

# Table of Cutting Speeds

(Fraction Size Drills)

Feet per Min.	30'	40'	50'	60'	70'	80'	90'	100'	110'	120'	130'	140'	150'
Diameter Inches	Revolutions per Minute												
1/16	1833	2445	3056	3667	4278	4889	5500	6111	6722	7334	7945	8556	9167
1/8	917	1222	1528	1833	2139	2445	2750	3056	3361	3667	3973	4278	4584
3/16	611	815	1019	1222	1426	1630	1833	2037	2241	2445	2648	2852	3056
1/4	458	611	764	917	1070	1222	1375	1528	1681	1833	1986	2139	2292
5/16	367	489	611	733	856	978	1100	1222	1345	1467	1589	1711	1833
3/8	306	407	509	611	713	815	917	1019	1120	1222	1324	1426	1528
7/16	262	349	437	524	611	698	786	873	960	1048	1135	1222	1310
1/2	229	306	382	458	535	611	688	764	840	917	993	1070	1146
5/8	183	244	306	367	428	489	550	611	672	733	794	856	917
3/4	153	203	255	306	357	407	458	509	560	611	662	713	764
7/8	131	175	218	262	306	349	393	436	480	524	568	611	655
1"	115	153	191	229	267	306	344	382	420	458	497	535	573
1 1/8	102	136	170	204	238	272	306	340	373	407	441	475	509
1 1/4	92	122	153	183	214	244	275	306	336	367	397	428	458
1 3/8	83	111	139	167	194	222	250	278	306	333	361	389	417
1 1/2	76	102	127	153	178	204	229	255	280	306	331	357	382
1 5/8	70	94	117	141	165	188	212	235	259	282	306	329	353
1 3/4	65	87	109	131	153	175	196	218	240	262	284	306	327
1 7/8	61	81	102	122	143	163	183	204	224	244	265	285	306
2"	57	76	95	115	134	153	172	191	210	229	248	267	287
2 1/4	51	68	85	102	119	136	153	170	187	204	221	238	255
2 1/2	46	61	76	92	107	122	137	153	168	183	199	214	229

# Tap Drill Sizes

Size	Threads per Inch			Outside Diameter Inches	Pitch Diameter Inches	Root Diameter Inches	Tap Drill Approx. 75% Full Thread	Decimal Equivalent of Tap Drill
	NC	NF	NS					
0	....	80	....	.0600	.0519	.0438	3/64	.0469
1	....	64	....	.0730	.0614	.0498	5/64	.0550
1	64	....	....	.0730	.0629	.0527	53	.0595
1	....	72	....	.0730	.0640	.0550	53	.0595
2	56	....	....	.0860	.0744	.0628	50	.0700
2	....	64	....	.0860	.0759	.0657	49	.0730
3	48	....	....	.0990	.0855	.0719	47	.0785
3	....	56	....	.0990	.0874	.0758	45	.0820
4	....	32	....	.1120	.0917	.0714	45	.0820
4	....	36	....	.1120	.0940	.0759	44	.0860
4	40	....	....	.1120	.0958	.0795	43	.0890
4	....	48	....	.1120	.0985	.0849	42	.0935
5	....	36	....	.1250	.1070	.0889	40	.0980
5	40	....	....	.1250	.1088	.0925	38	.1015
5	....	44	....	.1250	.1102	.0955	37	.1040
6	32	....	....	.1380	.1177	.0974	35	.1065
6	....	36	....	.1380	.1200	.1019	34	.1110
6	....	40	....	.1380	.1218	.1055	33	.1130
8	....	30	....	.1640	.1423	.1207	30	.1285
8	32	....	....	.1640	.1437	.1234	29	.1360
8	....	36	....	.1640	.1460	.1279	29	.1360
8	....	40	....	.1640	.1478	.1315	28	.1405
10	24	....	....	.1900	.1629	.1359	25	.1495
10	....	28	....	.1900	.1668	.1436	23	.1540
10	....	30	....	.1900	.1684	.1467	22	.1570
10	....	32	....	.1900	.1697	.1494	21	.1590
12	24	....	....	.2160	.1889	.1619	16	.1770
12	....	28	....	.2160	.1928	.1696	14	.1820
12	....	32	....	.2160	.1957	.1754	13	.1850
1/4	20	....	....	.2500	.2175	.1850	7	.2010
1/4	....	28	....	.2500	.2268	.2036	3	.2130
5/16	18	....	....	.3125	.2764	.2403	F	.2570
5/16	....	24	....	.3125	.2854	.2584	I	.2720
3/8	16	....	....	.3750	.3344	.2938	1/16	.3125
3/8	....	24	....	.3750	.3479	.3209	O	.3320
7/16	14	....	....	.4375	.3911	.3447	U	.3680
7/16	....	20	....	.4375	.4050	.3726	2 3/4	.3906
1/2	13	....	....	.5000	.4500	.4001	2 1/4	.4219
1/2	....	20	....	.5000	.4675	.4351	2 3/4	.4531
5/8	12	....	....	.5625	.5084	.4542	2 1/4	.4844
5/8	....	18	....	.5625	.5264	.4903	2 3/4	.5156
3/4	11	....	....	.6250	.5660	.5069	1 1/2	.5312
3/4	....	18	....	.6250	.5889	.5528	3/4	.5781
7/8	10	....	....	.7500	.6850	.6201	2 1/2	.6562
7/8	....	16	....	.7500	.7094	.6688	1 1/8	.6875
1"	9	....	....	.8750	.8028	.7307	4 3/4	.7656
1"	....	14	....	.8750	.8286	.7822	1 3/8	.8125
1"	8	....	....	.8750	.8389	.8028	5 3/4	.8281
1 1/8	....	14	....	1.0000	.9188	.8376	7/8	.8750
1 1/8	....	14	....	1.0000	.9536	.9072	1 5/16	.9375
1 1/4	7	....	....	1.1250	1.0322	.9394	6 3/4	.9844
1 1/4	....	12	....	1.1250	1.0709	1.0168	1 3/4	1.0469
1 1/4	....	7	....	1.2500	1.1572	1.0644	1 1/4	1.1094
1 3/8	....	12	....	1.2500	1.1959	1.1418	1 1/4	1.1719
1 3/8	6	....	....	1.3750	1.2667	1.1585	1	1.2187
1 3/8	....	12	....	1.3750	1.3209	1.2668	1 1/8	1.2969
1 1/2	6	....	....	1.5000	1.3917	1.2835	1 1/2	1.3437
1 1/2	....	12	....	1.5000	1.4459	1.3918	1 1/2	1.4219
1 3/4	5	....	....	1.7500	1.6201	1.4902	1 1/2	1.5625
1 3/4	....	4 1/2	....	2.0000	1.8557	1.7113	1 1/2	1.7812
2"	....	4 1/2	....	2.2500	2.1057	1.9613	2 1/2	2.0313
2"	....	4	....	2.5000	2.3376	2.1752	2	2.2500
2 1/4	....	4	....	2.7500	2.5876	2.4252	2 1/2	2.5000

DRILLS AND DRILLING OPERATIONS