YG TAP HARDENED

T0999-TIC SERIES

M ISO metric coarse threads DIN 13

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

▶ Carbide tap can increase tool life longer than HSS taps due to higher hardness. Suitable for hardened steels (HRc50~60)

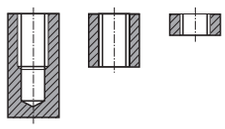
▶ VHM-Gewindebohrer ermöglichen aufgrund ihrer höheren Härte bessere Standzeiten als HSS-Gewindebohrer. Geeignet für gehärtete Stähle (HRc50~60)

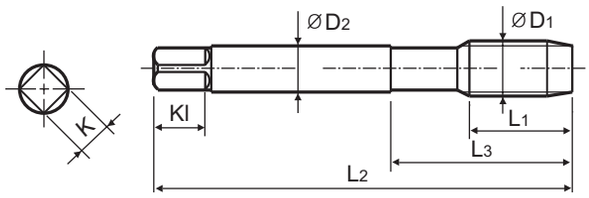
DIN 371

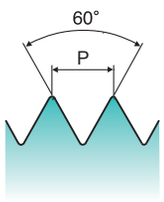
DIN 376

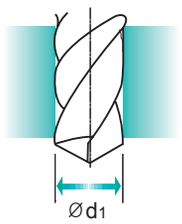
Hole type

2.0×D









Material groups **HR** | CARBIDE | DIN 371/376 | 6HX | 60° | D | TiCN

Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.201

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	TiCN	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M3	× 0.5	**T0999206TIC**	11	56	18	3.5	2.7	6	4	2.55
M4	× 0.7	**T0999246TIC**	13	63	21	4.5	3.4	6	4	3.4
M5	× 0.8	**T0999286TIC**	15	70	25	6	4.9	8	4	4.3
M6	× 1	**T0999316TIC**	17	80	30	6	4.9	8	5	5.1
M8	× 1.25	**T0999366TIC**	20	90	35	8	6.2	9	5	6.9
M10	× 1.5	**T0999426TIC**	22	100	39	10	8	11	5	8.6
M12	× 1.75	**T0999506TIC**	24	110	–	9	7	12	5	10.4
M14	× 2	**T0999546TIC**	26	110	–	11	9	12	6	12.2
M16	× 2	**T0999606TIC**	27	110	–	12	9	12	6	14.2
M18	× 2.5	**T0999656TIC**	30	125	–	14	11	14	6	15.7
M20	× 2.5	**T0999706TIC**	32	140	–	16	12	15	6	17.7

▶DIN 371(M3~M10) and DIN 376(M12~M20)

◎ : 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																		◎	◎	◎	◎

YG TAP HARDENED

RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDKONDITIONEN

ISO	VDI 3323	Material Description	HB	HRc	T0997-TIC	T0999-TIC	TC313 TB313 TY313	TC283 TY283
					Vc (m/min)			
P	1	Non-alloy steel	125					
	2		190	13				
	3		250	25				
	4		270	28				
	5		300	32				
	6	Low alloy steel	180	10				
	7		275	29			10-15	10-15
	8		300	32			6-10	6-10
	9		350	38	5-8	5-8	3-5	3-5
	10	High alloyed steel, and tool steel	200	15				
	11		325	35				
M	12	Stainless steel	200	15				
	13		240	23				
	14		180	10			4-6	4-6
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					
	22		100					
	23	Aluminum-cast, alloyed	75					
	24		90					
	25		130					
	26	Copper and Copper Alloys (Bronze / Brass)	110				25-35	25-35
	27		90					
	28		100					
	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	3-7	3-7		
	39		630	60	3-7	3-7		
	40	Chilled Cast Iron	400	42	3-7	3-7		
	41	Hardened Cast Iron	550	55	3-7	3-7		

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 ≥ 600m/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

YG THREADING TOOLS

SOLID CARBIDE & HSS-E
YG TAP
HARDENED

For Hardened Steels Applications
to Control the Continuous and Red-glowing Chips

HOLE TYPE			Max. 2.0xD Blind / Through Hole	
TOOL MATERIAL			CARBIDE	
CHAMFER LEAD ACC. TO DIN2197			C	D
FLUTE TYPE			Straight Flute	Straight Flute
SPIRAL FLUTE ANGLE			-	-
	M	DIN371/376	T0997-TIC (P.194)	T0999-TIC (P.195)
		DIN352		
		DIN357/LONG		
	MF	DIN—374		
		DIN2181		
	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			TiCN	TiCN
MODEL				

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P.201

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		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	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	◎	◎