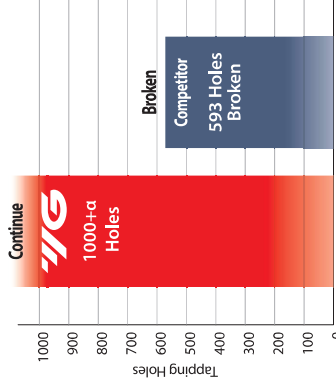


CASE STUDY

TEST III SPIRAL FLUTE TAP (M6x1.0)

Cutting Condition	
Tool	Spiral Flute Tap
Size	M6x1.0
Work Material	JIS: SUS304 / DIN: X16CrNi1810 / WR: 1.4350
RPM	531 rev/min.
Vc	10 m/min.
Feed	531 mm/min.
Tap Drill Size	5.1mm
Tapping Depth	12 mm
Tapping Holes	YG-1: 1000+α / Competitor: 593
Coolant	Wet Cut

Prime Taps (1000 Holes+α)



Competitor (593 Holes, Broken)



TEST IV SPIRAL FLUTE TAP (M8x1.25)

Cutting Condition	
Tool	Spiral Flute Tap
Size	M8x1.25
Work Material	JIS: S45C / DIN: CK45 / WR: 1.1191
RPM	796 rev/min
Vc	20 m/min
Feed	995 mm/min
Tap Drill Size	6.8mm
Tapping Depth	17 mm
Tapping Holes	YG-1: 1350+α / Competitor: 1350+α
Coolant	Wet Cut



1350 Holes Competitor

SELECTION GUIDE



THREADING TOOLS

HSS-PM PRIME TAPS

Premium Spiral Point and Spiral Flute Taps
High Performance in Various Ductile Materials

HOLE TYPE		Max. 2.5xD Blind Hole		Max. 3.0xD Through Hole	
TOOL MATERIAL		HSS-PM		B	
CHAMFERED AC TO DIN 1197		E		Spiral Point	
FLUTE TYPE		R45		-	
SPIRAL FLUTE ANGLE		TRE30 (p.9)		TRJ15 (p.14)	
M	DN32	TRE30 (p.9)	TRJ15 (p.14)		
	DN37/LONG				
MF	DN374	TRE31 (p.10)	TRJ16 (p.15)		
	DN2181				
UKC	DN371/376	TRE32 (p.12)	TRJ17 (p.17)		
	DN351				
UNF	DN371/374	TRE33 (p.13)	TRJ18 (p.19)		
	DN2181				
BSW	DN3182/183				
	DN351				
GBSP	DN3156/157				
EGM	DN371/376				
EG-UNC	DN371/376				
EG-UNF	DN371/374				

SERIES



◎ : Excellent ○ : Good
Please visit global.yg1.com/mat for material search

ISO 3233	VDI 12	Material Description	Composition / Structure / Heat Treatment	HB	HRC	Recommended cutting conditions
1	1	Non-alloy steel	About 0.15% C Annealed	125	12	○ 5-20 ○ 15-45
2	2	Non-alloy steel	About 0.45% C Annealed	190	13	◎ 10-50 ◎ 10-55
3	3	Non-alloy steel	About 0.45% C Quenched & Tempered	250	25	◎ 10-50 ◎ 10-55
4	4	Non-alloy steel	About 0.75% C Annealed	270	28	◎ 15-40 ◎ 15-50
5	5	Low alloy steel	About 0.75% C Quenched & Tempered	300	32	◎ 15-40 ◎ 15-50
6	6	Low alloy steel	Annealed	180	10	◎ 8-30 ◎ 8-30
7	7	Low alloy steel	Quenched & Tempered	275	29	◎ 8-30 ◎ 8-30
8	8	Low alloy steel	Quenched & Tempered	300	32	◎ 8-30 ◎ 8-30
9	9	High alloyed steel and tool steel	Quenched & Tempered	350	38	○ 8-30 ○ 8-30
10	10	High alloyed steel and tool steel	Annealed	200	15	○ 8-30 ○ 8-30
11	11	High alloyed steel and tool steel	Quenched & Tempered	325	35	○ 8-30 ○ 8-30
12	12	Stainless steel	Ferritic / Martensitic	200	15	◎ 5-15 ◎ 5-15
13	13	Stainless steel	Annealed	240	23	◎ 5-15 ◎ 5-15
14	14	Stainless steel	Quenched & Tempered	180	10	◎ 5-15 ◎ 5-15
15	15	Grey cast iron	Pearlitic / ferritic	180	10	○ 15-35 ○ 15-35
16	16	Grey cast iron	Pearlitic (Martensitic)	260	26	○ 15-35 ○ 15-35
17	17	Nodular cast iron	Ferritic	160	3	◎ 15-35 ◎ 15-35
18	18	Nodular cast iron	Pearlitic	250	25	◎ 15-35 ◎ 15-35
19	19	Malleable cast iron	Ferritic	130	10	◎ 15-35 ◎ 15-35
20	20	Malleable cast iron	Pearlitic	230	21	○ 15-35 ○ 15-35
21	21	Aluminum-wrought alloy	Not Curable	60		○ 15-35 ○ 15-35
22	22	Aluminum-wrought alloy	Curable	70		○ 15-35 ○ 15-35
23	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable	100		◎ 15-35 ◎ 15-35
24	24	Aluminum-cast, alloyed	≤ 12% Si, Curable	90		◎ 15-35 ◎ 15-35
25	25	Copper and Copper Alloys	> 12% Si, Not Curable	130		○ 15-35 ○ 15-35
26	26	Copper and Copper Alloys	Cutting Alloys, PB-1%	110		◎ 15-35 ◎ 15-35
27	27	Copper Alloys (Bronze / Brass)	CuZn, CuSnZn (Brass)	90		◎ 15-35 ◎ 15-35
28	28	Non Metallic Materials	CuSn, lead-free copper and electrolytic copper	100		◎ 15-35 ◎ 15-35
29	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic			◎ 15-35 ◎ 15-35
30	30	Non Metallic Materials	Rubber, Wood, etc.			
31	31	Heat Resistant Super Alloys	Fe Based	200	15	
32	32	Heat Resistant Super Alloys	Annealed	280	30	
33	33	Heat Resistant Super Alloys	Cured	250	25	
34	34	Heat Resistant Super Alloys	Ni or Co Based	350	38	
35	35	Heat Resistant Super Alloys	Cured	320	34	
36	36	Titanium Alloys	Pure Titanium	400 firm		
37	37	Titanium Alloys	Alpha + Beta Alloys	1050 firm		
38	38	Hardened steel	Hardened	550	55	
39	39	Chilled Cast Iron	Hardened	630	60	
40	40	Chilled Cast Iron	Cast	400	42	
41	41	Hardened Cast Iron	Hardened	550	55	