5.26	9.92
3.80	119.00	78.00	5.02	9.56
3.90	119.00	78.00	4.90	10.73
4.00	119.00	78.00	5.26	10.38
4.10	119.00	78.00	4.90	10.48
4.20	119.00	78.00	4.67	10.13
4.30	126.00	82.00	5.02	11.32
4.40	126.00	82.00	5.48	10.02
4.50	126.00	82.00	6.30	10.73

Article no.			5536	5537
Type			GU 500 DZ	GU 500 DZ
Cutting direction				
d1	l1	l2	GBP	
mm	mm	mm		
4.60	126.00	82.00	4.78	10.27
4.70	126.00	82.00	5.36	11.88
4.80	132.00	87.00	4.90	11.54
4.90	132.00	87.00	5.59	11.78
5.00	132.00	87.00	5.26	11.88
5.10	132.00	87.00	5.72	13.18
5.20	132.00	87.00	5.83	12.94
5.30	132.00	87.00	6.66	14.21
5.40	139.00	91.00	7.35	13.29
5.50	139.00	91.00	4.67	12.35
5.60	139.00	91.00	7.82	16.07
5.70	139.00	91.00	7.92	17.83
5.80	139.00	91.00	4.55	15.60
5.90	139.00	91.00	8.39	17.48
6.00	139.00	91.00	6.41	14.79
6.10	148.00	97.00	8.86	17.60
6.20	148.00	97.00	8.86	15.74
6.30	148.00	97.00	8.39	17.60
6.40	148.00	97.00	8.75	15.96
6.50	148.00	97.00	6.53	15.39
6.60	148.00	97.00	9.78	17.70
6.70	148.00	97.00	9.78	18.17
6.80	156.00	102.00	9.67	19.47
6.90	156.00	102.00	10.96	20.16
7.00	156.00	102.00	8.86	18.29
7.10	156.00	102.00	11.18	17.70
7.20	156.00	102.00	11.78	20.26
7.30	156.00	102.00	12.12	21.20
7.40	156.00	102.00	12.35	22.03
7.50	156.00	102.00	12.94	22.35
7.60	165.00	109.00	10.27	21.20
7.70	165.00	109.00	11.32	22.60
7.80	165.00	109.00	12.35	25.06
7.90	165.00	109.00	12.58	24.00
8.00	165.00	109.00	8.97	20.39
8.10	165.00	109.00	13.18	22.50

Article no.		5536	5537
Type		GU 500 DZ	GU 500 DZ
Cutting direction			
d1	l1	l2	GBP
mm	mm	mm	
8.20	165.00	109.00	12.94 24.58
8.30	165.00	109.00	12.94 25.97
8.40	165.00	109.00	14.57 27.96
8.50	165.00	109.00	11.18 24.00
8.60	175.00	115.00	14.21 23.76
8.70	175.00	115.00	17.37 24.00
8.80	175.00	115.00	15.74 24.45
8.90	175.00	115.00	18.99 24.81
9.00	175.00	115.00	10.84 25.27
9.10	175.00	115.00	17.01 25.27
9.20	175.00	115.00	18.06 25.27
9.30	175.00	115.00	14.92 25.27
9.40	175.00	115.00	15.50 25.27
9.50	175.00	115.00	13.74 25.27
9.60	184.00	121.00	21.32 26.68
9.70	184.00	121.00	27.37 27.96
9.80	184.00	121.00	18.99 29.94
9.90	184.00	121.00	25.06 32.51

Article no.		5536	5537
Type		GU 500 DZ	GU 500 DZ
Cutting direction			
d1	l1	l2	GBP
mm	mm	mm	
10.00	184.00	121.00	17.95 35.17
10.10	184.00	121.00	18.99 38.34
10.20	184.00	121.00	19.94 41.00
10.30	184.00	121.00	20.50 44.15
10.40	184.00	121.00	21.20 44.15
10.50	184.00	121.00	22.35 44.84
11.00	195.00	128.00	26.68 53.35
11.50	195.00	128.00	27.37 53.93
12.00	205.00	134.00	25.06 54.64
12.50	205.00	134.00	29.94 59.87
13.00	205.00	134.00	32.51 64.99
13.50	214.00	140.00	35.17 66.27
14.00	214.00	140.00	37.73 68.95

Solid carbide micro-precision drills without coolant ducts

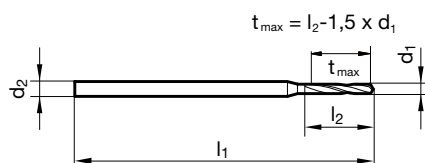
Tool material **Solid carbide**

Surface

Shank form cyl.



SL Drills

web thinning $\geq \varnothing 0.800$ • facet point grindingArticle no. **5652**Type **N**

Cutting direction

d1	d2	l1	l2	GBP
mm	mm	mm	mm	
0.10	3.00	38.00	1.20	14.86
0.20	3.00	38.00	2.50	15.80
0.30	3.00	38.00	5.00	17.31
0.40	3.00	38.00	7.00	19.35
0.50	3.00	38.00	7.00	18.88
0.60	3.00	38.00	7.00	17.31
0.70	3.00	38.00	8.00	16.09
0.80	3.00	38.00	10.00	16.43
0.90	3.00	38.00	10.00	18.50
1.00	3.00	38.00	10.00	16.81
1.10	3.00	38.00	10.00	16.81
1.20	3.00	38.00	10.00	18.50
1.30	3.00	38.00	10.00	18.50
1.40	3.00	38.00	10.00	18.50
1.50	3.00	38.00	10.00	18.50
1.60	3.00	38.00	12.00	18.88
1.70	3.00	38.00	12.00	18.88
1.80	3.00	38.00	12.00	16.81

Article no. **5652**Type **N**

Cutting direction

d1	d2	l1	l2	GBP
mm	mm	mm	mm	
1.90	3.00	38.00	12.00	18.88
2.00	3.00	38.00	12.00	18.50
2.10	3.00	38.00	12.00	16.81
2.20	3.00	38.00	12.00	17.31
2.40	3.00	38.00	12.00	16.43
2.50	3.00	38.00	12.00	16.81
2.60	3.00	38.00	12.00	18.50
2.80	3.00	38.00	12.00	20.30
3.00	3.00	38.00	12.00	16.81

SOLID CARBIDE MICRO-PRECISION DRILLS
WITH INTERNAL COOLINGfrom $\varnothing 1.4$ mm for drilling depths up to 5xD, 8xD, 15xD
can be found in our ExclusiveLine® programme.

EXCLUSIVELINE®



90° NC-spotting drills

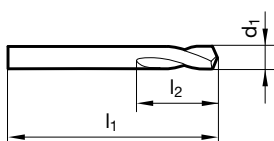

Tool material **Solid carbide**

Surface **F**

Shank form cyl.



facet point grinding • only suitable for spotting


Article no. **5508**

Type **N**

Cutting direction

d1	l1	l2
mm	mm	mm
3.00	46.00	12.00
4.00	55.00	12.00
5.00	62.00	14.00
6.00	66.00	16.00
8.00	79.00	21.00
10.00	89.00	25.00
12.00	102.00	30.00

GBP
19.82
19.82
18.88
21.27
32.11
46.28
62.36

Unit price
in £*

8.90
8.90
8.90
11.20
11.20
11.20

* for a min. quantity of 3 off,
< 3 off plus 50%

120° NC-spotting drills



Tool material

Solid carbide

Surface

F

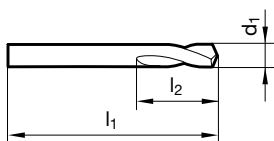
Shank form

cyl.



SL Drills

facet point grinding • only suitable for spotting



Article no.

5509

Type

N

Cutting direction



d1	l1	l2
mm	mm	mm
3.00	46.00	12.00
4.00	55.00	12.00
5.00	62.00	14.00
6.00	66.00	16.00
8.00	79.00	21.00
10.00	89.00	25.00
12.00	102.00	30.00

GBP

Unit price
in £*

14.92

8.90

17.37

8.90

20.30

8.90

21.71

11.20

34.00

11.20

48.20

11.20

65.19

* for a min. quantity of 3 off,
< 3 off plus 50%

142° NC-spotting drills



Tool material

Solid carbide

Surface



Shank form

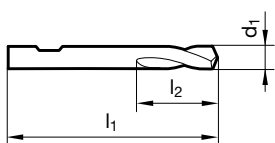
HB



regrinding



facet point grinding • only suitable for spotting



Article no.

5649

Type

N

Cutting direction



d1	l1	l2
mm	mm	mm
4.00	55.00	12.00
6.00	66.00	16.00
8.00	79.00	21.00
10.00	89.00	25.00
12.00	102.00	30.00
16.00	115.00	37.50
20.00	131.00	45.00

GBP

Unit price
in £*

16.72

7.10

24.57

7.10

35.43

8.90

51.02

8.90

68.50

13.30

105.50

13.30

165.80

17.80

* for a min. quantity of 3 off,
< 3 off plus 50%

NC spotting drills

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



Set of jobber drills

~5xD

GU500
DZ

DIN
338


118°

h8

Tool material	HSCO
Surface	
Shank form	cyl. 

SL Drills

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



Article no.				12
Type				GU 500 DZ
Cutting direction				
d1	increasing by	Pieces/set	Code no.	GBP
		Piece		
1.0-13.0	0,5	25	7.014	63.84
1.0-10.5	0,5	24	7.018	55.35

Set of jobber drills

~5xD	N	DIN 338	h8
------	---	------------	----

Tool material **HSS**

Surface **S**

Shank form cyl.



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


Article no. **234**

Type **N**

Cutting direction **R**

d1	increasing by	Pieces/set	Code no.	GBP
		Piece		
1.0-13.0	0,5	25	6.014	74.07
1.0-10.0	0,5	19	6.013	40.63
1.0-5.9	0,1	50	6.015	128.52
6.0-10.0	0,1	41	6.016	271.63
1.0-10.5	0,5	24	6.018	114.14



TM

Tool Management
Powered by

GUHRING



Optimal storage, for all types of consumable articles

GUHRING NAVIGATOR Ratio drills

Generally recommendations:

For safety reasons it is very important, that a drill does not exceed a speed of $n = 6,000 \text{ rev./min}$ 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 $\geq 7xD$:
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

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.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

Cooling:

without coolant ducts
with coolant ducts

Coolant:

○ Air
● Neat oil
● Soluble oil

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

Material group	Material examples Figures in bold = material no. to DIN EN 10 027	Tensile strength 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 hard. 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, 1.8668 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	Epoxy resin, Resopal, Pertinax, Moltopren	≤150		○
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		○
Kevlar	Kevlar	≤1000		○
Glass, carbon concentr. plastics	GFK/CFK	≤1000		○

≤3xD				≤5xD				≤7xD	≤10xD	≤12xD
5652	5510	5514	5526	5511	5515	5580	5518	5512	5513	5525
WN	6537K	6537K	6537K	6537L	6537L	6537L	6537L	C. Std.	C. Std.	C. Std.
SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
K/P	K/P	K/P	K/P	K/P	K/P	K/P	K	K/P	K	K/P
N	RT100U	RT100U	RT100VA	RT100U	RT100U	RT100VA	FT200G	RT100U	RT100GG	RT100
68	16	37	19	22	40	26	43	29	35	32

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

GUHRING NAVIGATOR Twist drills

Generally recommendations:

For safety reasons it is very important, that a drill does not exceed a speed of $n = 6,000 \text{ rev./min}$ 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 $\geq 7xD$:
1.) the pilot hole can be produced with a short, rigid drill. The diameter should be 0.01 - 0.02 mm larger than the diameter of the SL drill, the drilling depth $> 1xD$.

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

The recommended minimum coolant pressure is 40 bar.

Article no.

Standard/DIN

Tool material

Carbide grade

Type

Surface finish

Std. range page

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.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

Coolant:

- Air
- Neat oil
- Soluble oil

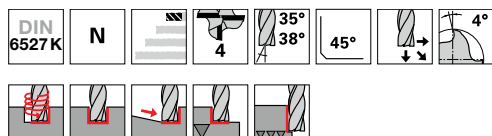
* TiN-tip coated

Material group	Material examples Figures in bold = material no. to DIN EN 10 027	Tensile strength 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 hard. 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, 1.8668 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	Epoxy resin, Resopal, Pertinax, Moltopren	≤150		○
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		○
Kevlar	Kevlar	≤1000		○
Glass, carbon concentr. plastics	GFK/CFK	≤1000		○

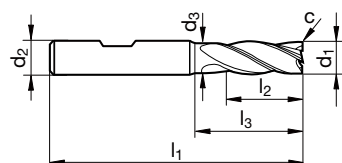
$\leq 10 \times D$
 5536 5537
 340 340
 HSCO
 - -
 GU 500
 ○ ● S
 41

53

Standard Ratio end mills RF 100 U


Tool material **Solid carbide**

Surface **F**

Shank form **HB**

Article no. **5534**

Type **N**

Cutting direction **(R)**

d1 h10	d2 h6	d3	l1	l2	l3	c	No. of	Code no.
mm	mm	mm	mm	mm	mm	mm x 45°		
6.00	6.00	5.70	54.00	10.00	17.00	0.15	4	6.000
8.00	8.00	7.70	58.00	12.00	21.00	0.15	4	8.000
10.00	10.00	9.50	66.00	14.00	24.00	0.20	4	10.000
12.00	12.00	11.50	73.00	16.00	26.00	0.20	4	12.000
16.00	16.00	15.50	82.00	22.00	32.00	0.35	4	16.000
20.00	20.00	19.50	92.00	26.00	40.00	0.45	4	20.000

Unit price in £*
15.23
20.39
28.75
37.83
61.44
94.71

Unit price in £*

14.80

22.40

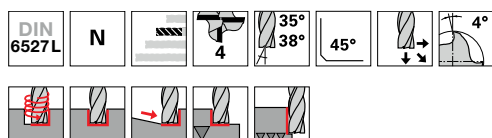
22.40

23.70

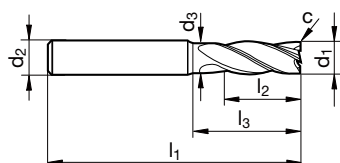
25.30

* for a min. quantity of 3off,
< 3off plus 50%

Standard Ratio end mills RF 100 U

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

Shank form HA HB



SL Milling cutters

Article no.									5735	5535	Unit price in £*
Type									N	N	
Cutting direction											
d1 h10	d2 h6	d3	l1	l2	l3	c	No. of	Code no.	GBP		
mm	mm	mm	mm	mm	mm	mm x 45°					
4.00	6.00	3.80	57.00	11.00	18.00	0.10	4	4.000	17.60	18.94	
5.00	6.00	4.80	57.00	13.00	18.00	0.10	4	5.000	17.60	18.94	
6.00	6.00	5.70	57.00	13.00	20.00	0.15	4	6.000	18.04	18.77	
8.00	8.00	7.70	63.00	19.00	26.00	0.15	4	8.000	23.17	23.91	
10.00	10.00	9.50	72.00	22.00	30.00	0.20	4	10.000	34.47	35.19	
12.00	12.00	11.50	83.00	26.00	36.00	0.20	4	12.000	44.44	45.32	
16.00	16.00	15.50	92.00	32.00	42.00	0.35	4	16.000	77.41	78.30	
20.00	20.00	19.50	104.00	38.00	52.00	0.45	4	20.000	118.92	119.65	28.30
25.00	25.00	24.00	121.00	45.00	63.00	0.60	4	25.000	248.97	256.29	31.10

* for a min. quantity of 3000,
< 3000 plus 50%

RF 100 U

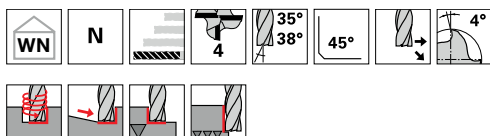
set of Ratio end mills

can be found on page 77.

Article no. 5635 1,000
(page 122 in this brochure)

consisting of Article no. 5535,
1 piece each Ø 6 / 8 / 10 / 12 / 16 mm

Standard Ratio end mills RF 100 U



Tool material

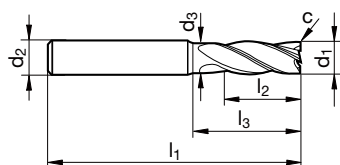
Solid carbide

Surface

F

Shank form

HA



Article no.

5582

Type

N

Cutting direction

R

d1 h10	d2 h6	d3	l1	l2	l3	c	No. of	Code no.
mm	mm	mm	mm	mm	mm	mm x 45°		
10.00	10.00	9.50	100.00	40.00	48.00	0.20	4	10.000
12.00	12.00	11.50	150.00	45.00	58.00	0.20	4	12.000
16.00	16.00	15.50	150.00	65.00	78.00	0.35	4	16.000
20.00	20.00	19.50	150.00	65.00	78.00	0.45	4	20.000
25.00	25.00	24.00	150.00	75.00	92.00	0.60	4	25.000

GBP

72.59

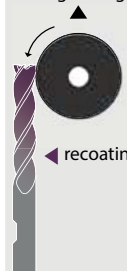
104.69

197.35

261.56

357.31

regrinding


Unit price
in £*

14.80

22.40

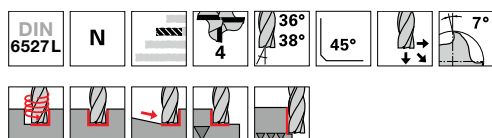
26.70

28.30

31.10

* for a min. quantity of 3off,
< 3off plus 50%

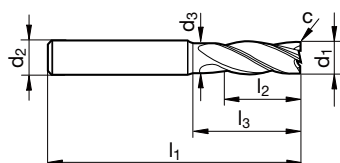
Ratio end mills RF 100 VA

Tool material **Solid carbide**Surface **a** **a**

Shank form HA HB



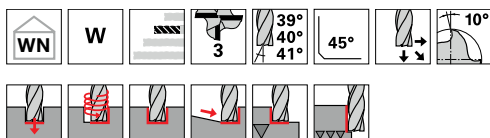
SL Milling cutters

Article no. **5653** **5654**Type **N** **N**Cutting direction **(R)** **(R)**

d1 h10	d2 h6	d3	l1	l2	l3	c	No. of	Code no.	GBP	Unit price in £*
mm	mm	mm	mm	mm	mm	mm x 45°				
3.00	6.00	2.80	57.00	8.00	15.00	0.10	4	3.000	18.56 20.07	
4.00	6.00	3.80	57.00	11.00	18.00	0.15	4	4.000	17.05 18.56	14.80
5.00	6.00	4.80	57.00	13.00	18.00	0.15	4	5.000	17.05 18.56	14.80
6.00	6.00	5.70	57.00	13.00	20.00	0.20	4	6.000	21.22 22.74	14.80
8.00	8.00	7.70	63.00	19.00	26.00	0.25	4	8.000	29.93 31.48	14.80
10.00	10.00	9.50	72.00	22.00	30.00	0.30	4	10.000	44.70 46.24	14.80
12.00	12.00	11.50	83.00	26.00	36.00	0.35	4	12.000	57.58 59.12	22.40
14.00	14.00	13.50	83.00	26.00	36.00	0.40	4	14.000	76.54 79.57	22.40
16.00	16.00	15.50	92.00	32.00	42.00	0.50	4	16.000	100.04 103.07	26.70
18.00	18.00	17.50	92.00	32.00	42.00	0.60	4	18.000	140.20 144.00	26.70
20.00	20.00	19.50	104.00	38.00	52.00	0.60	4	20.000	154.59 158.37	28.30
25.00	25.00	24.00	121.00	45.00	63.00	0.75	4	25.000	245.53 251.58	31.10

* for a min. quantity of 30ff,
< 30ff plus 50%

Ratio end mills Alu RF 100 A



Tool material

Solid carbide

Surface



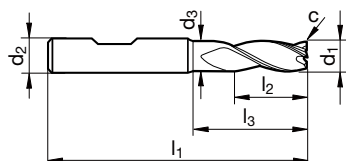
Shank form

HB

regrinding



SL Milling cutters



Article no.

5655

Type

W

Cutting direction



d1 e8	d2 h6	d3	l1	l2	l3	c	No. of	Code no.
mm	mm	mm	mm	mm	mm	mm x 45°		
3.00	6.00	2.80	57.00	8.00	15.00	0.03	3	3.000
4.00	6.00	3.80	57.00	11.00	18.00	0.04	3	4.000
5.00	6.00	4.80	57.00	13.00	18.00	0.05	3	5.000
6.00	6.00	5.70	57.00	13.00	20.00	0.06	3	6.000
8.00	8.00	7.70	63.00	19.00	26.00	0.08	3	8.000
10.00	10.00	9.50	72.00	22.00	30.00	0.10	3	10.000
12.00	12.00	11.50	83.00	26.00	36.00	0.12	3	12.000
16.00	16.00	15.50	92.00	32.00	42.00	0.16	3	16.000
20.00	20.00	19.50	104.00	38.00	52.00	0.20	3	20.000

GBP

Unit price
in £*

21.62

8.90

20.82

8.90

20.07

8.90

21.22

8.90

23.13

10.50

37.50

14.80

55.32

16.30

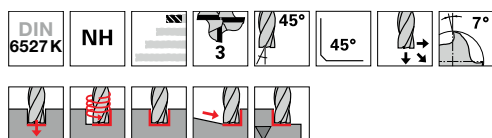
97.79

19.40

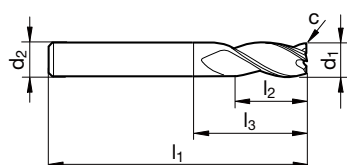
156.11

* for a min. quantity of 30off,
< 30off plus 50%

Slot drills GH 100 U (3-fluted)

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

Shank form HA



SL Milling cutters

Article no. **5505**Type **NH**

Cutting direction

d1 h10	d2 h6	l1	l2	l3	c	No. of flutes	Code no.
mm	mm	mm	mm	mm	mm x 45°		
3.00	6.00	50.00	4.00	7.90	0.05	3	3.000
4.00	6.00	54.00	5.00	8.90	0.06	3	4.000
5.00	6.00	54.00	6.00	11.40	0.08	3	5.000
6.00	6.00	54.00	7.00	18.00	0.09	3	6.000
8.00	8.00	58.00	9.00	22.00	0.12	3	8.000
9.00	10.00	66.00	10.00	19.40	0.14	3	9.000
10.00	10.00	66.00	11.00	26.00	0.15	3	10.000
12.00	12.00	73.00	12.00	28.00	0.18	3	12.000
16.00	16.00	82.00	16.00	34.00	0.19	3	16.000
20.00	20.00	92.00	20.00	42.00	0.24	3	20.000

GBP

Unit price
in £***13.66****12.78****12.78****12.78****18.48****27.72****25.82****32.42****62.03****93.25**

14.80

16.40

16.40

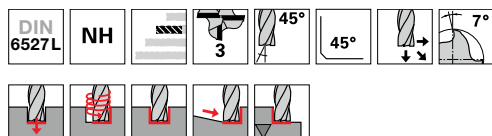
22.40

23.70

25.30

* for a min. quantity of 30ff,
< 30ff plus 50%

Slot drills GH 100 U (3-fluted)



Tool material

Solid carbide

Surface

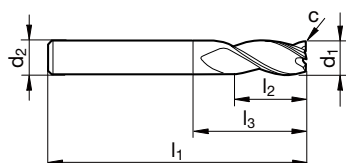
F

F

Shank form

HA

HB



Article no.

5506

5546

Type

NH

NH

Cutting direction

(R)

(R)

d1 h10	d2 h6	l1	l2	l3	c	No. of flutes	Code no.
mm	mm	mm	mm	mm	mm x 45°		
3.00	6.00	57.00	7.00	10.90	0.05	3	3.000
3.50	6.00	57.00	7.00	10.90	0.05	3	3.500
4.00	6.00	57.00	8.00	11.90	0.06	3	4.000
5.00	6.00	57.00	10.00	15.40	0.08	3	5.000
6.00	6.00	57.00	10.00	21.00	0.09	3	6.000
7.00	8.00	63.00	13.00	21.40	0.11	3	7.000
8.00	8.00	63.00	16.00	27.00	0.12	3	8.000
10.00	10.00	72.00	19.00	32.00	0.15	3	10.000
12.00	12.00	83.00	22.00	38.00	0.18	3	12.000
14.00	14.00	83.00	22.00	38.00	0.21	3	14.000
16.00	16.00	92.00	26.00	44.00	0.19	3	16.000
20.00	20.00	104.00	32.00	54.00	0.24	3	20.000

GBP

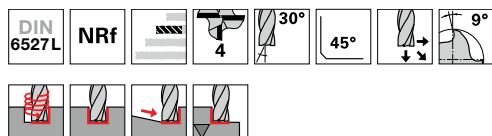
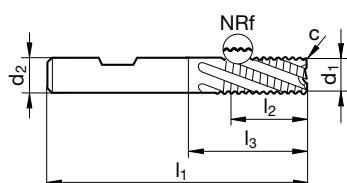
Unit price
in £*

15.42	16.15
17.02	17.74
15.42	16.15
15.42	16.15
15.42	16.15
20.39	21.11
19.35	20.39
28.33	29.03
42.98	43.69
54.27	
73.61	74.34
117.29	118.04

14.80
14.80
14.80
14.80
14.80
16.40
22.40
22.40
23.70
25.30

* for a min. quantity of 30ff,
< 30ff plus 50%

Roughing end mills GS 100 U (fine teeth)

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

SL Milling cutters

Article no. **5504**Type **NRf**

Cutting direction

d1 h10	d2 h6	l1	l2	l3	c	No. of flutes	Code no.
mm	mm	mm	mm	mm	mm x 45°		
6.00	6.00	57.00	13.00	21.00	0.30	4	6.000
8.00	8.00	63.00	19.00	27.00	0.30	4	8.000
10.00	10.00	72.00	22.00	32.00	0.30	4	10.000
12.00	12.00	83.00	26.00	38.00	0.50	4	12.000
16.00	16.00	92.00	32.00	44.00	0.50	4	16.000
20.00	20.00	104.00	38.00	54.00	0.50	4	20.000

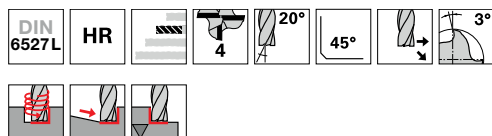
GBP
46.50
53.37
57.93
68.92
109.39
163.49

Unit price
in £*

16,40
22,40
23,70
25,30

* for a min. quantity of 30ff,
< 30ff plus 50%

Hard roughing end mills GS 100 H (fine teeth)



Tool material

Solid carbide

Surface

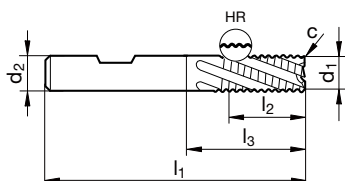


Shank form

HB



SL Milling cutters



Article no.

5583

Type

HR

Cutting direction



d1 h10	d2 h6	l1	l2	l3	c	No. of flutes	Code no.
mm	mm	mm	mm	mm	mm x 45°		
6.00	6.00	57.00	13.00	21.00	0.30	4	6.000
8.00	8.00	63.00	19.00	27.00	0.30	4	8.000
10.00	10.00	72.00	22.00	32.00	0.30	4	10.000
12.00	12.00	83.00	26.00	38.00	0.50	4	12.000
16.00	16.00	92.00	32.00	44.00	0.50	4	16.000
20.00	20.00	104.00	38.00	54.00	0.50	4	20.000

GBP

Unit price
in £*

58.65

63.35

68.92

81.09

129.63

193.83

17.80

17.80

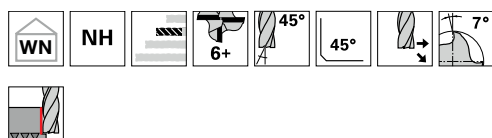
22.40

32.00

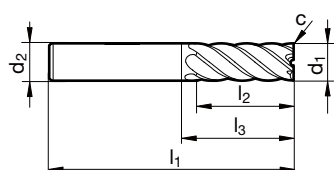
33.90

* for a min. quantity of 30ff,
< 30ff plus 50%

Multi-tooth end mills GH 100 U

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

Shank form HA HB



SL Milling cutters

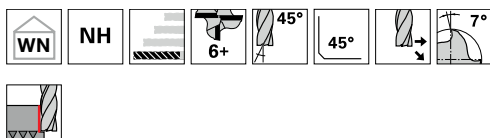
Article no. **5745** **5545**Type **NH** **NH**

Cutting direction

d1 h10	d2 h6	l1	l2	l3	c	No. of flutes	Code no.	GBP		Unit price in £*
mm	mm	mm	mm	mm	mm x 45°					
3.00	6.00	57.00	8.00	11.40	0.05	6	3.000	22.74		
4.00	6.00	57.00	11.00	15.90	0.05	6	4.000	21.69		14.80
5.00	6.00	57.00	13.00	17.90	0.05	6	5.000	20.54		14.80
6.00	6.00	57.00	13.00	21.00	0.05	6	6.000	19.35	20.39	14.80
8.00	8.00	63.00	19.00	27.00	0.10	6	8.000	23.62	24.34	14.80
10.00	10.00	72.00	22.00	32.00	0.10	6	10.000	36.53	37.26	16.40
12.00	12.00	83.00	26.00	38.00	0.10	6	12.000	48.54	49.43	22.40
16.00	16.00	92.00	32.00	44.00	0.15	6	16.000	88.28	89.02	23.70
20.00	20.00	104.00	38.00	54.00	0.15	8	20.000	122.14	122.87	25.30
25.00	25.00	121.00	45.00	65.00	0.20	10	25.000	216.41		31.10

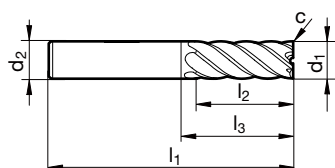
* for a min. quantity of 30off,
< 30off plus 50%

Multi-tooth end mills GH 100 U


Tool material **Solid carbide**

Surface **F**

Shank form HA


Article no. **5729**

Type **NH**

Cutting direction

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

GBP
27.72
31.83
56.59
78.30
141.49
212.60

Unit price
in £*

14.80
14.80
16.40
22.40
23.70
25.30

* for a min. quantity of 3off,
< 3off plus 50%

Slot drills (2-fluted)



Tool material

Solid carbide

Surface

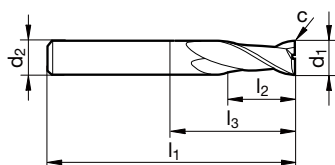
F

F

Shank form

HA

HB



SL Milling cutters

Article no.

5730

5530

Type

N

N

Cutting direction

R

R

d1 h10	d2 h6	l1	l2	l3	c	No. of flutes	Code no.
mm	mm	mm	mm	mm	mm x 45°		
2.00	6.00	57.00	6.00	9.40	0.02	2	2.000
3.00	6.00	57.00	7.00	11.90	0.05	2	3.000
4.00	6.00	57.00	8.00	13.40	0.05	2	4.000
5.00	6.00	57.00	10.00	16.90	0.05	2	5.000
6.00	6.00	57.00	10.00	21.00	0.05	2	6.000
8.00	8.00	63.00	16.00	27.00	0.10	2	8.000
10.00	10.00	72.00	19.00	32.00	0.10	2	10.000
12.00	12.00	83.00	22.00	38.00	0.10	2	12.000
16.00	16.00	92.00	26.00	44.00	0.15	2	16.000
20.00	20.00	104.00	32.00	54.00	0.15	2	20.000

GBP

Unit price
in £*

13.66 14.52

13.66 14.52

12.78 13.66

12.78 13.66

11.88 12.61

16.72 17.60

24.80 25.53

35.49 36.36

64.38

97.66

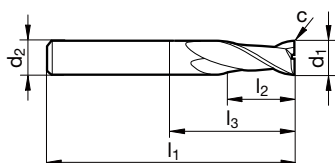
11.90
11.90
11.90
11.90
13.50
19.40
19.40
22.40

* for a min. quantity of 30off,
< 30off plus 50%

XL slot drills (2-fluted)


Tool material **Solid carbide**

Surface **F**

Shank form **HA**

Article no. **5549**

Type **N**

Cutting direction

d1 h10	d2 h6	l1	l2	l3	c	No. of flutes	Code no.
mm	mm	mm	mm	mm	mm x 45°		
3.00	3.00	75.00	20.00	47.00	0.05	2	3.000
4.00	4.00	75.00	25.00	47.00	0.05	2	4.000
5.00	5.00	75.00	30.00	47.00	0.05	2	5.000
6.00	6.00	75.00	30.00	39.00	0.05	2	6.000
8.00	8.00	100.00	40.00	64.00	0.10	2	8.000
10.00	10.00	100.00	40.00	60.00	0.10	2	10.000
12.00	12.00	150.00	45.00	105.00	0.10	2	12.000
16.00	16.00	150.00	65.00	102.00	0.15	2	16.000
20.00	20.00	150.00	65.00	100.00	0.15	2	20.000

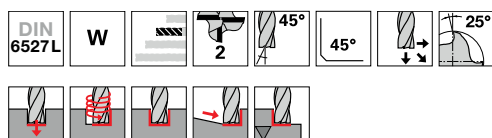
GBP

Unit price
in £*

17.89
11.90
19.35
11.90
20.39
11.90
20.39
11.90
38.86
11.90
47.79
13.50
73.61
19.40
118.04
19.40
156.89
22.40

* for a min. quantity of 30ff,
< 30ff plus 50%

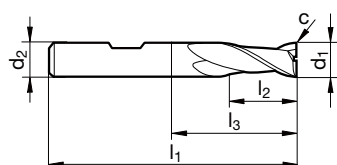
Al slot drills (2-fluted)

Tool material **Solid carbide**

Surface

Shank form HB

regrinding

Article no. **5543**Type **W**

Cutting direction

d1 e8	d2 h6	l1	l2	l3	c	No. of flutes	Code no.
mm	mm	mm	mm	mm	mm x 45°		
3.00	6.00	57.00	7.00	10.90	0.03	2	3.000
4.00	6.00	57.00	8.00	11.90	0.03	2	4.000
5.00	6.00	57.00	10.00	15.40	0.03	2	5.000
6.00	6.00	57.00	10.00	21.00	0.03	2	6.000
8.00	8.00	63.00	16.00	27.00	0.05	2	8.000
10.00	10.00	72.00	19.00	32.00	0.05	2	10.000
12.00	12.00	83.00	22.00	38.00	0.10	2	12.000
16.00	16.00	92.00	26.00	44.00	0.10	2	16.000
20.00	20.00	104.00	32.00	54.00	0.10	2	20.000

GBP

Unit price
in £***14.67****8.90****14.67****8.90****14.67****8.90****14.67****8.90****16.15****8.90****28.33****10.50****40.47****14.80****66.45****14.80****103.52****17.80*** for a min. quantity of 30off,
< 30off plus 50%

SL Milling cutters

Slot drills (3-fluted)



Tool material

Solid carbide

Surface

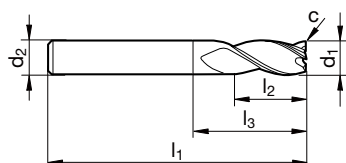
F

F

Shank form

HA

HB



Article no.

5507

5531

Type

N

N

Cutting direction

(R)

(R)

d1 h10	d2 h6	l1	l2	l3	c	No. of flutes	Code no.
mm	mm	mm	mm	mm	mm x 45°		
2.00	6.00	57.00	6.00	10.40	0.02	3	2.000
2.50	6.00	57.00	7.00	11.40	0.05	3	2.500
3.00	6.00	57.00	7.00	11.40	0.05	3	3.000
3.50	6.00	57.00	7.00	11.40	0.05	3	3.500
4.00	6.00	57.00	8.00	13.90	0.05	3	4.000
5.00	6.00	57.00	10.00	16.90	0.05	3	5.000
6.00	6.00	57.00	10.00	21.00	0.05	3	6.000
8.00	8.00	63.00	16.00	27.00	0.10	3	8.000
10.00	10.00	72.00	19.00	32.00	0.10	3	10.000
12.00	12.00	83.00	22.00	38.00	0.10	3	12.000
14.00	14.00	83.00	22.00	38.00	0.15	3	14.000
16.00	16.00	92.00	26.00	44.00	0.15	3	16.000
20.00	20.00	104.00	32.00	54.00	0.15	3	20.000

GBP

Unit price
in £*

13.66 14.52

14.52 14.52

13.66 14.52

14.52

12.78 13.66

12.78 13.66

11.88 12.61

16.72 17.60

24.80 25.53

35.49 36.36

52.50 64.38

63.64 97.66

14.80

22.40

22.40

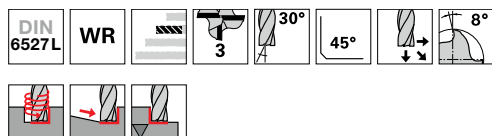
22.40

23.70

25.30

* for a min. quantity of 3off,
< 3off plus 50%

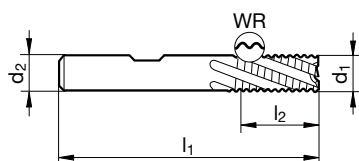
Roughing end mills (3-fluted)

Tool material **Solid carbide**

Surface

Shank form HB

regrinding



SL Milling cutters

Article no. **5544**Type **WR**

Cutting direction

d1 h10	d2 h6	l1	l2	No. of flutes	Code no.
mm	mm	mm	mm		
8.00	8.00	63.00	16.00	3	8.000
10.00	10.00	72.00	19.00	3	10.000
12.00	12.00	83.00	22.00	3	12.000
16.00	16.00	92.00	26.00	3	16.000
20.00	20.00	104.00	32.00	3	20.000

GBP

Unit price
in £***32.42****11.90****39.76****13.50****49.43****18.50****74.34****20.70****137.54****22.30*** for a min. quantity of 30ff,
< 30ff plus 50%

Mini slot drills (3-fluted)



Tool material

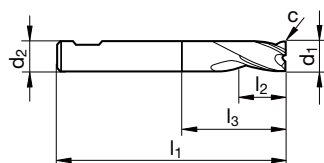
Solid carbide

Surface

F

Shank form

< Ø 2.0 HA, ≥ Ø 2.0 HB



Article no.

5574

Type

NH

Cutting direction

R

d1 h10	d2 h6	l1	l2	l3	c	No. of flutes	Code no.	GBP
mm	mm	mm	mm	mm	mm x 45°			
1.00	3.00	38.00	2.00	3.40	0.02	3	1.000	8.08
1.20	3.00	38.00	2.00	3.40	0.02	3	1.200	9.97
1.50	3.00	38.00	3.00	5.90	0.02	3	1.500	8.08
1.80	3.00	38.00	3.00	5.90	0.02	3	1.800	9.97
2.00	6.00	45.00	4.00	6.90	0.02	3	2.000	11.15
2.50	6.00	45.00	5.00	7.90	0.05	3	2.500	11.59
3.00	6.00	45.00	6.00	9.90	0.05	3	3.000	11.15
3.50	6.00	45.00	6.00	9.90	0.05	3	3.500	11.15
4.00	6.00	45.00	7.00	10.90	0.05	3	4.000	11.15
4.50	6.00	45.00	8.00	13.40	0.05	3	4.500	11.88
5.00	6.00	45.00	8.00	13.40	0.05	3	5.000	11.15
5.50	6.00	45.00	8.00	14.40	0.05	3	5.500	11.88
5.75	6.00	45.00	10.00	3.80	0.05	3	5.750	11.88
6.00	6.00	45.00	10.00	15.00	0.05	3	6.000	11.15
6.75	8.00	55.00	10.00	18.40	0.10	3	6.750	15.54
7.00	8.00	55.00	12.00	12.00	0.10	3	7.000	15.23
7.75	8.00	55.00	12.00	12.00	0.10	3	7.750	15.23
8.00	8.00	55.00	13.00	19.00	0.10	3	8.000	15.23
8.70	10.00	55.00	14.00	23.40	0.10	3	8.700	20.68
9.00	10.00	55.00	14.00	23.40	0.10	3	9.000	19.35
9.70	10.00	55.00	16.00	16.30	0.10	3	9.700	20.98
10.00	10.00	55.00	16.00	25.00	0.10	3	10.000	20.39

Mini slot drills (3-fluted)



Tool material

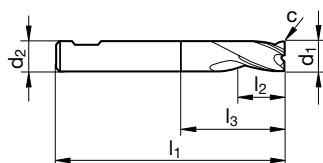
Solid carbide

Surface

F

Shank form

< Ø 2.0 HA, ≥ Ø 2.0 HB



SL Milling cutters

Article no.

5573

Type

N

Cutting direction

R

d1 h10	d2 h6	l1	l2	l3	c	No. of flutes	Code no.	GBP
mm	mm	mm	mm	mm	mm x 45°			
0.50	3.00	38.00	1.50	3.40	0.02	3	0.500	9.97
0.60	3.00	38.00	1.50	3.40	0.02	3	0.600	9.97
0.80	3.00	38.00	2.00	3.90	0.02	3	0.800	8.08
1.00	3.00	38.00	2.00	3.90	0.02	3	1.000	6.75
1.20	3.00	38.00	2.00	3.90	0.02	3	1.200	10.43
1.50	3.00	38.00	2.00	3.90	0.02	3	1.500	6.75
1.80	3.00	38.00	2.00	3.90	0.02	3	1.800	10.43
2.00	6.00	38.00	4.00	7.40	0.02	3	2.000	8.82
2.50	6.00	38.00	5.00	8.40	0.05	3	2.500	9.10
3.00	6.00	38.00	5.00	8.40	0.05	3	3.000	8.82
3.50	6.00	38.00	6.00	9.40	0.05	3	3.500	9.10
4.00	6.00	38.00	7.00	10.40	0.05	3	4.000	8.82
4.50	6.00	38.00	8.00	12.40	0.05	3	4.500	10.43
5.00	6.00	38.00	8.00	12.40	0.05	3	5.000	9.97
5.50	6.00	38.00	8.00	12.40	0.05	3	5.500	10.43
5.75	6.00	38.00	8.00	12.40	0.05	3	5.750	11.59
6.00	6.00	38.00	8.00	14.00	0.05	3	6.000	9.97
6.75	8.00	42.00	10.00	15.40	0.10	3	6.750	15.23
7.00	8.00	42.00	10.00	16.40	0.10	3	7.000	13.95
7.75	8.00	42.00	10.00	16.40	0.10	3	7.750	14.23
8.00	8.00	43.00	11.00	19.00	0.10	3	8.000	13.95
8.70	10.00	48.00	11.00	17.40	0.10	3	8.700	21.40
9.00	10.00	48.00	11.00	17.40	0.10	3	9.000	20.39
9.70	10.00	48.00	11.00	17.40	0.10	3	9.700	21.40
10.00	10.00	50.00	13.00	23.00	0.10	3	10.000	19.80
12.00	12.00	55.00	15.00	25.00	0.10	3	12.000	23.76
14.00	14.00	58.00	15.00	28.00	0.15	3	14.000	32.42
16.00	16.00	62.00	18.00	29.00	0.15	3	16.000	41.93
20.00	20.00	75.00	22.00	41.00	0.15	3	20.000	67.02

End mills (4-fluted)



Tool material

Solid carbide

Surface

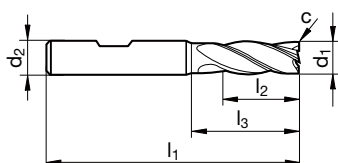
F

Shank form

HB



SL Milling cutters



Article no.

5532

Type

N

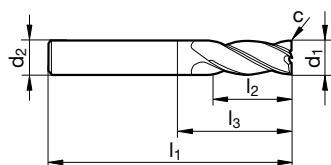
Cutting direction

R

d1 h10	d2 h6	l1	l2	l3	c	No. of flutes	Code no.	Unit price in £*
mm	mm	mm	mm	mm	mm x 45°			
2.00	6.00	57.00	7.00	11.40	0.02	4	2.000	16.00
3.00	6.00	57.00	8.00	12.90	0.05	4	3.000	17.17
4.00	6.00	57.00	11.00	16.90	0.05	4	4.000	16.72
5.00	6.00	57.00	13.00	19.90	0.05	4	5.000	17.60
6.00	6.00	57.00	13.00	21.00	0.05	4	6.000	17.60
7.00	8.00	63.00	16.00	27.00	0.10	4	7.000	20.68
8.00	8.00	63.00	19.00	27.00	0.10	4	8.000	20.68
9.00	10.00	72.00	19.00	28.40	0.10	4	9.000	26.85
10.00	10.00	72.00	22.00	32.00	0.10	4	10.000	31.96
12.00	12.00	83.00	26.00	38.00	0.10	4	12.000	43.26
14.00	14.00	83.00	26.00	38.00	0.15	4	14.000	59.83
16.00	16.00	92.00	32.00	44.00	0.15	4	16.000	79.92
18.00	18.00	92.00	32.00	44.00	0.15	4	18.000	101.92
20.00	20.00	104.00	38.00	54.00	0.15	4	20.000	124.19

* for a min. quantity of 3off,
< 3off plus 50%

XL end mills (4-fluted)

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

SL Milling cutters

Article no. **5556**Type **N**

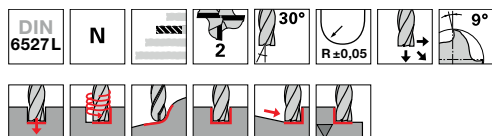
Cutting direction

d1 h10	d2 h6	l1	l2	l3	c	No. of flutes	Code no.
mm	mm	mm	mm	mm	mm x 45°		
3.00	3.00	75.00	20.00	47.00	0.05	4	3.000
4.00	4.00	75.00	25.00	47.00	0.05	4	4.000
5.00	5.00	75.00	30.00	47.00	0.05	4	5.000
6.00	6.00	75.00	30.00	39.00	0.05	4	6.000
8.00	8.00	100.00	40.00	64.00	0.10	4	8.000
10.00	10.00	100.00	40.00	60.00	0.10	4	10.000
12.00	12.00	150.00	45.00	105.00	0.10	4	12.000
16.00	16.00	150.00	65.00	102.00	0.15	4	16.000
20.00	20.00	150.00	65.00	100.00	0.15	4	20.000

GBP

Unit price
in £***20.39****14.80****22.59****14.80****24.34****14.80****30.80****14.80****32.42****14.80****45.32****16.40****71.11****22.40****108.37****23.70****141.49****25.30*** for a min. quantity of 30off,
< 30off plus 50%

Ball nose slot drills (2-fluted)



Tool material

Solid carbide

Surface

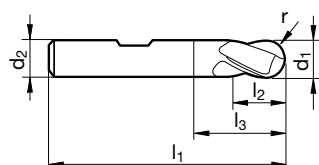
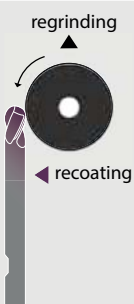
F

F

Shank form

HA

HB



Article no.

5585

5533

Type

N

N

Cutting direction

(R)

(R)

d1 h10	d2 h6	l1	l2	l3	r	No. of flutes	Code no.
mm	mm	mm	mm	mm	mm		
0.50	3.00	38.00	1.00	2.10	0.25	2	0.500
1.00	3.00	38.00	2.00	3.90	0.50	2	1.000
1.50	3.00	38.00	3.00	6.40	0.75	2	1.500
2.00	6.00	57.00	6.00	9.40	1.00	2	2.000
3.00	6.00	57.00	7.00	11.90	1.50	2	3.000
4.00	6.00	57.00	8.00	13.40	2.00	2	4.000
5.00	6.00	57.00	10.00	16.90	2.50	2	5.000
6.00	6.00	57.00	10.00	21.00	3.00	2	6.000
8.00	8.00	63.00	16.00	27.00	4.00	2	8.000
10.00	10.00	72.00	19.00	32.00	5.00	2	10.000
12.00	12.00	83.00	22.00	38.00	6.00	2	12.000
20.00	20.00	104.00	32.00	54.00	10.00	2	20.000

GBP

Unit price
in £*

27.14

23.62

22.29

22.74

22.74

22.74

22.74

22.74

29.03

37.69

52.65

133.13

23.45

23.45

23.45

23.45

23.45

23.45

23.45

29.78

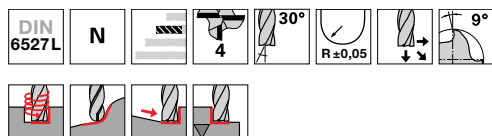
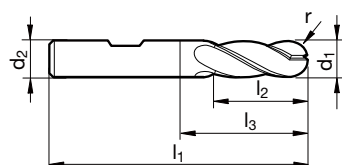
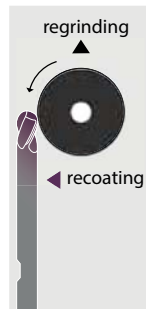
38.42

53.37

31.10

* for a min. quantity of 30off,
< 30off plus 50%

Ball nose end mills (4-fluted)

Tool material **Solid carbide**Surface **F**Shank form **HB**Article no. **5584**Type **N**

Cutting direction

d1 h10	d2 h6	l1	l2	l3	r	No. of flutes	Code no.
mm	mm	mm	mm	mm	mm		
3.00	6.00	57.00	8.00	12.40	1.50	4	3.000
4.00	6.00	57.00	11.00	15.90	2.00	4	4.000
5.00	6.00	57.00	13.00	19.40	2.50	4	5.000
6.00	6.00	57.00	13.00	21.00	3.00	4	6.000
8.00	8.00	63.00	19.00	27.00	4.00	4	8.000
10.00	10.00	72.00	22.00	32.00	5.00	4	10.000
12.00	12.00	83.00	26.00	38.00	6.00	4	12.000
20.00	20.00	104.00	38.00	54.00	10.00	4	20.000

GBP

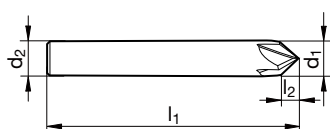
Unit price
in £***27.27****19.30****27.27****19.30****28.16****19.30****27.27****19.30****34.17****19.30****44.44****20.90****60.88****28.30****152.93****31.10*** for a min. quantity of 30off,
< 30off plus 50%

SL Milling cutters

Chamfering milling cutters


Tool material **Solid carbide**

Surface **A** **A**

Shank form **HA** **HB**

Article no. **5578** **5579**

Type **N** **N**

Cutting direction **(R)** **(R)**

d1 js9	d2 h6	l1	l2	Z	Code no.
mm	mm	mm	mm		
4.00	4.00	50.00	2.00	4	4.000
6.00	6.00	57.00	3.00	4	6.000
8.00	8.00	63.00	4.00	4	8.000
10.00	10.00	72.00	5.00	4	10.000
12.00	12.00	83.00	6.00	4	12.000

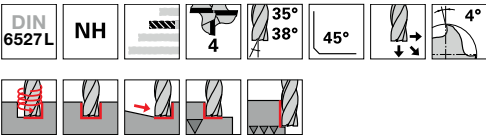
GBP	
15.53	
18.20	18.96
22.74	23.48
26.91	28.82
40.16	40.92

Unit price
in £*

11.90
11.90
11.90
13.50
19.30

* for a min. quantity of 3off,
< 3off plus 50%

Ratio end mill sets RF 100 U



Tool material	Solid carbide
Surface	
Shank form	cyl.



SL Milling cutters

Article no.			5635
Type			NH
Cutting direction			
d1	Pieces/set	Code no.	GBP
	Piece		
6.0-16.0	5	1.000	130.50

GUHRINGNAVIGATOR Milling cutters

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

ae = Width of cut

ap = Depth of cut

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

Material group	Material examples	Tensile str. N/mm ²	Hard- ness
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 hard. 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	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) 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	
≤ 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-CuSn5ZnNb	≤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 CuSn7ZnNb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn	≤600	
2.0790 CuNi18Zn19Pb	≤850		
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2	≤850 ≤1000	
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	≤150	
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100	
Kevlar	Kevlar	≤1000	
Glass, carbon concentr. plastics	GFK/CFK	≤1000	

Slot milling

Tool material

Sol. carb.

Sol. carb.

Type

N

N

Art. no.

DIN 6527

HA

5730

5507

DIN 6527

HB

5530

5531

Company std.

HA

Company std.

HB

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

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



ae = 1xD



ae = 1xD



ap = 0,5 x D



ap = 0,5 x D

Vc m/min	Feed col. no.	Vc m/min	Feed col. no.
85 - 105	42	85 - 105	42
81 - 99	41	81 - 99	41
85 - 105	41	85 - 105	41
63 - 77	42	63 - 77	42
85 - 105	41	85 - 105	41
76 - 94	41	76 - 94	41
63 - 77	42	63 - 77	42
76 - 94	42	76 - 94	42
63 - 77	42	63 - 77	42
90 - 110	41	90 - 110	41
76 - 94	41	76 - 94	41
54 - 66	42	54 - 66	42
85 - 105	41	85 - 105	41
76 - 94	40	76 - 94	40
76 - 94	41	76 - 94	41
63 - 77	40	63 - 77	40
45 - 55	42	45 - 55	42
45 - 55	40	45 - 55	40
45 - 55	42	45 - 55	42
40 - 50	40	40 - 50	40
36 - 44	41	36 - 44	41
108 - 132	41	108 - 132	41
99 - 121	40	99 - 121	40
90 - 110	41	90 - 110	41
81 - 99	40	81 - 99	40
54 - 66	40	54 - 66	40
27 - 33	40	27 - 33	40
45 - 55	40	45 - 55	40
36 - 44	40	36 - 44	40
405 - 495	43	405 - 495	43
495 - 605	43	495 - 605	43
198 - 242	42	198 - 242	42
162 - 198	43	162 - 198	43
225 - 275	44	225 - 275	44
108 - 132	43	108 - 132	43
90 - 110	43	90 - 110	43
81 - 99	42	81 - 99	42
90 - 110	42	90 - 110	42
72 - 88	41	72 - 88	41
72 - 88	42	72 - 88	42
63 - 77	40	63 - 77	40
108 - 132	40	108 - 132	40
99 - 121	40	99 - 121	40

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

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

SL Milling cutters

GUHRINGNAVIGATOR Milling cutters

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

a_e = Width of cut

a_p = Depth of cut

Tool material

Roughing

Sol. carb. Sol. carb.

Type

N

N

Article no.

DIN 6527

HA

5735*

5582

DIN 6527

HB

5535*

5534*

Company std.

HA

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

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

RF100



$a_e = 0.5-1.0xD$

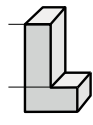


$a_p = 1xD$

RF100



$a_e = 0.25xD$



$a_p = 2xD$

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

Material group	Material examples	Tensile str. N/mm ²	Hard- ness	V_c m/min	Feed col. no.	V_c m/min	Feed col. no.
Common structural steels	1.0035 S185, 1.0486 P275N, 1.0345 P235GH, 1.0425 P265GH 1.0050 E295, 1.0070 E360, 1.8937 P500NH	≤500 ≤1000		170 - 208 157 - 193	51 50	110 - 136 102 - 126	47 46
Free-cutting steels	1.0718 11SMnPb30, 1.0736 11SMn37 1.0727 46 S20, 1.0728 60 S20, 1.0757 46SPb20	≤850 ≤1000		170 - 208 126 - 154	50 49	110 - 136 81 - 101	46 45
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		170 - 208 151 - 185 126 - 154	50 50 49	110 - 136 98 - 120 81 - 101	46 46 45
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	≤1000 ≤1400		151 - 185 126 - 154	49 48	98 - 120 81 - 101	45 44
Unalloyed case hard. steels	1.0301 C10, 1.1121 C10E	≤850		189 - 231	50	123 - 151	46
Alloyed case hardened steels	1.7043 38Cr4 1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5	≤1000 ≤1400		151 - 185 113 - 139	50 49	98 - 120 73 - 91	46 45
Nitriding steels	1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	≤1000 ≤1400		170 - 208 151 - 185	50 48	110 - 136 98 - 120	46 44
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6	≤850 ≤1400		151 - 185 126 - 154	50 48	98 - 120 81 - 101	46 44
High speed steels	1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3	≤1400		94 - 116	49	61 - 75	45
Spring steels	1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4	≤350 HB		94 - 116	48		
Hardened steels	-	≤48 HRC ≤66 HRC		44 - 54	46		
Stainless steels, sulphured austenitic martensitic	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17 1.4301 X5CrNi18-10, 1.4541 X6CrNiTi18-10 1.4057 X20CrNi17-2, 1.4122 X39CrMo17-1	≤900 ≤1100 ≤1500		80 - 100 70 - 90 65 - 70	49 48 49	60 - 80 55 - 75 50 - 65	45 44 45
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		220 - 270 201 - 247	50 49	143 - 175 131 - 161	46 45
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		182 - 224 157 - 193	50 49	118 - 146 102 - 126	46 45
Chilled cast iron	-	≤350 HB		107 - 131	47	69 - 85	43
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		56 - 70	48		
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		54 - 86 44 - 72	43 42	61 - 75 49 - 61	44 43
Aluminium and Al-alloys	3.0255 Al99,5, 3.2315 AlMgSi1, 3.3515 AlMg1	≤400				300 - 380	47
Al wrought alloys	3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si	≤650				370 - 440	47
Al cast alloys ≤ 10 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9	≤600				150 - 185	45
≤ 24 % Si	3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≤600				115 - 145	46
Magnesium alloys	3.5200 MgMn2, 3.5812.05 G-MgAl8Zn1, 3.5612.05 G-MgAl6Zn1	≤400				175 - 215	47
Copper, low-alloyed	2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb	≤500				80 - 100	46
Brass, short-chipping	2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2	≤600				75 - 95	45
long-chipping	2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5	≤600				60 - 75	45
Bronze, short-chipping	2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn	≤600				75 - 95	45
	2.0790 CuNi18Zn19Pb	≤850				55 - 70	44
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2	≤850 ≤1000					
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	≤150					
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100					
Kevlar	Kevlar	≤1000					
Glass, carbon concentr. plastics	GFK/CFK	≤1000					

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

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

SL Milling cutters

Machine taps for ISO metric threads



Tool material

HSS-E

Surface

Form



B

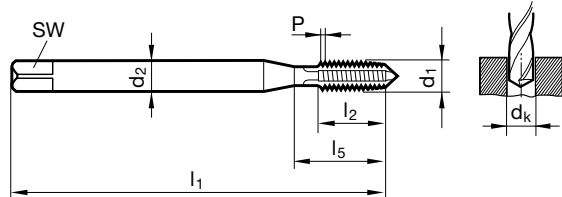
B

B

B

B

B



DIN 2184-1 DIN 371

Article no.

5560

5590

5558

5587

5561

5586

Type

N

N

H

H

N

N

Tolerance on Ø

ISO2/6H

ISO2/6H

ISO2/6H

ISO2/6H

ISO2/6H

ISO2/6H

d1	P	d2	SW	dk	l1	l2	l5
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

GBP					
7.82	12.81	8.35	19.91	7.82	11.71
7.82	13.33	8.35	19.91	7.82	12.26
7.82	13.72	9.14	21.40	7.82	13.33
7.82	16.56	9.14	21.40	7.82	15.35
10.49	21.80	11.17	23.81	10.49	19.52
11.84	24.09	13.99	26.91	11.84	23.41

Machine taps for ISO metric threads



Tool material

HSS-E

HSS-E-PM

HSS-E

Surface

S

●

●

○

●

F

Form

B

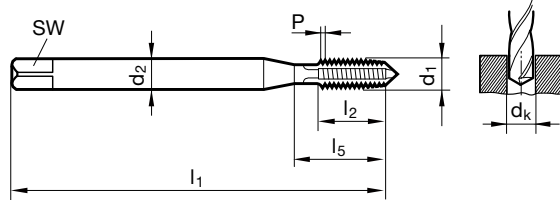
B

B

B

C

C



SL Thread cutting tools

DIN 2184-1 DIN 371

Article no.

5588

5597

5559

5557

5550

5595

Type

VA

VA

VA

AI

GG

GG

Tolerance on Ø

ISO2/6H

ISO2/6H

ISO2/6H

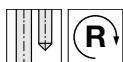
ISO2/6H

6HX

6HX

d1	P	d2	SW	dk	l1	l2	l5	GBP					
mm	mm	mm	mm	mm	mm	mm	mm						
M3	0.50	3.50	2.70	2.50	56.00	10.00	18.00	13.60	10.26	9.97	8.35	8.35	23.95
M4	0.70	4.50	3.40	3.30	63.00	12.00	21.00	13.72	9.81	9.97	8.35	8.35	24.48
M5	0.80	6.00	4.90	4.20	70.00	14.00	25.00	14.81	9.86	10.64	9.14	8.35	24.89
M6	1.00	6.00	4.90	5.00	80.00	16.00	30.00	18.57	9.92	9.97	9.14	8.35	24.89
M8	1.25	8.00	6.20	6.80	90.00	17.00	35.00	19.91	11.54	11.84	10.64	10.64	30.67
M10	1.50	10.00	8.00	8.50	100.00	20.00	39.00	25.16	14.58	14.68	12.81	13.33	39.03
M12	1.75	9.00	7.00	10.20	110.00	24.00	49.00		23.51				
M16	2.00	12.00	9.00	14.00	110.00	26.00	54.00		36.43				
M20	2.50	16.00	12.00	17.50	140.00	32.00	62.00		60.31				

Machine taps for ISO metric threads



Tool material

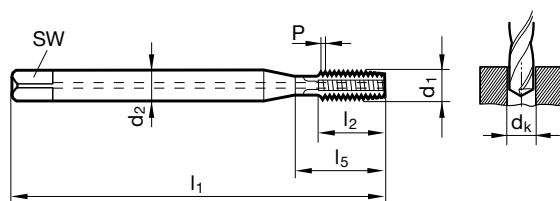
Solid carbide

Surface



Form

C



DIN 2184-1 DIN 371

Article no.

5593

Type

H

Tolerance on Ø

6HX

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

GBP

38.86

68.78

58.94

89.02

95.76

Machine taps for ISO metric threads



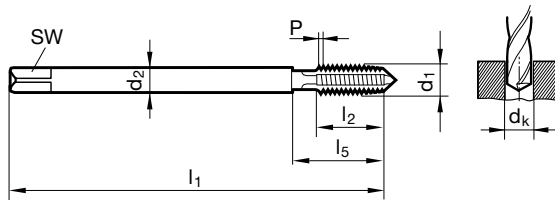
Tool material

HSS-E

Surface



Form

B

SL Thread cutting tools

DIN 2184-1 DIN 376

Article no.

5563

Type

N

Tolerance on Ø

ISO2/6H

d1	P	d2	SW	dk	l1	l2	l5
	mm	mm	mm	mm	mm	mm	mm
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
M20	2.50	16.00	12.00	17.50	140.00	32.00	62.00

GBP

19.77**20.81****29.60****44.67**

Machine taps for ISO metric fine threads



Tool material

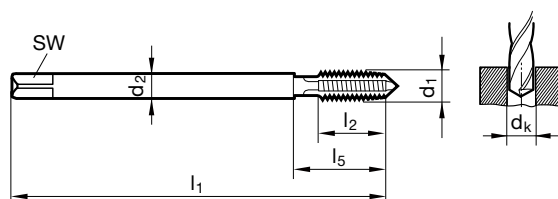
HSS-E

Surface



Form

B



DIN 2184-1 DIN 374

Article no.

5723

Type

N

Tolerance on Ø

ISO2/6H

d1	d2	SW	dk	l1	l2	l5	Code no.
	mm	mm	mm	mm	mm	mm	
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 0,75	4.50	3.40	5.20	80.00	13.00	30.00	6.004
M8 x 1	6.00	4.90	7.00	90.00	16.00	35.00	8.005
M10 x 1	7.00	5.50	9.00	90.00	16.00	35.00	10.005
M12 x 1	9.00	7.00	11.00	100.00	20.00	40.00	12.005
M12 x 1,5	9.00	7.00	10.50	100.00	20.00	40.00	12.007
M14 x 1,5	11.00	9.00	12.50	100.00	20.00	40.00	14.007
M16 x 1,5	12.00	9.00	14.50	100.00	22.00	44.00	16.007
M20 x 1,5	16.00	12.00	18.50	125.00	25.00	44.00	20.007

GBP

19.81

19.81

19.81

17.66

18.21

23.27

20.68

29.62

30.25

46.74

Machine taps for UNC-threads



Tool material

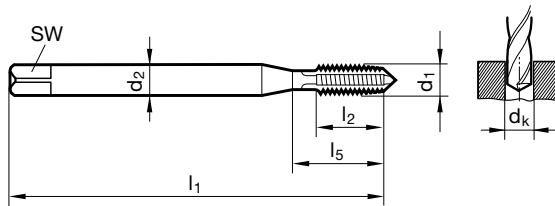
HSS-E

Surface



Form

B



SL Thread cutting tools

DIN 2184-1 ~DIN 371/~DIN 376

Article no.

5725

Type

N

Tolerance on Ø

2B

d1	d2	SW	dk	l1	l2	l5	Code no.
	mm	mm	mm	mm	mm	mm	
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
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
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

GBP

16.26

14.43

14.75

19.81

16.16

19.49

25.42

25.85

31.45

39.74

51.27

Machine taps for UNF-threads



Tool material

HSS-E

Surface

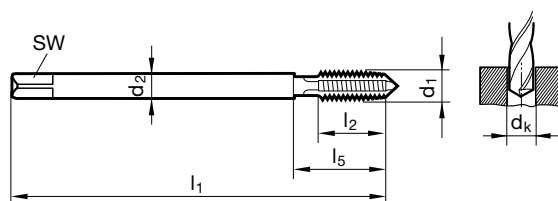


Form

B



SL Thread cutting tools



DIN 2184-1 ~DIN 374

Article no.

5727

Type

N

Tolerance on Ø

2B

d1	d2	SW	dk	l1	l2	l5	Code no.
	mm	mm	mm	mm	mm	mm	
4 - 48	2.20		2.40	56.00	10.00	18.00	2.845
6 - 40	2.50	2.10	2.95	56.00	11.00	20.00	3.505
10 - 32	3.50	2.70	4.10	70.00	14.00	25.00	4.826
1/4 - 28	4.50	3.40	5.50	80.00	16.00	30.00	6.350
3/8 - 24	7.00	5.50	8.50	90.00	18.00	35.00	9.525
5/8 - 18	12.00	9.00	14.50	100.00	22.00	44.00	15.875

GBP

22.51

22.51

22.51

27.77

29.94

50.94

Machine taps for BSP-threads



Tool material

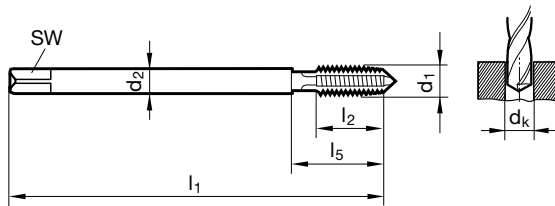
HSS-E

Surface



Form

B



DIN 2184-1 DIN 5156

Article no.

5731

Type

N

Tolerance on Ø

d1	P	d2	SW	dk	l1	l2	l5	Code no.
mm	mm	mm	mm	mm	mm	mm	mm	
G1/8	0.90	7.00	5.50	8.80	90.00	18.00	35.00	9.728
G1/4	1.33	11.00	9.00	11.80	100.00	20.00	40.00	13.157
G3/8	1.33	12.00	9.00	15.25	100.00	22.00	44.00	16.662
G1/2	1.81	16.00	12.00	19.00	125.00	25.00	44.00	20.955
G3/4	1.81	20.00	16.00	24.50	140.00	28.00	53.00	26.441
G1	2.30	25.00	20.00	30.75	160.00	30.00	56.00	33.249

GBP

20.24

26.92

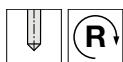
33.28

46.08

89.92

99.72

Machine taps for ISO metric threads



Tool material

HSS-E

Surface

C

S

C

C

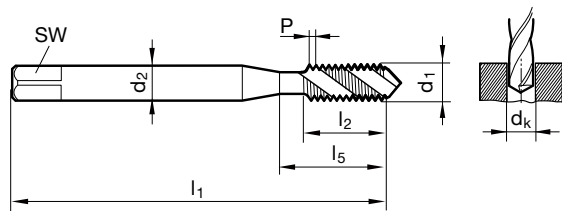
Form

C

C

C

C



DIN 2184-1 DIN 371

Article no.

5554

5592

5552

5591

Type

N R40

N R40

H R40

H R40

Tolerance on Ø

ISO2/6H

ISO2/6H

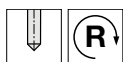
ISO2/6H

ISO2/6H

d1	P	d2	SW	dk	l1	l2	l5
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

GBP			
9.97	13.20	8.35	14.52
9.97	14.40	8.35	15.20
9.97	15.20	9.14	16.41
9.97	18.31	9.14	20.86
11.84	20.73	11.17	24.09
13.99	25.16	13.99	30.95

Machine taps for ISO metric threads



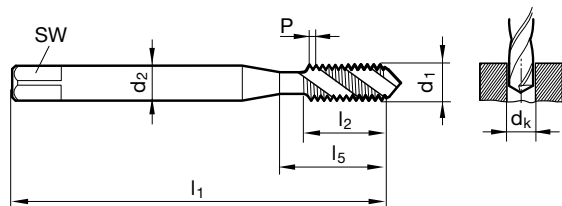
Tool material

HSS-E

Surface

Form

C	C	C	C	C



SL Thread cutting tools

DIN 2184-1 DIN 371

Article no.

Type

Tolerance on Ø

d1	P	d2	SW	dk	l1	l2	l5
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

5553

5596

5555

5594

5551

VA R40

VA R40

N R40

N R40

AI R45

ISO2/6H

ISO2/6H

ISO2/6H

ISO2/6H

ISO2/6H

GBP

10.64

10.64

10.64

10.64

13.99

16.15

14.95

15.08

15.48

16.15

22.48

27.86

9.97

9.97

9.97

9.97

11.84

13.99

14.40

15.08

15.48

18.03

20.19

26.11

8.35

8.35

9.14

9.14

10.64

12.81

Machine taps for ISO metric threads



Tool material

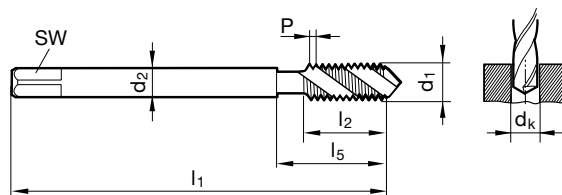
HSS-E

Surface



Form

C



DIN 2184-1 DIN 376

Article no.

5589

Type

N R40

Tolerance on Ø

ISO2/6H

d1	P	d2	SW	dk	l1	l2	l5
	mm	mm	mm	mm	mm	mm	mm
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

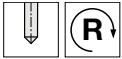
GBP

20.59

30.13

45.34

Machine taps for ISO metric threads



Tool material

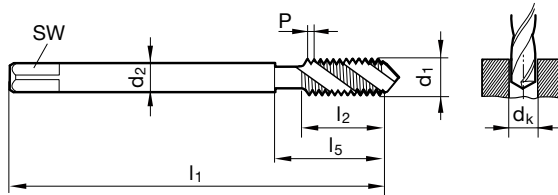
HSS-E

Surface



Form

C



SL Thread cutting tools

DIN 2184-1 DIN 376

Article no.

5717

Type

N R40

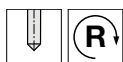
Tolerance on Ø

ISO2/6H

d1	P	d2	SW	dk	l1	l2	l5
	mm	mm	mm	mm	mm	mm	mm
M3	0.50	2.20		2.50	56.00	6.00	18.00
M4	0.70	2.80	2.10	3.30	63.00	7.50	21.00
M5	0.80	3.50	2.70	4.20	70.00	8.50	25.00
M6	1.00	4.50	3.40	5.00	80.00	11.00	30.00
M8	1.25	6.00	4.90	6.80	90.00	14.00	35.00
M10	1.50	7.00	5.50	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

GBP
13.25
11.95
11.74
11.63
12.17
16.47
18.21
26.60
40.07

Machine taps for UNC-threads



Tool material

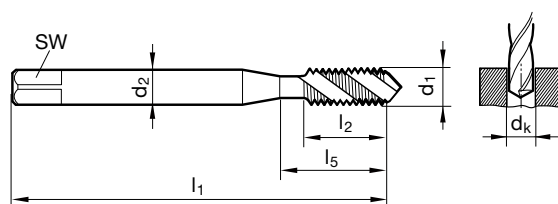
HSS-E

Surface



Form

C



DIN 2184-1 ~DIN 371/~DIN 376

Article no.

5726

Type

N R40

Tolerance on Ø

2B

d1	d2	SW	dk	l1	l2	l5	Code no.
	mm	mm	mm	mm	mm	mm	
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
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
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

GBP

20.68

17.78

19.17

18.74

20.24

19.81

21.32

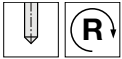
34.14

31.45

39.74

54.70

Machine taps for UNF-threads



Tool material

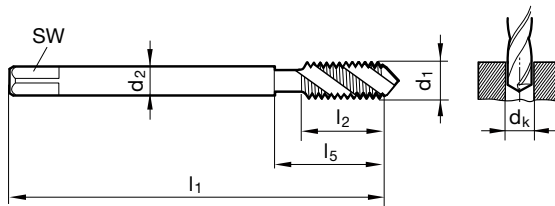
HSS-E

Surface



Form

C



SL Thread cutting tools

DIN 2184-1 ~DIN 374

Article no.

5728

Type

N R40

Tolerance on Ø

2B

d1	d2	SW	dk	l1	l2	l5	Code no.
	mm	mm	mm	mm	mm	mm	
4 - 48	2.20		2.40	56.00	6.00	18.00	2.845
6 - 40	2.50	2.10	2.95	56.00	6.50	20.00	3.505
10 - 32	3.50	2.70	4.10	70.00	8.50	25.00	4.826
1/4 - 28	4.50	3.40	5.50	80.00	9.00	30.00	6.350
3/8 - 24	7.00	5.50	8.50	90.00	11.00	35.00	9.525
5/8 - 18	12.00	9.00	14.50	100.00	15.00	44.00	15.875

GBP

25.42

21.00

19.81

23.27

25.42

52.12

Machine taps for BSP-threads



Tool material

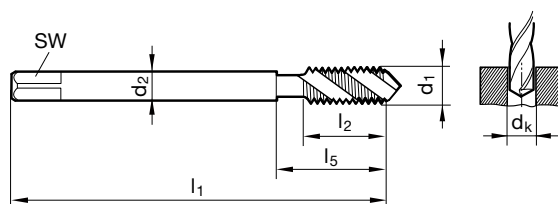
HSS-E

Surface



Form

C



DIN 2184-1 DIN 5156

Article no.

5732

Type

N R40

Tolerance on Ø

d1	P	d2	SW	dk	l1	l2	l5	Code no.
mm	mm	mm	mm	mm	mm	mm	mm	
G1/8	0.90	7.00	5.50	8.80	90.00	11.00	35.00	9.728
G1/4	1.33	11.00	9.00	11.80	100.00	14.00	40.00	13.157
G3/8	1.33	12.00	9.00	15.25	100.00	14.00	44.00	16.662
G1/2	1.81	16.00	12.00	19.00	125.00	18.00	44.00	20.955
G3/4	1.81	20.00	16.00	24.50	140.00	20.00	53.00	26.441
G1	2.30	25.00	20.00	30.75	160.00	24.00	56.00	33.249

GBP

21.00

29.94

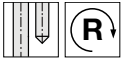
43.40

55.77

86.15

119.86

Fluteless machine taps for ISO metric threads



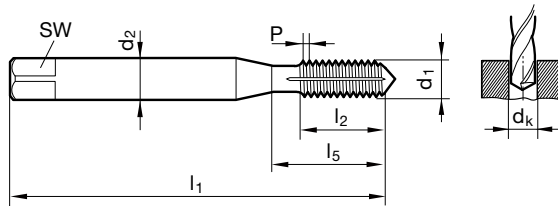
Tool material

HSS-E

Surface

S

Form

C

SL Thread cutting tools

DIN 2174 ~DIN 371

Article no.

5598

Type

N

Tolerance on Ø

6HX

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

GBP
18.71
19.25
20.46
23.69
27.05
34.72

Fluteless machine taps for ISO metric threads



Tool material

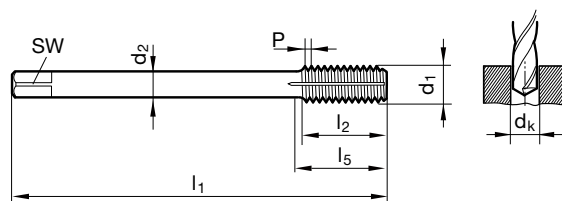
HSS-E

Surface

S

Form

C



DIN 2174 ~DIN 376

Article no.

5599

Type

N

Tolerance on Ø

6HX

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

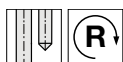
GBP

40.91

62.15

64.98

Thread milling cutters without chamfer for ISO metric threads



Tool material

Solid carbide

Surface

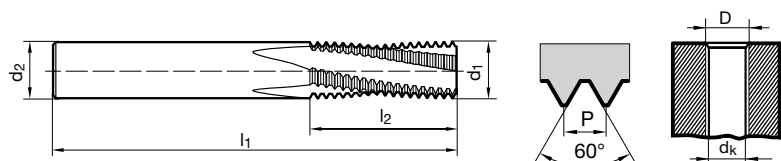
C

C

Shank form

HB

HA



Company std.

Article no.

5547

5548

Type

TM SP

TM SP

Tolerance on Ø

D	P	d1	d2	dk	l1	l2	Z	Code no.
	mm	mm	mm	mm	mm	mm		
M6	1.00	4.80	6.00	5.00	54.00	13.50	3	6.000
M8	1.25	6.40	8.00	6.80	62.00	18.10	3	8.000
M10	1.50	7.95	10.00	8.50	74.00	21.80	3	10.000
M12	1.75	9.95	10.00	10.20	74.00	25.40	4	12.000
M14	2.00	11.20	12.00	12.00	90.00	31.00	4	14.000
M16	2.00	12.80	14.00	14.00	90.00	35.00	4	16.000
M20	2.50	14.95	16.00	17.50	102.00	41.30	4	20.000

GBP

94.30

121.24

101.78

134.70

109.26

148.19

127.20

182.59

142.19

206.57

158.65

232.00

176.66

267.92

GUHRING NAVIGATOR

Article no.

Thread type

Tolerance

Standard/DIN

Tool material

Type

Surface finish

Cooling

Shank tolerance

Std. range page

Cooling:

☒ without coolant ducts

Coolant:

○ Air

● Neat oil

● Soluble oil

△ Paste

Material group	Material examples Figures in bold = material no. to DIN EN 10 027	Tensile strength N/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 hard. 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, 1.8668 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	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 2.0980 CuAl11Ni, 2.1247 CuBe2	≤850 ≤1000		●△●
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	≤150		●
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		●
Kevlar	Kevlar	≤1000		●
Glass, carbon concentr. plastics	GFK/CFK	≤1000		●

≤3xD											Fluteless taps	
5560	5590	5561	5586	5558	5587	5588	5559	5557	5550	5595	5598	5599
M	M	M	M	M	M	M	M	M	M	M	M	M
6H	6H	6H	6H	6H	6H	6H	6H	6H	6HX	6HX	6HX	6HX
371	371	371	371	371	371	371/376	371/376	371/376	371/376	371/376	~371	~376
HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E-PM	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
N/B	N/B	N/B	N/B	H/B	H/B	VA/B	VA/B	Al/B	GG/C	GG/C	N/C	N/C
×	×	×	×	×	×	×	×	×	×	×	×	axial
h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9
82	82	82	82	82	82	83	83	83	83	83	97	98

SL Thread cutting 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	V _c m/min	V _c m/min	V _c m/min
10	12	12	15			10	12				15	15
8	10	12	15			10	12				15	15
8	10	10	12			8	10				15	15
6	8	10	12			8	10				15	15
10	12	12	15			10	12				15	15
10	12	12	15			10	12				15	15
		10	12			8	10				12	12
		6	8	10	12	4	6				12	12
				8	10						8	8
10	12	12	15	10	12	10	12				15	15
		6	8	8	10	4	6				15	15
				10	12						8	8
		6	8	10	12	4	6				15	15
				8	10						8	8
				10	12						12	12
				8	10						8	8
				8	10						8	8
				8	10						10	10
		4	6			10	8				6	6
		4	6			10	8				6	6
						8	6				4	4
									15	25		
									15	25		
									10	20		
									10	20		
									10	15		
									8	15		
									8	15		
									8	15		
										10		
								15			20	20
								15			20	20
											20	20
								15				
								15			20	20
								15			20	20
								15			20	20

Article no.

Thread type

Tolerance

Standard/DIN

Tool material

Type

Surface finish

Cooling

Shank tolerance

Std. range page

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

Cooling:

☒ without coolant ducts

Coolant:

○ Air

● Neat oil

● Soluble oil

△ Paste

Material group	Material examples Figures in bold = material no. to DIN EN 10 027	Tensile strength N/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 hard. 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, 1.8668 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	Epoxy resin, Resopal, Pertinax, Moltopren	≤150		●
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		●
Kevlar	Kevlar	≤1000		●
Glass, carbon concentr. plastics	GFK/CFK	≤1000		●

≤3xD										≤2xD			
5554	5592	5555	5594	5552	5591	5596	5553	5551	5593	5547	5548		
M	M	M	M	M	M	M	M	M	M	M	M		
6H	6H	6H	6H	6H	6H	6H	6H	6H	6HX				
371	371	371	371	371	371	371	371	371	371				
HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	Sol. carb.	Sol. carb.	Sol. carb.		
N R40/C	N R40/C	N R40/C	N R40/C	H R40/C	H R40/C	VA R40/C	VA R40/C	Al R45/C	H/C	TM SP/HB	TM SP/HA		
h9	h9	h9	h9	h9	h9	h9	h9	h9	h6		axial		
90	90	91	91	90	90	91	91	91	84	99	99		
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	Feed col. no.	V _c m/min
8	12	10	15									110 4	110 4
		10	15									110 4	110 4
		8	10									110 4	110 4
8	12	10	15									110 4	110 4
8	12	10	15									110 4	110 4
		8	10									110 4	110 4
		4	6	8	10							90 3	90 3
				6	8							90 3	90 3
8	12	10	15									110 4	110 4
		4	6	8	10							90 3	90 3
				6	8							90 3	90 3
		4	6	8	10							90 3	90 3
				6	8							90 3	90 3
		4	6	8	10							90 3	90 3
				6	8							90 3	90 3
				6	8							90 3	90 3
												25 1	25 1
						10	8					60 2	60 2
						10	8					60 2	60 2
						6	4					60 2	60 2
										45		120 4	120 4
										45		120 4	120 4
										35		120 4	120 4
										35		120 4	120 4
										30		100 3	100 3
										30		120 4	120 4
										30		120 4	120 4
										30		100 3	100 3
										30		100 3	100 3
												35 2	35 2
												35 2	35 2
												35 2	35 2
								15		250	5	250 5	250 5
								15		250	5	250 5	250 5
									50	250	5	250 5	250 5
									50	250	5	250 5	250 5
										250	5	250 5	250 5
								15		250	5	250 5	250 5
										250	5	250 5	250 5
								15		250	5	250 5	250 5
										250	5	250 5	250 5
										250	5	250 5	250 5
								15	15	250	5	250 5	250 5
								15	15	250	5	250 5	250 5
										350	5	350 5	350 5
										350	6	350 6	350 6

Article no.

Thread type

Tolerance

Standard/DIN

Tool material

Type

Surface finish

Cooling

Shank tolerance

Std. range page

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

Cooling:

☒ without coolant ducts

Coolant:

○ Air

● Neat oil

● Soluble oil

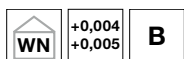
△ Paste

Material group	Material examples Figures in bold = material no. to DIN EN 10 027	Tensile strength N/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 hard. 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, 1.8668 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	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9	≤600		●△●
≤ 24 % Si	3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●△●
Magnesium alloys	3.5200 MgMn2, 3.5812.05 G-MgAl8Zn1, 3.5612.05 G-MgAl6Zn1	≤400		●△●
Copper, low-alloyed	2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb	≤500		●△●
Brass, short-chipping	2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2	≤600		●△●
long-chipping	2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5	≤600		●△●
Bronze, short-chipping	2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn	≤600		●△●
	2.0790 CuNi18Zn19Pb	≤850		●△●
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10	≤850		●△●
	2.0980 CuAl11Ni, 2.1247 CuBe2	≤1000		●△●
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	≤150		●
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		●
Kevlar	Kevlar	≤1000		●
Glass, carbon concentr. plastics	GFK/CFK	≤1000		●

SL Thread cutting tools

105

NC machine reamers

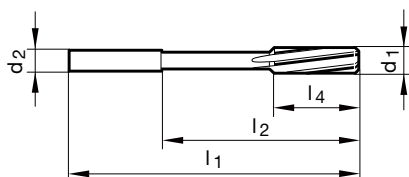

Tool material **Solid carbide**

Surface

Shank form HA



$\varnothing > 3.75 \text{ mm}$ with extremely unequal flute spacing • $\leq \varnothing 5.50 \text{ mm}$: 0.000/+0.004
 • $> \varnothing 5.50 \text{ mm}$: 0.00/+0.005


Article no. **5527**

Form **B**

Cutting direction

d1	d2 h6	l1	l2	l4	Z	Code no.	GBP
mm	mm	mm	mm	mm			
0.98	4.00	50.00	22.00	6.00	3	0.980	32.91
0.99	4.00	50.00	22.00	6.00	3	0.990	32.91
1.00	4.00	50.00	22.00	6.00	3	1.000	28.43
1.01	4.00	50.00	22.00	6.00	3	1.010	32.91
1.02	4.00	50.00	22.00	6.00	3	1.020	32.91
1.03	4.00	50.00	22.00	9.00	3	1.030	32.91
1.48	4.00	50.00	22.00	9.00	3	1.480	32.91
1.49	4.00	50.00	22.00	9.00	3	1.490	32.91
1.50	4.00	50.00	22.00	9.00	3	1.500	28.84
1.51	4.00	50.00	22.00	9.00	3	1.510	32.91
1.52	4.00	50.00	22.00	9.00	3	1.520	32.91
1.53	4.00	50.00	22.00	9.00	3	1.530	32.91
1.98	4.00	50.00	22.00	12.00	4	1.980	32.91
1.99	4.00	50.00	22.00	12.00	4	1.990	32.91
2.00	4.00	50.00	22.00	12.00	4	2.000	28.84
2.01	4.00	50.00	22.00	12.00	4	2.010	32.91
2.02	4.00	50.00	22.00	12.00	4	2.020	32.91
2.03	4.00	50.00	22.00	12.00	4	2.030	32.91
2.48	4.00	60.00	32.00	16.00	4	2.480	32.91
2.49	4.00	60.00	32.00	16.00	4	2.490	32.91
2.50	4.00	60.00	32.00	16.00	4	2.500	35.44
2.51	4.00	60.00	32.00	16.00	4	2.510	32.91
2.52	4.00	60.00	32.00	16.00	4	2.520	32.91
2.53	4.00	60.00	32.00	16.00	4	2.530	32.91
2.97	4.00	64.00	36.00	17.00	6	2.970	34.15
2.98	4.00	64.00	36.00	17.00	6	2.980	34.15
2.99	4.00	64.00	36.00	17.00	6	2.990	34.15
3.00	4.00	64.00	36.00	17.00	6	3.000	30.23
3.01	4.00	64.00	36.00	17.00	6	3.010	34.15
3.02	4.00	64.00	36.00	17.00	6	3.020	34.15
3.03	4.00	64.00	36.00	17.00	6	3.030	34.15
3.97	4.00	77.00	45.00	21.00	6	3.970	40.46
3.98	4.00	77.00	45.00	21.00	6	3.980	40.46
3.99	4.00	77.00	45.00	21.00	6	3.990	40.46
4.00	4.00	77.00	45.00	21.00	6	4.000	35.55
4.01	4.00	77.00	45.00	21.00	6	4.010	40.46

Article no.							5527
Form							B
Cutting direction							
d1	d2 h6	l1	l2	l4	Z	Code no.	GBP
mm	mm	mm	mm	mm			
4.02	4.00	77.00	45.00	21.00	6	4.020	40.46
4.03	4.00	77.00	45.00	21.00	6	4.030	40.46
4.97	6.00	93.00	59.00	26.00	6	4.970	43.95
4.98	6.00	93.00	59.00	26.00	6	4.980	43.95
4.99	6.00	93.00	59.00	26.00	6	4.990	43.95
5.00	6.00	93.00	59.00	26.00	6	5.000	40.04
5.01	6.00	93.00	59.00	26.00	6	5.010	43.95
5.02	6.00	93.00	59.00	26.00	6	5.020	43.95
5.03	6.00	93.00	59.00	26.00	6	5.030	43.95
5.97	6.00	93.00	57.00	26.00	6	5.970	47.45
5.98	6.00	93.00	57.00	26.00	6	5.980	47.45
5.99	6.00	93.00	57.00	26.00	6	5.990	47.45
6.00	6.00	93.00	57.00	26.00	6	6.000	43.53
6.01	6.00	93.00	57.00	26.00	6	6.010	48.02
6.02	6.00	93.00	57.00	26.00	6	6.020	48.02
6.03	6.00	93.00	57.00	26.00	6	6.030	48.02
7.00	8.00	109.00	69.00	31.00	6	7.000	43.95
7.97	8.00	117.00	75.00	33.00	6	7.970	60.47
7.98	8.00	117.00	75.00	33.00	6	7.980	60.47
7.99	8.00	117.00	75.00	33.00	6	7.990	60.47
8.00	8.00	117.00	75.00	33.00	6	8.000	55.02
8.01	8.00	117.00	75.00	33.00	6	8.010	60.47
8.02	8.00	117.00	75.00	33.00	6	8.020	60.47
8.03	8.00	117.00	75.00	33.00	6	8.030	60.47
8.04	8.00	117.00	75.00	33.00	6	8.040	60.47
9.00	10.00	125.00	81.00	36.00	6	9.000	60.47
9.97	10.00	133.00	87.00	38.00	6	9.970	69.29
9.98	10.00	133.00	87.00	38.00	6	9.980	69.29
9.99	10.00	133.00	87.00	38.00	6	9.990	69.29
10.00	10.00	133.00	87.00	38.00	6	10.000	65.78
10.01	10.00	133.00	87.00	38.00	6	10.010	69.29
10.02	10.00	133.00	87.00	38.00	6	10.020	69.29
10.03	10.00	133.00	87.00	38.00	6	10.030	69.29
10.04	10.00	133.00	87.00	38.00	6	10.040	69.29
10.05	10.00	133.00	87.00	38.00	6	10.050	69.29
11.97	12.00	151.00	105.00	44.00	6	11.970	83.42
11.98	12.00	151.00	105.00	44.00	6	11.980	83.42
11.99	12.00	151.00	105.00	44.00	6	11.990	83.42
12.00	12.00	151.00	105.00	44.00	6	12.000	79.93
12.01	12.00	151.00	105.00	44.00	6	12.010	83.42
12.02	12.00	151.00	105.00	44.00	6	12.020	83.42
12.03	12.00	151.00	105.00	44.00	6	12.030	83.42
12.04	12.00	151.00	105.00	44.00	6	12.040	83.42
12.05	12.00	151.00	105.00	44.00	6	12.050	83.42

GUHRING NAVIGATOR

NC chucking reamers

Article no. HB	5527
Standard/DIN	Company std.
Tool material	Solid carbide
Carbide grade	K10
Shank form	cyl.
Surface	○
Std. range page	106

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

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

○ bright

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

Coolant:

- Air
● Neat oil
● Soluble oil



Material group	Material examples, new description (old description in brackets) Figures in bold = material no. to DIN EN	Tensile str. N/mm ²	Hard- ness	Cool- ant	V _c m/min	Feed column no.
Common structural steels	1.0035 S185(St33), 1.0486 P275N(StE285), 1.0345 P235GH(H1), 1.0425 1.0050 E295 (St50-2), 1.0070 E360 (St70-2), 1.8937 P500NH (WStE500)	≤500 ≤1000		○ ○	18 16	72 72
Free-cutting steels	1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36) 1.0727 46S20 (45S20), 1.0728 (60S20), 1.0757 46SPb20 (45SPb20)	≤850 ≤1000		○ ○	18 16	72 72
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		○ ○ ○	18 16 14	71 72 71
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	≤1000 ≤1400		○ ○	14 12	71 71
Unalloyed case hard. steels	1.0301 (C10), 1.1121 C10E (Ck10)	≤850		○	18	71
Alloyed case hardened steels	1.7276 10CrMo11, 1.5125 11MnSi6 1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5	≤1000 ≤1400		● ●	14 12	71 71
Nitriding steels	1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	≤1000 ≤1400		○ ●	14 12	71 71
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		○ ●	12 10	71 71
High speed steels	1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3	≤1400		●	10	71
Spring steels	1.5026 55Si7, 1.1716 55Cr3, 1.8159 51CrV4 (51CrV4)		≤350 HB	●		
Hardened steels	-		≤48 HRC ≤66 HRC	● ●	6	71
Stainless steels, sulphured austenitic martensitic	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.86681 X6CrMoS17, 1.4305 1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 1.4057 X20CrNi172 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521	≤900 ≤1100 ≤1500		● ● ●	8 6 6	71 71 71
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	○ ○	20 18	71 71
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	○ ○	20 18	71 71
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	○ ○	16 16	71 71
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		○ ○	12 12	71 71
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤2000		●	6	71
Ti and Ti-alloys	3.7024 Ti99.5, 3.7114 TiAl5Sn2.5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7165 TiAl6V4, 3.7184 TiAl4Mo4Sn2.5, - TiAl8Mo1V1	≤850 ≤1400		● ●	10 10	71 71
Aluminium and Al-alloys	3.0255 Al99.5, 3.2315 AlMgSi1, 3.3515 AlMg1	≤400		○	30	73
Al wrought alloys	3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1.5	≤650		○	30	73
Al cast alloys ≤ 10 % Si ≤ 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		○ ○	40 30	72 72
Magnesium alloys	3.5200 MgMn2, 3.5812.05 G-MgAl8Zn1, 3.5612.05 G-MgAl6Zn1	≤400		○	25	72
Copper, low-alloyed	2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb	≤500		○	25	72
Brass, short-chipping long-chipping	2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2 2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0.5	≤600 ≤600		○ ○	35 30	72 72
Bronze, short-chipping	2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn 2.0790 CuNi18Zn19Pb	≤600 ≤850		○ ●	35 30	72 72
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2	≤850 ≤1000		● ●	30 25	72 72
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	≤150		○	20	73
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		○	20	73
Kevlar	Kevlar	≤1000		○		
Glass, carbon concentr. plastics	GFK/CFK	≤1000		○		

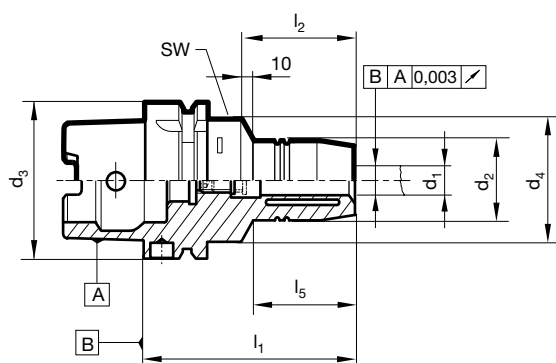
HSK-A hydraulic chucks with increased clamping force

Product information:

- balancing quality: G 2.5 / 25,000 rev./min
- axial length adjustment
- suitable for tools with internal coolant
- for tool shank tolerance h6
- extra lengths l1 = 150 mm, 160 mm (concentricity 5 µm) and 200 mm (concentricity 7 µm)
- HSK-A to ISO 12164-1 / DIN 69893-1

Supplied items:

- incl. adjustment screw
- incl. hexagon chuck key
- order coolant delivery set separately



Article no.

4299

d3	d1	d2	d4	l1	l2	l5	SW	Code no.	GBP
	mm	mm	mm	mm	mm	mm	mm		
HSK-A 63	6.00	26.00	50.00	70.00	37.00	24.00	5.0	6.063	372.80
HSK-A 63	8.00	28.00	50.00	70.00	37.00	24.00	5.0	8.063	372.80
HSK-A 63	10.00	30.00	50.00	80.00	41.00	35.00	5.0	10.063	372.80
HSK-A 63	12.00	32.00	50.00	85.00	46.00	40.00	5.0	12.063	372.80
HSK-A 63	14.00	34.00	50.00	85.00	46.00	40.00	5.0	14.063	372.80
HSK-A 63	16.00	38.00	50.00	90.00	49.00	46.00	5.0	16.063	372.80
HSK-A 63	18.00	40.00	50.00	90.00	49.00	47.00	5.0	18.063	372.80
HSK-A 63	20.00	42.00	50.00	90.00	51.00	48.00	5.0	20.063	372.80

ISO taper hydraulic chucks with increased clamping force

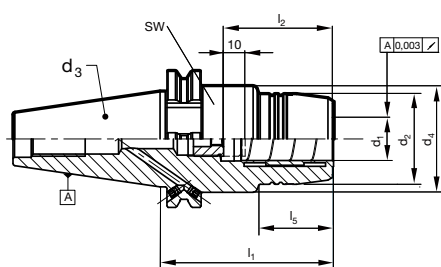


Product information:

- SK to DIN ISO 7388-1 form AD/AF
- bores for form B closed when supplied with screws
- balancing quality: G 2.5 / 25,000 rev./min
- axial length adjustment
- for tool shank tolerance h6
- suitable for tools with internal coolant

Supplied items:

- incl. adjustment screw
- incl. hexagon chuck key
- order pull studs separately



Article no.

4213

d3	d1	d2	d4	l1	l2	l5	SW	Code no.	GBP
	mm	mm	mm	mm	mm	mm	mm		
SK 40	6.00	26.00	49.50	80.50	37.00	29.50	5.0	6.040	316.88
SK 40	8.00	28.00	49.50	80.50	37.00	30.00	5.0	8.040	316.88
SK 40	10.00	30.00	49.50	80.50	41.00	31.00	5.0	10.040	316.88
SK 40	12.00	32.00	49.50	80.50	46.00	31.50	5.0	12.040	316.88
SK 40	14.00	34.00	49.50	80.50	46.00	31.50	5.0	14.040	316.88
SK 40	16.00	38.00	49.50	80.50	49.00	33.00	5.0	16.040	316.88
SK 40	18.00	40.00	49.50	80.50	49.00	33.00	5.0	18.040	316.88
SK 40	20.00	49.50	49.50	64.50	51.00		5.0	20.040	283.33

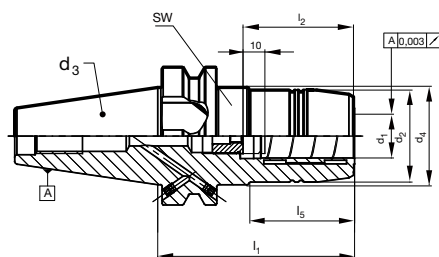
MAS/BT hydraulic chucks with increased clamping force

Product information:

- balancing quality: G 2.5 / 25,000 rev./min
- axial length adjustment
- for tool shank tolerance h6
- suitable for tools with internal coolant
- MAS/BT to DIN ISO 7388-2 form JD/JF (form AD/B)

Supplied items:

- incl. adjustment screw
- incl. hexagon chuck key
- order pull studs separately


Article no. **4221**

d3	Form	d1	d2	d4	l1	l2	l5	SW	Code no.	GBP
		mm	mm	mm	mm	mm	mm	mm		
BT 40	JD/JF	6.00	26.00	44.50	90.00	37.00	43.00	5.0	6.040	333.66
BT 40	JD/JF	8.00	28.00	44.50	90.00	37.00	44.50	5.0	8.040	333.66
BT 40	JD/JF	10.00	30.00	44.50	90.00	41.00	44.50	5.0	10.040	333.66
BT 40	JD/JF	12.00	32.00	44.50	90.00	46.00	44.50	5.0	12.040	333.66
BT 40	JD/JF	14.00	34.00	44.50	90.00	46.00	44.50	5.0	14.040	333.66
BT 40	JD/JF	16.00	38.00	44.50	90.00	49.00	47.50	5.0	16.040	333.66
BT 40	JD/JF	18.00	40.00	44.50	90.00	49.00	47.50	5.0	18.040	333.66
BT 40	JD/JF	20.00	49.50	49.50	72.50	51.00		5.0	20.040	305.70

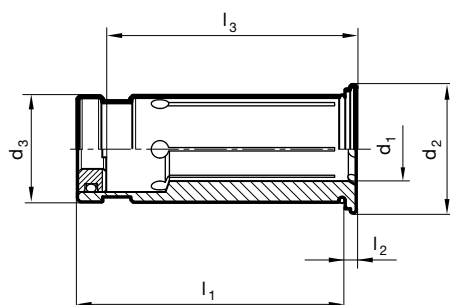
GÜHROJET reduction bushes for hydraulic chucks

Product information:

- for clamping smaller shank-Ø in hydraulic chucks
- clamping-Ø for tool shank tolerance h6
- with coolant slots for peripheral cooling, therefore process and tool life improvement
- concentricity $\leq 2 \mu\text{m}$
- with adjustable stop
- when applying reducing bushings the permissible transferable torque can be increased by approx. 25% in contrast to direct clamping

Supplied items:

- incl. stop element



Article no.

4369

d3	d1	d2	l1	l3	l2	Code no.	GBP
mm	mm	mm	mm	mm	mm		
20.00	3.00	24.10	50.50	2.00	28.50	3.020	127.37
20.00	4.00	24.10	50.50	2.00	28.50	4.020	127.37
20.00	5.00	24.10	50.50	2.00	28.50	5.020	127.37
20.00	6.00	24.10	50.50	2.00	37.50	6.020	103.56
20.00	7.00	24.10	50.50	2.00	37.50	7.020	103.56
20.00	8.00	24.10	50.50	2.00	37.50	8.020	103.56
20.00	9.00	24.10	50.50	2.00	42.50	9.020	103.56
20.00	10.00	24.10	50.50	2.00	42.50	10.020	103.56
20.00	11.00	24.10	50.50	2.00	42.50	11.020	103.56
20.00	12.00	24.10	50.50	2.00	47.50	12.020	103.56
20.00	13.00	24.10	50.50	2.00	47.50	13.020	103.56
20.00	14.00	24.10	50.50	2.00	47.50	14.020	103.56
20.00	15.00	24.10	50.50	2.00	47.50	15.020	103.56
20.00	16.00	24.10	50.50	2.00	47.50	16.020	103.56

HSK-A shrink fit chucks

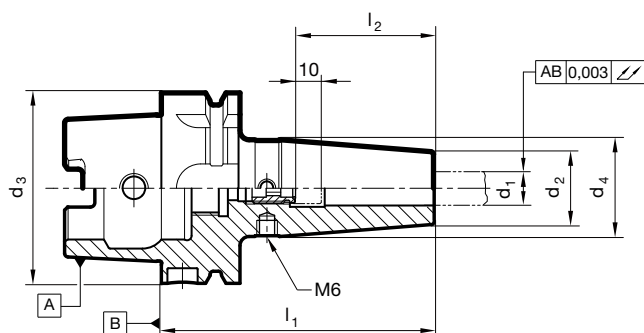
DIN
69882-8

Product information:

- balancing quality: G 2.5 / 25,000 rev./min or rev. < 1 gmm
- incl. balancing thread 4xM6/6xM6
- for tool shank tolerance h6
- extra lengths $l_1 = 120$ mm, 160 mm (concentricity 5 μ m) and 200 mm (concentricity 7 μ m)
- HSK-A to ISO 12164-1 / DIN 69893-1
- suitable for tools with internal coolant

Supplied items:

- incl. adjustment screw
- for conventional cooling order coolant delivery set separately



Article no.

4736

d3	d1	d2	d4	l1	l2		Code no.	GBP
	mm	mm	mm	mm	mm	kg		
HSK-A 63	6.00	21.00	27.00	80.00	36.00	0.82	6.063	119.25
HSK-A 63	8.00	21.00	27.00	80.00	36.00	5.90	8.063	119.25
HSK-A 63	10.00	24.00	32.00	85.00	41.00	0.91	10.063	119.25
HSK-A 63	12.00	24.00	32.00	90.00	46.00	0.94	12.063	119.25
HSK-A 63	14.00	27.00	34.00	90.00	46.00	0.97	14.063	119.25
HSK-A 63	16.00	27.00	34.00	95.00	49.00	0.90	16.063	119.25
HSK-A 63	18.00	33.00	42.00	95.00	49.00	1.16	18.063	119.25
HSK-A 63	20.00	33.00	42.00	100.00	51.00	1.18	20.063	119.25

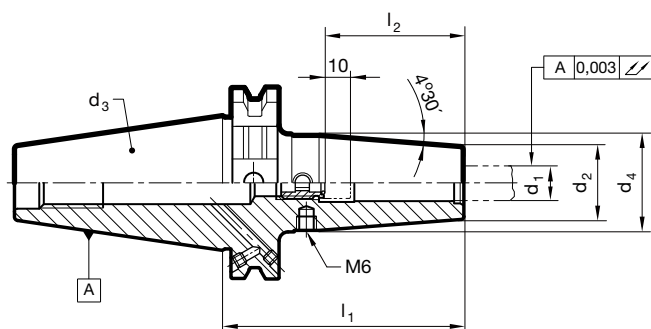
ISO taper shrink fit chucks


Product information:

- balancing quality: G 2.5 / 25,000 rev./min or rev. < 1 gmm
- incl. balancing thread 4xM6/6xM6
- SK to DIN ISO 7388-1 form AD/AF
- for tool shank tolerance h6
- extra lengths l₁ = 120 mm, 160 mm (concentricity 5 µm) and 200 mm (concentricity 7 µm)
- suitable for tools with internal coolant

Supplied items:

- incl. adjustment screw
- order pull studs separately



Article no.

4738

d3	d1	d2	d4	l1	l2		Code no.	GBP
	mm	mm	mm	mm	mm	kg		
SK 40	6.00	21.00	27.00	80.00	36.00	0.91	6.040	94.09
SK 40	8.00	21.00	27.00	80.00	36.00	1.00	8.040	94.09
SK 40	10.00	24.00	32.00	80.00	41.00	1.10	10.040	94.09
SK 40	12.00	24.00	32.00	81.60	46.00	1.03	12.040	94.09
SK 40	14.00	27.00	34.00	81.80	46.00	1.10	14.040	94.09
SK 40	16.00	27.00	34.00	82.00	49.00	1.10	16.040	94.09
SK 40	18.00	33.00	42.00	82.30	49.00	1.20	18.040	94.09
SK 40	20.00	33.00	42.00	82.60	51.00	1.50	20.040	94.09

MAS/BT shrink fit chucks

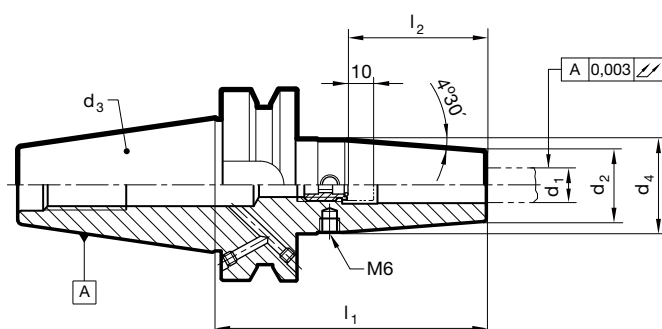


Product information:

- balancing quality: G 2.5 / 25,000 rev./min or rev. < 1 gmm
- incl. balancing thread 4xM6/6xM6
- MAS/BT to DIN ISO 7388-2 form JD/JF (form AD/B)
- for tool shank tolerance h6
- suitable for tools with internal coolant

Supplied items:

- incl. adjustment screw
- order pull studs separately



Article no.

4739

Tool holders

d3	Form	d1	d2	d4	l1	l2		Code no.	GBP
		mm	mm	mm	mm	mm	kg		
BT 40	JD/JF	6.00	21.00	27.00	90.00	36.00	1.20	6.040	105.47
BT 40	JD/JF	8.00	21.00	27.00	90.00	36.00	1.20	8.040	105.47
BT 40	JD/JF	10.00	24.00	32.00	90.00	41.00	1.25	10.040	105.47
BT 40	JD/JF	12.00	24.00	32.00	90.00	46.00	1.30	12.040	105.47
BT 40	JD/JF	14.00	27.00	34.00	90.00	46.00	1.40	14.040	105.47
BT 40	JD/JF	16.00	27.00	34.00	90.00	49.00	1.40	16.040	105.47
BT 40	JD/JF	18.00	33.00	42.00	90.00	49.00	1.70	18.040	105.47
BT 40	JD/JF	20.00	33.00	42.00	90.00	51.00	1.70	20.040	105.47

Shrink fit extensions

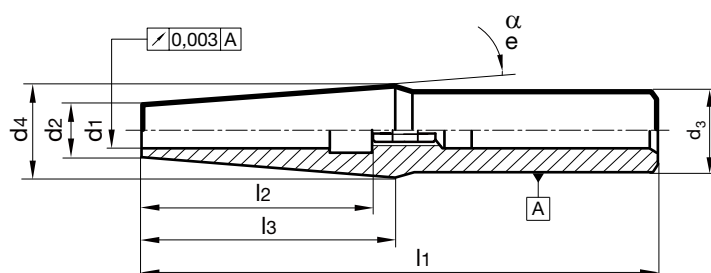


Product information:

- for clamping in hydraulic chucks or shrink fit chucks
- suitable for internal cooling
- we recommend the use of special cooling adaptors Guhring no. 4419
- for carbide tool shanks in tolerance h6 (from d1 14 mm also HSS possible)
- special designs on request

Supplied items:

- incl. setting screw Guhring no. 4977 or 4904



Article no.

4719

d1	d2	d3	d4	l1	l2	l3		Code no.	GBP
mm	mm	mm	mm	mm	mm	mm	kg		
3.00	7.00	16.00	16.00	115.00	30.00	67.00	0.12	3.016	94.09
4.00	7.00	16.00	16.00	115.00	35.00	67.00	0.12	4.016	94.09
5.00	8.00	16.00	16.00	115.00	40.00	67.00	0.12	5.016	94.09
6.00	10.00	16.00	16.00	115.00	36.00	67.00	0.12	6.016	88.41
8.00	12.00	16.00	16.00	115.00	36.00	67.00	0.13	8.016	88.41
10.00	14.00	16.00	16.00	115.00	41.00	67.00	0.12	10.016	88.41
12.00	16.00	16.00	23.20	115.00	46.00	67.00	0.16	12.016	88.41

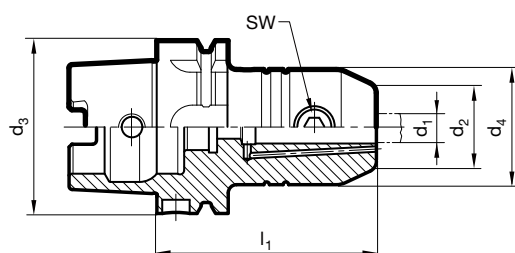
Side lock holders

**Product information:**

- balancing quality: G 6.3 / 15,000 rev./min
- for tool shank tolerance h6
- with locating bore DIN 1835-2 Form B "Weldon"
- from holder d1 = 25 with two clamping screws
- with coolant ducts for peripheral cooling, therefore process and tool life improvement
- coolant ducts: d1 = 6 - 14 mm with two coolant ducts, d1 = 16 - 40 mm with four coolant ducts
- HSK-A to ISO 12164-1 / DIN 69893-1
- suitable for tools with internal coolant

Supplied items:

- incl. clamping screw
- order coolant delivery set separately

**GÜHROJET**

Article no.

4232

d3	d1	d2	d4	l1	SW		Code no.	GBP
	mm	mm	mm	mm	mm	kg		
HSK-A 63	6.00	15.00	25.00	65.00	3.0	0.80	6.063	135.67
HSK-A 63	8.00	20.00	28.00	65.00	4.0	0.80	8.063	135.67
HSK-A 63	10.00	25.00	35.00	65.00	5.0	5.90	10.063	135.67
HSK-A 63	12.00	30.00	42.00	80.00	6.0	1.20	12.063	135.67
HSK-A 63	14.00	32.00	44.00	80.00	6.0	1.20	14.063	135.67
HSK-A 63	16.00	36.00	48.00	80.00	6.0	1.30	16.063	135.67
HSK-A 63	18.00	38.00	50.00	80.00	6.0	1.40	18.063	135.67
HSK-A 63	20.00	40.00	52.00	80.00	8.0	1.40	20.063	135.67

Side lock holders

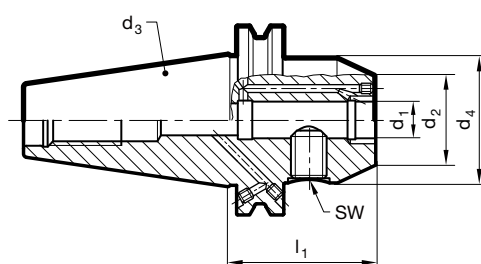


Product information:

- balancing quality: G 6.3 / 15,000 rev./min
- for tool shank tolerance h6
- with locating bore DIN 1835-2 Form B "Weldon"
- SK to DIN ISO 7388-1 form AD/AF
- bores for form B closed when supplied with screws
- with coolant ducts in the clamping bore for peripheral cooling, therefore process and tool life improvement
- from holder d1 = 25 with two clamping screws
- coolant ducts: d1 = 6 - 14 mm with two coolant ducts, d1 = 16 - 32 mm with four coolant ducts
- suitable for tools with internal coolant

Supplied items:

- incl. clamping screw
- order pull studs separately



GÜHROJET

Article no.

4317

d3	Form	d1	d2	d4	l1	SW		Code no.	GBP
		mm	mm	mm	mm	mm	kg		
SK 40	AD/AF	6.00	15.00	25.00	50.00	3.0	0.90	6.040	69.38
SK 40	AD/AF	8.00	20.00	28.00	50.00	4.0	0.90	8.040	69.38
SK 40	AD/AF	10.00	25.00	35.00	50.00	5.0	1.00	10.040	69.38
SK 40	AD/AF	12.00	30.00	42.00	50.00	6.0	1.20	12.040	69.38
SK 40	AD/AF	14.00	32.00	44.00	50.00	6.0	1.20	14.040	69.38
SK 40	AD/AF	16.00	36.00	48.00	63.00	6.0	4.99	16.040	69.38
SK 40	AD/AF	18.00	38.00	50.00	63.00	6.0	1.40	18.040	69.38
SK 40	AD/AF	20.00	40.00	52.00	63.00	8.0	4.98	20.040	69.38

Collet holders

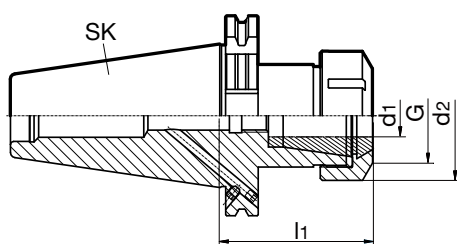


Product information:

- balancing quality: G 6.3 / 15,000 rev./min
- SK to DIN ISO 7388-1 form AD/AF

Supplied items:

- incl. retaining nut
- order collet, Guhring no. 4307, separately
- order clamping key, Guhring no. 4913, separately
- order pull studs separately



Article no.

4318

d3	Size	d1	d2	G	l1		Code no.	GBP
			mm		mm	kg		
SK 40	ER16	1,0-10,0	32.000	M22 X1.5	63.00	0.15	16.040	70.42
SK 40	ER25	1,0-16,0	42.000	M32 X1.5	60.00	1.40	25.040	78.70
SK 40	ER32	2,0-20,0	50.000	M40 X1.5	70.00	1.40	32.040	78.70

Side lock holders

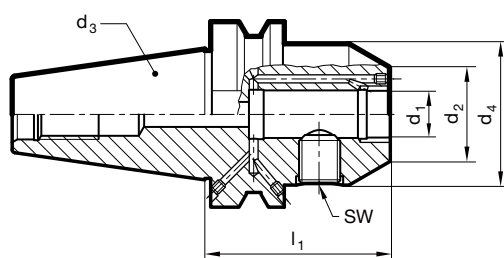


Product information:

- for tool shank tolerance h6
- with locating bore DIN 1835-2 Form B "Weldon"
- from holder d1 = 25 with two clamping screws
- with coolant ducts for peripheral cooling, therefore process and tool life improvement
- coolant delivery form JD/JF
- also suitable for tools with internal coolant

Supplied items:

- incl. clamping screw
- order pull studs separately



GÜHROJET

Article no.

4234

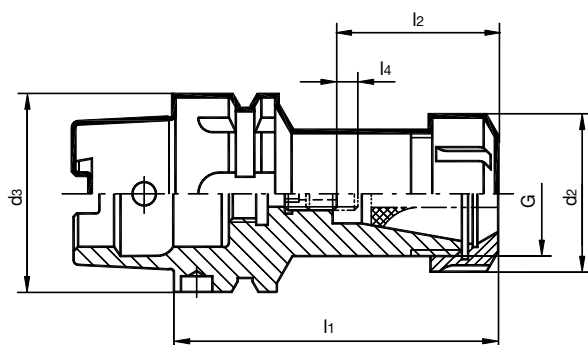
d3	Form	d1	d2	d4	l1	SW		Code no.	GBP
		mm	mm	mm	mm	mm	kg		
BT 40	JD/JF	6.00	15.00	25.00	50.00	3.0	5.81	6.040	69.38
BT 40	JD/JF	8.00	20.00	28.00	50.00	4.0	5.80	8.040	69.38
BT 40	JD/JF	10.00	25.00	35.00	63.00	5.0	6.05	10.040	69.38
BT 40	JD/JF	12.00	30.00	42.00	63.00	6.0	6.00	12.040	69.38
BT 40	JD/JF	14.00	32.00	44.00	63.00	6.0	5.93	14.040	69.38
BT 40	JD/JF	16.00	36.00	48.00	63.00	6.0	5.98	16.040	69.38
BT 40	JD/JF	18.00	38.00	50.00	63.00	6.0	6.17	18.040	69.38
BT 40	JD/JF	20.00	40.00	52.00	63.00	8.0	6.15	20.040	69.38

Collet holders



Product information:

- balancing quality: G 2.5 / 25,000 rev./min or rev. < 1 gmm
- HSK-A to ISO 12164-1 / DIN 69893-1

Article no. **4304**

d3	Size	d2	G	l1	l2	l4		Code no.	GBP
		mm		mm	mm	mm	kg		
HSK-A 63	ER16	28.00	M22 X1.5	100.00	34.00	6.00	5.88	16.063	147.05
HSK-A 63	ER25	42.00	M32 X1.5	80.00	42.00	6.00	6.07	25.063	147.05
HSK-A 63	ER32	50.00	M40 X1.5	100.00	50.00	10.00	1.20	32.063	169.83

Collet holders

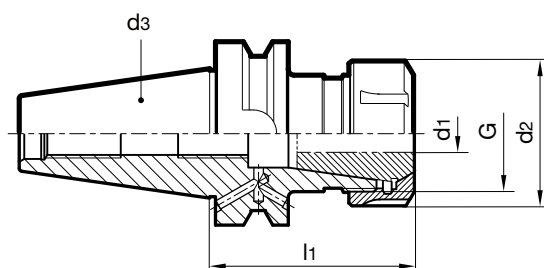


Product information:

- balancing quality: G 6.3 / 15,000 rev./min
- MAS/BT to DIN ISO 7388-2 Form JD/JF
- coolant delivery form JD/JF
- BT30 in JD design without coolant delivery via the collar

Supplied items:

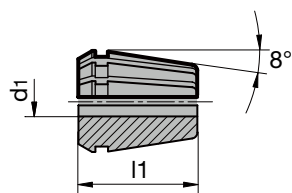
- incl. retaining nut
- order collet, Guhring no. 4307, separately
- order clamping key, Guhring no. 4913, separately
- incl. retaining nut Guhring no. 4306 and adjustment screw Guhring no. 4902
- order collet, Guhring no. 4307, clamping key, Guhring no. 4913 and coolant delivery set, Guhring no. 4949 separately



Article no. **4245**

d3	Size	d1	d2	G	l1		Code no.	GBP
			mm		mm	kg		
BT 40	ER16	1,0-10,0	32.00	M22 X1.5	63.00	0.14	16.040	76.63
BT 40	ER25	2,0-16,0	42.00	M32 X1.5	60.00	0.35	25.040	76.63
BT 40	ER32	2,0-20,0	50.00	M40 X1.5	70.00	0.62	32.040	76.63

Collets

Article no. **4307**

Size	d1	l1	Code no.	GBP
		mm		
ER11	1,0-0,5	18.00	1.011	26.93
ER16	1,0-0,5	27.50	1.016	25.90
ER20	1,0-0,5	31.50	1.020	25.90
ER25	1,0-0,5	34.00	1.025	27.44
ER11	1,5-1,0	18.00	1.511	26.93
ER16	1,5-1,0	27.50	1.516	25.90
ER20	1,5-1,0	31.50	1.520	25.90
ER25	1,5-1,0	34.00	1.525	27.44
ER11	2,0-1,5	18.00	2.011	26.93
ER16	2,0-1,0	27.50	2.016	25.90
ER20	2,0-1,0	31.50	2.020	25.90
ER25	2,0-1,0	34.00	2.025	27.44
ER32	2,0-1,0	40.00	2.032	31.06
ER11	2,5-2,0	18.00	2.511	26.93
ER16	2,5-1,5	27.50	2.516	25.90
ER20	2,5-1,5	31.50	2.520	25.90
ER25	2,5-1,5	34.00	2.525	27.44
ER32	2,5-1,5	40.00	2.532	31.06
ER11	3,0-2,5	18.00	3.011	22.78
ER16	3,0-2,0	27.50	3.016	22.26
ER20	3,0-2,0	31.50	3.020	22.26
ER25	3,0-2,0	34.00	3.025	23.32
ER32	3,0-2,0	40.00	3.032	25.90
ER11	4,0-3,5	18.00	4.011	22.78
ER16	4,0-3,0	27.50	4.016	22.26
ER20	4,0-3,0	31.50	4.020	22.26
ER25	4,0-3,0	34.00	4.025	23.32
ER32	4,0-3,0	40.00	4.032	25.90
ER40	4,0-3,0	46.00	4.040	29.51
ER11	5,0-4,5	18.00	5.011	22.78
ER16	5,0-4,0	27.50	5.016	22.26
ER20	5,0-4,0	31.50	5.020	22.26
ER25	5,0-4,0	34.00	5.025	23.32
ER32	5,0-4,0	40.00	5.032	25.90
ER40	5,0-4,0	46.00	5.040	29.51
ER11	6,0-5,5	18.00	6.011	22.78
ER16	6,0-5,0	27.50	6.016	22.26
ER20	6,0-5,0	31.50	6.020	22.26
ER25	6,0-5,0	34.00	6.025	23.32
ER32	6,0-5,0	40.00	6.032	25.90
ER40	6,0-5,0	46.00	6.040	29.51
ER11	7,0-6,5	18.00	7.011	22.78
ER16	7,0-6,0	27.50	7.016	22.26
ER20	7,0-6,0	31.50	7.020	22.26
ER25	7,0-6,0	34.00	7.025	23.32
ER32	7,0-6,0	40.00	7.032	25.90
ER40	7,0-6,0	46.00	7.040	29.51
ER16	8,0-7,0	27.50	8.016	22.26

Size	d1	l1	Code no.	GBP
		mm		
ER20	8,0-7,0	31.50	8.020	22.26
ER25	8,0-7,0	34.00	8.025	23.32
ER32	8,0-7,0	40.00	8.032	25.90
ER40	8,0-7,0	46.00	8.040	29.51
ER16	9,0-8,0	27.50	9.016	22.26
ER20	9,0-8,0	31.50	9.020	22.26
ER25	9,0-8,0	34.00	9.025	23.32
ER32	9,0-8,0	40.00	9.032	25.90
ER40	9,0-8,0	46.00	9.040	29.51
ER16	10,0-9,0	27.50	10.016	22.26
ER20	10,0-9,0	31.50	10.020	22.26
ER25	10,0-9,0	34.00	10.025	23.32
ER32	10,0-9,0	40.00	10.032	25.90
ER40	10,0-9,0	46.00	10.040	29.51
ER20	11,0-10,0	31.50	11.020	22.26
ER25	11,0-10,0	34.00	11.025	23.32
ER32	11,0-10,0	40.00	11.032	25.90
ER40	11,0-10,0	46.00	11.040	29.51
ER20	12,0-11,0	31.50	12.020	22.26
ER25	12,0-11,0	34.00	12.025	23.32
ER32	12,0-11,0	40.00	12.032	25.90
ER40	12,0-11,0	46.00	12.040	29.51
ER20	13,0-12,0	31.50	13.020	22.26
ER25	13,0-12,0	34.00	13.025	23.32
ER32	13,0-12,0	40.00	13.032	25.90
ER40	13,0-12,0	46.00	13.040	29.51
ER25	14,0-13,0	34.00	14.025	23.32
ER32	14,0-13,0	40.00	14.032	25.90
ER40	14,0-13,0	46.00	14.040	29.51
ER25	15,0-14,0	34.00	15.025	23.32
ER32	15,0-14,0	40.00	15.032	25.90
ER40	15,0-14,0	46.00	15.040	29.51
ER25	16,0-15,0	34.00	16.025	23.32
ER32	16,0-15,0	40.00	16.032	25.90
ER40	16,0-15,0	46.00	16.040	29.51
ER32	17,0-16,0	40.00	17.032	25.90
ER40	17,0-16,0	46.00	17.040	29.51
ER32	18,0-17,0	40.00	18.032	25.90
ER40	18,0-17,0	46.00	18.040	29.51
ER32	19,0-18,0	40.00	19.032	25.90
ER40	19,0-18,0	46.00	19.040	29.51
ER32	20,0-19,0	40.00	20.032	25.90
ER40	22,0-21,0	46.00	20.040	29.51
ER40	21,0-20,0	46.00	21.040	29.51
ER40	22,0-21,0	46.00	22.040	29.51
ER40	23,0-22,0	46.00	23.040	29.51
ER40	24,0-23,0	46.00	24.040	29.51
ER40	25,0-24,0	46.00	25.040	29.51
ER40	26,0-25,0	46.00	26.040	29.51

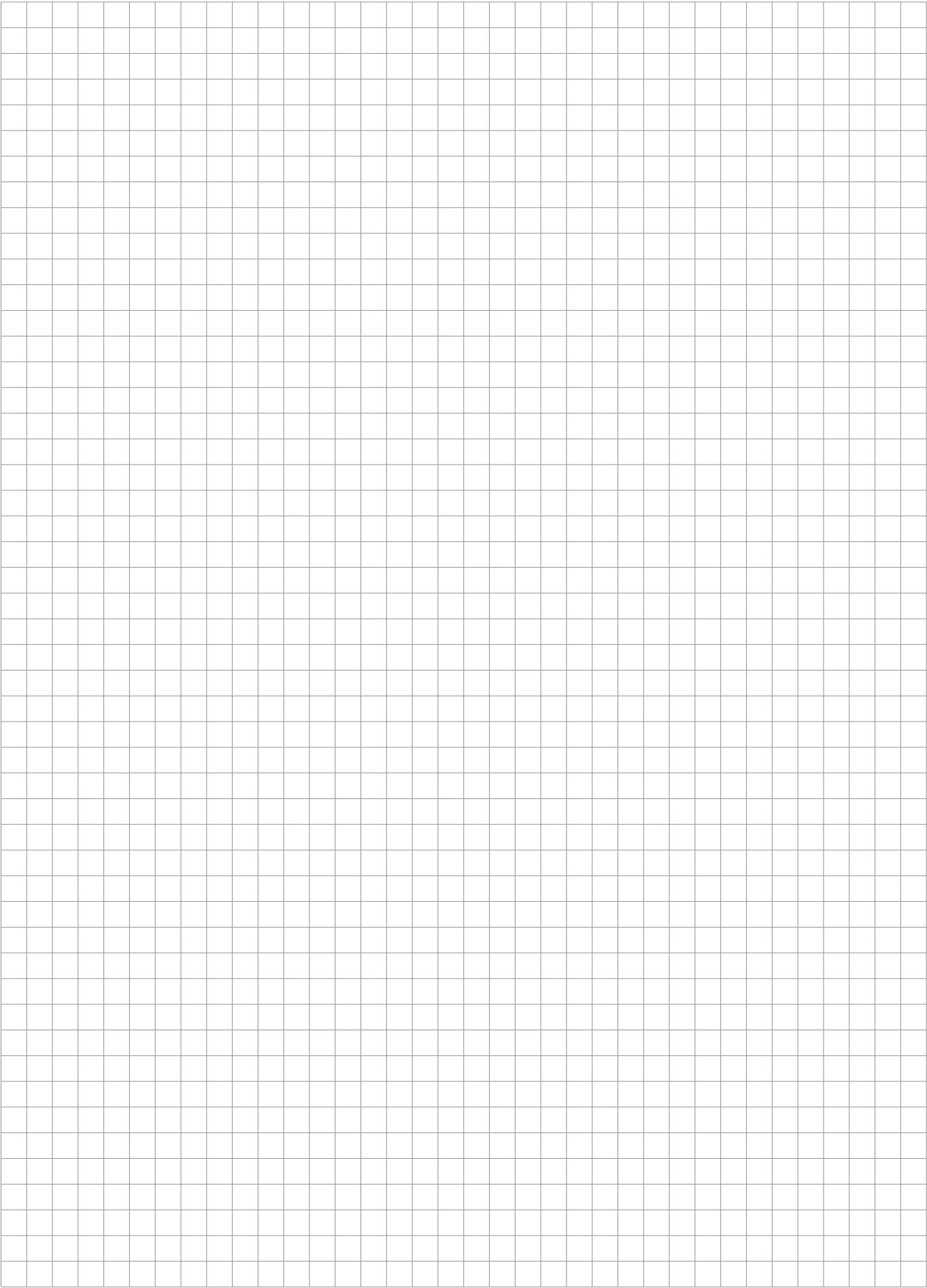
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Tool Management
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Article no.	Page	Drilling depth	Standard	Description	Tool material	Type	Form
12	47	~5xD	DIN 338	Set of jobber drills	HSCO	GU 500 DZ	
234	48	~5xD	DIN 338	Set of jobber drills	HSS	N	
4213	110		Company std.	ISO taper hydraulic chucks with increased clamping force			
4221	111		Company std.	MAS/BT hydraulic chucks with increased clamping force			
4232	117		DIN 69882-4	GÜHROJET HSK-A Weldon side lock holders			
4234	120		Company std.	GÜHROJET MAS/BT Weldon side lock holders			
4245	122		Company std.	MAS/BT collet holders			
4299	109		DIN 69882-7	HSK-A hydraulic chucks with increased clamping force			
4304	121		Company std.	HSK-A collet holders			
4307	123		DIN ISO 15488	Collets DIN ISO 15488			B
4317	118		Company std.	GÜHROJET ISO taper Weldon side lock holders			
4318	119		Company std.	ISO taper collet holders DIN 69871			
4369	112		Company std.	GÜHROJET reduction bushes for hydraulic chucks			
4719	116		Company std.	Shrink fit extensions			
4736	113		DIN 69882-8	HSK-A shrink fit chucks			
4738	114		Company std.	ISO taper shrink fit chucks			
4739	115		Company std.	MAS/BT shrink fit chucks			
5504	61		DIN 6527L	Roughing end mills GS 100 U (fine teeth)	Solid carbide	NRf	B
5505	59		DIN 6527K	Slot drills GH 100 U (3-fluted)	Solid carbide	NH	A
5506	60		DIN 6527L	Slot drills GH 100 U (3-fluted)	Solid carbide	NH	A
5507	68		DIN 6527L	Slot drills (3-fluted)	Solid carbide	N	A
5508	44		Company std.	90° NC-spotting drills	Solid carbide	N	
5509	45		Company std.	120° NC-spotting drills	Solid carbide	N	
5510	16	3xD	DIN 6537K	Ratio drills with oil feed	Solid carbide	RT 100 U	
5511	19	5xD	DIN 6537L	Ratio drills with oil feed	Solid carbide	RT 100 U	
5512	22	7xD	Company std.	Ratio drills with oil feed	Solid carbide	RT 100 U	
5513	28	10xD	Company std.	Ratio drills with oil feed	Solid carbide	RT 150 GG	
5514	16	3xD	DIN 6537K	Ratio drills without oil feed	Solid carbide	RT 100 U	
5515	19	5xD	DIN 6537L	Ratio drills without oil feed	Solid carbide	RT 100 U	
5516	32	3xD	DIN 6539	Stub drills	Solid carbide	N	
5517	33	5xD	Company std.	Jobber drills	Solid carbide	N	
5518	30	5xD	DIN 6537L	3-flute Ratio drills	Solid carbide	FT 200	
5519	37	~5xD	DIN 338	Jobber drills	HSCO	GU 500 DZ	
5520	34	~3xD	DIN 1897	Stub drills	HSCO	GU 500 DZ	
5521	34	~3xD	DIN 1897	Stub drills	HSS-E-PM	GT 500 DZ	
5522	37	~5xD	DIN 338	Jobber drills	HSS-E-PM	GT 500 DZ	
5523	37	~5xD	DIN 338	Jobber drills	HSCO	GU 500 DZ	
5524	34	~3xD	DIN 1897	Stub drills	HSCO	GU 500 DZ	
5525	25	12xD	Company std.	Ratio drills with oil feed	Solid carbide	RT 100 U	
5526	16	3xD	DIN 6537K	Ratio drills with oil feed	Solid carbide	RT 100 VA	
5527	106		Company std.	NC machine reamers	Solid carbide		B
5528	16	3xD	DIN 6537K	Ratio drills with oil feed	Solid carbide	RT 100 VA	
5530	65		DIN 6527L	Slot drills (2-fluted)	Solid carbide	N	B
5531	68		DIN 6527L	Slot drills (3-fluted)	Solid carbide	N	B
5532	72		DIN 6527L	End mills (4-fluted)	Solid carbide	N	B
5533	74		DIN 6527L	Ball nose slot drills (2-fluted)	Solid carbide	N	B
5534	54		DIN 6527K	Standard Ratio end mills RF 100 U	Solid carbide	N	B
5535	55		DIN 6527L	Standard Ratio end mills RF 100 U	Solid carbide	N	B
5536	41	~10xD	DIN 340	Long series twist drills	HSCO	GU 500 DZ	
5537	41	~10xD	DIN 340	Long series twist drills	HSCO	GU 500 DZ	
5543	67		DIN 6527L	AI slot drills (2-fluted)	Solid carbide	W	B
5544	69		DIN 6527L	Roughing end mills (3-fluted)	Solid carbide	WR	B
5545	63		Company std.	Multi-tooth end mills GH 100 U	Solid carbide	NH	B
5546	60		DIN 6527L	Slot drills GH 100 U (3-fluted)	Solid carbide	NH	B
5547	99		Company std.	Thread milling cutters without chamfer for ISO metric threads	Solid carbide	TM SP	
5548	99		Company std.	Thread milling cutters without chamfer for ISO metric threads	Solid carbide	TM SP	
5549	66		Company std.	XL slot drills (2-fluted)	Solid carbide	N	A
5550	83		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	GG	C
5551	91		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	AI R45	C
5552	90		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	H R40	C
5553	91		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	VA R40	C
5554	90		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	N R40	C
5555	91		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	N R40	C
5556	73		Company std.	XL end mills (4-fluted)	Solid carbide	N	A
5557	83		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	AI	B
5558	82		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	H	B
5559	83		DIN 371	Machine taps for ISO metric threads	HSS-E-PM	VA	B
5560	82		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	N	B
5561	82		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	N	B
5563	85		DIN 376	Machine taps for ISO metric threads	HSS-E	N	B
5573	71		Company std.	Mini slot drills (3-fluted)	Solid carbide	N	
5574	70		Company std.	Mini slot drills (3-fluted)	Solid carbide	NH	

Article no.	Page	Drilling depth	Standard	Description	Tool material	Type	Form
5578	76		Company std.	Chamfering milling cutters	Solid carbide	N	
5580	19	5xD	DIN 6537L	Ratio drills with oil feed	Solid carbide	RT 100 VA	
5581	19	5xD	DIN 6537L	Ratio drills with oil feed	Solid carbide	RT 100 VA	
5582	56		Company std.	Standard Ratio end mills RF 100 U	Solid carbide	N	
5583	62		DIN 6527L	Hard roughing end mills GS 100 H (fine teeth)	Solid carbide	HR	B
5584	75		DIN 6527L	Ball nose end mills (4-fluted)	Solid carbide	N	B
5585	74		DIN 6527L	Ball nose slot drills (2-fluted)	Solid carbide	N	A
5586	82		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	N	B
5587	82		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	H	B
5588	83		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	VA	B
5589	92		DIN 376	Machine taps for ISO metric threads	HSS-E	N R40	C
5590	82		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	N	B
5591	90		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	H R40	C
5592	90		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	N R40	C
5593	84		DIN 371/DIN 376	Machine taps for ISO metric threads	Solid carbide	H	C
5594	91		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	N R40	C
5595	83		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	GG	C
5596	91		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	VA R40	C
5597	83		DIN 371/DIN 376	Machine taps for ISO metric threads	HSS-E	VA	B
5598	97		~DIN 371	Fluteless machine taps for ISO metric threads	HSS-E	N	C
5599	98		~DIN 376	Fluteless machine taps for ISO metric threads	HSS-E	N	C
5610	16	3xD	DIN 6537K	Ratio drills with oil feed	Solid carbide	RT 100 U	
5611	19	5xD	DIN 6537L	Ratio drills with oil feed	Solid carbide	RT 100 U	
5612	22	7xD	Company std.	Ratio drills with oil feed	Solid carbide	RT 100 U	
5614	16	3xD	DIN 6537K	Ratio drills without oil feed	Solid carbide	RT 100 U	
5615	19	5xD	DIN 6537L	Ratio drills without oil feed	Solid carbide	RT 100 U	
5635	77		DIN 6527L	Ratio end mill sets RF 100 U	Solid carbide	NH	B
5649	46		Company std.	142° NC-spotting drills	Solid carbide	N	
5652	43		Company std.	Solid carbide micro-precision drills without coolant ducts	Solid carbide	N	
5653	57		DIN 6527L	Ratio end mills RF 100 VA	Solid carbide	N	A
5654	57		DIN 6527L	Ratio end mills RF 100 VA	Solid carbide	N	B
5655	58		Company std.	Ratio end mills Alu RF 100 A	Solid carbide	W	
5717	93		DIN 376	Machine taps for ISO metric threads	HSS-E	N R40	C
5723	86		DIN 374	Machine taps for ISO metric fine threads	HSS-E	N	B
5725	87		~DIN 371/~DIN 376	Machine taps for UNC-threads	HSS-E	N	B
5726	94		~DIN 371/~DIN 376	Machine taps for UNC-threads	HSS-E	N R40	C
5727	88		~DIN 374	Machine taps for UNF-threads	HSS-E	N	B
5728	95		~DIN 374	Machine taps for UNF-threads	HSS-E	N R40	C
5729	64		Company std.	Multi-tooth end mills GH 100 U	Solid carbide	NH	
5730	65		DIN 6527L	Slot drills (2-fluted)	Solid carbide	N	A
5731	89		DIN 5156	Machine taps for BSP-threads	HSS-E	N	B
5732	96		DIN 5156	Machine taps for BSP-threads	HSS-E	N R40	C
5735	55		DIN 6527L	Standard Ratio end mills RF 100 U	Solid carbide	N	A
5745	63		Company std.	Multi-tooth end mills GH 100 U	Solid carbide	NH	
9651	37	~5xD	DIN 338	Jobber drills	HSS	N	

ISO code

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

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

- optimal suitability
- limited suitability

Coatings

- | | | | | |
|--|---|---|--|--|
|  bright |  TiAlN |  AlCrN |  Sirius |  Signum |
|  steam tempered |  TiCN |  TiN |  FIRE/nano FIRE | |
|  nitrided |  Carbo |  MolyGlide |  TiAlN nanoA | |

Pictograms

Tool material	HSS HSS-E HSCO HSS-E-PM				VHM										
	High-speed steel					Solid carbide finest grain (HM-UF)									
Cutting depth	3xD	5xD	7xD	10xD	12xD	~3xD	~5xD	~7xD	~10xD						
Ø-tolerance	m7	h6	h7	h8	6HX	ISO2/6H									
Shank form	HA	HB	HE	Cyl											
	to DIN 6535			Cylindrical											
Standard	DIN 333	DIN 338	DIN 340	DIN 371	DIN 376	DIN 371/376	DIN 1897	DIN 6527 K	DIN 6527 L	DIN 6537 K	DIN 6537 L	DIN 6539	~DIN 371	~DIN 376	
	to DIN														
	WN														
	to Guhring standard														
Type	N	H	W	AI	NH	RT 100 U	RT 150 GG	FT 200	GU 500 DZ	GT 500 DZ					
	N R40	AI R45	H R40	VA R40	TM SP	GG	NRf	HR							
Internal cooling															
	with Internal cooling			without Internal cooling											
Cutting direction															
	right														
Hole type															
	Trough hole			Blind hole			Through/blind hole								
Form	B	C													
Application															
	Slotting	Roughing	Ramping	Helix	Drilling	Finishing	Copying								
Length															
	short (DIIN)	long (DIN)	extra length												
No. of cutting edges															
	no. of major cutting edges														
Helix angle															
	Size of helix angle / no. of different helix angles														
Rake angle															
	Rake angle of circumference cutting edges														
Cutting edge form															
	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

DRILLING

TAPPING/THREAD MILLING/
FLUTELESS TAPPING

MILLING

REAMING

PCD



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