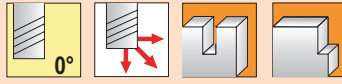


222M - 2 Flute - Square End
234M - 4 Flute - Square End
322M - 2 Flute - Ball End
334M - 4 Flute - Ball End

Technical information:
 page 192, 194, 198

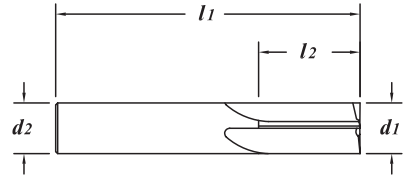


TOLERANCES

d_1	+0.00" -0.002" (+0.00 -0.050mm)	
d_2	1/8" - 3/16"	+0.000" -0.003" (-0.000 -0.075mm)
	1/4" - 1"	-0.001" -0.004" (-0.025 -0.100mm)
Ball radius	+0.00" -0.01" (+0.00 -0.25mm)	

Standard Length - Straight Flute

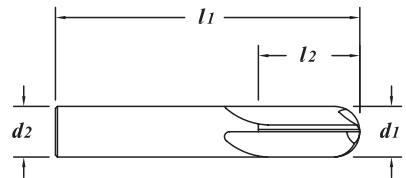
Solid submicron grain carbide end mill - center cutting
 For cutting high Rc materials
 Helps to hold perpendicularity



222M EDP#	234M EDP#	d_1 †		d_2 Shank Diameter	l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100	
		Decimal	Diameter								Metric
81070	82070	.1250	1/8"	3.17	1/8"	1-1/2"	1/2"	8.02	7.66	7.32	6.97
81110	82110	.1875	3/16"	4.76	3/16"	2"	5/8"	11.24	10.75	10.26	9.78
81150	82150	.2500	1/4"	6.35	1/4"	2-1/2"	3/4"	13.56	12.97	12.39	11.79
81190	82190	.3125	5/16"	7.94	5/16"	2-1/2"	7/8"	19.00	18.18	17.35	16.53
81230	82230	.3750	3/8"	9.52	3/8"	2-1/2"	7/8"	23.69	22.66	21.63	20.60
81270	82270	.4375	7/16"	11.11	7/16"	2-3/4"	1"	28.89	27.63	26.37	25.13
81310	82310	.5000	1/2"	12.70	1/2"	3"	1"	37.90	36.25	34.60	32.96
81330	82330	.6250	5/8"	15.87	5/8"	3-1/2"	1-1/4"	73.16	69.98	66.80	63.62
81350	82350	.7500	3/4"	19.05	3/4"	4"	1-1/2"	107.26	102.60	97.93	93.27
81370	82370	1.000	1"	25.04	1"	4"	1-1/2"	176.48	168.80	161.13	153.46

Standard Length - Straight Flute - Ball End

Solid submicron grain carbide end mill - center cutting
 For cutting high Rc materials
 Helps to hold perpendicularity



322M EDP#	334M EDP#	d_1 †		d_2 Shank Diameter	l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100	
		Decimal	Diameter								Metric
83070	84070	.1250	1/8"	3.17	1/8"	1-1/2"	1/2"	10.28	9.83	9.38	8.93
83110	84110	.1875	3/16"	4.76	3/16"	2"	5/8"	13.56	12.97	12.39	11.79
83150	84150	.2500	1/4"	6.35	1/4"	2-1/2"	3/4"	16.82	16.09	15.35	14.62
83190	84190	.3125	5/16"	7.94	5/16"	2-1/2"	7/8"	22.08	21.12	20.16	19.20
83230	84230	.3750	3/8"	9.52	3/8"	2-1/2"	7/8"	27.02	25.84	24.67	23.49
83270	84270	.4375	7/16"	11.11	7/16"	2-3/4"	1"	33.26	31.81	30.37	28.92
83310	84310	.5000	1/2"	12.70	1/2"	3"	1"	50.30	48.12	45.93	43.74
83330	84330	.6250	5/8"	15.87	5/8"	3-1/2"	1-1/4"	81.34	77.80	74.27	70.73
83350	84350	.7500	3/4"	19.05	3/4"	4"	1-1/2"	119.69	114.49	109.28	104.08
83370	84370	1.000	1"	25.04	1"	4"	1-1/2"	207.60	198.58	189.55	180.52