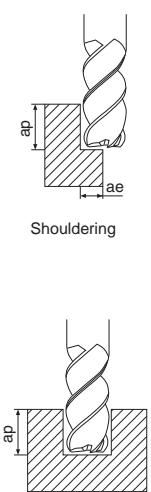


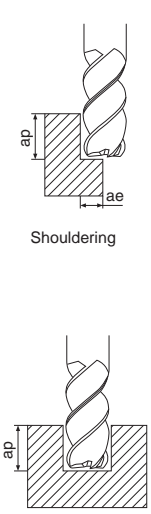
Recommended Cutting Conditions

4PGSS, 5PGSS

Application	Workpiece Material	Application	Depth of Cut (apxae) (mm)	Outside Dia. Dc (mm)	ø3	ø4	ø5	ø6	ø8	ø10	ø12	ø16	ø20	ø25
 <p>Shouldering</p> <p>Slotting</p>	Carbon Steel SxxC	Shouldering	1Dx0.3D	Spindle Revolution (min ⁻¹)	13,300	10,000	8,000	6,600	5,000	4,000	3,300	2,500	2,000	1,600
				Feed Rate (mm/min)	1,860	1,600	1,440	1,320	1,200	1,360	1,320	1,200	1,200	1,360
		Slotting	1D	Spindle Revolution (min ⁻¹)	/	/	/	6,600	5,000	4,000	3,300	2,500	2,000	1,600
				Feed Rate (mm/min)	/	/	/	660	600	680	660	600	600	680
	Alloy Steel SCM, SNCM	Shouldering	1Dx0.3D	Spindle Revolution (min ⁻¹)	10,600	8,000	6,400	5,300	4,000	3,200	2,700	2,000	1,600	1,300
				Feed Rate (mm/min)	1,180	1,020	920	840	880	890	860	880	830	1,040
		Slotting	0.75D	Spindle Revolution (min ⁻¹)	/	/	/	5,300	4,000	3,200	2,700	2,000	1,600	1,300
				Feed Rate (mm/min)	/	/	/	420	440	440	430	440	410	520
	Pre-hardened steel NAK, 30~45HRC	Shouldering	1Dx0.25D	Spindle Revolution (min ⁻¹)	8,500	6,400	5,100	4,200	3,200	2,500	2,100	1,600	1,300	1,000
				Feed Rate (mm/min)	710	610	550	500	570	550	580	570	570	700
		Slotting	0.5D	Spindle Revolution (min ⁻¹)	/	/	/	4,200	3,200	2,500	2,100	1,600	1,300	1,000
				Feed Rate (mm/min)	/	/	/	250	290	280	290	280	280	350
Stainless steel SUS	Shouldering	1Dx0.25D	Spindle Revolution (min ⁻¹)	5,300	4,000	3,200	2,700	2,000	1,600	1,300	1,000	800	600	
			Feed Rate (mm/min)	290	250	230	210	240	250	230	240	240	270	
	Slotting	0.4D	Spindle Revolution (min ⁻¹)	/	/	/	2,700	2,000	1,600	1,300	1,000	800	600	
			Feed Rate (mm/min)	/	/	/	100	120	120	120	120	120	130	
Titanium Alloys Heat-resistant Alloys (40~50HRC)	Shouldering	1Dx0.2D	Spindle Revolution (min ⁻¹)	3,700	2,800	2,200	1,900	1,400	1,100	900	700	550	450	
			Feed Rate (mm/min)	160	130	110	110	110	130	120	140	130	150	
	Slotting	0.3D	Spindle Revolution (min ⁻¹)	/	/	/	1,900	1,400	1,100	900	700	550	450	
			Feed Rate (mm/min)	/	/	/	60	60	60	60	70	70	80	

* Cutting with coolant is recommended for stainless steel, titanium alloys and heat-resistant alloys.

4PGSM, 5PGSM, 6PGSM

Application	Workpiece Material	Application	Depth of Cut (apxae) (mm)	Outside Dia. Dc (mm)	ø6	ø8	ø10	ø12	ø16	ø20	ø25
 <p>Shouldering</p> <p>Slotting</p>	Carbon Steel SxxC	Shouldering	1.5Dx0.3D	Spindle Revolution (min ⁻¹)	6,600	5,000	4,000	3,300	2,500	2,000	1,600
				Feed Rate (mm/min)	1,030	980	1,260	1,520	1,570	1,510	1,340
		Slotting	0.5D	Spindle Revolution (min ⁻¹)	6,600	5,000	4,000	3,300	2,500	2,000	1,600
				Feed Rate (mm/min)	520	500	640	770	790	750	670
	Alloy Steel SCM, SNCM	Shouldering	1.5Dx0.3D	Spindle Revolution (min ⁻¹)	5,300	4,000	3,200	2,700	2,000	1,600	1,300
				Feed Rate (mm/min)	740	670	940	1,130	1,170	1,140	1,030
		Slotting	0.5D	Spindle Revolution (min ⁻¹)	5,300	4,000	3,200	2,700	2,000	1,600	1,300
				Feed Rate (mm/min)	380	330	480	560	580	570	520
	Pre-hardened steel NAK, 30~45HRC	Shouldering	1.5Dx0.2D	Spindle Revolution (min ⁻¹)	4,200	3,200	2,500	2,100	1,600	1,300	1,000
				Feed Rate (mm/min)	470	490	610	700	730	710	710
		Slotting	0.4D	Spindle Revolution (min ⁻¹)	4,200	3,200	2,500	2,100	1,600	1,300	1,000
				Feed Rate (mm/min)	230	250	310	350	370	350	360
Stainless steel SUS	Shouldering	1.5Dx0.2D	Spindle Revolution (min ⁻¹)	2,700	2,000	1,600	1,300	1,000	800	600	
			Feed Rate (mm/min)	170	190	250	280	280	280	250	
	Slotting	0.4D	Spindle Revolution (min ⁻¹)	2,700	2,000	1,600	1,300	1,000	800	600	
			Feed Rate (mm/min)	80	90	120	140	140	140	130	
Titanium Alloys Heat-resistant Alloys (40~50HRC)	Shouldering	1.5Dx0.2D	Spindle Revolution (min ⁻¹)	1,900	1,400	1,100	900	700	550	450	
			Feed Rate (mm/min)	90	90	130	150	160	150	150	
	Slotting	0.3D	Spindle Revolution (min ⁻¹)	1,900	1,400	1,100	900	700	550	450	
			Feed Rate (mm/min)	40	40	60	70	80	70	70	

* Cutting with coolant is recommended for stainless steel, titanium alloys and heat-resistant alloys.

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Solid End Mill