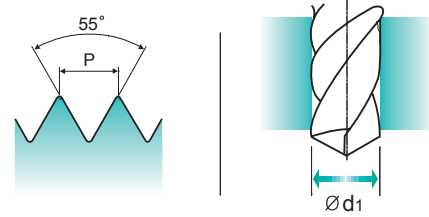
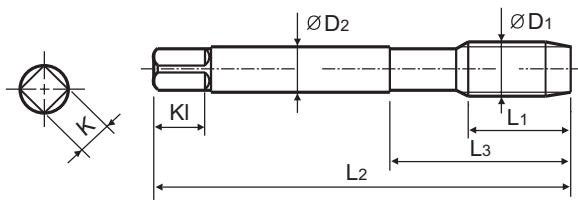


BSW Whitworth threads
 ● Whitworth Gewinde
 ○ BSW
 ○ Filettatura Whitworth

► 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.



Material groups: **GS** HSS-E DIN 2182/2183 55° B 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
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						
	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	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										
	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	○		○	○	◎	○		◎													



RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDKONDITIONEN

ISO	VDI 3323	Material Description	HB	HRC	TC711	TD711	TC517	TC127	TD127	TC227	TD227	TC211	TC463
					TC411			TC222					TC473
					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		110		25-35	35-40	25-35	25-35	35-40	25-35	35-40	25-35	25-35
	27	Copper and Copper Alloys (Bronze / Brass)	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									

SURFACE TREATMENT AND COATING

The applied High Speed Steels holds a grant of good wear resistance and toughness. Therefore YG-1 normally delivers taps with bright and unfinished surface. For certain materials, various surface treatments provide higher advantage in machining.

STEAM TEMPERED - Vap

Steam Tempered is a Fe₃O₄-oxyd-coating which reduces friction between the tool and workpiece, also preventing cold welding.

NITRIDING - NI

Recommend surface treatment for machining materials that affect wear abrasion, such as grey cast iron, alu-alloys with high Si-percentages (more than 10%).

Below are the various surface treatments for excellent finish surfaces suitable for many applications. The surface treatments are produced and developed within the company.

TiN-COATING

TiN-coating yields a hardness of approx. 2,300 HV and also a heat resistant up to approx. 600°C. The current coating is an excellent all-round coating for normal applications.

Colour : Golden Coefficient of friction against steel : 0.4

TiCN-COATING

TiCN takes place of TiN when the conditions require the coating to have a different hardness and toughness.

The TiCN brings advantages for machining very difficult steels or cutting interrupted bores.

The TiCN-coating has a hardness of approx. 3,000 HV, but is heat resistance only holds up to approx. 400°C, meaning that the TiCN needs an excellent cooling system for a long service life.

Colour : Blue-Grey Coefficient of friction against steel : 0.4

TiAlN-COATING

A special coating for machining abrasive materials such as grey cast iron, alu-alloys with silicon, fiber reinforced plastics, etc., or machining at high temperatures with insufficient cooling, or at high speeds ≥ 600 m/min. TiAlN has a hardness of approx. 3,000 HV and is heat resistant up to approx. 800°C.

Colour : Violet-Grey Coefficient of friction against steel : 0.4

Hardslick-COATING

Hardslick combines the advantages of an extremely hard, thermally stable TiAlN-coating with the sliding and lubricating properties of an outer WC/C(Tungsten carbide/carbon)-coating in a novel way. The Hardslick coating has a hardness of approx. 3,000 HV and is temperature-resistant up to approx. 800°C.

Colour : Violet-Grey Coefficient of friction against steel : 0.2

SELECTION GUIDE



**HSS & HSS-E
YG TAP
GENERAL**

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



Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P.161

HOLE TYPE		Max. 2.5xD Blind Hole			
TOOL MATERIAL		HSS-E			
CHAMFER LEAD ACC. TO DIN2197		C	C	C	
FLUTE TYPE		Spiral Flute	Spiral Flute	Spiral Flute	
SPIRAL FLUTE ANGLE		R40	R40	R20	
SERIES	M	DIN371/376	TC711 (P.124)	TD711 (P.125)	TC517 (P.133) TC612 (P.134)
		DIN352			
		DIN357/LONG			
	MF	DIN374	TC411 (P.126)	TD411 (P.128)	
		DIN2181			
	UNC	DIN371/376	TC144 (P.130)		
		DIN351			
	UNF	DIN371/374	TC124 (P.131)		
		DIN2181			
	BSW	DIN2182/2183	TC134 (P.132)		
		DIN351			
	G(BSP)	DIN5156/5157			
	EG-M	DIN371/376			
	EG-UNC	DIN371/376			
EG-UNF	DIN371/374				
SURFACE TREATMENT		Bright	TIN	Bright	
MODEL					

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		Ferritic		130				
20	Malleable cast iron	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		Cutting Alloys, PB>1%		110		○	○	○
	27	Copper and Copper Alloys (Bronze / Brass)	CuZn, CuSnZn (Brass)		90				
	28		CuSn, lead-free copper and electrolytic copper		100		◎	◎	◎
	29		Duroplastic, Fiber Reinforced Plastic						
	30	Non Metallic Materials	Rubber, Wood, etc.						
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15			
	32			Cured	280	30			
	33		Ni or Co Based	Annealed	250	25			
	34			Cured	350	38			
	35			Cast	320	34			
	36	Titanium Alloys	Pure Titanium		400 Rm				
	37		Alpha + Beta Alloys		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			

