www.aov.kr

DV700-Series

SEGMENT BALL VALVE

DAEJU CONTROL CO., LTD.

DV700-Series FEATURES

- Excellent sealing capacity -Class V Standard
- Precise contouring of the V-notch provides excellent control characteristics for an extensive variety of flow applications.
- Rugged self- adjusting metal seated option is ideally suited for high temperature applications or slurries.
- Splined connection between the shaft and ball ensures precise control and low hysteresis.
- Shearing action between ball and seal promotes smooth ,non-clogging operation-perfect for fiber or slurry applications.
- Easy to change seats, means low cost for valve repairs.
- Heavy duty construction with unrestricted straight through flow path gives high Capacity.
- Spring loaded seat maintains constant contact with the ball ,giving enhanced sealing performance.
- Superior trunnion bearing technology is engineered for excellent abrasion resistance.

Contents

DV Series Selection Guide

DV [ ] [ ] [ ] [ ]

Body Type
G. Globe
A. Angle

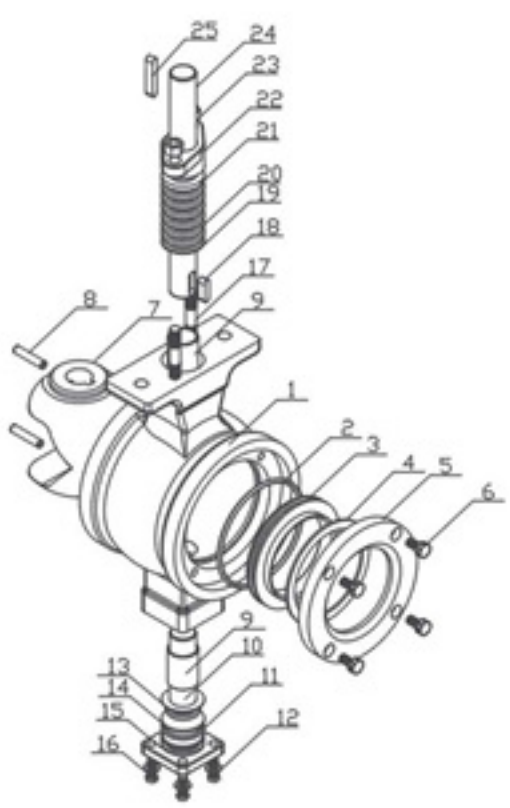
Trim Type
100. Single
200. Cage
300. X[iks]-Trim
400. Desuperheater
500. T.O.Butterfly
600. E.R.Plug
700. Segment Ball

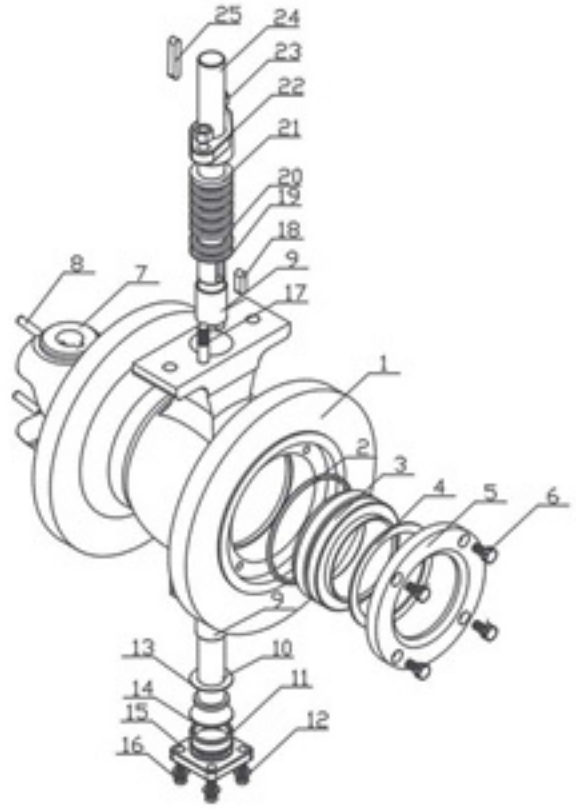
Actuator Type
DD. Diaph, Dir, Action
DR. Diaph, Rev, Action
CS. Spring Cyilnder
CD. Double Cyilnder
HS. Hydro, Cyilnder
EM. Electro, Motor
CE. Custom, Engineered

Size
C1. Φ250, C2, Φ290
C3. Φ370, C4, Φ480
C5. Φ550

Cylinder Size
300~1000

PARTS LIST MATERIALS OF CONSTRUCTION





No.	Name	Quantity	Meterial	Remark
1	Body	1	WCB, CF8, CF8M	
2	O-ring	1	Viton, Graphite	
3	Seat	1	SS304, SS316+Stellite Surfacing	HVOF coating is avaiable
4	Wavy spring	1	17-4PH	
5	Retainer	14	WCB, SS304, SS316	
6	Socket head screw	1	SS304	
7	Segment Ball	2	Chromium	HVOF coating is avaiable
8	Cylindrical pin	2	SS304	
9	Self Lubricating bearing	1	SS304+PTFE	
10	Lower shaft	1	17-4PH, SS316	
11	O-ring	4	Viton, Graphite	
12	Flat gasket	1	SS304	
13	Gasket	1	PTFE	
14	Adjust gasket	1	PTFE	
15	Blind flange	4	CF8, CF8M	
16	Hexagon screw	2	SS304	
17	Stud	1	SS304	
18	Flat key	1	SS304	
19	Upper packing	1	PTFE	
20	Middle packing	1 Group	PTFE	
21	Lower packing	1	PTFE	
22	Gland	1	CF8, CF8M	
23	Hexagon nut	2	SS304	
24	Upper shaft	1	17-4PH, SS316	
25	Wavy spring	1	17-4PH,	Option Inconel

TECHNICAL DATA

End Connection
Wafer/Flange structure: 1"-10"(DN25-DN250)
Flange structure: 12"-20"(DN300-DN500)

Normal Pressure Ratings
ANSI150 ANSI300
DIN PN10,PN16,PN25,PN40,PN64

Design Standard
1. Flange standard: ASME B 16.5, EN1092-1:2001, JB/T79.1-1994, HG20592-1997
2. Pressure-Temp rated valve : ASME B 16.34-2003, ISO7005-1
3. Face to face length standard:
   Wafer : special size
   Flange : ISA S75.04-1995, IEC/DIN 534-3-2
4. Applicable Temp range
   -20°F -248°F (-29°C-120°C) for PTFE seat
   -20°F -392°F (-29°C-200°C) for Metal seat
   -20°F -572°F (-29°C-300°C) for High temp metal seat
5. Seat and shell test standard
   Each DV700-Series valve undergoes hydraulic test with 1.5 X pressure rating as shell test pressure and 1.1 X pressure rating as seat tightness test pressure. Test medium is water.

Maximum Allowable leakage Rate

Size	Metal seat	Soft seat
DN25(1")	1.50ml/min	0.15ml/min
DN32(1 1/4")	1.80ml/min	0.20ml/min
DN40(1 1/2")	2.40ml/min	0.24ml/min
DN50(2")	3.00ml/min	0.30ml/min
DN65(2 1/2")	3.90ml/min	0.39ml/min
DN80(3")	4.80ml/min	0.48ml/min
DN100(4")	6.00ml/min	0.60ml/min
DN125(5")	7.50ml/min	0.75ml/min
DN150(6")	9.00ml/min	0.90ml/min
DN200(8")	12.00ml/min	1.20ml/min
DN250(10")	15.00ml/min	1.50ml/min
DN300(12")	18.00ml/min	1.80ml/min
DN350(14")	21.00ml/min	2.10ml/min
DN400(16")	24.00ml/min	2.40ml/min

CV Versus Valve Rotation, in Degrees

Size	10	20	30	40	50	60	70	80	90
DN25(1")	0.11	0.84	2	4	7	11	16	21	27
DN32(1 1/4")	0.19	1.47	4	7	12	19	27	37	47
DN40(1 1/2")	0.28	2.18	6	11	19	28	40	55	70
DN50(2")	0.44	3.43	9	17	29	45	64	87	110
DN65(2 1/2")	0.68	5.3	14	27	45	69	98	134	170
DN80(3")	1	9	23	44	74	114	162	221	280
DN100(4")	2	13	34	64	109	166	237	324	410
DN125(5")	3	23	62	117	199	305	434	593	750
DN150(6")	4	31	81	153	260	398	566	774	980
DN200(8")	7	54	143	268	456	698	994	1359	1720
DN250(10")	12	90	241	452	769	1177	1676	2291	2900
DN300(12")	15	119	315	593	1007	1543	2196	3002	3800
DN350(14")	28	218	581	1092	1855	2842	4046	5530	7000
DN400(16")	39	306	813	1529	2597	3979	5664	7742	9800

Maximum Allowable Differential Pressure

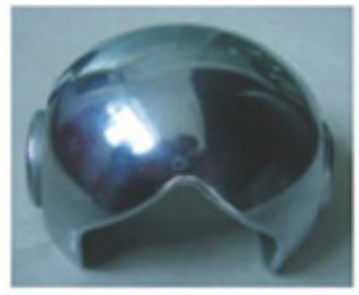
Size	Wafer Connection Class 150		Wafer Connection Class 300		Flanged Connection Class 150		Flanged Connection Class 150	
	Max Shutoff dp	Max control dp	Max Shutoff dp	Max control dp	Max Shutoff dp	Max control dp	Max Shutoff dp	Max control dp
	psi	psi	psi	psi	psi	psi	psi	psi
DN25(1")	290	217	725	507	290	217	725	507
DN32(1 1/4")	290	217	725	507	290	217	725	507
DN40(1 1/2")	290	217	725	507	290	217	725	507
DN50(2")	290	217	725	507	290	217	725	507
DN65(2 1/2")	290	217	725	507	290	217	725	507
DN80(3")	290	217	725	507	290	217	725	507
DN100(4")	232	174	580	362	232	174	580	507
DN125(5")	232	174	580	362	232	174	580	362
DN150(6")	232	174	580	362	232	174	580	362
DN200(8")	232	174	507	362	232	174	507	362
DN250(10")	203	145	507	362	203	145	507	362
DN300(12")	-	-	-	-	203	145	507	362
DN350(14")	-	-	-	-	174	116	435	290
DN400(16")	-	-	-	-	174	116	435	290

Segment Ball surface treatment

Hard chromium plating : Fine wear resistance and corrosion resistance, Hardness Rockwell HRC45-52, for general service

Stellite based alloy spray welding coating : Hardness HRC45-55, superior abrasion anderosion resistence

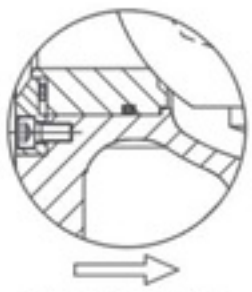
Ionitriding(plasma nitriding) : Hardness HRC52-62, suitable for abrasive conditions like solid particles, not applicable for corrosive Conditions



HVOF coation/Tungsten carbide coting : HRC62-68 Excellent wear resistance and corrosion resistance, applicable for solid particles or severe conditions requiring long service life

Sealing structure schematic drawing

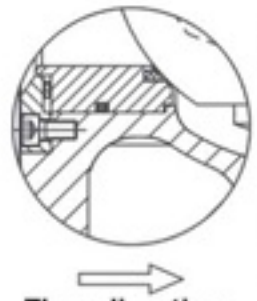
Sealing structure schematic drawing



Flow direction

Metal seat type A

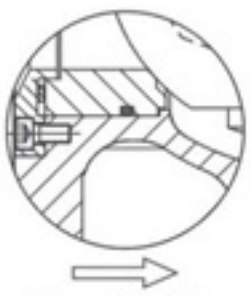
Seat	SS304/SS316+stellite surfacing
Spring	17-7PH
O-ring	VITON
Temp range	-29℃ -200℃
Applied	General



Flow direction

Soft seat type D

Seat	SS304/SS316+PTFE/RTFE
Spring	17-7PH
O-ring	VITON
Temp range	-29℃ -120℃
Applied	General



Flow direction

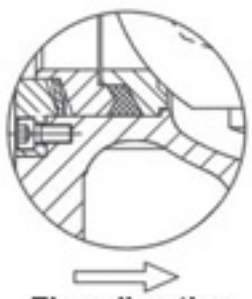
Metal seat type B

Seat	SS304/SS316+stellite surfacing
Spring	17-7PH
O-ring	VITON
Temp range	-29℃ -200℃
Applied	General or fluid containing long fiber

Flow direction

Metal seat type E

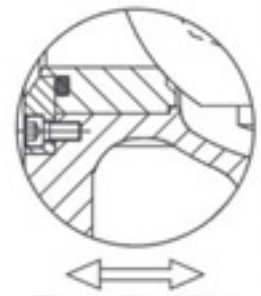
Seat	SS304/SS316+stellite surfacing
Spring	17-7PH/Inconel
O-ring	VITON
Temp range	-29℃ -120℃
Applied	Non-clogging design applied for high Consistency pulp or solid particles



Flow direction

Metal seat type C

Seat	SS304/SS316+stellite surfacing
Spring	17-7PH/Inconel
O-ring	Graphite
Temp range	-29℃ -300℃
Applied	Vapor or condensate

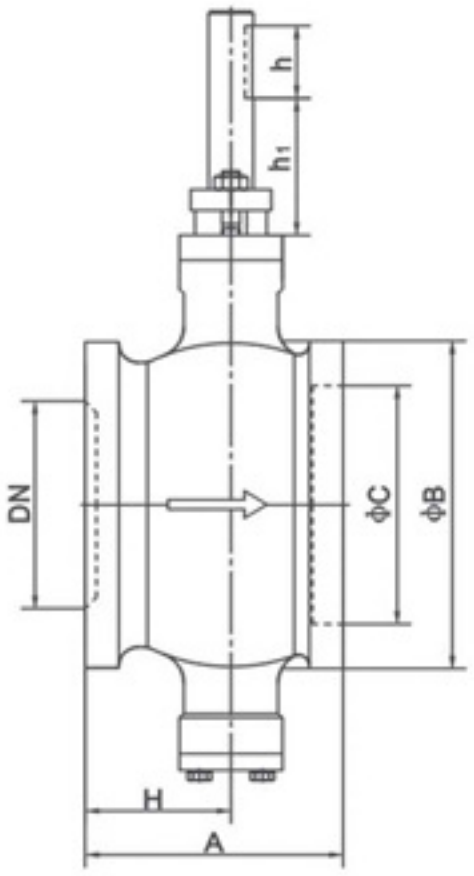


Flow direction

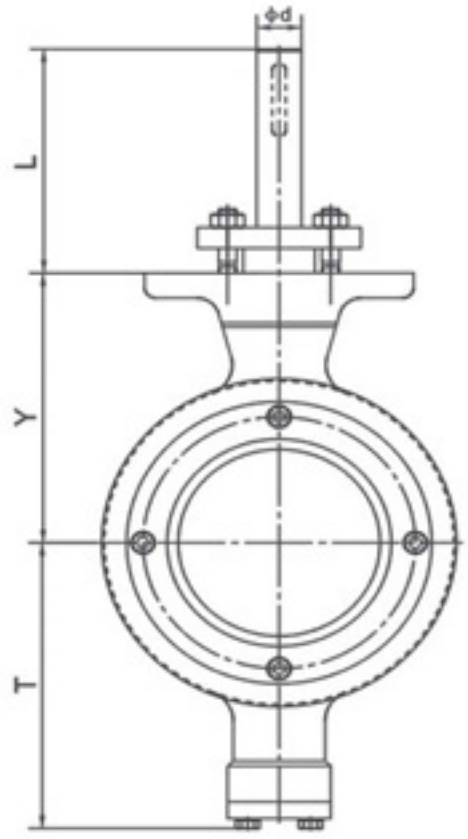
Metal seat type F

Seat	SS304/SS316+stellite surfacing
Spring	17-7PH/Inconel
O-ring	VITON
Temp range	-29℃ -300℃
Applied	General, bidirectional flow

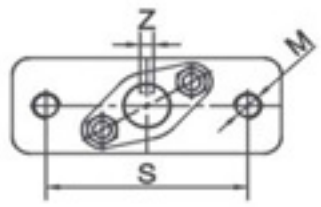
DIMENSION OF BARE STEM WAFER(DIN PN10, CLASS 150)

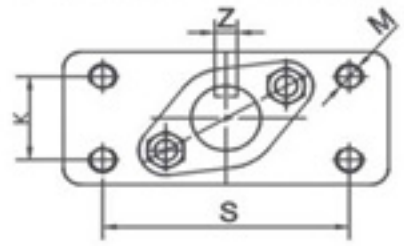


View fow size DN25-DN125(1"-5")



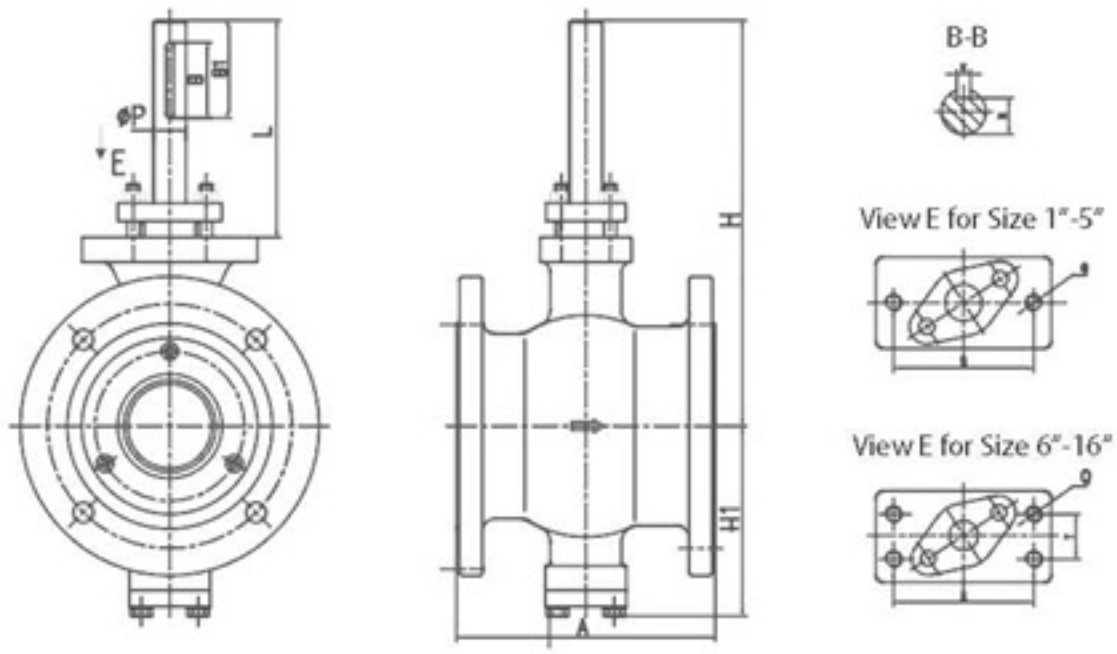
View fow size DN150-DN250(6"-10")





DN	A	H	B	C	T	Y	L	Ød	h1	h	S	K	M	Z
25	50	30	68	38	81	73	102	16	64	35	75	/	2-M10	5
32	60	35	76	45	86	78	100	16	62	35	75	/	2-M10	5
40	60	35	84	50	90	80	102	16	64	35	75	/	2-M10	5
50	75	43	100	62	93	90	104	16	66	35	75	/	2-M10	5
65	100	50	118	73	108	105	102	16	64	35	75	/	2-M10	5
80	100	57	132	90	123	118	110	20	68	35	90	/	2-M12	5
100	115	65	158	115	138	130	108	20	66	35	90	/	2-M12	6
125	129	78	184	134	148	145	110	25	65	40	90	/	2-M12	6
150	160	95	216	164	170	170	124	30	69	50	110	40	2-M12	8
200	200	120	268	206	301	201	124	30	69	50	110	40	2-M12	8
250	240	148	326	260	237	237	140	40	77	60	135	40	2-M16	12

DIMENSION OF BARE STEM VALVES



Flanged Style-ISA Face to face 1"-16"

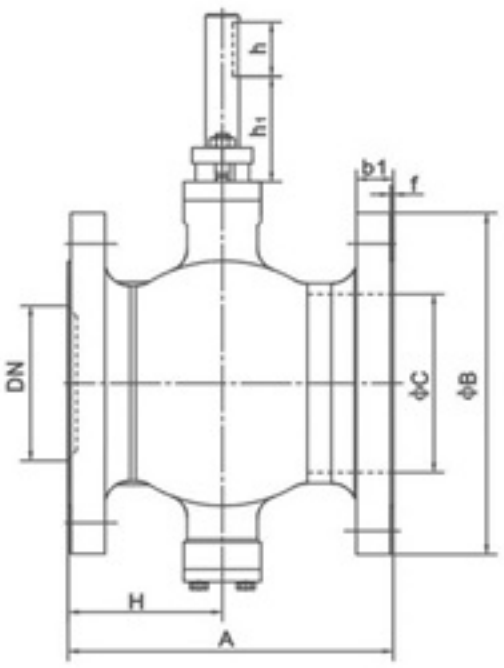
Flanged CLASS 150-ISA Face to Face

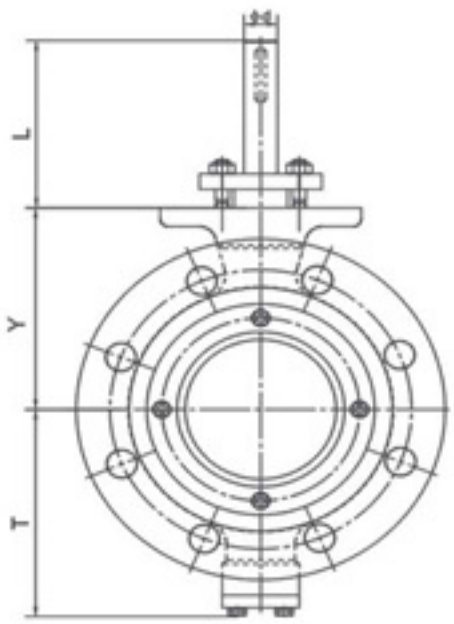
SIZE	Outline Demensions(Inches)				Connection Dimensions(Inches except as noted)							
	A	H	L	H1	øP	B1	B	K	N	S	Q	T
1"	4.0	7.5	4.5	3.4	0.6	1.8	1.4	0.2	0.5	3.1	M10	-
1 1/4"	4.1	7.8	4.6	3.4	0.6	1.8	1.4	0.2	0.5	3.1	M10	-
1 1/2"	4.5	7.9	4.5	3.4	0.6	1.8	1.4	0.2	0.5	3.1	M10	-
2";	4.9	7.9	4.5	3.8	0.6	1.8	1.4	0.2	0.5	3.1	M10	-
2 1/2"	5.7	8.7	4.3	4.4	0.6	1.8	1.4	0.2	0.5	3.1	M10	-
3"	6.5	9.4	4.9	4.4	0.8	1.8	1.4	0.2	0.6	3.5	M12	-
4"	7.6	9.9	4.8	4.8	0.8	1.8	1.4	0.2	0.6	3.5	M12	-
5"	8.4	10.3	4.8	5.6	1.0	1.8	1.4	0.3	0.8	3.9	M12	-
6"	9.0	12.1	5.0	6.5	1.2	1.2	1.6	0.4	1.0	4.3	M12	1.6
8"	9.6	13.0	5.1	7.7	1.2	1.2	1.6	0.4	1.0	4.3	M12	1.6
10"	11.7	15.0	5.7	9.3	1.6	1.6	2.4	0.5	1.4	5.1	M12	1.8
12"	13.3	17.0	6.0	11.1	1.6	1.6	2.4	0.5	1.4	5.1	M12	1.8
14"	15.7	21.5	7.8	13.3	2.0	2.0	2.4	0.6	1.7	5.3	M16	2.5
16"	15.7	26.0	10.4	15.4	2.4	2.4	3.1	0.7	2.1	6.9	M20	2.8

Flanged CLASS 300-ISA Face to Face

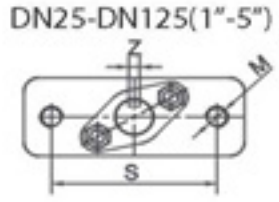
SIZE	Outline Demensions(Inches)				Connection Dimensions(Inches except as noted)							
	A	H	L	H1	øP	B1	B	K	N	S	Q	T
1"	4.0	7.5	4.5	3.4	0.6	1.8	1.4	0.2	0.5	3.1	M10	-
1 1/4"	4.1	7.8	4.6	3.4	0.6	1.8	1.4	0.2	0.5	3.1	M10	-
1 1/2"	4.5	7.9	4.5	3.4	0.6	1.8	1.4	0.2	0.5	3.1	M10	-
2";	4.9	7.9	4.5	3.8	0.6	1.8	1.4	0.2	0.5	3.1	M10	-
2 1/2"	5.7	8.7	4.3	4.4	0.8	1.8	1.4	0.2	0.6	3.1	M12	-
3"	6.5	9.4	4.9	4.4	0.8	2.0	1.6	0.2	0.6	3.5	M12	-
4"	7.6	9.9	4.8	4.8	1.0	2.0	1.6	0.3	0.8	3.5	M12	-
5"	8.4	10.3	4.8	5.6	1.2	2.2	1.6	0.4	1.0	3.9	M12	1.6
6"	9.0	12.1	5.0	6.5	1.2	2.2	1.6	0.4	1.0	4.3	M12	1.6
8"	9.6	13.0	5.1	7.7	1.6	3.0	2.4	0.5	1.4	4.3	M12	1.8
10"	11.7	15.0	5.7	9.3	1.6	3.1	2.4	0.5	1.4	5.1	M12	1.8
12"	13.3	17.0	6.0	11.1	2.0	3.1	2.4	0.6	1.7	5.3	M16	2.5
14"	15.7	21.5	7.8	13.3	2.4	4.1	3.1	0.7	2.1	6.9	M20	2.8
16"	15.7	26.0	10.4	15.4	2.8	4.1	3.1	0.8	2.5	7.5	M20	3.5

DIMENSION OF BARE STEM VALVES

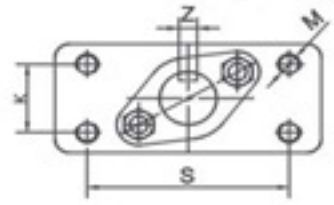




DN25-DN125(1"-5")



DN25-DN125(6"-16")



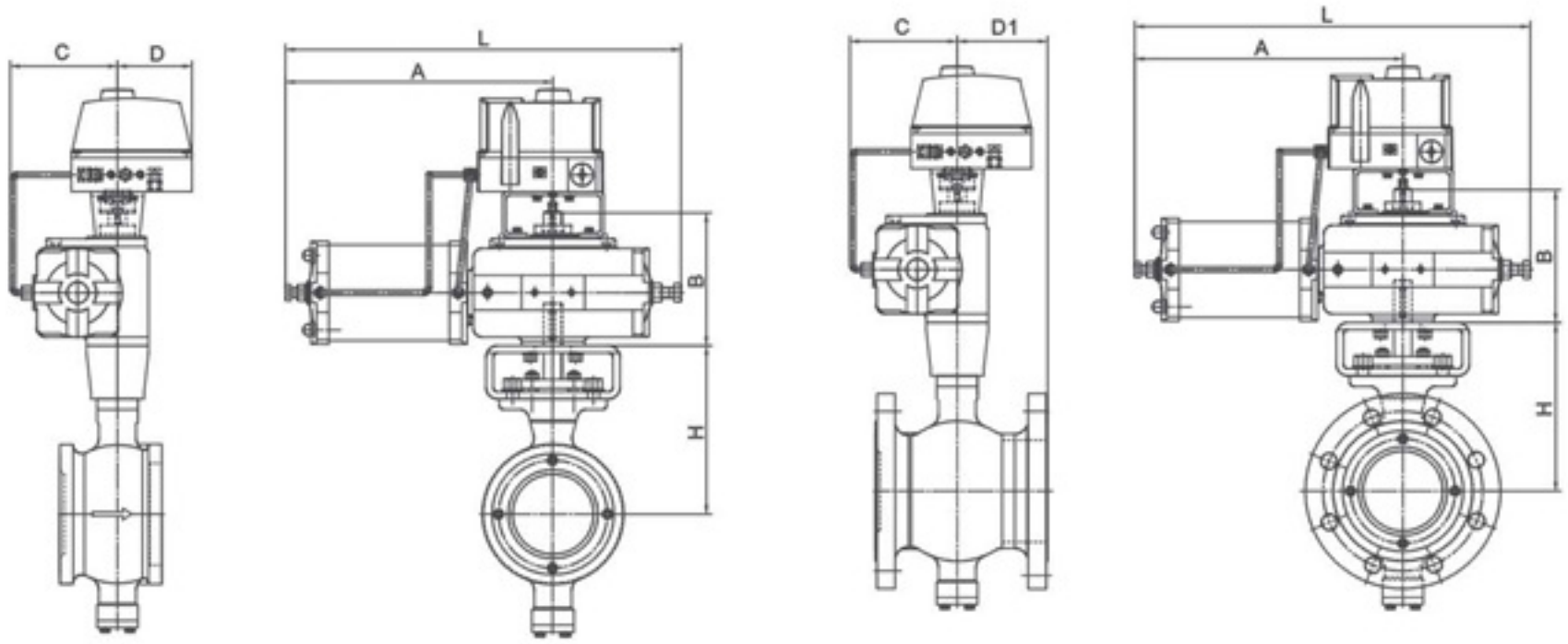
Flanged, DIN PN16

DN	A	H	B	b1	f	C	Y	T	L	Ød	h1	h	S	K	M	Z
25	102	51	115	16	2	38	73	81	102	16	64	35	75	/	2-M10	5
32	102	51	140	18	2	45	78	86	100	16	62	35	75	/	2-M10	5
40	114	57	150	18	2	50	80	90	102	16	64	35	75	/	2-M10	5
50	124	60	165	20	2	62	90	93	104	16	66	35	75	/	2-M10	5
65	145	70	185	20	2	73	105	108	102	16	64	35	75	/	2-M10	5
80	165	75	200	20	2	90	118	123	110	20	68	35	90	/	2-M12	6
100	194	92	220	22	2	115	130	138	108	20	66	35	90	/	2-M12	6
125	194	97	250	22	2	134	145	148	110	25	65	40	90	/40	2-M12	8
150	229	110	285	24	2	164	170	170	124	30	69	50	110	40	2-M12	8
200	243	120	340	24	2	206	201	200	124	30	69	50	110	40	2-M12	8
250	297	148	405	26	2	260	237	240	140	40	77	60	135	40	2-M16	12
300	338	190	460	28	2	316	282	286	140	40	77	60	135	64	2-M16	12
350	400	221	520	30	2	372	337	330	170	50	105	60	140	64	2-M16	14
400	400	220	580	32	2	420	372	367	212	60	127	80	170	80	2-M20	18

Flanged, DIN PN25

DN	A	H	B	b1	f	C	T	Y	L	Ød	h1	h	S	K	M	Z
25	102	51	115	16	2	38	81	73	102	16	64	35	75	/	2-M10	5
32	102	51	140	18	2	45	86	78	100	16	62	35	75	/	2-M10	5
40	114	57	150	18	2	50	90	80	102	16	64	35	75	/	2-M10	5
50	124	60	165	20	2	62	93	90	104	16	66	35	75	/	2-M10	5
65	145	70	185	22	2	73	108	105	102	16	64	35	75	/	2-M10	5
80	165	75	200	24	2	90	123	118	110	20	68	35	90	/	2-M12	6
100	194	92	235	24	2	115	138	130	108	20	66	35	90	/	2-M12	6
125	194	97	270	26	2	134	148	145	110	25	65	40	90	/40	2-M12	8
150	229	110	300	28	2	164	170	170	124	30	69	50	110	40	2-M12	8
200	243	120	360	30	2	206	200	201	124	30	69	50	110	40	2-M12	8
250	297	148	425	32	2	260	240	237	140	40	77	60	135	40	2-M16	12
300	338	190	485	34	2	316	286	282	140	40	77	60	135	64	2-M16	12
350	400	221	555	38	2	372	330	337	170	50	105	60	140	64	2-M16	14
400	400	220	620	40	2	420	367	372	212	60	127	80	170	80	2-M20	18

DIMENSIONS OF VALVE AUTOMATED WITH BALL PISTON TYPE ACTUATOR



SIZE		A	L	B	H	C	D	D1
in	mm							
1"	25	270	390	140	133	105	85	85
1 1/4"	32	270	390	140	138	105	85	85
1 1/2"	40	275	395	140	140	115	85	85
2";	50	275	395	140	150	115	85	85
2 1/2"	65	296	440	150	165	125	85	85
3"	80	300	445	150	178	135	85	90
4"	100	300	445	150	190	135	85	102
5"	125	343	507	155	205	155	85	97
6"	150	343	507	190	235	170	85	129
8"	200	418	617	224	265	200	85	123
10"	250	502	742	224	317	260	92	149
12"	300	520	760	224	362	280	/	149
14"	350	605	900	277	437	330	/	179
16"	400	620	900	277	492	330	/	180

DV700-Series VALVE BASIS WEIGHT CONTROL VALVE

Ball Valve Basis Weight Control Valve is mainly applied for precise control of the pulp flow rate in the papermachine to meet the growing demand on base weight and quality of the paper. The high precision control and high resolution conformance of the basis weight control valve is also applied for other conditions requiring accurate flow rate control, such as ultrafine blending and color blending etc.

With the change of the digital signal output from the Computer or Electric controller, the step motor driven actuator operates the valve in turn automatically to accomplish the extreme accurate control of the pulp flow rate.

The step motor controlled by pulse input signal realizes 7000 steps, 14000 steps and 28000 steps control.

A discrete and a repeatable angular movement of the valve out of each step will be accomplied within the valve opening angle 0-90 degree.

Features

- High resolution conformance
- High repeatability, backlash-free step motor assures high accuracy, NASA robot gear applied, no compensation needed on backlash gap.
- Accurate feedback
- High accuracy of pulp f1ow rate and improvement on paper quality
- Precise and robust design
- Accept remote control
- Installation and maintenance easy
- Manual override

DV700-Series VALVE BASIS WEIGHT CONTROL VALVE

Ball Valve Basis Weight Control Valve is mainly applied for precise control of the pulp flow rate in the papermachine to meet the growing demand on base weight and quality of the paper. The high precision control and high resolution conformance of the basis weight control valve is also applied for other conditions requiring accurate flow rate control, such as ultrafine blending and color blending etc.
With the change of the digital signal output from the Computer or Electric controller, the step motor driven actuator operates the valve in turn automatically to accomplish the extreme accurate control of the pulp flow rate.
The step motor controlled by pulse input signal realizes 7000 steps, 14000 steps and 28000 steps control.
A discrete and a repeatable angular movement of the valve out of each step will be accomplied within the valve opening angle 0-90 degree.

Features

- High resolution conformance
- High repeatability, backlash-free step motor assures high accuracy, NASA robot gear applied, no compensation needed on backlash gap.
- Accurate feedback
- High accuracy of pulp flow rate and improvement on paper quality
- Precise and robust design
- Accept remote control
- Installation and maintenance easy
- Manual override

www.aov.kr

djc DAEJU CONTROL CO., LTD.

Office:
RM 905, New T Castle,429-1,
Gasan-Dong, Geumcheon-Gu,
Seoul, Korea
Tel : +82-2-2626-9791
Fax : +82-2-2626-9795
E-mail : djc@aov.kr
www.aov.kr

Factory:
1Da-104, Sihwa Industrial complex,
429-913 Jeongwang 3Dong, Siheung-si,
Gyeonggi-do, Korea
Tel : +82-31-432-9791
Fax : +82-31-432-9792