

N

Bright Finish

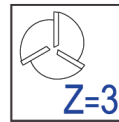
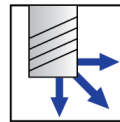
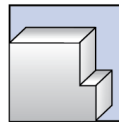
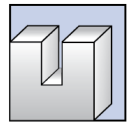
Target Materials:
Aluminum

MATERIAL HARDNESS (Rc)

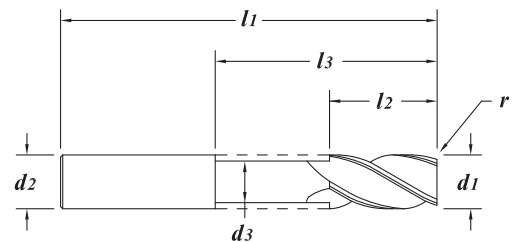
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**CALCULATE IDEAL PARAMETERS
FOR THE A3 IN YOUR
APPLICATION WITH THE GARR
TECHNICAL ADVISOR**



View the A3

TOLERANCES

d_1	+0.000" - .001" (+.000 - .025mm)
d_2	h6
r	+0.001" - .001" (+.025 - .025mm)
ball	+0.0000" - .0005" (+.0000 - .0127mm)

HIGH EFFICIENCY MILLING

Series A3 (continued)



.1562" - .2500"
(3.967mm - 6.350mm)

Recommended for aluminum

Variable Helix End Mill

Bright Finish

Solid submicron grain carbide end mill - center cutting

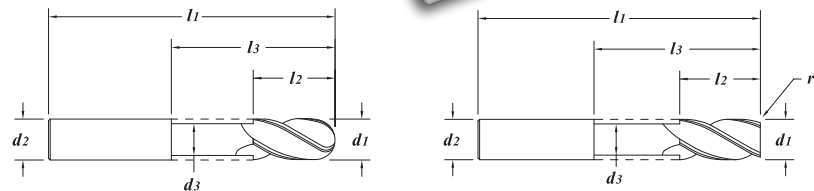
Engineered for High Efficiency Milling of Aluminum

Proprietary geometry with polished flutes breaks up harmonics

Improved end geometry provides superior floor finishes and increased plunge rates

Capable of running up to 40,000 RPM - reduces vibration and balance issues

Chip splitters and necks can be added within 48 hours



EDP#	d_1 †			d_2	l_1	l_2	r	l_3	d_3
	Decimal	Diameter	Metric	Shank Diameter	Overall Length	Flute Length	Corner Radius	Reach Length	Neck Diameter
NEW 06996	.1562	5/32"	3.967	3/16"	2"	1/2"	-	-	-
NEW 06997	.1562	5/32"	3.967	3/16"	2"	1/2"	.010"	-	-
NEW 06998	.1562	5/32"	3.967	3/16"	2"	1/2"	.020"	-	-
NEW 06999	.1562	5/32"	3.967	3/16"	2"	1/2"	.030"	-	-
07000	.1575		4.000	6.0	50	12	-	16	3.80
07001	.1575		4.000	6.0	50	12	0.20	16	3.80
07002	.1575		4.000	6.0	50	12	0.50	16	3.80
07003	.1575		4.000	6.0	50	12	1.00	16	3.80
07004	.1875	3/16"	4.763	3/16"	2"	1/2"	-	5/8"	.179"
07005	.1875	3/16"	4.763	3/16"	2"	1/2"	.015"	5/8"	.179"
07006	.1875	3/16"	4.763	3/16"	2"	1/2"	.030"	5/8"	.179"
07007	.1875	3/16"	4.763	3/16"	2"	1/2"	.060"	5/8"	.179"
07008	.1875	3/16"	4.763	3/16"	2"	1/2"	BALL	5/8"	.179"
NEW 07231	.1875	3/16"	4.763	3/16"	2-1/2"	3/4"	-	-	-
07009	.1969		5.000	6.0	65	16	-	26	4.70
07010	.1969		5.000	6.0	65	16	0.20	26	4.70
07011	.1969		5.000	6.0	65	16	0.50	26	4.70
07012	.1969		5.000	6.0	65	16	1.00	26	4.70
07013	.2362		6.000	6.0	65	19	-	26	5.70
07014	.2362		6.000	6.0	65	19	0.20	26	5.70
07015	.2362		6.000	6.0	65	19	0.50	26	5.70
07016	.2362		6.000	6.0	65	19	1.00	26	5.70
07017	.2362		6.000	6.0	65	19	1.50	26	5.70
07018	.2362		6.000	6.0	65	19	2.00	26	5.70
07019	.2362		6.000	6.0	65	19	BALL	26	5.70
NEW 07228	.2500	1/4"	6.350	1/4"	2"	3/8"	-	-	-
NEW 07229	.2500	1/4"	6.350	1/4"	2"	1/2"	-	-	-
07020	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	-	-	-
07021	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.015"	-	-
07022	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.030"	-	-
07023	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.060"	-	-
07024	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.090"	-	-
07025	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	BALL	-	-
07026	.2500	1/4"	6.350	1/4"	3"	1"	-	-	-
07027	.2500	1/4"	6.350	1/4"	3"	1"	.030"	-	-
07028	.2500	1/4"	6.350	1/4"	3"	1"	.060"	-	-

HIGH PERFORMANCE
END MILLS

MATERIAL HARDNESS (Rc)

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Series A3 (continued)

.2500" - .4724"
(6.350mm - 12.000mm)

EDP#	$d1$ † Diameter			$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	r Corner Radius	$l3$ Reach Length	$d3$ Neck Diameter
	Decimal		Metric						
07029	.2500	1/4"	6.350	1/4"	3"	3/8"	-	1-1/8"	.235"
07030	.2500	1/4"	6.350	1/4"	3"	3/8"	.015"	1-1/8"	.235"
07031	.2500	1/4"	6.350	1/4"	3"	3/8"	.030"	1-1/8"	.235"
07032	.2500	1/4"	6.350	1/4"	3"	3/8"	.060"	1-1/8"	.235"
07033	.3150		8.000	8.0	65	19	-	26	7.40
07034	.3150		8.000	8.0	65	19	0.20	26	7.40
07035	.3150		8.000	8.0	65	19	0.50	26	7.40
07036	.3150		8.000	8.0	65	19	1.00	26	7.40
07037	.3150		8.000	8.0	65	19	1.50	26	7.40
07041	.3750	3/8"	9.525	3/8"	2-1/2"	1"	-	-	-
07042	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.010"	-	-
07043	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.015"	-	-
07044	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.020"	-	-
07045	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.030"	-	-
07046	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.060"	-	-
07047	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.090"	-	-
07048	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.120"	-	-
07049	.3750	3/8"	9.525	3/8"	2-1/2"	1"	BALL	-	-
07050	.3750	3/8"	9.525	3/8"	3"	1-1/4"	-	-	-
07051	.3750	3/8"	9.525	3/8"	3"	1-1/4"	.015"	-	-
07052	.3750	3/8"	9.525	3/8"	3"	1-1/4"	.030"	-	-
07053	.3750	3/8"	9.525	3/8"	3"	1-1/4"	.060"	-	-
07054	.3750	3/8"	9.525	3/8"	3"	1-1/4"	.120"	-	-
07055	.3750	3/8"	9.525	3/8"	3"	1/2"	-	1-1/8"	.355"
07056	.3750	3/8"	9.525	3/8"	3"	1/2"	.015"	1-1/8"	.355"
07057	.3750	3/8"	9.525	3/8"	3"	1/2"	.030"	1-1/8"	.355"
07058	.3750	3/8"	9.525	3/8"	3"	1/2"	.060"	1-1/8"	.355"
07059	.3750	3/8"	9.525	3/8"	3"	1/2"	.090"	1-1/8"	.355"
07060	.3750	3/8"	9.525	3/8"	3"	1/2"	.120"	1-1/8"	.355"
07061	.3750	3/8"	9.525	3/8"	4"	1/2"	-	2-1/8"	.355"
07062	.3750	3/8"	9.525	3/8"	4"	1/2"	.015"	2-1/8"	.355"
07063	.3750	3/8"	9.525	3/8"	4"	1/2"	.020"	2-1/8"	.355"
07064	.3750	3/8"	9.525	3/8"	4"	1/2"	.030"	2-1/8"	.355"
07065	.3750	3/8"	9.525	3/8"	4"	1/2"	.060"	2-1/8"	.355"
07066	.3750	3/8"	9.525	3/8"	4"	1/2"	.090"	2-1/8"	.355"
07067	.3750	3/8"	9.525	3/8"	4"	1/2"	.120"	2-1/8"	.355"
07068	.3937		10.000	10.0	70	22	-	30	9.40
07069	.3937		10.000	10.0	70	22	0.20	30	9.40
07070	.3937		10.000	10.0	70	22	0.50	30	9.40
07071	.3937		10.000	10.0	70	22	1.00	30	9.40
07072	.3937		10.000	10.0	70	22	1.50	30	9.40
07073	.3937		10.000	10.0	70	22	2.00	30	9.40
07074	.3937		10.000	10.0	70	22	3.00	30	9.40
07075	.3937		10.000	10.0	70	22	BALL	30	9.40
07076	.3937		10.000	10.0	100	40	-	-	-
07077	.3937		10.000	10.0	100	22	-	55	9.40
07078	.4724		12.000	12.0	88	26	-	38	11.40
07079	.4724		12.000	12.0	88	26	0.20	38	11.40
07212	.4724		12.000	12.0	88	26	0.50	38	11.40
07081	.4724		12.000	12.0	88	26	1.00	38	11.40
07082	.4724		12.000	12.0	88	26	1.50	38	11.40

MATERIAL HARDNESS (Rc)

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EDP#	$d1^{\dagger}$ Diameter		$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	r Corner Radius	$l3$ Reach Length	$d3$ Neck Diameter
	Decimal	Metric						
07083	.4724	12.000	12.0	88	26	2.00	38	11.40
07084	.4724	12.000	12.0	88	26	3.00	38	11.40
07085	.4724	12.000	12.0	88	26	4.00	38	11.40
07086	.4724	12.000	12.0	88	26	BALL	38	11.40
07213	.4724	12.000	12.0	88	36	-	-	-
07088	.4724	12.000	12.0	88	36	0.20	-	-
07089	.4724	12.000	12.0	88	36	0.50	-	-
07090	.4724	12.000	12.0	88	36	1.00	-	-
07091	.4724	12.000	12.0	88	36	1.50	-	-
07092	.4724	12.000	12.0	88	36	2.00	-	-
07093	.4724	12.000	12.0	88	36	3.00	-	-
07094	.4724	12.000	12.0	88	36	4.00	-	-
07095	.4724	12.000	12.0	88	36	BALL	-	-
07215	.5000	12.700	1/2"	3"	1"	-	-	-
07216	.5000	12.700	1/2"	3"	1"	.030"	-	-
07217	.5000	12.700	1/2"	3"	1"	BALL	-	-
07096	.5000	12.700	1/2"	3"	1-1/4"	-	-	-
07097	.5000	12.700	1/2"	3"	1-1/4"	.010"	-	-
07098	.5000	12.700	1/2"	3"	1-1/4"	.015"	-	-
07099	.5000	12.700	1/2"	3"	1-1/4"	.020"	-	-
07100	.5000	12.700	1/2"	3"	1-1/4"	.030"	-	-
07101	.5000	12.700	1/2"	3"	1-1/4"	.060"	-	-
07102	.5000	12.700	1/2"	3"	1-1/4"	.090"	-	-
07103	.5000	12.700	1/2"	3"	1-1/4"	.120"	-	-
07218	.5000	12.700	1/2"	3"	1-1/4"	.125"	-	-
07104	.5000	12.700	1/2"	3"	1-1/4"	.190"	-	-
07105	.5000	12.700	1/2"	3"	1-1/4"	BALL	-	-
07219	.5000	12.700	1/2"	3"	1/2"	.030"	1-1/2"	.470"
07220	.5000	12.700	1/2"	3"	1/2"	.090"	1-1/2"	.470"
NEW 07230	.5000	12.700	1/2"	3-1/2"	1-1/2"	-	-	-
07221	.5000	12.700	1/2"	4"	1-5/8"	-	-	-
07222	.5000	12.700	1/2"	4"	1-5/8"	.030"	-	-
07223	.5000	12.700	1/2"	4"	1-5/8"	BALL	-	-
07106	.5000	12.700	1/2"	4"	2-1/16"	-	-	-
07107	.5000	12.700	1/2"	4"	2-1/16"	.015"	-	-
07108	.5000	12.700	1/2"	4"	2-1/16"	.030"	-	-
07109	.5000	12.700	1/2"	4"	2-1/16"	.060"	-	-
07110	.5000	12.700	1/2"	4"	2-1/16"	.120"	-	-
07224	.5000	12.700	1/2"	4"	1/2"	.090"	2"	.470"
07225	.5000	12.700	1/2"	4"	1/2"	.190"	2"	.470"
07111	.5000	12.700	1/2"	4"	5/8"	-	2-1/4"	.475"
07112	.5000	12.700	1/2"	4"	5/8"	.015"	2-1/4"	.475"
07113	.5000	12.700	1/2"	4"	5/8"	.030"	2-1/4"	.475"
07114	.5000	12.700	1/2"	4"	5/8"	.060"	2-1/4"	.475"
07115	.5000	12.700	1/2"	4"	5/8"	BALL	2-1/4"	.475"
07116	.6250	15.875	5/8"	4"	1-5/8"	-	-	-
07214	.6250	15.875	5/8"	4"	1-5/8"	.030"	-	-
07118	.6250	15.875	5/8"	4"	1-5/8"	.060"	-	-
07119	.6250	15.875	5/8"	4"	1-5/8"	.090"	-	-
07120	.6250	15.875	5/8"	4"	1-5/8"	.120"	-	-
07121	.6250	15.875	5/8"	4"	3/4"	-	2-3/8"	.590"
07122	.6250	15.875	5/8"	4"	3/4"	.030"	2-3/8"	.590"
07123	.6250	15.875	5/8"	4"	3/4"	.060"	2-3/8"	.590"
07124	.6250	15.875	5/8"	4"	3/4"	.120"	2-3/8"	.590"
07125	.6250	15.875	5/8"	4"	3/4"	.190"	2-3/8"	.590"

continued →

Series A3 (continued)

.6299" - .7500"
(16.000mm - 19.050mm)

EDP#	$d1$ † Diameter		$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	r Corner Radius	$l3$ Reach Length	$d3$ Neck Diameter
	Decimal	Metric	Diameter	Length	Length	Radius	Length	Diameter
07126	.6299	16.000	16.0	100	24	-	50	15.40
07127	.6299	16.000	16.0	100	24	0.50	50	15.40
07128	.6299	16.000	16.0	100	24	1.00	50	15.40
07129	.6299	16.000	16.0	100	24	1.50	50	15.40
07130	.6299	16.000	16.0	100	24	3.00	50	15.40
07131	.6299	16.000	16.0	100	24	6.00	50	15.40
07132	.6299	16.000	16.0	100	32	-	50	15.40
07133	.6299	16.000	16.0	100	32	0.50	50	15.40
07134	.6299	16.000	16.0	100	32	1.00	50	15.40
07135	.6299	16.000	16.0	100	32	1.50	50	15.40
07136	.6299	16.000	16.0	100	32	3.00	50	15.40
07137	.6299	16.000	16.0	100	32	6.00	50	15.40
07138	.7500	3/4"	19.050	3/4"	4"	1-3/4"	-	-
07139	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.015"	-
07140	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.030"	-
07141	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.060"	-
07142	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.078"	-
07143	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.094"	-
07144	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.120"	-
07145	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.156"	-
07146	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.190"	-
07147	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.250"	-
07148	.7500	3/4"	19.050	3/4"	4"	1-3/4"	BALL	-
07149	.7500	3/4"	19.050	3/4"	4"	1"	-	.715"
07150	.7500	3/4"	19.050	3/4"	4"	1"	.030"	.715"
07151	.7500	3/4"	19.050	3/4"	4"	1"	.060"	.715"
07152	.7500	3/4"	19.050	3/4"	4"	1"	.090"	.715"
07153	.7500	3/4"	19.050	3/4"	4"	1"	.120"	.715"
07154	.7500	3/4"	19.050	3/4"	4"	1"	.125"	.715"
07155	.7500	3/4"	19.050	3/4"	4"	1"	.160"	.715"
07156	.7500	3/4"	19.050	3/4"	4"	1"	.190"	.715"
07157	.7500	3/4"	19.050	3/4"	5"	2-1/4"	-	-
07158	.7500	3/4"	19.050	3/4"	5"	2-1/4"	.030"	-
07159	.7500	3/4"	19.050	3/4"	5"	2-1/4"	.060"	-
07160	.7500	3/4"	19.050	3/4"	5"	2-1/4"	.120"	-
07161	.7500	3/4"	19.050	3/4"	5"	2-1/4"	.125"	-
07162	.7500	3/4"	19.050	3/4"	5"	2-1/4"	.190"	-
07163	.7500	3/4"	19.050	3/4"	5"	2-1/4"	.250"	-
07226	.7500	3/4"	19.050	3/4"	6"	3-1/4"	-	-
07164	.7500	3/4"	19.050	3/4"	6"	1"	-	3-3/8"
07165	.7500	3/4"	19.050	3/4"	6"	1"	.030"	3-3/8"
07166	.7500	3/4"	19.050	3/4"	6"	1"	.060"	3-3/8"
07167	.7500	3/4"	19.050	3/4"	6"	1"	.090"	3-3/8"
07168	.7500	3/4"	19.050	3/4"	6"	1"	.125"	3-3/8"
07169	.7500	3/4"	19.050	3/4"	6"	1"	.250"	3-3/8"
07170	.7500	3/4"	19.050	3/4"	6"	1"	BALL	3-3/8"

MATERIAL HARDNESS (Rc)

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EDP#	$d1^{\dagger}$ Diameter		$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	r Corner Radius	$l3$ Reach Length	$d3$ Neck Diameter
	Decimal	Metric						
07171	.7874	20.000	20.0	100	30	-	50	19.4
07172	.7874	20.000	20.0	100	30	0.50	50	19.4
07173	.7874	20.000	20.0	100	30	1.00	50	19.4
07174	.7874	20.000	20.0	100	30	1.50	50	19.4
07175	.7874	20.000	20.0	100	30	3.00	50	19.4
07177	.7874	20.000	20.0	100	30	5.00	50	19.4
07178	.7874	20.000	20.0	100	30	6.00	50	19.4
07179	.7874	20.000	20.0	100	30	8.00	50	19.4
07180	.7874	20.000	20.0	150	30	-	100	19.40
07181	.7874	20.000	20.0	150	30	0.50	100	19.40
07182	.7874	20.000	20.0	150	30	1.00	100	19.40
07183	.7874	20.000	20.0	150	30	1.50	100	19.40
07184	.7874	20.000	20.0	150	30	3.00	100	19.40
07185	.7874	20.000	20.0	150	30	4.00	100	19.40
07186	.7874	20.000	20.0	150	30	5.00	100	19.40
07187	.7874	20.000	20.0	150	30	6.00	100	19.40
07188	.7874	20.000	20.0	150	30	8.00	100	19.40
07189	1.000	1"	25.400	1"	4"	1-1/4"	2"	.950"
07190	1.000	1"	25.400	1"	4"	1-1/4"	2"	.950"
07191	1.000	1"	25.400	1"	4-1/2"	1-1/4"	2-1/2"	.950"
07192	1.000	1"	25.400	1"	4-1/2"	1-1/4"	2-1/2"	.950"
07193	1.000	1"	25.400	1"	4-1/2"	1-1/4"	2-1/2"	.950"
07194	1.000	1"	25.400	1"	4-1/2"	1-1/4"	2-1/2"	.950"
07196	1.000	1"	25.400	1"	5"	1"	2-5/8"	.950"
07197	1.000	1"	25.400	1"	5"	1"	2-5/8"	.950"
07198	1.000	1"	25.400	1"	5"	1"	2-5/8"	.950"
07199	1.000	1"	25.400	1"	5"	1"	2-5/8"	.950"
07200	1.000	1"	25.400	1"	5"	1"	2-5/8"	.950"
07201	1.000	1"	25.400	1"	5"	1"	2-5/8"	.950"
07202	1.000	1"	25.400	1"	5"	2-1/4"	-	-
07203	1.000	1"	25.400	1"	5"	2-1/4"	.030"	-
07204	1.000	1"	25.400	1"	5"	2-1/4"	.060"	-
07205	1.000	1"	25.400	1"	5"	2-1/4"	.120"	-
07206	1.000	1"	25.400	1"	5"	2-1/4"	.250"	-
07207	1.000	1"	25.400	1"	6"	3-1/4"	-	-
07208	1.000	1"	25.400	1"	6"	3-1/4"	.030"	-
07209	1.000	1"	25.400	1"	6"	3-1/4"	.060"	-
07210	1.000	1"	25.400	1"	6"	3-1/4"	.120"	-
07211	1.000	1"	25.400	1"	6"	3-1/4"	.250"	-

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MATERIAL HARDNESS (Rc)

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