YG-1 CO., LTD.

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Vernon Hills, IL 60061 U.S.A.
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Technical Assistance: 888-868-5988
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Search 'YG-1' on social media outlets

ISO 9001 / ISO 14001
JAS-ANZ

YG1YUSY2505002

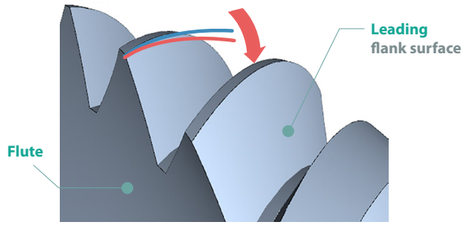
FEATURES OF GEOMETRY

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

▶ **Shank Tolerance 'h7'** for precision clamping and rigid tapping

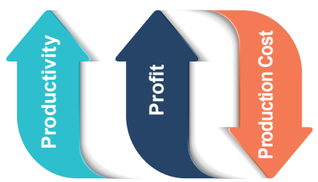
▶ **More thread relief** allows high speed cutting

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

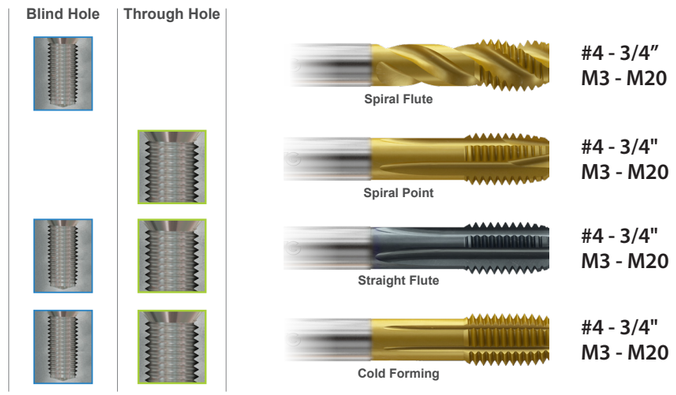


ADVANTAGES

▶ **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

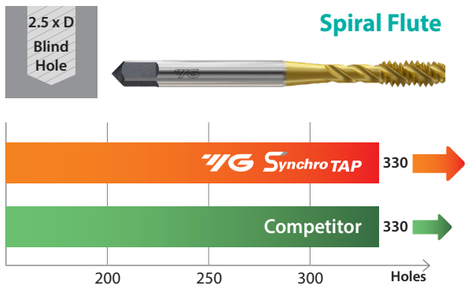
1P~2P 2P~3P 4P~5P

CASE STUDY

TEST I SPIRAL FLUTE TAP (M10x1.5)

Cutting Condition

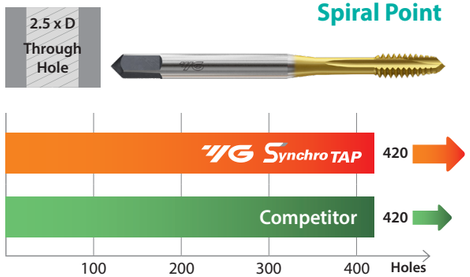
Tool	Synchro TAP Spiral Flute Tap	Competitor
Size	M10 x 1.5	
Work Material	C45 / 1045 / S45C Hardness : HRc20	
Cutting Speed	98.4 ft/min.	
RPM	955 rev./min.	
Tapping Depth	.9843" (2.5xD / Blind Hole)	
Tapping Holes	330	
Cooling Method	External Cooling Water Soluble (9% Emulsion)	
Machine	Machining Center	



TEST II SPIRAL POINT TAP (M6x1.0)

Cutting Condition

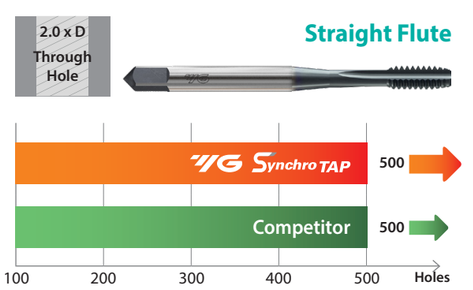
Tool	Synchro TAP Spiral Point Tap	Competitor
Size	M6 x 1.0	
Work Material	4140 / 42CrMo4 / SCM440 Hardness : HRc20	
Cutting Speed	98.4 ft/min.	
RPM	1592 rev./min.	
Tapping Depth	.5906" (2.5xD / Through Hole)	
Tapping Holes	420	
Cooling Method	External Cooling Water Soluble (9% Emulsion)	
Machine	Machining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



TEST III STRAIGHT FLUTE TAP (M10x1.5)

Cutting Condition

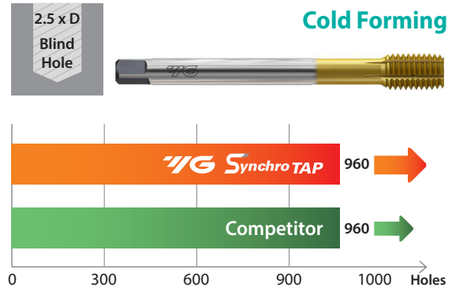
Tool	Synchro TAP Straight Flute Tap	Competitor
Size	M10 x 1.5	
Work Material	4140 / 42CrMo4 / SCM440 Hardness : HRc20	
Cutting Speed	82.0 ft/min.	
RPM	1326 rev./min.	
Tapping Depth	.7874" (2.0xD / Through Hole)	
Tapping Holes	500	
Cooling Method	External Cooling Water Soluble (9% Emulsion)	
Machine	Machining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



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	



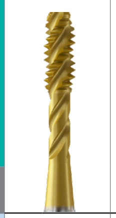
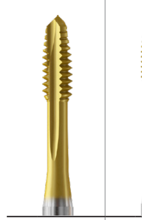
SELECTION GUIDE

HSS-PM
SYNCHRO TAP

High Speed Tapping with Rigid CNC Machines

Please visit
globalyg1.com/mat
for material search

◎ : Excellent ○ : Good

			TTS65	TTS61	TTS66	TTS62	TKS67	TKS63	TTS68	TTS64	TTS86	TTS81	TTS87	TTS82	TKS88	TKS83	TKS89	TKS84
HOLE TYPE			Max. 2.5xD Blind Hole		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			
TOOL MATERIAL			HSS-PM		HSS-PM													
CHAMFER LEAD ACC. TO DIN2197			2p-3p		4p-5p		2p-3p		2p-3p		2p-3p		4p-5p		2p-3p			
FLUTE TYPE			Spiral Flute		Spiral Point		Straight Flute		Forming		Spiral Flute		Spiral Point		Straight Flute			
SPIRAL FLUTE ANGLE			R45		-	-	-	-	-	-	R45		-	-	-	-	-	-
SERIES	M	DIN Length-ANSI Shank																
	M/MF	USCTI 302A		TTS61 (p. 10)		TTS62 (p. 13)		TKS63 (p. 16)		TTS64 (p. 19)								
		DIN Length-ANSI Shank										TTS81 (p. 22)		TTS82 (p. 25)		TKS83 (p. 28)		TKS84 (p. 31)
	UNC/ UNF	USCTI 302A	TTS65 (p. 8~9)		TTS66 (p. 11)		TKS67 (p. 14)		TTS68 (p. 17)									
		DIN Length-ANSI Shank									TTS86 (p. 20)		TTS87 (p. 23)		TKS88 (p. 26)		TKS89 (p. 29)	
SURFACE TREATMENT / COATING			TiN	TiN	TiN	TiN	TiCN	TiCN	TiN	TiN	TiN	TiN	TiN	TiN	TiCN	TiCN	TiCN	TiCN
MODEL											 NEW	 NEW	 NEW	 NEW	 NEW	 NEW	 NEW	 NEW

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc	Examples	TTS65	TTS61
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			

VDI 3323	TTS66	TTS62	TKS67	TKS63	TTS68	TTS64	TTS86	TTS81	TTS87	TTS82	TKS88	TKS83	TKS89	TKS84
1	◎ (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)
2	◎ (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)
3	◎ (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)
4	◎ (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)
5														
6	◎ (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)
7	◎ (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)
8														
9														
10														
11														
12	◎ (39-98)	◎ (39-98)			◎ (49-108)	◎ (49-108)	◎ (39-108)	◎ (39-108)	◎ (39-108)	◎ (39-108)				
13	◎ (39-98)	◎ (39-98)			◎ (49-108)	◎ (49-108)	◎ (39-108)	◎ (39-108)	◎ (39-108)	◎ (39-108)				
14	○ (39-60)	○ (39-60)			◎ (49-75)	◎ (49-75)	○ (39-66)	○ (39-66)	○ (39-66)	○ (39-66)				
15	○ (98-148)	○ (98-148)	◎ (98-148)	◎ (98-148)			○ (98-163)	○ (98-163)	○ (98-163)	○ (98-163)	◎ (98-163)	◎ (98-163)	◎ (98-163)	◎ (98-163)
16			◎ (98-148)	◎ (98-148)							◎ (98-163)	◎ (98-163)	◎ (98-163)	◎ (98-163)
17	◎ (82-148)	◎ (82-148)	◎ (82-148)	◎ (82-148)			◎ (82-163)	◎ (82-163)	◎ (82-163)	◎ (82-163)	◎ (82-163)	◎ (82-163)	◎ (82-163)	◎ (82-163)
18			◎ (82-148)	◎ (82-148)							◎ (82-163)	◎ (82-163)	◎ (82-163)	◎ (82-163)
19			○ (82-148)	○ (82-148)							○ (82-163)	○ (82-163)	○ (82-163)	○ (82-163)
20			○ (82-148)	○ (82-148)							○ (82-163)	○ (82-163)	○ (82-163)	○ (82-163)
21					◎ (131-184)	◎ (131-184)								
22					◎ (131-184)	◎ (131-184)								
23	◎ (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)
24	◎ (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)
25	◎ (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)
26	◎ (98-148)	◎ (98-148)					◎ (98-163)	◎ (98-163)	◎ (98-163)	◎ (98-163)				
27														
28	○ (82-118)	○ (82-118)			◎ (115-148)	◎ (115-148)	○ (82-130)	○ (82-130)	○ (82-130)	○ (82-130)				
29														
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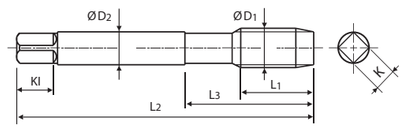
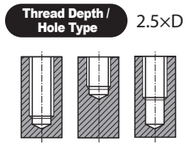
TiN-COATED HSS-PM SYNCHRO TAP
Spiral Flute Tap for High Speed Tapping

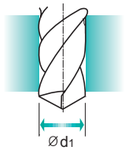
TTS65 SERIES

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 Drilll Diameter(Ød1) 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

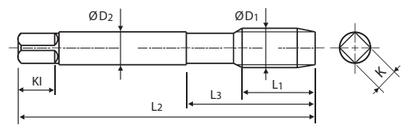
◎ : Excellent ○ : Good

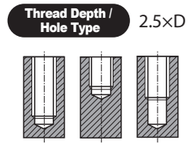
ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10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

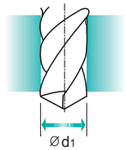
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	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 Drilll 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			◎	◎	◎	◎		○													

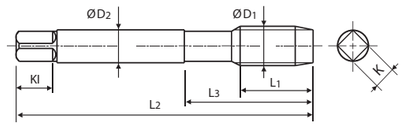
TiN-COATED HSS-PM SYNCHRO TAP

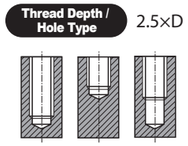
Spiral Flute Tap for High Speed Tapping

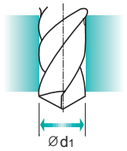
TTS61 SERIES

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			◎	◎	◎	◎		○													

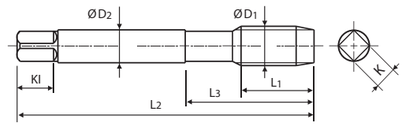
TiN-COATED HSS-PM SYNCHRO TAP

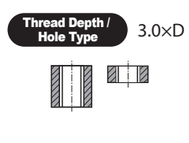
Spiral Point Tap for High Speed Tapping

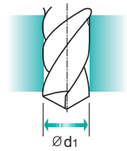
TTS66 SERIES

USCTI 302A

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







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

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		TiN		L1	L2	L3	D2	K	Kl	Z	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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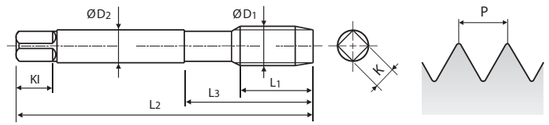
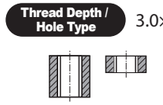
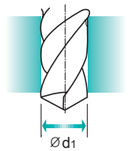


Thread Depth / Hole Type 3.0×D





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

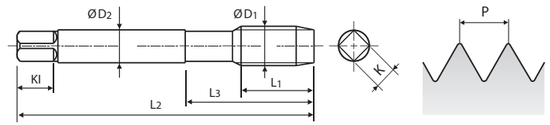
ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10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

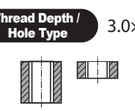
TiN-COATED HSS-PM SYNCHRO TAP
Spiral Point Tap for High Speed Tapping
TTS62 SERIES

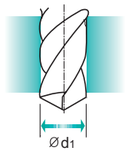
USCTI 302A

- 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 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
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	◎	◎	◎	◎		◎	◎					◎	◎	○	○		◎			

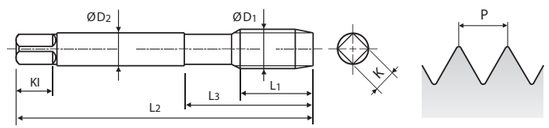
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	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			◎	◎	◎	◎		○													

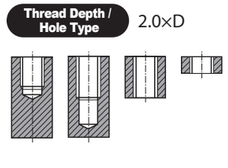
TiCN-COATED HSS-PM SYNCHRO TAP
Straight Flute Tap for High Speed Tapping

TKS67 SERIES

USCTI 302A

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





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
#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

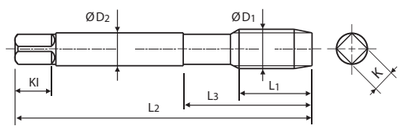
◎ : Excellent ○ : Good

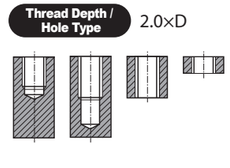
ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10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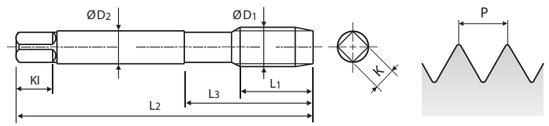
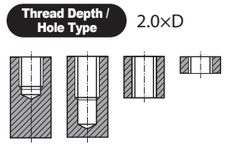
- Unsurpassed chip handling



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	○	○	○	○		○	○								◎	◎	◎	◎	○	○									

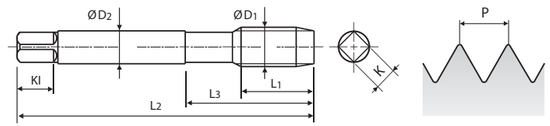
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	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

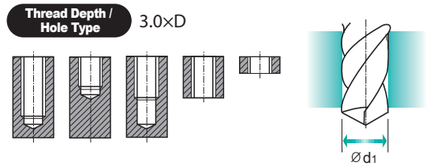
TTS68 SERIES

USCTI 302A

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



Thread Depth / Hole Type 3.0×D



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

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		TiN		L1	L2	L3	D2	K	Kl	Z	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	◎	◎	◎	◎		◎	◎					◎	◎	◎															

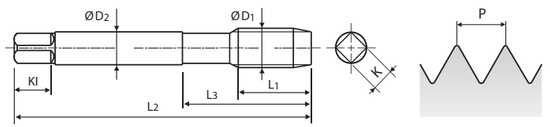
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	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	◎	◎	◎	◎	○			◎													

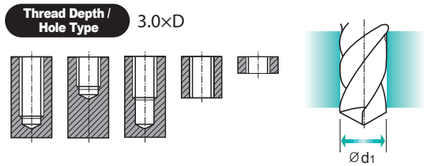
TiN-COATED HSS-PM SYNCHRO TAP
Forming for High Speed Tapping

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	Tapping Drill Diameter(Ød1) 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	◎	◎	◎	◎		◎	◎					◎	◎	◎						

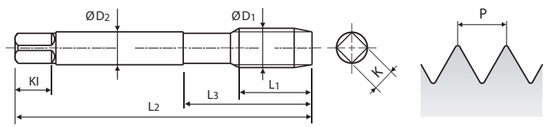
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	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	◎	◎	◎	◎	○			◎													

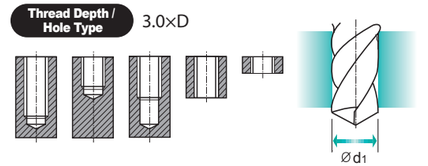
TiN-COATED HSS-PM SYNCHRO TAP
Forming for High Speed Tapping

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 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 Lobe Z	Tapping Drill Diameter(Ød1) Inch	Tapping Drill Diameter(Ød1) 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	◎	◎	◎	◎	○			◎													

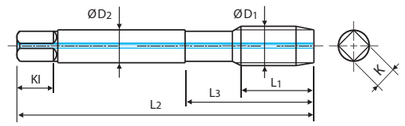
TiN-COATED HSS-PM SYNCHRO TAP
Spiral Flute Tap for High Speed Tapping

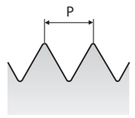
NEW **TTS86** SERIES

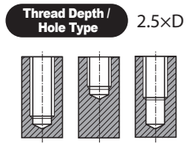
DIN/ANSI

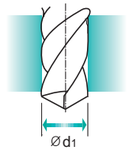
with Internal Coolant

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









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	Tapping Drill Diameter(Ød1) 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

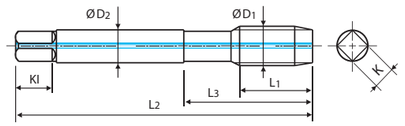
▶ NEXT PAGE

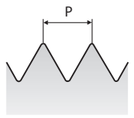
◎ : Excellent ○ : Good

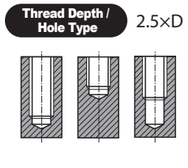
ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10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

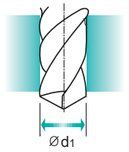
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	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			◎	◎	◎	◎		○													

TiN-COATED HSS-PM SYNCHRO TAP
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









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	Tapping Drill Diameter(Ød1) 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

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- ▶Precision Threads
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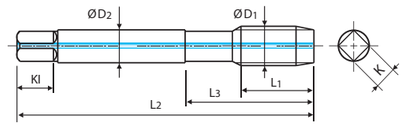
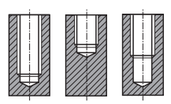
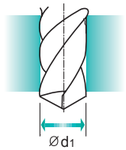


Thread Depth / Hole Type 2.5×D





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 Drill 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			◎	◎	◎	◎		○													

TiN-COATED HSS-PM SYNCHRO TAP

Spiral Point Tap for High Speed Tapping

NEW

TTS87 SERIES

DIN/ANSI

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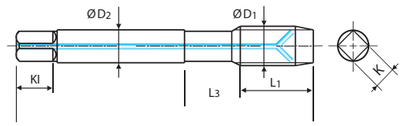
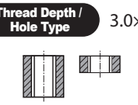
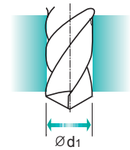


Thread Depth / Hole Type 3.0×D





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

p.7

Unit : Inch

Size	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	**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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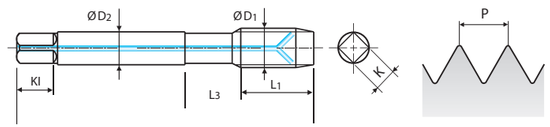
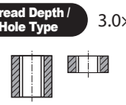
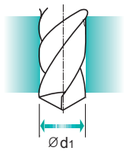


Thread Depth / Hole Type 3.0×D





Material groups **GS** | HSS PM | UNC UNF | H | 60° | 4P~5P | TiN | p.7

Unit : Inch

Size 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	**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			◎	◎	◎	◎		○													

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

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DIN/ANSI

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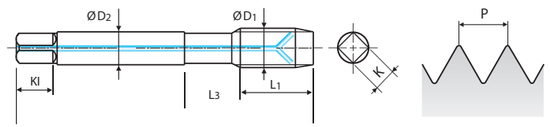
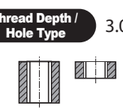
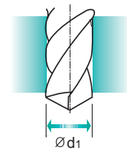
- ▶Unsurpassed chip handling



Thread Depth / Hole Type 3.0×D





Material groups **GS** | HSS PM | M/MF | D | 60° | 4P~5P | TiN | p.7

Unit : Inch

Size 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
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			◎	◎	◎	◎		○													

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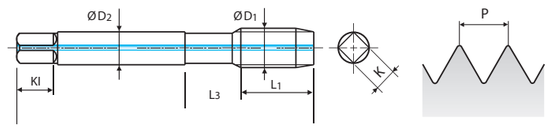
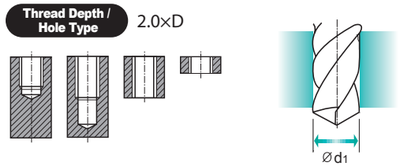
with Internal Coolant

- 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 Drill 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			○	○	○																

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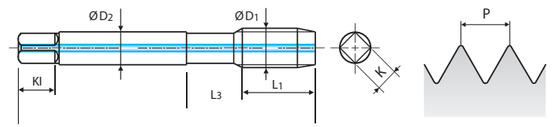
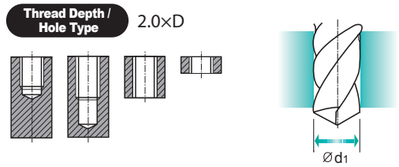


Thread Depth / Hole Type 2.0×D



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 Drill 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			○	○	○																

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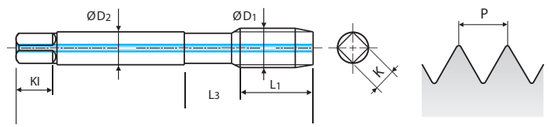
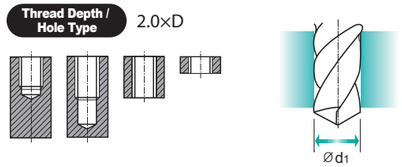


Thread Depth / Hole Type 2.0×D



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	**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			○	○	○																

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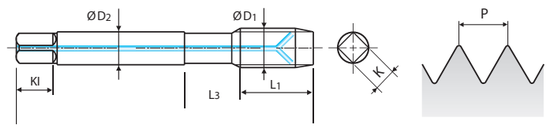
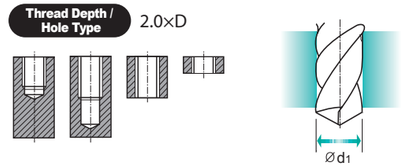


Thread Depth / Hole Type 2.0×D



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			○	○	○																

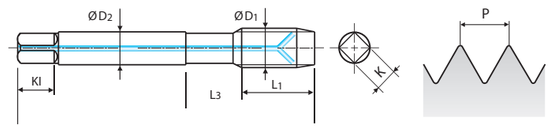
TiCN-COATED HSS-PM SYNCHRO TAP
Straight Flute Tap for High Speed Tapping

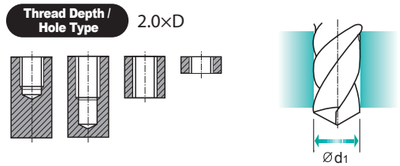
NEW
TKS89 SERIES

DIN/ANSI

with Internal Coolant

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





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

p.7

Unit : Inch

Size D1	Pitch P	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
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			○	○	○																

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

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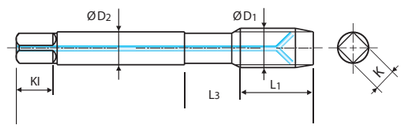
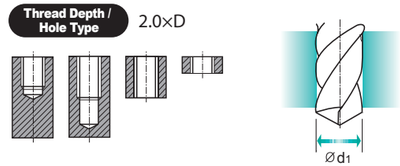




Material groups **GG** | HSS PM | M/MF | D | 60° | 2P~3P | TiCN

p.7

Unit : Inch

Size D1	Pitch P	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
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

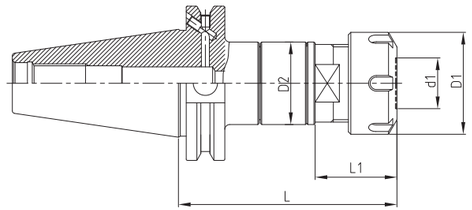
◎ : Excellent ○ : Good

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)

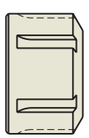
PART

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

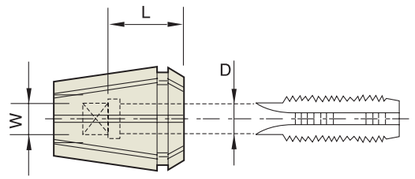
FIG.1

FIG.2



TAP ER COLLET

RD



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

Unit : Inch

RD 11TC					
EDP No.	TAP Inch	TAP Metric	D(Ø)	W(□)	L
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 Inch	TAP Metric	D(Ø)	W(□)	L
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 Inch	TAP Metric	D(Ø)	W(□)	L
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 Inch	TAP Metric	D(Ø)	W(□)	L
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 Inch	TAP Metric	D(Ø)	W(□)	L
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 Inch	TAP Metric	D(Ø)	W(□)	L
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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