YG-1 CO., LTD.

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Note The new address above has currently been updated since Korean new postal standard was valid from 2014.
Be noticed that the physical Headquarter location is NOT changed.

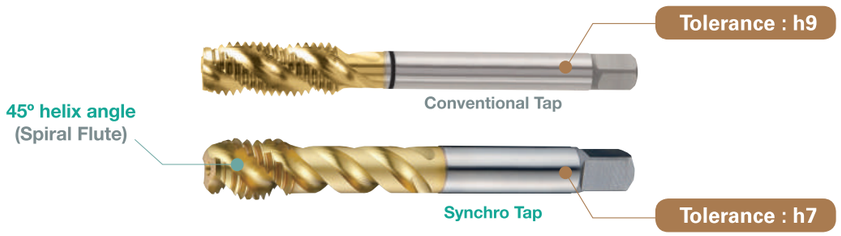
YouTube

Search 'YG-1' on social media outlets

YG1YESY180822002

FEATURES OF GEOMETRY

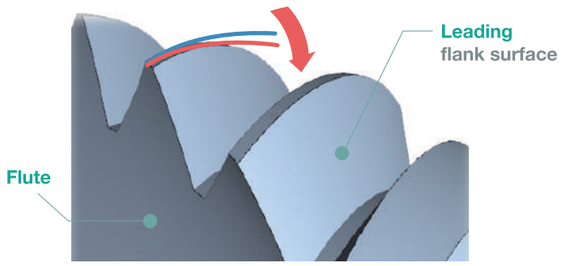
▶ **Shorter thread length** will reduce chip problems at higher speed tapping conditions



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

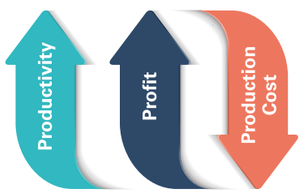
▶ **More thread relief**
allows high speed cutting

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

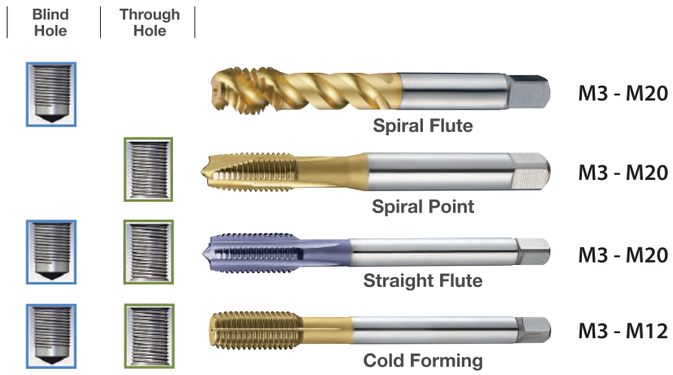


ADVANTAGES

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

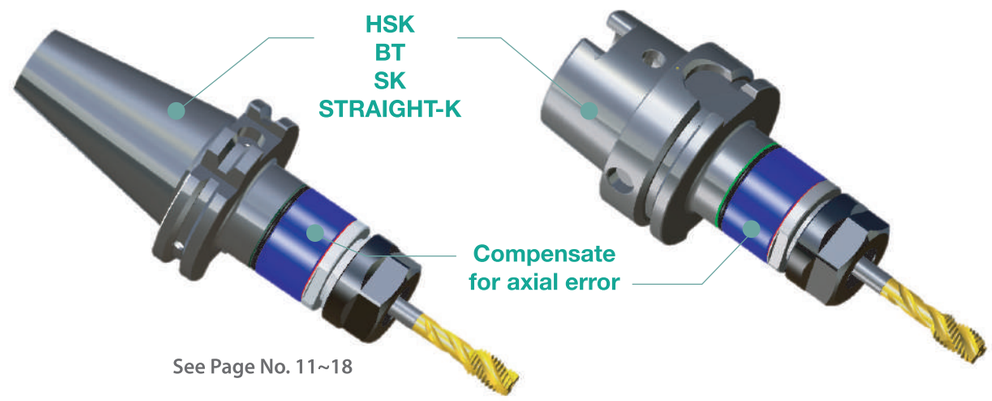


▶ **4 kinds** of taps are available



SYNCHRO TAPPING CHUCK (ER TYPE)

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



See Page No. 11~18

GUIDE LINE TO ICONS

Working Material

GS
Steels with good machinability Rm<850N/mm²

GV
Any material with at least 8~10% elongation

Tool Raw Material

HSS-PM

Helix Angle

R45

Standard of Tools

DIN 371/376
Number of DIN Standard

Class of Thread

6H 6HX

Thread Angle

60°

Chamfer Lead

B C

Surface Treatment

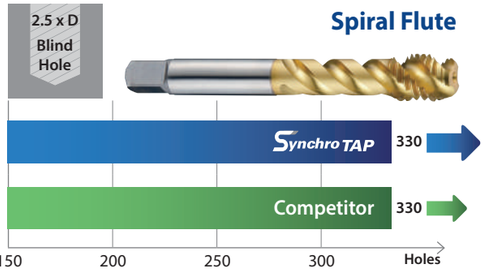
TiCN
Titanium Carbon Nitride Coating

TiN
Titanium Nitride Coating

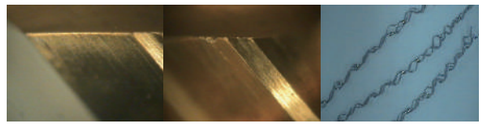
CASE STUDY

▶ SPIRAL FLUTE TAP M10 x 1.5

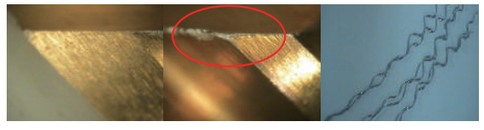
Tool	Synchro TAP Spiral Flute Tap	Competitor
Size	M10 x 1.5	
Work Material	C45 / 1045 / S45C Hardness : HRc20	
Cutting Speed	30 m/min.	
RPM	955 rev./min.	
Tapping Depth	25.0 mm (2.5xD / Blind Hole)	
Tapping Holes	330	
Cooling Method	External Cooling Water Soluble (9% Emulsion)	
Machine	Vertical Machining Center	



Synchro TAP

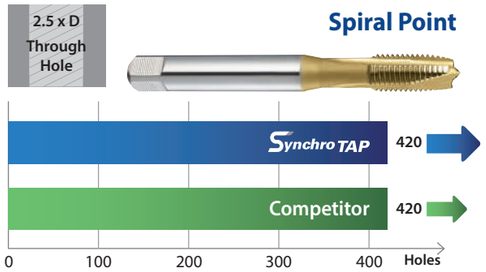


Competitor

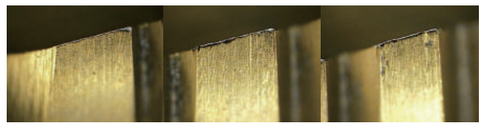


▶ SPIRAL POINT TAP M6 x 1.0

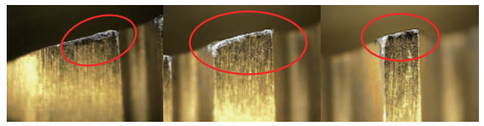
Tool	Synchro TAP Spiral Point Tap	Competitor
Size	M6 x 1.0	
Work Material	4140 / 42CrMo4 / SCM440 Hardness : HRc20	
Cutting Speed	30 m/min.	
RPM	1592 rev./min.	
Tapping Depth	15.0 mm (2.5xD / Through Hole)	
Tapping Holes	420	
Cooling Method	External Cooling Water Soluble (9% Emulsion)	
Machine	Vertical Machining Center	



Synchro TAP

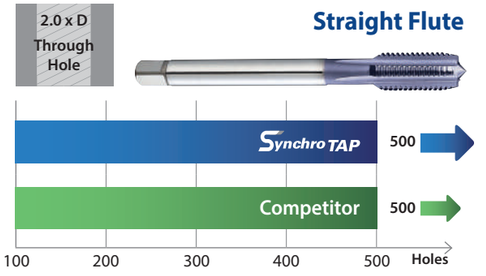


Competitor

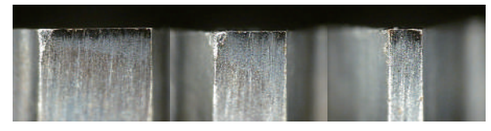


▶ STRAIGHT FLUTE TAP M10 x 1.5

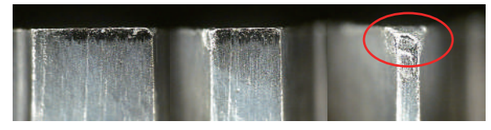
Tool	Synchro TAP Straight Flute Tap	Competitor
Size	M10 x 1.5	
Work Material	4140 / 42CrMo4 / SCM440 Hardness : HRc20	
Cutting Speed	25 m/min.	
RPM	1326 rev./min.	
Tapping Depth	20.0 mm (2.0xD / Through Hole)	
Tapping Holes	500	
Cooling Method	External Cooling Water Soluble (9% Emulsion)	
Machine	Vertical Machining Center	



Synchro TAP

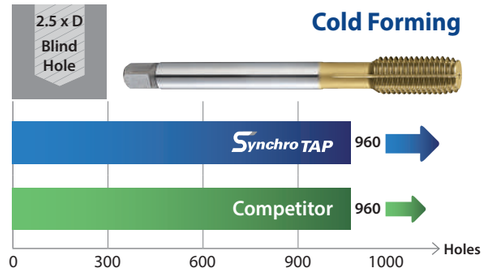


Competitor

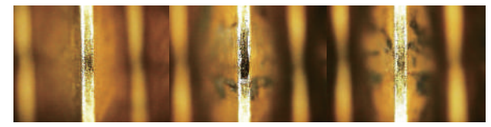


▶ COLD FORMING TAP M6 x 1.0

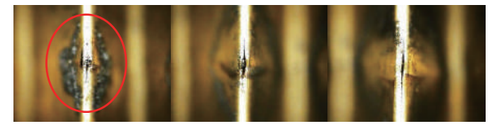
Tool	Synchro TAP Cold Forming Tap	Competitor
Size	M6 x 1.0	
Work Material	1045 / C45 / S45C Hardness : HRc20	
Cutting Speed	35 m/min.	
RPM	1857 rev./min.	
Tapping Depth	15.0 mm (2.5xD / Blind Hole)	
Tapping Holes	960	
Cooling Method	External Cooling Water Soluble (9% Emulsion)	
Machine	Vertical Machining Center	



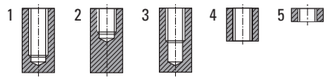
Synchro TAP



Competitor



MACHINE TAPS RECOMMENDATION TABLE



MATERIAL GROUPS			GS	GS	GS	GV
SERIES			TTS31	TTS33	TKS35	TTS37
FLUTE TYPE			Spiral Flute	Spiral Point	Straight Flute	Cold Forming
PAGE			7	8	9	10
THREAD TYPE			M	M	M	M
TAP MATERIAL			HSS-PM	HSS-PM	HSS-PM	HSS-PM
DESCRIPTION			DIN 371/376			
SURFACE TREATMENT / COATING			TiN	TiN	TiCN	TiN
SPIRAL FLUTE ANGLE			R45	-	-	-
CHAMFER LEAD ACC. DIN 2197			C	B	C	C
THREAD DEPTH			2.5D	3.0D	2.0D	3.0D
HOLE TYPE			2 - 3	4 - 5	1 - 2 - 3 - 4 - 5	1 - 2 - 3 - 4 - 5

Synchro TAP
TiN/TiCN-COATED HSS-PM TAPS

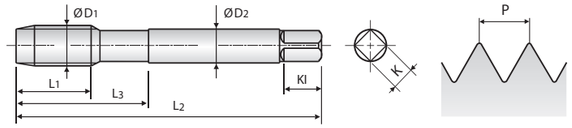
USE ◎ = EXCELLENT ○ = GOOD

MATERIAL GROUPS			LIST OF MATERIALS	TENSILE STRENGTH	HARDNESS	CUTTING SPEED				
				N/mm²	HB	m/min.				
10. STEELS	11	Steel	Magnetic Soft Steels	< 400	< 120	41~46	◎	◎	◎	◎
	12	Steel	Structure Steels	< 700	< 200	41~46	◎	◎	◎	◎
	13	Steel	Plain Carbon Steels	< 850	< 250	35~40	◎	◎	◎	◎
	14	St. Alloy	Alloy Steels	< 850	< 250	28~33	◎	◎	◎	◎
	15	St. Alloy	Alloy Steels, Hardened Steels	≤1,200	< 350	17~22				
	16	St. Alloy	Alloy Steels, Hardened Steels	> 1,200	> 350	7~12				
20. STAINLESS STEELS	21	INOX Free	Free Machining	< 850	< 250	18~23				◎
	22	INOX Aust.	Austenitic	< 850	< 250	13~18				◎
	23	INOX	Ferritic, Ferritic+Austenitic, Martensitic	< 1,000	< 300	10~15				
30. CAST IRON	31	GG cast	Grey Cast Iron	< 500	< 150	28~33	○	○	○	
	32	GG cast	Grey Cast Iron	< 1,000	< 300	13~18				
	33	GGG cast	Nodular Graphite, Malleable Cast Iron	< 700	< 200	28~33	◎	◎	◎	
	34	GGG cast	Nodular Graphite, Malleable Cast Iron	< 1,000	< 300	13~18				
60. COPPER, BRASS, BRONZE	61	Cu	Copper, Unalloyed	< 350	< 100	22~27	○	○		◎
	62	Cu Alloy (Short)	Short chip Brass, Bronze, Copper	< 700	< 200	72~77				
	63	Cu Alloy (Long)	Long chip Brass, Bronze, Copper	< 700	< 200	41~46	◎	◎		○
	64	Cu-Al-Fe	Cu-Al-Fe Alloys	< 1,500	< 470	7~12				
70. ALUMINUM	71	Al / Mg	Aluminum, Magnesium, Unalloyed	< 350	< 100	28~33				◎
	72	Al Wrought	Aluminum, Alloyed, Si < 1.5%	< 500	< 150	72~77				◎
	73	Al (Si ≤ 10%)	Aluminum, Alloyed, Si ≤10%	< 400	< 120	41~46	◎	◎		◎
	74	Al (Si > 10%)	Aluminum, Alloyed, Si > 10%	< 400	< 120	28~33	◎	◎	○	○
80. PLASTICS	81	Thermosoft	Thermoplastics			60~65	○	○		
	82	Thermoset	Thermosseting Plastics			22~27				
	83	FRP	Fiber Reinforced Plastics			12~17				

SERIES	MODEL	DESCRIPTION	PAGE
SYTER		SYNCHRO TAPPING CHUCK (ER TYPE)	11~14
CAT			15
SYTC		SYNCHRO TAPPING CHUCK (QUICK CHANGE TYPE)	16~18

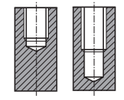
M SPIRAL FLUTE TAPS
ISO metric coarse threads DIN 13

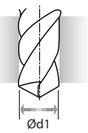
TTS31 SERIES



- ▶ Suitable for high speed machining and high precision threads
- ▶ Applicable to 2-3 times faster cutting speed than minimum general GS Taps cutting speeds

Hole type 2.5×D





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

Unit : mm

Size	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	TiN	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M3	x 0.5	**TTS31206**	6	56	18	3.5	2.7	6	3	2.5
M4	x 0.7	**TTS31246**	7	63	21	4.5	3.4	6	3	3.3
M5	x 0.8	**TTS31286**	8	70	25	6	4.9	8	3	4.2
M6	x 1.0	**TTS31316**	10	80	30	6	4.9	8	3	5
M8	x 1.25	**TTS31366**	13	90	35	8	6.2	9	3	6.8
M10	x 1.5	**TTS31426**	15	100	39	10	8	11	3	8.5
M12	x 1.75	**TTS31506**	18	110	44	9	7	10	3	10.2
M14	x 2.0	**TTS31546**	20	110	44	11	9	12	3	12
M16	x 2.0	**TTS31606**	20	110	44	12	9	12	3	14
M18	x 2.5	**TTS31656**	25	125	50	14	11	14	4	15.5
M20	x 2.5	**TTS31706**	25	140	54	16	12	15	4	17.5

- ▶ DIN 371(M3~M10) and DIN 376(M12~M20)
- ▶ Coating(TiAlN) is available on your request.

Unit : N/mm² ◎ : Excellent ○: Good

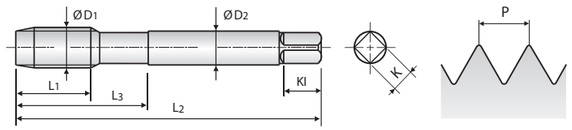
Steel < 400	Steel < 700	Steel < 850	St. Alloy < 850	St. Alloy ≤1200	St. Alloy > 1200	INOX Free < 850	INOX Aust. < 850	INOX < 1000	GG Cast < 500	GG Cast < 1000	GGG Cast < 700	GGG Cast < 1000	Ti < 700	Ti Alloy < 900
◎	◎	◎	◎						○		◎			

Ti Alloy ≤ 1300	Ni < 500	Ni Alloy < 900	Ni Alloy ≤1400	Cu < 350	Cu Alloy Short	Cu Alloy Long	Cu-Al-Fe < 1500	Al / Mg < 350	Al Wrought	Al Si≤10%	Al Si>10%	Plastic Thermosoft	Plastic Thermoset	Plastic FRP
				○		◎				◎	◎	○		

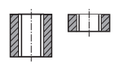
M SPIRAL POINT TAPS
ISO metric coarse threads DIN 13

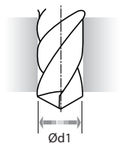
TTS33 SERIES

- ▶ Suitable for high speed machining and high precision threads
- ▶ Applicable to 2-3 times faster cutting speed than minimum general GS Taps cutting speeds



Hole type 3.0xD





Material groups **GS** | HSS-PM | DIN 371/376 | 6HX | 60° | B | TiN

Unit : mm

Size	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	TiN	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M3	x 0.5	**TTS33206**	5	56	18	3.5	2.7	6	3	2.5
M4	x 0.7	**TTS33246**	7	63	21	4.5	3.4	6	3	3.3
M5	x 0.8	**TTS33286**	8	70	25	6	4.9	8	3	4.2
M6	x 1.0	**TTS33316**	10	80	30	6	4.9	8	3	5
M8	x 1.25	**TTS33366**	13	90	35	8	6.2	9	3	6.8
M10	x 1.5	**TTS33426**	15	100	39	10	8	11	3	8.5
M12	x 1.75	**TTS33506**	18	110	44	9	7	10	4	10.2
M14	x 2.0	**TTS33546**	20	110	44	11	9	12	4	12
M16	x 2.0	**TTS33606**	20	110	44	12	9	12	4	14
M18	x 2.5	**TTS33656**	25	125	50	14	11	14	4	15.5
M20	x 2.5	**TTS33706**	25	140	54	16	12	15	4	17.5

- ▶ DIN 371(M3~M10) and DIN 376(M12~M20)
- ▶ Coating(TiAlN) is available on your request.

Unit : N/mm² ◎ : Excellent ○: Good

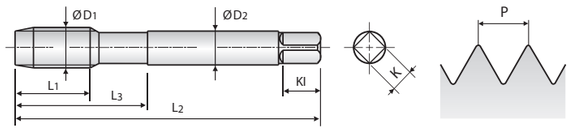
Steel < 400	Steel < 700	Steel < 850	St. Alloy < 850	St. Alloy ≤1200	St. Alloy > 1200	INOX Free < 850	INOX Aust. < 850	INOX < 1000	GG Cast < 500	GG Cast < 1000	GGG Cast < 700	GGG Cast < 1000	Ti < 700	Ti Alloy < 900
◎	◎	◎	◎						○		◎			

Ti Alloy ≤ 1300	Ni < 500	Ni Alloy < 900	Ni Alloy ≤1400	Cu < 350	Cu Alloy Short	Cu Alloy Long	Cu-Al-Fe < 1500	Al / Mg < 350	Al Wrought	Al Si≤10%	Al Si>10%	Plastic Thermosoft	Plastic Thermoset	Plastic FRP
				○		◎				◎	◎	○		

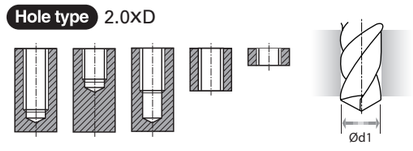
M STRAIGHT FLUTE TAPS
ISO metric coarse threads DIN 13

TKS35 SERIES

- ▶ Suitable for high speed machining and high precision threads
- ▶ Applicable to 2-3 times faster cutting speed than minimum general GS Taps cutting speeds



Hole type 2.0xD



Material groups **GS** | HSS-PM | DIN 371/376 | 6HX | 60° | C | TiCN

Unit : mm

Size	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	TiCN	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M3	x 0.5	**TKS35206**	5	56	18	3.5	2.7	6	3	2.5
M4	x 0.7	**TKS35246**	7	63	21	4.5	3.4	6	3	3.3
M5	x 0.8	**TKS35286**	8	70	25	6	4.9	8	3	4.2
M6	x 1.0	**TKS35316**	10	80	30	6	4.9	8	3	5
M8	x 1.25	**TKS35366**	13	90	35	8	6.2	9	3	6.8
M10	x 1.5	**TKS35426**	15	100	39	10	8	11	4	8.5
M12	x 1.75	**TKS35506**	18	110	44	9	7	10	4	10.2
M14	x 2.0	**TKS35546**	20	110	44	11	9	12	4	12
M16	x 2.0	**TKS35606**	20	110	44	12	9	12	4	14
M18	x 2.5	**TKS35656**	25	125	50	14	11	14	4	15.5
M20	x 2.5	**TKS35706**	25	140	54	16	12	15	4	17.5

- ▶ DIN 371(M3~M10) and DIN 376(M12~M20)
- ▶ Coating(TiAlN) is available on your request.

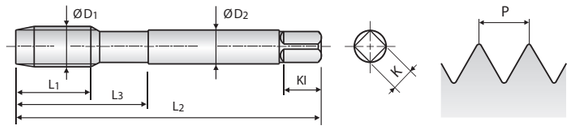
Unit : N/mm² ◎ : Excellent ○: Good

Steel < 400	Steel < 700	Steel < 850	St. Alloy < 850	St. Alloy ≤1200	St. Alloy > 1200	INOX Free < 850	INOX Aust. < 850	INOX < 1000	GG Cast < 500	GG Cast < 1000	GGG Cast < 700	GGG Cast < 1000	Ti < 700	Ti Alloy < 900
◎	◎	◎	◎						○		◎			

Ti Alloy ≤ 1300	Ni < 500	Ni Alloy < 900	Ni Alloy ≤1400	Cu < 350	Cu Alloy Short	Cu Alloy Long	Cu-Al-Fe < 1500	Al / Mg < 350	Al Wrought	Al Si≤10%	Al Si>10%	Plastic Thermosoft	Plastic Thermoset	Plastic FRP
											○			

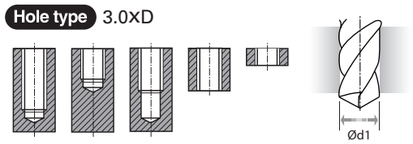
M COLD FORMING TAPS
ISO metric coarse threads DIN 13

TTS37 SERIES



▶ Suitable for high speed machining and high precision threads
▶ Applicable to 2-3 times faster cutting speed than minimum general GV Taps cutting speeds

Hole type 3.0XD



Material groups **GV** | HSS-PM | DIN 371/376 | 6HX | 60° | C | TiN

Unit : mm

Size	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Lobe	Tapping Drill Diameter
ØD1	P	TiN	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M3	x 0.5	**TTS37206**	5	56	18	3.5	2.7	6	5	2.8
M4	x 0.7	**TTS37246**	7	63	21	4.5	3.4	6	5	3.7
M5	x 0.8	**TTS37286**	8	70	25	6	4.9	8	5	4.65
M6	x 1.0	**TTS37316**	10	80	30	6	4.9	8	5	5.55
M8	x 1.25	**TTS37366**	13	90	35	8	6.2	9	5	7.4
M10	x 1.5	**TTS37426**	15	100	39	10	8	11	6	9.3
M12	x 1.75	**TTS37506**	18	110	44	9	7	10	6	11.2

▶ DIN 371(M3~M10) and DIN 376(M12)

Unit : N/mm²

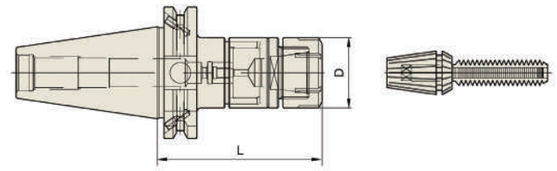
◎ : Excellent ○: Good

Steel < 400	Steel < 700	Steel < 850	St. Alloy < 850	St. Alloy ≤1200	St. Alloy > 1200	INOX Free < 850	INOX Aust. < 850	INOX < 1000	GG Cast < 500	GG Cast < 1000	GGG Cast < 700	GGG Cast < 1000	Ti < 700	Ti Alloy < 900
◎	◎	◎	◎			◎	◎							

Ti Alloy ≤ 1300	Ni < 500	Ni Alloy < 900	Ni Alloy ≤1400	Cu < 350	Cu Alloy Short	Cu Alloy Long	Cu-Al-Fe < 1500	Al / Mg < 350	Al Wrought	Al Si≤10%	Al Si>10%	Plastic Thermosoft	Plastic Thermoset	Plastic FRP
				◎		○		◎	◎	◎	○			

SYNCHRO TAPPING CHUCK (ER TYPE)

SYTER SERIES



■ DIN 69871-SK

DIN 69871 - SK	Taper Accuracy	G Value	RPM	Coolant System
	AT3	–	–	AD/B

Unit : mm

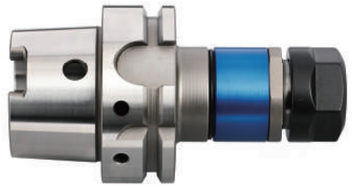
TAPER No.	MODEL No.	EDP No.	Tap Size	Clamping Range	Nut	D	L
40	**SK40AD/B-SYTER12-79**	**P2773701**	M2-M8	3.0 - 6.2	ER16	28	79
	SK40AD/B-SYTER16-85	**P2773702**	M3-M10	4.0 - 7.0	ER20	34	85
	SK40AD/B-SYTER20-90	**P2773703**	M3-M14	4.0 - 10.5	ER25	42	90
	SK40AD/B-SYTER27-100	**P2773704**	M4-M18	5.0 - 14.0	ER32	50	100
	SK40AD/B-SYTER33-120	**P2773705**	M8-M24	6.2 - 19.0	ER40	63	120
50	**SK50AD/B-SYTER12-79**	**P2773706**	M2-M8	3.0 - 6.2	ER16	28	79
	SK50AD/B-SYTER16-85	**P2773707**	M3-M10	4.0 - 7.0	ER20	34	85
	SK50AD/B-SYTER20-90	**P2773708**	M3-M14	4.0 - 10.5	ER25	42	90
	SK50AD/B-SYTER27-100	**P2773709**	M4-M18	5.0 - 14.0	ER32	50	100
	SK50AD/B-SYTER33-105	**P2773710**	M8-M24	6.2 - 19.0	ER40	63	105

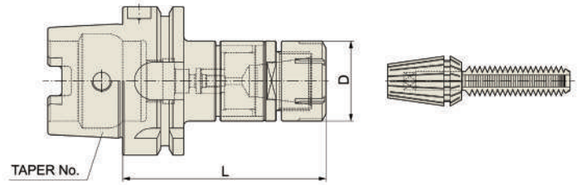
▶ FEATURE :

- 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

SYNCHRO TAPPING CHUCK (ER TYPE)

SYTER SERIES





■ DIN 69893/ISO 12164-1-HSK FORM A

DIN 69893 - HSK	Taper Accuracy	G Value	RPM	Coolant System
	–	–	–	AD

Unit : mm

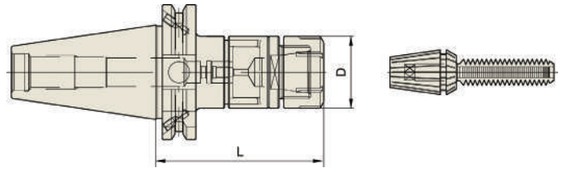
TAPER No.	MODEL No.	EDP No.	Tap Size	Clamping Range	Nut	D	L
63A	**HSK63A-SYTER16-90**	**P2773801**	M3-M10	4.0 - 7.0	ER20	34	90
	HSK63A-SYTER20-94	**P2773802**	M3-M14	4.0 - 10.5	ER25	42	94
	HSK63A-SYTER27-105	**P2773803**	M4-M18	5.0 - 14.0	ER32	50	105

▶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

SYNCHRO TAPPING CHUCK (ER TYPE)

SYTER SERIES



■ JIS B6339/MAS 403-BT

JIS B6339 - BT	Taper Accuracy	G Value	RPM	Coolant System
	AT3	–	–	AD/B

Unit : mm

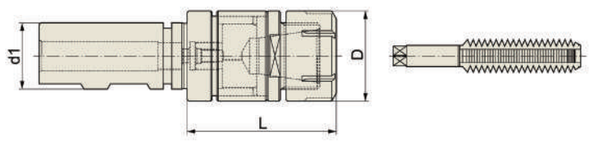
TAPER No.	MODEL No.	EDP No.	Tap Size	Clamping Range	Nut	D	L
40	**BT40AD/B-SYTER12-79**	**P2776301**	M2-M8	3.0 - 6.2	ER16	28	79
	BT40AD/B-SYTER16-85	**P2776302**	M3-M10	4.0 - 7.0	ER20	34	85
	BT40AD/B-SYTER20-90	**P2776303**	M3-M14	4.0 - 10.5	ER25	42	90
	BT40AD/B-SYTER27-100	**P2776304**	M4-M18	5.0 - 14.0	ER32	50	100
	BT40AD/B-SYTER33-125	**P2776305**	M8-M24	6.2 - 19.0	ER40	63	125
50	**BT50AD/B-SYTER12-100**	**P2776306**	M2-M8	3.0 - 6.2	ER16	28	100
	BT50AD/B-SYTER16-100	**P2776307**	M3-M10	4.0 - 7.0	ER20	34	100
	BT50AD/B-SYTER20-100	**P2776308**	M3-M14	4.0 - 10.5	ER25	42	100
	BT50AD/B-SYTER27-110	**P2776309**	M4-M18	5.0 - 14.0	ER32	50	110
	BT50AD/B-SYTER33-125	**P2776310**	M8-M24	6.2 - 19.0	ER40	63	125

▶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

SYNCHRO TAPPING CHUCK (ER TYPE)

SYTER SERIES



■ STRAIGHT-K

Unit : mm

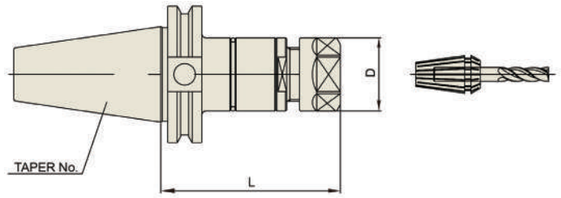
MODEL No.	EDP No.	Tap Size	Clamping Range	Nut / Collect	D	L	d1
K20-SYTER16	**P2773901**	M3-M10	4.0 - 7.0	ER20	34	58	20
K25-SYTER16	**P2773902**	M3-M10	4.0 - 7.0	ER20	34	61	25
K25-SYTER27	**P2773903**	M4-M18	5.0 - 14.0	ER32	50	69	25

▶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

SYNCHRO TAPPING CHUCK (ER TYPE)

CAT SERIES



ASME B5.50 - CAT	Taper Accuracy	G Value	RPM	Coolant System
	AT3	–	–	AD/B

■ ASME B5.50-2009-CAT

Unit : mm

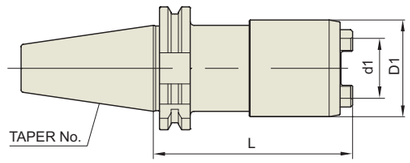
TAPER No.	MODEL No.	EDP No.	Tap Size	Clamping Range	Nut	D	L
40	**CAT40AD/B-SYTER12-79**	**JK060SYT**	M3-M12	3.5 - 10.0	ER16	28	79
	CAT40AD/B-SYTER16-85	**JK062SYT**	M3-M16	3.5 - 10.0	ER20	35	85
	CAT40AD/B-SYTER20-90	**JK064SYT**	M3-M20	3.5 - 16.0	ER25	42	90
	CAT40AD/B-SYTER27-100	**JK066SYT**	M4-M27	3.5 - 16.0	ER32	50	100
	CAT40AD/B-SYTER33-105	**JK068SYT**	M4-M33	7.0 - 16.0	ER40	63	105
50	**CAT50AD/B-SYTER12-79**	**JL060SYT**	M3-M12	3.5 - 10.0	ER16	28	79
	CAT50AD/B-SYTER16-85	**JL062SYT**	M3-M16	3.5 - 10.0	ER20	35	85
	CAT50AD/B-SYTER20-90	**JL064SYT**	M3-M20	3.5 - 16.0	ER25	42	90
	CAT50AD/B-SYTER27-100	**JL066SYT**	M4-M27	3.5 - 16.0	ER32	50	100
	CAT50AD/B-SYTER33-105	**JL068SYT**	M4-M33	7.0 - 16.0	ER40	63	105

▶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

SYNCHRO TAPPING CHUCK (QUICK CHANGE TYPE)

SYTC SERIES



■ DIN 69871-SK

DIN 69871 - SK	Taper Accuracy	G Value	RPM	Coolant System
	AT3	–	–	A

Unit : mm

TAPER No.	MODEL No.	EDP No.	Tap Size	Matching Inserts	d1	D1	L	Weight (Kg)
30	**SK30-SYTC12-65**	**P2774207**	M3-M12	1	19	36	65	0.50
	SK30-SYTC20-89	**P2774208**	M6-M24	2	31	50	89	1.00
40	**SK40-SYTC12-65**	**P2774201**	M3-M12	1	19	36	65	1.10
	SK40-SYTC20-79	**P2774202**	M6-M24	2	31	50	79	1.50
	SK40-SYTC33-115	**P2774203**	M18-M38	3	48	74	115	3.30
50	**SK50-SYTC12-65**	**P2774204**	M3-M12	1	19	36	65	3.00
	SK50-SYTC20-79	**P2774205**	M6-M24	2	31	50	79	3.30
	SK50-SYTC33-115	**P2774206**	M18-M38	3	48	74	115	5.20

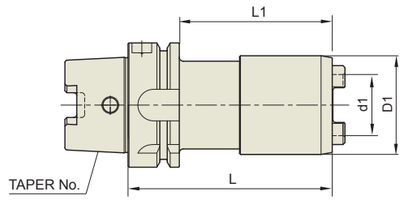
▶ FEATURE :

- 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

▶ CAT(ANSI B5.50) taper and Inch type products are available.

SYNCHRO TAPPING CHUCK (QUICK CHANGE TYPE)

SYTC SERIES



■ DIN 69893/ISO 12164-1-HSK FORM A

DIN 69893 - HSK	Taper Accuracy	G Value	RPM	Coolant System
	–	–	–	A

Unit : mm

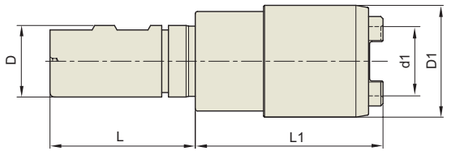
TAPER No.	MODEL No.	EDP No.	Tap Size	Matching Inserts	d1	D1	L	L1
32A	**HSK32A-SYTC12-75**	**P2774314**	M3-M12	1	19	36	75	55
50A	**HSK50A-SYTC12-72**	**P2774315**	M3-M12	1	19	36	72	46
	HSK50A-SYTC20-91	**P2774316**	M6-M24	2	31	50	91	65
63A	**HSK63A-SYTC12-75**	**P2774301**	M3-M12	1	19	36	75	49
	HSK63A-SYTC12-80	**P2774302**	M3-M12	1	19	36	80	54
	HSK63A-SYTC12-120	**P2774303**	M3-M12	1	19	36	120	94
	HSK63A-SYTC12-152	**P2774304**	M3-M12	1	19	36	152	126
	HSK63A-SYTC12-180	**P2774305**	M3-M12	1	19	36	180	154
	HSK63A-SYTC20-89	**P2774306**	M6-M24	2	31	50	89	63
	HSK63A-SYTC33-121	**P2774307**	M18-M38	3	48	74	121	95
100A	**HSK100A-SYTC12-75**	**P2774308**	M3-M12	1	19	36	75	43
	HSK100A-SYTC12-160	**P2774309**	M3-M12	1	19	36	160	131
	HSK100A-SYTC20-94	**P2774310**	M6-M24	2	31	50	94	65
	HSK100A-SYTC20-160	**P2774311**	M6-M24	2	31	50	160	131
	HSK100A-SYTC33-127	**P2774312**	M18-M38	3	48	74	127	98
	HSK100A-SYTC33-160	**P2774313**	M18-M38	3	48	74	160	131

▶ 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

SYNCHRO TAPPING CHUCK (QUICK CHANGE TYPE)

SYTC SERIES



■ STRAIGHT-K

Unit : mm

TAPER No.	MODEL No.	EDP No.	Tap Size	Matching Inserts	d1	D1	L	L1	D1
20	**K20-SYTC12-46**	**P2774401**	M3-M12	1	19	36	50	46	20
	K20-SYTC12-107.5	**P2774406**	M3-M12	1	19	36	50	107.5	20
25	**K25-SYTC12-46**	**P2774402**	M3-M12	1	19	36	56	46	25
	K25-SYTC20-74	**P2774403**	M6-M24	2	31	50	56	74	25
	K25-SYTC33-107.5	**P2774404**	M18-M38	3	48	74	56	107.5	25
32	**K32-SYTC12-74**	**P2774405**	M3-M12	1	31	50	60	74	32

▶ 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

TROUBLE SHOOTING GUIDE

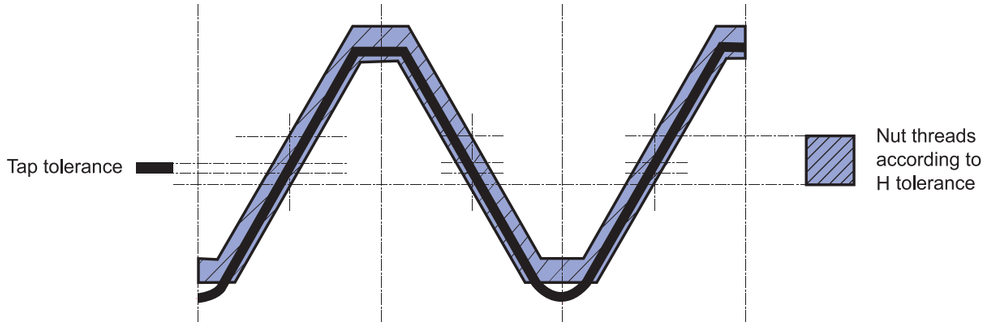
Specific Problem	Cause	Solution
Dimensional Accuracy		
Oversize Pitch Diameter	Incorrect Tap	1. Use proper limits of taps 2. Use longer chamfered taps
	Chip Packing	1. Use spiral point or spiral fluted taps 2. Reduce number of flutes to provide extra chip room 3. Use larger hole size 4. If tapping a hole, allow deeper hole where applicable or shorten the thread length of the parts 5. Use proper lubricant
	Galling	1. Apply proper surface treatment such as Hardslick or chrome 2. Use proper cutting lubricant 3. Reduce tapping speed 4. Use proper cutting angle in accordance with material being tapped 5. Use large hole size
	Operating Conditions	1. Apply proper tapping speed 2. Correct alignment of tap and drill hole 3. Free cutting either tap or workpiece 4. Use proper tapping speed to avoid torn or rough threads 5. Use lead screw tapper 6. Use proper tapping machine with suitable power 7. Avoid misalignment of the tap and drill hole from loose spindle or worn holder
	Tool Condition	1. Obtain proper indexing angle for the flutes at the cutting edge 2. Grind proper cutting angle and chamfer angle 3. Avoid too narrow a land width 4. Remove burrs from regrinding
Oversize Internal Diameter	Hole Size	1. Use minimum hole size 2. Avoid tapered hole 3. Use proper chamfered taps
	Galling	1. Galling solutions 1 through 4 above can be applied to this specific problem
Undersize Pitch Diameter	Incorrect Tap	1. Use oversize taps 2. Apply proper chamfer angle 3. Increase cutting angle
	Damaged Thread	1. Use proper reversing speed to avoid damaging tapped thread on the way out of the hole
	Left-over Chips	1. Increase cutting performance to avoid any left over chips in the hole 2. Remove left over chips from the hole for gage checking
Undersize Internal Diameter	Hole Size	1. Use maximum drill size
Breakage	Incorrect Tap Selection	1. Avoid chip packing in the flutes or on the bottom of the hole Use spiral pointed or spiral fluted taps or fluteless taps 2. Apply correct surface treatment such as Hardslick or bright
	Excessive Tapping Torque	1. Use larger drill size 2. Try to shorten thread length 3. Increase cutting angle 4. Apply a tap with more thread relief and reduced land width 5. Apply correct surface treatment such as Hardslick

TROUBLE SHOOTING GUIDE

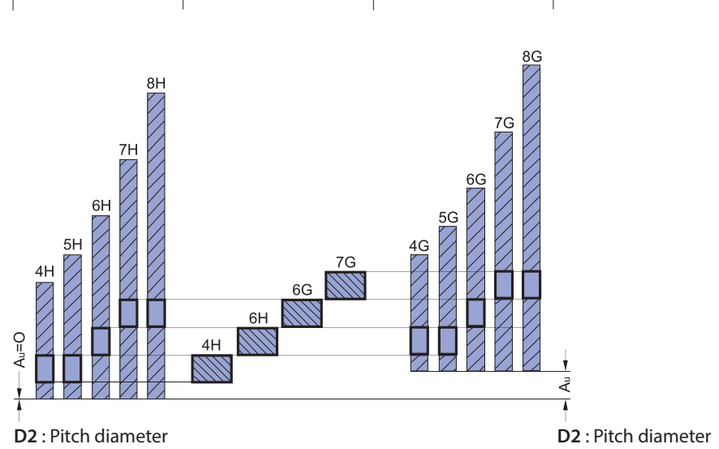
Specific Problem	Cause	Solution
		Dimensional Accuracy
Breakage	Operating Conditions	1. Reduce tapping speed 2. Avoid misalignment between tap and the hole and tapered hole 3. Use floating type of tapping holder 4. Use tapping holder with torque adjustment 5. Avoid hitting bottom of the hole with tap
	Tool Condition	1. Do not grind the bottom of the flute 2. Avoid too narrow a land width 3. Remove all worn sections when regrinding the flutes 4. Regrind tool more frequently
Chipping	Incorrect Tap Selection	1. Reduce cutting angle 2. Use a different kind of high-speed steel tap 3. Reduce hardness of the tap 4. Increase chamfer length 5. Avoid chip packing in the flutes or in the bottom of the hole by using spiral fluted or spiral pointed taps
	Operating Conditions	1. Reduce tapping speed 2. Avoid misalignment between tap and hole 3. Avoid sudden return of reverse in blind hole tapping 4. Avoid galling 5. Use larger hole size
Wear	Incorrect Tap Selection	1. Apply specially designed tap for tapping heat treated material 2. Change to a type of high-speed steel tap that contains vanadium 3. Apply special surface treatment such as TiCN, TiAlN or Hardslick 4. Increase chamfer length
	Operating Conditions	1. Reduce tapping speed 2. Apply proper cutting lubricants 3. Avoid work hardened hole 4. Use larger hole size
	Tool Condition	1. Grind proper cutting angle 2. Avoid hardness reduction from grinding process
Torn or Rough Thread	Chamfer Too Short	1. Increase chamfer length
	Wrong Cutting Angle	1. Apply proper cutting angle
	Galling	1. Use thread relieved taps 2. Reduce land width 3. Apply surface treatment such as Hardslick or chrome 4. Use proper cutting lubricant 5. Reduce tapping speed 6. Use larger hole size 7. Obtain proper alignment between tap and work
	Chip Packing	1. Use spiral pointed or spiral fluted taps 2. Use larger drill size
Chattering on Tapped Thread	Tool Free Cutting	1. Reduce cutting angle 2. Reduce amount of thread relief
	Tool Condition	1. Avoid too narrow land width 2. Do not grind the bottom of the flute

TAP TOLERANCES

Tolerance classes of taps and tolerance positions for screw threads as per Metric ISO Standard.



Nut thread Positioning of H tolerance	Tolerance Classes for Taps	Nut thread Positioning of G tolerance



Taps tolerances and recomanded classes

Tap tolerance ISO	Tap tolerance DIN	Correct class to obtain Nut thread with tolerance				
ISO 1	4H	4H	5H			
ISO 2	6H	4G	5G	6H		
ISO 3	6G			6G	7H	8H
	7G				7G	8G

SOLID DRILLS

PERFECT HOLES FOR PRECISE THREADING

YG DRILLING TOOLS

YG-1 Drilling tools are well known for its tight tolerance and high technology, continuously impressing various manufacturers around the world.
Its advance designed geometry brings out extraordinary performances, creating a longer tool life with outstanding productivity.
Also a variety of size and shapes are available for multiple applications.

P M K — SOLID CARBIDE

DREAM DRILLS GRENERAL

2-Flute Drills with/without Internal Coolant
Wide range of sizes and flute lengths
Perfect choice for general purpose

P K — SOLID CARBIDE

DREAM DRILLS HIGH FEED

3-Flute Drills with Internal Coolant
Up to 1.6 times faster drilling
compared to conventional 2-flute drills

P M N S — SOLID CARBIDE

DREAM DRILLS INOX

For drilling Stainless Steels
Special geometry and flute shape
for excellent chip evacuation and self-centering

N — SOLID CARBIDE

DREAM DRILLS ALU

For drilling Aluminum & Aluminum Alloys
Good chip evacuation due to
flute geometry & enough chip space

P M K N — SOLID CARBIDE

DREAM DRILLS FLAT BOTTON

180° Point Angle with/without Internal Coolant
Perfect choice for a various angled surface

P M K N S — PREMIUM HSS-PM

MULTI-1 DRILLS Multi-Purpose

For Drilling various work materials;
Carbon Steel, Alloy Steels, Cast Iron,
Stainless Steels, Aluminum, Titanium, etc

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Our performance and experience have granted YG-1 the global impression of one of the leading manufacturers of high quality cutting tool solutions. This global footprint expands over 75 countries, with international logistic centers, pledging to our customers to give the best service available today - and tomorrow.

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YG-1 CO., LTD.

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