

**TOLERANCES**

$d1$	+0.000" - .002" (+.000mm -.050mm)
$d2$	h6

**NEW ITEMS**

**Series V4S**

.2362" - .4724"  
(6.000mm - 12.000mm)



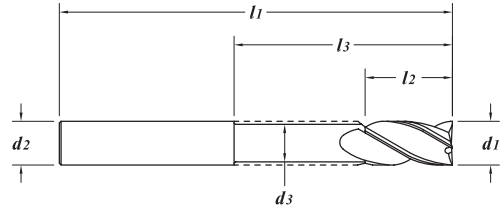
Recommended for titanium, inconel, and stainless steel

**Variable Helix End Mill - Square End**

**AlCrN Coating**

- Solid submicron grain carbide end mill - center cutting
- Helix geometry varies over length of flutes
- Variable flute design helps with chip evacuation in slots and pockets
- Variable rake aids in chip formation
- PCT (Polish Carbide Treatment) enhances tool life by 20%
- Minimizes burr on part
- Can be modified with a flat within 48 hours
- V4 Corner Radius - page 157
- V4 Ball End - page 165

*The combination of an extended flute length with a weldon flat may cause the flute washout to reach inside some end mill holders*



**HIGH PERFORMANCE END MILLS**

EDP#		$d1$ †		$d2$	$l1$	$l2$	$l3$	$d3$	1-11	12-24	25-49	50-100
(plain)	(weldon)	Decimal	Diameter	Shank Diameter	Overall Length	Flute Length	Reach Length	Neck Diameter				
			Metric									
50236	-	.2362	6.000	6.0	65	12	-	-	23.77	22.74	21.70	20.67
50237	-	.2362	6.000	6.0	65	19	-	-	23.77	22.74	21.70	20.67
50540	-	.2500	6.350	1/4"	2"	3/8"	-	-	20.33	19.45	18.56	17.68
50645	-	.2500	6.350	1/4"	2"	1/2"	-	-	20.33	19.45	18.56	17.68
50238	-	.2500	6.350	1/4"	2-1/2"	3/4"	-	-	22.94	21.95	20.95	19.95
<b>NEW</b> 50653	-	.2500	6.350	1/4"	3"	1-1/8"	-	-	34.91	33.39	31.87	30.36
<b>NEW</b> 50654	-	.2500	6.350	1/4"	4"	1-1/2"	-	-	37.56	35.93	34.29	32.66
<b>NEW</b> 50655	-	.2500	6.350	1/4"	4"	1-3/4"	-	-	37.56	35.93	34.29	32.66
<b>NEW</b> 50656	-	.2500	6.350	1/4"	4"	2"	-	-	37.56	35.93	34.29	32.66
<b>NEW</b> 50651	-	.2500	6.350	1/4"	3"	3/8"	1-1/8"	.237"	44.01	42.10	40.18	38.27
50600	-	.2500	6.350	1/4"	4"	3/8"	1-1/8"	.237"	46.85	44.81	42.78	40.74
<b>NEW</b> 50652	-	.2500	6.350	1/4"	4"	3/8"	2"	.237"	46.85	44.81	42.78	40.74
50541	-	.3125	7.937	5/16"	2"	7/16"	-	-	28.08	26.86	25.64	24.42
50239	-	.3125	7.937	5/16"	2-1/2"	13/16"	-	-	32.71	31.28	29.86	28.44
<b>NEW</b> 50657	-	.3125	7.937	5/16"	3"	1-1/4"	-	-	44.64	42.70	40.76	38.82
<b>NEW</b> 50658	-	.3125	7.937	5/16"	3"	7/16"	1-1/2"	.295"	55.34	52.93	50.53	48.12
50602	-	.3150	8.000	8.0	50	12	-	-	29.11	27.84	26.58	25.31
50240	-	.3150	8.000	8.0	65	22	-	-	33.89	32.42	30.94	29.47
<b>NEW</b> 50659	-	.3150	8.000	8.0	75	32	-	-	46.49	44.47	42.45	40.43
<b>NEW</b> 50660	-	.3150	8.000	8.0	100	12	50	7.50	64.00	61.22	58.43	55.65
50542	-	.3750	9.525	3/8"	2"	1/2"	-	-	33.13	31.69	30.25	28.81
50241	-	.3750	9.525	3/8"	2-1/2"	1"	-	-	38.61	36.93	35.25	33.57
<b>NEW</b> 50661	-	.3750	9.525	3/8"	3"	1-1/4"	-	-	49.24	47.10	44.96	42.82
<b>NEW</b> 50662	-	.3750	9.525	3/8"	4"	1-1/2"	-	-	55.64	53.22	50.80	48.38
50604	-	.3750	9.525	3/8"	4"	1/2"	1-1/8"	.355"	67.56	64.62	61.68	58.75
50606	-	.3937	10.000	10.0	50	14	-	-	42.55	40.70	38.85	37.00
50242	-	.3937	10.000	10.0	70	22	-	-	46.28	44.26	42.25	40.24
50608	-	.3937	10.000	10.0	70	26	-	-	46.28	44.26	42.25	40.24
<b>NEW</b> 50663	-	.3937	10.000	10.0	70	30	-	-	46.28	44.26	42.25	40.24
50450	50449	.4724	12.000	12.0	75	26	-	-	60.13	57.52	54.90	52.29
50243	50283	.4724	12.000	12.0	75	32	-	-	60.13	57.52	54.90	52.29
<b>NEW</b> 50664	-	.4724	12.000	12.0	88	36	-	-	77.40	74.03	70.67	67.30
50564	-	.4724	12.000	12.0	100	42	-	-	80.36	76.87	73.37	69.88
<b>NEW</b> 50665	-	.4724	12.000	12.0	100	48	-	-	80.36	76.87	73.37	69.88

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**MATERIAL HARDNESS (Rc)**

continued →

Series V4S (continued)

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

EDP# (plain)	EDP# (weldon)	Decimal	$d1$ † Diameter		$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	$l3$ Reach Length	$d3$ Neck Diameter	1-11	12-24	25-49	50-100
			Metric										
50543	-	.5000	1/2"	12.700	1/2"	2-1/2"	5/8"	-	-	54.17	51.81	49.46	47.10
50452	50453	.5000	1/2"	12.700	1/2"	3"	1"	-	-	57.73	55.22	52.71	50.20
50244	50284	.5000	1/2"	12.700	1/2"	3"	1-1/4"	-	-	57.73	55.22	52.71	50.20
NEW 50666	-	.5000	1/2"	12.700	1/2"	3-1/2"	1-1/2"	-	-	75.14	71.87	68.61	65.34
50578	50579	.5000	1/2"	12.700	1/2"	4"	1-5/8"	-	-	78.11	74.71	71.32	67.92
50646	-	.5000	1/2"	12.700	1/2"	4"	1-3/4"	-	-	78.11	74.71	71.32	67.92
50647	-	.5000	1/2"	12.700	1/2"	4"	2"	-	-	78.11	74.71	71.32	67.92
50245	50285	.5000	1/2"	12.700	1/2"	4"	2-1/8"	-	-	78.11	74.71	71.32	67.92
NEW 50668	-	.5000	1/2"	12.700	1/2"	6"	3"	-	-	112.42	107.53	102.64	97.76
50610	-	.5000	1/2"	12.700	1/2"	4"	5/8"	2-1/4"	.475"	89.79	85.89	81.98	78.08
NEW 50667	-	.5000	1/2"	12.700	1/2"	6"	5/8"	3-1/8"	.475"	124.19	118.79	113.39	107.99
50235	-	.5000	1/2"	12.700	1/2"	6"	5/8"	4-1/8"	.475"	124.19	118.79	113.39	107.99
50545	50546	.6250	5/8"	15.875	5/8"	3"	3/4"	-	-	100.73	96.35	91.97	87.59
50246	50286	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	-	-	106.51	101.88	97.25	92.62
NEW 50669	-	.6250	5/8"	15.875	5/8"	4"	1-1/2"	-	-	113.75	108.80	103.86	98.91
50612	-	.6250	5/8"	15.875	5/8"	4"	1-5/8"	-	-	113.75	108.80	103.86	98.91
NEW 50670	-	.6250	5/8"	15.875	5/8"	4"	1-3/4"	-	-	113.75	108.80	103.86	98.91
50547	-	.6299		16.000	16.0	75	19	-	-	105.32	100.74	96.16	91.58
50247	50287	.6299		16.000	16.0	88	32	-	-	111.12	106.29	101.46	96.63
NEW 50671	-	.6299		16.000	16.0	100	48	-	-	118.14	113.00	107.87	102.73
50548	-	.7500	3/4"	19.050	3/4"	3"	7/8"	-	-	148.79	142.32	135.85	129.38
50549	50550	.7500	3/4"	19.050	3/4"	4"	1"	-	-	152.04	145.43	138.82	132.21
50248	50288	.7500	3/4"	19.050	3/4"	4"	1-1/2"	-	-	152.04	145.43	138.82	132.21
50551	50552	.7500	3/4"	19.050	3/4"	4"	1-3/4"	-	-	152.04	145.43	138.82	132.21
50553	50554	.7500	3/4"	19.050	3/4"	5"	2-1/8"	-	-	204.07	195.20	186.32	177.45
NEW 50672	-	.7500	3/4"	19.050	3/4"	5"	2-1/2"	-	-	204.07	195.20	186.32	177.45
50555	-	.7874		20.000	20.0	100	25	-	-	205.42	196.49	187.56	178.63
50249	50289	.7874		20.000	20.0	100	38	-	-	205.42	196.49	187.56	178.63
NEW 50673	-	.7874		20.000	20.0	100	48	-	-	205.42	196.49	187.56	178.63
NEW 50674	-	.7874		20.000	20.0	150	60	-	-	257.75	246.54	235.34	224.13
50250	50290	1.000	1"	25.400	1"	4"	1-1/2"	-	-	227.15	217.27	207.40	197.52
NEW 50675	-	1.000	1"	25.400	1"	4-1/2"	2"	-	-	267.14	255.53	243.92	232.30
NEW 50676	-	1.000	1"	25.400	1"	5"	2-1/2"	-	-	304.06	290.84	277.62	264.40

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MATERIAL HARDNESS (Rc)

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V4-S series in 1018 material