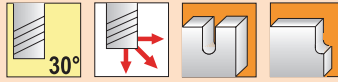


**TOLERANCES**

$d_1$	+.000" - .002" (+.000 - .050mm)	
$d_2$	1/8" - 3/16"	+.0000" - .0003" (-.0000 - .0075mm)
	1/4" - 1/2"	-.0001" - .0004" (-.0025 - .0100mm)
Ball radius	+.000" - .001" (+.000 - .025mm)	

Technical information:  
page 228, 230

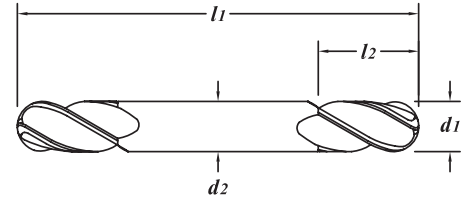


**520MA (540MA metric) - 2 Flute**  
**530MA (550MA metric) - 4 Flute**

END MILLS

**Standard Length - Double End - Ball End - TiAlN Coated**

- Solid submicron grain carbide end mill - center cutting
- Dry or semi-dry machining
- Up to 40% faster than uncoated
- Extremely versatile
- Uncoated - page 184



2 Flute EDP#	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								
31017	32017	.0312	1/32"	0.792	1/8"	2"	3/32"	28.87	27.61	26.36	25.10
31517	-	.0394		1.000	3.0	50	4	26.47	25.32	24.17	23.02
31027	32027	.0469	3/64"	1.191	1/8"	2"	1/8"	28.87	27.61	26.36	25.10
31527	-	.0591		1.500	3.0	50	5	26.47	25.32	24.17	23.02
31037	32037	.0625	1/16"	1.588	1/8"	2"	3/16"	28.87	27.61	26.36	25.10
31537	-	.0787		2.000	3.0	50	6	26.47	25.32	24.17	23.02
31047	32047	.0938	3/32"	2.383	1/8"	2"	1/4"	28.87	27.61	26.36	25.10
31547	32547	.0984		2.500	3.0	50	7	30.18	28.86	27.55	26.24
31557	-	.1181		3.000	3.0	50	8	22.82	21.82	20.83	19.84
31057	32057	.1250	1/8"	3.175	1/8"	2"	3/8"	21.86	20.91	19.96	19.01
-	32567	.1378		3.500	4.0	65	9.5	33.10	31.66	30.22	28.78
31067	32067	.1562	5/32"	3.967	3/16"	2-1/2"	7/16"	31.73	30.35	28.97	27.59
31577	32577	.1575		4.000	4.0	65	10	29.18	27.91	26.64	25.37
31077	32077	.1875	3/16"	4.763	3/16"	2-1/2"	1/2"	28.00	26.79	25.57	24.35
31597	-	.1969		5.000	5.0	65	12	34.37	32.88	31.38	29.89
31087	32087	.2188	7/32"	5.558	1/4"	2-1/2"	9/16"	36.56	34.97	33.38	31.79
31607	-	.2362		6.000	6.0	65	16	35.42	33.88	32.34	30.80
31097	32097	.2500	1/4"	6.350	1/4"	2-1/2"	5/8"	34.03	32.55	31.07	29.59
31107	32107	.3125	5/16"	7.938	5/16"	3-1/2"	3/4"	48.91	46.78	44.66	42.53
31627	32627	.3150		8.000	8.0	88	19	50.73	48.52	46.32	44.11
31117	32117	.3750	3/8"	9.525	3/8"	3-1/2"	3/4"	58.96	56.40	53.83	51.27
-	32647	.3937		10.000	10.0	88	19	79.53	76.08	72.62	69.16
31127	32127	.4375	7/16"	11.113	7/16"	4"	7/8"	79.94	76.46	72.99	69.51
31667	-	.4724		12.000	12.0	100	25	91.49	87.52	83.54	79.56
31137	32137	.5000	1/2"	12.700	1/2"	4"	1"	87.75	83.93	80.12	76.30
31157	32157	.6250	5/8"	15.875	5/8"	6"	1-1/4"	201.30	192.54	183.79	175.04
31167	32167	.7500	3/4"	19.050	3/4"	6"	1-1/2"	272.06	260.23	248.40	236.57
-	32687	.7874		20.000	20.0	150	38	387.31	370.47	353.63	336.79
-	32187	1.000	1"	25.400	1"	6"	1-1/2"	470.28	449.83	429.39	408.94