

**UNC**

**Unified coarse threads**

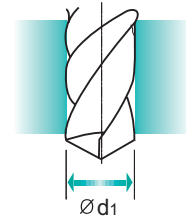
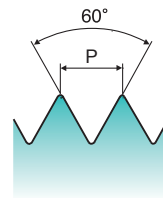
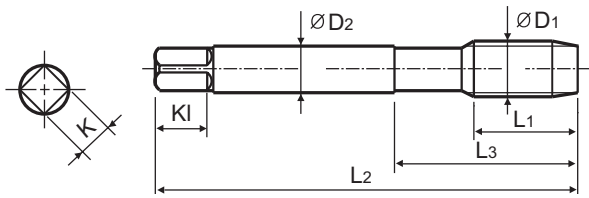
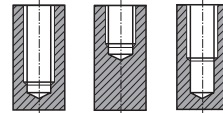
- Unified Grobgewinde
- UNC
- Unificato passo grosso

► 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.



**Hole type**  
2.5×D



HSS-E
DIN 371/376
2B
60°
C
Vap
R40

Machine taps  
Maschinengewindebohrer

Recommended Cutting Page : P.225

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		Vap	L1	L2	L3	ØD2	K	K1	Z	Ød1
#4 - 40UNC		TB904162	6	56	18	3.5	2.7	6	3	2.3
#5 - 40UNC		TB904202	7	56	18	3.5	2.7	6	3	2.6
#6 - 32UNC		TB904242	7	56	20	4	3	6	3	2.85
#8 - 32UNC		TB904282	8	63	21	4.5	3.4	6	3	3.5
#10 - 24UNC		TB904322	10	70	25	6	4.9	8	3	3.9
#12 - 24UNC		TB904362	10	80	30	6	4.9	8	3	4.5
1/4 - 20UNC		TB904402	13	80	30	7	5.5	8	3	5.2
5/16 - 18UNC		TB904442	14	90	35	8	6.2	9	3	6.6
3/8 - 16UNC		TB904482	16	100	39	9	7	10	3	8
7/16 - 14UNC		TB904522	17	100	40	8	6.2	9	3	9.4
1/2 - 13UNC		TB904562	20	110	44	9	7	10	3	10.75
9/16 - 12UNC		TB904602	20	110	44	11	9	12	3	12.25
5/8 - 11UNC		TB904642	22	110	44	12	9	12	3	13.5
3/4 - 10UNC		TB904702	25	125	50	14	11	14	4	16.5
7/8 - 9UNC		TB904742	27	140	54	18	14.5	17	4	19.5
1 - 8UNC		TB904782	30	160	60	20	16	19	4	22.25
1-1/8 - 7UNC		TB904822	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 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																				
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																					
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	Vc (m/min)													
					TB711	TQ813	TR813	TB914 TB183 TB904 TB924	TI914	TBE15	TBE16	TBE17	TBE18	TCH14	TQ853	TR853	TB623 TB123 TB264 TB274	TCH23
P	1	Non-alloy steel	125		15-20	15-20	15-20	15-20	20-25	15-20	15-20	15-20	15-20	20-25	15-20	15-20	15-20	20-25
	2		190	13	15-20	15-20	15-20	15-20	20-25	15-20	15-20	15-20	15-20	20-25	15-20	15-20	15-20	20-25
	3		250	25		12-18	12-18	12-18	18-24	12-18	12-18	12-18	12-18	18-24	12-18	12-18	12-18	18-24
	4		270	28		10-15	10-15	10-15	15-20	10-15	10-15	10-15	10-15	15-20	10-15	10-15	10-15	15-20
	5		300	32														
	6	Low alloy steel	180	10		10-15	10-15	10-15	15-20	10-15	10-15	10-15	10-15	15-20	10-15	10-15	10-15	15-20
	7		275	29														
	8		300	32														
	9		350	38														
	10	High alloyed steel, and tool steel	200	15														
	11		325	35														
M	12	Stainless steel	200	15	7-10	7-10	7-10	7-10	10-13	7-10	7-10	7-10	7-10	10-13	7-10	7-10	7-10	10-13
	13		240	23	5-8	5-8	5-8	5-8	8-11	5-8	5-8	5-8	5-8	8-11	5-8	5-8	5-8	8-11
	14		180	10	4-6	4-6	4-6	4-6	6-8	4-6	4-6	4-6	4-6	6-8	4-6	4-6	4-6	6-8
K	15	Grey cast iron	180	10														
	16		260	26														
	17	Nodular cast iron	160	3														
	18		250	25														
	19		Malleable cast iron	130														
20	230	21																
N	21	Aluminum-wrought alloy	60		10-15													
	22		100															
	23	Aluminum-cast, alloyed	75															
	24		90															
	25		130															
	26	Copper and Copper Alloys (Bronze / Brass)	110															
	27		90															
	28		100		15-20													
	29	Non Metallic Materials																
	30																	
S	31	Heat Resistant Super Alloys	200	15		10-15	10-15	10-15	15-20	10-15	10-15	10-15	10-15	15-20	10-15	10-15	10-15	15-20
	32		280	30														
	33		250	25														
	34		350	38														
	35		320	34														
	36	Titanium Alloys	400Rm			10-15	10-15	10-15	15-20	10-15	10-15	10-15	10-15	15-20	10-15	10-15	10-15	15-20
	37		1050Rm															
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 Fe<sub>3</sub>O<sub>4</sub>-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  $\geq 600\text{m/min}$ . 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  
YG TAP  
INOX**

For Stainless Steels with Lamellar, Irregular Chip Formation where the Cutting Forces are Higher

HOLE TYPE		Max. 2.0xD Blind Hole	Max. 2.5xD Blind Hole			
TOOL MATERIAL		HSS-E	HSS-PM			
CHAMFER LEAD ACC. TO DIN2197		C	C	C		
FLUTE TYPE		Spiral Flute	Spiral Flute	Spiral Flute		
SPIRAL FLUTE ANGLE		R40	R40	R40		
SERIES	M	DIN371/376	TB711 (P.206)	TQ813 (P.207)	TR813 (P.208)	TB914 (P.209)
		DIN352				
		DIN357/LONG				
	MF	DIN374				TB183 (P.219)
		DIN2181				
	UNC	DIN371/376				TB904 (P.220)
		DIN351				
	UNF	DIN371/374				TB924 (P.221)
		DIN2181				
	BSW	DIN2182/2183				
		DIN351				
	G(BSP)	DIN5156/5157				
	EG-M	DIN371/376				
	EG-UNC	DIN371/376				
EG-UNF	DIN371/374					
SURFACE TREATMENT		VAP	VAP	Bright	VAP	
MODEL						



Please visit [globalyg1.com/mat](http://globalyg1.com/mat) for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P.225

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		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		Non Metallic Materials							
	30		Duroplastic, Fiber Reinforced Plastic 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				