

VTX10 Single Seat Control Valve



FEATURES

- ▶ Double guided plug design for maximum support and plug stability.
- ▶ Stem guided through 4" (DN100) and post guided 6" (DN150) - 16" (DN400).
- ▶ Quick change trim for easy servicing and trim modifications.
- ▶ Cv range from 0.01 to 2925 in sizes 1/2" (DN15)-16" (DN400), Class 150-300.
- ▶ Wide selection of trim reductions and flow characteristics.
- ▶ Tight shutoff to ANSI/FCI 70-2 Class IV, V, and VI.
- ▶ Options include NACE MRO103/MR0175 compliance, custom materials, extension bonnets.
- ▶ Bolted bonnets and packaging boxes contribute to the prevention of thread corrosion.

*Equipment should be installed, operated, serviced, and maintained only by qualified personnel.
No responsibility is assumed by Schneider Electric for any consequences arising from the use of this material.*

KEY COMPONENTS OF THE QUICK CHANGE TIME GLOBE TRIM

Figure 1. Key Components

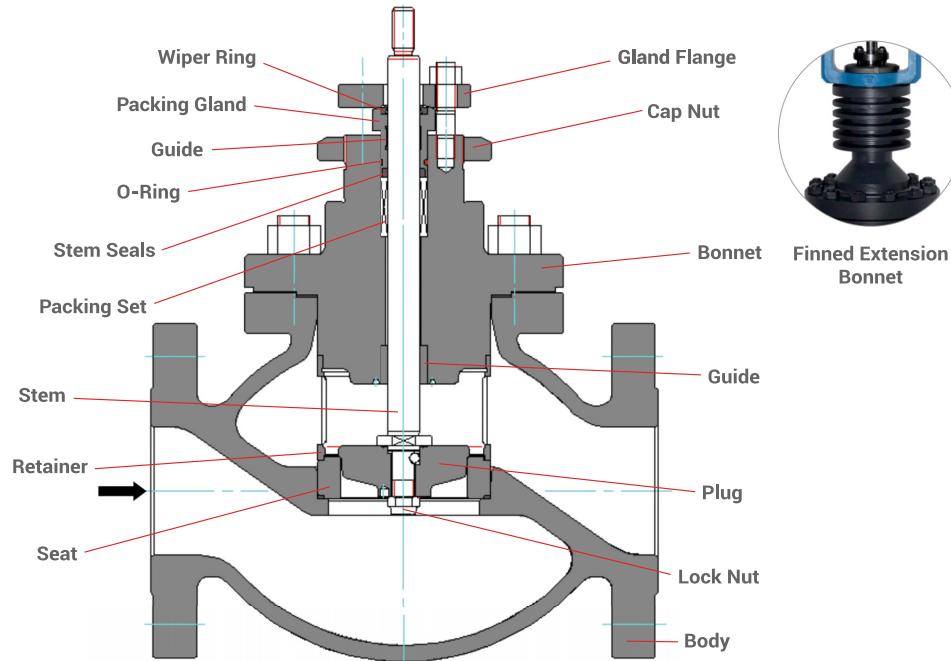


Table 1. Key Components

Type	Globe, Unbalanced Plug
Body Size	1/2"-16", (DN15-DN400)
Plug Characteristics	Contoured Plug-Equal Percentage
Pressure Classes	ASME Class 150-300
Body Connections (a)	Flanged (RF, RTJ), Welded Ends SW up to 2" (DN50), BW 2-1/2" and up (DN65) and larger
Face to Face Dimensions	IEC60534-3/ASME B16.10
Packing	PTFE V-Ring, Flexible Graphite
Gasket	Graphite, Reinforced Graphite

a. DIN and PN flanges are also available. Contact Global Customer Support for more information.

MATERIALS OF CONSTRUCTIONS

Carbon Steel

Table 2. Carbon Steel Materials

Name	Temperature °C/°F					
	-46	-29	200	260	345	425
	-50	-20	392	500	650	800
Body/Bonnet	A352-LCB					-
	-	A216-WCB				
Body/Packing Stud	A320-B7	A193-B7				
Body/Packing Nut		A194-2H				
Plug	-	420 SS-HT				
	316 SS				-	
	316 SS, 316 SS/HF					
Stem	316 SS					
Seat Gasket	3166 SS Graphite					
Seat	-	420 SS Filled PTFE			-	
	316 SS Filled PTFE			-		
	-	420 SS-HT				
	316 SS, 316 SS/HF					
Leakage, Class IV, V	Hard Seat					
Leakage, Class VI	316 SS Filled PTFE			-		
	-	420 SS Filled PTFE			-	
Locknut	300 SS					
Ball	300 SS					
Plug Gasket	316 SS Graphite					
Retainer	316 SS				-	
	-				400 SS	
Guide	-	420 SS-HT				
	316 SS NT					
Flat Key	316 SS					

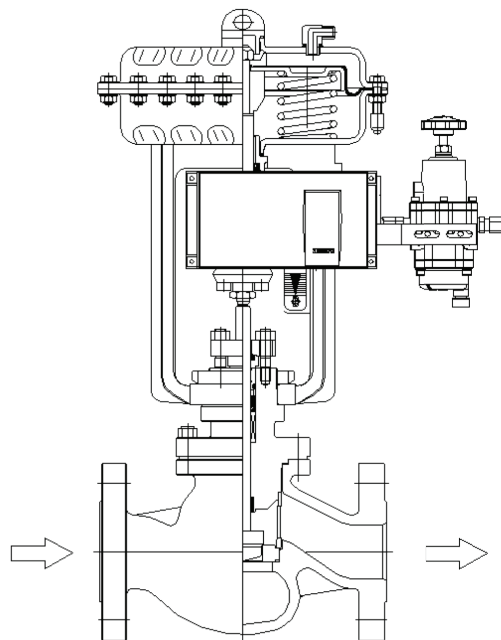
Table 2. Carbon Steel Materials (Continued)

Name	Temperature °C/°F					
	-46	-29	200	260	345	425
	-50	-20	392	500	650	800
Socket Head Screw	316 SS					
Body Gasket	316 SS Graphite					
Cap Nut	Carbon Steel					
Gland Flange	A216-WCB					

NOTES:

1. For flashing or cavitating service, we recommend Hardfaced 316 SS trim.
2. For Cv values < 29, plug and stem are integral.
3. Soft seat pressure drops are limited by temperature.
4. HT=Heat Treated, NT=Nitride, HF=Hardfaced with Stellite® 6 alloy.
5. Optional materials are available; consult the factory.
6. Pressure boundary parts are provided to ASTM standards.
7. Valve internal materials are supplied to ASTM/JIS/DIN/GB equivalent.
8. Compliance to NACE is available to MRO103 or MR01-75/ISO15156.

Figure 2. Carbon Steel and Stainless Steel VTX10 Cross-Sectional View



Stainless Steel

Table 3. Stainless Steel Materials

Name	Temperature °C/°F							
	-196 -320	-46 -50	-29 -20	200 392	260 500	345 650	425 800	566 1050
Body/Bonnet	A351-CF8M							
Body/Packing Stud	A193-B8M Class 1							
Body/Packing Nut	A194-B8M							
Plug	316 SS				-	-	-	-
	316 SS, 316 SS/HF							
Stem	316 SS							
Seat Gasket	316 SS Graphite							
Seat	316 SS Filled PTFE				-	-	-	-
	316 SS, 316 SS/HF							
Leakage, Class IV, V	Hard Seat							
Leakage, Class VI	316 SS Filled PTFE				-	-	-	-
Locknut	300 SS							
Ball	300 SS							
Plug Gasket	316 SS Graphite							
Retainer	316 SS							
Guide	316 SS NT							
Flat Key	316 SS							
Socket Head Screw	316 SS							
Body Gasket	316 SS Graphite							
Cap Nut	Carbon Steel							
Gland Flange	316 SS							

NOTES:

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3. Soft seat pressure drops are limited by temperature.
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NACE Standard Material

Table 4. NACE Standard Materials

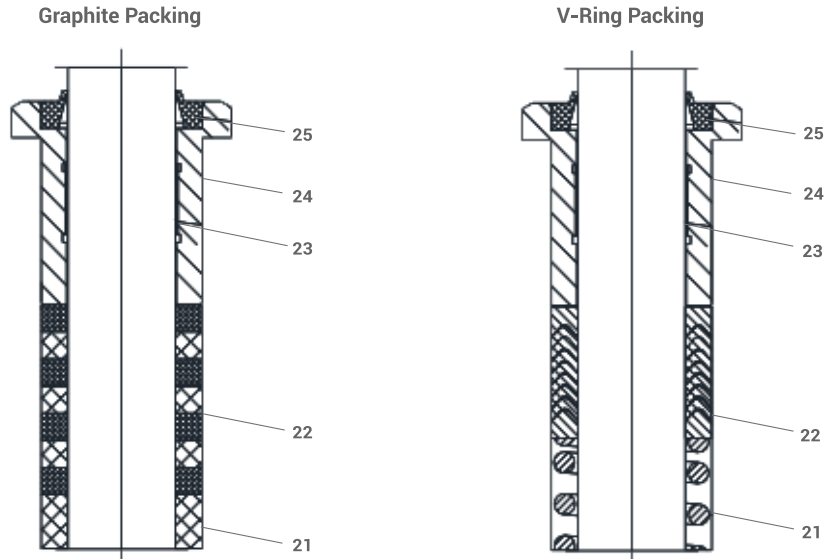
Name	Temperature °C/°F					
	-46	-29	200	260	345	425
	-50	-20	392	500	650	800
Body/Bonnet	A352-LCB					-
	-	A216-WCB				
	A351-CF8M					
Body/Packing Stud	A193 B8M Class 1					
	A320-L7/L7M	A193-B7/B7M				
Body/Packing Nut	A194-B8M					
	A194-L7/L7M	A194-2H/2HM				
Plug	316 SS				-	-
	316 SS, 316 SS/HF					
Stem	316 SS					
Seat Gasket	316 SS Graphite					
Seat	316 SS Filled PTFE			-	-	-
	316 SS, 316 SS/HF					
Leakage, Class IV, V	Hard Seat					
Leakage, Class VI	316 SS Filled PTFE			-	-	-
Locknut	300 SS					
Ball	300 SS					
Plug Gasket	316 SS Graphite					
Retainer CFM Body	316 SS					
Retainer, C/Steel Body	316 SS				400 SS	
Guide	316 SS NT					
Flat Key	300 SS					
Socket Head Screw	300 SS					
Body Gasket	316 SS Graphite					
Cap Nut	Carbon Steel					
Gland Flange	A216-WCB					

NOTES:

1. For flashing or cavitating service, we recommend Hardfaced 316 SS trim.
2. For Cv values < 29, plug and stem are integral.
3. Soft seat pressure drops are limited by temperature.
4. HT=Heat Treated, NT=Nitride, HF=Hardfaced with Stellite® 6 alloy.
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Valve Packing Boxes and Options

Figure 3. Graphite Packing and V-Ring Packing



Packing Box Bill of Material and Temperature Selection

Table 5. Packing Box Materials

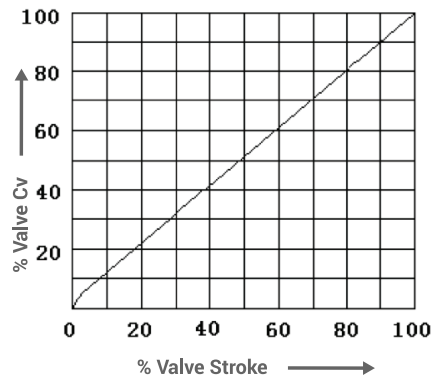
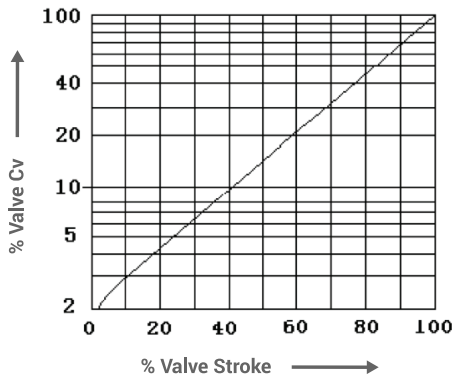
Item	Component (a)	Temperature, °C/°F							
		-196	-46	-29	200	260	345	425	566
		-320	-50	-20	392	500	650	800	1050
21	Spacer, Graphite Packing	Carbon							
	Spring, V-Ring	-	300 SS			-	-	-	-
	Spacer, NACE Service	-	Carbon						
22	Packing, Standard Bonnet	-	PTFE			-	-	-	-
		-				-	-	-	
		-	Grafoil®/Graphite						
	Packing, Extended/Finned Bonnet	PTFE			-	-	-	-	-
Filled PTFE			-	-	-	-	-		
Grafoil®/Graphite									
23	Guide Standard Bonnet	-	Metaloplast™			-	-	-	-
	Guide Extended Bonnet	Metaloplast™							-
24	Packing Follower	316 SS							
25	Wiper Ring, Standard Bonnet	-	Buna-N			-	-	-	-
	Wiper Ring, Extended Bonnet	Buna-N							-

a. Standard packing boxes are shown. Fugitive Emission qualified and live loading options are available.

FLOW CHARACTERISTICS

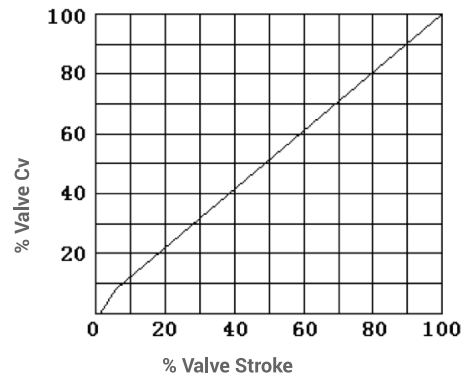
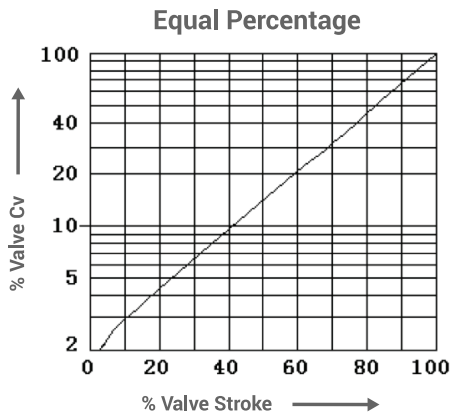
Cv vs Stroke, Metal Seated Trim

Figure 4. Cv vs Stroke, Metal Seated Trim



Cv vs Stroke, Soft Seated Trim

Figure 5. Cv vs Stroke, Soft Seated Trim



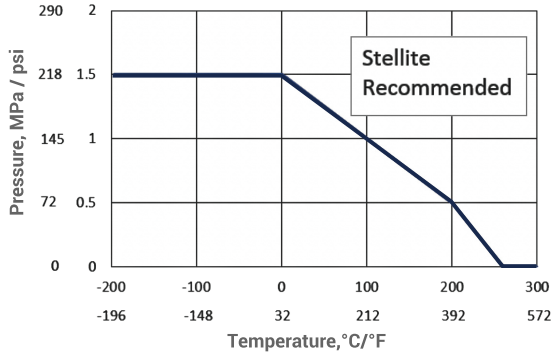
NOTES:

1. The Cv versus stroke characteristics may also be dependent on the application of the valve.
2. Certain industry applications are better served by a specific valve characteristic.
3. Contact Global Customer Support for further information.

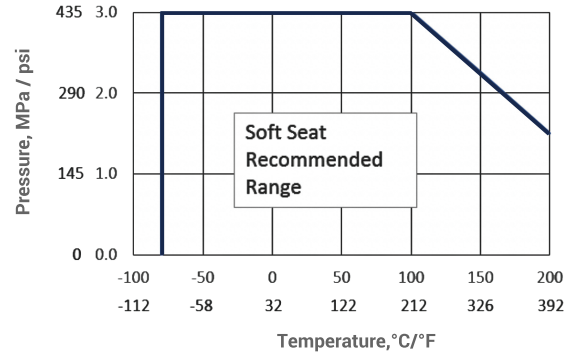
Material vs Operating Pressure-Temperature

Figure 6. Material vs Operating Pressure-Temperature

Pressure / Temperature Recommendation for Stellite®



Pressure / Temperature Soft Seat Limits



Rated Cv for Valve Sizes from 1/2" to 1 1/4"

Table 6. Trim Cv from 1/2" (DN15) to 1 1/4" (DN32)

Cv	Seat Size, mm	Metal Seat		Soft Seat			Travel, mm	Nominal Valve Size, mm			
		Equal Percentage	Linear	Equal Percentage	Linear	Quick-Opening		15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)
0.01	6	-	◆	-	◆	-	16 10, Quick-Opening	◆	◆	◆	-
0.04		-	◆	-	◆	-		◆	◆	◆	-
0.1		-	◆	-	◆	-		◆	◆	◆	-
0.16		-	◆	-	◆	-		◆	◆	◆	-
0.25		◆	◆	◆	◆	-		◆	◆	◆	-
0.4	8	◆	◆	◆	◆	-		◆	◆	◆	-
0.63		◆	◆	◆	◆	-		◆	◆	◆	-
0.73	5	◆	◆	◆	◆	-		◆	◆	-	-
1.0	11	◆	◆	◆	◆	-		◆	◆	◆	◆
1.6		◆	◆	◆	◆	-		◆	◆	◆	◆
1.9	10	◆	◆	◆	◆	-	◆	◆	◆	◆	
2.5	14	◆	◆	◆	◆	-	◆	◆	◆	◆	
4.0		◆	◆	◆	◆	-	◆	◆	◆	◆	
4.7	15	◆	◆	◆	◆	See below	◆	◆	◆	◆	
6.3	19	◆	◆	◆	◆	-	-	◆	◆	◆	
11.5	25	◆	◆	◆	◆	See below	-	-	◆	◆	

◆ Only available in 1/2" and 3/4" (DN15 and DN20) with metal and soft seats.

Rated Cv for Valve Sizes from 1 1/2" to 16"

Table 7. Trim Cv from 1 1/2" (DN40) to 16" (DN400)

Seat Type		Metal Seat							Soft Seat						
Flow Characteristics		Linear			Equal Percentage			Q-)	Linear			Equal Percentage			Q-O
Nominal Size inch (DN)	Travel (mm)	Cv1	Cv2	Cv3	Cv1	Cv2	Cv3	Cv1	Cv1	Cv2	Cv3	Cv1	Cv2	Cv3	Cv1
1.5 (40)	16 10 (on-off)	9	19	11.5	29	19	11.5	29	29	19	11.5	29	19	11.5	29
2 (50)		46	29	19	46	29	19	46	46	29	19	46	29	19	46
2.5 (65)		73	46	29	73	46	29	73	73	46	29	73	46	29	73
3 (80)	30 20 (on-off)	116	73	46	116	73	46	116	116	73	46	116	73	46	116
4 (100)		186	116	73	186	116	73	186	186	116	73	186	116	73	186
6 (150)	60 45 (on-off)	445	304	176	445	304	176	445	445	304	-	445	304	-	445
8 (200)		761	445	304	761	445	304	761	761	-	-	761	-	-	761
10 (250)	100 75 (on-off)	1053	761	445	1053	761	445	1053	1053	-	-	1053	-	-	1053
12 (300)		1521	1053	761	1521	1053	761	1521	1521	-	-	1521	-	-	1521
14 (350)		2106	1521	1053	2106	1521	1053	2106	2106	-	-	2106	-	-	2106
16 (400)	120 100 (on-off)	2925	2106	1521	2925	2106	1521	2925	2925	-	-	2925	-	-	2925

DIMENSIONS AND WEIGHTS

1/2 (DN15)'' to 4'' (DN100) Size Valves

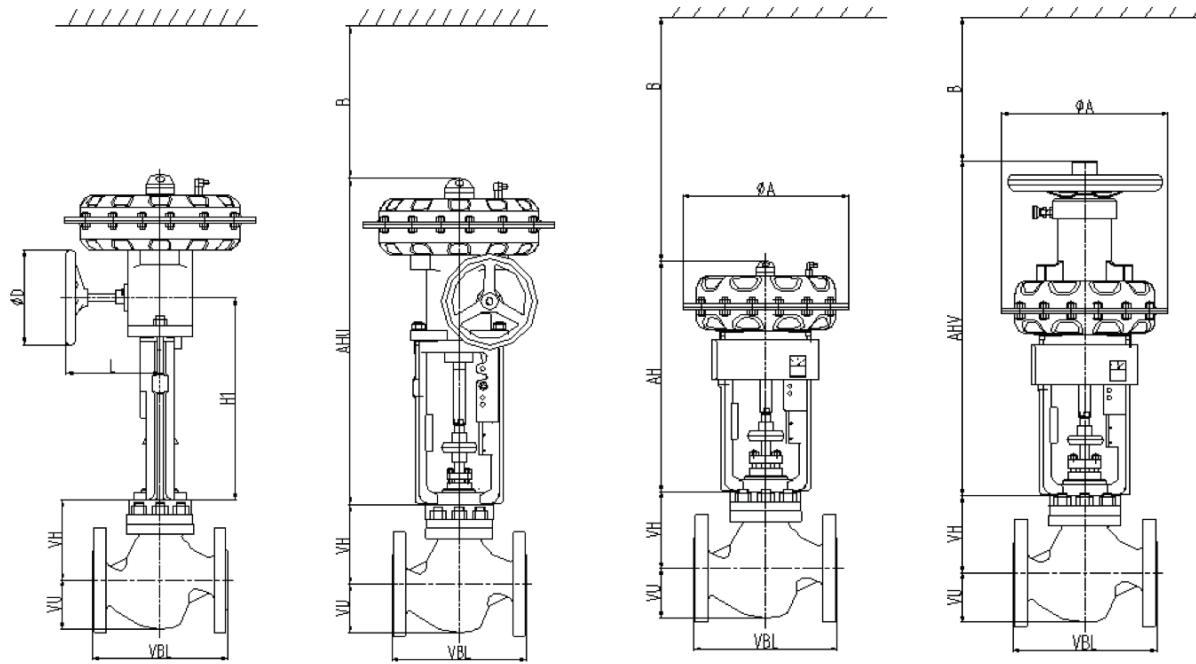
Table 8. Valve Dimensions from 1/2'' (DN15) to 4'' (DN100)

DN/ inch		15/ 1/2''	20/ 3/4''	25/ 1''	32/ 1.25''	40/ 1.5''	50/ 2''	65/ 2.5''	80/ 3''	100/ 4''	
Valve	VBL Class 150	RF	178/7''	181/ 7.12''	184/ 7.25''	200/ 7.87''					
		RJ	-	-	197/7.75''	213/ 8.39''	235/ 9.25''	267/ 10.5''	289/ 11.38''	311/ 12.25''	365/ 14.37''
		SW/BW	187/ 7.37''	206/ 8.12''	210/ 8.27''	245/ 9.65''	251/ 9.88''	286/ 11.26''	311/ 12.24''	337/ 13.27''	394/ 15.51''
	VBL Class 300	RF	191/ 7.52''	194/ 7.64''	197/ 7.76''	213/ 8.39''	235/ 9.25''	267/ 10.50''	282/ 11.50''	317/ 12.48''	368/ 14.5''
		RJ	202/ 7.95''	206/ 8.12''	210/ 8.27''	225/ 8.87''	248/ 9.76''	282/ 11.10''	308/ 12.31''	333/ 13.31''	384/ 15.12''
		SW/BW	187/ 7.37''	206/ 8.12''	210/ 8.27''	245/ 9.65''	251/ 9.88''	286/ 11.26''	311/ 12.24''	337/ 13.27''	394/ 15.51''
	VH Bonnet Type	Std.	138/5.4''				138/5.4''			182/ 7.2''	213/ 8.4''
		Ext.	207/8.1''				206/8.1''			301/11.9''	315/ 12.4''
	VU		48/1.9''	59/2.3''	62/2.4''	67/2.6''	78/3.1''	93/3.3''	95/ 3.7''	107/ 4.2''	137/ 5.4''
	Actuator	A dia	ASP2	270/10.6''							
ASP3			400/15.7''								
AH		ASP2	380/15.0''						425/16.7''		
		ASP3	505/19.9''								
AHV		ASP2	540/21.3''						580/22.8''		
		ASP3	780/30.7''								
AHU		ASP2	500/19.7''						545/21.5''		
		ASP3	685/12.5''								
B		ASP2	130/5.1''								
		ASP3	150/5.9''								
D dia		ASP2	200/7.9''								
		ASP3	250/9.8''								
L		ASP2	159/6.3''								
		ASP3	197/7.8''								
H1		ASP2	308/12.1''						331/13.0''		
		ASP3	424/16.7''								
Weight kg/lbs	ASP2	24/53	26.5/58	27/59	28/62	36/79	38/84	46.5/102	76/167	99/218	
	ASP3	47/103	50/110	59/112	62/114	59/130	61/134	70/154	96/211	119/262	

NOTES:

1. Dimensions are in mm (inches) weight kg (pounds).
2. Main flange size dimensions comply with ANSI B 16.5 Class 150/300.
3. See ASP actuator publication for additional dimensions for handwheels and different actuator sizes.
4. Face-to-face dimensions comply with DIN IEC 60534-3 and ANSI B16.10.

Figure 7. Dimensions

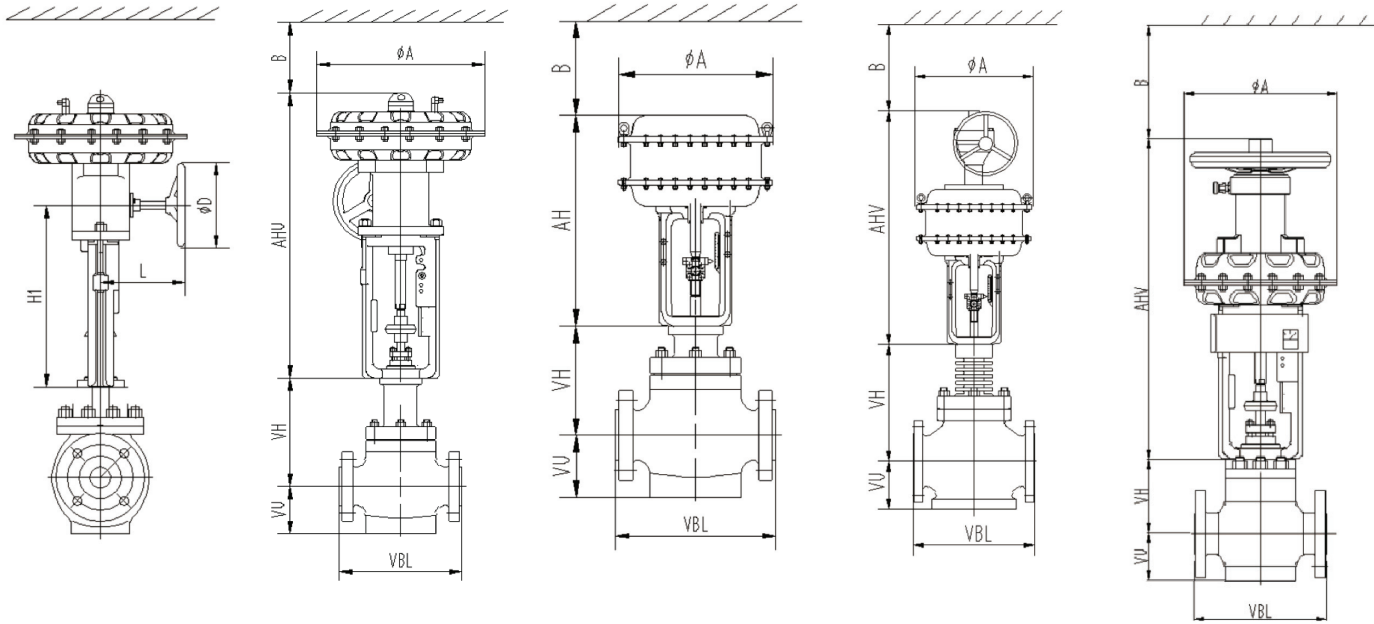


6" (DN150) to 16" (DN400) Size Valves

Table 9. Valve Dimensions from 6" (DN150) to 16" (DN400)

		DN/ inch	150/ 6"	200/ 8"	250/ 10"	300/ 12"	350/ 14"	400/ 16"	
Valve	VBL Class 150	RF	45/17.8"	543/21.4"	730/28.7"	850/33.5"	980/38.6"	1100/43.3"	
		RJ	464/18.3"	556/21.9"	742/29.2"	862/33.9"	992/39.1"	1112/43.8"	
		BW	473/18.6"	568/22.4"	-	-	-	-	
	VBL Class 300	RF	473/18.6"	568/22.4"	730/28.7"	850/33.5"	980/38.6"	1100/43.3"	
		RJ	488/19.2"	585/23.0"	742/29.2"	862/33.9"	992/39.1"	1112/43.8"	
		BW	508/20.0"	610/ 240.0"	-	-	-	-	
	VH Bonnet Type	Std.	261/10.3"	282/11.5"	360/14.2"	397/15.6"	533/21.0"	521/20.5"	
		Ext.	484/19.1"	517/20.4"	623//24.5"	657/25.9"	725/28.5"	781/30.7"	
	VU			189/7.4"	238/9.4"	305/12.0"	335/13.2"	395/15.6"	443/17.4"
	Actuator	A dia	ASP3	400/15.7"		-	-	-	-
ASP5			630/24.8"						
AH		ASP3	595/23.4"		-	-	-	-	
		ASP5	890/35.0"		820/32.3"				
AHV		ASP3	920/36.2"		-	-	-	-	
H1		ASP5	1265/ 49.8"	1295/51.0"	1370/53.9" 1400/55.1"				
AHU		ASP3	825/32.5"		-	-	-	-	
B				450/17.7"					
D dia		ASP3	250/10"		-	-	-	-	
		ASP5	350/13.8"						
L		ASP3	197/7.8"		-	-	-	-	
		ASP5	200/7.9"						
H1		ASP3	424/16.7"		-	-	-	-	
		ASP5	1100/43.3"						
Weight kg/lbs		ASP3	190/418	253/557	-	-	-	-	
		ASP5	333/733	393/865	455/1001	757/1665	885/1947	1502/3304	
<p>NOTES:</p> <p>1. Dimensions are in mm (inches) weight kg (pounds).</p> <p>2. Main flange size dimensions comply with ANSI B 16.5 Class 150/300.</p> <p>3. See ASP actuator publication for additional dimensions for handwheels and different actuator sizes.</p> <p>4. Face-to-face dimensions comply with DIN IEC 60534-3 and ANSI B16.10 to size 8" (DN200) valves.</p>									

Figure 8. Dimensions



NOTES

ADDITIONAL PRODUCTS

These product lines offer a broad range of measurement and instrument products, including solutions for pressure, flow, analytical, temperature, positioning, and controlling.

For a list of these offerings, visit our web site at:

www.se.com

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