

# Y/G PIPE TAPS

## TC728 SERIES

### G(BSP) Whitworth pipe threads DIN ISO 228/1

- Whitworth Rohrgewinde DIN ISO 228/1
- G(BSP) PROFIL 55° DIN ISO 228/1
- Filettatura Whitworth per tubi DIN ISO 228/1

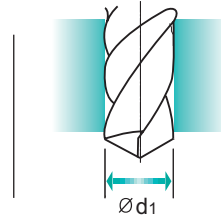
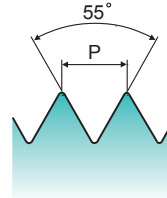
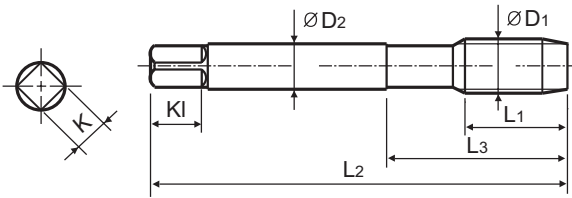
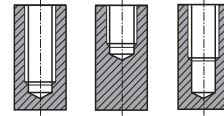
► Suitable for tapping blind holes due to special flute geometry and excellent chip evacuation.

► Geeignet zum Gewinden von Sacklöchern dank besonderer Nutengeometrie und ausgezeichneter Spanabfuhr.

DIN 5156



Hole type  
2.5xD



Material groups: **GS** HSS-E DIN 5156 55° C Bright R40

Machine taps  
Maschinengewindebohrer

Recommended Cutting Page : P.306

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
G1/8 - 28		TC728200	20	90	36	7	5.5	8	3	8.8
G1/4 - 19		TC728400	22	100	40	11	9	12	3	11.8
G3/8 - 19		TC728480	22	100	40	12	9	12	3	15.25
G1/2 - 14		TC728560	25	125	50	16	12	15	4	19
G3/4 - 14		TC728700	28	140	54	20	16	19	4	24.5
G1 - 11		TC728780	30	160	60	25	20	23	4	30.75

◎ : 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	○	○	○	○	◎	◎	○														



**RECOMMENDED CUTTING CONDITIONS**  
**EMPFOHLENE SCHNEIDKONDITIONEN**

					TC728	TC729	TB514	TC727
THREAD MILLS					Vc (m/min)			
SYNCHRO TAPS	ISO	VDI 3323	Material Description	HB	HRc			
COMBO TAPS	P	1	Non-alloy steel	125			15-20	
		2		190	13	15-20		15-20
3		250		25	12-18		12-18	
4		270		28	10-15		10-15	
5		300		32				
YG TAP GENERAL		6	Low alloy steel	180	10	10-15	10-15	10-15
YG TAP STEEL		7		275	29	10-15	10-15	10-15
YG TAP HARDENED		8		300	32		6-10	
		9		350	38		3-5	
YG TAP INOX		10	High alloyed steel, and tool steel	200	15			
		11		325	35			
YG TAP CAST IRON	M	12	Stainless steel	200	15		7-10	
		13		240	23		5-8	
		14		180	10		4-6	4-6
YG TAP ALU	K	15	Grey cast iron	180	10			
		16		260	26			
		17	Nodular cast iron	160	3	10-15		10-15
		18		250	25	5-8		5-8
		19	Malleable cast iron	130				
20	230	21						
YG TAP FORMING	N	21	Aluminum-wrought alloy	60		10-15		10-15
		22		100		10-15		10-15
NUT TAPS		23	Aluminum-cast, alloyed	75		15-20		15-20
		24		90		15-20		15-20
		25		130		10-15		10-15
STI TAPS		26	Copper and Copper Alloys (Bronze / Brass)	110		25-35		25-35
		27		90		8-12		8-12
		28		100				
PIPE TAPS		29	Non Metallic Materials					
		30						
TECHNICAL DATA	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 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 PIPE TAPS

Tapping Whitworth Pipe threads

HOLE TYPE		Max. 2.0xD Blind/Through Hole	Max. 2.5xD Blind Hole	Max. 3.0xD Through Hole	
TOOL MATERIAL		HSS		HSS-E	
CHAMFER LEAD ACC. TO DIN2197		I/III		C B	
FLUTE TYPE		Straight Flute		Spiral Flute Spiral Point	
SPIRAL FLUTE ANGLE		-		R40 R40 R40 -	
SERIES	M	DIN371/376			
		DIN352			
		DIN357/LONG			
	MF	DIN374			
		DIN2181			
	UNC	DIN371/376			
		DIN351			
	UNF	DIN371/374			
		DIN2181			
	BSW	DIN2182/2183			
		DIN351			
	G(BSP)	DIN5156/5157	T7709 (P.301)	TC728 (P.302)	TC729 (P.303)
EG-M	DIN371/376				
EG-UNC	DIN371/376				
EG-UNF	DIN371/374				
SURFACE TREATMENT		Bright	Bright	Bright	VAP Bright
MODEL					



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

◎ : Excellent ○ : Good

Recommended cutting conditions : P.306

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	Low alloy steel	About 0.75% C Annealed	270	28		◎		◎
	5		About 0.75% C Quenched & Tempered	300	32				
	6		Annealed	180	10	○	◎	○	◎
	7		Quenched & Tempered	275	29		◎	○	◎
	8	High alloyed steel, and tool steel	Quenched & Tempered	300	32			◎	
	9		Quenched & Tempered	350	38			◎	
	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		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				