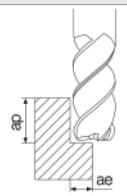
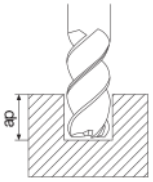
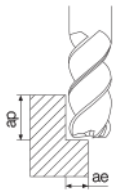
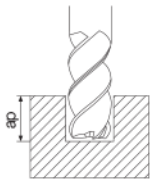
4FESW

Applications	Workpiece Material	Application	Outside Dia. Dc (mm)	Ø3	Ø4	Ø5	Ø6	Ø8	Ø10	Ø12	Ø13
 Shouldering (ap×ae) (inch) 0.0394Dc×0.0079Dc  Slotting (ae) (inch) 0.0079Dc	Carbon Steel	Shouldering	Spindle RPM	11,000	8,000	6,400	5,300	4,000	3,200	2,700	2,500
			Feed Rate (IPM)	37.795	37.795	37.795	37.795	30.709	26.772	24.409	22.441
		Slotting	Spindle RPM	11,000	8,000	6,400	5,300	4,000	3,200	2,700	2,500
			Feed Rate (IPM)	37.795	37.795	37.795	37.795	30.709	26.772	24.409	22.441
	Alloy Steel	Shouldering	Spindle RPM	7,400	5,600	4,500	3,700	2,800	2,200	1,900	1,700
			Feed Rate (IPM)	25.197	25.197	25.197	25.197	20.472	17.717	16.142	14.567
		Slotting	Spindle RPM	7,400	5,600	4,500	3,700	2,800	2,200	1,900	1,700
			Feed Rate (IPM)	25.197	25.197	25.197	25.197	20.472	17.717	16.142	14.567
	Pre-hardened Steel (30~45HRC)	Shouldering	Spindle RPM	7,400	5,600	4,500	3,700	2,800	2,200	1,900	1,700
			Feed Rate (IPM)	25.197	25.197	25.197	25.197	20.472	17.717	16.142	14.567
		Slotting	Spindle RPM	7,400	5,600	4,500	3,700	2,800	2,200	1,900	1,700
			Feed Rate (IPM)	25.197	25.197	25.197	25.197	20.472	17.717	16.142	14.567
	Stainless Steel	Shouldering	Spindle RPM	6,400	4,800	3,800	3,200	2,400	1,900	1,600	1,500
			Feed Rate (IPM)	18.898	18.898	18.898	18.898	15.354	13.386	12.205	11.417
		Slotting	Spindle RPM	6,400	4,800	3,800	3,200	2,400	1,900	1,600	1,500
			Feed Rate (IPM)	18.898	18.898	18.898	18.898	15.354	13.386	12.205	11.417

* Cutting with coolant is recommended for stainless steel.

3ZFKS (Short), 3ZFKM (Medium)

Applications	Workpiece Material	Depth of Cut (ap×ae) (inch)	Outside Dia. Dc (mm)		Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø10	Ø12
 Shouldering  Plunge milling Slotting	Carbon Steel	Shouldering Short 0.0472Dc×0.0118Dc Medium 0.0591Dc×0.0118Dc Plunge milling / Slotting 1Dc	Spindle RPM		13,800	10,700	8,800	7,500	6,600	6,000	4,800	4,000
			Feed Rate (mm/min)	Shouldering	33.465	37.402	43.307	47.244	43.307	39.370	35.827	33.465
				Plunge milling	7.087	6.693	6.693	6.693	6.299	5.906	4.724	3.937
				Slotting	22.441	25.591	27.559	28.740	29.528	30.709	31.496	29.528
	Alloy Steel	Shouldering Short 0.0472Dc×0.0118Dc Medium 0.0591Dc×0.0118Dc Plunge milling / Slotting 0.5Dc	Spindle RPM		10,600	9,300	8,300	7,400	6,500	6,000	4,700	3,500
			Feed Rate (mm/min)	Shouldering	27.559	30.709	35.433	38.583	35.433	33.465	29.528	27.559
				Plunge milling	4.724	4.724	5.118	5.512	5.118	5.118	4.724	3.937
				Slotting	19.685	21.260	22.441	23.228	24.016	23.622	22.835	19.685
	Pre-hardened Steel (30~45HRC)		Spindle RPM		5,200	4,000	3,200	2,600	2,300	2,000	1,600	1,400
			Feed Rate (mm/min)	Shouldering	17.323	17.323	19.291	19.291	19.291	17.323	15.748	14.567
				Plunge milling	3.543	4.331	4.331	5.118	4.331	3.937	3.150	2.756
				Slotting	8.661	10.630	10.630	12.598	12.992	12.992	9.055	7.874
	Stainless Steel	Shouldering Short 0.0472Dc×0.0079Dc Medium 0.0591Dc×0.0079Dc Plunge milling / Slotting 0.5Dc	Spindle RPM		3,300	2,500	2,000	1,700	1,400	1,300	1,100	900
			Feed Rate (mm/min)	Shouldering	11.024	10.630	12.992	13.386	12.992	12.992	13.780	12.598
				Plunge milling	0.787	1.181	1.575	1.575	1.575	1.181	0.787	0.787
				Slotting	4.331	4.331	5.118	5.512	5.118	5.118	4.724	4.724
	Titanium Alloys		Spindle RPM		3,300	2,500	2,000	1,700	1,400	1,300	1,100	900
			Feed Rate (mm/min)	Shouldering	11.024	10.630	12.992	13.386	12.992	12.992	13.780	12.598
				Plunge milling	0.787	1.181	1.575	1.575	1.575	1.181	0.787	0.787
				Slotting	4.331	4.331	5.118	5.512	5.118	5.118	4.724	4.724

· Compressed air is recommended for cutting steel.
· Water soluble coolant is recommended for machining stainless steel and titanium alloys.
· Adjust depth of cut (ap) to suit machine rigidity