SELECTION GUIDE

THREADING TOOLS

HSS-E & HSS YG TAP GENERAL

- For General Purpose Through and Blind Hole Applications

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good



HOLE TYPE						Max. 3.0xD Through Hole		
TOOL MATERIAL						HSS		
CHAMFER LEAD						4P-5P		
FLUTE TYPE						Spiral Point		
SPIRAL FLUTE ANGLE						-		
SERIES M/MF						T7B17 (p.B272)	T6B17 (p.B272)	T8B17 (p.B272)
SURFACE TREATMENT / COATING						Bright	Steam Oxide	TiN
ISO	VDI 3323	Material Description	Composition / Structure	Heat Treatment	HB	HRc		
P	1	Non-alloy steel	About 0.15% C	Annealed	125		◎ 25-50	◎ 25-50	◎ 50-80
P	2		About 0.45% C	Annealed	190	13	◎ 25-50	◎ 25-50	◎ 50-80
P	3		About 0.45% C	Quenched & Tempered	250	25	◎ 25-50	◎ 25-50	◎ 50-80
P	4		About 0.75% C	Annealed	270	28	○ 6-30	○ 6-30	○ 10-35
P	5		About 0.75% C	Quenched & Tempered	300	32	○ 6-30	○ 6-30	○ 10-35
P	6	Low alloy steel		Annealed	180	10	◎ 6-30	◎ 6-30	◎ 10-35
P	7			Quenched & Tempered	275	29	○ 6-30	○ 6-30	○ 10-35
P	8			Quenched & Tempered	300	32	○ 6-30	○ 6-30	○ 10-35
P	9			Quenched & Tempered	350	38			
P	10	High alloyed steel, and tool steel		Annealed	200	15			
P	11			Quenched & Tempered	325	35			
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15	○ 12-35	○ 12-35	○ 20-50
M	13		Martensitic	Quenched & Tempered	240	23	○ 12-35	○ 12-35	○ 20-50
M	14		Austenitic		180	10			
K	15	Grey cast iron	Pearlitic / ferritic		180	10			
K	16		Pearlitic (Martensitic)		260	26			
K	17	Nodular cast iron	Ferritic		160	3	○ 12-45	○ 12-45	○ 25-55
K	18		Pearlitic		250	25	○ 12-45	○ 12-45	○ 25-55
K	19	Malleable cast iron	Ferritic		130				
K	20		Pearlitic		230	21			
N	21	Aluminum-wrought alloy	Not Curable		60				
N	22		Curable	Hardened	100				
N	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75		○ 40-65		○ 45-90
N	24		≤ 12% Si, Curable	Hardened	90		○ 40-65		○ 45-90
N	25		> 12% Si, Not Curable		130				
N	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110		○ 50-60	○ 50-60	○ 65-100
N	27		CuZn, CuSnZn (Brass)		90		○ 30-65	○ 30-65	○ 30-65
N	28		CuSn, lead-free copper and electrolytic copper		100				
N	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic						
N	30		Rubber, Wood, etc.						
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15			
S	32			Cured	280	30			
S	33		Ni or Co Based	Annealed	250	25			
S	34			Cured	350	38			
S	35			Cast	320	34			
S	36	Titanium Alloys	Pure Titanium		400 Rm				
S	37		Alpha + Beta Alloys	Hardened	1050 Rm				
H	38	Hardened steel		Hardened	550	55			
H	39			Hardened	630	60			
H	40	Chilled Cast Iron		Cast	400	42			
H	41	Hardened Cast Iron		Hardened	550	55			

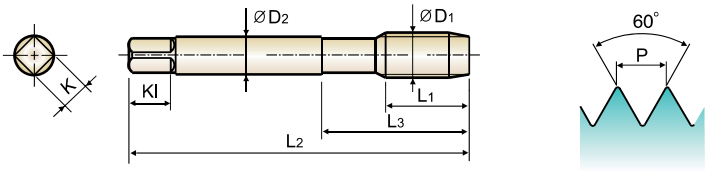


HOLE TYPE		Max. 3.0xD Through Hole							
TOOL MATERIAL		HSS							
CHAMFER LEAD		4P-5P						1.5P-2P	
FLUTE TYPE		Spiral Point						Spiral Point	
SPIRAL FLUTE ANGLE		-						-	
SERIES UNC/UNF		T7236 (p.B273)	T6236 (p.B273)	T8236 (p.B273)	T7G36 (p.B273)	T6G36 (p.B273)	T8G36 (p.B273)	T7256 (p.B274)	T6256 (p.B274)
SURFACE TREATMENT / COATING		Bright	Steam Oxide	TiN	Bright	Steam Oxide	TiN	Bright	Steam Oxide
		Pulley Tap	Pulley Tap	Pulley Tap	Pulley Tap	Pulley Tap	Pulley Tap		
ISO	VDI 3323								
P	1	◎ 25-50	◎ 25-50	◎ 50-80	◎ 25-50	◎ 25-50	◎ 50-80	◎ 25-50	◎ 25-50
P	2	◎ 25-50	◎ 25-50	◎ 50-80	◎ 25-50	◎ 25-50	◎ 50-80	◎ 25-50	◎ 25-50
P	3	◎ 25-50	◎ 25-50	◎ 50-80	◎ 25-50	◎ 25-50	◎ 50-80	◎ 25-50	◎ 25-50
P	4	○ 6-30	○ 6-30	○ 10-35	○ 6-30	○ 6-30	○ 10-35	○ 6-30	○ 6-30
P	5	○ 6-30	○ 6-30	○ 10-35	○ 6-30	○ 6-30	○ 10-35	○ 6-30	○ 6-30
P	6	◎ 6-30	◎ 6-30	◎ 10-35	◎ 6-30	◎ 6-30	◎ 10-35	◎ 6-30	◎ 6-30
P	7	○ 6-30	○ 6-30	○ 10-35	○ 6-30	○ 6-30	○ 10-35	○ 6-30	○ 6-30
P	8	○ 6-30	○ 6-30	○ 10-35	○ 6-30	○ 6-30	○ 10-35	○ 6-30	○ 6-30
P	9								
P	10								
P	11								
M	12	○ 12-35	○ 12-35	○ 20-50	○ 12-35	○ 12-35	○ 20-50	○ 12-35	○ 12-35
M	13	○ 12-35	○ 12-35	○ 20-50	○ 12-35	○ 12-35	○ 20-50	○ 12-35	○ 12-35
M	14								
K	15								
K	16								
K	17	○ 12-45	○ 12-45	○ 25-55	○ 12-45	○ 12-45	○ 25-55	○ 12-45	○ 12-45
K	18	○ 12-45	○ 12-45	○ 25-55	○ 12-45	○ 12-45	○ 25-55	○ 12-45	○ 12-45
K	19								
K	20								
N	21								
N	22								
N	23	○ 40-65		○ 45-90	○ 40-65		○ 45-90	○ 40-65	
N	24	○ 40-65		○ 45-90	○ 40-65		○ 45-90	○ 40-65	
N	25								
N	26	○ 50-60	○ 50-60	○ 65-100	○ 50-60	○ 50-60	○ 65-100	○ 50-60	○ 50-60
N	27	○ 30-65	○ 30-65	○ 30-65	○ 30-65	○ 30-65	○ 30-65	○ 30-65	○ 30-65
N	28								
N	29								
N	30								
S	31								
S	32								
S	33								
S	34								
S	35								
S	36								
S	37								
H	38								
H	39								
H	40								
H	41								

CARBIDE
HSS
THREAD MILL
SYNCHRO TAP
PRIME TAP
COMBO TAP
YG TAP BLUE RING
YG TAP STEEL
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP HARDENED STEEL
YG TAP GENERAL
YG TAP FORMING
STI TAP
PIPE TAP
TECHNICAL DATA

Spiral Point Tap, Pulley Tap & 6" Extension





ANSI Pulley Tap (ASME B94.9)

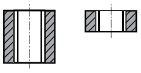
Material groups **GS**

HSS | UNC UNF | USCTI | 4P~5P | Bright | Steam Oxide | TiN

p.B227

Thread Depth / Hole Type

3.0×D



Unit : Inch

Size D1	T.P.I	EDP No. Bright	Steam Oxide	TiN	Limit	Overall Length L2	Thread Length L1	Neck Length L3	Shank Diameter D2	Square Size K	Square Length Kl	No. of Flute
#6	32UNC	T7236243	T6236243	T8236243	H3	6.000	.689	.965	.141	.110	.190	2
#8	32UNC	T7236283	T6236283	T8236283	H3	6.000	.752	1.047	.168	.131	.250	2
#10	24UNC	T7236323	T6236323	T8236323	H3	6.000	.906	1.260	.194	.152	.250	2
#10	32UNF	T7236343	T6236343	T8236343	H3	6.000	.906	1.260	.194	.152	.250	2
1/4	20UNC	T7236403	T6236403	T8236403	H3	6.000	1.000	1.575	.255	.191	.310	2
1/4	28UNF	T7236423	T6236423	T8236423	H3	6.000	1.000	1.575	.255	.191	.310	2
5/16	18UNC	T7236443	T6236443	T8236443	H3	6.000	1.126	1.850	.318	.238	.380	2
5/16	24UNF	T7236463	T6236463	T8236463	H3	6.000	1.126	1.850	.318	.238	.380	2
3/8	16UNC	T7236483	T6236483	T8236483	H3	6.000	1.252	2.028	.381	.286	.440	3
3/8	24UNF	T7236503	T6236503	T8236503	H3	6.000	1.252	2.028	.381	.286	.440	3
7/16	14UNC	T7236523	T6236523	T8236523	H3	6.000	1.437	2.244	.444	.333	.410	3
7/16	20UNF	T7236543	T6236543	T8236543	H3	6.000	1.437	2.244	.444	.333	.410	3
1/2	13UNC	T7236563	T6236563	T8236563	H3	6.000	1.657	2.520	.507	.380	.440	3
1/2	20UNF	T7236583	T6236583	T8236583	H3	6.000	1.657	2.520	.507	.380	.440	3
5/8	11UNC	T7236643	T6236643	T8236643	H3	6.000	1.811	2.776	.633	.475	.560	3
5/16	18UNC	T7G36443	T6G36443	T8G36443	H3	6.000	1.126	1.850	.318	.238	.380	3
5/16	24UNF	T7G36463	T6G36463	T8G36463	H3	6.000	1.126	1.850	.318	.238	.380	3

▶6" EXTENSION (#6~#10)
▶Pulley Tap (1/4~3/4)
▶Steam Oxide is not recommended for Aluminum and Aluminum alloys.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	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	N										S							H			
Material Description	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	400Rm	1050Rm	550	630	400	550
Recommended			○	○		○	○														

TECHNICAL DATA

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				
			Unified Class of Thread		American National Class of Thread		Min. All Class (Basic)	Unified Class of Thread		American National Class of Thread	
	UNC	UNF	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.

THREAD LIMITS

Unified Thread, Machine Screw Size - Ground Thread

Size	Thread per Inch			Major Diameter (Inches)			Pitch Diameter Limits (Inches)								
	UNC	UNF	UNS	Basic	Min.	Max.	Basic Pitch Dia.	H1 Limit		H2 Limit		H3 Limit		H7 Limit	
								Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
#0	–	80	–	.0600	.0605	.0615	.0519	.0519	.0524	.0524	.0529	–	–	–	–
#1	64	–	–	.0730	.0735	.0745	.0629	.0629	.0634	.0634	.0639	–	–	–	–
	–	72	–	.0730	.0735	.0745	.0640	.0640	.0645	.0645	.0650	–	–	–	–
#2	56	–	–	.0860	.0865	.0875	.0744	.0744	.0749	.0749	.0754	–	–	–	–
	–	64	–	.0860	.0865	.0875	.0759	–	–	.0764	.0769	–	–	–	–
#3	48	–	–	.0990	.0100	.1010	.0855	.0855	.0860	.0860	.0865	–	–	–	–
	–	56	–	.0990	.0995	.1005	.0874	.0874	.0879	.0879	.0884	–	–	–	–
#4	–	–	36	.1120	.1135	.1145	.0940	–	–	.0945	.0950	–	–	–	–
	40	–	–	.1120	.1135	.1145	.0958	.0958	.0963	.0963	.0968	–	–	–	–
	–	48	–	.1120	.1130	.1140	.0985	.0985	.0990	.0990	.0995	–	–	–	–
#5	40	–	–	.1250	.1265	.1275	.1088	.1088	.1093	.1093	.1098	–	–	–	–
	–	44	–	.1250	.1260	.1270	.1102	–	–	.1107	.1112	–	–	–	–
#6	32	–	–	.1380	.1400	.1410	.1177	.1177	.1182	.1182	.1187	.1187	.1192	.1207	.1212
	–	40	–	.1380	.1395	.1405	.1218	.1218	.1223	.1223	.1228	—	—	—	—
#8	32	–	–	.1640	.1660	.1670	.1437	.1437	.1442	.1442	.1447	.1447	.1452	.1467	.1472
	–	36	–	.1640	.1655	.1665	.1460	–	–	.1465	.1470	—	—	—	—
#10	24	–	–	.1900	.1930	.1940	.1629	.1629	.1634	.1634	.1639	.1639	.1644	.1659	.1664
	–	32	–	.1900	.1920	.1930	.1697	.1697	.1702	.1702	.1707	.1707	.1712	.1727	.1732
#12	24	–	–	.2160	.2190	.2200	.1889	–	–	–	–	.1899	.1904	–	–
	–	28	–	.2160	.2185	.2195	.1928	–	–	–	–	.1938	.1943	–	–

Lead Tolerance

A maximum lead deviation of plus or minus .0005" within any two threads not farther apart than 1" is permitted

Pitch Diameter Limits

H1 = Basic to basic plus .0005"

H2 = Basic plus .0005" to basic plus .001"

H3 = Basic plus .001" to basic plus .0015"

H7 = Basic plus .003" to basic plus .0035"

Angle Tolerance

24 to 80 threads per inch incl. = 30 plus or minus in 1/2 angle.

Unified Thread, Machine Screw Size - Ground Thread

Size	Thread per Inch			Major Diameter (Inches)			Pitch Diameter Limits (Inches)											
	UNC	UNF	UNS	Basic	Min.	Max.	Basic Pitch Dia.	H1 Limit		H2 Limit		H3 Limit		H4 Limit		H5 Limit		H6 Limit	
								Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1/4	20	–	–	.2500	.2540	.2550	.2175	.2175	.2180	.2180	.2185	.2185	.2190	–	–	.2195	.2200	–	–
	–	28	–	.2500	.2525	.2535	.2268	.2268	.2273	.2273	.2278	.2278	.2283	.2283	.2288	–	–	–	–
5/16	18	–	–	.3125	.3170	.3180	.2764	.2764	.2769	.2769	.2774	.2774	.2779	–	–	.2784	.2789	–	–
	–	24	–	.3125	.3155	.3165	.2854	.2854	.2859	.2859	.2864	.2864	.2869	.2869	.2874	–	–	–	–
3/8	16	–	–	.3750	.3800	.3810	.3344	.3344	.3349	.3349	.3354	.3354	.3359	–	–	.3364	.3369	–	–
	–	24	–	.3750	.3780	.3790	.3479	.3479	.3484	.3484	.3489	.3489	.3494	.3494	.3499	–	–	–	–
7/16	14	–	–	.4375	.4435	.4445	.3911	–	–	.3916	.3921	.3921	.3926	–	–	.3931	.3936	–	–
	–	20	–	.4375	.4415	.4425	.4050	–	–	–	–	.4060	.4065	–	–	.4070	.4075	–	–
1/2	13	–	–	.5000	.5065	.5075	.4500	.4500	.4505	.4505	.4510	.4510	.4515	–	–	.4520	.4525	–	–
	–	20	–	.5000	.5040	.5050	.4675	.4675	.4680	.4680	.4685	.4685	.4690	–	–	.4695	.4700	–	–
9/16	12	–	–	.5625	.5690	.5700	.5084	–	–	.5089	.5094	.5094	.5099	–	–	.5104	.5109	–	–
	–	18	–	.5625	.5670	.5680	.5264	–	–	.5269	.5274	.5274	.5279	–	–	.5284	.5289	–	–
5/8	11	–	–	.6250	.6320	.6330	.5660	–	–	.5665	.5670	.5670	.5675	–	–	.5680	.5685	–	–
	–	18	–	.6250	.6295	.6305	.5889	–	–	.5894	.5899	.5899	.5904	–	–	.5909	.5914	–	–
11/16	–	–	11	.6875	.6945	.6955	.6285	–	–	–	–	.6295	.6300	–	–	–	–	–	–
	–	–	16	.6875	.6925	.6935	.6469	–	–	.6855	.6860	.6479	.6484	–	–	–	–	–	–
3/4	10	–	–	.7500	.7525	.7590	.6850	.6850	.6855	.7099	.7104	.6860	.6865	–	–	.6870	.6875	–	–
	–	16	–	.7500	.7550	.7560	.7094	.7094	.7099	–	–	.7104	.7109	–	–	.7114	.7119	.8053	–
7/8	9	–	–	.8750	.8835	.8850	.8028	–	–	.8291	.8296	–	–	.8043	.8048	–	–	.8311	.8058
	–	14	–	.8750	.8810	.8820	.8286	–	–	.9193	.9198	–	–	.8301	.8306	–	–	.9213	.8318
1	8	–	–	1.0000	1.0095	1.0110	.9188	–	–	–	–	–	–	.9203	.9208	–	–	–	.9218
	–	12	–	1.0000	1.0065	1.0075	.9459	–	–	–	–	–	–	.9474	.9479	–	–	–	–
	–	–	14	1.0000	1.0060	1.0070	.9536	–	–			–	–	.9551	.9556	–	–		–

Lead Tolerance

A maximum lead deviation of plus or minus .0005" within any two threads not farther apart than 1" is permitted

Pitch Diameter Limits

H1 = Basic to basic plus .0005"
H2 = Basic plus .0005" to basic plus .001"
H3 = Basic plus .001" to basic plus .0015"
H4 = Basic plus .0015" to basic plus .0020"
H5 = Basic plus .0020" to basic plus .0025"
H6 = Basic plus .0025" to basic plus .0030"

Angle Tolerance

Threads per Inch	Deviation in Half Angle
6 to 9 Incl. 10 to 28 Incl.	25' Plus or Minus 30' Plus or Minus

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
	-	-	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
	-	-	-	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

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
	-	-	-	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
	-	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

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
1-1/8	-	-	-	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
	-	-	-	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	1.2176	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
	-	-	-	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	-	-	1.2850	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
	-	-	-	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
1-7/16	-	-	-	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
	-	-	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

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
	-	-	-	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
	-	-	-	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