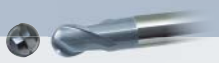
HECOB-2-PN | Recommended Cutting Conditions

HECOB-2-PN



		ØD1/R0.5		ØD2/R1		ØD3/R1.5		ØD4/R2		ØD5/R2.5	
		▽	▽▽▽	▽	▽▽▽	▽	▽▽▽	▽	▽▽▽	▽	▽▽▽
		Roughing	Finishing	Roughing	Finishing	Roughing	Finishing	Roughing	Finishing	Roughing	Finishing
Copper, Aluminium	V_c (m/min)	190	190	250	280	250	280	250	280	250	280
	n (min⁻¹)	60,000	60,000	39,800	44,600	26,500	29,700	19,900	22,300	15,900	17,800
	f_z (mm/tooth)	0.021	0.019	0.043	0.037	0.065	0.056	0.086	0.074	0.108	0.093
	V_f (mm/min)	2,520	2,280	3,420	3,300	3,450	3,330	3,420	3,300	3,430	3,310
	a_p (mm)	0.080	0.05	0.160	0.1	0.240	0.12	0.320	0.14	0.400	0.16
	a_e (mm)	0.320	0.05	0.640	0.1	0.960	0.12	1.280	0.14	1.600	0.16
Carbon steel, Alloy steel, Cast iron (180~250HB)	V_c (m/min)	190	190	200	220	200	220	200	220	200	220
	n (min⁻¹)	60,000	60,000	31,800	35,000	21,200	23,300	15,900	17,500	12,700	14,000
	f_z (mm/tooth)	0.020	0.019	0.040	0.037	0.062	0.056	0.083	0.074	0.105	0.093
	V_f (mm/min)	2,400	2,280	2,540	2,590	2,630	2,610	2,640	2,590	2,670	2,600
	a_p (mm)	0.080	0.05	0.160	0.1	0.240	0.12	0.320	0.14	0.400	0.16
	a_e (mm)	0.320	0.05	0.640	0.1	0.960	0.12	1.280	0.14	1.600	0.16
Stainless steel (20~40HRC)	V_c (m/min)	170	190	170	200	170	200	170	200	170	200
	n (min⁻¹)	54,100	60,000	27,100	31,800	18,000	21,200	13,500	15,900	10,800	12,700
	f_z (mm/tooth)	0.018	0.015	0.036	0.032	0.055	0.048	0.074	0.065	0.093	0.082
	V_f (mm/min)	1,950	1,800	1,950	2,040	1,980	2,040	2,000	2,070	2,010	2,080
	a_p (mm)	0.070	0.05	0.140	0.1	0.210	0.12	0.280	0.14	0.350	0.16
	a_e (mm)	0.280	0.05	0.560	0.1	0.840	0.12	1.120	0.14	1.400	0.16
Alloy steel, Tool steel (25~35HRC)	V_c (m/min)	180	190	180	200	180	200	180	200	180	200
	n (min⁻¹)	57,300	60,000	28,600	31,800	19,100	21,200	14,300	15,900	11,500	12,700
	f_z (mm/tooth)	0.018	0.015	0.036	0.032	0.055	0.048	0.074	0.065	0.093	0.082
	V_f (mm/min)	2,060	1,800	2,060	2,040	2,100	2,040	2,120	2,070	2,140	2,080
	a_p (mm)	0.070	0.05	0.140	0.1	0.210	0.12	0.280	0.14	0.350	0.16
	a_e (mm)	0.280	0.05	0.560	0.1	0.840	0.12	1.120	0.14	1.400	0.16
Alloy steel, Tool steel (35~45HRC)	V_c (m/min)	150	180	150	180	150	180	150	180	150	180
	n (min⁻¹)	47,700	57,300	23,900	28,600	15,900	19,100	11,900	14,300	9,500	11,500
	f_z (mm/tooth)	0.015	0.015	0.030	0.031	0.046	0.046	0.062	0.062	0.077	0.078
	V_f (mm/min)	1,430	1,720	1,430	1,770	1,460	1,760	1,480	1,770	1,460	1,790
	a_p (mm)	0.060	0.05	0.120	0.1	0.180	0.12	0.240	0.14	0.300	0.16
	a_e (mm)	0.240	0.05	0.480	0.1	0.720	0.12	0.960	0.14	1.200	0.16
Hardened Steel, Tool Steels (hot&cold) (45~50HRC)	V_c (m/min)	120	150	120	150	120	150	120	150	120	150
	n (min⁻¹)	38,200	47,700	19,100	23,900	12,700	15,900	9,500	11,900	7,600	9,500
	f_z (mm/tooth)	0.014	0.013	0.028	0.027	0.042	0.042	0.054	0.055	0.066	0.070
	V_f (mm/min)	1,070	1,240	1,070	1,290	1,070	1,340	1,030	1,310	1,000	1,330
	a_p (mm)	0.050	0.05	0.100	0.1	0.150	0.12	0.200	0.14	0.250	0.16
	a_e (mm)	0.200	0.05	0.400	0.1	0.600	0.12	0.800	0.14	1.000	0.16

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		ØD6/R3		ØD8/R4		ØD10/R5		ØD12/R6	
		▽	▽▽▽	▽	▽▽▽	▽	▽▽▽	▽	▽▽▽
		Roughing	Finishing	Roughing	Finishing	Roughing	Finishing	Roughing	Finishing
Copper, Aluminium	V_c (m/min)	250	280	250	280	250	280	250	280
	n (min⁻¹)	13,300	14,900	9,900	11,100	8,000	8,900	6,600	7,400
	f_z (mm/tooth)	0.130	0.111	0.177	0.150	0.220	0.186	0.260	0.222
	V_f (mm/min)	3,460	3,310	3,500	3,330	3,520	3,310	3,430	3,290
	a_p (mm)	0.480	0.18	0.640	0.2	0.800	0.23	0.960	0.25
	a_e (mm)	1.920	0.18	2.560	0.2	3.200	0.23	3.840	0.25
Carbon steel, Alloy steel, Cast iron (180~250HB)	V_c (m/min)	200	220	200	220	200	220	200	220
	n (min⁻¹)	10,600	11,700	8,000	8,800	6,400	7,000	5,300	5,800
	f_z (mm/tooth)	0.125	0.111	0.165	0.150	0.200	0.186	0.235	0.222
	V_f (mm/min)	2,650	2,600	2,640	2,640	2,560	2,600	2,490	2,580
	a_p (mm)	0.480	0.18	0.640	0.2	0.800	0.23	0.960	0.25
	a_e (mm)	1.920	0.18	2.560	0.2	3.200	0.23	3.840	0.25
Stainless steel (20~40HRC)	V_c (m/min)	170	200	170	200	170	200	170	200
	n (min⁻¹)	9,000	10,600	6,800	8,000	5,400	6,400	4,500	5,300
	f_z (mm/tooth)	0.112	0.098	0.150	0.130	0.185	0.165	0.220	0.190
	V_f (mm/min)	2,020	2,080	2,040	2,080	2,000	2,110	1,980	2,010
	a_p (mm)	0.420	0.18	0.560	0.2	0.700	0.23	0.840	0.25
	a_e (mm)	1.680	0.18	2.240	0.2	2.800	0.23	3.360	0.25
Alloy steel, Tool steel (25~35HRC)	V_c (m/min)	180	200	180	200	180	200	180	200
	n (min⁻¹)	9,500	10,600	7,200	8,000	5,700	6,400	4,800	5,300
	f_z (mm/tooth)	0.112	0.098	0.150	0.130	0.185	0.165	0.220	0.190
	V_f (mm/min)	2,130	2,080	2,160	2,080	2,110	2,110	2,110	2,010
	a_p (mm)	0.420	0.18	0.560	0.2	0.700	0.23	0.840	0.25
	a_e (mm)	1.680	0.18	2.240	0.2	2.800	0.23	3.360	0.25
Alloy steel, Tool steel (35~45HRC)	V_c (m/min)	150	180	150	180	150	180	150	180
	n (min⁻¹)	8,000	9,500	6,000	7,200	4,800	5,700	4,000	4,800
	f_z (mm/tooth)	0.091	0.094	0.120	0.120	0.150	0.145	0.180	0.173
	V_f (mm/min)	1,460	1,790	1,440	1,730	1,440	1,650	1,440	1,660
	a_p (mm)	0.360	0.18	0.480	0.2	0.600	0.23	0.720	0.25
	a_e (mm)	1.440	0.18	1.920	0.2	2.400	0.23	2.880	0.25
Hardened Steel, Tool Steels (hot&cold) (45~50HRC)	V_c (m/min)	120	150	120	150	120	150	120	150
	n (min⁻¹)	6,400	8,000	4,800	6,000	3,800	4,800	3,200	4,000
	f_z (mm/tooth)	0.080	0.084	0.105	0.110	0.130	0.140	0.155	0.168
	V_f (mm/min)	1,020	1,340	1,010	1,320	990	1,340	990	1,340
	a_p (mm)	0.300	0.18	0.400	0.2	0.500	0.23	0.600	0.25
	a_e (mm)	1.200	0.18	1.600	0.2	2.000	0.23	2.400	0.25

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