

Series 320M, 323M, 330M, 920M, 923M, 930M

.0200" - .2656"
(0.508mm - 6.746mm)



TOLERANCES

d_1	$\leq .030"$ $\geq 1/32"$	$+0.000" - .001"$ (+.000 - .025mm)
d_2	h6	
ball radius	$+0.000" - .001"$ (+.000 - .025mm)	

Standard Length - Ball End

Solid submicron grain carbide end mill - center cutting

Extremely versatile

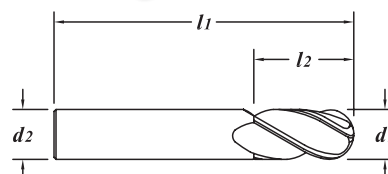
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Extended length - page 247



(320M/920M) 2 Flute EDP#	(323M/923M) 3 Flute EDP#	(330M/930M) 4 Flute EDP#	d_1 † Diameter			d_2 Shank Diameter	l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
			Decimal		Metric							
16650	-	-	.0200	.0200"	0.508	1/8"	1-1/2"	.060"	22.99	21.99	20.99	19.99
16700	-	-	.0250	.0250"	0.635	1/8"	1-1/2"	.075"	22.21	21.24	20.28	19.31
16750	-	-	.0300	.0300"	0.762	1/8"	1-1/2"	.090"	19.14	18.30	17.47	16.64
16010	17010	18010	.0312	1/32"	0.792	1/8"	1-1/2"	3/32"	14.19	13.57	12.96	12.34
47010	38010	48010	.0394		1.000	3.0	38	4	14.90	14.26	13.61	12.96
16020	17020	18020	.0469	3/64"	1.191	1/8"	1-1/2"	1/8"	14.19	13.57	12.96	12.34
47020	38020	48020	.0591		1.500	3.0	38	6	14.90	14.26	13.61	12.96
16030	17030	18030	.0625	1/16"	1.588	1/8"	1-1/2"	1/4"	13.40	12.82	12.23	11.65
16040	17040	18040	.0781	5/64"	1.984	1/8"	1-1/2"	1/4"	13.40	12.82	12.23	11.65
47030	38030	48030	.0787		2.000	3.0	38	8	14.05	13.44	12.83	12.22
16050	17050	18050	.0938	3/32"	2.383	1/8"	1-1/2"	3/8"	12.81	12.25	11.70	11.14
47040	38040	48040	.0984		2.500	3.0	38	12	13.47	12.88	12.30	11.71
16060	17060	18060	.1094	7/64"	2.779	1/8"	1-1/2"	3/8"	12.81	12.25	11.70	11.14
47050	38050	48050	.1181		3.000	3.0	38	12	12.22	11.69	11.16	10.63
16070	17070	18070	.1250	1/8"	3.175	1/8"	1-1/2"	1/2"	11.63	11.12	10.62	10.11
47060	38060	48060	.1378		3.500	4.0	50	12	17.94	17.16	16.38	15.60
16080	17080	18080	.1406	9/64"	3.571	3/16"	2"	9/16"	17.05	16.31	15.57	14.83
16090	17090	18090	.1562	5/32"	3.967	3/16"	2"	9/16"	17.05	16.31	15.57	14.83
47070	38070	48070	.1575		4.000	4.0	50	14	16.09	15.39	14.69	13.99
16100	17100	18100	.1719	11/64"	4.366	3/16"	2"	9/16"	17.05	16.31	15.57	14.83
47080	38080	48080	.1772		4.500	5.0	50	14	20.25	19.37	18.49	17.61
16110	17110	18110	.1875	3/16"	4.763	3/16"	2"	5/8"	15.32	14.65	13.99	13.32
97070	98070	99070	.1969		5.000	5.0	50	16	18.61	17.80	16.99	16.18
47090	38090	48090	.1969		5.000	5.0	65	16	19.50	18.66	17.81	16.96
16120	17120	18120	.2031	13/64"	5.159	1/4"	2-1/2"	5/8"	19.84	18.98	18.11	17.25
16130	17130	18130	.2188	7/32"	5.558	1/4"	2-1/2"	5/8"	19.84	18.98	18.11	17.25
16140	17140	18140	.2344	15/64"	5.954	1/4"	2-1/2"	3/4"	19.84	18.98	18.11	17.25
47100	38100	48100	.2362		6.000	6.0	65	19	20.00	19.13	18.26	17.39
16150	17150	18150	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	19.03	18.21	17.38	16.55
16160	17160	18160	.2656	17/64"	6.746	5/16"	2-1/2"	7/8"	29.79	28.49	27.20	25.90

Series 320M, 323M, 330M, 920M, 923M, 930M (continued)

.2756" - 1.000"
(7.00mm - 25.40mm)

GENERAL PURPOSE
END MILLS

(320M/920M) 2 Flute EDP#	(323M/923M) 3 Flute EDP#	(330M/930M) 4 Flute EDP#	d_1 † Diameter		d_2 Shank Diameter	l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100	
			Decimal	Metric								
47110	38110	48110	.2756		7.000	7.0	65	22	25.67	24.55	23.44	22.32
16170	17170	18170	.2812	9/32"	7.142	5/16"	2-1/2"	7/8"	29.79	28.49	27.20	25.90
16180	-	18180	.2969	19/64"	7.541	5/16"	2-1/2"	7/8"	29.79	28.49	27.20	25.90
16190	17190	18190	.3125	5/16"	7.938	5/16"	2-1/2"	7/8"	24.94	23.86	22.77	21.69
47120	38120	48120	.3150		8.000	8.0	65	22	26.25	25.11	23.97	22.83
16200	17200	18200	.3281	21/64"	8.334	3/8"	2-1/2"	7/8"	35.65	34.10	32.55	31.00
16210	17210	18210	.3438	11/32"	8.733	3/8"	2-1/2"	7/8"	35.65	34.10	32.55	31.00
47130	38130	48130	.3543		9.000	9.0	65	22	32.07	30.68	29.28	27.89
16220	-	18220	.3594	23/64"	9.129	3/8"	2-1/2"	7/8"	35.65	34.10	32.55	31.00
16230	17230	18230	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	30.53	29.21	27.88	26.55
16240	17240	18240	.3906	25/64"	9.921	7/16"	2-3/4"	7/8"	43.87	41.97	40.06	38.15
47140	38140	48140	.3937		10.000	10.0	70	25	37.48	35.85	34.22	32.59
16250	17250	18250	.4062	13/32"	10.317	7/16"	2-3/4"	7/8"	43.87	41.97	40.06	38.15
16260	17260	18260	.4219	27/64"	10.716	7/16"	2-3/4"	7/8"	43.87	41.97	40.06	38.15
47150	38150	48150	.4331		11.000	11.0	75	25	39.46	37.74	36.03	34.31
16270	17270	18270	.4375	7/16"	11.113	7/16"	2-3/4"	1"	37.58	35.95	34.31	32.68
16280	-	18280	.4531	29/64"	11.509	1/2"	3"	1"	62.84	60.10	57.37	54.64
16290	17290	18290	.4688	15/32"	11.908	1/2"	3"	1"	62.84	60.10	57.37	54.64
47160	38160	48160	.4724		12.000	12.0	75	25	59.70	57.10	54.51	51.91
16300	-	18300	.4844	31/64"	12.304	1/2"	3"	1"	62.84	60.10	57.37	54.64
16310	17310	18310	.5000	1/2"	12.700	1/2"	3"	1"	56.83	54.36	51.89	49.42
47170	38170	48170	.5512		14.000	14.0	88	32	86.91	83.13	79.35	75.57
16320	17320	18320	.5625	9/16"	14.288	9/16"	3-1/2"	1-1/4"	82.78	79.18	75.58	71.98
16330	17330	18330	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	91.92	87.92	83.93	79.93
47180	38180	48180	.6299		16.000	16.0	88	38	96.50	92.30	88.11	83.91
16340	17340	18340	.6875	11/16"	17.463	3/4"	4"	1-1/2"	153.02	146.37	139.71	133.06
47190	-	48190	.7087		18.000	18.0	100	38	142.01	135.84	129.66	123.49
16350	17350	18350	.7500	3/4"	19.050	3/4"	4"	1-1/2"	135.27	129.39	123.51	117.63
47200	38200	48200	.7874		20.000	20.0	100	38	190.44	182.16	173.88	165.60
47210	-	48210	.8661		22.000	22.0	100	38	211.55	202.36	193.16	183.96
16360	17360	18360	.8750	7/8"	22.225	7/8"	4"	1-1/2"	216.72	207.30	197.87	188.45
47220	-	-	.9843		25.000	25.0	100	38	221.77	212.12	202.48	192.84
16370	17370	18370	1.000	1"	25.400	1"	4"	1-1/2"	234.65	224.44	214.24	204.04

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MATERIAL HARDNESS (Rc)

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