

MATERIAL	SPEED (S.F.M.)	END MILL DIAMETER		
		UP TO 1/4"	UP TO 1/2"	UP TO 1"
FEED PER TOOTH (INCHES)				
Aluminum/Aluminum Alloys	600-1200	.0002-.0020	.0020-.0040	.0060-.0100
Brass/Bronze	200-350	.0005-.0020	.0020-.0030	.0040-.0080
Copper/Copper Alloys	350-900	.0005-.0020	.0020	.0020-.0060
Iron-Cast (soft)	200-500	.0005-.0020	.0020-.0030	.0030-.0080
Iron-Cast (hard)	80-350	.0003-.0008	.0008-.0020	.0020-.0040
Iron-Ductile	80-400	.0002-.0010	.0010-.0020	.0020-.0060
Iron-Malleable	200-600	.0002-.0010	.0010-.0030	.0030-.0070
Magnesium/Magnesium Alloys	800-1400	.0005-.0020	.0020-.0060	.0040-.0100
Monel/High Nickel Steel	150-300	.0002-.0010	.0010-.0020	.0020-.0040
Plastics	600-1200	.0006-.0030	.0030-.0060	.0060-.0150
Plastic-Glass Filled	300-800	.0006-.0030	.0030-.0040	.0040-.0120
Refractory Alloys	80-400	.0002-.0010	.0010	.0010-.0020
Steel-Low Carbon	200-500	.0002-.0010	.0010-.0030	.0030-.0070
Steel-Medium Carbon	100-250	.0004-.0015	.0015-.0020	.0020-.0050
Steel-Hardened	25-120	.0002-.0005	.0005-.0010	.0010-.0030
Steel-Mold	200-350	.0002-.0010	.0010-.0020	.0020-.0060
Steel-Tool	100-300	.0002-.0010	.0010-.0020	.0020-.0060

### ALL DESIGN-RITE END MILLS ARE CENTER CUTTING

- Lower Radial Width of Cut – Higher range of recommended surface speeds should be used
- Greater Radial Width of Cut – Lower range of recommended surface speeds should be used
- For Slotting Applications – Speeds should be reduced by approximately 20% of lowest range value
- For Peripheral Applications – Axial depth of cut not to exceed 1-1/2 times the cutter diameter
  - Long & X-Long End Mills – Reduce feed per tooth by 50%
  - ZrN & AlTiN Coating – Inease S.F.M. by 25% to 40%

### S.F.M./R.P.M. CONVERSION CHART

#### DIAMETER

S.F.M.	1/16	3/32	1/8	5/32	3/16	7/32	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1
50	3,050	2,040	1,530	1,220	1,020	875	765	610	510	440	380	310	250	220	190
75	4,580	3,060	2,290	1,830	1,530	1,310	1,150	920	760	660	570	460	380	330	285
100	6,100	4,080	3,050	2,450	2,040	1,750	1,530	1,220	1,020	870	760	610	510	440	385
125	7,630	5,100	3,820	3,050	2,550	2,180	1,920	1,530	1,270	1,100	950	770	630	550	475
150	9,150	6,120	4,570	3,670	3,060	2,620	2,290	1,830	1,530	1,310	1,140	920	760	660	575
175	10,680	7,140	5,350	4,270	3,570	3,060	2,680	2,140	1,780	1,540	1,330	1,080	880	770	665
200	12,200	8,150	6,100	4,900	4,070	3,500	3,100	2,450	2,000	1,750	1,500	1,200	1,000	875	750
300	18,500	12,200	9,200	7,300	6,100	5,250	4,600	3,700	3,100	2,600	2,300	1,800	1,500	1,300	1,100
400	24,500	16,300	12,200	9,800	8,150	7,000	6,100	4,900	4,100	3,500	3,050	2,450	2,050	1,750	1,525
500	30,500	20,400	15,300	12,200	10,200	8,700	7,600	6,100	5,100	4,400	3,800	3,100	2,500	2,200	1,900
750	45,800	36,700	22,900	18,300	15,300	13,100	11,500	9,200	7,600	6,550	5,700	4,600	3,800	3,770	2,850
1,000	-	40,800	30,600	24,500	20,400	17,500	15,300	12,200	10,200	8,750	7,650	6,100	5,100	4,400	3,800
1,500	-	-	45,900	36,700	30,600	26,200	22,900	18,300	15,300	13,150	11,300	9,200	7,600	6,500	5,700
2,000	-	-	-	49,000	40,800	35,000	30,600	24,400	20,400	17,500	15,300	12,200	10,200	8,700	7,600
3,000	-	-	-	-	-	52,500	45,900	36,600	30,600	26,250	22,900	18,300	15,300	13,100	11,400
4,000	-	-	-	-	-	-	-	48,800	40,800	35,000	30,600	24,400	20,400	17,500	15,200
5,000	-	-	-	-	-	-	-	-	-	43,700	38,200	30,600	25,500	21,800	19,000