



**YG TAP  
CAST IRON**

**TE454** SERIES

**UNF**

**Unified fine threads**

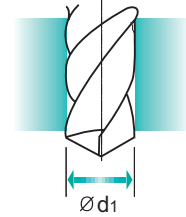
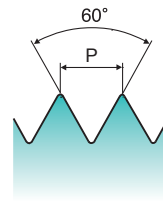
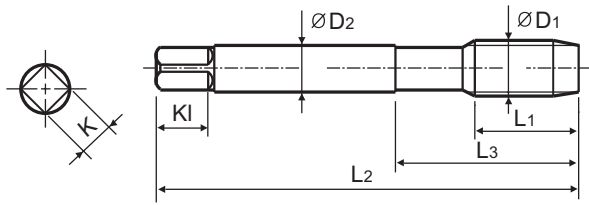
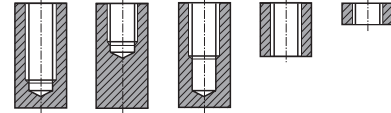
- Unified Feingewinde
- UNF
- Unificato passo fine

► Suitable for tapping cast iron or similar work materials due to nitriding.

► Geeignet zum Gewindeschneiden von Guss oder ähnlichen Werkstoffen dank der Nitrierung



**Hole type**  
2.0×D



- HSS-E**
- DIN 371/374**
- 2BX**
- 60°**
- C**
- NI**

Machine taps  
Maschinengewindebohrer

Recommended Cutting Page : P.237

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		Ni	L1	L2	L3	ØD2	K	KI	Z	Ød1
#4	- 48UNF	TE454182	11	56	18	3.5	2.7	6	3	2.4
#5	- 44UNF	TE454222	11	56	18	3.5	2.7	6	3	2.7
#6	- 40UNF	TE454262	12	56	20	4	3	6	3	3
#8	- 36UNF	TE454302	13	63	21	4.5	3.4	6	3	3.5
#10	- 32UNF	TE454342	15	70	25	6	4.9	8	3	4.1
#12	- 28UNF	TE454382	16	80	30	6	4.9	8	4	4.7
1/4	- 28UNF	TE454422	17	80	30	7	5.5	8	4	5.5
5/16	- 24UNF	TE454462	17	90	35	8	6.2	9	4	6.9
3/8	- 24UNF	TE454502	18	100	39	9	7	10	4	8.5
7/16	- 20UNF	TE454542	22	100	40	8	6.2	9	4	9.9
1/2	- 20UNF	TE454582	22	100	40	9	7	10	4	11.5
9/16	- 18UNF	TE454622	22	100	40	11	9	12	4	12.9
5/8	- 18UNF	TE454662	22	100	40	12	9	12	4	14.5
3/4	- 16UNF	TE454722	25	110	44	14	11	14	4	17.5
7/8	- 14UNF	TE454762	26	125	50	18	14.5	17	4	20.5
1	- 12UNF	TE454802	28	140	54	18	14.5	17	4	23.25
1-1/8	- 12UNF	TE454842	30	150	60	22	18	21	4	26.5

►DIN 371(#4~3/8) and DIN 374(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	T0993	TE821 TE403 TE434 TE454	TD821	TI821	TY821
					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					
	8		300	32					
	9		350	38					
	10	High alloyed steel, and tool steel	200	15					
	11		325	35					
M	12	Stainless steel	200	15					
	13		240	23					
	14		180	10					
K	15	Grey cast iron	180	10	10-15	10-15	15-20	15-20	15-20
	16		260	26	5-8	5-8	8-11	8-11	8-11
	17	Nodular cast iron	160	3	10-15	10-15	15-20	15-20	15-20
	18		250	25	5-8	5-8	8-11	8-11	8-11
	19	Malleable cast iron	130		10-15	10-15	15-20	15-20	15-20
20	230		21	5-8	5-8	8-11	8-11	8-11	
N	21	Aluminum-wrought alloy	60						
	22		100						
	23	Aluminum-cast, alloyed	75		15-20				
	24		90						
	25		130		10-15				
	26	Copper and Copper Alloys (Bronze / Brass)	110						
	27		90		8-12	12-16	12-16	12-16	
	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					
	39		630	60					
	40	Chilled Cast Iron	400	42	3-5				
	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



# SOLID CARBIDE & HSS-E YG TAP CAST IRON

For Cast Iron or Similar Work Materials

HOLE TYPE		Max. 2.0xD Blind / Through Hole					
TOOL MATERIAL		CARBIDE		HSS-E			
CHAMFER LEAD ACC. TO DIN2197		C	C	C	C	C	
FLUTE TYPE		Straight Flute	Straight Flute	Straight Flute	Straight Flute	Straight Flute	
SPIRAL FLUTE ANGLE		-	-	-	-	-	
SERIES	M	DIN371/376	T0993 (P.229)	TE821 (P.230)	TD821 (P.231)	TI821 (P.232)	TY821 (P.233)
		DIN352					
		DIN357/LONG					
	MF	DIN374		TE403 (P.234)			
		DIN2181					
	UNC	DIN371/376		TE434 (P.235)			
		DIN351					
	UNF	DIN371/374		TE454 (P.236)			
		DIN2181					
	BSW	DIN2182/2183					
		DIN351					
	G(BSP)	DIN5156/5157					
	EG-M	DIN371/376					
	EG-UNC	DIN371/376					
EG-UNF	DIN371/374						
SURFACE TREATMENT		Bright	NI	TIN	TiCN	TiAIN	
MODEL							



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

◎ : Excellent ○ : Good

Recommended cutting conditions : P.237

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 Rubber, Wood, etc.						
	30									
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					