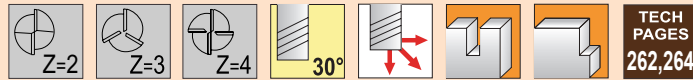


**TOLERANCES**

<i>d1</i>	+0.000° -0.002° (+.000 -.050mm)
<i>d2</i>	h6

**Series 220MC, 223MC, 230MC**



END MILLS

**Standard Length - Square End**

**TiCN Coating**

Solid submicron grain carbide end mill - center cutting

Improved abrasion resistance and lubricity

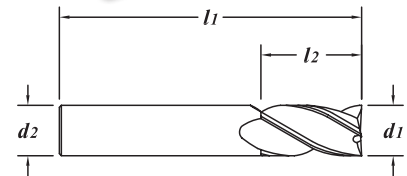
Extremely versatile

Uncoated - page 194

TiN Coating - page 196

TiALN Coating - page 198

Extended length - page 222



(220MC) 2 Flute EDP#	(223MC) 3 Flute EDP#	(230MC) 4 Flute EDP#	<i>d1</i> † Diameter		<i>d2</i> Shank Diameter	<i>l1</i> Overall Length	<i>l2</i> Flute Length	1-11	12-24	25-49	50-100	
			Decimal	Metric								
11014	12014	13014	.0312	1/32"	0.792	1/8"	1-1/2"	3/32"	12.43	11.89	11.35	10.81
11024	12024	13024	.0469	3/64"	1.191	1/8"	1-1/2"	1/8"	12.43	11.89	11.35	10.81
11034	12034	13034	.0625	1/16"	1.588	1/8"	1-1/2"	1/4"	11.70	11.19	10.68	10.17
11044	12044	13044	.0781	5/64"	1.984	1/8"	1-1/2"	1/4"	11.70	11.19	10.68	10.17
11054	12054	13054	.0938	3/32"	2.383	1/8"	1-1/2"	3/8"	11.17	10.68	10.20	9.71
11064	12064	13064	.1094	7/64"	2.779	1/8"	1-1/2"	3/8"	11.17	10.68	10.20	9.71
11074	12074	13074	.1250	1/8"	3.175	1/8"	1-1/2"	1/2"	10.48	10.02	9.57	9.11
11084	12084	13084	.1406	9/64"	3.571	3/16"	2"	9/16"	14.44	13.82	13.19	12.56
11094	12094	13094	.1562	5/32"	3.967	3/16"	2"	9/16"	14.44	13.82	13.19	12.56
11104	12104	13104	.1719	11/64"	4.366	3/16"	2"	9/16"	14.44	13.82	13.19	12.56
11114	12114	13114	.1875	3/16"	4.763	3/16"	2"	5/8"	13.81	13.21	12.61	12.01
11124	12124	13124	.2031	13/64"	5.159	1/4"	2-1/2"	5/8"	19.84	18.98	18.11	17.25
11134	12134	13134	.2188	7/32"	5.558	1/4"	2-1/2"	5/8"	19.84	18.98	18.11	17.25
11144	12144	13144	.2344	15/64"	5.954	1/4"	2-1/2"	3/4"	19.84	18.98	18.11	17.25
11154	12154	13154	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	18.45	17.64	16.84	16.04
11164	12164	13164	.2656	17/64"	6.746	5/16"	2-1/2"	7/8"	30.51	29.18	27.86	26.53
11174	12174	13174	.2812	9/32"	7.142	5/16"	2-1/2"	7/8"	30.51	29.18	27.86	26.53
11184	12184	13184	.2969	19/64"	7.541	5/16"	2-1/2"	7/8"	30.51	29.18	27.86	26.53
11194	12194	13194	.3125	5/16"	7.938	5/16"	2-1/2"	7/8"	25.58	24.46	23.35	22.24
11204	12204	13204	.3281	21/64"	8.334	3/8"	2-1/2"	7/8"	35.05	33.53	32.00	30.48
11214	12214	13214	.3438	11/32"	8.733	3/8"	2-1/2"	7/8"	35.05	33.53	32.00	30.48
11224	12224	13224	.3594	23/64"	9.129	3/8"	2-1/2"	7/8"	35.05	33.53	32.00	30.48
11234	12234	13234	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	30.41	29.08	27.76	26.44
11244	12244	13244	.3906	25/64"	9.921	7/16"	2-1/2"	7/8"	41.94	40.12	38.29	36.47
11254	12254	13254	.4062	13/32"	10.317	7/16"	2-1/2"	7/8"	41.94	40.12	38.29	36.47
11264	-	13264	.4219	27/64"	10.716	7/16"	2-1/2"	7/8"	41.94	40.12	38.29	36.47
11274	12274	13274	.4375	7/16"	11.113	7/16"	2-3/4"	1"	37.01	35.40	33.79	32.18
11284	-	13284	.4531	29/64"	11.509	1/2"	3"	1"	54.03	51.68	49.33	46.98
11294	12294	13294	.4688	15/32"	11.908	1/2"	3"	1"	54.03	51.68	49.33	46.98
-	12304	13304	.4844	31/64"	12.304	1/2"	3"	1"	54.03	51.68	49.33	46.98
11314	12314	13314	.5000	1/2"	12.700	1/2"	3"	1"	46.36	44.34	42.33	40.31
11324	12324	13324	.5625	9/16"	14.288	9/16"	3-1/2"	1-1/4"	78.10	74.70	71.31	67.91
11334	12334	13334	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	86.74	82.97	79.20	75.43
11344	-	13344	.6875	11/16"	17.463	3/4"	4"	1-1/2"	138.69	132.66	126.63	120.60
11354	12354	13354	.7500	3/4"	19.050	3/4"	4"	1-1/2"	123.63	118.25	112.88	107.50
11364	12364	13364	.8750	7/8"	22.225	7/8"	4"	1-1/2"	178.70	170.93	163.16	155.39
11374	12374	13374	1.000	1"	25.400	1"	4"	1-1/2"	185.02	176.98	168.93	160.89
-	-	13394	1.250	1-1/4"	31.750	1-1/4"	4-1/2"	2"	515.50	493.09	470.67	448.26

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MATERIAL HARDNESS (Rc)

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