

VTX30 Cage Control Valve



FEATURES

- ▶ Top Guided Stem and Drilled Hole Plug
- ▶ Clamped Symmetrical Seat Ring
- ▶ Robust, compact body with various trim options
- ▶ Cv Range from 2.9 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
- ▶ Options include NACE MR0103/MR0175 Compliance, Custom Materials, Extension Bonnet
- ▶ 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 TRIM GLOBE VALVES

Figure 1. Key Components

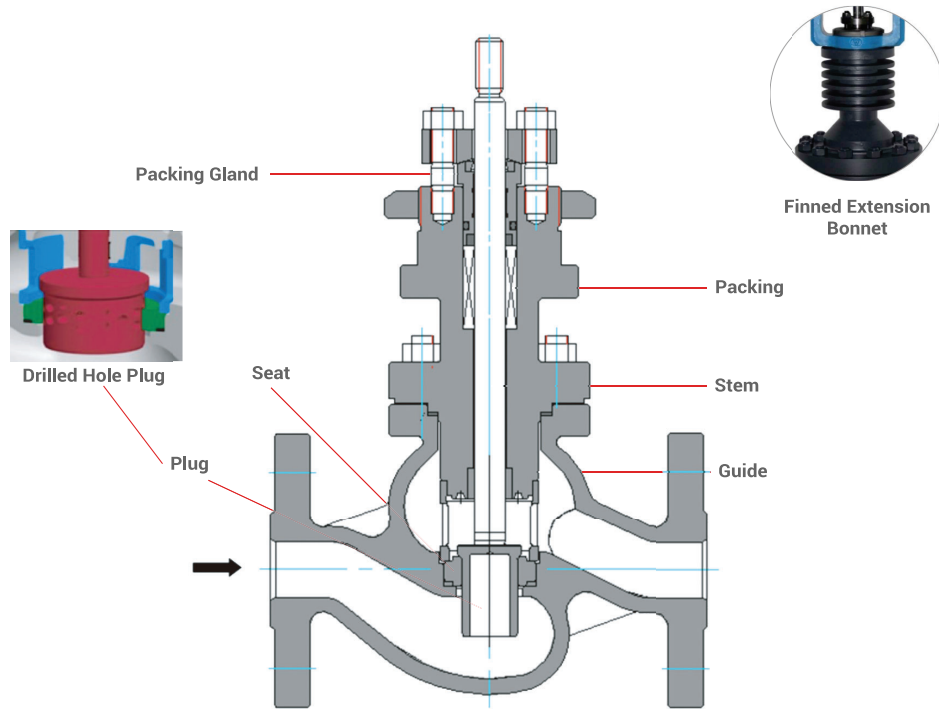


Table 1. Key Components

Type	Globe, Unbalanced Drilled Hole Plug
Body Size	1/2" - 16", (DN15-DN400)
Plug Characteristics	Drilled Hole Plug-Single Plug, Equal Percentage, Linear
Pressure Classes	ASME Class 150-300
Body Connections (a)	Flanged (RF, RTJ), Welded Ends SW up to 2" (DN50, BW 2-1/2" (DN65) and up
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 CONSTRUCTION

Carbon Steel

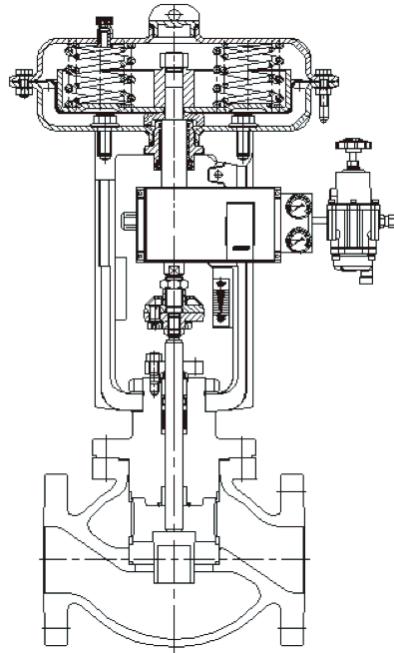
Table 2. Carbon Steel Materials

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	A194-7	A194-2H				
Plug	-	420 SS HT				
	316 SS/NT					
Stem	316 SS					
Seat Gasket	316 SS Graphite					
Seat	-	420 SS HT				
	316 SS, 316 SS/HF					
Leakage, Class IV, V	Hard Seat					
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					
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 valve size 1/2" (DN15) to 4" (DN100), plug and stem are integral.
3. Soft seat pressure drops are limited by temperature.
4. HT=Heat Treated, NT=Nitride, HF= Stellite® 6 alloy.
5. Optional materials are available, contact Global Customer Support.
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 MR0103 or MR0175/ISO 15156.

Figure 2. Carbon Steel and Stainless Steel VTX30 Cross-Sectional View



Stainless Steel

Table 3. Stainless Steel Materials

Name	Temperature °C/°F							
	-196	-46	-29	200	260	345	425	566
	-320	-50	-20	392	500	650	800	1050
Body/Bonnet	Cf8, CF8M							
Body/Packing Stud	A193-B8M Class 1							
Body/Packing Nut	A194-B8M							
Plug	316 SS NT							
Stem	316 SS							
Seat Gasket	316 SS Graphite							
Seat	316 SS, 316 SS/HF							
Leakage, Class IV, V	Hard Seat							
Locknut	300 SS							
Ball	300 SS							
Plug Gasket	316 SS Graphite							
Retainer	316 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	CF8M							

NOTES:

1. For flashing or cavitating service, we recommend Hardfaced 316 SS trim.
2. For valve size 1/2" (DN15) to 4" (DN100), plug and stem are integral.
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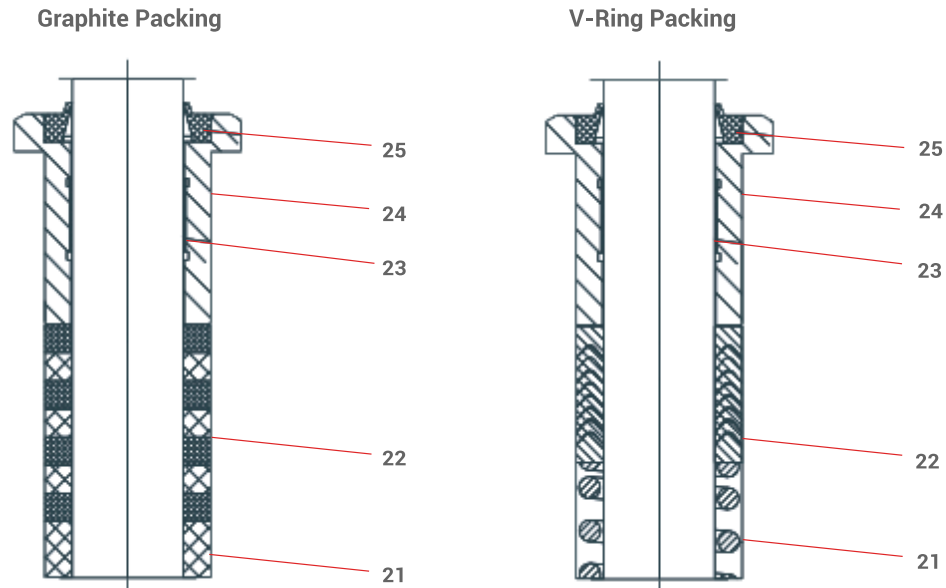
NACE Standard Materials

Table 4. NACE Materials

Name	Temperature °C/°F					
	-46	-29	200	260	345	425
	-50	-20	392	500	650	800
Body/Bonnet	A352-LCB					-
	-	WCB				
	CF8, CF8M					
Body/Packing Stud	A193 BBM Class 1					
	A320-L7/L7M	A193-B7/B7M				
Body/Packing Nut	A194-B8M					
	A194-L7/L7M	A194-2H/2HM				
Plug	316 SS NT					
Stem	316 SS					
Seat Gasket	316 SS Graphite					
Seat	316 SS, 316 SS/HF					
Leakage, Class IV, V	Hard Seat					
Locknut	300 SS					
Ball	300 SS					
Plug Gasket	316 SS Graphite					
Retainer	316 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 valve size 1/2" (DN15) to 4" (DN100), plug and stem are integral. 3. Soft seat pressure drops are limited by temperature. 4. HT=Heat Treated, NT=Nitride, HF= Stellite® 6 alloy. 5. Optional materials are available, Contact Global Customer Support. 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 MR0103 or MR0175/ISO 15156.						

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 Packing	-	300 SS				-	-	-
	Spacer, NACE Service	-	Carbon						
22	Packing, Standard Bonnet	-	PTFE			-	-	-	-
		-	Filled 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							-

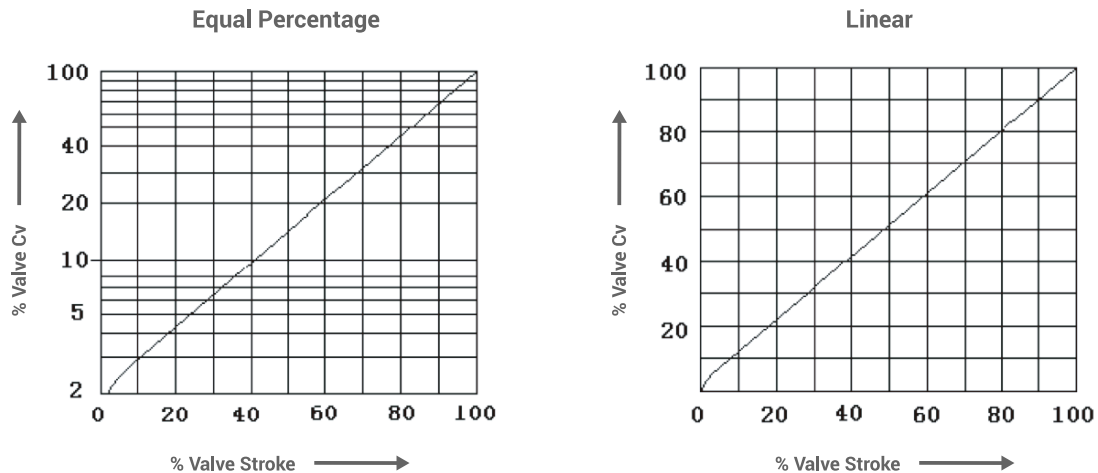
a. Standard packing boxes are shown. Fugitive Emission qualified and live loading options are available.

FLOW CHARACTERISTICS

Cv vs Stroke, Metal Seated Trim

- ▶ Linear and Equal Percentage plug characteristics are available.
- ▶ We recommend Linear characteristic for consistent pressure drop with variable flow conditions.

- ▶ We recommend Equal Percentage characteristic for variable pressure drop (high pressure drop at low flow and low pressure drop at high flow.)
- ▶ For different conditions, review the pressure drop profile to linearize flow response versus stroke through the valve.

Cv vs Stroke, Soft Seated Trim*Figure 4. Cv vs Stroke, Soft Seated Trim***NOTES:**

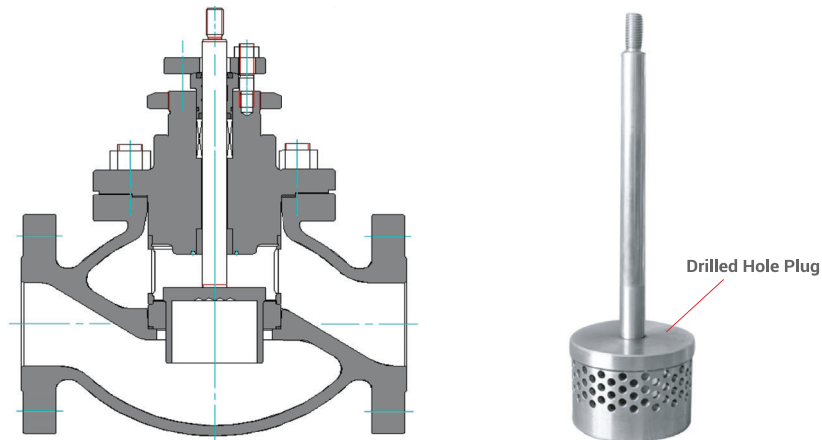
The Cv versus stroke characteristics may also be dependent on the application of the valve. Certain industry applications are better served by a specific valve characteristic. Contact Global Customer Support for further information.

Rated Cv for Valve Sizes from 1/2" (DN15) to 16" (DN400)

Table 6. Trim Cv from 1/2" (DN15) to 16" DN400)

Plug Type		Drilled Hole Plug					
Flow Characteristics		Linear			Equal Percentage		
Nominal Size inch (DN)	Travel (mm)	Cv1	Cv2	Cv3	Cv1	Cv2	Cv3
1/2" (15)	20 (0.79")	2.9	-	-	2.9	-	-
3/4" (20)		2.9	-	-	2.9	-	-
1" (25)		7.3	2.9	-	4.7	2.9	-
1 1/4" (32)		7.3	2.9	-	4.7	2.9	-
1 1/2" (40)		19	11.5	7.3	19	11.5	7.3
2" (50)		29	19	11.5	29	19	11.5
2 1/2" (65)		46	29	19	29	19	11.5
3" (80)	30 (1.2")	116	73	46	64	46	29
4" (100)		139	116	73	73	64	46
6" (150)	60 (22.4")	445	304	198	246	176	146
8" (200)		527	445	304	304	246	176
10" (250)	100 (3.94")	1053	761	445	608	445	375
12" (300)		1521	1053	781	842	608	445
14" (350)		2106	1521	1053	995	842	608
16" (400)	120 (4.7")	2925	2106	1638	1463	1053	842

Figure 5. Trim Cv from 1/2" (DN15) to 16" (DN400)



DIMENSIONS AND WEIGHTS

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

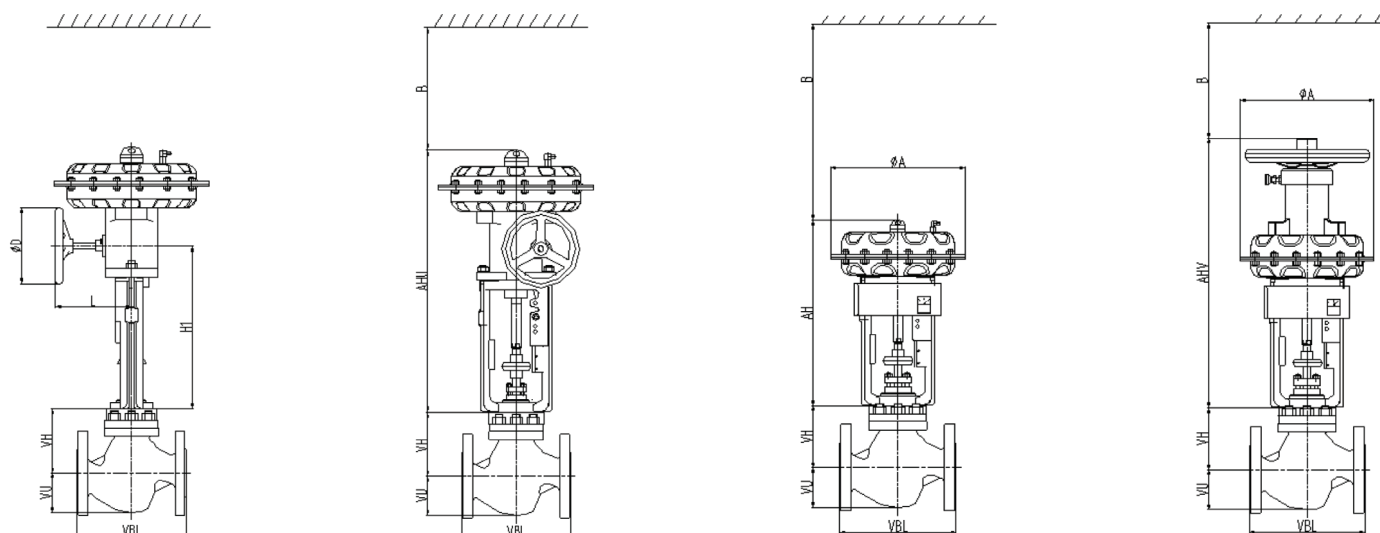
Table 7. Valve Dimensions from 1/2" (DN15) to 4" DN100)

Valve	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"	
	VBL Class 150	RF	178/7"	187/7.12"	184/7.25"	200/7.87"	222/8.75"	254/10"	276/10.87"	298/11.75"	352/13.87"	
		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"	292/11.50"	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"	83/3.3"	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	59/130	62/37	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 6. Dimensions



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

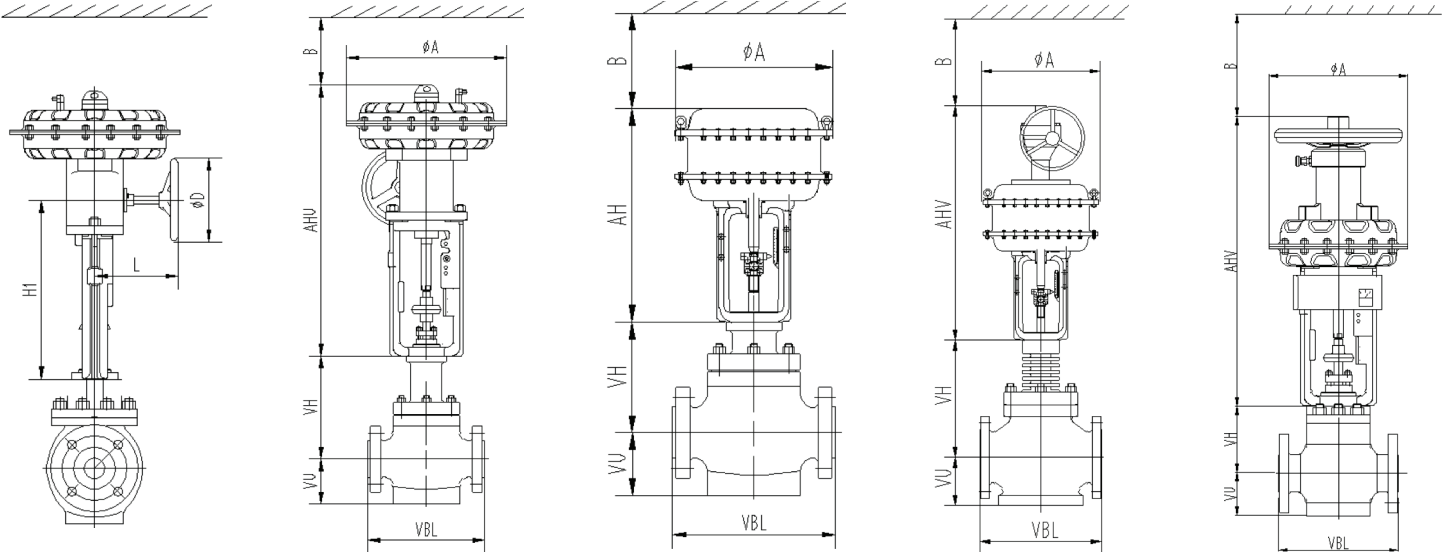
Table 8. Valve Dimensions from 6" (DN150) to 16" (DN400)

Valve	DN/ inch		150/ 6"	200/ 8"	250/ 10"	300/ 12"	350/ 14"	400/ 16"
Valve	VBL Class 150	RF	451/17.8"	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"	610/24.0"	-	-	-	-
	VH Bonnet Type	Std.	261/10.3"	292/11.5"	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"	239/9.4"	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	645/25.4"		-	-	-	-
		ASP5	890/35.0"		820/32.3"			
	AHV	ASP3	920/36.2"		-	-	-	-
	H1	ASP5	1265/49.8"		1370/53.9"			
			1295/51.0"		1400/55.1"			
	AHU	ASP3	825/32.5"		-	-	-	-
	B		200/7.9"		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

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





NOTES



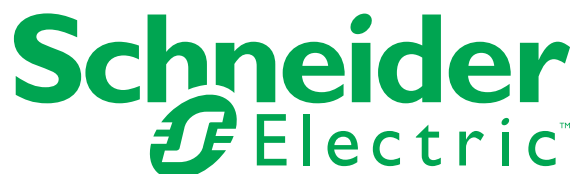
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