






## HIGH PERFORMANCE TAPS RECOMMENDATION TABLE

Super HSS : Premium HSS Metallurgy  
 P-HSS : Powdered Metallurgy  
 HSSE-V3 : 3% Vanadium Alloy HSS-EX  
 HSS-V : Vanadium Alloy HSS

⊙ = RECOMMENDED  
 ○ = SUITABLE

	GS	GS	GS
SERIES	T7336 (LH)	T7A15 (LH)	T7616/ T6616/ T8616
DESCRIPTION	USCTI 302 (Left Hand)	USCTI 302 (Left Hand)	USCTI Long Shank
PAGE	455	456	457
THREADS	UNC/UNF	UNC/UNF	UNC/UNF
TAP MATERIALS	HSS	HSS	HSS
CHAMFER LENGTH	5P / 2P	5P / 2P	4-5P
SURFACE TREATMENT	Bright	Bright	Bright Steam Oxide TiN
SPIRAL FLUTE ANGLE	-	-	-
THREAD DEPTH	2.0D	2.0D	2.0D
HOLE TYPE	Blind Through	Blind Through	Blind Through

COOLANT  
 A = Cutting Oil  
 T = Oil Emulsion  
 X = Cutting Oil/Oil Emulsion

Material Group	Material Sub-Group	ISO	Hardness (HRC)	Hardness (BHN)	Cutting Speed (SFM)		COOLANT			
					Uncoated	Coated				
Steel	Low carbon steels Free machining carbon steels	P	< 15	< 180	25 - 50	50 - 80	T	⊙	⊙	⊙
	Medium to high carbon steels Low alloyed steels	P	< 23	< 240	25 - 50	50 - 80	T	⊙	⊙	⊙
	Steel castings & forgings Heat-treatable alloy steels	P	> 24 ≤ 38	> 250 ≤ 350	6 - 30	10 - 35	X			
	Alloyed tool steels Mold steels	P	> 38 ≤ 44	> 350 ≤ 420	6 - 12	-	A			
Stainless Steel	Free machining stainless steels	M	< 23	< 240	12 - 35	20 - 50	A	⊙	⊙	⊙
	Heat-and corrosion-resistant stainless steels Valve stainless steels	M	> 24 ≤ 38	> 250 ≤ 350	12 - 15	12 - 15	A			
	Stainless steel castings Precipitation hardening stainless steels	M	> 38 ≤ 44	> 350 ≤ 420	12 - 15	-	A			
Cast Iron	Grey cast iron	K	-	≤ 220	35 - 50	50 - 65	T			
	Nodular cast iron / Chilled cast iron Meehanite iron / Ductile iron	K	-	≥ 250	12 - 45	25 - 55	X			
Copper	Pure and alloyed copper	N	-	-	50 - 60	65 - 100	T	⊙	⊙	⊙
Brass	Free machining brass Alloyed brass	N	-	-	30 - 65	-	T	⊙	⊙	⊙
Bronze		N	44	< 420	12 - 20	35 - 80	T			
Aluminum	Pure Aluminum Aluminum alloys	N	-	-	50 - 65	-	T	⊙	⊙	⊙
	Aluminum alloy castings	N	-	-	40 - 65	45 - 90	T	⊙	⊙	⊙
Zinc		N	-	-	25 - 65	50 - 80	T	⊙	⊙	⊙
Magnesium		N	-	-	-	45 - 100	T	⊙	⊙	⊙
Nickel Alloys	718 & 625 INCO <sub>N</sub> / Waspaloy Hastelloy <sub>N</sub> / Invar Monel <sub>N</sub> / Incoloy	S	≤ 38	≤ 350	10 - 15	-	A			
	718 Inconel A286	S	> 38 ≤ 44	> 350 ≤ 420	10 - 12	-	A			
Titanium		S	≤ 38	≤ 350	3 - 15	-	A			



# STRAIGHT FLUTE TAPS

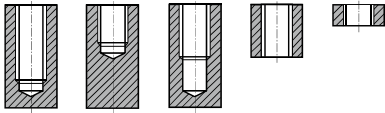
**T7336** SERIES

**HSS**

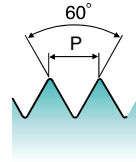
**CARBIDE**

## LEFT HAND TAP

Hole type 2.0xD



USCTI



GS
HSS
UNC UNF
USCTI 302
H2~H4
60°
5P/2P
Bright

SIZE	Thread Per Inch		Thread Limit	No. of Flute	EDP No.	
	UNC	UNF			Bright	
					Plug	Bottoming
#6	32	—	H3	3	T7336247	T7336248
#6	—	40	H2	3	T7336267	T7336268
#8	32	—	H3	4	T7336287	T7336288
#8	—	36	H2	4	T7336307	T7336308
#10	24	—	H3	4	T7336327	T7336328
#10	—	32	H3	4	T7336347	T7336348
1/4	20	—	H3	4	T7336407	T7336408
1/4	—	28	H3	4	T7336427	T7336428
5/16	18	—	H3	4	T7336447	T7336448
5/16	—	24	H3	4	T7336467	T7336468
3/8	16	—	H3	4	T7336487	T7336488
3/8	—	24	H3	4	T7336507	T7336508
7/16	14	—	H3	4	T7336527	T7336528
7/16	—	20	H3	4	T7336547	T7336548
1/2	13	—	H3	4	T7336567	T7336568
1/2	—	20	H3	4	T7336587	T7336588
9/16	12	—	H3	4	T7336607	T7336608
9/16	—	18	H3	4	T7336627	T7336628
5/8	11	—	H3	4	T7336647	T7336648
5/8	—	18	H3	4	T7336667	T7336668
3/4	10	—	H3	4	T7336707	T7336708
3/4	—	16	H3	4	T7336727	T7336728
7/8	9	—	H4	4	T7336747	T7336748
7/8	—	14	H4	4	T7336767	T7336768
1	8	—	H4	4	T7336787	T7336788
1	—	12	H4	4	T7336807	T7336808

► For tapping depth on ANSI Length Taps, refer to MCTI 302 on page 495.

◎ : Excellent ○ : Good

P				M				K		
Low carbon steels/ Free machining carbon steels	Medium to high carbon steels/ Low alloyed steels	Steel castings & forgings / Heat-treatable alloy steels	Alloyed tool steels / Mold steels	Free machining stainless steels	Heat-and corrosionresistant stainless steels / Valve stainless steels	Stainless steel castings / Precipitation hardening stainless steels	Grey cast iron			
○	○			○						
K		N				S				
Nodular cast iron / Chilled cast iron / Meehanite iron / Ductile iron	Pure and alloyed copper	Free machining brass / Alloyed brass	Bronze	Pure Aluminum/ Aluminum alloy	Aluminum alloy castings	Zinc	Magnesium	718 & 625 INCO / Waspaloy / Hastelloy / Invar / Monel / Incoloy	718 Inconel / A286	Titanium
	○	○		○	○	○	○			

THREAD  
MILLS

COMBO  
TAPS

SPIRAL  
FLUTE TAPS

SPIRAL  
POINT TAPS

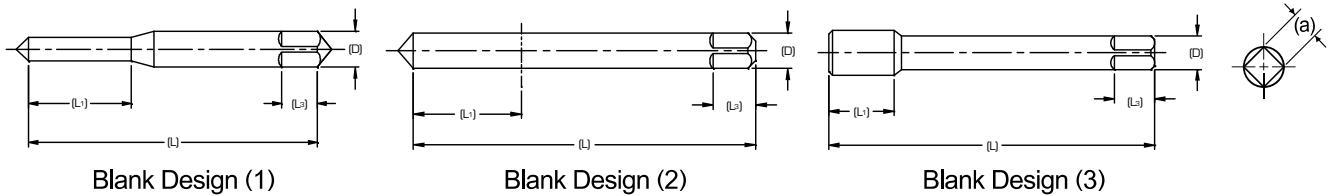
STRAIGHT  
FLUTE TAPS

FORMING  
TAPS

SCREW  
THREAD  
INSERT TAPS

PIPE TAPS

TECHNICAL  
DATA

**6 YG-1 USCTI 302 TAP BLANK DIMENSION**

**Unified Tap Blank**

Nominal Size	Overall Length	Thread Length	Shank Diameter	Square Length	Square Size	Blank Design No.
	(L)	(L <sub>1</sub> )	(D)	(L <sub>s</sub> )	(a)	
#0	1.63	.31	.141	.19	.110	1
#1	1.69	.38	.141	.19	.110	1
#2	1.75	.44	.141	.19	.110	1
#3	1.81	.50	.141	.19	.110	1
#4	1.88	.56	.141	.19	.110	1
#5	1.94	.63	.141	.19	.110	1
#6	2.00	.69	.141	.19	.110	1
#8	2.13	.75	.168	.25	.131	1
#10	2.38	.88	.194	.25	.152	1
#12	2.38	.94	.220	.28	.165	1
1/4	2.50	1.00	.255	.31	.191	2
5/16	2.72	1.13	.318	.38	.238	2
3/8	2.94	1.25	.381	.44	.286	2
7/16	3.16	1.44	.323	.41	.242	3
1/2	3.38	1.66	.367	.44	.275	3
9/16	3.59	1.66	.429	.50	.322	3
5/8	3.81	1.81	.480	.56	.360	3
11/16	4.03	1.81	.542	.63	.406	3
3/4	4.25	2.00	.590	.69	.442	3
13/16	4.47	2.00	.652	.69	.489	3
7/8	4.69	2.22	.697	.75	.523	3
15/16	4.91	2.22	.760	.75	.570	3
1	5.13	2.50	.800	.81	.600	3
1-1/8	5.44	2.56	.896	.88	.672	3
1-1/4	5.75	2.56	1.021	1.00	.766	3
1-3/8	6.06	3.00	1.108	1.06	.831	3
1-1/2	6.38	3.00	1.233	1.13	.925	3

**Metric Tap Blank**

Nominal Size	Overall Length	Thread Length	Shank Diameter	Square Length	Square Size	Blank Design No.
	(L)	(L <sub>1</sub> )	(D)	(L <sub>s</sub> )	(a)	
M1.6	1.63	.310	.141	.19	.110	1
M1.8	1.69	.380	.141	.19	.110	1
M2	1.75	.440	.141	.19	.110	1
M2.5	1.81	.500	.141	.19	.110	1
M3	1.94	.630	.141	.19	.110	1
M3.5	2.00	.690	.141	.19	.110	1
M4	2.13	.750	.168	.25	.131	1
M4.5	2.38	.880	.194	.25	.152	1
M5	2.38	.880	.194	.25	.152	1
M6	2.50	1.00	.255	.31	.191	2
M7	2.72	1.13	.318	.38	.238	2
M8	2.72	1.13	.318	.38	.238	2
M10	2.94	1.25	.381	.44	.286	2
M12	3.38	1.66	.367	.44	.275	3
M14	3.59	1.66	.429	.50	.322	3
M16	3.81	1.81	.480	.56	.360	3
M18	4.03	1.81	.542	.63	.406	3
M20	4.47	2.00	.652	.69	.489	3
M22	4.69	2.22	.697	.75	.523	3
M24	4.91	2.22	.760	.75	.570	3
M30	5.44	2.56	1.021	1.00	.766	3
M33	5.75	2.56	1.108	1.06	.831	3
M36	6.06	3.00	1.233	1.13	.925	3



## 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	GH1	GH1	GH2	GH1	.0519	.0536	.0532	.0542	.0536
#1	64	-	GH1	GH1	GH2	GH1	.0629	.0648	.0643	.0655	.0648
#1	-	72	GH1	GH1	GH2	GH1	.0640	.0658	.0653	.0665	.0659
#2	56	-	GH1	GH1	GH2	GH1	.0744	.0764	.0759	.0772	.0765
#2	-	64	GH1	GH1	GH2	GH1	.0759	.0778	.0773	.0786	.0779
#3	48	-	GH1	GH1	GH2	GH1	.0855	.0877	.0871	.0885	.0877
#3	-	56	GH1	GH1	GH2	GH1	.0874	.0894	.8890	.0902	.0895
#4	40	-	GH2	GH1	GH2	GH2	.0958	.0982	.0975	.0991	.0982
#4	-	48	GH1	GH1	GH2	GH1	.0985	.1007	.1001	.1016	.1008
#5	40	-	GH2	GH1	GH2	GH2	.1088	.1112	.1105	.1121	.1113
#5	-	44	GH1	GH1	GH2	GH1	.1102	.1125	.1118	.1134	.1126
#6	32	-	GH2	GH1	GH3	GH2	.1177	.1204	.1196	.1214	.1204
#6	-	40	GH2	GH1	GH2	GH2	.1218	.1242	.1235	.1252	.1243
#8	32	-	GH2	GH1	GH3	GH2	.1437	.1464	.1456	.1475	.1465
#8	-	36	GH2	GH1	GH2	GH2	.1460	.1485	.1478	.1496	.1487
#10	24	-	GH3	GH1	GH3	GH3	.1629	.1662	.1653	.1672	.1661
#10	-	32	GH2	GH1	GH3	GH2	.1697	.1724	.1716	.1736	.1726
#12	24	-	GH3	GH1	GH3	GH3	.1889	.1922	.1913	.1933	.1922
#12	-	28	GH3	GH1	GH3	GH3	.1928	.1959	.1950	.1970	.1959
1/4	20	-	GH3	GH2	GH5	GH3	.2175	.2211	.2201	.2223	.2211
1/4	-	28	GH3	GH1	GH4	GH3	.2268	.2299	.2290	.2311	.2300
5/16	18	-	GH3	GH2	GH5	GH3	.2764	.2805	.2794	.2817	.2803
5/16	-	24	GH3	GH1	GH4	GH3	.2854	.2887	.2878	.2902	.2890
3/8	16	-	GH3	GH2	GH5	GH3	.3344	.3389	.3376	.3401	.3387
3/8	-	24	GH3	GH1	GH4	GH3	.3479	.3512	.3503	.3528	.3516
7/16	14	-	GH5	GH3	GH5	GH3	.3911	.3960	.3947	.3972	.3957
7/16	-	20	GH3	GH1	GH5	GH3	.4050	.4086	.4076	.4104	.4091
1/2	13	-	GH5	GH3	GH5	GH3	.4500	.4552	.4537	.4565	.4548
1/2	-	20	GH3	GH1	GH5	GH3	.4675	.4711	.4701	.4731	.4717
9/16	12	-	GH5	GH3	GH5	GH3	.5084	.5140	.5124	.5152	.5135
9/16	-	18	GH3	GH2	GH5	GH3	.5264	.5305	.5294	.5323	.5308
5/8	11	-	GH5	GH3	GH5	GH3	.5660	.5719	.5702	.5732	.5714
5/8	-	18	GH3	GH2	GH5	GH3	.5889	.5930	.5919	.5949	.5934
3/4	10	-	GH5	GH3	GH5	GH3	.6850	.6914	.6895	.6927	.6907
3/4	-	16	GH3	GH2	GH5	GH3	.7094	.7139	.7126	.7159	.7143
7/8	9	-	GH6	GH4	GH6	GH4	.8028	.8098	.8077	.8110	.8089
7/8	-	14	GH4	GH2	GH6	GH4	.8286	.8335	.8322	.8356	.8339
1	8	-	GH6	GH4	GH6	GH4	.9188	.9264	.9242	.9276	.9254
1	-	12	GH4	GH2	GH6	GH4	.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.

**15 TAP DRILL SIZES - 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
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
	-	-	-	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
5/8	11	-	-	-	.5290	.5360	.5344	.5300	.5321	.5341	.5361	.5381
5/8	11	-	-	-	.5270	.5460	.5391	.5305	.5364	.5423	.5482	.5541



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
5/8	-	-	-	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
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
	9	-	-	-	.7550	.7780	.7681	.7595	.7668	.7740	.7812	.7884
7/8	-	-	-	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
	8	-	-	-	.8650	.8900	.8797	.8701	.8782	.8863	.8945	.9026
1	-	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
	-	-	-	8	.9270	.9520	.9422	.9326	.9407	.9488	.9570	.9651
1-1/16	-	-	-	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
	-	-	-	8	.9700	.9980	.9875	.9765	.9858	.9951	1.0044	1.0137
1-1/8	-	-	-	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

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
1-1/8	-	-	-	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
1-5/16	-	-	-	28	1.2110	1.2200	1.2176	1.2129	1.2152	1.2175	1.2198	1.2222
	-	-	-	8	1.1770	1.2020	1.2176	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
1-3/8	-	-	-	28	1.2740	1.2820	1.2801	1.2754	1.2777	1.2800	1.2823	1.2847
	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	-	-	1.2850	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
1-7/16	-	-	-	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
	-	-	-	6	1.2570	1.2880	1.2770	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
1-1/2	-	-	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
	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
1-9/16	-	-	-	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
	-	-	-	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
1-5/8	-	-	-	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
	-	-	-	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
1-11/16	-	-	-	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	



**TECHNICAL DATA**

THREAD MILLS

COMBO TAPS

SPIRAL FLUTE TAPS

SPIRAL POINT TAPS

STRAIGHT FLUTE TAPS

FORMING TAPS

SCREW THREAD INSERT TAPS

PIPE TAPS

TECHNICAL DATA

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
1-11/16	-	-	-	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
1-13/16	-	-	-	20	1.6960	1.7070	1.7037	1.6980	1.7013	1.7045	1.7078	1.7110
	-	-	-	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
1-7/8	-	-	-	20	1.7580	1.7700	1.7662	1.7605	1.7638	1.7670	1.7703	1.7735
	-	-	-	6	1.6950	1.7250	1.7146	1.7018	1.7126	1.7235	1.7343	1.7451
	-	-	-	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
1-15/16	-	-	-	20	1.8210	1.8320	1.8287	1.8230	1.8263	1.8295	1.8328	1.8360
	-	-	-	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
2	-	-	-	20	1.8830	1.8950	1.8912	1.8855	1.8888	1.8920	1.8953	1.8985
	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
2-1/8	-	-	-	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
	-	-	-	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
2-1/4	-	-	-	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
	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
2-3/8	-	-	-	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
	-	-	-	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
2-1/2	-	-	-	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
	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
2-1/2	-	-	-	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