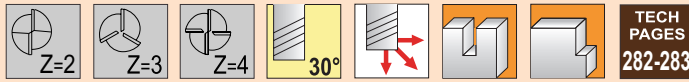


**TOLERANCES**

$d_1$	+0.00" -0.002" (+.000 -0.050mm)
$d_2$	h6

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

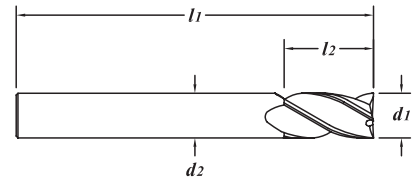


.1181" - .3150"  
(3.000mm - 8.000mm)

**GENERAL PURPOSE  
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 236
- TiCN Coating - page 238
- Stub Length - page 209
- Standard length - page 220



(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	14.85	14.20	13.56	12.91	
92027	93027	94027	.1181	3.000	3.0	75	20	24.29	23.23	22.18	21.12	
92037	93037	94037	.1181	3.000	3.0	75	25	24.29	23.23	22.18	21.12	
41017	54517	42017	.1250	1/8"	3.175	1/8"	2"	5/8"	16.01	15.31	14.62	13.92
41027	54527	42027	.1250	1/8"	3.175	1/8"	3"	3/4"	23.82	22.78	21.75	20.71
41037	54537	42037	.1250	1/8"	3.175	1/8"	3"	1"	23.82	22.78	21.75	20.71
92047	93047	94047	.1575	4.000	4.0	50	16	16.05	15.36	14.66	13.96	
92057	93057	94057	.1575	4.000	4.0	75	20	26.28	25.14	23.99	22.85	
92067	93067	94067	.1575	4.000	4.0	75	25	26.28	25.14	23.99	22.85	
41047	54547	42047	.1875	3/16"	4.763	3/16"	3"	1"	26.84	25.67	24.51	23.34
41057	54557	42057	.1875	3/16"	4.763	3/16"	3"	1-1/8"	26.84	25.67	24.51	23.34
41067	54567	42067	.1875	3/16"	4.763	3/16"	4"	1"	29.90	28.60	27.30	26.00
92087	93087	94087	.1969	5.000	5.0	75	20	29.37	28.09	26.82	25.54	
92097	93097	94097	.1969	5.000	5.0	75	25	29.37	28.09	26.82	25.54	
92107	93107	94107	.2362	6.000	6.0	75	25	33.15	31.71	30.27	28.83	
92117	93117	94117	.2362	6.000	6.0	100	25	35.65	34.10	32.55	31.00	
92127	93127	94127	.2362	6.000	6.0	100	32	35.65	34.10	32.55	31.00	
92137	93137	94137	.2362	6.000	6.0	150	38	48.61	46.50	44.38	42.27	
41077	54577	42077	.2500	1/4"	6.350	1/4"	3"	1"	31.79	30.40	29.02	27.64
41087	54587	42087	.2500	1/4"	6.350	1/4"	4"	1"	34.19	32.70	31.22	29.73
41097	54597	42097	.2500	1/4"	6.350	1/4"	4"	1-1/2"	34.19	32.70	31.22	29.73
41107	54607	42107	.2500	1/4"	6.350	1/4"	6"	1-1/2"	46.63	44.61	42.58	40.55
41117	54617	42117	.3125	5/16"	7.938	5/16"	3"	1"	40.69	38.92	37.15	35.38
41127	54627	42127	.3125	5/16"	7.938	5/16"	4"	1"	46.68	44.65	42.62	40.59
41137	54637	42137	.3125	5/16"	7.938	5/16"	4"	1-5/8"	46.68	44.65	42.62	40.59
41147	54647	42147	.3125	5/16"	7.938	5/16"	6"	1-1/2"	68.05	65.09	62.13	59.17
92147	93147	94147	.3150	8.000	8.0	75	25	42.38	40.54	38.69	36.85	
92157	93157	94157	.3150	8.000	8.0	100	25	48.58	46.46	44.35	42.24	
92167	93167	94167	.3150	8.000	8.0	100	41	48.58	46.46	44.35	42.24	
92177	93177	94177	.3150	8.000	8.0	150	50	69.41	66.40	63.38	60.36	

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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)

(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								
41157	54657	42157	.3750	3/8"	9.525	3/8"	3"	1"	44.75	42.80	40.86	38.91
41167	54667	42167	.3750	3/8"	9.525	3/8"	4"	1"	50.55	48.36	46.16	43.96
41177	54677	42177	.3750	3/8"	9.525	3/8"	4"	2"	50.55	48.36	46.16	43.96
41187	54687	42187	.3750	3/8"	9.525	3/8"	6"	1-1/2"	72.73	69.56	66.40	63.24
41197	54697	42197	.3750	3/8"	9.525	3/8"	6"	3"	72.73	69.56	66.40	63.24
92187	93187	94187	.3937		10.000	10.0	75	25	48.98	46.85	44.72	42.59
92197	93197	94197	.3937		10.000	10.0	100	25	63.19	60.45	57.70	54.95
92207	93207	94207	.3937		10.000	10.0	100	50	63.19	60.45	57.70	54.95
92217	93217	94217	.3937		10.000	10.0	150	38	84.24	80.58	76.91	73.25
92227	93227	94227	.3937		10.000	10.0	150	75	84.24	80.58	76.91	73.25
41207	54707	42207	.4375	7/16"	11.113	7/16"	4"	1"	67.26	64.34	61.41	58.49
41217	54717	42217	.4375	7/16"	11.113	7/16"	4"	2"	67.26	64.34	61.41	58.49
41227	54727	42227	.4375	7/16"	11.113	7/16"	6"	1-1/2"	90.37	86.44	82.51	78.58
41237	54737	42237	.4375	7/16"	11.113	7/16"	6"	3"	90.37	86.44	82.51	78.58
92237	93237	94237	.4724		12.000	12.0	100	25	74.29	71.06	67.83	64.60
92247	93247	94247	.4724		12.000	12.0	100	50	74.29	71.06	67.83	64.60
92257	93257	94257	.4724		12.000	12.0	150	50	101.83	97.41	92.98	88.55
92267	93267	94267	.4724		12.000	12.0	150	75	101.83	97.41	92.98	88.55
41247	54747	42247	.5000	1/2"	12.700	1/2"	4"	1"	70.77	67.69	64.62	61.54
41257	54757	42257	.5000	1/2"	12.700	1/2"	4"	2"	70.77	67.69	64.62	61.54
41267	54767	42267	.5000	1/2"	12.700	1/2"	6"	1-1/2"	101.83	97.41	92.98	88.55
41277	54777	42277	.5000	1/2"	12.700	1/2"	6"	3"	101.83	97.41	92.98	88.55
92277	93277	94277	.5512		14.000	14.0	100	25	98.88	94.58	90.28	85.98
92287	93287	94287	.5512		14.000	14.0	100	50	98.88	94.58	90.28	85.98
-	93297	94297	.5512		14.000	14.0	150	50	131.39	125.68	119.96	114.25
92307	93307	94307	.5512		14.000	14.0	150	75	131.39	125.68	119.96	114.25
41287	54787	42287	.5625	9/16"	14.288	9/16"	6"	2"	131.39	125.68	119.96	114.25
-	54797	42297	.5625	9/16"	14.288	9/16"	6"	3"	131.39	125.68	119.96	114.25
41307	54807	42307	.6250	5/8"	15.875	5/8"	6"	2"	140.93	134.81	128.68	122.55
41317	54817	42317	.6250	5/8"	15.875	5/8"	6"	3"	140.93	134.81	128.68	122.55
92317	93317	94317	.6299		16.000	16.0	150	50	140.93	134.81	128.68	122.55
92327	93327	94327	.6299		16.000	16.0	150	75	140.93	134.81	128.68	122.55
-	-	94337	.7087		18.000	18.0	150	50	204.87	195.97	187.06	178.15
-	93347	94347	.7087		18.000	18.0	150	75	204.87	195.97	187.06	178.15
41327	54827	42327	.7500	3/4"	19.050	3/4"	6"	2"	215.67	206.29	196.92	187.54
41337	54837	42337	.7500	3/4"	19.050	3/4"	6"	3"	215.67	206.29	196.92	187.54
92357	93357	94357	.7874		20.000	20.0	150	50	232.97	222.84	212.71	202.58
92367	93367	94367	.7874		20.000	20.0	150	75	232.97	222.84	212.71	202.58
-	93377	94377	.9843		25.000	25.0	150	50	342.46	327.57	312.68	297.79
92387	93387	94387	.9843		25.000	25.0	150	75	342.46	327.57	312.68	297.79
41347	54847	42347	1.000	1"	25.400	1"	6"	2"	357.20	341.67	326.14	310.61
41357	54857	42357	1.000	1"	25.400	1"	6"	3"	357.20	341.67	326.14	310.61
-	-	42367	1.000	1"	25.400	1"	6"	4"	374.39	358.12	341.84	325.56
-	-	42397	1.250	1-1/4"	31.750	1-1/4"	6"	3"	732.22	700.38	668.55	636.71

MATERIAL HARDNESS (Rc)  
70  
35  
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