

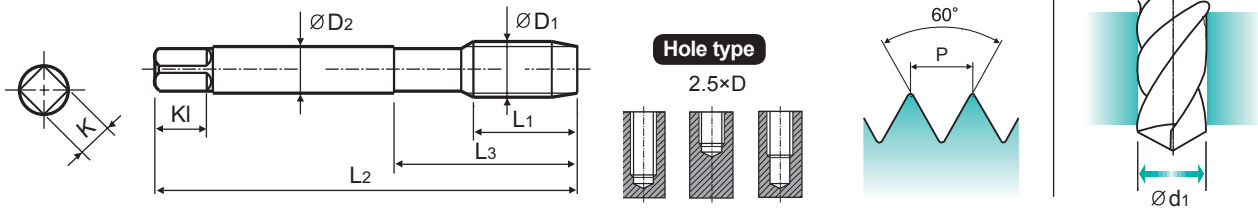
UNC

Unified coarse threads

- Unified Grobgewinde
- UNC
- Unificato passo fine

► For using multi-purpose and correct thread profiles & long tool life due to special tap geometry. YG-1 company has a patent.

► Für vielfältigen Einsatz, genaue Gewindeprofile und lange Standzeit dank einer besonderen Schneidengeometrie. Von YG-1 patentiert.



HSS-E DIN 371/376 3B 60° C Bright TiN R40

Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.114

Unit : mm

SIZE ØD1	TPI	EDP No.		Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter ØD2	Square Size K	Square Length KI	No. of Flute Z	Tapping Drill Diameter Ød1
		Bright	TiN								
#4 - 40 UNC		TCE01162	TDE01162	6	56	18	3.5	2.7	6	3	2.3
#5 - 40 UNC		TCE01202	TDE01202	7	56	18	3.5	2.7	6	3	2.6
#6 - 32 UNC		TCE01242	TDE01242	7	56	20	4	3	6	3	2.85
#8 - 32 UNC		TCE01282	TDE01282	8	63	21	4.5	3.4	6	3	3.5
#10 - 24 UNC		TCE01322	TDE01322	10	70	25	6	4.9	8	3	3.9
#12 - 24 UNC		TCE01362	TDE01362	10	80	30	6	4.9	8	3	4.5
1/4 - 20 UNC		TCE01402	TDE01402	13	80	30	7	5.5	8	3	5.2
5/16 - 18 UNC		TCE01442	TDE01442	14	90	35	8	6.2	9	3	6.6
3/8 - 16 UNC		TCE01482	TDE01482	16	100	39	9	7	10	3	8
7/16 - 14 UNC		TCE01522	TDE01522	17	100	40	8	6.2	9	3	9.4
1/2 - 13 UNC		TCE01562	TDE01562	20	110	44	9	7	10	3	10.75
9/16 - 12 UNC		TCE01602	TDE01602	20	110	44	11	9	12	3	12.25
5/8 - 11 UNC		TCE01642	TDE01642	22	110	44	12	9	12	3	13.5
3/4 - 10 UNC		TCE01702	TDE01702	25	125	50	14	11	14	4	16.5
7/8 - 9 UNC		TCE01742	TDE01742	27	140	54	18	14.5	17	4	19.5
1 - 8 UNC		TCE01782	TDE01782	30	160	60	20	16	19	4	22.25

► DIN 371(#4~3/8) and DIN 376(7/16~1)

* The other coating(TiCN or TiAlN) or Surface Treatment(Steam Homo) is available on your request.

◎ : Excellent ○ : Good

ISO Material Description	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	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 Material Description	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			◎			◎	◎	◎													



COMBO TAPS

RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDKONDITIONEN

THREAD MILLS	SYNCHRO TAPS	COMBO TAPS	ISO	VDI 3323	Material Description	HB	HRc	TC804	TD804	TB804	TCE05	TDE05	TBE05	TCE06	TDE06	
								TC844	TD844	TB844	TCE09	TDE09				
								TC824	TD824	TB824	TCE01	TDE01				
								TC864	TD864	TB864	TCE02	TDE02				
								Vc (m/min)								
YG TAP GENERAL	P	1	Non-alloy steel	125		15-20	20-25	15-20	15-20	20-25	15-20	15-20	20-25	15-20	20-25	
		2		190	13	15-20	20-25	15-20	15-20	20-25	15-20	15-20	20-25			
		3		250	25	12-18	18-24	12-18	12-18	18-24	12-18	12-18	18-24			
		4		270	28	10-15	15-20	10-15	10-15	15-20	10-15	10-15	15-20			
		5		300	32	6-10	10-14	6-10	6-10	10-14	6-10	6-10	10-14			
		6	Low alloy steel	180	10	10-15	15-20	10-15	10-15	15-20	10-15	10-15	15-20			
		7		275	29	10-15	15-20	10-15	10-15	15-20	10-15	10-15	15-20			
		8		300	32	6-10	10-14	6-10	6-10	10-14	6-10	6-10	10-14			
		9		350	38	3-5	5-7	3-5	3-5	5-7	3-5	3-5	5-7			
		10		High alloyed steel, and tool steel	200	15	3-5	5-7	3-5	3-5	5-7	3-5	3-5	5-7		
		11			325	35										
YG TAP CAST IRON	M	12	Stainless steel	200	15	7-10	10-15	7-10	7-10	10-15	7-10	7-10	10-15			
		13		240	23	5-8	8-11	5-8	5-8	8-11	5-8	5-8	8-11			
		14		180	10	4-6	6-8	4-6	4-6	6-8	4-6	4-6	6-8			
YG TAP ALU	K	15	Grey cast iron	180	10	10-15	15-20	10-15	10-15	15-20	10-15	10-15	15-20			
		16		260	26	5-8	8-11	5-8	5-8	8-11	5-8	5-8	8-11			
		17	Nodular cast iron	160	3	10-15	15-20	10-15	10-15	15-20	10-15	10-15	15-20			
		18		250	25	5-8	8-11	5-8	5-8	8-11	5-8	5-8	8-11			
		19		130												
20	Malleable cast iron	230	21													
NUT TAPS	N	21	Aluminum-wrought alloy	60												
		22		100												
		23	Aluminum-cast, alloyed	75		15-20	20-25	15-20	15-20	20-25	15-20	15-20	20-25			
		24		90												
		25		130												
		26	Copper and Copper Alloys (Bronze / Brass)	110		25-35	35-40	25-35	25-35	35-40	25-35	25-35	35-40			
		27		90		8-12	12-17	8-12	8-12	12-17	8-12	8-12	12-17			
		28		100		15-20	20-25	15-20	15-20	20-25	15-20	15-20	20-25			
		29	Non Metallic Materials													
		30														
PIPE TAPS	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												
TECHNICAL DATA	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-E & HSS-PM COMBO TAPS

For Multi Purpose Tapping
YG-1's Patent

HOLE TYPE		Max. 2.5xD Blind Hole						
TOOL MATERIAL		HSS-E						
CHAMFER LEAD ACC. TO DIN2197		C	C	C	C	C	C	
FLUTE TYPE		Spiral Flute	Spiral Flute	Spiral Flute	Spiral Flute	Spiral Flute	Spiral Flute	
SPIRAL FLUTE ANGLE		R40	R40	R40	R40	R40	R40	
SERIES	M	DIN371/376	TC804 (P.76)	TD804 (P.76)	TB804 (P.76)	TCE05 (P.77)	TDE05 (P.77)	TBE05 (P.77)
		DIN352						
		DIN357/LONG						
	MF	DIN374	TC844 (P.81)	TD844 (P.81)	TB844 (P.81)	TCE09 (P.83)	TDE09 (P.83)	
		DIN2181						
	UNC	DIN371/376	TC824 (P.91)	TD824 (P.91)	TB824 (P.91)	TCE01 (P.92)	TDE01 (P.92)	
		DIN351						
	UNF	DIN371/374	TC864 (P.93)	TD864 (P.93)	TB864 (P.93)	TCE02 (P.94)	TDE02 (P.94)	
		DIN2181						
	BSW	DIN2182/2183						
		DIN351						
	G(BSP)	DIN5156/5157						
	EG-M	DIN371/376						
	EG-UNC	DIN371/376						
EG-UNF	DIN371/374							
SURFACE TREATMENT		Bright	TiN	VAP	Bright	TiN	VAP	
MODEL								



Please visit
globalyg1.com/mat
for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P.114

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment	HB	HRC	Bright	TiN	VAP	Bright	TiN	VAP	
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	◎	◎	◎	◎	◎	◎	
	YG TAP Ti Ni	4	Low alloy steel	About 0.75% C Annealed	270	28	◎	◎	◎	◎	◎	◎
		5		About 0.75% C Quenched & Tempered	300	32	◎	◎	◎	◎	◎	◎
	YG TAP FORMING	6	High alloyed steel, and tool steel	Annealed	180	10	◎	◎	◎	◎	◎	◎
		7		Quenched & Tempered	275	29	◎	◎	◎	◎	◎	◎
		8		Quenched & Tempered	300	32	◎	◎	◎	◎	◎	◎
		9		Quenched & Tempered	350	38	◎	◎	◎	◎	◎	◎
	NUT TAPS	10		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	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							