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Search 'YG-1' on social media outlets

ISO 9001 / ISO 14001

YG1YUSY2505002

YU-SY25 **AMERICA**

BEST VALUE IN THE WORLD OF CUTTING TOOLS



YG Synchro TAP

TiN/TiCN-COATED
HSS-PM (Powder Metallurgy) TAP

For High-Speed Tapping on Rigid CNC Machine

NEW

SYNCHRO TAP with Internal Coolant

- For extreme spindle speeds
- Axial and Radial coolant for reduced heat and longer tool life at higher spindle speeds
- Better chip flow for improved thread finish

FEATURES OF GEOMETRY

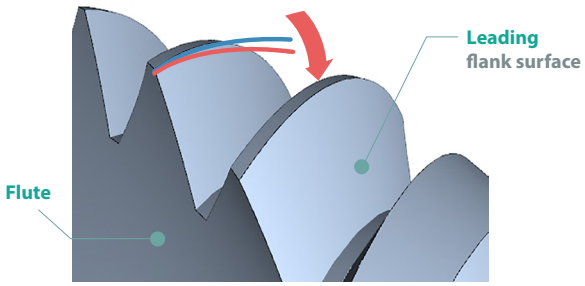
Shorter thread length will reduce chip problems at higher speed tapping conditions



Shank Tolerance 'h7' for precision clamping and rigid tapping

More thread relief allows high speed cutting

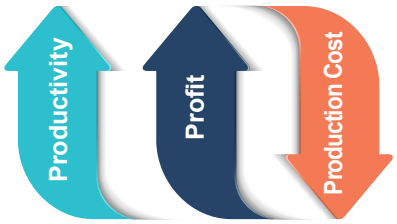
HSS-PM (Powder Metallurgy)
for more reliable performance and wear resistance



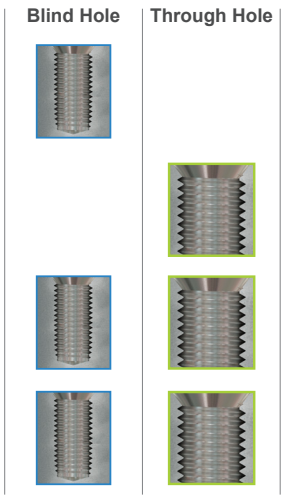
ADVANTAGES

PRODUCTIVITY
Up to 3 times Faster in tapping compared to conventional taps (General Steel)

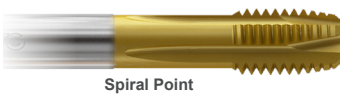




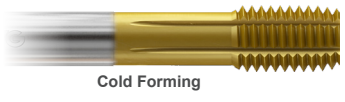
4 kinds of taps are available




Spiral Flute — #4 - 3/4" M3 - M20


Spiral Point — #4 - 3/4" M3 - M20


Straight Flute — #4 - 3/4" M3 - M20


Cold Forming — #4 - 3/4" M3 - M20

SYNCHRO TAPPING CHUCK (ER TYPE)

See Page No. 32

When using Synchro taps, YG-1 strongly recommends SYNCHRO Tapping Chuck for the best thread quality and superior tool life



CAT(ASME B5.50)

Feature :
- To compensate for synchronization errors to extend tap life and to improve thread quality
- To compensate for pitch tolerances of taps
- For machine with synchronized spindle

BT(JIS B6339/MAS-403), HSK(DIN 69893/ISO 12164-1) and K-STRAIGHT taper products are available

GUIDE LINE TO ICONS

Work Piece Material

Material groups GS
Steels with good machinability
Rm<850N/mm²

Material groups GV
Any material with at least
8-10% elongation

Material groups GG
Grey Cast Iron
and Cast Aluminum

Thread Angle

60°

Tool Raw Material

HSS PM

Pitch Limit

H D

Surface Treatment

TiCN
Titanium Carbon Nitride Coating

TiN
Titanium Nitride Coating

Helix Angle

R45°

Chamfer Lead

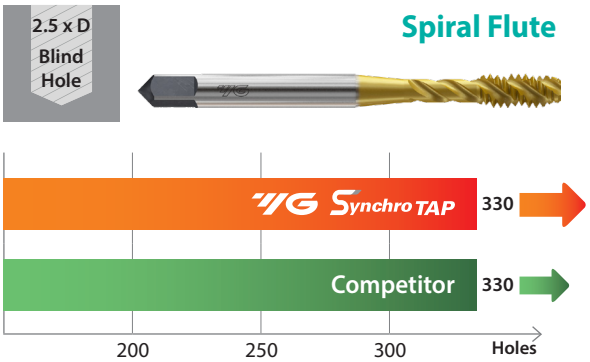
1P~2P 2P~3P 4P~5P

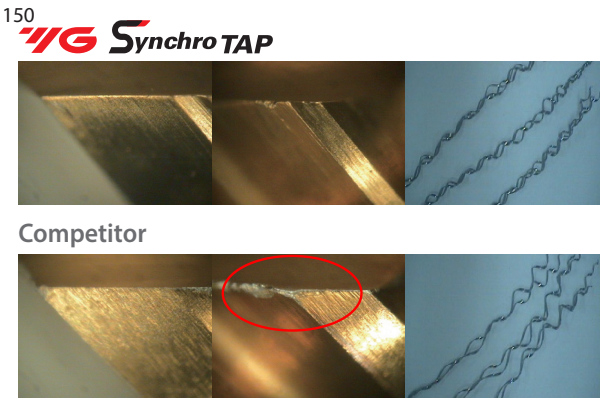
CASE STUDY

TEST I SPIRAL FLUTE TAP (M10x1.5)

Cutting Condition

Tool	Synchro TAP Spiral Flute Tap	Competitor
Size	M10 x 1.5	
Work Material	C45 / 1045 / S45C Hardness : HRc20	
Cutting Speed	98.4 ft/min.	
RPM	955 rev./min.	
Tapping Depth	.9843" (2.5xD / Blind Hole)	
Tapping Holes	330	
Cooling Method	External Cooling Water Soluble (9% Emulsion)	
Machine	Machining Center	

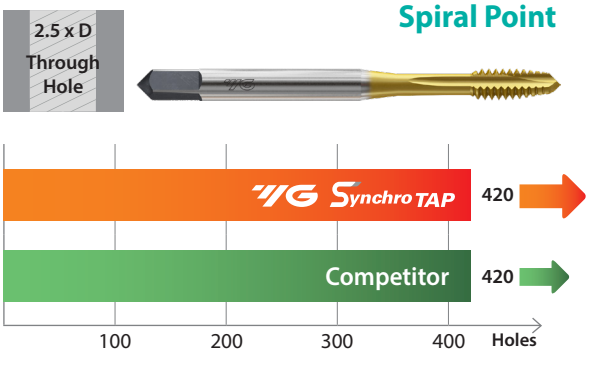


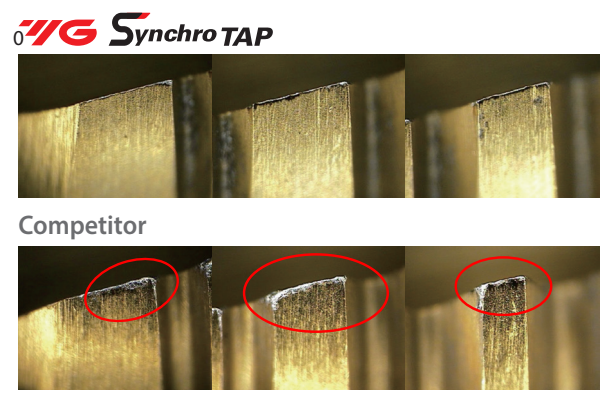


TEST II SPIRAL POINT TAP (M6x1.0)

Cutting Condition

Tool	Synchro TAP Spiral Point Tap	Competitor
Size	M6 x 1.0	
Work Material	4140 / 42CrMo4 / SCM440 Hardness : HRc20	
Cutting Speed	98.4 ft/min.	
RPM	1592 rev./min.	
Tapping Depth	.5906" (2.5xD / Through Hole)	
Tapping Holes	420	
Cooling Method	External Cooling Water Soluble (9% Emulsion)	
Machine	Machining Center	

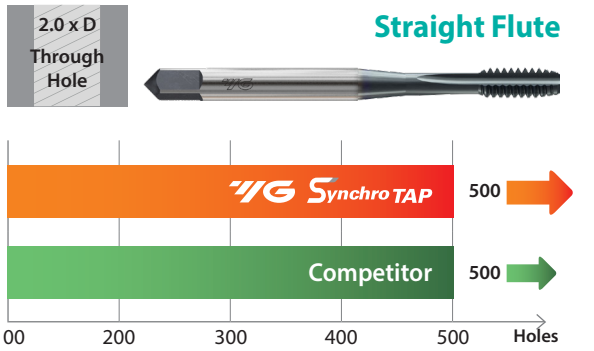




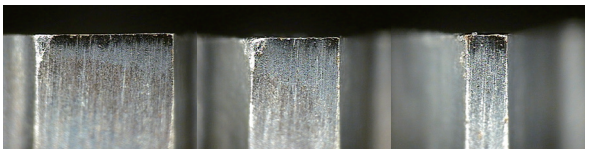
TEST III STRAIGHT FLUTE TAP (M10x1.5)

Cutting Condition

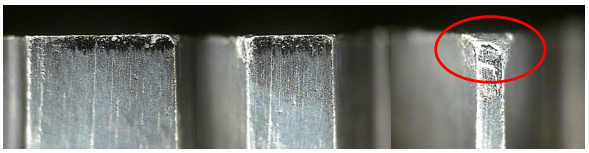
Tool	Synchro TAP Straight Flute Tap	Competitor
Size	M10 x 1.5	
Work Material	4140 / 42CrMo4 / SCM440 Hardness : HRc20	
Cutting Speed	82.0 ft/min.	
RPM	1326 rev./min.	
Tapping Depth	.7874" (2.0xD / Through Hole)	
Tapping Holes	500	
Cooling Method	External Cooling Water Soluble (9% Emulsion)	
Machine	Machining Center	



YG Synchro TAP



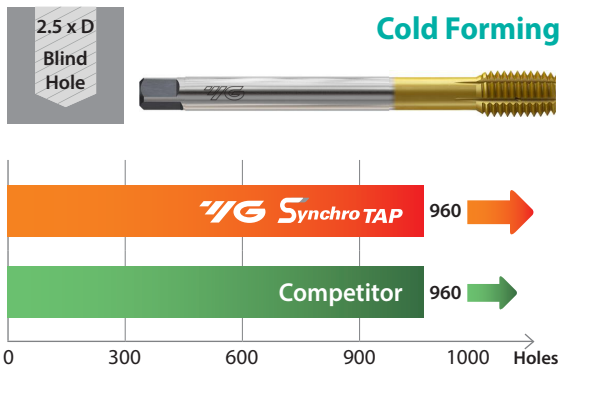
Competitor



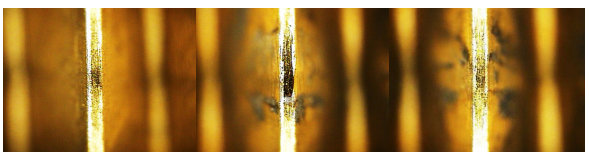
TEST IV COLD FORMING TAP (M6x1.0)

Cutting Condition

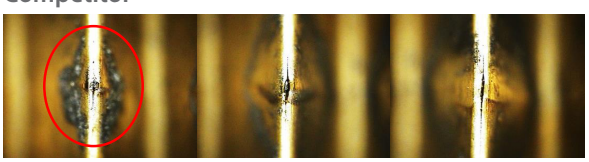
Tool	Synchro TAP Forming Tap	Competitor
Size	M6 x 1.0	
Work Material	1045 / C45 / S45C Hardness : HRc20	
Cutting Speed	114.8 ft/min.	
RPM	1857 rev./min.	
Tapping Depth	.5906" (2.5xD / Blind Hole)	
Tapping Holes	960	
Cooling Method	External Cooling Water Soluble (9% Emulsion)	
Machine	Machining Center	



YG Synchro TAP



Competitor



SELECTION GUIDE

HSS-PM
SYNCHRO TAP

High Speed Tapping with Rigid CNC Machines

HOLE TYPE			Max. 2.5xD Blind Hole	
TOOL MATERIAL			HSS-PM	
CHAMFER LEAD ACC.TO DIN2197			2p-3p	
FLUTE TYPE			Spiral Flute	
SPIRAL FLUTE ANGLE			R45	
SERIES	M	DIN Length-ANSI Shank		
	M/MF	USCTI 302A		TTS61 (p. 10)
		DIN Length-ANSI Shank		
	UNC/UNF	USCTI 302A	TTS65 (p. 8~9)	
		DIN Length-ANSI Shank		
SURFACE TREATMENT / COATING			TiN	TiN
MODEL				

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc	Examples		
P	1	Non-alloy steel	About 0.15% C	Annealed	125		S15C, C15, 1015	◎ (79-148)	◎ (79-148)
	2		About 0.45% C	Annealed	190	13	S45C, C45, 1045	◎ (79-148)	◎ (79-148)
	3		About 0.45% C	Quenched & tempered	250	25		◎ (79-148)	◎ (79-148)
	4		About 0.75% C	Annealed	270	28	SK5, Ck75, 1080	◎ (66-128)	◎ (66-128)
	5		About 0.75% C	Quenched & tempered	300	32			
	6	Low alloy steel		Annealed	180	10	SCM440, 42CrMo4, 410	◎ (66-128)	◎ (66-128)
	7			Quenched & tempered	275	29		◎ (66-128)	◎ (66-128)
	8			Quenched & tempered	300	32			
	9			Quenched & tempered	350	38			
	10	High alloyed steel, and tool steel		Annealed	200	15	SKD, D2		
	11			Quenched & Tempered	325	35	SKH, SUH, M42		
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15	SUS 420, X40Cr13, 420	◎ (39-98)	◎ (39-98)
	13		Martensitic	Quenched & Tempered	240	23		◎ (39-98)	◎ (39-98)
	14			Austenitic	180	10	SUS 316, 316, X5CrNiMo 17 12 2	○ (39-60)	○ (39-60)
K	15	Grey cast iron	Pearlitic / ferritic		180	10	FC, GG, EN-GJL-250	○ (98-148)	○ (98-148)
	16		Pearlitic (Martensitic)		260	26			
	17	Nodular cast iron	Ferritic		160	3	FCD, GGG, EN-GJS-500-7	◎ (82-148)	◎ (82-148)
	18		Pearlitic		250	25			
	19	Malleable cast iron	Ferritic		130		FCMW, FCMP, GTS, GJMB350-10		
	20		Pearlitic		230	21			
N	21	Aluminum-wrought alloy	Not Curable		60		SAE 1000, AlMg 1, 3.3315		
	22		Curable	Hardened	100		SAE 7050, AlCuMg 1, 3.1325		
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75		ADC12, G-AlSi12, 3.2581	◎ (148-197)	◎ (148-197)
	24		≤ 12% Si, Curable	Hardened	90		C4BS, G-AlSi10Mg, 3.2381	◎ (148-197)	◎ (148-197)
	25		> 12% Si, Not Curable		130			◎ (82-118)	◎ (82-118)
	26	"Copper and Copper Alloys (Bronze / Brass)"	Cutting Alloys, PB>1%		110		CuZn36Pb 3, 2.0375	◎ (98-148)	◎ (98-148)
	27		CuZn, CuSnZn (Brass)		90		CuZn 15, 2.0240		
	28		CuSn, lead-free copper and electrolytic copper		100		G-CuZn40Fe, 2.0590	○ (82-118)	○ (82-118)
	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic				CFRP		
	30		Rubber, Wood, etc.						
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15	X12 NiCrSi 36-16, 1.4864		
	32			Cured	280	30			
	33		Ni or Co Based	Annealed	250	25	Inconel 718, NiCr20TiAl, 2.4631		
	34			Cured	350	38	NiCu30Al, 2.4375		
	35			Cast	320	34	G-X120Mn12, 1.3401		
	36	Titanium Alloys	Pure Titanium		400 Rm				
	37		Alpha + Beta Alloys	Hardened	1050 Rm		TiAl6V4, 3.7165		
H	38	Hardened steel		Hardened	550	55	SK3		
	39			Hardened	630	60			
	40	Chilled Cast Iron		Cast	400	42			
	41	Hardened Cast Iron		Hardened	550	55			

Max. 3.0xD Through Hole		Max. 2.0xD Blind / Through Hole		Max. 3.0xD Blind / Through Hole		Max. 2.5xD Blind Hole		Max. 3.0xD Through Hole		Max. 2.0xD Blind / Through Hole			
HSS-PM													
4p-5p		2p-3p		2p-3p		2p-3p		4p-5p		2p-3p			
Spiral Point		Straight Flute		Forming		Spiral Flute		Spiral Point		Straight Flute			
-	-	-	-	-	-	R45		-	-	-	-	-	-
	TTS62 (p. 13)		TKS63 (p. 16)		TTS64 (p. 19)								
							TTS81 (p. 22)		TTS82 (p. 25)		TKS83 (p. 28)		TKS84 (p. 31)
TTS66 (p. 11)		TKS67 (p. 14)		TTS68 (p. 17)									
						TTS86 (p. 20)		TTS87 (p. 23)		TKS88 (p. 26)		TKS89 (p. 29)	
TiN	TiN	TiCN	TiCN	TiN	TiN	TiN	TiN	TiN	TiN	TiCN	TiCN	TiCN	TiCN
													
◎ (79-148)	◎ (79-148)	○ (79-148)	○ (79-148)	◎ (115-184)	◎ (115-184)	◎ (79-163)	◎ (79-163)	◎ (79-163)	◎ (79-163)	○ (79-163)	○ (79-163)	○ (79-163)	○ (79-163)
◎ (79-148)	◎ (79-148)	○ (79-148)	○ (79-148)	◎ (115-184)	◎ (115-184)	◎ (79-163)	◎ (79-163)	◎ (79-163)	◎ (79-163)	○ (79-163)	○ (79-163)	○ (79-163)	○ (79-163)
◎ (79-148)	◎ (79-148)	○ (79-148)	○ (79-148)	◎ (115-184)	◎ (115-184)	◎ (79-163)	◎ (79-163)	◎ (79-163)	◎ (79-163)	○ (79-163)	○ (79-163)	○ (79-163)	○ (79-163)
◎ (66-128)	◎ (66-128)	○ (66-128)	○ (66-128)	◎ (98-164)	◎ (98-164)	◎ (66-141)	◎ (66-141)	◎ (66-141)	◎ (66-141)	○ (66-141)	○ (66-141)	○ (66-141)	○ (66-141)
◎ (66-128)	◎ (66-128)	○ (66-128)	○ (66-128)	◎ (98-164)	◎ (98-164)	◎ (66-141)	◎ (66-141)	◎ (66-141)	◎ (66-141)	○ (66-141)	○ (66-141)	○ (66-141)	○ (66-141)
◎ (66-128)	◎ (66-128)	○ (66-128)	○ (66-128)	◎ (98-164)	◎ (98-164)	◎ (66-141)	◎ (66-141)	◎ (66-141)	◎ (66-141)	○ (66-141)	○ (66-141)	○ (66-141)	○ (66-141)
◎ (39-98)	◎ (39-98)			◎ (49-108)	◎ (49-108)	◎ (39-108)	◎ (39-108)	◎ (39-108)	◎ (39-108)				
◎ (39-98)	◎ (39-98)			◎ (49-108)	◎ (49-108)	◎ (39-108)	◎ (39-108)	◎ (39-108)	◎ (39-108)				
○ (39-60)	○ (39-60)			◎ (49-75)	◎ (49-75)	○ (39-66)	○ (39-66)	○ (39-66)	○ (39-66)				
○ (98-148)	○ (98-148)	◎ (98-148)	◎ (98-148)			○ (98-163)	○ (98-163)	○ (98-163)	○ (98-163)	◎ (98-163)	◎ (98-163)	◎ (98-163)	◎ (98-163)
		◎ (98-148)	◎ (98-148)							◎ (98-163)	◎ (98-163)	◎ (98-163)	◎ (98-163)
◎ (82-148)	◎ (82-148)	◎ (82-148)	◎ (82-148)			◎ (82-163)	◎ (82-163)	◎ (82-163)	◎ (82-163)	◎ (82-163)	◎ (82-163)	◎ (82-163)	◎ (82-163)
		◎ (82-148)	◎ (82-148)							◎ (82-163)	◎ (82-163)	◎ (82-163)	◎ (82-163)
		○ (82-148)	○ (82-148)							○ (82-163)	○ (82-163)	○ (82-163)	○ (82-163)
		○ (82-148)	○ (82-148)							○ (82-163)	○ (82-163)	○ (82-163)	○ (82-163)
				◎ (131-184)	◎ (131-184)								
				◎ (131-184)	◎ (131-184)								
◎ (148-197)	◎ (148-197)	○ (148-197)	○ (148-197)	◎ (184-230)	◎ (184-230)	◎ (148-217)	◎ (148-217)	◎ (148-217)	◎ (148-217)	○ (148-217)	○ (148-217)	○ (148-217)	○ (148-217)
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◎ (82-118)	◎ (82-118)	○ (82-118)	○ (82-118)	○ (115-148)	○ (115-148)	◎ (82-130)	◎ (82-130)	◎ (82-130)	◎ (82-130)	○ (82-130)	○ (82-130)	○ (82-130)	○ (82-130)
◎ (98-148)	◎ (98-148)					◎ (98-163)	◎ (98-163)	◎ (98-163)	◎ (98-163)				
○ (82-118)	○ (82-118)			◎ (115-148)	◎ (115-148)	○ (82-130)	○ (82-130)	○ (82-130)	○ (82-130)				

TiN-COATED HSS-PM SYNCHRO TAP

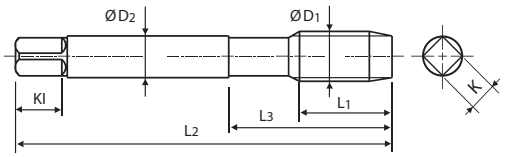
Spiral Flute Tap for High Speed Tapping

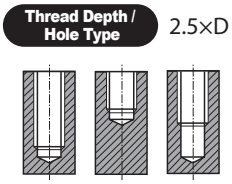
TTS65 SERIES

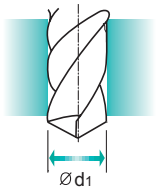
USCTI 302A



- ▶2-3 times faster when tapping the GS material group
- ▶Precision Threads
- ▶Unsurpassed chip handling







Material groups **GS** | HSS PM | UNC UNF | H | 60° | R45 | 2P~3P | TiN

p.6

Unit : Inch

Size	TPI	EDP No.	Limit	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drilll Diameter(Ød1)	
D1		TiN		L1	L2	L3	D2	K	Kl	Z	Inch	Metric
#4 -	40	TTS65162	H2	.250	1.88	.563	.141	.110	.19	3	-	2.3
#4 -	48	TTS65181	H1	.209	1.88	.563	.141	.110	.19	3	3/32	-
#4 -	48	TTS65182	H2	.209	1.88	.563	.141	.110	.19	3	3/32	-
#5 -	40	TTS65202	H2	.250	1.94	.626	.141	.110	.19	3	-	2.6
#5 -	44	TTS65221	H1	.227	1.94	.626	.141	.110	.19	3	37	-
#5 -	44	TTS65222	H2	.227	1.94	.626	.141	.110	.19	3	37	-
#6 -	32	TTS65242	H2	.313	2.00	.689	.141	.110	.19	3	-	2.8
#6 -	32	TTS65243	H3	.313	2.00	.689	.141	.110	.19	3	-	2.8
#6 -	40	TTS65262	H2	.250	2.00	.689	.141	.110	.19	3	-	2.9
#8 -	32	TTS65282	H2	.313	2.13	.752	.168	.131	.25	3	-	3.4
#8 -	32	TTS65283	H3	.313	2.13	.752	.168	.131	.25	3	-	3.4
#8 -	36	TTS65302	H2	.278	2.13	.752	.168	.131	.25	3	-	3.5
#10 -	24	TTS65323	H3	.417	2.38	.906	.194	.152	.25	3	-	3.9
#10 -	32	TTS65342	H2	.313	2.38	.906	.194	.152	.25	3	-	4.1
#10 -	32	TTS65343	H3	.313	2.38	.906	.194	.152	.25	3	-	4.1
#12 -	24	TTS65363	H3	.417	2.38	.906	.220	.165	.28	3	-	4.5
#12 -	28	TTS65383	H3	.357	2.38	.906	.220	.165	.28	3	-	4.7
1/4 -	20	TTS65403	H3	.500	2.50	1.000	.255	.191	.31	3	-	5.2
1/4 -	20	TTS65405	H5	.500	2.50	1.000	.255	.191	.31	3	-	5.2
1/4 -	28	TTS65423	H3	.357	2.50	1.000	.255	.191	.31	3	-	5.5
1/4 -	28	TTS65424	H4	.357	2.50	1.000	.255	.191	.31	3	-	5.5
5/16 -	18	TTS65443	H3	.556	2.72	1.126	.318	.238	.38	3	-	6.7
5/16 -	18	TTS65445	H5	.556	2.72	1.126	.318	.238	.38	3	-	6.7
5/16 -	24	TTS65463	H3	.417	2.72	1.126	.318	.238	.38	3	-	7.0
5/16 -	24	TTS65464	H4	.417	2.72	1.126	.318	.238	.38	3	-	7.0

▶ NEXT PAGE

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			◎	◎	◎	◎		○													

TiN-COATED HSS-PM SYNCHRO TAP

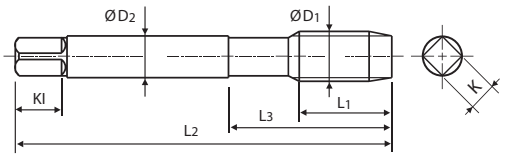
Spiral Flute Tap for High Speed Tapping

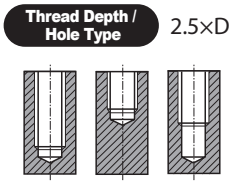
TTS65 SERIES

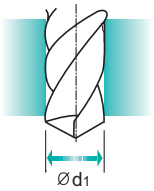
USCTI 302A



- ▶2-3 times faster when tapping the GS material group
- ▶Precision Threads
- ▶Unsurpassed chip handling







Material groups **GS** | HSS PM | UNC UNF | H | 60° | R45 | 2P~3P | TiN

p.6

Unit : Inch

Size D1	TPI	EDP No. TiN	Limit	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter D2	Square Size K	Square Length Kl	No. of Flute Z	Tapping Drill Diameter(Ød1) Inch	Metric
3/8	- 16	**TTS65483**	H3	.625	2.94	1.252	.381	.286	.44	3	-	8.1
3/8	- 16	**TTS65485**	H5	.625	2.94	1.252	.381	.286	.44	3	-	8.1
3/8	- 24	**TTS65503**	H3	.417	2.94	1.252	.381	.286	.44	3	-	8.6
3/8	- 24	**TTS65504**	H4	.417	2.94	1.252	.381	.286	.44	3	-	8.6
7/16	- 14	**TTS65523**	H3	.714	3.16	1.850	.323	.242	.41	3	-	9.5
7/16	- 14	**TTS65525**	H5	.714	3.16	1.850	.323	.242	.41	3	-	9.5
7/16	- 20	**TTS65543**	H3	.500	3.16	1.850	.323	.242	.41	3	-	10.0
7/16	- 20	**TTS65545**	H5	.500	3.16	1.850	.323	.242	.41	3	-	10.0
1/2	- 13	**TTS65563**	H3	.769	3.38	2.067	.367	.275	.44	3	-	11.0
1/2	- 13	**TTS65565**	H5	.769	3.38	2.067	.367	.275	.44	3	-	11.0
1/2	- 20	**TTS65583**	H3	.500	3.38	2.067	.367	.275	.44	3	-	11.6
1/2	- 20	**TTS65585**	H5	.500	3.38	2.067	.367	.275	.44	3	-	11.6
9/16	- 12	**TTS65603**	H3	.833	3.59	2.067	.429	.322	.50	3	-	12.5
9/16	- 12	**TTS65605**	H5	.833	3.59	2.067	.429	.322	.50	3	-	12.5
9/16	- 18	**TTS65623**	H3	.556	3.59	2.067	.429	.322	.50	3	-	13.0
9/16	- 18	**TTS65625**	H5	.556	3.59	2.067	.429	.322	.50	3	-	13.0
5/8	- 11	**TTS65643**	H3	.909	3.81	2.205	.480	.360	.56	3	-	13.9
5/8	- 11	**TTS65645**	H5	.909	3.81	2.205	.480	.360	.56	3	-	13.9
5/8	- 18	**TTS65663**	H3	.556	3.81	2.205	.480	.360	.56	3	-	14.6
5/8	- 18	**TTS65665**	H5	.556	3.81	2.205	.480	.360	.56	3	-	14.6
3/4	- 10	**TTS65705**	H5	1.000	4.25	2.480	.590	.442	.69	4	-	16.9
3/4	- 16	**TTS65723**	H3	.625	4.25	2.480	.590	.442	.69	4	-	17.7
3/4	- 16	**TTS65725**	H5	.625	4.25	2.480	.590	.442	.69	4	-	17.7

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			◎	◎	◎	◎		○													

TiN-COATED HSS-PM SYNCHRO TAP

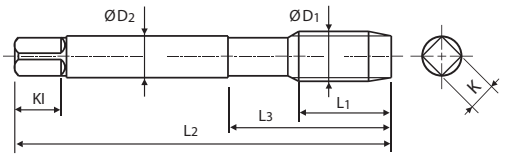
Spiral Flute Tap for High Speed Tapping

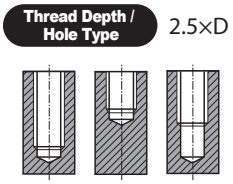
TTS61 SERIES

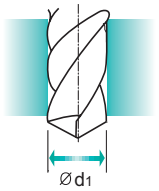
USCTI 302A



- ▶2-3 times faster when tapping the GS material group
- ▶Precision Threads
- ▶Unsurpassed chip handling







Material groups **GS** | HSS PM | M/MF | D | 60° | 2P~3P | R45 | TiN

p.6

Unit : Inch

Size	Pitch	EDP No.	Limit	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter(Ød1)	
D1	P	TiN		L1	L2	L3	D2	K	Kl	Z	Inch	Metric
M3	x 0.5	**TTS61203**	D3	.197	1.94	.646	.141	.110	.19	3	-	2.5
M4	x 0.7	**TTS61244**	D4	.276	2.13	.768	.168	.131	.25	3	-	3.4
M5	x 0.8	**TTS61284**	D4	.315	2.38	.933	.194	.152	.25	3	-	4.3
M6	x 1.0	**TTS61315**	D5	.394	2.50	1.000	.255	.191	.31	3	-	5.1
M8	x 1.25	**TTS61365**	D5	.512	2.72	1.126	.318	.238	.38	3	-	6.9
M8	x 1.0	**TTS61375**	D5	.394	2.72	1.126	.318	.238	.38	3	-	7.1
M10	x 1.5	**TTS61426**	D6	.591	2.94	1.252	.381	.286	.44	3	-	8.7
M10	x 1.25	**TTS61435**	D5	.512	2.94	1.252	.381	.286	.44	3	-	8.9
M12	x 1.75	**TTS61506**	D6	.709	3.38	2.067	.367	.275	.44	3	-	10.5
M12	x 1.25	**TTS61525**	D5	.512	3.38	2.067	.367	.275	.44	3	-	10.7
M14	x 2.0	**TTS61547**	D7	.787	3.59	2.067	.429	.322	.50	3	-	12.3
M14	x 1.5	**TTS61556**	D6	.591	3.59	2.067	.429	.322	.50	3	-	12.7
M16	x 2.0	**TTS61607**	D7	.787	3.81	2.205	.480	.360	.56	3	-	14.3
M16	x 1.5	**TTS61616**	D6	.591	3.81	2.205	.480	.360	.56	3	-	14.7
M18	x 2.5	**TTS61657**	D7	.984	4.03	2.205	.542	.406	.63	4	-	15.8
M18	x 1.5	**TTS61676**	D6	.591	4.03	2.205	.542	.406	.63	4	-	16.7
M20	x 2.5	**TTS61707**	D7	.984	4.47	2.480	.652	.489	.69	4	-	17.8
M20	x 1.5	**TTS61726**	D6	.591	4.47	2.480	.652	.489	.69	4	-	18.7

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			◎	◎	◎	◎		○													

TiN-COATED HSS-PM SYNCHRO TAP

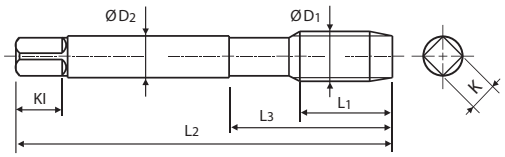
Spiral Point Tap for High Speed Tapping

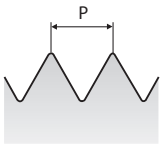
TTS66 SERIES

USCTI 302A

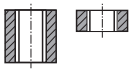


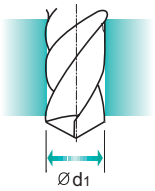
- ▶2-3 times faster when tapping the GS material group
- ▶Precision Threads
- ▶Unsurpassed chip handling





Thread Depth / Hole Type 3.0×D





Material groups **GS** | HSS PM | UNC UNF | H | 60° | 4P~5P | TiN

p.7

Unit : Inch

Size D1	TPI	EDP No. TiN	Limit	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter D2	Square Size K	Square Length Kl	No. of Flute Z	Tapping Drill Diameter(Ød1) Inch	Metric
#4 - 40		TTS66162	H2	.250	1.88	.563	.141	.110	.19	3	-	2.3
#4 - 48		TTS66181	H1	.209	1.88	.563	.141	.110	.19	3	3/32	-
#4 - 48		TTS66182	H2	.209	1.88	.563	.141	.110	.19	3	3/32	-
#5 - 40		TTS66202	H2	.250	1.94	.626	.141	.110	.19	3	-	2.6
#5 - 44		TTS66221	H1	.227	1.94	.626	.141	.110	.19	3	37	-
#5 - 44		TTS66222	H2	.227	1.94	.626	.141	.110	.19	3	37	-
#6 - 32		TTS66242	H2	.313	2.00	.689	.141	.110	.19	3	-	2.8
#6 - 32		TTS66243	H3	.313	2.00	.689	.141	.110	.19	3	-	2.8
#6 - 40		TTS66262	H2	.250	2.00	.689	.141	.110	.19	3	-	2.9
#8 - 32		TTS66282	H2	.313	2.13	.752	.168	.131	.25	3	-	3.4
#8 - 32		TTS66283	H3	.313	2.13	.752	.168	.131	.25	3	-	3.4
#8 - 36		TTS66302	H2	.278	2.13	.752	.168	.131	.25	3	-	3.5
#10 - 24		TTS66323	H3	.417	2.38	.906	.194	.152	.25	3	-	3.9
#10 - 32		TTS66342	H2	.313	2.38	.906	.194	.152	.25	3	-	4.1
#10 - 32		TTS66343	H3	.313	2.38	.906	.194	.152	.25	3	-	4.1
#12 - 24		TTS66363	H3	.417	2.38	.906	.220	.165	.28	3	-	4.5
#12 - 28		TTS66383	H3	.357	2.38	.906	.220	.165	.28	3	-	4.7
1/4 - 20		TTS66403	H3	.500	2.50	1.000	.255	.191	.31	3	-	5.2
1/4 - 20		TTS66405	H5	.500	2.50	1.000	.255	.191	.31	3	-	5.2
1/4 - 28		TTS66423	H3	.357	2.50	1.000	.255	.191	.31	3	-	5.5
1/4 - 28		TTS66424	H4	.357	2.50	1.000	.255	.191	.31	3	-	5.5
5/16 - 18		TTS66443	H3	.556	2.72	1.126	.318	.238	.38	3	-	6.7
5/16 - 18		TTS66445	H5	.556	2.72	1.126	.318	.238	.38	3	-	6.7
5/16 - 24		TTS66463	H3	.417	2.72	1.126	.318	.238	.38	3	-	7.0
5/16 - 24		TTS66464	H4	.417	2.72	1.126	.318	.238	.38	3	-	7.0

▶ NEXT PAGE

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			◎	◎	◎	◎		○													

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Spiral Point Tap for High Speed Tapping

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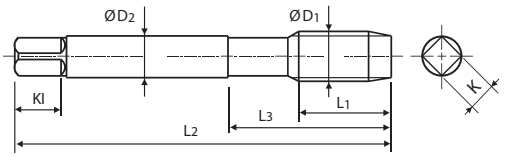
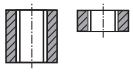
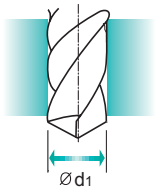


Thread Depth / Hole Type 3.0×D





Material groups **GS** | HSS PM | UNC UNF | H | 60° | 4P~5P | TiN

p.7

Unit : Inch

Size D1	TPI	EDP No. TiN	Limit	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter D2	Square Size K	Square Length Kl	No. of Flute Z	Tapping Drill Diameter(Ød1) Inch	Metric
3/8 -	16	TTS66483	H3	.625	2.94	1.252	.381	.286	.44	3	-	8.1
3/8 -	16	TTS66485	H5	.625	2.94	1.252	.381	.286	.44	3	-	8.1
3/8 -	24	TTS66503	H3	.417	2.94	1.252	.381	.286	.44	3	-	8.6
3/8 -	24	TTS66504	H4	.417	2.94	1.252	.381	.286	.44	3	-	8.6
7/16 -	14	TTS66523	H3	.714	3.16	1.850	.323	.242	.41	4	-	9.5
7/16 -	14	TTS66525	H5	.714	3.16	1.850	.323	.242	.41	4	-	9.5
7/16 -	20	TTS66543	H3	.500	3.16	1.850	.323	.242	.41	4	-	10.0
7/16 -	20	TTS66545	H5	.500	3.16	1.850	.323	.242	.41	4	-	10.0
1/2 -	13	TTS66563	H3	.769	3.38	2.067	.367	.275	.44	4	-	11.0
1/2 -	13	TTS66565	H5	.769	3.38	2.067	.367	.275	.44	4	-	11.0
1/2 -	20	TTS66583	H3	.500	3.38	2.067	.367	.275	.44	4	-	11.6
1/2 -	20	TTS66585	H5	.500	3.38	2.067	.367	.275	.44	4	-	11.6
9/16 -	12	TTS66603	H3	.833	3.59	2.067	.429	.322	.50	4	-	12.5
9/16 -	12	TTS66605	H5	.833	3.59	2.067	.429	.322	.50	4	-	12.5
9/16 -	18	TTS66623	H3	.556	3.59	2.067	.429	.322	.50	4	-	13.0
9/16 -	18	TTS66625	H5	.556	3.59	2.067	.429	.322	.50	4	-	13.0
5/8 -	11	TTS66643	H3	.909	3.81	2.205	.480	.360	.56	4	-	13.9
5/8 -	11	TTS66645	H5	.909	3.81	2.205	.480	.360	.56	4	-	13.9
5/8 -	18	TTS66663	H3	.556	3.81	2.205	.480	.360	.56	4	-	14.6
5/8 -	18	TTS66665	H5	.556	3.81	2.205	.480	.360	.56	4	-	14.6
3/4 -	10	TTS66703	H3	1.000	4.25	2.480	.590	.442	.69	4	-	16.9
3/4 -	10	TTS66705	H5	1.000	4.25	2.480	.590	.442	.69	4	-	16.9
3/4 -	16	TTS66723	H3	.625	4.25	2.480	.590	.442	.69	4	-	17.7
3/4 -	16	TTS66725	H5	.625	4.25	2.480	.590	.442	.69	4	-	17.7

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			◎	◎	◎	◎		○													

TiN-COATED HSS-PM SYNCHRO TAP

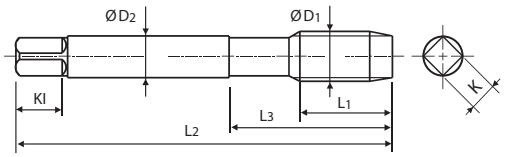
Spiral Point Tap for High Speed Tapping

TTS62 SERIES

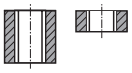
USCTI 302A

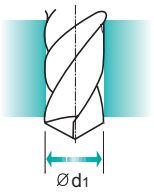


- 2-3 times faster when tapping the GS material group
- Precision Threads
- Unsurpassed chip handling



Thread Depth / Hole Type 3.0×D





Material groups **GS** | HSS PM | M/MF | D | 60° | 4P~5P | TiN

p.7

Unit : Inch

Size	Pitch	EDP No.	Limit	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drilll Diameter(Ød1)	
D1	P	TiN		L1	L2	L3	D2	K	Kl	Z	Inch	Metric
M3	x 0.5	**TTS62203**	D3	.197	1.94	.646	.141	.110	.19	3	-	2.5
M4	x 0.7	**TTS62244**	D4	.276	2.13	.768	.168	.131	.25	3	-	3.4
M5	x 0.8	**TTS62284**	D4	.315	2.38	.933	.194	.152	.25	3	-	4.3
M6	x 1.0	**TTS62315**	D5	.394	2.50	1.000	.255	.191	.31	3	-	5.1
M8	x 1.25	**TTS62365**	D5	.512	2.72	1.126	.318	.238	.38	3	-	6.9
M8	x 1.0	**TTS62375**	D5	.394	2.72	1.126	.318	.238	.38	3	-	7.1
M10	x 1.5	**TTS62426**	D6	.591	2.94	1.252	.381	.286	.44	3	-	8.7
M10	x 1.25	**TTS62435**	D5	.512	2.94	1.252	.381	.286	.44	3	-	8.9
M12	x 1.75	**TTS62506**	D6	.709	3.38	2.067	.367	.275	.44	4	-	10.5
M12	x 1.25	**TTS62525**	D5	.512	3.38	2.067	.367	.275	.44	4	-	10.7
M14	x 2.0	**TTS62547**	D7	.787	3.59	2.067	.429	.322	.50	4	-	12.3
M14	x 1.5	**TTS62556**	D6	.591	3.59	2.067	.429	.322	.50	4	-	12.7
M16	x 2.0	**TTS62607**	D7	.787	3.81	2.205	.480	.360	.56	4	-	14.3
M16	x 1.5	**TTS21616**	D6	.591	3.81	2.205	.480	.360	.56	4	-	14.7
M18	x 2.5	**TTS62657**	D7	.984	4.03	2.205	.542	.406	.63	4	-	15.8
M18	x 1.5	**TTS62676**	D6	.591	4.03	2.205	.542	.406	.63	4	-	16.7
M20	x 2.5	**TTS62707**	D7	.984	4.47	2.480	.652	.489	.69	4	-	17.8
M20	x 1.5	**TTS62726**	D6	.591	4.47	2.480	.652	.489	.69	4	-	18.7

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			◎	◎	◎	◎		○													

TiCN-COATED HSS-PM SYNCHRO TAP

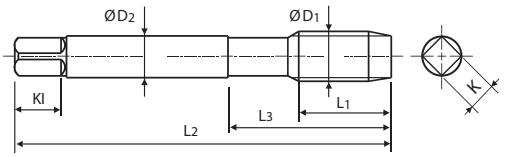
Straight Flute Tap for High Speed Tapping

TKS67 SERIES

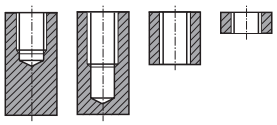
USCTI 302A

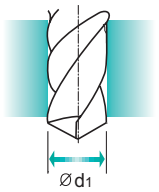


- ▶2-3 times faster when tapping the GG material group
- ▶Precision Threads
- ▶Unsurpassed chip handling



Thread Depth / Hole Type 2.0×D





Material groups **GG** | HSS PM | UNC UNF | H | 60° | 2P~3P | TiCN

p.7

Unit : Inch

Size	TPI	EDP No.	Limit	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter(Ød1)	
D1		TiCN		L1	L2	L3	D2	K	Kl	Z	Inch	Metric
#4	- 40	TKS67162	H2	.250	1.88	.563	.141	.110	.19	3	-	2.3
#4	- 48	TKS67181	H1	.209	1.88	.563	.141	.110	.19	3	3/32	-
#4	- 48	TKS67182	H2	.209	1.88	.563	.141	.110	.19	3	3/32	-
#5	- 40	TKS67202	H2	.250	1.94	.626	.141	.110	.19	3	-	2.6
#5	- 44	TKS67221	H1	.227	1.94	.626	.141	.110	.19	3	37	-
#5	- 44	TKS67222	H2	.227	1.94	.626	.141	.110	.19	3	37	-
#6	- 32	TKS67242	H2	.313	2.00	.689	.141	.110	.19	3	-	2.8
#6	- 32	TKS67243	H3	.313	2.00	.689	.141	.110	.19	3	-	2.8
#6	- 40	TKS67262	H2	.250	2.00	.689	.141	.110	.19	3	-	2.9
#8	- 32	TKS67282	H2	.313	2.13	.752	.168	.131	.25	3	-	3.4
#8	- 32	TKS67283	H3	.313	2.13	.752	.168	.131	.25	3	-	3.4
#8	- 36	TKS67302	H2	.278	2.13	.752	.168	.131	.25	3	-	3.5
#10	- 24	TKS67323	H3	.417	2.38	.906	.194	.152	.25	3	-	3.9
#10	- 32	TKS67342	H2	.313	2.38	.906	.194	.152	.25	3	-	4.1
#10	- 32	TKS67343	H3	.313	2.38	.906	.194	.152	.25	3	-	4.1
#12	- 24	TKS67363	H3	.417	2.38	.906	.220	.165	.28	3	-	4.5
#12	- 28	TKS67383	H3	.357	2.38	.906	.220	.165	.28	3	-	4.7
1/4	- 20	TKS67403	H3	.500	2.50	1.000	.255	.191	.31	3	-	5.2
1/4	- 20	TKS67405	H5	.500	2.50	1.000	.255	.191	.31	3	-	5.2
1/4	- 28	TKS67423	H3	.357	2.50	1.000	.255	.191	.31	3	-	5.5
1/4	- 28	TKS67424	H4	.357	2.50	1.000	.255	.191	.31	3	-	5.5
5/16	- 18	TKS67443	H3	.556	2.72	1.126	.318	.238	.38	3	-	6.7
5/16	- 18	TKS67445	H5	.556	2.72	1.126	.318	.238	.38	3	-	6.7
5/16	- 24	TKS67463	H3	.417	2.72	1.126	.318	.238	.38	3	-	7.0
5/16	- 24	TKS67464	H4	.417	2.72	1.126	.318	.238	.38	3	-	7.0.

▶ NEXT PAGE

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			○	○	○																

TiCN-COATED HSS-PM SYNCHRO TAP

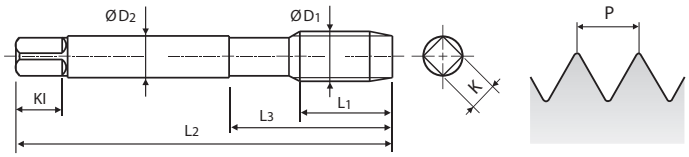
Straight Flute Tap for High Speed Tapping

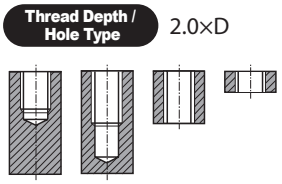
TKS67 SERIES

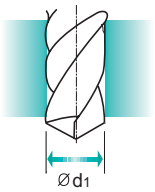
USCTI 302A



- ▶ 2-3 times faster when tapping the GG material group
- ▶ Precision Threads
- ▶ Unsurpassed chip handling







Material groups **GG** | HSS PM | UNC UNF | H | 60° | 2P~3P | TiCN

p.7

Unit : Inch

Size D1	TPI	EDP No. TiCN	Limit	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter D2	Square Size K	Square Length Kl	No. of Flute Z	Tapping Drill Diameter(Ød1) Inch	Metric
3/8	16	**TKS67483**	H3	.625	2.94	1.252	.381	.286	.44	4	-	8.1
3/8	16	**TKS67485**	H5	.625	2.94	1.252	.381	.286	.44	4	-	8.1
3/8	24	**TKS67503**	H3	.417	2.94	1.252	.381	.286	.44	4	-	8.6
3/8	24	**TKS67504**	H4	.417	2.94	1.252	.381	.286	.44	4	-	8.6
7/16	14	**TKS67523**	H3	.714	3.16	1.850	.323	.242	.41	4	-	9.5
7/16	14	**TKS67525**	H5	.714	3.16	1.850	.323	.242	.41	4	-	9.5
7/16	20	**TKS67543**	H3	.500	3.16	1.850	.323	.242	.41	4	-	10.0
7/16	20	**TKS67545**	H5	.500	3.16	1.850	.323	.242	.41	4	-	10.0
1/2	13	**TKS67563**	H3	.769	3.38	2.067	.367	.275	.44	4	-	11.0
1/2	13	**TKS67565**	H5	.769	3.38	2.067	.367	.275	.44	4	-	11.0
1/2	20	**TKS67583**	H3	.500	3.38	2.067	.367	.275	.44	4	-	11.6
1/2	20	**TKS67585**	H5	.500	3.38	2.067	.367	.275	.44	4	-	11.6
9/16	12	**TKS67603**	H3	.833	3.59	2.067	.429	.322	.50	4	-	12.5
9/16	12	**TKS67605**	H5	.833	3.59	2.067	.429	.322	.50	4	-	12.5
9/16	18	**TKS67623**	H3	.556	3.59	2.067	.429	.322	.50	4	-	13.0
9/16	18	**TKS67625**	H5	.556	3.59	2.067	.429	.322	.50	4	-	13.0
5/8	11	**TKS67643**	H3	.909	3.81	2.205	.480	.360	.56	4	-	13.9
5/8	11	**TKS67645**	H5	.909	3.81	2.205	.480	.360	.56	4	-	13.9
5/8	18	**TKS67663**	H3	.556	3.81	2.205	.480	.360	.56	4	-	14.6
5/8	18	**TKS67665**	H5	.556	3.81	2.205	.480	.360	.56	4	-	14.6
3/4	10	**TKS67703**	H3	1.000	4.25	2.480	.590	.442	.69	4	-	16.9
3/4	10	**TKS67705**	H5	1.000	4.25	2.480	.590	.442	.69	4	-	16.9
3/4	16	**TKS67723**	H3	.625	4.25	2.480	.590	.442	.69	4	-	17.7
3/4	16	**TKS67725**	H5	.625	4.25	2.480	.590	.442	.69	4	-	17.7

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			○	○	○																

TiCN-COATED HSS-PM SYNCHRO TAP

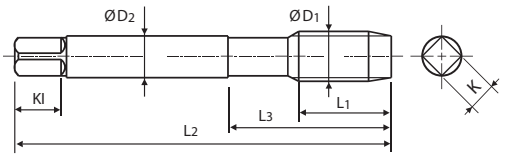
Straight Flute Tap for High Speed Tapping

TKS63 SERIES

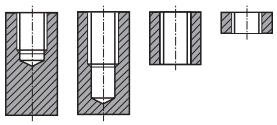
USCTI 302A

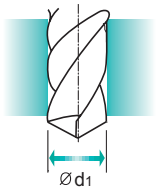


- 2-3 times faster when tapping the GG material group
- Precision Threads
- Unsurpassed chip handling



Thread Depth / Hole Type 2.0×D





Material groups **GG** | HSS PM | M/MF | D | 60° | 2P~3P | TiCN

p.7

Unit : Inch

Size	Pitch	EDP No.	Limit	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter(Ød1)	
D1	P	TiCN		L1	L2	L3	D2	K	Kl	Z	Inch	Metric
M3	x 0.5	**TKS63203**	D3	.197	1.94	.646	.141	.110	.19	3	-	2.5
M4	x 0.7	**TKS63244**	D4	.276	2.13	.768	.168	.131	.25	3	-	3.4
M5	x 0.8	**TKS63284**	D4	.315	2.38	.933	.194	.152	.25	3	-	4.3
M6	x 1.0	**TKS63315**	D5	.394	2.50	1.000	.255	.191	.31	3	-	5.1
M8	x 1.25	**TKS63365**	D5	.512	2.72	1.126	.318	.238	.38	3	-	6.9
M8	x 1.0	**TKS63375**	D5	.394	2.72	1.126	.318	.238	.38	3	-	7.1
M10	x 1.5	**TKS63426**	D6	.591	2.94	1.252	.381	.286	.44	4	-	8.7
M10	x 1.25	**TKS63435**	D5	.512	2.94	1.252	.381	.286	.44	4	-	8.9
M12	x 1.75	**TKS63506**	D6	.709	3.38	2.067	.367	.275	.44	4	-	10.5
M12	x 1.25	**TKS63525**	D5	.512	3.38	2.067	.367	.275	.44	4	-	10.7
M14	x 2.0	**TKS63547**	D7	.787	3.59	2.067	.429	.322	.50	4	-	12.3
M14	x 1.5	**TKS63556**	D6	.591	3.59	2.067	.429	.322	.50	4	-	12.7
M16	x 2.0	**TKS63607**	D7	.787	3.81	2.205	.480	.360	.56	4	-	14.3
M16	x 1.5	**TKS63616**	D6	.591	3.81	2.205	.480	.360	.56	4	-	14.7
M18	x 2.5	**TKS63657**	D7	.984	4.03	2.205	.542	.406	.63	4	-	15.8
M18	x 1.5	**TKS63676**	D6	.591	4.03	2.205	.542	.406	.63	4	-	16.7
M20	x 2.5	**TKS63707**	D7	.984	4.47	2.480	.652	.489	.69	4	-	17.8
M20	x 1.5	**TKS63726**	D6	.591	4.47	2.480	.652	.489	.69	4	-	18.7

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			○	○	○																

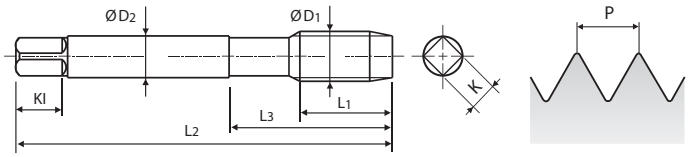
TiN-COATED HSS-PM SYNCHRO TAP
Forming for High Speed Tapping

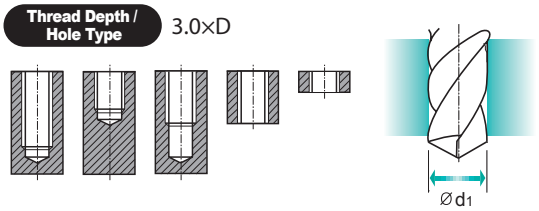
TTS68 SERIES

USCTI 302A



- ▶2-3 times faster when machining the GV material group
- ▶Precision Threads





Material groups **GV** | HSS PM | UNC UNF | H | 60° | 2P~3P | TiN

p.7

Unit : Inch

Size D1	TPI	EDP No. TiN	Limit	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter D2	Square Size K	Square Length Kl	No. of Flute Z	Tapping Drill Diameter(Ød1) Inch	Metric
#4	40	TTS68163	H3	.250	1.88	.563	.141	.110	.19	4	-	2.6
#4	40	TTS68165	H5	.250	1.88	.563	.141	.110	.19	4	-	2.6
#4	48	TTS68183	H3	.209	1.88	.563	.141	.110	.19	4	-	2.6
#4	48	TTS68185	H5	.209	1.88	.563	.141	.110	.19	4	-	2.6
#5	40	TTS68203	H3	.250	1.94	.626	.141	.110	.19	5	-	2.9
#5	40	TTS68205	H5	.250	1.94	.626	.141	.110	.19	5	-	2.9
#5	44	TTS68223	H3	.227	1.94	.626	.141	.110	.19	5	-	2.9
#5	44	TTS68225	H5	.227	1.94	.626	.141	.110	.19	5	-	2.9
#6	32	TTS68243	H3	.313	2.00	.689	.141	.110	.19	5	-	3.1
#6	32	TTS68245	H5	.313	2.00	.689	.141	.110	.19	5	-	3.1
#6	40	TTS68263	H3	.250	2.00	.689	.141	.110	.19	5	-	3.2
#6	40	TTS68265	H5	.250	2.00	.689	.141	.110	.19	5	-	3.2
#8	32	TTS68283	H3	.313	2.13	.752	.168	.131	.25	5	-	3.8
#8	32	TTS68285	H5	.313	2.13	.752	.168	.131	.25	5	-	3.8
#8	36	TTS68303	H3	.278	2.13	.752	.168	.131	.25	5	-	3.9
#8	36	TTS68305	H5	.278	2.13	.752	.168	.131	.25	5	-	3.9
#10	24	TTS68324	H4	.417	2.38	.906	.194	.152	.25	5	-	4.4
#10	24	TTS68326	H6	.417	2.38	.906	.194	.152	.25	5	-	4.4
#10	32	TTS68344	H4	.313	2.38	.906	.194	.152	.25	5	-	4.5
#10	32	TTS68346	H6	.313	2.38	.906	.194	.152	.25	5	-	4.5
#12	24	TTS68364	H4	.417	2.38	.906	.220	.165	.28	5	-	5.0
#12	24	TTS68366	H6	.417	2.38	.906	.220	.165	.28	5	-	5.0
1/4	20	TTS68404	H4	.500	2.50	1.000	.255	.191	.31	5	-	5.8
1/4	20	TTS68406	H6	.500	2.50	1.000	.255	.191	.31	5	-	5.8
1/4	28	TTS68424	H4	.357	2.50	1.000	.255	.191	.31	5	-	5.9
1/4	28	TTS68426	H6	.357	2.50	1.000	.255	.191	.31	5	-	5.9

▶ NEXT PAGE

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	○			◎													

TiN-COATED HSS-PM SYNCHRO TAP
Forming for High Speed Tapping

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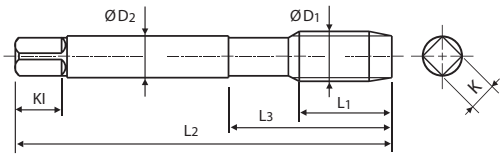
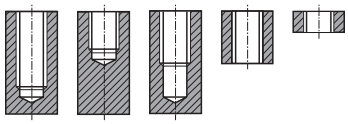
USCTI 302A

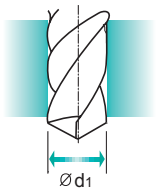


- ▶2-3 times faster when machining the GV material group
- ▶Precision Threads



Thread Depth / Hole Type 3.0×D





Material groups **GV** | HSS PM | UNC UNF | H | 60° | 2P~3P | TiN

p.7

Unit : Inch

Size D1	TPI	EDP No. TiN	Limit	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter D2	Square Size K	Square Length Kl	No. of Flute Z	Tapping Drill Diameter(Ød1) Inch	Metric
5/16 - 18		TTS68445	H5	.556	2.72	1.126	.318	.238	.38	5	-	7.3
5/16 - 18		TTS68447	H7	.556	2.72	1.126	.318	.238	.38	5	-	7.3
5/16 - 24		TTS68465	H5	.417	2.72	1.126	.318	.238	.38	5	-	7.5
5/16 - 24		TTS68467	H7	.417	2.72	1.126	.318	.238	.38	5	-	7.5
3/8 - 16		TTS68485	H5	.625	2.94	1.252	.381	.286	.44	6	-	8.8
3/8 - 16		TTS68487	H7	.625	2.94	1.252	.381	.286	.44	6	-	8.8
3/8 - 24		TTS68505	H5	.417	2.94	1.252	.381	.286	.44	6	-	9.0
3/8 - 24		TTS68507	H7	.417	2.94	1.252	.381	.286	.44	6	-	9.0
7/16 - 14		TTS68525	H5	.714	3.16	1.850	.323	.242	.41	6	-	10.3
7/16 - 14		TTS68528	H8	.714	3.16	1.850	.323	.242	.41	6	-	10.3
7/16 - 20		TTS68545	H5	.500	3.16	1.850	.323	.242	.41	6	-	10.5
7/16 - 20		TTS68548	H8	.500	3.16	1.850	.323	.242	.41	6	-	10.5
1/2 - 13		TTS68566	H6	.769	3.38	2.067	.367	.275	.44	6	-	11.9
1/2 - 13		TTS68568	H8	.769	3.38	2.067	.367	.275	.44	6	-	11.9
1/2 - 20		TTS68585	H5	.500	3.38	2.067	.367	.275	.44	6	-	12.1
1/2 - 20		TTS68588	H8	.500	3.38	2.067	.367	.275	.44	6	-	12.1
9/16 - 12		TTS68607	H7	.833	3.59	2.067	.429	.322	.50	8	-	13.4
9/16 - 12		TTS68600	H10	.833	3.59	2.067	.429	.322	.50	8	-	13.4
9/16 - 18		TTS68627	H7	.556	3.59	2.067	.429	.322	.50	8	-	13.7
9/16 - 18		TTS68620	H10	.556	3.59	2.067	.429	.322	.50	8	-	13.7
5/8 - 11		TTS68647	H7	.909	3.81	2.205	.480	.360	.56	8	-	14.9
5/8 - 11		TTS68640	H10	.909	3.81	2.205	.480	.360	.56	8	-	14.9
5/8 - 18		TTS68667	H7	.556	3.81	2.205	.480	.360	.56	8	-	15.2
5/8 - 18		TTS68660	H10	.556	3.81	2.205	.480	.360	.56	8	-	15.2
3/4 - 10		TTS68707	H7	1.000	4.25	2.480	.590	.442	.69	8	-	18
3/4 - 10		TTS68700	H10	1.000	4.25	2.480	.590	.442	.69	8	-	18
3/4 - 16		TTS68727	H7	.625	4.25	2.480	.590	.442	.69	8	-	18.4
3/4 - 16		TTS68720	H10	.625	4.25	2.480	.590	.442	.69	8	-	18.4

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	○			◎													

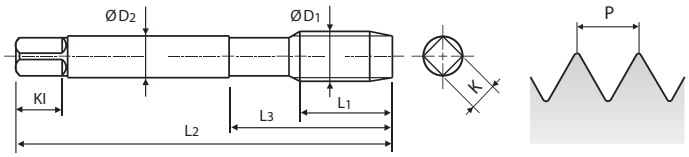
TiN-COATED HSS-PM SYNCHRO TAP
Forming for High Speed Tapping

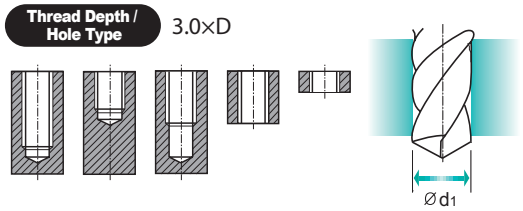
TTS64 SERIES

USCTI 302A



- 2-3 times faster when machining the GV material group
- Precision Threads





Material groups **GV** | HSS PM | M/MF | D | 60° | 2P~3P | TiN

p.7

Unit : Inch

Size	Pitch	EDP No.	Limit	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Lobe	Tapping Drilll Diameter(Ød1)	
D1	P	TiN		L1	L2	L3	D2	K	Kl	Z	Inch	Metric
M3	x 0.5	**TTS64205**	D5	.197	1.94	.646	.141	.110	.19	5	-	2.8
M4	x 0.7	**TTS64246**	D6	.276	2.13	.768	.168	.131	.25	5	-	3.7
M5	x 0.8	**TTS64287**	D7	.315	2.38	.933	.194	.152	.25	5	-	4.6
M6	x 1.0	**TTS64318**	D8	.394	2.50	1.000	.255	.191	.31	5	-	5.6
M8	x 1.0	**TTS64378**	D8	.394	2.72	1.126	.318	.238	.38	5	-	7.5
M8	x 1.25	**TTS64369**	D9	.512	2.72	1.126	.318	.238	.38	5	-	7.6
M10	x 1.25	**TTS64439**	D9	.492	2.94	1.252	.381	.286	.44	6	-	9.4
M10	x 1.5	**TTS64420**	D10	.591	2.94	1.252	.381	.286	.44	6	-	9.5
M12	x 1.25	**TTS64520**	D10	.492	3.38	2.067	.367	.275	.44	6	-	11.2
M12	x 1.75	**TTS6450A**	D11	.709	3.38	2.067	.367	.275	.44	6	-	11.4
M14	x 1.5	**TTS64550**	D10	.591	3.59	2.067	.429	.322	.50	8	-	13.1
M14	x 2.0	**TTS6454B**	D12	.787	3.59	2.067	.429	.322	.50	8	-	13.3
M16	x 1.5	**TTS64610**	D10	.591	3.81	2.205	.480	.360	.56	8	-	15.1
M16	x 2.0	**TTS6460B**	D12	.787	3.81	2.205	.480	.360	.56	8	-	15.3
M18	x 1.5	**TTS64670**	D10	.591	4.03	2.205	.542	.406	.63	8	-	16.9
M18	x 2.5	**TTS6465B**	D12	.984	4.03	2.205	.542	.406	.63	8	-	17.3
M20	x 1.5	**TTS64720**	D10	.984	4.47	2.480	.652	.489	.69	8	-	18.9
M20	x 2.5	**TTS6470B**	D12	.984	4.47	2.480	.652	.489	.69	8	-	19.3

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	○			◎													

Spiral Flute Tap for High Speed Tapping

NEW

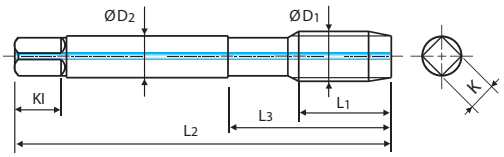
TTS86 SERIES

DIN/ANSI

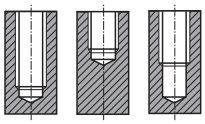


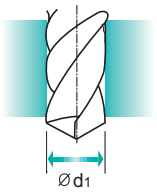
with Internal Coolant

- ▶2-3 times faster when tapping the GS material group
- ▶Precision Threads
- ▶Unsurpassed chip handling



Thread Depth / Hole Type 2.5×D





Material groups **GS** | HSS PM | UNC UNF | H | 60° | 2P~3P | R45 | TiN

p.7

Unit : Inch

Size	Pitch	EDP No.	Limit	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter(Ød1)	
D1	P	TiN		L1	L2	L3	D2	K	Kl	Z	Inch	Metric
1/4	- 20	TTS86403IC	H3	.499	3.14	1.179	.255	.191	.31	3	-	5.2
1/4	- 20	TTS86405IC	H5	.499	3.14	1.179	.255	.191	.31	3	-	5.2
1/4	- 28	TTS86423IC	H3	.358	3.14	1.179	.255	.191	.31	3	-	5.5
1/4	- 28	TTS86424IC	H4	.358	3.14	1.179	.255	.191	.31	3	-	5.5
5/16	- 18	TTS86443IC	H3	.558	3.54	1.376	.318	.238	.38	3	-	6.7
5/16	- 18	TTS86445IC	H5	.558	3.54	1.376	.318	.238	.38	3	-	6.7
5/16	- 24	TTS86463IC	H3	.417	3.54	1.376	.318	.238	.38	3	-	7.0
5/16	- 24	TTS86464IC	H4	.417	3.54	1.376	.318	.238	.38	3	-	7.0
3/8	- 16	TTS86483IC	H3	.625	3.93	1.533	.381	.286	.44	3	-	8.1
3/8	- 16	TTS86485IC	H5	.625	3.93	1.533	.381	.286	.44	3	-	8.1
3/8	- 24	TTS86503IC	H3	.417	3.93	1.533	.381	.286	.44	3	-	8.6
3/8	- 24	TTS86504IC	H4	.417	3.93	1.533	.381	.286	.44	3	-	8.6
7/16	- 14	TTS86523IC	H3	.715	3.93	1.847	.323	.242	.41	3	-	9.5
7/16	- 14	TTS86525IC	H5	.715	3.93	1.847	.323	.242	.41	3	-	9.5
7/16	- 20	TTS86543IC	H3	.499	3.93	1.847	.323	.242	.41	3	-	10.0
7/16	- 20	TTS86545IC	H5	.499	3.93	1.847	.323	.242	.41	3	-	10.0
1/2	- 13	TTS86563IC	H3	.770	4.32	2.064	.367	.275	.44	3	-	11.0
1/2	- 13	TTS86565IC	H5	.770	4.32	2.064	.367	.275	.44	3	-	11.0
1/2	- 20	TTS86583IC	H3	.499	3.93	2.064	.367	.275	.44	3	-	11.6
1/2	- 20	TTS86585IC	H5	.499	3.93	2.064	.367	.275	.44	3	-	11.6
9/16	- 12	TTS86603IC	H3	.833	4.32	2.064	.429	.322	.50	3	-	12.5
9/16	- 12	TTS86605IC	H5	.833	4.32	2.064	.429	.322	.50	3	-	12.5
9/16	- 18	TTS86623IC	H3	.558	3.93	2.064	.429	.322	.50	3	-	13.0
9/16	- 18	TTS86625IC	H5	.558	3.93	2.064	.429	.322	.50	3	-	13.0
5/8	- 11	TTS86643IC	H3	.908	4.32	2.201	.480	.360	.56	3	-	13.9
5/8	- 11	TTS86645IC	H5	.908	4.32	2.201	.480	.360	.56	3	-	13.9

▶ NEXT PAGE

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			◎	◎	◎	◎		○													

NEW

TiN-COATED HSS-PM SYNCHRO TAP

Spiral Flute Tap for High Speed Tapping

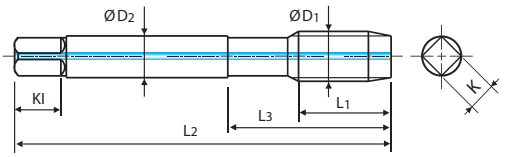
TTS86 SERIES

DIN/ANSI

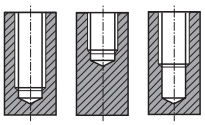


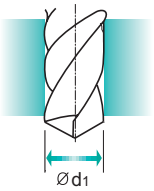
with Internal Coolant

- ▶2-3 times faster when tapping the GS material group
- ▶Precision Threads
- ▶Unsurpassed chip handling



Thread Depth / Hole Type 2.5×D





Material groups **GS** | HSS PM | UNC UNF | H | 60° | 2P~3P | R45 | TiN

p.7

Unit : Inch

Size D1	Pitch P	EDP No. TiN	Limit	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter D2	Square Size K	Square Length Kl	No. of Flute Z	Tapping Drill Diameter(Ød1) Inch	Metric
5/8	- 18	**TTS86663IC**	H3	.558	3.93	2.201	.480	.360	.56	3	-	14.6
5/8	- 18	**TTS86665IC**	H5	.558	3.93	2.201	.480	.360	.56	3	-	14.6
3/4	- 10	**TTS86703IC**	H3	.998	4.91	2.476	.590	.442	.69	4	-	16.9
3/4	- 10	**TTS86705IC**	H5	.998	4.91	2.476	.590	.442	.69	4	-	16.9
3/4	- 16	**TTS86723IC**	H3	.625	4.32	2.476	.590	.442	.69	4	-	17.7
3/4	- 16	**TTS86725IC**	H5	.625	4.32	2.476	.590	.442	.69	4	-	17.7

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			◎	◎	◎	◎		○													

TiN-COATED HSS-PM SYNCHRO TAP

Spiral Flute Tap for High Speed Tapping

NEW

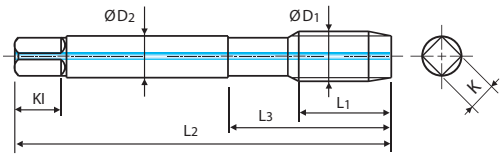
TTS81 SERIES

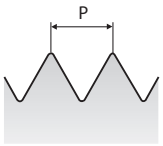
DIN/ANSI



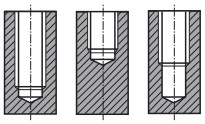
with Internal Coolant

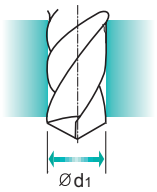
- 2-3 times faster when tapping the GS material group
- Precision Threads
- Unsurpassed chip handling





Thread Depth / Hole Type 2.5×D





Material groups **GS** | HSS PM | M/MF | D | 60° | 2P~3P | R45 | TiN

p.7

Unit : Inch

Size	Pitch	EDP No.	Limit	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drilll Diameter(Ød1)	
D1	P	TiN		L1	L2	L3	D2	K	Kl	Z	Inch	Metric
M6	x 1.0	TTS81315IC	D5	.393	3.14	1.179	.255	.191	.31	3	-	5.1
M8	x 1.25	TTS81365IC	D5	.511	3.54	1.376	.318	.238	.38	3	-	6.9
M8	x 1.0	TTS81375IC	D5	.393	3.54	1.376	.318	.238	.38	3	-	7.1
M10	x 1.5	TTS81426IC	D6	.590	3.93	1.533	.381	.286	.44	3	-	8.7
M10	x 1.25	TTS81435IC	D5	.511	3.93	1.533	.381	.286	.44	3	-	8.9
M12	x 1.75	TTS81506IC	D6	.708	4.32	2.064	.367	.275	.44	3	-	10.5
M12	x 1.25	TTS81525IC	D5	.511	3.93	2.064	.367	.275	.44	3	-	10.9
M14	x 2.0	TTS81547IC	D7	.786	4.32	2.064	.429	.322	.50	3	-	12.3
M14	x 1.5	TTS81556IC	D6	.590	3.93	2.064	.429	.322	.50	3	-	12.7
M16	x 2.0	TTS81607IC	D7	.786	4.32	2.201	.480	.360	.56	3	-	14.3
M16	x 1.5	TTS81616IC	D6	.590	3.93	2.201	.480	.360	.56	3	-	14.7
M18	x 2.5	TTS81657IC	D7	.983	4.91	2.476	.542	.406	.63	4	-	15.8
M18	x 1.5	TTS81676IC	D6	.590	4.32	2.476	.542	.406	.63	4	-	16.7
M20	x 2.5	TTS81707IC	D7	.983	5.50	2.752	.652	.489	.69	4	-	17.8
M20	x 1.5	TTS81726IC	D6	.590	4.91	2.752	.652	.489	.69	4	-	18.7

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			◎	◎	◎	◎		○													

NEW

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Spiral Point Tap for High Speed Tapping

TTS87 SERIES

DIN/ANSI



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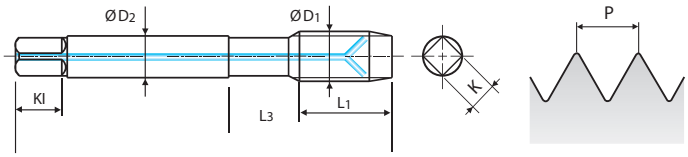
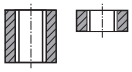
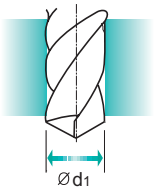


Thread Depth / Hole Type 3.0×D





Material groups **GS** | HSS PM | UNC UNF | H | 60° | 4P~5P | TiN

p.7

Unit : Inch

Size D1	Pitch P	EDP No. TiN	Limit	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter D2	Square Size K	Square Length Kl	No. of Flute Z	Tapping Drill Diameter(Ød1) Inch	Metric
1/4	20	TTS87403RCP	H3	.499	3.14	1.179	.255	.191	.31	3	-	5.2
1/4	20	TTS87405RCP	H5	.499	3.14	1.179	.255	.191	.31	3	-	5.2
1/4	28	TTS87423RCP	H3	.358	3.14	1.179	.255	.191	.31	3	-	5.5
1/4	28	TTS87424RCP	H4	.358	3.14	1.179	.255	.191	.31	3	-	5.5
5/16	18	TTS87443RCP	H3	.558	3.54	1.376	.318	.238	.38	3	-	6.7
5/16	18	TTS87445RCP	H5	.558	3.54	1.376	.318	.238	.38	3	-	6.7
5/16	24	TTS87463RCP	H3	.417	3.54	1.376	.318	.238	.38	3	-	7.0
5/16	24	TTS87464RCP	H4	.417	3.54	1.376	.318	.238	.38	3	-	7.0
3/8	16	TTS87483RCP	H3	.625	3.93	1.533	.381	.286	.44	3	-	8.1
3/8	16	TTS87485RCP	H5	.625	3.93	1.533	.381	.286	.44	3	-	8.1
3/8	24	TTS87503RCP	H3	.417	3.93	1.533	.381	.286	.44	3	-	8.6
3/8	24	TTS87504RCP	H4	.417	3.93	1.533	.381	.286	.44	3	-	8.6
7/16	14	TTS87523RCP	H3	.715	3.93	1.847	.323	.242	.41	4	-	9.5
7/16	14	TTS87525RCP	H5	.715	3.93	1.847	.323	.242	.41	4	-	9.5
7/16	20	TTS87543RCP	H3	.499	3.93	1.847	.323	.242	.41	4	-	10.0
7/16	20	TTS87545RCP	H5	.499	3.93	1.847	.323	.242	.41	4	-	10.0
1/2	13	TTS87563RCP	H3	.770	4.32	2.064	.367	.275	.44	4	-	11.0
1/2	13	TTS87565RCP	H5	.770	4.32	2.064	.367	.275	.44	4	-	11.0
1/2	20	TTS87583RCP	H3	.499	3.93	2.064	.367	.275	.44	4	-	11.6
1/2	20	TTS87585RCP	H5	.499	3.93	2.064	.367	.275	.44	4	-	11.6
9/16	12	TTS87603RCP	H3	.833	4.32	2.064	.429	.322	.50	4	-	12.5
9/16	12	TTS87605RCP	H5	.833	4.32	2.064	.429	.322	.50	4	-	12.5
9/16	18	TTS87623RCP	H3	.558	3.93	2.064	.429	.322	.50	4	-	13.0
9/16	18	TTS87625RCP	H5	.558	3.93	2.064	.429	.322	.50	4	-	13.0
5/8	11	TTS87643RCP	H3	.908	4.32	2.201	.480	.360	.56	4	-	13.9
5/8	11	TTS87645RCP	H5	.908	4.32	2.201	.480	.360	.56	4	-	13.9

▶ NEXT PAGE

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			◎	◎	◎	◎		○													

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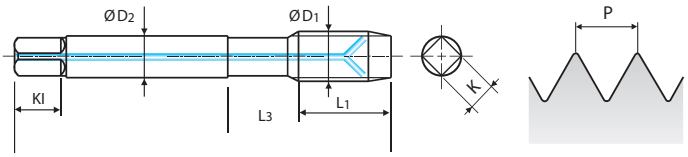
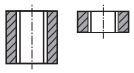
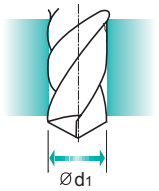


Thread Depth / Hole Type 3.0×D





Material groups **GS** | HSS PM | UNC UNF | H | 60° | 4P~5P | TiN

p.7

Unit : Inch

Size	Pitch	EDP No.	Limit	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter(Ød1)	
D1	P	TiN		L1	L2	L3	D2	K	Kl	Z	Inch	Metric
5/8	- 18	**TTS87663RCP**	H3	.558	3.93	2.201	.480	.360	.56	4	-	14.6
5/8	- 18	**TTS87665RCP**	H5	.558	3.93	2.201	.480	.360	.56	4	-	14.6
3/4	- 10	**TTS87703RCP**	H3	.998	4.91	2.476	.590	.442	.69	4	-	16.9
3/4	- 10	**TTS87705RCP**	H5	.998	4.91	2.476	.590	.442	.69	4	-	16.9
3/4	- 16	**TTS87723RCP**	H3	.625	4.32	2.476	.590	.442	.69	4	-	17.7
3/4	- 16	**TTS87725RCP**	H5	.625	4.32	2.476	.590	.442	.69	4	-	17.7

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			◎	◎	◎	◎		○													

NEW

TiN-COATED HSS-PM SYNCHRO TAP
Spiral Point Tap for High Speed Tapping

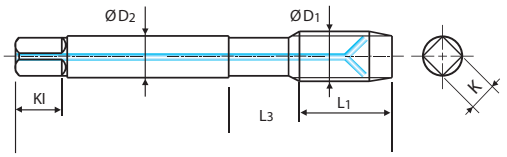
TTS82 SERIES

DIN/ANSI

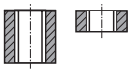


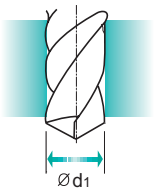
with Internal Coolant

- ▶2-3 times faster when tapping the GS material group
- ▶Precision Threads
- ▶Unsurpassed chip handling



Thread Depth / Hole Type 3.0×D





Material groups **GS** | HSS PM | M/MF | D | 60° | 4P~5P | TiN

p.7

Unit : Inch

Size	Pitch	EDP No.	Limit	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drilll Diameter(Ød1)	
D1	P	TiN		L1	L2	L3	D2	K	Kl	Z	Inch	Metric
M6	x 1.0	TTS82315RCP	D5	.393	3.14	1.179	.255	.191	.31	3	-	5.1
M8	x 1.25	TTS82365RCP	D5	.511	3.54	1.376	.318	.238	.38	3	-	6.9
M8	x 1.0	TTS82375RCP	D5	.393	3.54	1.376	.318	.238	.38	3	-	7.1
M10	x 1.5	TTS82426RCP	D6	.590	3.93	1.533	.381	.286	.44	3	-	8.7
M10	x 1.25	TTS82435RCP	D5	.511	3.93	1.533	.381	.286	.44	3	-	8.9
M12	x 1.75	TTS82506RCP	D6	.708	4.32	2.064	.367	.275	.44	4	-	10.5
M12	x 1.25	TTS82525RCP	D5	.511	3.93	2.064	.367	.275	.44	4	-	10.9
M14	x 2.0	TTS82547RCP	D7	.786	4.32	2.064	.429	.322	.50	4	-	12.3
M14	x 1.5	TTS82556RCP	D6	.590	3.93	2.064	.429	.322	.50	4	-	12.7
M16	x 2.0	TTS82607RCP	D7	.786	4.32	2.201	.480	.360	.56	4	-	14.3
M16	x 1.5	TTS82616RCP	D6	.590	3.93	2.201	.480	.360	.56	4	-	14.7
M18	x 2.5	TTS82657RCP	D7	.983	4.91	2.476	.542	.406	.63	4	-	15.8
M18	x 1.5	TTS82676RCP	D6	.590	4.32	2.476	.542	.406	.63	4	-	16.7
M20	x 2.5	TTS82707RCP	D7	.983	5.50	2.752	.652	.489	.69	4	-	17.8
M20	x 1.5	TTS82726RCP	D6	.590	4.91	2.752	.652	.489	.69	4	-	18.7

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			◎	◎	◎	◎		○													

TiCN-COATED HSS-PM SYNCHRO TAP

Straight Flute Tap for High Speed Tapping

NEW

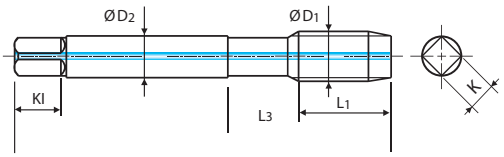
TKS88 SERIES

DIN/ANSI

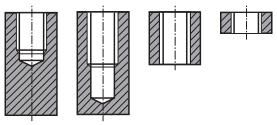


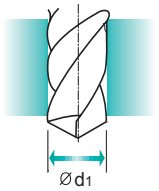
with Internal Coolant

- ▶2-3 times faster when tapping the GG material group
- ▶Precision Threads
- ▶Unsurpassed chip handling



Thread Depth / Hole Type 2.0×D





Material groups **GG** | HSS PM | UNC UNF | H | 60° | 2P~3P | TiCN

p.7

Unit : Inch

Size	Pitch	EDP No.	Limit	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drilll Diameter(Ød1)	
D1	P	TiN		L1	L2	L3	D2	K	Kl	Z	Inch	Metric
1/4 -	20	TKS88403IC	H3	.499	3.14	1.179	.255	.191	.31	3	-	5.2
1/4 -	20	TKS88405IC	H5	.499	3.14	1.179	.255	.191	.31	3	-	5.2
1/4 -	28	TKS88423IC	H3	.358	3.14	1.179	.255	.191	.31	3	-	5.5
1/4 -	28	TKS88424IC	H4	.358	3.14	1.179	.255	.191	.31	3	-	5.5
5/16 -	18	TKS88443IC	H3	.558	3.54	1.376	.318	.238	.38	3	-	6.7
5/16 -	18	TKS88445IC	H5	.558	3.54	1.376	.318	.238	.38	3	-	6.7
5/16 -	24	TKS88463IC	H3	.417	3.54	1.376	.318	.238	.38	3	-	7.0
5/16 -	24	TKS88464IC	H4	.417	3.54	1.376	.318	.238	.38	3	-	7.0
3/8 -	16	TKS88483IC	H3	.625	3.93	1.533	.381	.286	.44	4	-	8.1
3/8 -	16	TKS88485IC	H5	.625	3.93	1.533	.381	.286	.44	4	-	8.1
3/8 -	24	TKS88503IC	H3	.417	3.93	1.533	.381	.286	.44	4	-	8.6
3/8 -	24	TKS88504IC	H4	.417	3.93	1.533	.381	.286	.44	4	-	8.6
7/16 -	14	TKS88523IC	H3	.715	3.93	1.847	.323	.242	.41	4	-	9.5
7/16 -	14	TKS88525IC	H5	.715	3.93	1.847	.323	.242	.41	4	-	9.5
7/16 -	20	TKS88543IC	H3	.499	3.93	1.847	.323	.242	.41	4	-	10.0
7/16 -	20	TKS88545IC	H5	.499	3.93	1.847	.323	.242	.41	4	-	10.0
1/2 -	13	TKS88563IC	H3	.770	4.32	2.064	.367	.275	.44	4	-	11.0
1/2 -	13	TKS88565IC	H5	.770	4.32	2.064	.367	.275	.44	4	-	11.0
1/2 -	20	TKS88583IC	H3	.499	3.93	2.064	.367	.275	.44	4	-	11.6
1/2 -	20	TKS88585IC	H5	.499	3.93	2.064	.367	.275	.44	4	-	11.6
9/16 -	12	TKS88603IC	H3	.833	4.32	2.064	.429	.322	.50	4	-	12.5
9/16 -	12	TKS88605IC	H5	.833	4.32	2.064	.429	.322	.50	4	-	12.5
9/16 -	18	TKS88623IC	H3	.558	3.93	2.064	.429	.322	.50	4	-	13.0
9/16 -	18	TKS88625IC	H5	.558	3.93	2.064	.429	.322	.50	4	-	13.0
5/8 -	11	TKS88643IC	H3	.908	4.32	2.201	.480	.360	.56	4	-	13.9
5/8 -	11	TKS88645IC	H5	.908	4.32	2.201	.480	.360	.56	4	-	13.9

▶ NEXT PAGE

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			○	○	○																

NEW

TiCN-COATED HSS-PM SYNCHRO TAP
Straight Flute Tap for High Speed Tapping

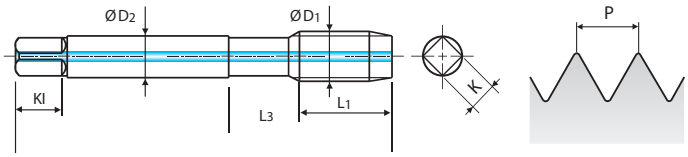
TKS88 SERIES

DIN/ANSI

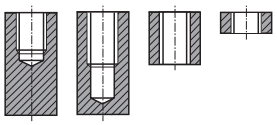


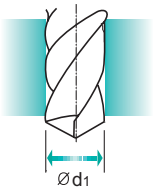
with Internal Coolant

- ▶2-3 times faster when tapping the GG material group
- ▶Precision Threads
- ▶Unsurpassed chip handling



Thread Depth / Hole Type 2.0×D





Material groups **GG** | HSS PM | UNC UNF | H | 60° | 2P~3P | TiCN

p.7

Unit : Inch

Size	Pitch	EDP No.	Limit	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drilll Diameter(Ød1)	
D1	P	TiN		L1	L2	L3	D2	K	Kl	Z	Inch	Metric
5/8	- 18	**TKS88663IC**	H3	.558	3.93	2.201	.480	.360	.56	4	-	14.6
5/8	- 18	**TKS88665IC**	H5	.558	3.93	2.201	.480	.360	.56	4	-	14.6
3/4	- 10	**TKS88703IC**	H3	.998	4.91	2.476	.590	.442	.69	4	-	16.9
3/4	- 10	**TKS88705IC**	H5	.998	4.91	2.476	.590	.442	.69	4	-	16.9
3/4	- 16	**TKS88723IC**	H3	.625	4.32	2.476	.590	.442	.69	4	-	17.7
3/4	- 16	**TKS88725IC**	H5	.625	4.32	2.476	.590	.442	.69	4	-	17.7

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			○	○	○																

Straight Flute Tap for High Speed Tapping

NEW

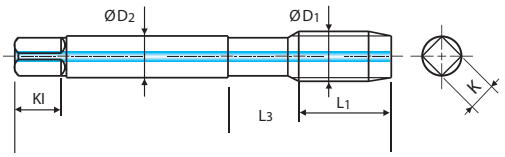
TKS83 SERIES

DIN/ANSI

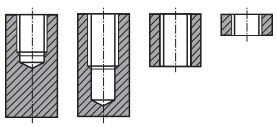


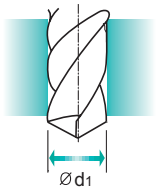
with Internal Coolant

- 2-3 times faster when tapping the GG material group
- Precision Threads
- Unsurpassed chip handling



Thread Depth / Hole Type 2.0×D





Material groups **GG** | HSS PM | M/MF | D | 60° | 2P~3P | TiCN

p.7

Unit : Inch

Size	Pitch	EDP No.	Limit	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter(Ød1)	
D1	P	TiCN		L1	L2	L3	D2	K	Kl	Z	Inch	Metric
M6	x 1.0	TKS83315IC	D5	.393	3.14	1.179	.255	.191	.31	3	-	5.1
M8	x 1.25	TKS83365IC	D5	.511	3.54	1.376	.318	.238	.38	3	-	6.9
M8	x 1.0	TKS83375IC	D5	.393	3.54	1.376	.318	.238	.38	3	-	7.1
M10	x 1.5	TKS83426IC	D6	.590	3.93	1.533	.381	.286	.44	4	-	8.7
M10	x 1.25	TKS83435IC	D5	.511	3.93	1.533	.381	.286	.44	4	-	8.9
M12	x 1.75	TKS83506IC	D6	.708	4.32	2.064	.367	.275	.44	4	-	10.5
M12	x 1.25	TKS83525IC	D5	.511	3.93	2.064	.367	.275	.44	4	-	10.9
M14	x 2.0	TKS83547IC	D7	.786	4.32	2.064	.429	.322	.50	4	-	12.3
M14	x 1.5	TKS83556IC	D6	.590	3.93	2.064	.429	.322	.50	4	-	12.7
M16	x 2.0	TKS83607IC	D7	.786	4.32	2.201	.480	.360	.56	4	-	14.3
M16	x 1.5	TKS83616IC	D6	.590	3.93	2.201	.480	.360	.56	4	-	14.7
M18	x 2.5	TKS83657IC	D7	.983	4.91	2.476	.542	.406	.63	4	-	15.8
M18	x 1.5	TKS83676IC	D6	.590	4.32	2.476	.542	.406	.63	4	-	16.7
M20	x 2.5	TKS83707IC	D7	.983	5.50	2.752	.652	.489	.69	4	-	17.8
M20	x 1.5	TKS83726IC	D6	.590	4.91	2.752	.652	.489	.69	4	-	18.7

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			○	○	○																

NEW

TiCN-COATED HSS-PM SYNCHRO TAP
Straight Flute Tap for High Speed Tapping

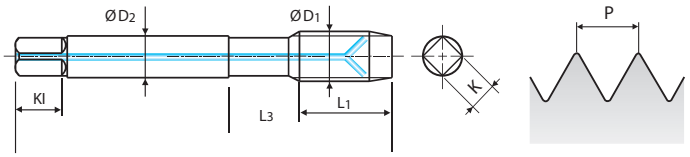
TKS89 SERIES

DIN/ANSI

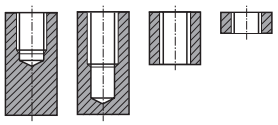


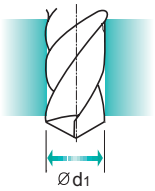
with Internal Coolant

- ▶ 2-3 times faster when tapping the GG material group
- ▶ Precision Threads
- ▶ Unsurpassed chip handling



Thread Depth / Hole Type 2.0×D





Material groups **GG** | HSS PM | UNC UNF | H | 60° | 2P~3P | TiCN

p.7

Unit : Inch

Size	Pitch	EDP No.	Limit	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drilll Diameter(Ød1)	
D1	P	TiCN		L1	L2	L3	D2	K	Kl	Z	Inch	Metric
1/4	- 20	TKS89403RCP	H3	.499	3.14	1.179	.255	.191	.31	3	-	5.2
1/4	- 20	TKS89405RCP	H5	.499	3.14	1.179	.255	.191	.31	3	-	5.2
1/4	- 28	TKS89423RCP	H3	.358	3.14	1.179	.255	.191	.31	3	-	5.5
1/4	- 28	TKS89424RCP	H4	.358	3.14	1.179	.255	.191	.31	3	-	5.5
5/16	- 18	TKS89443RCP	H3	.558	3.54	1.376	.318	.238	.38	3	-	6.7
5/16	- 18	TKS89445RCP	H5	.558	3.54	1.376	.318	.238	.38	3	-	6.7
5/16	- 24	TKS89463RCP	H3	.417	3.54	1.376	.318	.238	.38	3	-	7.0
5/16	- 24	TKS89464RCP	H4	.417	3.54	1.376	.318	.238	.38	3	-	7.0
3/8	- 16	TKS89483RCP	H3	.625	3.93	1.533	.381	.286	.44	4	-	8.1
3/8	- 16	TKS89485RCP	H5	.625	3.93	1.533	.381	.286	.44	4	-	8.1
3/8	- 24	TKS89503RCP	H3	.417	3.93	1.533	.381	.286	.44	4	-	8.6
3/8	- 24	TKS89504RCP	H4	.417	3.93	1.533	.381	.286	.44	4	-	8.6
7/16	- 14	TKS89523RCP	H3	.715	3.93	1.847	.323	.242	.41	4	-	9.5
7/16	- 14	TKS89525RCP	H5	.715	3.93	1.847	.323	.242	.41	4	-	9.5
7/16	- 20	TKS89543RCP	H3	.499	3.93	1.847	.323	.242	.41	4	-	10.0
7/16	- 20	TKS89545RCP	H5	.499	3.93	1.847	.323	.242	.41	4	-	10.0
1/2	- 13	TKS89563RCP	H3	.770	4.32	2.064	.367	.275	.44	4	-	11.0
1/2	- 13	TKS89565RCP	H5	.770	4.32	2.064	.367	.275	.44	4	-	11.0
1/2	- 20	TKS89583RCP	H3	.499	3.93	2.064	.367	.275	.44	4	-	11.6
1/2	- 20	TKS89585RCP	H5	.499	3.93	2.064	.367	.275	.44	4	-	11.6
9/16	- 12	TKS89603RCP	H3	.833	4.32	2.064	.429	.322	.50	4	-	12.5
9/16	- 12	TKS89605RCP	H5	.833	4.32	2.064	.429	.322	.50	4	-	12.5
9/16	- 18	TKS89623RCP	H3	.558	3.93	2.064	.429	.322	.50	4	-	13.0
9/16	- 18	TKS89625RCP	H5	.558	3.93	2.064	.429	.322	.50	4	-	13.0
5/8	- 11	TKS89643RCP	H3	.908	4.32	2.201	.480	.360	.56	4	-	13.9
5/8	- 11	TKS89645RCP	H5	.908	4.32	2.201	.480	.360	.56	4	-	13.9

▶ NEXT PAGE

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			○	○	○																

TiCN-COATED HSS-PM SYNCHRO TAP

Straight Flute Tap for High Speed Tapping

NEW

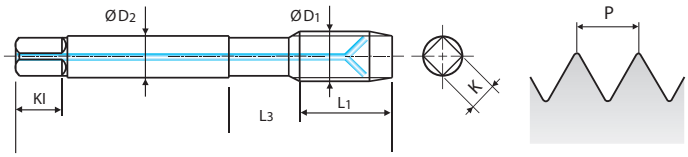
TKS89 SERIES

DIN/ANSI

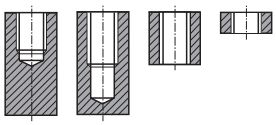


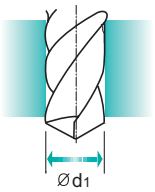
with Internal Coolant

- ▶2-3 times faster when tapping the GG material group
- ▶Precision Threads
- ▶Unsurpassed chip handling



Thread Depth / Hole Type 2.0×D





Material groups **GG** | HSS PM | UNC UNF | H | 60° | 2P~3P | TiCN

p.7

Unit : Inch

Size	Pitch	EDP No.	Limit	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drilll Diameter(Ød1)	
D1	P	TiCN		L1	L2	L3	D2	K	Kl	Z	Inch	Metric
5/8 -	18	**TKS89663RCP**	H3	.558	3.93	2.201	.480	.360	.56	4	-	14.6
5/8 -	18	**TKS89665RCP**	H5	.558	3.93	2.201	.480	.360	.56	4	-	14.6
3/4 -	10	**TKS89703RCP**	H3	.998	4.91	2.476	.590	.442	.69	4	-	16.9
3/4 -	10	**TKS89705RCP**	H5	.998	4.91	2.476	.590	.442	.69	4	-	16.9
3/4 -	16	**TKS89723RCP**	H3	.625	4.32	2.476	.590	.442	.69	4	-	17.7
3/4 -	16	**TKS89725RCP**	H5	.625	4.32	2.476	.590	.442	.69	4	-	17.7

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended			○	○	○																

NEW

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Straight Flute Tap for High Speed Tapping

TKS84 SERIES

DIN/ANSI



with Internal Coolant

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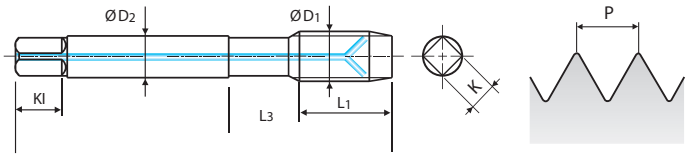
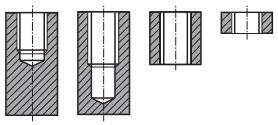
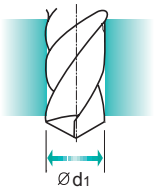
- ▶ Precision Threads
- ▶ Unsurpassed chip handling



Thread Depth / Hole Type 2.0×D





Material groups **GG** | HSS PM | M/MF | D | 60° | 2P~3P | TiCN

p.7

Unit : Inch

Size	Pitch	EDP No.	Limit	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drilll Diameter(Ød1)	
D1	P	TiCN		L1	L2	L3	D2	K	Kl	Z	Inch	Metric
M6	x 1.0	**TKS84315RCP**	D5	.393	3.14	1.179	.255	.191	.31	3	-	5.1
M8	x 1.25	**TKS84365RCP**	D5	.511	3.54	1.376	.318	.238	.38	3	-	6.9
M8	x 1.0	**TKS84375RCP**	D5	.393	3.54	1.376	.318	.238	.38	3	-	7.1
M10	x 1.5	**TKS84426RCP**	D6	.590	3.93	1.533	.381	.286	.44	4	-	8.7
M10	x 1.25	**TKS84435RCP**	D5	.511	3.93	1.533	.381	.286	.44	4	-	8.9
M12	x 1.75	**TKS84506RCP**	D6	.708	4.32	2.064	.367	.275	.44	4	-	10.5
M12	x 1.25	**TKS84525RCP**	D5	.511	3.93	2.064	.367	.275	.44	4	-	10.9
M14	x 2.0	**TKS84547RCP**	D7	.786	4.32	2.064	.429	.322	.50	4	-	12.3
M14	x 1.5	**TKS84556RCP**	D6	.590	3.93	2.064	.429	.322	.50	4	-	12.7
M16	x 2.0	**TKS84607RCP**	D7	.786	4.32	2.201	.480	.360	.56	4	-	14.3
M16	x 1.5	**TKS84616RCP**	D6	.590	3.93	2.201	.480	.360	.56	4	-	14.7
M18	x 2.5	**TKS84657RCP**	D7	.983	4.91	2.476	.542	.406	.63	4	-	15.8
M18	x 1.5	**TKS84676RCP**	D6	.590	4.32	2.476	.542	.406	.63	4	-	16.7
M20	x 2.5	**TKS84707RCP**	D7	.983	5.50	2.752	.652	.489	.69	4	-	17.8
M20	x 1.5	**TKS84726RCP**	D6	.590	4.91	2.752	.652	.489	.69	4	-	18.7

◎ : Excellent ○ : Good

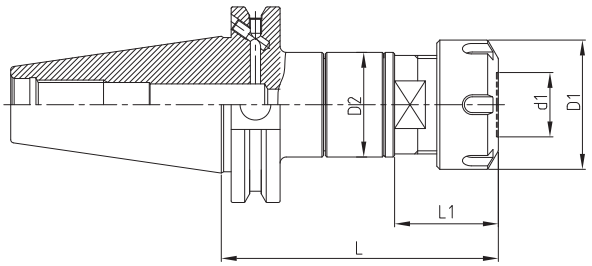
ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	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	400 Rm	1050 Rm	550	630	400	550
Recommended			○	○	○																

SYNCHRO TAPPING ER CHUCK

CAT





ASME B5.50 - CAT | AT3 | AD/B

ASME B5.50-2009-CAT

Unit : mm

EDP No.	TAPER No.	MODEL No.	d1 (TAP SIZE)	NUT/ COLLET	D1	D2	L	L1	WEIGHT(Kg)
JK060SYT	40	CAT40 AD/B - SYTER 12 - 79	M3 - M12	ER16	28	34	79	26	1.00
JK062SYT		CAT40 AD/B - SYTER 16 - 85	M3 - M16	ER20	34	34	85	27	1.08
JK064SYT		CAT40 AD/B - SYTER 20 - 90	M3 - M20	ER25	42	34	90	34	1.08
JK066SYT		CAT40 AD/B - SYTER 27 - 100	M4 - M27	ER32	50	45	100	31	1.37
JK068SYT		CAT40 AD/B - SYTER 33 - 120	M4 - M33	ER40	63	62	120	35	2.16
JL060SYT	50	CAT50 AD/B - SYTER 12 - 79	M3 - M12	ER16	28	34	79	24	2.83
JL062SYT		CAT50 AD/B - SYTER 16 - 85	M3 - M16	ER20	34	34	85	27	2.86
JL064SYT		CAT50 AD/B - SYTER 20 - 90	M3 - M20	ER25	42	34	90	34	2.87
JL066SYT		CAT50 AD/B - SYTER 27 - 100	M4 - M27	ER32	50	45	100	31	3.04
JL068SYT		CAT50 AD/B - SYTER 33 - 120	M4 - M33	ER40	63	62	105	35	3.93

* BT(JIS B6339/MAS-403), HSK(DIN 69893/ISO 12164-1) and STRAIGHT-K Taper products are available.
For details, please discuss separately.

Feature

- To compensate for synchronization errors to extend tap life and to improve thread quality
- To compensate for pitch tolerances of taps
- For machine with synchronized spindle

ER COLLET CHUCK (ER NUT)

PART

EDP No.	SERIES	TYPE
ZZ061	ER 11 - NUT	FIG.1
ZZ063	ER 16 - NUT	FIG.1
ZZ066	ER 20 - NUT	FIG.1

EDP No.	SERIES	TYPE
ZZ069	ER 25 - NUT	FIG.2
ZZ072	ER 32 - NUT	FIG.2
ZZ077	ER 40 - NUT	FIG.2

FIG.1

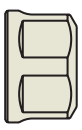
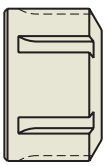


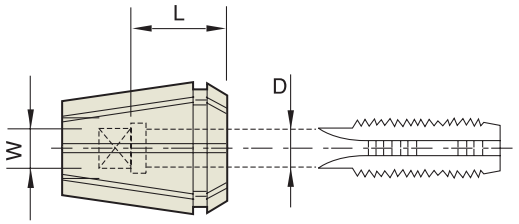
FIG.2



TAP ER COLLET

RD





Below standard Tap ER Collet conforms to ANSI (For STANDARD TAPS)

Unit : Inch

RD 11TC					
EDP No.	TAP		D(Ø)	W(□)	L
	Inch	Metric			
11TC1411	#6	M3	.141	.110	.472
11TC1613	#8	M4	.168	.131	.472
11TC1915	#10	M4.5+M5	.194	.152	.472
11TC2216	#12	-	.220	.165	.551
11TC2519	1/4	M6	.255	.191	.551

RD 16TC					
EDP No.	TAP		D(Ø)	W(□)	L
	Inch	Metric			
16TC1411	#6	M3	.141	.110	.709
16TC1613	#8	M4	.168	.131	.709
16TC1915	#10	M4.5+M5	.194	.152	.709
16TC2216	#12	-	.220	.165	.709
16TC2519	1/4	M6	.255	.191	.709
16TC3123	5/16	M7+M8	.318	.238	.709
16TC3224	7/16	-	.323	.242	.709

RD 20TC					
EDP No.	TAP		D(Ø)	W(□)	L
	Inch	Metric			
20TC1411	#6	M3	.141	.110	.709
20TC1613	#8	M4	.168	.131	.709
20TC1915	#10	M4.5+M5	.194	.152	.709
20TC2216	#12	-	.220	.165	.709
20TC2519	1/4	M6	.255	.191	.709
20TC3123	5/16	M7+M8	.318	.238	.866
20TC3828	3/8	M10	.381	.286	.866
20TC3224	7/16	-	.323	.242	.866
20TC3622	1/2	M12	.367	.275	.866

RD 25TC					
EDP No.	TAP		D(Ø)	W(□)	L
	Inch	Metric			
25TC1411	#6	M3	.141	.110	.709
25TC1613	#8	M4	.168	.131	.709
25TC1915	#10	M4.5+M5	.194	.152	.709
25TC2216	#12	-	.220	.165	.709
25TC2519	1/4	M6	.255	.191	.709
25TC3123	5/16	M7+M8	.318	.238	.866
25TC3828	3/8	M10	.381	.286	.866
25TC3224	7/16	-	.323	.242	.866
25TC3622	1/2	M12	.367	.275	.866
25TC4232	9/16	M14	.429	.322	.984
25TC4836	5/8	M16	.480	.360	.984
25TC5440	11/16	M18	.542	.406	.984
25TC5944	3/4	-	.590	.442	.984

RD 32TC					
EDP No.	TAP		D(Ø)	W(□)	L
	Inch	Metric			
32TC1411	#6	M3	.141	.110	.709
32TC1613	#8	M4	.168	.131	.709
32TC1915	#10	M4.5+M5	.194	.152	.709
32TC2216	#12	-	.220	.165	.709
32TC2519	1/4	M6	.255	.191	.709
32TC3123	5/16	M7+M8	.318	.238	.866
32TC3828	3/8	M10	.381	.286	.866
32TC3224	7/16	-	.323	.242	.866
32TC3627	1/2	M12	.367	.275	.866
32TC4232	9/16	M14	.429	.322	.984
32TC4836	5/8	M16	.480	.360	.984
32TC5440	11/16	M18	.542	.406	.984
32TC5944	3/4	-	.590	.442	.984
32TC6548	13/16	M20	.652	.489	.984

RD 40TC					
EDP No.	TAP		D(Ø)	W(□)	L
	Inch	Metric			
40TC1411	#6	M3	.141	.110	.709
40TC1613	#8	M4	.168	.131	.709
40TC1915	#10	M4.5+M5	.194	.152	.709
40TC2216	#12	-	.220	.165	.709
40TC2519	1/4	M6	.255	.191	.709
40TC3123	5/16	M7+M8	.318	.238	.866
40TC3828	3/8	M10	.381	.286	.866
40TC3224	7/16	-	.323	.242	.866
40TC3627	1/2	M12	.367	.275	.866
40TC4232	9/16	M14	.429	.322	.984
40TC4836	5/8	M16	.480	.360	.984
40TC5440	11/16	M18	.542	.406	.984
40TC5944	3/4	-	.590	.442	.984
40TC6548	13/16	M20	.652	.489	.984
40TC6952	7/8	M22	.697	.523	.984
40TC7657	15/16	M24	.760	.570	.984
40TC8060	1	M25	.800	.600	1.102

MEMO

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Since 1982, YG-1 has been committed to quality, innovation and the unique customer experience.
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