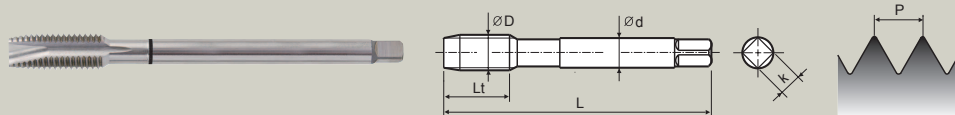


M SPIRAL POINT for Multi-Purpose

ISO Metric coarse threads DIN 13

Long Shank



Hole type



SPIRAL POINT TAPS ♦ **TC445**



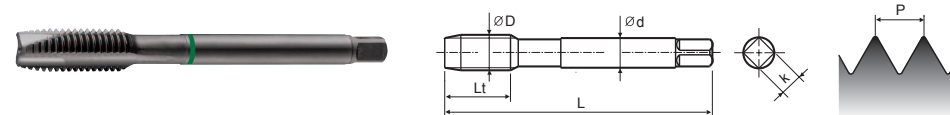
Unit : mm

SIZE	Pitch	Limit	EDP No.	Overall Length	Thread Length	Shank Diameter	Square Size
D	P			L	Lt	d	k
M3	x 0.5	6H	TC445206	100.0	11.0	3.5	2.7
M4	x 0.7	6H	TC445246	125.0	13.0	4.5	3.4
M5	x 0.8	6H	TC445286	140.0	15.0	6.0	4.9
M6	x 1.0	6H	TC445316	160.0	17.0	6.0	4.9
M8	x 1.25	6H	TC445366	180.0	20.0	6.0	4.9
M10	x 1.5	6H	TC445426	200.0	22.0	7.0	5.5
M12	x 1.75	6H	TC445506	220.0	24.0	9.0	7.0
M14	x 2.0	6H	TC445546	220.0	26.0	11.0	9.0
M16	x 2.0	6H	TC445606	220.0	27.0	12.0	9.0
M20	x 2.5	6H	TC445706	280.0	32.0	16.0	12.0

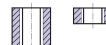
* Coating(TiN, TiCN or TiAlN) or Surface Treatment(Steam Homo) is available on your request.

M SPIRAL POINT TAPS for Stainless Steels

ISO Metric coarse threads DIN 13



Hole type



SPIRAL POINT TAPS ♦ **TQ428 / TB428**



up to M12 over M12

Unit : mm

SIZE	Pitch	Limit	EDP No.	Overall Length	Thread Length	Shank Diameter	Square Size
D	P			L	Lt	d	k
M2	x 0.4	6H	TQ428136	45.0	8.0	2.8	2.1
M2.2	x 0.45	6H	TQ428156	45.0	8.0	2.8	2.1
M2.3	x 0.4	6H	TQ428196	45.0	8.0	2.8	2.1
M2.5	x 0.45	6H	TQ428176	50.0	9.0	2.8	2.1
M2.6	x 0.45	6H	TQ428496	50.0	9.0	2.8	2.1
M3	x 0.5	6H	TQ428206	56.0	11.0	3.5	2.7
M3.5	x 0.6	6H	TQ428226	56.0	12.0	4.0	3.0
M4	x 0.7	6H	TQ428246	63.0	13.0	4.5	3.4
M4.5	x 0.75	6H	TQ428266	70.0	14.0	6.0	4.9
M5	x 0.8	6H	TQ428286	70.0	15.0	6.0	4.9
M6	x 1.0	6H	TQ428316	80.0	17.0	6.0	4.9
M7	x 1.0	6H	TQ428346	80.0	17.0	7.0	5.5
M8	x 1.25	6H	TQ428366	90.0	20.0	8.0	6.2
M9	x 1.25	6H	TQ428396	90.0	20.0	9.0	7.0
M10	x 1.5	6H	TQ428426	100.0	22.0	10.0	8.0
M11	x 1.5	6H	TQ428466	100.0	22.0	8.0	6.2
M12	x 1.75	6H	TQ428506	110.0	24.0	9.0	7.0
M14	x 2.0	6H	TB428546	110.0	26.0	11.0	9.0
M16	x 2.0	6H	TB428606	110.0	27.0	12.0	9.0
M18	x 2.5	6H	TB428656	125.0	30.0	14.0	11.0
M20	x 2.5	6H	TB428706	140.0	32.0	16.0	12.0
M22	x 2.5	6H	TB428746	140.0	32.0	18.0	14.5
M24	x 3.0	6H	TB428786	160.0	34.0	18.0	14.5
M27	x 3.0	6H	TB428866	160.0	36.0	20.0	16.0
M30	x 3.5	6H	TB428946	180.0	40.0	22.0	18.0

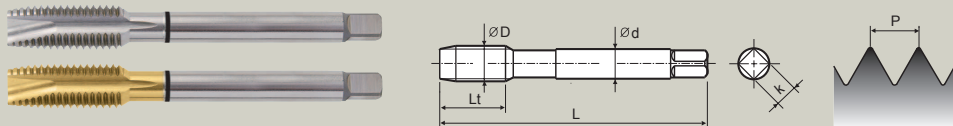
► DIN371 (M2-M10) and DIN376 (M11-M30)

► HSS-PM(M2-M12/TQ428) and HSS-E(M14-M30/TB428)

* Coating(TiN, TiCN or TiAlN) or Surface Treatment(Steam Homo) is available on your request.

UNF SPIRAL POINT TAPS for Multi-Purpose

Unified fine threads



Hole type



SPIRAL POINT TAPS ♦ **TC874 / TD874**



Unit : mm

SIZE	TPI	Limit	EDP No.		Overall Length	Thread Length	Shank Diameter	Square Size
			Bright	TiN	L	Lt	d	k
#4	- 48 UNF	2B	TC874182	TD874182	56.0	11.0	3.5	2.7
#5	- 44 UNF	2B	TC874222	TD874222	56.0	11.0	3.5	2.7
#6	- 40 UNF	2B	TC874262	TD874262	56.0	12.0	4.0	3.0
#8	- 36 UNF	2B	TC874302	TD874302	63.0	13.0	4.5	3.4
#10	- 32 UNF	2B	TC874342	TD874342	70.0	15.0	6.0	4.9
#12	- 28 UNF	2B	TC874382	TD874382	80.0	16.0	6.0	4.9
1/4	- 28 UNF	2B	TC874422	TD874422	80.0	17.0	7.0	5.5
5/16	- 24 UNF	2B	TC874462	TD874462	90.0	17.0	8.0	6.2
3/8	- 24 UNF	2B	TC874502	TD874502	100.0	18.0	9.0	7.0
7/16	- 20 UNF	2B	TC874542	TD874542	100.0	22.0	8.0	6.2
1/2	- 20 UNF	2B	TC874582	TD874582	100.0	22.0	9.0	7.0
9/16	- 18 UNF	2B	TC874622	TD874622	100.0	22.0	11.0	9.0
5/8	- 18 UNF	2B	TC874662	TD874662	100.0	22.0	12.0	9.0
3/4	- 16 UNF	2B	TC874722	TD874722	110.0	25.0	14.0	11.0
7/8	- 14 UNF	2B	TC874762	TD874762	125.0	26.0	18.0	14.5
1"	- 12 UNF	2B	TC874802	TD874802	140.0	28.0	20.0	16.0

► DIN371 (#4~3/8) and DIN374 (7/16~1")

* The other coating(TiCN or TiAlN) or Surface Treatment(Steam Homo) is available on your request.

CUTTING SPEED TABLE

Cutting Speeds m/min. into revolutions per minute

Unit : mm

Tool Dia.	TOOL R.P.M.(rev/min)															
	Cutting Speed (m/min)															
	1	2	3	4	5	6	8	10	12	15	20	25	30	40	50	60
1	318	637	955	1274	1592	1910	2548	3185	3822	4777	6396	7962	9554	12739	15924	19108
2	159	318	478	637	796	955	1274	1592	1911	2388	3185	3981	4777	6369	7962	9554
3	106	212	318	425	531	637	849	1062	1274	1592	2123	2654	3185	4246	5308	6369
4	80	159	239	318	398	478	637	796	955	1194	1592	1990	2389	3185	3981	4777
5	64	127	191	255	318	382	510	637	764	955	1274	1592	1911	2548	3185	3822
6	53	106	159	212	265	318	425	531	637	796	1062	1327	1592	2123	2653	3185
8	40	80	119	159	199	239	318	398	478	597	796	955	1194	1592	1990	2388
10	31	64	96	127	159	191	255	318	382	478	637	796	955	1274	1592	1911
12	26	53	80	106	133	159	212	265	318	398	531	663	796	1062	1327	1592
14	23	45	68	91	114	136	182	227	273	341	455	569	682	910	1137	1365
16	20	40	60	80	100	119	159	199	239	299	398	498	597	796	995	1194
18	18	35	53	71	88	106	142	177	212	265	354	442	531	708	885	1062
20	16	32	48	64	80	96	127	159	191	239	318	398	478	637	796	955
25	13	25	38	51	64	76	102	127	153	191	255	318	382	510	637	764
30	11	21	32	42	53	64	85	106	127	159	212	265	318	425	531	637
35	9	18	27	36	45	55	73	91	109	136	182	227	273	364	455	546
40	8	16	24	32	40	48	64	80	96	119	159	199	239	318	398	478

RPM = rev/min

V = m/min

D = Dia.(mm)

$$V = \frac{RPM \cdot \pi \cdot D}{1000}$$

$$RPM = \frac{1000 \cdot V}{\pi \cdot D}$$

RECOMMENDED TAP DRILL SIZE(M,MF)

Unit : mm

Metric-ISO threads coarse pitch				Metric-ISO threads fine pitch				Metric-ISO threads fine pitch			
M	Pitch mm.	Maximum core dia. mm.	Drill size mm.	MF	Pitch mm.	Maximum core dia. mm.	Drill size mm.	MF	Pitch mm.	Maximum core dia. mm.	Drill size mm.
1	0.25	0.785	0.75	2.5	0.35	2.221	2.15	25	2.00	23.210	23.00
1.1	0.25	0.885	0.85	3	0.35	2.271	2.65	26	1.50	24.676	24.50
1.2	0.25	0.985	0.95	3.5	0.35	3.221	3.15	27	1.00	26.153	26.00
1.4	0.30	1.160	1.10	4	0.50	3.599	3.50	27	1.50	25.676	25.50
1.6	0.35	1.321	1.25	4.5	0.50	4.099	4.00	27	2.00	25.210	25.00
1.7	0.35	1.346	1.30	5	0.50	4.599	4.50	28	1.00	27.153	27.00
1.8	0.35	1.521	1.45	5.5	0.50	5.099	5.00	28	1.50	26.676	26.50
2	0.40	1.679	1.60	6	0.75	5.378	5.20	28	2.00	26.210	26.00
2.2	0.45	1.838	1.75	7	0.75	6.378	6.20	30	1.00	29.153	29.00
2.3	0.40	1.920	1.90	8	0.75	7.378	7.20	30	1.50	28.676	28.50
2.5	0.45	2.138	2.05	8	1.00	7.153	7.00	30	2.00	28.210	28.00
2.6	0.45	2.176	2.10	9	0.75	8.378	8.20	30	3.00	27.252	27.00
3	0.50	2.599	2.50	9	1.00	8.153	8.00	32	1.50	30.675	30.50
3.5	0.60	3.010	2.90	10	0.75	9.378	9.20	32	2.00	30.210	30.00
4	0.70	3.422	3.30	10	1.00	9.153	9.00	33	1.50	31.676	31.50
4.5	0.75	3.878	3.70	10	1.25	8.912	8.80	33	2.00	31.210	31.00
5	0.80	4.334	4.20	11	0.75	10.378	10.20	33	3.00	30.252	30.00
6	1.00	5.153	5.00	11	1.00	10.153	10.00	35	1.50	33.676	33.50
7	1.00	6.153	6.00	12	1.00	11.153	11.00	36	1.50	34.676	34.50
8	1.25	6.912	6.80	12	1.25	10.912	10.80	36	2.00	34.210	34.00
9	1.25	7.912	7.80	12	1.50	10.676	10.50	36	3.00	33.252	33.00
10	1.50	8.676	8.50	14	1.00	13.153	13.00	38	1.50	36.676	36.50
11	1.50	9.676	9.50	14	1.25	12.912	12.80	39	1.50	37.676	37.50
12	1.75	10.441	10.20	14	1.50	12.676	12.50	39	2.00	37.210	37.00
14	2.00	12.210	12.00	15	1.00	14.153	14.00	39	3.00	36.252	36.00
16	2.00	14.210	14.00	15	1.50	13.676	13.50	40	1.50	38.676	38.50
18	2.50	15.744	15.50	16	1.00	15.153	15.00	40	2.00	38.210	38.00
20	2.50	17.744	17.50	16	1.50	14.676	14.50	40	3.00	37.252	37.00
22	2.50	19.744	19.50	17	1.00	16.153	16.00	42	1.50	40.676	40.50
24	3.00	21.252	21.00	17	1.50	15.676	15.50	42	2.00	40.210	40.00
27	3.00	24.252	24.00	18	1.00	17.153	17.00	42	3.00	39.252	39.00
30	3.50	26.771	26.50	18	1.50	16.676	16.50	45	1.50	43.676	43.50
33	3.50	29.771	29.50	18	2.00	16.210	16.00	45	2.00	43.210	43.00
36	4.00	32.270	32.00	20	1.00	19.153	19.00	45	3.00	42.252	42.00
39	4.00	35.270	35.00	20	1.50	18.676	18.50	48	1.50	46.676	46.50
42	4.50	37.799	37.50	20	2.00	18.210	18.00	48	2.00	46.210	46.00
45	4.50	40.799	40.50	22	1.00	21.153	21.00	48	3.00	45.252	45.00
48	5.00	43.297	43.00	22	1.50	20.676	20.50	50	1.50	48.676	48.50
52	5.00	47.297	47.00	22	2.00	20.210	20.00	50	2.00	48.210	48.00
56	5.50	50.796	50.50	24	1.00	23.153	23.00	50	3.00	47.252	47.00
60	5.50	54.796	54.50	24	1.50	22.676	22.50	52	1.50	50.676	50.50
64	6.00	58.305	58.00	24	2.00	22.210	22.00	52	2.00	50.210	50.00
68	6.00	62.305	62.00	25	1.00	24.153	24.00	52	3.00	49.252	49.00
				25	1.50	23.676	23.50				

RECOMMENDED TAP DRILL SIZE(UNC, UNF)

Unit : mm

American Unified coarse threads				American Unified fine threads			
UNC	T.P.I	Maximum core dia. mm.	Drill size mm.	UNF	T.P.I	Maximum core dia. mm.	Drill size mm.
#1	64	1.585	1.50	#0	80	1.306	1.30
#2	56	1.872	1.80	#1	72	1.613	1.60
#3	48	2.146	2.10	#2	64	1.913	1.90
#4	40	2.385	2.30	#3	56	2.197	2.10
#5	40	2.697	2.60	#4	48	2.459	2.40
#6	32	2.896	2.85	#5	44	2.741	2.70
#8	32	3.528	3.50	#6	40	3.012	3.00
#10	24	3.950	3.90	#8	36	3.597	3.50
#12	24	4.590	4.50	#10	32	4.168	4.10
1/4"	20	5.250	5.20	#12	28	4.717	4.70
5/16"	18	6.680	6.60	1/4"	28	5.563	5.50
3/8"	16	8.082	8.00	5/16"	24	6.995	6.90
7/16"	14	9.441	9.40	3/8"	24	8.565	8.50
1/2"	13	10.881	10.75	7/16"	20	9.947	9.90
9/16"	12	12.301	12.25	1/2"	20	11.524	11.50
5/8"	11	13.693	13.50	9/16"	18	12.969	12.90
3/4"	10	16.624	16.50	5/8"	18	14.554	14.50
7/8"	9	19.520	19.50	3/4"	16	17.546	17.50
1"	8	22.344	22.25	7/8"	14	20.493	20.50
1*1/8"	7	25.082	25.00	1"	12	23.363	23.25
1*1/4"	7	28.258	28.25	1*1/8"	12	26.538	26.50
1*3/8"	6	30.851	30.75	1*1/4"	12	29.713	29.50
1*1/2"	6	34.026	34.00	1*3/8"	12	32.888	32.70
1*3/4"	5	39.560	39.50	1*1/2"	12	36.063	36.00
2"	4.5	45.367	45.25				