



TQ428 SERIES

TB428 SERIES

M

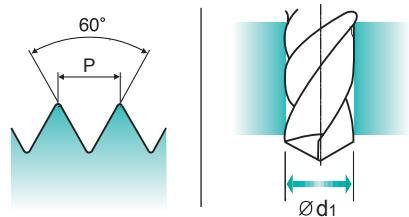
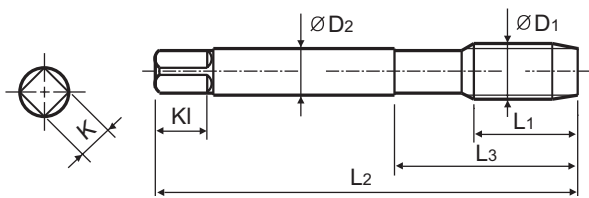
ISO Metric coarse threads DIN 13

Metrisches ISO-Gewinde DIN 13

ISO MÉTRIQUE DIN13

ISO Metrico passo grosso DIN 13

- For stainless steels and correct thread profiles & long tool life due to special tap geometry. YG-1 company has a patent.
- Für rostfreie stähle, genaue Gewindeprofile und lange Standzeit dank einer besonderen Schneidengeometrie. Von YG-1 patentiert.



Material groups

VA

up to M12

over M12

HSS-PM

HSS-E

DIN 371/376

6H

60°

B

Vap

Machine taps

Maschinengewindebohrer

Recommended Cutting Page : P.117

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	Vap	L1	L2	L3	ØD2	K	KI	Z	Ød1
M2 × 0.4		TQ428136	8	45	13	2.8	2.1	5	3	1.6
M2.2 × 0.45		TQ428156	8	45	13	2.8	2.1	5	3	1.75
M2.3 × 0.4		TQ428196	8	45	13	2.8	2.1	5	3	1.9
M2.5 × 0.45		TQ428176	9	50	15	2.8	2.1	5	3	2.05
M2.6 × 0.45		TQ428496	9	50	15	2.8	2.1	5	3	2.1
M3 × 0.5		TQ428206	11	56	18	3.5	2.7	6	3	2.5
M3.5 × 0.6		TQ428226	12	56	20	4	3	6	3	2.9
M4 × 0.7		TQ428246	13	63	21	4.5	3.4	6	3	3.3
M4.5 × 0.75		TQ428266	14	70	25	6	4.9	8	3	3.7
M5 × 0.8		TQ428286	15	70	25	6	4.9	8	3	4.2
M6 × 1		TQ428316	17	80	30	6	4.9	8	3	5
M7 × 1		TQ428346	17	80	30	7	5.5	8	3	6
M8 × 1.25		TQ428366	20	90	35	8	6.2	9	3	6.8
M9 × 1.25		TQ428396	20	90	35	9	7	10	3	7.8
M10 × 1.5		TQ428426	22	100	39	10	8	11	3	8.5
M11 × 1.5		TQ428466	22	100	40	8	6.2	9	3	9.5
M12 × 1.75		TQ428506	24	110	44	9	7	10	3	10.2
M14 × 2		TB428546	26	110	44	11	9	12	3	12
M16 × 2		TB428606	27	110	44	12	9	12	3	14
M18 × 2.5		TB428656	30	125	50	14	11	14	4	15.5
M20 × 2.5		TB428706	32	140	54	16	12	15	4	17.5
M22 × 2.5		TB428746	32	140	54	18	14.5	17	4	19.5
M24 × 3		TB428786	34	160	60	18	14.5	17	4	21
M27 × 3		TB428866	36	160	60	20	16	19	4	24
M30 × 3.5		TB428946	40	180	70	22	18	21	4	26.5

- DIN 371(M2~M10) and DIN 376(M11~M30)
- HSS-PM(M2~M12/TQ428) and HSS-E(M14~M30/TB428)
- * Coating(TiN, TiCN or TiAlN) is available on your request.

◎ : 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

					TB744 TB754 TQ744 TQ754	TC814 TC854 TC834 TC874	TD814 TD854 TD834 TD874	TB814 TB854 TB834 TB874	TCJ05 TCJ09 TCJ01 TCJ02	TDJ05 TDJ09 TDJ01 TDJ02	TBJ05	TCJ06
					Vc (m/min)							
THREAD MILLS	COMBO TAPS	1	Non-alloy steel	125		15-20	20-25	15-20	15-20	20-25	15-20	15-20
SYNCHRO TAPS		2		190	15-20	15-20	20-25	15-20	15-20	20-25	15-20	15-20
		3		250		12-18	18-24	12-18	12-18	18-24	12-18	12-18
		4		270	10-15	10-15	15-20	10-15	10-15	15-20	10-15	10-15
		5		300		6-10	10-14	6-10	6-10	10-14	6-10	6-10
YG TAP GENERAL		6	Low alloy steel	180	10-15	10-15	15-20	10-15	10-15	15-20	10-15	10-15
YG TAP STEEL		7		275	10-15	10-15	15-20	10-15	10-15	15-20	10-15	10-15
YG TAP HARDENED		8		300		6-10	10-14	6-10	6-10	10-14	6-10	6-10
		9		350		3-5	5-7	3-5	3-5	5-7	3-5	3-5
YG TAP INOX		10		200		3-5	5-7	3-5	3-5	5-7	3-5	3-5
		11	High alloyed steel, and tool steel	325								
	M	12	Stainless steel	200	7-10	7-10	10-15	7-10	7-10	10-15	7-10	7-10
YG TAP CAST IRON		13		240	5-8	5-8	8-11	5-8	5-8	8-11	5-8	5-8
		14		180	4-6	4-6	6-8	4-6	4-6	6-8	4-6	4-6
	K	15	Grey cast iron	180		10-15	15-20	10-15	10-15	15-20	10-15	10-15
YG TAP ALU		16		260		5-8	8-11	5-8	5-8	8-11	5-8	5-8
		17	Nodular cast iron	160		10-15	15-20	10-15	10-15	15-20	10-15	10-15
YG TAP Ti Ni		18		250		5-8	8-11	5-8	5-8	8-11	5-8	5-8
		19	Malleable cast iron	130								
YG TAP FORMING		20		230								
	N	21	Aluminum-wrought alloy	60								
		22		100								
NUT TAPS		23	Aluminum-cast, alloyed	75		15-20	20-25	15-20	15-20	20-25	15-20	15-20
		24		90								
STI TAPS		25		130								
		26	Copper and Copper Alloys (Bronze / Brass)	110		25-35	35-40	25-35	25-35	35-40	25-35	25-35
PIPE TAPS		27		90		8-12	12-17	8-12	8-12	12-17	8-12	8-12
		28		100	15-20	15-20	20-25	15-20	15-20	20-25	15-20	15-20
TECHNICAL DATA		29	Non Metallic Materials									
		30										
	S	31	Heat Resistant Super Alloys	200								
		32		280								
		33		250								
		34		350								
		35		320								
		36	Titanium Alloys	400 Rm								
		37		1050 Rm								
	H	38	Hardened steel	550								
		39		630								
		40	Chilled Cast Iron	400								
		41	Hardened Cast Iron	550								


RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDKONDITIONEN

	TDJ06	TBJ06	TCJ07	TDJ07	TBJ07	TCJ08	TDJ08	TBJ08	TC814-IC	TC445	TB428 TB438	TQ428 TQ438
VDI 3323	Vc (m/min)											
1	20-25	15-20	15-20	20-25	15-20	15-20	20-25	15-20	15-20	15-20		
2	20-25	15-20	15-20	20-25	15-20	15-20	20-25	15-20	15-20	15-20	15-20	15-20
3	18-24	12-18	12-18	18-24	12-18	12-18	18-24	12-18	12-18	12-18		
4	15-20	10-15	10-15	15-20	10-15	10-15	15-20	10-15	10-15	10-15	10-15	10-15
5	10-14	6-10	6-10	10-14	6-10	6-10	10-14	6-10	6-10	6-10		
6	15-20	10-15	10-15	15-20	10-15	10-15	15-20	10-15	10-15	10-15	10-15	10-15
7	15-20	10-15	10-15	15-20	10-15	10-15	15-20	10-15	10-15	10-15	10-15	10-15
8	10-14	6-10	6-10	10-14	6-10	6-10	10-14	6-10	6-10	6-10		
9	5-7	3-5	3-5	5-7	3-5	3-5	5-7	3-5	3-5	3-5		
10	5-7	3-5	3-5	5-7	3-5	3-5	5-7	3-5	3-5	3-5		
11												
12	10-15	7-10	7-10	10-15	7-10	7-10	10-15	7-10	7-10	7-10	7-10	7-10
13	8-11	5-8	5-8	8-11	5-8	5-8	8-11	5-8	5-8	5-8	5-8	5-8
14	6-8	4-6	4-6	6-8	4-6	4-6	6-8	4-6	4-6	4-6	4-6	4-6
15	15-20	10-15	10-15	15-20	10-15	10-15	15-20	10-15	10-15	10-15		
16	8-11	5-8	5-8	8-11	5-8	5-8	8-11	5-8	5-8	5-8		
17	15-20	10-15	10-15	15-20	10-15	10-15	15-20	10-15	10-15	10-15		
18	8-11	5-8	5-8	8-11	5-8	5-8	8-11	5-8	5-8	5-8		
19												
20												
21												
22												
23	20-25	15-20	15-20	20-25	15-20	15-20	20-25	15-20	15-20	15-20		
24												
25												
26	35-40	25-35	25-35	35-40	25-35	25-35	35-40	25-35	25-35	25-35		
27	12-17	8-12	8-12	12-17	8-12	8-12	12-17	8-12	8-12	8-12		
28	20-25	15-20	15-20	20-25	15-20	15-20	20-25	15-20	15-20	15-20	15-20	15-20
29												
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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 $\geq 600\text{m/min}$. 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-E & HSS-PM COMBO TAPS

For Multi Purpose Tapping YG-1's Patent



Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P.114

HOLE TYPE			Max. 3.0xD Through Hole					
TOOL MATERIAL			HSS-E					
CHAMFER LEAD ACC. TO DIN2197			B	B	B	B	B	B
FLUTE TYPE			Spiral Point	Spiral Point	Spiral Point	Spiral Point	Spiral Point	Spiral Point
SPIRAL FLUTE ANGLE			-	-	-	-	-	-
SERIES	M	DIN 371/376	TC814 (P.95)	TD814 (P.95)	TB814 (P.95)	TCJ05 (P.96)	TDJ05 (P.96)	TBJ05 (P.96)
		DIN352						
		DIN357/LONG						
	MF	DIN374	TC854 (P.100)	TD854 (P.100)	TB854 (P.100)	TCJ09 (P.102)	TDJ09 (P.102)	
		DIN2181						
	UNC	DIN 371/376	TC834 (P.109)	TD834 (P.109)	TB834 (P.109)	TCJ01 (P.110)	TDJ01 (P.110)	
		DIN351						
	UNF	DIN 371/374	TC874 (P.111)	TD874 (P.111)	TB874 (P.111)	TCJ02 (P.112)	TDJ02 (P.112)	
		DIN2181						
	BSW	DIN2182/2183						
		DIN351						
	G(BSP)	DIN5156/5157						
	EG-M	DIN 371/376						
	EG-UNC	DIN 371/376						
EG-UNF	DIN 371/374							
SURFACE TREATMENT			Bright	TiN	VAP	Bright	TiN	VAP
MODEL								
HB	HRC							
125		○	○	○	○	○	○	○
190	13	◎	◎	◎	◎	◎	◎	◎
250	25	◎	◎	◎	◎	◎	◎	◎
270	28	◎	◎	◎	◎	◎	◎	◎
300	32	◎	◎	◎	◎	◎	◎	◎
180	10	◎	◎	◎	◎	◎	◎	◎
275	29	◎	◎	◎	◎	◎	◎	◎
300	32	◎	◎	◎	◎	◎	◎	◎
350	38	◎	◎	◎	◎	◎	◎	◎
200	15	○	○	○	○	○	○	○
325	35							
200	15	◎	◎	◎	◎	◎	◎	◎
240	23	◎	◎	◎	◎	◎	◎	◎
180	10	◎	◎	◎	◎	◎	◎	◎
180	10	◎	◎	◎	◎	◎	◎	◎
260	26	◎	◎	◎	◎	◎	◎	◎
160	3	◎	◎	◎	◎	◎	◎	◎
250	25	◎	◎	◎	◎	◎	◎	◎
130								
230	21							
60								
100								
75		◎	◎	◎	◎	◎	◎	◎
90								
130								
110		◎	◎	◎	◎	◎	◎	◎
90		◎	◎	◎	◎	◎	◎	◎
100		◎	◎	◎	◎	◎	◎	◎
200	15							
280	30							
250	25							
350	38							
320	34							
400 Rm								
1050 Rm								
550	55							
630	60							
400	42							
550	55							

