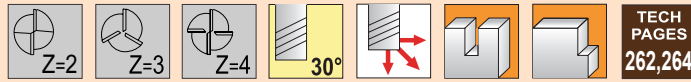


**TOLERANCES**

$d_1$	+0.000° -0.002° (+.000 -0.050mm)
$d_2$	h6

**Series 620MA, 623MA, 630MA, 640MA, 643MA, 650MA**

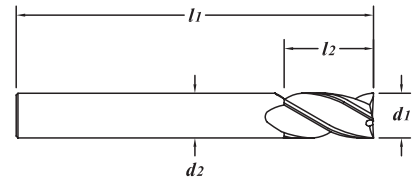


.1181" - .3150"  
(3.000mm - 8.000mm)

END MILLS

**Extra Length  
TiAlN Coating**

- Solid submicron grain carbide end mill - center cutting
- Extended reach
- Dry or semi-dry machining
- Can be modified with a neck within 48 hours
- Extremely versatile
- Uncoated - page 220
- TiCN Coating - page 222
- Stub Length - page 187
- Standard length - page 198



(620MA/640MA) 2 Flute EDP#	(623MA/643MA) 3 Flute EDP#	(630MA/650MA) 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								
92017	93017	94017	.1181	3.000	3.0	50	16	13.59	13.00	12.41	11.82	
92027	93027	94027	.1181	3.000	3.0	75	20	22.24	21.27	20.31	19.34	
92037	93037	94037	.1181	3.000	3.0	75	25	22.24	21.27	20.31	19.34	
41017	54517	42017	.1250	1/8"	3.175	1/8"	2"	5/8"	14.65	14.01	13.38	12.74
41027	54527	42027	.1250	1/8"	3.175	1/8"	3"	3/4"	21.80	20.86	19.91	18.96
41037	54537	42037	.1250	1/8"	3.175	1/8"	3"	1"	21.80	20.86	19.91	18.96
92047	93047	94047	.1575	4.000	4.0	50	16	14.70	14.06	13.42	12.78	
92057	93057	94057	.1575	4.000	4.0	75	20	24.06	23.01	21.97	20.92	
92067	93067	94067	.1575	4.000	4.0	75	25	24.06	23.01	21.97	20.92	
41047	54547	42047	.1875	3/16"	4.763	3/16"	3"	1"	24.58	23.51	22.44	21.37
41057	54557	42057	.1875	3/16"	4.763	3/16"	3"	1-1/8"	24.58	23.51	22.44	21.37
41067	54567	42067	.1875	3/16"	4.763	3/16"	4"	1"	27.38	26.19	25.00	23.81
92077	93077	94077	.1969	5.000	5.0	50	16	18.22	17.42	16.63	15.84	
92087	93087	94087	.1969	5.000	5.0	75	20	26.90	25.73	24.56	23.39	
92097	93097	94097	.1969	5.000	5.0	75	25	26.90	25.73	24.56	23.39	
92107	93107	94107	.2362	6.000	6.0	75	25	30.36	29.04	27.72	26.40	
92117	93117	94117	.2362	6.000	6.0	100	25	32.65	31.23	29.81	28.39	
92127	93127	94127	.2362	6.000	6.0	100	32	32.65	31.23	29.81	28.39	
92137	93137	94137	.2362	6.000	6.0	150	38	44.51	42.57	40.64	38.70	
41077	54577	42077	.2500	1/4"	6.350	1/4"	3"	1"	29.11	27.84	26.58	25.31
41087	54587	42087	.2500	1/4"	6.350	1/4"	4"	1"	31.31	29.95	28.59	27.23
41097	54597	42097	.2500	1/4"	6.350	1/4"	4"	1-1/2"	31.31	29.95	28.59	27.23
41107	54607	42107	.2500	1/4"	6.350	1/4"	6"	1-1/2"	42.70	40.84	38.99	37.13
41117	54617	42117	.3125	5/16"	7.938	5/16"	3"	1"	37.26	35.64	34.02	32.40
41127	54627	42127	.3125	5/16"	7.938	5/16"	4"	1"	42.75	40.89	39.03	37.17
41137	54637	42137	.3125	5/16"	7.938	5/16"	4"	1-5/8"	42.75	40.89	39.03	37.17
41147	54647	42147	.3125	5/16"	7.938	5/16"	6"	1-1/2"	62.31	59.60	56.89	54.18
92147	93147	94147	.3150	8.000	8.0	75	25	38.80	37.11	35.43	33.74	
92157	93157	94157	.3150	8.000	8.0	100	25	44.49	42.56	40.62	38.69	
92167	93167	94167	.3150	8.000	8.0	100	41	44.49	42.56	40.62	38.69	
92177	93177	94177	.3150	8.000	8.0	150	50	63.57	60.81	58.04	55.28	

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MATERIAL HARDNESS (Rc)

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continued →

# Series 620MA, 623MA, 630MA, 640MA, 643MA, 650MA (continued)

.3750" - 1.250"  
(9.525mm - 31.750mm)

END MILLS

(620MA/640MA) 2 Flute EDP#	(623MA/643MA) 3 Flute EDP#	(630MA/650MA) 4 Flute EDP#	$d1$ † Diameter		$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	1-11	12-24	25-49	50-100	
			Decimal	Metric								
41157	54657	42157	.3750	3/8"	9.525	3/8"	3"	1"	40.97	39.19	37.41	35.63
41167	54667	42167	.3750	3/8"	9.525	3/8"	4"	1"	46.30	44.29	42.27	40.26
41177	54677	42177	.3750	3/8"	9.525	3/8"	4"	2"	46.30	44.29	42.27	40.26
41187	54687	42187	.3750	3/8"	9.525	3/8"	6"	1-1/2"	66.60	63.70	60.81	57.91
41197	54697	42197	.3750	3/8"	9.525	3/8"	6"	3"	66.60	63.70	60.81	57.91
92187	93187	94187	.3937		10.000	10.0	75	25	44.85	42.90	40.95	39.00
92197	93197	94197	.3937		10.000	10.0	100	25	57.87	55.35	52.84	50.32
92207	93207	94207	.3937		10.000	10.0	100	50	57.87	55.35	52.84	50.32
92217	93217	94217	.3937		10.000	10.0	150	38	77.14	73.79	70.43	67.08
92227	93227	94227	.3937		10.000	10.0	150	75	77.14	73.79	70.43	67.08
41207	54707	42207	.4375	7/16"	11.113	7/16"	4"	1"	61.59	58.92	56.24	53.56
41217	54717	42217	.4375	7/16"	11.113	7/16"	4"	2"	61.59	58.92	56.24	53.56
41227	54727	42227	.4375	7/16"	11.113	7/16"	6"	1-1/2"	82.75	79.16	75.56	71.96
41237	54737	42237	.4375	7/16"	11.113	7/16"	6"	3"	82.75	79.16	75.56	71.96
92237	93237	94237	.4724		12.000	12.0	100	25	68.03	65.08	62.12	59.16
92247	93247	94247	.4724		12.000	12.0	100	50	68.03	65.08	62.12	59.16
92257	93257	94257	.4724		12.000	12.0	150	50	93.25	89.20	85.14	81.09
92267	93267	94267	.4724		12.000	12.0	150	75	93.25	89.20	85.14	81.09
41247	54747	42247	.5000	1/2"	12.700	1/2"	4"	1"	64.80	61.99	59.17	56.35
41257	54757	42257	.5000	1/2"	12.700	1/2"	4"	2"	64.80	61.99	59.17	56.35
41267	54767	42267	.5000	1/2"	12.700	1/2"	6"	1-1/2"	93.25	89.20	85.14	81.09
41277	54777	42277	.5000	1/2"	12.700	1/2"	6"	3"	93.25	89.20	85.14	81.09
92277	93277	94277	.5512		14.000	14.0	100	25	90.54	86.60	82.67	78.73
92287	93287	94287	.5512		14.000	14.0	100	50	90.54	86.60	82.67	78.73
-	93297	94297	.5512		14.000	14.0	150	50	120.32	115.09	109.86	104.63
92307	93307	94307	.5512		14.000	14.0	150	75	120.32	115.09	109.86	104.63
41287	54787	42287	.5625	9/16"	14.288	9/16"	6"	2"	120.32	115.09	109.86	104.63
-	54797	42297	.5625	9/16"	14.288	9/16"	6"	3"	120.32	115.09	109.86	104.63
41307	54807	42307	.6250	5/8"	15.875	5/8"	6"	2"	129.06	123.45	117.84	112.23
41317	54817	42317	.6250	5/8"	15.875	5/8"	6"	3"	129.06	123.45	117.84	112.23
92317	93317	94317	.6299		16.000	16.0	150	50	129.06	123.45	117.84	112.23
92327	93327	94327	.6299		16.000	16.0	150	75	129.06	123.45	117.84	112.23
92337	-	94337	.7087		18.000	18.0	150	50	187.61	179.45	171.30	163.14
-	93347	94347	.7087		18.000	18.0	150	75	187.61	179.45	171.30	163.14
41327	54827	42327	.7500	3/4"	19.050	3/4"	6"	2"	197.50	188.91	180.33	171.74
41337	54837	42337	.7500	3/4"	19.050	3/4"	6"	3"	197.50	188.91	180.33	171.74
92357	93357	94357	.7874		20.000	20.0	150	50	213.34	204.06	194.79	185.51
92367	93367	94367	.7874		20.000	20.0	150	75	213.34	204.06	194.79	185.51
-	93377	94377	.9843		25.000	25.0	150	50	313.61	299.97	286.34	272.70
92387	93387	94387	.9843		25.000	25.0	150	75	313.61	299.97	286.34	272.70
41347	54847	42347	1.000	1"	25.400	1"	6"	2"	327.11	312.88	298.66	284.44
41357	54857	42357	1.000	1"	25.400	1"	6"	3"	327.11	312.88	298.66	284.44
-	-	42367	1.000	1"	25.400	1"	6"	4"	342.85	327.94	313.04	298.13
-	-	42397	1.250	1-1/4"	31.750	1-1/4"	6"	3"	670.53	641.38	612.22	583.07

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MATERIAL HARDNESS (Rc)

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