



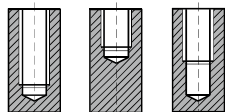
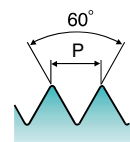
HIGH PERFORMANCE TAPS RECOMMENDATION TABLE

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

⊙ = RECOMMENDED
○ = SUITABLE

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

					GS		GS	
			SERIES		T7A96/T6A96/T8A96 T7295/T6295/T8295		T7A86/T6A86/T8A86 T7A85/T6A85/T8A85	
			DESCRIPTION		USCTI 302		USCTI 302	
			PAGE		393		394	
			THREADS		UNC/UNF		M/MF	
			TAP MATERIALS		HSS		HSS	
			CHAMFER LENGTH		4-5P 1.5-2P		4-5P 1.5-2P	
			SURFACE TREATMENT		Bright Steam Oxide TiN		Bright Steam Oxide TiN	
			SPIRAL FLUTE ANGLE		R50°		R50°	
			THREAD DEPTH		2.5D		2.5D	
			HOLE TYPE		Blind		Blind	
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 INCON / Waspaloy Hastelloyn / Invar Moneln / 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	

STANDARD TAPS : SPIRAL FLUTE TAPS for General Purpose
Hole type 2.5xD

USCTI

THREAD MILLS
COMBO TAPS
SPIRAL FLUTE TAPS
SPIRAL POINT TAPS
STRAIGHT FLUTE TAPS
FORMING TAPS
SCREW THREAD INSERT TAPS
PIPE TAPS
TECHNICAL DATA


SIZE	Thread Per Inch		Limit	No. of Flute	EDP No.					
	UNC	UNF			Plug			Bottoming		
					Bright	Steam Oxide	TiN	Bright	Steam Oxide	TiN
#3	48	—	H2	2	T7A96122	T6A96122	T8A96122	T7295122	T6295122	T8295122
#4	40	—	H2	2	T7A96162	T6A96162	T8A96162	T7295162	T6295162	T8295162
#5	40	—	H2	2	T7A96202	T6A96202	T8A96202	T7295202	T6295202	T8295202
#6	32	—	H2	2	T7A96242	T6A96242	T8A96242	T7295242	T6295242	T8295242
#6	32	—	H3	2	T7A96243	T6A96243	T8A96243	T7295243	T6295243	T8295243
#8	32	—	H2	3	T7A96282	T6A96282	T8A96282	T7295282	T6295282	T8295282
#8	32	—	H3	3	T7A96283	T6A96283	T8A96283	T7295283	T6295283	T8295283
#10	24	—	H3	3	T7A96323	T6A96323	T8A96323	T7295323	T6295323	T8295323
#10	—	32	H2	3	T7A96342	T6A96342	T8A96342	T7295342	T6295342	T8295342
#10	—	32	H3	3	T7A96343	T6A96343	T8A96343	T7295343	T6295343	T8295343
#12	24	—	H3	3	T7A96363	T6A96363	T8A96363	T7295363	T6295363	T8295363
1/4	20	—	H3	3	T7A96403	T6A96403	T8A96403	T7295403	T6295403	T8295403
1/4	20	—	H5	3	T7A96405	T6A96405	T8A96405	T7295405	T6295405	T8295405
1/4	—	28	H3	3	T7A96423	T6A96423	T8A96423	T7295423	T6295423	T8295423
5/16	18	—	H3	3	T7A96443	T6A96443	T8A96443	T7295443	T6295443	T8295443
5/16	18	—	H5	3	T7A96445	T6A96445	T8A96445	T7295445	T6295445	T8295445
5/16	—	24	H3	3	T7A96463	T6A96463	T8A96463	T7295463	T6295463	T8295463
3/8	16	—	H3	3	T7A96483	T6A96483	T8A96483	T7295483	T6295483	T8295483
3/8	16	—	H5	3	T7A96485	T6A96485	T8A96485	T7295485	T6295485	T8295485
3/8	—	24	H3	3	T7A96503	T6A96503	T8A96503	T7295503	T6295503	T8295503
7/16	14	—	H3	3	T7A96523	T6A96523	T8A96523	T7295523	T6295523	T8295523
7/16	14	—	H5	3	—	—	—	T7295525	T6295525	T8295525
7/16	—	20	H3	3	T7A96543	T6A96543	T8A96543	T7295543	T6295543	T8295543
1/2	13	—	H3	3	T7A96563	T6A96563	T8A96563	T7295563	T6295563	T8295563
1/2	13	—	H5	3	T7A96565	T6A96565	T8A96565	T7295565	T6295565	T8295565
1/2	—	20	H3	3	T7A96583	T6A96583	T8A96583	T7295583	T6295583	T8295583
5/8	11	—	H3	4	T7A96643	T6A96643	T8A96643	T7295643	T6295643	T8295643
5/8	—	18	H3	4	T7A96663	T6A96663	T8A96663	T7295663	T6295663	T8295663
3/4	10	—	H3	4	T7A96703	T6A96703	T8A96703	T7295703	T6295703	T8295703
3/4	—	16	H3	4	T7A96723	T6A96723	T8A96723	T7295723	T6295723	T8295723

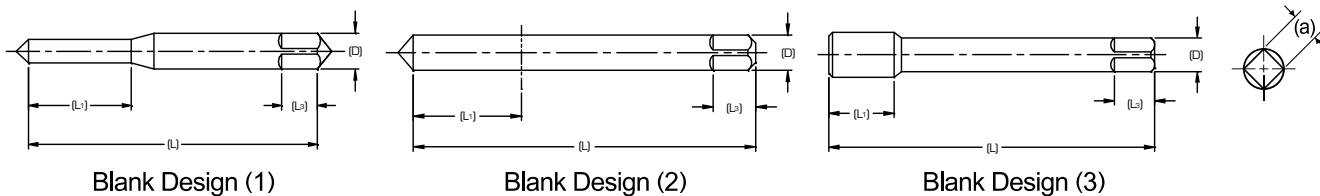
▶ For tapping depth on ANSI Length Taps, refer to MCTI 302 on page 495.

◎ : 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 / Waspalloy / Hastelloy / Invar / Monel / Incoloy	718 Inconel / A286 Titanium
○					○				



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 ₁]	[D]	[L ₂]	[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 ₁]	[D]	[L ₂]	[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.



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	-	-	32	-	.1820	.1900	.1895	.1835	.1856	.1876	.1896	.1916
	20	-	-	-	.1960	.2070	.2067	.1980	.2013	.2045	.2078	.2110
	-	28	-	-	.2110	.2200	.2190	.2129	.2152	.2175	.2198	.2222
5/16	-	-	32	-	.2160	.2240	.2229	.2175	.2196	.2216	.2236	.2256
	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
3/8	-	-	32	-	.2790	.2860	.2847	.2800	.2821	.2841	.2861	.2881
	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
7/16	-	-	32	-	.3410	.3490	.3469	.3425	.3446	.3466	.3486	.3506
	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
1/2	-	-	-	32	.4040	.4110	.4094	.4050	.4071	.4091	.4111	.4131
	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
9/16	-	-	-	32	.4660	.4740	.4719	.4675	.4696	.4716	.4736	.4756
	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
					.5270	.5460	.5391	.5305	.5364	.5423	.5482	.5541

THREAD
MILLSCOMBO
TAPSSPIRAL
FLUTE TAPSSPIRAL
POINT TAPSSTRAIGHT
FLUTE TAPSFORMING
TAPSSCREW
THREAD
INSERT TAPS

PIPE TAPS

TECHNICAL
DATA

HSS

CARBIDE



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
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
	-	-	-	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
15/16	-	-	-	32	.8410	.8490	.8469	.8425	.8446	.8466	.8486	.8506
	-	-	-	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
1	-	-	-	32	.9040	.9110	.9094	.9050	.9071	.9091	.9111	.9131
	8	-	-	-	.8650	.8900	.8797	.8701	.8782	.8863	.8945	.9026
	-	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
1-1/16	-	-	-	32	.9660	.9740	.9719	.9675	.9696	.9716	.9736	.9756
	-	-	-	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
1-1/8	-	-	-	28	1.0240	1.0320	1.0301	1.0254	1.0277	1.0300	1.0323	1.0347
	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

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



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
2-5/8	-	-	-	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