

Lathe Cutting Data Tables

	Cutting Factor HSS	Cutting Factor T/C
Hard Steel	50	150
Mild Steel	100	300
Cast Iron	60	180
Alloy Steels (1320 - 9262)	65	195
Carbon Steels (C1008 - C1095)	70	210
Free Maching Steels (B1111 - B1113) & (C1108 - C1213)	115	345
Stainless Steels (300 & 400 Series)	75	225
Bronzes	80	240
Leaded Steel 12L14	300	900
Aluminium	250	750
Brass	600	1800

The following tables show the alloy and the diameter in mm of the work piece. The recommended rotation of the work piece can thus be read off. Diameters for work using High Speed Steel (HSS) are in Black, and those for Tungsten Carbide (T/C) are in Blue.

The Formula used is :

$$\text{RPM} = (320 \times \text{Cutting Factor}) / (\text{Diameter in mm})$$

The tables below give diameters from 5mm to 100mm.

	5	5	10	10	15	15
Hard Steel	3200	9600	1600	4800	1066	3200
Mild Steel	6400	19200	3200	9600	2133	6400
Cast Iron	3840	11520	1920	5760	1280	3840
A Steels	4160	12480	2080	6240	1386	4160
C Steels	4480	13440	2240	6720	1493	4480
F M Steels	7360	22080	3680	11040	2453	7360
S Steels	4800	14400	2400	7200	1600	4800
Bronzes	5120	15360	2560	7680	1706	5120
L Steel	19200	57600	9600	28800	6400	19200
Aluminium	16000	48000	8000	24000	5333	16000
Brass	38400	115200	19200	57600 1	2800	38400

	20	20	25	25	30	30
Hard Steel	800	2400	640	1920	533	1600
Mild Steel	1600	4800	1280	3840	1066	3200
Cast Iron	960	2880	768	2304	640	1920
A Steels	1040	3120	832	2496	693	2080
C Steels	1120	3360	896	2688	746	2240
F M Steels	1840	5520	1472	4416	1226	3680
S Steels	1200	3600	960	2880	800	2400
Bronzes	1280	3840	1024	3072	853	2560
L Steel	4800	14400	3840	11520	3200	9600
Aluminium	4000	12000	3200	9600	2666	8000
Brass	9600	28800	7680	23040	6400	19200

	35	35	40	40	45	45
Hard Steel	457	1371	400	1200	355	1066
Mild Steel	914	2742	800	2400	711	2133
Cast Iron	548	1645	480	1440	426	1280
A Steels	594	1782	520	1560	462	1386
C Steels	640	1920	560	1680	497	1493
F M Steels	1051	3154	920	2760	817	2453
S Steels	685	2057	600	1800	533	1600
Bronzes	731	2194	640	1920	568	1706
L Steel	2742	8228	2400	7200	2133	6400
Aluminium	2285	6857	2000	6000	1777	5333
Brass	5485	16457	4800	14400	4266	12800

	50	50	55	55	60	60
Hard Steel	320	960	290	872	266	800
Mild Steel	640	1920	581	1745	533	1600
Cast Iron	384	1152	349	1047	320	960
A Steels	416	1248	378	1134	346	1040
C Steels	448	1344	407	1221	373	1120
F M Steels	736	2208	669	2007	613	1840
S Steels	480	1440	436	1309	400	1200
Bronzes	512	1536	465	1396	426	1280
L Steel	1920	5760	1745	5236	1600	4800
Aluminium	1600	4800	1454	4363	1333	4000
Brass	3840	11520	3490	10472	3200	9600

	65	65	70	70	75	75
Hard Steel	246	738	228	685	213	640
Mild Steel	492	1476	457	1371	426	1280
Cast Iron	295	886	274	822	256	768
A Steels	320	960	297	891	277	832
C Steels	344	1033	320	960	298	896
F M Steels	566	1698	525	1577	490	1472
S Steels	369	1107	342	1028	320	960
Bronzes	393	1181	365	1097	341	1024
L Steel	1476	4430	1371	4114	1280	3840
Aluminium	1230	3692	1142	3428	1066	3200
Brass	2953	8861	2742	8228	2560	7680

	80	80	85	85	90	90
Hard Steel	200	600	188	564	177	533
Mild Steel	400	1200	376	1129	355	1066
Cast Iron	240	720	225	677	213	640
A Steels	260	780	244	734	231	693
C Steels	280	840	263	790	248	746
F M Steels	460	1380	432	1298	408	1226
S Steels	300	900	282	847	266	800
Bronzes	320	960	301	903	284	853
L Steel	1200	3600	1129	3388	1066	3200
Aluminium	1000	3000	941	2823	888	2666
Brass	2400	7200	2258	6776	2133	6400

	95	95	100	100
Hard Steel	168	505	160	480
Mild Steel	336	1010	320	960
Cast Iron	202	606	192	576
A Steels	218	656	208	624
C Steels	235	707	224	672
F M Steels	387	1162	368	1104
S Steels	252	757	240	720
Bronzes	269	808	256	768
L Steel	1010	3031	960	2880
Aluminium	842.	2526	800	2400
Brass	2021	6063	1920	5760