

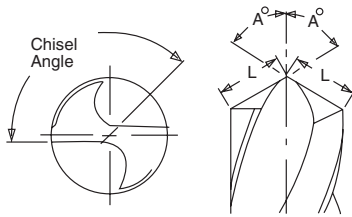
Reference Data Section

Drill Points Suggested for Various Materials

The follow data is supplied by Regal Cutting Tools.

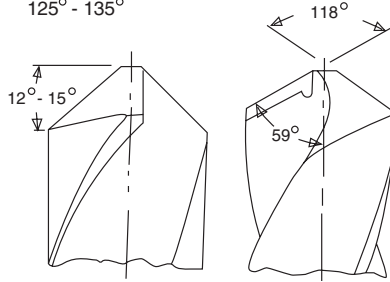
NOTE: Point designs illustrated are not necessarily available from factory stock. Grinds suggested may be made and evaluated by user.

IMPORTANT: Lip lengths and angles must be equal.



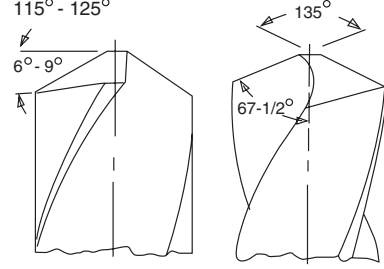
BRASS and SOFT BRONZE

CHISEL ANGLE
125° - 135°



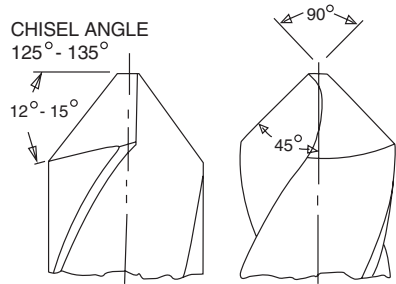
HARD and TOUGH MATERIALS,
MANGANESE STEEL RAILS, etc.

CHISEL ANGLE
115° - 125°



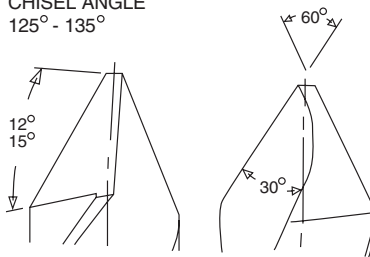
HARD WOOD, BAKELITE, HARD RUBBER
and FIBERS, SOFT and MEDIUM CAST IRON

CHISEL ANGLE
125° - 135°



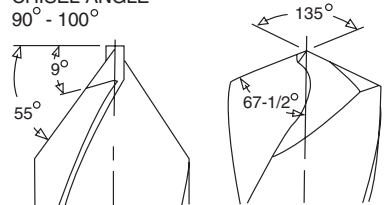
WOOD, RUBER, BAKELITE,
FIBER, MOLDED PLASTICS

CHISEL ANGLE
125° - 135°



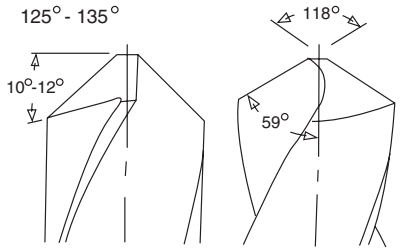
CRANKSHAFT or SPLIT POINT for
DEEP HOLES
Overcomes excessive thrust (due to heavy
web) HARD and TOUGH MATERIALS

CHISEL ANGLE
90° - 100°



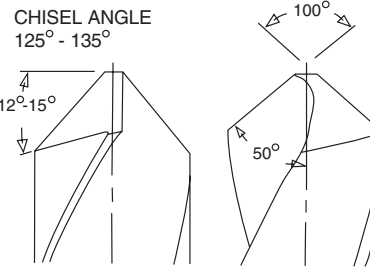
REGULAR POINT...GENERAL PURPOSE,
MILD STEELS, LAMINATED PLASTICS, etc.

CHISEL ANGLE
125° - 135°



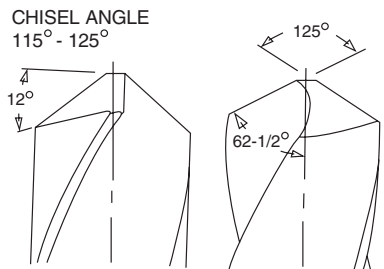
SOFT ALUMINUM, MAGNESIUM, COPPER
and MEDIUM HARD BRASS

CHISEL ANGLE
125° - 135°



HEAT TREATED STEELS, DROP FORGINGS
and CONNECTING RODS

CHISEL ANGLE
115° - 125°



Decimal and Millimeter Equivalents of Fractional Inches

Fraction	Decimal	mm	Fraction	Decimal	mm	Fraction	Decimal	mm	Fraction	Decimal	mm
1/64	0.0156	0.3969	49/64	0.7656	19.4469	1-33/64	1.5156	38.4969	2-17/64	2.2656	57.5469
1/32	0.0313	0.7938	25/32	0.7813	19.8438	1-17/32	1.5313	38.8938	2-9/32	2.2813	57.9438
3/64	0.0469	1.1906	51/64	0.7969	20.2406	1-35/64	1.5469	39.2906	2-19/64	2.2969	58.3406
1/16	0.0625	1.5875	13/16	0.8125	20.6375	1-9/16	1.5625	39.6875	2-5/16	2.3125	58.7375
5/64	0.0781	1.9844	53/64	0.8281	21.0344	1-37/64	1.5781	40.0844	2-21/64	2.3281	59.1344
3/32	0.0938	2.3813	27/32	0.8438	21.4313	1-19/32	1.5938	40.4813	2-11/32	2.3438	59.5313
7/64	0.1094	2.7781	55/64	0.8594	21.8281	1-39/64	1.6094	40.8781	2-23/64	2.3594	59.9281
1/8	0.1250	3.1750	7/8	0.8750	22.2250	1-5/8	1.6250	41.2750	2-3/8	2.3750	60.3250
9/64	0.1406	3.5719	57/64	0.8906	22.6219	1-41/64	1.6406	41.6719	2-25/64	2.3906	60.7219
5/32	0.1563	3.9688	29/32	0.9063	23.0188	1-21/32	1.6563	42.0688	2-13/32	2.4063	61.1188
11/64	0.1719	4.3656	59/64	0.9219	23.4156	1-43/64	1.6719	42.4656	2-27/64	2.4219	61.5156
3/16	0.1875	4.7625	15/16	0.9375	23.8125	1-11/16	1.6875	42.8625	2-7/16	2.4375	61.9125
13/64	0.2031	5.1594	61/64	0.9531	24.2094	1-45/64	1.7031	43.2594	2-29/64	2.4531	62.3094
7/32	0.2188	5.5563	31/32	0.9688	24.6063	1-23/32	1.7188	43.6563	2-15/32	2.4688	62.7063
15/64	0.2344	5.9531	63/64	0.9844	25.0031	1-47/64	1.7344	44.0531	2-31/64	2.4844	63.1031
1/4	0.2500	6.3500	1	1.0000	25.4000	1-3/4	1.7500	44.4500	2-1/2	2.5000	63.5000
17/64	0.2656	6.7469	1-1/64	1.0156	25.7969	1-49/64	1.7656	44.8469	2-33/64	2.5156	63.8969
9/32	0.2813	7.1438	1-1/32	1.0313	26.1938	1-25/32	1.7813	45.2438	2-17/32	2.5313	64.2938
19/64	0.2969	7.5406	1-3/64	1.0469	26.5906	1-51/64	1.7969	45.6406	2-35/64	2.5469	64.6906
5/16	0.3125	7.9375	1-1/16	1.0625	26.9875	1-13/16	1.8125	46.0375	2-9/16	2.5625	65.0875
21/64	0.3281	8.3344	1-5/64	1.0781	27.3844	1-53/64	1.8281	46.4344	2-37/64	2.5781	65.4844
11/32	0.3438	8.7313	1-3/32	1.0938	27.7813	1-27/32	1.8438	46.8313	2-19/32	2.5938	65.8813
23/64	0.3594	9.1281	1-7/64	1.1094	28.1781	1-55/64	1.8594	47.2281	2-39/64	2.6094	66.2781
3/8	0.3750	9.5250	1-1/8	1.1250	28.5750	1-7/8	1.8750	47.6250	2-5/8	2.6250	66.6750
25/64	0.3906	9.9219	1-9/64	1.1406	28.9719	1-57/64	1.8906	48.0219	2-41/64	2.6406	67.0719
13/32	0.4063	10.3188	1-5/32	1.1563	29.3688	1-29/32	1.9063	48.4188	2-21/32	2.6563	67.4688
27/64	0.4219	10.7156	1-11/64	1.1719	29.7656	1-59/64	1.9219	48.8156	2-43/64	2.6719	67.8656
7/16	0.4375	11.1125	1-3/16	1.1875	30.1625	1-15/16	1.9375	49.2125	2-11/16	2.6875	68.2625
29/64	0.4531	11.5094	1-13/64	1.2031	30.5594	1-61/64	1.9531	49.6094	2-45/64	2.7031	68.6594
15/32	0.4688	11.9063	1-7/32	1.2188	30.9563	1-31/32	1.9688	50.0063	2-23/32	2.7188	69.0563
31/64	0.4844	12.3031	1-15/64	1.2344	31.3531	1-63/64	1.9844	50.4031	2-47/64	2.7344	69.4531
1/2	0.5000	12.7000	1-1/4	1.2500	31.7500	2	2.0000	50.8000	2-3/4	2.7500	69.8500
33/64	0.5156	13.0969	1-17/64	1.2656	32.1469	2-1/64	2.0156	51.1969	2-49/64	2.7656	70.2469
17/32	0.5313	13.4938	1-9/32	1.2813	32.5438	2-1/32	2.0313	51.5938	2-25/32	2.7813	70.6438
35/64	0.5469	13.8906	1-19/64	1.2969	32.9406	2-3/64	2.0469	51.9906	2-51/64	2.7969	71.0406
9/16	0.5625	14.2875	1-5/16	1.3125	33.3375	2-1/16	2.0625	52.3875	2-13/16	2.8125	71.4375
37/64	0.5781	14.6844	1-21/64	1.3281	33.7344	2-5/64	2.0781	52.7844	2-53/64	2.8281	71.8344
19/32	0.5938	15.0813	1-11/32	1.3438	34.1313	2-3/32	2.0938	53.1813	2-27/32	2.8438	72.2313
39/64	0.6094	15.4781	1-23/64	1.3594	34.5281	2-7/64	2.1094	53.5781	2-55/64	2.8594	72.6281
5/8	0.6250	15.8750	1-3/8	1.3750	34.9250	2-1/8	2.1250	53.9750	2-7/8	2.8750	73.0250
41/64	0.6406	16.2719	1-25/64	1.3906	35.3219	2-9/64	2.1406	54.3719	2-57/64	2.8906	73.4219
21/32	0.6563	16.6688	1-13/32	1.4063	35.7188	2-5/32	2.1563	54.7688	2-29/32	2.9063	73.8188
43/64	0.6719	17.0656	1-27/64	1.4219	36.1156	2-11/64	2.1719	55.1656	2-59/64	2.9219	74.2156
11/16	0.6875	17.4625	1-7/16	1.4375	36.5125	2-3/16	2.1875	55.5625	2-15/16	2.9375	74.6125
45/64	0.7031	17.8594	1-29/64	1.4531	36.9094	2-13/64	2.2031	55.9594	2-61/64	2.9531	75.0094
23/32	0.7188	18.2563	1-15/32	1.4688	37.3063	2-7/32	2.2188	56.3563	2-31/32	2.9688	75.4063
47/64	0.7344	18.6531	1-31/64	1.4844	37.7031	2-15/64	2.2344	56.7531	2-63/64	2.9844	75.8031
3/4	0.7500	19.0500	1-1/2	1.5000	38.1000	2-1/4	2.2500	57.1500	3	3.0000	76.2000

Decimal and Millimeter Equivalents of Wire, Fractional and Letter Size Drills

Drill Size	Decimal	mm	Drill Size	Decimal	mm	Drill Size	Decimal	mm	Drill Size	Decimal	mm
80	0.0135	0.3429	49	0.0730	1.8542	20	0.1610	4.0894	I	0.2720	6.9088
79	0.0145	0.3683	48	0.0760	1.9304	19	0.1660	4.2164	J	0.2770	7.0358
1/64	0.0156	0.3969	5/64	0.0781	1.9844	18	0.1695	4.3053	K	0.2810	7.1374
78	0.0160	0.4064	47	0.0785	1.9939	11/64	0.1719	4.3656	9/32	0.2813	7.1438
77	0.0180	0.4572	46	0.0810	2.0574	17	0.1730	4.3942	L	0.2900	7.3660
76	0.0200	0.5080	45	0.0820	2.0828	16	0.1770	4.4958	M	0.2950	7.4930
75	0.0210	0.5334	44	0.0860	2.1844	15	0.1800	4.5720	19/64	0.2969	7.5406
74	0.0225	0.5715	43	0.0890	2.2606	14	0.1820	4.6228	N	0.3020	7.6708
73	0.0240	0.6096	42	0.0935	2.3749	13	0.1850	4.6990	5/16	0.3125	7.9375
72	0.0250	0.6350	3/32	0.0938	2.3813	3/16	0.1875	4.7625	O	0.3160	8.0264
71	0.0260	0.6604	41	0.0960	2.4384	12	0.1890	4.8006	P	0.3230	8.2042
70	0.0280	0.7112	40	0.0980	2.4892	11	0.1910	4.8514	21/64	0.3281	8.3344
69	0.0292	0.7417	39	0.0995	2.5273	10	0.1935	4.9149	Q	0.3320	8.4328
68	0.0310	0.7874	38	0.1015	2.5781	9	0.1960	4.9784	R	0.3390	8.6106
1/32	0.0313	0.7938	37	0.1040	0.2642	8	0.1990	5.0546	11/32	0.3438	8.7313
67	0.0320	0.8128	36	0.1065	2.7051	7	0.2010	5.1054	S	0.3480	8.8392
66	0.0330	0.8382	7/64	0.1094	2.7781	13/64	0.2031	5.1594	T	0.3580	9.0932
65	0.0350	0.8890	35	0.1100	2.7940	6	0.2040	5.1816	23/64	0.3594	9.1281
64	0.0360	0.9144	34	0.1110	2.8194	5	0.2055	5.2197	U	0.3680	9.3472
63	0.0370	0.9398	33	0.1130	2.8702	4	0.2090	5.3086	3/8	0.3750	9.5250
62	0.0380	0.9652	32	0.1160	2.9464	3	0.2130	5.4102	V	0.3770	9.5758
61	0.0390	0.9906	31	0.1200	3.0480	7/32	0.2188	5.5563	W	0.3860	9.8044
60	0.0400	1.0160	1/8	0.1250	3.1750	2	0.2210	5.6134	25/64	0.3906	9.9219
59	0.0410	1.0414	30	0.1285	3.2639	1	0.2280	5.7912	X	0.3970	10.0838
58	0.0420	1.0668	29	0.1360	3.4544	A	0.2340	5.9436	Y	0.4040	10.2616
57	0.0430	1.0922	28	0.1405	3.5687	15/64	0.2344	5.9531	13/32	0.4063	10.3188
56	0.0465	1.1811	9/64	0.1406	3.5719	B	0.2380	6.0452	Z	0.4130	10.4902
3/64	0.0469	1.1906	27	0.1440	3.6576	C	0.2420	6.1468	27/64	0.4219	10.7156
55	0.0520	1.3208	26	0.1470	3.7338	D	0.2460	6.2484	7/16	0.4375	11.1125
54	0.0550	1.3970	25	0.1495	3.7973	1/4	0.2500	6.3500	29/64	0.4531	11.5094
53	0.0595	1.5113	24	0.1520	3.8608	E	0.2500	6.3500	15/32	0.4688	11.9063
1/16	0.0625	1.5875	23	0.1540	3.9116	F	0.2570	6.5278	31/64	0.4844	12.3031
52	0.0635	1.6129	5/32	0.1563	3.9688	G	0.2610	6.6294	1/2	0.5000	12.7000
51	0.0670	1.7018	22	0.1570	3.9878	17/64	0.2656	6.7469			
50	0.0700	1.7780	21	0.1590	4.0386	H	0.2660	6.7564			

Millimeters Converted to Decimal Inches

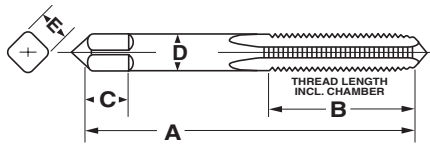
mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches
0.50	0.0197	8.00	0.3150	15.50	0.6102	23.00	0.9055	30.50	1.2008
1.00	0.0394	8.50	0.3346	16.00	0.6299	23.50	0.9252	31.00	1.2205
1.50	0.0591	9.00	0.3543	16.50	0.6496	24.00	0.9449	31.50	1.2402
2.00	0.0787	9.50	0.3740	17.00	0.6693	24.50	0.9646	32.00	1.2598
2.50	0.0984	10.00	0.3937	17.50	0.6890	25.00	0.9843	32.50	1.2795
3.00	0.1181	10.50	0.4134	18.00	0.7087	25.50	1.0039	33.00	1.2992
3.50	0.1378	11.00	0.4331	18.50	0.7283	26.00	1.0236	33.50	1.3189
4.00	0.1575	11.50	0.4528	19.00	0.7480	26.50	1.0433	34.00	1.3386
4.50	0.1772	12.00	0.4724	19.50	0.7677	27.00	1.0630	34.50	1.3583
5.00	0.1969	12.50	0.4921	20.00	0.7874	27.50	1.0827	35.00	1.3780
5.50	0.2165	13.00	0.5118	20.50	0.8071	28.00	1.1024	35.50	1.3976
6.00	0.2362	13.50	0.5315	21.00	0.8268	28.50	1.1220	36.00	1.4173
6.50	0.2559	14.00	0.5512	21.50	0.8465	29.00	1.1417	36.50	1.4370
7.00	0.2756	14.50	0.5709	22.00	0.8661	29.50	1.1614	37.00	1.4567
7.50	0.2953	15.00	0.5906	22.50	0.8858	30.00	1.1811	37.50	1.4764

For other values use the following conversion: to convert millimeters to inches divide by 25.4

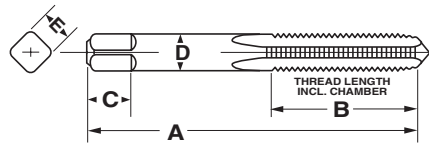
Hardness Conversion Numbers For Steel

Brinell 3000 kg. Load 10 mm. Ball		ROCKWELL		Tensile Strength PSI Approx.	Brinell 3000 kg. Load 10 mm. Ball		ROCKWELL		Tensile Strength PSI Approx.
Diameter mm	Hardness Number	B Scale	C Scale		Diameter mm	Hardness Number	B Scale	C Scale	
2.25	745		65.3		3.75	262	103.0	26.6	125,000
2.30	712				3.80	255	102.0	25.4	121,000
2.35	682		61.7		3.85	248	101.0	24.2	118,000
2.40	653		60.0		3.90	241	100.0	22.8	114,000
2.45	627		58.7		3.95	235	99.0	21.7	111,000
2.50	601		57.3		4.00	229	98.2	20.5	109,000
2.55	578		56.0		4.05	223	97.3	18.8	104,000
2.60	555		54.7	298,000	4.10	217	96.4	17.5	103,000
2.65	534		53.5	288,000	4.15	212	95.5	16.0	100,000
2.70	514		52.1	274,000	4.20	207	94.6	15.2	99,000
2.75	495		51.0	264,000	4.25	201	93.8	13.8	97,000
2.80	477		49.6	252,000	4.30	197	92.8	12.7	94,000
2.85	461		48.5	242,000	4.35	192	91.9	11.5	92,000
2.90	444		47.1	230,000	4.40	187	90.7	10.0	90,000
2.95	429		45.7	219,000	4.45	183	90.0	9.0	89,000
3.00	415		44.5	212,000	4.50	179	89.0	8.0	88,000
3.05	401		43.1	202,000	4.55	174	87.8	6.4	86,000
3.10	338		41.8	193,000	4.60	170	86.8	5.4	84,000
3.15	375		40.4	184,000	4.65	167	86.0	4.4	83,000
3.20	363		39.1	177,000	4.70	163	85.0	3.3	82,000
3.25	352	110.0	37.9	170,000	4.80	156	82.9	0.9	80,000
3.30	341	109.0	36.6	163,000	4.90	149	80.8		
3.35	331	108.5	35.5	158,000	5.00	143	78.7		
3.40	321	108.0	34.3	152,000	5.10	137	76.4		
3.45	311	107.5	33.1	147,000	5.20	131	74.0		
3.50	302	107.0	32.1	143,000	5.30	126	72.0		
3.55	293	106.0	30.9	139,000	5.40	121	69.8		
3.60	285	105.5	2.9	136,000	5.50	116	67.6		
3.65	277	104.5	28.8	131,000	5.60	111	65.7		
3.70	269	104.0	27.6	128,000					

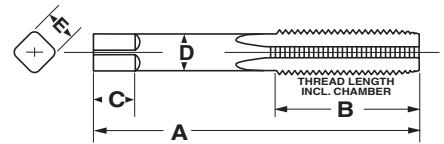
Standard Tap Dimensions



Size #0-12 Machine Screw
Sizes 1.6-6.3 mm



Size #14 Machine Screw
Sizes 7-10 mm



Sizes larger than 3/8"
Sizes 12 mm and larger

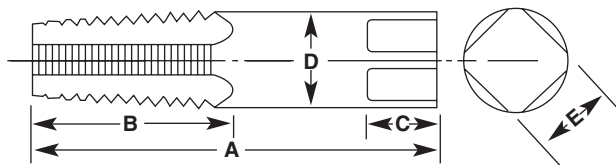
STYLE-1

STYLE-2

STYLE-3

Nominal Diameter Range (in.)		Mach. Screw Size No.	Nominal Fractional Diameter (in.)	Nominal Metric Diameter (mm)	Style	Tap Dimensions - Inches				
						Length Overall A	Length of Thread B	Length of Square C	Diameter of Shank D	Size of Square E
Over	To (incl.)									
.052	.065	0	1/16	M1.6	1	1-5/8	5/16	3/16	.141	.110
.065	.078	1	-	M1.8	1	1-11/16	3/8	3/16	.141	.110
.078	.091	2	-	M2, M2.2	1	1-3/4	7/16	3/16	.141	.110
.091	.104	3	3/32	M2.5	1	1-13/16	1/2	3/16	.141	.110
.104	.117	4	-	-	1	1-7/8	9/16	3/16	.141	.110
.117	.130	5	1/8	M3, M3.15	1	1-15/16	5/8	3/16	.141	.110
.130	.145	6	-	M3.5	1	2	11/16	3/16	.141	.110
.145	.171	8	5/32	M4	1	2-1/8	3/4	1/4	.168	.131
.171	.197	10	3/16	M4.5, M5	1	2-3/8	7/8	1/4	.194	.152
.197	.223	12	7/32	-	1	2-3/8	15/16	9/32	.220	.165
.223	.260	14	1/4	M6, M6.3	2	2-1/2	1	5/16	.255	.191
.260	.323	-	5/16	M7, M8	2	2-23/32	1-1/8	3/8	.318	.238
.323	.395	-	3/8	M10	2	2-15/16	1-1/4	7/16	.381	.286
.395	.448	-	7/16	-	3	3-5/32	1-7/16	13/32	.323	.242
.448	.510	-	1/2	M12, M12.5	3	3-3/8	1-21/32	7/16	.367	.275
.510	.573	-	9/16	M14	3	3-19/32	1-21/32	1/2	.429	.322
.573	.635	-	5/8	M16	3	3-13/16	1-13/16	9/16	.480	.360
.635	.709	-	11/16	M18	3	4-1/32	1-13/16	5/8	.542	.406
.709	.760	-	3/4	-	3	4-1/4	2	11/16	.590	.442
.760	.823	-	13/16	M20	3	4-15/32	2	11/16	.652	.489
.823	.885	-	7/8	M22	3	4-11/16	2-7/32	3/4	.697	.523
.885	.948	-	15/16	M24	3	4-29/32	2-7/32	3/4	.760	.570
.948	1.010	-	1	M25	3	5-1/8	2-1/2	13/16	.800	.600
1.010	1.073	-	1-1/16	M27	3	5-1/8	2-1/2	7/8	.896	.672
1.073	1.135	-	1-1/8	-	3	5-7/16	2-9/16	7/8	.896	.672
1.135	1.198		1-3/16	M30	3	5-7/16	2-9/16	1	1.021	.766
1.198	1.260		1-1/4	-	3	5-3/4	2-9/16	1	1.021	.766
1.260	1.323		1-5/16	M33	3	5-3/4	2-9/16	1-1/16	1.108	.831
1.323	1.385		1-3/8	-	3	6-1/16	3	1-1/16	1.108	.831
1.385	1.448		1-7/16	M36	3	6-1/16	3	1-1/8	1.233	.925
1.448	1.510		1-1/2	-	3	6-3/8	3	1-1/8	1.233	.925
1.510	1.635		1-5/8	M39	3	6-11/16	3-3/16	1-1/8	1.305	.979
1.635	1.760		1-3/4	M42	3	7	3-3/16	1-1/4	1.430	1.072
1.760	1.885		1-7/8	-	3	7-5/16	3-9/16	1-1/4	1.519	1.139
1.885	2.010		2	M48	3	7-5/8	3-9/16	1-3/8	1.644	1.233
2.010	2.135		2-1/8	-	3	8	3-9/16	1-3/8	1.769	1.327
2.135	2.260		2-1/4	M56	3	8-1/4	3-9/16	1-7/16	1.894	1.420
2.260	2.385		2-3/8	-	3	8-1/2	4	1-7/16	2.019	1.514
2.385	2.510		2-1/2	-	3	8-3/4	4	1-1/2	2.100	1.575
2.510	2.635		2-5/8	M64	3	8-3/4	4	1-1/2	2.225	1.669
2.635	2.760		2-3/4	-	3	9-1/4	4	1-9/16	2.350	1.762
2.760	2.885		2-7/8	M72	3	9-1/4	4	1	2.475	1.856
2.885	3.010		3	-	3	9-3/4	4-9/16	1-5/8	2.543	1.907
3.010	3.135		3-1/8	-	3	9-3/4	4-9/16	1-5/8	2.668	2.001
3.135	3.260		3-1/4	M80	3	10	4-9/16	1-3/4	2.793	2.095
3.260	3.385		3-3/8	-	3	10	4-9/16	1-3/4	2.883	2.162
3.385	3.510		3-1/2	-	3	10-1/4	4-15/16	2	3.008	2.256
3.510	3.635		3-5/8	M90	3	10-1/4	4-15/16	2	3.133	2.350
3.635	3.760		3-3/4	-	3	10-1/2	5-5/16	2-1/8	3.217	2.413
3.760	3.885		3-7/8	-	3	10-1/2	5-5/16	2-1/8	3.342	2.506
3.885	4.010		4	M100	3	10-3/4	5-5/16	2-1/4	3.467	2.600

Pipe Tap Dimensions - Straight and Taper



Nominal Size Inches	Pipe Diameter Inches	Standard Projection	Minimum Projection	Length Overall A	Length of Thread B	Length of Square C	Diameter of Shank D	Size of Square E
1/16-27	0.300	0.312	Flush ("0" Proj.)	2-1/8	11/16	3/8	0.3125	0.234
1/8-27 Small Shank	0.405	0.312	Flush ("0" Proj.)	2-1/8	3/4	3/8	0.3125	0.234
1/8-27	0.405	0.312	Flush ("0" Proj.)	2-1/8	3/4	3/8	0.4375	0.328
1/4-18	0.540	0.459	0.218	2-7/16	1-1/16	7/16	0.5625	0.421
3/8-18	0.675	0.454	0.150	2-9/16	1-1/16	1/2	0.7000	0.531
1/2-14	0.840	0.579	0.260	3-1/8	1-3/8	5/8	0.6875	0.515
3/4-14	1.050	0.565	0.245	3-1/4	1-3/8	11/16	0.9063	0.679
1-11.5	1.315	0.678	0.275	3-3/4	1-3/4	13/16	1.1250	0.843
1-1/4-11.5	1.660	0.686	0.285	4	1-3/4	15/16	1.3125	0.984
1-1/2-11.5	1.900	0.699	0.300	4-1/4	1-3/4	1	1.5000	1.125
2-11.5	2.375	0.667	0.267	4-1/2	1-3/4	1-1/8	1.8750	1.406
2-1/2-8	2.875	0.925	0.525	5-1/2	2-9/16	1-1/4	2.2500	1.687
3-8	3.500	0.925	0.525	6	2-5/8	1-3/8	2.6250	1.968
3-1/2-8	4.000	0.938	0.525	6-1/2	2-11/16	1-1/2	2.8125	2.108
4-8	4.500	0.950	0.525	6-3/4	2-3/4	1-5/8	3.0000	2.250

Standard Tap Drill Sizes for Cut Threads

Drill Size (inches) = Major Diameter (inches) - (0.01299 x %Thread / # of Threads Per Inch)

Tap	Tap Drill	Decimal Equiv. of Tap Drill	Theo. % of Thrd	Probable Oversize (mean)	Probable Hole Size	% of Thrd	Tap	Tap Drill	Decimal Equiv. of Tap Drill	Theo. % of Thrd	Probable Oversize (mean)	Probable Hole Size	% of Thrd
	26	.1470	79	.0032	.1502	74	1/2-20	29/64	.4531	72	.0047	.4578	65
	25	.1495	75	.0032	.1527	69	9/16-12	15/32	.4688	87	.0048	.4736	82
	24	.1520	70	.0032	.1552	64		31/64	.4844	72	.0048	.4892	68
10-32	5/32	.1653	83	.0032	.1595	75	9/16-18	1/2	.500	87	.0048	.5048	80
	22	.1570	81	.0032	.1602	73	5/8-11	17/32	.5313	79	.0049	.5362	75
	21	.1590	76	.0032	.1622	68	5/8-18	9/16	.5625	87	.0049	.5674	80
12-24	11/64	.1719	82	.0035	.1754	75	3/4-10	41/64	.6406	84	.0050	.6456	80
	17	.1730	79	.0035	.1765	73		21/32	.6563	72	.0050	.6613	68
	16	.1770	72	.0035	.1805	66	3/4-16	11/16	.6875	77	.0050	.6925	71
12-28	16	.1770	84	.0035	.1805	77	7/8-9	49/64	.7656	76	.0052	.7708	72
	15	.1800	78	.0035	.1835	70	7/8-14	51/64	.7969	84	.0052	.8021	79
	14	.1820	73	.0035	.1855	66	1-8	55/64	.8594	87	.0059	.8653	83
1/4-20	9	.1960	83	.0038	.1998	77		7/8	.875	77	.0059	.8809	73
	8	.1990	79	.0038	.2028	73	1-12	29/32	.9063	87	.0059	.9122	81
	7	.2010	75	.0038	.2048	70		59/64	.9219	72	.0060	.9279	67
	13/64	.2031	72	.0038	.2069	66	1-14	59/64	.9219	84	.0060	.9279	78
1/4-28	3	.2130	80	.0038	.2168	72	1-1/8-7	31/32	.9688	84	.0062	.9750	81
5/16-18	F	.2570	77	.0038	.2608	72		63/64	.9844	76	.0067	.9911	72
	G	.2610	71	.0041	.2651	66		1-1/64	1.0156	59	.0070	1.0226	55
5/16-24	H	.2660	86	.0041	.2701	78	1-1/8-12	1-1/32	1.0313	87	.0071	1.0384	80
	I	.2720	75	.0041	.2761	67	1-1/4-7	1-3/32	1.0938	84			
3/8-16	5/16	.3125	77	.0044	.3169	72		1-7/64	1.1094	76			
	O	.3160	73	.0044	.3204	68	1-1/4-12	1-11/64	1.1719	72			
3/8-24	21/64	.3281	87	.0044	.3325	79	1-3/8-6	1-13/64	1.2031	79			
	Q	.3320	79	.0044	.3364	71		1-7/32	1.2188	72			
7/16-14	T	.3580	86	.0046	.3626	81	1-3/8-12	1-19/64	1.2969	72			
	23/64	.3594	84	.0046	.3640	79	1-1/2-6	1-21/64	1.3281	79			
	U	.3680	75	.0046	.3726	70		1-11/32	1.3438	72			
7/16-20	W	.3860	79	.0046	.3906	72	1-1/2-12	1-27/64	1.4219	72			
	25/64	.3906	72	.0046	.3952	65							

REAMING
RECOMMENDED

Pipe Tap Drill Sizes for Cut Threads

Suggested Pipe Tap Drill Size	Drill Size	Taps Size		1/16	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
		Taper Pipe Tap		C	R	7/16	37/64	23/32	59/64	1-5/32	1-1/2	1-47/64	2-7/32	2-5/8	3-1/4
		Straight Pipe Tap‡		1/4	S	29/64	19/32	47/64	15/16	1-3/16	1-33/64	1-3/4	2-7/32	2-21/32	3-9/32

‡For dryseal straight pipe threads, suggested drill sizes are as shown, except: 1/4" pipe, 0.444 drill size.

Standard Tap Drill Sizes for Rolled Threads

Drill Size (inches) = Major Diameter (inches) - (0.0068 x %Thread / # of Threads Per Inch)

Tap	Basic Major Diameter	Theoretical Drill Size		Recommended Drill Size	Dec. Equiv.	Tap	Basic Major Diameter	Theoretical Drill Size		Recommended Drill Size	Dec. Equiv.
		Max. 55% Thread	Min. 75% Thread					Max. 55% Thread	Min. 75% Thread		
10-24	0.1900	0.1744	0.1692	11/64	0.1719	7/16-14	0.4375	0.4107	0.4018	13/32	0.4062
10-32	0.1900	0.1783	0.1744	16	0.1770	7/16-20	0.4375	0.4188	0.4125	Z	0.4130
12-24	0.2160	0.2004	0.1952	8	0.1990	1/2-13	0.5000	0.4712	0.4615	15/32	0.4682
12-28	0.2160	0.2026	0.1981	7	0.2010	1/2-20	0.5000	0.4813	0.4750	12.25mm	0.4823
1/4-20	0.2500	0.2313	0.2250	1	0.2280	9/16-12	0.5625	0.5313	0.5208	17/32	0.5313
1/4-28	0.2500	0.2366	0.2321	15/64	0.2344	9/16-18	0.5625	0.5417	0.5347	13.65mm	0.5374
5/16-18	0.3125	0.2917	0.2847	L	0.2900	5/8-11	0.6250	0.5909	0.5795	14.85mm	0.5846
5/16-24	0.3125	0.2969	0.2917	M	0.2950	5/8-18	0.6250	0.6042	0.5972	15.25mm	0.6004
3/8-16	0.3750	0.3516	0.3438	S	0.3480	3/4-10	0.7500	0.7125	0.7000	45/64	0.7031
3/8-24	0.3750	0.3594	0.3542	T	0.3580	3/4-16	0.7500	0.7266	0.7188	23/32	0.7188

Metric Tap Drill Sizes for Cut Threads

Drill Size (mm) = Major Diameter (mm) - (0.01299 x Metric Pitch x %Thread)

Tap	Tap Drill	Decimal Equiv. of Tap Drill (inches)	Theo. % of Thrd	Mean Probable Oversize (inches)	Probable Hole Size (inches)	% of Thrd	Tap	Tap Drill	Decimal Equiv. of Tap Drill	Theo. % of Thrd	Mean Probable Oversize (inches)	Probable Hole Size (inches)	% of Thrd
4-0.70	#30	.1285	81	.0029	.1314	73	10-1.50	"Q"	.3320	80	.0044	.3364	75
	3.3mm	.1299	77	.0029	.1328	69		8.5mm	.3346	77	.0044	.3390	71
	3.7mm	.1457	82	.0032	.1489	74		10.25mm	.2035	77	.0047	.4082	72
4.5-0.75	#26	.1470	79	.0032	.1502	70	12-1.75	"Y"	.4040	76	.0047	.4087	71
	#25	.1495	72	.0032	.1527	64		13/32	.4062	74	.0047	.4109	69
	4.2mm	.1654	77	.0032	.1686	69		15/32	.4688	81	.0048	.4736	76
5-0.80	#19	.1660	75	.0032	.1692	68	14-2.00	12mm	.4724	77	.0048	.4772	72
	#10	.1935	84	.0038	.1973	76		35/64	.5469	81	.0049	.5518	76
	#9	.1960	79	.0038	.1998	71		16-2.00	14mm	.5512	77	.0049	.5561
6-1.00	5mm	.1968	77	.0038	.2006	70	20-2.50	11/16	.6875	78	.0050	.6925	74
	#8	.1990	73	.0038	.2028	65		17.5mm	.6890	77	.0052	.6942	73
	"A"	.2340	81	.0038	.2378	74		13/16	.8125	86	.0052	.8177	82
7-1.00	6mm	.2362	77	.0038	.2400	70	24-3.00	21mm	.8268	77	.0059	.8327	73
	"B"	.2380	74	.0838	.2418	66		53/64	.8281	76	.0059	.8340	72
	6.7mm	.2638	80	.0041	.2679	74		1-1/32	1.0312	83	.0071	1.0383	80
8-1.25	17/64	.2656	77	.0041	.2697	71	30-3.50	26.5mm	1.0433	77	.0071	1.0504	73
	"H"	.2660	77	.0041	.2701	70		1-3/64	1.0469	75	.0072	1.0541	70
	6.8mm	.2677	74	.0041	.2718	68		36-4.00	1-17/64	1.2656	74	Reaming Recommended	
8.4mm	.3307	82	.0044	.3351	76								

Metric Tap Drill Sizes for Rolled Threads

Drill Size (mm) = Major Diameter (mm) - (0.0068 x Metric Pitch x %Thread)

Tap	Theoretical Drill Size		Tap	Theoretical Drill Size	
	Max. 55% Thread	Min. 75% Thread		Max. 55% Thread	Min. 75% Thread
	5-0.50	4.81		4.75	14-1.00
5-0.80	4.70	4.60	14-2.00	13.25	13.00
6-0.75	5.72	5.63	16-1.00	15.63	15.50
6-1.00	5.63	5.50	16-2.00	15.25	15.00
7-0.75	6.72	6.63	20-1.00	19.63	19.50
7-1.00	6.63	6.50	20-2.50	19.06	18.75
8-0.75	7.72	7.63	24-1.00	23.63	23.50
8-1.25	7.53	7.38	24-3.00	22.88	22.50
10-0.75	9.72	9.63	30-3.50	28.69	28.25
10-1.50	9.44	9.25	36-4.00	34.50	34.00
12-1.00	11.63	11.50			
12-1.75	11.34	11.13			