

SuperLine

9th Edition

New Range of
Milling Cutters and Taps



HIGHTECH TOOLS + SUPER PRICE

SuperLine is our high-tech tool range
for the following applications

drilling
milling
tapping
fluteless tapping
reaming

All SL-tools excel thanks to

their convincing cost-performance ratio,
their outstanding quality,
their immediate availability and
the customer friendly service for the entire duration of application.

SUPER IN COST-EFFICIENCY

We produce SL-tools in large batches on completely new precision grinding machines developed by us. The extremely high productivity achieved with this manufacturing concept brings cost advantages that are fully passed on to our customers. Added to the guaranteed high SL quality, you will gain cost-efficiency that cannot be matched.

SUPER IN TOOL LIFE

We support our SL-tools beyond the initial sale and the successful application. We look after SL-tools for their entire life. Regrinding and recoating – all this is part of our service. And who is more competent than the tool manufacturer?!

The tools can be sent to us by courier or our own logistics service can collect and deliver the tools. We are convinced, that the SuperLine program is the best offer at the right time. Test the quality, compare the prices. Take advantage of the exceptional advantages of SuperLine.



SUPER IN QUALITY

SL quality – offers highest accuracy and process reliability!
This is the result of our major investment. Therefore the new manufacturing procedures have been implemented according to DIN ISO 9001 and VDA 6.4.
This is what our employees are trained for.



SUPER IN AVAILABILITY

The immediate availability of SL tools ex-stock is one of the corner stones for the success of this range. For you as a customer it means: Order today and apply tomorrow! For us as tool manufacturer it means: Guaranteeing the sophisticated logistics from raw material via production to delivery. Put us to the test. SL tools are ready and available now.



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ORDERING POSSIBILITIES

Standard range

Tools from the standard range are illustrated in bold in this catalogue. For most cutting tasks they provide an extremely economical solution. They are available immediately.

Obsolete range

Products that have small or no demand are listed in our obsolete range and illustrated in light in the catalogue. They are available only as long as the product is in stock. If products from the obsolete range are out of stock, production readiness with short delivery is provided in the form of a special tool order. Prices available on request.

PACKAGING DETAIL

Tool group	Standard	Units per package
Solid carbide twist drills	all DIN standards and Guhring standards	all sizes supplied 1 unit per package
Solid carbide milling cutters and reamers	all DIN standards and Guhring standards	all sizes supplied 1 unit per package
High speed steel twist drills	DIN 1897 DIN 338 DIN 340	≤ 7.5 mm packed in units of 10 > 7.5 ... 10.6 mm packed in units of 5 > 10.6 mm 1 unit per package
High speed steel taps and fluteless taps	DIN 371 DIN 374 DIN 376 DIN 5456	≤ M6 packed in units of 10 > M6 1 unit per package





SL drills

Standard (DIN)	Type	Shank form	Drilling depth	Tool illustration	Tool material	Carbide grade	Surface	Internal cooling	Ø-range mm	Gühr. no.	Page
Ratio drills											
DIN 6537 short	RT100 U	HA	3 x D		Carb.-UF	K/P	F	–	3.00...20.00	5514	12
	RT100 U	HE			Carb.-UF	K/P	F	–	3.00...20.00	5614	12
	RT100 U	HA			Carb.-UF	K/P	F	■	3.00...20.00	5510	12
	RT100 U	HE			Carb.-UF	K/P	F	■	3.00...20.00	5610	12
	RT100 VA	HA	3 x D		Carb.-UF	K/P	a	■	3.00...20.00	8510	12
	RT100 VA	HE			Carb.-UF	K/P	a	■	3.00...20.00	8610	12
DIN 6537 long	RT100 U	HA	5 x D		Carb.-UF	K/P	F	–	3.00...20.00	5515	16
	RT100 U	HE			Carb.-UF	K/P	F	–	3.00...20.00	5615	16
	RT100 U	HA			Carb.-UF	K/P	F	■	3.00...20.00	5511	16
	RT100 U	HE			Carb.-UF	K/P	F	■	3.00...20.00	5611	16
	RT100 VA	HA	5 x D		Carb.-UF	K/P	a	■	3.00...20.00	8511	16
	RT100 VA	HE			Carb.-UF	K/P	a	■	3.00...20.00	8611	16
Gühring std.	RT100 U	HA	7 x D		Carb.-UF	K/P	F	■	3.00...20.00	5512	21
		HE			Carb.-UF	K/P	F	■	3.00...20.00	5612	21
Gühring std.	RT100	HA	12 x D		Carb.-UF	K/P	F	■	3.00...20.00	5525	24
Gühring std.	RT150 GG	HA	10 x D		Carb.-UF	K	○	■	3.00...16.00	5513	27
3-flute Ratio drills											
DIN 6537 long	FT200	HA	5 x D		Carb.-UF	K	○	–	3.00...20.00	5518	28
Carbide twist drills											
DIN 6539	N	–	3 x D		Carb.-UF	K	○	–	1.50...12.00	5516	30
Gühring std.	N	–	5 x D		Carb.-UF	K	○	–	2.00...12.00	5517	31



SL drills

Standard (DIN)	Type/Form	Shank form	Drilling depth	Tool illustration	Tool material	Carbide grade	Surface	Internal cooling	Ø-range mm	Gühr. no.	Page
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High speed steel twist drills

	GU500 DZ	–	3 x D		HSCO	–	○	–	1.00...14.00	5524	32
DIN 1897	GU500 DZ	–	3 x D		HSCO	–	Ⓢ	–	1.00...14.00	5520	32
	GT500 DZ	–	3 x D		HSS-E-PM	–	Ⓢ	–	1.00...14.00	5521	32
	N	–	5 x D		HSS	–	Ⓢ	–	1.00...16.00	9651	35
DIN 338	GU500 DZ	–	5 x D		HSCO	–	○	–	1.00...14.00	5523	35
	GU500 DZ	–	5 x D		HSCO	–	Ⓢ	–	1.00...14.00	5519	35
	GT500 DZ	–	5 x D		HSS-E-PM	–	Ⓢ	–	1.00...14.00	5522	35
DIN 340	GU500 DZ	–	10 x D		HSCO	–	○	–	1.00...14.00	5536	40
	GU500 DZ	–	10 x D		HSCO	–	Ⓢ	–	1.00...14.00	5537	40

Sets of high speed steel twist drills

DIN 338	GU500 DZ	–	5 x D	Sets of high speed steel twist drills Guhring no. 5523	HSCO	–	○	–	–	201	43
DIN 338	N	–	5 x D	Sets of high speed steel twist drills Guhring no. 9651	HSS	–	Ⓢ	–	–	201	43



SL milling cutters

DIN	Form	Type	Tolerance on cutting-Ø	Tool illustration	No. of cutting edges	Tool material	Carbide grade	Surface	Ø-range mm	Guhr. no.	Page
Ratio end mills RF 100											
DIN 6537 short	HB	N	h10		4-fluted	Carb.-UF	K/P	F	6.00...20.00	5534	49
DIN 6527 long	HA	N	h10		4-fluted	Carb.-UF	K/P	F	4.00...25.00	5735	50
	HB	N	h10		4-fluted	Carb.-UF	K/P	F	4.00...25.00	5535	50
Guhring std.	HA	N	h10		4-fluted	Carb.-UF	K/P	F	10.00...25.00	5582	52
Guhring std.	HA	W*	h10		3-fluted	Carb.-UF	K	○	3.00...20.00	3472	53
Guhring std.	HA	W*	h10		3-fluted	Carb.-UF	K	○	6.00...20.00	3473	54
Sets of Ratio end mills RF 100											
DIN 6537 short	HB	N	h10		4-fluted	Carb.-UF	K/P	F	6/8/10/12/16	5534	51
DIN 6527 long	HB	N	h10		4-fluted	Carb.-UF	K/P	F	6/8/10/12/16	5535	51
Mini-Slot drills											
Guhring std. short	–	N	h10		3-fluted	Carb.-UF	K/P	F	0.50...20.00	5573	55
Guhring std. long	–	N	h10		3-fluted	Carb.-UF	K/P	F	1.00...10.00	5574	56
Slot drills and ball nose slot drills (2-fluted)											
DIN 6527 long	HA	N	h10		2-fluted	Carb.-UF	K/P	F	0.50...20.00	5585	57
	HB	N	h10		2-fluted	Carb.-UF	K/P	F	4.00...12.00	5533	57
DIN 6527 long	HA	N	h10		2-fluted	Carb.-UF	K/P	F	2.00...20.00	5730	58
	HB	N	h10		2-fluted	Carb.-UF	K/P	F	2.00...20.00	5530	58
Guhring std.	HA	N	h10		2-fluted	Carb.-UF	K/P	F	3.00...20.00	5549	59
DIN 6527 short	HA	W*	e8		2-fluted	Carb.-UF	K	○	3.00...20.00	5742	59
	HB	W*	e8		2-fluted	Carb.-UF	K	○	3.00...20.00	5542	59
DIN 6527 long	HA	W*	e8		2-fluted	Carb.-UF	K	○	3.00...20.00	5743	60
	HB	W*	e8		2-fluted	Carb.-UF	K	○	3.00...20.00	5543	60



SL milling cutters

DIN	Form	Type	Tolerance on cutting-Ø	Tool illustration	No. of cutting edges	Tool material	Carbide grade	Surface	Ø-range mm	Guhr. no.	Page
Slot drills (3-fluted)											
DIN 6527 short	HA	NH	h10		3-fluted	Carb.-UF	K/P	F	3.00...20.00	5505	61
	HB	NH	h10		3-fluted	Carb.-UF	K/P	F	3.00...20.00	5502	61
DIN 6527 long	HA	N	h10		3-fluted	Carb.-UF	K/P	F	2.00...20.00	5507	62
	HB	N	h10		3-fluted	Carb.-UF	K/P	F	2.00...20.00	5531	62
DIN 6527 long	HA	NH	h10		3-fluted	Carb.-UF	K/P	F	3.00...20.00	5506	63
	HB	NH	h10		3-fluted	Carb.-UF	K/P	F	3.00...20.00	5546	63
DIN 6527 long	HB	WR	h10		3-fluted	Carb.-UF	K	○	8.00...20.00	5544	63
End mills and ball nose end mills (4- and multi-fluted)											
DIN 6527 long	HB	N	h10		4-fluted	Carb.-UF	K/P	F	3.00...20.00	5584	64
DIN 6527 long	HB	N	h10		4-fluted	Carb.-UF	K/P	F	2.00...20.00	5532	65
Guhring std.	HA	N	h10		4-fluted	Carb.-UF	K/P	F	3.00...20.00	5556	66
DIN 6527 long	HA	NH	h10		multi-fluted	Carb.-UF	K/P	F	3.00...25.00	5745	67
	HB	NH	h10		multi-fluted	Carb.-UF	K/P	F	6.00...20.00	5545	67
Guhring std.	HA	NH	h10		multi-fluted	Carb.-UF	K/P	F	6.00...20.00	5729	68
	HB	NH	h10		multi-fluted	Carb.-UF	K/P	F	6.00...20.00	5529	68
DIN 6527 long	HB	NRf	h10		4-fluted	Carb.-UF	K/P	F	6.00...20.00	5504	69
	HB	HR	h10		4-fluted	Carb.-UF	K/P	F	6.00...20.00	5583	69



SL machine taps

DIN	Type	Form	Tolerance zone	Tool illustration and colour ring code	Thread type	Tool material	Surface	Thread range	Gühring no.	Page
for through holes										
	N	B	ISO 2 / 6H		ISO metric	HSS-E		M3 ... M10	5560	75
	N	B	ISO 2 / 6H		ISO metric	HSS-E		M3 ... M10	5590	75
	H	B	ISO 2 / 6H		ISO metric	HSS-E		M3 ... M10	5558	75
	H	B	ISO 2 / 6H		ISO metric	HSS-E		M3 ... M10	5587	75
	VA	B	ISO 2 / 6H		ISO metric	HSS-E		M3 ... M10	5588	75
DIN 371	VA	B	ISO 2 / 6H		ISO metric	HSS-E-PM		M3 ... M10	5559	75
	N	B	ISO 2 / 6H		ISO metric	HSS-E		M3 ... M10	5561	75
	N	B	ISO 2 / 6H		ISO metric	HSS-E		M3 ... M10	5586	75
	AI	B	ISO 2 / 6H		ISO metric	HSS-E		M3 ... M10	5557	75
	GG	C	ISO 2 / 6H		ISO metric	HSS-E		M3 ... M10	5550	75
	GG	C	6HX		ISO metric	HSS-E		M3 ... M10	5595	75
DIN 371	H	C	6HX IC ≥ M5		ISO metric	Carb.-UF		M4 ... M10	5593	76
DIN 376	N	B	ISO 2 / 6H		ISO metric	HSS-E		M12 ... M20	5563	76
DIN 374	N	B	ISO 2 / 6H		ISO metric fine	HSS-E		M4 x 0.50 ... M20 x 1.5	5723	77
~ DIN 371 / 376	N	B	2B		UNC	HSS-E		Nr. 4-40 ... 3/4-10	5725	77
~ DIN 374	N	B	2B		UNF	HSS-E		Nr. 4-48 ... 5/8-18	5727	78
DIN 5156	N	B	-		BSP	HSS-E		G 1/8 ... G1	5731	78

SL Fluteless Taps

for through holes and blind holes

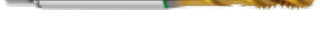
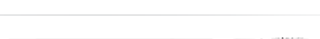
~DIN 371	N	C	6HX		ISO metric	HSS-E		M3 ... M10	5598	79
~DIN 376	N	C	6HX		ISO metric	HSS-E		M12 ... M16	5599	79

Tap selector chart

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bright steam tempered nitrided TiAlN TiCN TiN

SL machine taps

DIN	Type	Form	Tolerance zone	Tool illustration and colour ring code	Thread type	Tool material	Surface	Thread range	Guhring no.	Page
 for blind holes										
	N R40	C	ISO 2 / 6H			ISO metric	HSS-E		M3 ... M10	5554 80
	N R40	C	ISO 2 / 6H			ISO metric	HSS-E		M3 ... M10	5592 80
	N R40	C	ISO 2 / 6H			ISO metric	HSS-E		M3 ... M10	5552 80
	N R40	C	ISO 2 / 6H			ISO metric	HSS-E		M3 ... M10	5591 80
DIN 371	VA R40	C	ISO 2 / 6H			ISO metric	HSS-E		M3 ... M10	5553 80
	VA R40	C	ISO 2 / 6H			ISO metric	HSS-E		M3 ... M10	5596 80
	N R40	C	ISO 2 / 6H			ISO metric	HSS-E		M3 ... M10	5555 80
	N R40	C	ISO 2 / 6H			ISO metric	HSS-E		M3 ... M10	5594 80
	AI R45	C	ISO 2 / 6H			ISO metric	HSS-E		M3 ... M10	5551 80
DIN 376	N R40	C	ISO 2 / 6H			ISO metric	HSS-E		M12 ... M20	5589 81
DIN 371	H	C	6HX	 IC ≥ M5		ISO metric	Carb.-UF		M4 ... M10	5593 76
DIN 376	N R40	C	ISO 2 / 6H			ISO metric	HSS-E		M3 ... M20	5717 81
~ DIN 371/376	N R40	C	2B			UNC	HSS-E		Nr. 4-40 ... 3/4-10	5726 81
~ DIN 374	N R40	C	2B			UNF	HSS-E		Nr. 4-48 ... 5/8-18	5728 82
DIN 5156	N R40	C	-			BSP	HSS-E		G 1/8 ... G1	5732 82

SL reamers

Guhring std.



Carb.-UF



0.98 ... 12.05

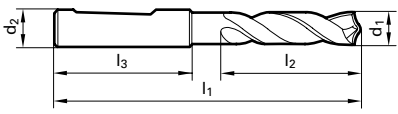
5527

83

Ratio drills, right-hand cutting

DIN 6537 short

Tool material						Carbide-UF					
Carbide grade						K/P		K/P		K/P	
Guhring no.						5514	5614	5510	5610	8510	8610
Type						RT 100 U	RT 100 U	RT 100 U	RT 100 U	RT 100 VA	RT 100 VA
Shank form						HA	HE	HA	HE	HA	HE
Surface finish						F	F	F	F	a	a
Drilling depth						3 x D	3 x D	3 x D	3 x D	3 x D	3 x D
Coolant ducts						—	—	■	■	■	■



						Unit price in £						Unit price in £
nominal diameter	shank dia.	total length	flute length	shank length								
d _{1m7}	d ₂	l ₁	l ₂	l ₃								
inch	mm	mm	mm	mm								
1/8	3.00	6	62	20	36	23.79	24.82	30.02	30.93	36.22	37.15	16.48
	3.10					23.79	24.82	30.02	30.93	38.56	39.46	
	3.17					23.79	24.82	30.02	30.93	38.56	39.46	
	3.20					23.79	24.82	30.02	30.93	38.56	39.46	
	3.25					23.79	24.82	30.02	30.93	38.56	39.46	
	3.30					23.79	24.82	30.02	30.93	38.56	39.46	
9/64	3.40					23.79	24.82	30.02	30.93	38.56	39.46	
	3.50					23.79	24.82	30.02	30.93	38.56	39.46	
	3.57					23.79	24.82	30.02	30.93	38.56	39.46	
	3.60					23.79	24.82	30.02	30.93	38.56	39.46	
	3.70	62	20			23.79	24.82	30.02	30.93	38.56	39.46	
	3.80	66	24			23.79	24.82	30.02	30.93	38.56	39.46	
5/32	3.90					23.79	24.82	30.02	30.93	38.56	39.46	
	3.97					23.79	24.82	30.02	30.93	38.56	39.46	
11/64	4.00					23.79	24.82	32.49	33.93	38.99	40.86	
	4.10					23.79	24.82	32.49	33.93	41.78	43.17	
	4.20					23.79	24.82	32.49	33.93	41.78	43.17	
	4.30					23.79	24.82	32.49	33.93	41.78	43.17	
	4.37					23.79	24.82	32.49	33.93	41.78	43.17	
	4.40					23.79	24.82	32.49	33.93	41.78	43.17	
3/16	4.50					23.79	24.82	32.49	33.93	41.78	43.17	
	4.60					23.79	24.82	32.49	33.93	41.78	43.17	
	4.65					23.79	24.82	32.49	33.93	41.78	43.17	
	4.70		24			23.79	24.82	32.49	33.93	41.78	43.17	
	4.76		28			23.79	24.82	32.49	33.93	41.78	43.17	
	4.80					23.79	24.82	32.49	33.93	41.78	43.17	
13/64	4.90					23.79	24.82	32.49	33.93	41.78	43.17	
	5.00					23.79	24.82	32.49	33.93	38.99	40.86	
	5.10					23.79	24.82	32.49	33.93	41.78	43.17	
	5.16					23.79	24.82	32.49	33.93	41.78	43.17	
	5.20					23.79	24.82	32.49	33.93	41.78	43.17	
	5.30					23.79	24.82	32.49	33.93	41.78	43.17	
7/32	5.40					23.79	24.82	32.49	33.93	41.78	43.17	
	5.50					23.79	24.82	32.49	33.93	41.78	43.17	
	5.55					23.79	24.82	32.49	33.93	41.78	43.17	
	5.56					23.79	24.82	32.49	33.93	41.78	43.17	
	5.60					23.79	24.82	32.49	33.93	41.78	43.17	
	5.70					23.79	24.82	32.49	33.93	41.78	43.17	
15/64	5.80					23.79	24.82	32.49	33.93	41.78	43.17	
	5.90					23.79	24.82	32.49	33.93	41.78	43.17	
	5.95					23.79	24.82	32.49	33.93	41.78	43.17	
	6.00	6	66	28	28	23.79	24.82	32.49	33.93	38.99	40.86	

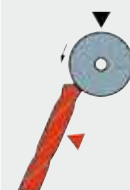
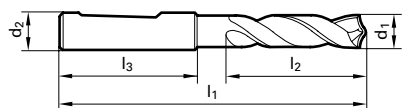
 Regrinding ▼
 and recoating ▼


F FIRE a TiAlN nanoA ■ tool with internal cooling

Ratio drills, right-hand cutting

DIN 6537 short

Tool material	Carbide-UF		Carbide-UF		Carbide-UF	
Carbide grade	K/P		K/P		K/P	
Guhring no.	5514	5614	5510	5610	8510	8610
Type	RT 100 U	RT 100 U	RT 100 U	RT 100 U	RT 100 VA	RT 100 VA
Shank form	HA	HE	HA	HE	HA	HE
Surface finish	F	F	F	F	a	a
Drilling depth	3 x D	3 x D	3 x D	3 x D	3 x D	3 x D
Coolant ducts	-	-	■	■	■	■

 Regrinding ▼
 and recoating ▼


nominal diameter d _{1m7}		shank dia. d ₂	total length l ₁	flute length l ₂	shank length l ₃	Unit price in £				
inch	mm	mm	mm	mm	mm					
1/4	6.10	8	79	34	36	23.79	24.82	44.06	46.01	49.22
	6.20					23.79	24.82	44.06	46.01	49.22
	6.30					23.79	24.82	44.06	46.01	49.22
	6.35					23.79	24.82	44.06	46.01	49.22
	6.40					23.79	24.82	44.06	46.01	49.22
	6.50					23.79	24.82	44.06	46.01	49.22
17/64	6.60					23.79	24.82	44.06	46.01	49.22
	6.70					23.79	24.82	44.06	46.01	49.22
	6.75					23.79	24.82	44.06	46.01	49.22
	6.80					23.79	24.82	44.06	46.01	49.22
	6.90					23.79	24.82	44.06	46.01	49.22
	7.00			34		23.79	24.82	44.06	46.01	45.51
9/32	7.10			41		23.79	24.82	44.06	46.01	49.22
	7.14					23.79	24.82	44.06	46.01	49.22
	7.20					23.79	24.82	44.06	46.01	49.22
	7.30					23.79	24.82	44.06	46.01	49.22
	7.40					23.79	24.82	44.06	46.01	49.22
	7.50					23.79	24.82	44.06	46.01	49.22
19/64	7.54					23.79	24.82	44.06	46.01	49.22
	7.60					23.79	24.82	44.06	46.01	49.22
	7.70					23.79	24.82	44.06	46.01	49.22
	7.80					23.79	24.82	44.06	46.01	49.22
	7.90					23.79	24.82	44.06	46.01	49.22
	7.94					23.79	24.82	44.06	46.01	49.22
5/16	8.00	8	79	41	36	23.79	24.82	44.06	46.01	45.51
	8.10	10	89	47	40	26.66	28.21	49.40	51.35	56.64
	8.20					26.66	28.21	49.40	51.35	56.64
	8.30					26.66	28.21	49.40	51.35	56.64
	8.33					26.66	28.21	49.40	51.35	56.64
	8.40					26.66	28.21	49.40	51.35	56.64
21/64	8.50					26.66	28.21	49.40	51.35	56.64
	8.60					26.66	28.21	49.40	51.35	56.64
	8.70					26.66	28.21	49.40	51.35	56.64
	8.73					26.66	28.21	49.40	51.35	56.64
	8.80					26.66	28.21	49.40	51.35	56.64
	8.90					26.66	28.21	49.40	51.35	56.64
11/32	9.00					26.66	28.21	49.40	51.35	51.99
	9.10					26.66	28.21	49.40	51.35	56.64
	9.13					26.66	28.21	49.40	51.35	56.64
	9.20					26.66	28.21	49.40	51.35	56.64
	9.25					26.66	28.21	49.40	51.35	56.64
	9.30	10	89	47	40	26.66	28.21	49.40	51.35	56.64
23/64										

Unit price in £

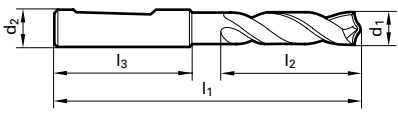
20.76

F FIRE a TiAlN nanoA ■ tool with internal cooling

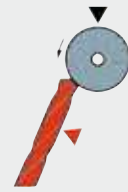
Ratio drills, right-hand cutting

DIN 6537 short

Tool material						Carbide-UF					
Carbide grade						K/P		K/P		K/P	
Guhring no.						5514	5614	5510	5610	8510	8610
Type						RT 100 U	RT 100 U	RT 100 U	RT 100 U	RT 100 VA	RT 100 VA
Shank form						HA	HE	HA	HE	HA	HE
Surface finish						F	F	F	F	a	a
Drilling depth						3 x D	3 x D	3 x D	3 x D	3 x D	3 x D
Coolant ducts						-	-	■	■	■	■







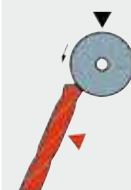
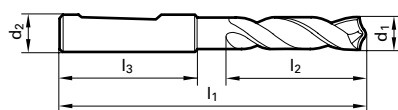
						Unit price in £						Unit price in £
3/8	9.40	10	89	47	40	26.66	28.21	49.40	51.35	56.64	59.42	20.76
	9.50					26.66	28.21	49.40	51.35	56.64	59.42	
	9.52					26.66	28.21	49.40	51.35	56.64	59.42	
	9.60					26.66	28.21	49.40	51.35	56.64	59.42	
	9.70					26.66	28.21	49.40	51.35	56.64	59.42	
	9.80					26.66	28.21	49.40	51.35	56.64	59.42	
25/64	9.90					26.66	28.21	49.40	51.35	56.64	59.42	
	9.92					26.66	28.21	49.40	51.35	56.64	59.42	
	10.00	10	89	47	40	26.66	28.21	49.40	51.35	56.64	54.33	
	10.10	12	102	55	45	39.78	41.47	70.71	73.71	78.92	80.79	
13/32	10.20					39.78	41.47	70.71	73.71	78.92	80.79	
	10.30					39.78	41.47	70.71	73.71	78.92	80.79	
	10.32					39.78	41.47	70.71	73.71	78.92	80.79	
	10.40					39.78	41.47	70.71	73.71	78.92	80.79	
	10.50					39.78	41.47	70.71	73.71	78.92	80.79	
27/64	10.60					39.78	41.47	70.71	73.71	78.92	80.79	
	10.70					39.78	41.47	70.71	73.71	78.92	80.79	
	10.72					39.78	41.47	70.71	73.71	78.92	80.79	
	10.80					39.78	41.47	70.71	73.71	78.92	80.79	
	10.90					39.78	41.47	70.71	73.71	78.92	80.79	
7/16	11.00					39.78	41.47	70.71	73.71	73.35	75.68	
	11.10					39.78	41.47	70.71	73.71	78.92	80.79	
	11.11					39.78	41.47	70.71	73.71	78.92	80.79	
	11.20					39.78	41.47	70.71	73.71	78.92	80.79	
	11.30					39.78	41.47	70.71	73.71	78.92	80.79	
29/64	11.40					39.78	41.47	70.71	73.71	78.92	80.79	
	11.50					39.78	41.47	70.71	73.71	78.92	80.79	
	11.51					39.78	41.47	70.71	73.71	78.92	80.79	
	11.60					39.78	41.47	70.71	73.71	78.92	80.79	
	11.70					39.78	41.47	70.71	73.71	78.92	80.79	
15/32	11.80					39.78	41.47	70.71	73.71	78.92	80.79	
	11.90					39.78	41.47	70.71	73.71	78.92	80.79	
	11.91					39.78	41.47	70.71	73.71	78.92	80.79	
	12.00	12	102	55		39.78	41.47	70.71	73.71	73.35	75.68	
	12.10	14	107	60		53.43	55.37	98.78	102.80			
31/64	12.20					53.43	55.37	98.78	102.80	100.29	104.94	
	12.30					53.43	55.37	98.78	102.80			
	12.40					53.43	55.37	98.78	102.80			
	12.50					53.43	55.37	98.78	102.80	100.29	104.94	
	12.60					53.43	55.37	98.78	102.80			
1/2	12.70					53.43	55.37	98.78	102.80	100.29	104.94	
	12.80	14	107	60	45	53.43		98.78	102.80	100.29	104.94	

F FIRE
 a TiAlN nanoA
 tool with internal cooling

Ratio drills, right-hand cutting

DIN 6537 short

Tool material	Carbide-UF		Carbide-UF		Carbide-UF	
Carbide grade	K/P		K/P		K/P	
Guhring no.	5514	5614	5510	5610	8510	8610
Type	RT 100 U	RT 100 U	RT 100 U	RT 100 U	RT 100 VA	RT 100 VA
Shank form	HA	HE	HA	HE	HA	HE
Surface finish	F	F	F	F	a	a
Drilling depth	3 x D	3 x D	3 x D	3 x D	3 x D	3 x D
Coolant ducts	—	—	■	■	■	■

 Regrinding ▼
 and recoating ▼


nominal diameter d _{1m7}		shank dia. d ₂	total length l ₁	flute length l ₂	shank length l ₃	Unit price in £				Unit price in £
inch	mm	mm	mm	mm	mm					
33/64	12.90	14	107	60	45	53.43	98.78	102.80		
	13.00					53.43	55.37	98.78	102.80	104.94
	13.10					53.43	55.37	98.78	102.80	
	13.20					53.43	55.37	98.78	102.80	
	13.30					53.43	55.37	98.78	102.80	104.94
	13.40							98.78	102.80	
	13.50					53.43	55.37	98.78	102.80	104.94
	13.60					53.43		98.78	102.80	
	13.70					53.43	55.37	98.78	102.80	104.94
	13.80					53.43	55.37	98.78		
	13.90							98.78	102.80	
	14.00	14	107	60	45	53.43	55.37	98.78	102.80	104.94
9/16	14.10	16	115	65	48	53.43	71.62	120.61	125.55	
	14.20					53.43	71.62	120.61	125.55	128.14
	14.29					68.76	71.62	120.61	125.55	128.14
	14.30					68.76	71.62	120.61	125.55	128.14
	14.40					68.76	71.62	120.61	125.55	
	14.50					68.76	71.62	120.61	125.55	128.14
	14.60							120.61	125.55	
	14.70					68.76	71.62	120.61	125.55	128.14
	14.80							120.61	125.55	
	14.90							120.61	125.55	
	15.00					68.76	71.62	120.61	125.55	128.14
	15.10					68.76	71.62	120.61	125.55	
	15.20					68.76	71.62	120.61	125.55	128.14
	15.30							120.61	125.55	128.14
	15.40							120.61	125.55	
	15.50					68.76	71.62	120.61	125.55	128.14
	15.60					68.76	71.62	120.61	125.55	
	15.70					68.76	71.62	120.61	125.55	128.14
5/8	15.80					68.76	71.62	120.61	125.55	
	15.87					68.76	71.62	120.61	125.55	
	15.90							120.61	125.55	
	16.00	16	115	65		68.76	71.62	120.61	125.55	128.14
	16.30	18	123	73					203.50	212.50
	16.50					121.20	130.50	193.78	203.50	212.50
	16.90								203.50	212.50
	17.00					121.20	130.50	193.78	203.50	212.50
	17.30								203.50	212.50
	17.50					121.20	130.50	193.78	203.50	212.50
	18.00	18	123	73	48	121.20	130.50	193.78	203.50	212.50
	18.50	20	131	79	50	133.00	140.50	211.72	221.93	230.30
3/4	18.90								221.93	230.30
	19.00					133.00	140.50	211.72	221.93	230.30
	19.05								221.93	230.30
	19.30								221.93	230.30
	19.50					133.00	140.50	211.72	221.93	230.30
	20.00	20	131	79	50	133.00	140.50	211.72	221.93	230.30

34.51

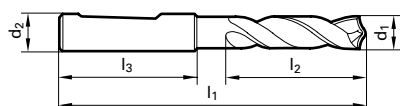
48.25

F FIRE a TiAlN nanoA ■ tool with internal cooling

Ratio drills, right-hand cutting

DIN 6537 long

Tool material	Carbide-UF		Carbide-UF		Carbide-UF	
Carbide grade	K/P		K/P		K/P	
Guhring no.	5515	5615	5511	5611	8511	8611
Type	RT 100 U	RT 100 U	RT 100 U	RT 100 U	RT 100 VA	RT 100 VA
Shank form	HA	HE	HA	HE	HA	HE
Surface finish	F	F	F	F	a	a
Drilling depth	5 x D	5 x D	5 x D	5 x D	5 x D	5 x D
Coolant ducts	–	–	■	■	■	■

 Regrinding ▼
 and recoating ▼


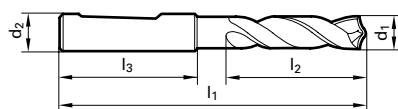
nominal diameter		shank dia.	total length	flute length	shank length	Unit price in £						Unit price in £
inch	mm	d2 mm	l1 mm	l2 mm	l3 mm							
1/8	3.00	6	66	28	36	27.17	28.73	38.72	39.90	43.64	45.04	16.48
	3.10					27.17	28.73	38.72	39.90	46.44	47.36	
	3.17					27.17	28.73	38.72	39.90	46.44	47.36	
	3.20					27.17	28.73	38.72	39.90	46.44	47.36	
	3.25					27.17	28.73	38.72	39.90	46.44	47.36	
	3.30					27.17	28.73	38.72	39.90	46.44	47.36	
9/64	3.40					27.17	28.73	38.72	39.90	46.44	47.36	
	3.50					27.17	28.73	38.72	39.90	46.44	47.36	
	3.57					27.17	28.73	38.72	39.90	46.44	47.36	
	3.60					27.17	28.73	38.72	39.90	46.44	47.36	
	3.70		66	28		27.17	28.73	38.72	39.90	46.44	47.36	
	3.80		74	36		27.17	28.73	38.72	39.90	46.44	47.36	
5/32	3.90					27.17	28.73	38.72	39.90	46.44	47.36	
	3.97					27.17	28.73	38.72	39.90	46.44	47.36	
	4.00					27.17	28.73	41.58	43.66	47.36	49.22	
	4.10					27.17	28.73	41.58	43.66	50.15	51.53	
	4.20					27.17	28.73	41.58	43.66	50.15	51.53	
	4.30					27.17	28.73	41.58	43.66	50.15	51.53	
11/64	4.37					27.17	28.73	41.58	43.66	50.15	51.53	
	4.40					27.17	28.73	41.58	43.66	50.15	51.53	
	4.50					27.17	28.73	41.58	43.66	50.15	51.53	
	4.60					27.17	28.73	41.58	43.66	50.15	51.53	
	4.65					27.17	28.73	41.58	43.66	50.15	51.53	
	4.70		74	36		27.17	28.73	41.58	43.66	50.15	51.53	
3/16	4.76		82	44		27.17	28.73	41.58	43.66	50.15	51.53	
	4.80					27.17	28.73	41.58	43.66	50.15	51.53	
	4.90					27.17	28.73	41.58	43.66	50.15	51.53	
	5.00					27.17	28.73	41.58	43.66	47.36	49.22	
	5.10					27.17	28.73	41.58	43.66	50.15	51.53	
	5.16					27.17	28.73	41.58	43.66	50.15	51.53	
13/64	5.20					27.17	28.73	41.58	43.66	50.15	51.53	
	5.30					27.17	28.73	41.58	43.66	50.15	51.53	
	5.40					27.17	28.73	41.58	43.66	50.15	51.53	
	5.50					27.17	28.73	41.58	43.66	50.15	51.53	
	5.55					27.17	28.73	41.58	43.66	50.15	51.53	
	5.56	6	82	44	36	27.17	28.73	41.58	43.66	50.15	51.53	
7/32	5.56	6	82	44	36	27.17	28.73	41.58	43.66	50.15	51.53	

F FIRE a TiAlN nanoA ■ tool with internal cooling

Ratio drills, right-hand cutting

DIN 6537 long

Tool material	Carbide-UF		Carbide-UF		Carbide-UF	
Carbide grade	K/P		K/P		K/P	
Guhring no.	5515	5615	5511	5611	8511	8611
Type	RT 100 U	RT 100 U	RT 100 U	RT 100 U	RT 100 VA	RT 100 VA
Shank form	HA	HE	HA	HE	HA	HE
Surface finish	F	F	F	F	a	a
Drilling depth	5 x D	5 x D	5 x D	5 x D	5 x D	5 x D
Coolant ducts	–	–	■	■	■	■

 Regrinding ▼
 and recoating ▼


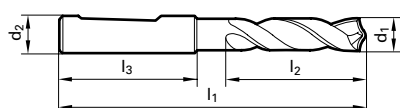
nominal diameter		shank dia.	total length	flute length	shank length	Unit price in £						Unit price in £
inch	mm	d2 mm	l1 mm	l2 mm	l3 mm							
15/64	5.60	6	82	44	36	27.17	28.73	41.58	43.66	50.15	51.53	16.48
	5.70					27.17	28.73	41.58	43.66	50.15	51.53	
	5.80					27.17	28.73	41.58	43.66	50.15	51.53	
	5.90					27.17	28.73	41.58	43.66	50.15	51.53	
	5.95					27.17	28.73	41.58	43.66	50.15	51.53	
	6.00	6	82	44		27.17	28.73	41.58	43.66	47.36	49.22	
1/4	6.10	8	91	53		27.55	29.64	46.01	48.08	59.42	60.82	20.76
	6.20					27.55	29.64	46.01	48.08	59.42	60.82	
	6.30					27.55	29.64	46.01	48.08	59.42	60.82	
	6.35					27.55	29.64	46.01	48.08	59.42	60.82	
	6.40					27.55	29.64	46.01	48.08	59.42	60.82	
	6.50					27.55	29.64	46.01	48.08	59.42	60.82	
17/64	6.60					27.55	29.64	46.01	48.08	59.42	60.82	20.76
	6.70					27.55	29.64	46.01	48.08	59.42	60.82	
	6.75					27.55	29.64	46.01	48.08	59.42	60.82	
	6.80					27.55	29.64	46.01	48.08	59.42	60.82	
	6.90					27.55	29.64	46.01	48.08	59.42	60.82	
	7.00					27.55	29.64	46.01	48.08	55.25	56.64	
9/32	7.10					27.55	29.64	46.01	48.08	59.42	60.82	20.76
	7.14					27.55	29.64	46.01	48.08	59.42	60.82	
	7.20					27.55	29.64	46.01	48.08	59.42	60.82	
	7.30					27.55	29.64	46.01	48.08	59.42	60.82	
	7.40					27.55	29.64	46.01	48.08	59.42	60.82	
	7.50					27.55	29.64	46.01	48.08	59.42	60.82	
19/64	7.54					27.55	29.64	46.01	48.08	59.42	60.82	20.76
	7.60					27.55	29.64	46.01	48.08	59.42	60.82	
	7.70					27.55	29.64	46.01	48.08	59.42	60.82	
	7.80					27.55	29.64	46.01	48.08	59.42	60.82	
	7.90					27.55	29.64	46.01	48.08	59.42	60.82	
	7.94					27.55	29.64	46.01	48.08	59.42	60.82	
5/16	8.00	8	91	53	36	27.55	29.64	46.01	48.08	55.25	56.64	20.76
	8.10	10	103	61	40	30.55	32.90	52.77	55.24	69.17	71.03	
	8.20					30.55	32.90	52.77	55.24	69.17	71.03	
21/64	8.30					30.55	32.90	52.77	55.24	69.17	71.03	
	8.33					30.55	32.90	52.77	55.24	69.17	71.03	
	8.40	10	103	61	40	30.55	32.90	52.77	55.24	69.17	71.03	

F FIRE a TiAlN nanoA ■ tool with internal cooling

Ratio drills, right-hand cutting

DIN 6537 long

Tool material	Carbide-UF		Carbide-UF		Carbide-UF	
Carbide grade	K/P		K/P		K/P	
Guhring no.	5515	5615	5511	5611	8511	8611
Type	RT 100 U	RT 100 U	RT 100 U	RT 100 U	RT 100 VA	RT 100 VA
Shank form	HA	HE	HA	HE	HA	HE
Surface finish	F	F	F	F	a	a
Drilling depth	5 x D	5 x D	5 x D	5 x D	5 x D	5 x D
Coolant ducts	–	–				

 Regrinding ▼
 and recoating ▼


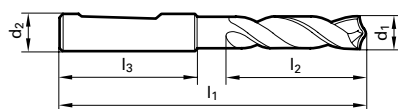
nominal diameter d _{1m7}		shank dia. d ₂	total length l ₁	flute length l ₂	shank length l ₃	Unit price in £						Unit price in £
inch	mm	mm	mm	mm	mm							
11/32	8.50	10	103	61	40	30.55	32.90	52.77	55.24	69.17	71.03	20.76
	8.60					30.55	32.90	52.77	55.24	69.17	71.03	
	8.70					30.55	32.90	52.77	55.24	69.17	71.03	
	8.73					30.55	32.90	52.77	55.24	69.17	71.03	
	8.80					30.55	32.90	52.77	55.24	69.17	71.03	
	8.90					30.55	32.90	52.77	55.24	69.17	71.03	
23/64	9.00					30.55	32.90	52.77	55.24	63.61	65.01	
	9.10					30.55	32.90	52.77	55.24	69.17	71.03	
	9.13					30.55	32.90	52.77	55.24	69.17	71.03	
	9.20					30.55	32.90	52.77	55.24	69.17	71.03	
	9.25					30.55	32.90	52.77	55.24	69.17	71.03	
	9.30					30.55	32.90	52.77	55.24	69.17	71.03	
3/8	9.40		89	47		30.55	32.90	52.77	55.24	69.17	71.03	
	9.50		103	61		30.55	32.90	52.77	55.24	69.17	71.03	
	9.52					30.55	32.90	52.77	55.24	69.17	71.03	
	9.60					30.55	32.90	52.77	55.24	69.17	71.03	
	9.70					30.55	32.90	52.77	55.24	69.17	71.03	
	9.80					30.55	32.90	52.77	55.24	69.17	71.03	
25/64	9.90					30.55	32.90	52.77	55.24	69.17	71.03	
	9.92					30.55	32.90	52.77	55.24	69.17	71.03	
	10.00	10	103	61	40	30.55	32.90	52.77	55.24	63.61	65.01	
	10.10	12	118	71	45	45.63	48.49	77.07	79.94	94.70	96.57	34.51
	10.20					45.63	48.49	77.07	79.94	94.70	96.57	
	10.30					45.63	48.49	77.07	79.94	94.70	96.57	
13/32	10.32					45.63	48.49	77.07	79.94	94.70	96.57	
	10.40					45.63	48.49	77.07	79.94	94.70	96.57	
	10.50					45.63	48.49	77.07	79.94	94.70	96.57	
	10.60					45.63	48.49	77.07	79.94	94.70	96.57	
	10.70					45.63	48.49	77.07	79.94	94.70	96.57	
	10.72					45.63	48.49	77.07	79.94	94.70	96.57	
27/64	10.80					45.63	48.49	77.07	79.94	94.70	96.57	
	10.90					45.63	48.49	77.07	79.94	94.70	96.57	
	11.00					45.63	48.49	77.07	79.94	88.21	90.55	
	11.10					45.63	48.49	77.07	79.94	94.70	96.57	
	11.11					45.63	48.49	77.07	79.94	94.70	96.57	
	11.20	12	118	71	45	45.63	48.49	77.07	79.94	94.70	96.57	

 F FIRE a TiAlN nanoA  tool with internal cooling

Ratio drills, right-hand cutting

DIN 6537 long

Tool material	Carbide-UF		Carbide-UF		Carbide-UF	
Carbide grade	K/P		K/P		K/P	
Guhring no.	5515	5615	5511	5611	8511	8611
Type	RT 100 U	RT 100 U	RT 100 U	RT 100 U	RT 100 VA	RT 100 VA
Shank form	HA	HE	HA	HE	HA	HE
Surface finish	F	F	F	F	a	a
Drilling depth	5 x D	5 x D	5 x D	5 x D	5 x D	5 x D
Coolant ducts	-	-	■	■	■	■

 Regrinding ▼
 and recoating ▼


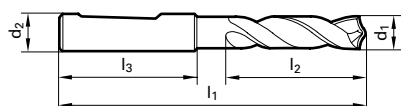
nominal diameter		shank dia.	total length	flute length	shank length	Unit price in £						Unit price in £
inch	mm	d2 mm	l1 mm	l2 mm	l3 mm							
11/32	11.30	12	118	71	45	45.63	48.49	77.07	79.94	94.70	96.57	34.51
	11.40					45.63	48.49	77.07	79.94	94.70	96.57	
	11.50					45.63	48.49	77.07	79.94	94.70	96.57	
	11.60					45.63	48.49	77.07	79.94	94.70	96.57	
	11.70					45.63	48.49	77.07	79.94	94.70	96.57	
	11.80					45.63	48.49	77.07	79.94	94.70	96.57	
15/32	11.90					45.63	48.49	77.07	79.94	94.70	96.57	
	11.91					45.63	48.49	77.07	79.94	94.70	96.57	
	12.00	12	118	71		45.63	48.49	77.07	79.94	88.21	90.55	
31/64	12.10	14	124	77		60.05	64.46	103.71	108.14			
	12.20					60.05	64.46	103.71	108.14	120.72	126.30	
	12.30					60.05	62.58	103.71	108.14			
	12.40					60.05	64.46	103.71	108.14			
	12.50					60.05	64.46	103.71	108.14	120.72	126.30	
1/2	12.60					60.05	64.46	103.71	108.14			
	12.70					60.05	64.46	103.71	108.14	120.72	126.30	
	12.80							103.71	108.14	120.72	126.30	
	12.90							103.71	108.14			
33/64	13.00					60.05	64.46	103.71	108.14	115.14	117.01	
	13.10							103.71	108.14			
	13.20					60.05	64.46					
	13.30					60.05	64.46	103.71	108.14	120.72	126.30	
	13.40							103.71	108.14			
	13.50					60.05	64.46	103.71	108.14	120.72	126.30	
9/16	13.70					60.05	64.46	103.71	108.14	120.72	126.30	
	13.80					60.05	64.46	103.71	108.14			
	13.90							103.71	108.14			
	14.00	14	124	77	45	60.05	64.46	103.71	108.14	115.14	117.01	
	14.10	16	133	83	48	78.12	83.44	127.88	133.22			
9/16	14.20					78.12	83.44	127.88	133.22	148.56	153.22	
	14.29					78.12	83.44	127.88	133.22	148.56	153.22	
	14.30					78.12	83.44	127.88	133.22	148.56	153.22	
	14.40					78.12	83.44	127.88	133.22			
	14.50					78.12	83.44	127.88	133.22	148.56	153.22	
	14.60							127.88	133.22			
	14.70	16	133	83	48	78.12	83.44	127.88	133.22	148.56	153.22	

F FIRE a TiAlN nanoA ■ tool with internal cooling

Ratio drills, right-hand cutting

DIN 6537 long

Tool material	Carbide-UF		Carbide-UF		Carbide-UF	
Carbide grade	K/P		K/P		K/P	
Guhring no.	5515	5615	5511	5611	8511	8611
Type	RT 100 U	RT 100 U	RT 100 U	RT 100 U	RT 100 VA	RT 100 VA
Shank form	HA	HE	HA	HE	HA	HE
Surface finish	F	F	F	F	a	a
Drilling depth	5 x D	5 x D	5 x D	5 x D	5 x D	5 x D
Coolant ducts	–	–				

 Regrinding ▼
 and recoating ▼


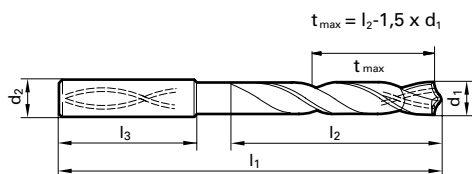
nominal diameter d _{1m7}		shank dia. d ₂	total length l ₁	flute length l ₂	shank length l ₃	Unit price in £				Unit price in £
inch	mm	mm	mm	mm	mm					
	14.80	16	133	83	48			127.88		
	14.90							127.88	133.22	
	15.00					78.12	83.44	127.88	133.22	138.36 142.08
	15.10					78.12	83.44	127.88		
	15.20					78.12	83.44	127.88	133.22	148.56 153.22
	15.30							127.88	133.22	148.56 153.22
	15.40							127.88	133.22	
	15.50					78.12	83.44	127.88	133.22	148.56 153.22
	15.60					78.12	83.44	127.88	133.22	
	15.70					78.12	83.44	127.88	133.22	148.56 153.22
5/8	15.80					78.12	83.44	127.88	133.22	
	15.87					78.12	83.44	127.88	133.22	
	15.90							127.88	133.22	
	16.00	16	133	83		78.12	83.44	127.88	133.22	138.36 142.08
	16.30	18	143	93					214.51	221.93
2 1/32	16.50					128.50	138.50	204.96	213.15	214.51 221.93
	16.67							204.96	213.15	
	16.90								214.51	221.93
	17.00					128.50	138.50	204.96	213.15	214.51 221.93
	17.30								214.51	221.93
	17.50					128.50	138.50	204.96	213.15	214.51 221.93
	18.00	18	143	93	48	128.50	138.50	204.96	213.15	214.51 221.93
	18.50	20	153	101	50	140.00	148.50	222.89	231.61	269.29 283.23
	18.90								269.29	283.23
3/4	19.00					140.00	148.50	222.89	231.61	250.72 260.00
	19.05							222.89	231.61	269.29 283.23
	19.30								269.29	283.23
	19.50					140.00	148.50	222.89	231.61	269.29 283.23
	20.00	20	151	101	50	140.00	148.50	222.89	231.61	250.72 260.00

 F FIRE a TiAlN nanoA  tool with internal cooling

Ratio drills, right-hand cutting

Guhring std.

Tool material	Carbide-UF	
Carbide grade	K/P	
Guhring no.	5512	5612
Type	RT 100 U	RT 100 U
Shank form	HA	HE
Surface finish		
Drilling depth	7 x D	7 x D
Coolant ducts		


 Regrinding ▼
 and recoating ▼

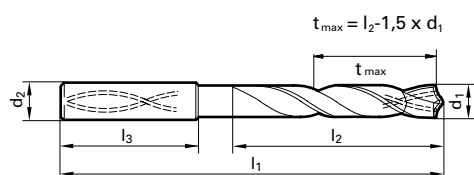
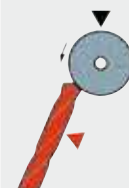

nominal diameter d1m7		shank dia. d2	total length l1	flute length l2	shank length l3	Unit price in £		Unit price in £
inch	mm	mm	mm	mm	mm			
1/8	3.00	6	70	30	36	95.40	99.81	16.48
	3.10					95.40	99.81	
	3.17					95.40	99.81	
	3.20					95.40	99.81	
	3.25					95.40	99.81	
	3.30		70	35.5		95.40	99.81	
9/64	3.40		75	37.5		95.40	99.81	
	3.50					95.40	99.81	
	3.57					95.40	99.81	
	3.60					95.40	99.81	
	3.70					95.40	99.81	
	3.80					95.40	99.81	
5/32	3.90					95.40	99.81	
	3.97					95.40	99.81	
	4.00					95.40	99.81	
	4.10					95.40	99.81	
	4.20		75	37.5		95.40	99.81	
	4.30		85	45		95.40	99.81	
11/64	4.37					95.40	99.81	
	4.40					95.40	99.81	
	4.50					95.40	99.81	
	4.60					95.40	99.81	
	4.65					95.40	99.81	
	4.70		85	45		95.40	99.81	
3/16	4.76		90	50		95.40	99.81	
	4.80					95.40	99.81	
	4.90					95.40	99.81	
	5.00					95.40	99.81	
	5.10					95.40	99.81	
	5.16					95.40	99.81	
13/64	5.20					95.40	99.81	
	5.30		90	50		95.40	99.81	
	5.40		97	57		95.40	99.81	
	5.50					95.40	99.81	
	5.56					95.40	99.81	
	5.70					95.40	99.81	
7/32	5.80					95.40	99.81	
	5.90					95.40	99.81	
	5.95					95.40	99.81	
	6.00	6	97	57		95.40	99.81	
	6.10	8	106	66	36	115.41		
	6.20	8	106	66	36	115.41	120.61	
								20.76

 FIRE
  tool with internal cooling

Ratio drills, right-hand cutting

Guhring std.

Tool material	Carbide-UF	
Carbide grade	K/P	
Guhring no.	5512	5612
Type	RT 100 U	RT 100 U
Shank form	HA	HE
Surface finish		
Drilling depth	7 x D	7 x D
Coolant ducts		


 Regrinding ▼
 and recoating ▼


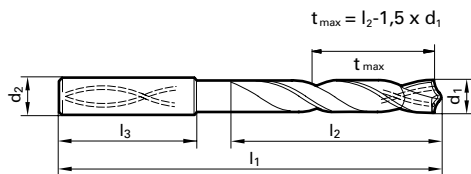
nominal diameter d _{1m7}		shank dia. d ₂	total length l ₁	flute length l ₂	shank length l ₃	Unit price in £		Unit price in £
inch	mm	mm	mm	mm	mm			
1/4	6.30	8	106	66	36	115.41	120.61	20.76
	6.35					115.41	120.61	
	6.50					115.41	120.61	
	6.60					115.41	120.61	
	6.70					115.41	120.61	
	6.80		106	66		115.41	120.61	
5/16	6.90		116	76		115.41	120.61	
	7.00					115.41	120.61	
	7.10					115.41	120.61	
	7.20					115.41	120.61	
	7.40					115.41	120.61	
	7.50					115.41	120.61	
3/8	7.54					115.41	120.61	
	7.60					115.41	120.61	
	7.70					115.41	120.61	
	7.80					115.41	120.61	
	7.94					115.41	120.61	
	8.00	8	116	76	36	115.41	120.61	
7/16	8.10	10	131	87	40	140.36	147.11	
	8.20					140.36	147.11	
	8.33					140.36	147.11	
	8.40					140.36	147.11	
	8.50					140.36	147.11	
	8.60					140.36	147.11	
1/2	8.70					140.36	147.11	
	8.73					140.36	147.11	
	8.80					140.36	147.11	
	9.00		131	87		140.36	147.11	
	9.10		139	95		140.36	147.11	
	9.13					140.36	147.11	
9/16	9.20					140.36	147.11	
	9.30					140.36	147.11	
	9.40					140.36	147.11	
	9.50					140.36	147.11	
	9.52					140.36	147.11	
	9.70					140.36	147.11	
5/8	9.80					140.36	147.11	
	9.90					140.36	147.11	
	9.92					140.36	147.11	
	10.00	10	139	95	40	140.36	147.11	
	10.20	12	155	106	45	186.24	193.01	
	10.30	12	155	106	45	186.24	193.01	34.51

 FIRE  tool with internal cooling

Ratio drills, right-hand cutting

Guhring std.

Tool material	Carbide-UF	
Carbide grade	K/P	
Guhring no.	5512	5612
Type	RT 100 U	RT 100 U
Shank form	HA	HE
Surface finish		
Drilling depth	7 x D	7 x D
Coolant ducts		


 Regrinding ▼
and recoating ▼

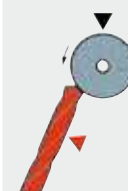
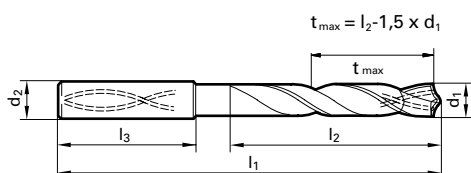

nominal diameter d _{1m7}		shank dia. d ₂	total length l ₁	flute length l ₂	shank length l ₃	Unit price in £		Unit price in £
inch	mm	mm	mm	mm	mm			
13/32	10.32	12	155	106	45	186.24		
	10.50					186.24	193.01	
27/64	10.72					186.24		
	10.80					186.24	193.01	
7/16	11.00		155	106		186.24	193.01	
	11.10		163	114		186.24		
	11.11					186.24		
	11.20					186.24	193.01	
15/32	11.50					186.24	193.01	
	11.80					186.24	193.01	
	11.91					186.24		
	12.00	12	163	114		186.24	193.01	
31/64	12.10	14	182	133		234.98	240.18	
	12.20					234.98	240.18	
	12.30					234.98		
	12.50					234.98	240.18	
1/2	12.70					234.98	240.18	
	13.00					234.98	240.18	
	13.10					234.98		
	13.50					234.98	240.18	
9/16	14.00	14	182	133	45	234.98	240.18	
	14.10	16	204	152	48	294.64	296.73	
	14.20					294.64	296.73	
	14.29					294.64		
5/8	14.50					294.64	296.73	
	15.00					294.64	296.73	
	15.50					294.64	296.73	
	15.87					294.64		
3/4	16.00	16	204	152		294.64	296.73	
	16.50	18	223	171		368.33	371.84	
	17.00					368.33	371.84	
	17.50					368.33	371.84	
48.25	18.00	18	223	171	48	368.33	371.84	
	18.50	20	244	190	50	432.40	437.47	
	19.00					432.40	437.47	
	19.05					432.40	437.47	
48.25	19.50	20				432.40	437.47	
	20.00	20	244	190	50	432.40	437.47	

 FIRE
  tool with internal cooling

Ratio drills, right-hand cutting

Guhring std.

Tool material	Carbide-UF
Carbide grade	K/P
Guhring no.	5525
Type	RT 100
Shank form	HA
Surface finish	F
Drilling depth	12 x D
Coolant ducts	

 Regrinding ▼
 and recoating ▼


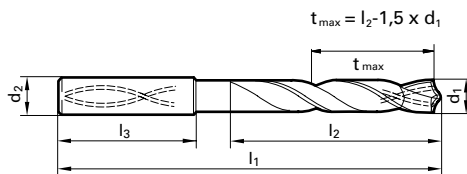
nominal diameter d1m7		shank dia. d2	total length l1	flute length l2	shank length l3	Unit price in £	Unit price in £
inch	mm	mm	mm	mm	mm		
1/8	3.00	6	90	50	36	120.61	17.96
	3.10					120.61	
	3.17					120.61	
	3.20					120.61	
	3.30					120.61	
	3.40					120.61	
	3.50					120.61	
	3.60					120.61	
	3.70		90	50		120.61	
	3.80		102	64		120.61	
	3.90					120.61	
	4.00					120.61	
	4.10					120.61	
	4.20					120.61	
	4.30					120.61	
	4.40					120.61	
1/4	4.50					120.61	22.01
	4.60					120.61	
	4.70		102	64		120.61	
	4.80		116	78		120.61	
	4.90					120.61	
	5.00					120.61	
	5.10					120.61	
	5.20					120.61	
	5.30					120.61	
	5.40					120.61	
	5.50					120.61	
	5.60					120.61	
	5.70					120.61	
	5.80					120.61	
	5.90					120.61	
	6.00	6	116	78		120.61	
	6.10	8	146	78		141.54	
	6.20					141.54	
	6.30					141.54	
	6.35	8	146	108	36	141.54	

F FIRE  tool with internal cooling

Ratio drills, right-hand cutting

Guhring std.

Tool material	Carbide-UF
Carbide grade	K/P
Guhring no.	5525
Type	RT 100
Shank form	HA
Surface finish	F
Drilling depth	12 x D
Coolant ducts	■

 Regrinding ▼
 and recoating ▼


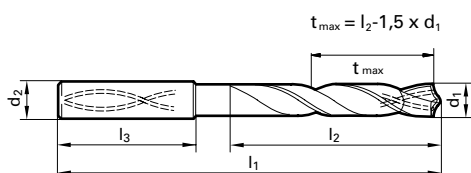
nominal diameter d1m7		shank dia. d2	total length l1	flute length l2	shank length l3	Unit price in £	Unit price in £
inch	mm	mm	mm	mm	mm		
	6.40	8	146	108	36	141.54	22.01
	6.50					141.54	
	6.60					141.54	
	6.70					141.54	
	6.80					141.54	
	6.90					141.54	
	7.00					141.54	
	7.10					141.54	
	7.20					141.54	
	7.30					141.54	
	7.40					141.54	
	7.50					141.54	
	7.60					141.54	
	7.70					141.54	
	7.80					141.54	
	7.90					141.54	
	8.00	8	146	108	36	141.54	
	8.10	10	162	120	40	179.23	
	8.20					179.23	
	8.30					179.23	
	8.40					179.23	
	8.50					179.23	
	8.60					179.23	
	8.70					179.23	
	8.80					179.23	
	8.90					179.23	
	9.00					179.23	
	9.10					179.23	
	9.20					179.23	
	9.30					179.23	
	9.40					179.23	
	9.50					179.23	
3/8	9.52					179.23	
	9.60					179.23	
	9.70					179.23	
	9.80	10	162	120	40	179.23	

F FIRE ■ tool with internal cooling

Ratio drills, right-hand cutting

Guhring std.

Tool material	Carbide-UF
Carbide grade	K/P
Guhring no.	5525
Type	RT 100
Shank form	HA
Surface finish	F
Drilling depth	12 x D
Coolant ducts	

 Regrinding ▼
and
recoating ▼


nominal diameter d1m7		shank dia. d2	total length l1	flute length l2	shank length l3	Unit price in £	Unit price in £
inch	mm	mm	mm	mm	mm		
	9.90	10	162	120	40	179.23	22.01
	10.00	10	162	120	40	179.23	
	10.20	12	204	156	45	234.60	
7/16	10.50					234.60	35.87
	11.00					234.60	
	11.11					234.60	
	11.50					234.60	
	12.00	12	204	156		234.60	
1/2	12.50	14	230	182		292.05	
	12.70					292.05	
	13.00					292.05	
	13.50					292.05	
	14.00	14	230	182	45	292.05	
	14.50	16	260	208	48	414.20	50.18
	15.00					414.20	
	15.50					414.20	
	16.00	16	260	208	48	414.20	
	16.50	18	285	234		461.39	
	17.00					461.39	
	17.50					461.39	
	18.00	18	285	234	48	461.39	
3/4	18.50	20	310	258	50	657.77	
	19.00					657.77	
	19.05					657.77	
	19.50	20	310	258	50	657.77	
	20.00	20	310	258	50	657.77	

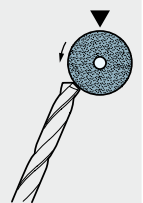
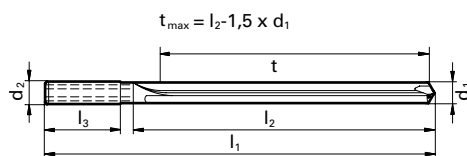
F FIRE  tool with internal cooling

Ratio drills, right-hand cutting

Guhring std.

Tool material	Carbide-UF
Carbide grade	K
Guhring no.	5513
Type	RT 150 GG
Shank form	HA
Surface finish	○
Drilling depth	10 x D
Coolant ducts	■

Regrinding ▼



nominal diameter d _{1m7}		shank dia. d ₂	total length l ₁	flute length l ₂	shank length l ₃	Unit price in £	Unit price in £
inch	mm	mm	mm	mm	mm		
1/8	3.00	6	91	42	36	40.16	
	3.17					40.16	
	3.25					40.16	
9/64	3.30			42		40.16	
	3.50			48		40.16	
	3.57		91	48		40.16	
5/32	3.80		121	77		40.16	
	3.97					40.16	
	4.00					49.91	
	4.20					49.91	13.75
	4.50			77		49.91	
	5.00			82		49.91	
	5.50					49.91	
	6.00	6	121	82		49.91	
	6.35	8	146	106		65.25	
1/4	6.50					65.25	
	6.80					65.25	
	7.00					65.25	
	7.50					65.25	
	7.80					65.25	
	8.00	8	146	106	36	65.25	
	8.50	10	175	130	40	82.01	16.48
	9.00					82.01	
	9.50					82.01	
3/8	9.52					82.01	
	10.00	10	175	130	40	82.01	
	10.20	12	209	159	45	101.77	
	10.50					101.77	
	11.00					101.77	
	11.50	12	209	159	45	101.77	
	12.00	12	209	159	45	101.77	
	12.50	14	233	183		135.42	
	12.70					135.42	
1/2	13.00					135.42	22.01
	13.50					135.42	
	14.00	14	233	183	45	135.42	
	14.50	16	260	207	48	171.43	
	15.00					171.43	
	15.50					171.43	
	16.00	16	260	207	48	171.43	

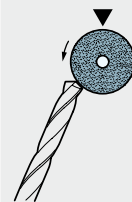
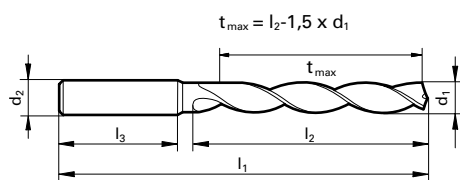
○ blank ■ tool with internal cooling

3-fluted Ratio drills, right-hand cutting

DIN 6537 long

Tool material	Carbide-UF
Carbide grade	K
Guhring no.	5518
Type	FT200
Shank form	HA
Surface finish	○
Drilling depth	5 x D
Coolant ducts	-

Regrinding ▼



nominal dia. d1m7 mm	shank dia. d2 mm	total length l1 mm	flute length l2 mm	shank length l3 mm	Unit price in £	Unit price in £
3.00	6	66	28	36	32.23	13.75
3.10					32.23	
3.20					32.23	
3.30					32.23	
3.50					32.23	
3.70	6	66	28	36	32.23	
3.80					32.23	
4.00					32.23	
4.10					32.23	
4.20					32.23	
4.50	6	74	36	36	32.23	
4.80					32.23	
5.00					32.23	
5.10					32.23	
5.20					32.23	
5.30	6	82	44	36	32.23	16.48
5.50					32.23	
5.80					32.23	
6.00					32.23	
6.10					38.72	
6.20	8	91	53	36	38.72	
6.40					38.72	
6.50					38.72	
6.70					38.72	
6.80					38.72	
7.00	8	91	53	36	38.72	
7.10					38.72	
7.40					38.72	
7.50					38.72	
7.80					38.72	
8.00	10	103	61	40	38.72	
8.10					44.32	
8.20					44.32	
8.40					44.32	
8.50					44.32	
8.60	10	103	61	40	44.32	

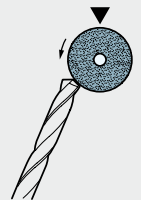
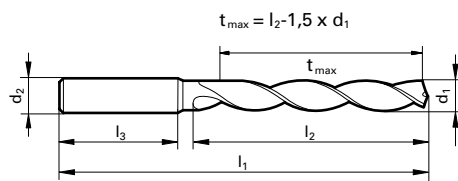
○ bright

3-fluted Ratio drills, right-hand cutting

DIN 6537 long

Tool material	Carbide-UF
Carbide grade	K
Guhring no.	5518
Type	FT200
Shank form	HA
Surface finish	○
Drilling depth	5 x D
Coolant ducts	-

Regrinding ▼



nominal dia. d1m7 mm	shank dia. d2 mm	total length l1 mm	flute length l2 mm	shank length l3 mm	Unit price in £	Unit price in £
8.70	10	103	61	40	44.32	16.48
8.80					44.32	
9.00					44.32	
9.10					44.32	
9.50					44.32	
9.80					44.32	
10.00	10	103	61	40	44.32	22.01
10.10	12	118	71	45	65.12	
10.20					65.12	
10.30					65.12	
10.50					65.12	
11.00					65.12	
11.20					65.12	
11.50					65.12	
11.80					65.12	
12.00	12	118	71		65.12	
12.10	14	124	77		85.40	
12.50					85.40	
13.00					85.40	33.09
13.50					85.40	
14.00	14	124	77	45	85.40	
14.50	16	133	83	48	105.41	
15.00					105.41	
15.50	16	133	83		105.41	
16.00	16	133	83		105.41	
16.50	18	143	93		163.38	
17.00					163.38	
17.50					163.38	
18.00	18	143	93	48	163.38	
18.50	20	153	101	50	220.68	
19.00					220.68	
19.50					220.68	
20.00	20	153	101	50	220.68	

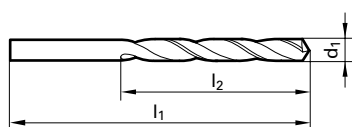
○ bright

Stub drills, right-hand cutting

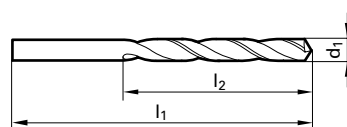
DIN 6539

Tool material	Carbide-UF
Carbide grade	K
Guhring no.	5516
Type	N
Surface finish	○

Tool material	Carbide-UF
Carbide grade	K
Guhring no.	5516
Type	N
Surface finish	○



nominal diameter d ₁		total length l ₁	flute length l ₂	Unit price in £
inch	mm	mm	mm	
	1.50	32	9	3.38
	1.60	34	10	3.38
	2.00	38	12	3.38
	2.10	38	12	3.38
	2.20	40	13	3.38
	2.30	40	13	3.38
3/32	2.38	43	14	3.38
	2.40			3.38
	2.50			3.38
	2.60	43	14	3.38
	2.70	46	16	4.94
7/64	2.78			4.94
	2.80			4.94
	2.90			4.94
	3.00	46	16	4.94
	3.10	49	18	4.94
1/8	3.17			4.94
	3.20			4.94
	3.30	49	18	4.94
	3.40	52	20	5.20
	3.50			5.20
9/64	3.57			5.60
	3.60			5.60
	3.70	52	20	5.60
	3.80	55	22	6.12
	3.90			6.12
5/32	3.97			6.12
	4.00			6.12
	4.10			6.63
	4.20	55	22	6.63
	4.30	58	24	6.63
11/64	4.37			6.63
	4.40			6.63
	4.50			6.63
	4.60			6.63
	4.70	58	24	7.27
3/16	4.76	62	26	7.27
	4.80			7.27
	4.90			7.27
	5.00			7.27
	5.10			13.00
	5.20	62	26	9.36



nominal diameter d ₁		total length l ₁	flute length l ₂	Unit price in £
inch	mm	mm	mm	
	5.50	66	28	9.36
	5.80	66	28	9.88
	6.00	66	28	9.88
1/4	6.35	70	31	12.35
	6.40			24.44
	6.50	70	31	12.35
	6.80	74	34	15.48
	6.90			15.48
	7.00			14.82
9/32	7.14			17.42
	7.50	74	34	17.42
5/16	7.94	79	37	19.88
	8.00			19.88
	8.50	79	37	24.44
	8.60	84	40	25.21
11/32	8.73			26.66
	8.80			26.66
	9.00			25.47
	9.50	84	40	27.55
	10.00	89	43	29.64
	10.20			34.19
	10.50	89	43	34.19
	11.00	95	47	37.82
7/16	11.11			43.40
	11.50	95	47	43.40
15/32	11.91	102	51	43.40
	12.00	102	51	43.40

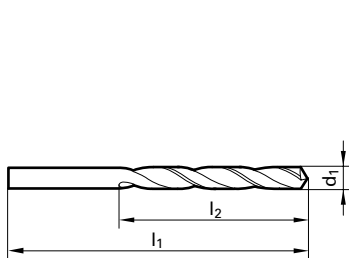
○ bright

Jobber drills, right-hand cutting

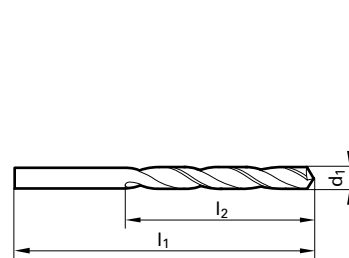
Guhring std.

Tool material	Carbide-UF
Carbide grade	K
Guhring no.	5517
Type	N
Surface finish	○

Tool material	Carbide-UF
Carbide grade	K
Guhring no.	5517
Type	N
Surface finish	○



nominal diameter d1		total length l1	flute length l2	Unit price in £
inch	mm			
	2.00	49	24	4.16
	2.10	49	24	4.81
	2.20	53	27	5.20
3/32	2.30	53	27	5.20
	2.38	57	30	5.20
	2.40			5.20
	2.50			5.20
	2.60	57	30	7.27
	2.70	61	33	7.27
7/64	2.78			7.27
	2.80			7.27
	2.90			7.27
	3.00	61	33	6.63
	3.10	65	36	6.63
1/8	3.17			6.63
	3.20			6.63
	3.30	65	36	6.63
	3.40	70	39	7.68
	3.50			7.27
9/64	3.57			8.20
	3.60			8.20
	3.70	70	39	8.20
	3.80	75	43	8.20
	3.90			8.20
5/32	3.97			8.20
	4.00			8.20
	4.10			8.58
	4.20	75	43	8.58
	4.30	80	47	11.18
11/64	4.37			11.18
	4.40			11.18
	4.50			10.28
	4.60			11.83
	4.70	80	47	11.83
3/16	4.76	86	52	11.83
	4.80			11.83
	4.90			11.83
	5.00			11.18
	5.10			23.79
13/64	5.16	86	52	15.48
	5.50	93	57	15.48
7/32	5.56	93	57	15.85



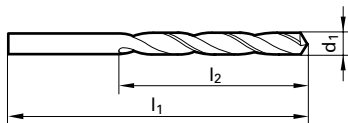
nominal diameter d1		total length l1	flute length l2	Unit price in £
inch	mm			
15/64	5.95	93	57	15.85
	6.00	93	57	15.85
1/4	6.35	101	63	19.88
	6.50	101	63	19.88
	6.80	109	69	23.54
	6.90			23.54
	7.00			23.54
9/32	7.14			26.66
	7.50	109	69	23.54
5/16	7.94	117	75	30.16
	8.00			27.55
	8.50	117	75	32.23
11/32	8.73	125	81	36.65
	9.00			33.16
	9.50	125	81	36.65
	10.00	133	87	40.81
	10.20			49.01
	10.50	133	87	47.31
	11.00	142	94	57.59
7/16	11.11			61.09
	11.50	142	94	61.09
	11.91	151	101	61.09
15/32	12.00	151	101	66.68

○ bright

Stub drills, right-hand cutting

DIN 1897

Tool material	HSCO		HSS-E-PM
Guhring no.	5524	5520	5521
Type	GU 500 DZ	GU 500 DZ	GT 500 DZ
Surface finish	○	Ⓢ	Ⓢ



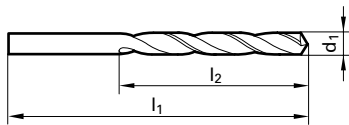
nominal diameter d ₁		total length l ₁	flute length l ₂	Unit price in £		
inch	mm	mm	mm			
	1.00	26	6	1.43	3.58	6.91
	1.10	28	7	1.43	3.58	6.91
	1.20	30	8	1.43	3.82	7.05
	1.30	30	8	1.43	4.06	7.40
	1.40	32	9	1.43	3.58	6.91
	1.50	32	9	1.43	3.46	6.56
1/16	1.59	34	10		3.58	
	1.60	34	10	1.43	3.58	6.67
	1.70	34	10	1.43	3.58	6.67
	1.80	36	11	1.43	3.58	6.67
	1.90	36	11	1.43	3.58	6.67
	2.00	38	12	1.43	2.99	5.72
	2.10	38	12	1.43	3.58	6.32
	2.20	40	13	1.43	3.58	6.91
	2.30	40	13	1.43	3.10	6.91
3/32	2.38	43	14	1.43	3.46	6.91
	2.40			1.43	3.82	7.16
	2.50			1.43	3.22	6.09
	2.60	43	14	1.43	3.93	7.16
	2.70	46	16	1.56	4.06	6.80
7/64	2.78			1.56	3.93	5.72
	2.80			1.56	3.82	7.40
	2.90			1.56	4.06	6.56
	3.00	46	16	1.43	3.46	6.32
	3.10	49	18	1.56	3.58	6.56
1/8	3.17			1.56	3.58	6.56
	3.20			1.56	3.46	7.05
	3.30	49	18	1.56	3.46	7.16
	3.40	52	20	1.67	4.06	6.44
	3.50			1.67	3.46	6.91
9/64	3.57			1.67	3.93	6.56
	3.60			1.67	4.30	5.72
	3.70	52	20	1.67	3.93	6.09
	3.80	55	22	1.79	4.17	6.91
	3.90			1.79	4.77	7.76
5/32	3.97			1.79	4.30	6.91
	4.00			1.79	3.93	6.44
	4.10			1.79	4.41	7.40
	4.20	55	22	1.79	3.93	6.56
	4.30	58	24	1.79	4.41	7.28
11/64	4.37			1.79	4.67	7.52
	4.40			1.79	4.77	7.76

○ bright Ⓢ TiN

Stub drills, right-hand cutting

DIN 1897

Tool material	HSCO		HSS-E-PM
Guhring no.	5524	5520	5521
Type	GU 500 DZ	GU 500 DZ	GT 500 DZ
Surface finish	○	Ⓢ	Ⓢ



nominal diameter d ₁		total length l ₁	flute length l ₂	Unit price in £		
inch	mm	mm	mm			
3/16	4.50	58	24	1.79	4.41	6.56
	4.60			1.79	4.41	8.23
	4.70	58	24	1.79	4.77	7.76
	4.76	62	26	1.79	4.90	7.76
	4.80			1.79	5.01	8.35
13/64	4.90			1.79	5.01	8.47
	5.00			1.79	4.30	7.16
	5.10			1.91	4.67	7.40
	5.16			1.91	4.90	7.63
	5.20			1.91	5.01	8.59
7/32	5.30	62	26	1.91	5.24	8.23
	5.40	66	28	2.14	5.61	8.94
	5.50			2.03	4.77	7.63
	5.56			2.28	5.24	9.18
	5.60			2.28	5.72	9.18
15/64	5.70			2.28	6.09	9.67
	5.80			2.28	5.85	9.91
	5.90			2.28	6.09	9.67
	5.95			2.28	5.72	9.30
	6.00	66	28	2.14	5.14	8.12
1/4	6.10	70	31	2.51	6.09	9.54
	6.20			2.51	6.09	9.54
	6.30			2.51	6.44	10.01
	6.35			2.51	6.44	9.91
	6.40			2.51	6.44	9.91
9/32	6.50			2.39	6.09	8.35
	6.60			2.63	6.67	10.50
	6.70	70	31	2.63	6.91	10.86
	6.80	74	34	3.10	7.40	9.77
	6.90			3.10	7.28	11.58
5/16	7.00			3.10	6.80	12.76
	7.10			3.82	8.23	14.07
	7.14			3.82	8.35	13.47
	7.20			3.82	8.35	13.96
	7.30			3.82	8.35	13.96
	7.40			3.82	8.47	14.07
	7.50	74	34	3.22	7.05	13.36
	7.60	79	37	4.17	9.06	14.91
	7.70			4.17	9.06	14.91
	7.80			4.17	9.06	12.76
	7.90			4.17	9.06	14.91
	7.94	79	37	4.17	8.59	16.10

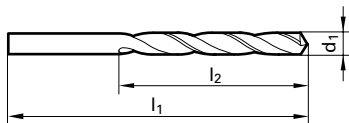
○ bright Ⓢ TiN



Stub drills, right-hand cutting

DIN 1897

Tool material	HSCO		HSS-E-PM
Guhring no.	5524	5520	5521
Type	GU 500 DZ	GU 500 DZ	GT 500 DZ
Surface finish	○	Ⓢ	Ⓢ

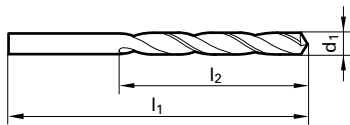


nominal diameter d ₁		total length l ₁	flute length l ₂	Unit price in £		
inch	mm	mm	mm			
1 1/8	8.00	79	37	3.46	8.35	13.96
	8.10			4.17	10.73	17.65
	8.20			4.17	11.09	18.24
	8.30			4.17	11.33	18.60
	8.40			4.17	11.33	18.60
	8.50	79	37	3.58	9.77	15.50
	8.60	84	40	6.32	12.29	
	8.70				15.26	
	8.73			4.90	10.97	16.93
	8.80			4.90	12.29	21.83
1 1/4	9.00			4.17	9.91	17.06
	9.10				14.37	
	9.30			5.24	11.33	25.51
	9.50	84	40	4.67	10.97	20.51
	9.60	89	43		16.73	
	9.70			8.86		
	9.80			5.85	13.00	22.06
	10.00			5.24	10.73	19.68
	10.20				13.60	28.98
	10.30			6.80	13.60	
1 3/8	10.40			8.81	13.60	
	10.50	89	43	6.80	12.89	28.03
	10.80	95	47		13.89	
	11.00			7.87	14.44	28.03
	11.11			9.06	15.39	33.03
	11.50	95	47	9.06	16.58	29.57
	12.00	102	51	9.43	16.10	33.99
	12.50			11.58	17.77	37.08
	12.70				18.60	
	13.00	102	51	13.60	17.77	37.08
1 1/2	13.50	107	54	14.07	18.97	39.48
	14.00	107	54	14.68	23.49	49.02

Jobber drills, right-hand cutting

DIN 338

Tool material	HSS	HSCO		HSS-E-PM
Guhring no.	9651	5523	5519	5522
Type	N	GU 500 DZ	GU 500 DZ	GT 500 DZ
Surface finish	Tip coated 			



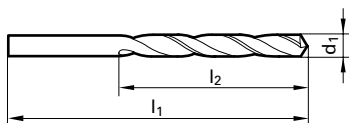
nominal diameter d ₁		total length l ₁	flute length l ₂	Unit price in £			
inch	mm	mm	mm				
3/64	1.00	34	12	0.89	1.43	2.99	7.63
	1.10	36	14	1.01	1.43	3.22	7.52
	1.19	38	16	1.00			
	1.20	38	16	0.94	1.43	3.10	7.76
	1.30	38	16	0.89	1.43	3.22	8.23
1/16	1.40	40	18	0.85	1.43	3.22	7.52
	1.45	40	18			3.22	
	1.50	40	18	0.67	1.43	2.99	7.28
	1.59	43	20	0.66			
	1.60	43	20	0.66	1.43	2.99	7.40
5/64	1.70	43	20	0.79	1.43	3.22	7.40
	1.80	46	22	0.77	1.43	3.22	7.40
	1.90	46	22	0.75	1.43	3.22	7.40
	1.98	49	24	0.77			
	2.00	49	24	0.60	1.43	3.10	6.32
3/32	2.10	49	24	0.72	1.43	3.22	6.91
	2.20	53	27	0.72	1.43	3.46	7.52
	2.30			0.72	1.43	3.34	7.52
	2.38	53	27	0.59	1.43	3.34	7.63
	2.40	57	30	0.72	1.43	3.10	7.76
7/64	2.50			0.59	1.43	3.22	6.80
	2.60	57	30	0.72	1.43	3.34	8.23
	2.70	61	33	0.72	1.56	3.46	7.76
	2.78			0.71	1.56	3.46	6.67
	2.80			0.74	1.56	3.46	8.59
1/8	2.90			0.63	1.56	3.46	7.52
	3.00	61	33	0.61	1.43	3.34	7.16
	3.10	65	36	0.79	1.56	3.82	7.52
	3.17			0.61	1.56	3.58	7.52
	3.20			0.77	1.56	3.58	8.23
9/64	3.30	65	36	0.66	1.56	3.82	8.23
	3.40	70	39	0.83	1.67	4.06	7.40
	3.50			0.67	1.67	4.06	7.76
	3.57			0.81	1.67	4.06	7.52
	3.60			0.84	1.67	4.06	6.56
5/32	3.70	70	39	0.72	1.67	4.06	7.05
	3.80	75	43	0.89	1.79	4.30	7.76
	3.90			0.92	1.79	4.41	9.06
	3.97			0.75	1.79	4.30	7.87
	4.00			0.75	1.79	4.17	7.28
	4.10			0.78	1.79	4.30	8.47
	4.20	75	43	0.80	1.79	4.30	7.52

 bright  TiN

Jobber drills, right-hand cutting

DIN 338

Tool material	HSS	HSCO		HSS-E-PM
Guhring no.	9651	5523	5519	5522
Type	N	GU 500 DZ	GU 500 DZ	GT 500 DZ
Surface finish	Tip coated 			



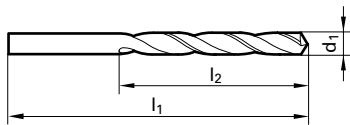
nominal diameter d ₁		total length l ₁	flute length l ₂	Unit price in £			
inch	mm	mm	mm				
11/64	4.25	75	43			4.53	
	4.30	80	47	1.00	1.79	4.53	8.35
	4.37			1.00	1.79	4.53	8.59
	4.40			1.03	1.79	4.53	9.06
	4.50			0.83	2.28	4.41	7.40
3/16	4.60	80	47	1.08	1.79	4.67	9.43
	4.70	80	47	1.09	1.79	4.67	9.06
	4.76	86	52	0.92	1.91	4.77	9.06
	4.80	86	52	1.12	1.79	4.77	9.54
	4.90			1.13	1.91	4.90	9.77
13/64	5.00			0.96	1.91	4.77	8.23
	5.10			1.19	1.91	4.90	8.94
	5.16			1.22	1.91	4.90	9.06
	5.20			1.26	1.91	4.90	10.25
	5.30	86	52	1.28	1.91	5.24	9.91
7/32	5.40	93	57	1.31	2.14	5.85	10.73
	5.50			1.32	2.03	5.72	9.18
	5.56			1.12	2.28	5.72	10.97
	5.60			1.39	2.28	5.96	10.86
	5.70			1.44	2.28	5.96	11.58
15/64	5.80			1.47	2.28	5.96	11.93
	5.90			1.51	2.28	6.09	11.58
	5.95			1.61	2.28	5.85	11.09
	6.00	93	57	1.27	2.14	5.72	9.67
	6.10	101	63	1.61	2.51	6.56	11.58
1/4	6.20			1.65	2.51	6.44	11.58
	6.30			1.67	2.51	6.32	12.05
	6.35			1.40	2.51	6.44	11.93
	6.40			1.75	2.51	6.44	11.93
	6.50			1.44	2.51	6.91	10.01
17/64	6.60			1.82	2.63	7.05	12.64
	6.70	101	63	1.88	2.63	7.16	13.00
	6.75	109	69	1.86			
	6.80			1.56	3.22	7.76	12.76
	6.90			1.98	3.22	7.76	13.83
9/32	7.00			1.64	3.10	7.76	15.26
	7.10			2.08	3.82	8.59	16.93
	7.14			1.76	3.82	8.59	16.10
	7.20			2.13	3.82	8.59	16.70
	7.30			2.20	3.82	9.06	16.70
	7.40			2.25	3.82	9.06	16.82
	7.50	109	69	1.88	3.22	8.23	16.10

 bright
  TiN

Jobber drills, right-hand cutting

DIN 338

Tool material	HSS	HSCO		HSS-E-PM
Guhring no.	9651	5523	5519	5522
Type	N	GU 500 DZ	GU 500 DZ	GT 500 DZ
Surface finish	Tip coated 			



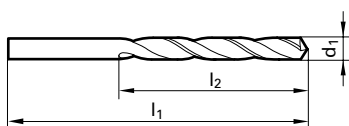
nominal diameter d ₁		total length l ₁	flute length l ₂	Unit price in £			
inch	mm	mm	mm				
19/64	7.54	117	75	2.44			
	7.60			2.37	4.17	9.77	17.77
	7.70			2.44	4.17	9.54	17.89
5/16	7.80	117	75	2.50	4.17	9.67	15.02
	7.90			2.56	4.17	10.15	17.77
	7.94			2.09	4.17	9.67	19.31
21/64	8.00	117	75	2.12	3.46	9.30	16.70
	8.10			2.68	4.17	10.01	22.06
	8.20			2.73	4.17	9.91	23.01
11/32	8.30	125	81	2.81	4.17	9.91	23.01
	8.33			2.94			
	8.40			2.89	4.17	10.38	23.01
23/64	8.50	125	81	2.41	3.58	9.43	19.55
	8.60			3.05	6.32	10.25	
	8.70			3.11	4.90	13.84	
3/8	8.73	133	87	2.56	4.90	10.25	20.98
	8.80			3.17	4.90	11.09	27.07
	8.90			3.28	6.98	11.09	
25/64	9.00	133	87	2.71	4.17	10.38	21.59
	9.10			3.42			
	9.13			3.61			
13/32	9.20	142	94	3.49			
	9.30			3.57	5.24	11.33	32.07
	9.40			3.67			
27/64	9.50	142	94	3.04	4.67	10.97	25.51
	9.52			3.06			
	9.60			3.85			
7/16	9.70	142	94	3.88		12.76	
	9.80			3.97	5.85	12.76	27.54
	9.90			4.13		19.31	
15/32	9.92	142	94	4.33			
	10.00			3.39	5.24	12.40	24.57
	10.10			5.08			
19/32	10.20	142	94	5.17	6.91	14.31	37.56
	10.30			5.39	8.81	14.44	
	10.32			3.74			
9/16	10.40	142	94	5.60			
	10.50			3.79	6.91	14.44	36.49
	10.60			5.80			
1 1/8	10.70	142	94	5.94			
	10.72			5.03	9.41		
	10.80			6.03			

 bright  TiN

Jobber drills, right-hand cutting

DIN 338

Tool material	HSS	HSCO		HSS-E-PM
Guhring no.	9651	5523	5519	5522
Type	N	GU 500 DZ	GU 500 DZ	GT 500 DZ
Surface finish	Tip coated 			



nominal diameter d ₁		total length l ₁	flute length l ₂	Unit price in £			
inch	mm	mm	mm				
7/16	10.90	142	94	6.18			
	11.00			4.23	7.87	14.91	36.49
	11.10			6.49			
	11.11			4.35	9.06	15.63	43.05
	11.20			6.55			
29/64	11.30			6.71			
	11.40			6.88			
	11.50			4.66	9.06	16.58	38.52
	11.51			6.11			
	11.60			7.10			
15/32	11.70			7.19			
	11.80	142	94	7.50			
	11.90	151	101	7.50			
	11.91			5.11			
	12.00			5.23	9.43	17.53	44.00
31/64	12.10			9.85			
	12.20			10.07			
	12.30	151	101	7.05			
	12.40	151	101	10.20			
	12.50			5.75	11.58	18.13	48.06
1/2	12.60			10.85			
	12.70			8.68	12.64		65.63
	12.80			11.26			
	12.90			11.48			
	13.00			6.36	13.60	19.45	48.06
33/64	13.10			10.20			
	13.20	151	101	12.48			
	13.25	160	108	13.42			
	13.30			13.59			
	13.40			13.98			
17/32	13.49			11.21			
	13.50			10.70	15.39	22.54	51.04
	13.60			14.37			
	13.70			14.60			
	13.75			14.56			
35/64	13.80			14.65			
	13.89			12.17			
	13.90			15.22			
	14.00	160	108	10.98	16.10	23.49	64.04
	14.25	169	114	15.78			
9/16	14.29			12.21			
	14.50	169	114	15.78			

 bright
  TiN

DIN 338

A schematic diagram of a drill bit. The total length of the bit is labeled l_1 . The length of the fluted section is labeled l_2 . The diameter of the bit is labeled d_1 .

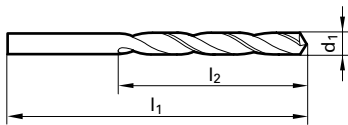


○ bright ● TiN

Long series twist drills, right-hand cutting

DIN 340

Tool material	HSCO	
Guhring no.	5536	5537
Type	GU 500 DZ	GU 500 DZ
Surface finish	○	Ⓢ



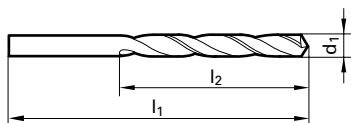
nominal diameter d ₁ mm	total length l ₁ mm	flute length l ₂ mm	Unit price in £	
1.00	56	33	3.68	6.60
1.10	60	37	4.97	7.47
1.20	65	41	4.54	8.33
1.30	65	41	4.66	8.22
1.40	70	45	4.97	8.12
1.50	70	45	3.89	7.03
1.60	76	50	4.87	8.33
1.70	76	50	4.76	9.08
1.80	80	53	4.76	8.77
1.90	80	53	4.44	9.30
2.00	85	56	3.57	6.92
2.10	85	56	4.01	8.00
2.20	90	59	4.01	8.12
2.30	90	59	4.01	8.00
2.40	95	62	4.11	7.35
2.50			3.68	7.03
2.60	95	62	4.22	8.12
2.70	100	66	4.44	8.55
2.80			4.76	8.22
2.90			4.33	8.55
3.00	100	66	3.79	7.57
3.10	106	69	4.54	9.08
3.20			4.33	8.44
3.30	106	69	4.76	8.98
3.40	112	73	4.54	9.30
3.50			4.66	9.08
3.60			4.87	9.41
3.70	112	73	4.87	9.20
3.80	119	78	4.66	8.87
3.90			4.54	9.95
4.00			4.87	9.63
4.10			4.54	9.73
4.20	119	78	4.33	9.41
4.30	126	82	4.66	10.50
4.40			5.09	9.30
4.50			5.84	9.95
4.60			4.44	9.52
4.70	126	82	4.97	11.03
4.80	132	87	4.54	10.71
4.90			5.19	10.93
5.00			4.87	11.03
5.10	132	87	5.30	12.23

○ bright Ⓢ TiN

Long series twist drills, right-hand cutting

DIN 340

Tool material	HSCO	
Guhring no.	5536	5537
Type	GU 500 DZ	GU 500 DZ
Surface finish	○	Ⓢ



nominal diameter d ₁ mm	total length l ₁ mm	flute length l ₂ mm	Unit price in £	
5.20	132	87	5.41	12.01
5.30	132	87	6.17	13.19
5.40	139	91	6.82	12.33
5.50			4.33	11.46
5.60			7.25	14.92
5.70			7.35	16.55
5.80			4.22	14.49
5.90			7.79	16.22
6.00	139	91	5.95	13.74
6.10	148	97	8.22	16.34
6.20			8.22	14.61
6.30			7.79	16.34
6.40			8.12	14.82
6.50			6.06	14.28
6.60			9.08	16.44
6.70	148	97	9.08	16.87
6.80	156	102	8.98	18.07
6.90			10.17	18.72
7.00			8.22	16.98
7.10			10.38	16.44
7.20			10.93	18.82
7.30			11.25	19.68
7.40			11.46	20.45
7.50	156	102	12.01	20.76
7.60	165	109	9.52	19.68
7.70			10.50	20.98
7.80			11.46	23.26
7.90			11.68	22.28
8.00			8.33	18.93
8.10			12.23	20.88
8.20			12.01	22.82
8.30			12.01	24.12
8.40			13.52	25.96
8.50	165	109	10.38	22.28
8.60	175	115	13.19	22.06
8.70			16.12	22.28
8.80			14.61	22.71
8.90			17.63	23.04
9.00			10.06	23.47
9.10			15.79	23.47
9.20			16.77	23.47
9.30	175	115	13.84	23.47

○ bright Ⓢ TiN

DIN 340

A schematic diagram of a drill bit. The drill bit is shown in cross-section, revealing a double-flute design. The total length of the drill bit is labeled l_1 . The length of the double-flute section is labeled l_2 . The diameter of the drill bit is labeled d_1 .



○ bright ● TiN

Sets of jobber drills, right-hand cutting

DIN 338

Tool material	HSCO	HSS
Guhring no.	201	201
Consisting of	5523	9651
Type	GU 500 DZ	N
Surface finish	○	Tip coated S



Composition of drill set	Drills per set	Code-no.	Unit price in £
from 1.0 – 10.5 mm in increments of 0.5 mm supplementary sizes 3.3/4.2/6.8/10.2	24	7.018	51.40
from 1.0 – 13.0 mm in increments of 0.5 mm	25	7.014	59.27
from 1.0 – 10.0 mm in increments of 0.5 mm	19	9.013	37.73
from 1.0 – 13.0 mm in increments of 0.5 mm	25	9.014	68.79

GUHRING NAVIGATOR Drilling tools

Application recommendations

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

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 $> 1 \times D$.

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.

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

Cutting direction:

- ☒ right-hand cutting

Coatings:

- ☐ bright
☒ TiAlN nanoA-coated
☒ FIRE-coated

$\leq 3 \times D$

Tool material	Carbide
Carbide grade	K/P
Type	RT 100 U
Surface finish	F
Cooling	
DIN	HA R
6537	HE R
G.S.	HA R
	HE R



Material group	Material examples, new description (old description in brackets) <i>Figures in bold = material no. to DIN EN</i>	Tensile strength Hardness MPa (N/mm ²)	Coolant	v _c m/min	Feed col. no.	v _c m/min
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 >500-850	☒ ☐	145 120	7 6	130 110
Free-cutting steels	1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36) 1.0727 46S20 (45S20), 1.0728 60S20, 1.0757 46SPb20 (45SPb20)	≤850 850-1000	☒ ☐	170 145	8 8	145 110
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)	≤700 700-850 850-1000	☒ ☐ ☐	130 125 120	8 7 7	120 110 105
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	850-≤1000 1000-1200	☒ ☐	120 105	7 7	105 100
Unalloyed case hardened steels	1.0301 (C10), 1.1121 C10E (Ck10)	≤750	☒	145	8	130
Alloyed case hardened steels	1.7043 38Cr4 1.5752 15NiCr13 (15NiCr13), 1.7131 16MnCr5, 1.7264 20CrMo5	850-≤1000 1000-1200	☒ ☐	120 85	7 5	120 85
Nitriding steels	1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	≥850-≤1000 >1000-1200	☒ ☐	110 105	7 5	100 90
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4	≤850 >850-1000	☒ ☐	80 65	6 5	65 55
High speed steels	1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3	≥650-1000	☒	60	4	
Spring steels	1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4 (51CrV4)	≤330 HB	☒	60	3	45
Stainless steels, sulphured	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9	≤850	☒	60	5	55
austenitic	1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A)	≤850	☒	55	5	45
martensitic	1.4057 X20CrNi17 2 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2	≤850	☒	45	5	45
Hardened steels	-	≤40-48 HRC >48-60 HRC	☒ ☐	55 35	3 2	45 25
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤1200	☒	35	4	25
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 <300 HB	☒ ☐	210 160	9 9	210 155
New cast materials CGI	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)	800-1000 1200-1400	☒ ☐			
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 <300 HB	☒ ☐	140 130	9 8	155 125
Chilled cast iron	-	≤350 HB	☒	40	3	35
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 >850-1200	☒ ☐	45 40	4 3	40 35
Aluminium and Al-alloys	3.0255 Al99.5, 3.2315 AlMgSi1, 3.3515 AlMg1	≤400	☒	310	9	260
Al wrought alloys	3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1.5	≤450	☒	310	9	260
Al cast alloys ≤ 10 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9	≤600	☒	260	9	220
> 10 % Si	3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≤600	☒	220	9	180
Magnesium alloys	3.5200 MgMn2, 3.5812.05 G-MgAl8Zn1, 3.5612.05 G-MgAl6Zn1	≤450	☒	280	8	260
Copper, low-alloyed	2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5Zn1Pb	≤400	☒	125	7	105
Brass, short-chipping	2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2	≤600	☒	325	8	270
long-chipping	2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0.5	≤600	☒	220	7	180
Bronze, short-chipping	2.1090 CuSn7Zn1Pb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn	≤600	☒	125	7	105
long-chipping	2.0790 CuNi18Zn19Pb 2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2	>600-850 ≤850 >850-1000	☒ ☐ ☐	105 90 80	6 6 6	85 80 60

$\leq 5 \times D$
 $\leq 7 \times D \leq 10 \times D \leq 12 \times D$

Carbide	Carbide	Carbide	Carbide	Carbide	Carbide	Carbide	Carbide	Carbide
K/P	K/P	K/P	K/P	K/P	K	K/P	K	K/P
RT 100 U	RT 100 VA	RT 100 U	RT 100 U	RT 100 VA	FT 200 G	RT 100 U	RT 150 GG	RT 100
								
								
5514	8510	5511	5515	8511	5518			
5614	8610	5611	5615	8611		5512	5513	5525
						5612		

Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min	Feed col. no.	v_c m/min
7			145	7	130	7				145	6			90	6				
6			120	6	110	6				120	5			80	5				
8			170	8	145	8				170	7			100	7				
7			145	8	110	7				145	7			90	7				
7			130	8	120	7				130	7			90	7				
7			125	7	110	7				125	6			80	6				
7			120	7	105	7				120	6			80	6				
7			120	7	105	7				120	6			80	6				
6			105	7	100	6				105	6			60	6				
8			145	8	130	8				145	7			90	7				
7			120	7	120	7				120	6			80	6				
5			85	5	85	5				85	4			60	4				
6			105	7	100	6				110	6			60	6				
5			100	5	90	5				105	4			50	4				
6			70	6	65	6				80	5			50	5				
5			55	5	55	5				65	4			40	4				
			60	5						60	4			35	4				
3			60	3	45	3				60	2			35	2				
4	80	5	60	5	55	4	80	5		60	4			40	4				
4	60	2-3	55	5	45	4	60	2-3		55	4			40	4				
3	80	5	50	5	45	3	80	5		45	4			40	4				
3			55	3	45	3				55	2								
2			35	2	25	2				35	1								
4			35	4	25	4				35	3								
8	30	4	195	9	210	8	30	4	100	6			6	120	8				
8			160	9	155	8			80	6			6	120	8				
7			140	9	145	7			80	6			6	90	8				
7			130	8	125	7			70	6			6	80	7				
3			40	3	35	3							1						
4	45	4	45	4	40	4	45	4											
3	40	3	40	3	35	3	40	3											
9			310	9	260	9			180	7			8	150	8				
9			310	9	260	9			160	7			8	150	8				
8			260	9	235	9			150	7			8	150	8				
8			220	9	170	8			120	6			8	120	8				
8			280	8	260	8			180	6				150	7				
7			125	7	105	7								80	6				
8			325	8	270	8			180	6			7	120	7				
7			220	7	180	7								120	6				
6			125	7	105	6							6	40	6				
6			105	6	85	6							5						
5			90	6	80	5								40	5				
5			80	6	60	5													

Application recommendations

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

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 10xD

drills: Pilot holes are necessary for extra length SL drills $\geq 7 \times D$:

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 $> 1 \times D$.

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.

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	0.315	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

* Cutting lip corrected to appr. 10°

- bright
- TiN-coated
- UF Ultra fine grain

Material group	Material examples, new description (old description in brackets) <i>Figures in bold = material no. to DIN EN</i>	Tensile strength MPa (N/mm ²)	Hardness	Coolant
Common structural steels	1.0035 S185(St33), 1.0486 P275N(StE285), 1.0345 P235GH(H1), 1.0425 P265GH(H2) 1.0050 E295 (St50-2), 1.0070 E360 (St70-2), 1.8937 P500NH (WStE500)	≤500 >500-850		 
Free-cutting steels	1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36) 1.0727 46S20 (45S20), 1.0728 (60S20), 1.0757 46SPb20 (45SPb20)	≤850 850-1000		 
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)	≤ 700 700-850 850-1000		  
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	850-≤1000 1000-1200		 
Unalloyed case hardened steels	1.0301 (C10), 1.1121 C10E (Ck10)	≤750		
Alloyed case hardened steels	1.7043 38Cr4 1.5752 15NiCr13 (15NiCr13), 1.7131 16MnCr5, 1.7264 20CrMo5	850-≤1000 1000-1200		 
Nitriding steels	1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	≥850-≤1000 >1000-1200		 
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4	≤850 >850-1000		 
High speed steels	1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3	≥650-1000		
Spring steels	1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4 (51CrV4)		≤330 HB	
Stainless steels, sulphured	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9	≤850		
austenitic	1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A)	≤850		
martensitic	1.4057 X20CrNi17.2 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2	≤850		
Hardened steels	-		≤40-48 HRC >48-60 HRC	 
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤1200		
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 <300 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)		≤220 HB <300 HB	 
Chilled cast iron	-	800-1000		
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	1200-1400		
Aluminium and Al-alloys	3.0255 Al99,5, 3.2315 AlMgSi1, 3.3515 AlMg1		≤240 HB <300 HB	 
Al wrought alloys	3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1,5		≤350 HB	
Al cast alloys ≤ 10 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9	≤850		
> 10 % Si	3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	>850-1200		
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	≤450		
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	≤450		 
long-chipping	2.0790 CuNi18Zn19Pb	≤400		
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2	≤600 ≤600		 
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	≤600		
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	>600-850		 
Kevlar	Kevlar	≤850		
Glass, carbon concent. plastics	GFK/CFK	>850-1000		

$\leq 3 \times D$ drilling depth

		HSCO	HSS-E-PM	Carbide
Guhring no. straight	Tool material			
	Carbide grade	—	—	K10/K20
	Type	GU 500	GU 500	N
	Surface finish	○	Ⓢ	○
	DIN 1897	5524 5520	5521	
	DIN 338			
	DIN 340			
	DIN 6539			5516
G.S.				

$\leq 5 \times D$ drilling depth

HSCO	HSS-E-PM	Carbide
— —	—	K10/K20
GU 500	GT 500	N
 		
5523 5519	5522	
		5517

 $\leq 10 \times D$

HSCO

— —

GU 500

○ ●

5536 5537

straight



S			S			S			S			S														
Vc m/min	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Vc m/min	Feed col. no.										
35	45	6 6	40	6			35	45	6 6	40	6	80	4	29	32	6 6										
30	35	5 5	32	5			30	35	5 5	32	5	70	4	22	25	5 5										
40	50	6 6	45	6		80	5	40	50	6 6	45	6	80	5	32	35	6 6									
30	40	6 6	40	5		70	4	30	40	6 6	40	5	70	4	25	28	6 6									
32	42	6 6	42	6		80	4	32	42	6 6	42	6	80	4	25	28	6 6									
28	35	6 6	40	5		70	4	28	35	6 6	40	5	70	4	22	25	6 6									
20	22	5 5	28	4		60	4	20	22	5 5	28	4	60	4	13	15	5 5									
15	18	4 4	25	4		60	4	15	18	4 4	25	4	60	4	12	13	4 4									
13	15	3 3	20	3				13	15	3 3	20	3			11	12	3 3									
30	40	6 6	40	4			80	5	30	40	6 6	40		4	80	5	25	28	6 6							
16	20	4 4	22	4	60		4	16	20	4 4	22	4		60	4	12	14	4 4								
12	15	3 3	18	3				12	15	3 3	18	3				11	12	3 3								
15	18	4 4	20	4			50	4	15	18	4 4	20			4	50	4	12	13	4 4						
10	12	3 3	15	3					10	12	3 3	15			3			7	8	3 3						
15	18	4 4	25	4				50	3	15	18	4 4			25		4	50	3	12	13	4 4				
10	13	3 3	15	3						10	13	3 3			15		3			9	10	3 3				
10	13	3 3	15	3							10	13			3 3		15		3			9	10	3 3		
			12	2						25	2						12		2		25	2				
14	18	4 4	15	4		25				4	14		18		4 4		15		4		25	4		12	13	4 4
10	12	4 4	10	3		25				3	10		12		4 4		10		3		25	3		7	8	4 4
12	15	4 4	12	3		25				3	12		15		4 4		12		3		25	3		11	12	4 4
					20	3									20		3									
					15	2											15				2					
36	45	6 6	50	6	90	4	36						45	6 6	50	6	90				4			29	32	6 6
30	36	6 6	40	6	80	4	30						36	6 6	40	6	80				4			23	26	6 6
30	40	6 6	45	6	80	4	30	40					6 6	45	6	70	4	25			28			6 6		
22	28	6 6	32	6	70	4	22	28	6 6				32	6	60	4	18	20		6 6						
			8	3								8	3													
						20	3								20	3										
						15	2									15		2								
50	70	7 7				200	7					50	70		7 7						200		7	45	50	7 7
50	70	7 7				200	7			50		70	7 7					200	7		45		50	7 7		
65	85	7 7				150	6			65	85	7 7				150		6	54		60	7 7				
60	70	6 6				120	6			60	70	6 6				120		6	45		50	6 6				
60	70	6 6				180	5			60	70	6 6				180		5	45		50	6 6				
25	32	5 5	50	5		80	5*			25	32	5 5	50		5	80		5*	21		24	5 5				
45	63	5 5				180	5*			45	63	5 5				180		5*	45		50	5 5				
30	40	5 5	60	5	180	5*	30			40	5 5	60	5	180	5*	25		28	5 5							
36	50	4 4	50	5	120	5	36	50		4 4	50	5	120	5	31	35	4 4									
30	35	4 4	45	4	120	5	30	35	4 4	45	4	120	5	22	25	4 4										
30	32	4 4	40	4	70	4	30	32	4 4	40	4	70	4	22	24	4 4										
25	28	4 4	32	4	50	3	25	28	4 4	32	4	50	3	18	20	4 4										
20	25	4 4	25	4	40	3	20	25	4 4	25	4	40	4	16	18	4 4										
15	15	4 4					15	15	4 4					11	12	4 4										

Guhring solid carbide Ratio end mills type RF 100



with micro-corner protection for longer tool life

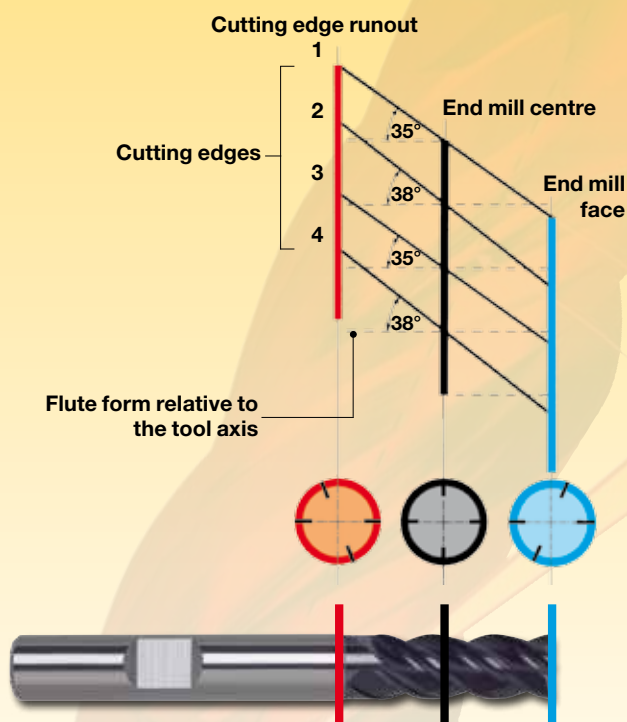
We have developed the Ratio end mill with uneven helix angle primarily to prevent chattering and the so-called corkscrew effect (as found when withdrawing tools having a large helix angle).

However, the uneven helix angle does not only combat these two unwanted effects but offers the following additional advantages:

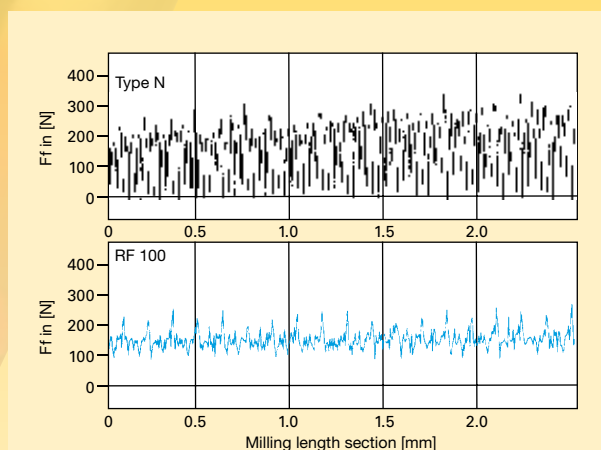
Summary of advantages

- suitable for roughing and finishing
- up to 60% higher feed rates
- up to 4-times longer tool life
- vibration-free operation
- improved workpiece surface quality

Guhring's Ratio end mills offer a very simple, but highly efficient solution in order to provide optimal rigidity during the machining process. The cutting edges possess different helix angles. Subsequently, Ratio end mills have an uneven cutting edge spacing that effectively suppresses the regenerative effect.



In contrast to the heavy chattering characteristics displayed by a tool with an even cutting edge spacing, the milling process with a Ratio end mill from Guhring is chatter-free resulting in an improved workpiece surface quality as well as an increased profile accuracy and an improved tool life.



The cutting force comparison between a conventional milling cutter type N and a RF100 clearly shows the quieter, more rigid operation of the RF100.

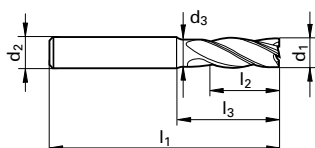
Material (ISO-code)	Steel	Cast iron	Stainless steel	Aluminium	Ti-special alloys	Hardened steel
Hardness tensile strength	up to 850 N/mm ² above 850 N/mm ²	up to 180 HB 30 above 180 HB 30	up to 750 N/mm ² above 750 N/mm ²	up to 3% Si above 3% Si	Ti-based Ni-based	up to 52 HRC above 52 HRC
RF 100 U	○	●	●		●	○
RF 100 F	●	○	●		●	
RF 100 A				●	●	
RF 100 SF	●	●	●	○	●	○

● = optimal suitability

○ = limited suitability

DIN 6527 short

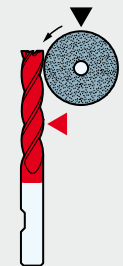
Regrinding and recoating ▼



F FIRE *with highly unequal helix angles

DIN 6527 long

Regrinding 
and
recoating 



F FIRE *with highly unequal helix angles

The Super-Line RF 100 U Package Deal

- up to 60% higher in feed rates
- longer tool life
- vibration-free machining
- suitable for roughing and finishing
- increased surface quality



Guhring no. 5534 code no 1,0
FIRE-coated, short length, cutting over
centre, diameters 6, 8, 10, 12 and 16 mm

£ 107.56/Set

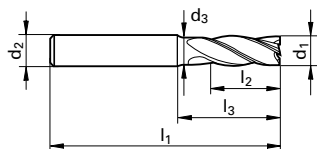
Guhring no. 5535 code no 1,0
FIRE-coated, long length, cutting over
centre, diameters 6, 8, 10, 12 and 16 mm

£ 121.18/Set



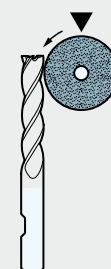
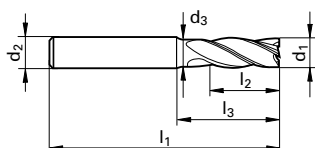
Guhring std.

Regrinding and recoating ▼



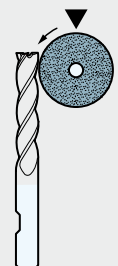
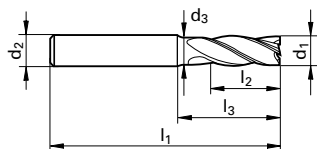
F FIRE *with highly unequal helix angles

Guhring std.

Regrinding ▼

○ bright *with highly unequal helix angles
 ** especially for aluminium and non-ferrous metals

Guhring std.

Regrinding ▼

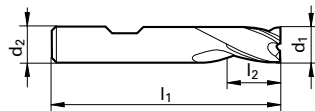
○ bright

** especially for aluminium and non-ferrous

Mini slot drills, 3-fluted

Guhring std. short

Tool material	Carbide-UF
Carbide grade	K/P
Guhring no.	5573
Form	–
Type	N
Tolerance on cutting diameter	h10
Surface finish	F
Helix angle	30°



nominal dia. d ₁ mm	shank dia. d ₂ mm	total length l ₁ mm	cutting edge length l ₂ mm	Unit price in £
0.50*	3	38	1.5	9.25
0.60*			1.5	9.25
0.80*			2	7.50
1.00*				6.26
1.20*				9.68
1.50*				6.26
1.80*	3	38	2	9.68
2.00	6	35	4	8.18
2.50		36	5	8.45
3.00		36	5	8.18
3.50		37	6	8.45
4.00		38	7	8.18
4.50		38	8	9.68
5.00		39		9.25
5.50				9.68
5.75				10.76
6.00	6	39	8	9.25
6.75	8	42	10	14.15
7.00				12.95
7.75		42	10	13.21
8.00	8	43	11	12.95
8.70	10	48		19.87
9.00				18.93
9.70		48	11	19.87
10.00	10	50	13	18.39
12.00	12	55	15	22.06
14.00	14	58	15	30.10
16.00	16	62	18	38.93
18.00	18	70	20	46.57
20.00	20	75	22	62.23

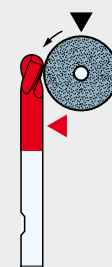
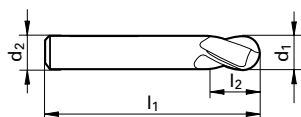
Guhring std. long



F FIRE *≤ Ø 1.8 mm: straight shank according to DIN 6535 HA

DIN 6527 long

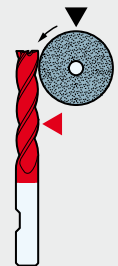
Regrinding and recoating ▼



F FIRE

DIN 6527 long

Regrinding
and
recoating



F FIRE

Slot drills, 2-fluted Guhring std. Slot drills, 2-fluted DIN 6527 short

Tool material **Carb.-UF**
Carbide grade **K/P**
Guhring no. **5549**

Form HA

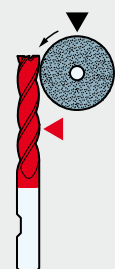
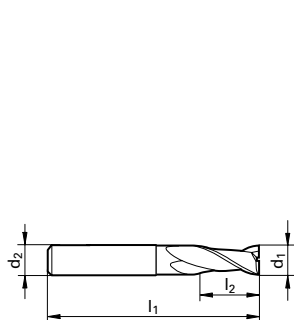
Type N

Tolerance on cutting diameter h10

Surface finish **F**

Helix angle 30°

Regrinding and recoating ▼



nominal dia. d1 mm	shank dia. d2 mm	total length l1 mm	cutting edge length l2 mm	Unit price in £
3.00	3	75	20	16.60
4.00	4		25	17.97
5.00	5		30	18.93
6.00	6	75	30	18.93
8.00	8	100	40	36.08
10.00	10	100	40	44.38
12.00	12	150	45	68.35
14.00	14		45	82.66
16.00	16		65	109.61
18.00	18			127.72
20.00	20	150	65	145.69

Net price per piece

11.01
12.49
17.96
17.96
19.27
20.76
22.01

Tool material **Carbide-UF**
Carbide grade **K**
Guhring no. **5742 5542**

Form HA HB

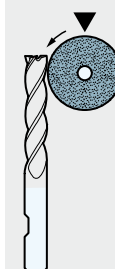
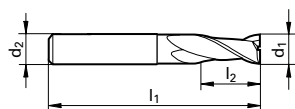
Type W* W*

Tolerance on cutting diameter e8 e8

Surface finish ○ ○

Helix angle 45° 45°

Regrinding ▼



nominal dia. d1 mm	shank dia. d2 mm	total length l1 mm	cutting edge length l2 mm	Unit price in £	
3.00	6	50	4	10.08	10.62
4.00		54	5	10.08	10.62
5.00		54	6	10.08	10.62
6.00		54	7	10.08	10.62
8.00	8	58	9	11.98	12.95
10.00	10	66	11	16.60	17.29
12.00	12	73	12	24.93	25.60
14.00	14	75	14	33.92	34.59
16.00	16	82	16	38.26	39.08
18.00	18	84	18	51.88	52.55
20.00	20	92	20	67.68	68.35

Unit price in £

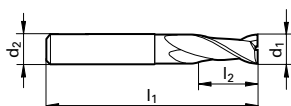
8.27
9.77
13.75
13.75
15.14
16.55
18.00

○ bright

F FIRE

*especially for aluminium and non-ferrous metals

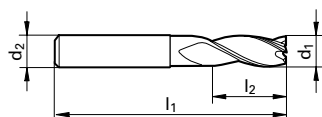
DIN 6527 long

Regrinding ▼Unit price in £

○ bright *especially for aluminium and non-ferrous metals

DIN 6527 short

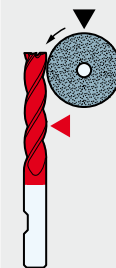
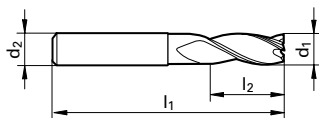
Regrinding and recoating ▼



F FIRE

DIN 6527 long

Regrinding
and
recoating 



F FIRE

Slot drills, 3-fluted

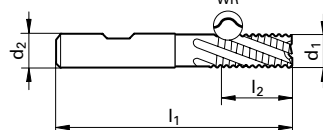
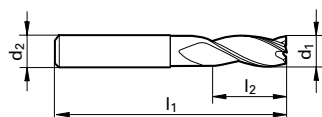
DIN 6527 long

Tool material	Carbide-UF	
Carbide grade	K/P	
Guhring no.	5506	5546
Form	HA	HB
Type	NH	NH
Tolerance on cutting diameter	h10	h10
Surface finish	F	F
Helix angle	45°	45°

Tool material	Carb.-UF
Carbide grade	K
Guhring no.	5544
Form	HB
Type	WR*
Tolerance on cutting diameter	h10
Surface finish	○
Helix angle	30°

Regrinding ▼
and recoating ▼

Regrinding ▼



nominal dia. d1 mm	shank dia. d2 mm	total length l1 mm	cutting edge length l2 mm	Unit price in £	
3.00	6	57	7	14.31	14.99
3.50			7	15.80	16.48
4.00			8	14.31	14.99
4.50			8	15.80	16.48
5.00			10	14.31	14.99
6.00	6	57	10	14.31	14.99
7.00	8	63	13	18.93	19.60
8.00	8	63	16	17.97	18.93
9.00	10	72	16	27.91	28.59
10.00	10	72	19	26.30	26.96
12.00	12	83	22	39.90	40.57
14.00	14	83	22	50.39	51.07
16.00	16	92	26	68.35	69.03
18.00	18	92	26	83.33	84.01
20.00	20	104	32	108.92	109.61

Net price
per piece

nominal dia. d1 mm	shank dia. d2 mm	total length l1 mm	cutting edge length l2 mm	Unit price in £	Unit price in £
8.00	8	63	16	30.10	11.01
10.00	10	72	19	36.92	12.49
12.00	12	83	22	45.90	17.15
16.00	16	92	26	69.03	19.25
20.00	20	104	32	127.72	20.72

13.75

15.22

15.22

20.76

20.76

22.01

22.01

23.50

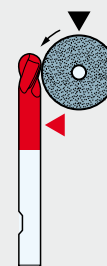
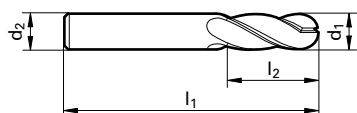
○ bright

F FIRE

*especially for aluminium and non-ferrous metals

DIN 6527 long

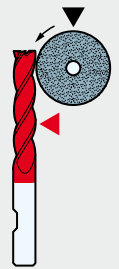
Regrinding and recoating ▼



F FIRE

DIN 6527 long

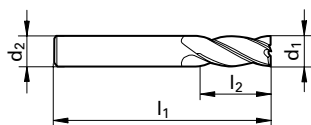
Regrinding 
and
recoating 



F FIRE

Guhring std.

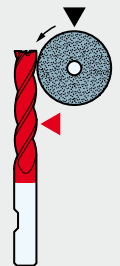
Regrinding and recoating ▼



F FIRE

DIN 6527 long

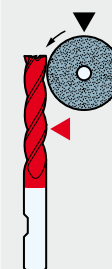
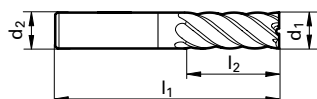
Regrinding
and
recoating 



F FIRE

Guhring std.

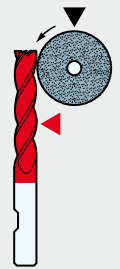
Regrinding and recoating ▼



F FIRE

DIN 6527 long

Regrinding
and
recoating 



F FIRE

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

a_e = Width of cut

a_p = Depth of cut

Schneidstoff

Typ

Carbide-UF

Carbide-UF

N

N

Guhring no.

DIN 6527
DIN 6527
Guhring std.
Guhring std.

HA
HB
HA
HB

5730
5530

5507
5531

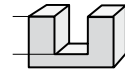
* For large cutting depths on unstable machines f_z and v_c must be reduced or a 4-flute tool RF 100 (Guhring no. 5582) must be applied.

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

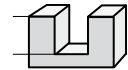


$a_e = 1 \times D$

$a_e = 1 \times D$



$a_p = 0.5 \times D$



$a_p = 0.5 \times D$

Cutter-Ø mm	Feed column no.															
	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
	f _z (mm/tooth)															
2.00	0.001	0.001	0.001	0.002	0.002	0.004	0.005	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.018	0.020
3.00	0.002	0.002	0.003	0.003	0.004	0.007	0.010	0.010	0.010	0.015	0.016	0.013	0.019	0.022	0.024	0.030
5.00	0.005	0.006	0.007	0.009	0.010	0.014	0.020	0.020	0.022	0.025	0.026	0.026	0.028	0.030	0.032	0.038
6.00	0.006	0.008	0.009	0.011	0.013	0.017	0.024	0.025	0.027	0.031	0.029	0.033	0.039	0.036	0.041	0.047
8.00	0.010	0.012	0.014	0.016	0.019	0.024	0.032	0.032	0.035	0.042	0.042	0.047	0.053	0.052	0.058	0.064
10.00	0.013	0.015	0.018	0.021	0.025	0.030	0.038	0.039	0.044	0.050	0.053	0.059	0.065	0.066	0.073	0.080
12.00	0.010	0.018	0.022	0.026	0.030	0.036	0.046	0.048	0.052	0.059	0.063	0.072	0.079	0.085	0.090	0.100
16.00	0.020	0.023	0.027	0.032	0.038	0.045	0.054	0.058	0.063	0.071	0.079	0.088	0.095	0.100	0.110	0.120
20.00	0.023	0.028	0.033	0.038	0.045	0.057	0.066	0.073	0.080	0.090	0.097	0.100	0.110	0.120	0.130	0.140
25.00	0.030	0.035	0.040	0.045	0.055	0.065	0.075	0.100	0.120	0.130	0.140	0.150	0.165	0.170	0.180	0.190

Material group	Material examples	Tens. strength MPa (N/mm²)	Hard- ness
Common structural steels	1.0035 S185, 1.0486 P275N, 1.0345 P235GH, 1.0425 P265GH	≤500	
	1.0050 E295, 1.0070 E360, 1.8937 P500NH	>500-850	
Free-cutting steels	1.0718 11SMnPb30, 1.0736 11SMn37	≤850	
	1.0727 46 S20, 1.0728 60 S20, 1.0757 46SPb20	850-1000	
Unalloyed heat-treatable steels	1.0402 C22, 1.1178 C30E	≤700	
	1.0503 C45, 1.1191 C45E	700-850	
	1.0601 C60, 1.1221 C60E	700-1000	
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4	850-1000	
	1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	1000-1200	
Unalloyed case hard. steels	1.0301 C10, 1.1121 C10E	≤750	
Alloyed case hardened steels	1.7043 38Cr4	850-1000	
	1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5	1000-1200	
Nitriding steels	1.8504 34CrAl6	≥850-1000	
	1.8519 31CrMoV9, 1.8550 34CrAlNi7	1000-1200	
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9	≤850	
	1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6	850-1000	
High speed steels	1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3	>650-1000	
Spring steels	1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4	≤330 HB	
Stainless steels, sulphured	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17	≤750	
austenitic	1.4301 X5CrNi18-10, 1.4541 X6CrNiTi18-10	750-800	
martensitic	1.4057 X20CrNi17-2, 1.4122 X39CrMo17-1	850-1200	
Hardened steels	-	≤40-54 HRC	
		>54-60 HRC	
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤1200	
Cast iron	0.6010 EN-GJL-100(GG10), 0.6020 EN-GJL-200(GG20)	≤240 HB	
	0.6025 EN-GJL-250(GG25), 0.6035 EN-GJL-350(GG35)	<300 HB	
Spheroidal graphite and malleable cast iron	0.7050 EN-GJS-500-7(GGG50), 0.8035 EN-GJMW-350-4(GTW35)	≤240 HB	
	0.7070 EN-GJS-700-2(GGG70), 0.8170 EN-GJMB-700-2(GTS70)	<300 HB	
Chilled cast iron	-	≤350 HB	
Ti and Ti-alloys	3.7024 Ti99,5, 3.7114 TiAl5Sn2,5, 3.7124 TiCu2	≤850	
	3.7154 TiAl6Zr5, 3.7164 TiAl6V4, 3.7184 TiAl4Mo4Sn2,5	850-1200	
Al and Al-alloys	3.0255 Al99,5, 3.2315 AlMgSi1, 3.3515 AlMg1	≤450	
Al wrought alloys	3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si	≤450	
Al cast alloys ≤ 10 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9	≤600	
> 10 % Si	3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≤600	
Magnesium alloys	MgMn2, G-MgAl8Zn1, G-MgAl6Zn3	≤450	
Copper, low-alloyed	2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnNb	≤400	
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	>600-850	
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10	≤850	
	2.0980 CuAl11Ni, 2.1247 CuBe2	850-1000	
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	-	
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	-	

a_p with
 f_z -correction

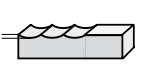
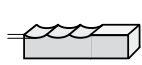
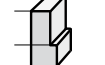
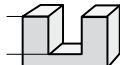
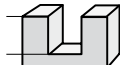
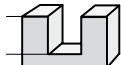
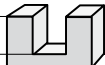
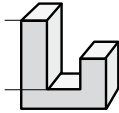
1 x D = 75%
1,5 x D = 50%

1 x D = 75%
1,5 x D = 50%

Fine finishing

Trace milling

Carbide-UF	Carbide-UF	Carbide-UF	Carbide-UF	Carbide-UF	Carbide-UF	Carbide-UF	Carbide-UF	Carbide-UF
N	NH	W	N	NH	NH	N	N	N
5549	5505 5506						5585**	
	5546	5543					5533**	5584**
		3472 3473			5745	5729*		
			5573	5574	5545			

 $a_e = 1 \times D$ $a_e = 1 \times D$ $a_e = 1 \times D$ $a_e = 1 \times D$ $a_e = 1 \times D$ $a_e = 0.05 \times D$ $a_e = 0.05 \times D$ $a_e = 0.05 \times D$ $a_e = 0.05 \times D$  $a_p = 2 \times D$ $a_p = 0.5 \times D$ $a_p = 0.5 \times D$ $a_p = 0.5 \times D$ $a_p = 0.5 \times D$ $a_p = 1.5 \times D$ $a_p = 3 \times D$ $a_p = 0.05 \times D$ $a_p = 0.05 \times D$

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

3 x D = 50%

1 x D = 75%
1,5 x D = 50%1 x D = 75%
1,5 x D = 50%

1,5 x D = 75%

1,5 x D = 75%

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

a_e = Width of cut

a_p = Depth of cut

Schneidstoff

Typ

Carbide-UF

Carbide-UF

N

N

Gühring no.

DIN 6527

HA

5735*

5582

DIN 6527

HB

5535*

5534*

Gühring std.

HA

Gühring std.

HB

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

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

RF100
54HRC

RF100

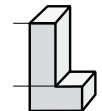


$a_e = 0.5 - 1.0 \times D$

$a_e = 0.25 \times D$



$a_p = 1 \times D$



$a_p = 2 \times D$

Cutter-Ø mm	Feed column no.															
	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
	f _z (mm/tooth)															
2.00	0.001	0.001	0.001	0.002	0.002	0.004	0.005	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.018	0.020
3.00	0.002	0.002	0.003	0.003	0.004	0.007	0.010	0.010	0.010	0.015	0.016	0.013	0.019	0.022	0.024	0.030
5.00	0.005	0.006	0.007	0.009	0.010	0.014	0.020	0.020	0.022	0.025	0.026	0.026	0.028	0.030	0.032	0.038
6.00	0.006	0.008	0.009	0.011	0.013	0.017	0.024	0.025	0.027	0.031	0.029	0.033	0.039	0.036	0.041	0.047
8.00	0.010	0.012	0.014	0.016	0.019	0.024	0.032	0.032	0.035	0.042	0.042	0.047	0.053	0.052	0.058	0.064
10.00	0.013	0.015	0.018	0.021	0.025	0.030	0.038	0.039	0.044	0.050	0.053	0.059	0.065	0.066	0.073	0.080
12.00	0.010	0.018	0.022	0.026	0.030	0.036	0.046	0.048	0.052	0.059	0.063	0.072	0.079	0.085	0.090	0.100
16.00	0.020	0.023	0.027	0.032	0.038	0.045	0.054	0.058	0.063	0.071	0.079	0.088	0.095	0.100	0.110	0.120
20.00	0.023	0.028	0.033	0.038	0.045	0.057	0.066	0.073	0.080	0.090	0.097	0.100	0.110	0.120	0.130	0.140
25.00	0.030	0.035	0.040	0.045	0.055	0.065	0.075	0.100	0.120	0.130	0.140	0.150	0.165	0.170	0.180	0.190

Material group	Material examples	Tens. strength MPa (N/mm²)	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 >500-850	
Free-cutting steels	1.0718 11SMnPb30, 1.0736 11SMn37 1.0727 46 S20, 1.0728 60 S20, 1.0757 46SPb20	≤850 850-1000	
Unalloyed heat-treatable steels	1.0402 C22, 1.1178 C30E 1.0503 C45, 1.1191 C45E 1.0601 C60, 1.1221 C60E	≤700 700-850 850-1000	
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	850-1000 1000-1200	
Unalloyed case hard. steels	1.0301 C10, 1.1121 C10E	≤750	
Alloyed case hardened steels	1.7043 38Cr4 1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5	850-1000 1000-1200	
Nitriding steels	1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	≥850-1000 1000-1200	
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6	≤850 850-1000	
High speed steels	1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3	>650-1000	
Spring steels	1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4	≤330 HB	
Stainless steels, sulphured	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17	≤750	
austenitic	1.4301 X5CrNi18-10, 1.4541 X6CrNiTi18-10	750-800	
martensitic	1.4057 X20CrNi17-2, 1.4122 X39CrMo17-1	850-1200	
Hardened steels	-	≤40-54 HRC >54-60 HRC	
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤1200	
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 <300 HB	
Spheroidal graphite 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 <300 HB	
Chilled cast iron	-	≤350 HB	
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	≤850 850-1200	
Al and Al-alloys	3.0255 Al99.5, 3.2315 AlMgSi1, 3.3515 AlMg1	≤450	
Al wrought alloys	3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si	≤450	
Al cast alloys ≤ 10 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9	≤600	
> 10 % Si	3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≤600	
Magnesium alloys	MgMn2, G-MgAl8Zn1, G-MgAl6Zn3	≤450	
Copper, low-alloyed	2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnNb	≤400	
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	>600-850	
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10	≤850	
	2.0980 CuAl11Ni, 2.1247 CuBe2	850-1000	
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	-	
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	-	

a_p with
 f_z -correction

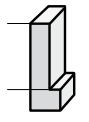
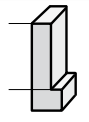
a_p 1.5 x D = 50%
 a_e 0.25 x D = 150%

a_p 0.5 x D = 75%
 a_p 2 x D = 50%

Finishing

Carbide-UF	Carbide-UF	Carbide-UF	Carbide-UF	Carbide-UF	Carbide-UF	Carbide-UF	Carbide-UF	Carbide-UF
NH	W	NRf	HR	N	N	N	N	W
5505 5506				5735	5582		5556	
5546	5543	5504**	5583**	5535 5534		5532		5543
	3472 3473							3472 3473

								
$a_e = 0.5-1.0 \times D$	$a_e = 0.5-1.0 \times D$	$a_e = 0.5-1.0 \times D$	$a_e = 0.5-1.0 \times D$	$a_e = 0.1 \times D$	$a_e = 0.1 \times D$	$a_e = 0.1 \times D$	$a_e = 0.1 \times D$	$a_e = 0.1 \times D$

								
$a_p = 1 \times D$	$a_p = 1 \times D$	$a_p = 1 \times D$	$a_p = 1 \times D$	$a_p = 1 \times D$	$a_p = 2 \times D$	$a_p = 1 \times D$	$a_p = 2 \times D$	$a_p = 1 \times D$

V_c m/min	Fc no.	V_c m/min	Fc no.	V_c m/min	Fc no.	V_c m/min	Fc no.	V_c m/min	Fc no.	V_c m/min	Fc no.	V_c m/min	Fc no.	V_c m/min	Fc no.	V_c m/min	Fc no.
170 - 208	49			97 - 119	43			212 - 260	49	139 - 171	44	157 - 193	48	103 - 127	43		
157 - 193	48			90 - 110	42			194 - 238	48	127 - 157	43	144 - 176	47	94 - 116	42		
170 - 208	48			97 - 119	42			212 - 260	48	139 - 171	43	157 - 193	47	103 - 127	42		
126 - 154	47			72 - 88	41			158 - 194	47	109 - 135	42	117 - 143	46	81 - 99	41		
170 - 208	48			97 - 119	42			212 - 260	48	139 - 171	43	157 - 193	47	103 - 127	42		
151 - 185	48			86 - 106	42			194 - 238	48	121 - 149	43	144 - 176	47	90 - 110	42		
126 - 154	47			72 - 88	41			158 - 194	47	103 - 127	42	117 - 143	46	76 - 94	41		
151 - 185	47			86 - 106	41			188 - 230	47	121 - 149	42	139 - 171	46	90 - 110	41		
126 - 154	46			72 - 88	40	72 - 88	39	158 - 194	46	103 - 127	41	117 - 143	45	76 - 94	40		
189 - 231	48			108 - 132	42			236 - 290	48	134 - 164	43	175 - 215	47	99 - 121	42		
151 - 185	48			86 - 106	42	86 - 106	41	188 - 230	48	121 - 149	43	139 - 171	47	90 - 110	42		
113 - 139	47			64 - 80	41	64 - 80	40	139 - 171	47	90 - 112	42	103 - 127	46	67 - 83	41		
170 - 208	48			97 - 119	42	97 - 119	41	212 - 260	48	139 - 171	43	157 - 193	47	103 - 127	42		
151 - 185	46			86 - 106	40	86 - 106	39	194 - 238	46	121 - 149	41	144 - 176	45	90 - 110	40		
151 - 185	48			86 - 106	42	86 - 106	41	188 - 230	48	121 - 149	43	139 - 171	47	90 - 110	42		
126 - 154	46			72 - 88	40	72 - 88	39	158 - 194	46	103 - 127	41	117 - 143	45	76 - 94	40		
94 - 116	47					54 - 66	47	121 - 149	47	79 - 97	42	90 - 110	46	58 - 72	41		
67 - 83	46					54 - 66	26	121 - 149	46								
67 - 83	47			54 - 66	41			121 - 149	47	72 - 90	44	90 - 110	46				
58 - 72	46			46 - 58	40			103 - 127	46	62 - 75	43	76 - 94	45				
54 - 66	47			43 - 53	41	43 - 53	40	97 - 119	47	58 - 72	44	72 - 88	46				
31 - 39	44			25 - 31	38	25 - 31	38	61 - 75	44								
						18 - 22	38										
40 - 50	46			32 - 40	42			72 - 90	46			54 - 66	45				
157 - 193	48			126 - 154	44	126 - 154	42	255 - 313	48	182 - 224	43	189 - 231	47	135 - 165	42		
144 - 176	47			115 - 141	43	115 - 141	41	255 - 313	47	163 - 201	42	189 - 231	46	121 - 149	41		
130 - 160	48			104 - 128	44	104 - 128	42	231 - 283	48	152 - 186	43	171 - 209	47	112 - 138	42		
112 - 138	47			90 - 110	43	90 - 110	41	194 - 238	47	127 - 157	42	144 - 176	46	94 - 116	41		
76 - 94	45					61 - 75	39	134 - 164	45			99 - 121	44				
67 - 83	46			54 - 66	41			121 - 149	46	79 - 97	41	90 - 110	45	58 - 72	40		
54 - 66	45			43 - 53	40			97 - 119	45	61 - 75	40	72 - 88	44	45 - 55	39		
		297 - 363	46							220 - 280	46	765 - 935	50	450 - 550	45	342 - 418	51
		360 - 440	46							250 - 300	45					414 - 506	50
		144 - 176	44							220 - 250	44	373 - 457	48	225 - 275	43	165 - 203	49
117 - 143	45	117 - 143	45							200 - 240	45	306 - 374	49	180 - 220	44		
		171 - 209	46							210 - 260	46					197 - 241	51
		81 - 99	45							110 - 120	45	198 - 242	49	135 - 165	44	93 - 115	50
		72 - 88	44	117 - 143	44	117 - 143	42			100 - 120	44	180 - 220	48	108 - 132	43	82 - 102	49
		67 - 83	44	94 - 116	44					90 - 110	44	144 - 176	48	90 - 110	43	77 - 95	49
		72 - 88	44	117 - 143	44	117 - 143	42			100 - 120	44	180 - 220	48	108 - 132	43	82 - 102	49
63 - 77	43	63 - 77	43	87 - 107	43	87 - 107	41					135 - 165	47			72 - 90	48
63 - 77	43	63 - 77	43	87 - 107	43												
54 - 66	42	54 - 66	42	72 - 90	42												
81 - 99	42	81 - 99	42													93 - 115	47
72 - 88	42	72 - 88	42													82 - 102	47

$a_p 0.5 \times D = 120\%$	$a_p 0.5 \times D = 120\%$	$a_p 1.5 \times D = 50\%$	$a_p 0.5 \times D = 120\%$	$a_p 2 \times D = 50\%$	$a_p 3 \times D = 50\%$	$a_p 2 \times D = 50\%$	$a_p 3 \times D = 50\%$	$a_p 2 \times D = 50\%$
$a_p 2 \times D = 50\%$	$a_p 2 \times D = 50\%$	$a_e 0.25 \times D = 140\%$						

SL Tap Selector Chart

Material Group	Thread Type	Through Hole		Blind Hole		Thread Forming Surface Coated
		Steam Tempered	Surface Coated	Steam Tempered	Surface Coated	
Steels up to 800 N/mm ² yellow band	Metric up to M 10 Metric over M 10 Metric fine UNC UNF BSP	5560 5723 5725 5727 5731	5590 TiN coated	5554/5717 5717 5726 5728 5732	5592 TiN coated	5598 TiN 5599 TiN
Stainless steel blue band	Metric up to M 10 Metric over M 10 Metric fine UNC UNF	5559	5588 TiN coated	5553	5596 TiN coated	5598 TiN 5599 TiN
Cast iron white band	Metric up to M 10 Metric over M 10 Metric fine UNC UNF	5550 nitrided	5595 TiAlN coated			
Aluminium black band	Metric up to M 10 Metric over M 10 Metric fine UNC UNF	5557 bright		5551 bright		5598 TiN 5599 TiN
High tensile materials 800-1200 N/mm ² red band	Metric up to M 10 Metric over M 10 Metric fine UNC UNF	5558	5587 TiCN coated	5552	5591 TiCN coated	
Universal application up to 1000 N/mm ² green band	Metric up to M 10 Metric over M 10 Metric fine UNC UNF	5561 5563	5586 TiN coated	5555 5589	5594 TiN coated	

TM Tool Dispensing Systems



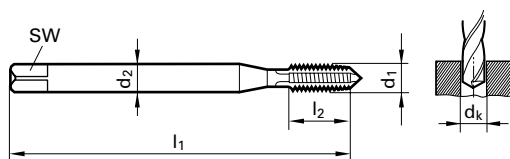
Concentrate on your core business tasks. Leave the intelligent tool storage and administration to Guhring. With TM Tool Dispensing Systems the customer benefits from controlled tool availability around the clock, reduction of storage as well as administration costs and transparency of tool consumption, cost allocation as well as stock levels.

for through holes

ISO metric threads DIN 371



Tool material	HSS-E					HSS-E-PM
Guhring no.	5560	5590	5558	5587	5588	5559
Type	N	N	H	H	VA	VA
Form	B	B	B	B	B	B
Tolerance zone	ISO 2/6H	ISO 2/6H	ISO 2/6H	ISO 2/6H	ISO 2/6H	ISO 2/6H
Surface finish						



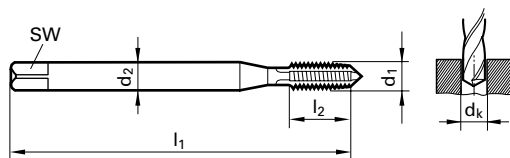
nom. dia. d1 mm	pitch	shank dia. d2 mm	square SW	tapping size hole mm	total length l1 mm	thread length l2 mm	Unit price in £					
M 3	0.50	3.5	2.7	2.50	56	10	7.25	11.88	7.75	18.48	12.62	9.25
M 4	0.70	4.5	3.4	3.30	63	12	7.25	12.37	7.75	18.48	12.74	9.25
M 5	0.80	6.0	4.9	4.20	70	14	7.25	12.74	8.49	19.87	13.75	9.88
M 6	1.00	6.0	4.9	5.00	80	16	7.25	15.37	8.49	19.87	17.24	9.25
M 8	1.25	8.0	6.2	6.80	90	20	9.74	20.24	10.37	22.11	18.48	10.99
M 10	1.50	10.0	8.0	8.50	100	22	10.99	22.36	12.99	24.99	23.36	13.63

for through holes

ISO metric threads DIN 371



Tool material	HSS-E				
Guhring no.	5561	5586	5557	5550	5595
Type	N	N	AI	GG	GG
Form	B	B	B	C	C
Tolerance zone	ISO 2/6H	ISO 2/6H	ISO 2/6H	ISO 2/6H	6HX
Surface finish					



nom. dia. d1 mm	pitch	shank dia. d2 mm	square SW	tapping size hole mm	total length l1 mm	thread length l2 mm	Unit price in £				
M 3	0.50	3.5	2.7	2.50	56	10	7.25	10.87	7.75	7.75	22.24
M 4	0.70	4.5	3.4	3.30	63	12	7.25	11.38	7.75	7.75	22.73
M 5	0.80	6.0	4.9	4.20	70	14	7.25	12.37	8.49	7.75	23.11
M 6	1.00	6.0	4.9	5.00	80	16	7.25	14.24	8.49	7.75	23.11
M 8	1.25	8.0	6.2	6.80	90	20	9.74	18.12	9.88	9.88	28.48
M 10	1.50	10.0	8.0	8.50	100	22	10.99	21.74	11.88	12.37	36.24

bright
 steam tempered
 nitrided
 TiAlN
 TiCN
 TiN

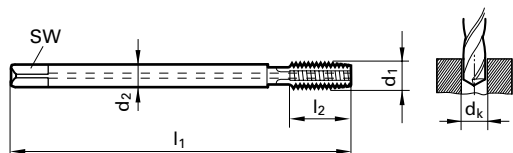
for through holes and blind holes

ISO metric threads DIN 371



Tool material	Carbide-UF
Guhring no.	5593
Type	H
Form	C
Tolerance zone	6HX
Surface finish	○

IC ≥ M5



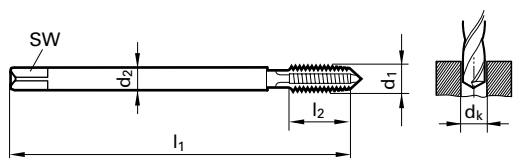
nom. dia. d1 mm	pitch	shank dia. d2 mm	square SW	tapping size hole mm	total length l1 mm	thread length l2 mm	Unit price in £
M 4	0.70	4.5	3.4	3.30	63	10	36.08
M 5	0.80	6.0	4.9	4.20	70	10	63.87
M 6	1.00	6.0	4.9	5.00	80	12	54.73
M 8	1.25	8.0	6.2	6.80	90	16	82.66
M 10	1.50	10.0	8.0	8.50	100	18	88.92

for through holes

ISO metric threads DIN 376



Tool material	HSS-E
Guhring no.	5563
Type	N
Form	B
Tolerance zone	ISO 2/6H
Surface finish	●



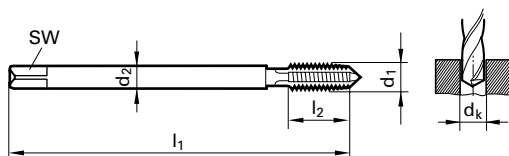
nom. dia. d1 mm	pitch	shank dia. d2 mm	square SW	tapping size hole mm	total length l1 mm	thread length l2 mm	Unit price in £
M 12	1.75	9	7	10.20	110	24	18.36
M 16	2.00	12	9	14.00	110	26	27.48
M 20	2.50	16	12	17.50	140	32	41.48

for through holes

ISO metric fine threads DIN 374



Tool material	HSS-E
Guhring no.	5723
Type	N
Form	B
Tolerance zone	ISO 2/6H
Surface finish	



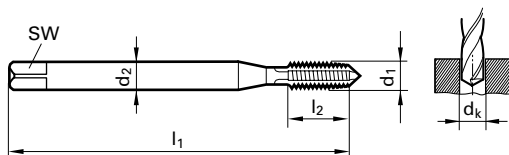
nom. dia. x pitch d1 mm	shank dia. d2 mm	square SW	tapping size hole mm	total length l1 mm	thread length l2 mm	Code no.	Unit price in £
M 4 X 0.5	2.80	2.1	3.50	63	8	4.003	18.40
M 5 X 0.5	3.50	2.7	4.50	70	10	5.003	18.40
M 6 X 0.75	4.50	3.4	5.20	80	13	6.004	18.40
M 8 X 1	6.00	4.9	7.00	90	17	8.005	16.40
M 10 X 1	7.00	5.5	9.00	90	17	10.005	16.90
M 12 X 1	9.00	7.0	11.00	100	20	12.005	21.60
M 12 X 1.5	9.00	7.0	10.50	100	20	12.007	19.20
M 14 X 1.5	11.00	9.0	12.50	100	20	14.007	27.50
M 16 X 1.5	12.00	9.0	14.50	100	22	16.007	28.10
M 20 X 1.5	16.00	12.0	18.50	125	25	20.007	43.40

for through holes

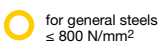
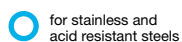
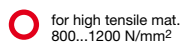
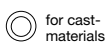
UNC threads ~ DIN 371 / ~ DIN 376



Tool material	HSS-E
Guhring no.	5725
Type	N
Form	B
Tolerance zone	2B
Surface finish	



nom. dia. - pitch d1 mm	shank dia. d2 mm	square SW	tapping size hole mm	total length l1 mm	thread length l2 mm	Code no.	Unit price in £
NR. 4 -40	3.50	2.7	2.35	56	11	2.845	15.10
NR. 6 -32	4.00	3.0	2.85	56	12	3.505	13.40
NR. 8 -32	4.50	3.4	3.50	63	13	4.166	13.70
NR.10 -24	6.00	4.9	3.90	70	14	4.826	18.40
1/4 -20	7.00	5.5	5.10	80	16	6.350	15.00
5/16-18	8.00	6.2	6.60	90	18	7.938	18.10
3/8 -16	10.00	8.0	8.00	100	20	9.525	23.60
7/16-14	8.00	6.2	9.40	100	22	11.113	24.00
1/2 -13	9.00	7.0	10.80	110	25	12.700	29.20
5/8 -11	12.00	9.0	13.50	110	30	15.875	36.90
3/4 -10	14.00	11.0	16.50	125	33	19.050	47.60

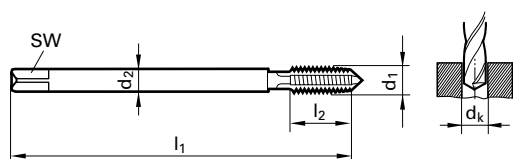


for through holes

UNF threads ~ DIN 374



Tool material	HSS-E
Guhring no.	5727
Type	N
Form	B
Tolerance zone	2B
Surface finish	



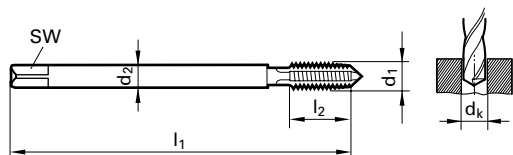
nom. dia. - pitch d1 mm	shank dia. d2 mm	square SW	tapping size hole mm	total length l1 mm	thread length l2 mm	Code no.	Unit price in £
NR. 4 -48	2.20		2.40	56	10	2.845	20.90
NR. 6 -40	2.50	2.1	2.95	56	11	3.505	20.90
NR.10 -32	3.50	2.7	4.10	70	14	4.826	20.90
1/4 -28	4.50	3.4	5.50	80	16	6.350	25.80
3/8 -24	7.00	5.5	8.50	90	18	9.525	27.80
5/8 -18	12.00	9.0	14.50	100	22	15.875	47.30

for through holes

BSP threads DIN 5156



Tool material	HSS-E
Guhring no.	5731
Type	N
Form	B
Tolerance zone	-
Surface finish	



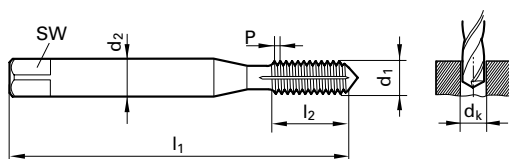
nom. dia. d1 mm	pitch G/inch	shank dia. d2 mm	square SW	tapping size hole mm	total length l1 mm	thread length l2 mm	Code no.	Unit price in £
G 1/8	28.00	5.50	5.5	8.80	90	18	9.728	18.80
G 1/4	19.00	9.00	9.0	11.80	100	20	13.157	25.00
G 3/8	19.00	9.00	9.0	15.25	100	22	16.662	30.90
G 1/2	14.00	12.00	12.0	19.00	125	25	20.955	42.80
G 3/4	14.00	16.00	16.0	24.50	140	28	26.441	83.50
G1	11.00	20.00	20.0	30.75	160	30	33.249	92.60

for through holes and blind holes

ISO metric threads ~ DIN 371



Tool material	HSS-E
Guhring no.	5598
Type	N
Form	C
Tolerance zone	6HX
Surface finish	S



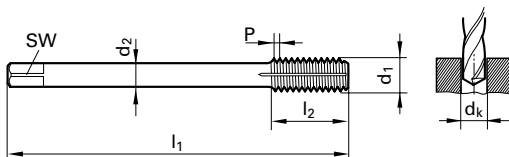
nom. dia. d1 mm	pitch	shank dia. d2 mm	square SW	tapping size hole mm	total length l1 mm	thread length l2 mm	Unit price in £
M 3	0.50	3.5	2.7	2.80	56	10	17.37
M 4	0.70	4.5	3.4	3.65	63	12	17.87
M 5	0.80	6.0	4.9	4.65	70	14	18.99
M 6	1.00	6.0	4.9	5.55	80	16	21.99
M 8	1.25	8.0	6.2	7.40	90	18	25.11
M 10	1.50	10.0	8.0	9.25	100	20	32.23

for through holes and blind holes

ISO metric threads ~DIN 376



Tool material	HSS-E
Guhring no.	5599
Type	N
Form	C
Tolerance zone	6HX
Surface finish	S



nom. dia. d1 mm	pitch	shank dia. d2 mm	square SW	tapping size hole mm	total length l1 mm	thread length l2 mm	Unit price in £
M 12	1.75	9.0	7.0	11.25	110	24	37.98
M 14	2.00	11.0	9.0	13.10	110	26	57.71
M 16	2.00	12.0	9.0	15.10	110	26	60.34



for blind holes

ISO metric threads DIN 371

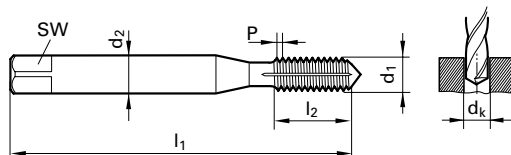
							HSS-E			
Tool material							HSS-E			
Guhring no.							5554	5592	5552	5591
Type							N R40	N R40	H R40	H R40
Form							C	C	C	C
Tolerance zone							ISO 2/6H	ISO 2/6H	ISO 2/6H	ISO 2/6H
Surface finish							○	●	○	●
										
							Unit price in £			
nom. dia. d1 mm	pitch	shank dia. d2 mm	square SW	tapping size hole mm	total length l1 mm	thread length l2 mm	9.25	12.25	7.75	13.48
M 3	0.50	3.5	2.7	2.50	56	6.00	9.25	12.25	7.75	13.48
M 4	0.70	4.5	3.4	3.30	63	7.50	9.25	13.37	7.75	14.12
M 5	0.80	6.0	4.9	4.20	70	8.50	9.25	14.12	8.49	15.23
M 6	1.00	6.0	4.9	5.00	80	11.00	9.25	17.00	8.49	19.37
M 8	1.25	8.0	6.2	6.80	90	14.00	10.99	19.24	10.37	22.36
M 10	1.50	10.0	8.0	8.50	100	16.00	12.99	23.36	12.99	28.74

for blind holes

ISO metric threads DIN 376



Tool material	HSS-E	
Guhring no.	5589	5717
Type	N R40	N R40
Form	C	B
Tolerance zone	ISO 2/6H	ISO 2/6H
Surface finish		



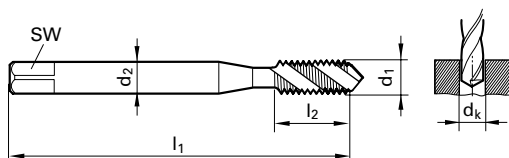
nom. dia. d1 mm	pitch	shank dia. d2 mm	square SW	tapping size hole mm	total length l1 mm	thread length l2 mm	Code no.	Unit price in £	
M 3	0.50	2.20		2.50	56	6.0	3.000		12.30
M 4	0.70	2.80	2.1	3.30	63	7.5	4.000		11.10
M 5	0.80	3.50	2.7	4.20	70	8.5	5.000		10.90
M 6	1.00	4.50	3.4	5.00	80	11.0	6.000		10.80
M 8	1.25	6.00	4.9	6.80	90	14.0	8.000		11.30
M10	1.50	7.00	5.5	8.50	100	16.0	10.000		15.30
M12	1.75	9.00	7.0	10.20	110	18.5	12.000	19.12	16.90
M16	2.00	12.00	9.0	14.00	110	20.0	16.000	27.97	24.70
M20	2.50	16.00	12.0	17.50	140	25.0	20.000	42.11	37.20

for blind holes

UNC threads ~ DIN 371 / ~ DIN 376



Tool material	HSS-E
Guhring no.	5726
Type	N R40
Form	C
Tolerance zone	2B
Surface finish	



nom. dia. - pitch d1 mm	shank dia. d2 mm	square SW	tapping size hole mm	total length l1 mm	thread length l2 mm	Code no.	Unit price in £	
NR. 4 -40	3.50	2.7	2.35	56	7	2.845		19.20
NR. 6 -32	4.00	3.0	2.85	56	8	3.505		16.50
NR. 8 -32	4.50	3.4	3.50	63	8	4.166		17.80
NR.10 -24	6.00	4.9	3.90	70	11	4.826		17.40
1/4 -20	7.00	5.5	5.10	80	13	6.350		18.80
5/16-18	8.00	6.2	6.60	90	14	7.938		18.40
3/8 -16	10.00	8.0	8.00	100	16	9.525		19.80
7/16-14	8.00	6.2	9.40	100	18	11.113		31.70
1/2 -13	9.00	7.0	10.80	110	20	12.700		29.20
5/8 -11	12.00	9.0	13.50	110	24	15.875		36.90
3/4 -10	14.00	11.0	16.50	125	25	19.050		50.80


for cast-
materials

for Al and
Al-alloys

for high tensile mat.
800...1200 N/mm²

for stainless and
acid resistant steels

for general steels
≤ 800 N/mm²

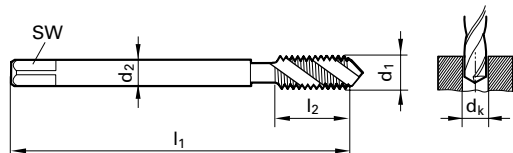
for universal applications
≤ 1000 N/mm²

for blind holes

UNF threads ~ DIN 374



Tool material	HSS-E
Guhring no.	5728
Type	N R40
Form	C
Tolerance zone	2B
Surface finish	



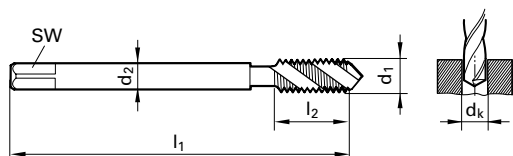
nom. dia. - pitch d1 mm	shank dia. d2 mm	square SW	tapping size hole mm	total length l1 mm	thread length l2 mm	Code no.	Unit price in £
NR. 4 -48	2.20		2.40	56	6.0	2.845	23.60
NR. 6 -40	2.50	2.1	2.95	56	6.5	3.505	19.50
NR.10 -32	3.50	2.7	4.10	70	8.5	4.826	18.40
1/4 -28	4.50	3.4	5.50	80	9.0	6.350	21.60
3/8 -24	7.00	5.5	8.50	90	11.0	9.525	23.60
5/8 -18	12.00	9.0	14.50	100	15.0	15.875	48.40

for blind holes

BSP threads DIN 5156



Tool material	HSS-E
Guhring no.	5732
Type	N R40
Form	C
Tolerance zone	-
Surface finish	



nom. dia. d1 mm	pitch G/inch	shank dia. d2 mm	square SW	tapping size hole mm	total length l1 mm	thread length l2 mm	Code no.	Unit price in £
G 1/8	28.00	5.50	5.5	8.80	90	11	9.728	19.50
G 1/4	19.00	9.00	9.0	11.80	100	14	13.157	27.80
G 3/8	19.00	9.00	9.0	15.25	100	14	16.662	40.30
G 1/2	14.00	12.00	12.0	19.00	125	18	20.955	51.80
G 3/4	14.00	16.00	16.0	24.50	140	20	26.441	80.00
G1	11.00	20.00	20.0	30.75	160	24	33.249	111.30

 bright
  steam tempered
  nitrided
  TiAlN
  TiCN
  TiN

NC machine chucking reamers

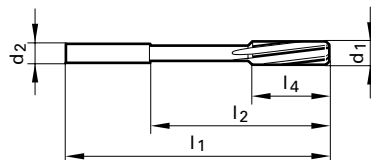
Guhring std.

Product information

- $\varnothing > 4,0$ mm with highly unequal flute spacing
- left hand spiral flutes
- tolerance:
from $\varnothing 0.98$ to 5.03 mm:
0.000/+0.004
from $\varnothing 5.97$ to 12.05 mm:
0.000/+0.005

NC machine chucking reamers are similar to DIN 8093 with straight shank (h6) for standardised tool clamping in hydraulic or shrink fit chucks. The combination of NC machine chucking reamer and hydraulic, high precision clamping or shrink fit chuck respectively offers highest concentricity and process reliability for the production of holes to required tolerances.

Tool material	Carbide-UF
Carbide grade	K10
Guhring no.	5527
Form	
Type	
Tolerance	see product information
Surface finish	○
Cutting direction	right



nominal $\varnothing$ d1 mm	shank $\varnothing$ d2 mm	total length l1 mm	effective length l2 mm	flute length l4 mm	no. of flutes z	Unit price in £
0.98	4	50	22	6	3	30.55
0.99						30.55
1.00						26.40
1.01						30.55
1.02				6		30.55
1.03				9		30.55
1.48						30.55
1.49						30.55
1.50						26.78
1.51						30.55
1.52						30.55
1.53				9	3	30.55
1.98				12	4	30.55
1.99						30.55
2.00						26.78
2.01						30.55
2.02						30.55
2.03		50	22	12		30.55
2.48		60	32	16		30.55
2.49						30.55
2.50						32.90
2.51						30.55
2.52						30.55
2.53		60	32	16	4	30.55
2.97		64	36	17	6	31.71
2.98						31.71
2.99						31.71
3.00						28.07
3.01						31.71
3.02						31.71
3.03		64	36	17		31.71
3.97		77	45	21		37.56
3.98						37.56
3.99						37.56
4.00						33.01
4.01	4	77	45	21	6	37.56

○ bright

NC machine chucking reamers

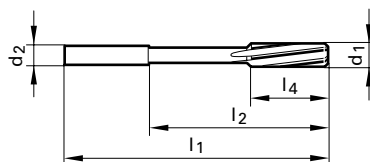
Guhring std.

Product information

- $\varnothing > 4,0$ mm with highly unequal flute spacing
- left hand spiral flutes
- tolerance:
from $\varnothing 0.98$ to 5.03 mm:
 $0.000/+0.004$
from $\varnothing 5.97$ to 12.05 mm:
 $0.000/+0.005$

NC machine chucking reamers are similar to DIN 8093 with straight shank (h6) for standardised tool clamping in hydraulic or shrink fit chucks. The combination of NC machine chucking reamer and hydraulic, high precision clamping or shrink fit chuck respectively offers highest concentricity and process reliability for the production of holes to required tolerances.

Tool material	Carbide-UF
Carbide grade	K10
Guhring no.	5527
Form	
Type	
Tolerance	see product information
Surface finish	○
Cutting direction	right



nominal $\varnothing$ d_1 mm	shank $\varnothing$ d_2 mm	total length l_1 mm	effective length l_2 mm	flute length l_4 mm	no. of flutes z	Unit price in £
4.02	4	77	45	21	6	37.56
4.03	4	77	45	21		37.56
4.97	6	93	59	26		40.81
4.98						40.81
4.99						40.81
5.00						37.17
5.01						40.81
5.02						40.81
5.03			59			40.81
5.97			57			44.06
5.98						44.06
5.99						44.06
6.00						40.42
6.01						44.58
6.02						44.58
6.03	6	93	57	26		44.58
7.00	8	109	69	31		40.81
7.97		117	75	33		56.15
7.98						56.15
7.99						56.15
8.00						51.09
8.01						56.15
8.02						56.15
8.03		117				56.15
8.04	8	125	75	33		56.15
9.00	10	133	81	36		56.15
9.97			87	38		64.34
9.98						64.34
9.99						64.34
10.00						61.09
10.01						64.34
10.02						64.34
10.03						64.34
10.04						64.34
10.05	10	133	87	38		64.34
11.97	12	151	105	44	6	77.47

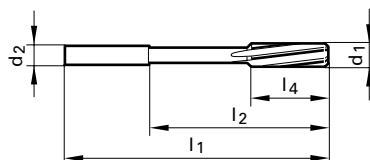
○ bright

Guhring std.

NC machine chucking reamers are similar to DIN 8093 with straight shank (h6) for standardised tool clamping in hydraulic or shrink fit chucks. The combination of NC machine chucking reamer and hydraulic, high precision clamping or shrink fit chuck respectively offers highest concentricity and process reliability for the production of holes to required tolerances.

- $\varnothing > 4,0$ mm with highly unequal flute spacing
- left hand spiral flutes
- tolerance:
from $\varnothing 0.98$ to 5.03 mm:
 $0.000/+0.004$
from $\varnothing 5.97$ to 12.05 mm:
 $0.000/+0.005$

Tool material	Carbide-UF
Carbide grade	K10
Guhring no.	5527
Form	
Type	
Tolerance	see product information
Surface finish	
Cutting direction	right

[illegible]

○ bright



GUHRINGNAVIGATOR NC machine chucking reamers

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

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

Tool material/Carbide grade

Carbide

Form

–

Surface finish

○

Gühr.
no.
straight

Gühring std.

5527

Counter-sink 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	0.600
6.30	0.125	0.160	0.200	0.400	0.700
8.00	0.160	0.200	0.250	0.600	1.000
10.00	0.200	0.250	0.315	0.600	1.200
12.50	0.200	0.250	0.315	0.800	1.200
16.00	0.250	0.315	0.400	0.800	1.400
20.00	0.315	0.400	0.500	0.800	1.400
25.00	0.400	0.500	0.630	1.000	1.600
31.50	0.400	0.500	0.630	1.000	2.000
40.00	0.500	0.630	0.800	1.200	2.000
50.00	0.630	0.800	1.000	1.400	2.200
> 50.00	0.800	1.000	1.250	1.600	2.200

Coolant:

○ Air

● Neat oil

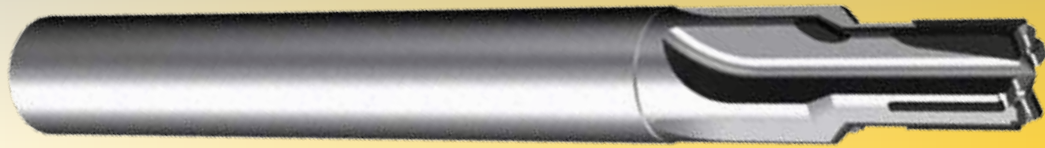
● Soluble oil

○ bright



Material group	Material examples, new description (old description in brackets) Figures in bold = material no. to DIN EN	Tensile strength MPa (N/mm ²)	Hard- ness	Cool- ant	v _c m/min	Feed col. no.
Common structural steels	1.0035 S185 (St33), 1.0486 P275N (StE285), 1.0345 P235GH (H1)	≤500		○	18	72
	1.0050 E295 (St50-2), 1.0070 E360 (St70-2), 1.8937 P500NH	≤1000		○	16	72
Free-cutting steels	1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36)	≤850		○	18	72
	1.0727 46S20 (45S20), 1.0728 (60S20), 1.0757 46SPb20 (45SPb20)	≤1000		○	16	72
Unalloyed heat-treatable steels	1.0402 C22, 1.1178 C30E (Ck30)	≤700		○	18	71
	1.0503 C45, 1.1191 C45E (Ck45)	≤850		○	16	72
	1.0601 C60, 1.1221 C60E (Ck60)	≤1000		○	14	71
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4	≤1000		○	14	71
	1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	≤1400		○	12	71
Unalloyed case hardened steels	1.0301 (C10), 1.1121 C10E (Ck10)	≤850		○	18	71
Alloyed case hardened steels	1.7276 10CrMo11, 1.5125 11MnSi6	≤1000		○	14	71
	1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5	≤1400		○	12	71
Nitriding steels	1.8504 34CrAl6	≤1000		○	14	71
	1.8519 31CrMoV9, 1.8550 34CrAlNi7	≤1400		○	12	71
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9	≤850		○	12	71
	1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767	≤1400		○	10	71
High speed steels	1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3	≤1400		○	10	71
Spring steels	1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4 (51CrV4)		≤350 HB	○		
Stainless steels, sulphured	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305	≤900		○	8	71
austenitic	1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571	≤1100		○	6	71
martensitic	1.4057 X20CrNi172 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521	≤1500		○	6	71
Hardened steels	–		≤48 HRC	○		
			≤66 HRC	○		
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤2000		○		
Cast iron	0.6010 EN-GJL-100 (GG10), 0.6020 EN-GJL-200 (GG20)	≤240 HB		○	20	71
	0.6025 EN-GJL-250 (GG25), 0.6035 EN-GJL-350 (GG35)	≤350 HB		○	18	71
Spheroidal graphite iron and malleable cast iron	0.7050 EN-GJS-500-7 (GGG50), 0.8035 EN-GJMW-350-4 (GTW35)	≤240 HB		○	20	71
Chilled cast iron	0.7070 EN-GJS-700-2 (GGG70), 0.8170 EN-GJMB-700-2 (GTS70)	≤350 HB		○	18	71
Ti and Ti-alloys	3.7024 Ti99.5, 3.7114 TiAl5Sn2.5, 3.7124 TiCu2	≤850		○	10	71
	3.7154 TiAl6Zr5, 3.7165 TiAl6V4, 3.7184 TiAl4Mo4Sn2.5, - TiAl8Mo1V1	≤1400		○	10	71
Aluminium and Al-alloys	3.0255 Al99.5, 3.2315 AlMgSi1, 3.3515 AlMg1	≤400		○	30	73
Al wrought alloys	3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365	≤650		○	30	73
Al cast alloys ≤ 10 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9	≤600		○	40	72
≤ 24 % Si	3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		○	30	72
Magnesium alloys	3.5200 MgMn2, 3.5812.05 G-MgAl8Zn1, 3.5612.05 G-MgAl6Zn1	≤400		○	25	72
Copper, low-alloyed	2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb	≤500		○	25	72
Brass, short-chipping	2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2	≤600		○	35	72
long-chipping	2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0.5	≤600		○	30	72
Bronze, short-chipping	2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn	≤600		○	35	72
	2.0790 CuNi18Zn19Pb	≤850		○	30	72
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10	≤850		○	30	72
	2.0980 CuAl11Ni, 2.1247 CuBe2	≤1000		○	25	72
Duroplastics	Bakelit, Resopal, Pertinax, Moltopren	≤150		○	20	73
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		○	20	73
New cast materials GGV	EN-GJV250 (GGV25), EN-GJV350 (GGV35)		≤220 HB	○	20	71
	EN-GJV400 (GGV40), EN-GJV500 (GGV50), SiMo 6		≤300 HB	○	16	71
New cast materials ADI	EN-GJS-800-8 (ADI800), EN-GJS-1000-5 (ADI1000)	≤1000		○		71
	EN-GJS-1200-2 (ADI1200), EN-GJS-1400-1 (ADI1400)	≤1400		○	12	71
Kevlar	Kevlar	≤1000		○		
Glass, carbon conc. plastics	GFK/CFK	≤1000		○		

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