

HIGH PERFORMANCE
END MILLS

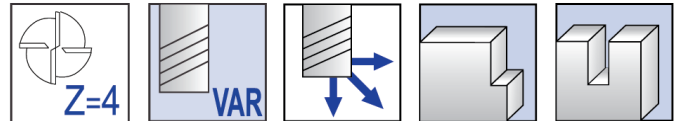
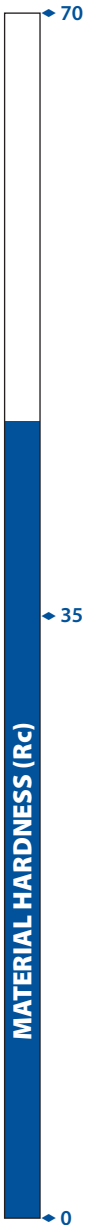
Series V4S, V4R, V4B

SERIES HIGHLIGHT

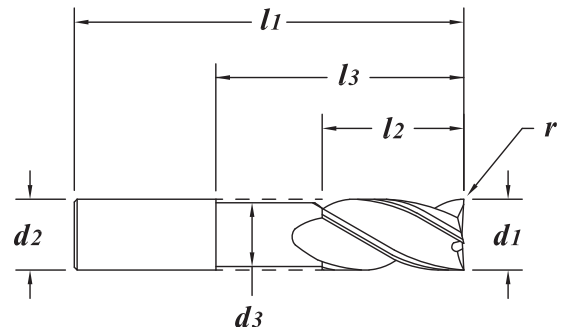
S M P K

High Performance End Mills
AlCrN Coating

Target Materials:
Titanium
Inconel
Stainless Steel



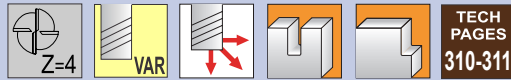
CALCULATE IDEAL PARAMETERS
FOR THE V4S, V4R, AND V4B IN YOUR
APPLICATION WITH THE
GARR TECHNICAL ADVISOR



← View the V4S, V4R, V4B

TOLERANCES

d_1	+ .000" - .002" (+.000mm - .050mm)
d_2	h6
r	+ .001" - .001" (+.025 - .025mm)
ball radius	+ .000" - .001" (+.000 - .025mm)



Series V4S, V4R, V4B

.1562" - .2188"
(3.967mm - 5.558mm)

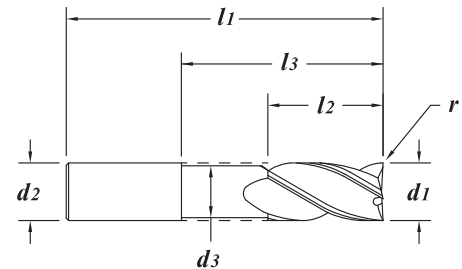
Recommended for titanium, inconel, and stainless steel

Variable Helix End Mill

AlCrN Coating

- Solid submicron grain carbide end mill - center cutting
- Engineered for High Efficiency Milling
- 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
- Minimizes burr on part
- Smaller diameters can be modified with a flat within 48 hours

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



EDP#	(plain) (weldon)	d_1 †		d_2	l_1	l_2	r	l_3	d_3	LIST PRICE	
		Decimal	Diameter Metric								Shank Diameter
50171	-	.1562	5/32"	3.967	1/4"	2"	1/2"	-	-	-	22.41
50172	-	.1562	5/32"	3.967	1/4"	2"	1/2"	.010"	-	-	24.36
50173	-	.1562	5/32"	3.967	1/4"	2"	1/2"	.015"	-	-	24.36
50174	-	.1562	5/32"	3.967	1/4"	2"	1/2"	.020"	-	-	24.36
50175	-	.1562	5/32"	3.967	1/4"	2"	1/2"	.030"	-	-	24.36
50176	-	.1562	5/32"	3.967	1/4"	2"	1/2"	BALL	-	-	24.36
50177	-	.1575		4.000	6.0	50	12	-	-	-	24.95
50178	-	.1575		4.000	6.0	50	12	0.20	-	-	25.34
50179	-	.1575		4.000	6.0	50	12	0.30	-	-	25.34
50180	-	.1575		4.000	6.0	50	12	0.50	-	-	25.34
50181	-	.1575		4.000	6.0	50	12	BALL	-	-	25.34
50182	-	.1875	3/16"	4.763	1/4"	2"	1/2"	-	-	-	21.97
50183	-	.1875	3/16"	4.763	1/4"	2"	1/2"	.010"	-	-	23.88
50184	-	.1875	3/16"	4.763	1/4"	2"	1/2"	.015"	-	-	23.88
50185	-	.1875	3/16"	4.763	1/4"	2"	1/2"	.020"	-	-	23.88
50186	-	.1875	3/16"	4.763	1/4"	2"	1/2"	.030"	-	-	23.88
50187	-	.1875	3/16"	4.763	1/4"	2"	1/2"	BALL	-	-	23.88
50188	-	.1969		5.000	6.0	65	20	-	-	-	26.69
50189	-	.1969		5.000	6.0	65	20	0.20	-	-	27.51
50190	-	.1969		5.000	6.0	65	20	0.30	-	-	27.51
50191	-	.1969		5.000	6.0	65	20	0.50	-	-	27.51
50192	-	.1969		5.000	6.0	65	20	BALL	-	-	27.51
50193	-	.2188	7/32"	5.558	1/4"	2-1/2"	3/4"	-	-	-	24.27
50194	-	.2188	7/32"	5.558	1/4"	2-1/2"	3/4"	.010"	-	-	26.49
50195	-	.2188	7/32"	5.558	1/4"	2-1/2"	3/4"	.015"	-	-	26.49
50196	-	.2188	7/32"	5.558	1/4"	2-1/2"	3/4"	.020"	-	-	26.49
50197	-	.2188	7/32"	5.558	1/4"	2-1/2"	3/4"	.030"	-	-	26.49
50198	-	.2188	7/32"	5.558	1/4"	2-1/2"	3/4"	BALL	-	-	26.49

HIGH PERFORMANCE END MILLS

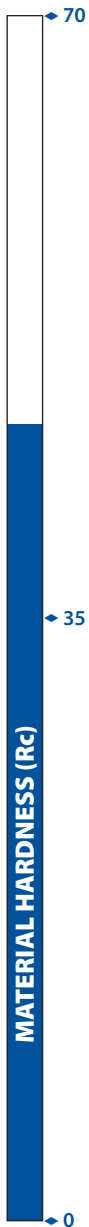
MATERIAL HARDNESS (Rc) 70 35 0

continued →

Series V4S, V4R, V4B (continued)

.2362" - .2500"
(6.000mm - 6.350mm)

EDP#	(plain) (weldon)	$d1^{\dagger}$ Diameter		$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	r Corner Radius	$l3$ Reach Length	$d3$ Neck Diameter	LIST PRICE
		Decimal	Metric							
50236	-	.2362	6.000	6.0	65	12	-	-	-	23.44
50199	-	.2362	6.000	6.0	65	12	0.30	-	-	26.64
50200	-	.2362	6.000	6.0	65	12	0.50	-	-	26.64
50201	-	.2362	6.000	6.0	65	12	0.75	-	-	26.64
50202	-	.2362	6.000	6.0	65	12	1.00	-	-	26.64
50203	-	.2362	6.000	6.0	65	12	1.50	-	-	26.64
50252	-	.2362	6.000	6.0	65	12	BALL	-	-	26.64
50237	-	.2362	6.000	6.0	65	19	-	-	-	23.44
50204	-	.2362	6.000	6.0	65	19	0.30	-	-	26.64
50205	-	.2362	6.000	6.0	65	19	0.50	-	-	26.64
50206	-	.2362	6.000	6.0	65	19	1.00	-	-	26.64
50253	-	.2362	6.000	6.0	65	19	BALL	-	-	26.64
50540	-	.2500 1/4"	6.350	1/4"	2"	3/8"	-	-	-	20.05
50489	-	.2500 1/4"	6.350	1/4"	2"	3/8"	.010"	-	-	23.13
50490	-	.2500 1/4"	6.350	1/4"	2"	3/8"	.015"	-	-	23.13
50491	-	.2500 1/4"	6.350	1/4"	2"	3/8"	.020"	-	-	23.13
50708	-	.2500 1/4"	6.350	1/4"	2"	3/8"	.030"	-	-	23.13
50709	-	.2500 1/4"	6.350	1/4"	2"	3/8"	.040"	-	-	23.13
50710	-	.2500 1/4"	6.350	1/4"	2"	3/8"	.060"	-	-	23.13
50711	-	.2500 1/4"	6.350	1/4"	2"	3/8"	.090"	-	-	23.13
50560	-	.2500 1/4"	6.350	1/4"	2"	3/8"	BALL	-	-	23.13
50645	-	.2500 1/4"	6.350	1/4"	2"	1/2"	-	-	-	20.05
50614	-	.2500 1/4"	6.350	1/4"	2"	1/2"	.010"	-	-	23.13
50616	-	.2500 1/4"	6.350	1/4"	2"	1/2"	.015"	-	-	23.13
50618	-	.2500 1/4"	6.350	1/4"	2"	1/2"	.020"	-	-	23.13
50712	-	.2500 1/4"	6.350	1/4"	2"	1/2"	.030"	-	-	23.13
50713	-	.2500 1/4"	6.350	1/4"	2"	1/2"	.040"	-	-	23.13
50714	-	.2500 1/4"	6.350	1/4"	2"	1/2"	.060"	-	-	23.13
50715	-	.2500 1/4"	6.350	1/4"	2"	1/2"	.090"	-	-	23.13
50238	-	.2500 1/4"	6.350	1/4"	2-1/2"	3/4"	-	-	-	22.62
50207	-	.2500 1/4"	6.350	1/4"	2-1/2"	3/4"	.010"	-	-	25.62
50208	-	.2500 1/4"	6.350	1/4"	2-1/2"	3/4"	.015"	-	-	25.62
50620	-	.2500 1/4"	6.350	1/4"	2-1/2"	3/4"	.020"	-	-	25.62
50209	-	.2500 1/4"	6.350	1/4"	2-1/2"	3/4"	.030"	-	-	25.62
50716	-	.2500 1/4"	6.350	1/4"	2-1/2"	3/4"	.040"	-	-	25.62
50210	-	.2500 1/4"	6.350	1/4"	2-1/2"	3/4"	.060"	-	-	25.62
50717	-	.2500 1/4"	6.350	1/4"	2-1/2"	3/4"	.090"	-	-	25.62
50254	-	.2500 1/4"	6.350	1/4"	2-1/2"	3/4"	BALL	-	-	25.62
50653	-	.2500 1/4"	6.350	1/4"	3"	1-1/8"	-	-	-	34.41
50493	-	.2500 1/4"	6.350	1/4"	3"	1-1/8"	.030"	-	-	37.94
50677	-	.2500 1/4"	6.350	1/4"	3"	1-1/8"	BALL	-	-	37.94



Series V4S, V4R, V4B (continued)

.2500" - .3150"
(6.350mm - 8.000mm)

HIGH PERFORMANCE
END MILLS

EDP#	(plain) (weldon)	$d1$ †		$d2$	$l1$	$l2$	r	$l3$	$d3$	LIST PRICE	
		Decimal	Diameter								Metric
50654	-	.2500	1/4"	6.350	1/4"	4"	1-1/2"	-	-	-	37.03
50681	-	.2500	1/4"	6.350	1/4"	4"	1-1/2"	BALL	-	-	40.62
50655	-	.2500	1/4"	6.350	1/4"	4"	1-3/4"	-	-	-	37.03
50718	-	.2500	1/4"	6.350	1/4"	4"	1-3/4"	.020"	-	-	40.62
50682	-	.2500	1/4"	6.350	1/4"	4"	1-3/4"	BALL	-	-	40.62
50656	-	.2500	1/4"	6.350	1/4"	4"	2"	-	-	-	37.03
50683	-	.2500	1/4"	6.350	1/4"	4"	2"	BALL	-	-	40.62
50651	-	.2500	1/4"	6.350	1/4"	3"	3/8"	-	1-1/8"	.237"	43.38
50678	-	.2500	1/4"	6.350	1/4"	3"	3/8"	BALL	1-1/8"	.237"	46.96
50600	-	.2500	1/4"	6.350	1/4"	4"	3/8"	-	1-1/8"	.237"	46.18
50211	-	.2500	1/4"	6.350	1/4"	4"	3/8"	.015"	1-1/4"	.230"	49.64
50474	-	.2500	1/4"	6.350	1/4"	4"	3/8"	BALL	1-1/8"	.237"	49.64
50679	-	.2500	1/4"	6.350	1/4"	4"	3/8"	BALL	1-1/2"	.237"	49.64
50652	-	.2500	1/4"	6.350	1/4"	4"	3/8"	-	2"	.237"	46.18
50680	-	.2500	1/4"	6.350	1/4"	4"	3/8"	BALL	2"	.237"	49.64
50719	-	.2500	1/4"	6.350	1/4"	6"	3/8"	.010"	4"	.230"	62.50
50684	-	.2500	1/4"	6.350	1/4"	6"	3/8"	BALL	4"	.230"	62.50
50720	-	.3125	5/16"	7.937	5/16"	2"	3/8"	.030"	-	-	31.58
50541	-	.3125	5/16"	7.937	5/16"	2"	7/16"	-	-	-	27.69
50622	-	.3125	5/16"	7.937	5/16"	2"	7/16"	.010"	-	-	31.58
50624	-	.3125	5/16"	7.937	5/16"	2"	7/16"	.015"	-	-	31.58
50492	-	.3125	5/16"	7.937	5/16"	2"	7/16"	.020"	-	-	31.58
50721	-	.3125	5/16"	7.937	5/16"	2"	7/16"	.125"	-	-	31.58
50561	-	.3125	5/16"	7.937	5/16"	2"	7/16"	BALL	-	-	31.58
50239	-	.3125	5/16"	7.937	5/16"	2-1/2"	13/16"	-	-	-	32.24
50626	-	.3125	5/16"	7.937	5/16"	2-1/2"	13/16"	.010"	-	-	34.69
50628	-	.3125	5/16"	7.937	5/16"	2-1/2"	13/16"	.015"	-	-	34.69
50212	-	.3125	5/16"	7.937	5/16"	2-1/2"	13/16"	.020"	-	-	34.69
50213	-	.3125	5/16"	7.937	5/16"	2-1/2"	13/16"	.030"	-	-	34.69
50722	-	.3125	5/16"	7.937	5/16"	2-1/2"	13/16"	.060"	-	-	34.69
50723	-	.3125	5/16"	7.937	5/16"	2-1/2"	13/16"	.125"	-	-	34.69
50255	-	.3125	5/16"	7.937	5/16"	2-1/2"	13/16"	BALL	-	-	34.69
50657	-	.3125	5/16"	7.937	5/16"	3"	1-1/4"	-	-	-	44.00
50724	-	.3125	5/16"	7.937	5/16"	3"	1-1/4"	.015"	-	-	48.40
50725	-	.3125	5/16"	7.937	5/16"	3"	1-1/4"	.030"	-	-	48.40
50726	-	.3125	5/16"	7.937	5/16"	3"	1-1/4"	.060"	-	-	48.40
50685	-	.3125	5/16"	7.937	5/16"	3"	1-1/4"	BALL	-	-	48.40
50658	-	.3125	5/16"	7.937	5/16"	3"	7/16"	-	1-1/2"	.295"	54.54
50686	-	.3125	5/16"	7.937	5/16"	3"	7/16"	BALL	1-1/2"	.295"	58.94
50602	-	.3150		8.000	8.0	50	12	-	-	-	28.69
50630	-	.3150		8.000	8.0	50	12	0.50	-	-	32.75
50240	-	.3150		8.000	8.0	65	22	-	-	-	33.41
50214	-	.3150		8.000	8.0	65	22	0.50	-	-	36.00
50356	-	.3150		8.000	8.0	65	22	0.75	-	-	36.00
50215	-	.3150		8.000	8.0	65	22	1.00	-	-	36.00
50727	-	.3150		8.000	8.0	65	22	1.20	-	-	36.00
50357	-	.3150		8.000	8.0	65	22	1.50	-	-	36.00
50358	-	.3150		8.000	8.0	65	22	2.00	-	-	36.00
50728	-	.3150		8.000	8.0	65	22	3.00	-	-	36.00
50256	-	.3150		8.000	8.0	65	22	BALL	-	-	36.00

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MATERIAL HARDNESS (Rc)

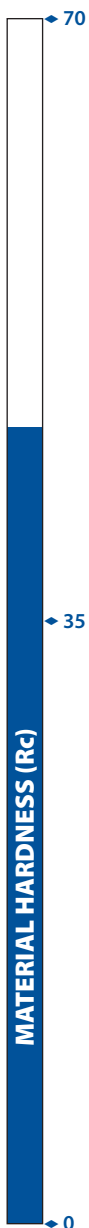
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continued →

Series V4S, V4R, V4B (continued)

.3150" - .3937"
(8.000mm - 10.000mm)

EDP#	<i>d1</i> †	<i>d1</i> †		<i>d2</i>	<i>l1</i>	<i>l2</i>	<i>r</i>	<i>l3</i>	<i>d3</i>	LIST PRICE	
		Decimal	Metric								Shank Diameter
50659	-	.3150	8.000	8.0	75	32	-	-	-	45.83	
50687	-	.3150	8.000	8.0	75	32	BALL	-	-	50.46	
50660	-	.3150	8.000	8.0	100	12	-	50	7.50	63.09	
50688	-	.3150	8.000	8.0	100	12	BALL	50	7.50	68.18	
50542	-	.3750	3/8"	9.525	3/8"	2"	1/2"	-	-	32.66	
50632	-	.3750	3/8"	9.525	3/8"	2"	1/2"	.010"	-	37.29	
50729	-	.3750	3/8"	9.525	3/8"	2"	1/2"	.015"	-	37.29	
50494	-	.3750	3/8"	9.525	3/8"	2"	1/2"	.020"	-	37.29	
50634	-	.3750	3/8"	9.525	3/8"	2"	1/2"	.030"	-	37.29	
50730	-	.3750	3/8"	9.525	3/8"	2"	1/2"	.060"	-	37.29	
50732	-	.3750	3/8"	9.525	3/8"	2"	1/2"	.090"	-	37.29	
50733	-	.3750	3/8"	9.525	3/8"	2"	1/2"	.120"	-	37.29	
50734	-	.3750	3/8"	9.525	3/8"	2"	1/2"	.125"	-	37.29	
50562	-	.3750	3/8"	9.525	3/8"	2"	1/2"	BALL	-	37.29	
50241	-	.3750	3/8"	9.525	3/8"	2-1/2"	1"	-	-	38.05	
50216	-	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.010"	-	40.53	
50735	-	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.015"	-	40.53	
50217	-	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.020"	-	40.53	
50218	-	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.030"	-	40.53	
50736	-	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.040"	-	40.53	
50219	-	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.060"	-	40.53	
50636	-	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.090"	-	40.53	
50737	-	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.120"	-	40.53	
50738	-	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.125"	-	40.53	
50257	-	.3750	3/8"	9.525	3/8"	2-1/2"	1"	BALL	-	40.53	
50661	-	.3750	3/8"	9.525	3/8"	3"	1-1/4"	-	-	48.54	
50739	-	.3750	3/8"	9.525	3/8"	3"	1-1/4"	.015"	-	53.34	
50637	-	.3750	3/8"	9.525	3/8"	3"	1-1/4"	.030"	-	53.34	
50740	-	.3750	3/8"	9.525	3/8"	3"	1-1/4"	.060"	-	53.34	
50689	-	.3750	3/8"	9.525	3/8"	3"	1-1/4"	BALL	-	53.34	
50662	-	.3750	3/8"	9.525	3/8"	4"	1-1/2"	-	-	54.85	
50741	-	.3750	3/8"	9.525	3/8"	4"	1-1/2"	.015"	-	60.03	
50742	-	.3750	3/8"	9.525	3/8"	4"	1-1/2"	.030"	-	60.03	
50743	-	.3750	3/8"	9.525	3/8"	4"	1-1/2"	.060"	-	60.03	
50744	-	.3750	3/8"	9.525	3/8"	4"	1-1/2"	.120"	-	60.03	
50690	-	.3750	3/8"	9.525	3/8"	4"	1-1/2"	BALL	-	60.03	
50745	-	.3750	3/8"	9.525	3/8"	6"	2-1/2"	.060"	-	83.11	
50604	-	.3750	3/8"	9.525	3/8"	4"	1/2"	-	1-1/8"	.355"	66.60
50220	-	.3750	3/8"	9.525	3/8"	4"	1/2"	.020"	1-7/8"	.350"	71.63
50476	-	.3750	3/8"	9.525	3/8"	4"	1/2"	BALL	1-1/8"	.355"	71.63
50606	-	.3937	10.000	10.0	50	14	-	-	-	41.94	
50638	-	.3937	10.000	10.0	50	14	0.50	-	-	45.01	
50242	-	.3937	10.000	10.0	70	22	-	-	-	45.62	
50746	-	.3937	10.000	10.0	70	22	0.25	-	-	48.94	
50221	-	.3937	10.000	10.0	70	22	0.50	-	-	48.94	
50359	-	.3937	10.000	10.0	70	22	0.75	-	-	48.94	
50360	-	.3937	10.000	10.0	70	22	1.00	-	-	48.94	
50361	-	.3937	10.000	10.0	70	22	1.50	-	-	48.94	
50362	-	.3937	10.000	10.0	70	22	2.00	-	-	48.94	
50747	-	.3937	10.000	10.0	70	22	3.00	-	-	48.94	
50258	-	.3937	10.000	10.0	70	22	BALL	-	-	48.94	
50608	-	.3937	10.000	10.0	70	26	-	-	-	45.62	
50748	-	.3937	10.000	10.0	70	26	1.50	-	-	48.94	
50663	-	.3937	10.000	10.0	70	30	-	-	-	45.62	
50691	-	.3937	10.000	10.0	70	30	BALL	-	-	48.94	



Series V4S, V4R, V4B (continued)

.3937" - .5000"
(10.000mm - 12.700mm)

HIGH PERFORMANCE
END MILLS

EDP#		d_1 †		d_2	l_1	l_2	r	l_3	d_3	LIST PRICE
(plain)	(weldon)	Decimal	Diameter	Shank Diameter	Overall Length	Flute Length	Corner Radius	Reach Length	Neck Diameter	
50749	-	.3937	10.000	10.0	70	22	0.50	30	9.40	59.48
50750	-	.3937	10.000	10.0	100	12	0.30	50	9.40	86.55
50692	-	.3937	10.000	10.0	100	14	BALL	50	9.40	86.55
50450	50449	.4724	12.000	12.0	75	26	-	-	-	59.27
50363	50369	.4724	12.000	12.0	75	26	0.30	-	-	72.08
50364	50370	.4724	12.000	12.0	75	26	0.50	-	-	72.08
50365	50366	.4724	12.000	12.0	75	26	0.75	-	-	72.08
50367	50371	.4724	12.000	12.0	75	26	1.00	-	-	72.08
50372	50373	.4724	12.000	12.0	75	26	1.50	-	-	72.08
50374	50375	.4724	12.000	12.0	75	26	2.00	-	-	72.08
50470	-	.4724	12.000	12.0	75	26	BALL	-	-	72.08
50243	50283	.4724	12.000	12.0	75	32	-	-	-	59.27
50222	50270	.4724	12.000	12.0	75	32	0.50	-	-	72.08
50223	50271	.4724	12.000	12.0	75	32	1.00	-	-	72.08
50259	50291	.4724	12.000	12.0	75	32	BALL	-	-	72.08
50664	-	.4724	12.000	12.0	88	36	-	-	-	76.29
50751	-	.4724	12.000	12.0	88	36	0.30	-	-	81.00
50752	-	.4724	12.000	12.0	88	36	0.50	-	-	81.00
50753	-	.4724	12.000	12.0	88	36	1.00	-	-	81.00
50754	-	.4724	12.000	12.0	88	36	1.50	-	-	81.00
50755	-	.4724	12.000	12.0	88	36	3.00	-	-	81.00
50693	-	.4724	12.000	12.0	88	36	BALL	-	-	81.00
50564	-	.4724	12.000	12.0	100	42	-	-	-	79.22
50566	-	.4724	12.000	12.0	100	42	0.30	-	-	83.89
50568	-	.4724	12.000	12.0	100	42	0.50	-	-	83.89
50570	-	.4724	12.000	12.0	100	42	1.00	-	-	83.89
50572	-	.4724	12.000	12.0	100	42	2.00	-	-	83.89
50574	-	.4724	12.000	12.0	100	42	3.00	-	-	83.89
50576	-	.4724	12.000	12.0	100	42	BALL	-	-	83.89
50665	-	.4724	12.000	12.0	100	48	-	-	-	79.22
50756	-	.4724	12.000	12.0	100	48	0.30	-	-	83.89
50757	-	.4724	12.000	12.0	100	48	0.50	-	-	83.89
50758	-	.4724	12.000	12.0	100	48	1.00	-	-	83.89
50759	-	.4724	12.000	12.0	100	48	1.50	-	-	83.89
50760	-	.4724	12.000	12.0	100	48	3.00	-	-	83.89
50761	-	.4724	12.000	12.0	100	48	4.00	-	-	83.89
50694	-	.4724	12.000	12.0	100	48	BALL	-	-	83.89
50695	-	.4724	12.000	12.0	100	14	BALL	50	11.40	95.47
50543	-	.5000	12.700	1/2"	2-1/2"	5/8"	-	-	-	53.39
50640	-	.5000	12.700	1/2"	2-1/2"	5/8"	.010"	-	-	61.94
50762	-	.5000	12.700	1/2"	2-1/2"	5/8"	.015"	-	-	61.94
50496	50497	.5000	12.700	1/2"	2-1/2"	5/8"	.020"	-	-	61.94
50642	-	.5000	12.700	1/2"	2-1/2"	5/8"	.030"	-	-	61.94
50763	-	.5000	12.700	1/2"	2-1/2"	5/8"	.060"	-	-	61.94
50764	-	.5000	12.700	1/2"	2-1/2"	5/8"	.090"	-	-	61.94
50765	-	.5000	12.700	1/2"	2-1/2"	5/8"	.120"	-	-	61.94
50644	-	.5000	12.700	1/2"	2-1/2"	5/8"	.125"	-	-	61.94
50766	-	.5000	12.700	1/2"	2-1/2"	5/8"	.156"	-	-	61.94
50767	-	.5000	12.700	1/2"	2-1/2"	5/8"	.190"	-	-	61.94
50563	-	.5000	12.700	1/2"	2-1/2"	5/8"	BALL	-	-	61.94

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MATERIAL HARDNESS (Rc)

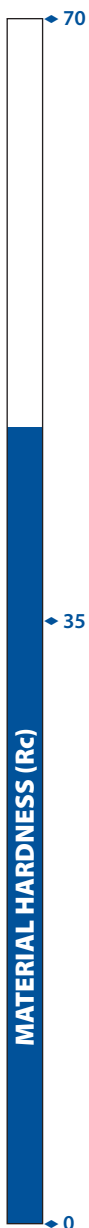
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continued →

Series V4S, V4R, V4B (continued)

.5000"
(12.700mm)

EDP#		$d1$ †		$d2$	$l1$	$l2$	r	$l3$	$d3$	LIST PRICE	
(plain)	(weldon)	Decimal	Diameter	Metric	Shank Diameter	Overall Length	Flute Length	Corner Radius	Reach Length		Neck Diameter
50452	50453	.5000	1/2"	12.700	1/2"	3"	1"	-	-	-	56.91
50379	50380	.5000	1/2"	12.700	1/2"	3"	1"	.010"	-	-	69.14
50768	-	.5000	1/2"	12.700	1/2"	3"	1"	.015"	-	-	69.14
50381	50382	.5000	1/2"	12.700	1/2"	3"	1"	.020"	-	-	69.14
50383	50384	.5000	1/2"	12.700	1/2"	3"	1"	.030"	-	-	69.14
50385	50386	.5000	1/2"	12.700	1/2"	3"	1"	.060"	-	-	69.14
50769	-	.5000	1/2"	12.700	1/2"	3"	1"	.090"	-	-	69.14
50770	-	.5000	1/2"	12.700	1/2"	3"	1"	.120"	-	-	69.14
50771	-	.5000	1/2"	12.700	1/2"	3"	1"	.125"	-	-	69.14
50772	-	.5000	1/2"	12.700	1/2"	3"	1"	.190"	-	-	69.14
50472	50473	.5000	1/2"	12.700	1/2"	3"	1"	BALL	-	-	69.14
50244	50284	.5000	1/2"	12.700	1/2"	3"	1-1/4"	-	-	-	56.91
50224	50272	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.010"	-	-	69.14
50773	-	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.015"	-	-	69.14
50225	50273	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.020"	-	-	69.14
50226	50274	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.030"	-	-	69.14
50227	50275	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.060"	-	-	69.14
50774	-	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.090"	-	-	69.14
50775	-	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.120"	-	-	69.14
50776	-	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.125"	-	-	69.14
50777	-	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.156"	-	-	69.14
50778	-	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.190"	-	-	69.14
50260	50292	.5000	1/2"	12.700	1/2"	3"	1-1/4"	BALL	-	-	69.14
50666	-	.5000	1/2"	12.700	1/2"	3-1/2"	1-1/2"	-	-	-	74.07
50779	-	.5000	1/2"	12.700	1/2"	3-1/2"	1-1/2"	.010"	-	-	78.81
50780	-	.5000	1/2"	12.700	1/2"	3-1/2"	1-1/2"	.015"	-	-	78.81
50781	-	.5000	1/2"	12.700	1/2"	3-1/2"	1-1/2"	.020"	-	-	78.81
50782	-	.5000	1/2"	12.700	1/2"	3-1/2"	1-1/2"	.030"	-	-	78.81
50783	-	.5000	1/2"	12.700	1/2"	3-1/2"	1-1/2"	.060"	-	-	78.81
50784	-	.5000	1/2"	12.700	1/2"	3-1/2"	1-1/2"	.090"	-	-	78.81
50785	-	.5000	1/2"	12.700	1/2"	3-1/2"	1-1/2"	.120"	-	-	78.81
50696	-	.5000	1/2"	12.700	1/2"	3-1/2"	1-1/2"	BALL	-	-	78.81
50578	50579	.5000	1/2"	12.700	1/2"	4"	1-5/8"	-	-	-	77.00
50580	50581	.5000	1/2"	12.700	1/2"	4"	1-5/8"	.010"	-	-	81.72
50582	50583	.5000	1/2"	12.700	1/2"	4"	1-5/8"	.020"	-	-	81.72
50584	50585	.5000	1/2"	12.700	1/2"	4"	1-5/8"	.030"	-	-	81.72
50586	50587	.5000	1/2"	12.700	1/2"	4"	1-5/8"	.040"	-	-	81.72
50588	50589	.5000	1/2"	12.700	1/2"	4"	1-5/8"	.060"	-	-	81.72
50590	50591	.5000	1/2"	12.700	1/2"	4"	1-5/8"	.120"	-	-	81.72
50592	50593	.5000	1/2"	12.700	1/2"	4"	1-5/8"	BALL	-	-	81.72
50646	-	.5000	1/2"	12.700	1/2"	4"	1-3/4"	-	-	-	77.00
50647	-	.5000	1/2"	12.700	1/2"	4"	2"	-	-	-	77.00
50245	50285	.5000	1/2"	12.700	1/2"	4"	2-1/8"	-	-	-	77.00
50786	-	.5000	1/2"	12.700	1/2"	4"	2-1/8"	.010"	-	-	81.72
50787	-	.5000	1/2"	12.700	1/2"	4"	2-1/8"	.015"	-	-	81.72
50788	-	.5000	1/2"	12.700	1/2"	4"	2-1/8"	.020"	-	-	81.72
50789	-	.5000	1/2"	12.700	1/2"	4"	2-1/8"	.030"	-	-	81.72
50790	-	.5000	1/2"	12.700	1/2"	4"	2-1/8"	.060"	-	-	81.72
50791	-	.5000	1/2"	12.700	1/2"	4"	2-1/8"	.090"	-	-	81.72
50792	-	.5000	1/2"	12.700	1/2"	4"	2-1/8"	.120"	-	-	81.72
50793	-	.5000	1/2"	12.700	1/2"	4"	2-1/8"	.125"	-	-	81.72
50794	-	.5000	1/2"	12.700	1/2"	4"	2-1/8"	.190"	-	-	81.72
50261	50293	.5000	1/2"	12.700	1/2"	4"	2-1/8"	BALL	-	-	81.72



EDP#		$d1$ †		$d2$	$l1$	$l2$	r	$l3$	$d3$	LIST PRICE	
(plain)	(weldon)	Decimal	Diameter	Shank Diameter	Overall Length	Flute Length	Corner Radius	Reach Length	Neck Diameter		
50668	-	.5000	1/2"	12.700	1/2"	6"	3"	-	-	110.82	
50795	-	.5000	1/2"	12.700	1/2"	6"	3"	.020"	-	115.56	
50796	-	.5000	1/2"	12.700	1/2"	6"	3"	.030"	-	115.56	
50797	-	.5000	1/2"	12.700	1/2"	6"	3"	.060"	-	115.56	
50798	-	.5000	1/2"	12.700	1/2"	6"	3"	.120"	-	115.56	
50799	-	.5000	1/2"	12.700	1/2"	6"	3"	.190"	-	115.56	
50699	-	.5000	1/2"	12.700	1/2"	6"	3"	BALL	-	115.56	
50610	-	.5000	1/2"	12.700	1/2"	4"	5/8"	-	2-1/4"	.475"	88.51
50228	50276	.5000	1/2"	12.700	1/2"	4"	5/8"	.020"	2-1/4"	.470"	93.28
50900	-	.5000	1/2"	12.700	1/2"	4"	5/8"	.030"	2-1/4"	.470"	93.28
50901	-	.5000	1/2"	12.700	1/2"	4"	5/8"	.060"	2-1/4"	.470"	93.28
50902	-	.5000	1/2"	12.700	1/2"	4"	5/8"	.120"	2-1/4"	.470"	93.28
50478	-	.5000	1/2"	12.700	1/2"	4"	5/8"	BALL	2-1/4"	.475"	93.28
50667	-	.5000	1/2"	12.700	1/2"	6"	5/8"	-	3-1/8"	.475"	122.42
50235	-	.5000	1/2"	12.700	1/2"	6"	5/8"	-	4-1/8"	.475"	122.42
50594	-	.5000	1/2"	12.700	1/2"	6"	5/8"	.020"	4-1/8"	.470"	127.15
50596	-	.5000	1/2"	12.700	1/2"	6"	5/8"	.030"	4-1/8"	.470"	127.15
50697	-	.5000	1/2"	12.700	1/2"	6"	5/8"	BALL	3-1/8"	.475"	127.15
50598	-	.5000	1/2"	12.700	1/2"	6"	5/8"	BALL	4-1/8"	.475"	127.15
50698	-	.5000	1/2"	12.700	1/2"	6"	1"	BALL	4-1/2"	.475"	127.15
50545	50546	.6250	5/8"	15.875	5/8"	3"	3/4"	-	-	-	99.29
50903	-	.6250	5/8"	15.875	5/8"	3"	3/4"	.010"	-	-	107.10
50904	-	.6250	5/8"	15.875	5/8"	3"	3/4"	.015"	-	-	107.10
50498	50499	.6250	5/8"	15.875	5/8"	3"	3/4"	.020"	-	-	107.10
50500	50501	.6250	5/8"	15.875	5/8"	3"	3/4"	.030"	-	-	107.10
50502	50503	.6250	5/8"	15.875	5/8"	3"	3/4"	.060"	-	-	107.10
50905	-	.6250	5/8"	15.875	5/8"	3"	3/4"	.090"	-	-	107.10
50906	-	.6250	5/8"	15.875	5/8"	3"	3/4"	.120"	-	-	107.10
50907	-	.6250	5/8"	15.875	5/8"	3"	3/4"	.125"	-	-	107.10
50908	-	.6250	5/8"	15.875	5/8"	3"	3/4"	.156"	-	-	107.10
50909	-	.6250	5/8"	15.875	5/8"	3"	3/4"	.190"	-	-	107.10
50910	-	.6250	5/8"	15.875	5/8"	3"	3/4"	.250"	-	-	107.10
50246	50286	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	-	-	-	104.99
50911	-	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.010"	-	-	110.07
50912	-	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.015"	-	-	110.07
50229	50277	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.020"	-	-	110.07
50534	50535	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.030"	-	-	110.07
50536	-	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.040"	-	-	110.07
50538	50539	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.060"	-	-	110.07
50913	-	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.090"	-	-	110.07
50230	50278	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.120"	-	-	110.07
50914	-	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.125"	-	-	110.07
50915	-	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.156"	-	-	110.07
50916	-	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.190"	-	-	110.07
50917	-	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.250"	-	-	110.07
50262	50294	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	BALL	-	-	110.07

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MATERIAL HARDNESS (Rc)

0

continued →

Series V4S, V4R, V4B (continued)

.6250" - .6299"
(15.875mm - 16.000mm)

EDP#		$d1$ †		$d2$	$l1$	$l2$	r	$l3$	$d3$	LIST PRICE	
(plain)	(weldon)	Decimal	Diameter	Metric	Shank Diameter	Overall Length	Flute Length	Corner Radius	Reach Length		Neck Diameter
50669	-	.6250	5/8"	15.875	5/8"	4"	1-1/2"	-	-	-	112.13
50918	-	.6250	5/8"	15.875	5/8"	4"	1-1/2"	.010"	-	-	119.66
50919	-	.6250	5/8"	15.875	5/8"	4"	1-1/2"	.015"	-	-	119.66
50920	-	.6250	5/8"	15.875	5/8"	4"	1-1/2"	.020"	-	-	119.66
50921	-	.6250	5/8"	15.875	5/8"	4"	1-1/2"	.030"	-	-	119.66
50922	-	.6250	5/8"	15.875	5/8"	4"	1-1/2"	.060"	-	-	119.66
50923	-	.6250	5/8"	15.875	5/8"	4"	1-1/2"	.090"	-	-	119.66
50924	-	.6250	5/8"	15.875	5/8"	4"	1-1/2"	.120"	-	-	119.66
50925	-	.6250	5/8"	15.875	5/8"	4"	1-1/2"	.125"	-	-	119.66
50926	-	.6250	5/8"	15.875	5/8"	4"	1-1/2"	.156"	-	-	119.66
50927	-	.6250	5/8"	15.875	5/8"	4"	1-1/2"	.190"	-	-	119.66
50928	-	.6250	5/8"	15.875	5/8"	4"	1-1/2"	.250"	-	-	119.66
50700	-	.6250	5/8"	15.875	5/8"	4"	1-1/2"	BALL	-	-	119.66
50612	-	.6250	5/8"	15.875	5/8"	4"	1-5/8"	-	-	-	112.13
50670	-	.6250	5/8"	15.875	5/8"	4"	1-3/4"	-	-	-	112.13
50701	-	.6250	5/8"	15.875	5/8"	4"	1-3/4"	BALL	-	-	119.66
50547	-	.6299		16.000	16.0	75	19	-	-	-	103.81
50504	-	.6299		16.000	16.0	75	19	0.50	-	-	111.81
50506	-	.6299		16.000	16.0	75	19	1.00	-	-	111.81
50508	-	.6299		16.000	16.0	75	19	3.00	-	-	111.81
50929	-	.6299		16.000	16.0	75	19	4.00	-	-	111.81
50930	-	.6299		16.000	16.0	75	19	5.00	-	-	111.81
50931	-	.6299		16.000	16.0	75	19	6.00	-	-	111.81
50247	50287	.6299		16.000	16.0	88	32	-	-	-	109.55
50231	50279	.6299		16.000	16.0	88	32	0.50	-	-	114.88
50409	50410	.6299		16.000	16.0	88	32	0.75	-	-	114.88
50411	50412	.6299		16.000	16.0	88	32	1.00	-	-	114.88
50413	50414	.6299		16.000	16.0	88	32	1.50	-	-	114.88
50415	50416	.6299		16.000	16.0	88	32	2.00	-	-	114.88
50932	-	.6299		16.000	16.0	88	32	2.50	-	-	114.88
50417	50418	.6299		16.000	16.0	88	32	3.00	-	-	114.88
50933	-	.6299		16.000	16.0	88	32	4.00	-	-	114.88
50934	-	.6299		16.000	16.0	88	32	5.00	-	-	114.88
50935	-	.6299		16.000	16.0	88	32	6.00	-	-	114.88
50263	50295	.6299		16.000	16.0	88	32	BALL	-	-	114.88
50671	-	.6299		16.000	16.0	100	48	-	-	-	116.46
50936	-	.6299		16.000	16.0	100	48	0.50	-	-	122.15
50937	-	.6299		16.000	16.0	100	48	1.00	-	-	122.15
50938	-	.6299		16.000	16.0	100	48	1.50	-	-	122.15
50939	-	.6299		16.000	16.0	100	48	2.00	-	-	122.15
50940	-	.6299		16.000	16.0	100	48	3.00	-	-	122.15
50941	-	.6299		16.000	16.0	100	48	4.00	-	-	122.15
50942	-	.6299		16.000	16.0	100	48	5.00	-	-	122.15
50943	-	.6299		16.000	16.0	100	48	6.00	-	-	122.15
50702	-	.6299		16.000	16.0	100	48	BALL	-	-	122.15

MATERIAL HARDNESS (Rc)

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EDP#		$d1^{\dagger}$		$d2$	$l1$	$l2$	r	$l3$	$d3$	LIST PRICE	
(plain)	(weldon)	Decimal	Diameter								Shank Diameter
50548	-	.7500	3/4"	19.050	3/4"	3"	7/8"	-	-	-	146.67
50944	-	.7500	3/4"	19.050	3/4"	3"	7/8"	.010"	-	-	154.50
50945	-	.7500	3/4"	19.050	3/4"	3"	7/8"	.015"	-	-	154.50
50946	-	.7500	3/4"	19.050	3/4"	3"	7/8"	.020"	-	-	154.50
50556	-	.7500	3/4"	19.050	3/4"	3"	7/8"	.030"	-	-	154.50
50947	-	.7500	3/4"	19.050	3/4"	3"	7/8"	.060"	-	-	154.50
50948	-	.7500	3/4"	19.050	3/4"	3"	7/8"	.120"	-	-	154.50
50549	50550	.7500	3/4"	19.050	3/4"	4"	1"	-	-	-	149.88
50949	-	.7500	3/4"	19.050	3/4"	4"	1"	.010"	-	-	157.85
50950	-	.7500	3/4"	19.050	3/4"	4"	1"	.015"	-	-	157.85
50510	50511	.7500	3/4"	19.050	3/4"	4"	1"	.020"	-	-	157.85
50512	50513	.7500	3/4"	19.050	3/4"	4"	1"	.030"	-	-	157.85
50514	50515	.7500	3/4"	19.050	3/4"	4"	1"	.060"	-	-	157.85
50951	-	.7500	3/4"	19.050	3/4"	4"	1"	.090"	-	-	157.85
50952	-	.7500	3/4"	19.050	3/4"	4"	1"	.120"	-	-	157.85
50954	-	.7500	3/4"	19.050	3/4"	4"	1"	.250"	-	-	157.85
50955	-	.7500	3/4"	19.050	3/4"	4"	1"	.3125"	-	-	157.85
50248	50288	.7500	3/4"	19.050	3/4"	4"	1-1/2"	-	-	-	149.88
50956	-	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.010"	-	-	157.85
50957	-	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.015"	-	-	157.85
50516	50517	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.020"	-	-	157.85
50232	50280	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.030"	-	-	157.85
50518	50519	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.060"	-	-	157.85
50958	-	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.090"	-	-	157.85
50520	50521	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.120"	-	-	157.85
50959	-	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.125"	-	-	157.85
50960	-	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.156"	-	-	157.85
50961	-	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.190"	-	-	157.85
50962	-	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.250"	-	-	157.85
50963	-	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.3125"	-	-	157.85
50264	50296	.7500	3/4"	19.050	3/4"	4"	1-1/2"	BALL	-	-	157.85
50551	50552	.7500	3/4"	19.050	3/4"	4"	1-3/4"	-	-	-	149.88
50964	-	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.010"	-	-	157.85
50965	-	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.015"	-	-	157.85
50522	50523	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.020"	-	-	157.85
50524	50525	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.030"	-	-	157.85
50526	50527	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.060"	-	-	157.85
50966	-	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.090"	-	-	157.85
50967	-	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.120"	-	-	157.85
50968	-	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.125"	-	-	157.85
50969	-	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.156"	-	-	157.85
50970	-	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.190"	-	-	157.85
50971	-	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.250"	-	-	157.85
50972	-	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.3125"	-	-	157.85

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MATERIAL HARDNESS (Rc)

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continued →

Series V4S, V4R, V4B (continued)

.7500" - .7874"
(19.050mm - 20.000mm)

EDP#		$d1$ †		$d2$	$l1$	$l2$	r	$l3$	$d3$	LIST PRICE	
(plain)	(weldon)	Decimal	Diameter	Metric	Shank Diameter	Overall Length	Flute Length	Corner Radius	Reach Length		Neck Diameter
50553	50554	.7500	3/4"	19.050	3/4"	5"	2-1/8"	-	-	-	201.16
50973	-	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.010"	-	-	218.97
50974	-	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.015"	-	-	218.97
50975	-	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.020"	-	-	218.97
50976	-	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.030"	-	-	218.97
50977	-	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.060"	-	-	218.97
50979	-	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.120"	-	-	218.97
50980	-	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.125"	-	-	218.97
50981	-	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.156"	-	-	218.97
50982	-	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.190"	-	-	218.97
50983	-	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.250"	-	-	218.97
50984	-	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.3125"	-	-	218.97
50672	-	.7500	3/4"	19.050	3/4"	5"	2-1/2"	-	-	-	201.16
50985	-	.7500	3/4"	19.050	3/4"	5"	2-1/2"	.010"	-	-	218.97
50986	-	.7500	3/4"	19.050	3/4"	5"	2-1/2"	.015"	-	-	218.97
50987	-	.7500	3/4"	19.050	3/4"	5"	2-1/2"	.020"	-	-	218.97
50988	-	.7500	3/4"	19.050	3/4"	5"	2-1/2"	.030"	-	-	218.97
50989	-	.7500	3/4"	19.050	3/4"	5"	2-1/2"	.060"	-	-	218.97
50990	-	.7500	3/4"	19.050	3/4"	5"	2-1/2"	.090"	-	-	218.97
50991	-	.7500	3/4"	19.050	3/4"	5"	2-1/2"	.120"	-	-	218.97
50992	-	.7500	3/4"	19.050	3/4"	5"	2-1/2"	.125"	-	-	218.97
50993	-	.7500	3/4"	19.050	3/4"	5"	2-1/2"	.156"	-	-	218.97
50994	-	.7500	3/4"	19.050	3/4"	5"	2-1/2"	.190"	-	-	218.97
50995	-	.7500	3/4"	19.050	3/4"	5"	2-1/2"	.250"	-	-	218.97
50996	-	.7500	3/4"	19.050	3/4"	5"	2-1/2"	.3125"	-	-	218.97
50703	-	.7500	3/4"	19.050	3/4"	5"	2-1/2"	BALL	-	-	218.97
50555	-	.7874		20.000	20.0	100	25	-	-	-	202.50
50249	50289	.7874		20.000	20.0	100	38	-	-	-	202.50
50997	-	.7874		20.000	20.0	100	38	0.50	-	-	223.42
50528	-	.7874		20.000	20.0	100	38	1.00	-	-	223.42
50530	-	.7874		20.000	20.0	100	38	2.00	-	-	223.42
50998	-	.7874		20.000	20.0	100	38	2.50	-	-	223.42
50532	-	.7874		20.000	20.0	100	38	3.00	-	-	223.42
50999	-	.7874		20.000	20.0	100	38	4.00	-	-	223.42
50121	-	.7874		20.000	20.0	100	38	5.00	-	-	223.42
50122	-	.7874		20.000	20.0	100	38	6.00	-	-	223.42
50123	-	.7874		20.000	20.0	100	38	8.00	-	-	223.42
50265	50297	.7874		20.000	20.0	100	38	BALL	-	-	223.42
50673	-	.7874		20.000	20.0	100	48	-	-	-	202.50
50124	-	.7874		20.000	20.0	100	48	0.50	-	-	223.42
50125	-	.7874		20.000	20.0	100	48	1.00	-	-	223.42
50126	-	.7874		20.000	20.0	100	48	1.50	-	-	223.42
50127	-	.7874		20.000	20.0	100	48	2.00	-	-	223.42
50128	-	.7874		20.000	20.0	100	48	2.50	-	-	223.42
50129	-	.7874		20.000	20.0	100	48	3.00	-	-	223.42
50131	-	.7874		20.000	20.0	100	48	4.00	-	-	223.42
50132	-	.7874		20.000	20.0	100	48	5.00	-	-	223.42
50133	-	.7874		20.000	20.0	100	48	6.00	-	-	223.42
50134	-	.7874		20.000	20.0	100	48	8.00	-	-	223.42

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MATERIAL HARDNESS (Rc)

EDP#		$d1$ † Diameter		$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	r Corner Radius	$l3$ Reach Length	$d3$ Neck Diameter	LIST PRICE
(plain)	(weldon)	Decimal	Metric							
50674	-	.7874	20.000	20.0	150	60	-	-	-	254.08
50135	-	.7874	20.000	20.0	150	60	0.50	-	-	274.66
50136	-	.7874	20.000	20.0	150	60	1.00	-	-	274.66
50137	-	.7874	20.000	20.0	150	60	3.00	-	-	274.66
50138	-	.7874	20.000	20.0	150	60	6.00	-	-	274.66
50705	-	.7874	20.000	20.0	150	60	BALL	-	-	274.66
50250	50290	1.000	1"	25.400	1"	4"	1-1/2"	-	-	223.91
50139	-	1.000	1"	25.400	1"	4"	1-1/2"	.020"	-	269.50
50233	50281	1.000	1"	25.400	1"	4"	1-1/2"	.030"	-	269.50
50141	-	1.000	1"	25.400	1"	4"	1-1/2"	.060"	-	269.50
50142	-	1.000	1"	25.400	1"	4"	1-1/2"	.090"	-	269.50
50143	-	1.000	1"	25.400	1"	4"	1-1/2"	.120"	-	269.50
50557	-	1.000	1"	25.400	1"	4"	1-1/2"	.125"	-	269.50
50144	-	1.000	1"	25.400	1"	4"	1-1/2"	.156"	-	269.50
50145	-	1.000	1"	25.400	1"	4"	1-1/2"	.190"	-	269.50
50146	-	1.000	1"	25.400	1"	4"	1-1/2"	.250"	-	269.50
50147	-	1.000	1"	25.400	1"	4"	1-1/2"	.3125"	-	269.50
50148	-	1.000	1"	25.400	1"	4"	1-1/2"	.375"	-	269.50
50266	50298	1.000	1"	25.400	1"	4"	1-1/2"	BALL	-	269.50
50675	-	1.000	1"	25.400	1"	4-1/2"	2"	-	-	263.33
50149	-	1.000	1"	25.400	1"	4-1/2"	2"	.020"	-	300.56
50151	-	1.000	1"	25.400	1"	4-1/2"	2"	.030"	-	300.56
50152	-	1.000	1"	25.400	1"	4-1/2"	2"	.060"	-	300.56
50153	-	1.000	1"	25.400	1"	4-1/2"	2"	.090"	-	300.56
50154	-	1.000	1"	25.400	1"	4-1/2"	2"	.120"	-	300.56
50155	-	1.000	1"	25.400	1"	4-1/2"	2"	.156"	-	300.56
50156	-	1.000	1"	25.400	1"	4-1/2"	2"	.190"	-	300.56
50157	-	1.000	1"	25.400	1"	4-1/2"	2"	.250"	-	300.56
50158	-	1.000	1"	25.400	1"	4-1/2"	2"	.3125"	-	300.56
50706	-	1.000	1"	25.400	1"	4-1/2"	2"	BALL	-	300.56
50234	50282	1.000	1"	25.400	1"	5"	2-1/8"	.030"	-	331.60
50676	-	1.000	1"	25.400	1"	5"	2-1/2"	-	-	299.73
50159	-	1.000	1"	25.400	1"	5"	2-1/2"	.020"	-	331.60
50161	-	1.000	1"	25.400	1"	5"	2-1/2"	.030"	-	331.60
50162	-	1.000	1"	25.400	1"	5"	2-1/2"	.060"	-	331.60
50163	-	1.000	1"	25.400	1"	5"	2-1/2"	.090"	-	331.60
50164	-	1.000	1"	25.400	1"	5"	2-1/2"	.120"	-	331.60
50165	-	1.000	1"	25.400	1"	5"	2-1/2"	.156"	-	331.60
50166	-	1.000	1"	25.400	1"	5"	2-1/2"	.190"	-	331.60
50167	-	1.000	1"	25.400	1"	5"	2-1/2"	.250"	-	331.60
50168	-	1.000	1"	25.400	1"	5"	2-1/2"	.3125"	-	331.60
50707	-	1.000	1"	25.400	1"	5"	2-1/2"	BALL	-	331.60

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MATERIAL HARDNESS (Rc)

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