THREAD MILLS

SYNCHRO TAPS

COMBO TAPS

**HSS** TC633 SERIES



ISO Metric coarse threads DIN 13

Metrisches ISO-Gewinde DIN 13

- () ISO MÉTRIQUE DIN13
- () ISO Metrico passo grosso DIN 13
- ► For using multi-purpose and correct thread profiles & long tool life due to special tap geometry. YG-1 company has a patent.

► Für vielfältigen Einsatz, genaue Gewindeprofile und lange Standzeitendank einer besonderen Schneidengeometrie. Von YG-1 patentiert.











YG TAP

YG TAP

YG TAP INOX

YG TAP CAST IRON

YG TAP ALU

YG TAP Ti Ni

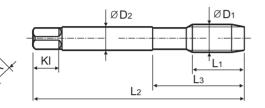
YG TAP

**NUT TAPS** 

PIPE TAPS

TECHNICAL DATA

# **Long Shank**



















Machine taps Maschinengewindebohrer

Recommended Cutting Page: P.115

Recommen	Voit: mm													
SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter				
ØD1	Р	Bright	L1	L2	L3	ØD2	K	KI	Z	Ød1				
M3	× 0.5	TC633206	11	100	18	3.5	2.7	6	3	2.5				
M4	× 0.7	TC633246	13	125	21	4.5	3.4	6	3	3.3				
M5	× 0.8	TC633286	15	140	25	6	4.9	8	3	4.2				
M6	× 1	TC633316	17	160	30	6	4.9	8	3	5				
M8	× 1.25	TC633366	20	180	35	6	4.9	8	3	6.8				
M10	× 1.5	TC633426	22	200	39	7	5.5	8	3	8.5				
M12	× 1.75	TC633506	24	220	44	9	7	10	3	10.2				
M14	× 2	TC633546	26	220	44	11	9	12	3	12				
M16	× 2	TC633606	27	220	44	12	9	12	3	14				
M20	× 2.5	TC633706	32	280	54	16	12	15	4	17.5				

<sup>\*</sup> Coating(TiN, TiCN or TiAIN) or Surface Treatment(Steam Homo) is available on your request.

																		Q	· LXC	ellerit (	) · G00u
ISO	P											M		K							
Material Description		No	Non-alloy steel Low alloy steel			el	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	1	0	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	1	5	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	20	00 3	325	200	240	180	180	260	160	250	130	230
Recommended	0	0	0	0	0	0	0	0	0		)		0	0	0	0	0	0	0		
ISO					N						S									Н	
Material Description		inum- ht alloy	Aluminu	um-cast,	alloyed		and Coppe onze / Bra		Non Me Mater		F	leat Re	esistant	Super A	lloys	Titaniu	m Alloys		lened eel		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	1050 Rm	550	630	400	550
Recommended			0			0	0	0													

○ · Evcellent ○ · Good

HSS



# RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN

THREAD MILLS

SYNCHRO TAPS

> COMBO TAPS

YG TAP GENERAL

> YG TAP STEEL

YG TAP HARDENED

> YG TAP INOX

> > YG TAP CAST IRON

> > YG TAP ALU

YG TAP Ti Ni

YG TAP FORMING

**NUT TAPS** 

STI TAPS

PIPE TAPS

TECHNICAL DATA

					TC804 TC844 TC824 TC864	TD804 TD844 TD824 TD864	TB804 TB844 TB824 TB864	TCE05 TCE09 TCE01 TCE02	TDE05 TDE09 TDE01 TDE02	TBE05	TCE06	TDE06		
ISO	VDI 3323	Material Description	НВ	HRc				/min)						
	1		125		15-20	20-25	15-20	15-20	20-25	15-20	15-20	20-25		
	2		190	13	15-20	20-25	15-20	15-20	20-25	15-20	15-20	20-25		
	3	Non-alloy steel	250	25	12-18	18-24	12-18	12-18	18-24	12-18	12-18	18-24		
	4		270	28	10-15	15-20	10-15	10-15	15-20	10-15	10-15	15-20		
	5		300	32	6-10	10-14	6-10	6-10	10-14	6-10	6-10	10-14		
Р	6		180	10	10-15	15-20	10-15	10-15	15-20	10-15	10-15	15-20		
	7	Low alloy steel	275	29	10-15	15-20	10-15	10-15	15-20	10-15	10-15	15-20		
	8	Í	300	32	6-10	10-14	6-10	6-10	10-14	6-10	6-10	10-14		
	9		350	38	3-5	5-7	3-5	3-5	5-7	3-5	3-5	5-7		
	10	High alloyed steel, and tool steel	200	15	3-5	5-7	3-5	3-5	5-7	3-5	3-5	5-7		
	11	and tool steel	325	35	7.40	10.15	7.10	7.10	10.15	7.10	7.10	10.15		
8.4	12	6	200	15	7-10	10-15	7-10	7-10	10-15	7-10	7-10	10-15		
M	13	Stainless steel	240	23	5-8 4-6	8-11 6-8	5-8 4-6	5-8 4-6	8-11 6-8	5-8 4-6	5-8 4-6	8-11 6-8		
	15		180 180	10	10-15	15-20	10-15	10-15	15-20	10-15	10-15	15-20		
	16	Grey cast iron	260	26	5-8	8-11	5-8	5-8	8-11	5-8	5-8	8-11		
	17		160	3	10-15	15-20	10-15	10-15	15-20	10-15	10-15	15-20		
K	18	Nodular cast iron	250	25	5-8	8-11	5-8	5-8	8-11	5-8	5-8	8-11		
	19		130			0			0			0		
	20	Malleable cast iron	230	21										
	21	Aluminum-	60											
	22	wrought alloy	100											
	23	Aluminum- cast, alloyed	75		15-20	20-25	15-20	15-20	20-25	15-20	15-20	20-25		
	24		90											
N	25	cust, anoyed	130											
N	26	Copper and	110		25-35	35-40	25-35	25-35	35-40	25-35	25-35	35-40		
	27	Copper Alloys	90		8-12	12-17	8-12	8-12	12-17	8-12	8-12	12-17		
	28	(Bronze / Brass)	100		15-20	20-25	15-20	15-20	20-25	15-20	15-20	20-25		
	29	Non Metallic												
	30	Materials												
	31		200	15										
	32	Heat Resistant	280	30										
	33	Super Alloys	250	25										
S	34		350	38										
	35		320	34										
	36	Titanium Alloys	400 Rm											
	37		1050 Rm											
	38 39	Hardened steel	550	55										
Н	40	Chilled Cast Iron	630	60										
	40	Hardened Cast Iron	400 550	42 55										
	41	Hardened Cast IIOII	330	- 33										





## **RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN**

	TBE06	TCE07	TDE07	TBE07	TCE08	TDE08	TBE08	TC804-IC	TC633	TC807
VDI 3323					Vc (m	/min)				
1	15-20	15-20	20-25	15-20	15-20	20-25	15-20	15-20	15-20	15-20
2	15-20	15-20	20-25	15-20	15-20	20-25	15-20	15-20	15-20	15-20
3	12-18	12-18	18-24	12-18	12-18	18-24	12-18	12-18	12-18	12-18
4	10-15	10-15	15-20	10-15	10-15	15-20	10-15	10-15	10-15	10-15
5	6-10	6-10	10-14	6-10	6-10	10-14	6-10	6-10	6-10	6-10
6	10-15	10-15	15-20	10-15	10-15	15-20	10-15	10-15	10-15	10-15
7	10-15	10-15	15-20	10-15	10-15	15-20	10-15	10-15	10-15	10-15
8	6-10	6-10	10-14	6-10	6-10	10-14	6-10	6-10	6-10	6-10
9	3-5	3-5	5-7	3-5	3-5	5-7	3-5	3-5	3-5	3-5
10	3-5	3-5	5-7	3-5	3-5	5-7	3-5	3-5	3-5	3-5
11										
12	7-10	7-10	10-15	7-10	7-10	10-15	7-10	7-10	7-10	7-10
13	5-8	5-8	8-11	5-8	5-8	8-11	5-8	5-8	5-8	5-8
14	4-6	4-6	6-8	4-6	4-6	6-8	4-6	4-6	4-6	4-6
15	10-15	10-15	15-20	10-15	10-15	15-20	10-15	10-15	10-15	10-15
16	5-8	5-8	8-11	5-8	5-8	8-11	5-8	5-8	5-8	5-8
17	10-15	10-15	15-20	10-15	10-15	15-20	10-15	10-15	10-15	10-15
18	5-8	5-8	8-11	5-8	5-8	8-11	5-8	5-8	5-8	5-8
19										
20										
21										
22										
23	15-20	15-20	20-25	15-20	15-20	20-25	15-20	15-20	15-20	15-20
24										
25										
26	25-35	25-35	35-40	25-35	25-35	35-40	25-35	25-35	25-35	25-35
27	8-12	8-12	12-17	8-12	8-12	12-17	8-12	8-12	8-12	8-12
28	15-20	15-20	20-25	15-20	15-20	20-25	15-20	15-20	15-20	15-20
29										
30										
31										
32										
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34										
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41										

YG TAP STEEL

YG TAP HARDENED

YG TAP INOX

YG TAP CAST IRON

YG TAP ALU

YG TAP Ti Ni

YG TAP FORMING

**NUT TAPS** 

PIPE TAPS

TECHNICAL DATA

# 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

## **TIAIN-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  $\geq$  600m/min. TiAIN 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 TiAIN-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

HSS

**THREAD** 

**SYNCHRO** 

COMBO TAPS

YG TAP **GENERAL** 

YG TAP

YG TAP

YG TAP INOX

YG TAP

Please visit

globalyg1.com/mat

for material search

Non-alloy steel

Low alloy steel

High alloyed steel, and tool steel

Stainless steel

Grey cast iron

Nodular cast iron

Malleable cast iron

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

YG TAP

YG TAP Ti Ni

P

M 13

K

N

S

38

39

12

14

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20

YG TAP

**NUT TAPS** 

**TECHNICAL** 

#### **SELECTION GUIDE**



# HSS-E & HSS-PI COMBO

Hardened

550

55

					Max. 2.5xD								
C	JUIDE			HOLE.	ТҮРЕ	Blind Hole							
			-	TOOL MA	ATERIAL			HS	S-E				
	THREADIN	NC.	CHAM	MFER LEAD A	ACC. TO DIN2197	С	С	С	С	С	С		
	THREADIN	NG		FLUTE	TYPE	Spiral Flute	Spiral Flute						
	TOOLS		SP	IRAL FLU	JTE ANGLE	R40	R40	R40	R40	R40	R40		
					DIN371/376	TC804	TD804	TB804	TCE05	TDE05	TBE05		
						(P.76)	(P.76)	(P.76)	(P.77)	(P.77)	(P.77)		
C	CEQU	CC DM		M	DIN352								
<b>D</b>	S-E & H	33-PIVI			DIN357/LONG								
					DIN374	TC844 (P.81)	TD844 (P.81)	TB844 (P.81)	TCE09 (P.83)	TDE09 (P.83)			
		<b>VIBO</b>		MF	DIN2181	(r.o1)	(r.o1)	(r.o1)	(r.os)	(r.os)			
						TC824	TD824	TB824	TCE01	TDE01			
	-			UNC	DIN371/376	(P.91)	(P.91)	(P.91)	(P.92)	(P.92)			
		APS	is		DIN351								
			SERIES		DIN371/374	TC864 (P.93)	TD864 (P.93)	TB864 (P.93)	TCE02 (P.94)	TDE02 (P.94)			
	For Multi P	urpose Tapping	S	UNF	DIN2181	(1.23)	(1.23)	(1.23)	(1.24)	(1.54)			
		YG-1's Patent			DIN2182/2183								
				BSW									
					DIN351								
				G(BSP)	DIN5156/5157								
				EG-M	DIN371/376								
				EG-UNC	DIN371/376								
				EG-UNF	DIN371/374								
			SL	IRFACE T	REATMENT	Bright	TiN	VAP	Bright	TiN	VAP		
R	© ecommended cutting	MODEL											
otion	Composition / Struct	ure / Heat Treatment		НВ	HRC		4	6		4	4		
	About 0.15% C	Annealed		125		0	0	0	0	0	0		
	About 0.45% C	Annealed		190	13	0	0	0	0	0	0		
eel	About 0.45% C	Quenched & Tempered		250	25	0	0	0	0	0	0		
	About 0.75% C	Annealed		270	28	0	0	0	0	0	0		
	About 0.75% C	Quenched & Tempered Annealed		300 180	32 10	© ©	0	0	0	0	0		
		Quenched & Tempered		275	29	0	0	0	0	0	0		
eel		Quenched & Tempered		300	32	0	0	0	0	0	0		
		Quenched & Tempered		350	38	0	0	0	0	0	0		
teel,		Annealed		200	15	0	0	0	0	0	0		
el		Quenched & Tempered		325	35								
	Ferritic / Martensitic	Annealed		200	15	0	0	0	0	0	0		
el	Martensitic	Quenched & Tempered		240	23	0	0	0	0	0	0		
	Austenitic			180	10	0	0	0	0	0	0		
n	Pearlitic / ferritic			180	10	0	0	0	0	0	0		
,,,	Pearlitic (Martensitic)			260	26	0	0	0	0	0	0		
iron	Ferritic			160	3	0	0	0	0	0	0		
	Pearlitic			250	25	0	0	0	0	0	0		
iron	Ferritic			130	21								
	Pearlitic Not Curable			230 60	21								
- oy	Curable	Hardened		100									
٠,	≤ 12% Si, Not Curable			75		0	0	0	0	0	0		
-	≤ 12% Si, Curable	Hardened		90									
d	> 12% Si, Not Curable			130									
d	Cutting Alloys, PB>1%	6		110		0	0	0	0	0	0		
ys	CuZn, CuSnZn (Brass)			90		0	0	0	0	0	0		
ss)	CuSn, lead-free copper			100		0	0	0	0	0	0		
ic	Duroplastic, Fiber Reir	nforced Plastic											
	Rubber, Wood, etc.												
	Fe Based	Annealed		200	15								
nt		Cured		280	30								
rs	Ni ou Co Door I	Annealed		250	25								
	Ni or Co Based	Cured		350	38								
	Pure Titanium	Cast		320 00 Rm	34								
oys	Alpha + Beta Alloys	Hardened		50 Rm									
	Alpha i beta Alloys	Hardened		550 Kill	55								
eel		Hardened		630	60								
ron		Cast		400	42								

Max. 2.5xD Blind Hole														_
	I	I	I	I	I	HSS-E	I		I	I		I	HSS-PM	
C	C	C	C	C	C	C	C	C	C	C	E	C	C	
Spiral Flute	Spiral Flute	Spiral Flute	Spiral Flute	Spiral Flute	Spiral Flute	Spiral Flute	Spiral Flute	Spiral Flute	Spiral Flute	Spiral Flute	Spiral Flute	Spiral Flute	Spiral Flute	
TCE06	R40 TDE06	R40 TBE06	TCE07	R40 TDE07	R40 TBE07	TCE08	R40 TDE08	R40 TBE08	R40 TC804-IC	R40	R40 TC807	R45 TB744	R45 TQ744	
(P.78)	(P.78)	(P.78)	(P.79)	(P.79)	(P.79)	(P.80)	(P.80)	(P.80)	(P.85)		(P.86)	(P.88)	(P.88)	
										TCC22				M
										TC633 (P.87)				
												TB754 (P.90)	TQ754 (P.89)	MF
														.,,,
														UNC
														UNF
														BSW
														G(BSP)
														EG-M
														EG-UNC
														EG-UNF
Bright	TiN	VAP	Bright	TiN	VAP	Bright	TiN	VAP	Bright	Bright	Bright	VAP	VAP	
1						1					1			
		1										1	1	
		7			7			7	(条					
We k						W.				W				
										1				
														1
O	0	0	0	0	0	0	0	0	0	0	0	0	0	2
0	0	0	0	0	0	0	0	0	0	0	0			3
0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
0	0	0	0	0	0	0	0	0	0	0	0			5 <b>P</b>
0	0	0	0	0	0	© ©	0	© ©	0	0	© ©	0	0	7
0	0	0	0	0	0	0	0	0	0	0	0		0	8
0	0	0	0	0	0	0	0	0	0	0	0			9
0	0	0	0	0	0	0	0	0	0	0	0			10 11
0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0	13 M
0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
0	0	0	0	0	0	0	0	0	0	0	0			15 16
0	© ©	0	0	0	© ©	© ©	© ©	© ©	0	0	© ©			17
0	0	0	0	0	0	0	0	0	0	0	0			17 18 <b>K</b>
														19
														20
														22
0	0	0	0	0	0	0	0	0	0	0	0			23
														19 20 21 22 23 24 25 26 27 28 29 30
0	0	0	0	0	0	0	0	0	0	0	0			25 N
0	0	0	0	0	0	0	0	0	0	0	0			27
0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
														29
														31
														32
														33
														34 <b>S</b> 35
														36
														37
														39 40 H
														38 39 40 41
						,								