

**AHU**  
Recommended Cutting Condition

Work piece material	Work piece material	Insert material	Parameter	Dia. 3/4" (3 Flute)			Dia. 1" (2 Flute)			Dia. 1 1/4" (3 Flute)		
												
				1003 Insert Size			1505 Insert Size			1505 Insert Size		
				3° Ramp Angle			5° Ramp Angle			4° Ramp Angle		
Slotting	"Z" Level Facing	Profiling	Slotting	"Z" Level Facing	Profiling	Slotting	"Z" Level Facing	Profiling				
1	Mild steel Carbon steel (<200HB) 1018 Hot/Cold Rolled	PTH30E	RPM	3,438	3,438	4,329	2,579	2,579	3,247	2,063	2,063	2,598
			SFM	675	675	850	675	675	850	675	675	850
			IPM	46.4	56.7	90.9	30.9	41.3	64.9	37.1	49.5	77.9
			Feed per Tooth	.0045	.0055	.007	.006	.008	.01	.006	.008	.01
			Depth of Cut Max	.045	.08	up to .187	.06	.125	up to .31	.06	.125	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia
2	Carbon steel Alloy steel (<30HRC) P-20	PTH30E TB6045	RPM	2,929	2,929	3,820	2,197	2,197	2,865	1,757	1,757	2,292
			SFM	575	575	750	575	575	750	575	575	750
			IPM	35.1	48.3	74.5	26.4	35.1	57.3	31.6	42.2	68.8
			Feed per Tooth	.004	.0055	.0065	.006	.008	.01	.006	.008	.01
			Depth of Cut	.045	.08	up to .187	.06	.125	up to .31	.06	.125	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia
3	Carbon steel Alloy steel (30-40HRC) P-20 High Hard 4140	PTH30E TB6045	RPM	2,674	2,674	3,056	2,006	2,006	2,292	1,604	1,604	1,834
			SFM	525	525	600	525	525	600	525	525	600
			IPM	32.1	44.1	59.6	24.1	28.1	39.0	28.9	33.7	46.8
			Feed per Tooth	.004	.0055	.0065	.006	.007	.0085	.006	.007	.0085
			Depth of Cut	.045	.08	up to .187	.06	.093	up to .31	.06	.093	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia
4	Stainless Steel Alloy steel (45-54HRC) 17-4 / 15-5 D-2	PTH30E TB6045	RPM	1,375	1,375	1,783	1,031	1,031	1,337	825	825	1,070
			SFM	270	270	350	270	270	350	270	270	350
			IPM	18.6	24.8	37.4	10.3	13.4	21.4	12.4	16.1	25.7
			Feed per Tooth	.0045	.006	.007	.005	.0065	.008	.005	.0065	.008
			Depth of Cut	.045	.08	up to .187	.045	.093	up to .31	.045	.093	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia
5	Titanium	PTH30E	RPM	1,146	1,146	1,350	860	860	1,012	688	688	810
			SFM	225	225	265	225	225	265	225	225	265
			IPM	12.0	15.5	26.3	8.6	13.8	17.2	10.3	16.5	20.7
			Feed per Tooth	.0035	.0045	.0065	.005	.008	.0085	.005	.008	.0085
			Depth of Cut	.045	.08	up to .187	.06	.125	up to .31	.06	.125	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia
6	Stainless Steel 300, 400 Series	TB6045	RPM	3,311	3,311	3,693	2,483	2,483	2,770	1,986	1,986	2,216
			SFM	650	650	725	650	650	725	650	650	725
			IPM	44.7	64.6	77.5	22.3	34.8	44.3	26.8	41.7	53.2
			Feed per Tooth	.0045	.0065	.007	.0045	.007	.008	.0045	.007	.008
			Depth of Cut	.045	.08	up to .187	.06	.093	up to .31	.06	.093	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia
7	Cast Iron	PTH30E	RPM	2,669	2,669	3,565	2,002	2,002	2,674	1,601	1,601	2,139
			SFM	524	524	700	524	524	700	524	524	700
			IPM	48.0	64.1	107.0	32.0	40.0	53.5	38.4	48.0	64.2
			Feed per Tooth	.006	.008	.01	.008	.01	.01	.008	.01	.01
			Depth of Cut	.045	.08	up to .187	.06	.125	up to .31	.06	.125	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia

**AHU**

Recommended Cutting Condition

Work piece material	Work piece material	Insert material	Parameter	Dia. 1 1/2" (4 Flute)			Dia.1 1/2" (5 Flute)			Dia. 2" (5 Flute)		
												
				1505 Insert Size			1003 Insert Size			1505 Insert Size		
				3.5° Ramp Angle			3.5° Ramp Angle			2° Ramp Angle		
		"Z" Level	Profiling			"Z" Level	Profiling			"Z" Level	Profiling	
		Slotting	Facing			Slotting	Facing			Slotting	Facing	
1	Mild steel Carbon steel (<200HB) 1018 Hot/Cold Rolled	PTH30E	RPM	1,719	1,719	2,165	1,719	1,719	2,165	1,289	1,289	1,624
			SFM	675	675	850	675	675	850	675	675	850
			IPM	41.3	55.0	86.6	38.7	47.3	75.8	38.7	51.6	81.2
			Feed per Tooth	.006	.008	.01	.0045	.0055	.007	.006	.008	.01
			Depth of Cut	.06	.125	up to .31	.045	.08	up to .187	.06	.125	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia
2	Carbon steel Alloy steel (<30HRC) P-20	PTH30E TB6045	RPM	1,464	1,464	1,910	1,464	1,464	1,910	1,098	1,098	1,433
			SFM	575	575	750	575	575	750	575	575	750
			IPM	35.1	46.9	76.4	17.6	24.2	37.2	32.9	43.9	71.6
			Feed per Tooth	.006	.008	.01	.004	.0055	.0065	.006	.008	.01
			Depth of Cut	.06	.125	up to .31	.045	.08	up to .187	.06	.125	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia
3	Carbon steel Alloy steel (30-40HRC) P-20 High Hard 4140	PTH30E TB6045	RPM	1,337	1,337	1,528	1,337	1,337	1,528	1,003	1,003	1,146
			SFM	525	525	600	525	525	600	525	525	600
			IPM	32.1	37.4	52.0	16.0	22.1	29.8	30.1	35.1	48.7
			Feed per Tooth	.006	.007	.0085	.004	.0055	.0065	.006	.007	.0085
			Depth of Cut	.06	.093	up to .31	.045	.08	up to .187	.06	.093	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia
4	Stainless Steel Alloy steel (45-54HRC) 17-4 / 15-5 D-2	PTH30E TB6045	RPM	688	688	891	688	688	891	516	516	669
			SFM	270	270	350	270	270	350	270	270	350
			IPM	13.8	17.9	28.5	15.5	20.6	31.2	12.9	16.8	26.7
			Feed per Tooth	.005	.0065	.008	.0045	.006	.007	.005	.0065	.008
			Depth of Cut	.045	.093	up to .31	.03	.06	up to .187	.045	.093	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia
5	Titanium	PTH30E	RPM	573	573	675	573	573	675	430	430	506
			SFM	225	225	265	225	225	265	225	225	265
			IPM	11.5	18.3	22.9	14.3	22.9	28.7	10.7	17.2	21.5
			Feed per Tooth	.005	.008	.0085	.005	.008	.0085	.005	.008	.0085
			Depth of Cut	.045	.125	up to .31	.045	.08	up to .187	.045	.093	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia
6	Stainless Steel 300, 400 Series	TB6045	RPM	1,655	1,655	1,846	1,655	1,655	1,846	1,242	1,242	1,385
			SFM	650	650	725	650	650	725	650	650	725
			IPM	29.8	46.3	59.1	22.3	32.3	38.8	27.9	43.5	55.4
			Feed per Tooth	.0045	.007	.008	.0045	.0065	.007	.0045	.007	.008
			Depth of Cut	.06	.093	up to .31	.045	.08	up to .187	.06	.093	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia
7	Cast Iron	PTH30E	RPM	1,334	1,334	1,783	1,334	1,334	1,783	1,001	1,001	1,337
			SFM	524	524	700	524	524	700	524	524	700
			IPM	42.7	53.4	71.3	24.0	32.0	53.5	40.0	50.0	66.9
			Feed per Tooth	.008	.01	.01	.006	.008	.01	.008	.01	.01
			Depth of Cut	.06	.125	up to .31	.045	.08	up to .187	.06	.125	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia	Full	< 1/2 Dia.	< 20 % Dia

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Recommended Cutting Condition

Work piece material	Work piece material	Insert material	Parameter	Dia. 3" (7 Flute)		
						
				1505 Insert Size		
				1.5° Ramp Angle		
		Slotting	"Z" Level Facing	Profiling		
1	Mild steel Carbon steel (<200HB)  1018 Hot/Cold Rolled	PTH30E	RPM	860	860	1,082
			SFM	675	675	850
			IPM	36.1	48.1	75.8
			Feed per Tooth	.006	.008	.01
			Depth of Cut	.06	.125	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia
2	Carbon steel Alloy steel (<30HRC)  P-20	PTH30E TB6045	RPM	732	732	955
			SFM	575	575	750
			IPM	30.8	41.0	66.9
			Feed per Tooth	.006	.008	.01
			Depth of Cut	.06	.125	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia
3	Carbon steel Alloy steel (30-40HRC)  P-20 High Hard 4140	PTH30E TB6045	RPM	669	669	764
			SFM	525	525	600
			IPM	28.1	32.8	45.5
			Feed per Tooth	.006	.007	.0085
			Depth of Cut	.06	.093	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia
4	Stainless Steel Alloy steel (45-54HRC) 17-4 / 15-5  D-2	PTH30E TB6045	RPM	344	344	446
			SFM	270	270	350
			IPM	12.0	15.6	25.0
			Feed per Tooth	.005	.0065	.008
			Depth of Cut	.045	.093	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia
5	Titanium	PTH30E	RPM	287	287	337
			SFM	225	225	265
			IPM	10.0	16.0	20.1
			Feed per Tooth	.005	.008	.0085
			Depth of Cut	.045	.125	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia
6	Stainless Steel 300, 400 Series	TB6045	RPM	828	828	923
			SFM	650	650	725
			IPM	26.1	40.6	51.7
			Feed per Tooth	.0045	.007	.008
			Depth of Cut	.06	.093	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia
7	Cast Iron	PTH30E	RPM	667	667	891
			SFM	524	524	700
			IPM	37.4	46.7	62.4
			Feed per Tooth	.008	.01	.01
			Depth of Cut	.06	.125	up to .31
			Width of Cut	Full	< 1/2 Dia.	< 20 % Dia