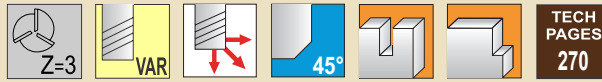


# Series ARC

.1575" - .3750"  
(4.000mm - 9.525mm)



TOLERANCES	
$d_1$	+0.000" - .002" (+0.000 - .050mm)
$d_2$	h6
$d_3$	+0.000" - .005" (+0.000 - .127mm)

Recommended for aluminum and non-ferrous materials

## Aluminum Knuckle Rougher / Ripper

Bright finish - Uncoated

Solid submicron grain carbide end mill - center cutting

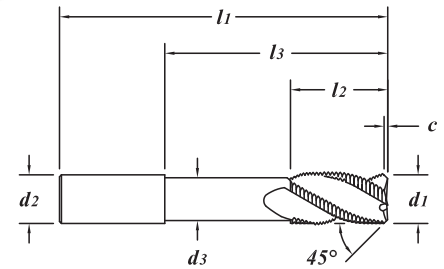
Wave knuckle design to break up chips

Each flute has individual helix angle to break up harmonics

Reduces tool pressure requiring less machine power

Designed for roughing Aluminum Alloys

Ideal for use in extruded Aluminum



MATERIAL HARDNESS (Rc) 70  
35  
0

EDP#	$d_1$ † Diameter		$d_2$ Shank Diameter	$l_1$ Overall Length	$l_2$ Flute Length	$c$ Chamfer Length	$l_3$ Reach Length	$d_3$ Neck Diameter	1-11	12-24	25-49	50-100	
	Decimal	Metric											
46219	.1575	4.000	6.0	50	8	0.30	-	-	31.29	29.93	28.57	27.21	
46222	.1575	4.000	6.0	50	12	0.30	-	-	31.29	29.93	28.57	27.21	
46225	.1575	4.000	6.0	65	10	0.30	30	3.2	35.81	34.25	32.70	31.14	
46228	.1575	4.000	6.0	75	15	0.30	40	3.2	47.14	45.09	43.04	40.99	
46231	.1875	3/16"	4.763	2"	5/16"	.015"	-	-	26.55	25.40	24.24	23.09	
46234	.1875	3/16"	4.763	3/16"	2"	9/16"	.015"	-	26.55	25.40	24.24	23.09	
46237	.1875	3/16"	4.763	3/16"	3"	1"	.015"	-	37.15	35.53	33.92	32.30	
46240	.1875	3/16"	4.763	3/16"	3"	1/2"	.015"	1-1/2"	.160"	40.42	38.66	36.91	35.15
46243	.2362	6.000	6.0	50	12	0.50	-	-	31.05	29.70	28.35	27.00	
46246	.2362	6.000	6.0	65	19	0.50	-	-	33.63	32.17	30.71	29.24	
46249	.2362	6.000	6.0	100	20	0.50	60	5.2	47.69	45.62	43.54	41.47	
46252	.2500	1/4"	6.350	1/4"	2"	3/8"	.020"	-	29.68	28.39	27.10	25.81	
46255	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.020"	-	33.22	31.78	30.33	28.89	
46258	.2500	1/4"	6.350	1/4"	4"	1-1/2"	.020"	-	42.88	41.02	39.15	37.29	
46261	.2500	1/4"	6.350	1/4"	4"	1"	.020"	2"	.220"	46.16	44.15	42.15	40.14
46264	.3125	5/16"	7.938	5/16"	2"	7/16"	.020"	-	35.42	33.88	32.34	30.80	
46267	.3125	5/16"	7.938	5/16"	2-1/2"	13/16"	.020"	-	36.77	35.17	33.57	31.97	
46270	.3125	5/16"	7.938	5/16"	4"	1-1/2"	.020"	-	52.67	50.38	48.09	45.80	
46273	.3125	5/16"	7.938	5/16"	4"	1"	.020"	2"	.285"	55.95	53.52	51.08	48.65
46276	.3150	8.000	8.0	50	12	0.50	-	-	36.27	34.69	33.12	31.54	
46279	.3150	8.000	8.0	65	22	0.50	-	-	37.69	36.05	34.41	32.77	
46282	.3150	8.000	8.0	100	40	0.50	-	-	54.52	52.15	49.78	47.41	
46285	.3150	8.000	8.0	100	20	0.50	60	7.2	57.80	55.29	52.77	50.26	
46288	.3150	8.000	8.0	150	40	0.50	100	7.2	76.71	73.37	70.04	66.70	
46291	.3750	3/8"	9.525	3/8"	2"	1/2"	.025"	-	41.33	39.53	37.74	35.94	
46294	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	.025"	-	45.92	43.92	41.93	39.93	
46297	.3750	3/8"	9.525	3/8"	3"	1-1/4"	.025"	-	53.67	51.34	49.00	46.67	
46300	.3750	3/8"	9.525	3/8"	4"	1-5/8"	.025"	-	57.70	55.19	52.68	50.17	
46303	.3750	3/8"	9.525	3/8"	4"	1"	.025"	2"	.345"	60.97	58.32	55.67	53.02
46306	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.025"	4"	.345"	78.30	74.90	71.49	68.09

EDP#	$d1$ † Diameter		$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	$c$ Chamfer Length	$l3$ Reach Length	$d3$ Neck Diameter	1-11	12-24	25-49	50-100
	Decimal	Metric										
46309	.3937	10.000	10.0	50	16	0.50	-	-	51.11	48.89	46.67	44.44
46312	.3937	10.000	10.0	70	22	0.50	-	-	53.89	51.55	49.20	46.86
46315	.3937	10.000	10.0	100	40	0.50	-	-	67.13	64.21	61.29	58.37
46318	.3937	10.000	10.0	100	20	0.50	60	9.2	70.40	67.34	64.28	61.22
46321	.3937	10.000	10.0	150	40	0.50	100	9.2	88.30	84.46	80.62	76.78
46324	.4724	12.000	12.0	65	19	0.80	-	-	58.75	56.20	53.64	51.09
46327	.4724	12.000	12.0	75	32	0.80	-	-	66.42	63.53	60.64	57.76
46330	.4724	12.000	12.0	100	50	0.80	-	-	77.87	74.48	71.10	67.71
46333	.4724	12.000	12.0	100	25	0.80	60	11.2	81.14	77.61	74.08	70.56
46336	.4724	12.000	12.0	150	40	0.80	100	11.2	109.91	105.13	100.35	95.57
46339	.5000	1/2"	12.700	1/2"	2-1/2"	5/8"	.030"	-	55.92	53.49	51.06	48.63
46342	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.030"	-	63.38	60.62	57.87	55.11
46345	.5000	1/2"	12.700	1/2"	4"	2"	.030"	-	74.11	70.89	67.67	64.44
46348	.5000	1/2"	12.700	1/2"	4"	1"	.030"	2"	77.38	74.02	70.65	67.29
46351	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.030"	4"	108.22	103.51	98.81	94.10
46354	.6250	5/8"	15.875	5/8"	3"	3/4"	.035"	-	99.21	94.90	90.58	86.27
46357	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.035"	-	102.12	97.68	93.24	88.80
46360	.6250	5/8"	15.875	5/8"	4"	1-5/8"	.035"	-	108.18	103.48	98.77	94.07
46363	.6250	5/8"	15.875	5/8"	4"	1"	.035"	2"	111.46	106.61	101.77	96.92
46366	.6250	5/8"	15.875	5/8"	6"	1-1/2"	.035"	3"	156.56	149.75	142.95	136.14
46369	.6250	5/8"	15.875	5/8"	6"	1-1/2"	.035"	4"	156.56	149.75	142.95	136.14
46372	.6299	16.000	16.0	75	19	1.00	-	-	104.41	99.87	95.33	90.79
46375	.6299	16.000	16.0	88	32	1.00	-	-	107.10	102.44	97.79	93.13
46378	.6299	16.000	16.0	100	50	1.00	-	-	114.66	109.67	104.69	99.70
46381	.6299	16.000	16.0	100	20	1.00	50	15.2	117.93	112.80	107.67	102.55
46384	.6299	16.000	16.0	150	40	1.00	100	15.2	158.24	151.36	144.48	137.60
46387	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.040"	-	149.35	142.86	136.36	129.87
46390	.7500	3/4"	19.050	3/4"	5"	2-1/4"	.040"	-	209.29	200.19	191.09	181.99
46393	.7500	3/4"	19.050	3/4"	4"	7/8"	.040"	2"	152.63	145.99	139.36	132.72
46396	.7500	3/4"	19.050	3/4"	6"	1-1/2"	.040"	3"	251.98	241.02	230.07	219.11
46399	.7500	3/4"	19.050	3/4"	6"	1-1/2"	.040"	4"	251.98	241.02	230.07	219.11
46402	.7874	20.000	20.0	100	22	1.00	-	-	210.73	201.57	192.40	183.24
46405	.7874	20.000	20.0	100	40	1.00	-	-	210.73	201.57	192.40	183.24
46408	.7874	20.000	20.0	100	30	1.00	50	19.2	214.00	204.70	195.39	186.09
46411	.7874	20.000	20.0	150	40	1.00	100	19.2	261.38	250.02	238.65	227.29
46414	1.000	1"	25.400	1"	4"	1-1/2"	.040"	-	253.59	242.56	231.54	220.51
46417	1.000	1"	25.400	1"	5"	2"	.040"	-	313.80	300.16	286.51	272.87
46420	1.000	1"	25.400	1"	6"	2"	.040"	3-1/2"	421.65	403.32	384.98	366.65
46423	1.000	1"	25.400	1"	7"	2"	.040"	4-1/2"	554.48	530.37	506.26	482.16

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MATERIAL HARDNESS (Rc)

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