

# AXIALLY INSTALLED

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## EXTERNAL – BEVELED

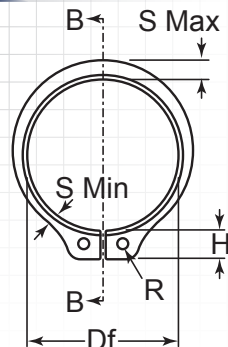


### DESCRIPTION

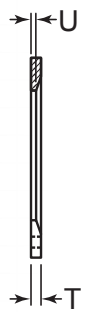
These rings look exactly like their SH counterpart, except they have a 15° bevel on the inner edge. This combines with a complimentary groove bevel to eliminate end play by wedging itself between the groove and the retained part.

### HOW TO IDENTIFY

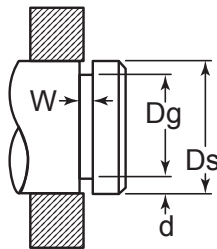
1. Verify beveled external design and appearance.
2. Measure the shaft diameter (Ds).
3. Measure the maximum ring cross section (S Max).
4. Measure the minimum ring cross section (S Min).
5. Measure the ring thickness (T).
6. Find the part in the chart.



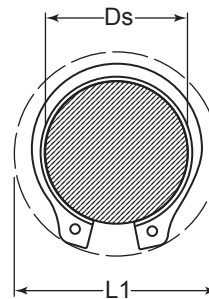
Ring Dimensions with Section B-B



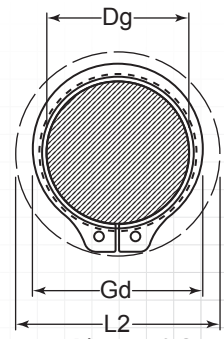
Section B-B



Groove Dimensions



Clearance Diameter Expanded Over Shaft



Clearance Diameter & Gauging Diameter Released in Groove.

Item #	Shaft Diameter	Groove Size					Ring Size & Weight							Clearance Diameter	
		Diameter		Width		Depth	Free Diameter		Thickness <sup>2</sup>		Thickness Beveled End		Weight Per 1,000 pcs.	Expanded Over Shaft	Released in Groove
	Ds	Dg	Tol.	W	Tol.	d	Df	Tol.	T	Tol.	U	Tol.	Lbs.	L1	L2
VSH-100	1.000" (1)	.930"	+.000/- .003"	.037"	+.005/- .000"	.035"	.925"	+.005/- .010"	.042"	±.002"	.034"	±.001"	3.6	1.41"	1.38"
VSH-102	1.023"	.951"	.004"***	.036"		.036"	.946"	+.010/- .015"	.042"	±.002"	.033"	±.001"	3.9	1.43"	1.40"
VSH-106	1.062" (1-1/16)	.992"		.044"		.035"	.982"		.050"	±.002"	.041"	±.001"	4.8	1.50"	1.47"
VSH-112	1.125" (1-1/8)	1.051"		.044"		.037"	1.041"		.050"	±.002"	.041"	±.001"	5.1	1.55"	1.52"
VSH-119	1.188" (1-3/16)	1.108"		.044"		.040"	1.098"		.050"	±.002"	.041"	±.001"	5.6	1.61"	1.57"
VSH-125	1.250" (1-1/4)	1.166"	+.000/- .004"	.043"		.042"	1.156"	+.013/- .020"	.050"	±.002"	.040"	±.001"	5.9	1.69"	1.65"
VSH-131	1.312" (1-5/16)	1.224"	.005"***	.042"		.044"	1.214"		.050"	±.002"	.039"	±.001"	6.8	1.75"	1.71"
VSH-137	1.375" (1-3/8)	1.282"		.042"		.046"	1.272"		.050"	±.002"	.039"	±.001"	7.2	1.80"	1.76"
VSH-143	1.438" (1-7/16)	1.343"		.042"		.047"	1.333"		.050"	±.002"	.039"	±.001"	8.1	1.87"	1.83"
VSH-150	1.500" (1-1/2)	1.397"		.041"		.051"	1.387"	+.015/- .025"	.050"	±.002"	.038"	±.001"	9.0	1.99"	1.95"
VSH-157	1.562" (1-9/16)	1.459"		.053"		.051"	1.446"		.062"	±.003"	.049"	±.001"	12.4	2.10"	2.05"
VSH-162	1.625" (1-5/8)	1.516"		.053"		.054"	1.503"		.062"	±.003"	.049"	±.001"	13.2	2.17"	2.13"
VSH-168	1.688" (1-11/16)	1.573"		.052"		.057"	1.560"		.062"	±.003"	.048"	±.001"	14.8	2.24"	2.20"
VSH-175	1.750" (1-3/4)	1.631"		.052"		.059"	1.618"		.062"	±.003"	.048"	±.001"	15.3	2.31"	2.26"
VSH-177	1.772"	1.650"	+.000/- .005"	.052"		.061"	1.637"		.062"	±.003"	.048"	±.001"	15.4	2.33"	2.28"
VSH-181	1.812" (1-13/16)	1.688"	.005"***	.052"		.062"	1.675"		.062"	±.003"	.048"	±.001"	16.2	2.38"	2.33"
VSH-187	1.875" (1-7/8)	1.748"		.052"	.063"	1.735"	.062"		±.003"	.048"	±.001"	17.3	2.44"	2.39"	
VSH-196	1.969" (1-31/32)	1.832"		.051"	.068"	1.819"	.062"	±.003"	.047"	±.001"	18.0	3.09"	2.54"		
VSH-200	2.000" (2)	1.863"		.051"	.068"	1.850"	+.015/- .025"	.062"	±.003"	.047"	±.001"	19.0	3.10"	2.57"	
VSH-206	2.062" (2-1/16)	1.921"		.067"	.070"	1.906"		.078"	±.003"	.062"	±.0015"	25.0	3.22"	2.68"	
VSH-212	2.125" (2-1/8)	1.979"	+.000/- .006"	.067"	.073"	1.964"		.078"	±.003"	.062"	±.0015"	26.1	3.29"	2.78"	
VSH-215	2.156" (2-5/32)	2.008"	.006"***	.067"	.074"	1.993"		.078"	±.003"	.062"	±.0015"	26.3	3.40"	2.81"	
VSH-225	2.250" (2-1/4)	2.096"		.066"	.077"	2.081"		.078"	±.003"	.061"	±.0015"	27.7	3.51"	2.90"	

TO ORDER DIFFERENT MATERIAL/FINISHES,  
APPEND SUFFIX WITH YOUR CHOICE:  
"NONE" • -BC • -SS • -ZD • -Z3

Additional attribute data on adjacent page. ►

FOR DETAILED SPECIFICATIONS AND TOLERANCES, VISIT HUYETT.COM.

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## EXTERNAL – BEVELED

### SUFFIX MATERIAL/FINISH

- ### = CARBON SPRING STEEL, PHOSPHATE
- ###-BC = BERYLLIUM COPPER, PLAIN
- ###-SS = PH 15-7 MO STAINLESS STEEL, PLAIN
- ###-ZD = CARBON SPRING STEEL, ZINC YELLOW
- ###-Z3 = CARBON SPRING STEEL, ZINC TRIVALENT

Material/finish combinations may not be available in all sizes.  
More finishes available, see page 22 for a complete listing.

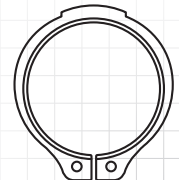


### ALTERNATE DESIGNS

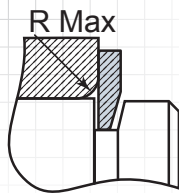
(Manufacturer's Option)



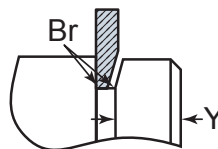
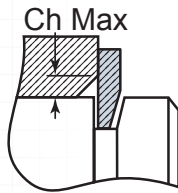
Asymmetrical Design



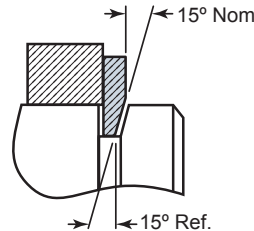
Alternate Lug Design for Larger Sizes



Maximum Corner Radius (R Max) & Chamfer (Ch Max) for Retained Part



Maximum Bottom Radii (Br),  
.005 for ring sizes VSH-100 – VSH-200;  
.010 for ring sizes VSH-206 – VSH-1000



Item #	Allowable Corner Radii & Chamfers		Max. Load w/R Max. or Ch Max.	Edge Margin	End Play Take Up	Lug Height		Maximum Section		Minimum Section		Hole Diameter		Gauging Dia.	Thrust Load <sup>1</sup> Square Corner Abutment	
	R Max.	Ch Max.				H	Tol.	S Max.	Tol.	S Min.	Tol.	R	Tol.		Ring Safety Factor of 4	Groove Safety Factor of 2
VSH-100	.057"	.034"	1,340	.052"	.005"	.167"	±.004"	.116"	±.005"	.065"	±.005"	.078"		1.144"	5,024	1,200
VSH-102	.058"	.035"	1,340	.054"	.005"	.168"	±.004"	.118"	±.005"	.066"	±.005"	.078"		1.170"	5,126	1,300
VSH-106	.060"	.036"	1,950	.052"	.005"	.181"	±.004"	.122"	±.006"	.069"	±.006"	.078"		1.217"	6,293	1,300
VSH-112	.063"	.038"	1,950	.055"	.005"	.182"	±.004"	.128"	±.006"	.071"	±.006"	.078"		1.286"	6,699	1,450
VSH-119	.064"	.0385"	1,950	.060"	.005"	.198"	±.004"	.132"	±.006"	.072"	±.006"	.078"		1.351"	7,105	1,650
VSH-125	.068"	.041"	1,950	.063"	.0055"	.183"	±.004"	.140"	±.006"	.076"	±.006"	.078"		1.424"	7,460	1,850
VSH-131	.068"	.041"	1,950	.066"	.006"	.183"	±.004"	.146"	±.006"	.0765"	±.006"	.078"		1.490"	7,866	2,000
VSH-137	.072"	.043"	1,950	.069"	.006"	.184"	±.004"	.152"	±.006"	.082"	±.006"	.078"		1.562"	8,222	2,250
VSH-143	.076"	.045"	1,950	.070"	.006"	.184"	±.004"	.160"	±.006"	.086"	±.006"	.078"		1.636"	8,628	2,450
VSH-150	.079"	.047"	1,950	.076"	.007"	.214"	±.004"	.168"	±.006"	.091"	±.006"	.120"		1.706"	8,932	2,700
VSH-157	.082"	.049"	3,000	.076"	.007"	.255"	±.004"	.172"	±.006"	.093"	±.006"	.125"	+0.015/ -.002"	1.778"	11,571	2,900
VSH-162	.087"	.052"	3,000	.081"	.0075"	.235"	±.004"	.180"	±.006"	.097"	±.006"	.125"		1.849"	12,028	3,100
VSH-168	.09"	.054"	3,000	.085"	.0075"	.235"	±.004"	.184"	±.006"	.099"	±.006"	.125"		1.912"	12,535	3,400
VSH-175	.091"	.054"	3,000	.088"	.008"	.260"	±.005"	.188"	±.006"	.101"	±.006"	.125"		1.981"	12,992	3,650
VSH-177	.092"	.055"	3,000	.090"	.008"	.237"	±.005"	.190"	±.006"	.102"	±.006"	.125"		2.004"	13,144	3,750
VSH-181	.092"	.055"	3,000	.093"	.008"	.238"	±.005"	.192"	±.006"	.102"	±.006"	.125"		2.047"	13,449	3,950
VSH-187	.094"	.056"	3,000	.094"	.0085"	.239"	±.005"	.196"	±.006"	.104"	±.006"	.125"		2.114"	13,906	4,200
VSH-196	.094"	.056"	3,000	.102"	.009"	.245"	±.005"	.200"	±.006"	.106"	±.006"	.125"		2.209"	14,565	4,700
VSH-200	.096"	.057"	3,000	.102"	.009"	.239"	±.005"	.204"	±.006"	.108"	±.006"	.125"		2.246"	14,819	4,800
VSH-206	.098"	.059"	5,000	.105"	.0095"	.266"	±.005"	.208"	±.007"	.111"	±.007"	.125"		2.315"	19,234	5,100
VSH-212	.098"	.059"	5,000	.109"	.010"	.280"	±.005"	.212"	±.007"	.113"	±.007"	.125"		2.386"	19,793	5,450
VSH-215	.097"	.058"	5,000	.111"	.010"	.280"	±.005"	.212"	±.007"	.113"	±.007"	.125"		2.410"	20,097	5,600
VSH-225	.100"	.060"	5,000	.115"	.010"	.280"	±.005"	.220"	±.007"	.116"	±.007"	.125"		2.513"	21,011	6,100

◀ Additional attribute data on adjacent page.

For hardness specifications, see page 113.

\*\* F.I.M. (Full Indicator Movement) – Maximum allowable deviation of runout between groove and shaft.

<sup>1</sup> Based on housings/shafts made of cold rolled steel. For more information on thrust load and safety factor see pages 14 & 15.

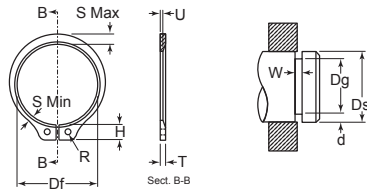
<sup>2</sup> For plated rings add .002" to the listed maximum thickness (T) and beveled end thickness (U) values.

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## EXTERNAL – BEVELED



### HOW TO IDENTIFY

1. Verify beveled external design and appearance.
2. Measure the shaft diameter (Ds).
3. Measure the maximum ring cross section (S Max).
4. Measure the minimum ring cross section (S Min).
5. Measure the ring thickness (T).
6. Find the part in the chart.

Item #	Shaft Diameter	Groove Size					Ring Size & Weight							Clearance Diameter	
		Diameter		Width		Depth	Free Diameter		Thickness <sup>2</sup>		Thickness Beveled End		Weight Per 1,000 pcs.	Expanded Over Shaft	Released in Groove
		D <sub>s</sub>	D <sub>g</sub>	Tol.	W	Tol.	d	D <sub>f</sub>	Tol.	T	Tol.	U	Tol.	lbs.	L1
VSH-231	2.312" (2-5/16)	2.154"	+.000/- .006" .006"***	.065"	+.007/ -.000"	.079"	2.139"	+.015/ -.025"	.078"	±.003"	.060"	±.0015"	28.0	3.58"	2.97"
VSH-237	2.375" (2-3/8)	2.212"		.065"		.081"	2.197"		.078"	±.003"	.060"	±.0015"	29.2	3.50"	3.06"
VSH-243	2.438" (2-7/16)	2.270"		.065"		.084"	2.255"		.078"	±.003"	.060"	±.0015"	29.5	3.64"	3.07"
VSH-250	2.500" (2-1/2)	2.328"		.064"		.086"	2.313"	.078"	±.003"	.059"	±.0015"	29.7	3.17"	3.09"	
VSH-255	2.559"	2.397"		.064"		.081"	2.377"	.078"	±.003"	.059"	±.0015"	33.9	3.18"	3.10"	
VSH-262	2.625" (2-5/8)	2.448"		.064"		.088"	2.428"	.078"	±.003"	.059"	±.0015"	35.0	3.30"	3.22"	
VSH-268	2.688" (2-11/16)	2.505"		.064"		.091"	2.485"	.078"	±.003"	.059"	±.0015"	36.0	3.37"	3.29"	
VSH-275	2.750" (2-3/4)	2.563"		.079"		.093"	2.543"	.093"	±.003"	.073"	±.002"	47.0	3.48"	3.40"	
VSH-287	2.875" (2-7/8)	2.679"		.078"		.098"	2.659"	.093"	±.003"	.072"	±.002"	48.5	3.60"	3.51"	
VSH-293	2.938" (2-15/16)	2.737"		.078"		.100"	2.717"	.093"	±.003"	.072"	±.002"	50.0	3.67"	3.58"	
VSH-300	3.000" (3)	2.795"		.077"		.102"	2.775"	.093"	±.003"	.071"	±.002"	52.0	3.60"	3.50"	
VSH-306	3.062" (3-1/16)	2.852"		.077"		.105"	2.832"	.093"	±.003"	.071"	±.002"	47.0	3.74"	3.64"	
VSH-312	3.125" (3-1/8)	2.912"		.076"		.106"	2.892"	.093"	±.003"	.070"	±.002"	58.0	3.85"	3.76"	
VSH-315	3.156" (3-5/32)	2.940"		.076"		.108"	2.920"	.093"	±.003"	.070"	±.002"	59.0	3.88"	3.78"	
VSH-325	3.250" (3-1/4)	3.026"		.076"		.112"	3.006"	.093"	±.003"	.070"	±.002"	62.0	3.93"	3.83"	
VSH-334	3.346" (3-11/32)	3.112"		.075"		.117"	3.092"	.093"	±.003"	.069"	±.002"	64.0	4.02"	3.92"	
VSH-343	3.438" (3-7/16)	3.199"		.075"		.119"	3.179"	.093"	±.003"	.069"	±.002"	66.0	4.12"	4.01"	
VSH-350	3.500" (3-1/2)	3.257"		.091"		.121"	3.237"	.109"	±.003"	.084"	±.0025"	72.0	4.16"	4.05"	
VSH-354	3.543"	3.297"		.091"		.123"	3.277"	.109"	±.003"	.084"	±.0025"	73.0	4.25"	4.14"	
VSH-362	3.625" (3-5/8)	3.372"		.090"		.126"	3.352"	.109"	±.003"	.083"	±.0025"	76.0	4.33"	4.21"	
VSH-368	3.688" (3-11/16)	3.430"	.090"	.129"	3.410"	.109"	±.003"	.083"	±.0025"	80.0	4.39"	4.27"			
VSH-375	3.750" (3-3/4)	3.488"	.089"	.131"	3.468"	.109"	±.003"	.082"	±.0025"	83.0	4.52"	4.40"			
VSH-387	3.875" (3-7/8)	3.604"	.089"	.135"	3.584"	.109"	±.003"	.082"	±.0025"	88.0	4.62"	4.49"			
VSH-393	3.938" (3-15/16)	3.662"	.088"	.138"	3.642"	.109"	±.003"	.081"	±.0025"	95.0	4.70"	4.57"			
VSH-400	4.000" (4)	3.720"	.088"	.140"	3.700"	.109"	±.003"	.081"	±.0025"	101.0	4.76"	4.63"			
VSH-425	4.250" (4-1/4)	4.009"	.094"	.120"	3.989"	.109"	±.003"	.087"	±.0025"	112.0	4.98"	4.87"			
VSH-437	4.375" (4-3/8)	4.126"	.094"	.124"	4.106"	.109"	±.003"	.087"	±.0025"	115.0	5.11"	4.99"			
VSH-450	4.500" (4-1/2)	4.243"	.094"	.128"	4.223"	.109"	±.003"	.087"	±.0025"	132.0	5.37"	5.25"			
VSH-475	4.750" (4-3/4)	4.478"	.092"	.136"	4.458"	.109"	±.003"	.085"	±.0025"	113.0	5.62"	5.49"			
VSH-500	5.000" (5)	4.712"	.091"	.144"	4.692"	.109"	±.003"	.084"	±.0025"	149.0	5.87"	5.74"			
VSH-525	5.250" (5-1/4)	4.947"	+.000/- .007" .006"***	.105"	+.008/ -.000"	.151"	4.927"	+.020/ -.040"	.125"	±.004"	.098"	±.003"	190.0	6.20"	6.05"
VSH-550	5.500" (5-1/2)	5.182"		.104"		.159"	5.162"		.125"	±.004"	.097"	±.003"	201.0	6.45"	6.30"
VSH-575	5.750" (5-3/4)	5.416"		.103"		.167"	5.396"		.125"	±.004"	.096"	±.003"	199.0	6.69"	6.53"
VSH-600	6.000" (6)	5.651"		.102"		.174"	5.631"		.125"	±.004"	.095"	±.003"	210.0	6.95"	6.78"

TO ORDER DIFFERENT MATERIAL/FINISHES,  
APPEND SUFFIX WITH YOUR CHOICE:  
"NONE" • -BC • -SS • -ZD • -Z3

Additional attribute data on adjacent page. ►

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## EXTERNAL – BEVELED



### SUFFIX MATERIAL/FINISH

- ### = CARBON SPRING STEEL, PHOSPHATE
- ###-BC = BERYLLIUM COPPER, PLAIN
- ###-SS = PH 15-7 MO STAINLESS STEEL, PLAIN
- ###-ZD = CARBON SPRING STEEL, ZINC YELLOW
- ###-Z3 = CARBON SPRING STEEL, ZINC TRIVALENT

Material/finish combinations may not be available in all sizes.  
More finishes available, see page 22 for a complete listing.

Item #	Allowable Corner Radii & Chamfers		Max. Load w/R Max. or Ch Max.	Edge Margin	End Play Take Up	Lug Height		Maximum Section		Minimum Section		Hole Diameter		Gauging Dia.	Thrust Load <sup>1</sup>	
															Square Corner Abutment	
	Ring Safety Factor of 4	Groove Safety Factor of 2														
	R Max.	Ch Max.	P'r lbs.	Y		H	Tol.	S Max.	Tol.	S Min.	Tol.	R	Tol.	Gd Min.	Pr lbs.	Pg lbs.
VSH-231	.100"	.060"	5,000	.118"	.0105"	.280"	±.005"	.222"	±.007"	.118"	±.007"	.125"		2.577"	21,518	6,300
VSH-237	.100"	.060"	5,000	.121"	.011"	.292"	±.005"	.224"	±.007"	.119"	±.007"	.125"		2.640"	22,127	6,800
VSH-243	.102"	.061"	5,000	.126"	.011"	.268"	±.005"	.228"	±.007"	.120"	±.007"	.125"		2.706"	22,736	7,100
VSH-250	.104"	.062"	5,000	.129"	.0115"	.292"	±.005"	.232"	±.007"	.122"	±.007"	.125"		2.772"	23,345	7,500
VSH-255	.108"	.065"	5,000	.121"	.011"	.268"	±.005"	.238"	±.007"	.125"	±.007"	.125"		2.845"	23,853	7,300
VSH-262	.1095"	.066"	5,000	.132"	.0115"	.292"	±.005"	.242"	±.007"	.127"	±.007"	.125"		2.910"	24,462	8,200
VSH-268	.1115"	.067"	5,000	.136"	.012"	.292"	±.005"	.246"	±.007"	.129"	±.007"	.125"		2.975"	25,071	8,600
VSH-275	.112"	.067"	7,350	.139"	.012"	.324"	±.005"	.248"	±.007"	.131"	±.007"	.125"		3.041"	30,552	9,000
VSH-287	.115"	.069"	7,350	.147"	.013"	.324"	±.005"	.256"	±.007"	.133"	±.007"	.125"		3.172"	31,973	9,900
VSH-293	.116"	.070"	7,350	.150"	.0135"	.324"	±.005"	.260"	±.007"	.136"	±.007"	.125"		3.239"	32,683	10,300
VSH-300	.117"	.070"	7,350	.153"	.0135"	.264"	±.005"	.264"	±.007"	.138"	±.007"	.125"		3.306"	33,394	10,700
VSH-306	.107"	.064"	7,350	.157"	.014"	.300"	±.005"	.300"	±.007"	.131"	±.007"	.125"		3.347"	34,003	11,200
VSH-312	.120"	.072"	7,350	.159"	.014"	.324"	±.005"	.272"	±.008"	.141"	±.008"	.125"		3.439"	34,815	11,700
VSH-315	.1205"	.072"	7,350	.162"	.0145"	.324"	±.005"	.274"	±.008"	.143"	±.008"	.125"		3.469"	35,119	11,900
VSH-325	.123"	.074"	7,350	.168"	.015"	.300"	±.005"	.300"	±.008"	.145"	±.008"	.125"	+.015/ -.002"	3.571"	36,134	12,700
VSH-334	.126"	.076"	7,350	.175"	.0155"	.300"	±.005"	.300"	±.008"	.147"	±.008"	.125"		3.669"	37,251	13,600
VSH-343	.129"	.077"	7,350	.178"	.016"	.300"	±.005"	.300"	±.008"	.148"	±.008"	.125"		3.767"	38,266	14,300
VSH-350	.122"	.073"	10,500	.181"	.016"	.285"	±.005"	.285"	±.008"	.148"	±.008"	.125"		3.821"	45,574	14,800
VSH-354	.123"	.074"	10,500	.184"	.0165"	.310"	±.005"	.310"	±.008"	.149"	±.008"	.125"		3.866"	46,183	15,200
VSH-362	.127"	.076"	10,500	.189"	.017"	.310"	±.005"	.310"	±.008"	.153"	±.008"	.125"		3.956"	47,299	16,300
VSH-368	.1295"	.078"	10,500	.193"	.017"	.310"	±.005"	.310"	±.008"	.156"	±.008"	.125"		4.026"	48,010	16,500
VSH-375	.133"	.080"	10,500	.196"	.0175"	.342"	±.005"	.342"	±.008"	.160"	±.008"	.125"		4.098"	48,822	17,200
VSH-387	.137"	.082"	10,500	.202"	.018"	.342"	±.005"	.342"	±.008"	.163"	±.008"	.125"		4.229"	50,446	18,300
VSH-393	.137"	.082"	10,500	.207"	.0185"	.342"	±.005"	.342"	±.008"	.163"	±.008"	.125"		4.290"	51,359	19,000
VSH-400	.135"	.081"	10,500	.210"	.019"	.342"	±.005"	.342"	±.008"	.163"	±.008"	.125"	4.350"	52,171	19,600	
VSH-425	.146"	.088"	10,500	.18"	.016"	.342"	±.008"	.342"	±.010"	.176"	±.010"	.125"	4.620"	55,419	18,000	
VSH-437	.146"	.088"	10,500	.186"	.017"	.342"	±.008"	.342"	±.010"	.181"	±.010"	.125"	4.740"	57,043	19,000	
VSH-450	.102"	.061"	10,500	.192"	.017"	.405"	±.008"	.405"	±.010"	.185"	±.010"	.125"	4.920"	58,667	20,200	
VSH-475	.115"	.069"	10,500	.204"	.018"	.405"	±.008"	.405"	±.010"	.136"	±.010"	.125"	5.060"	61,915	22,700	
VSH-500	.165"	.099"	10,500	.216"	.019"	.405"	±.008"	.405"	±.010"	.194"	±.010"	.156"	+.020/ -.005"	5.410"	65,163	25,400
VSH-525	.169"	.101"	13,500	.226"	.020"	.435"	±.008"	.435"	±.010"	.211"	±.010"	.156"		5.670"	78,460	28,000
VSH-550	.175"	.105"	13,500	.238"	.021"	.497"	±.008"	.390"	±.010"	.209"	±.010"	.156"		5.940"	82,215	30,800
VSH-575	.184"	.110"	13,500	.250"	.022"	.518"	±.008"	.435"	±.010"	.220"	±.010"	.156"		6.210"	85,971	33,800
VSH-600	.143"	.086"	13,500	.261"	.023"	.540"	±.008"	.435"	±.010"	.171"	±.010"	.156"		6.380"	89,625	37,000

◀ Additional attribute data on adjacent page.

For hardness specifications, see page 113.

\*\* F.I.M. (Full Indicator Movement) – Maximum allowable deviation of runout between groove and shaft.

<sup>1</sup> Based on housings/shafts made of cold rolled steel. For more information on thrust load and safety factor see pages 14 & 15.

<sup>2</sup> For plated rings add .002" to the listed maximum thickness (T) and beveled end thickness (U) values.

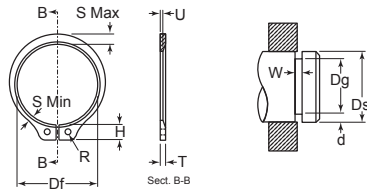
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## EXTERNAL – BEVELED



### HOW TO IDENTIFY

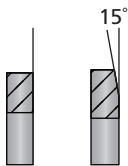
1. Verify beveled external design and appearance.
2. Measure the shaft diameter (Ds).
3. Measure the maximum ring cross section (S Max).
4. Measure the minimum ring cross section (S Min).
5. Measure the ring thickness (T).
6. Find the part in the chart.

Item #	Shaft Diameter	Groove Size					Ring Size & Weight							Clearance Diameter	
		Diameter		Width		Depth	Free Diameter		Thickness <sup>2</sup>		Thickness Beveled End		Weight Per 1,000 pcs.	Expanded Over Shaft	Released in Groove
		Ds	Dg	Tol.	W	Tol.	d	Df	Tol.	T	Tol.	U	Tol.	Lbs.	L1
VSH-625	6.250" (6-1/4)	5.886"	+.000/- .008" .006"***	.132"	+.008/ -.000"	.182"	5.866"	+.020/ -.050"	.156"	±.005"	.124"	±.003"	282.0	7.31"	7.14"
VSH-650	6.500" (6-1/2)	6.120"		.131"		.190"	6.100"		.156"	±.005"	.123"	±.003"	330.0	7.67"	7.49"
VSH-675	6.750" (6-3/4)	6.355"		.130"		.197"	6.335"		.156"	±.005"	.122"	±.003"	356.0	8.06"	7.87"
VSH-700	7.000" (7)	6.590"		.129"		.205"	6.570"	.156"	±.005"	.121"	±.003"	388.0	8.13"	7.93"	
VSH-750	7.500" (7-1/2)	7.059"		.158"		.220"	7.039"	.187"	±.005"	.149"	±.003"	534.0	8.70"	8.49"	
VSH-800	8.000" (8)	7.528"		.157"		.236"	7.508"	.187"	±.005"	.148"	±.003"	628.0	9.24"	9.01"	
VSH-850	8.500" (8-1/2)	7.997"		.154"		.251"	7.977"	.187"	±.005"	.145"	±.003"	700.0	9.79"	9.54"	
VSH-900	9.000" (9)	8.465"		.153"		.267"	8.445"	.187"	±.005"	.144"	±.003"	757.0	10.60"	10.34"	
VSH-950	9.500" (9-1/2)	8.935"		.150"		.282"	8.915"	.187"	±.005"	.141"	±.003"	820.0	11.10"	10.82"	
VSH-1000	10.000" (10)	9.405"		.148"		.297"	9.385"	.187"	±.005"	.139"	±.003"	964.0	11.61"	11.32"	

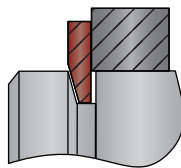
TO ORDER DIFFERENT MATERIAL/FINISHES,  
APPEND SUFFIX WITH YOUR CHOICE:  
"NONE" • -BC • -SS • -ZD • -Z3

Additional attribute data on adjacent page. ►

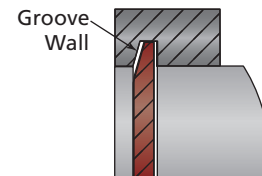
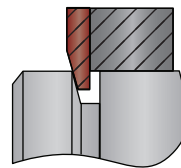
### APPLICATIONS



These rings look exactly like their housing and shaft counterparts, except they feature a 15° beveled or angled edge.



Other applications use the retaining ring to take up end play and to act as a spring or as a preload on parts to reduce chatter or vibration. These rings are either bowed or beveled. The beveled type retaining rings function as a wedge. See page 13 for more information on rigid end play take up.



These rings wedge themselves between the retained part and the groove wall, until the assembly is virtually locked into place.

FOR MORE INFORMATION ON ACCUMULATED TOLERANCES, SEE PAGE 106



Visit [huyett.com](http://huyett.com) to download Material, Compliance, and RoHS/REACH Certifications\* in your Account Order History.

\* Some exclusions apply

FOR DETAILED SPECIFICATIONS AND TOLERANCES, VISIT [HUYETT.COM](http://HUYETT.COM).

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## EXTERNAL – BEVELED

### SUFFIX MATERIAL/FINISH

- ### = CARBON SPRING STEEL, PHOSPHATE
- ###-BC = BERYLLIUM COPPER, PLAIN
- ###-SS = PH 15-7 MO STAINLESS STEEL, PLAIN
- ###-ZD = CARBON SPRING STEEL, ZINC YELLOW
- ###-Z3 = CARBON SPRING STEEL, ZINC TRIVALENT

Material/finish combinations may not be available in all sizes.  
More finishes available, see page 22 for a complete listing.



Item #	Allowable Corner Radii & Chamfers		Max. Load w/R Max. or Ch Max.	Edge Margin	End Play Take Up	Lug Height		Maximum Section		Minimum Section		Hole Diameter		Gauging Dia.	Thrust Load <sup>1</sup> Square Corner Abutment	
	R Max.	Ch Max.				H	Tol.	S Max.	Tol.	S Min.	Tol.	R	Tol.		Ring Safety Factor of 4	Groove Safety Factor of 2
VSH-625	.148"	.089"	21,000	.273"	.024"	.561"	±.012"	.485"	±.015"	.176"	±.015"	.156"		6.650"	116,522	40,000
VSH-650	.191"	.114"	21,000	.285"	.025"	.586"	±.012"	.485"	±.015"	.236"	±.015"	.156"		6.980"	121,191	43,500
VSH-675	.200"	.120"	21,000	.295"	.026"	.608"	±.012"	.515"	±.015"	.246"	±.015"	.187"		7.260"	125,860	47,000
VSH-700	.208"	.125"	21,000	.307"	.027"	.530"	±.012"	.515"	±.015"	.256"	±.015"	.187"		7.520"	130,529	50,500
VSH-750	.220"	.132"	30,000	.330"	.029"	.676"	±.012"	.545"	±.015"	.277"	±.015"	.187"	+.020/ -.005"	8.060"	167,678	58,000
VSH-800	.235"	.141"	30,000	.354"	.032"	.735"	±.012"	.560"	±.015"	.294"	±.015"	.187"		8.590"	178,843	66,500
VSH-850	.250"	.150"	30,000	.376"	.034"	.735"	±.012"	.580"	±.015"	.314"	±.015"	.187"		9.130"	190,008	75,000
VSH-900	.267"	.160"	30,000	.400"	.036"	.735"	±.012"	.609"	±.015"	.333"	±.015"	.187"		9.670"	201,173	86,000
VSH-950	.281"	.168"	30,000	.423"	.038"	.735"	±.012"	.642"	±.015"	.350"	±.015"	.187"		10.200"	212,338	94,500
VSH-1000	.294"	.176"	30,000	.445"	.040"	.735"	±.012"	.675"	±.015"	.367"	±.015"	.187"		10.730"	223,503	105,000

◀ Additional attribute data on adjacent page.

\*\* F.I.M. (Full Indicator Movement) – Maximum allowable deviation of runout between groove and shaft.

- Based on housings/shafts made of cold rolled steel. For more information on thrust load and safety factor see pages 14 & 15.
- For plated rings add .002" to the listed maximum thickness (T) and beveled end thickness (U) values.

STACKED OPTIONS  
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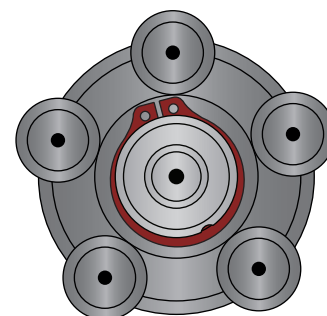


INSTALLATION TOOLS  
AVAILABLE, SEE PAGE 248

### HARDNESS RANGES: VSH RINGS

Material	Size Range	Scale	Rockwell Hardness
(blank) Carbon Steel, (SAE 1060-1090)	100 – 102	C	47 – 53
	106 – 343	C	47 – 52
	350 – 700	C	44 – 51
	725 – 1000	C	40 – 47
-SS Stainless Steel, (PH 15-7 Mo)	All	C	44 – 51
-BC Beryllium Copper	100 – 102	30N	56.5 – 62
	106+	C	37 – 43

### APPLICATIONS



VSH ring used on an automotive air conditioning compressor.