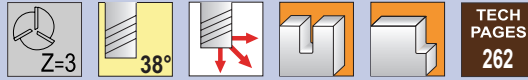


Series 143R

NEW ITEMS

.1181" - .2362"
(3.000mm - 6.000mm)



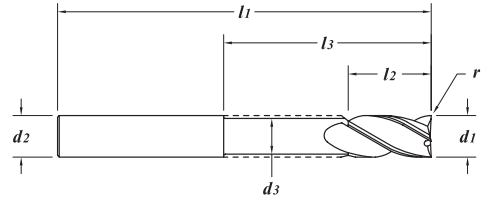
TOLERANCES	
$d1$	+0.000" -0.001" (+0.000 -0.025mm)
$d2$	h6
r	+0.0005" -0.0005" (+0.0127 -0.0127mm)

Recommended for aluminum

HSAL End Mill - Corner Radius

ALUMASTAR Coating

- 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 5,000-20,000 RPM spindles)
- 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										
39113	.1181	3.000	3.0	38	6	0.20	-	-	22.48	21.51	20.53	19.55
39123	.1181	3.000	3.0	38	6	0.50	-	-	22.48	21.51	20.53	19.55
39133	.1181	3.000	3.0	38	12	0.20	-	-	22.48	21.51	20.53	19.55
39143	.1181	3.000	3.0	38	12	0.50	-	-	22.48	21.51	20.53	19.55
39153	.1250	1/8"	3.175	1/8"	1-1/2"	1/4"	.010"	-	21.82	20.87	19.92	18.97
39163	.1250	1/8"	3.175	1/8"	1-1/2"	1/4"	.020"	-	21.82	20.87	19.92	18.97
39173	.1250	1/8"	3.175	1/8"	1-1/2"	1/2"	.010"	-	21.82	20.87	19.92	18.97
39183	.1250	1/8"	3.175	1/8"	1-1/2"	1/2"	.020"	-	21.82	20.87	19.92	18.97
39193	.1575	4.000	6.0	50	8	0.20	-	-	30.35	29.03	27.71	26.39
39203	.1575	4.000	6.0	50	8	0.50	-	-	30.35	29.03	27.71	26.39
39213	.1575	4.000	6.0	50	12	0.20	-	-	30.35	29.03	27.71	26.39
39223	.1575	4.000	6.0	50	12	0.30	-	-	30.35	29.03	27.71	26.39
39225	.1575	4.000	6.0	50	12	0.50	-	-	30.35	29.03	27.71	26.39
39243	.1575	4.000	6.0	65	6	0.30	20	3.7	37.11	35.50	33.88	32.27
39253	.1575	4.000	6.0	65	6	0.50	20	3.7	37.11	35.50	33.88	32.27
39263	.1575	4.000	6.0	65	6	1.00	20	3.7	37.11	35.50	33.88	32.27
39265	.1875	3/16"	4.763	3/16"	2"	5/16"	.010"	-	22.51	21.53	20.55	19.57
39275	.1875	3/16"	4.763	3/16"	2"	5/16"	.020"	-	22.51	21.53	20.55	19.57
39280	.1875	3/16"	4.763	3/16"	2"	5/16"	.030"	-	22.51	21.53	20.55	19.57
39283	.1875	3/16"	4.763	3/16"	2"	9/16"	.010"	-	22.51	21.53	20.55	19.57
39285	.1875	3/16"	4.763	3/16"	2"	9/16"	.020"	-	22.51	21.53	20.55	19.57
39293	.1875	3/16"	4.763	3/16"	2"	9/16"	.030"	-	22.51	21.53	20.55	19.57
39303	.1875	3/16"	4.763	3/16"	3"	7/32"	.010"	3/4"	41.20	39.41	37.62	35.83
39313	.1875	3/16"	4.763	3/16"	3"	7/32"	.030"	3/4"	41.20	39.41	37.62	35.83
39343	.1969	5.000	6.0	65	16	0.30	-	-	31.31	29.95	28.59	27.23
39363	.1969	5.000	6.0	75	8	0.30	20	4.7	51.16	48.94	46.71	44.49
39373	.1969	5.000	6.0	75	8	0.50	20	4.7	51.16	48.94	46.71	44.49
39383	.1969	5.000	6.0	75	8	1.00	20	4.7	51.16	48.94	46.71	44.49
39403	.2362	6.000	6.0	65	19	0.30	-	-	30.31	29.00	27.68	26.36
39423	.2362	6.000	6.0	75	10	0.30	25	5.7	49.52	47.37	45.21	43.06
39433	.2362	6.000	6.0	75	10	0.50	25	5.7	49.52	47.37	45.21	43.06
39436	.2362	6.000	6.0	75	10	1.00	25	5.7	49.52	47.37	45.21	43.06
39439	.2362	6.000	6.0	75	10	1.50	25	5.7	49.52	47.37	45.21	43.06
39443	.2362	6.000	6.0	75	10	2.00	25	5.7	49.52	47.37	45.21	43.06

EDP#	d_1 † Diameter			d_2 Shank Diameter	l_1 Overall Length	l_2 Flute Length	r Corner Radius	l_3 Reach Length	d_3 Neck Diameter	1-11	12-24	25-49	50-100
	Decimal		Metric										
NEW 39314	.2500	1/4"	6.350	1/4"	2"	1/2"	.010"	-	-	27.32	26.13	24.94	23.76
NEW 39316	.2500	1/4"	6.350	1/4"	2"	1/2"	.015"	-	-	27.32	26.13	24.94	23.76
NEW 39318	.2500	1/4"	6.350	1/4"	2"	1/2"	.020"	-	-	27.32	26.13	24.94	23.76
39453	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.010"	-	-	28.80	27.54	26.29	25.04
39463	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.015"	-	-	28.80	27.54	26.29	25.04
NEW 39320	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.020"	-	-	28.80	27.54	26.29	25.04
39473	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.030"	-	-	28.80	27.54	26.29	25.04
39493	.2500	1/4"	6.350	1/4"	4"	3/8"	.015"	1-1/8"	.235"	49.89	47.72	45.55	43.38
40403	.2500	1/4"	6.350	1/4"	4"	3/8"	.030"	1-1/8"	.235"	49.89	47.72	45.55	43.38
39503	.2500	1/4"	6.350	1/4"	4"	3/8"	.015"	2-1/8"	.235"	55.03	52.64	50.24	47.85
39543	.2756		7.000	8.0	65	19	0.30	-	-	44.08	42.16	40.25	38.33
39563	.2756		7.000	8.0	75	12	0.30	25	6.4	67.15	64.23	61.31	58.39
NEW 39322	.3125	5/16"	7.938	5/16"	2"	1/2"	.010"	-	-	34.87	33.35	31.84	30.32
NEW 39324	.3125	5/16"	7.938	5/16"	2"	1/2"	.020"	-	-	34.87	33.35	31.84	30.32
39593	.3125	5/16"	7.938	5/16"	2-1/2"	3/4"	.010"	-	-	38.11	36.45	34.80	33.14
39603	.3125	5/16"	7.938	5/16"	2-1/2"	3/4"	.015"	-	-	38.11	36.45	34.80	33.14
NEW 39326	.3125	5/16"	7.938	5/16"	2-1/2"	3/4"	.020"	-	-	38.11	36.45	34.80	33.14
39613	.3125	5/16"	7.938	5/16"	2-1/2"	3/4"	.030"	-	-	38.11	36.45	34.80	33.14
39623	.3125	5/16"	7.938	5/16"	4"	7/16"	.015"	1-1/8"	.297"	65.58	62.73	59.88	57.03
39633	.3125	5/16"	7.938	5/16"	4"	7/16"	.030"	1-1/8"	.297"	65.58	62.73	59.88	57.03
NEW 39328	.3150		8.000	8.0	50	12	0.50	-	-	36.49	34.90	33.32	31.73
39663	.3150		8.000	8.0	65	19	0.50	-	-	40.10	38.36	36.61	34.87
39683	.3150		8.000	8.0	75	12	0.50	25	7.4	61.10	58.44	55.79	53.13
39688	.3150		8.000	8.0	75	12	1.00	25	7.4	61.10	58.44	55.79	53.13
39693	.3150		8.000	8.0	75	12	2.00	25	7.4	61.10	58.44	55.79	53.13
39698	.3150		8.000	8.0	75	12	3.00	25	7.4	61.10	58.44	55.79	53.13
NEW 39330	.3750	3/8"	9.525	3/8"	2"	1/2"	.010"	-	-	41.03	39.25	37.46	35.68
NEW 39332	.3750	3/8"	9.525	3/8"	2"	1/2"	.020"	-	-	41.03	39.25	37.46	35.68
39703	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	.010"	-	-	44.41	42.48	40.55	38.62
39713	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	.015"	-	-	44.41	42.48	40.55	38.62
NEW 39334	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	.020"	-	-	44.41	42.48	40.55	38.62
39723	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	.030"	-	-	44.41	42.48	40.55	38.62
39733	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	.060"	-	-	44.41	42.48	40.55	38.62
39763	.3750	3/8"	9.525	3/8"	4"	1/2"	.030"	2-1/8"	.355"	75.84	72.55	69.25	65.95
39773	.3750	3/8"	9.525	3/8"	4"	1/2"	.060"	2-1/8"	.355"	75.84	72.55	69.25	65.95
39783	.3750	3/8"	9.525	3/8"	6"	1/2"	.030"	4"	.355"	110.75	105.93	101.12	96.30
NEW 39336	.3937		10.000	10.0	50	14	0.50	-	-	61.70	59.02	56.33	53.65
39803	.3937		10.000	10.0	70	24	0.50	-	-	68.11	65.15	62.19	59.23
39843	.3937		10.000	10.0	100	12	0.50	35	9.4	91.56	87.58	83.60	79.62
39848	.3937		10.000	10.0	100	12	1.00	35	9.4	91.56	87.58	83.60	79.62
39853	.3937		10.000	10.0	100	12	1.50	35	9.4	91.56	87.58	83.60	79.62
39863	.3937		10.000	10.0	100	12	2.00	35	9.4	91.56	87.58	83.60	79.62
39873	.3937		10.000	10.0	100	12	3.00	35	9.4	91.56	87.58	83.60	79.62
NEW 39344	.4724		12.000	12.0	65	16	0.50	-	-	73.92	70.71	67.49	64.28
39883	.4724		12.000	12.0	75	32	0.50	-	-	84.25	80.59	76.92	73.26
NEW 39346	.4724		12.000	12.0	75	32	0.75	-	-	84.25	80.59	76.92	73.26
NEW 39348	.4724		12.000	12.0	75	32	1.00	-	-	84.25	80.59	76.92	73.26
39903	.4724		12.000	12.0	100	16	0.50	40	11.4	108.28	103.58	98.87	94.16
39907	.4724		12.000	12.0	100	16	1.00	40	11.4	108.28	103.58	98.87	94.16
39911	.4724		12.000	12.0	100	16	1.50	40	11.4	108.28	103.58	98.87	94.16
39915	.4724		12.000	12.0	100	16	2.00	40	11.4	108.28	103.58	98.87	94.16
39919	.4724		12.000	12.0	100	16	3.00	40	11.4	108.28	103.58	98.87	94.16

70

35

0

MATERIAL HARDNESS (Rc)

continued →

Series 143R (continued)

.5000" - 1.000"
(12.700mm - 25.400mm)

MATERIAL HARDNESS (RC) 70 35 0

EDP#	d_1 † Diameter		d_2 Shank Diameter	l_1 Overall Length	l_2 Flute Length	r Corner Radius	l_3 Reach Length	d_3 Neck Diameter	1-11	12-24	25-49	50-100	
	Decimal	Metric											
NEW 39353	.5000	1/2"	12.700	1/2"	2-1/2"	5/8"	.010"	-	-	70.23	67.18	64.12	61.07
NEW 39355	.5000	1/2"	12.700	1/2"	2-1/2"	5/8"	.020"	-	-	70.23	67.18	64.12	61.07
39923	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.010"	-	-	80.04	76.56	73.08	69.60
39933	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.015"	-	-	80.04	76.56	73.08	69.60
NEW 39356	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.020"	-	-	80.04	76.56	73.08	69.60
39943	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.030"	-	-	80.04	76.56	73.08	69.60
39953	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.060"	-	-	80.04	76.56	73.08	69.60
39963	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.120"	-	-	80.04	76.56	73.08	69.60
NEW 39972	.5000	1/2"	12.700	1/2"	4"	1-5/8"	.015"	-	-	92.55	88.53	84.50	80.48
39973	.5000	1/2"	12.700	1/2"	4"	2"	.010"	-	-	92.55	88.53	84.50	80.48
40413	.5000	1/2"	12.700	1/2"	4"	2"	.030"	-	-	92.55	88.53	84.50	80.48
40423	.5000	1/2"	12.700	1/2"	4"	2"	.060"	-	-	92.55	88.53	84.50	80.48
40433	.5000	1/2"	12.700	1/2"	4"	5/8"	.010"	2-1/8"	.475"	102.87	98.40	93.92	89.45
39983	.5000	1/2"	12.700	1/2"	4"	5/8"	.030"	2-1/8"	.475"	102.87	98.40	93.92	89.45
40443	.5000	1/2"	12.700	1/2"	4"	5/8"	.060"	2-1/8"	.475"	102.87	98.40	93.92	89.45
40453	.5000	1/2"	12.700	1/2"	4"	5/8"	.120"	2-1/8"	.475"	102.87	98.40	93.92	89.45
39993	.5000	1/2"	12.700	1/2"	6"	5/8"	.030"	4-1/8"	.475"	154.38	147.66	140.95	134.24
39366	.6250	5/8"	15.875	5/8"	3"	3/4"	.010"	-	-	129.15	123.53	117.92	112.30
39368	.6250	5/8"	15.875	5/8"	3"	3/4"	.020"	-	-	129.15	123.53	117.92	112.30
NEW 39369	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.015"	-	-	132.87	127.09	121.32	115.54
NEW 39370	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.020"	-	-	132.87	127.09	121.32	115.54
40463	.6250	5/8"	15.875	5/8"	4"	1-5/8"	.015"	-	-	138.45	132.43	126.41	120.39
NEW 39372	.6250	5/8"	15.875	5/8"	4"	1-5/8"	.020"	-	-	138.45	132.43	126.41	120.39
40023	.6250	5/8"	15.875	5/8"	4"	1-5/8"	.030"	-	-	138.45	132.43	126.41	120.39
40473	.6250	5/8"	15.875	5/8"	4"	1-5/8"	.060"	-	-	138.45	132.43	126.41	120.39
40483	.6250	5/8"	15.875	5/8"	4"	1-5/8"	.120"	-	-	138.45	132.43	126.41	120.39
40033	.6250	5/8"	15.875	5/8"	6"	3/4"	.030"	2-3/8"	.590"	197.96	189.35	180.75	172.14
40043	.6250	5/8"	15.875	5/8"	6"	3/4"	.030"	4-3/8"	.590"	208.30	199.24	190.19	181.13
40083	.6299	5/8"	16.000	16.0	100	40	1.00	-	-	145.75	139.41	133.08	126.74
40103	.6299	5/8"	16.000	16.0	100	20	1.00	40	15.4	150.90	144.34	137.78	131.22
40113	.6299	5/8"	16.000	16.0	125	20	2.00	60	15.4	198.05	189.44	180.83	172.22
40118	.6299	5/8"	16.000	16.0	125	20	3.00	60	15.4	198.05	189.44	180.83	172.22
40123	.6299	5/8"	16.000	16.0	125	20	4.00	60	15.4	198.05	189.44	180.83	172.22
NEW 39374	.7500	3/4"	19.050	3/4"	4"	1-1/4"	.020"	-	-	179.69	171.88	164.06	156.25
40133	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.015"	-	-	179.69	171.88	164.06	156.25
NEW 39376	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.020"	-	-	179.69	171.88	164.06	156.25
40143	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.030"	-	-	179.69	171.88	164.06	156.25
40153	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.060"	-	-	179.69	171.88	164.06	156.25
40493	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.120"	-	-	179.69	171.88	164.06	156.25
40503	.7500	3/4"	19.050	3/4"	6"	1"	.015"	2-1/2"	.715"	267.79	256.15	244.50	232.86
40163	.7500	3/4"	19.050	3/4"	6"	1"	.030"	2-1/2"	.715"	267.79	256.15	244.50	232.86
40513	.7500	3/4"	19.050	3/4"	6"	1"	.060"	2-1/2"	.715"	267.79	256.15	244.50	232.86
40523	.7500	3/4"	19.050	3/4"	6"	1"	.120"	2-1/2"	.715"	267.79	256.15	244.50	232.86
NEW 40171	.7500	3/4"	19.050	3/4"	6"	1"	.015"	4"	.715"	275.06	263.10	251.14	239.18
40173	.7500	3/4"	19.050	3/4"	6"	1"	.030"	4-3/8"	.715"	275.06	263.10	251.14	239.18
40183	.7874	3/4"	20.000	20.0	100	32	1.00	-	-	252.23	241.26	230.30	219.33
40223	.7874	3/4"	20.000	20.0	100	20	1.00	40	19.0	257.38	246.19	235.00	223.81
40225	.7874	3/4"	20.000	20.0	150	20	1.00	65	19.0	345.40	330.39	315.37	300.35
40226	.7874	3/4"	20.000	20.0	150	20	2.00	65	19.0	345.40	330.39	315.37	300.35
40229	.7874	3/4"	20.000	20.0	150	20	3.00	65	19.0	345.40	330.39	315.37	300.35
40231	.7874	3/4"	20.000	20.0	150	20	4.00	65	19.0	345.40	330.39	315.37	300.35
40243	.9843	3/4"	25.000	25.0	100	38	1.00	-	-	291.86	279.17	266.48	253.79
40293	1.000	1"	25.400	1"	4"	1-5/8"	.030"	-	-	306.44	293.12	279.79	266.47
40303	1.000	1"	25.400	1"	4"	1-5/8"	.060"	-	-	306.44	293.12	279.79	266.47
40313	1.000	1"	25.400	1"	4"	1-5/8"	.120"	-	-	306.44	293.12	279.79	266.47
40343	1.000	1"	25.400	1"	6"	1-1/4"	.030"	3-3/8"	.960"	449.09	429.56	410.04	390.51
40353	1.000	1"	25.400	1"	6"	1-1/4"	.060"	3-3/8"	.960"	449.09	429.56	410.04	390.51
40363	1.000	1"	25.400	1"	6"	1-1/4"	.120"	3-3/8"	.960"	449.09	429.56	410.04	390.51
NEW 40366	1.000	1"	25.400	1"	6"	1-1/4"	.030"	4"	.960"	449.09	429.56	410.04	390.51