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YG
Combo TAP

HSS-E Taps for Multi-Purpose

NEW SIZES SPIRAL FLUTE
NEW SIZES SPIRAL POINT

PRODUCT FEATURES

MULTIPURPOSE TAPPING IN VARIOUS DUCTILE MATERIALS

Combo Tap's geometry is designed to provide smooth chip evacuation resulting in uninterrupted manufacturing. Guaranteed process reliability even in less rigid machining conditions.

- ▶ For Steels, Stainless Steels, Cast Iron and Non-Ferrous Materials
- ▶ Prevents over & under feeding by its optimized flank geometry
- ▶ Constant threading quality preventing oversized threading

MULTI-PURPOSE



TiCN

The TiCN brings advantages for machining very difficult steels or cutting interrupted bores. The TiCN-coating has a hardness of approx. 3,000 HV, but its heat resistance only holds up to approx. 400°C, meaning that the TiCN needs an excellent cooling system for a long service life.



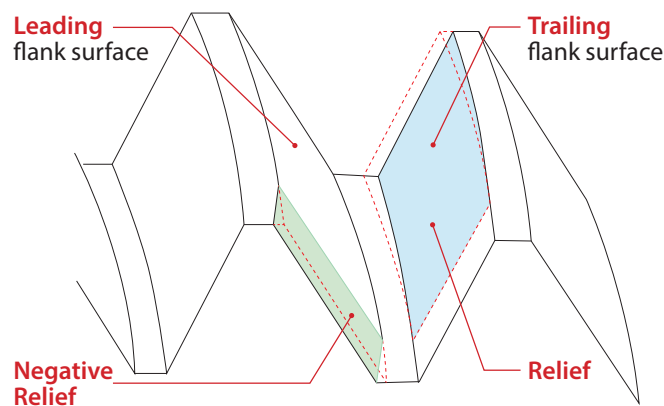
TiN

TiN-coating yields a hardness of approx. 2,300 HV and also a heat resistant up to approx. 600°C. The current coating is an excellent all-round coating for normal applications.



Steam Oxide

Steam Tempered is a Fe3O4-oxyd-coating which reduces friction between the tool and workpiece, also preventing cold welding.



- **Optimized flank geometry to prevent over & under feeding**
- Enables **smoother tapping** with better chip evacuation
- **Compensation** of cutting force, which reduces tap wear and extends tool life.

TEST RESULT AGAINST COMPETITIVE TAPS COMBO TAP for Multi-Purpose

▶TEST 1 - M8 x 1.25 (Spiral Flute)

Cutting Condition	
Work Material	Carbon Steel AISI: 1045 DIN: C45 WR: 1.0503 JIS: S45C
Tapping Depth	.79"
Coolant	Water Soluble Oil
Vc (Tapping Speed)	33 SFM













YG-1	COMPETITOR A	COMPETITOR B
		
▲ Total Tapping 204 Holes	▲ Total Tapping 159 Holes	▲ Total Tapping 204 Holes

▶TEST 2 - M10 x 1.5 (Spiral Point)

Cutting Condition	
Work Material	Carbon Steel AISI: 1045 DIN: C45 WR: 1.0503 JIS: S45C
Tapping Depth	1"
Coolant	Water Soluble Oil
Vc (Tapping Speed)	33 SFM

YG-1	COMPETITOR A	COMPETITOR B
		
▲ Total Tapping 216 Holes	▲ Total Tapping 99 Holes	▲ Total Tapping 196 Holes

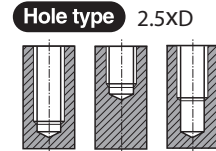
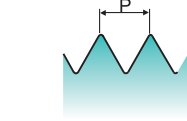
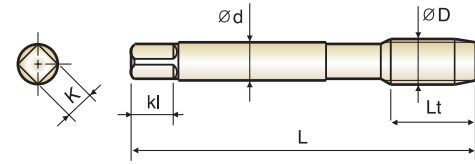
ICON GUIDE

Tool Raw Material 	Thread Designation  	Chamfer   	Flute Helix 
Blank Standard 	Finish  		
	 		

UNC/UNF HSS-E COMBO TAP NEW SIZES SPIRAL FLUTE for Multi-Purpose

Bright
Steam Oxide
TiCN

T2 SERIES
T2-S SERIES
T2-C SERIES



HSS-E UNC UNF USCTI 302A 2P~3P Bright Steam Oxide TiCN R40

Unit : inch * NEW SIZE

SIZE ØD	TPI	Limit	Overall Length L	Thread Length Lt	Shank Diameter d	Square Size K	Square Length kl	No. of Flute	EDP No.		
									Bright	Steam Oxide	TiCN
#2 - 56 UNC	H2	1.75	.157	.141	.110	.188	2	* T2082	* T2082S	* T2082C	
#3 - 48 UNC	H2	1.81	.197	.141	.110	.188	2	* T2122	* T2122S	* T2122C	
#4 - 40 UNC	H2	1.88	.236	.141	.110	.188	2	T2162	T2162S	T2162C	
#4 - 40 UNC	H3	1.88	.236	.141	.110	.188	2	* T2163	* T2163S	* T2163C	
#4 - 40 UNC	H4	1.88	.236	.141	.110	.188	2	* T2164	* T2164S	* T2164C	
#4 - 40 UNC	H5	1.88	.236	.141	.110	.188	2	* T2165	* T2165S	* T2165C	
#4 - 48 UNF	H2	1.88	.236	.141	.110	.188	2	T2182	T2182S	T2182C	
#5 - 40 UNC	H2	1.94	.236	.141	.110	.188	3	T2202	T2202S	T2202C	
#5 - 44 UNF	H2	1.94	.236	.141	.110	.188	3	T2222	T2222S	T2222C	
#6 - 32 UNC	H2	2.00	.276	.141	.110	.188	3	* T2242	* T2242S	* T2242C	
#6 - 32 UNC	H3	2.00	.276	.141	.110	.188	3	T2243	T2243S	T2243C	
#6 - 32 UNC	H5	2.00	.276	.141	.110	.188	3	* T2245	* T2245S	* T2245C	
#6 - 32 UNC	H7	2.00	.276	.141	.110	.188	3	* T2247	* T2247S	* T2247C	
#6 - 32 UNC	H11	2.00	.276	.141	.110	.188	3	* T224A	* T224AS	* T224AC	
#6 - 40 UNF	H2	2.00	.276	.141	.110	.188	3	T2262	T2262S	T2262C	
#8 - 32 UNC	H2	2.13	.276	.168	.131	.250	3	* T2282	* T2282S	* T2282C	
#8 - 32 UNC	H3	2.13	.276	.168	.131	.250	3	T2283	T2283S	T2283C	
#8 - 32 UNC	H5	2.13	.276	.168	.131	.250	3	* T2285	* T2285S	* T2285C	
#8 - 32 UNC	H7	2.13	.276	.168	.131	.250	3	* T2287	* T2287S	* T2287C	
#8 - 32 UNC	H11	2.13	.276	.168	.131	.250	3	* T228A	* T228AS	* T228AC	
#8 - 36 UNF	H2	2.13	.276	.168	.131	.250	3	T2302	T2302S	T2302C	
#10 - 24 UNC	H3	2.38	.354	.194	.152	.250	3	T2323	T2323S	T2323C	
#10 - 24 UNC	H5	2.38	.354	.194	.152	.250	3	* T2325	* T2325S	* T2325C	
#10 - 24 UNC	H11	2.38	.354	.194	.152	.250	3	* T232A	* T232AS	* T232AC	
#10 - 32 UNF	H2	2.38	.276	.194	.152	.250	3	* T2342	* T2342S	* T2342C	
#10 - 32 UNF	H3	2.38	.276	.194	.152	.250	3	T2343	T2343S	T2343C	
#10 - 32 UNF	H5	2.38	.276	.194	.152	.250	3	* T2345	* T2345S	* T2345C	
#10 - 32 UNF	H7	2.38	.276	.194	.152	.250	3	* T2347	* T2347S	* T2347C	

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◎ : Excellent ○ : Good

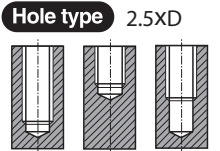
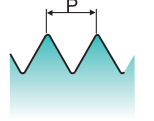
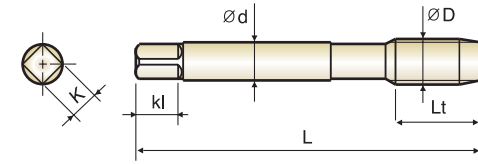
ISO Material Description	P										M				K					
	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	○	○	◎	◎	◎	◎	◎	◎	◎	◎	◎

ISO Material Description	N										S						H				
	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						110	90	100			15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	200	280	250	350	320	400 Rm	1050 Rm	550	630			400	400	400	550	
Recommended		◎				◎	◎	◎													

UNC/UNF HSS-E COMBO TAP NEW SIZES SPIRAL FLUTE for Multi-Purpose

Bright
Steam Oxide
TiCN

T2 SERIES
T2-S SERIES
T2-C SERIES



HSS-E UNC UNF USCTI 302A 2P~3P Bright Steam Oxide TiCN R40

Unit : inch * NEW SIZE

SIZE ØD	TPI	Limit	Overall Length L	Thread Length Lt	Shank Diameter d	Square Size K	Square Length kl	No. of Flute	EDP No.		
									Bright	Steam Oxide	TiCN
#10 - 32 UNF	H11	2.38	.276	.194	.152	.250	3	* T234A	* T234AS	* T234AC	
#12 - 24 UNC	H3	2.38	.354	.220	.165	.281	3	T2363	T2363S	T2363C	
#12 - 28 UNF	H3	2.38	.276	.220	.165	.281	3	T2383	T2383S	T2383C	
1/4 - 20 UNC	H3	2.50	.433	.255	.191	.312	3	T2403	T2403S	T2403C	
1/4 - 20 UNC	H5	2.50	.433	.255	.191	.312	3	T2405	T2405S	T2405C	
1/4 - 20 UNC	H11	2.50	.433	.255	.191	.312	3	* T240A	* T240AS	* T240AC	
1/4 - 28 UNF	H2	2.50	.354	.255	.191	.312	3	* T2422	* T2422S	* T2422C	
1/4 - 28 UNF	H3	2.50	.354	.255	.191	.312	3	T2423	T2423S	T2423C	
1/4 - 28 UNF	H4	2.50	.354	.255	.191	.312	3	T2424	T2424S	T2424C	
1/4 - 28 UNF	H5	2.50	.354	.255	.191	.312	3	* T2425	* T2425S	* T2425C	
1/4 - 28 UNF	H7	2.50	.354	.255	.191	.312	3	* T2427	* T2427S	* T2427C	
1/4 - 28 UNF	H11	2.50	.354	.255	.191	.312	3	* T242A	* T242AS	* T242AC	
5/16 - 18 UNC	H2	2.72	.472	.318	.238	.375	3	* T2442	* T2442S	* T2442C	
5/16 - 18 UNC	H3	2.72	.472	.318	.238	.375	3	T2443	T2443S	T2443C	
5/16 - 18 UNC	H5	2.72	.472	.318	.238	.375	3	T2445	T2445S	T2445C	
5/16 - 18 UNC	H7	2.72	.472	.318	.238	.375	3	* T2447	* T2447S	* T2447C	
5/16 - 18 UNC	H11	2.72	.472	.318	.238	.375	3	* T244A	* T244AS	* T244AC	
5/16 - 24 UNF	H2	2.72	.394	.318	.238	.375	3	* T2462	* T2462S	* T2462C	
5/16 - 24 UNF	H3	2.72	.394	.318	.238	.375	3	T2463	T2463S	T2463C	
5/16 - 24 UNF	H4	2.72	.394	.318	.238	.375	3	T2464	T2464S	T2464C	
5/16 - 24 UNF	H5	2.72	.394	.318	.238	.375	3	T2465	T2465S	T2465C	
5/16 - 24 UNF	H6	2.72	.394	.318	.238	.375	3	* T2466	* T2466S	* T2466C	
5/16 - 24 UNF	H7	2.72	.394	.318	.238	.375	3	* T2467	* T2467S	* T2467C	
5/16 - 24 UNF	H11	2.72	.394	.318	.238	.375	3	* T246A	* T246AS	* T246AC	
3/8 - 16 UNC	H2	2.94	.551	.381	.286	.438	3	* T2482	* T2482S	* T2482C	
3/8 - 16 UNC	H3	2.94	.551	.381	.286	.438	3	T2483	T2483S	T2483C	
3/8 - 16 UNC	H5	2.94	.551	.381	.286	.438	3	T2485	T2485S	T2485C	
3/8 - 16 UNC	H7	2.94	.551	.381	.286	.438	3	* T2487	* T2487S	* T2487C	

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◎ : Excellent ○ : Good

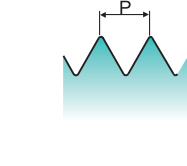
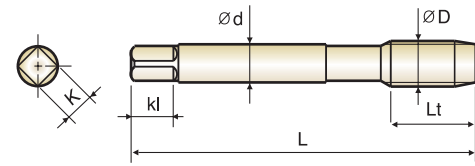
ISO Material Description	P										M				K					
	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	○	○	◎	◎	◎	◎	◎	◎	◎	◎	◎

ISO Material Description	N										S						H				
	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						110	90	100			15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	200	280	250	350	320	400 Rm	1050 Rm	550	630			400	400	400	550	
Recommended		◎				◎	◎	◎													

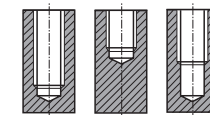
UNC/UNF HSS-E COMBO TAP NEW SIZES SPIRAL FLUTE for Multi-Purpose

Bright
Steam Oxide
TiCN

T2 SERIES
T2-S SERIES
T2-C SERIES



Hole type 2.5XD



HSS-E UNC UNF USCTI 302A 2P~3P Bright Steam Oxide TiCN R40

Unit : inch * NEW SIZE

SIZE ØD	TPI	Limit	Overall Length L	Thread Length Lt	Shank Diameter d	Square Size K	Square Length kl	No. of Flute	EDP No.		
									Bright	Steam Oxide	TiCN
3/8 - 16 UNC	H11	2.94	.551	.381	.286	.438	3	* T248A	* T248AS	* T248AC	
3/8 - 24 UNF	H2	2.94	.394	.381	.286	.438	3	* T2502	* T2502S	* T2502C	
3/8 - 24 UNF	H3	2.94	.394	.381	.286	.438	3	T2503	T2503S	T2503C	
3/8 - 24 UNF	H4	2.94	.394	.381	.286	.438	3	T2504	T2504S	T2504C	
3/8 - 24 UNF	H5	2.94	.394	.381	.286	.438	3	* T2505	* T2505S	* T2505C	
3/8 - 24 UNF	H7	2.94	.394	.381	.286	.438	3	* T2507	* T2507S	* T2507C	
3/8 - 24 UNF	H11	2.94	.394	.381	.286	.438	3	* T250A	* T250AS	* T250AC	
7/16 - 14 UNC	H3	3.16	.591	.323	.242	.406	3	T2523	T2523S	T2523C	
7/16 - 14 UNC	H5	3.16	.591	.323	.242	.406	3	T2525	T2525S	T2525C	
7/16 - 14 UNC	H7	3.16	.591	.323	.242	.406	3	* T2527	* T2527S	* T2527C	
7/16 - 14 UNC	H11	3.16	.591	.323	.242	.406	3	* T252A	* T252AS	* T252AC	
7/16 - 20 UNF	H3	3.16	.472	.323	.242	.406	3	T2543	T2543S	T2543C	
7/16 - 20 UNF	H5	3.16	.472	.323	.242	.406	3	T2545	T2545S	T2545C	
7/16 - 20 UNF	H7	3.16	.472	.323	.242	.406	3	* T2547	* T2547S	* T2547C	
7/16 - 20 UNF	H11	3.16	.472	.323	.242	.406	3	* T254A	* T254AS	* T254AC	
1/2 - 13 UNC	H3	3.38	.630	.367	.275	.438	3	* T2563	* T2563S	* T2563C	
1/2 - 13 UNC	H5	3.38	.630	.367	.275	.438	3	T2565	T2565S	T2565C	
1/2 - 13 UNC	H7	3.38	.630	.367	.275	.438	3	* T2567	* T2567S	* T2567C	
1/2 - 13 UNC	H11	3.38	.630	.367	.275	.438	3	* T256A	* T256AS	* T256AC	
1/2 - 20 UNF	H2	3.38	.472	.367	.275	.438	3	* T2582	* T2582S	* T2582C	
1/2 - 20 UNF	H3	3.38	.472	.367	.275	.438	3	* T2583	* T2583S	* T2583C	
1/2 - 20 UNF	H5	3.38	.472	.367	.275	.438	3	T2585	T2585S	T2585C	
1/2 - 20 UNF	H7	3.38	.472	.367	.275	.438	3	* T2587	* T2587S	* T2587C	
1/2 - 20 UNF	H11	3.38	.472	.367	.275	.438	3	* T258A	* T258AS	* T258AC	
9/16 - 12 UNC	H3	3.59	.709	.429	.322	.500	3	* T2603	* T2603S	* T2603C	
9/16 - 12 UNC	H5	3.59	.709	.429	.322	.500	3	T2605	T2605S	T2605C	
9/16 - 18 UNF	H3	3.59	.512	.429	.322	.500	3	* T2623	* T2623S	* T2623C	
9/16 - 18 UNF	H5	3.59	.512	.429	.322	.500	3	T2625	T2625S	T2625C	

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◎ : Excellent ○ : Good

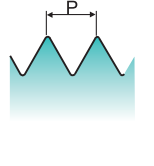
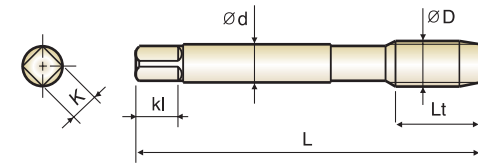
ISO Material Description	P										M						K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel						Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21			
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230			
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎			

ISO Material Description	N										S						H				
	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
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	60	100	75	90	130	110	90	100			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	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

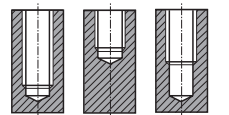
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Hole type 2.5XD



HSS-E UNC UNF USCTI 302A 2P~3P Bright Steam Oxide TiCN R40

Unit : inch * NEW SIZE

SIZE ØD	TPI	Limit	Overall Length L	Thread Length Lt	Shank Diameter d	Square Size K	Square Length kl	No. of Flute	EDP No.		
									Bright	Steam Oxide	TiCN
5/8 - 11 UNC	H5	3.81	.748	.480	.360	.562	4	T2645	T2645S	T2645C	
5/8 - 18 UNF	H3	3.81	.512	.480	.360	.562	4	* T2663	* T2663S	* T2663C	
5/8 - 18 UNF	H5	3.81	.512	.480	.360	.562	4	T2665	T2665S	T2665C	
3/4 - 10 UNC	H3	4.25	.827	.590	.442	.688	4	* T2703	* T2703S	* T2703C	
3/4 - 10 UNC	H5	4.25	.827	.590	.442	.688	4	T2705	T2705S	T2705C	
3/4 - 16 UNF	H3	4.25	.591	.590	.442	.688	4	* T2723	* T2723S	* T2723C	
3/4 - 16 UNF	H5	4.25	.591	.590	.442	.688	4	T2725	T2725S	T2725C	
7/8 - 9 UNC	H6	4.69	.827	.697	.523	.750	4	T2746	T2746S	T2746C	
7/8 - 14 UNF	H4	4.69	.709	.697	.523	.750	4	* T2764	* T2764S	* T2764C	
7/8 - 14 UNF	H6	4.69	.709	.697	.523	.750	4	T2766	T2766S	T2766C	
1" - 8 UNC	H6	5.13	.984	.800	.600	.812	4	T2786	T2786S	T2786C	
1" - 12 UNF	H6	5.13	.709	.800	.600	.812	4	T2806	T2806S	T2806C	
1_1/8 - 7 UNC	H6	5.44	1.023	.896	.672	.880	4	* T2826	* T2826S	* T2826C	
1_1/8 - 8 UN	H6	5.44	1.023	.896	.672	.880	4	* T2836	* T2836S	* T2836C	
1_1/8 - 12 UNF	H5	5.44	.787	.896	.672	.880	4	* T2845	* T2845S	* T2845C	
1_1/4 - 7 UNC	H6	5.75	1.023	1.021	.766	1.000	4	* T2866	* T2866S	* T2866C	
1_1/4 - 8 UN	H6	5.75	1.023	1.021	.766	1.000	4	* T2876	* T2876S	* T2876C	
1_1/4 - 12 UNF	H5	5.75	.787	1.021	.766	1.000	4	* T2885	* T2885S	* T2885C	
1_3/8 - 6 UNC	H6	6.06	1.181	1.108	.831	1.060	4	* T2906	* T2906S	* T2906C	
1_3/8 - 8 UN	H6	6.06	1.181	1.108	.831	1.060	4	* T2916	* T2916S	* T2916C	
1_3/8 - 12 UNF	H5	6.06	.866	1.108	.831	1.060	4	* T2925	* T2925S	* T2925C	
1_1/2 - 6 UNC	H6	6.38	1.181	1.233	.925	1.130	4	* T2946	* T2946S	* T2946C	
1_1/2 - 8 UN	H6	6.38	1.181	1.233	.925	1.130	4	* T2956	* T2956S	* T2956C	
1_1/2 - 12 UNF	H5	6.38	.866	1.233	.925	1.130	4	* T2965	* T2965S	* T2965C	

- ▶ Coating (TiN, TiAlN or Hardslick) is available on your request.
- ▶ Coating Codes for Combo Tap
Bright Finish No. + N(TiN), F(TiAlN), H(Hardslick)
- ▶ Steam Oxide is not recommended for Aluminum and Aluminum alloys.

◎ : Excellent ○ : Good

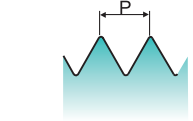
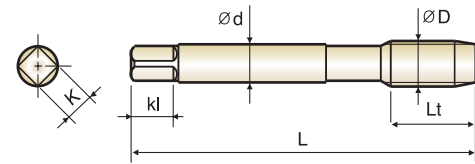
ISO Material Description	P										M						K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel						Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21			
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230			
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎			

ISO Material Description	N										S						H				
	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
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	60	100	75	90	130	110	90	100			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	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

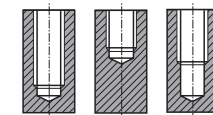
M/MF HSS-E COMBO TAP NEW SIZES SPIRAL FLUTE for Multi-Purpose

Bright
Steam Oxide
TiCN

T5 SERIES
T5-S SERIES
T5-C SERIES



Hole type 2.5XD



HSS-E M/MF USCTI 302A 2P~3P Bright Steam Oxide TiCN R40

Unit : inch

* NEW SIZE

SIZE	PITCH	Limit	Overall Length L	Thread Length Lt	Shank Diameter d	Square Size K	Square Length kl	No. of Flute	EDP No.		
									Bright	Steam Oxide	TiCN
M3 x 0.5	D3	D3	1.94	.197	.141	.110	.188	3	T5203	T5203S	T5203C
M3 x 0.5	D11	D11	1.94	.197	.141	.110	.188	3	* T520A	* T520AS	* T520AC
M3.5 x 0.6	D4	D4	2.00	.276	.141	.110	.188	3	T5224	T5224S	T5224C
M3.5 x 0.6	D11	D11	2.00	.276	.141	.110	.188	3	* T522A	* T522AS	* T522AC
M4 x 0.7	D4	D4	2.13	.276	.168	.131	.250	3	T5244	T5244S	T5244C
M4 x 0.7	D11	D11	2.13	.276	.168	.131	.250	3	* T524A	* T524AS	* T524AC
M5 x 0.8	D4	D4	2.38	.354	.194	.152	.250	3	T5284	T5284S	T5284C
M5 x 0.8	D11	D11	2.38	.354	.194	.152	.250	3	* T528A	* T528AS	* T528AC
M6 x 1.0	D5	D5	2.50	.433	.255	.191	.312	3	T5315	T5315S	T5315C
M6 x 1.0	D11	D11	2.50	.433	.255	.191	.312	3	* T531A	* T531AS	* T531AC
M7 x 1.0	D5	D5	2.72	.433	.318	.238	.375	3	T5345	T5345S	T5345C
M7 x 1.0	D11	D11	2.72	.433	.318	.238	.375	3	* T534A	* T534AS	* T534AC
M8 x 1.25	D5	D5	2.72	.472	.318	.238	.375	3	T5365	T5365S	T5365C
M8 x 1.25	D11	D11	2.72	.472	.318	.238	.375	3	* T536A	* T536AS	* T536AC
M8 x 1.0	D5	D5	2.72	.433	.318	.238	.375	3	T5375	T5375S	T5375C
M8 x 1.0	D11	D11	2.72	.433	.318	.238	.375	3	* T537A	* T537AS	* T537AC
M10 x 1.5	D6	D6	2.94	.512	.381	.286	.438	3	T5426	T5426S	T5426C
M10 x 1.5	D11	D11	2.94	.512	.381	.286	.438	3	* T542A	* T542AS	* T542AC
M10 x 1.25	D5	D5	2.94	.472	.381	.286	.438	3	T5435	T5435S	T5435C
M10 x 1.25	D11	D11	2.94	.472	.381	.286	.438	3	* T543A	* T543AS	* T543AC
M10 x 1.0	D5	D5	2.94	.433	.381	.286	.438	3	* T5445	* T5445S	* T5445C
M10 x 1.0	D11	D11	2.94	.433	.381	.286	.438	3	* T544A	* T544AS	* T544AC
M12 x 1.75	D6	D6	3.38	.591	.367	.275	.438	3	T5506	T5506S	T5506C
M12 x 1.75	D11	D11	3.38	.591	.367	.275	.438	3	* T550A	* T550AS	* T550AC
M12 x 1.5	D6	D6	3.38	.591	.367	.275	.438	3	T5516	T5516S	T5516C
M12 x 1.5	D11	D11	3.38	.591	.367	.275	.438	3	T551A	T551AS	T551AC
M12 x 1.25	D5	D5	3.38	.551	.367	.275	.438	3	T5525	T5525S	T5525C
M12 x 1.25	D11	D11	3.38	.551	.367	.275	.438	3	T552A	T552AS	T552AC

▶ NEXT PAGE

◎ : Excellent ○ : Good

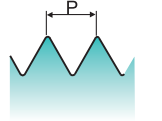
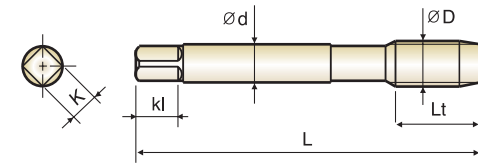
ISO	P										M			K										
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel			Stainless steel			Grey cast iron			Nodular cast iron			Malleable cast iron	
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	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				
	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
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34		55	60	42	55	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended			◎			◎	◎	◎													

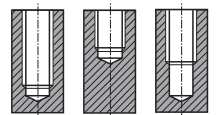
M/MF HSS-E COMBO TAP NEW SIZES SPIRAL FLUTE for Multi-Purpose

Bright
Steam Oxide
TiCN

T5 SERIES
T5-S SERIES
T5-C SERIES



Hole type 2.5XD



HSS-E M/MF USCTI 302A 2P~3P Bright Steam Oxide TiCN R40

Unit : inch

* NEW SIZE

SIZE	PITCH	Limit	Overall Length L	Thread Length Lt	Shank Diameter d	Square Size K	Square Length kl	No. of Flute	EDP No.		
									Bright	Steam Oxide	TiCN
M14 x 2.0	D7	D7	3.59	.709	.429	.322	.500	3	T5547	T5547S	T5547C
M14 x 1.5	D6	D6	3.59	.551	.429	.322	.500	3	T5556	T5556S	T5556C
M16 x 2.0	D7	D7	3.81	.709	.480	.360	.562	3	T5607	T5607S	T5607C
M16 x 1.5	D6	D6	3.81	.551	.480	.360	.562	3	T5616	T5616S	T5616C
M18 x 2.5	D7	D7	4.03	.787	.542	.406	.625	4	T5657	T5657S	T5657C
M18 x 1.5	D6	D6	4.03	.551	.542	.406	.625	4	T5676	T5676S	T5676C
M20 x 2.5	D7	D7	4.47	.787	.652	.489	.688	4	T5707	T5707S	T5707C
M20 x 1.5	D6	D6	4.47	.551	.652	.489	.688	4	T5726	T5726S	T5726C
M22 x 2.5	D7	D7	4.69	.787	.697	.523	.750	4	T5747	T5747S	T5747C
M22 x 1.5	D6	D6	4.69	.551	.697	.523	.750	4	T5766	T5766S	T5766C
M24 x 3.0	D8	D8	4.91	.945	.760	.570	.750	4	T5788	T5788S	T5788C
M24 x 1.5	D6	D6	4.91	.551	.760	.570	.750	4	* T5806	* T5806S	* T5806C
M27 x 3.0	D6	D6	5.13	.945	.896	.672	.880	4	* T5866	* T5866S	* T5866C
M27 x 3.0	D8	D8	5.13	.945	.896	.672	.880	4	* T5868	* T5868S	* T5868C
M27 x 3.0	D9	D9	5.13	.945	.896	.672	.880	4	* T5869	* T5869S	* T5869C
M27 x 1.5	D6	D6	5.13	.591	.896	.672	.880	4	* T5886	* T5886S	* T5886C

- ▶ Coating (TiN, TiAlN or Hardslick) is available on your request.
- ▶ Coating Codes for Combo Tap
Bright Finish No. + N (TiN), F (TiAlN), H (Hardslick)
- ▶ Steam Oxide is not recommended for Aluminum and Aluminum alloys.

◎ : Excellent ○ : Good

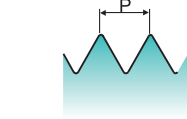
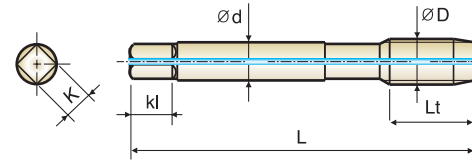
ISO	P										M			K										
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel			Stainless steel			Grey cast iron			Nodular cast iron			Malleable cast iron	
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	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				
	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
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34		55	60	42	55	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended			◎			◎	◎	◎													

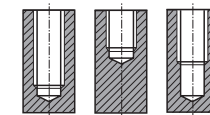
UNC/UNF HSS-E COMBO TAP SPIRAL FLUTE for Multi-Purpose

Bright
TiN **T6** SERIES
T6-N SERIES

with Internal Coolant



Hole type 2.5XD



HSS-E UNC UNF USCTI 302A 2P~3P Bright TiN R40

Unit : inch

SIZE	TPI	Limit	Overall Length L	Thread Length Lt	Shank Diameter d	Square Size K	Square Length kl	No. of Flute	EDP No.	
									Bright	TiN
1/4 - 20 UNC	H5	2.50	.433	.255	.191	.312	3	T6405	T6405N	
1/4 - 28 UNF	H4	2.50	.354	.255	.191	.312	3	T6424	T6424N	
5/16 - 18 UNC	H5	2.72	.472	.318	.238	.375	3	T6445	T6445N	
5/16 - 24 UNF	H4	2.72	.394	.318	.238	.375	3	T6464	T6464N	
3/8 - 16 UNC	H5	2.94	.551	.381	.286	.438	3	T6485	T6485N	
3/8 - 24 UNF	H4	2.94	.394	.381	.286	.438	3	T6504	T6504N	
7/16 - 14 UNC	H5	3.16	.591	.323	.242	.406	3	T6525	T6525N	
7/16 - 20 UNF	H5	3.16	.472	.323	.242	.406	3	T6545	T6545N	
1/2 - 13 UNC	H5	3.38	.630	.367	.275	.438	3	T6565	T6565N	
1/2 - 20 UNF	H5	3.38	.472	.367	.275	.438	3	T6585	T6585N	
9/16 - 12 UNC	H5	3.59	.709	.429	.322	.500	3	T6605	T6605N	
9/16 - 18 UNF	H5	3.59	.512	.429	.322	.500	3	T6625	T6625N	
5/8 - 11 UNC	H5	3.81	.748	.480	.360	.562	4	T6645	T6645N	
5/8 - 18 UNF	H5	3.81	.512	.480	.360	.562	4	T6665	T6665N	
3/4 - 10 UNC	H5	4.25	.827	.590	.442	.688	4	T6705	T6705N	
3/4 - 16 UNF	H5	4.25	.591	.590	.442	.688	4	T6725	T6725N	
7/8 - 9 UNC	H6	4.69	.827	.697	.523	.750	4	T6746	T6746N	
7/8 - 14 UNF	H6	4.69	.709	.697	.523	.750	4	T6766	T6766N	
1" - 8 UNC	H6	5.13	.984	.800	.600	.812	4	T6786	T6786N	
1" - 12 UNF	H6	5.13	.709	.800	.600	.812	4	T6806	T6806N	

- ▶ Coating(TiCN, TiAlN or Hardslick) or Surface Treatment(Steam Oxide) is available on your request.
- ▶ Coating Codes for Combo Tap
Bright Finish No. + C(TiCN), F(TiAlN), H(Hardslick), S(Steam Oxide)

◎ : Excellent ○ : Good

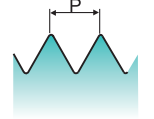
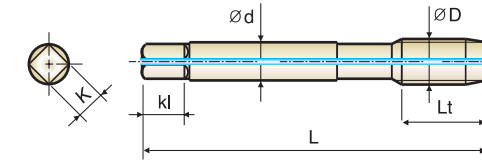
ISO Material Description	P										M			K							
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel			Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRC	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	10	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

ISO Material Description	N				S						H										
	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						110	90	100			15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130						200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended		◎				◎	◎	◎													

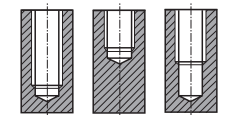
M HSS-E COMBO TAP SPIRAL FLUTE for Multi-Purpose

Bright
TiN **T8** SERIES
T8-N SERIES

with Internal Coolant



Hole type 2.5XD



HSS-E M USCTI 302A 2P~3P Bright TiN R40

Unit : inch

SIZE	PITCH	Limit	Overall Length L	Thread Length Lt	Shank Diameter d	Square Size K	Square Length kl	No. of Flute	EDP No.	
									Bright	TiN
M6 x 1.0	D5	2.50	.433	.255	.191	.312	3	T8315	T8315N	
M8 x 1.25	D5	2.72	.472	.318	.238	.375	3	T8365	T8365N	
M10 x 1.5	D6	2.94	.512	.381	.286	.438	3	T8426	T8426N	
M12 x 1.75	D6	3.38	.591	.367	.275	.438	3	T8506	T8506N	
M14 x 2.0	D7	3.59	.709	.429	.322	.500	3	T8547	T8547N	
M16 x 2.0	D7	3.81	.709	.480	.360	.562	3	T8607	T8607N	
M18 x 2.5	D7	4.03	.787	.542	.406	.625	4	T8657	T8657N	
M20 x 2.5	D7	4.47	.787	.652	.489	.688	4	T8707	T8707N	

- ▶ Coating(TiCN, TiAlN or Hardslick) or Surface Treatment(Steam Oxide) is available on your request.
- ▶ Coating Codes for Combo Tap
Bright Finish No. + C(TiCN), F(TiAlN), H(Hardslick), S(Steam Oxide)

◎ : Excellent ○ : Good

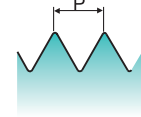
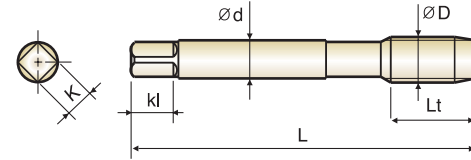
ISO Material Description	P										M			K							
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel			Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRC	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	10	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

ISO Material Description	N				S						H										
	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						110	90	100			15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130						200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended		◎				◎	◎	◎													

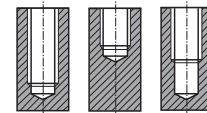
UNC/UNF HSS-E COMBO TAP SPIRAL FLUTE for Multi-Purpose

Bright
TiCN **T7** SERIES
T7-C SERIES

Short Chamfer



Hole type 2.5XD



HSS-E UNC UNF USCT1 302A 1P~2P Bright TiCN R40

Unit : inch

SIZE	TPI	Limit	Overall Length	Thread Length	Shank Diameter	Square Size	Square Length	No. of Flute	EDP No.	
									Bright	TiCN
#4 - 40 UNC	H2	1.88	.236	.141	.110	.188	2	T7162	T7162C	
#4 - 48 UNF	H2	1.88	.236	.141	.110	.188	2	T7182	T7182C	
#5 - 40 UNC	H2	1.94	.236	.141	.110	.188	3	T7202	T7202C	
#5 - 44 UNF	H2	1.94	.236	.141	.110	.188	3	T7222	T7222C	
#6 - 32 UNC	H3	2.00	.276	.141	.110	.188	3	T7243	T7243C	
#6 - 40 UNF	H2	2.00	.276	.141	.110	.188	3	T7262	T7262C	
#8 - 32 UNC	H3	2.13	.276	.168	.131	.250	3	T7283	T7283C	
#8 - 36 UNF	H2	2.13	.276	.168	.131	.250	3	T7302	T7302C	
#10 - 24 UNC	H3	2.38	.354	.194	.152	.250	3	T7323	T7323C	
#10 - 32 UNF	H3	2.38	.276	.194	.152	.250	3	T7343	T7343C	
#12 - 24 UNC	H3	2.38	.354	.220	.165	.281	3	T7363	T7363C	
#12 - 28 UNF	H3	2.38	.276	.220	.165	.281	3	T7383	T7383C	
1/4 - 20 UNC	H5	2.50	.433	.255	.191	.312	3	T7405	T7405C	
1/4 - 28 UNF	H4	2.50	.354	.255	.191	.312	3	T7424	T7424C	
5/16 - 18 UNC	H5	2.72	.472	.318	.238	.375	3	T7445	T7445C	
5/16 - 24 UNF	H4	2.72	.394	.318	.238	.375	3	T7464	T7464C	
3/8 - 16 UNC	H5	2.94	.551	.381	.286	.438	3	T7485	T7485C	
3/8 - 24 UNF	H4	2.94	.394	.381	.286	.438	3	T7504	T7504C	
7/16 - 14 UNC	H5	3.16	.591	.323	.242	.406	3	T7525	T7525C	
7/16 - 20 UNF	H5	3.16	.472	.323	.242	.406	3	T7545	T7545C	
1/2 - 13 UNC	H5	3.38	.630	.367	.275	.438	3	T7565	T7565C	
1/2 - 20 UNF	H5	3.38	.472	.367	.275	.438	3	T7585	T7585C	
9/16 - 12 UNC	H5	3.59	.709	.429	.322	.500	3	T7605	T7605C	
9/16 - 18 UNF	H5	3.59	.512	.429	.322	.500	3	T7625	T7625C	
5/8 - 11 UNC	H5	3.81	.748	.480	.360	.562	4	T7645	T7645C	
5/8 - 18 UNF	H5	3.81	.512	.480	.360	.562	4	T7665	T7665C	
3/4 - 10 UNC	H5	4.25	.827	.590	.442	.688	4	T7705	T7705C	
3/4 - 16 UNF	H5	4.25	.591	.590	.442	.688	4	T7725	T7725C	

▶ NEXT PAGE

◎ : Excellent ○ : Good

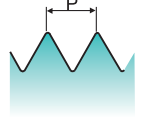
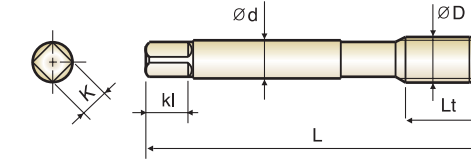
ISO	P										M				K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	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				
	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		
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34		55	60	42	55	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended		◎	◎	◎	◎	◎	◎	◎													

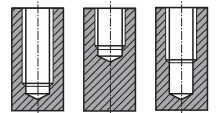
UNC/UNF HSS-E COMBO TAP SPIRAL FLUTE for Multi-Purpose

Bright
TiCN **T7** SERIES
T7-C SERIES

Short Chamfer



Hole type 2.5XD



HSS-E UNC UNF USCT1 302A 1P~2P Bright TiCN R40

Unit : inch

SIZE	TPI	Limit	Overall Length	Thread Length	Shank Diameter	Square Size	Square Length	No. of Flute	EDP No.	
									Bright	TiCN
7/8 - 9 UNC	H6	4.69	.827	.697	.523	.750	4	T7746	T7746C	
7/8 - 14 UNF	H6	4.69	.709	.697	.523	.750	4	T7766	T7766C	
1" - 8 UNC	H6	5.13	.984	.800	.600	.812	4	T7786	T7786C	
1" - 12 UNF	H6	5.13	.709	.800	.600	.812	4	T7806	T7806C	

- ▶ Coating(TiN, TiAlN or Hardslick) or Surface Treatment(Steam Oxide) is available on your request.
- ▶ Coating Codes for Combo Tap
Bright Finish No. + N(TiN), F(TiAlN), H(Hardslick), S(Steam Oxide)

◎ : Excellent ○ : Good

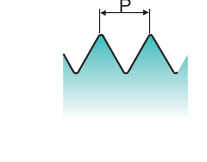
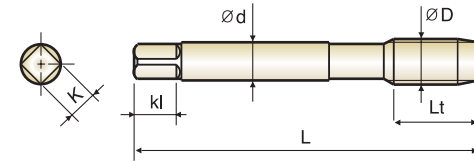
ISO	P										M				K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	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				
	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		
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34		55	60	42	55	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended		◎	◎	◎	◎	◎	◎	◎													

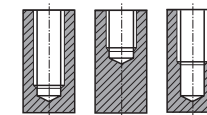
M/MF HSS-E COMBO TAP SPIRAL FLUTE for Multi-Purpose

Bright TiCN **T9** SERIES
T9-C SERIES

Short Chamfer



Hole type 2.5XD



HSS-E M/MF USCTI 302A 1P~2P Bright TiCN R40

Unit : inch

SIZE	PITCH	Limit	Overall Length	Thread Length	Shank Diameter	Square Size	Square Length	No. of Flute	EDP No.	
									Bright	TiCN
M3	x 0.5	D3	1.94	.197	.141	.110	.188	3	T9203	T9203C
M3.5	x 0.6	D4	2.00	.276	.141	.110	.188	3	T9224	T9224C
M4	x 0.7	D4	2.13	.276	.168	.131	.250	3	T9244	T9244C
M5	x 0.8	D4	2.38	.354	.194	.152	.250	3	T9284	T9284C
M6	x 1.0	D5	2.50	.433	.255	.191	.312	3	T9315	T9315C
M7	x 1.0	D5	2.72	.433	.318	.238	.375	3	T9345	T9345C
M8	x 1.25	D5	2.72	.472	.318	.238	.375	3	T9365	T9365C
M8	x 1.0	D5	2.72	.433	.318	.238	.375	3	T9375	T9375C
M10	x 1.5	D6	2.94	.512	.381	.286	.438	3	T9426	T9426C
M10	x 1.25	D5	2.94	.472	.381	.286	.438	3	T9435	T9435C
M12	x 1.75	D6	3.38	.591	.367	.275	.438	3	T9506	T9506C
M12	x 1.25	D5	3.38	.551	.367	.275	.438	3	T9525	T9525C
M14	x 2.0	D7	3.59	.709	.429	.322	.500	3	T9547	T9547C
M14	x 1.5	D6	3.59	.551	.429	.322	.500	3	T9556	T9556C
M16	x 2.0	D7	3.81	.709	.480	.360	.562	3	T9607	T9607C
M16	x 1.5	D6	3.81	.551	.480	.360	.562	3	T9616	T9616C
M18	x 2.5	D7	4.03	.787	.542	.406	.625	4	T9657	T9657C
M18	x 1.5	D6	4.03	.551	.542	.406	.625	4	T9676	T9676C
M20	x 2.5	D7	4.47	.787	.652	.489	.688	4	T9707	T9707C
M20	x 1.5	D6	4.47	.551	.652	.489	.688	4	T9726	T9726C
M22	x 2.5	D7	4.69	.787	.697	.523	.750	4	T9747	T9747C
M22	x 1.5	D6	4.69	.551	.697	.523	.750	4	T9766	T9766C
M24	x 3.0	D8	4.91	.945	.760	.570	.750	4	T9788	T9788C

- ▶ Coating (TiN, TiAlN or Hardslick) or Surface Treatment (Steam Oxide) is available on your request.
- ▶ Coating Codes for Combo Tap
Bright Finish No. + N (TiN), F (TiAlN), H (Hardslick), S (Steam Oxide)

◎ : Excellent ○ : Good

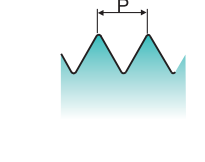
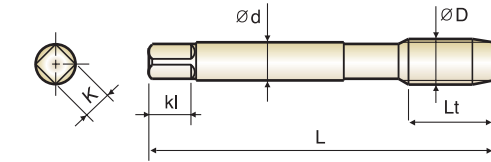
ISO	P										M				K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	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				
	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		
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34		55	60	42	55	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎			◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

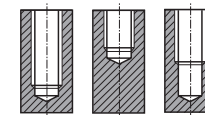
UNC/UNF HSS-E COMBO TAP SPIRAL FLUTE for Multi-Purpose

Steam Oxide TiCN **T1-S** SERIES
T1-C SERIES

DIN Length-ANSI Shank



Hole type 2.5XD



HSS-E UNC UNF 2P~3P Steam Oxide TiCN R40

Unit : inch

SIZE	TPI	Limit	Overall Length	Thread Length	Shank Diameter	Square Size	Square Length	No. of Flute	EDP No.	
									Steam Oxide	TiCN
#2	- 56 UNC	H2	1.77	.157	.141	.110	.188	2	T1082S	T1082C
#3	- 48 UNC	H2	1.97	.197	.141	.110	.188	2	* T1122S	* T1122C
#4	- 40 UNC	H2	2.21	.236	.141	.110	.188	2	* T1162S	* T1162C
#4	- 48 UNF	H2	2.21	.236	.141	.110	.188	2	* T1182S	* T1182C
#5	- 40 UNC	H2	2.21	.236	.141	.110	.188	3	T1202S	T1202C
#6	- 32 UNC	H3	2.21	.276	.141	.110	.188	3	T1243S	T1243C
#6	- 40 UNF	H2	2.21	.276	.141	.110	.188	3	* T1262S	* T1262C
#8	- 32 UNC	H3	2.48	.276	.168	.131	.250	3	T1283S	T1283C
#10	- 24 UNC	H3	2.76	.354	.194	.152	.250	3	T1323S	T1323C
#10	- 32 UNF	H3	2.76	.276	.194	.152	.250	3	T1343S	T1343C
#12	- 24 UNC	H3	3.15	.354	.220	.165	.281	3	T1363S	T1363C
#12	- 28 UNF	H3	3.15	.276	.220	.165	.281	3	T1383S	T1383C
1/4	- 20 UNC	H5	3.15	.433	.255	.191	.312	3	T1405S	T1405C
1/4	- 28 UNF	H4	3.15	.354	.255	.191	.312	3	T1424S	T1424C
5/16	- 18 UNC	H5	3.54	.472	.318	.238	.375	3	T1445S	T1445C
5/16	- 24 UNF	H4	3.54	.394	.318	.238	.375	3	T1464S	T1464C
3/8	- 16 UNC	H5	3.94	.551	.381	.286	.438	3	T1485S	T1485C
3/8	- 24 UNF	H4	3.94	.394	.381	.286	.438	3	T1504S	T1504C
7/16	- 14 UNC	H5	3.94	.591	.323	.242	.406	3	T1525S	T1525C
7/16	- 20 UNF	H5	3.94	.472	.323	.242	.406	3	T1545S	T1545C
1/2	- 13 UNC	H5	4.33	.630	.367	.275	.438	3	T1565S	T1565C
1/2	- 20 UNF	H5	3.94	.472	.367	.275	.438	3	T1585S	T1585C
9/16	- 12 UNC	H5	4.33	.709	.429	.322	.500	3	T1605S	T1605C
9/16	- 18 UNF	H5	3.94	.512	.429	.322	.500	3	T1625S	T1625C
5/8	- 11 UNC	H5	4.33	.748	.480	.360	.562	4	T1645S	T1645C
5/8	- 18 UNF	H5	3.94	.512	.480	.360	.562	4	T1665S	T1665C
3/4	- 10 UNC	H5	4.92	.827	.590	.442	.688	4	T1705S	T1705C
3/4	- 16 UNF	H5	4.33	.591	.590	.442	.688	4	T1725S	T1725C

▶ NEXT PAGE

◎ : Excellent ○ : Good

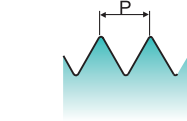
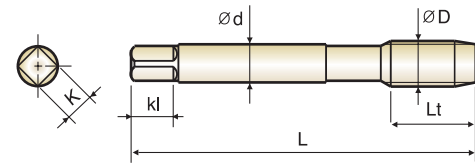
ISO	P										M				K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	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				
	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		
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34		55	60	42	55	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎			◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

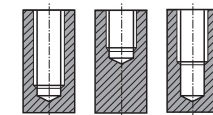
UNC/UNF HSS-E COMBO TAP NEW SIZES SPIRAL FLUTE for Multi-Purpose

Steam Oxide **T1-S SERIES**
TiCN **T1-C SERIES**

DIN Length-ANSI Shank



Hole type 2.5XD



HSS-E UNC UNF 2P~3P Steam Oxide TiCN R40

Unit : inch

* (NEW SIZE)

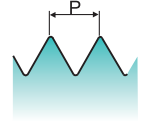
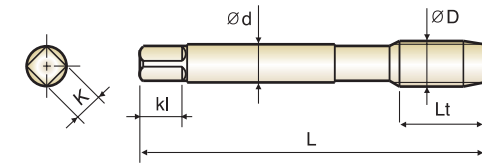
SIZE	TPI	Limit	Overall Length L	Thread Length Lt	Shank Diameter d	Square Size K	Square Length kl	No. of Flute	EDP No.	
									Steam Oxide	TiCN
7/8	- 9 UNC	H6	5.51	.827	.697	.523	.750	4	T1746S	T1746C
7/8	- 14 UNF	H6	4.92	.709	.697	.523	.750	4	T1766S	T1766C
1"	- 8 UNC	H6	6.30	.984	.800	.600	.812	4	T1786S	T1786C
1"	- 12 UNF	H6	5.51	.709	.800	.600	.812	4	T1806S	T1806C

► Steam Oxide is not recommended for Aluminum and Aluminum alloys.

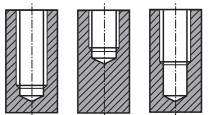
M/MF HSS-E COMBO TAP NEW SIZES SPIRAL FLUTE for Multi-Purpose

Steam Oxide **TA-S SERIES**
TiCN **TA-C SERIES**

DIN Length-ANSI Shank



Hole type 2.5XD



HSS-E M/MF 2P~3P Steam Oxide TiCN R40

Unit : inch

* (NEW SIZE)

SIZE	PITCH	Limit	Overall Length L	Thread Length Lt	Shank Diameter d	Square Size K	Square Length kl	No. of Flute	EDP No.	
									Steam Oxide	TiCN
M3	x 0.5	D3	2.21	.197	.141	.110	.188	3	TA203S	TA203C
M3.5	x 0.6	D4	2.21	.276	.141	.110	.188	3	TA224S	TA224C
M4	x 0.7	D4	2.48	.276	.168	.131	.250	3	TA244S	TA244C
M5	x 0.8	D4	2.76	.354	.194	.152	.250	3	TA284S	TA284C
M6	x 1	D5	3.15	.433	.255	.191	.312	3	TA315S	TA315C
M7	x 1	D5	3.15	.433	.318	.238	.375	3	* TA345S	* TA345C
M8	x 1.25	D5	3.54	.472	.318	.238	.375	3	TA365S	TA365C
M8	x 1	D5	3.54	.433	.318	.238	.375	3	* TA375S	* TA375C
M10	x 1.5	D6	3.94	.512	.381	.286	.438	3	TA426S	TA426C
M10	x 1.25	D5	3.94	.472	.381	.286	.438	3	TA435S	TA435C
M12	x 1.75	D6	4.33	.591	.367	.275	.438	3	TA506S	TA506C
M12	x 1.5	D11	3.94	.551	.367	.275	.438	3	* TA51AS	* TA51AC
M12	x 1.25	D5	3.94	.551	.367	.275	.438	3	TA525S	TA525C
M14	x 2	D7	4.33	.709	.429	.322	.500	3	TA547S	TA547C
M14	x 1.5	D6	3.94	.551	.429	.322	.500	3	TA556S	TA556C
M16	x 2	D7	4.33	.709	.480	.360	.562	3	TA607S	TA607C
M16	x 1.5	D6	3.94	.551	.480	.360	.562	3	TA616S	TA616C
M18	x 2.5	D7	4.92	.787	.542	.406	.625	4	TA657S	TA657C
M18	x 1.5	D6	4.33	.551	.542	.406	.625	4	TA676S	TA676C
M20	x 2.5	D7	4.92	.551	.652	.489	.688	4	* TA707S	* TA707C
M20	x 1.5	D6	5.51	.787	.652	.489	.688	4	* TA726S	* TA726C

► Steam Oxide is not recommended for Aluminum and Aluminum alloys.

◎ : Excellent ○ : Good

ISO	P										M				K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
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	38	10	29	32	38	15	35	15	23	10	10	26	3	25	10	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				
	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
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
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	15	30	25	38	34	400 Rm	1050 Rm	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		◎				◎	◎	◎													

◎ : Excellent ○ : Good

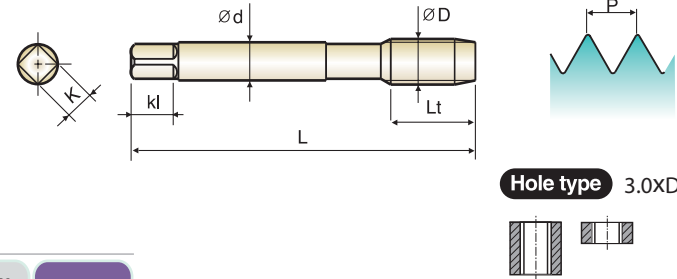
ISO	P										M				K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	10	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				
	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
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
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	15	30	25	38	34	400 Rm	1050 Rm	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		◎				◎	◎	◎													

UNC/UNF HSS-E COMBO TAP NEW SIZES SPIRAL POINT for Multi-Purpose

Bright
Steam Oxide
TiCN

T4 SERIES
T4-S SERIES
T4-C SERIES



HSS-E UNC UNF USCTI 302A 4P~5P Bright Steam Oxide TiCN

Unit : inch * NEW SIZE

SIZE	TPI	Limit	Overall Length L	Thread Length Lt	Shank Diameter d	Square Size K	Square Length kl	No. of Flute	EDP No.		
									Bright	Steam Oxide	TiCN
#2 - 56 UNC	H2	1.75	.256	.141	.110	.188	2	* T4082	* T4082S	* T4082C	
#3 - 48 UNC	H2	1.81	.295	.141	.110	.188	2	* T4122	* T4122S	* T4122C	
#4 - 40 UNC	H2	1.88	.335	.141	.110	.188	2	* T4162	* T4162S	* T4162C	
#4 - 40 UNC	H3	1.88	.335	.141	.110	.188	2	* T4163	* T4163S	* T4163C	
#4 - 40 UNC	H4	1.88	.335	.141	.110	.188	2	* T4164	* T4164S	* T4164C	
#4 - 40 UNC	H5	1.88	.335	.141	.110	.188	2	* T4165	* T4165S	* T4165C	
#4 - 48 UNF	H2	1.88	.335	.141	.110	.188	2	T4182	T4182S	T4182C	
#5 - 40 UNC	H2	1.94	.374	.141	.110	.188	3	T4202	T4202S	T4202C	
#5 - 44 UNF	H2	1.94	.374	.141	.110	.188	3	T4222	T4222S	T4222C	
#6 - 32 UNC	H2	2.00	.413	.141	.110	.188	3	* T4242	* T4242S	* T4242C	
#6 - 32 UNC	H3	2.00	.413	.141	.110	.188	3	* T4243	* T4243S	* T4243C	
#6 - 32 UNC	H4	2.00	.413	.141	.110	.188	3	* T4244	* T4244S	* T4244C	
#6 - 32 UNC	H5	2.00	.413	.141	.110	.188	3	* T4245	* T4245S	* T4245C	
#6 - 32 UNC	H6	2.00	.413	.141	.110	.188	3	* T4246	* T4246S	* T4246C	
#6 - 32 UNC	H7	2.00	.413	.141	.110	.188	3	* T4247	* T4247S	* T4247C	
#6 - 32 UNC	H11	2.00	.413	.141	.110	.188	3	* T424A	* T424AS	* T424AC	
#6 - 40 UNF	H2	2.00	.413	.141	.110	.188	3	T4262	T4262S	T4262C	
#8 - 32 UNC	H2	2.13	.453	.168	.131	.250	3	* T4282	* T4282S	* T4282C	
#8 - 32 UNC	H3	2.13	.453	.168	.131	.250	3	* T4283	* T4283S	* T4283C	
#8 - 32 UNC	H4	2.13	.453	.168	.131	.250	3	* T4284	* T4284S	* T4284C	
#8 - 32 UNC	H5	2.13	.453	.168	.131	.250	3	* T4285	* T4285S	* T4285C	
#8 - 32 UNC	H6	2.13	.453	.168	.131	.250	3	* T4286	* T4286S	* T4286C	
#8 - 32 UNC	H7	2.13	.453	.168	.131	.250	3	* T4287	* T4287S	* T4287C	
#8 - 32 UNC	H11	2.13	.453	.168	.131	.250	3	* T428A	* T428AS	* T428AC	
#8 - 36 UNF	H2	2.13	.453	.168	.131	.250	3	T4302	T4302S	T4302C	
#10 - 24 UNC	H3	2.38	.531	.194	.152	.250	3	* T4323	* T4323S	* T4323C	
#10 - 24 UNC	H5	2.38	.531	.194	.152	.250	3	* T4325	* T4325S	* T4325C	
#10 - 24 UNC	H11	2.38	.531	.194	.152	.250	3	* T432A	* T432AS	* T432AC	

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◎ : Excellent ○ : Good

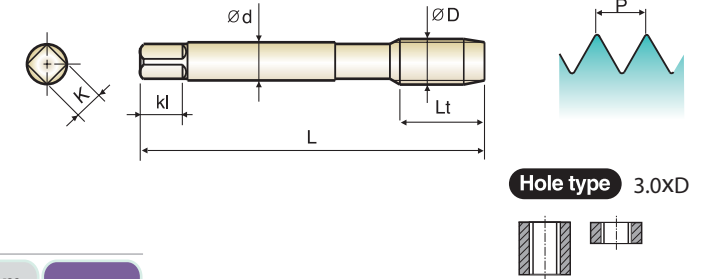
ISO Material Description	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

ISO Material Description	N										S						H				
	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						110	90	100			15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	200	280	250	350	320	400 Rm	1050 Rm	550	630			400	400	400	550	550
Recommended		◎				◎	◎	◎													

UNC/UNF HSS-E COMBO TAP NEW SIZES SPIRAL POINT for Multi-Purpose

Bright
Steam Oxide
TiCN

T4 SERIES
T4-S SERIES
T4-C SERIES



HSS-E UNC UNF USCTI 302A 4P~5P Bright Steam Oxide TiCN

Unit : inch * NEW SIZE

SIZE	TPI	Limit	Overall Length L	Thread Length Lt	Shank Diameter d	Square Size K	Square Length kl	No. of Flute	EDP No.		
									Bright	Steam Oxide	TiCN
#10 - 32 UNF	H2	2.38	.531	.194	.152	.250	3	* T4342	* T4342S	* T4342C	
#10 - 32 UNF	H3	2.38	.531	.194	.152	.250	3	* T4343	* T4343S	* T4343C	
#10 - 32 UNF	H4	2.38	.531	.194	.152	.250	3	* T4344	* T4344S	* T4344C	
#10 - 32 UNF	H5	2.38	.531	.194	.152	.250	3	* T4345	* T4345S	* T4345C	
#10 - 32 UNF	H6	2.38	.531	.194	.152	.250	3	* T4346	* T4346S	* T4346C	
#10 - 32 UNF	H7	2.38	.531	.194	.152	.250	3	* T4347	* T4347S	* T4347C	
#10 - 32 UNF	H11	2.38	.531	.194	.152	.250	3	* T434A	* T434AS	* T434AC	
#12 - 24 UNC	H3	2.38	.571	.220	.165	.281	3	T4363	T4363S	T4363C	
#12 - 28 UNF	H3	2.38	.571	.220	.165	.281	3	T4383	T4383S	T4383C	
1/4 - 20 UNC	H2	2.50	.591	.255	.191	.312	3	* T4402	* T4402S	* T4402C	
1/4 - 20 UNC	H3	2.50	.591	.255	.191	.312	3	* T4403	* T4403S	* T4403C	
1/4 - 20 UNC	H5	2.50	.591	.255	.191	.312	3	* T4405	* T4405S	* T4405C	
1/4 - 20 UNC	H7	2.50	.591	.255	.191	.312	3	* T4407	* T4407S	* T4407C	
1/4 - 20 UNC	H11	2.50	.591	.255	.191	.312	3	* T440A	* T440AS	* T440AC	
1/4 - 28 UNF	H2	2.50	.591	.255	.191	.312	3	* T4422	* T4422S	* T4422C	
1/4 - 28 UNF	H3	2.50	.591	.255	.191	.312	3	* T4423	* T4423S	* T4423C	
1/4 - 28 UNF	H4	2.50	.591	.255	.191	.312	3	* T4424	* T4424S	* T4424C	
1/4 - 28 UNF	H5	2.50	.591	.255	.191	.312	3	* T4425	* T4425S	* T4425C	
1/4 - 28 UNF	H6	2.50	.591	.255	.191	.312	3	* T4426	* T4426S	* T4426C	
1/4 - 28 UNF	H7	2.50	.591	.255	.191	.312	3	* T4427	* T4427S	* T4427C	
1/4 - 28 UNF	H11	2.50	.591	.255	.191	.312	3	* T442A	* T442AS	* T442AC	
5/16 - 18 UNC	H3	2.72	.669	.318	.238	.375	3	* T4443	* T4443S	* T4443C	
5/16 - 18 UNC	H5	2.72	.669	.318	.238	.375	3	* T4445	* T4445S	* T4445C	
5/16 - 18 UNC	H7	2.72	.669	.318	.238	.375	3	* T4447	* T4447S	* T4447C	
5/16 - 18 UNC	H11	2.72	.669	.318	.238	.375	3	* T444A	* T444AS	* T444AC	
5/16 - 24 UNF	H2	2.72	.669	.318	.238	.375	3	* T4462	* T4462S	* T4462C	
5/16 - 24 UNF	H3	2.72	.669	.318	.238	.375	3	* T4463	* T4463S	* T4463C	
5/16 - 24 UNF	H4	2.72	.669	.318	.238	.375	3	* T4464	* T4464S	* T4464C	

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◎ : Excellent ○ : Good

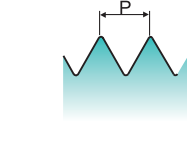
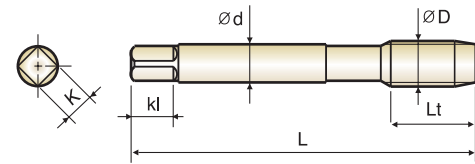
ISO Material Description	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

ISO Material Description	N										S						H				
	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						110	90	100			15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	200	280	250	350	320	400 Rm	1050 Rm	550	630			400	400	400	550	550
Recommended		◎				◎	◎	◎													

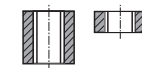
UNC/UNF HSS-E COMBO TAP NEW SIZES SPIRAL POINT for Multi-Purpose

Bright
Steam Oxide
TiCN

T4 SERIES
T4-S SERIES
T4-C SERIES



Hole type 3.0XD



HSS-E UNC UNF USCTI 302A 4P~5P Bright Steam Oxide TiCN

Unit : inch

* NEW SIZE

SIZE ØD	TPI	Limit	Overall Length L	Thread Length Lt	Shank Diameter d	Square Size K	Square Length kl	No. of Flute	EDP No.		
									Bright	Steam Oxide	TiCN
5/16 - 24 UNF	H5	H5	2.72	.669	.318	.238	.375	3	T4465	T4465S	T4465C
5/16 - 24 UNF	H6	H6	2.72	.669	.318	.238	.375	3	* T4466	* T4466S	* T4466C
5/16 - 24 UNF	H7	H7	2.72	.669	.318	.238	.375	3	* T4467	* T4467S	* T4467C
5/16 - 24 UNF	H11	H11	2.72	.669	.318	.238	.375	3	* T446A	* T446AS	* T446AC
3/8 - 16 UNC	H3	H3	2.94	.748	.381	.286	.438	3	T4483	T4483S	T4483C
3/8 - 16 UNC	H5	H5	2.94	.748	.381	.286	.438	3	T4485	T4485S	T4485C
3/8 - 16 UNC	H7	H7	2.94	.748	.381	.286	.438	3	* T4487	* T4487S	* T4487C
3/8 - 16 UNC	H11	H11	2.94	.748	.381	.286	.438	3	* T448A	* T448AS	* T448AC
3/8 - 24 UNF	H2	H2	2.94	.748	.381	.286	.438	3	* T4502	* T4502S	* T4502C
3/8 - 24 UNF	H3	H3	2.94	.748	.381	.286	.438	3	T4503	T4503S	T4503C
3/8 - 24 UNF	H4	H4	2.94	.748	.381	.286	.438	3	T4504	T4504S	T4504C
3/8 - 24 UNF	H5	H5	2.94	.748	.381	.286	.438	3	* T4505	* T4505S	* T4505C
3/8 - 24 UNF	H6	H6	2.94	.748	.381	.286	.438	3	* T4506	* T4506S	* T4506C
3/8 - 24 UNF	H7	H7	2.94	.748	.381	.286	.438	3	* T4507	* T4507S	* T4507C
3/8 - 24 UNF	H11	H11	2.94	.748	.381	.286	.438	3	* T450A	* T450AS	* T450AC
7/16 - 14 UNC	H3	H3	3.16	.866	.323	.242	.406	3	T4523	T4523S	T4523C
7/16 - 14 UNC	H5	H5	3.16	.866	.323	.242	.406	3	T4525	T4525S	T4525C
7/16 - 14 UNC	H7	H7	3.16	.866	.323	.242	.406	3	* T4527	* T4527S	* T4527C
7/16 - 14 UNC	H11	H11	3.16	.866	.323	.242	.406	3	* T452A	* T452AS	* T452AC
7/16 - 20 UNF	H3	H3	3.16	.866	.323	.242	.406	3	T4543	T4543S	T4543C
7/16 - 20 UNF	H5	H5	3.16	.866	.323	.242	.406	3	T4545	T4545S	T4545C
7/16 - 20 UNF	H7	H7	3.16	.866	.323	.242	.406	3	* T4547	* T4547S	* T4547C
7/16 - 20 UNF	H11	H11	3.16	.866	.323	.242	.406	3	* T454A	* T454AS	* T454AC
1/2 - 13 UNC	H3	H3	3.38	.984	.367	.275	.438	3	* T4563	* T4563S	* T4563C
1/2 - 13 UNC	H5	H5	3.38	.984	.367	.275	.438	3	T4565	T4565S	T4565C
1/2 - 13 UNC	H7	H7	3.38	.984	.367	.275	.438	3	* T4567	* T4567S	* T4567C
1/2 - 13 UNC	H11	H11	3.38	.984	.367	.275	.438	3	* T456A	* T456AS	* T456AC
1/2 - 20 UNF	H2	H2	3.38	.984	.367	.275	.438	3	* T4582	* T4582S	* T4582C

▶ NEXT PAGE

◎ : Excellent ○ : Good

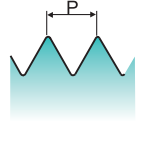
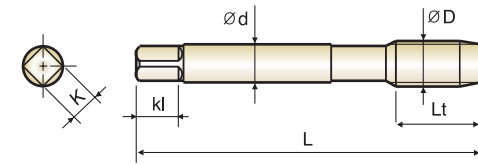
ISO Material Description	P										M						K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel			Grey cast iron			Nodular cast iron			Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21			
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230			
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎			

ISO Material Description	N										S						H				
	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		◎				◎	◎	◎													

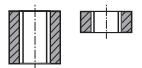
UNC/UNF HSS-E COMBO TAP NEW SIZES SPIRAL POINT for Multi-Purpose

Bright
Steam Oxide
TiCN

T4 SERIES
T4-S SERIES
T4-C SERIES



Hole type 3.0XD



HSS-E UNC UNF USCTI 302A 4P~5P Bright Steam Oxide TiCN

Unit : inch

* NEW SIZE

SIZE ØD	TPI	Limit	Overall Length L	Thread Length Lt	Shank Diameter d	Square Size K	Square Length kl	No. of Flute	EDP No.		
									Bright	Steam Oxide	TiCN
1/2 - 20 UNF	H3	H3	3.38	.984	.367	.275	.438	3	* T4583	* T4583S	* T4583C
1/2 - 20 UNF	H5	H5	3.38	.984	.367	.275	.438	3	T4585	T4585S	T4585C
1/2 - 20 UNF	H7	H7	3.38	.984	.367	.275	.438	3	* T4587	* T4587S	* T4587C
1/2 - 20 UNF	H11	H11	3.38	.984	.367	.275	.438	3	* T458A	* T458AS	* T458AC
9/16 - 12 UNC	H3	H3	3.59	.984	.429	.322	.500	3	* T4603	* T4603S	* T4603C
9/16 - 12 UNC	H5	H5	3.59	.984	.429	.322	.500	3	T4605	T4605S	T4605C
9/16 - 18 UNF	H3	H3	3.59	.984	.429	.322	.500	3	* T4623	* T4623S	* T4623C
9/16 - 18 UNF	H5	H5	3.59	.984	.429	.322	.500	3	T4625	T4625S	T4625C
5/8 - 11 UNC	H3	H3	3.81	1.083	.480	.360	.562	3	* T4643	* T4643S	* T4643C
5/8 - 11 UNC	H5	H5	3.81	1.083	.480	.360	.562	3	T4645	T4645S	T4645C
5/8 - 18 UNF	H3	H3	3.81	1.083	.480	.360	.562	3	* T4663	* T4663S	* T4663C
5/8 - 18 UNF	H5	H5	3.81	1.083	.480	.360	.562	3	T4665	T4665S	T4665C
5/8 - 18 UNF	H7	H7	3.81	1.083	.480	.360	.562	3	* T4667	* T4667S	* T4667C
3/4 - 10 UNC	H3	H3	4.25	1.201	.590	.442	.688	3	* T4703	* T4703S	* T4703C
3/4 - 10 UNC	H5	H5	4.25	1.201	.590	.442	.688	3	T4705	T4705S	T4705C
3/4 - 16 UNF	H3	H3	4.25	1.201	.590	.442	.688	3	* T4723	* T4723S	* T4723C
3/4 - 16 UNF	H5	H5	4.25	1.201	.590	.442	.688	3	T4725	T4725S	T4725C
7/8 - 9 UNC	H5	H5	4.69	1.339	.697	.523	.750	3	* T4745	* T4745S	* T4745C
7/8 - 9 UNC	H6	H6	4.69	1.339	.697	.523	.750	3	T4746	T4746S	T4746C
7/8 - 14 UNF	H4	H4	4.69	1.339	.697	.523	.750	3	* T4764	* T4764S	* T4764C
7/8 - 14 UNF	H6	H6	4.69	1.339	.697	.523	.750	3	T4766	T4766S	T4766C
1" - 8 UNC	H4	H4	5.13	1.496	.800	.600	.812	3	* T4784	* T4784S	* T4784C
1" - 8 UNC	H6	H6	5.13	1.496	.800	.600	.812	3	T4786	T4786S	T4786C
1" - 12 UNF	H4	H4	5.13	1.496	.800	.600	.812	3	* T4804	* T4804S	* T4804C
1" - 12 UNF	H6	H6	5.13	1.496	.800	.600	.812	3	T4806	T4806S	T4806C
1_1/8 - 7 UNC	H6	H6	5.44	1.535	.896	.672	.880	4	* T4826	* T4826S	* T4826C
1_1/8 - 8 UN	H6	H6	5.44	1.535	.896	.672	.880	4	* T4836	* T4836S	* T4836C
1_1/8 - 12 UNF	H5	H5	5.44	1.535	.896	.672	.880	4	* T4845	* T4845S	* T4845C

▶ NEXT PAGE

◎ : Excellent ○ : Good

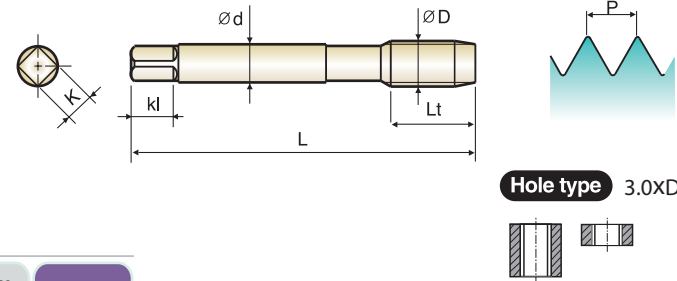
ISO Material Description	P										M						K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel			Grey cast iron			Nodular cast iron			Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21			
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230			
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎			

ISO Material Description	N										S						H				
	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		◎				◎	◎	◎													

UNC/UNF HSS-E COMBO TAP NEW SIZES SPIRAL POINT for Multi-Purpose

Bright
Steam Oxide
TiCN

T4 SERIES
T4-S SERIES
T4-C SERIES



HSS-E UNC UNF USCTI 302A 4P~5P Bright Steam Oxide TiCN

Unit : inch * (NEW SIZE)

SIZE ØD	TPI	Limit	Overall Length L	Thread Length Lt	Shank Diameter d	Square Size K	Square Length kl	No. of Flute	EDP No.		
									Bright	Steam Oxide	TiCN
1_1/4 - 7 UNC	H6	5.75	1.535	1.021	.766	1.000	4	* T4866	* T4866S	* T4866C	
1_1/4 - 8 UN	H6	5.75	1.535	1.021	.766	1.000	4	* T4876	* T4876S	* T4876C	
1_1/4 - 12 UNF	H5	5.75	1.535	1.021	.766	1.000	4	* T4885	* T4885S	* T4885C	
1_3/8 - 6 UNC	H6	6.06	1.791	1.108	.831	1.060	4	* T4906	* T4906S	* T4906C	
1_3/8 - 8 UN	H6	6.06	1.791	1.108	.831	1.060	4	* T4916	* T4916S	* T4916C	
1_3/8 - 12 UNF	H5	6.06	1.791	1.108	.831	1.060	4	* T4925	* T4925S	* T4925C	
1_1/2 - 6 UNC	H6	6.38	1.791	1.233	.925	1.130	4	* T4946	* T4946S	* T4946C	
1_1/2 - 8 UN	H6	6.38	1.791	1.233	.925	1.130	4	* T4956	* T4956S	* T4956C	
1_1/2 - 12 UNF	H5	6.38	1.791	1.233	.925	1.130	4	* T4965	* T4965S	* T4965C	

- ▶ Coating (TiN, TiAlN or Hardslick) is available on your request.
- ▶ Coating Codes for Combo Tap
Bright Finish No. + N (TiN), F (TiAlN), H (Hardslick)
- ▶ Steam Oxide is not recommended for Aluminum and Aluminum alloys.

◎ : Excellent ○ : Good

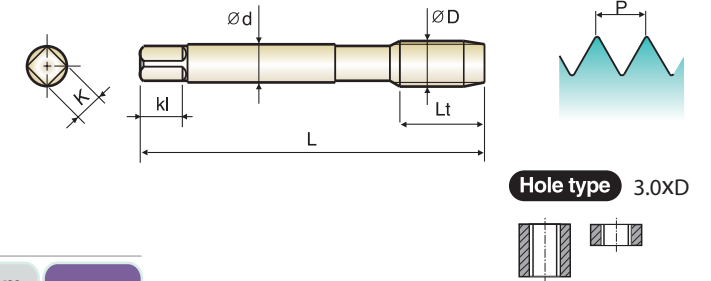
ISO Material Description	P										M			K							
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel			Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	30	180	29	32	38	15	35	15	23	10	10	26	3	25	10	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

ISO Material Description	N										S						H				
	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						110	90	100			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		◎				◎	◎	◎													

M/MF HSS-E COMBO TAP NEW SIZES SPIRAL POINT for Multi-Purpose

Bright
Steam Oxide
TiCN

T3 SERIES
T3-S SERIES
T3-C SERIES



HSS-E M/MF USCTI 302A 4P~5P Bright Steam Oxide TiCN

Unit : inch * (NEW SIZE)

SIZE ØD	PITCH P	Limit	Overall Length L	Thread Length Lt	Shank Diameter d	Square Size K	Square Length kl	No. of Flute	EDP No.		
									Bright	Steam Oxide	TiCN
M3 x 0.5	D3	1.94	.374	.141	.110	.188	3	T3203	T3203S	T3203C	
M3 x 0.5	D11	1.94	.374	.141	.110	.188	3	* T320A	* T320AS	* T320AC	
M3.5 x 0.6	D4	2.00	.413	.141	.110	.188	3	T322A	T322AS	T322AC	
M3.5 x 0.6	D11	2.00	.413	.141	.110	.188	3	* T322A	* T322AS	* T322AC	
M4 x 0.7	D4	2.13	.453	.168	.131	.250	3	T324A	T324AS	T324AC	
M4 x 0.7	D11	2.13	.453	.168	.131	.250	3	* T324A	* T324AS	* T324AC	
M5 x 0.8	D4	2.38	.531	.194	.152	.250	3	T328A	T328AS	T328AC	
M5 x 0.8	D11	2.38	.531	.194	.152	.250	3	* T328A	* T328AS	* T328AC	
M6 x 1.0	D5	2.50	.591	.255	.191	.312	3	T3315	T3315S	T3315C	
M6 x 1.0	D11	2.50	.591	.255	.191	.312	3	* T331A	* T331AS	* T331AC	
M7 x 1.0	D5	2.72	.669	.318	.238	.375	3	T3345	T3345S	T3345C	
M7 x 1.0	D11	2.72	.669	.318	.238	.375	3	* T334A	* T334AS	* T334AC	
M8 x 1.25	D5	2.72	.669	.318	.238	.375	3	T3365	T3365S	T3365C	
M8 x 1.25	D11	2.72	.669	.318	.238	.375	3	* T336A	* T336AS	* T336AC	
M8 x 1.0	D5	2.72	.669	.318	.238	.375	3	T3375	T3375S	T3375C	
M8 x 1.0	D11	2.72	.669	.318	.238	.375	3	* T337A	* T337AS	* T337AC	
M10 x 1.5	D6	2.94	.748	.381	.286	.438	3	T3426	T3426S	T3426C	
M10 x 1.5	D11	2.94	.748	.381	.286	.438	3	* T342A	* T342AS	* T342AC	
M10 x 1.25	D5	2.94	.748	.381	.286	.438	3	T3435	T3435S	T3435C	
M10 x 1.25	D11	2.94	.748	.381	.286	.438	3	* T343A	* T343AS	* T343AC	
M10 x 1.0	D5	2.94	.748	.381	.286	.438	3	* T3445	* T3445S	* T3445C	
M10 x 1.0	D11	2.94	.748	.381	.286	.438	3	* T344A	* T344AS	* T344AC	
M12 x 1.75	D6	3.38	.984	.367	.275	.438	3	T3506	T3506S	T3506C	
M12 x 1.75	D11	3.38	.984	.367	.275	.438	3	* T350A	* T350AS	* T350AC	
M12 x 1.5	D6	3.38	.984	.367	.275	.438	3	* T3516	* T3516S	* T3516C	
M12 x 1.5	D11	3.38	.984	.367	.275	.438	3	* T351A	* T351AS	* T351AC	
M12 x 1.25	D5	3.38	.984	.367	.275	.438	3	T3525	T3525S	T3525C	
M12 x 1.25	D11	3.38	.984	.367	.275	.438	3	* T352A	* T352AS	* T352AC	

◎ : Excellent ○ : Good

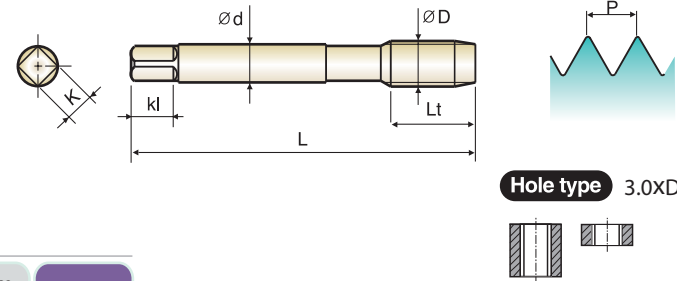
ISO Material Description	P										M			K							
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel			Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	30	180	29	32	38	15	35	15	23	10	10	26	3	25	10	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

ISO Material Description	N										S						H				
	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						110	90	100			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		◎				◎	◎	◎													

M/MF HSS-E COMBO TAP NEW SIZES SPIRAL POINT for Multi-Purpose

Bright
Steam Oxide
TiCN

T3 SERIES
T3-S SERIES
T3-C SERIES



HSS-E M/MF USCTI 302A 4P~5P Bright Steam Oxide TiCN

Unit : inch * **NEW SIZE**

SIZE	PITCH	Limit	Overall Length L	Thread Length Lt	Shank Diameter d	Square Size K	Square Length kl	No. of Flute	EDP No.		
									Bright	Steam Oxide	TiCN
M14 x 2.0	D7	D7	3.59	.984	.429	.322	.500	3	T3547	T3547S	T3547C
M14 x 1.5	D6	D6	3.59	.984	.429	.322	.500	3	T3556	T3556S	T3556C
M16 x 2.0	D7	D7	3.81	1.083	.480	.360	.562	3	T3607	T3607S	T3607C
M16 x 1.5	D6	D6	3.81	1.083	.480	.360	.562	3	T3616	T3616S	T3616C
M18 x 2.5	D7	D7	4.03	1.083	.542	.406	.625	3	T3657	T3657S	T3657C
M18 x 1.5	D6	D6	4.03	1.083	.542	.406	.625	3	T3676	T3676S	T3676C
M20 x 2.5	D7	D7	4.47	1.201	.652	.489	.688	3	T3707	T3707S	T3707C
M20 x 1.5	D6	D6	4.47	1.201	.652	.489	.688	3	T3726	T3726S	T3726C
M22 x 2.5	D7	D7	4.69	1.339	.697	.523	.750	3	T3747	T3747S	T3747C
M22 x 1.5	D6	D6	4.69	1.339	.697	.523	.750	3	T3766	T3766S	T3766C
M24 x 3.0	D8	D8	4.91	1.339	.760	.570	.750	3	T3788	T3788S	T3788C
M24 x 1.5	D6	D6	4.91	1.339	.760	.570	.750	3	* T3806	* T3806S	* T3806C
M27 x 3.0	D8	D8	5.13	1.496	.896	.672	.880	4	* T3868	* T3868S	* T3868C
M27 x 1.5	D6	D6	5.13	1.496	.896	.672	.880	4	* T3886	* T3886S	* T3886C
M30 x 3.5	D9	D9	5.44	1.535	1.021	.766	1.000	4	* T3949	* T3949S	* T3949C
M30 x 3.0	D9	D9	5.44	1.535	1.021	.766	1.000	4	* T3959	* T3959S	* T3959C
M30 x 1.5	D6	D6	5.44	1.535	1.021	.766	1.000	4	* T3976	* T3976S	* T3976C

- ▶ Coating(TiN, TiAlN or Hardslick) is available on your request.
- ▶ Coating Codes for Combo Tap
Bright Finish No. + N(TiN), F(TiAlN), H(Hardslick)
- ▶ Steam Oxide is not recommended for Aluminum and Aluminum alloys.

◎ : Excellent ○ : Good

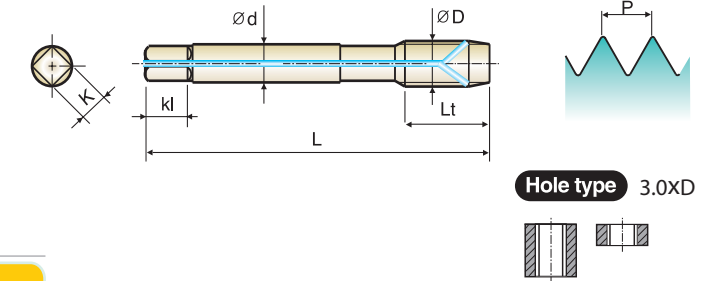
ISO Material Description	P									M			K							
	Non-alloy steel			Low alloy steel			High alloyed steel, and tool steel			Stainless steel			Grey cast iron	Nodular cast iron		Malleable cast iron				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	32	10	29	32	38	15	35	15	23	10	10	26	3	25	19	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

ISO Material Description	N						S						H								
	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		◎				◎	◎	◎													

UNC/UNF HSS-E COMBO TAP SPIRAL POINT for Multi-Purpose

Bright
TiN

TB SERIES
TB-N SERIES



HSS-E UNC UNF USCTI 302A 4P~5P Bright TiN

Unit : inch

SIZE	TPI	Limit	Overall Length L	Thread Length Lt	Shank Diameter d	Square Size K	Square Length kl	No. of Flute	EDP No.	
									Bright	TiN
1/4 - 20 UNC	H5	H5	2.50	.591	.255	.191	.312	3	TB405	TB405N
1/4 - 28 UNF	H4	H4	2.50	.591	.255	.191	.312	3	TB424	TB424N
5/16 - 18 UNC	H5	H5	2.72	.669	.318	.238	.375	3	TB445	TB445N
5/16 - 24 UNF	H4	H4	2.72	.669	.318	.238	.375	3	TB464	TB464N
3/8 - 16UNC	H5	H5	2.94	.748	.381	.286	.438	3	TB485	TB485N
3/8 - 24 UNF	H4	H4	2.94	.748	.381	.286	.438	3	TB504	TB504N
7/16 - 14 UNC	H5	H5	3.16	.866	.323	.242	.406	3	TB525	TB525N
7/16 - 20 UNF	H5	H5	3.16	.866	.323	.242	.406	3	TB545	TB545N
1/2 - 13 UNC	H5	H5	3.38	.984	.367	.275	.438	3	TB565	TB565N
1/2 - 20 UNF	H5	H5	3.38	.984	.367	.275	.438	3	TB585	TB585N
9/16 - 12 UNC	H5	H5	3.59	.984	.429	.322	.500	3	TB605	TB605N
9/16 - 18 UNF	H5	H5	3.59	.984	.429	.322	.500	3	TB625	TB625N
5/8 - 11 UNC	H5	H5	3.81	1.083	.480	.360	.562	3	TB645	TB645N
5/8 - 18 UNF	H5	H5	3.81	1.083	.480	.360	.562	3	TB665	TB665N
3/4 - 10 UNC	H5	H5	4.25	1.201	.590	.442	.688	3	TB705	TB705N
3/4 - 16 UNF	H5	H5	4.25	1.201	.590	.442	.688	3	TB725	TB725N
7/8 - 9 UNC	H6	H6	4.69	1.339	.697	.523	.750	3	TB746	TB746N
7/8 - 14 UNF	H6	H6	4.69	1.339	.697	.523	.750	3	TB766	TB766N
1" - 8 UNC	H6	H6	5.13	1.496	.800	.600	.812	3	TB786	TB786N
1" - 12 UNF	H6	H6	5.13	1.496	.800	.600	.812	3	TB806	TB806N

- ▶ Coating(TiCN, TiAlN or Hardslick) or Surface Treatment(Steam Oxide) is available on your request.
- ▶ Coating Codes for Combo Tap
Bright Finish No. + N(TiN), F(TiAlN), H(Hardslick), S(Steam Oxide)

◎ : Excellent ○ : Good

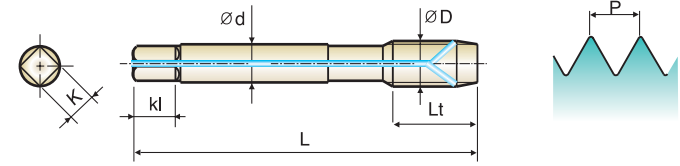
ISO Material Description	P									M			K							
	Non-alloy steel			Low alloy steel			High alloyed steel, and tool steel			Stainless steel			Grey cast iron	Nodular cast iron		Malleable cast iron				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	32	10	29	32	38	15	35	15	23	10	10	26	3	25	19	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

ISO Material Description	N						S						H								
	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		◎				◎	◎	◎													

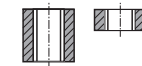
M HSS-E COMBO TAP SPIRAL POINT for Multi-Purpose

Bright
TiN **TH** SERIES
TH-N SERIES

with Internal Coolant



Hole type 3.0XD



HSS-E M USCTI 302A 4P ~ 5P Bright TiN

Unit : inch

SIZE	PITCH	Limit	Overall Length	Thread Length	Shank Diameter	Square Size	Square Length	No. of Flute	EDP No.	
									Bright	TiN
ØD	P		L	Lt	d	K	kl			
M6	x 1.0	D5	2.50	.591	.255	.191	.312	3	TH315	TH315N
M8	x 1.25	D5	2.72	.669	.318	.238	.375	3	TH365	TH365N
M10	x 1.5	D6	2.94	.748	.381	.286	.438	3	TH426	TH426N
M12	x 1.75	D6	3.38	.984	.367	.275	.438	3	TH506	TH506N
M14	x 2.0	D7	3.59	.984	.429	.322	.500	3	TH547	TH547N
M16	x 2.0	D7	3.81	1.083	.480	.360	.562	3	TH607	TH607N
M18	x 2.5	D7	4.03	1.083	.542	.406	.625	3	TH657	TH657N
M20	x 2.5	D7	4.47	1.201	.652	.489	.688	3	TH707	TH707N

- ▶ Coating (TiCN, TiAlN or Hardslick) or Surface Treatment (Steam Oxide) is available on your request.
- ▶ Coating Codes for Combo Tap
Bright Finish No. + C (TiCN), F (TiAlN), H (Hardslick), S (Steam Oxide)

◎ : Excellent ○ : Good

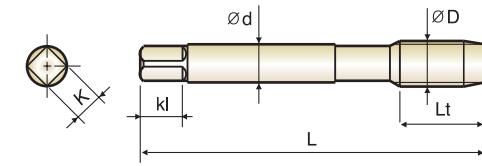
ISO	P										M			K											
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel			Stainless steel			Grey cast iron			Nodular cast iron			Malleable cast iron		
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	130	21	21	22	23	24	25
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	21	22	23	24	25
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

ISO	N										S						H							
	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			
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
HRc	15	30	25	38	34	200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550	630	400	550	550	550	400	550	550
HB	60	100	75	90	130	110	90	100																
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

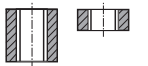
UNC/UNF HSS-E COMBO TAP NEW SIZES SPIRAL POINT for Multi-Purpose

Steam Oxide
TiCN **TC-S** SERIES
TC-C SERIES

DIN Length-ANSI Shank



Hole type 3.0XD



HSS-E UNC UNF 4P ~ 5P Steam Oxide TiCN

Unit : inch

SIZE	TPI	Limit	Overall Length	Thread Length	Shank Diameter	Square Size	Square Length	No. of Flute	EDP No.	
									Steam Oxide	TiCN
ØD			L	Lt	d	K	kl			
#2	- 56 UNC	H2	1.77	.256	.141	.110	.188	2	* TC082S	* TC082C
#3	- 48 UNC	H2	1.97	.295	.141	.110	.188	2	* TC122S	* TC122C
#4	- 40 UNC	H2	2.21	.335	.141	.110	.188	2	TC162S	TC162C
#4	- 48 UNF	H2	2.21	.335	.141	.110	.188	2	* TC182S	* TC182C
#5	- 40 UNC	H2	2.21	.374	.141	.110	.188	3	TC202S	TC202C
#6	- 32 UNC	H3	2.21	.413	.141	.110	.188	3	TC243S	TC243C
#6	- 40 UNF	H2	2.21	.413	.141	.110	.188	3	* TC262S	* TC262C
#8	- 32 UNC	H3	2.48	.453	.168	.131	.250	3	TC283S	TC283C
#10	- 24 UNC	H3	2.76	.531	.194	.152	.250	3	TC323S	TC323C
#10	- 32 UNF	H3	2.76	.531	.194	.152	.250	3	TC343S	TC343C
#12	- 24 UNC	H3	3.15	.571	.220	.165	.281	3	TC363S	TC363C
#12	- 28 UNF	H3	3.15	.571	.220	.165	.281	3	TC383S	TC383C
1/4	- 20 UNC	H5	3.15	.591	.255	.191	.312	3	TC405S	TC405C
1/4	- 28 UNF	H4	3.15	.591	.255	.191	.312	3	TC424S	TC424C
5/16	- 18 UNC	H5	3.54	.669	.318	.238	.375	3	TC445S	TC445C
5/16	- 24 UNF	H4	3.54	.669	.318	.238	.375	3	TC464S	TC464C
3/8	- 16 UNC	H5	3.94	.748	.381	.286	.438	3	TC485S	TC485C
3/8	- 24 UNF	H4	3.94	.748	.381	.286	.438	3	TC504S	TC504C
7/16	- 14 UNC	H5	3.94	.866	.323	.242	.406	3	TC525S	TC525C
7/16	- 20 UNF	H5	3.94	.866	.323	.242	.406	3	TC545S	TC545C
1/2	- 13 UNC	H5	4.33	.984	.367	.275	.438	3	TC565S	TC565C
1/2	- 20 UNF	H5	3.94	.984	.367	.275	.438	3	TC585S	TC585C
9/16	- 12 UNC	H5	4.33	.984	.429	.322	.500	3	TC605S	TC605C
9/16	- 18 UNF	H5	3.94	.984	.429	.322	.500	3	TC625S	TC625C
5/8	- 11 UNC	H5	4.33	1.083	.480	.360	.562	3	TC645S	TC645C
5/8	- 18 UNF	H5	3.94	1.083	.480	.360	.562	3	TC665S	TC665C
3/4	- 10 UNC	H5	4.92	1.201	.590	.442	.688	3	TC705S	TC705C
3/4	- 16 UNF	H5	4.33	1.201	.590	.442	.688	3	TC725S	TC725C
7/8	- 9 UNC	H6	5.51	1.339	.697	.523	.750	3	TC746S	TC746C
7/8	- 14 UNF	H6	4.92	1.339	.697	.523	.750	3	TC766S	TC766C
1"	- 8 UNC	H6	6.30	1.496	.800	.600	.812	3	TC786S	TC786C
1"	- 12 UNF	H6	5.51	1.496	.800	.600	.812	3	TC806S	TC806C

* NEW SIZE

- ▶ Steam Oxide is not recommended for Aluminum and Aluminum alloys.

◎ : Excellent ○ : Good

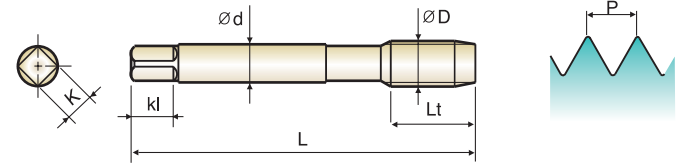
ISO	P										M			K											
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel			Stainless steel			Grey cast iron			Nodular cast iron			Malleable cast iron		
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	130	21	21	22	23	24	25
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	21	22	23	24	25
Recommended	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

ISO	N										S						H							
	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			
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
HRc	15	30	25	38	34	200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550	630	400	550	550	550	400	550	550
HB	60	100	75	90	130	110	90	100																
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

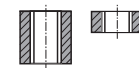
M/MF HSS-E COMBO TAP NEW SIZES SPIRAL POINT for Multi-Purpose

Steam Oxide
TiCN **TK-S SERIES**
TK-C SERIES

DIN Length-ANSI Shank



Hole type 3.0XD



HSS-E M/MF 4P~5P Steam Oxide TiCN

Unit : inch

* (NEW SIZE)

SIZE	PITCH	Limit	Overall Length	Thread Length	Shank Diameter	Square Size	Square Length	No. of Flute	EDP No.	
									Steam Oxide	TiCN
ØD	P		L	Lt	d	K	kl			
M3	x 0.5	D3	2.21	.374	.141	.110	.188	3	TK203S	TK203C
M3.5	x 0.6	D4	2.21	.413	.141	.110	.188	3	TK224S	TK224C
M4	x 0.7	D4	2.48	.453	.168	.131	.250	3	TK244S	TK244C
M5	x 0.8	D4	2.76	.531	.194	.152	.250	3	TK284S	TK284C
M6	x 1	D5	3.15	.591	.255	.191	.312	3	TK315S	TK315C
M7	x 1	D5	3.15	.669	.318	.238	.375	3	* TK345S	* TK345C
M8	x 1.25	D5	3.54	.669	.318	.238	.375	3	TK365S	TK365C
M8	x 1	D5	3.54	.669	.318	.238	.375	3	* TK375S	* TK375C
M10	x 1.5	D6	3.94	.748	.381	.286	.438	3	TK426S	TK426C
M10	x 1.25	D5	3.94	.748	.381	.286	.438	3	TK435S	TK435C
M12	x 1.75	D6	4.33	.984	.367	.275	.438	3	TK506S	TK506C
M12	x 1.5	D6	3.94	.984	.367	.275	.438	3	* TK516S	* TK516C
M12	x 1.25	D5	3.94	.984	.367	.275	.438	3	TK525S	TK525C
M14	x 2	D7	4.33	.984	.429	.322	.500	3	TK547S	TK547C
M14	x 1.5	D6	3.94	.984	.429	.322	.500	3	TK556S	TK556C
M16	x 2	D7	4.33	1.083	.480	.360	.562	3	TK607S	TK607C
M16	x 1.5	D6	3.94	1.083	.480	.360	.562	3	TK616S	TK616C
M18	x 2.5	D7	4.92	1.083	.542	.406	.625	3	TK657S	TK657C
M18	x 1.5	D6	4.33	1.083	.542	.406	.625	3	TK676S	TK676C
M20	x 2.5	D7	4.92	1.201	.652	.489	.688	3	* TK707S	* TK707C
M20	x 1.5	D6	5.51	1.201	.652	.489	.688	3	* TK726S	* TK726C

► Steam Oxide is not recommended for Aluminum and Aluminum alloys.

COMBO SPIRAL FLUTE TAP SETS



Series	Series	Standard	Surface Treatment	Size	Q'ty
T2836SET8	T2	UNC/F	Bright	1/4-20, 1/4-28, 5/16-18, 5-16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20	8 pcs
TG836SET8	T2-C	UNC/F	TiCN	1/4-20, 1/4-28, 5/16-18, 5-16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20	8 pcs
T2836SET8-1	T2	UNC/F	Bright	1/4-20, 1/4-28, 5/16-18, 5-16-24, 3/8-16, 3/8-24, 1/2-13, 1/2-20	8 pcs
TG836SET8-1	T2-C	UNC/F	TiCN	1/4-20, 1/4-28, 5/16-18, 5-16-24, 3/8-16, 3/8-24, 1/2-13, 1/2-20	8 pcs
T2805SET7	T5	M/MF	Bright	M3, M4, M5, M6, M8, M10, M12	7 pcs
TG805SET7	T5-C	M/MF	TiCN	M3, M4, M5, M6, M8, M10, M12	7 pcs

* Hardslick Coated Set available upon request

◎ : Excellent ○ : Good

ISO Material Description	P										M				K						
	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 Material Description	N										S						H				
	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			◎			◎	◎	◎													

TROUBLE SHOOTING GUIDE

Specific Problem	Cause	Solution
Dimensional Accuracy		
Oversize Pitch Diameter	Incorrect Tap	<ol style="list-style-type: none"> 1. Use proper limits of taps 2. Use longer chamfered taps
	Chip Packing	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 1. Apply coated tap: HardSlick or Chrome 2. Use proper coolant/concentration 3. Reduce tapping speed 4. Use proper cutting angle in accordance with material being tapped 5. Use large hole size
	Operating Conditions	<ol style="list-style-type: none"> 1. Check tapping speed 2. Be sure of correct to tool alignment 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 1. Avoid chip packing in the flutes or on the bottom of the hole 2. Use spiral pointed or spiral fluted taps or fluteless taps 3. Apply correct surface treatment such as Hardslick or bright
	Excessive Tapping Torque	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 1. Reduce tapping speed 2. Apply proper cutting lubricants 3. Avoid work hardened hole 4. Use larger hole size
	Tool Condition	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 1. Use spiral pointed or spiral fluted taps 2. Use larger drill size
Chattering on Tapped Thread	Tool Free Cutting	<ol style="list-style-type: none"> 1. Reduce cutting angle 2. Reduce amount of thread relief
	Tool Condition	<ol style="list-style-type: none"> 1. Avoid too narrow land width 2. Do not grind the bottom of the flute



UNC/UNF RECOMMENDED TAP DRILL SIZE

- UNIFIED THREAD

Size	Threads Per Inch				Minor Diameter			Tap Drill Diameter (Cutting Tap)				
	UNC	UNF	UNEF	UN	Min. 2B&3B	Max. 2B	Max. 3B	80% Thread	75% Thread	70% Thread	65% Thread	60% Thread
#0	-	80	-	-	.0465	.0514	.0514	.0470	.0478	.0486	.0494	.0503
#1	64	-	-	-	.0561	.0623	.0623	.0568	.0578	.0588	.0598	.0608
	-	72	-	-	.0580	.0635	.0635	.0586	.0595	.0604	.0613	.0622
#2	56	-	-	-	.0667	.0737	.0737	.0674	.0686	.0698	.0709	.0721
	-	64	-	-	.0691	.0753	.0753	.0698	.0708	.0718	.0728	.0738
#3	48	-	-	-	.0764	.0845	.0845	.0774	.0787	.0801	.0814	.0828
	-	56	-	-	.0797	.0865	.0865	.0804	.0816	.0828	.0839	.0851
#4	40	-	-	-	.0849	.0939	.0939	.0860	.0876	.0893	.0909	.0925
	-	48	-	-	.0894	.0968	.0968	.0904	.0917	.0931	.0944	.0958
#5	40	-	-	-	.0979	.1062	.1062	.0990	.1006	.1023	.1039	.1055
	-	44	-	-	.1004	.1079	.1079	.1014	.1029	.1043	.1058	.1073
#6	32	-	-	-	.1040	.1140	.1140	.1055	.1076	.1096	.1116	.1136
	-	40	-	-	.1110	.1190	.1186	.1120	.1136	.1153	.1169	.1185
#8	32	-	-	-	.1300	.1390	.1389	.1315	.1336	.1356	.1376	.1396
	-	36	-	-	.1340	.1420	.1416	.1351	.1369	.1387	.1405	.1424
#10	24	-	-	-	.1450	.1560	.1555	.1467	.1494	.1521	.1548	.1575
	-	32	-	-	.1560	.1640	.1641	.1575	.1596	.1616	.1636	.1656
#12	24	-	-	-	.1710	.1810	.1807	.1727	.1754	.1781	.1808	.1835
	-	28	-	-	.1770	.1860	.1857	.1789	.1812	.1835	.1858	.1882
	-	-	32	-	.1820	.1900	.1895	.1835	.1856	.1876	.1896	.1916
1/4	20	-	-	-	.1960	.2070	.2067	.1980	.2013	.2045	.2078	.2110
	-	28	-	-	.2110	.2200	.2190	.2129	.2152	.2175	.2198	.2222
	-	-	32	-	.2160	.2240	.2229	.2175	.2196	.2216	.2236	.2256
5/16	18	-	-	-	.2520	.2650	.2630	.2548	.2584	.2620	.2656	.2692
	-	-	-	20	.2580	.2700	.2680	.2605	.2638	.2670	.2703	.2735
	-	24	-	-	.2670	.2770	.2754	.2692	.2719	.2746	.2773	.2800
	-	-	-	28	.2740	.2820	.2807	.2754	.2777	.2800	.2823	.2847
	-	-	32	-	.2790	.2860	.2847	.2800	.2821	.2841	.2861	.2881
3/8	16	-	-	-	.3070	.3210	.3182	.3101	.3141	.3182	.3222	.3263
	-	-	-	20	.3210	.3320	.3297	.3230	.3263	.3295	.3328	.3360
	-	24	-	-	.3300	.3400	.3372	.3317	.3344	.3371	.3398	.3425
	-	-	-	28	.3360	.3450	.3426	.3379	.3402	.3425	.3448	.3472
	-	-	32	-	.3410	.3490	.3469	.3425	.3446	.3466	.3486	.3506
7/16	14	-	-	-	.3600	.3760	.3717	.3633	.3679	.3726	.3772	.3818
	-	-	-	16	.3700	.3840	.3800	.3726	.3766	.3807	.3847	.3888
	-	20	-	-	.3830	.3950	.3916	.3855	.3888	.3920	.3953	.3985
	-	-	28	-	.3990	.4070	.4051	.4004	.4027	.4050	.4073	.4097
	-	-	-	32	.4040	.4110	.4094	.4050	.4071	.4091	.4111	.4131
1/2	13	-	-	-	.4170	.4340	.4284	.4201	.4251	.4301	.4351	.4400
	-	-	-	16	.4320	.4460	.4419	.4351	.4391	.4432	.4472	.4513
	-	20	-	-	.4460	.4570	.4537	.4480	.4513	.4545	.4578	.4610
	-	-	28	-	.4610	.4700	.4676	.4629	.4652	.4675	.4698	.4722
	-	-	-	32	.4660	.4740	.4719	.4675	.4696	.4716	.4736	.4756
9/16	12	-	-	-	.4720	.4900	.4843	.4759	.4813	.4867	.4921	.4976

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UNC/UNF RECOMMENDED TAP DRILL SIZE

- UNIFIED THREAD

Size	Threads Per Inch				Minor Diameter			Tap Drill Diameter (Cutting Tap)				
	UNC	UNF	UNEF	UN	Min. 2B&3B	Max. 2B	Max. 3B	80% Thread	75% Thread	70% Thread	65% Thread	60% Thread
	-	-	-	16	.4950	.5090	.5040	.4976	.5016	.5057	.5097	.5138
	-	18	-	-	.5020	.5150	.5106	.5048	.5084	.5120	.5156	.5192
	-	-	-	20	.5080	.5200	.5162	.5105	.5138	.5170	.5203	.5235
	-	-	24	-	.5170	.5270	.5244	.5192	.5219	.5246	.5273	.5300
	-	-	-	28	.5240	.5320	.5301	.5254	.5277	.5300	.5323	.5347
	-	-	-	32	.5290	.5360	.5344	.5300	.5321	.5341	.5361	.5381
5/8	11	-	-	-	.5270	.5460	.5391	.5305	.5364	.5423	.5482	.5541
	-	-	-	12	.5350	.5530	.5463	.5384	.5438	.5492	.5546	.5601
	-	-	-	16	.5570	.5710	.5662	.5601	.5641	.5682	.5722	.5763
	-	18	-	-	.5650	.5780	.5730	.5673	.5709	.5745	.5781	.5817
	-	-	-	20	.5710	.5820	.5787	.5730	.5763	.5795	.5828	.5860
	-	-	24	-	.5800	.5900	.5869	.5817	.5844	.5871	.5898	.5925
	-	-	-	28	.5860	.5950	.5926	.5879	.5902	.5925	.5948	.5972
	-	-	-	32	.5910	.5980	.5969	.5925	.5946	.5966	.5986	.6006
11/16	-	-	-	12	.5970	.6150	.6085	.6009	.6063	.6117	.6171	.6226
	-	-	-	16	.6200	.6340	.6284	.6226	.6266	.6307	.6347	.6388
	-	-	-	20	.6330	.6450	.6412	.6355	.6388	.6420	.6453	.6485
	-	-	24	-	.6420	.6520	.6494	.6442	.6469	.6496	.6523	.6550
	-	-	-	28	.6490	.6570	.6551	.6504	.6527	.6550	.6573	.6597
	-	-	-	32	.6540	.6610	.6594	.6550	.6571	.6591	.6611	.6631
3/4	10	-	-	-	.6420	.6630	.6545	.6461	.6526	.6591	.6656	.6721
	-	-	-	12	.6600	.6780	.6707	.6634	.6688	.6742	.6796	.6851
	-	16	-	-	.6820	.6960	.6908	.6851	.6891	.6932	.6972	.7013
	-	-	20	-	.6960	.7070	.7037	.6980	.7013	.7045	.7078	.7110
	-	-	-	28	.7110	.7200	.7176	.7129	.7152	.7175	.7198	.7222
	-	-	-	32	.7160	.7240	.7219	.7175	.7196	.7216	.7236	.7256
13/16	-	-	-	12	.7220	.7400	.7329	.7259	.7313	.7367	.7421	.7476
	-	-	-	16	.7450	.7590	.7533	.7476	.7516	.7557	.7597	.7638
	-	-	20	-	.7580	.7700	.7662	.7605	.7638	.7670	.7703	.7735
	-	-	-	28	.7740	.7820	.7801	.7754	.7777	.7800	.7823	.7847
	-	-	-	32	.7790	.7860	.7844	.7800	.7821	.7841	.7861	.7881
7/8	9	-	-	-	.7550	.7780	.7681	.7595	.7668	.7740	.7812	.7884
	-	-	-	12	.7850	.8030	.7948	.7884	.7938	.7992	.8046	.8101
	-	14	-	-	.7980	.8140	.8068	.8008	.8054	.8101	.8147	.8193
	-	-	-	16	.8070	.8210	.8158	.8101	.8141	.8182	.8222	.8263
	-	-	20	-	.8210	.8320	.8287	.8230	.8263	.8295	.8328	.8360
	-	-	-	28	.8360	.8450	.8426	.8379	.8402	.8425	.8448	.8472
	-	-	-	32	.8410	.8490	.8469	.8425	.8446	.8466	.8486	.8506
15/16	-	-	-	12	.8470	.8650	.8575	.8509	.8563	.8617	.8671	.8726
	-	-	-	16	.8700	.8840	.8783	.8726	.8766	.8807	.8847	.8888
	-	-	20	-	.8830	.8950	.8912	.8855	.8888	.8920	.8953	.8985
	-	-	-	28	.8990	.9070	.9051	.9004	.9027	.9050	.9073	.9097
	-	-	-	32	.9040	.9110	.9094	.9050	.9071	.9091	.9111	.9131
1"	8	-	-	-	.8650	.8900	.8797	.8701	.8782	.8863	.8945	.9026

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UNC/UNF RECOMMENDED TAP DRILL SIZE

- UNIFIED THREAD

Size	Threads Per Inch				Minor Diameter			Tap Drill Diameter (Cutting Tap)				
	UNC	UNF	UNEF	UN	Min. 2B&3B	Max. 2B	Max. 3B	80% Thread	75% Thread	70% Thread	65% Thread	60% Thread
	-	12	-	-	.9100	.9280	.9198	.9134	.9188	.9242	.9296	.9351
	-	-	-	16	.9320	.9460	.9408	.9351	.9391	.9432	.9472	.9513
	-	-	20	-	.9460	.9570	.9537	.9480	.9513	.9545	.9578	.9610
	-	-	-	28	.9610	.9700	.9676	.9629	.9652	.9675	.9698	.9722
	-	-	-	32	.9660	.9740	.9719	.9675	.9696	.9716	.9736	.9756
1*1/16	-	-	-	8	.9270	.9520	.9422	.9326	.9407	.9488	.9570	.9651
	-	-	-	12	.9720	.9900	.9823	.9759	.9813	.9867	.9921	.9976
	-	-	-	16	.9950	1.0090	1.0033	.9976	1.0016	1.0057	1.0097	1.0138
	-	-	18	-	1.0020	1.0150	1.0105	1.0048	1.0084	1.0120	1.0156	1.0192
	-	-	-	20	1.0080	1.0200	1.0162	1.0105	1.0138	1.0170	1.0203	1.0235
	-	-	-	28	1.0240	1.0320	1.0301	1.0254	1.0277	1.0300	1.0323	1.0347
1*1/8	7	-	-	-	.9700	.9980	.9875	.9765	.9858	.9951	1.0044	1.0137
	-	-	-	8	.9900	1.0150	1.0047	.9951	1.0032	1.0113	1.0195	1.0276
	-	12	-	-	1.0350	1.0530	1.0448	1.0384	1.0438	1.0492	1.0546	1.0601
	-	-	-	16	1.0570	1.0710	1.0658	1.0601	1.0641	1.0682	1.0722	1.0763
	-	-	18	-	1.0650	1.0780	1.0730	1.0673	1.0709	1.0745	1.0781	1.0817
	-	-	-	20	1.0710	1.0820	1.0787	1.0730	1.0763	1.0795	1.0828	1.0860
	-	-	-	28	1.0860	1.0950	1.0926	1.0879	1.0902	1.0925	1.0948	1.0972
1*3/16	-	-	-	8	1.0520	1.0770	1.0672	1.0576	1.0657	1.0738	1.0820	1.0901
	-	-	-	12	1.0970	1.1150	1.1073	1.1009	1.1063	1.1117	1.1171	1.1226
	-	-	-	16	1.1200	1.1340	1.1283	1.1226	1.1266	1.1307	1.1347	1.1388
	-	-	18	-	1.1270	1.1400	1.1355	1.1298	1.1334	1.1370	1.1406	1.1442
	-	-	-	20	1.1330	1.1450	1.1412	1.1355	1.1388	1.1420	1.1453	1.1485
	-	-	-	28	1.1490	1.1570	1.1551	1.1504	1.1527	1.1550	1.1573	1.1597
1*1/4	7	-	-	-	1.0950	1.1230	1.1125	1.1015	1.1108	1.1201	1.1294	1.1387
	-	-	-	8	1.1150	1.1400	1.1297	1.1201	1.1282	1.1363	1.1445	1.1526
	-	12	-	-	1.1600	1.1780	1.1698	1.1634	1.1688	1.1742	1.1796	1.1851
	-	-	-	16	1.1820	1.1960	1.1908	1.1851	1.1891	1.1932	1.1972	1.2013
	-	-	18	-	1.1900	1.2030	1.1980	1.1923	1.1959	1.1995	1.2031	1.2067
	-	-	-	20	1.1960	1.2070	1.2037	1.1980	1.2013	1.2045	1.2078	1.2110
	-	-	-	28	1.2110	1.2200	1.2176	1.2129	1.2152	1.2175	1.2198	1.2222
1*5/16	-	-	-	8	1.1770	1.2020	1.1922	1.1826	1.1907	1.1988	1.2070	1.2151
	-	-	-	12	1.2220	1.2400	1.2323	1.2259	1.2313	1.2367	1.2421	1.2476
	-	-	-	16	1.2450	1.2590	1.2533	1.2476	1.2516	1.2557	1.2597	1.2638
	-	-	18	-	1.2520	1.2650	1.2605	1.2548	1.2584	1.2620	1.2656	1.2692
	-	-	-	20	1.2580	1.2700	1.2662	1.2605	1.2638	1.2670	1.2703	1.2735
	-	-	-	28	1.2740	1.2820	1.2801	1.2754	1.2777	1.2800	1.2823	1.2847
1*3/8	6	-	-	-	1.1950	1.2250	1.2146	1.2018	1.2126	1.2235	1.2343	1.2451
	-	-	-	8	1.2400	1.2650	1.2547	1.2451	1.2532	1.2613	1.2695	1.2776
	-	12	-	-	1.2580	1.3030	1.2948	1.2884	1.2938	1.2992	1.3046	1.3101
	-	-	-	16	1.3070	1.3210	1.3158	1.3101	1.3141	1.3182	1.3222	1.3263
	-	-	18	-	1.3150	1.3280	1.3230	1.3173	1.3209	1.3245	1.3281	1.3317
	-	-	-	20	1.3210	1.3320	1.3287	1.3230	1.3263	1.3295	1.3328	1.3360
	-	-	-	28	1.3360	1.3450	1.3426	1.3379	1.3402	1.3425	1.3448	1.3472

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UNC/UNF RECOMMENDED TAP DRILL SIZE

- UNIFIED THREAD

Size	Threads Per Inch				Minor Diameter			Tap Drill Diameter (Cutting Tap)				
	UNC	UNF	UNEF	UN	Min. 2B&3B	Max. 2B	Max. 3B	80% Thread	75% Thread	70% Thread	65% Thread	60% Thread
1*7/16	-	-	-	6	1.2570	1.2880	1.2771	1.2643	1.2751	1.2860	1.2968	1.3076
	-	-	-	8	1.3020	1.3270	1.3172	1.3076	1.3157	1.3238	1.3320	1.3401
	-	-	-	12	1.3470	1.3650	1.3573	1.3509	1.3563	1.3617	1.3671	1.3726
	-	-	-	16	1.3700	1.3840	1.3783	1.3726	1.3766	1.3807	1.3847	1.3888
	-	-	18	-	1.3770	1.3900	1.3855	1.3798	1.3834	1.3870	1.3906	1.3942
	-	-	-	20	1.3830	1.3950	1.3912	1.3855	1.3888	1.3920	1.3953	1.3985
	-	-	-	28	1.3990	1.4070	1.4051	1.4004	1.4027	1.4050	1.4073	1.4097
1*1/2	6	-	-	-	1.3200	1.3500	1.3396	1.3268	1.3376	1.3485	1.3593	1.3701
	-	-	-	8	1.3650	1.3900	1.3797	1.3701	1.3782	1.3863	1.3945	1.4026
	-	12	-	-	1.4100	1.4280	1.4198	1.4134	1.4188	1.4242	1.4296	1.4351
	-	-	-	16	1.4320	1.4460	1.4408	1.4351	1.4391	1.4432	1.4472	1.4513
	-	-	18	-	1.4400	1.4520	1.4480	1.4423	1.4459	1.4495	1.4531	1.4567
	-	-	-	20	1.4460	1.4570	1.4537	1.4480	1.4513	1.4545	1.4578	1.4610
	-	-	-	28	1.4610	1.4700	1.4676	1.4629	1.4652	1.4675	1.4698	1.4722
1*9/16	-	-	-	6	1.3820	1.4130	1.4021	1.3893	1.4001	1.4110	1.4218	1.4326
	-	-	-	8	1.4270	1.4520	1.4422	1.4326	1.4407	1.4488	1.4570	1.4651
	-	-	-	12	1.4720	1.4900	1.4823	1.4759	1.4813	1.4867	1.4921	1.4976
	-	-	-	16	1.4950	1.5090	1.5033	1.4976	1.5016	1.5057	1.5097	1.5138
	-	-	18	-	1.5020	1.5150	1.5105	1.5048	1.5084	1.5120	1.5156	1.5192
	-	-	-	20	1.5080	1.5200	1.5162	1.5105	1.5138	1.5170	1.5203	1.5235
1*5/8	-	-	-	6	1.4450	1.4750	1.4646	1.4518	1.4626	1.4735	1.4843	1.4951
	-	-	-	8	1.4900	1.5150	1.5047	1.4951	1.5032	1.5113	1.5195	1.5276
	-	-	-	12	1.5350	1.5530	1.5448	1.5384	1.5438	1.5492	1.5546	1.5601
	-	-	-	16	1.5570	1.5710	1.5658	1.5601	1.5641	1.5682	1.5722	1.5763
	-	-	18	-	1.5650	1.5780	1.5730	1.5673	1.5709	1.5745	1.5781	1.5817
	-	-	-	20	1.5710	1.5820	1.5787	1.5730	1.5763	1.5795	1.5828	1.5860
1*11/16	-	-	-	6	1.5070	1.5380	1.5271	1.5143	1.5251	1.5360	1.5468	1.5576
	-	-	-	8	1.5520	1.5770	1.5672	1.5576	1.5657	1.5738	1.5820	1.5901
	-	-	-	12	1.5970	1.6150	1.6073	1.6009	1.6063	1.6117	1.6171	1.6226
	-	-	-	16	1.6200	1.6340	1.6283	1.6226	1.6266	1.6307	1.6347	1.6388
	-	-	18	-	1.6270	1.6400	1.6355	1.6298	1.6334	1.6370	1.6406	1.6442
	-	-	-	20	1.6330	1.6450	1.6412	1.6355	1.6388	1.6420	1.6453	1.6485
1*3/4	5	-	-	-	1.5340	1.5680	1.5575	1.5422	1.5552	1.5681	1.5811	1.5941
	-	-	-	6	1.5700	1.6000	1.5896	1.5768	1.5876	1.5985	1.6093	1.6201
	-	-	-	8	1.6150	1.6400	1.6297	1.6201	1.6282	1.6363	1.6445	1.6526
	-	-	-	12	1.6600	1.6780	1.6698	1.6634	1.6688	1.6742	1.6796	1.6851
	-	-	-	16	1.6820	1.6960	1.6908	1.6851	1.6891	1.6932	1.6972	1.7013
	-	-	-	20	1.6960	1.7070	1.7037	1.6980	1.7013	1.7045	1.7078	1.7110
1*13/16	-	-	-	6	1.6320	1.6630	1.6521	1.6393	1.6501	1.6610	1.6718	1.6826
	-	-	-	8	1.6770	1.7020	1.6922	1.6826	1.6907	1.6988	1.7070	1.7151
	-	-	-	12	1.7220	1.7400	1.7323	1.7259	1.7313	1.7367	1.7421	1.7476
	-	-	-	16	1.7450	1.7590	1.7533	1.7476	1.7516	1.7557	1.7597	1.7638
	-	-	-	20	1.7580	1.7700	1.7662	1.7605	1.7638	1.7670	1.7703	1.7735
1*7/8	-	-	-	6	1.6950	1.7250	1.7146	1.7018	1.7126	1.7235	1.7343	1.7451

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UNC/UNF RECOMMENDED TAP DRILL SIZE - UNIFIED THREAD

Size	Threads Per Inch				Minor Diameter			Tap Drill Diameter (Cutting Tap)				
	UNC	UNF	UNEF	UN	Min. 2B&3B	Max. 2B	Max. 3B	80% Thread	75% Thread	70% Thread	65% Thread	60% Thread
-	-	-	-	8	1.7400	1.7650	1.7547	1.7451	1.7532	1.7613	1.7695	1.7776
-	-	-	-	12	1.7850	1.8030	1.7948	1.7884	1.7938	1.7992	1.8046	1.8101
-	-	-	-	16	1.8070	1.8210	1.8158	1.8101	1.8141	1.8182	1.8222	1.8263
-	-	-	-	20	1.8210	1.8320	1.8287	1.8230	1.8263	1.8295	1.8328	1.8360
1*15/16	-	-	-	6	1.7570	1.7880	1.7771	1.7643	1.7751	1.7860	1.7968	1.8076
-	-	-	-	8	1.8020	1.8270	1.8172	1.8076	1.8157	1.8238	1.8320	1.8401
-	-	-	-	12	1.8470	1.8650	1.8573	1.8509	1.8563	1.8617	1.8671	1.8726
-	-	-	-	16	1.8700	1.8840	1.8783	1.8726	1.8766	1.8807	1.8847	1.8888
-	-	-	-	20	1.8830	1.8950	1.8912	1.8855	1.8888	1.8920	1.8953	1.8985
2"	4 1/2	-	-	-	1.7590	1.7950	1.7861	1.7691	1.7835	1.7979	1.8124	1.8268
-	-	-	-	6	1.8200	1.8500	1.8396	1.8268	1.8376	1.8485	1.8593	1.8701
-	-	-	-	8	1.8650	1.8900	1.8797	1.8701	1.8782	1.8863	1.8945	1.9026
-	-	-	-	12	1.9100	1.9280	1.9198	1.9134	1.9188	1.9242	1.9296	1.9351
-	-	-	-	16	1.9320	1.9460	1.9408	1.9351	1.9391	1.9432	1.9472	1.9513
-	-	-	-	20	1.9460	1.9570	1.9537	1.9480	1.9513	1.9545	1.9578	1.9610
2*1/8	-	-	-	6	1.9450	1.9750	1.9646	1.9518	1.9626	1.9735	1.9843	1.9951
-	-	-	-	8	1.9900	2.0150	2.0047	1.9951	2.0032	2.0113	2.0195	2.0276
-	-	-	-	12	2.0350	2.0530	2.0448	2.0384	2.0438	2.0492	2.0546	2.0601
-	-	-	-	16	2.0570	2.0710	2.0658	2.0601	2.0641	2.0682	2.0722	2.0763
-	-	-	-	20	2.0710	2.0820	2.0787	2.0730	2.0763	2.0795	2.0828	2.0860
2*1/4	4 1/2	-	-	-	2.0090	2.0450	2.0361	2.0191	2.0335	2.0479	2.0624	2.0768
-	-	-	-	6	2.0700	2.1000	2.0896	2.0768	2.0876	2.0985	2.1093	2.1201
-	-	-	-	8	2.1150	2.1400	2.1297	2.1201	2.1282	2.1363	2.1445	2.1526
-	-	-	-	12	2.1600	2.1780	2.1698	2.1634	2.1688	2.1742	2.1796	2.1851
-	-	-	-	16	2.1820	2.1960	2.1908	2.1851	2.1891	2.1932	2.1972	2.2013
-	-	-	-	20	2.1960	2.2070	2.2037	2.1980	2.2013	2.2045	2.2078	2.2110
2*3/8	-	-	-	6	2.1950	2.2260	2.2146	2.2018	2.2126	2.2235	2.2343	2.2451
-	-	-	-	8	2.2400	2.2650	2.2547	2.2451	2.2532	2.2613	2.2695	2.2776
-	-	-	-	12	2.2850	2.3030	2.2948	2.2884	2.2938	2.2992	2.3046	2.3101
-	-	-	-	16	2.3070	2.3210	2.3158	2.3101	2.3141	2.3182	2.3222	2.3263
-	-	-	-	20	2.3210	2.3320	2.3287	2.3230	2.3263	2.3295	2.3328	2.3360
2*1/2	4	-	-	-	2.2290	2.2670	2.2594	2.2402	2.2564	2.2727	2.2889	2.3052
-	-	-	-	6	2.3200	2.3500	2.3396	2.3268	2.3376	2.3485	2.3593	2.3701
-	-	-	-	8	2.3650	2.3900	2.3797	2.3701	2.3782	2.3863	2.3945	2.4026
-	-	-	-	12	2.4100	2.4280	2.4198	2.4134	2.4188	2.4242	2.4296	2.4351
-	-	-	-	16	2.4320	2.4460	2.4408	2.4351	2.4391	2.4432	2.4472	2.4513
-	-	-	-	20	2.4460	2.4570	2.4537	2.4480	2.4513	2.4545	2.4578	2.4610



M/MF RECOMMENDED TAP DRILL SIZE - METRIC THREAD

Size	Pitch		Minor Diameter		Tap Drill Diameter (Cutting Tap)									
	M	MF	Min. 6H	Max. 6H	80% Thread		75% Thread		70% Thread		65% Thread		60% Thread	
					mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
M1	0.25	-	0.729	0.798	0.74	.0291	0.76	.0298	0.77	.0304	0.79	.0311	0.81	.0317
-	-	0.2	0.783	0.841	0.79	.0312	0.81	.0317	0.82	.0322	0.83	.0327	0.84	.0332
M1.1	0.25	-	0.829	0.898	0.84	.0331	0.86	.0337	0.87	.0344	0.89	.0350	0.91	.0356
-	-	0.2	0.883	0.941	0.89	.0351	0.91	.0356	0.92	.0361	0.93	.0367	0.94	.0372
M1.2	0.25	-	0.929	0.998	0.94	.0370	0.96	.0377	0.97	.0383	0.99	.0389	1.01	.0396
-	-	0.2	0.983	1.041	0.99	.0391	1.01	.0396	1.02	.0401	1.03	.0406	1.04	.0411
M1.4	0.3	-	1.075	1.159	1.09	.0428	1.11	.0436	1.13	.0444	1.15	.0451	1.17	.0459
-	-	0.2	1.183	1.241	1.19	.0469	1.21	.0474	1.22	.0480	1.23	.0485	1.24	.0490
M1.6	0.35	-	1.221	1.321	1.24	.0487	1.26	.0496	1.28	.0505	1.30	.0514	1.33	.0523
-	-	0.2	1.383	1.441	1.39	.0548	1.41	.0553	1.42	.0558	1.43	.0563	1.44	.0569
M1.7	0.35	-	1.321	1.421	1.34	.0526	1.36	.0535	1.38	.0544	1.40	.0553	1.43	.0562
-	-	0.3	1.375	1.459	1.39	.0547	1.41	.0554	1.43	.0562	1.45	.0570	1.47	.0577
-	-	0.25	1.429	1.498	1.44	.0567	1.46	.0573	1.47	.0580	1.49	.0586	1.51	.0593
-	-	0.2	1.483	1.541	1.49	.0587	1.51	.0593	1.52	.0598	1.53	.0603	1.54	.0608
M1.8	0.35	-	1.421	1.521	1.44	.0565	1.46	.0574	1.48	.0583	1.50	.0592	1.53	.0601
-	-	0.2	1.583	1.641	1.59	.0627	1.61	.0632	1.62	.0637	1.63	.0642	1.64	.0647
M2	0.4	-	1.567	1.679	1.58	.0624	1.61	.0634	1.64	.0644	1.66	.0654	1.69	.0665
-	-	0.25	1.729	1.798	1.74	.0685	1.76	.0692	1.77	.0698	1.79	.0704	1.81	.0711
M2.2	0.45	-	1.713	1.838	1.73	.0682	1.76	.0694	1.79	.0705	1.82	.0717	1.85	.0728
-	-	0.25	1.929	1.998	1.94	.0764	1.96	.0770	1.97	.0777	1.99	.0783	2.01	.0789
M2.3	0.4	-	1.867	1.979	1.88	.0742	1.91	.0752	1.94	.0762	1.96	.0773	1.99	.0783
-	-	0.35	1.921	2.021	1.94	.0762	1.96	.0771	1.98	.0780	2.00	.0789	2.03	.0798
-	-	0.25	2.029	2.098	2.04	.0803	2.06	.0810	2.07	.0816	2.09	.0822	2.11	.0829
M2.5	0.45	-	2.013	2.138	2.03	.0800	2.06	.0812	2.09	.0823	2.12	.0835	2.15	.0846
-	-	0.35	2.121	2.221	2.14	.0841	2.16	.0850	2.18	.0859	2.20	.0868	2.23	.0877
M2.6	0.45	-	2.113	2.238	2.13	.0840	2.16	.0851	2.19	.0863	2.22	.0874	2.25	.0886
-	-	0.35	2.221	2.321	2.24	.0880	2.26	.0889	2.28	.0898	2.30	.0907	2.33	.0916
M3	0.5	-	2.459	2.599	2.48	.0997	2.51	.0989	2.55	.1002	2.58	.1015	2.61	.1028
-	-	0.35	2.621	2.721	2.64	.1038	2.66	.1047	2.68	.1056	2.70	.1065	2.73	.1074
M3.5	0.6	-	2.850	3.010	2.88	.1132	2.92	.1148	2.95	.1163	2.99	.1178	3.03	.1194
-	-	0.35	3.121	3.221	3.14	.1235	3.16	.1244	3.18	.1253	3.20	.1262	3.23	.1271
M4	0.7	-	3.242	3.422	3.27	.1288	3.32	.1306	3.36	.1324	3.41	.1342	3.45	.1360
-	-	0.5	3.459	3.599	3.48	.1370	3.51	.1383	3.55	.1396	3.58	.1409	3.61	.1421
M4.5	0.75	-	3.688	3.878	3.72	.1465	3.77	.1484	3.82	.1503	3.87	.1522	3.92	.1542
-	-	0.5	3.959	4.099	3.98	.1567	4.01	.1580	4.05	.1593	4.08	.1605	4.11	.1618
M5	0.9	-	4.026	4.226	4.06	.1600	4.12	.1623	4.18	.1646	4.24	.1669	4.30	.1692
-	-	0.8	4.134	4.334	4.17	.1641	4.22	.1662	4.27	.1682	4.32	.1703	4.38	.1723
-	-	0.5	4.459	4.599	4.48	.1764	4.51	.1777	4.55	.1790	4.58	.1802	4.61	.1815
M5.5	-	0.9	4.526	4.726	4.56	.1797	4.62	.1820	4.68	.1843	4.74	.1866	4.80	.1889
-	-	0.75	4.688	4.878	4.72	.1858	4.77	.1878	4.82	.1897	4.87	.1916	4.92	.1935
-	-	0.5	4.959	5.099	4.98	.1961	5.01	.1974	5.05	.1986	5.08	.1999	5.11	.2012
M6	1	-	4.917	5.153	4.96	.1953	5.03	.1979	5.09	.2004	5.16	.2030	5.22	.2055
-	-	0.75	5.188	5.378	5.22	.2055	5.27	.2075	5.32	.2094	5.37	.2113	5.42	.2132
-	-	0.5	5.459	5.599	5.48	.2158	5.51	.2170	5.55	.2183	5.58	.2196	5.61	.2209
M7	1	-	5.917	6.153	5.96	.2347	6.03	.2372	6.09	.2398	6.16	.2423	6.22	.2449
-	-	0.75	6.188	6.378	6.22	.2449	6.27	.2468	6.32	.2487	6.37	.2507	6.42	.2526
-	-	0.5	6.459	6.599	6.48	.2551	6.51	.2564	6.55	.2577	6.58	.2590	6.61	.2602
M8	1.25	-	6.647	6.912	6.70	.2638	6.78	.2670	6.86	.2702	6.94	.2734	7.03	.2766
-	-	1	6.917	7.153	6.96	.2740	7.03	.2766	7.09	.2792	7.16	.2817	7.22	.2843
-	-	0.75	7.188	7.378	7.22	.2843	7.27	.2862	7.32	.2881	7.37	.2900	7.42	.2919



M/MF RECOMMENDED TAP DRILL SIZE - METRIC THREAD

Size	Pitch		Minor Diameter		Tap Drill Diameter(Cutting Tap)									
	M	MF	Min. 6H	Max. 6H	80% Thread		75% Thread		70% Thread		65% Thread		60% Thread	
					mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
M9	-	0.5	7.459	7.599	7.48	.2945	7.51	.2958	7.55	.2971	7.58	.2983	7.61	.2996
	1.25	-	7.647	7.912	7.70	.3032	7.78	.3064	7.86	.3096	7.94	.3128	8.03	.3160
	-	1	7.917	8.153	7.96	.3134	8.03	.3160	8.09	.3185	8.16	.3211	8.22	.3236
M10	-	0.75	8.188	8.378	8.22	.3236	8.27	.3256	8.32	.3275	8.37	.3294	8.42	.3313
	-	0.5	8.459	8.599	8.48	.3339	8.51	.3352	8.55	.3364	8.58	.3377	8.61	.3390
	1.5	-	8.376	8.676	8.44	.3323	8.54	.3362	8.64	.3400	8.73	.3438	8.83	.3477
	-	1.25	8.647	8.912	8.70	.3426	8.78	.3458	8.86	.3490	8.94	.3521	9.03	.3553
	-	1	8.917	9.153	8.96	.3528	9.03	.3553	9.09	.3579	9.16	.3605	9.22	.3630
M11	-	0.75	9.188	9.378	9.22	.3630	9.27	.3649	9.32	.3669	9.37	.3688	9.42	.3707
	-	0.5	9.459	9.599	9.48	.3732	9.51	.3745	9.55	.3758	9.58	.3771	9.61	.3784
	1.5	-	9.376	9.676	9.44	.3717	9.54	.3755	9.64	.3794	9.73	.3832	9.83	.3870
	-	1	9.917	10.153	9.96	.3922	10.03	.3947	10.09	.3973	10.16	.3998	10.22	.4024
	-	0.75	10.188	10.378	10.22	.4024	10.27	.4043	10.32	.4062	10.37	.4081	10.42	.4101
M12	-	0.5	10.459	10.599	10.48	.4126	10.51	.4139	10.55	.4152	10.58	.4164	10.61	.4177
	1.75	-	10.106	10.441	10.18	.4008	10.30	.4053	10.41	.4098	10.52	.4143	10.64	.4187
	-	1.5	10.376	10.676	10.44	.4111	10.54	.4149	10.64	.4187	10.73	.4226	10.83	.4264
	-	1.25	10.647	10.912	10.70	.4213	10.78	.4245	10.86	.4277	10.94	.4309	11.03	.4341
	-	1	10.917	11.153	10.96	.4315	11.03	.4341	11.09	.4366	11.16	.4392	11.22	.4418
M13	-	0.75	11.188	11.378	11.22	.4418	11.27	.4437	11.32	.4456	11.37	.4475	11.42	.4494
	-	0.5	11.459	11.599	11.48	.4520	11.51	.4533	11.55	.4545	11.58	.4558	11.61	.4571
	1.75	-	11.106	11.441	11.18	.4402	11.30	.4447	11.41	.4492	11.52	.4536	11.64	.4581
	-	1.5	11.376	11.676	11.44	.4504	11.54	.4543	11.64	.4581	11.73	.4619	11.83	.4658
	-	1.25	11.647	11.912	11.70	.4607	11.78	.4639	11.86	.4671	11.94	.4703	12.03	.4735
M14	-	1	11.917	12.153	11.96	.4709	12.03	.4735	12.09	.4760	12.16	.4786	12.22	.4811
	-	0.75	12.188	12.378	12.22	.4811	12.27	.4830	12.32	.4850	12.37	.4869	12.42	.4888
	-	0.5	12.459	12.599	12.48	.4914	12.51	.4926	12.55	.4939	12.58	.4952	12.61	.4965
	2	-	11.835	12.210	11.92	.4694	12.05	.4745	12.18	.4796	12.31	.4847	12.44	.4898
	-	1.5	12.376	12.676	12.44	.4898	12.54	.4936	12.64	.4975	12.73	.5013	12.83	.5052
M15	-	1.25	12.647	12.912	12.70	.5000	12.78	.5032	12.86	.5064	12.94	.5096	13.03	.5128
	-	1	12.917	13.153	12.96	.5103	13.03	.5128	13.09	.5154	13.16	.5179	13.22	.5205
	-	0.75	13.188	13.378	13.22	.5205	13.27	.5224	13.32	.5243	13.37	.5262	13.42	.5282
	-	0.5	13.459	13.599	13.48	.5307	13.51	.5320	13.55	.5333	13.58	.5346	13.61	.5358
	2	-	12.835	13.210	12.92	.5087	13.05	.5138	13.18	.5190	13.31	.5241	13.44	.5292
M16	-	1.5	13.376	13.676	13.44	.5292	13.54	.5330	13.64	.5369	13.73	.5407	13.83	.5445
	-	1.25	13.647	13.912	13.70	.5394	13.78	.5426	13.86	.5458	13.94	.5490	14.03	.5522
	-	1	13.917	14.153	13.96	.5496	14.03	.5522	14.09	.5548	14.16	.5573	14.22	.5599
	-	0.75	14.188	14.378	14.22	.5599	14.27	.5618	14.32	.5637	14.37	.5656	14.42	.5675
	-	0.5	14.459	14.599	14.48	.5701	14.51	.5714	14.55	.5727	14.58	.5739	14.61	.5752
M17	2	-	13.835	14.210	13.92	.5481	14.05	.5532	14.18	.5583	14.31	.5634	14.44	.5685
	-	1.5	14.376	14.676	14.44	.5685	14.54	.5724	14.64	.5762	14.73	.5801	14.83	.5839
	-	1	14.917	15.153	14.96	.5890	15.03	.5916	15.09	.5941	15.16	.5967	15.22	.5992
	-	2	14.835	15.210	14.92	.5875	15.05	.5926	15.18	.5977	15.31	.6028	15.44	.6079
	-	1.5	15.376	15.676	15.44	.6079	15.54	.6118	15.64	.6156	15.73	.6194	15.83	.6233
M18	-	1.25	15.647	15.912	15.70	.6181	15.78	.6213	15.86	.6245	15.94	.6277	16.03	.6309
	-	1	15.917	16.153	15.96	.6284	16.03	.6309	16.09	.6335	16.16	.6360	16.22	.6386
	-	0.75	16.188	16.378	16.22	.6386	16.27	.6405	16.32	.6424	16.37	.6444	16.42	.6463
	-	0.5	16.459	16.599	16.48	.6488	16.51	.6501	16.55	.6514	16.58	.6527	16.61	.6539
	2.5	-	15.294	15.744	15.40	.6064	15.56	.6128	15.73	.6192	15.89	.6256	16.05	.6319
M19	-	2	15.835	16.210	15.92	.6268	16.05	.6319	16.18	.6371	16.31	.6422	16.44	.6473
	-	1.5	16.376	16.676	16.44	.6473	16.54	.6511	16.64	.6550	16.73	.6588	16.83	.6626

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M/MF RECOMMENDED TAP DRILL SIZE - METRIC THREAD

Size	Pitch		Minor Diameter		Tap Drill Diameter(Cutting Tap)									
	M	MF	Min. 6H	Max. 6H	80% Thread		75% Thread		70% Thread		65% Thread		60% Thread	
					mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
M19	-	1	16.917	17.153	16.96	.6677	17.03	.6703	17.09	.6729	17.16	.6754	17.22	.6780
	-	2.5	16.294	16.744	16.40	.6457	16.56	.6521	16.73	.6585	16.89	.6649	17.05	.6713
	-	2	16.835	17.210	16.92	.6662	17.05	.6713	17.18	.6764	17.31	.6815	17.44	.6867
M20	-	1.5	17.376	17.676	17.44	.6867	17.54	.6905	17.64	.6943	17.73	.6982	17.83	.7020
	-	1.25	17.647	17.912	17.70	.6969	17.78	.7001	17.86	.7033	17.94	.7065	18.03	.7097
	-	1	17.917	18.153	17.96	.7071	18.03	.7097	18.09	.7122	18.16	.7148	18.22	.7173
	-	0.75	18.188	18.378	18.22	.7173	18.27	.7193	18.32	.7212	18.37	.7231	18.42	.7250
	-	0.5	18.459	18.599	18.48	.7276	18.51	.7289	18.55	.7301	18.58	.7314	18.61	.7327
M21	2.5	-	17.294	17.744	17.40	.6851	17.56	.6915	17.73	.6979	17.89	.7043	18.05	.7107
	-	2	17.835	18.210	17.92	.7056	18.05	.7107	18.18	.7158	18.31	.7209	18.44	.7260
	-	1.5	18.376	18.676	18.44	.7260	18.54	.7299	18.64	.7337	18.73	.7375	18.83	.7414
	-	1	18.917	19.153	18.96	.7465	19.03	.7490	19.09	.7516	19.16	.7542	19.22	.7567
	-	2.5	18.294	18.744	18.40	.7245	18.56	.7309	18.73	.7373	18.89	.7437	19.05	.7501
M22	-	1.5	19.376	19.676	19.44	.7654	19.54	.7692	19.64	.7731	19.73	.7769	19.83	.7807
	-	1	19.917	20.153	19.96	.7859	20.03	.7884	20.09	.7910	20.16	.7935	20.22	.7961
	2.5	-	19.294	19.744	19.40	.7639	19.56	.7702	19.73	.7766	19.89	.7830	20.05	.7894
	-	2	19.835	20.210	19.92	.7843	20.05	.7894	20.18	.7945	20.31	.7997	20.44	.8048
	-	1.5	20.376	20.676	20.44	.8048	20.54	.8086	20.64	.8124	20.73	.8163	20.83	.8201
M23	-	1	20.917	21.153	20.96	.8252	21.03	.8278	21.09	.8303	21.16	.8329	21.22	.8355
	-	2.5	20.294	20.744	20.40	.8032	20.56	.8096	20.73	.8160	20.89	.8224	21.05	.8288
	-	2	20.835	21.210	20.92	.8237	21.05	.8288	21.18	.8339	21.31	.8390	21.44	.8441
	-	1.5	21.376	21.676	21.44	.8441	21.54	.8480	21.64	.8518	21.73	.8556	21.83	.8595
	-	1	21.917	22.153	21.96	.8646	22.03	.8672	22.09	.8697	22.16	.8723	22.22	.8748
M24	3	-	20.752	21.252	20.88	.8221	21.08	.8298	21.27	.8375	21.47	.8452	21.66	.8528
	-	2	21.835	22.210	21.92	.8631	22.05	.8682	22.18	.8733	22.31	.8784	22.44	.8835
	-	1.5	22.376	22.676	22.44	.8835	22.54	.8873	22.64	.8912	22.73	.8950	22.83	.8989
	-	1	22.917	23.153	22.96	.9040	23.03	.9065	23.09	.9091	23.16	.9116	23.22	.9142
	-	3	21.752	22.252	21.88	.8615	22.08	.8692	22.27	.8769	22.47	.8845	22.66	.8922
M25	-	2	22.835	23.210	22.92	.9024	23.05	.9075	23.18	.9127	23.31	.9178	23.44	.9229
	-	1.5	23.376	23.676	23.44	.9229	23.54	.9267	23.64	.9306	23.73	.9344	23.83	.9382
	-	1	23.917	24.153	23.96	.9433	24.03	.9459	24.09	.9485	24.16	.9510	24.22	.9536
	-	3	22.752	23.252	22.88	.9009	23.08	.9085	23.27	.9162	23.47	.9239	23.66	.9316
	-	2	23.835	24.210	23.92	.9418	24.05	.9469	24.18	.9520	24.31	.9571	24.44	.9623
M26	-	1.5	24.376	24.676										



TECHNICAL DATA

M/MF RECOMMENDED TAP DRILL SIZE - METRIC THREAD

Table with columns: Size, Pitch (M, MF), Minor Diameter (Min. 6H, Max. 6H), Tap Drill Diameter (Cutting Tap) (80% Thread, 75% Thread, 70% Thread, 65% Thread, 60% Thread) in mm and Inch.

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TECHNICAL DATA



M/MF RECOMMENDED TAP DRILL SIZE - METRIC THREAD

Table with columns: Size, Pitch (M, MF), Minor Diameter (Min. 6H, Max. 6H), Tap Drill Diameter (Cutting Tap) (80% Thread, 75% Thread, 70% Thread, 65% Thread, 60% Thread) in mm and Inch.

TAP RECOMMENDATIONS FOR CLASSES OF THREAD - INCH

Internal Screw Thread Classes and Tap Recommendations

Size	Threads per Inch		Recommended Tap for Class of Thread				Pitch Diameter Limits for Class of Thread				
	UNC	UNF	Unified Class of Thread		American National Class of Thread		Min. All Class (Basic)	Unified Class of Thread		American National Class of Thread	
			Class 2	Class 3	Class 2B	Class 3B		Max. Class 2	Max. Class 3	Max. Class 2B	Max. Class 3B
#0	-	80	H1	H1	H2	H1	.0519	.0536	.0532	.0542	.0536
#1	64	-	H1	H1	H2	H1	.0629	.0648	.0643	.0655	.0648
#1	-	72	H1	H1	H2	H1	.0640	.0658	.0653	.0665	.0659
#2	56	-	H1	H1	H2	H1	.0744	.0764	.0759	.0772	.0765
#2	-	64	H1	H1	H2	H1	.0759	.0778	.0773	.0786	.0779
#3	48	-	H1	H1	H2	H1	.0855	.0877	.0871	.0885	.0877
#3	-	56	H1	H1	H2	H1	.0874	.0894	.8890	.0902	.0895
#4	40	-	H2	H1	H2	H2	.0958	.0982	.0975	.0991	.0982
#4	-	48	H1	H1	H2	H1	.0985	.1007	.1001	.1016	.1008
#5	40	-	H2	H1	H2	H2	.1088	.1112	.1105	.1121	.1113
#5	-	44	H1	H1	H2	H1	.1102	.1125	.1118	.1134	.1126
#6	32	-	H2	H1	H3	H2	.1177	.1204	.1196	.1214	.1204
#6	-	40	H2	H1	H2	H2	.1218	.1242	.1235	.1252	.1243
#8	32	-	H2	H1	H3	H2	.1437	.1464	.1456	.1475	.1465
#8	-	36	H2	H1	H2	H2	.1460	.1485	.1478	.1496	.1487
#10	24	-	H3	H1	H3	H3	.1629	.1662	.1653	.1672	.1661
#10	-	32	H2	H1	H3	H2	.1697	.1724	.1716	.1736	.1726
#12	24	-	H3	H1	H3	H3	.1889	.1922	.1913	.1933	.1922
#12	-	28	H3	H1	H3	H3	.1928	.1959	.1950	.1970	.1959
1/4	20	-	H3	H2	H5	H3	.2175	.2211	.2201	.2223	.2211
1/4	-	28	H3	H1	H4	H3	.2268	.2299	.2290	.2311	.2300
5/16	18	-	H3	H2	H5	H3	.2764	.2805	.2794	.2817	.2803
5/16	-	24	H3	H1	H4	H3	.2854	.2887	.2878	.2902	.2890
3/8	16	-	H3	H2	H5	H3	.3344	.3389	.3376	.3401	.3387
3/8	-	24	H3	H1	H4	H3	.3479	.3512	.3503	.3528	.3516
7/16	14	-	H5	H3	H5	H3	.3911	.3960	.3947	.3972	.3957
7/16	-	20	H3	H1	H5	H3	.4050	.4086	.4076	.4104	.4091
1/2	13	-	H5	H3	H5	H3	.4500	.4552	.4537	.4565	.4548
1/2	-	20	H3	H1	H5	H3	.4675	.4711	.4701	.4731	.4717
9/16	12	-	H5	H3	H5	H3	.5084	.5140	.5124	.5152	.5135
9/16	-	18	H3	H2	H5	H3	.5264	.5305	.5294	.5323	.5308
5/8	11	-	H5	H3	H5	H3	.5660	.5719	.5702	.5732	.5714
5/8	-	18	H3	H2	H5	H3	.5889	.5930	.5919	.5949	.5934
3/4	10	-	H5	H3	H5	H3	.6850	.6914	.6895	.6927	.6907
3/4	-	16	H3	H2	H5	H3	.7094	.7139	.7126	.7159	.7143
7/8	9	-	H6	H4	H6	H4	.8028	.8098	.8077	.8110	.8089
7/8	-	14	H4	H2	H6	H4	.8286	.8335	.8322	.8356	.8339
1	8	-	H6	H4	H6	H4	.9188	.9264	.9242	.9276	.9254
1	-	12	H4	H2	H6	H4	.9459	.9515	.9499	.9535	.9516

The above recommended taps normally produce the Class of Thread indicated in average materials when used with reasonable care. However, if the tap specified does not give a satisfactory gage fit in the work, a choice of some other limit tap will be necessary.

TAP RECOMMENDATIONS FOR CLASSES OF THREAD - METRIC

Size	Pitch	Recommended Tap for Class of Thread		Pitch Diameter Limits for Class of Thread (mm)			Pitch Diameter Limits for Class of Thread (inch)		
		4H	6H	Min. (Basic)	Max. 4H	Max. 6H	Min. (Basic)	Max. 4H	Max. 6H
M1.6	0.35	D1	D3	1.373	1.426	1.458	.05406	.05614	.05740
M2	0.40	D1	D3	1.740	1.796	1.830	.06850	.07071	.07205
M2.5	0.45	D1	D3	2.208	2.268	2.303	.08693	.08929	.09067
M3	0.50	D1	D3	2.675	2.738	2.775	.10531	.10780	.10925
M3.5	0.60	D1	D4	3.110	3.181	3.222	.12244	.12524	.12685
M4	0.70	D2	D4	3.545	3.620	3.663	.13957	.14252	.14421
M4.5	0.75	D2	D4	4.013	4.088	4.131	.15789	.16094	.16264
M5	0.80	D2	D4	4.480	4.560	4.605	.17638	.17953	.18130
M6	1.00	D3	D5	5.350	5.445	5.500	.21063	.21437	.21654
M7	1.00	D3	D5	6.350	6.445	6.500	.25000	.25374	.25591
M8	1.25	D3	D5	7.188	7.288	7.348	.28299	.28693	.28929
M10	1.50	D3	D6	9.026	9.138	9.206	.35535	.35976	.36244
M12	1.75	D3	D6	10.863	10.988	11.063	.42768	.43260	.43555
M14	2.00	D3	D7	12.701	12.833	12.913	.50004	.50524	.50839
M16	2.00	D4	D7	14.701	14.833	14.913	.57878	.58398	.58713
M20	2.50	D4	D7	18.376	18.516	18.600	.72346	.72898	.73228
M24	3.00	D4	D8	22.051	22.221	22.316	.86815	.87484	.87858
M30	3.50	D5	D9	27.727	27.907	28.007	1.09161	1.0987	1.10264
M36	4.00	D5	D9	33.402	33.592	33.702	1.31504	1.32252	1.32685

