

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

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



TECH  
PAGES  
290-291

**TOLERANCES**

$d_1$	$\leq .030"$	$+0.000" - .001"$ (+.000 - .025mm)
	$\geq 1/32"$	$+0.000" - .002"$ (+.000 - .050mm)
$d_2$	h6	
ball radius	$+0.000" - .001"$ (+.000 - .025mm)	

## Standard Length - Ball End

Solid submicron grain carbide end mill - center cutting

Extremely versatile

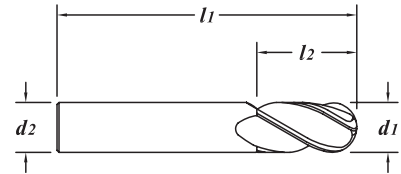
TiN Coating - page 242

TiCN Coating - page 243

TiAlN Coating - page 244

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Extended length - page 259



MATERIAL HARDNESS (Rc)  
70  
35  
0

(320M/920M) 2 Flute EDP#	(323M/923M) 3 Flute EDP#	(330M/930M) 4 Flute EDP#	$d_1$ †		$d_2$ Shank Diameter	$l_1$ Overall Length	$l_2$ Flute Length	LIST PRICE	
			Decimal	Diameter Metric					
16650	-	-	.0200	.0200"	0.508	1/8"	1-1/2"	.060"	21.79
16700	-	-	.0250	.0250"	0.635	1/8"	1-1/2"	.075"	21.05
16750	-	-	.0300	.0300"	0.762	1/8"	1-1/2"	.090"	18.14
16010	17010	18010	.0312	1/32"	0.792	1/8"	1-1/2"	3/32"	13.45
47010	38010	48010	.0394		1.000	3.0	38	4	14.13
16020	17020	18020	.0469	3/64"	1.191	1/8"	1-1/2"	1/8"	13.45
47020	38020	48020	.0591		1.500	3.0	38	6	14.13
16030	17030	18030	.0625	1/16"	1.588	1/8"	1-1/2"	1/4"	12.70
16040	17040	18040	.0781	5/64"	1.984	1/8"	1-1/2"	1/4"	12.70
47030	38030	48030	.0787		2.000	3.0	38	8	13.32
16050	17050	18050	.0938	3/32"	2.383	1/8"	1-1/2"	3/8"	12.14
47040	38040	48040	.0984		2.500	3.0	38	12	12.76
16060	17060	18060	.1094	7/64"	2.779	1/8"	1-1/2"	3/8"	12.14
47050	38050	48050	.1181		3.000	3.0	38	12	11.59
16070	17070	18070	.1250	1/8"	3.175	1/8"	1-1/2"	1/2"	11.02
47060	38060	48060	.1378		3.500	4.0	50	12	17.00
16080	17080	18080	.1406	9/64"	3.571	3/16"	2"	9/16"	16.16
16090	17090	18090	.1562	5/32"	3.967	3/16"	2"	9/16"	16.16
47070	38070	48070	.1575		4.000	4.0	50	14	15.25
16100	17100	18100	.1719	11/64"	4.366	3/16"	2"	9/16"	16.16
47080	38080	48080	.1772		4.500	5.0	50	14	19.19
16110	17110	18110	.1875	3/16"	4.763	3/16"	2"	5/8"	14.52
97070	98070	99070	.1969		5.000	5.0	50	16	17.64
47090	38090	48090	.1969		5.000	5.0	65	16	18.49
16120	17120	18120	.2031	13/64"	5.159	1/4"	2-1/2"	5/8"	18.80
16130	17130	18130	.2188	7/32"	5.558	1/4"	2-1/2"	5/8"	18.80
16140	17140	18140	.2344	15/64"	5.954	1/4"	2-1/2"	3/4"	18.80
47100	38100	48100	.2362		6.000	6.0	65	19	18.96
16150	17150	18150	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	18.04
16160	17160	18160	.2656	17/64"	6.746	5/16"	2-1/2"	7/8"	28.23

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

.2756" - 1.000"  
(7.000mm - 25.400mm)

GENERAL PURPOSE  
END MILLS

(320M/920M) 2 Flute EDP#	(323M/923M) 3 Flute EDP#	(330M/930M) 4 Flute EDP#	$d_1$ †		$d_2$ Shank Diameter	$l_1$ Overall Length	$l_2$ Flute Length	LIST PRICE	
			Decimal	Diameter Metric					
47110	38110	48110	.2756		7.000	7.0	65	22	24.33
16170	17170	18170	.2812	9/32"	7.142	5/16"	2-1/2"	7/8"	28.23
16180	-	18180	.2969	19/64"	7.541	5/16"	2-1/2"	7/8"	28.23
16190	17190	18190	.3125	5/16"	7.938	5/16"	2-1/2"	7/8"	23.64
47120	38120	48120	.3150		8.000	8.0	65	22	24.88
16200	17200	18200	.3281	21/64"	8.334	3/8"	2-1/2"	7/8"	33.79
16210	17210	18210	.3438	11/32"	8.733	3/8"	2-1/2"	7/8"	33.79
47130	38130	48130	.3543		9.000	9.0	65	22	30.40
16220	-	18220	.3594	23/64"	9.129	3/8"	2-1/2"	7/8"	33.79
16230	17230	18230	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	28.94
16240	17240	18240	.3906	25/64"	9.921	7/16"	2-3/4"	7/8"	41.58
47140	38140	48140	.3937		10.000	10.0	70	25	35.52
16250	17250	18250	.4062	13/32"	10.317	7/16"	2-3/4"	7/8"	41.58
16260	17260	18260	.4219	27/64"	10.716	7/16"	2-3/4"	7/8"	41.58
47150	38150	48150	.4331		11.000	11.0	75	25	37.40
16270	17270	18270	.4375	7/16"	11.113	7/16"	2-3/4"	1"	35.62
16280	-	18280	.4531	29/64"	11.509	1/2"	3"	1"	59.56
16290	17290	18290	.4688	15/32"	11.908	1/2"	3"	1"	59.56
47160	38160	48160	.4724		12.000	12.0	75	25	56.58
16300	-	18300	.4844	31/64"	12.304	1/2"	3"	1"	59.56
16310	17310	18310	.5000	1/2"	12.700	1/2"	3"	1"	53.87
47170	38170	48170	.5512		14.000	14.0	88	32	82.37
16320	17320	18320	.5625	9/16"	14.288	9/16"	3-1/2"	1-1/4"	78.46
16330	17330	18330	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	87.12
47180	38180	48180	.6299		16.000	16.0	88	38	91.46
16340	17340	18340	.6875	11/16"	17.463	3/4"	4"	1-1/2"	145.04
47190	-	48190	.7087		18.000	18.0	100	38	134.60
16350	17350	18350	.7500	3/4"	19.050	3/4"	4"	1-1/2"	128.22
47200	38200	48200	.7874		20.000	20.0	100	38	180.50
47210	-	48210	.8661		22.000	22.0	100	38	200.52
16360	17360	18360	.8750	7/8"	22.225	7/8"	4"	1-1/2"	205.41
47220	-	-	.9843		25.000	25.0	100	38	210.20
16370	17370	18370	1.000	1"	25.400	1"	4"	1-1/2"	222.40

70

35

MATERIAL HARDNESS (Rc)

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