

YG SPIRAL FLUTE TAPS

TTS31 SERIES

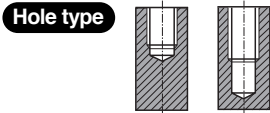
M ISO metric coarse threads DIN 13
Metrisches ISO-Gewinde DIN 13

► Suitable for high speed machining and high precision threads

► Geeignet für die High-Speed-Bearbeitung (HSC) und hoher Gewinde-Präzision



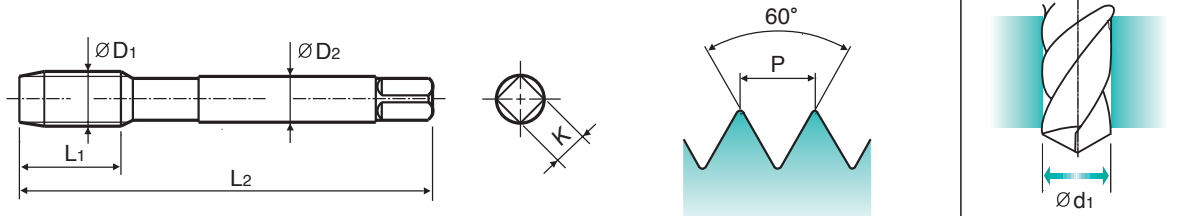
DIN 371/376



Synchro Type Applicable to 2-3 times faster cutting speed than minimum general GS Taps cutting speeds

Material groups: **GS** HSS-PM DIN 371/376 6H 60° C TiN R45

Machine taps
 Maschinengewindebohrer



SIZE	Pitch	EDP No.	Thread Length	Overall Length	Shank Diameter	Square Size	Tapping Drill Diameter
ØD1	P		L1	L2	ØD2	K	Ød1
M3	× 0.5	TTS31206	6	56	3.5	2.7	2.5
M4	× 0.7	TTS31246	7	63	4.5	3.4	3.3
M5	× 0.8	TTS31286	8	70	6	4.9	4.2
M6	× 1	TTS31316	10	80	6	4.9	5
M8	× 1.25	TTS31366	13	90	8	6.2	6.8
M10	× 1.5	TTS31426	15	100	10	8	8.5
M12	× 1.75	TTS31506	18	110	9	7	10.2
M14	× 2	TTS31546	20	110	11	9	12
M16	× 2	TTS31606	20	110	12	9	14
M18	× 2.5	TTS31656	25	125	14	11	15.5
M20	× 2.5	TTS31706	25	140	16	12	17.5

- DIN371 (M3~M10) and DIN376 (M11~M20)
- Coating(TiAlN) is available on your request.

Unit : N/mm²

Steel < 400	Steel < 700	Steel < 850	St. Alloy < 850	St. Alloy ≤ 1200	St. Alloy > 1200	INOX Free < 850	INOX Aust. < 850	INOX < 1000	GG Cast < 500	GG Cast < 1000	GGG Cast < 700	GGG Cast < 1000	Ti < 700	Ti Alloy < 900
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Ti Alloy ≤ 1300	Ni < 500	Ni Alloy < 900	Ni Alloy ≤ 1400	Cu < 350	Cu Alloy Short	Cu Alloy Long	Cu-Al-Fe < 1500	Al / Mg < 350	Al Wrought	Al Si ≤ 10%	Al Si > 10%	Plastic Thermosoft	Plastic Thermoset	Plastic FRP
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



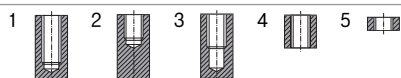
MACHINE TAPS

RECOMMENDATION TABLE

USE

⊙ = EXCELLENT

○ = GOOD



MATERIAL GROUPS			MU	MU	MU
DIN 371/376	M	EDP No. (Page)	TC804 (p.375)	TD804 (p.375)	TC804-IC (p.378)
DIN 371/376	EG-M	EDP No. (Page)			
DIN 352	M	EDP No. (Page)			
DIN 374	MF	EDP No. (Page)	TC844 (p.376)	TD844 (p.376)	
DIN 371/376	UNC	EDP No. (Page)	TC824 (p.384)	TD824 (p.384)	
DIN 371/376	EG-UNC	EDP No. (Page)			
DIN 371/374	UNF	EDP No. (Page)	TC864 (p.385)	TD864 (p.385)	
DIN 371/376	EG-UNF	EDP No. (Page)			
DIN 2182/2183	BSW	EDP No. (Page)			
DIN 357/5156	M/G(BSP)	EDP No. (Page)			
LONG	M	EDP No. (Page)			
SURFACE TREATMENT / COATING			Bright	TiN	Bright
SPIRAL FLUTE ANGLE			R40	R40	R40
CHAMFER LEAD ACC. DIN 2197			C	C	C
HOLE TYPE			1-2-3	1-2-3	1-2-3

COOLANT

- A = Cutting Oil
- T = Oil Emulsion
- X = Cutting Oil/Oil Emulsion
- S = Dry
- Z = Dry/Oil Emulsion

MATERIAL GROUPS	LIST OF MATERIALS	HARDNESS HB	TENSILE STRENGTH Rm N/mm ²	CHIP	CUTTING SPEED Vc m/min	COOLANT	HOLE TYPE	HOLE TYPE	HOLE TYPE
10. STEELS	11 Steel < 400	Magnetic soft steels	< 120 < 400	Extra long	15-20	T	⊙	⊙	⊙
	12 Steel < 700	Structure steels	< 200 < 700	Medium/long	15-20	T	⊙	⊙	⊙
	13 Steel < 850	Plain carbon steels	< 250 < 850	Long	12-18	T	⊙	⊙	⊙
	14 St. Alloy < 850	Alloy steels	< 250 < 850	Long	10-15	X	⊙	⊙	⊙
	15 St. Alloy ≤ 1,200	Alloy steels, Hardened steels	< 350 ≤ 1,200	Long	6-10	X	⊙	⊙	⊙
	16 St. Alloy > 1,200	Alloy steels, Hardened steels	> 350 > 1,200	Long	3-5	A			
20. STAINLESS STEELS	21 INOX Free < 850	Free machining	< 250 < 850	Medium	7-10	A	⊙	⊙	⊙
	22 INOX Aust.< 850	Austenitic	< 250 < 850	Long	5-8	A	⊙	⊙	⊙
	23 INOX < 1,100	Ferritic, Ferritic+Austenitic, Martensitic	< 300 < 1,100	Long	4-6	A	⊙	⊙	⊙
30. CAST IRON	31 GG Cast < 500	Grey cast iron	< 150 < 500	Extra short	10-15	X	⊙	⊙	⊙
	32 GG Cast < 1,000	Grey cast iron	< 300 < 1,000	Extra short	5-8	T	⊙	⊙	⊙
	33 GGG Cast < 700	Nodular graphite, Malleable cast iron	< 200 < 700	Short	10-15	X	⊙	⊙	⊙
	34 GGG Cast < 1,000	Nodular graphite, Malleable cast iron	< 300 < 1,000	Short	5-8	X	⊙	⊙	⊙
40. TITANIUM	41 Ti < 700	Titanium, Unalloyed	< 200 < 700	Extra long	10-15	T	⊙	⊙	⊙
	42 Ti Alloy < 900	Titanium, Alloyed	< 270 < 900	Medium/Short	8-12	A	○	○	○
	43 Ti Alloy ≤ 1,300	Titanium, Alloyed	< 350 ≤ 1,300	Medium/Short	4-6	A			
50. NICKEL	51 Ni < 500	Nickel, Unalloyed	< 150 < 500	Extra long	8-12	A	⊙	⊙	⊙
	52 Ni Alloy < 900	Nickel, Alloyed	< 270 < 900	Long	10-15	A	○	○	○
	53 Ni Alloy ≤ 1,400	Nickel, Alloyed	< 410 ≤ 1,400	Long	2-4	A			
60. COPPER, BRASS, BRONZE	61 Cu < 350	Copper, Unalloyed	< 100 < 350	Extra long	8-12	T	⊙	⊙	⊙
	62 Cu Alloy (Short)	Short chip Brass, Bronze, Copper	< 200 < 700	Medium/Short	25-35	T	⊙	⊙	⊙
	63 Cu Alloy (Long)	Long chip Brass, Bronze, Copper	< 200 < 700	Long	15-20	T	⊙	⊙	⊙
	64 Cu-Al-Fe < 1,500	Cu-Al-Fe alloys	< 470 < 1,500	Short	3-5	A			
70. ALUMINUM	71 Al/Mg < 350	Aluminum, Magnesium, Unalloyed	< 100 < 350	Extra long	10-15	T			
	72 Al Wrought	Aluminum, Alloyed Si < 0.5%	< 150 < 500	Medium	25-35	T	⊙	⊙	⊙
	73 Al (Si ≤ 10%)	Aluminum, Alloyed, Si ≤ 10%	< 120 < 400	Medium/Short	15-20	T	⊙	⊙	⊙
	74 Al (Si > 10%)	Aluminum, Alloyed, Si > 10%	< 120 < 400	Short	10-15	T	⊙	⊙	⊙
80. PLASTICS	81 Thermosoft.	Thermoplastics		Extra long	20-30	T			
	82 Thermoset.	Thermosetting Plastics		Short	8-12	Z			
	83 FRP	Fiber Reinforced Plastics		Extra short	5-7	Z			

