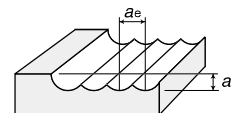


標準切削条件表 Recommended cutting conditions

EPBTS-TH



< 荒切削 > Roughing

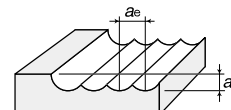
被削材(硬さ) Work material (Hardness)	条件域 Cutting range	切込み Depth of cut (mm)	切削条件 Cutting Conditions	ボール半径R×外径Dc Tool Dia.(mm)						
				R1.5×3	R2×4	R2.5×5	R3×6	R4×8	R5×10	R6×12
プリハードン鋼 Pre-hardened Steels (35~45HRC) CENA1,NAK80	高速切削 High Speed	ap=0.12Dc ae=0.36Dc	回転数n (min ⁻¹)	37,700	28,300	22,800	19,200	14,700	11,800	9,800
			送り速度vf (mm/min)	3,620	3,620	3,650	3,690	3,760	3,780	3,650
	汎用切削 General	ap=0.12Dc ae=0.36Dc	回転数n (min ⁻¹)	17,300	13,000	10,500	8,800	6,800	5,400	4,500
			送り速度vf (mm/min)	1,560	1,560	1,580	1,580	1,630	1,620	1,570
焼入れ鋼 Hardened Steels (45~55HRC) SKD61,SKT4	高速切削 High Speed	ap=0.1Dc ae=0.3Dc	回転数n (min ⁻¹)	27,500	20,600	16,700	14,000	10,700	8,600	7,200
			送り速度vf (mm/min)	2,810	2,800	2,840	2,860	2,910	2,920	2,850
	汎用切削 General	ap=0.1Dc ae=0.3Dc	回転数n (min ⁻¹)	14,300	10,700	8,600	7,300	5,600	4,500	3,700
			送り速度vf (mm/min)	1,030	1,030	1,030	1,050	1,080	1,080	1,030
焼入れ鋼 Hardened Steels (55~65HRC) SKD11,SKH51	高速切削 High Speed	ap=0.06Dc ae=0.18Dc	回転数n (min ⁻¹)	22,400	16,800	13,600	11,400	8,800	7,000	5,800
			送り速度vf (mm/min)	2,280	2,280	2,310	2,330	2,390	2,380	2,300
	汎用切削 General	ap=0.08Dc ae=0.24Dc	回転数n (min ⁻¹)	12,200	9,200	7,400	6,200	4,800	3,800	3,200
			送り速度vf (mm/min)	730	740	740	740	770	760	740
焼入れ鋼 Hardened Steels (65~72HRC) SKH,HAP	高速切削 High Speed	ap=0.05Dc ae=0.15Dc	回転数n (min ⁻¹)	13,200	9,900	8,000	6,800	5,200	4,100	3,400
			送り速度vf (mm/min)	1,110	1,110	1,120	1,140	1,160	1,150	1,110
	汎用切削 General	ap=0.07Dc ae=0.21Dc	回転数n (min ⁻¹)	7,100	5,300	4,300	3,600	2,800	2,200	1,900
			送り速度vf (mm/min)	340	340	340	350	360	350	350

【注意】 ①被削材、加工形状に合わせて、適切なクーラントを使用してください。
②この標準切削条件表は切削条件の目安を示すものです。実際の加工では加工形状、目的、使用機械等により条件を調整してください。

【Note】 ①Use the appropriate coolant for the work material and machining shape.
②These Recommended Cutting Conditions indicate only the rule of a thumb for the cutting conditions. In actual machining, the condition should be adjusted according to the machining shape, purpose and the machine type.

< 仕上げ切削 > Finishing

ap: 仕上げ代 Finishing out amount
ae: ピックフィード Pick feed



被削材(硬さ) Work material (Hardness)	条件域 Cutting range	切込み Depth of cut (mm)	切削条件 Cutting Conditions	ボール半径R×外径Dc Tool Dia.(mm)						
				R1.5×3	R2×4	R2.5×5	R3×6	R4×8	R5×10	R6×12
プリハードン鋼 Pre-hardened Steels (35~45HRC) CENA1,NAK80	高速切削 High Speed	ap=0.05~0.1 ae=0.02Dc	回転数n (min ⁻¹)	27,500	24,200	20,900	17,600	13,200	11,000	8,800
			送り速度vf (mm/min)	3,890	4,150	4,020	3,910	3,200	2,890	2,400
	汎用切削 General	ap=0.05~0.1 ae=0.02Dc	回転数n (min ⁻¹)	17,000	13,000	10,500	8,500	6,400	5,100	4,200
			送り速度vf (mm/min)	2,620	2,430	2,260	2,060	1,690	1,460	1,240
焼入れ鋼 Hardened Steels (45~55HRC) SKD61,SKT4	高速切削 High Speed	ap=0.05~0.1 ae=0.02Dc	回転数n (min ⁻¹)	26,400	22,000	18,150	14,300	11,000	8,800	7,260
			送り速度vf (mm/min)	3,200	3,550	3,310	3,030	2,550	2,220	1,910
	汎用切削 General	ap=0.05~0.1 ae=0.02Dc	回転数n (min ⁻¹)	15,400	11,000	9,130	7,590	5,720	4,510	3,850
			送り速度vf (mm/min)	1,850	1,760	1,670	1,600	1,320	1,130	1,000
焼入れ鋼 Hardened Steels (55~65HRC) SKD11,SKH51	高速切削 High Speed	ap=0.05~0.1 ae=0.02Dc	回転数n (min ⁻¹)	23,100	17,600	14,850	12,100	8,800	7,040	5,830
			送り速度vf (mm/min)	2,800	2,660	2,550	2,440	1,680	1,640	1,490
	汎用切削 General	ap=0.05~0.1 ae=0.02Dc	回転数n (min ⁻¹)	14,300	10,560	7,040	5,280	4,180	3,520	2,640
			送り速度vf (mm/min)	1,720	1,580	1,440	1,410	1,170	1,000	880
焼入れ鋼 Hardened Steels (65~72HRC) SKH,HAP	高速切削 High Speed	ap=0.05~0.1 ae=0.02Dc	回転数n (min ⁻¹)	17,600	13,200	11,000	8,800	6,600	5,280	4,400
			送り速度vf (mm/min)	2,130	2,000	1,910	1,780	1,470	1,280	1,110
	汎用切削 General	ap=0.05~0.1 ae=0.02Dc	回転数n (min ⁻¹)	11,000	7,920	6,490	5,280	3,960	3,190	2,640
			送り速度vf (mm/min)	1,320	1,190	1,100	1,060	870	770	660

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