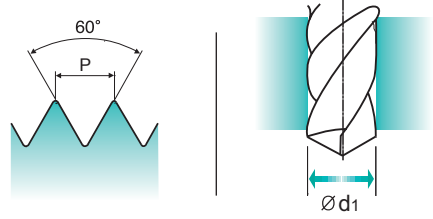
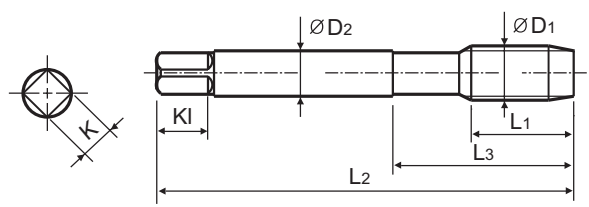
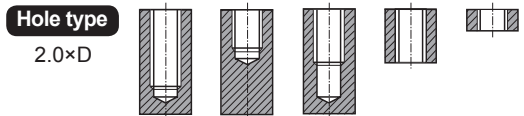


**M ISO metric coarse threads DIN 13**

- **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.



Material groups: **VG** HSS-E DIN 352 6H 60° **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
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						
	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					
	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																					

# 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  $\geq 600$ 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**

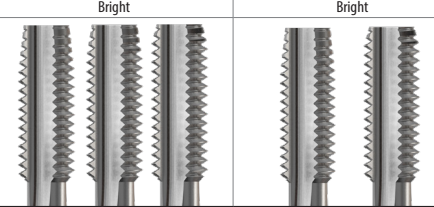
Suitable for Tapping Blind / Through Holes due to Flute Geometry and Excellent Chip Evacuation



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

◎ : Excellent ○ : Good

HOLE TYPE	Max. 2.0xD Blind/Through Hole		
TOOL MATERIAL	HSS		
CHAMFER LEAD ACC. TO DIN2197	I / II / III	I / III	
FLUTE TYPE	Straight Flute	Straight Flute	
SPIRAL FLUTE ANGLE	-	-	
MODEL	M	DIN371/376	
		DIN352	<b>T7109</b> (P.151)
		DIN357/LONG	
	MF	DIN374	
		DIN2181	<b>T7309</b> (P.153)
	UNC	DIN371/376	
		DIN351	
	UNF	DIN371/374	
		DIN2181	
	BSW	DIN2182/2183	
		DIN351	
	G(BSP)	DIN5156/5157	
EG-M	DIN371/376		
EG-UNC	DIN371/376		
EG-UNF	DIN371/374		
SURFACE TREATMENT	Bright	Bright	



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	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		

