



ABPF

Recommended Cutting Condition

Work piece material	Work piece material	Insert material	Parameter	Dia. 5/16 or 8mm			Dia. 3/8 or 10mm			Dia. 1/2 or 12mm		
												
				Semi Finishing		Finishing	Semi Finishing		Finishing	Semi Finishing		Finishing
				General	High Feed		General	High Feed		General	High Feed	
I	Carbon steel Alloy steel (<30HRC)	PCA12M	RPM	6,370	12,340	12,340	5,100	9,240	11,150	4,250	7,170	10,080
			SFM	525	1017	1017	525	951	1148	525	886	1246
			IPM	100.0	388.0	194.0	80.0	290.0	175.0	66.0	225.0	158.0
			Feed per Tooth	.008	.0157	.008	.008	.0157	.008	.008	.0157	.008
			Depth of Cut	.008	.0039	.0039	.0098	.0059	.0039	.012	.008	.0039
			Width of Cut	.031	.031	.0098	.039	.031	.0098	.047	.035	.0118
II	P-20	PCA12M	RPM	4,780	10,750	10,750	3,820	7,640	9,550	3,180	6,100	8,760
			SFM	393.0	885.0	885.0	393.0	787.0	984.0	393.0	754.0	1082.0
			IPM	75.0	338.0	169.0	60.0	240.0	150.0	50.0	192.0	137.0
			Feed per Tooth	.0078	.0157	.0078	.0078	.0157	.0078	.0078	.0157	.0078
			Depth of Cut	.0078	.0039	.0039	.0098	.0059	.0039	.0118	.0078	.0039
			Width of Cut	.031	.031	.0098	.039	.031	.0098	.047	.035	.0118
III	Alloy steel Tool steel (30-40HRC) P-20 High Hard 4140	PCA12M	RPM	3,980	9,160	9,160	3,180	6,690	8,280	2,650	5,310	7,700
			SFM	328.0	754.0	754.0	328.0	688.0	852.0	328.0	656.0	951.0
			IPM	31.5	144.0	144.0	25.0	105.0	130.0	20.0	83.0	121.0
			Feed per Tooth	.0039	.0078	.0078	.0039	.0078	.0078	.0039	.0078	.0078
			Depth of Cut	.0078	.0039	.0039	.0098	.0059	.0039	.0118	.0078	.0039
			Width of Cut	.031	.031	.0098	.039	.031	.0098	.047	.035	.0118
IV	Pre-Harden Steel Tool steel (40-50HRC) D-2	PCA12M	RPM	6,370	12,340	12,340	5,090	9,240	11,150	4,240	7,170	10,080
			SFM	524.0	1016.0	1016.0	524.0	951.0	1148.0	524.0	885.0	1246.0
			IPM	150.0	583.0	194.0	120.0	436.0	263.0	100.0	338.0	238.0
			Feed per Tooth	.0118	.0236	.0078	.0118	.0236	.0118	.0118	.0236	.0118
			Depth of Cut	.0078	.0039	.0039	.0098	.0059	.0039	.0118	.0078	.0039
			Width of Cut	.031	.031	.0098	.0393	.031	.0098	.047	.0354	.0118
VIII	Cast iron GG GGG	PCA12M	Maximum (Feed per Tooth)	<0.0315			<0.0315			<0.0315		
			Maximum Depth of Cut	<.1570			<.1968			<.2362		

ABPF

Recommended Cutting Condition

Work piece material	Work piece material	Insert material	Parameter	Dia. 5/8 or 16mm			Dia. 3/4 or 20mm			Dia. 1" or 25mm					
															
				Semi Finishing		Finishing	Semi Finishing		Finishing	Semi Finishing		Finishing			
				General	High Feed		General	High Feed		General	High Feed				
I II	Carbon steel Alloy steel (<30HRC) P-20	PCA12M	RPM	3,180	4,180	9,950	2,550	3,340	9,080	2,040	2,680	8,030			
			SFM	524.0	688.0	1640.0	524.0	688.0	1869.0	524.0	688.0	2066.0			
			IPM	62.5	164.5	235.0	50.3	131.4	285.8	40.0	105.5	316.0			
			Feed per Tooth	.0098	.0196	.0118	.0098	.0196	.0157	.0098	.0196	.0196			
			Depth of Cut	.0314	.0236	.0039	.0393	.0275	.0039	.0492	.0354	.0039			
			Width of Cut	.0629	.0433	.0137	.0787	.059	.0157	.0984	.070	.0196			
III	Alloy steel Tool steel (30-40HRC) P-20 High Hard 4140	PCA12M	RPM	2,390	2,990	7,560	1,910	2,550	6,690	1,530	2,040	5,990			
			SFM	393.0	492.0	1246.0	393.0	524.0	1377.0	393.0	524.0	1541.0			
			IPM	47.0	117.7	178.0	37.7	100.0	210.0	30.0	80.3	235.0			
			Feed per Tooth	.0098	.0196	.0118	.0098	.0196	.0157	.0098	.0196	.0196			
			Depth of Cut	.0314	.0236	.0039	.0393	.0275	.0039	.049	.0354	.0039			
			Width of Cut	.0629	.0433	.0118	.0787	.059	.0157	.0984	.0708	.0196			
IV	Pre-Harden Steel Tool steel (40-50HRC) D-2	PCA12M	RPM	1,990	2,990	6,970	1,590	2,390	6,370	1,270	1,910	5,730			
			SFM	328.0	492.0	1148.0	328.0	492.0	1312.0	328.0	492.0	1476.0			
			IPM	18.8	56.6	164.0	14.9	45.2	200.0	12.0	36.2	225.5			
			Feed per Tooth	.0047	.0094	.0118	.0047	.0094	.0157	.0047	.0094	.0196			
			Depth of Cut	.0314	.0236	.0039	.0393	.0275	.0039	.0492	.0354	.0039			
			Width of Cut	.063	.0433	.0118	.0787	.059	.0157	.0984	.0708	.0196			
VIII	Cast iron GG GGG	PCA12M	RPM	3,200	4,180	9,950	2,550	3,340	9,080	2,050	2,680	8,030			
			SFM	524.0	688.0	1640.0	524.0	688.0	1869.0	524.0	688.0	2066.0			
			IPM	88.0	230.0	235.0	70.0	184.0	285.0	56.6	147.0	316.0			
			Feed per Tooth	.0137	.0275	.0118	.0137	.0275	.0157	.0137	.0275	.0196			
			Depth of Cut	.0314	.0236	.0039	.0393	.0275	.0039	.0492	.0354	.0039			
			Width of Cut	.063	.0433	.0118	.0787	.059	.0157	.0984	.0708	.0196			
Maximum (Feed per Tooth)			<.0393			<.0393			<.0393						
Maximum Depth of Cut			<.3149			<.3937			<.4921						