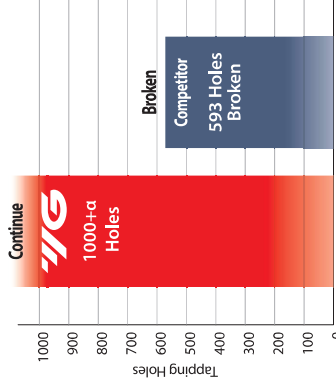


CASE STUDY

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)

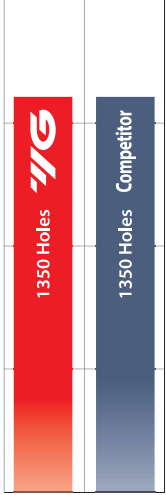


Competitor (593 Holes, Broken)



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



HSS-PM PRIME TAPS

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

HOLE TYPE	TOOL MATERIAL	TOOL TYPE	FLUTE TYPE	SPR. POINT	Max. 3.0xD Through Hole
C	HSS-PM	Spiral Flute	R45	Spiral Point	-
			TRE30 (p.9)	TRE34 (p.9)	
M	DIN932	DIN937/LONG	TRJ15	-	-
			TRJ16 (p.15)		
			TRJ17 (p.17)		
			TRJ18 (p.19)		
			TRJ19 (p.19)		
MF	DIN934	DIN937	TRJ16	-	-
			TRJ17		
UKC	DIN931	DIN937/6	TRJ17	-	-
			TRJ18		
UNF	DIN9182/183	DIN931	TRJ18	-	-
			TRJ19		
BSW	DIN931	DIN937	TRJ16	-	-
			TRJ17		
GBSP	DIN9156/57	DIN937/6	TRJ17	-	-
			TRJ18		
EGM	DIN937/6	DIN931	TRJ17	-	-
			TRJ18		
EG-UNC	DIN937/6	DIN931	TRJ17	-	-
			TRJ18		
EG-UNF	DIN937/6	DIN931	TRJ17	-	-
			TRJ18		
SERIES					
SUBFACE TREATMENT					
MODEL					

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

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment	HB	HRC	Recommended cutting conditions Vc (m/min)
P	1	Non-alloy steel	About 0.15% C Annealed	125	12	5-20 ◎
	2	Non-alloy steel	About 0.45% C Annealed	190	13	10-50 ◎
	3	Non-alloy steel	About 0.45% C Quenched & Tempered	250	25	10-50 ◎
	4	Non-alloy steel	About 0.75% C Annealed	270	28	15-40 ◎
	5	Non-alloy steel	About 0.75% C Quenched & Tempered	300	32	15-40 ◎
	6	Non-alloy steel	About 0.75% C Annealed	180	10	8-30 ◎
	7	Low alloy steel	Quenched & Tempered	275	29	8-30 ◎
	8	Low alloy steel	Quenched & Tempered	300	32	8-30 ◎
	9	Low alloy steel	Quenched & Tempered	350	38	8-30 ◎
	10	High alloyed steel and tool steel	Annealed	200	15	8-30 ○
M	11	Stainless steel	Annealed	200	15	8-30 ○
	12	Stainless steel	Ferritic / Martensitic	200	15	5-15 ◎
	13	Stainless steel	Martensitic	240	23	5-15 ◎
	14	Stainless steel	Austenitic	180	10	5-15 ◎
K	15	Grey cast iron	Pearlitic / Ferritic	180	10	15-35 ○
	16	Grey cast iron	Pearlitic (Martensitic)	260	26	15-35 ○
	17	Nodular cast iron	Ferritic	160	3	15-35 ◎
	18	Nodular cast iron	Pearlitic	250	25	15-35 ◎
	19	Malleable cast iron	Ferritic	130	10	15-35 ◎
	20	Malleable cast iron	Pearlitic	230	21	15-35 ◎
N	21	Aluminum-wrought alloy	Not Curable	60		15-35 ○
	22	Aluminum-cast, alloyed	Curable	75		15-35 ○
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable	100		15-35 ○
	24	Aluminum-cast, alloyed	≤ 12% Si, Curable	90		15-35 ◎
	25	Copper and Copper Alloys	> 12% Si, Not Curable	130		15-35 ○
	26	Copper and Copper Alloys	Cutting Alloys, PB-1 %	110		15-35 ○
	27	Copper and Copper Alloys	(Bronze / Brass)	90		15-35 ◎
	28	Copper and Copper Alloys	CuZn, CuSnZn (Brass)	90		15-35 ◎
	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic	100		15-35 ◎
	30	Non Metallic Materials	Rubber, Wood, etc.			
S	31	Heat Resistant Super Alloys	Fe Based	200	15	
	32	Heat Resistant Super Alloys	Annealed	280	30	
	33	Heat Resistant Super Alloys	Cured	250	25	
	34	Heat Resistant Super Alloys	Ni or Co Based	350	38	
	35	Heat Resistant Super Alloys	Cast	320	34	
	36	Heat Resistant Super Alloys	Pure Titanium	400 firm		
H	37	Heat Resistant Super Alloys	Alpha + Beta Alloys	1050 firm		
	38	Heat Resistant Super Alloys	Hardened	550	55	
	39	Heat Resistant Super Alloys	Hardened	630	60	
	40	Heat Resistant Super Alloys	Cast	400	42	
	41	Heat Resistant Super Alloys	Hardened	550	55	