



**ABPF**

Recommended Cutting Condition

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	
Carbon steel Alloy steel (<30HRC) P-20	PCA12M Rough WF (ACS05E) Finish	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
Alloy steel Tool steel (30-40HRC) P-20 High Hard 4140	PCA12M Rough WF (ACS05E) Finish	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
Pre-Harden Steel Tool steel (40-50HRC) D-2	PCA12M Low Rc (WH ATH80D) High Rc	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
Cast iron GG GGG	(WF ACS05E) Finish PCA12M Rough	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
Maximum (Feed per Tooth)			<.0315			<.0315			<.0315		
Maximum Depth of Cut			<.1570			<.1968			<.2362		

**ABPF**

Recommended Cutting Condition

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	
Carbon steel Alloy steel (<30HRC) P-20	PCA12M Rough WF (ACS05E) Finish	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
Alloy steel Tool steel (30-40HRC) P-20 High Hard 4140	PCA12M Rough WF (ACS05E) Finish	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
Pre-Harden Steel Tool steel (40-50HRC) D-2	PCA12M Low Rc (WH ATH80D) High Rc	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
Cast iron GG GGG	(WF ACS05E) Finish PCA12M Rough	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		



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