

Series 143R

.1575" - .3150"
(4.000mm - 8.000mm)



TOLERANCES

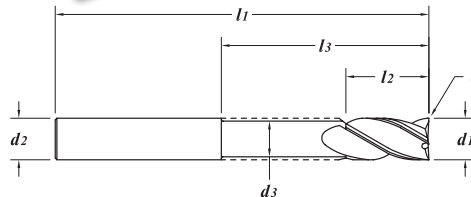
$d1$	+0.000" -0.001" (+0.000 -0.025mm)
$d2$	h6
r	+0.0005" -0.0005" (+0.0127 -0.0127mm)

Recommended for Aluminum

HSAL End Mill - 3 Flute - Corner Radius

ALUMASTAR Coated

- Solid submicron grain carbide end mill - center cutting
- Specific coating engineered to repel aluminum
- Engineered to run at 750-2500 SFM (225-750 M/Min.)
- For high speed machining of aluminum
- High velocity - high metal removal rate (for spindles 10,000 RPM and above)
- Need to use properly balanced holders
- Holds perpendicularity
- Flats can be added within 48 hours



MATERIAL HARDNESS (Rc)

70

35

0

EDP#	$d1$ † Diameter		$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	r Corner Radius	$l3$ Reach Length	$d3$ Neck Diameter	1-11	12-24	25-49	50-100	
	Decimal	Metric											
NEW 39113	.1181	3.000	3.0	38	6	0.2	-	-	21.41	20.48	19.55	18.62	
NEW 39123	.1181	3.000	3.0	38	6	0.5	-	-	21.41	20.48	19.55	18.62	
NEW 39133	.1181	3.000	3.0	38	12	0.2	-	-	21.41	20.48	19.55	18.62	
NEW 39143	.1181	3.000	3.0	38	12	0.5	-	-	21.41	20.48	19.55	18.62	
NEW 39153	.1250	1/8"	3.175	1/8"	1-1/2"	1/4"	.010"	-	20.78	19.88	18.97	18.07	
NEW 39163	.1250	1/8"	3.175	1/8"	1-1/2"	1/4"	.020"	-	20.78	19.88	18.97	18.07	
NEW 39173	.1250	1/8"	3.175	1/8"	1-1/2"	1/2"	.010"	-	20.78	19.88	18.97	18.07	
NEW 39183	.1250	1/8"	3.175	1/8"	1-1/2"	1/2"	.020"	-	20.78	19.88	18.97	18.07	
NEW 39193	.1575	4.000	6.0	50	8	0.2	-	-	28.90	27.64	26.39	25.13	
NEW 39203	.1575	4.000	6.0	50	8	0.5	-	-	28.90	27.64	26.39	25.13	
NEW 39213	.1575	4.000	6.0	50	12	0.2	-	-	28.90	27.64	26.39	25.13	
39223	.1575	4.000	6.0	50	12	0.3	-	-	28.90	27.64	26.39	25.13	
NEW 39225	.1575	4.000	6.0	50	12	0.5	-	-	28.90	27.64	26.39	25.13	
39243	.1575	4.000	6.0	65	6	0.3	20	3.7	35.34	33.80	32.27	30.73	
NEW 39253	.1575	4.000	6.0	65	6	0.5	20	3.7	35.34	33.80	32.27	30.73	
NEW 39263	.1575	4.000	6.0	65	6	1.0	20	3.7	35.34	33.80	32.27	30.73	
NEW 39265	.1875	3/16"	4.763	3/16"	2"	5/16"	.010"	-	21.44	20.50	19.57	18.64	
NEW 39275	.1875	3/16"	4.763	3/16"	2"	5/16"	.020"	-	21.44	20.50	19.57	18.64	
NEW 39280	.1875	3/16"	4.763	3/16"	2"	5/16"	.030"	-	21.44	20.50	19.57	18.64	
39283	.1875	3/16"	4.763	3/16"	2"	9/16"	.010"	-	21.44	20.50	19.57	18.64	
NEW 39285	.1875	3/16"	4.763	3/16"	2"	9/16"	.020"	-	21.44	20.50	19.57	18.64	
39293	.1875	3/16"	4.763	3/16"	2"	9/16"	.030"	-	21.44	20.50	19.57	18.64	
39303	.1875	3/16"	4.763	3/16"	3"	7/32"	.010"	3/4"	.170"	39.24	37.53	35.83	34.12
39313	.1875	3/16"	4.763	3/16"	3"	7/32"	.030"	3/4"	.170"	39.24	37.53	35.83	34.12
39343	.1969	5.000	6.0	65	16	0.3	-	-	29.82	28.52	27.23	25.93	
39363	.1969	5.000	6.0	75	8	0.3	20	4.7	48.73	46.61	44.49	42.37	
NEW 39373	.1969	5.000	6.0	75	8	0.5	20	4.7	48.73	46.61	44.49	42.37	
NEW 39383	.1969	5.000	6.0	75	8	1.0	20	4.7	48.73	46.61	44.49	42.37	
39403	.2362	6.000	6.0	65	19	0.3	-	-	28.87	27.61	26.36	25.10	
39423	.2362	6.000	6.0	75	10	0.3	25	5.7	47.16	45.11	43.06	41.01	
NEW 39433	.2362	6.000	6.0	75	10	0.5	25	5.7	47.16	45.11	43.06	41.01	
NEW 39436	.2362	6.000	6.0	75	10	1.0	25	5.7	47.16	45.11	43.06	41.01	
NEW 39439	.2362	6.000	6.0	75	10	1.5	25	5.7	47.16	45.11	43.06	41.01	
NEW 39443	.2362	6.000	6.0	75	10	2.0	25	5.7	47.16	45.11	43.06	41.01	

Series 143R (continued)

.3750" - .6299"
(9.525mm - 16.000mm)

HIGH PERFORMANCE
END MILLS

70

MATERIAL HARDNESS (Rc)

35

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EDP#	$d1$ † Diameter		$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	r Corner Radius	$l3$ Reach Length	$d3$ Neck Diameter	1-11	12-24	25-49	50-100	
	Decimal	Metric											
39453	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.010"	-	-	27.43	26.24	25.04	23.85
39463	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.015"	-	-	27.43	26.24	25.04	23.85
39473	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.030"	-	-	27.43	26.24	25.04	23.85
39493	.2500	1/4"	6.350	1/4"	4"	3/8"	.015"	1-1/8"	.235"	47.51	45.44	43.38	41.31
40403	.2500	1/4"	6.350	1/4"	4"	3/8"	.030"	1-1/8"	.235"	47.51	45.44	43.38	41.31
39503	.2500	1/4"	6.350	1/4"	4"	3/8"	.015"	2-1/8"	.235"	52.41	50.13	47.85	45.57
39543	.2756		7.000	8.0	65	19	0.3	-	-	41.98	40.15	38.33	36.50
39563	.2756		7.000	8.0	75	12	0.3	25	6.4	63.95	61.17	58.39	55.61
39593	.3125	5/16"	7.938	5/16"	2-1/2"	3/4"	.010"	-	-	36.29	34.72	33.14	31.56
39603	.3125	5/16"	7.938	5/16"	2-1/2"	3/4"	.015"	-	-	36.29	34.72	33.14	31.56
39613	.3125	5/16"	7.938	5/16"	2-1/2"	3/4"	.030"	-	-	36.29	34.72	33.14	31.56
39623	.3125	5/16"	7.938	5/16"	4"	7/16"	.015"	1-1/8"	.297"	62.46	59.74	57.03	54.31
39633	.3125	5/16"	7.938	5/16"	4"	7/16"	.030"	1-1/8"	.297"	62.46	59.74	57.03	54.31
39663	.3150		8.000	8.0	65	19	0.5	-	-	38.19	36.53	34.87	33.21
39683	.3150		8.000	8.0	75	12	0.5	25	7.4	58.19	55.66	53.13	50.60
39688	.3150		8.000	8.0	75	12	1.0	25	7.4	58.19	55.66	53.13	50.60
39693	.3150		8.000	8.0	75	12	2.0	25	7.4	58.19	55.66	53.13	50.60
39698	.3150		8.000	8.0	75	12	3.0	25	7.4	58.19	55.66	53.13	50.60
39703	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	.010"	-	-	42.30	40.46	38.62	36.78
39713	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	.015"	-	-	42.30	40.46	38.62	36.78
39723	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	.030"	-	-	42.30	40.46	38.62	36.78
39733	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	.060"	-	-	42.30	40.46	38.62	36.78
39763	.3750	3/8"	9.525	3/8"	4"	1/2"	.030"	2-1/8"	.355"	72.23	69.09	65.95	62.81
39773	.3750	3/8"	9.525	3/8"	4"	1/2"	.060"	2-1/8"	.355"	72.23	69.09	65.95	62.81
39783	.3750	3/8"	9.525	3/8"	6"	1/2"	.030"	4"	.355"	105.47	100.88	96.30	91.71
39803	.3937		10.000	10.0	70	24	0.5	-	-	64.87	62.05	59.23	56.41
39843	.3937		10.000	10.0	100	12	0.5	35	9.4	87.20	83.41	79.62	75.83
NEW 39848	.3937		10.000	10.0	100	12	1.0	35	9.4	87.20	83.41	79.62	75.83
NEW 39853	.3937		10.000	10.0	100	12	1.5	35	9.4	87.20	83.41	79.62	75.83
NEW 39863	.3937		10.000	10.0	100	12	2.0	35	9.4	87.20	83.41	79.62	75.83
NEW 39873	.3937		10.000	10.0	100	12	3.0	35	9.4	87.20	83.41	79.62	75.83
39883	.4724		12.000	12.0	75	32	0.5	-	-	80.24	76.75	73.26	69.77
39903	.4724		12.000	12.0	100	16	0.5	40	11.4	103.13	98.65	94.16	89.68
NEW 39907	.4724		12.000	12.0	100	16	1.0	40	11.4	103.13	98.65	94.16	89.68
NEW 39911	.4724		12.000	12.0	100	16	1.5	40	11.4	103.13	98.65	94.16	89.68
NEW 39915	.4724		12.000	12.0	100	16	2.0	40	11.4	103.13	98.65	94.16	89.68
NEW 39919	.4724		12.000	12.0	100	16	3.0	40	11.4	103.13	98.65	94.16	89.68
39923	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.010"	-	-	76.23	72.92	69.60	66.29
39933	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.015"	-	-	76.23	72.92	69.60	66.29
39943	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.030"	-	-	76.23	72.92	69.60	66.29
39953	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.060"	-	-	76.23	72.92	69.60	66.29
39963	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.120"	-	-	76.23	72.92	69.60	66.29
39973	.5000	1/2"	12.700	1/2"	4"	2"	.010"	-	-	88.15	84.32	80.48	76.65
40413	.5000	1/2"	12.700	1/2"	4"	2"	.030"	-	-	88.15	84.32	80.48	76.65
40423	.5000	1/2"	12.700	1/2"	4"	2"	.060"	-	-	88.15	84.32	80.48	76.65
40433	.5000	1/2"	12.700	1/2"	4"	5/8"	.010"	2-1/8"	.475"	97.97	93.71	89.45	85.19
39983	.5000	1/2"	12.700	1/2"	4"	5/8"	.030"	2-1/8"	.475"	97.97	93.71	89.45	85.19
40443	.5000	1/2"	12.700	1/2"	4"	5/8"	.060"	2-1/8"	.475"	97.97	93.71	89.45	85.19
40453	.5000	1/2"	12.700	1/2"	4"	5/8"	.120"	2-1/8"	.475"	97.97	93.71	89.45	85.19
39993	.5000	1/2"	12.700	1/2"	6"	5/8"	.030"	4-1/8"	.475"	147.03	140.64	134.24	127.85

continued →

Series 143R (continued)

.7500" - 1.000"
(19.050mm - 25.400mm)

MATERIAL HARDNESS (Rc)
70
35
0

EDP#	$d1$ † Diameter			$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	r Corner Radius	$l3$ Reach Length	$d3$ Neck Diameter	1-11	12-24	25-49	50-100
	Decimal		Metric										
40463	.6250	5/8"	15.875	5/8"	4"	1-5/8"	.015"	-	-	131.86	126.13	120.39	114.66
40023	.6250	5/8"	15.875	5/8"	4"	1-5/8"	.030"	-	-	131.86	126.13	120.39	114.66
40473	.6250	5/8"	15.875	5/8"	4"	1-5/8"	.060"	-	-	131.86	126.13	120.39	114.66
40483	.6250	5/8"	15.875	5/8"	4"	1-5/8"	.120"	-	-	131.86	126.13	120.39	114.66
40033	.6250	5/8"	15.875	5/8"	6"	3/4"	.030"	2-3/8"	.590"	188.53	180.33	172.14	163.94
40043	.6250	5/8"	15.875	5/8"	6"	3/4"	.030"	4-3/8"	.590"	198.38	189.75	181.13	172.50
40083	.6299		16.000	16.0	100	40	1.0	-	-	138.81	132.77	126.74	120.70
40103	.6299		16.000	16.0	100	20	1.0	40	15.4	143.72	137.47	131.22	124.97
NEW 40113	.6299		16.000	16.0	125	20	2.0	60	15.4	188.62	180.42	172.22	164.02
NEW 40118	.6299		16.000	16.0	125	20	3.0	60	15.4	188.62	180.42	172.22	164.02
NEW 40123	.6299		16.000	16.0	125	20	4.0	60	15.4	188.62	180.42	172.22	164.02
40133	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.015"	-	-	171.13	163.69	156.25	148.81
40143	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.030"	-	-	171.13	163.69	156.25	148.81
40153	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.060"	-	-	171.13	163.69	156.25	148.81
40493	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.120"	-	-	171.13	163.69	156.25	148.81
40503	.7500	3/4"	19.050	3/4"	6"	1"	.015"	2-1/2"	.715"	255.04	243.95	232.86	221.77
40163	.7500	3/4"	19.050	3/4"	6"	1"	.030"	2-1/2"	.715"	255.04	243.95	232.86	221.77
40513	.7500	3/4"	19.050	3/4"	6"	1"	.060"	2-1/2"	.715"	255.04	243.95	232.86	221.77
40523	.7500	3/4"	19.050	3/4"	6"	1"	.120"	2-1/2"	.715"	255.04	243.95	232.86	221.77
40173	.7500	3/4"	19.050	3/4"	6"	1"	.030"	4-3/8"	.715"	261.96	250.57	239.18	227.79
40183	.7874		20.000	20.0	100	32	1.0	-	-	240.22	229.78	219.33	208.89
40223	.7874		20.000	20.0	100	20	1.0	40	19.0	245.12	234.47	223.81	213.15
NEW 40225	.7874		20.000	20.0	150	20	1.0	65	19.0	328.96	314.66	300.35	286.05
NEW 40226	.7874		20.000	20.0	150	20	2.0	65	19.0	328.96	314.66	300.35	286.05
NEW 40229	.7874		20.000	20.0	150	20	3.0	65	19.0	328.96	314.66	300.35	286.05
NEW 40231	.7874		20.000	20.0	150	20	4.0	65	19.0	328.96	314.66	300.35	286.05
40243	.9843		25.000	25.0	100	38	1.0	-	-	277.96	265.87	253.79	241.70
40283	.9843		25.000	25.0	100	25	1.0	50	24.0	282.87	270.57	258.27	245.97
40293	1.000	1"	25.400	1"	4"	1-5/8"	.030"	-	-	291.85	279.16	266.47	253.78
40303	1.000	1"	25.400	1"	4"	1-5/8"	.060"	-	-	291.85	279.16	266.47	253.78
40313	1.000	1"	25.400	1"	4"	1-5/8"	.120"	-	-	291.85	279.16	266.47	253.78
40343	1.000	1"	25.400	1"	6"	1-1/4"	.030"	3-3/8"	.960"	427.70	409.10	390.51	371.91
40353	1.000	1"	25.400	1"	6"	1-1/4"	.060"	3-3/8"	.960"	427.70	409.10	390.51	371.91
40363	1.000	1"	25.400	1"	6"	1-1/4"	.120"	3-3/8"	.960"	427.70	409.10	390.51	371.91