

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

MF

ISO Metric fine threads DIN 13

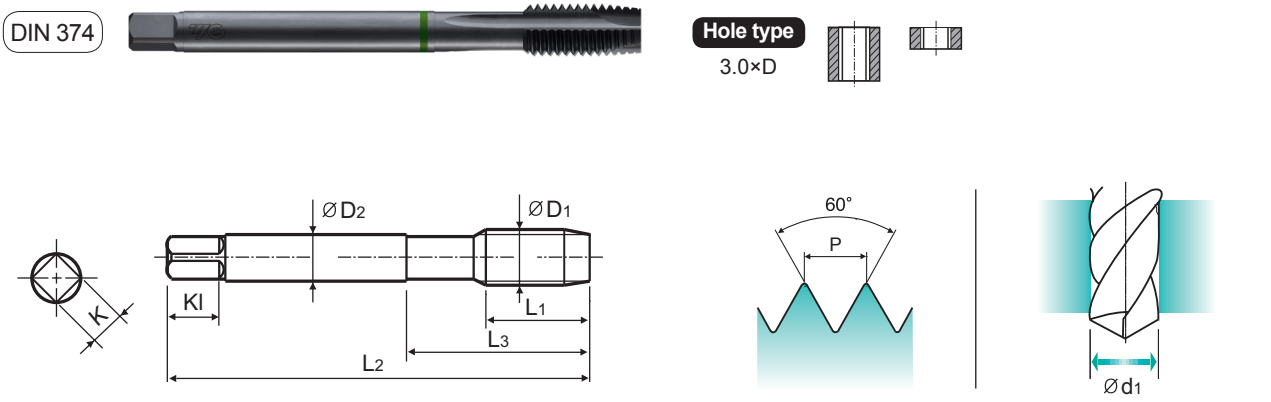
 Metrisches ISO-Feingewinde DIN 13

 ISO MÉTRIQUE PAS FINS 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

HSS-E

DIN 374

6H





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
M14 × 1.5		TB438556	22	100	40	11	9	12	3	12.5
M14 × 1.25		TB438566	22	100	40	11	9	12	3	12.8
M14 × 1.0		TB438576	22	100	40	11	9	12	3	13
M16 × 1.5		TB438616	22	100	40	12	9	12	3	14.5
M16 × 1		TB438626	18	100	40	12	9	12	3	15
M18 × 1.5		TB438676	25	110	44	14	11	14	4	16.5
M18 × 1		TB438686	20	110	44	14	11	14	4	17
M20 × 1.5		TB438726	25	125	50	16	12	15	4	18.5
M20 × 1		TB438736	20	125	50	16	12	15	4	19
M22 × 1.5		TB438766	25	125	50	18	14.5	17	4	20.5
M22 × 1		TB438776	20	125	50	18	14.5	17	4	21
M24 × 2		TB438796	27	140	54	18	14.5	17	4	22
M24 × 1.5		TB438806	27	140	54	18	14.5	17	4	22.5
M26 × 1.5		TB438856	28	140	54	18	14.5	17	4	24.5
M27 × 2		TB438876	28	140	54	20	16	19	4	25
M27 × 1.5		TB438886	28	140	54	20	16	19	4	25.5
M28 × 1.5		TB438916	28	140	54	20	16	19	4	26.5
M30 × 2		TB438966	30	150	57	22	18	21	4	28
M30 × 1.5		TB438976	30	150	57	22	18	21	4	28.5

* 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	
HRc											15	30	25	38	34			55	60	42	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	
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	P	1	Non-alloy steel	125		15-20	20-25	15-20	15-20	20-25	15-20	15-20	
SYNCHRO TAPS			2		190	13	15-20	15-20	20-25	15-20	15-20	20-25	15-20	15-20
			3		250	25		12-18	18-24	12-18	12-18	18-24	12-18	12-18
YG TAP GENERAL			4		270	28	10-15	10-15	15-20	10-15	10-15	15-20	10-15	10-15
			5		300	32		6-10	10-14	6-10	6-10	10-14	6-10	6-10
YG TAP STEEL		P	6	Low alloy steel	180	10	10-15	10-15	15-20	10-15	10-15	15-20	10-15	10-15
YG TAP HARDENED			7		275	29	10-15	10-15	15-20	10-15	10-15	15-20	10-15	10-15
			8		300	32		6-10	10-14	6-10	6-10	10-14	6-10	6-10
			9		350	38		3-5	5-7	3-5	3-5	5-7	3-5	3-5
YG TAP INOX			P		10	High alloyed steel, and tool steel	200	15		3-5	5-7	3-5	3-5	5-7
		11		325	35									
YG TAP CAST IRON		M	12	Stainless steel	200	15	7-10	7-10	10-15	7-10	7-10	10-15	7-10	7-10
			13		240	23	5-8	5-8	8-11	5-8	5-8	8-11	5-8	5-8
	14		180		10	4-6	4-6	6-8	4-6	4-6	6-8	4-6	4-6	
YG TAP ALU	K	15	Grey cast iron	180	10		10-15	15-20	10-15	10-15	15-20	10-15	10-15	
		16		260	26		5-8	8-11	5-8	5-8	8-11	5-8	5-8	
YG TAP Ti Ni		17	Nodular cast iron	160	3		10-15	15-20	10-15	10-15	15-20	10-15	10-15	
		18		250	25		5-8	8-11	5-8	5-8	8-11	5-8	5-8	
YG TAP FORMING		19	Malleable cast iron	130										
		20		230	21									
NUT TAPS	N	21	Aluminum-wrought alloy	60										
		22		100										
		23	Aluminum-cast, alloyed	75		15-20	20-25	15-20	15-20	20-25	15-20	15-20		
24		90												
25		130												
STI TAPS		26	Copper and Copper Alloys (Bronze / Brass)	110		25-35	35-40	25-35	25-35	35-40	25-35	25-35		
		27		90		8-12	12-17	8-12	8-12	12-17	8-12	8-12		
PIPE TAPS		28		100		15-20	15-20	20-25	15-20	15-20	20-25	15-20	15-20	
		29	Non Metallic Materials											
TECHNICAL DATA		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									
		41	Hardened Cast Iron	550	55									


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
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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								

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	Low alloy steel	About 0.75% C	Quenched & Tempered	300	32	◎	◎	◎	◎	◎	◎
	6			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	Non Metallic Materials	CuSn, lead-free copper and electrolytic copper		100		◎	◎	◎	◎	◎	◎
	29		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	Titanium Alloys		Cast	320	34						
	36		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						

