



Industrial Supply Company



Leading Through Innovation



HSS & HSS-E

YG TAP GENERAL

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- Suitable for Tapping Blind / Through Holes due to Flute Geometry and Excellent Chip Evacuation
- Geeignet für das Gewindeschneiden von Grund- und Durchgangsbohrungen aufgrund der Nutengeometrie und der hervorragenden Spanabfuhr

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GENERAL**

Suitable for Tapping Blind / Through Holes
due to Flute Geometry and Excellent Chip Evacuation



Please visit
globalyig1.com/mat
for material search

◎: Excellent ○: Good

Recommended cutting conditions : P.161

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRC			
P	1	Non-alloy steel	About 0.15% C	Annealed	125		○	○	○
	2		About 0.45% C	Annealed	190	13	⊙	⊙	⊙
	3		About 0.45% C	Quenched & Tempered	250	25	⊙	⊙	⊙
	4		About 0.75% C	Annealed	270	28	⊙	⊙	⊙
	5		About 0.75% C	Quenched & Tempered	300	32	○	○	○
	6	Low alloy steel		Annealed	180	10	⊙	⊙	⊙
	7			Quenched & Tempered	275	29	⊙	⊙	⊙
	8			Quenched & Tempered	300	32	○	○	○
	9			Quenched & Tempered	350	38			
	10	High alloyed steel, and tool steel		Annealed	200	15			
	11			Quenched & Tempered	325	35			
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15	○	○	○
	13		Martensitic	Quenched & Tempered	240	23	○	○	○
	14		Austenitic		180	10			
K	15	Grey cast iron		Pearlitic / ferritic	180	10			
	16			Pearlitic (Martensitic)	260	26			
	17	Nodular cast iron		Ferritic	160	3	⊙	⊙	⊙
	18			Pearlitic	250	25	⊙	⊙	⊙
	19	Malleable cast iron		Ferritic	130				
	20			Pearlitic	230	21			
	N	21	Aluminum-wrought alloy	Not Curable		60		○	○
22		Curable Hardened		100					
23		Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75		○	○	○
24			≤ 12% Si, Curable Hardened		90		○	○	○
25			> 12% Si, Not Curable		130		⊙	⊙	⊙
26		Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110		○	○	○
27			CuZn, CuSnZn (Brass)		90				
28			CuSn, lead-free copper and electrolytic copper		100		⊙	⊙	⊙
29		Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic						
30			Rubber, Wood, etc.						
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15			
	32			Cured	280	30			
	33			Annealed	250	25			
	34		Ni or Co Based	Cured	350	38			
	35			Cast	320	34			
	36	Titanium Alloys	Pure Titanium		400 Rm				
	37		Alpha + Beta Alloys	Hardened	1050 Rm				
H	38	Hardened steel		Hardened	550	55			
	39			Hardened	630	60			
	40	Chilled Cast Iron		Cast	400	42			
	41	Hardened Cast Iron		Hardened	550	55			

Max. 3.0xD Through Hole						Max. 2.0xD Blind/Through Hole
HSS-E						
B	B	B	B	C	C	
Spiral Point	Spiral Point	Spiral Point	Spiral Point	Spiral Flute	Straight Flute	
-	-	-	-	L20	-	
TC127 (P.135)	TD127 (P.136)	TC227 (P.145)	TD227 (P.146)	TC211 (P.147)	TC463 (P.148)	M
TC122 (P.137)						
TC222 (P.138)	TD222 (P.140)				TC473 (P.149)	MF
TC214 (P.142)					TC424 (P.150)	UNC
TC234 (P.143)						UNF
TC224 (P.144)						BSW
						G(BSP)
						EG-M
						EG-UNC
						EG-UNF
Bright	TIN	Bright	TIN	Bright	Bright	
○	○	○	○	○	○	1
◎	◎	◎	◎	◎	○	2
◎	◎	◎	◎	◎	○	3
◎	◎	◎	◎	◎	○	4
○	○	○	○	○	○	5
◎	◎	◎	◎	◎	○	6 P
◎	◎	◎	◎	◎	○	7
○	○	○	○	○	○	8
						9
						10
						11
○	○	○	○	○	○	12
○	○	○	○	○	○	13 M
						14
					○	15
					○	16
◎	◎	◎	◎	◎	○	17 K
◎	◎	◎	◎	◎	○	18
						19
						20
○	○	○	○	○		21
						22
○	○	○	○	○		23
○	○	○	○	○		24
◎	◎	◎	◎	◎	○	25 N
○	○	○	○	○	○	26
					○	27
◎	◎	◎	◎	◎		28
						29
						30
						31
						32
						33
						34 S
						35
						36
						37
						38
						39 H
						40
						41

Suitable for Tapping Blind / Through Holes
due to Flute Geometry and Excellent Chip Evacuation



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for material search

◎ : Excellent ○ : Good

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc				
P	1	Non-alloy steel	About 0.15% C	Annealed	125					
	2		About 0.45% C	Annealed	190	13				
	3		About 0.45% C	Quenched & tempered	250	25				
	4		About 0.75% C	Annealed	270	28				
	5		About 0.75% C	Quenched & tempered	300	32				
	6	Low alloy steel		Annealed	180	10				
	7			Quenched & tempered	275	29				
	8			Quenched & tempered	300	32				
	9			Quenched & tempered	350	38				
	10	High alloyed steel, and tool steel		Annealed	200	15				
	11			Quenched & Tempered	325	35				
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15				
	13		Martensitic	Quenched & Tempered	240	23				
	14		Austenitic		180	10				
K	15	Grey cast iron	Pearlitic / ferritic		180	10				
	16		Pearlitic (Martensitic)		260	26				
	17	Nodular cast iron	Ferritic		160	3				
	18		Pearlitic		250	25				
	19	Malleable cast iron	Ferritic		130					
	20		Pearlitic		230	21				
N	21	Aluminum-wrought alloy	Not Curable		60					
	22		Curable Hardened		100					
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75					
	24		≤ 12% Si, Curable Hardened		90					
	25		> 12% Si, Not Curable		130					
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110					
	27		CuZn, CuSnZn (Brass)		90					
	28		CuSn, lead-free copper and electrolytic copper		100					
	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic							
	30		Rubber, Wood, etc.							
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15				
	32			Cured	280	30				
	33			Annealed	250	25				
	34		Ni or Co Based	Cured	350	38				
	35			Cast	320	34				
	36	Titanium Alloys	Pure Titanium		400 Rm					
	37		Alpha + Beta Alloys	Hardened	1050 Rm					
H	38	Hardened steel		Hardened	550	55				
	39			Hardened	630	60				
	40	Chilled Cast Iron		Cast	400	42				
	41	Hardened Cast Iron		Hardened	550	55				



Max. 2.0xD
Blind/Through Hole

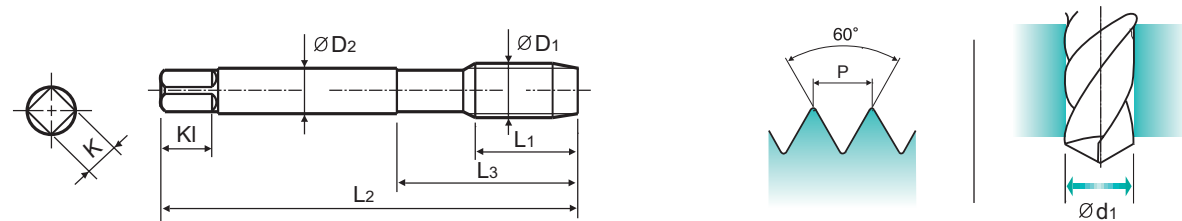
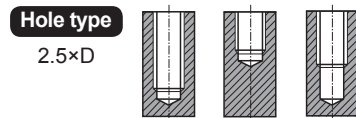
HSS						HSS-E	
I / II / III	I / III	I / II / III	I / II / III	I / II / III	I / II / III	I / II / III	
Straight Flute	Straight Flute	Straight Flute	Straight Flute	Straight Flute	Straight Flute	Straight Flute	
-	-	-	Left Hand Cut	-	-	-	
			T7343 (P.158)	TB373 (P.159)	TC353 (P.160)	M	
						MF	
T7363 (P.155)						UNC	
	T7509 (P.156)					UNF	
		T7609 (P.157)				BSW	
						G(BSP)	
						EG-M	
						EG-UNC	
						EG-UNF	
Bright	Bright	Bright	Bright	VAP	Bright		
○	○	○	○	○	○	1	
○	○	○	○	○	○	2	
○	○	○	○	○	○	3	
○	○	○	○	○	○	4	
						5	
○	○	○	○	○	○	6 P	
○	○	○	○	○	○	7	
						8	
						9	
						10	
						11	
				○		12	
				○		13 M	
				○		14	
						15	
						16	
○	○	○	○			17 K	
○	○	○	○			18	
						19	
						20	
						21	
						22	
						23	
						24	
○	○	○	○			25 N	
○	○	○	○			26	
○	○	○	○			27	
						28	
						29	
						30	
						31	
						32	
						33	
						34 S	
						35	
						36	
						37	
						38	
						39 H	
						40	
						41	

M ISO metric coarse threads DIN 13

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

► Suitable for tapping blind holes due to special flute geometry and excellent chip evacuation.

► Geeignet zum Gewinden von Sacklöchern dank besonderer Nutengeometrie und ausgezeichneter Spanabfuhr.



Recommended Cutting Page : P.161

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
M2 × 0.4		TC711136	8	45	13	2.8	2.1	5	3	1.6
M2.2 × 0.45		TC711156	8	45	13	2.8	2.1	5	3	1.75
*M2.3 × 0.4		TC711196	8	45	13	2.8	2.1	5	3	1.9
M2.5 × 0.45		TC711176	9	50	15	2.8	2.1	5	3	2.05
*M2.6 × 0.45		TC711496	9	50	15	2.8	2.1	5	3	2.1
M3 × 0.5		TC711206	6	56	18	3.5	2.7	6	3	2.5
M3.5 × 0.6		TC711226	7	56	20	4	3	6	3	2.9
M4 × 0.7		TC711246	7	63	21	4.5	3.4	6	3	3.3
M4.5 × 0.75		TC711266	8	70	25	6	4.9	8	3	3.7
M5 × 0.8		TC711286	8	70	25	6	4.9	8	3	4.2
M6 × 1		TC711316	10	80	30	6	4.9	8	3	5
M7 × 1		TC711346	10	80	30	7	5.5	8	3	6
M8 × 1.25		TC711366	13	90	35	8	6.2	9	3	6.8
M9 × 1.25		TC711396	13	90	35	9	7	10	3	7.8
M10 × 1.5		TC711426	15	100	39	10	8	11	3	8.5
M11 × 1.5		TC711466	17	100	40	8	6.2	9	3	9.5
M12 × 1.75		TC711506	18	110	44	9	7	10	3	10.2
M14 × 2		TC711546	20	110	44	11	9	12	3	12
M16 × 2		TC711606	20	110	44	12	9	12	3	14
M18 × 2.5		TC711656	25	125	50	14	11	14	4	15.5
M20 × 2.5		TC711706	25	140	54	16	12	15	4	17.5
M22 × 2.5		TC711746	25	140	54	18	14.5	17	4	19.5
M24 × 3		TC711786	30	160	60	18	14.5	17	4	21
M27 × 3		TC711866	30	160	60	20	16	19	4	24
M30 × 3.5		TC711946	35	180	70	22	18	21	4	26.5

► DIN 371(M2~M10) and DIN 376(M11~M30)
► * DIN profile not ISO

◎ : Excellent ○ : Good

ISO	P										M					K						
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron			
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
HRC		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21		
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230		
Recommended	○	◎		◎	○	◎	◎		○			○					◎	◎				

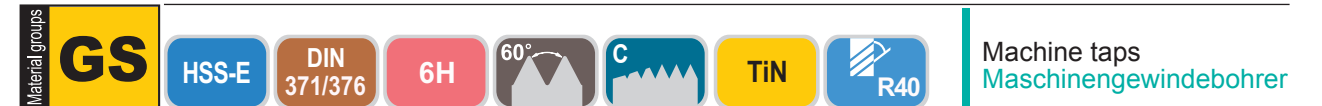
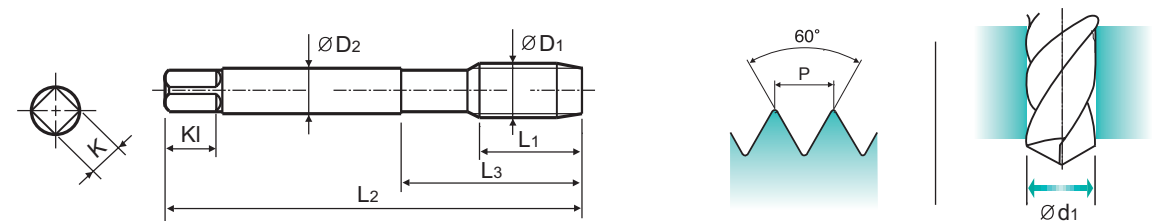
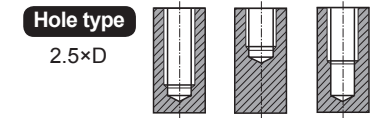
ISO	N										S										H				
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron		Hardened Cast Iron		
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41				
HRC											15	30	25	38	34	36	37	55	60	42	55				
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550				
Recommended	○		○	○	◎	○		◎																	

M ISO metric coarse threads DIN 13

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

► Suitable for tapping blind holes due to special flute geometry and excellent chip evacuation.

► Geeignet zum Gewinden von Sacklöchern dank besonderer Nutengeometrie und ausgezeichneter Spanabfuhr.



Recommended Cutting Page : P.161

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	TiN	L1	L2	L3	ØD2	K	KI	Z	Ød1
M2 × 0.4		TD711136	8	45	13	2.8	2.1	5	3	1.6
M2.2 × 0.45		TD711156	8	45	13	2.8	2.1	5	3	1.75
*M2.3 × 0.4		TD711196	8	45	13	2.8	2.1	5	3	1.9
M2.5 × 0.45		TD711176	9	50	15	2.8	2.1	5	3	2.05
*M2.6 × 0.45		TD711496	9	50	15	2.8	2.1	5	3	2.1
M3 × 0.5		TD711206	6	56	18	3.5	2.7	6	3	2.5
M3.5 × 0.6		TD711226	7	56	20	4	3	6	3	2.9
M4 × 0.7		TD711246	7	63	21	4.5	3.4	6	3	3.3
M4.5 × 0.75		TD711266	8	70	25	6	4.9	8	3	3.7
M5 × 0.8		TD711286	8	70	25	6	4.9	8	3	4.2
M6 × 1		TD711316	10	80	30	6	4.9	8	3	5
M7 × 1		TD711346	10	80	30	7	5.5	8	3	6
M8 × 1.25		TD711366	13	90	35	8	6.2	9	3	6.8
M9 × 1.25		TD711396	13	90	35	9	7	10	3	7.8
M10 × 1.5		TD711426	15	100	39	10	8	11	3	8.5
M11 × 1.5		TD711466	17	100	40	8	6.2	9	3	9.5
M12 × 1.75		TD711506	18	110	44	9	7	10	3	10.2
M14 × 2		TD711546	20	110	44	11	9	12	3	12
M16 × 2		TD711606	20	110	44	12	9	12	3	14
M18 × 2.5		TD711656	25	125	50	14	11	14	4	15.5
M20 × 2.5		TD711706	25	140	54	16	12	15	4	17.5
M22 × 2.5		TD711746	25	140	54	18	14.5	17	4	19.5
M24 × 3		TD711786	30	160	60	18	14.5	17	4	21
M27 × 3		TD711866	30	160	60	20	16	19	4	24
M30 × 3.5		TD711946	35	180	70	22	18	21	4	26.5

► DIN 371(M2~M10) and DIN 376(M11~M30)
► * DIN profile not ISO

◎ : Excellent ○ : Good

ISO	P										M					K						
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron			
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
HRC		13	25	28	32		10	29	32	38		15	35		15	23	10					
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230		
Recommended	○	◎	◎	◎	◎	◎	◎	○				○					◎	◎				

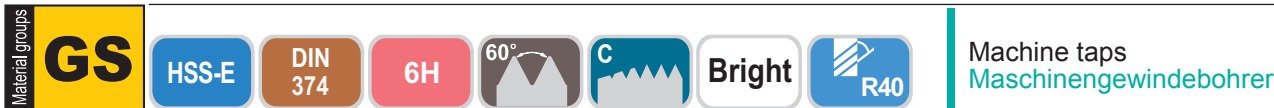
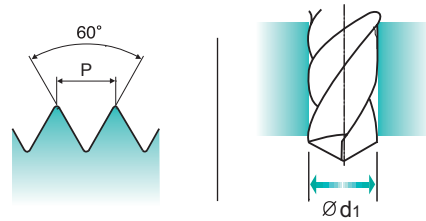
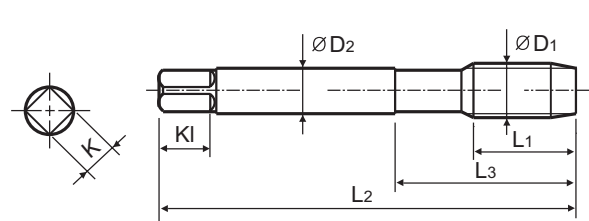
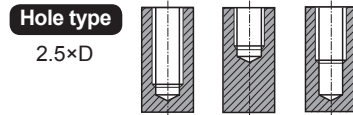
ISO	N										S										H					
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast iron		Hardened Cast iron			
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41					
HRC											15	30	25	38	34			55	60	42	55					
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550					
Recommended	○		○	○	◎	○		◎																		

MF ISO metric fine threads DIN 13

Metrisches ISO-Feingewinde DIN 13
ISO MÉTRIQUE PAS FINS DIN13
ISO Metrico passo fine DIN 13

► Suitable for tapping blind holes due to special flute geometry and excellent chip evacuation.

► Geeignet zum Gewinden von Sacklöchern dank besonderer Nutengeometrie und ausgezeichneter Spanabfuhr.



Recommended Cutting Page : P.161

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
M4 × 0.5		TC411256	5	63	21	2.8	2.1	5	3	3.5
M5 × 0.5		TC411296	5	70	25	3.5	2.7	6	3	4.5
M6 × 0.75		TC411326	8	80	30	4.5	3.4	6	3	5.2
M6 × 0.5		TC411336	5	80	30	4.5	3.4	6	3	5.5
M7 × 0.75		TC411356	10	80	30	5.5	4.3	7	3	6.2
M8 × 1		TC411376	10	90	36	6	4.9	8	3	7
M8 × 0.75		TC411386	8	80	30	6	4.9	8	3	7.2
M8 × 0.5		TC411936	5	80	30	6	4.9	8	3	7.5
M10 × 1.25		TC411436	16	100	40	7	5.5	8	3	8.8
M10 × 1		TC411446	10	90	36	7	5.5	8	3	9
M10 × 0.75		TC411456	10	90	36	7	5.5	8	3	9.2
M12 × 1.5		TC411516	15	100	40	9	7	10	3	10.5
M12 × 1.25		TC411526	15	100	40	9	7	10	3	10.8
M12 × 1		TC411536	11	100	40	9	7	10	3	11
M14 × 1.5		TC411556	15	100	40	11	9	12	3	12.5
M14 × 1.25		TC411566	15	100	40	11	9	12	3	12.8
M14 × 1		TC411576	11	100	40	11	9	12	3	13
M16 × 1.5		TC411616	15	100	40	12	9	12	3	14.5
M16 × 1		TC411626	12	100	40	12	9	12	3	15
M18 × 1.5		TC411676	17	110	44	14	11	14	4	16.5
M18 × 1		TC411686	13	110	44	14	11	14	4	17

► NEXT PAGE

◎ : Excellent ○ : Good

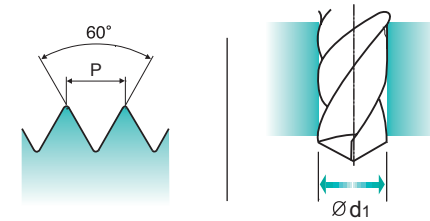
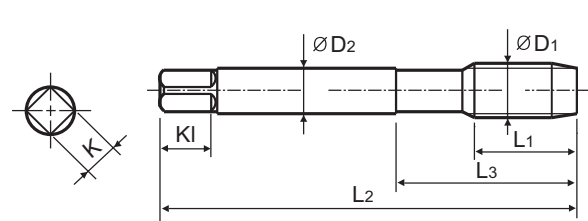
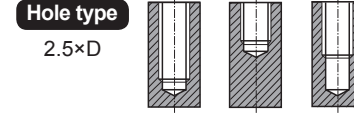
ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	○	○	○	○	○	○	○	◎	◎	○	○
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34	55	60	42	55	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	○	○	○	◎	◎	○	○	◎												

MF ISO metric fine threads DIN 13

Metrisches ISO-Feingewinde DIN 13
ISO MÉTRIQUE PAS FINS DIN13
ISO Metrico passo grosso DIN 13

► Suitable for tapping blind holes due to special flute geometry and excellent chip evacuation.

► Geeignet zum Gewinden von Sacklöchern dank besonderer Nutengeometrie und ausgezeichneter Spanabfuhr.



Recommended Cutting Page : P.161

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
M20 × 1.5		TC411726	17	125	50	16	12	15	4	18.5
M20 × 1		TC411736	14	125	50	16	12	15	4	19
M22 × 1.5		TC411766	17	125	50	18	14.5	17	4	20.5
M22 × 1		TC411776	14	125	50	18	14.5	17	4	21
M24 × 2		TC411796	20	140	54	18	14.5	17	4	22
M24 × 1.5		TC411806	20	140	54	18	14.5	17	4	22.5
M26 × 1.5		TC411856	20	140	54	18	14.5	17	4	24.5
M27 × 2		TC411876	20	140	54	20	16	19	4	25
M27 × 1.5		TC411886	20	140	54	20	16	19	4	25.5
M28 × 1.5		TC411916	20	140	54	20	16	19	4	26.5
M30 × 2		TC411966	22	150	57	22	18	21	4	28
M30 × 1.5		TC411976	22	150	57	22	18	21	4	28.5

◎ : Excellent ○ : Good

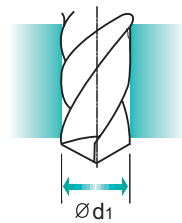
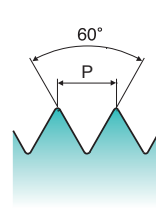
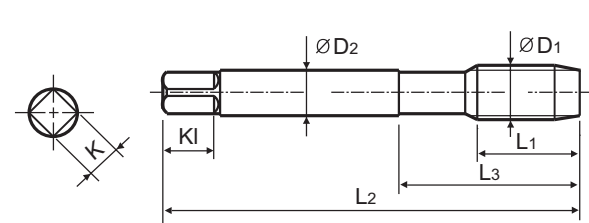
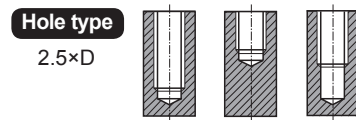
ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	○	○	○	○	○	○	○	◎	◎	○	○
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34	55	60	42	55	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	○	○	○	◎	◎	○	○	◎												

MF ISO metric fine threads DIN 13

Metrisches ISO-Feingewinde DIN 13
ISO MÉTRIQUE PAS FINS DIN13
ISO Metrico passo grosso DIN 13

► Suitable for tapping blind holes due to special flute geometry and excellent chip evacuation.

► Geeignet zum Gewinden von Sacklöchern dank besonderer Nutengeometrie und ausgezeichneter Spanabfuhr.



GS HSS-E DIN 374 6H 60° C TiN R40 Machine taps Maschinengewindebohrer

Recommended Cutting Page : P.161

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	TiN	L1	L2	L3	ØD2	K	KI	Z	Ød1
M4 × 0.5		TD411256	5	63	21	2.8	2.1	5	3	3.5
M5 × 0.5		TD411296	5	70	25	3.5	2.7	6	3	4.5
M6 × 0.75		TD411326	8	80	30	4.5	3.4	6	3	5.2
M6 × 0.5		TD411336	5	80	30	4.5	3.4	6	3	5.5
M7 × 0.75		TD411356	10	80	30	5.5	4.3	7	3	6.2
M8 × 1		TD411376	10	90	36	6	4.9	8	3	7
M8 × 0.75		TD411386	8	80	30	6	4.9	8	3	7.2
M8 × 0.5		TD411936	5	80	30	6	4.9	8	3	7.5
M10 × 1.25		TD411436	16	100	40	7	5.5	8	3	8.8
M10 × 1		TD411446	10	90	36	7	5.5	8	3	9
M10 × 0.75		TD411456	10	90	36	7	5.5	8	3	9.2
M12 × 1.5		TD411516	15	100	40	9	7	10	3	10.5
M12 × 1.25		TD411526	15	100	40	9	7	10	3	10.8
M12 × 1		TD411536	11	100	40	9	7	10	3	11
M14 × 1.5		TD411556	15	100	40	11	9	12	3	12.5
M14 × 1.25		TD411566	15	100	40	11	9	12	3	12.8
M14 × 1		TD411576	11	100	40	11	9	12	3	13
M16 × 1.5		TD411616	15	100	40	12	9	12	3	14.5

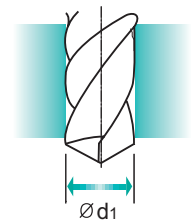
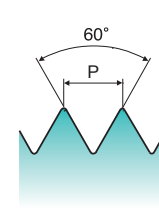
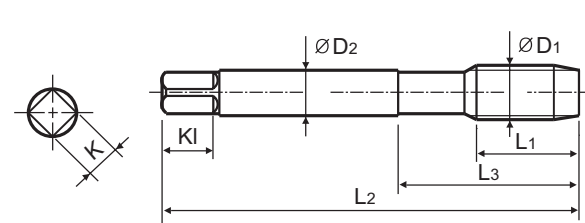
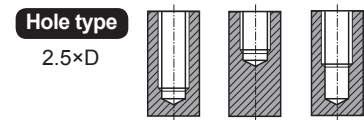
► NEXT PAGE

MF ISO metric fine threads DIN 13

Metrisches ISO-Feingewinde DIN 13
ISO MÉTRIQUE PAS FINS DIN13
ISO Metrico passo grosso DIN 13

► Suitable for tapping blind holes due to special flute geometry and excellent chip evacuation.

► Geeignet zum Gewinden von Sacklöchern dank besonderer Nutengeometrie und ausgezeichneter Spanabfuhr.



GS HSS-E DIN 374 6H 60° C TiN R40 Machine taps Maschinengewindebohrer

Recommended Cutting Page : P.161

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	TiN	L1	L2	L3	ØD2	K	KI	Z	Ød1
M16 × 1		TD411626	12	100	40	12	9	12	3	15
M18 × 1.5		TD411676	17	110	44	14	11	14	4	16.5
M18 × 1		TD411686	13	110	44	14	11	14	4	17
M20 × 1.5		TD411726	17	125	50	16	12	15	4	18.5
M20 × 1		TD411736	14	125	50	16	12	15	4	19
M22 × 1.5		TD411766	17	125	50	18	14.5	17	4	20.5
M22 × 1		TD411776	14	125	50	18	14.5	17	4	21
M24 × 2		TD411796	20	140	54	18	14.5	17	4	22
M24 × 1.5		TD411806	20	140	54	18	14.5	17	4	22.5
M26 × 1.5		TD411856	20	140	54	18	14.5	17	4	24.5
M27 × 2		TD411876	20	140	54	20	16	19	4	25
M27 × 1.5		TD411886	20	140	54	20	16	19	4	25.5
M28 × 1.5		TD411916	20	140	54	20	16	19	4	26.5
M30 × 2		TD411966	22	150	57	22	18	21	4	28
M30 × 1.5		TD411976	22	150	57	22	18	21	4	28.5

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	○	○	○	○	◎	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

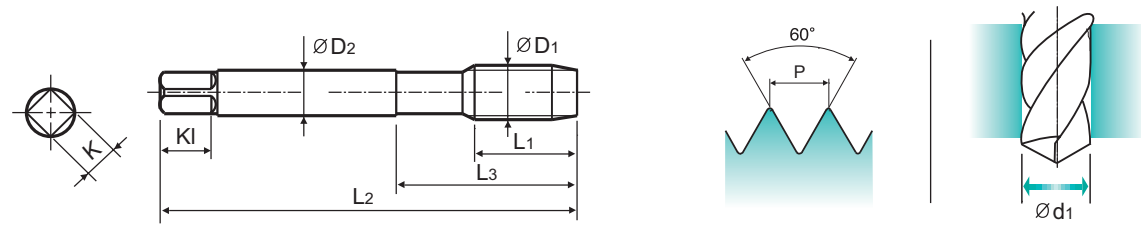
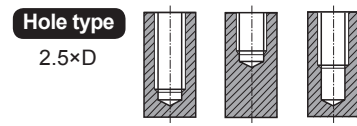
UNC

Unified coarse threads

Unified Grobgewinde
 UNC
 Unificato passo grosso

► Suitable for tapping blind holes due to special flute geometry and excellent chip evacuation.

► Geeignet zum Gewinden von Sacklöchern dank besonderer Nutengeometrie und ausgezeichneter Spanabfuhr.



Recommended Cutting Page : P.161

Unit : mm

SIZE	TPI	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1		Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
#4	-40UNC	TC144162	6	56	18	3.5	2.7	6	3	2.3
#5	-40UNC	TC144202	7	56	18	3.5	2.7	6	3	2.6
#6	-32UNC	TC144242	7	56	20	4	3	6	3	2.85
#8	-32UNC	TC144282	8	63	21	4.5	3.4	6	3	3.5
#10	-24UNC	TC144322	10	70	25	6	4.9	8	3	3.9
#12	-24UNC	TC144362	10	80	30	6	4.9	8	3	4.5
1/4	-20UNC	TC144402	13	80	30	7	5.5	8	3	5.2
5/16	-18UNC	TC144442	14	90	35	8	6.2	9	3	6.6
3/8	-16UNC	TC144482	16	100	39	9	7	10	3	8
7/16	-14UNC	TC144522	17	100	40	8	6.2	9	3	9.4
1/2	-13UNC	TC144562	20	110	44	9	7	10	3	10.75
9/16	-12UNC	TC144602	20	110	44	11	9	12	3	12.25
5/8	-11UNC	TC144642	22	110	44	12	9	12	3	13.5
3/4	-10UNC	TC144702	25	125	50	14	11	14	4	16.5
7/8	-9UNC	TC144742	27	140	54	18	14.5	17	4	19.5
1	-8UNC	TC144782	30	160	60	20	16	19	4	22.25
1-1/8	-7UNC	TC144822	35	180	65	22	18	21	4	25

►DIN 371(#4~3/8) and DIN 376(7/16~1-1/8)

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	○	◎	◎	○	○	○	○	○	○	○	○	○	◎	◎	○	○
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRC	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	○	○	○	○	◎	○	○	◎												

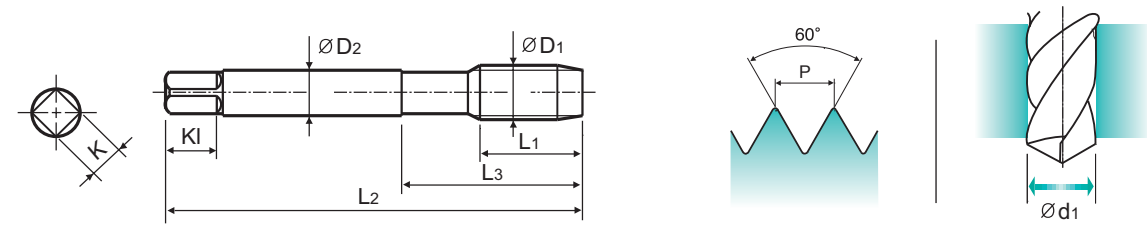
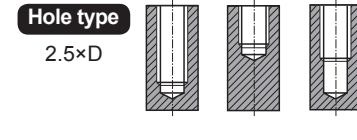
UNF

Unified fine threads

Unified Feingewinde
 UNF
 Unificato passo grosso

► Suitable for tapping blind holes due to special flute geometry and excellent chip evacuation.

► Geeignet zum Gewinden von Sacklöchern dank besonderer Nutengeometrie und ausgezeichneter Spanabfuhr.



Recommended Cutting Page : P.161

Unit : mm

SIZE	TPI	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1		Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
#4	-48UNF	TC124182	6	56	18	3.5	2.7	6	3	2.4
#5	-44UNF	TC124222	7	56	18	3.5	2.7	6	3	2.7
#6	-40UNF	TC124262	7	56	20	4	3	6	3	3
#8	-36UNF	TC124302	8	63	21	4.5	3.4	6	3	3.5
#10	-32UNF	TC124342	10	70	25	6	4.9	8	3	4.1
#12	-28UNF	TC124382	10	80	30	6	4.9	8	3	4.7
1/4	-28UNF	TC124422	10	80	30	7	5.5	8	3	5.5
5/16	-24UNF	TC124462	10	90	35	8	6.2	9	3	6.9
3/8	-24UNF	TC124502	10	100	39	9	7	10	3	8.5
7/16	-20UNF	TC124542	13	100	40	8	6.2	9	3	9.9
1/2	-20UNF	TC124582	13	100	40	9	7	10	3	11.5
9/16	-18UNF	TC124622	15	100	40	11	9	12	3	12.9
5/8	-18UNF	TC124662	15	100	40	12	9	12	3	14.5
3/4	-16UNF	TC124722	17	110	44	14	11	14	4	17.5
7/8	-14UNF	TC124762	17	125	50	18	14.5	17	4	20.5
1	-12UNF	TC124802	20	140	54	18	14.5	17	4	23.25
1-1/8	-12UNF	TC124842	22	150	60	22	18	21	4	26.5

►DIN 371(#4~3/8) and DIN 374(7/16~1-1/8)

◎ : Excellent ○ : Good

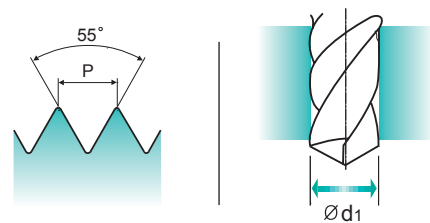
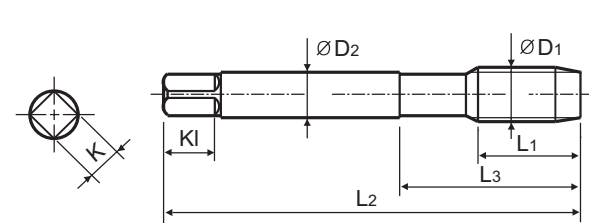
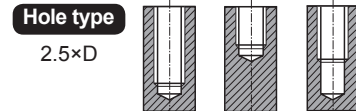
ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	○	◎	◎	○	○	○	○	○	○	○	○	○	◎	◎	○	○
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRC	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	○	○	○	○	◎	○	○	◎												

BSW Whitworth threads

Whitworth Gewinde
BSW
Unificato passo grosso

► Suitable for tapping blind holes due to special flute geometry and excellent chip evacuation.

► Geeignet zum Gewinden von Sacklöchern dank besonderer Nutengeometrie und ausgezeichneter Spanabfuhr.



Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.161

Unit : mm

SIZE	TPI	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1		Bright	L1	L2	L3	ØD2	K	K1	Z	Ød1
W1/8 - 40		TC134200	7	56	18	3.5	2.7	6	3	2.5
W5/32 - 32		TC134280	7	63	21	4.5	3.4	6	3	3.1
W3/16 - 24		TC134320	10	70	25	6	4.9	8	3	3.6
W7/32 - 24		TC134360	10	80	30	6	4.9	8	3	4.4
W1/4 - 20		TC134400	13	80	30	7	5.5	8	3	5.1
W5/16 - 18		TC134440	14	90	35	8	6.2	9	3	6.5
W3/8 - 16		TC134480	16	100	39	9	7	10	3	7.9
W7/16 - 14		TC134520	17	100	40	8	6.2	9	3	9.3
W1/2 - 12		TC134560	20	110	44	9	7	10	3	10.5
W9/16 - 12		TC134600	20	110	44	11	9	12	3	12
W5/8 - 11		TC134640	22	110	40	12	9	12	3	13.5
W3/4 - 10		TC134700	25	125	50	14	11	14	4	16.5
W7/8 - 9		TC134740	27	140	54	18	14.5	17	4	19.25
W1 - 8		TC134780	30	160	60	20	16	19	4	22
W1-1/8 - 7		TC134820	35	180	65	22	18	21	4	24.75

►DIN 2182(W1/8~W3/8) and DIN 2183(W7/16~W1-1/8)

◎ : Excellent ○ : Good

ISO	P										M					K						
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron			Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
HRc		13	25	28	32		29	32	38	15	35	15	23	10	10	26	3	25		21		
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230		
Recommended	○	◎	◎	◎	○	◎	◎	○				○	○				◎	◎				

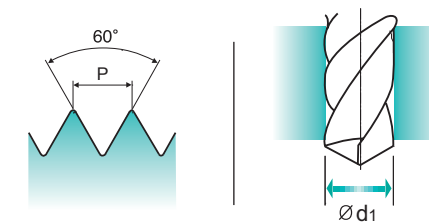
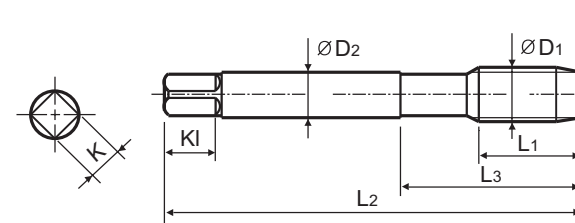
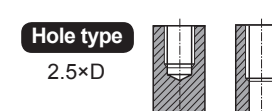
ISO	N										S										H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast iron	Hardened Cast iron			
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41		
HRc											15	30	25	38	34			55	60	42	55		
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550		
Recommended	○	○	○	○	◎	○		◎															

M ISO metric coarse threads DIN 13

Metrisches ISO-Gewinde DIN 13
ISO MÉTRIQUE DIN13
ISO Metrico passo grosso DIN 13

► Suitable for tapping blind holes due to special flute geometry and excellent chip evacuation.

► Geeignet zum Gewinden von Sacklöchern dank besonderer Nutengeometrie und ausgezeichneter Spanabfuhr.



Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.161

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Bright	L1	L2	L3	ØD2	K	K1	Z	Ød1
M2 × 0.4		TC517136	8	45	13	2.8	2.1	5	3	1.6
M2.2 × 0.45		TC517156	8	45	13	2.8	2.1	5	3	1.75
*M2.3 × 0.4		TC517196	8	45	13	2.8	2.1	5	3	1.9
M2.5 × 0.45		TC517176	9	50	15	2.8	2.1	5	3	2.05
*M2.6 × 0.45		TC517496	9	50	15	2.8	2.1	5	3	2.1
M3 × 0.5		TC517206	6	56	18	3.5	2.7	6	3	2.5
M3.5 × 0.6		TC517226	7	56	20	4	3	6	3	2.9
M4 × 0.7		TC517246	7	63	21	4.5	3.4	6	3	3.3
M4.5 × 0.75		TC517266	8	70	25	6	4.9	8	3	3.7
M5 × 0.8		TC517286	8	70	25	6	4.9	8	3	4.2
M6 × 1		TC517316	10	80	30	6	4.9	8	3	5
M7 × 1		TC517346	10	80	30	7	5.5	8	3	6
M8 × 1.25		TC517366	13	90	35	8	6.2	9	3	6.8
M9 × 1.25		TC517396	13	90	35	9	7	10	3	7.8
M10 × 1.5		TC517426	15	100	39	10	8	11	3	8.5
M11 × 1.5		TC517466	17	100	40	8	6.2	9	3	9.5
M12 × 1.75		TC517506	18	110	44	9	7	10	3	10.2
M14 × 2		TC517546	20	110	44	11	9	12	3	12
M16 × 2		TC517606	20	110	44	12	9	12	3	14
M18 × 2.5		TC517656	25	125	50	14	11	14	4	15.5
M20 × 2.5		TC517706	25	140	54	16	12	15	4	17.5
M22 × 2.5		TC517746	25	140	54	18	14.5	17	4	19.5
M24 × 3		TC517786	30	160	60	18	14.5	17	4	21
M27 × 3		TC517866	30	160	60	20	16	19	4	24
M30 × 3.5		TC517946	35	180	70	22	18	21	4	26.5

►DIN 371(M2~M10) and DIN 376(M11~M30)

►* DIN profile not ISO

◎ : Excellent ○ : Good

ISO	P										M					K							
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron			Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21				
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230			
Recommended	○	◎	◎	◎	○	◎	◎	○				○	○				◎	◎					

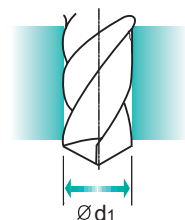
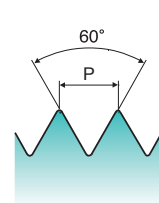
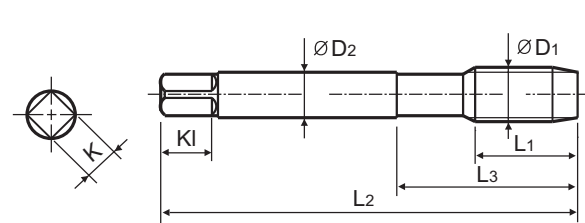
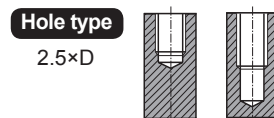
ISO	N										S										H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast iron		Hardened Cast iron		
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41			
HRc											15	30	25	38	34	400Rm	1050Rm	550	630	400	550			
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550			
Recommended	○		○	○	◎	○		◎			○	○	○	○	○	○	○	○	○	○	○			

M ISO metric coarse threads DIN 13

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

► Suitable for tapping blind holes due to special flute geometry and excellent chip evacuation.

► Geeignet zum Gewinden von Sacklöchern dank besonderer Nutengeometrie und ausgezeichneter Spanabfuhr.



GS HSS-E DIN 352 6H 60° C Bright R20 Short machine taps Maschinengewindebohrer kurz

Recommended Cutting Page : P.161

Unit : mm

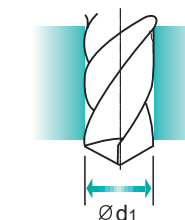
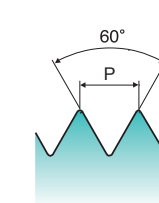
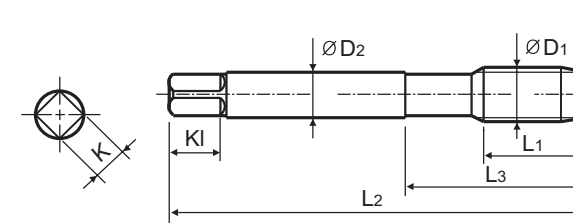
SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Bright	L1	L2	L3	ØD2	K	K1	Z	Ød1
M3	× 0.5	TC612206	11	40	18	3.5	2.7	6	3	2.5
M4	× 0.7	TC612246	13	45	21	4.5	3.4	6	3	3.3
M5	× 0.8	TC612286	16	52	26	6	4.9	8	3	4.2
M6	× 1	TC612316	18	56	27	6	4.9	8	3	5
M8	× 1.25	TC612366	20	63	34	6	4.9	8	3	6.8
M10	× 1.5	TC612426	22	70	38	7	5.5	8	3	8.5
M12	× 1.75	TC612506	24	80	45	9	7	10	3	10.2
M14	× 2	TC612546	26	80	45	11	9	12	3	12
M16	× 2	TC612606	27	80	45	12	9	12	3	14
M18	× 2.5	TC612656	30	95	58	14	11	14	4	15.5
M20	× 2.5	TC612706	32	95	58	16	12	15	4	17.5

M ISO metric coarse threads DIN 13

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

► Suitable for through hole in more cutting speed than other taps due to thick web.

► Geeignet für Durchgangslöcher in höherer Schnittgeschwindigkeit als bei anderen Gewindebohrern dank größerer Kerndicke.



GS HSS-E DIN 371 6H 60° B Bright Machine taps Maschinengewindebohrer

Recommended Cutting Page : P.161

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Bright	L1	L2	L3	ØD2	K	K1	Z	Ød1
M2	× 0.4	TC127136	8	45	13	2.8	2.1	5	3	1.6
M2.2	× 0.45	TC127156	8	45	13	2.8	2.1	5	3	1.75
*M2.3	× 0.4	TC127196	8	45	13	2.8	2.1	5	3	1.9
M2.5	× 0.45	TC127176	9	50	15	2.8	2.1	5	3	2.05
*M2.6	× 0.45	TC127496	9	50	15	2.8	2.1	5	3	2.1
M3	× 0.5	TC127206	11	56	18	3.5	2.7	6	3	2.5
M3.5	× 0.6	TC127226	12	56	20	4	3	6	3	2.9
M4	× 0.7	TC127246	13	63	21	4.5	3.4	6	3	3.3
M4.5	× 0.75	TC127266	14	70	25	6	4.9	8	3	3.7
M5	× 0.8	TC127286	15	70	25	6	4.9	8	3	4.2
M6	× 1	TC127316	17	80	30	6	4.9	8	3	5
M7	× 1	TC127346	17	80	30	7	5.5	8	3	6
M8	× 1.25	TC127366	20	90	35	8	6.2	9	3	6.8
M9	× 1.25	TC127396	20	90	35	9	7	10	3	7.8
M10	× 1.5	TC127426	22	100	39	10	8	11	3	8.5
M11	× 1.5	TC127466	22	100	39	11	9	12	3	9.5
M12	× 1.75	TC127506	24	110	44	12	9	12	3	10.2

► * DIN profile not ISO

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	○	○	○	○	○	○	○	◎	◎	○	○
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	○	○	○	◎	◎	○	○	◎												

◎ : Excellent ○ : Good

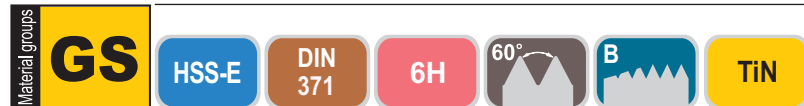
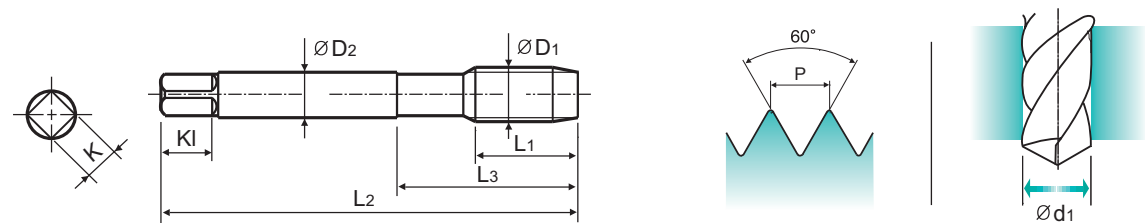
ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	○	○	○	○	○	○	○	◎	◎	○	○
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	○	○	○	◎	◎	○	○	◎												

M ISO metric coarse threads DIN 13

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

► Suitable for through hole in more cutting speed than other taps due to thick web.

► Geeignet für Durchgangslöcher in höherer Schnittgeschwindigkeit als bei anderen Gewindebohrern dank größerer Kerndicke.



Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.161

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	TIN	L1	L2	L3	ØD2	K	KI	Z	Ød1
M2 × 0.4		TD127136	8	45	13	2.8	2.1	5	3	1.6
M2.2 × 0.45		TD127156	8	45	13	2.8	2.1	5	3	1.75
*M2.3 × 0.4		TD127196	8	45	13	2.8	2.1	5	3	1.9
M2.5 × 0.45		TD127176	9	50	15	2.8	2.1	5	3	2.05
*M2.6 × 0.45		TD127496	9	50	15	2.8	2.1	5	3	2.1
M3 × 0.5		TD127206	11	56	18	3.5	2.7	6	3	2.5
M3.5 × 0.6		TD127226	12	56	20	4	3	6	3	2.9
M4 × 0.7		TD127246	13	63	21	4.5	3.4	6	3	3.3
M4.5 × 0.75		TD127266	14	70	25	6	4.9	8	3	3.7
M5 × 0.8		TD127286	15	70	25	6	4.9	8	3	4.2
M6 × 1		TD127316	17	80	30	6	4.9	8	3	5
M7 × 1		TD127346	17	80	30	7	5.5	8	3	6
M8 × 1.25		TD127366	20	90	35	8	6.2	9	3	6.8
M9 × 1.25		TD127396	20	90	35	9	7	10	3	7.8
M10 × 1.5		TD127426	22	100	39	10	8	11	3	8.5
M11 × 1.5		TD127466	22	100	39	11	9	12	3	9.5
M12 × 1.75		TD127506	24	110	44	12	9	12	3	10.2

► *DIN profile not ISO

◎ : Excellent ○ : Good

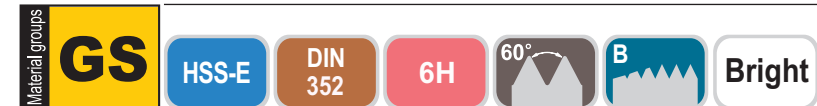
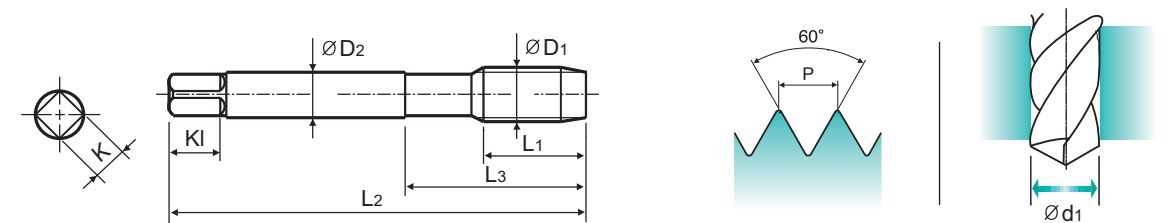
ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	◎	◎	◎	○	○	○	○	○	○	○	○	○	◎	◎	○	○
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	○	○	○	◎	◎	○	○	◎												

M ISO metric coarse threads DIN 13

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

► Suitable for through hole in more cutting speed than other taps due to thick web.

► Geeignet für Durchgangslöcher in höherer Schnittgeschwindigkeit als bei anderen Gewindebohrern dank größerer Kerndicke.



Short machine taps
Maschinengewindebohrer kurz

Recommended Cutting Page : P.161

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
M2 × 0.4		TC122136	8	36	13	2.8	2.1	5	3	1.6
M2.5 × 0.45		TC122176	9	40	15	2.8	2.1	5	3	2.05
M3 × 0.5		TC122206	11	40	18	3.5	2.7	6	3	2.5
M4 × 0.7		TC122246	13	45	21	4.5	3.4	6	3	3.3
M5 × 0.8		TC122286	16	52	26	6	4.9	8	3	4.2
M6 × 1		TC122316	18	56	27	6	4.9	8	3	5
M8 × 1.25		TC122366	20	63	34	6	4.9	8	3	6.8
M10 × 1.5		TC122426	22	70	38	7	5.5	8	3	8.5
M12 × 1.75		TC122506	24	80	45	9	7	10	3	10.2
M14 × 2		TC122546	26	80	45	11	9	12	3	12
M16 × 2		TC122606	27	80	45	12	9	12	3	14

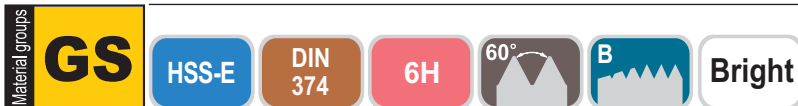
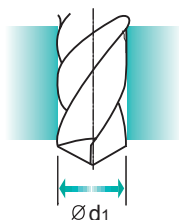
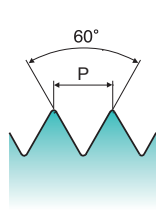
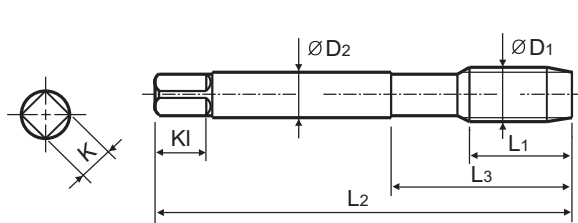
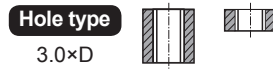
◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	◎	◎	◎	○	○	○	○	○	○	○	○	○	◎	◎	○	○
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	○	○	○	◎	◎	○	○	◎												

MF ISO metric fine threads DIN 13
 Metrisches ISO-Feingewinde DIN 13
 ISO MÉTRIQUE PAS FINS DIN13
 ISO Metrico passo fine DIN 13

► Suitable for through hole in more cutting speed than other taps due to thick web.

► Geeignet für Durchgangslöcher in höherer Schnittgeschwindigkeit als bei anderen Gewindebohrern dank größerer Kerndicke.



Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.161

Unit : mm

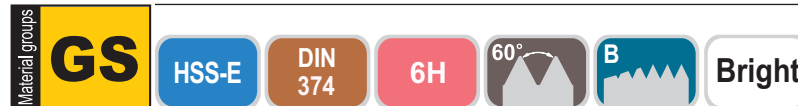
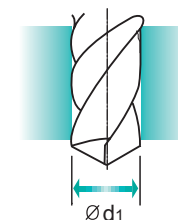
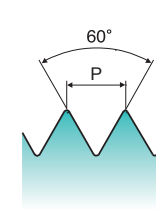
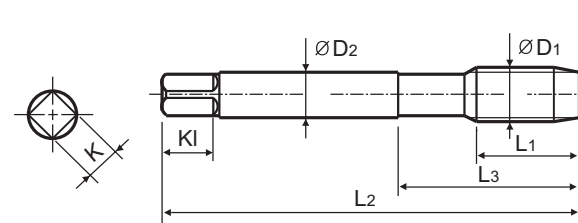
SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
M4 × 0.5		TC222256	10	63	21	2.8	2.1	5	3	3.5
M5 × 0.5		TC222296	11	70	25	3.5	2.7	6	3	4.5
M6 × 0.75		TC222326	13	80	30	4.5	3.4	6	3	5.2
M6 × 0.5		TC222336	13	80	30	4.5	3.4	6	3	5.5
M7 × 0.75		TC222356	14	80	30	5.5	4.3	7	3	6.2
M8 × 1		TC222376	17	90	36	6	4.9	8	3	7
M8 × 0.75		TC222386	14	80	30	6	4.9	8	3	7.2
M8 × 0.5		TC222936	14	80	30	6	4.9	8	3	7.5
M10 × 1.25		TC222436	22	100	40	7	5.5	8	3	8.8
M10 × 1		TC222446	18	90	36	7	5.5	8	3	9
M10 × 0.75		TC222456	18	90	36	7	5.5	8	3	9.2
M12 × 1.5		TC222516	22	100	40	9	7	10	3	10.5
M12 × 1.25		TC222526	22	100	40	9	7	10	3	10.8
M12 × 1		TC222536	18	100	40	9	7	10	3	11
M14 × 1.5		TC222556	22	100	40	11	9	12	3	12.5
M14 × 1.25		TC222566	22	100	40	11	9	12	3	12.8
M14 × 1		TC222576	18	100	40	11	9	12	3	13

► NEXT PAGE

MF ISO metric fine threads DIN 13
 Metrisches ISO-Feingewinde DIN 13
 ISO MÉTRIQUE PAS FINS DIN13
 ISO Metrico passo fine DIN 13

► Suitable for through hole in more cutting speed than other taps due to thick web.

► Geeignet für Durchgangslöcher in höherer Schnittgeschwindigkeit als bei anderen Gewindebohrern dank größerer Kerndicke.



Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.161

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
M16 × 1.5		TC222616	22	100	40	12	9	12	3	14.5
M16 × 1		TC222626	18	100	40	12	9	12	3	15
M18 × 1.5		TC222676	25	110	44	14	11	14	4	16.5
M18 × 1		TC222686	20	110	44	14	11	14	4	17
M20 × 1.5		TC222726	25	125	50	16	12	15	4	18.5
M20 × 1		TC222736	20	125	50	16	12	15	4	19
M22 × 1.5		TC222766	25	125	50	18	14.5	17	4	20.5
M22 × 1		TC222776	20	125	50	18	14.5	17	4	21
M24 × 2		TC222796	27	140	54	18	14.5	17	4	22
M24 × 1.5		TC222806	27	140	54	18	14.5	17	4	22.5
M26 × 1.5		TC222856	28	140	54	18	14.5	17	4	24.5
M27 × 2		TC222876	28	140	54	20	16	19	4	25
M27 × 1.5		TC222886	28	140	54	20	16	19	4	25.5
M28 × 1.5		TC222916	28	140	54	20	16	19	4	26.5
M30 × 2		TC222966	30	150	57	22	18	21	4	28
M30 × 1.5		TC222976	30	150	57	22	18	21	4	28.5

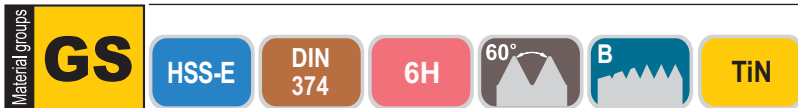
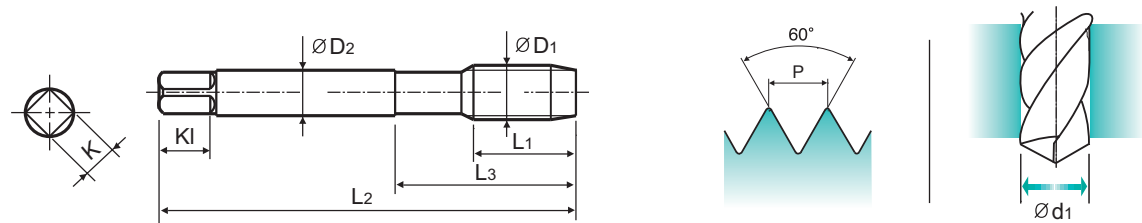
◎ : Excellent ○ : Good

ISO	P									M			K		
Material Description	Non-alloy steel									Low alloy steel			High alloyed steel, and tool steel		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N									S			H		
Material Description	Aluminum-wrought alloy									Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)		
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
HB	60	100	75	90	130	110	90	100			200	280	250	350	320
Recommended	○	○	○	○	◎	○	○	○	○	○	○	○	○	○	○

MF ISO metric fine threads DIN 13
 Metrisches ISO-Feingewinde DIN 13
 ISO MÉTRIQUE PAS FINS DIN13
 ISO Metrico passo fine DIN 13

► Suitable for through hole in more cutting speed than other taps due to thick web.

► Geeignet für Durchgangslöcher in höherer Schnittgeschwindigkeit als bei anderen Gewindebohrern dank größerer Kerndicke.



Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.161

Unit : mm

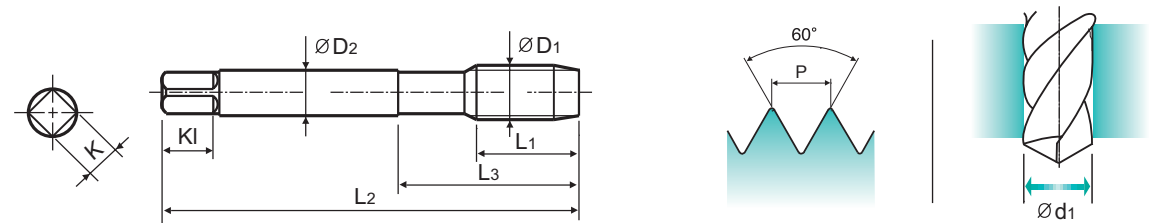
SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	TiN	L1	L2	L3	ØD2	K	KI	Z	Ød1
M4 × 0.5		TD222256	10	63	21	2.8	2.1	5	3	3.5
M5 × 0.5		TD222296	11	70	25	3.5	2.7	6	3	4.5
M6 × 0.75		TD222326	13	80	30	4.5	3.4	6	3	5.2
M6 × 0.5		TD222336	13	80	30	4.5	3.4	6	3	5.5
M7 × 0.75		TD222356	14	80	30	5.5	4.3	7	3	6.2
M8 × 1		TD222376	17	90	36	6	4.9	8	3	7
M8 × 0.75		TD222386	14	80	30	6	4.9	8	3	7.2
M8 × 0.5		TD222936	14	80	30	6	4.9	8	3	7.5
M10 × 1.25		TD222436	22	100	40	7	5.5	8	3	8.8
M10 × 1		TD222446	18	90	36	7	5.5	8	3	9
M10 × 0.75		TD222456	18	90	36	7	5.5	8	3	9.2
M12 × 1.5		TD222516	22	100	40	9	7	10	3	10.5
M12 × 1.25		TD222526	22	100	40	9	7	10	3	10.8
M12 × 1		TD222536	18	100	40	9	7	10	3	11
M14 × 1.5		TD222556	22	100	40	11	9	12	3	12.5
M14 × 1.25		TD222566	22	100	40	11	9	12	3	12.8
M14 × 1		TD222576	18	100	40	11	9	12	3	13
M16 × 1.5		TD222616	22	100	40	12	9	12	3	14.5

► NEXT PAGE

MF ISO metric fine threads DIN 13
 Metrisches ISO-Feingewinde DIN 13
 ISO MÉTRIQUE PAS FINS DIN13
 ISO Metrico passo fine DIN 13

► Suitable for through hole in more cutting speed than other taps due to thick web.

► Geeignet für Durchgangslöcher in höherer Schnittgeschwindigkeit als bei anderen Gewindebohrern dank größerer Kerndicke.



Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.161

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	TiN	L1	L2	L3	ØD2	K	KI	Z	Ød1
M16 × 1		TD222626	18	100	40	12	9	12	3	15
M18 × 1.5		TD222676	25	110	44	14	11	14	4	16.5
M18 × 1		TD222686	20	110	44	14	11	14	4	17
M20 × 1.5		TD222726	25	125	50	16	12	15	4	18.5
M20 × 1		TD222736	20	125	50	16	12	15	4	19
M22 × 1.5		TD222766	25	125	50	18	14.5	17	4	20.5
M22 × 1		TD222776	20	125	50	18	14.5	17	4	21
M24 × 2		TD222796	27	140	54	18	14.5	17	4	22
M24 × 1.5		TD222806	27	140	54	18	14.5	17	4	22.5
M26 × 1.5		TD222856	28	140	54	18	14.5	17	4	24.5
M27 × 2		TD222876	28	140	54	20	16	19	4	25
M27 × 1.5		TD222886	28	140	54	20	16	19	4	25.5
M28 × 1.5		TD222916	28	140	54	20	16	19	4	26.5
M30 × 2		TD222966	30	150	57	22	18	21	4	28
M30 × 1.5		TD222976	30	150	57	22	18	21	4	28.5

◎ : Excellent ○ : Good

ISO	P									M			K		
Material Description	Non-alloy steel									Low alloy steel			High alloyed steel, and tool steel		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N									S			H		
Material Description	Aluminum-wrought alloy									Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)		
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
HB	60	100	75	90	130	110	90	100			200	280	250	350	320
Recommended	○	○	○	○	◎	○	○	○	○	○	○	○	○	○	○

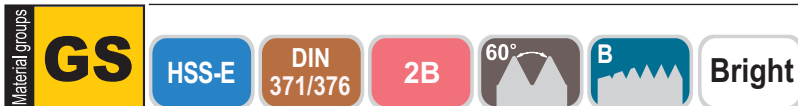
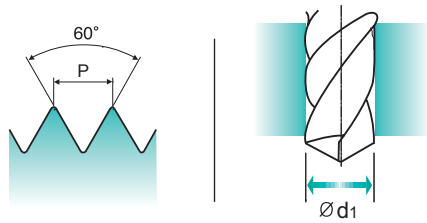
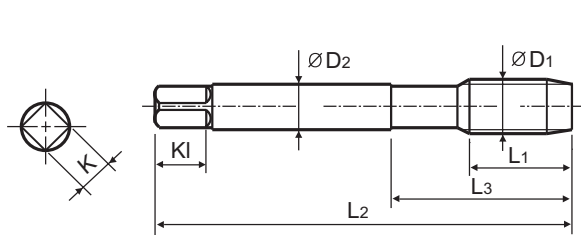
UNC

Unified coarse threads

Unified Grobgewinde
 UNC
 Unificato passo grosso

► Suitable for through hole in more cutting speed than other taps due to thick web.

► Geeignet für Durchgangslöcher in höherer Schnittgeschwindigkeit als bei anderen Gewindebohrern dank größerer Kerndicke.



Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.161

Unit : mm

SIZE	TPI	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1		Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
#4 - 40UNC		TC214162	11	56	18	3.5	2.7	6	3	2.3
#5 - 40UNC		TC214202	11	56	18	3.5	2.7	6	3	2.6
#6 - 32UNC		TC214242	12	56	20	4	3	6	3	2.85
#8 - 32UNC		TC214282	13	63	21	4.5	3.4	6	3	3.5
#10 - 24UNC		TC214322	15	70	25	6	4.9	8	3	3.9
#12 - 24UNC		TC214362	16	80	30	6	4.9	8	3	4.5
1/4 - 20UNC		TC214402	17	80	30	7	5.5	8	3	5.2
5/16 - 18UNC		TC214442	20	90	35	8	6.2	9	3	6.6
3/8 - 16UNC		TC214482	22	100	39	9	7	10	3	8
7/16 - 14UNC		TC214522	22	100	40	8	6.2	9	3	9.4
1/2 - 13UNC		TC214562	25	110	44	9	7	10	3	10.75
9/16 - 12UNC		TC214602	26	110	44	11	9	12	3	12.25
5/8 - 11UNC		TC214642	27	110	44	12	9	12	3	13.5
3/4 - 10UNC		TC214702	30	125	50	14	11	14	4	16.5
7/8 - 9UNC		TC214742	32	140	54	18	14.5	17	4	19.5
1 - 8UNC		TC214782	36	160	60	20	16	19	4	22.25
1-1/8 - 7UNC		TC214822	40	180	70	22	18	21	4	25

► DIN 371(#4~3/8) and DIN 376(7/16~1-1/8)

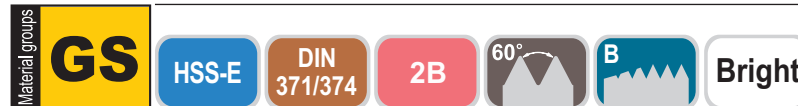
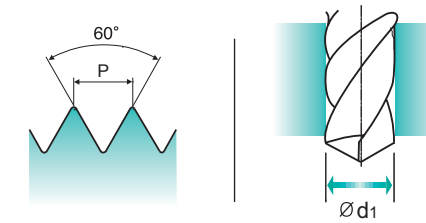
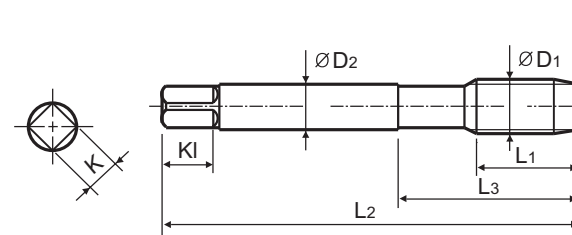
UNF

Unified fine threads

Unified Feingewinde
 UNF
 Unificato passo fine

► Suitable for through hole in more cutting speed than other taps due to thick web.

► Geeignet für Durchgangslöcher in höherer Schnittgeschwindigkeit als bei anderen Gewindebohrern dank größerer Kerndicke.



Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.161

Unit : mm

SIZE	TPI	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1		Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
#4 - 48UNF		TC234182	11	56	18	3.5	2.7	6	3	2.4
#5 - 44UNF		TC234222	11	56	18	3.5	2.7	6	3	2.7
#6 - 40UNF		TC234262	12	56	20	4	3	6	3	3
#8 - 36UNF		TC234302	13	63	21	4.5	3.4	6	3	3.5
#10 - 32UNF		TC234342	15	70	25	6	4.9	8	3	4.1
#12 - 28UNF		TC234382	16	80	30	6	4.9	8	3	4.7
1/4 - 28UNF		TC234422	17	80	30	7	5.5	8	3	5.5
5/16 - 24UNF		TC234462	17	90	35	8	6.2	9	3	6.9
3/8 - 24UNF		TC234502	18	100	39	9	7	10	3	8.5
7/16 - 20UNF		TC234542	22	100	40	8	6.2	9	3	9.9
1/2 - 20UNF		TC234582	22	100	40	9	7	10	3	11.5
9/16 - 18UNF		TC234622	22	100	40	11	9	12	3	12.9
5/8 - 18UNF		TC234662	22	100	40	12	9	12	3	14.5
3/4 - 16UNF		TC234722	25	110	44	14	11	14	4	17.5
7/8 - 14UNF		TC234762	26	125	50	18	14.5	17	4	20.5
1 - 12UNF		TC234802	28	140	54	18	14.5	17	4	23.25
1-1/8 - 12UNF		TC234842	30	150	60	22	18	21	4	26.5

► DIN 371(#4~3/8) and DIN 374(7/16~1-1/8)

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	○	◎	◎	○		○	○						◎	◎		
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34	55	60	42	55	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	○		○	○	◎	○		◎												

◎ : Excellent ○ : Good

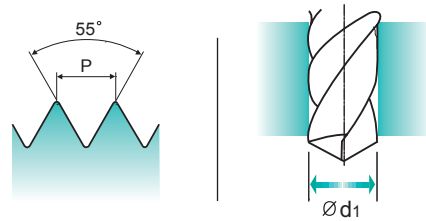
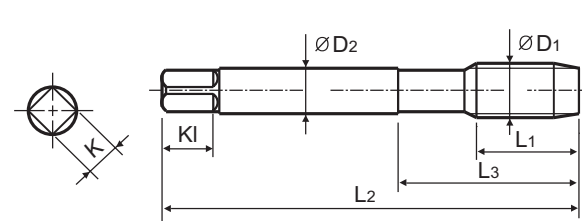
ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	○	◎	◎	○		○	○						◎	◎		
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34	55	60	42	55	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	○		○	○	◎	○		◎												

BSW Whitworth threads

Whitworth Gewinde
 BSW
 Filettatura Whitworth

► Suitable for through hole in more cutting speed than other taps due to thick web.

► Geeignet für Durchgangslöcher in höherer Schnittgeschwindigkeit als bei anderen Gewindebohrern dank größerer Kerndicke.



Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.161

Unit : mm

SIZE	TPI	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1		Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
W1/8 - 40		TC224200	11	56	18	3.5	2.7	6	3	2.5
W5/32 - 32		TC224280	13	63	21	4.5	3.4	6	3	3.1
W3/16 - 24		TC224320	15	70	25	6	4.9	8	3	3.6
W7/32 - 24		TC224360	16	80	30	6	4.9	8	3	4.4
W1/4 - 20		TC224400	17	80	30	7	5.5	8	3	5.1
W5/16 - 18		TC224440	20	90	35	8	6.2	9	3	6.5
W3/8 - 16		TC224480	22	100	39	9	7	10	3	7.9
W7/16 - 14		TC224520	22	100	40	8	6.2	9	3	9.3
W1/2 - 12		TC224560	25	110	44	9	7	10	3	10.5
W9/16 - 12		TC224600	26	110	44	11	9	12	3	12
W5/8 - 11		TC224640	27	110	44	12	9	12	3	13.5
W3/4 - 10		TC224700	30	125	50	14	11	14	4	16.5
W7/8 - 9		TC224740	32	140	54	18	14.5	17	4	19.25
W1 - 8		TC224780	36	160	60	20	16	19	4	22
W1-1/8 - 7		TC224820	40	180	65	22	18	21	4	24.75

► DIN 2182(W1/8~W3/8) and DIN 2183(W7/16~W1-1/8)

◎ : Excellent ○ : Good

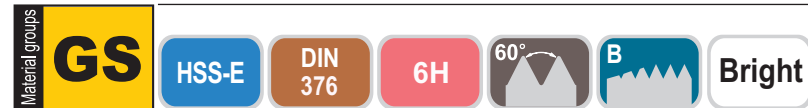
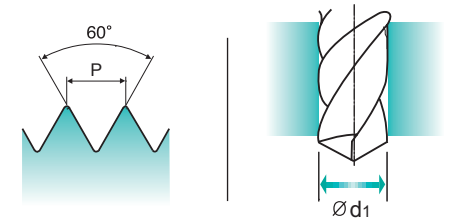
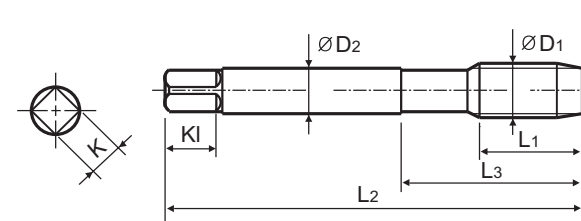
ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	○	◎	◎	○	○	○	○	○	○	○	○	○	◎	◎	○	○
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRC	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	○	○	○	○	◎	○	○	◎												

M ISO metric coarse threads DIN 13

Metrisches ISO-Gewinde DIN 13
 ISO MÉTRIQUE DIN13
 ISO Metrico passo grosso DIN 13

► Suitable for through hole in more cutting speed than other taps due to thick web.

► Geeignet für Durchgangslöcher in höherer Schnittgeschwindigkeit als bei anderen Gewindebohrern dank größerer Kerndicke.



Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.161

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
M3 × 0.5		TC227206	11	56	18	2.2	1.8	5	3	2.5
M3.5 × 0.6		TC227226	12	56	20	2.5	2.1	5	3	2.9
M4 × 0.7		TC227246	13	63	21	2.8	2.1	5	3	3.3
M4.5 × 0.75		TC227266	14	70	25	3.5	2.7	6	3	3.7
M5 × 0.8		TC227286	15	70	25	3.5	2.7	6	3	4.2
M6 × 1		TC227316	17	80	30	4.5	3.4	6	3	5
M7 × 1		TC227346	17	80	30	5.5	4.3	7	3	6
M8 × 1.25		TC227366	20	90	36	6	4.9	8	3	6.8
M9 × 1.25		TC227396	20	90	36	7	5.5	8	3	7.8
M10 × 1.5		TC227426	22	100	40	7	5.5	8	3	8.5
M11 × 1.5		TC227466	22	100	40	8	6.2	9	3	9.5
M12 × 1.75		TC227506	24	110	44	9	7	10	3	10.2
M14 × 2		TC227546	26	110	44	11	9	12	3	12
M16 × 2		TC227606	27	110	44	12	9	12	3	14
M18 × 2.5		TC227656	30	125	50	14	11	14	4	15.5
M20 × 2.5		TC227706	32	140	54	16	12	15	4	17.5
M22 × 2.5		TC227746	32	140	54	18	14.5	17	4	19.5
M24 × 3		TC227786	34	160	60	18	14.5	17	4	21
M27 × 3		TC227866	36	160	60	20	16	19	4	24
M30 × 3.5		TC227946	40	180	70	22	18	21	4	26.5

◎ : Excellent ○ : Good

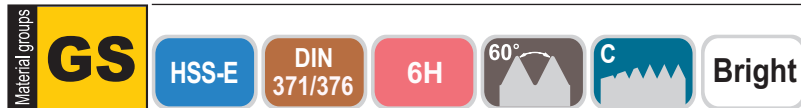
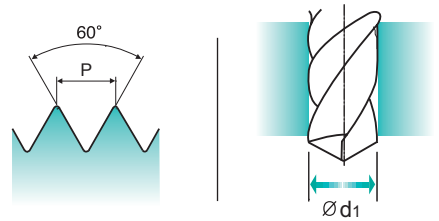
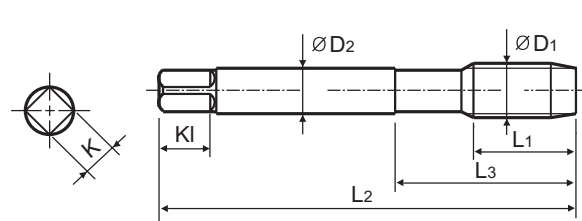
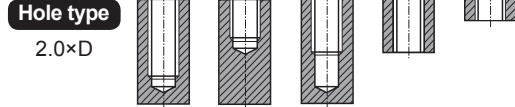
ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	○	◎	◎	○	○	○	○	○	○	○	○	○	◎	◎	○	○
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRC	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	○	○	○	○	◎	○	○	◎												

M ISO metric coarse threads DIN 13

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

► Suitable for tapping shallow holes and the blind holes having enough chip space at the bottom of holes.

► Geeignet zum Schneiden von kurzem Durchgangsgewinde und in Sacklöchern mit ausreichendem Raum für Späne am Bohrungsgrund.



Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.161

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
M2 × 0.4		TC463136	8	45	13	2.8	2.1	5	3	1.6
M2.2 × 0.45		TC463156	8	45	13	2.8	2.1	5	3	1.75
*M2.3 × 0.4		TC463196	8	45	13	2.8	2.1	5	3	1.9
M2.5 × 0.45		TC463176	9	50	15	2.8	2.1	5	3	2.05
*M2.6 × 0.45		TC463496	9	50	15	2.8	2.1	5	3	2.1
M3 × 0.5		TC463206	11	56	18	3.5	2.7	6	3	2.5
M3.5 × 0.6		TC463226	12	56	20	4	3	6	3	2.9
M4 × 0.7		TC463246	13	63	21	4.5	3.4	6	3	3.3
M4.5 × 0.75		TC463266	14	70	25	6	4.9	8	3	3.7
M5 × 0.8		TC463286	15	70	25	6	4.9	8	3	4.2
M6 × 1		TC463316	17	80	30	6	4.9	8	3	5
M7 × 1		TC463346	17	80	30	7	5.5	8	3	6
M8 × 1.25		TC463366	20	90	35	8	6.2	9	3	6.8
M9 × 1.25		TC463396	20	90	35	9	7	10	3	7.8
M10 × 1.5		TC463426	22	100	39	10	8	11	3	8.5
M11 × 1.5		TC463466	22	100	40	8	6.2	9	3	9.5
M12 × 1.75		TC463506	24	110	44	9	7	10	3	10.2
M14 × 2		TC463546	26	110	44	11	9	12	3	12
M16 × 2		TC463606	27	110	44	12	9	12	3	14
M18 × 2.5		TC463656	30	125	50	14	11	14	4	15.5
M20 × 2.5		TC463706	32	140	54	16	12	15	4	17.5
M22 × 2.5		TC463746	32	140	54	18	14.5	17	4	19.5
M24 × 3		TC463786	34	160	60	18	14.5	17	4	21
M27 × 3		TC463866	36	160	60	20	16	19	4	24
M30 × 3.5		TC463946	40	180	70	22	18	21	4	26.5

► DIN 371(M2~M10) and DIN 376(M11~M30)
► * DIN profile not ISO

◎ : Excellent ○ : Good

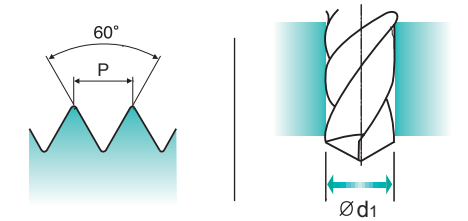
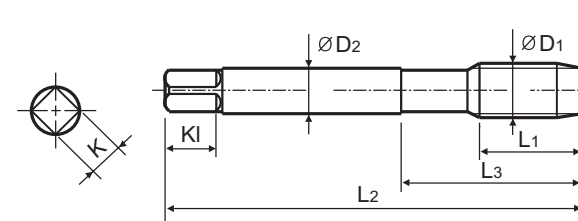
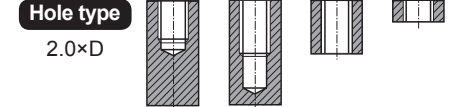
ISO	P										M					K								
Material Description	Non-alloy steel					Low alloy steel				High alloy steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron					
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
HRC		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21				
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230				
Recommended	○	○	○	○	○	○	○	○	○			○	○		○	○	○	○						
ISO	N										S										H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron		Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41			
HRC											15	30	25	38	34			55	60	42	55			
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550			
Recommended					○	○	○																	

MF ISO metric fine threads DIN 13

- Metrisches ISO-Feingewinde DIN 13
- ISO MÉTRIQUE PAS FINS DIN13
- ISO Metrico passo fine DIN 13

► Suitable for tapping shallow holes.

► Geeignet zum Gewindeschneiden flacher Sacklöcher.



Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.161

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
M4 × 0.5		TC473256	10	63	21	2.8	2.1	5	3	3.5
M5 × 0.5		TC473296	11	70	25	3.5	2.7	6	3	4.5
M6 × 0.75		TC473326	13	80	30	4.5	3.4	6	3	5.2
M6 × 0.5		TC473336	13	80	30	4.5	3.4	6	3	5.5
M7 × 0.75		TC473356	14	80	30	5.5	4.3	7	3	6.2
M8 × 1		TC473376	17	90	36	6	4.9	8	3	7
M8 × 0.75		TC473386	14	80	30	6	4.9	8	3	7.2
M8 × 0.5		TC473936	14	80	30	6	4.9	8	3	7.5
M10 × 1.25		TC473436	22	100	40	7	5.5	8	3	8.8
M10 × 1		TC473446	18	90	36	7	5.5	8	3	9
M10 × 0.75		TC473456	18	90	36	7	5.5	8	3	9.2
M12 × 1.5		TC473516	22	100	40	9	7	10	3	10.5
M12 × 1.25		TC473526	22	100	40	9	7	10	3	10.8
M12 × 1		TC473536	18	100	40	9	7	10	3	11
M14 × 1.5		TC473556	22	100	40	11	9	12	3	12.5
M14 × 1.25		TC473566	22	100	40	11	9	12	3	12.8
M14 × 1		TC473576	18	100	40	11	9	12	3	13
M16 × 1.5		TC473616	22	100	40	12	9	12	3	14.5
M18 × 1.5		TC473676	25	110	44	14	11	14	4	16.5
M20 × 1.5		TC473726	25	125	50	16	12	15	4	18.5
M22 × 1.5		TC473766	25	125	50	18	14.5	17	4	20.5
M24 × 1.5		TC473806	27	140	54	18	14.5	17	4	22.5

◎ : Excellent ○ : Good

ISO	P										M				K									
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel				Grey cast iron		Nodular cast iron		Malleable cast iron				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
HRc	13	23	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21					
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230				
Recommended	○	○	○	○	○	○	○	○	○			○	○		○	○	○	○						
ISO	N										S										H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron		Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41			
HRc											15	30	25	38	34			55	60	42	55			
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550			
Recommended					○	○	○																	

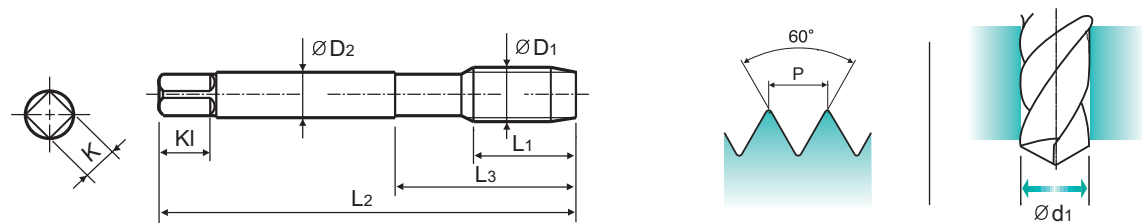
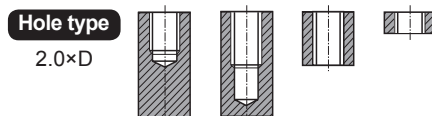
UNC

Unified coarse threads

Unified Grobgewinde
 UNC
 Unificato passo grosso

► Suitable for tapping shallow holes.

► Geeignet zum Gewindeschneiden flacher Sacklöcher.



Material groups **GS** **HSS-E** **DIN 371/376** **2B** **60°** **C** **Bright**

Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.161

Unit : mm

SIZE	TPI	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1		Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
#4 - 40UNC		TC424162	11	56	18	3.5	2.7	6	3	2.3
#5 - 40UNC		TC424202	11	56	18	3.5	2.7	6	3	2.6
#6 - 32UNC		TC424242	12	56	20	4	3	6	3	2.85
#8 - 32UNC		TC424282	13	63	21	4.5	3.4	6	3	3.5
#10 - 24UNC		TC424322	15	70	25	6	4.9	8	3	3.9
#12 - 24UNC		TC424362	16	80	30	6	4.9	8	3	4.5
1/4 - 20UNC		TC424402	17	80	30	7	5.5	8	3	5.2
5/16 - 18UNC		TC424442	20	90	35	8	6.2	9	3	6.6
3/8 - 16UNC		TC424482	22	100	39	9	7	10	3	8
7/16 - 14UNC		TC424522	22	100	40	8	6.2	9	3	9.4
1/2 - 13UNC		TC424562	25	110	44	9	7	10	3	10.75
9/16 - 12UNC		TC424602	26	110	44	11	9	12	3	12.25
5/8 - 11UNC		TC424642	27	110	44	12	9	12	3	13.5
3/4 - 10UNC		TC424702	30	125	50	14	11	14	4	16.5
7/8 - 9UNC		TC424742	32	140	54	18	14.5	17	4	19.5
1 - 8UNC		TC424782	36	160	60	20	16	19	4	22.25
1-1/8 - 7UNC		TC424822	40	180	70	22	18	21	4	25

► DIN 371(#4~3/8) and DIN 376(7/16~1- 1/8)

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			15	30	25	38	34	400Rm	1050Rm	550	630	400
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

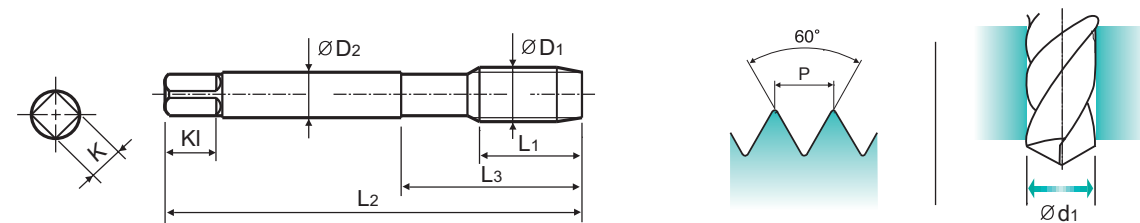
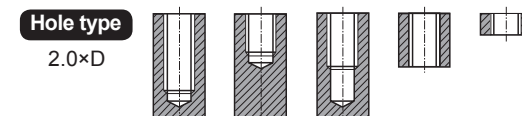
M

ISO metric coarse threads DIN 13

Metrisches ISO-Gewinde DIN 13
 ISO MÉTRIQUE DIN13
 ISO Metrico passo grosso DIN 13

► This tap is a serial hand tap in set, First, Second and Bottoming.
► Bottoming tap of set has final internal thread dimensions only.

► Dies ist ein Handgewindebohrer im Satz mit Vor-, Mittel- und Fertigsteiner.
► Nur der Fertigsteiner kann das gewünschte Gewinde schneiden



Material groups **GS** **HSS** **DIN 352** **6H** **60°** **I / II / III** **Bright**

Sets of taps
Gewindebohrer -Satz

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
M2 × 0.4		T7109139	8	36	13	2.8	2.1	5	3	1.6
M2.2 × 0.45		T7109159	9	36	13	2.8	2.1	5	3	1.75
*M2.3 × 0.4		T7109199	9	36	13	2.8	2.1	5	3	1.9
M2.5 × 0.45		T7109179	9	40	15	2.8	2.1	5	3	2.05
*M2.6 × 0.45		T7109499	9	40	15	2.8	2.1	5	3	2.1
M3 × 0.5		T7109209	11	40	18	3.5	2.7	6	3	2.5
M3.5 × 0.6		T7109229	13	45	21	4	3	6	3	2.9
M4 × 0.7		T7109249	13	45	21	4.5	3.4	6	3	3.3
M4.5 × 0.75		T7109269	16	50	25	6	4.9	8	3	3.7
M5 × 0.8		T7109289	16	52	26	6	4.9	8	3	4.2
M5.5 × 0.9		T7109N69	18	56	27	6	4.9	8	3	4.6
M6 × 1		T7109319	18	56	27	6	4.9	8	3	5
M7 × 1		T7109349	18	56	28.5	6	4.9	8	3	6
M8 × 1.25		T7109369	20	63	34	6	4.9	8	3	6.8
M9 × 1.25		T7109399	20	63	34	7	5.5	8	4	7.8
M10 × 1.5		T7109429	22	70	38	7	5.5	8	4	8.5
M11 × 1.5		T7109469	22	70	38	8	6.2	9	4	9.5
M12 × 1.75		T7109509	24	80	45	9	7	10	4	10.2
M14 × 2		T7109549	26	80	45	11	9	12	4	12
M16 × 2		T7109609	27	80	45	12	9	12	4	14
M18 × 2.5		T7109659	30	95	58	14	11	14	4	15.5
M20 × 2.5		T7109709	32	95	58	16	12	15	4	17.5

► *DIN profile not ISO

► NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			15	30	25	38	34	400Rm	1050Rm	550	630	400
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

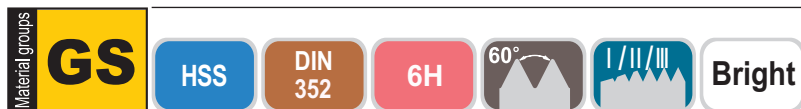
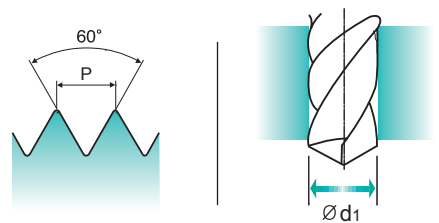
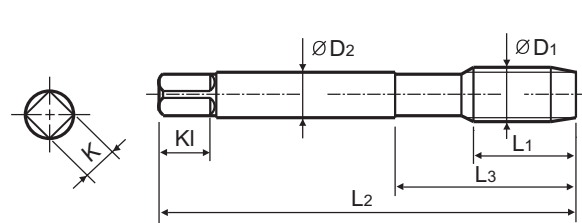
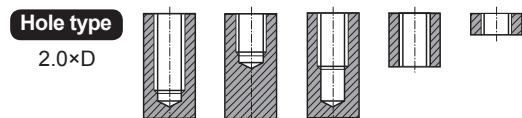
M ISO metric coarse threads DIN 13

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

- This tap is a serial hand tap in set, First, Second and Bottoming.
- Bottoming tap of set has final internal thread dimensions only.



- Dies ist ein Handgewindebohrer im Satz mit Vor-, Mittel- und Fertigschneider.
- Nur der Fertigschneider kann das gewünschte Gewinde schneiden.



Sets of taps
Gewindebohrer-Satz

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
M22 × 2.5		T7109749	32	100	62	18	14.5	17	4	19.5
M24 × 3		T7109789	34	110	69	18	14.5	17	4	21
M27 × 3		T7109869	36	110	69	20	16	19	4	24
M30 × 3.5		T7109949	40	125	77	22	18	21	4	26.5
M33 × 3.5		T7109A49	40	125	77	25	20	23	4	29.5
M36 × 4		T7109B39	50	150	88	28	22	25	4	32
M39 × 4		T7109C09	50	150	88	32	24	27	4	35
M42 × 4.5		T7109C89	56	150	88	32	24	27	4	37.5
M45 × 4.5		T7109D59	58	160	93	36	29	32	4	40.5
M48 × 5		T7109E29	65	180	102	36	29	32	4	43
M52 × 5		T7109F39	65	180	102	40	32	35	4	47

►*DIN profile not ISO

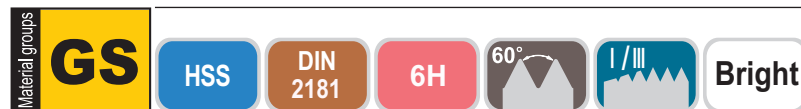
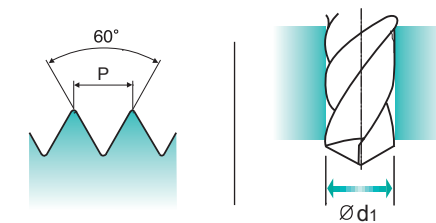
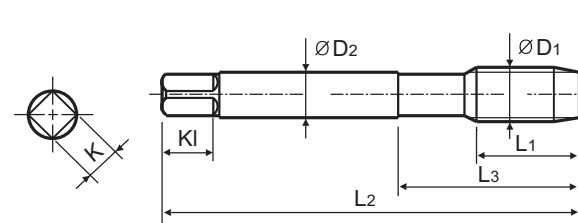
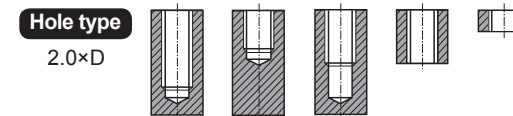
MF ISO metric fine threads DIN 13

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE PAS FINS DIN13
- ISO Metrico passo fine DIN 13

- This tap is a serial hand tap in set, First and Bottoming.
- Bottoming tap of set has final internal thread dimensions only.



- Handgewindebohrersatz mit Vor- und Fertigschneider.
- Nur der Fertigschneider kann das gewünschte Gewinde schneiden.



Sets of taps
Gewindebohrer-Satz

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
M3 × 0.35		T7309219	9	40	18	3.5	2.7	6	3	2.65
M4 × 0.5		T7309259	10	45	18	4.5	3.4	6	3	3.5
M5 × 0.5		T7309299	13	52	22	6	4.9	8	3	4.5
M6 × 0.75		T7309329	14	56	24	6	4.9	8	3	5.2
M6 × 0.5		T7309339	13	56	24	6	4.9	8	3	5.5
M7 × 0.75		T7309359	14	56	27	6	4.9	8	3	6.2
M8 × 1		T7309379	17	63	27	6	4.9	8	3	7
M8 × 0.75		T7309389	14	63	27	6	4.9	8	3	7.2
M8 × 0.5		T7309939	14	63	27	6	4.9	8	3	7.5
M9 × 1		T7309409	17	63	27	7	5.5	8	4	8
M10 × 1.25		T7309439	22	70	32	7	5.5	8	4	8.8
M10 × 1		T7309449	18	63	27	7	5.5	8	4	9
M10 × 0.75		T7309459	18	63	27	7	5.5	8	4	9.2
M11 × 1		T7309479	18	63	27	8	6.2	9	4	10
M12 × 1.5		T7309519	20	70	32	9	7	10	4	10.5
M12 × 1.25		T7309529	20	70	32	9	7	10	4	10.8
M12 × 1		T7309539	18	70	32	9	7	10	4	11
M13 × 1.5		T7309N19	20	70	32	11	9	12	4	11.5
M13 × 1		T7309N29	18	70	32	11	9	12	4	12
M14 × 1.5		T7309559	20	70	32	11	9	12	4	12.5
M14 × 1.25		T7309569	20	70	32	11	9	12	4	12.8
M14 × 1		T7309579	18	70	32	11	9	12	4	13
M15 × 1.5		T7309589	20	70	32	12	9	12	4	13.5
M15 × 1		T7309599	18	70	32	12	9	12	4	14
M16 × 1.5		T7309619	20	70	32	12	9	12	4	14.5

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◎ : Excellent ○ : Good

																				◎ : Excellent ○ : Good			
ISO	P										M					K							
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
HRc	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21					
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230			
Recommended	○	○	○	○		○	○										○	○					
ISO	N										S							H					
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron			
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41		
HRc											15	30	25	38	34			55	60	42	55		
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550		
Recommended					○	○	○																

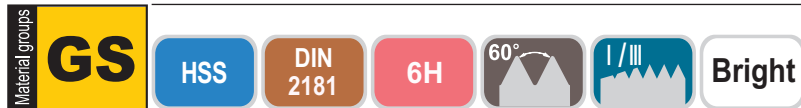
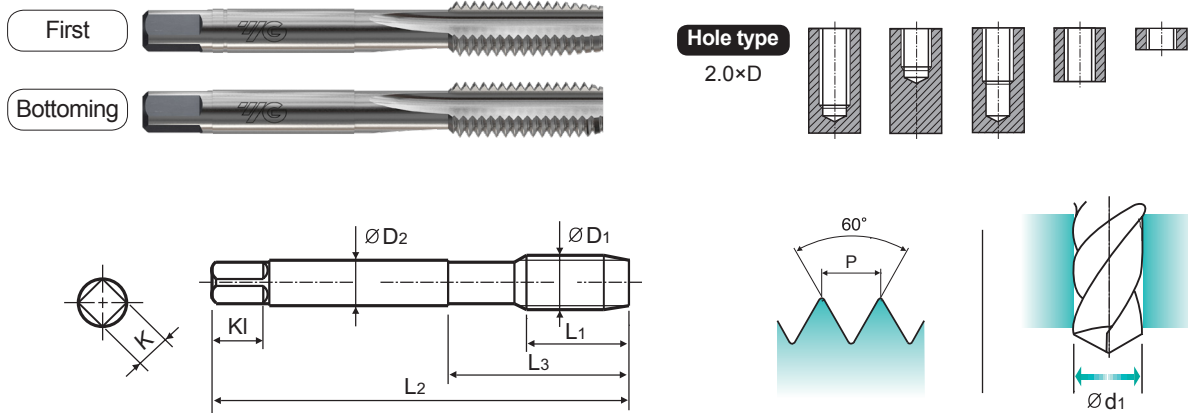
																				◎ : Excellent ○ : Good			
ISO	P										M					K							
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
HRc	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21					
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230			
Recommended	○	○	○	○		○	○										○	○					
ISO	N										S					H							
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials		Heat Resistant Super Alloys			Titanium Alloys		Hardened steel		Chilled Cast Iron		Hardened Cast Iron		
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41		
HRc											15	30	25	38	34	36	37	55	60	42	55		
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550		
Recommended					○	○	○																

MF ISO metric fine threads DIN 13

Metrisches ISO-Feingewinde DIN 13
 ISO MÉTRIQUE PAS FINS DIN 13
 ISO Metrico passo fine DIN 13

- ▶ This tap is a serial hand tap in set, First and Bottoming.
 ▶ Bottoming tap of set has final internal thread dimensions only.

- ▶ Handgewindebohrersatz mit Vor- und Fertigschneider.
 ▶ Nur der Fertigschneider kann das gewünschte Gewinde schneiden.



Sets of taps
Gewindebohrer-Satz

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Bright	L1	L2	L3	ØD2	K	K1	Z	Ød1
M16 × 1		T7309629	18	70	32	12	9	12	4	15
M18 × 2		T7309669	22	80	35	14	11	14	4	16
M18 × 1.5		T7309679	22	80	35	14	11	14	4	16.5
M18 × 1		T7309689	18	80	35	14	11	14	4	17
M20 × 2		T7309719	22	80	35	16	12	15	4	18
M20 × 1.5		T7309729	22	80	35	16	12	15	4	18.5
M20 × 1		T7309739	18	80	35	16	12	15	4	19
M22 × 2		T7309759	22	80	35	18	14.5	17	4	20
M22 × 1.5		T7309769	22	80	35	18	14.5	17	4	20.5
M22 × 1		T7309779	18	80	35	18	14.5	17	4	21
M24 × 2		T7309799	22	90	40	18	14.5	17	4	22
M24 × 1.5		T7309809	22	90	40	18	14.5	17	4	22.5
M24 × 1		T7309819	18	90	40	18	14.5	17	4	23
M25 × 1.5		T7309839	22	90	40	18	14.5	17	4	23.5
M25 × 1		T7309849	18	90	40	18	14.5	17	4	24
M26 × 1.5		T7309859	22	90	40	18	14.5	17	4	24.5
M26 × 1		T7309N59	18	90	40	18	14.5	17	4	25
M27 × 2		T7309879	22	90	40	20	16	19	4	25
M27 × 1.5		T7309889	22	90	40	20	16	19	4	25.5
M27 × 1		T7309899	18	90	40	20	16	19	4	26
M28 × 2		T7309909	22	90	40	20	16	19	4	26
M28 × 1.5		T7309919	22	90	40	20	16	19	4	26.5
M30 × 2		T7309969	22	90	40	22	18	21	4	28
M30 × 1.5		T7309979	22	90	40	22	18	21	4	28.5
M30 × 1		T7309989	18	90	40	22	18	21	4	29

◎ : Excellent ○ : Good

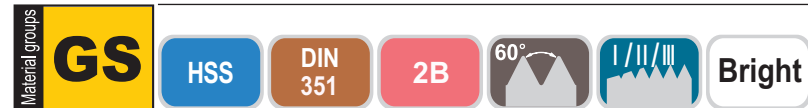
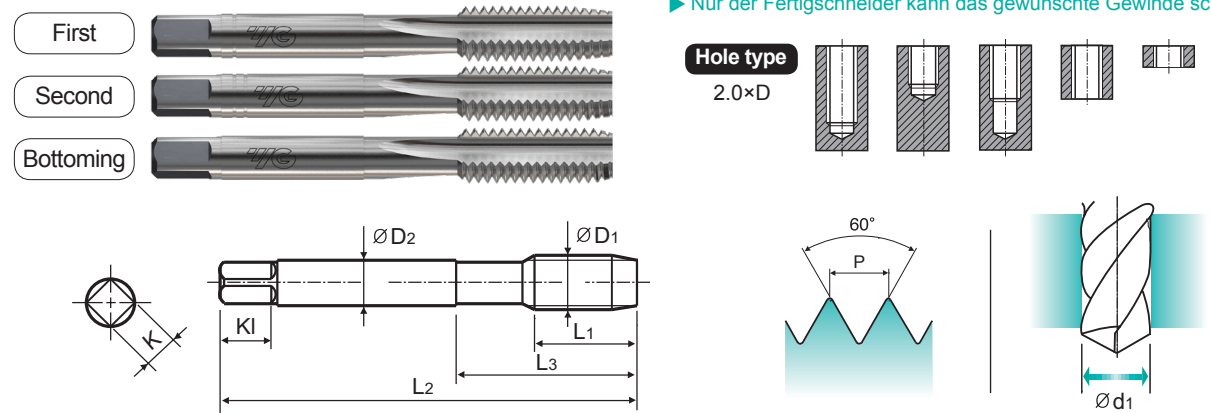
ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRC	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

UNC Unified coarse threads

Unified Grobgewinde
 UNC
 Unificato passo grosso

- ▶ This tap is a serial hand tap in set, First, Second and Bottoming.
 ▶ Bottoming tap of set has final internal thread dimensions only.

- ▶ Dies ist ein Handgewindebohrer im Satz mit Vor-, Mittel- und Fertigschneider.
 ▶ Nur der Fertigschneider kann das gewünschte Gewinde schneiden.



Sets of taps
Gewindebohrer-Satz

Unit : mm

SIZE	TPI	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1		Bright	L1	L2	L3	ØD2	K	K1	Z	Ød1
#2 - 56UNC		T7363089	9	36	13	2.8	2.1	5	3	1.8
#3 - 48UNC		T7363129	10	40	15	2.8	2.1	5	3	2.1
#4 - 40UNC		T7363169	10	42	18	3.5	2.7	6	3	2.3
#5 - 40UNC		T7363209	10	42	18	3.5	2.7	6	3	2.6
#6 - 32UNC		T7363249	11	45	18	4	3	6	3	2.85
#8 - 32UNC		T7363289	12	48	23	4.5	3.4	6	3	3.5
#10 - 24UNC		T7363329	14	52	26	6	4.9	6	3	3.9
#12 - 24UNC		T7363369	16	56	27	6	4.9	8	3	4.5
1/4 - 20UNC		T7363409	16	56	27	6	4.9	8	3	5.2
5/16 - 18UNC		T7363449	20	63	34	6	4.9	8	3	6.6
3/8 - 16UNC		T7363489	22	70	38	7	5.5	8	4	8
7/16 - 14UNC		T7363529	22	70	38	8	6.2	9	4	9.4
1/2 - 13UNC		T7363569	25	80	45	9	7	10	4	10.75
9/16 - 12UNC		T7363609	26	80	45	11	9	12	4	12.25
5/8 - 11UNC		T7363649	27	90	55	12	9	12	4	13.5
3/4 - 10UNC		T7363709	32	105	65	14	11	14	4	16.5
7/8 - 9UNC		T7363749	32	110	69	18	14.5	17	4	19.5
1 - 8UNC		T7363789	36	110	69	20	16	19	4	22.25
1-1/8 - 7UNC		T7363829	40	125	77	22	18	21	4	25
1-1/4 - 7UNC		T7363869	40	125	77	25	20	23	4	28.25
1-1/8 - 6UNC		T7363909	50	150	88	28	22	25	4	30.75
1-1/2 - 6UNC		T7363949	50	150	88	32	24	27	4	34
1-3/4 - 5UNC		T7363B89	58	160	93	36	29	32	4	39.5
2 - 4½UNC		T7363D29	65	180	102	40	32	35	4	45.25

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRC	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

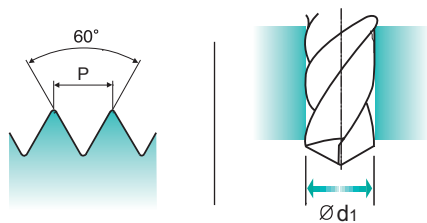
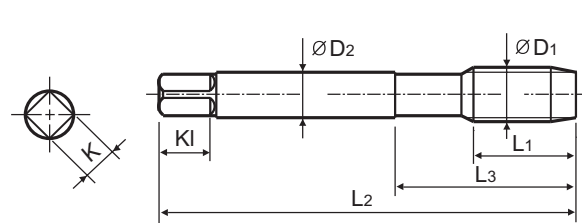
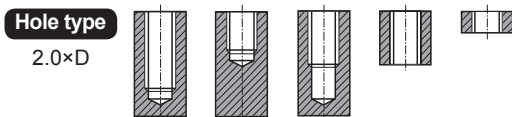
UNF

Unified fine threads

- Unified Feingewinde
- UNF
- Unificato passo fine

► This tap is a serial hand tap in set, First and Bottoming.
► Bottoming tap of set has final internal thread dimensions only.

► Handgewindebohrersatz mit Vor- und Fertigschneider.
► Nur der Fertigschneider kann das gewünschte Gewinde schneiden.



Sets of taps
Gewindebohrer-Satz

Unit : mm

SIZE	TPI	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1		Bright	L1	L2	L3	ØD2	K	K1	Z	Ød1
#4 - 48 UNF		T7509189	10	42	18	3.5	2.7	6	3	2.4
#5 - 44 UNF		T7509229	10	42	18	3.5	2.7	6	3	2.7
#6 - 40 UNF		T7509269	11	45	18	4	3	6	3	3
#8 - 36 UNF		T7509309	12	48	23	4.5	3.4	6	3	3.5
#10 - 32 UNF		T7509349	14	52	22	6	4.9	8	3	4.1
#12 - 28 UNF		T7509389	16	56	24	6	4.9	8	3	4.7
1/4 - 28 UNF		T7509429	16	56	24	6	4.9	8	3	5.5
5/16 - 24 UNF		T7509469	17	63	27	6	4.9	8	3	6.9
3/8 - 24 UNF		T7509509	18	63	27	7	5.5	8	4	8.5
7/16 - 20 UNF		T7509549	20	70	32	8	6.2	9	4	9.9
1/2 - 20 UNF		T7509589	20	70	32	9	7	10	4	11.5
9/16 - 18 UNF		T7509629	20	70	32	11	9	12	4	12.9
5/8 - 18 UNF		T7509669	20	70	32	12	9	12	4	14.5
3/4 - 16 UNF		T7509729	22	80	38	14	11	14	4	17.5
7/8 - 14 UNF		T7509769	22	80	38	18	14.5	17	4	20.5
1 - 12 UNF		T7509809	22	90	40	18	14.5	17	4	23.25
1-1/8 - 12 UNF		T7509849	22	90	40	22	18	21	4	26.5

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRC	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			15	30	25	38	34	400Rm	1050Rm	550	630	400
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

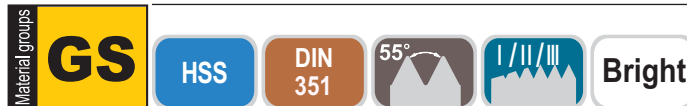
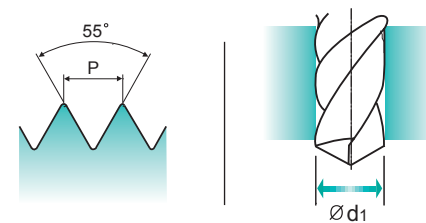
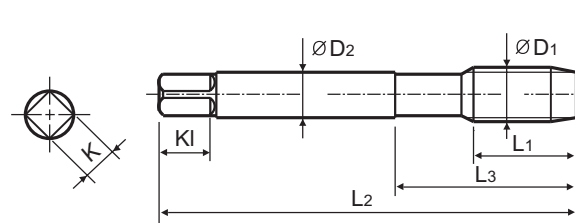
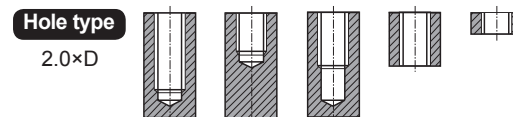
BSW

Whitworth threads

- Whitworth Gewinde
- BSW
- Filettatura Whitworth

► This tap is a serial hand tap in set, First, Second and Bottoming.
► Bottoming tap of set has final internal thread dimensions only.

► Dies ist ein Handgewindebohrer im Satz mit Vor-, Mittel- und Fertigschneider.
► Nur der Fertigschneider kann das gewünschte Gewinde schneiden.



Sets of taps
Gewindebohrer-Satz

Unit : mm

SIZE	TPI	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1		Bright	L1	L2	L3	ØD2	K	K1	Z	Ød1
W3/32 - 48		T7609129	10	40	15	2.8	2.1	5	3	1.8
W1/8 - 40		T7609209	10	42	18	3.5	2.7	6	3	2.5
W5/32 - 32		T7609289	12	48	23	4.5	3.4	6	3	3.1
W3/16 - 24		T7609329	14	52	26	6	4.9	8	3	3.6
W7/32 - 24		T7609369	16	56	27	6	4.9	8	3	4.4
W1/4 - 20		T7609409	16	56	27	6	4.9	8	3	5.1
W5/16 - 18		T7609449	20	63	34	6	4.9	8	3	6.5
W3/8 - 16		T7609489	22	70	38	7	5.5	8	4	7.9
W7/16 - 14		T7609529	22	70	38	8	6.2	9	4	9.3
W1/2 - 12		T7609569	25	80	45	9	7	10	4	10.5
W9/16 - 12		T7609609	26	80	45	11	9	12	4	12
W5/8 - 11		T7609649	27	90	55	12	9	12	4	13.5
W3/4 - 10		T7609709	32	105	65	14	11	14	4	16.5
W7/8 - 9		T7609749	32	110	69	18	14.5	17	4	19.25
W1 - 8		T7609789	36	110	69	20	16	19	4	22
W1-1/8 - 7		T7609829	40	125	77	22	18	21	4	24.75
W1-1/4 - 7		T7609869	40	125	77	25	20	23	4	27.75
W1-3/8 - 6		T7609909	50	150	88	28	22	25	4	30.5
W1-1/2 - 6		T7609949	50	150	88	32	24	27	4	33.5
W1-5/8 - 5		T7609989	56	150	88	32	24	27	4	35.5
W1-3/4 - 5		T7609889	58	160	93	36	29	32	4	39
W1-7/8 - 4½		T7609829	65	180	102	36	29	32	4	41.5
W2 - 4½		T7609829	65	180	102	40	32	35	4	44.5

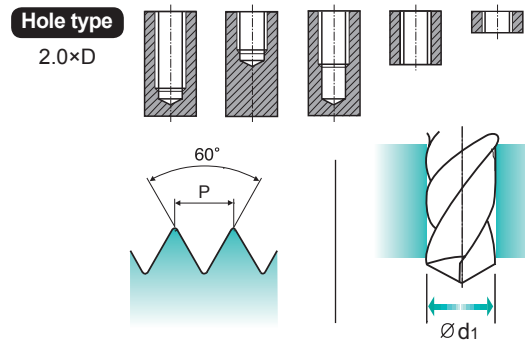
ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRC	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			15	30	25	38	34	400Rm	1050Rm	550	630	400
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

M-LH ISO metric coarse threads DIN 13

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

- This tap is a serial hand tap in set, First, Second and Bottoming.
- Bottoming tap of set has final internal thread dimensions only.

- Dies ist ein Handgewindebohrer im Satz mit Vor-, Mittel- und Fertigschneider.
- Nur der Fertigschneider kann das gewünschte Gewinde schneiden.



Sets of taps
Gewindebohrer-Satz

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Bright	L1	L2	L3	ØD2	K	K1	Z	Ød1
M3 × 0.5		T7343209	11	40	18	3.5	2.7	6	3	2.5
M3.5 × 0.6		T7343229	13	45	21	4	3	6	3	2.9
M4 × 0.7		T7343249	13	45	21	4.5	3.4	6	3	3.3
M4.5 × 0.75		T7343269	16	50	25	6	4.9	8	3	3.7
M5 × 0.8		T7343289	16	52	26	6	4.9	8	3	4.2
M6 × 1		T7343319	18	56	27	6	4.9	8	3	5
M8 × 1.25		T7343369	20	63	34	6	4.9	8	3	6.8
M10 × 1.5		T7343429	22	70	38	7	5.5	8	4	8.5
M12 × 1.75		T7343509	24	80	45	9	7	10	4	10.2
M14 × 2		T7343549	26	80	45	11	9	12	4	12
M16 × 2		T7343609	27	80	45	12	9	12	4	14
M18 × 2.5		T7343659	30	95	58	14	11	14	4	15.5
M20 × 2.5		T7343709	32	95	58	16	12	15	4	17.5
M22 × 2.5		T7343749	32	100	62	18	14.5	17	4	19.5
M24 × 3		T7343789	34	110	69	18	14.5	17	4	21
M27 × 3		T7343869	36	110	69	20	16	19	4	24
M30 × 3.5		T7343949	40	125	77	22	18	21	4	26.5

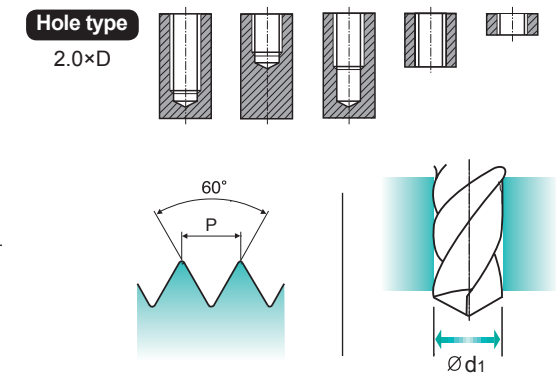
► LH=Left hand thread

M ISO metric coarse threads DIN 13

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

- This tap is a serial hand tap in set, First, Second and Bottoming.
- Bottoming tap of set has final internal thread dimensions only.

- Dies ist ein Handgewindebohrer im Satz mit Vor-, Mittel- und Fertigschneider.
- Nur der Fertigschneider kann das gewünschte Gewinde schneiden.



Sets of taps
Gewindebohrer-Satz

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Vap	L1	L2	L3	ØD2	K	K1	Z	Ød1
M3 × 0.5		TB373209	11	40	18	3.5	2.7	6	3	2.5
M3.5 × 0.6		TB373229	13	45	21	4	3	6	3	2.9
M4 × 0.7		TB373249	13	45	21	4.5	3.4	6	3	3.3
M4.5 × 0.75		TB373269	16	50	25	6	4.9	8	3	3.7
M5 × 0.8		TB373289	16	52	26	6	4.9	8	3	4.2
M6 × 1		TB373319	18	56	27	6	4.9	8	3	5
M8 × 1.25		TB373369	20	63	34	6	4.9	8	3	6.8
M10 × 1.5		TB373429	22	70	38	7	5.5	8	4	8.5
M12 × 1.75		TB373509	24	80	45	9	7	10	4	10.2
M14 × 2		TB373549	26	80	45	11	9	12	4	12
M16 × 2		TB373609	27	80	45	12	9	12	4	14
M18 × 2.5		TB373659	30	95	58	14	11	14	4	15.5
M20 × 2.5		TB373709	32	95	58	16	12	15	4	17.5

► First with pilot guide

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

◎ : Excellent ○ : Good

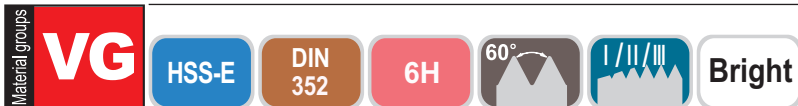
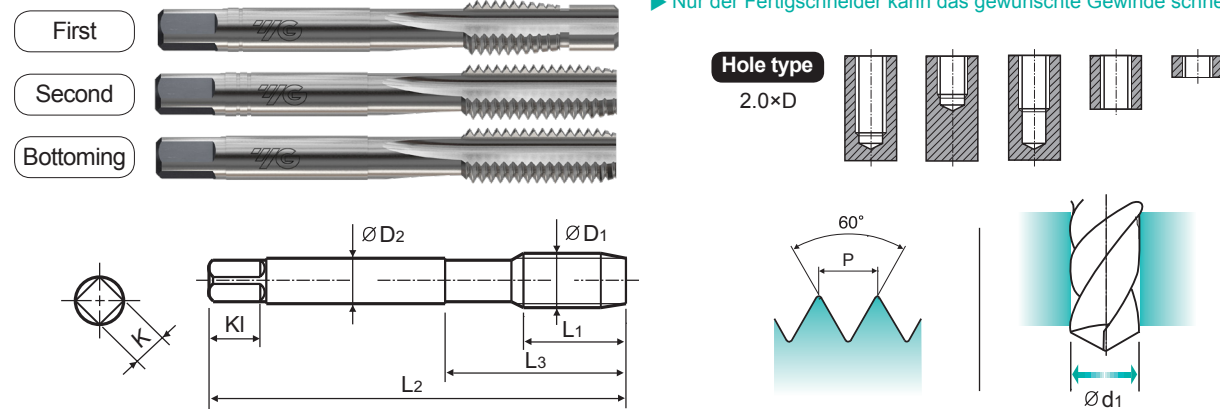
ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

M ISO metric coarse threads DIN 13

Metrisches ISO-Gewinde DIN 13
 ISO MÉTRIQUE DIN13
 ISO Metrico passo grosso DIN 13

- ▶ This tap is a serial hand tap in set, First, Second and Bottoming.
 ▶ Bottoming tap of set has final internal thread dimensions only..

▶ Dies ist ein Handgewindebohrer im Satz mit Vor-, Mittel- und Fertigschneider.
 ▶ Nur der Fertigschneider kann das gewünschte Gewinde schneiden.



Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1
M3	× 0.5	TC353209	11	40	18	3.5	2.7	6	3	2.5
M3.5	× 0.6	TC353229	13	45	21	4	3	6	3	2.9
M4	× 0.7	TC353249	13	45	21	4.5	3.4	6	3	3.3
M4.5	× 0.75	TC353269	16	50	25	6	4.9	8	3	3.7
M5	× 0.8	TC353289	16	52	26	6	4.9	8	3	4.2
M6	× 1	TC353319	18	56	27	6	4.9	8	3	5
M8	× 1.25	TC353369	20	63	34	6	4.9	8	3	6.8
M10	× 1.5	TC353429	22	70	38	7	5.5	8	4	8.5
M12	× 1.75	TC353509	24	80	45	9	7	10	4	10.2
M14	× 2	TC353549	26	80	45	11	9	12	4	12
M16	× 2	TC353609	27	80	45	12	9	12	4	14
M18	× 2.5	TC353659	30	95	58	14	11	14	4	15.5
M20	× 2.5	TC353709	32	95	58	16	12	15	4	17.5

▶ First with pilot guide

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	230
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

					TC711 TC411 TC144 TC124 TC134	TD711 TD411	TC517 TC612	TC127 TC122 TC222 TC214 TC234 TC224	TD127 TD222	TC227	TD227	TC211	TC463 TC473 TC424
ISO	VDI 3323	Material Description	HB	HRc	Vc (m/min)								
P	1	Non-alloy steel	125		15-20	20-25	15-20	15-20	20-25	15-20	20-25	15-20	15-20
	2		190	13	15-20	20-25	15-20	15-20	20-25	15-20	20-25	15-20	15-20
	3		250	25	12-18	18-24	12-18	12-18	18-24	12-18	18-24	12-18	12-18
	4		270	28	10-15	15-20	10-15	10-15	15-20	10-15	15-20	10-15	10-15
	5		300	32	6-10	10-14	6-10	6-10	10-14	6-10	10-14	6-10	6-10
	6	Low alloy steel	180	10	10-15	15-20	10-15	10-15	15-20	10-15	15-20	10-15	10-15
	7		275	29	10-15	15-20	10-15	10-15	15-20	10-15	15-20	10-15	10-15
	8		300	32	6-10	10-14	6-10	6-10	10-14	6-10	10-14	6-10	6-10
	9		350	38									
	10	High alloyed steel, and tool steel	200	15									
	11		325	35									
M	12	Stainless steel	200	15	7-10	10-13	7-10	7-10	10-13	7-10	10-13	7-10	7-10
	13		240	23	5-8	8-11	5-8	5-8	8-11	5-8	8-11	5-8	5-8
	14		180	10									
K	15	Grey cast iron	180	10									10-15
	16		260	26									5-8
	17	Nodular cast iron	160	3	10-15	15-20	10-15	10-15	15-20	10-15	15-20	10-15	10-15
	18		250	25	5-8	8-11	5-8	5-8	8-11	5-8	8-11	5-8	5-8
	19	Malleable cast iron	130										
	20		230	21									
N	21	Aluminum-wrought alloy	60		10-15	15-20	10-15	10-15	15-20	10-15	15-20	10-15	
	22		100										
	23	Aluminum-cast, alloyed	75		15-20	20-25	15-20	15-20	20-25	15-20	20-25	15-20	
	24		90		15-20	20-25	15-20	15-20	20-25	15-20	20-25	15-20	
	25		130		10-15	15-20	10-15	10-15	15-20	10-15	15-20	10-15	10-15
	26	Copper and Copper Alloys (Bronze / Brass)	110		25-35	35-40	25-35	25-35	35-40	25-35	35-40	25-35	25-35
	27		90										8-12
	28		100		15-20	20-25	15-20	15-20	20-25	15-20	20-25	15-20	
	29	Non Metallic Materials											
	30												
S	31	Heat Resistant Super Alloys	200	15									
	32		280	30									
	33		250	25									
	34		350	38									
	35		320	34									
	36	Titanium Alloys	400 Rm										
	37		1050 Rm										
H	38	Hardened steel	550	55									
	39		630	60									
	40	Chilled Cast Iron	400	42									
	41	Hardened Cast Iron	550	55									