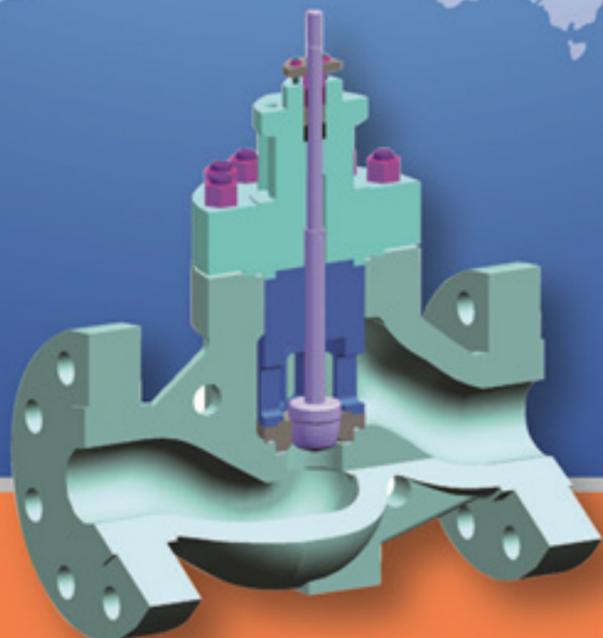


DV100-Series Unbalanced Valve

**General Purpose Contoured-Port Valve
Teflon Body, Micro Flow, Cryogenic Service**



DV100-Series Control Valve

DV100-Series range of Valves was developed to provide a cost effective, reliable and easily maintained control valve capable of working in rigorous environments.

The quick change trim option provides for easily accessible seat and trim components to minimise fitting and parts replacement times.

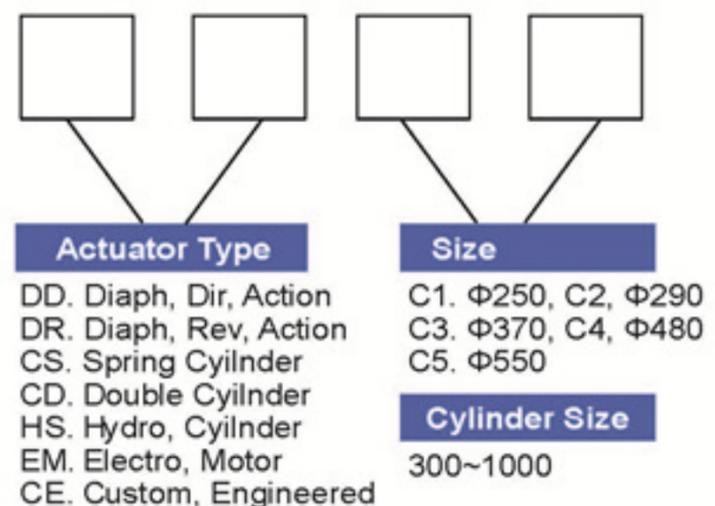
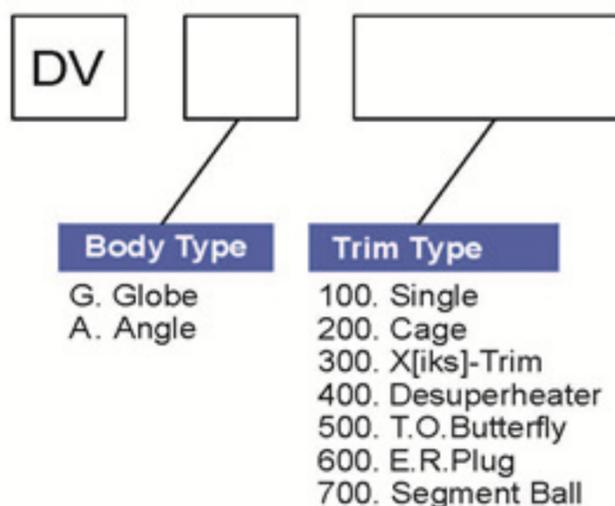
Stem guided contoured trim in both balanced and non-balanced configuration gives excellent rigidity and resistance to vibration and service wear.

The valve is designed to accommodate other products within the DJC multi-hole multi stage and disk stack X[iks]-Trim.

Contents

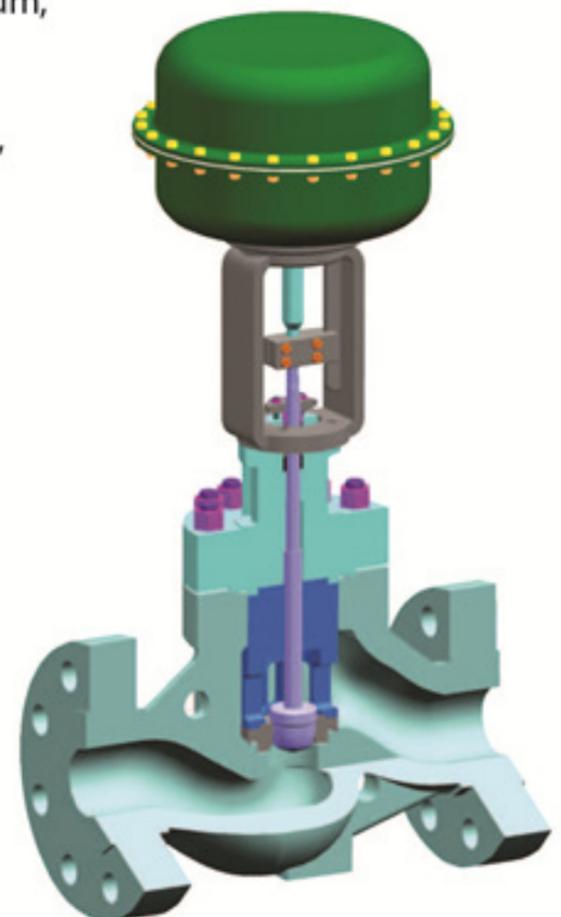
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Type of Body & Bonnet	4
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Body Materials & Temperature Range	6/7
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DV Series Selection Guide



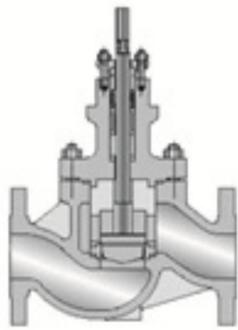
Specification

Body Size	1" to 12"
Body Style	Globe, Angle, y-Globe, Micro Flow Cryogenic, Teflon body
Pressure Rating	ANSI 150~2500 LBS
End Connection	Flanged, Socket welded, Butt welded, Ring type in joint, Others
Trim Design	Unbalanced
Bonnet Type	Bolted design, Pressure seal design
Seat Leakage	ANSI B16. 104/ANSI FCI 70.2 Class IV(Standard), V(Optional), VI(Optional, Soft seat) MSS-SP-61(Optional)
Velocity Control Trim	Multi-hole, Cascade, X[iks]-Trim Equal %, Liner, Modified %
Characteristic	Custom-Engineered
Flow Coefficient	See page 8,9
Standard Material	
Body & Bonnet	A216 WCB/A105, A217 WC6/A182 F11 A217 WC9/A182 F22, A182 F91 Stainless Steel, Titanium, Monel, Aluminium, Hastelloy, Alloy, Others.
Trim	Trim 316SS, 410SS, 420SS, 42J2SS, 630SS, F-11, F-22, F-91 with Stellite overlay Inconel, Others special materials.
Rangeability	15:1, 30:1, 50:1, 70:1
Actuator	Spring Diaphragm, Spring Cylinder Double Cylinder, Motor, Hydraulic

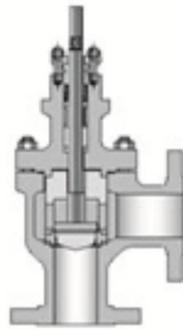


Valve Body Style

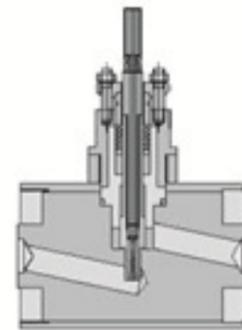
DJC DV100-Series valve is available in two basic body styles of either globe angle many parts are interchangeable with the exception of the valve bodies. The angle pattern has an optional venturi seat which may be specified in order to provide additional protection to the valve outlet.



GLOBE BODY/ DV100



ANGLE BODY/ DV200



TEFLON BODY/ DVG100

The standard bonnet enables the forming of a deep packing box together with a long guide housing there by providing a robust and vibration resistant assembly. Teflon rings are the standard packing up to 250 °C



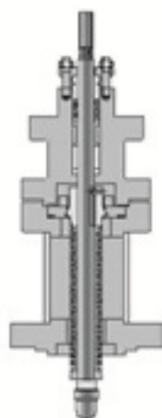
STANDARD BONNET

Protects the packing from excessive heat or cold, which may adversely affect valve or packing performance. A application temperature range depends upon valve and bonnet construction materials.



EXTENSION BONNET

Provides for a positive metallic gland seal within the rated pressure and temperature of the bellows material selected. Use on hazardous, lethal service an auxiliary packing box in the upper bonnet serves as a back up seal in the unlikely event of a bellows failure



BELLOWS SEAL BONNET

Permits stagnated moderate temperature gas to form within the bonnet which protects the packing from the extremes of temperature produced by the line fluid. Normally constructed in stainless steel it operated to -196 °C



CRYOGENIC BONNET

DV100-Series Cryogenic Service Application

Reliability and ease of maintenance are essential features of any good control valve and to this end the DJC range of cryogenic service valves have been kept as simple as possible.

The number of components has been kept to a minimum and ease of access to the trim is straight forward through the remove of the bonnet retaining nut and lifting of the complete bonnet and plug assembly.

Bodies are normally supplied in stainless steel or bronze with a stainless steel extension of the suitable length for the installation position and temperature as minus 268 °C (450°F). The extension can be fitted with a cold-box flange of any shape size required.

Trim construction is based on the traditional DJC top & retainer guided quick change seat design and incorporates a soft seal in PTFE or RTFE when bubble tight shut-off is required. Other types of trim such as balanced, cage are available when required. End connection can be flanged screwed socket or buttweld end plus pipe stubs as necessary. All body components are cleaned and degreased suitable oxygen service and the end connection suitably masked after testing to prevent ingress matter, moisture

DV100-Series Microflow Control Application

Increasing technical demands by user have persuaded DJC to rethink the standard to this specialized field of microflow control. Possible approaches and solutions were proposed and through the process of testing body under laboratory and field conditions a new solution took form.

MCV are designed and manufactured for the express purpose of control fractions of the capacity of flow through 1" and smaller line sized. The preference of the research facilities and process industries for scaled-down dimensions with proportionate economy in cost has been the prime factor in making them available.

No omission has been made in paralleling the design, construction and characteristics of performance, interchangeability or available accessories normally associated with larger valves.

MCV are the highest quality products available for low flow control and are well suited for those applications requiring precise control in very critical areas. The valves proven ability to function under the most adverse conditions makes it a vital tool in research and process as the final control element.

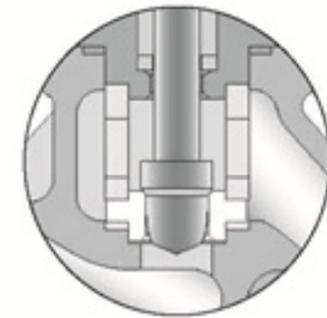
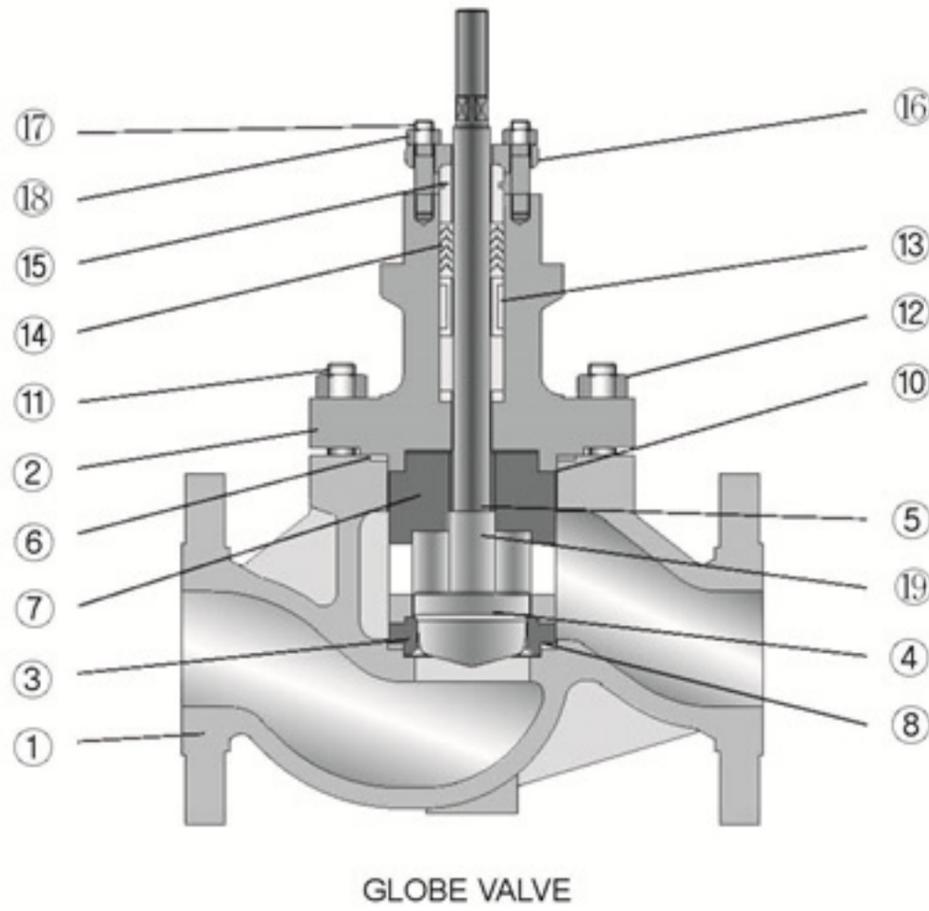
DV-ALL Teflon Body Application

DV100 is designed for those applications where severe corrosion resistance is required.

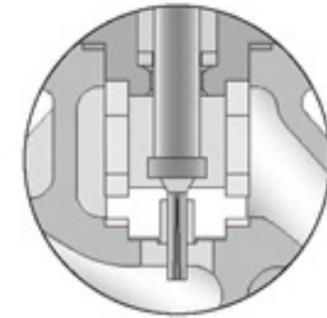
With its varied trim options and configurations, it is a most versatile valve for corrosive services, features include



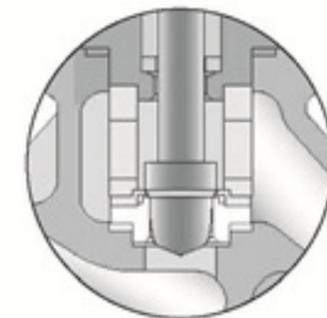
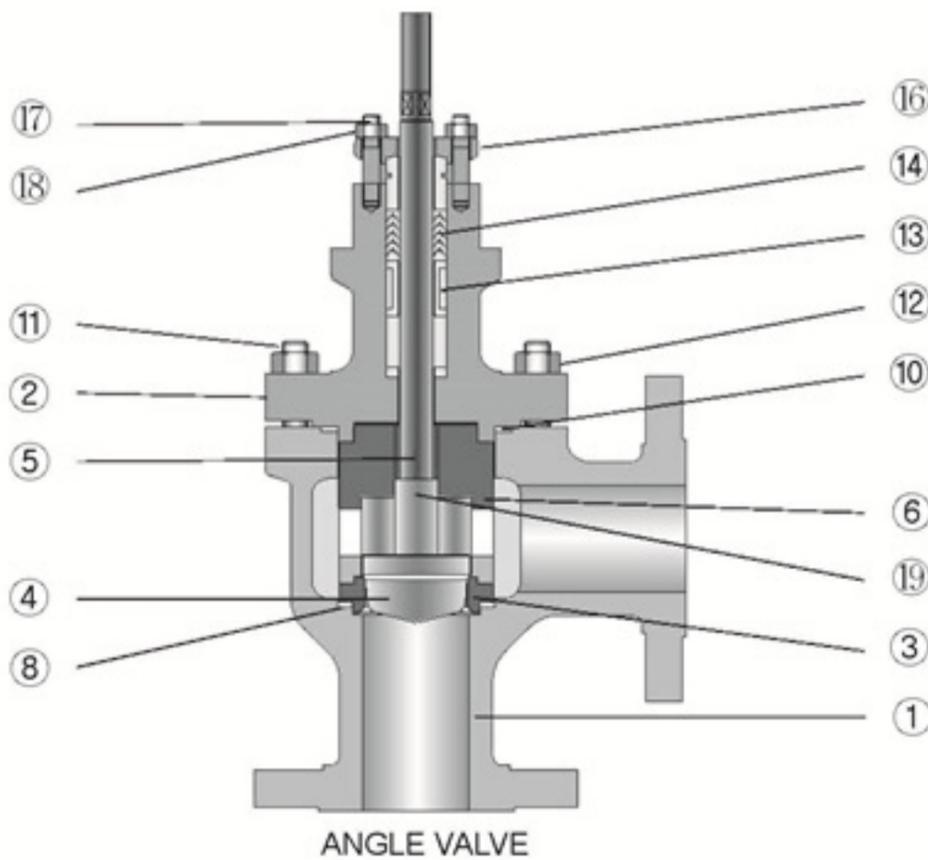
Body Materials



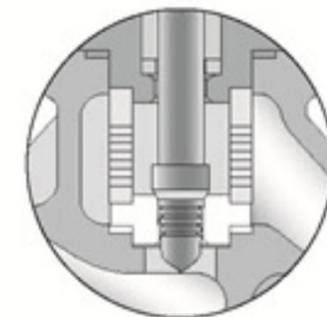
**CONTOURED
UNBALANCED TRIM**



MICROFLOW TRIM



**CONTOURED
SOFT SEAT TRIM**



**ANTI-CAVITATION
LOW NOISE CONTROL TRIM**

Body Materials

Carbon Steel or Low Alloy Steel

Part No.	Valve type	Temperature Range	
5	Plug-Stem	316SS	
17	Packing Stud	316SS	
18	Packing Nut	316SS	
16	Packing Flange	S25C or 316SS	
15	Gland Follower	316SS	
14	Packing	See Specification Sheet	
13	Packing Spacer	316SS	
2	Bonnet	A216WCB A217-WC6 or A217-WC9	
11	Body Stud	A194 B7	A194 B16
12	Body Nut	A194 2H	A194 B4
9+10	Body Gasket	Spiral wounded	
6	Seat Ring Retainer	316SS	
8	Seat Ring Gasket	Spiral wounded	
3	Seat Ring	316SS, 316SS+Stellite	
		420J2 SS	
		630SS	
4	Plug	316SS, 316SS+Stellite	
		420J2 SS	
		630SS	
19	Plug Stem Pin	316SS	
1	Body	A216 WCB	
		A217-WC6 or A217-WC9	
7	Upper Seat-Ring	Retainer : 316SS	

Stainless Steel

Part No.	Valve type	Temperature Range	
1	Body	A351 CF8M	
2	Bonnet	A351 CF8M	
11	Body Stud	A193 B8	630SS
12	Body Nut	316SS	316SS
4	Plug	316SS, 316SS+Stellite	
3	Seat Ring	316SS, 316SS+Stellite	
6	Seat Ring Retainer	316SS	
7	Upper Seat Ring Retainer	316SS with Cr. Plate	
5	Plug Stem	316SS or 630SS	
19	Plug Stem Pin	316SS	
9+10	Body Gasket	Spiral wounded	
8	Seat Ring Gasket	Spiral wounded	
14	Packing	See Specification sheet	
15	Gland Follower	316SS	
17	Packing Stud	316SS	
18	Packing Nut	316SS	
13	Packing Spacer	S25C or 316SS	

Micro Flow Cv Chart

Micro Flow Trim

Trim No.	Flow Coefficient Cv								Spring Range psi	Max. Supply psi	Critical Flow Min. FL
	Min	Intermediate Cv						Max			
9	0.0016	0.002	0.0024	0.0028	0.0032	0.0036	0.004	3-15	18.0	0.85	
8	0.004	0.005	0.006	0.007	0.008	0.009	0.010	3-15	18.0	0.85	
7	0.010	0.013	0.016	0.019	0.021	0.023	0.025	3-15	18.0	0.85	
6	0.020	0.025	0.030	0.035	0.040	0.045	0.050	3-15	18.0	0.85	
5	0.04	0.05	0.06	0.07	0.08	0.09	0.10	3-15	18.0	0.85	
4	0.10	0.13	0.16	0.19	0.21	0.23	0.25	3-15	18.0	0.90	
3	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	6-24	30.0	0.90
2	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	6-24	30.0	0.92
1	0.9	1.1	1.3	1.5	1.7	1.9	2.1	2.3	6-24	30.0	0.92
0	1.5	1.9	2.3	2.9	2.6	3.2	3.8	3.8	6-24	30.0	0.92

Anti-Cavitation Trim

LINEAR

Trim No.	Flow Coefficient Cv								Spring Range psi	Max. Supply psi	Critical Flow Min. FL
	Min	Intermediate Cv						Max			
C6	0.02	0.025	0.030	0.035	0.04	0.045	0.05	6-24	30.0	2900	
C5	0.04	0.05	0.06	0.07	0.08	0.09	0.10	6-24	30.0	2900	
C4	0.10	0.13	0.16	0.19	0.21	0.23	0.25	6-24	30.0	2900	
C3	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	6-24	30.0	1450

Note : Upstream pressure P_i must not exceed P_{max} on the rating of flanges

Ultra Microflow Trim

Valve Size	Trim No.	Cv Coefficient Cv	Rangeability		Orifice Diameter	Port Area m^2
			Linear	Eq%		
1/4" 1/2" 3/4"	U1	0.001	15:1	N/A	0.0625	0.0031
	U2	0.006	15:1	N/A	0.0625	0.0031
	U3	0.004	15:1	N/A	0.0625	0.0031
	U4	0.00027	15:1	N/A	0.0625	0.0031
	U5	0.00018	15:1	N/A	0.0625	0.0031
	U6	0.00012	15:1	N/A	0.0625	0.0031
	U7	0.00008	15:1	N/A	0.0625	0.0031
1/4"	U8	0.00005	15:1	N/A	0.0625	0.0031
	U9	0.000036	15:1	N/A	0.042	0.0014

Option : Rated Cv 0.000024, 0.000006, 0.000004 Rangeability 15:1 Orifice Dia 0.042" Port Area 0.0014 m^2

Cv, FL Travel Chart

Contoured Trim / Globe & Angle Valves

Percent of Travel			10	20	30	40	50	60	70	80	90	100
FL			0.93	0.93	0.92	0.92	0.91	0.91	0.91	0.90	0.90	0.90
Valve Size	Orifice Dia	Travel(mm)	Rated Cv									
3/4, 1"	0.156"	10	0.026	0.045	0.065	0.084	0.103	0.123	0.142	0.161	0.181	0.2
	0.250"	20	0.104	0.181	0.259	0.336	0.413	0.491	0.568	0.645	0.723	0.8
	0.375"		0.455	0.793	1.132	1.470	1.808	2.147	2.485	2.823	3.162	3.5
	0.500"		0.650	1.133	1.617	2.100	2.583	3.067	3.550	4.033	4.517	5.0
	0.750"		1.170	2.040	2.910	3.780	4.650	5.520	6.390	7.260	8.130	9.0
1"	1.000"		2.080	3.627	5.173	6.720	8.267	9.813	11.360	12.167	14.453	16.0
1-1/2"	1"	20/30	3.250	5.667	8.083	10.500	12.917	15.333	17.750	20.167	22.583	25.0
	1.580"		4.550	7.933	11.317	14.700	18.083	21.467	24.850	28.233	31.617	35.0
2"	1.580"	30	4.94	8.61	12.29	15.96	19.63	23.31	26.98	30.65	34.33	38.0
	2.000"		6.11	10.65	15.20	19.74	24.28	28.83	33.37	37.91	42.46	47.0
2-1/2"	2.000"	30/40	6.50	11.33	16.17	21.00	25.83	30.67	35.50	40.33	45.17	50.0
	2.500"		9.49	16.55	23.60	30.66	37.72	44.77	51.83	58.89	65.94	73.0
3"	2.000"	30/40	7.15	12.47	17.78	23.10	28.42	33.73	38.05	44.37	49.68	55.0
	3.000"		13.65	23.80	33.95	44.10	54.25	64.40	74.55	84.70	94.85	105.0
4"	3.150"	40/50	14.30	24.93	35.57	46.20	56.83	67.47	78.10	88.73	99.37	110.0
	4.000"		24.70	43.07	61.43	79.80	98.17	116.53	134.90	153.27	171.63	190.0
9"	4.000"	40/50	26.00	45.33	64.67	84.00	103.33	122.67	142.00	161.33	180.67	200.0
	6.000"	50/70	98.67	98.67	129.33	168.00	206.67	245.33	284.00	322.67	361.33	400.0

Linear

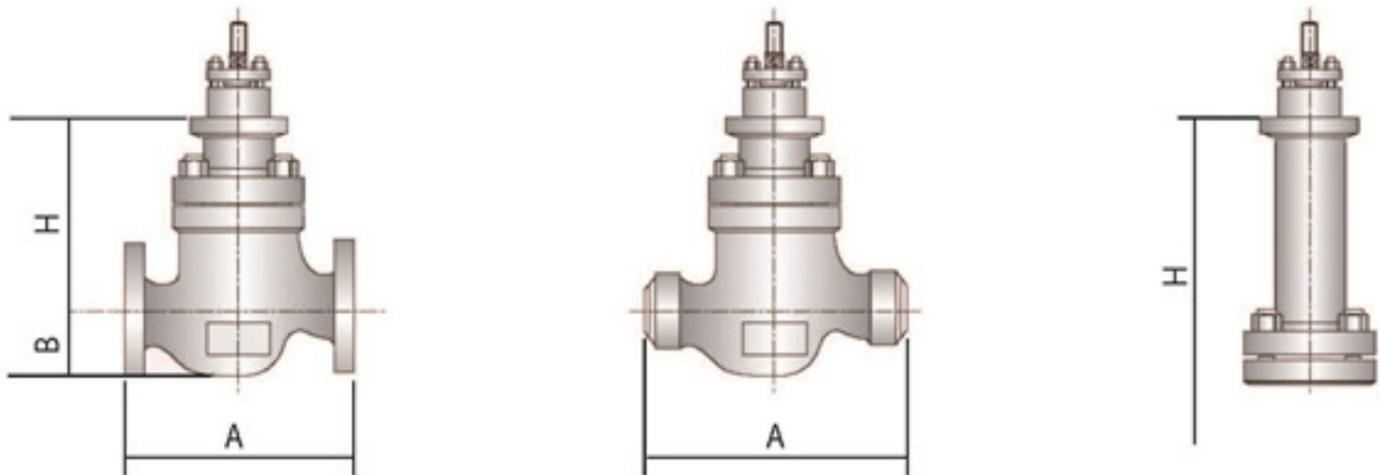
Contoured Trim / Globe & Angle Valves

Percent of Travel			10	20	30	40	50	60	70	80	90	100
FL			0.93	0.93	0.93	0.92	0.92	0.91	0.91	0.90	0.90	0.90
Valve Size	Orifice Dia	Travel(mm)	Rated Cv									
3/4, 1"	0.250"	20	0.015	0.200	0.028	0.039	0.055	0.077	0.108	0.152	0.214	0.3
	0.375"		0.038	0.053	0.074	0.104	0.146	0.205	0.288	0.405	0.569	0.8
	0.500"		0.164	0.230	0.324	0.455	0.639	0.898	1.262	1.773	2.491	3.5
	0.750"		0.234	0.329	0.462	0.650	0.913	1.283	1.802	2.533	3.558	5.0
	1"		1.000"	0.422	0.592	0.832	1.169	1.643	2.309	3.244	4.559	6.405
1-1/2"	1"	20/30	0.749	1.053	1.480	2.079	2.921	4.105	5.767	8.104	11.380	16.0
	1.580"		1.171	1.645	2.312	3.248	4.564	6.413	9.012	12.662	17.792	25.0
2"	1.580"	30	1.640	2.300	3.240	4.550	6.390	8.980	12.620	17.730	24.910	35.0
	2.000"		1.78	2.50	3.51	4.94	6.94	9.75	13.70	19.25	27.04	38.0
2-1/2"	2.000"	30/40	2.20	3.09	4.35	6.11	8.58	12.06	16.94	23.81	33.45	47.0
	2.500"		2.34	3.29	4.62	6.50	9.13	12.83	18.02	25.32	35.58	50.0
3"	2.000"	30/40	3.28	4.61	6.47	9.09	12.78	17.96	25.23	35.45	49.82	70.0
	3.000"		3.33	4.67	6.56	9.23	12.96	18.21	25.93	35.96	50.53	71.0
4"	3.150"	40/50	4.92	6.91	9.71	13.64	19.17	26.94	37.85	53.18	74.73	105.0
	4.000"		5.15	7.24	10.17	14.29	20.08	28.22	39.65	55.71	78.28	110.0
9"	4.000"	40/50	8.90	12.50	17.57	24.69	34.69	48.74	68.49	96.23	135.22	190.0
	6.000"	50/70	9.18	12.90	18.12	25.48	35.78	50.28	70.65	99.27	139.49	196.0

Equal %



Dimensions



ANSI Class 150~600 LBS

Valve Size (inch)	A						B		H			
	ANSI Class 150		ANSI Class 300		ANSI Class 600		ANSI Class 150~300	ANSI Class 600	ANSI Class 150~300		ANSI Class 600	
	Rf	Welding	Rf	Welding	Rf	Welding			Standard Bonnet	Standard Bonnet	Standard Bonnet	Extension Bonnet
1/2"	184	206	190	206	203	206	50	50	150	260	155	270
3/4"	184	210	194	210	206	210	50	50	155	270	170	296
1"	184	210	197	210	210	210	55	55	155	270	170	296
1.5"	222	251	235	251	251	251	62	72	190	315	206	350
2"	254	286	267	286	286	286	75	80	255	370	270	402
2.5"	276	292	292	292	311	311	90	100	276	380	295	430
3"	298	318	318	318	337	337	110	120	280	390	320	454
4"	352	368	368	368	394	394	110	140	320	440	346	488
6"	451	473	473	473	508	508	170	182	385	451	398	520
8"	543		568		610	610						
10"	673		708		752	752						

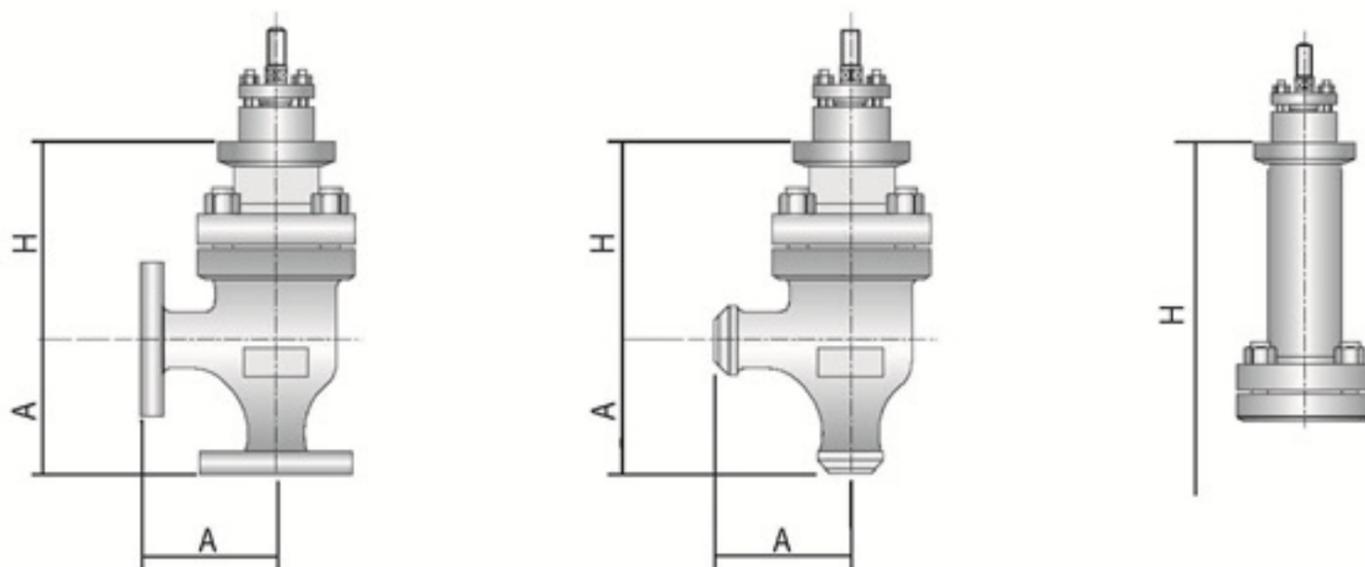
unit/mm

ANSI Class 900~2500 LBS

Valve Size (inch)	A						B		H			
	ANSI Class 900		ANSI Class 1500		ANSI Class 2500		ANSI Class 900~1500	ANSI Class 600	ANSI Class 900~1500		ANSI Class 2500	
	Rf	Welding	Rf	Welding	Rf	Welding			Standard Bonnet	Standard Bonnet	Standard Bonnet	Extension Bonnet
3/4"	273	279	273	279	318	318	60	70	230	350	280	410
1"	273	279	273	279	318	318	70	80	230	350	280	410
1.5"	333	330	333	330	381	381	80	100	265	390	320	474
2"	375	375	375	375	400	400	100	120	280	440	355	515
2.5"	410	410	410	410	441	441	120	135	324	480	380	568
3"	441	460	460	460	660	660	140	150	360	540	446	630
4"	511	530	530	530	737	737	170	185	405	636	498	715
6"	714	768	768	768	864	864	220	230	510	720	562	850

unit/mm

Dimensions



ANSI Class 150~600 LBS

unit/mm

Valve Size (inch)	A						H			
	ANSI Class 150		ANSI Class 300		ANSI Class 600		ANSI Class 150~300		ANSI Class 600	
	Rf	Rf	Rf	Rf	Rf	Rf	Extension Bonnet	Extension Bonnet	Extension Bonnet	Extension Bonnet
3/4"	98	98	98	98	105	210	155	270	170	296
1"	98	98	98	98	105	210	155	270	170	296
1.5"	112	126	126	126	126	251	190	315	206	350
2"	127	132	132	132	143	143	230	370	270	402
2.5"	138	146	146	146	156	156	276	380	295	430
3"	149	159	159	159	169	169	280	390	320	454
4"	176	184	184	184	197	197	320	440	346	488
6"	226	238	238	238	254	254	385	451	398	520

ANSI Class 900~2500 LBS

unit/mm

Valve Size (inch)	A						H			
	ANSI Class 150		ANSI Class 300		ANSI Class 600		ANSI Class 150~300		ANSI Class 600	
	Rf	Rf	Rf	Rf	Rf	Rf	Extension Bonnet	Extension Bonnet	Extension Bonnet	Extension Bonnet
3/4"	36	139	136	139	59	159	230	350	280	410
1"	136	139	136	139	159	159	230	350	280	410
1.5"	166	166	166	166	191	191	265	390	320	474
2"	187	187	187	187	205	205	280	440	355	515
2.5"	205	205	205	205	221	221	324	480	380	568
3"	230	230	230	230	330	330	360	540	446	630
4"	265	265	265	265	369	369	405	636	498	715
6"	384	384	384	384	432	432	510	720	562	850

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