

**ARPF**

Recommended Cutting Condition

Work piece material	work piece material	Insert material	Parameter	Dia. 8mm			Dia. 3/8 or 10mm			Dia. 1/2 or 12mm		
				Semi Finishing		Finishing	Semi Finishing		Finishing	Semi Finishing		Finishing
				General	High Speed		General	High Speed		General	High Speed	
I	Carbon steel Alloy steel (<30HRC)	PCA12M	RPM	6,370	11,940	11,940	5,090	9,550	9,550	4,240	7,960	7,960
			SFM	524.0	984.0	984.0	524.0	984.0	984.0	524.0	984.0	984.0
			IPM	100.0	140.0	140.0	80.0	112.0	112.0	67.0	94.0	94.0
			Feed per Tooth	.0078	.0059	.0059	.0078	.0059	.0059	.0078	.0059	.0059
			Depth of Cut	.0078	.0078	.0039	.0098	.0098	.0039	.0118	.0118	.0039
			Width of Cut	.031	.0157	.0078	.0393	.0196	.0078	.0472	.0236	.0078
II	P-20	PCA12M	RPM	4,770	11,150	11,150	3,820	8,920	8,920	3,180	7,430	7,430
			SFM	393.0	918.0	918.0	393.0	918.0	918.0	393.0	918.0	918.0
			IPM	75.0	131.0	131.0	60.0	105.0	105.0	50.0	87.0	87.0
			Feed per Tooth	.0078	.0059	.0059	.0078	.0059	.0059	.0078	.0059	.0059
			Depth of Cut	.0078	.0078	.0039	.0098	.0098	.0039	.0118	.0118	.0039
			Width of Cut	.0314	.0157	.0078	.0393	.0196	.0078	.0472	.0236	.0078
III	Alloy steel Tool steel (30-40HRC) P-20 High Hard 4140	PCA12M	RPM	3,980	11,150	11,150	3,180	8,920	8,920	2,650	7,430	7,430
			SFM	328.0	918.0	918.0	328.0	918.0	918.0	328.0	918.0	918.0
			IPM	31.0	44.0	44.0	25.0	35.0	35.0	20.0	29.0	29.0
			Feed per Tooth	.0039	.0019	.0019	.0039	.0019	.0019	.0039	.0019	.0019
			Depth of Cut	.0078	.0078	.0039	.0098	.0098	.0039	.0118	.0118	.0039
			Width of Cut	.0314	.0078	.0078	.0393	.0098	.0078	.0472	.0118	.0078
IV	Pre-Harden Steel Tool steel (40-50HRC) D-2	PCA12M	RPM	6,370	15,130	15,130	5,090	12,100	12,100	4,240	10,080	10,080
			SFM	524.0	1246.0	1246.0	524.0	1246.0	1246.0	524.0	1246.0	1246.0
			IPM	150.0	238.0	238.0	120.0	190.0	190.0	100.0	158.0	158.0
			Feed per Tooth	.0118	.0078	.0078	.0118	.0078	.0078	.0118	.0078	.0078
			Depth of Cut	.0078	.0078	.0039	.0098	.0078	.0039	.0118	.0118	.0039
			Width of Cut	.0314	.0157	.0078	.0393	.0157	.0078	.0472	.0236	.0078
VIII	Cast iron GG GGG	PCA12M	RPM	6,370	15,130	15,130	5,090	12,100	12,100	4,240	10,080	10,080
			SFM	524.0	1246.0	1246.0	524.0	1246.0	1246.0	524.0	1246.0	1246.0
			IPM	150.0	238.0	238.0	120.0	190.0	190.0	100.0	158.0	158.0
			Feed per Tooth	.0118	.0078	.0078	.0118	.0078	.0078	.0118	.0078	.0078
			Depth of Cut	.0078	.0078	.0039	.0098	.0078	.0039	.0118	.0118	.0039
			Width of Cut	.0314	.0157	.0078	.0393	.0157	.0078	.0472	.0236	.0078
Maximum (Feed per Tooth)				<.0196			<.0196			<.0196		
Maximum Depth of Cut				<.0984			<.1181			<.1574		



**ARPF**  
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 Speed		General	High Speed		General	High Speed	
I II	Carbon steel Alloy steel (<30HRC) P-20	PCA12M	RPM	3,200	5,970	5,970	2,550	4,780	4,780	2,050	3,820	3,820
			SFM	524.0	984.0	984.0	524.0	984.0	984.0	524.0	984.0	984.0
			IPM	62.9	94.0	94.0	51.0	75.0	75.0	40.5	60.2	60.2
			Feed per Tooth	.0098	.0078	.0078	.0098	.0078	.0078	.0098	.0078	.0078
			Depth of Cut	.0314	.0314	.0078	.0393	.0393	.0078	.0492	.0492	.0078
			Width of Cut	.0629	.0629	.0078	.0787	.0787	.0078	.0984	.0492	.0078
III	Alloy steel Tool steel (30-40HRC) P-20 High Hard 4140	PCA12M	RPM	2,400	5,570	5,570	1,910	4,460	4,460	1,530	3,570	3,570
			SFM	393.0	918.0	918.0	393.0	918.0	918.0	393.0	918.0	918.0
			IPM	47.0	87.0	87.0	37.5	70.0	70.0	30.1	56.2	56.2
			Feed per Tooth	.0098	.0078	.0078	.0098	.0078	.0078	.0098	.0078	.0078
			Depth of Cut	.0314	.0314	.0078	.0393	.0393	.0078	.0492	.0492	.0078
			Width of Cut	.0629	.0629	.0078	.0787	.0787	.0078	.0984	.0984	.0078
IV	Pre-Harden Steel Tool steel (40-50HRC) D-2	PCA12M	RPM	1,990	5,570	5,570	1,590	4,460	4,460	1,270	3,570	3,570
			SFM	328.0	918.0	918.0	328.0	918.0	918.0	328.0	918.0	918.0
			IPM	18.8	26.3	26.3	14.9	21.0	21.0	12.0	16.9	16.9
			Feed per Tooth	.0047	.0023	.0023	.0047	.0023	.0023	.0047	.0023	.0023
			Depth of Cut	.0314	.0314	.0078	.0393	.0393	.0078	.0492	.0492	.0078
			Width of Cut	.0629	.0314	.0078	.0787	.0393	.0078	.0984	.0492	.0078
VIII	Cast iron GG GGG	PCA12M	RPM	3,200	7,560	7,560	2,550	6,050	6,050	2,050	4,840	4,840
			SFM	524.0	1246.0	1246.0	524.0	1246.0	1246.0	524.0	1246.0	1246.0
			IPM	88.0	178.0	178.0	70.0	142.0	142.0	56.0	114.0	114.0
			Feed per Tooth	.0137	.0118	.0118	.0137	.0118	.0118	.0137	.0118	.0118
			Depth of Cut	.0314	.0314	.0078	.0393	.0393	.0078	.0492	.0492	.0078
			Width of Cut	.0629	.0629	.0078	.0787	.0787	.0078	.0984	.0984	.0078
Maximum (Feed per Tooth)				<.0236			<.0236			<.0236		
Maximum Depth of Cut				<.1968			<.2362			<.3149		

