

# HIGH PERFORMANCE END MILLS

## DLC Mill



USA STOCK ITEM\*

List No. 6231HD Fractional sizes

EDP	Diameter of Mill	Shank Diameter	Length of Cut	Overall Length
1315363	1/8	3/8	3/8	2-5/16
1315370	3/16		7/16	
1315386	1/4		5/8	2-7/16
1315392	5/16		3/4	2-1/2
1315408	3/8			
1315414	7/16		1	2-11/16
1315420	1/2	1/2	1-1/4	3-1/4
1315437	5/8	5/8	1-5/8	3-3/4
1315443	3/4	3/4		4-1/8
1315450	1	1	2	4-1/2

1 per tube

⚠ WARNING: Cancer - www.P65Warnings.ca.gov

### Standard Milling Conditions List No. 6231HD

Work Material	Aluminum		Aluminum Alloys					
	1070		4032, 6061		5052		7075	
	960 - 980 SFM		650 - 670 SFM		820 - 825 SFM		650 - 655 SFM	
Milling Conditions	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)
Dia. of Mill (inch)								
1/8	30,000	31.5	19,900	14.9	25,100	22.6	19,900	11.9
3/16	20,000	38.0	13,300	17.5	16,800	26.5	13,300	14.0
1/4	15,000	39.4	10,000	17.5	12,600	26.5	9,940	13.9
5/16	12,000	39.4	8,000	21.5	10,030	32.0	7,950	16.9
3/8	10,000	45.0	6,700	22.6	8,360	33.9	6,630	17.9
7/16	8,500	47.2	5,700	23.9	7,160	37.6	5,680	19.9
1/2	7,500	47.2	5,000	25.0	6,270	37.6	4,970	19.9
5/8	6,000	47.2	4,000	25.0	5,020	37.7	3,980	19.9
3/4	5,000	47.2	3,400	25.5	4,180	37.6	3,320	19.9
1	3,700	47.2	2,500	25.0	3,140	37.7	2,490	19.9
Depth of Cut	a <sub>a</sub>	1.5D						
	a <sub>r</sub>	0.2D						
	H	1D						

HSS END MILLS

# HIGH PERFORMANCE END MILLS

## AG Mill Roughing



List No. 6485 Fractional Sizes

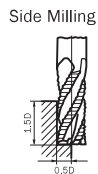
EDP	Diameter of Mill	Shank Diameter	Length of Cut	Number of Flutes	Overall Length
1380710	1/4	3/8	5/8	4	2-7/16
1380726	5/16		3/4		2-1/2
1380732	3/8				
1380749	1/2		1-1/4		3-1/4
1380755	5/8	5/8	1-5/8	5	3-3/4
1380761	3/4	3/4			3-7/8
1380778	7/8	7/8	1-7/8	6	4-1/8
1380784	1	1	2		4-1/2
1380790	1-1/4	1-1/4			
1380806	1-1/2			8	
1380812	2				

1 per tube

**WARNING:** Cancer - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

## Standard Milling Conditions List No. 6485

Work Material	Structural Steels Carbon Steels		Alloy Steels Pre-Hardened Steels		Mold Steels Stainless Steels		Nickel Alloys Titanium Alloys		Cast Irons		Aluminum Alloys Copper Alloys Nonferrous Alloys	
	Milling Conditions		90 - 100 SFM		70 - 80 SFM		60 - 65 SFM		145 - 150 SFM		280 - 285 SFM	
Dia. Of Mill (inch)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)
-	2,000	10.2	1,500	7.1	1,200	3.9	1,000	3.0	2,400	12.6	4,500	47.2
1/4	1,900	10.4	1,400	7.3	1,100	4.0	950	3.1	2,200	12.6	4,300	48.3
5/16	1,500	11.0	1,200	7.5	1,000	4.6	720	3.1	1,800	13.3	3,400	51.3
-	1,500	11.0	1,200	7.5	1,000	4.7	720	3.1	1,800	13.4	3,400	51.2
3/8	1,300	11.0	1,000	7.6	760	4.6	630	3.2	1,500	13.5	2,900	51.7
-	1,200	11.0	900	7.5	720	4.7	590	3.1	1,400	13.4	2,700	51.2
-	1,000	11.0	800	7.5	600	4.7	490	3.3	1,200	13.4	2,300	51.2
1/2	950	11.0	720	7.6	570	4.7	470	3.3	1,100	13.5	2,200	51.7
-	800	11.0	610	7.5	480	4.7	400	3.3	950	13.4	1,800	51.2
5/8	760	11.0	570	7.5	460	4.7	380	3.3	900	13.5	1,700	51.3
3/4	630	11.0	480	7.5	380	4.5	320	3.3	750	13.5	1,400	50.8
-	600	11.0	450	7.1	360	4.3	290	3.1	720	13.4	1,400	51.2
7/8	540	11.8	410	8.6	330	5.3	270	3.6	640	16.3	1,200	59.2
-	480	11.4	360	7.9	290	5.1	250	3.4	550	15.4	1,100	55.1
1	470	11.4	360	7.9	290	5.0	240	3.2	560	15.7	1,100	54.4
-	400	10.2	300	7.1	240	4.3	200	3.1	470	14.2	900	51.2
1 1/4	380	11.4	290	7.7	230	4.8	190	3.5	450	15.2	860	55.6
1 1/2	320	8.0	240	4.7	190	3.4	160	2.6	370	10.1	720	38.8
-	300	6.7	250	4.3	180	2.9	150	2.0	360	9.1	670	33.1
-	240	4.3	180	2.8	140	1.8	120	1.3	290	5.9	550	20.5
2	240	5.3	180	3.7	140	2.5	120	1.7	280	7.2	540	25.9



- 1) In dry milling which is recommended air blow, reduce the RPM and feed to 70% of above table values.
- 2) Adjust milling condition when unusual vibration or different sound occur.

# HIGH PERFORMANCE END MILLS

## AG Mill Heavy



List No. 6403 Fractional Sizes

EDP	Diameter of Mill	Shank Diameter	Length of Cut	Number of Flutes	Overall Length
1380600	1/4	3/8	5/8	4	2-7/16
1380617	5/16		3/4		2-1/2
1380623	3/8		3/4		2-1/2
1380630	1/2		1-1/4		3-1/4
1380646	5/8		5/8		3-3/4
1380652	3/4		3/4		3-7/8
1380669	7/8	7/8	1-7/8	4-1/8	
1380675	1	1	2	6	4-1/2
1380681	1-1/4	1-1/4			
1380698	1-1/2				
1380703	2				

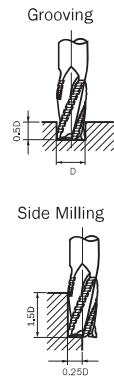
1 per tube

⚠ WARNING: Cancer - www.P65Warnings.ca.gov

### Standard Milling Conditions List No. 6403

Work Material	Structural Steels Carbon Steels		Alloy Steels Pre-Hardened Steels		Mold Steels Stainless Steels		Nickel Alloys Titanium Alloys		Cast Irons		Aluminum Alloys Copper Alloys Nonferrous Alloys	
	150 - 155 SFM		115 - 125 SFM		95 - 105 SFM		75 - 80 SFM		175 - 185 SFM		330 - 350 SFM	
Milling Conditions	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)
Dia. Of Mill (inch)												
-	5,000	11.4	3,800	7.5	3,200	5.1	2,500	3.5	5,800	30.3	10,800	52.0
-	3,000	11.4	2,300	7.5	1,900	5.1	1,600	3.5	3,500	30.3	6,500	52.0
-	2,500	11.4	1,900	7.5	1,600	5.1	1,300	3.5	2,900	31.1	5,400	52.0
1/4	2,300	11.2	1,800	7.7	1,500	5.2	1,200	3.3	2,800	31.1	5,200	53.0
5/16	1,900	11.5	1,400	7.6	1,200	5.1	1,000	3.5	2,200	31.0	4,100	52.2
-	1,900	11.4	1,400	7.5	1,200	5.1	1,000	3.5	2,200	31.1	4,100	52.0
3/8	1,600	11.5	1,200	7.7	1,000	4.9	790	3.3	1,800	31.6	3,500	53.0
-	1,500	11.8	1,200	7.9	1,000	5.1	800	3.5	1,700	31.5	3,200	52.0
-	1,300	11.4	1,000	7.9	800	5.1	600	3.5	1,400	31.1	2,800	52.0
1/2	1,200	11.2	920	7.7	760	5.3	600	3.6	1,400	31.6	2,600	51.9
-	1,000	11.4	800	7.9	600	5.1	500	3.5	1,200	31.1	2,200	52.0
5/8	940	11.2	730	7.7	610	5.3	480	3.5	1,100	30.0	2,100	52.0
3/4	780	10.5	610	7.7	510	4.7	400	3.1	920	28.9	1,700	52.0
-	750	10.2	600	7.9	500	4.7	400	3.1	900	29.1	1,700	52.0
7/8	670	9.4	520	7.0	440	4.0	340	2.6	790	26.1	1,500	46.7
-	600	8.7	500	5.9	400	3.5	300	2.4	700	22.8	1,300	38.6
1	580	10.5	460	6.3	380	4.1	300	2.7	690	26.8	1,300	46.0
-	500	7.9	400	4.7	300	3.1	250	2.0	600	20.1	1,100	33.9
1 1/4	470	7.4	370	4.4	310	3.2	240	2.5	550	16.9	1,000	29.6
1 1/2	390	7.0	310	4.1	260	3.2	200	2.1	460	10.3	870	18.7
-	370	6.7	300	4.3	220	2.9	180	2.0	450	9.1	800	15.5
-	300	4.3	240	2.8	160	1.8	120	1.3	320	5.9	620	10.5
2	290	5.1	230	3.3	150	2.2	120	1.5	310	7.3	610	13.7

- 1) In dry milling which is recommended air blow, reduce the RPM and feed to 70% of above table values.
- 2) Adjust milling condition when unusual vibration or different sound occur.



HSS END MILLS

# Roughing and Finishing (Heavy Duty)



List No. 6367

Fractional sizes  
Surface Treat, 8% Cobalt HSS

List No. 6367X

Fractional sizes  
SG Coated, 8% Cobalt HSS

EDP	Diameter of Mill	Shank Diameter	Length of Cut	Number of Flutes	Overall Length
1024726	1/4	3/8	5/8	4	2-7/16
1024732	5/16		3/4		2-1/2
1024761	3/8		3/4		2-1/2
1024812	1/2	1/2	1-1/4		3-1/4
1024858			2		4
1024864	5/8	5/8	1-5/8		3-3/4
1024870			2-1/2		4-5/8
1024921			1-5/8		3-3/4
1024950	3/4	3/4	1-5/8		3-7/8
1024915			3		5-1/4
1024996	7/8	7/8	1-7/8		4-1/8
1025000			1-7/8		4-1/8
1024967			3-1/2	5-3/4	
1025067	1	3/4	2	4-1/2	
1025103		2	4-1/2		
1025023	1	4	6-1/2		
1025190	1-1/8	2	4-1/2		
1042873	1-1/4	3/4	2	4-1/2	
1019565			4	6-1/2	
1025212			1-1/4	2	4-1/2
1025315	1-1/2	3/4	4	6-1/2	
1042880			2	4-1/2	
1019600			4	6-1/2	
1025350	1-3/4	1-1/4	2	4-1/2	
1025396			4	6-1/2	
1025401			2	4-1/2	
1025418	2	2	4	6-1/2	
1024282			2	4-1/2	
1025447			4	6-1/2	
1025620	2-1/2	2	4	7-3/4	
1025499			6	9-3/4	
1025591			8	11-3/4	
1086318	2	2	4	7-3/4	
1086324			6	9-3/4	
1086330			8	11-3/4	
1086347			10	13-3/4	
1086353	3	2-1/2	4	7-3/4	
1086360			6	9-3/4	
1086376			8	11-3/4	
1086382	10	10	10	13-3/4	
1086399			12	15-3/4	

EDP	Diameter of Mill	Shank Diameter	Length of Cut	Number of Flutes	Overall Length
1175970	1/4	3/8	5/8	4	2-7/16
1175986	5/16		3/4		2-1/2
1175992	3/8		3/4		2-1/2
1176007	1/2	1/2	1-1/4		3-1/4
1176020	5/8	5/8	1-5/8		3-3/4
1176059	3/4	3/4	1-5/8		3-7/8
1176088	7/8	7/8	1-7/8		4-1/8
1176100	1	3/4	2		4-1/2
1176151	1	1	2		4-1/2
1176168	1		4		6-1/2
1176202	1-1/4	1-1/4	2		4-1/2
1176219	1-1/4		4		6-1/2
1176248	1-1/2		2	4-1/2	
1176254	1-1/2		4	6-1/2	
1176260	1-3/4	2	4-1/2		
1176283	2	2	2	4-1/2	
1176122	2	2	4	8	7-3/4

⚠ WARNING: Cancer - www.P65Warnings.ca.gov

1 per tube ⚠ WARNING: Cancer - www.P65Warnings.ca.gov  
Shanks 2" and Larger Have Combination Drive  
8 And 10 Flutes Are Not Center Cutting

HSS END MILLS

# HIGH PERFORMANCE END MILLS

## Standard Milling Conditions List No. 6367

Work Material	Carbon Steels		Carbon Steels Alloy Steels		Die Steels Stainless Steels		Nickel Alloys Titanium Alloys		Cast Iron		Aluminum Alloys Copper Alloys Nonferrous Alloys	
	80 SFM		60 SFM		40 SFM		33 SFM		100 SFM		200 SFM	
Milling Conditions												
Dia. of Mill (inch)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)
	1/4	1,300	5.9	900	3.7	700	2.1	510	1.5	1,600	17.3	3,100
3/8	820	5.9	600	3.8	410	2.1	340	1.5	1,100	17.7	2,100	32.1
1/2	620	5.9	450	3.8	310	2.1	260	1.5	800	17.3	1,600	31.9
5/8	490	5.9	360	3.7	250	2.1	210	1.5	610	17.1	1,300	31.5
3/4	410	5.6	300	3.6	210	2.0	170	1.4	510	16.3	1,100	31.5
1	310	5.5	230	3.5	160	2.2	130	1.4	380	15.7	800	29.5
1 1/4	250	4.3	180	2.7	130	1.5	110	1.1	310	12.6	700	23.6
1 1/2	210	3.5	150	2.2	110	1.2	90	0.8	260	9.8	600	18.5
1 3/4	180	2.4	130	1.6	90	0.9	80	0.6	220	7.5	500	13.8
2	160	2.0	120	1.4	80	0.7	70	0.5	190	5.9	400	11.0
Depth of Cut	a <sub>s</sub>	1.5D										
	a <sub>r</sub>	0.25D										
	H	0.5D										

## Standard Milling Conditions List No. 6367X

Work Material	Carbon Steels		Alloy Steels		Die Steels Stainless Steels		Nickel Alloys Titanium Alloys		Cast Iron		Aluminum Alloys Copper Alloys Nonferrous Alloys	
	118 SFM		83 SFM		70 SFM		60 SFM		130 SFM		260 SFM	
Milling Conditions												
Dia. of Mill (inch)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)
	1/4	1,800	9.4	1,300	6.8	1,100	4.8	890	2.8	2,000	24.0	4,000
3/8	1,200	8.6	840	5.4	680	3.5	600	2.4	1,400	22.4	2,700	43.2
1/2	880	8.4	630	5.8	510	3.7	450	2.7	1,000	22.4	2,000	46.4
5/8	710	8.5	510	5.7	410	3.4	360	2.6	800	22.4	1,600	44.8
3/4	590	8.0	420	5.2	340	3.3	300	2.4	670	21.4	1,400	41.4
1	440	8.4	320	6.0	260	3.6	230	2.8	500	24.0	1,000	45.0
1 1/4	360	5.8	260	4.1	210	2.5	180	1.9	400	16.3	800	29.8
1 1/2	300	4.7	210	3.2	170	1.9	150	1.5	340	13.5	700	25.2
1 3/4	260	3.4	180	2.2	150	1.4	130	1.1	290	11.3	600	18.0
Depth of Cut	a <sub>s</sub>	1.5D										
	a <sub>r</sub>	0.25D										
	H	0.5D										

# HIGH PERFORMANCE END MILLS

## Roughing (Hog)



List No. 6303 Bright Finish, 8% Cobalt HSS

List No. 6303X SG Coated, 8% Cobalt HSS

EDP	Diameter of Mill	Shank Diameter	Length of Cut	Number of Flutes	Overall Length	
1085363	1/4	3/8	5/8	4	2-7/16	
1085370			1-1/4		3-1/16	
1085386	5/16		3/4		2-1/2	
1085392			1-3/8		3-1/8	
1085408	3/8		3/4		2-1/2	
1085414			1-1/2		3-1/4	
1085420	1/2	1/2	1-1/4	4	3-1/4	
1085437		2	4			
1085443	5/8	5/8	1-5/8	5	3-3/4	
1085450			2-1/2		4-5/8	
1085466	3/4		1-5/8		3-7/8	
1085472			3		5-1/4	
1086267	3/4		1-5/8		3-7/8	
1086273			3		5-1/4	
1085489	7/8	1-7/8	5	4-1/8		
1085495		3-1/2		5-3/4		
1085500		7/8		1-7/8	4-1/8	
1085517				3-1/2	5-3/4	
1085523		1		3/4	2	4-1/4
1085530				1	1	3-1/4
1086003	1	1	2	6	4-1/2	
1086010			4		6-1/2	
1086026	3		5-1/2			
1086032	1-1/8		2		4-1/2	
1086049	1-1/4		3/4		2	4-1/2
1086055			4		6-1/2	
1086061	1-1/4	1-1/4	2	8	4-1/2	
1086078			4		6 1/2	
1086084	3		5-1/2			
1086090	1-1/2		3/4		2	4-1/2
1086106			4		6 1/2	
1086112	1-1/2		1-1/4		2	6
1086129		4		6-1/2		
1086135	3	5-1/2				
1086141	1-3/4	3/4		2	4-1/2	
1086158		4		6-1/2		
1086164	1-3/4	1-1/4		2	8	
1086170			4	6-1/2		
1086187	3		5-1/2			
1086193	2		2	4-1/2		
1086209			4	6-1/2		
1086215	2		3	5-1/2		
1086221		4	7-3/4			
1086238		6	9-3/4			
1086244		8	11-3/4			
1086250	3	6-3/4				

EDP	Diameter of Mill	Shank Diameter	Length of Cut	Number of Flutes	Overall Length	
1175510	1/4	3/8	5/8	4	2-7/16	
1175533	5/16		3/4		2-1/2	
1175556	3/8	3/4	2-1/2			
1175579		1-1/4	3-1/4			
1175585	1/2	1/2	2		4	
1175591		5/8	5/8		1-5/8	3-3/4
1175607	5/8	5/8	2-1/2	5	4-5/8	
1175636			1-5/8		3-7/8	
1175642	3/4		3/4		3	5-1/4
1175659	7/8		7/8		1-7/8	4-1/8
1175671			7/8		1-7/8	4-1/8
1175694	1		3/4		2	6
1175716		1	2	4-1/2		
1175722	1	1-1/4	4	8	6-1/2	
1175739			3		5-1/2	
1175774	1-1/4		2		4-1/2	
1175780			4		6-1/2	
1175797	1-1/2		3		5-1/2	
1175825			2		4-1/2	
1175831	1-1/2	4	6-1/2			
1175848		3	5-1/2			
1175877	1-3/4	2	4-1/2			
1175883		4	6-1/2			
1175890	2	3	5-1/2			
1175905		2	4-1/2			
1175934	2	2	4	8	7-3/4	
1175940			6		9-3/4	
1175963			3		6-3/4	

⚠ WARNING: Cancer - www.P65Warnings.ca.gov

1 per tube  
 ⚠ WARNING: Cancer - www.P65Warnings.ca.gov  
 Shanks 2" And Larger Have Combination Drive  
 All Sizes Are Not Center Cutting

HSS END MILLS

## Roughing (Hog)



List No. 6307      8% Cobalt HSS

EDP	Diameter of Mill	Shank Diameter	Length of Cut	Number of Flutes	Overall Length	
1182749	1/4	3/8	5/8	3	2-7/16	
1182755			1-1/4		3-1/16	
1182761	5/16		3/4		2-1/2	
1182778			1-3/8		3-1/8	
1182784	3/8		3/4		2-1/2	
1182790			1-1/2		3-1/4	
1182806	1/2		1/2	1-1/4	4	3-1/4
1182812				2		4
1182829	5/8		5/8	1-5/8	4	3-3/4
1182835				2-1/2		4-5/8
1182841	3/4	1-5/8		3-7/8		
1182864		1-5/8		3-7/8		
1182887	7/8	3/4	1-7/8	5	4-1/8	
1182909			7/8		1-7/8	4-1/8
1182921	1	3/4	2	5	4-1/4	
1182944		1	2		4-1/2	
1182950			4		6-1/2	
1182967			3		5-1/2	
1182973	1-1/8	2	4-1/2			
1183000	1-1/4	1-1/4	2	6	4-1/2	
1183017			4		6-1/2	
1183023			3		5-1/2	
1183052	2		4-1/2			
1183069	1-1/2		4		6-1/2	
1183075			3		5-1/2	
1183103	1-3/4		2	4-1/2		
1183132	2		2	2	6	4-1/2
1183149				4		6-1/2
1183161			2	4		7-3/4
1183178		6		9-3/4		

1 per tube  
Shanks 2" And Larger Have Combination Drive

WARNING: Cancer - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

HSS END MILLS

# HIGH PERFORMANCE END MILLS

## Standard Milling Conditions List No. 6303, 6307

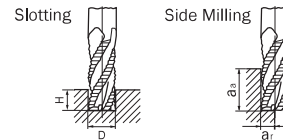
Work Material	Carbon Steels		Alloy Steels		Die Steels Stainless Steels		Nickel Alloys Titanium Alloys		Cast Iron		Aluminum Alloys Copper Alloys Nonferrous Alloys	
	80 SFM		60 SFM		40 SFM		33 SFM		100 SFM		200 SFM	
	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)
1/4	1,300	5.1	900	3.1	700	1.7	510	1.2	1,600	6.7	3,100	26.4
3/8	820	5.1	600	3.1	410	1.7	340	1.2	1,100	6.7	2,100	26.4
1/2	620	5.1	450	3.2	310	1.7	260	1.2	800	6.7	1,600	26.4
5/8	490	5.1	360	3.1	250	1.7	210	1.2	610	6.7	1,300	26.4
3/4	410	5.1	300	3.0	210	1.7	170	1.2	510	6.7	1,100	26.4
1	310	5.1	230	3.1	160	1.8	130	1.2	380	6.7	800	26.4
1 1/4	250	4.9	180	3.1	130	1.8	110	1.2	310	6.7	700	26.4
1 1/2	210	3.5	150	2.3	110	1.3	90	0.9	260	5.3	600	21.7
1 3/4	180	2.6	130	1.6	90	0.9	80	0.6	220	3.7	500	15.7
2	160	2.4	120	1.6	80	0.9	70	0.6	190	3.5	400	14.2
Depth of Cut	a <sub>a</sub>	1.5D										
	a <sub>r</sub>	0.25D										
	H	0.5D										

1) The above cutting speeds and feeds apply to regular end mill flute length.  
For long fluted end mills please use the following factors below:

Cutting Length	Reduce Feed by
2.5 × Diameter	15%
3 × Diameter	25%
4 × Diameter	55%

2) In dry milling, reduce the RPM and Feed 30% of values on table above. (recommended air blow)  
3) Adjust drilling condition when unusual vibration or sound occurs.

D: Dia. of Mill

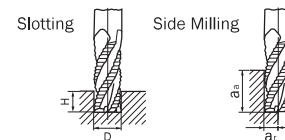


## Standard Milling Conditions List No. 6303X

Work Material	Carbon Steels		Alloy Steels		Die Steels Stainless Steels		Nickel Alloys Titanium Alloys		Cast Iron		Aluminum Alloys Copper Alloys Nonferrous Alloys	
	118 SFM		83 SFM		70 SFM		60 SFM		130 SFM		260 SFM	
	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)
1/4	1,800	7.2	1,300	4.7	1,100	3.5	890	2.1	2,000	9.6	4,000	36.8
3/8	1,200	7.2	840	5.0	680	2.7	600	1.9	1,400	9.0	2,700	33.5
1/2	880	7.0	630	4.8	510	2.9	450	2.0	1,000	8.8	2,000	36.0
5/8	710	7.1	510	4.5	410	3.0	360	2.1	800	8.6	1,600	35.2
3/4	590	6.8	420	4.4	340	2.7	300	2.0	670	8.6	1,400	34.7
1	440	7.8	320	5.0	260	3.4	230	2.5	500	11.3	1,000	42.5
1 1/4	360	7.6	260	5.0	210	3.3	180	2.3	400	11.0	800	40.8
1 1/2	300	5.2	210	3.2	170	2.0	150	1.5	340	7.3	700	28.6
1 3/4	260	3.6	180	2.2	150	1.4	130	1.1	290	4.9	600	19.8
—	1,900	7.1	1,300	4.3	1,100	2.8	930	2.1	2,100	8.7	4,200	35.0
Depth of Cut	a <sub>a</sub>	1.5D										
	a <sub>r</sub>	0.25D										
	H	0.5D										

1) In dry milling, reduce the RPM and feed rate 30% of values on table above. (recommended air blow)  
2) Adjust milling condition when unusual vibration or sound occurs.

D: Dia. of Mill





# HIGH PERFORMANCE END MILLS

## Two Flute Single End



List No. 6231 8% Cobalt HSS

EDP	Diameter of Mill	Shank Diameter	Length of Cut	Overall Length		
1030592	1/8	3/8	3/8	2-5/16		
1230784	5/32					
1030614	3/16		7/16			
1230790	7/32					
1030637	1/4		1/2			
1230806	9/32					
1030672	5/16		9/16			
1230812	11/32					
1030775	3/8					
1230829	13/32		13/16		2-1/2	
1030781	7/16					
1230835	15/32					
1030803	1/2		1/2		1	3
1230841	1/2		3/8		13/16	2-1/2
1230858	17/32	1/2	1-1/8	3-1/8		
1030810	9/16					
1030855	5/8	5/8	1-5/16	3-7/16		
1230864	5/8	1/2	1-1/8	3-1/8		
1030941	11/16	5/8	1-5/16	3-7/16		
1230870		1/2		3-5/16		
1030958	5/8	3-7/16				
1230887	3/4	1/2		3-5/16		
1030964	3/4	3-9/16				
1226927	13/16	5/8		3-5/8		
1031066	7/8	7/8		3-3/4		
1230893		5/8		3-5/8		
1031117		3/4		3-3/4		
1230909		5/8		3-5/8		
1031130	1	1		1-5/8	4-1/8	
1031146		3/4		3-3/4		
1230915		5/8		1-1/2	3-5/8	
1230703		7/8		3-3/4		
1031169	1-1/8	1	4-1/8			
1230710		3/4	3-7/8			
1230726		7/8	3-7/8			
1031198	1-1/4	1	4-1/8			
1230732		3/4	3-7/8			
1230749		7/8	3-7/8			
1031203		1-1/4	4-1/8			
1031226	1-3/8	1	4-1/8			
1230755		3/4	3-7/8			
1031261		1	4-1/8			
1230761	1-1/2	3/4	3-7/8			
1031290		1-1/4	4-1/8			
1031341		1-1/4	4-1/8			
1031393	2	1-1/4	4-1/8			

1 per tube WARNING: Cancer - www.P65Warnings.ca.gov  
Shanks 2" and Larger Have Combination Drive

List No. 6231X SG Coated, 8% Cobalt HSS

EDP	Diameter of Mill	Shank Diameter	Length of Cut	Overall Length				
1176290	1/8	3/8	3/8	2-5/16				
1176311	3/16		7/16					
1176334	1/4		1/2					
1176357	5/16		9/16					
1176370	3/8							
1176392	7/16		13/16		2-1/2			
1176414	1/2		1/2		1	3		
1176443	9/16		1/2		1-1/8	3-1/8		
1176450	5/8		5/8		1-5/16	3-7/16		
1176472	11/16							
1176495	3/4						3/4	3-9/16
1176517								
1176530	7/8		3/4		1-1/2	3-3/4		
1176546	1		1		1-5/8	4-1/8		
1176569	1	3/4	1-1/2	3-3/4				
1176575	1	1	1-5/8	4-1/8				
1176603	1-1/8	1	1-5/8	4-1/8				
1176661	1-1/4	1-1/4						
1176712	1-1/2							

WARNING: Cancer - www.P65Warnings.ca.gov

HSS END MILLS

# HIGH PERFORMANCE END MILLS

## Two Flute Long Single End



List No. 6233 8% Cobalt HSS

EDP	Diameter of Mill	Shank Diameter	Length of Cut	Overall Length
1043479	1/4	3/8	1	3 1/16
1043485	5/16		1 1/4	3 5/16
1043491	3/8		1 1/2	3 1/4
1043507			1	2 3/4
1043513	1/2	1/2	2	4
1043520			1 1/2	3 1/2
1043536			3	5
1043542			5/8	2
1043571	3/4	3/4	2 1/4	4 1/2
1043600	7/8	7/8	2 1/2	4 3/4
1043639	1	1	3	5 1/2
1043674	1 1/8			
1043680	1 1/4			
1043702	1 1/2			
1043725	1 3/4	1 1/4	3	5 1/2
1043760	2			

1 per tube

**WARNING:** Cancer - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

## Regular Single End



List No. 6230 8% Cobalt HSS

EDP	Diameter of Mill	Shank Diameter	Length of Cut	Overall Length
0107454	1.0	6.0	2.0	50.0
0107505	1.5		3.0	
0107528	2.0		7.0	
0107540	2.5		9.0	
0107730	3.0	8.0	12.0	60.0
0107769	3.5		15.0	
0107810	4.0			
0107855	4.5		5.0	
0107878	5.0	10.0	20.0	65.0
0107935	5.5			
0107941	6.0			
0107970	6.5			
0108066	7.0	10.0	25.0	75.0
0108072	7.5			
0108089	8.0			
0108095	8.5			
0108100	9.0	10.0	30.0	80.0
0108117	9.5			
0108123	10.0			
0108249	12.0			
0108278	13.0	16.0	35.0	90.0
0108358	14.0		40.0	
0108387	15.0			
0108444	16.0		105.0	
0108530	17.0	20.0	45.0	110.0
0108576	19.0		50.0	
0108640	20.0			
0108977	24.0		25.0	
0109004	25.0			
0109027	26.0			
0109457	30.0			

**WARNING:** Cancer - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

HSS END MILLS

# HIGH PERFORMANCE END MILLS

## Standard Milling Conditions

List No. 6231, 6233, 6230

Work Material		Carbon Steels		Alloy Steels		Die Steels Stainless Steels		Nickel Alloys Titanium Alloys		Cast Iron		Aluminum Alloys Copper Alloys Nonferrous Alloys	
		85 SFM		60 SFM		40 SFM		33 SFM		100 SFM		200 SFM	
		Dia. of Mill (inch)	(mm)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)
—	2			4,000	3.1	2,800	2.0	2,000	1.1	1,600	0.7	4,800	9.1
—	3	2,700	3.3	1,900	2.1	1,300	1.2	1,100	0.8	3,200	9.4	6,400	17.7
1/8	3.175	2,600	3.3	1,800	2.1	1,300	1.2	1,100	0.8	3,100	9.4	6,100	17.7
3/16	4.7625	1,700	3.3	1,200	2.1	840	1.2	680	0.8	2,100	9.4	4,100	17.7
—	5	1,600	3.3	1,100	2.1	800	1.2	640	0.8	1,900	9.4	3,800	17.7
—	6	1,300	3.3	930	2.1	660	1.2	530	0.8	1,600	9.4	3,200	17.7
1/4	6.35	1,300	3.3	890	2.1	630	1.2	510	0.8	1,600	9.4	3,100	17.7
—	8	1,000	3.3	700	2.1	500	1.2	400	0.8	1,200	9.4	2,400	17.7
3/8	9.525	850	3.3	600	2.1	420	1.2	340	0.8	1,100	9.4	2,100	17.7
—	10	800	3.4	560	2.1	400	1.2	320	0.8	960	9.4	1,900	17.7
—	12	660	3.3	460	2.1	330	1.2	270	0.8	800	9.4	1,600	17.7
1/2	12.7	640	3.3	450	2.1	320	1.2	260	0.8	800	9.4	1,600	17.7
—	15	530	3.3	370	2.1	270	1.2	210	0.8	640	9.4	1,300	17.7
5/8	15.875	510	3.3	360	2.1	260	1.2	210	0.8	610	9.4	1,300	17.7
3/4	19.05	430	3.2	300	2.0	210	1.1	170	0.7	510	9.1	1,100	16.9
—	20	400	3.1	280	2.0	200	1.1	160	0.7	480	9.1	960	16.5
—	25	320	2.4	220	1.5	160	0.8	130	0.6	380	7.1	760	12.6
1	25.4	320	2.4	230	1.5	160	0.8	130	0.6	380	7.0	770	12.4
—	30	270	1.9	190	1.2	130	0.7	110	0.5	320	5.5	640	10.2
1 1/4	—	260	1.8	180	1.1	130	0.6	110	0.5	310	5.1	610	9.8
1 1/2	—	220	1.5	150	0.9	110	0.5	90	0.4	260	4.1	510	7.9
—	—	200	1.3	140	0.8	100	0.5	80	0.3	240	3.8	480	7.1
1 3/4	—	190	1.1	130	0.6	90	0.4	80	0.3	220	3.0	440	5.9
—	—	160	0.7	110	0.4	80	0.2	60	0.2	190	2.0	380	3.5
2	—	160	0.6	120	0.4	80	0.2	70	0.2	190	1.9	390	3.4
Depth of Cut	a <sub>s</sub>	1.5D											
	a <sub>r</sub>	0.25D											
	H	0.5D											

1) The above cutting speeds and feeds apply to regular end mill flute length.

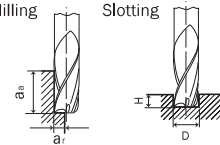
For long fluted end mills please use the following factors below:

Cutting Length	Reduce Feed by
2.5 × Diameter	15%
3 × Diameter	25%
4 × Diameter	55%
5 × Diameter	65%
6 × Diameter	75%

D: Dia. of Mill

Side Milling

Slotting



2) In dry milling, reduce the RPM and Feed 30% of values on table above. (recommended air blow)

3) Adjust drilling condition when unusual vibration or different sound occurs.

## Standard Milling Conditions

List No. 6231X

Work Material		Carbon Steels		Alloy Steels		Die Steels Stainless Steels		Nickel Alloys Titanium Alloys		Cast Iron		Aluminum Alloys Copper Alloys Nonferrous Alloys	
		118 SFM		83 SFM		70 SFM		60 SFM		130 SFM		260 SFM	
Dia. of Mill (inch)		RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)
1/8		3,600	5.5	2,600	3.5	2,100	2.2	1,800	1.7	4,000	15.2	8,000	28.0
3/16		2,400	5.5	1,700	3.5	1,400	2.2	1,200	1.6	2,700	15.1	5,300	28.0
1/4		1,800	5.5	1,300	3.5	1,100	2.2	890	1.7	2,000	15.4	4,000	28.0
3/8		1,200	5.5	840	3.6	680	2.2	600	1.7	1,400	15.7	2,700	28.3
1/2		880	5.5	630	3.6	510	2.2	450	1.7	1,000	15.4	2,000	28.3
5/8		710	5.5	510	3.5	410	2.2	360	1.7	800	15.3	1,600	28.0
3/4		590	5.5	420	3.5	340	2.1	300	1.6	670	14.8	1,400	27.2
1		440	3.9	320	2.6	260	1.6	230	1.2	500	11.0	1,000	20.5
1 1/4		360	3.0	260	2.0	210	1.3	180	0.9	400	8.3	800	15.0
1 1/2		300	2.6	210	1.6	170	1.0	150	0.8	340	6.7	700	12.6
Depth of Cut	a <sub>s</sub>	1.5D											
	a <sub>r</sub>	0.25D											
	H	0.5D											

# HIGH PERFORMANCE END MILLS

## Four Flute Single End



List No. 6210      8% Cobalt HSS      (Unit) : mm

EDP	Diameter of Mill	Shank Diameter	Length of Cut	Overall Length
0110773	2.5	6.0	7.0	50.0
0110824	3.0		9.0	
0111282	3.5	8.0	12.0	60.0
0111327	4.0		15.0	
0111459	4.5			
0111516	5.0			
0111619	5.5			
0111660	6.0			
0111866	6.5	10.0	20.0	65.0
0112060	7.0			
0112564	7.5			
0112667	8.0		25.0	
0112680	8.5			
0112696	9.0			
0112701	9.5	12.0	30.0	80.0
0112782	10.0			
0112810	11.0	16.0	35.0	90.0
0112879	12.0			
0112891	13.0	20.0	40.0	95.0
0113067	14.0			
0113118	15.0			
0113227	16.0	25.0	45.0	105.0
0113233	17.0			
0113262	18.0			
0113320	19.0			
0113336	20.0	25.0	50.0	110.0
0113497	24.0			
0113577	26.0			
0113611	28.0	25.0	55.0	120.0
0113772	30.0			

1 per tube

⚠ WARNING: Cancer - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

HSS END MILLS

# HIGH PERFORMANCE END MILLS

## Multi-Flute Single End Center Cutting



List No. 6211M 8% Cobalt HSS

EDP	Diameter of Mill	Shank Diameter	Length of Cut	Number of Flutes	Overall Length	
1030345	1/8	3/8	3/8	4	2-5/16	
1042290	3/16		1/2		2-3/8	
1042305	1/4		5/8		2-7/16	
1042311	5/16		3/4		2-1/2	
1042328	3/8		3/4		2-1/2	
1042334	1/2	1/2	1-1/4	6	3-1/4	
1030351						
1042340	5/8	5/8	1-5/8	4	3-3/4	
1030368				6		
1042357				4		
1030374	3/4	3/4	6	3-7/8		
1042363	7/8	7/8	1-7/8	4	4-1/8	
1030380				6		
1042370	1	1	2	4	4-1/2	
1030402				6		
1042386				4		
1030419				1-1/8		6
1042392				1-1/4		4
1030425	6					
1042408	1-1/2	1-1/4	4	4	4-1/2	
1030586				6		
1042414				6		
1042850	2	4	4	6	4-1/2	

⚠ WARNING: Cancer - www.P65Warnings.ca.gov



HSS END MILLS

List No. 6211X 8% Cobalt HSS, SG Coated

EDP	Diameter of Mill	Shank Diameter	Length of Cut	Number of Flutes	Overall Length
1176729	1/8	3/8	3/8	4	2-5/16
1176735	3/16		1/2		2-3/8
1176741	1/4		5/8		2-7/16
1176758	5/16		3/4		2-1/2
1176764	3/8		3/4		2-1/2
1176770	1/2	1/2	1-1/4	6	3-1/4
1176787					
1176793	5/8	5/8	1-5/8	4	3-3/4
1176809				6	
1176815				4	
1176821	3/4	3/4	6	3-7/8	

1 per tube

EDP	Diameter of Mill	Shank Diameter	Length of Cut	Number of Flutes	Overall Length
1176838	7/8	7/8	1-7/8	4	4-1/8
1176844				6	
1176850	1	1	2	4	4-1/2
1176867				6	
1176873				4	
1176880	1-1/8	1-1/4	2	6	4-1/2
1176896	4				
1176901	1-1/4	1-1/4	2	6	4-1/2
1176918	4				
1176924	1-1/2			6	

⚠ WARNING: Cancer - www.P65Warnings.ca.gov

# Multi-Flute Long Single End Center Cutting



List No. 6213 8% Cobalt HSS

EDP	Diameter of Mill	Shank Diameter	Length of Cut	Number of Flutes	Overall Length
1042741	1/4	3/8	1 1/4	4	3 1/16
1042758	5/16		1 3/8		3 1/8
1042764	3/8		1 1/2		3 1/4
1042770	1/2	1/2	2		4
1042787	5/8	5/8	2 1/2		4 5/8
1042793	3/4	3/4	3		5 1/4
1042809	7/8	7/8	3 1/2		5 3/4
1042815	1	1	4		6 1/2
1042821	1 1/4	1 1/4			

1 per tube

⚠ WARNING: Cancer - www.P65Warnings.ca.gov

# HIGH PERFORMANCE END MILLS

## Standard Milling Conditions

List No. 6210, 6211M, 6213

4 Flute

Work Material		Carbon Steels		Alloy Steels		Die Steels Stainless Steels		Nickel Alloys Titanium Alloys		Cast Iron		Aluminum Alloys Copper Alloys Nonferrous Alloys	
		Milling Conditions		85 SFM		60 SFM		40 SFM		33 SFM		100 SFM	
Dia. of Mill (inch)	(mm)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)
		—	3	2,700	5.1	1,900	3.1	1,300	1.8	1,100	1.2	3,200	14.2
1/8	3.175	2,600	5.1	1,800	3.1	1,300	1.8	1,100	1.2	3,100	14.2	6,100	26.4
3/16	4.7625	1,700	5.1	1,200	3.1	840	1.7	680	1.2	2,100	14.2	4,100	26.4
—	5	1,600	5.1	1,100	3.1	800	1.7	640	1.2	1,900	14.2	3,800	25.6
—	6	1,300	5.1	930	3.1	660	1.7	530	1.2	1,600	14.2	3,200	26.4
1/4	6.35	1,300	5.1	890	3.1	630	1.7	510	1.2	1,600	14.2	3,100	26.4
—	8	1,000	5.1	700	3.1	500	1.7	400	1.2	1,200	14.2	2,400	26.4
3/8	9.525	850	5.1	600	3.1	420	1.8	340	1.2	1,100	14.4	2,100	26.6
—	10	800	5.1	560	3.2	400	1.8	320	1.2	960	14.6	1,900	26.8
—	12	660	5.1	460	3.2	330	1.8	270	1.2	800	14.6	1,600	26.4
1/2	12.7	640	5.1	450	3.2	320	1.8	260	1.2	800	14.6	1,600	26.4
—	15	530	5.1	370	3.1	270	1.8	210	1.2	640	14.6	1,300	26.4
5/8	15.875	510	5.1	360	3.1	260	1.7	210	1.2	610	14.4	1,300	25.6
3/4	19.05	430	4.9	300	3.0	210	1.7	170	1.1	510	13.6	1,100	25.2
—	20	400	4.7	280	3.0	200	1.7	160	1.1	480	13.4	960	24.8
—	25	320	3.6	220	2.3	160	1.3	130	0.9	380	10.2	760	18.9
1	25.4	320	3.5	230	2.3	160	1.3	130	0.9	380	10.0	770	18.7
—	30	270	2.9	190	1.8	130	1.0	110	0.7	320	8.3	640	15.4
1 1/4	31.75	260	2.7	180	1.7	130	1.0	110	0.7	310	7.9	610	14.2
1 1/2	38.1	220	2.2	150	1.4	110	0.8	90	0.5	260	6.1	510	11.4
—	40	200	2.0	140	1.3	100	0.7	80	0.5	240	5.5	480	10.6
1 3/4	44.45	190	1.6	130	1.0	90	0.6	80	0.4	220	4.1	440	8.7
—	50	160	1.0	110	0.6	80	0.4	60	0.2	190	2.9	380	5.5
2	50.8	160	1.0	120	0.6	80	0.3	70	0.2	190	2.8	390	5.3
Depth of Cut	a <sub>a</sub>	1.5D											
	a <sub>r</sub>	0.25D											

## Standard Milling Conditions

List No. 6210, 6211M, 6213

6 Flute

Work Material		Carbon Steels		Alloy Steels		Die Steels Stainless Steels		Nickel Alloys Titanium Alloys		Cast Iron		Aluminum Alloys Copper Alloys Nonferrous Alloys	
		Milling Conditions		85 SFM		60 SFM		40 SFM		33 SFM		100 SFM	
Dia. of Mill (inch)		RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)
		1/2		640	7.7	450	4.8	320	2.7	260	1.8	800	21.9
5/8		510	7.7	360	4.6	260	2.6	210	1.8	610	21.6	1,300	38.4
3/4		430	7.4	300	4.5	210	2.5	170	1.7	510	20.4	1,100	37.8
7/8		370	6.5	260	4.0	180	2.2	150	1.5	440	17.7	900	33.1
1		320	5.3	230	3.4	160	1.9	130	1.3	380	15.1	770	28.1
1 1/4		260	4.1	180	2.6	130	1.5	110	1.0	310	11.8	610	21.3
1 1/2		220	3.2	150	2.1	110	1.2	90	0.8	260	9.2	510	17.1
2		160	1.5	120	0.9	80	0.5	70	0.3	190	4.1	390	8.0
Depth of Cut	a <sub>a</sub>	1.5D											
	a <sub>r</sub>	0.25D											

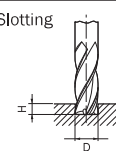
1) The above cutting speeds and feeds apply to regular end mill flute length.

For long fluted end mills please use the following factors below:

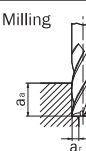
Cutting Length	Reduce Feed by
2.5 × Diameter	15%
3 × Diameter	25%
4 × Diameter	55%
5 × Diameter	65%
6 × Diameter	75%

D: Dia. of Mill

Slotting



Side Milling



2) In dry milling, reduce the RPM and Feed 30% of values on table above. ( recommended air blow )

3) Adjust drilling condition when unusual vibration or different sound occurs.

# HIGH PERFORMANCE END MILLS

## Standard Milling Conditions List No. 6211X

### 4 Flute

Work Material	Carbon Steels		Alloy Steels		Die Steels Stainless Steels		Nickel Alloys Titanium Alloys		Cast Iron		Aluminum Alloys Copper Alloys Nonferrous Alloys	
	118 SFM		83 SFM		70 SFM		60 SFM		130 SFM		260 SFM	
	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)
1/8	3,600	8.6	2,600	5.2	2,100	2.5	1,800	2.5	4,000	20.8	8,000	38.4
3/16	2,400	6.7	1,700	4.1	1,400	2.2	1,200	1.9	2,700	17.3	5,300	31.8
1/4	1,800	7.9	1,300	4.7	1,100	3.1	900	2.5	2,000	22.4	4,000	36.8
3/8	1,200	6.7	900	4.7	700	2.8	600	2.0	1,400	19.6	2,700	33.5
1/2	880	7.4	630	4.8	510	3.1	450	2.3	1,000	20.0	1,990	37.4
5/8	710	7.4	510	4.5	410	3.0	360	2.2	800	20.8	1,590	34.3
3/4	590	6.6	420	4.4	340	2.7	300	2.0	670	18.5	1,330	31.9
1	440	4.8	320	3.1	260	2.0	230	1.5	500	13.4	1,000	24.8
1 1/4	360	3.8	260	2.5	210	1.6	180	1.2	400	10.2	800	18.9
1 1/2	300	3.1	210	1.9	170	1.2	150	0.9	340	8.2	670	15.0
Depth of Cut	a <sub>s</sub>	1.5D										
	a <sub>r</sub>	0.25D										

### 6 Flute

Work Material	Carbon Steels		Alloy Steels		Die Steels Stainless Steels		Nickel Alloys Titanium Alloys		Cast Iron		Aluminum Alloys Copper Alloys Nonferrous Alloys	
	116 SFM		83 SFM		70 SFM		60 SFM		130 SFM		330 SFM	
	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)
1/2	880	11.1	630	7.2	510	4.6	450	3.4	1,000	30.0	2,700	56.1
5/8	710	11.1	510	6.7	410	4.4	360	3.2	800	31.2	1,990	51.5
3/4	590	9.9	420	6.6	340	4.1	300	3.1	670	27.7	1,590	47.9
1	440	7.3	320	4.7	260	3.0	230	2.3	500	20.1	1,330	37.2
1 1/4	360	5.7	260	3.7	210	2.3	180	1.7	400	15.4	1,000	28.3
1 1/2	300	4.6	210	2.9	170	1.8	150	1.4	340	12.2	800	22.5
Depth of Cut	a <sub>s</sub>	1.5D										
	a <sub>r</sub>	0.25D										

- 1) The above cutting speeds and feeds apply to regular end mill flute length.  
For long fluted end mills please use the following factors below:

Cutting Length	Reduce Feed by
2.5 × Diameter	15%
3 × Diameter	25%
4 × Diameter	55%

- 2) In dry milling, reduce the RPM and Feed 30% of values on table above. ( recommended air blow )  
3) Adjust drilling condition when unusual vibration or different sound occurs.

D: Dia. of Mill

