

HGOB-2-PN | Recommended Cutting Conditions

HGOB-2-PN

		D0.3/R0.15		D0.4/R0.2		D0.5/R0.25		D0.6/R0.3		D0.8/R0.4		D1/R0.5		D1.5/R0.75		D2/R1	
		▽	▽▽▽	▽	▽▽▽	▽	▽▽▽	▽	▽▽▽	▽	▽▽▽	▽	▽▽▽	▽	▽▽▽	▽	▽▽▽
		Roughing	Finishing	Roughing	Finishing	Roughing	Finishing	Roughing	Finishing	Roughing	Finishing	Roughing	Finishing	Roughing	Finishing	Roughing	Finishing
Copper, Aluminium	V_c (m/min)	60	60	80	80	90	90	110	110	150	150	190	190	280	280	300	350
	n (min ⁻¹)	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	47,700	55,700
	f_z (mm/tooth)	0.006	0.005	0.008	0.007	0.010	0.009	0.013	0.011	0.017	0.015	0.021	0.019	0.032	0.028	0.043	0.037
	V_f (mm/min)	720	600	960	840	1,200	1,080	1,560	1,320	2,040	1,800	2,520	2,280	3,840	3,360	4,100	4,120
	a_p (mm)	0.038	0.015	0.050	0.02	0.063	0.025	0.075	0.03	0.100	0.04	0.125	0.05	0.188	0.07	0.250	0.1
	a_e (mm)	0.150	0.015	0.200	0.02	0.250	0.025	0.300	0.03	0.400	0.04	0.500	0.05	0.750	0.07	1.000	0.1
Carbon steel, Alloy steel, Cast iron (180~250HB)	V_c (m/min)	60	60	80	80	90	90	110	110	150	150	190	190	250	270	250	270
	n (min ⁻¹)	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	53,100	57,300	39,800	43,000
	f_z (mm/tooth)	0.006	0.005	0.008	0.007	0.010	0.009	0.012	0.011	0.016	0.015	0.020	0.019	0.030	0.028	0.040	0.037
	V_f (mm/min)	720	600	960	840	1,200	1,080	1,440	1,320	1,920	1,800	2,400	2,280	3,190	3,210	3,180	3,180
	a_p (mm)	0.038	0.015	0.050	0.02	0.063	0.025	0.075	0.03	0.100	0.04	0.125	0.05	0.188	0.07	0.250	0.1
	a_e (mm)	0.150	0.015	0.200	0.02	0.250	0.025	0.300	0.03	0.400	0.04	0.500	0.05	0.750	0.07	1.000	0.1
Stainless steel (20~40HRC)	V_c (m/min)	60	60	80	80	90	90	110	110	150	150	190	190	210	230	210	230
	n (min ⁻¹)	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	44,600	48,800	33,400	36,600
	f_z (mm/tooth)	0.005	0.004	0.007	0.006	0.009	0.008	0.010	0.009	0.014	0.012	0.018	0.015	0.027	0.024	0.036	0.032
	V_f (mm/min)	600	480	840	720	1,080	960	1,200	1,080	1,680	1,440	2,160	1,800	2,410	2,340	2,400	2,340
	a_p (mm)	0.036	0.015	0.048	0.02	0.060	0.025	0.072	0.03	0.096	0.04	0.120	0.05	0.180	0.07	0.240	0.1
	a_e (mm)	0.144	0.015	0.192	0.02	0.240	0.025	0.288	0.03	0.384	0.04	0.480	0.05	0.720	0.07	0.960	0.1
Alloy steel, Tool steel (25~35HRC)	V_c (m/min)	60	60	80	80	90	90	110	110	150	150	190	190	210	230	210	230
	n (min ⁻¹)	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	44,600	48,800	33,400	36,600
	f_z (mm/tooth)	0.005	0.004	0.007	0.006	0.009	0.008	0.010	0.009	0.014	0.012	0.018	0.015	0.027	0.024	0.036	0.032
	V_f (mm/min)	600	480	840	720	1,080	960	1,200	1,080	1,680	1,440	2,160	1,800	2,410	2,340	2,400	2,340
	a_p (mm)	0.036	0.015	0.048	0.02	0.060	0.025	0.072	0.03	0.096	0.04	0.120	0.05	0.180	0.07	0.240	0.1
	a_e (mm)	0.144	0.015	0.192	0.02	0.240	0.025	0.288	0.03	0.384	0.04	0.480	0.05	0.720	0.07	0.960	0.1
Alloy steel, Tool steel (35~45HRC)	V_c (m/min)	60	60	80	80	90	90	110	110	150	150	190	190	190	200	180	200
	n (min ⁻¹)	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	58,900	60,000	39,300	42,400	29,400	31,800
	f_z (mm/tooth)	0.004	0.004	0.006	0.006	0.007	0.008	0.009	0.009	0.012	0.012	0.015	0.015	0.023	0.023	0.030	0.031
	V_f (mm/min)	480	480	720	720	840	960	1,080	1,080	1,440	1,440	1,770	1,800	1,810	1,950	1,760	1,970
	a_p (mm)	0.033	0.015	0.044	0.02	0.055	0.025	0.066	0.03	0.088	0.04	0.110	0.05	0.165	0.07	0.220	0.1
	a_e (mm)	0.132	0.015	0.176	0.02	0.220	0.025	0.264	0.03	0.352	0.04	0.440	0.05	0.660	0.07	0.880	0.1
Hardened Steel, Tool Steels (hot&cold) (45~50HRC)	V_c (m/min)	60	60	80	80	90	90	110	110	150	150	150	170	160	170	160	170
	n (min ⁻¹)	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	49,300	54,100	32,900	36,100	24,700	27,100
	f_z (mm/tooth)	0.004	0.004	0.005	0.005	0.007	0.007	0.008	0.008	0.011	0.011	0.014	0.013	0.021	0.020	0.028	0.027
	V_f (mm/min)	480	460	600	620	840	780	960	940	1,320	1,260	1,380	1,410	1,380	1,440	1,380	1,460
	a_p (mm)	0.030	0.015	0.040	0.02	0.050	0.025	0.060	0.03	0.080	0.04	0.100	0.05	0.150	0.07	0.200	0.1
	a_e (mm)	0.120	0.015	0.160	0.02	0.200	0.025	0.240	0.03	0.320	0.04	0.400	0.05	0.600	0.07	0.800	0.1

HGOB-2-PN

HGOB-2-PN		D2.5/R1.25		D3/R1.5		D4/R2		D5/R2.5		D6/R3		D8/R4		D10/R5		D12/R6	
		▽	▽▽▽	▽	▽▽▽	▽	▽▽▽	▽	▽▽▽	▽	▽▽▽	▽	▽▽▽	▽	▽▽▽	▽	▽▽▽
		Roughing	Finishing	Roughing	Finishing	Roughing	Finishing	Roughing	Finishing	Roughing	Finishing	Roughing	Finishing	Roughing	Finishing	Roughing	Finishing
Copper, Aluminium	V _c (m/min)	300	350	300	350	300	350	300	350	300	350	300	350	300	350	300	350
	n (min ⁻¹)	38,200	44,600	31,800	37,100	23,900	27,900	19,100	22,300	15,900	18,600	11,900	13,900	9,500	11,100	8,000	9,300
	f _z (mm/tooth)	0.054	0.047	0.065	0.056	0.086	0.074	0.108	0.093	0.130	0.111	0.177	0.150	0.220	0.186	0.260	0.222
	V _f (mm/min)	4,130	4,190	4,130	4,160	4,110	4,130	4,130	4,150	4,130	4,130	4,210	4,170	4,180	4,130	4,160	4,130
	a _p (mm)	0.313	0.1	0.375	0.12	0.500	0.14	0.625	0.16	0.750	0.18	1.000	0.2	1.250	0.23	1.500	0.25
	a _e (mm)	1.250	0.1	1.500	0.12	2.000	0.14	2.500	0.16	3.000	0.18	4.000	0.2	5.000	0.23	6.000	0.25
Carbon steel, Alloy steel, Cast iron (180~250HB)	V _c (m/min)	250	270	250	270	250	270	250	270	250	270	250	270	250	270	250	270
	n (min ⁻¹)	31,800	34,400	26,500	28,600	19,900	21,500	15,900	17,200	13,300	14,300	9,900	10,700	8,000	8,600	6,600	7,200
	f _z (mm/tooth)	0.050	0.047	0.062	0.056	0.083	0.074	0.105	0.093	0.125	0.111	0.165	0.150	0.200	0.186	0.235	0.222
	V _f (mm/min)	3,180	3,230	3,290	3,200	3,300	3,180	3,340	3,200	3,330	3,170	3,270	3,210	3,200	3,200	3,100	3,200
	a _p (mm)	0.313	0.1	0.375	0.12	0.500	0.14	0.625	0.16	0.750	0.18	1.000	0.2	1.250	0.23	1.500	0.25
	a _e (mm)	1.250	0.1	1.500	0.12	2.000	0.14	2.500	0.16	3.000	0.18	4.000	0.2	5.000	0.23	6.000	0.25
Stainless steel (20~40HRC)	V _c (m/min)	210	230	210	230	210	230	210	230	210	230	210	230	210	230	210	230
	n (min ⁻¹)	26,700	29,300	22,300	24,400	16,700	18,300	13,400	14,600	11,100	12,200	8,400	9,200	6,700	7,300	5,600	6,100
	f _z (mm/tooth)	0.045	0.040	0.055	0.048	0.074	0.065	0.093	0.082	0.112	0.098	0.150	0.130	0.185	0.165	0.220	0.190
	V _f (mm/min)	2,400	2,340	2,450	2,340	2,470	2,380	2,490	2,390	2,490	2,390	2,520	2,390	2,480	2,410	2,460	2,320
	a _p (mm)	0.300	0.1	0.360	0.12	0.480	0.14	0.600	0.16	0.720	0.18	0.960	0.2	1.200	0.23	1.440	0.25
	a _e (mm)	1.200	0.1	1.440	0.12	1.920	0.14	2.400	0.16	2.880	0.18	3.840	0.2	4.800	0.23	5.760	0.25
Alloy steel, Tool steel (25~35HRC)	V _c (m/min)	210	230	210	230	210	230	210	230	210	230	210	230	210	230	210	230
	n (min ⁻¹)	26,700	29,300	22,300	24,400	16,700	18,300	13,400	14,600	11,100	12,200	8,400	9,200	6,700	7,300	5,600	6,100
	f _z (mm/tooth)	0.045	0.040	0.055	0.048	0.074	0.065	0.093	0.082	0.112	0.098	0.150	0.130	0.185	0.165	0.220	0.190
	V _f (mm/min)	2,400	2,340	2,450	2,340	2,470	2,380	2,490	2,390	2,490	2,390	2,520	2,390	2,480	2,410	2,460	2,320
	a _p (mm)	0.300	0.1	0.360	0.12	0.480	0.14	0.600	0.16	0.720	0.18	0.960	0.2	1.200	0.23	1.440	0.25
	a _e (mm)	1.200	0.1	1.440	0.12	1.920	0.14	2.400	0.16	2.880	0.18	3.840	0.2	4.800	0.23	5.760	0.25
Alloy steel, Tool steel (35~45HRC)	V _c (m/min)	190	200	180	200	180	200	190	200	180	200	190	200	190	200	180	200
	n (min ⁻¹)	23,600	25,500	19,600	21,200	14,700	15,900	11,800	12,700	9,800	10,600	7,400	8,000	5,900	6,400	4,900	5,300
	f _z (mm/tooth)	0.038	0.038	0.046	0.046	0.062	0.062	0.077	0.078	0.091	0.094	0.120	0.120	0.150	0.145	0.180	0.173
	V _f (mm/min)	1,790	1,940	1,800	1,950	1,820	1,970	1,820	1,980	1,780	1,990	1,780	1,920	1,770	1,860	1,760	1,830
	a _p (mm)	0.275	0.1	0.330	0.12	0.440	0.14	0.550	0.16	0.660	0.18	0.880	0.2	1.100	0.23	1.320	0.25
	a _e (mm)	1.100	0.1	1.320	0.12	1.760	0.14	2.200	0.16	2.640	0.18	3.520	0.2	4.400	0.23	5.280	0.25
Hardened Steel, Tool Steels (hot&cold) (45~50HRC)	V _c (m/min)	150	170	150	170	150	170	160	170	150	170	160	170	150	170	150	170
	n (min ⁻¹)	19,700	21,600	16,400	18,000	12,300	13,500	9,900	10,800	8,200	9,000	6,200	6,800	4,900	5,400	4,100	4,500
	f _z (mm/tooth)	0.035	0.035	0.042	0.042	0.054	0.055	0.066	0.070	0.080	0.084	0.105	0.110	0.130	0.140	0.155	0.168
	V _f (mm/min)	1,380	1,510	1,380	1,510	1,330	1,490	1,310	1,510	1,310	1,510	1,300	1,500	1,270	1,510	1,270	1,510
	a _p (mm)	0.250	0.1	0.300	0.12	0.400	0.14	0.500	0.16	0.600	0.18	0.800	0.2	1.000	0.23	1.200	0.25
	a _e (mm)	1.000	0.1	1.200	0.12	1.600	0.14	2.000	0.16	2.400	0.18	3.200	0.2	4.000	0.23	4.800	0.25