





Material

Steel  
< 850 N/mm<sup>2</sup>

d1 [mm]	z	v <sub>c</sub> [m/min]	f <sub>z</sub> [mm]	a <sub>p</sub> [mm]	a <sub>e</sub> [mm]	n [min <sup>-1</sup> ]	v <sub>f</sub> [mm/min]	Q [cm <sup>3</sup> /min]
3	3	180	0.010	4.5	1.4	19100	575	3.5
4	3	180	0.015	6.0	1.8	14325	645	7.0
5	3	180	0.015	7.5	2.3	11460	515	8.5
6	3	180	0.035	9.0	2.7	9550	1005	24.5
8	3	180	0.045	12.0	3.6	7160	965	41.5
10	3	180	0.055	15.0	4.5	5730	945	64.0
12	3	180	0.065	18.0	5.4	4775	930	90.5
16	3	180	0.085	24.0	7.2	3580	915	158.0
20	3	180	0.110	30.0	9.0	2865	945	255.0

Steel  
850 - 1100 N/mm<sup>2</sup>

3	3	120	0.010	4.5	1.4	12735	380	2.5
4	3	120	0.015	6.0	1.8	9550	430	4.5
5	3	120	0.015	7.5	2.3	7640	345	6.0
6	3	120	0.035	9.0	2.7	6365	670	16.5
8	3	120	0.045	12.0	3.6	4775	645	28.0
10	3	120	0.055	15.0	4.5	3820	630	42.5
12	3	120	0.065	18.0	5.4	3185	620	60.5
16	3	120	0.085	24.0	7.2	2385	610	105.5
20	3	120	0.110	30.0	9.0	1910	630	170.0

Stainless steel  
[Cr-Ni/1.4301]

3	3	60	0.005	4.5	1.4	6365	95	0.5
4	3	60	0.010	6.0	1.8	4775	145	1.5
5	3	60	0.010	7.5	2.3	3820	115	2.0
6	3	60	0.025	9.0	2.7	3185	240	6.0
8	3	60	0.030	12.0	3.6	2385	215	9.5
10	3	60	0.040	15.0	4.5	1910	230	15.5
12	3	60	0.045	18.0	5.4	1590	215	21.0
16	3	60	0.060	24.0	7.2	1195	215	37.0
20	3	60	0.075	30.0	9.0	955	215	58.0

Cast iron  
(lamellar / spheroidal)

3	3	180	0.010	4.5	1.4	19100	575	3.5
4	3	180	0.015	6.0	1.8	14325	645	7.0
5	3	180	0.015	7.5	2.3	11460	515	8.5
6	3	180	0.035	9.0	2.7	9550	1005	24.5
8	3	180	0.045	12.0	3.6	7160	965	41.5
10	3	180	0.055	15.0	4.5	5730	945	64.0
12	3	180	0.065	18.0	5.4	4775	930	90.5
16	3	180	0.085	24.0	7.2	3580	915	158.0
20	3	180	0.110	30.0	9.0	2865	945	255.0



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Steel  
< 850 N/mm<sup>2</sup>

d1 [mm]	z	v <sub>c</sub> [m/min]	f <sub>z</sub> [mm]	a <sub>p</sub> [mm]	a <sub>e</sub> [mm]	n [min <sup>-1</sup> ]	v <sub>f</sub> [mm/min]	Q [cm <sup>3</sup> /min]
3	3	160	0.010	4.5	3	16975	510	7.0
4	3	160	0.015	6.0	4	12735	575	14.0
5	3	160	0.020	7.5	5	10185	610	23.0
6	3	160	0.025	9.0	6	8490	635	34.5
8	3	160	0.035	12.0	8	6365	670	64.5
10	3	160	0.040	15.0	10	5095	610	91.5
12	3	160	0.050	18.0	12	4245	635	137.0
16	3	160	0.065	16.0	16	3185	620	158.5
20	3	160	0.085	20.0	20	2545	650	260.0

Steel  
850 - 1100 N/mm<sup>2</sup>

3	3	100	0.010	4.5	3	10610	320	4.5
4	3	100	0.015	6.0	4	7960	360	8.5
5	3	100	0.020	7.5	5	6365	380	14.5
6	3	100	0.025	9.0	6	5305	400	21.5
8	3	100	0.035	12.0	8	3980	420	40.5
10	3	100	0.040	15.0	10	3185	380	57.0
12	3	100	0.050	18.0	12	2655	400	86.5
16	3	100	0.065	16.0	16	1990	390	100.0
20	3	100	0.085	20.0	20	1590	405	162.0

Stainless steel  
[Cr-Ni/1.4301]

3	3	40	0.005	4.5	3	4245	65	1.0
4	3	40	0.010	6.0	4	3185	95	2.5
5	3	40	0.015	7.5	5	2545	115	4.5
6	3	40	0.020	9.0	6	2120	125	7.0
8	3	40	0.025	12.0	8	1590	120	11.5
10	3	40	0.030	15.0	10	1275	115	17.5
12	3	40	0.035	18.0	12	1060	110	24.0
16	3	40	0.045	16.0	16	795	105	27.0
20	3	40	0.060	20.0	20	635	115	46.0

Cast iron  
(lamellar / spheroidal)

3	3	160	0.010	4.5	3	16975	510	7.0
4	3	160	0.010	6.0	4	12735	380	9.0
5	3	160	0.015	7.5	5	10185	460	17.5
6	3	160	0.025	9.0	6	8490	635	34.5
8	3	160	0.035	12.0	8	6365	670	64.5
10	3	160	0.045	15.0	10	5095	690	103.5
12	3	160	0.055	18.0	12	4245	700	151.0
16	3	160	0.075	16.0	16	3185	715	183.0
20	3	160	0.090	20.0	20	2545	685	274.0