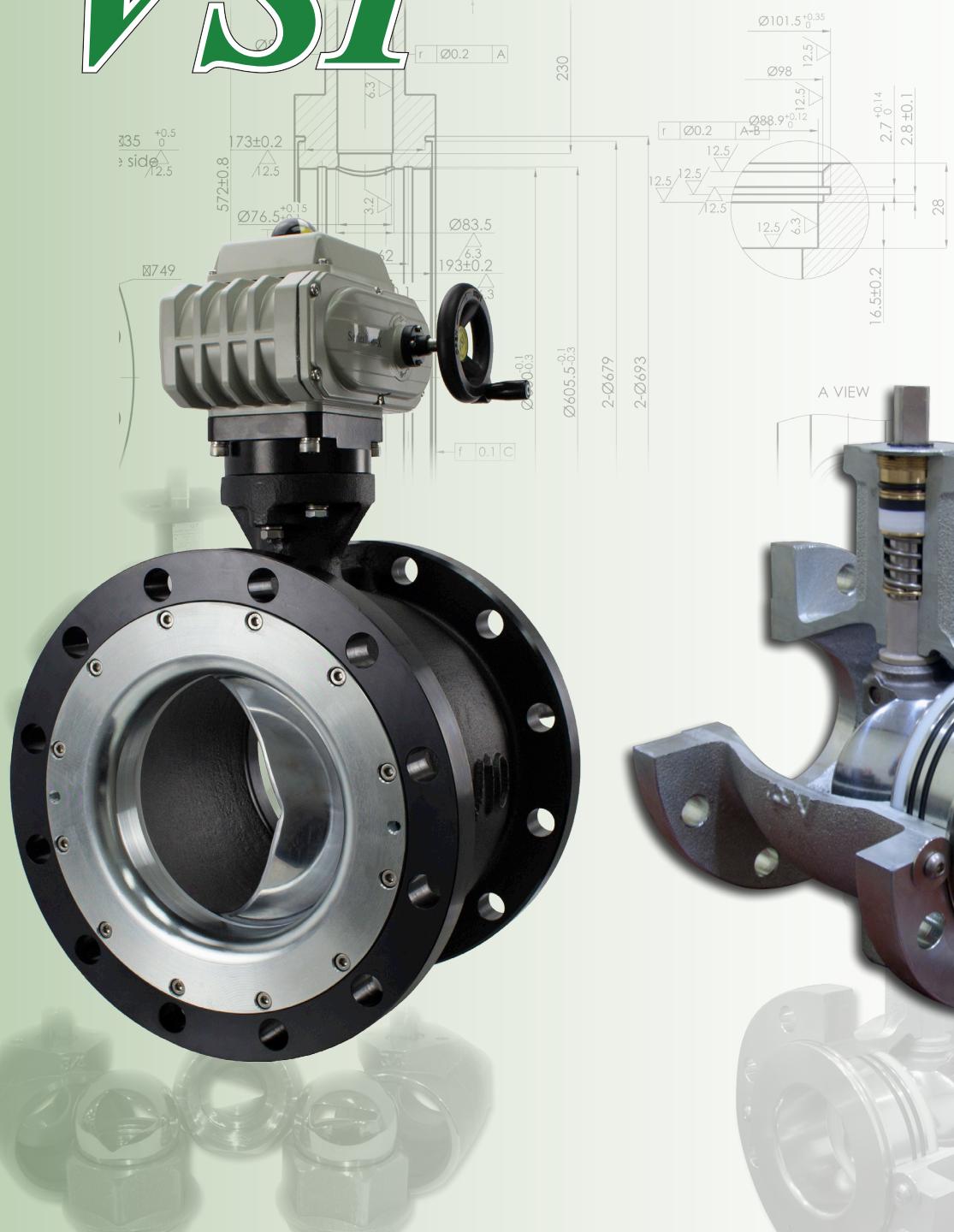


# VSI

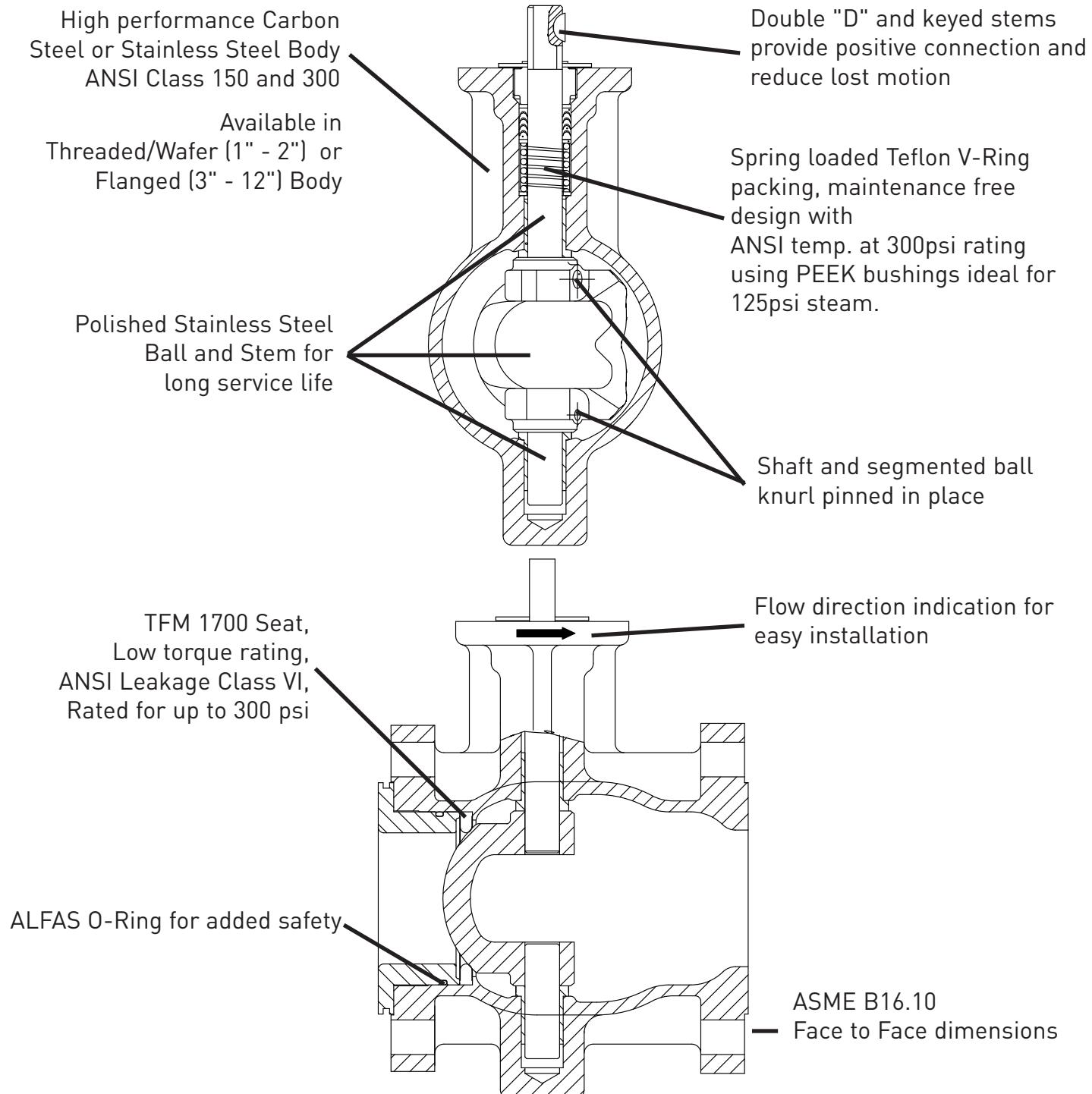


## SERIES V

### High Performance Segmented Ball Valve

## General Information

- High Rangeability: 300:1 Turn down ratio
- Flow Characteristic: Equal Percentage
- Low Pressure Recovery Rate: minimizes cavitation and excessive noise
- Body Rating: Multi-Rated ANSI 150/300
- Face to Face Dimension: ASME B16.10
- Leakage Class: ANSI Class VI



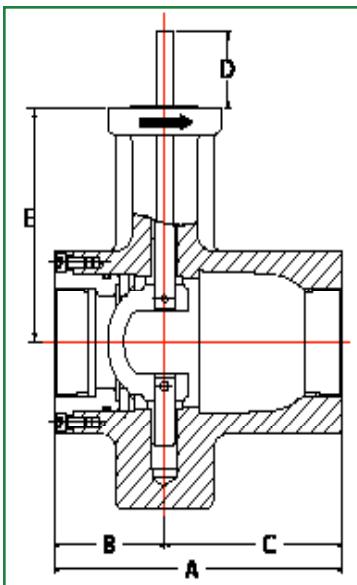
# Flow and Dimensional Information

## Cv Values - Valve Sizing Coefficients (Cv)

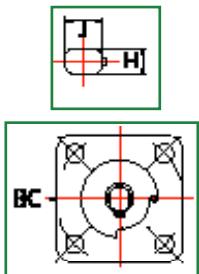
Flow Coefficient	Valve Size (Inches)	Flow Coefficients ( $C_v$ ) for V-Series Ball Valves 1" - 12"										Torque Required @ 250 psi Close Off in-lb
		10	20	30	40	50	60	70	75	80	90	
$C_v$	V-1 (1")	0.04	0.5	3	5	8	12	17	24	29	31	40
	V-1.5 (1.5")	0.07	3	7	12	21	29	40	55	68	73	80
	V-2 (2")	0.09	4	10	21	34	43	65	77	85	96	130
	V-3 (3")	1	12	29	49	68	117	157	207	215	270	200
	V-4 (4")	4	22	46	86	130	195	279	350	421	529	400
	V-6 (6")	5	33	79	148	230	330	440	507	575	850	650
	V-8 (8")	9	55	135	255	395	565	755	865	985	1455	1400
	V-10 (10")	15	100	240	450	705	1010	1345	1550	1755	2600	2600
	V-12 (12")	19	125	300	555	865	1240	1655	1905	2165	3200	3700

## Valve Dimensions

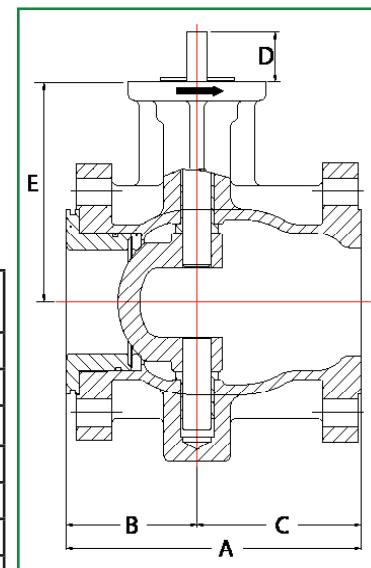
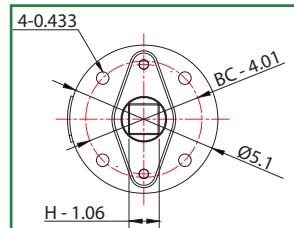
V-1 to V-6



V-1 to V-2



V-8 to V-12



V-3 to V-12

Dimension	V-1 (1")	V-1.5 (1 1/2")	V-2 (2")	V-3 (3")	V-4 (4")	V-6 (6")	V-8 (8")	V-10 (10")	V-12 (12")
A	5	6.5	7	8	9	10.5	9.57	11.69	13.31
B	1.81	2.13	2.68	3.54	4.33	5.06	4.53	5.94	6.97
C	3.19	4.37	4.33	4.45	4.69	5.43	5.04	5.75	6.34
D	1.33	1.33	1.33	1.37	1.37	1.37	1.50	1.50	1.50
E	4.04	4.43	5.12	5.98	7.05	7.98	9.13	10.24	11.93
F	2.56	2.88	3.60	4.33	5.11	6.00	6.85	8.35	10.08
H	.39	.39	.39	.55	.55	.55	1.06	1.06	1.06
J	.5	.5	.5	.75	.75	.75	-	-	-
BC	2.76	2.76	2.76	4.01	4.01	4.01	4.01	4.01	4.01
Weight (lb)	9	15	19	38	56	93	150	215	330

Dimension A has a tolerance of  $\pm .0625$  (2mm)

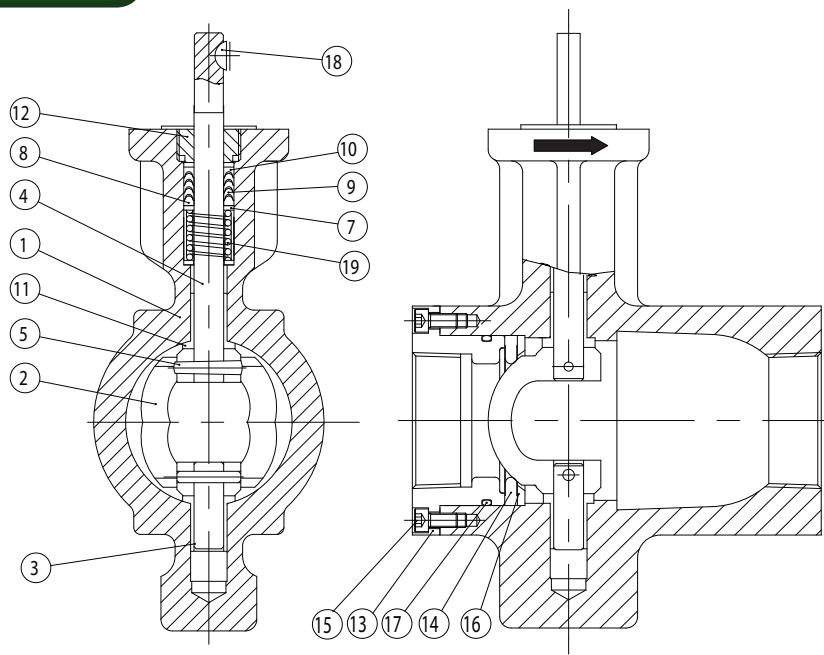
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# Construction Materials

## Threaded/Wafer Series V (Sizes 1, 1.5 & 2)

NO	PART NAME	Q'TY	MATERIAL
1	VALVE BODY	1	WCC*
2	SEGMENTED BALL	1	SUS304
3	FOLLOWER SHAFT	1	SUS304
4	DRIVE SHAFT	1	SUS304
5	TAPER PIN	1	SUS304
6	TAPER PIN	1	SUS304
7	PACKING WASHER	1	SUS304
8	PACKING RINGS	1	TEFLON
9	PACKING RINGS	1	TEFLON
10	PACKING FOLLOWER	1	GRAPHITE
11	SHAFT BEARING	2	PEEK
12	PACKING FLANGE	1	C3604
13	SEAT RETAINER	1	S45C
14	BALL SEAT	1	TFM 1700
15	SEAT RETAINER SCREW	8	SUS304
16	SEAT SPACER	1	SUS304
17	SEAT RETAINER SEAL	1	ALFAS
18	WOODUFF KEY	1	SM45C
19	PACKING SPRING	1	SUS304



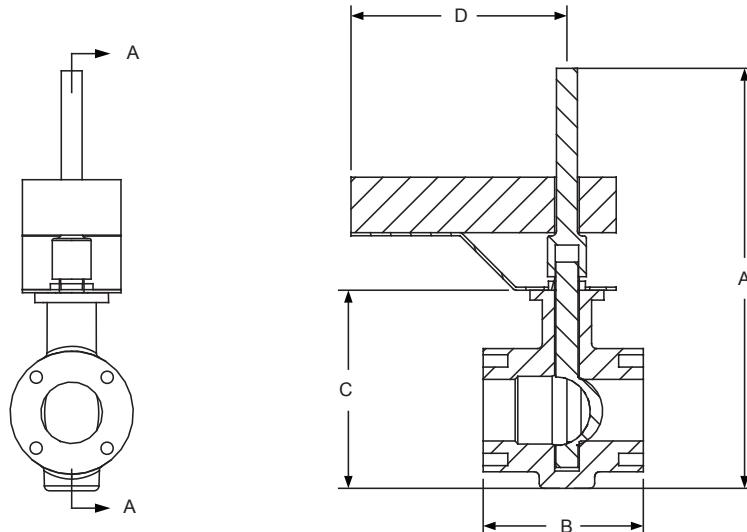
## Flanged Series V (Sizes 3, 4, & 6)

NO	PART NAME	Q'TY	MATERIAL
1	VALVE BODY	1	WCC*
2	SEGMENTED BALL	1	SUS304
3	FOLLOWER SHAFT	1	SUS304
4	DRIVE SHAFT	1	SUS304
5	TAPER PIN	1	SUS304
6	TAPER PIN	1	SUS304
7	PACKING WASHER	1	SUS304
8	PACKING RINGS	1	TEFLON
9	PACKING RINGS	1	TEFLON
10	PACKING FOLLOWER	1	GRAPHITE
11	SHAFT BEARING	2	PEEK
12	PACKING FLANGE	1	C3604
13	SEAT RETAINER	1	S45C OR WCC
14	BALL SEAT	1	TFM 1700
16	SEAT RETAINER SEAL	1	ALFAS
18	WOODUFF KEY	1	SM45C
19	PACKING SPRING	1	SUS304

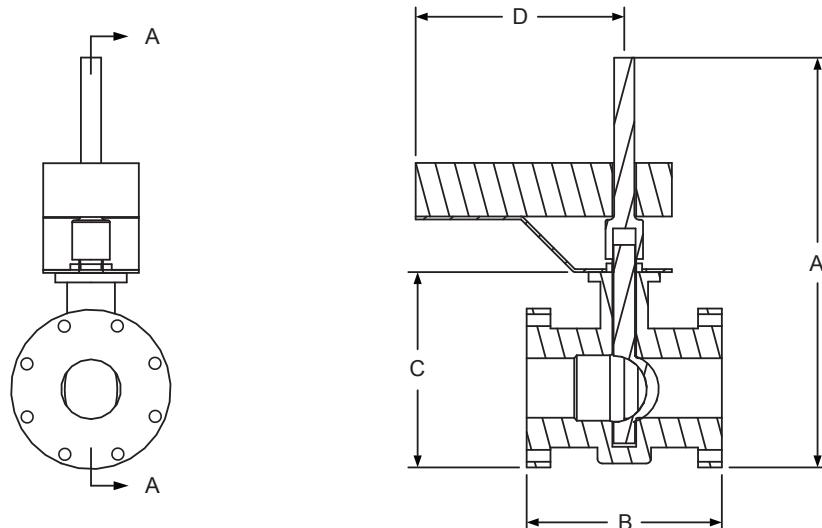
\*Body is also available in Cast Stainless Steel 304 [CF8]

(See detailed drawings for V-8 to V-12 material cross section)

## 2-Way Valve Assembly Dimensions



VALVE SIZE	SERIES V 2-WAY THREADED/WAFERED			
	A	B	C	D
1"	15	5	7	10
1.5"	17	6.5	8	10
2"	19	7	9	10



VALVE SIZE	SERIES V 2-WAY FLANGED			
	A	B	C	D
3"	22.5	8	10.5	10
4"	24	9	12	10
6"	26.5	10.5	14.5	10

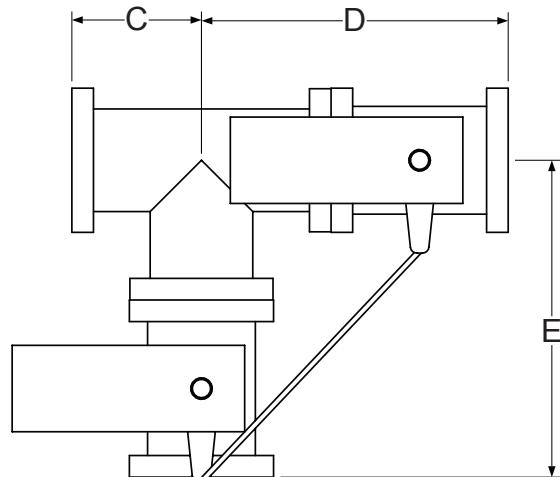
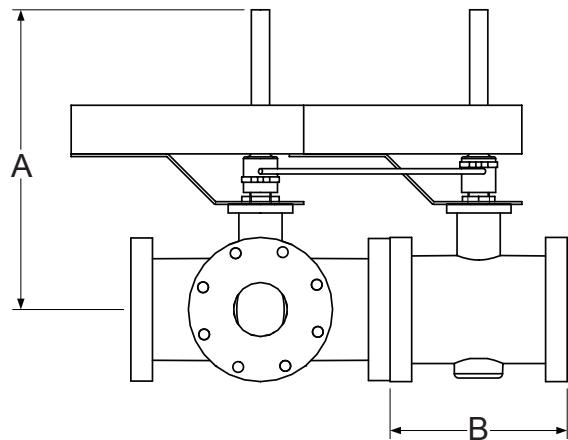
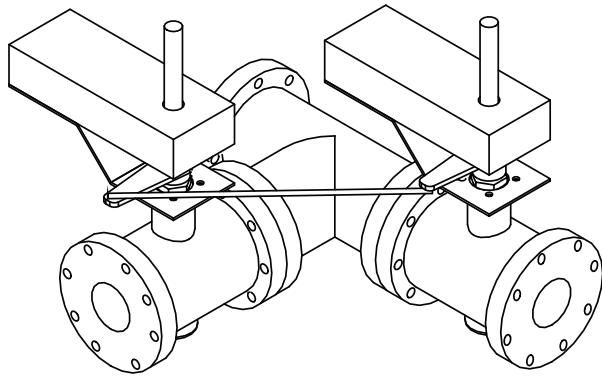
(See detailed drawings for V-8 to V-12 dimensions)



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## Assembly Dimensions

### 3-Way Valve Assembly Dimensions

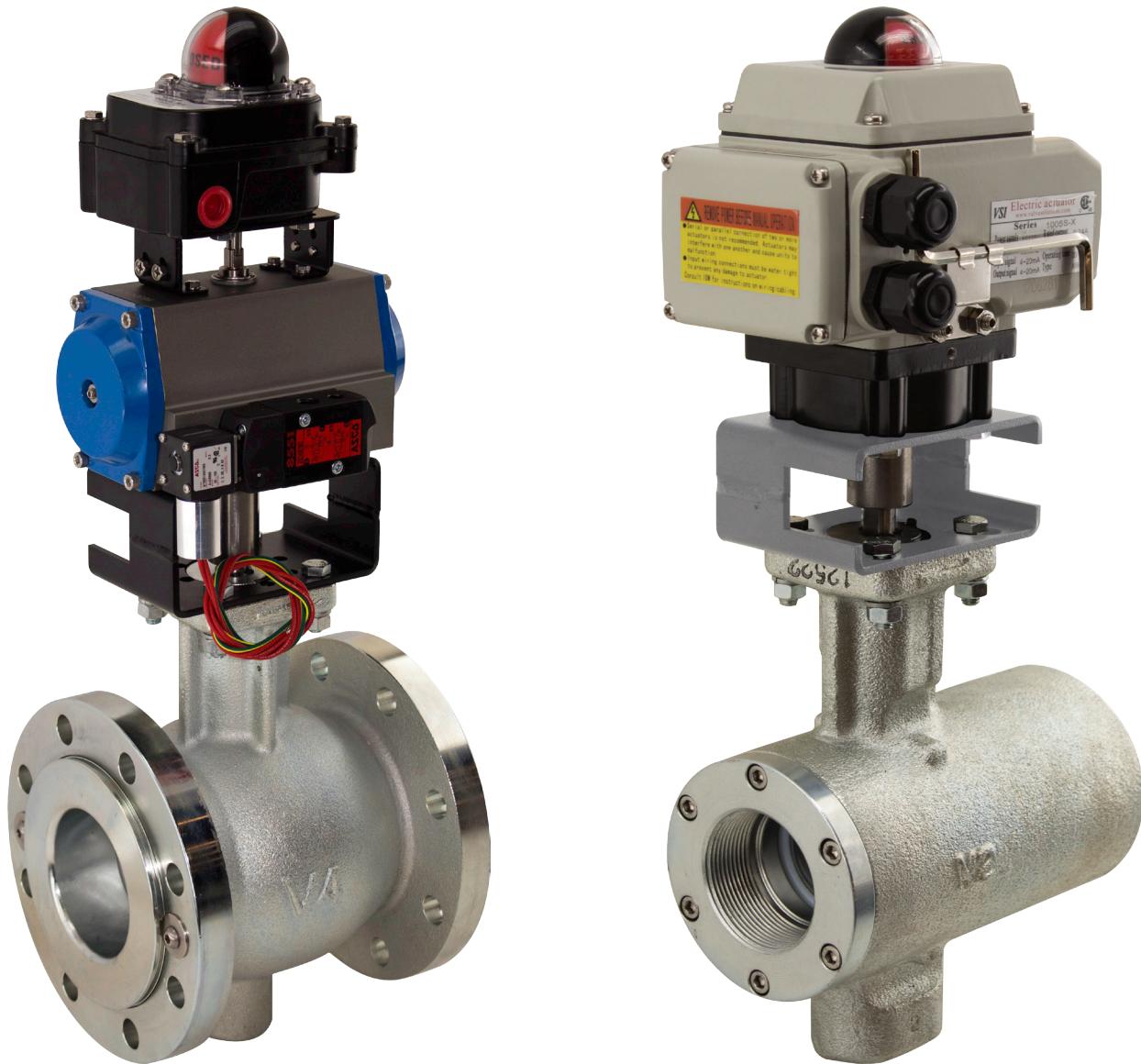


VALVE SIZE	SERIES V 3-WAY FLANGED			
	A	B	C	D/E
3"	18	8	5.5	13.5
4"	19	9	6.5	15.5
6"	21	10.5	8	18.5

(See detailed drawings for V-8 to V-12 dimensions)

## Engineering Specification of Acutated HVAC Control Valves

Automatic control valves for HVAC control shall be constructed of a carbon steel body, stainless steel V-notch ball and shaft, low friction bearings and a TFM 1700 ball seat. Valve sizes 1, 1.5 & 2 inches shall be ANSI Class 150/300 multi-rated and have Universal End Connections for use with NPT or ANSI Class 150/300 wafer connections. Valve sizes 3, 4, 6, 8, 10, and 12 inch shall have ANSI Class 150 or 300 flanges as required by application. Control valves shall be rated ANSI Class VI leakage rate, 0°F to 450°F temperature range and maximum 250 PSI allowable shutoff pressure. Valves are for use with water, steam and percentage glycol water mixes. Valves have 90 degree rotation, 300:1 rangeability with equal percentage control characteristic. Standard actuators as well as low pressure industry standard pneumatic actuators are acceptable. Valve and linkage shall carry a 3 year warranty from the date of installation. Valve shall be a Valve Solutions Series V segmented ball control valve or approved equal.



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### VSI Limited Product Warranty

This limited warranty applies in the United States to products manufactured by VSI, LLC. VSI, LLC. warrants the product purchased from it or its authorized reseller to be free from defects in material and workmanship under normal use during the two year warranty period from the date of its purchase. Other products not manufactured by VSI, LLC. which are provided as part of an assembly may carry additional warranties from that manufacturer or supplier.

During the warranty period, VSI, LLC. will repair or replace defective parts of the product, or, at VSI, LLC. sole option, issue a credit for the original purchase price of the product. Repaired or replaced product will be warranted hereunder only for the remaining portion of the original warranty period. All exchanged products under this Limited Warranty will become the property of VSI, LLC. A proper Return Material Authorization (RMA) number will have to be obtained for all products to be returned under this Limited Warranty. Any claim under this Limited Warranty must include a description of the problem encountered and any relevant information that may assist VSI, LLC. in the replication or resolution of the problem.

This Limited Warranty is transferable during its term to the end user of the product. Any transfer shall not extend or alter the terms of this Limited Warranty.

This Limited Warranty extends only to products purchased from VSI, LLC. or its authorized reseller and does not extend to any product that has been damaged or rendered defective as a result of (a) modification, repair, alteration or improper installation by any person other than VSI, LLC. or its authorized representative; (b) unreasonable or improper use or storage, use beyond rated conditions, operation other than per VSI, LLC. or the manufacturer's instructions, or being otherwise subjected to improper maintenance, negligence or accident; or (c) any use of the product after purchaser has knowledge of any defect in the product.

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