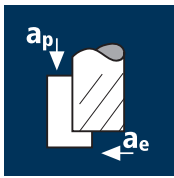




## Application

## Material



Nickel-based alloys  
annealed  
Rm <1000 N/mm<sup>2</sup>  
[Inconel 718]



d1 [mm]	z	v <sub>r</sub> [m/min]	f <sub>s</sub> [mm]	a <sub>p</sub> [mm]	a <sub>e</sub> [mm]	n [min <sup>-1</sup> ]	v <sub>r</sub> [mm/min]	Q [cm <sup>3</sup> /min]
3.00	4	35	0.010	5.400	1.800	3715	150	1.4
4.00	4	35	0.015	7.200	2.400	2785	165	2.9
5.00	4	35	0.020	9.000	3.000	2230	180	4.8
6.00	4	35	0.020	10.800	3.600	1855	150	5.8
8.00	4	35	0.030	14.400	4.800	1395	165	11.6
10.00	4	35	0.035	18.000	6.000	1115	155	16.8
12.00	4	35	0.045	21.600	7.200	930	165	26.0
16.00	4	35	0.050	28.800	9.600	695	140	38.5
20.00	4	35	0.060	36.000	12.000	555	135	57.8

Nickel-based alloys  
precipitation hardened  
Rm > 1000 N/mm<sup>2</sup>  
[Inconel 718]



3.00	4	25	0.010	5.400	1.800	2655	105	1.0
4.00	4	25	0.010	7.200	2.400	1990	80	1.4
5.00	4	25	0.015	9.000	3.000	1590	95	2.6
6.00	4	25	0.015	10.800	3.600	1325	80	3.1
8.00	4	25	0.025	14.400	4.800	995	100	6.9
10.00	4	25	0.030	18.000	6.000	795	95	10.3
12.00	4	25	0.035	21.600	7.200	665	95	14.4
16.00	4	25	0.040	28.800	9.600	495	80	22.0
20.00	4	25	0.050	36.000	12.000	400	80	34.4

Manganese steel  
Mn >5%  
[1.3964 / Nitronic]  
[1.3401 / X120Mn12]



3.00	4	40	0.010	5.400	1.800	4245	170	1.7
4.00	4	40	0.015	7.200	2.400	3185	190	3.3
5.00	4	40	0.020	9.000	3.000	2545	205	5.5
6.00	4	40	0.020	10.800	3.600	2120	170	6.6
8.00	4	40	0.030	14.400	4.800	1590	190	13.2
10.00	4	40	0.035	18.000	6.000	1275	180	19.3
12.00	4	40	0.045	21.600	7.200	1060	190	29.7
16.00	4	40	0.050	28.800	9.600	795	160	44.0
20.00	4	40	0.060	36.000	12.000	635	155	66.0

Inox difficult  
[Cr-Ni-Mo+/1.4529]  
Heat resistant steel  
[1.4841]



3.00	4	50	0.015	5.400	1.800	5305	320	3.1
4.00	4	50	0.020	7.200	2.400	3980	320	5.5
5.00	4	50	0.030	9.000	3.000	3185	380	10.3
6.00	4	50	0.035	10.800	3.600	2655	370	14.4
8.00	4	50	0.045	14.400	4.800	1990	360	24.8
10.00	4	50	0.055	18.000	6.000	1590	350	37.8
12.00	4	50	0.065	21.600	7.200	1325	345	53.6
16.00	4	50	0.070	28.800	9.600	995	280	77.0
20.00	4	50	0.085	36.000	12.000	795	270	116.9

PM high-speed steel  
annealed  
[Böhler S390]  
[ASP 2023]



3.00	4	80	0.010	5.400	1.800	8490	340	3.3
4.00	4	80	0.015	7.200	2.400	6365	380	6.6
5.00	4	80	0.020	9.000	3.000	5095	405	11.0
6.00	4	80	0.020	10.800	3.600	4245	340	13.2
8.00	4	80	0.030	14.400	4.800	3185	380	26.4
10.00	4	80	0.035	18.000	6.000	2545	355	38.5
12.00	4	80	0.045	21.600	7.200	2120	380	59.4
16.00	4	80	0.050	28.800	9.600	1590	320	88.0
20.00	4	80	0.060	36.000	12.000	1275	305	132.0

Titanium alloys  
> 300 HB  
[Ti6Al4V]



3.00	4	70	0.010	5.400	1.800	7425	295	2.9
4.00	4	70	0.015	7.200	2.400	5570	335	5.8
5.00	4	70	0.015	9.000	3.000	4455	265	7.2
6.00	4	70	0.020	10.800	3.600	3715	295	11.6
8.00	4	70	0.025	14.400	4.800	2785	280	19.3
10.00	4	70	0.035	18.000	6.000	2230	310	33.7
12.00	4	70	0.040	21.600	7.200	1855	295	46.2
16.00	4	70	0.045	28.800	9.600	1395	250	69.3
20.00	4	70	0.055	36.000	12.000	1115	245	105.9



Nickel-based alloys  
annealed  
Rm <1000 N/mm<sup>2</sup>  
[Inconel 718]



3.00	4	25	0.010	4.200	3.000	2655	105	1.3
4.00	4	25	0.010	5.600	4.000	1990	80	1.8
5.00	4	25	0.015	7.000	5.000	1590	95	3.3
6.00	4	25	0.015	8.400	6.000	1325	80	4.0
8.00	4	25	0.025	11.200	8.000	995	100	8.9
10.00	4	25	0.030	14.000	10.000	795	95	13.4
12.00	4	25	0.035	16.800	12.000	665	95	18.7
16.00	4	25	0.040	22.400	16.000	495	80	28.5
20.00	4	25	0.050	28.000	20.000	400	80	44.6

Nickel-based alloys  
precipitation hardened  
Rm > 1000 N/mm<sup>2</sup>  
[Inconel 718]



3.00	4	20	0.005	4.200	3.000	2120	40	0.5
4.00	4	20	0.010	5.600	4.000	1590	65	1.4
5.00	4	20	0.010	7.000	5.000	1275	50	1.8
6.00	4	20	0.015	8.400	6.000	1060	65	3.2
8.00	4	20	0.020	11.200	8.000	795	65	5.7
10.00	4	20	0.020	14.000	10.000	635	50	7.1
12.00	4	20	0.025	16.800	12.000	530	55	10.7
16.00	4	20	0.030	22.400	16.000	400	50	17.1
20.00	4	20	0.040	28.000	20.000	320	50	28.5