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LIQUID DUMP VALVES PNEUMATIC OPERATED

**PISTON BALANCED FAIL CLOSE
 MODEL PB**

APPLICATIONS:

Used as oil or water dump valves on separators, treaters, knockouts, and other similar liquid accumulators where a reduced signal pressure is available.

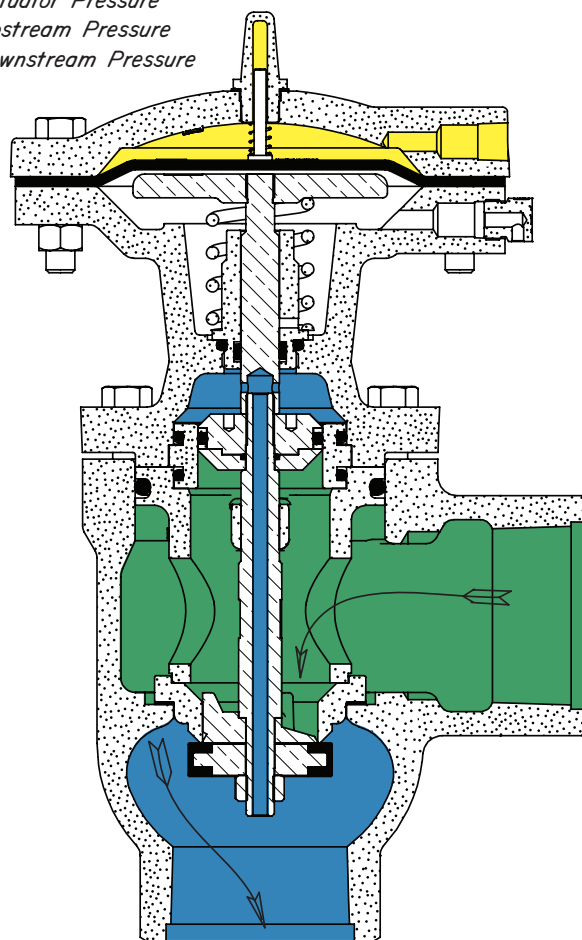
FEATURES:

- Piston balanced seat assembly
- 10 psig minimum actuating pressure
- Fail Close service.
- All internal parts can be removed with valve in-line
- Reinforced oil resistant synthetic rubber diaphragms & seats

CERTIFICATIONS:

Canadian Registration Number (CRN):
 0C15804.24567890NTY (Ductile)
 Kimray is an ISO 9001- certified manufacturer.

- Stem and Seat Assembly
- Actuator Pressure
- Upstream Pressure
- Downstream Pressure



Standard Configuration Code †	Order Code	Line Size	Connection Type	Body Type	Max Δ P psig	Max. W.P. psig ††	Cv	Cf
DPB2SAADF1S	ELA	2"	NPT	Angle	500	500	23.3	0.79
DPB2SATDF1S	EYA			Thru				
DPB2ARADF1S	ELC		150RF	Angle				
DPB2ARTDF1S	EYC			Thru				
DPB3SAADF1S	ELG	3"	NPT	Angle	250	250	43.8	0.79
DPB3SSTDF1S	EYG			Thru				
DPB3ARADF1S	ELI		150RF	Angle				
DPB3ARTDF1S	EYI			Thru				
DPB4ARADF1S	ELM	4"	150RF	Angle	250	250	70.1	0.79
DPB4ARTDF1S	EYM			Thru				

NOTES:

For standard & optional seals, metals, Cf Cv values, material specifications & dimensions see technical data on pages 04:1 - 04:111
 † For Corrosive service remove last "S" & replace with "C"
 † For KimCoat option remove last "S" & replace with "K"
 † For code builder see page 04:00.2
 †† Max W.P. values based on -20°F to 100°F.

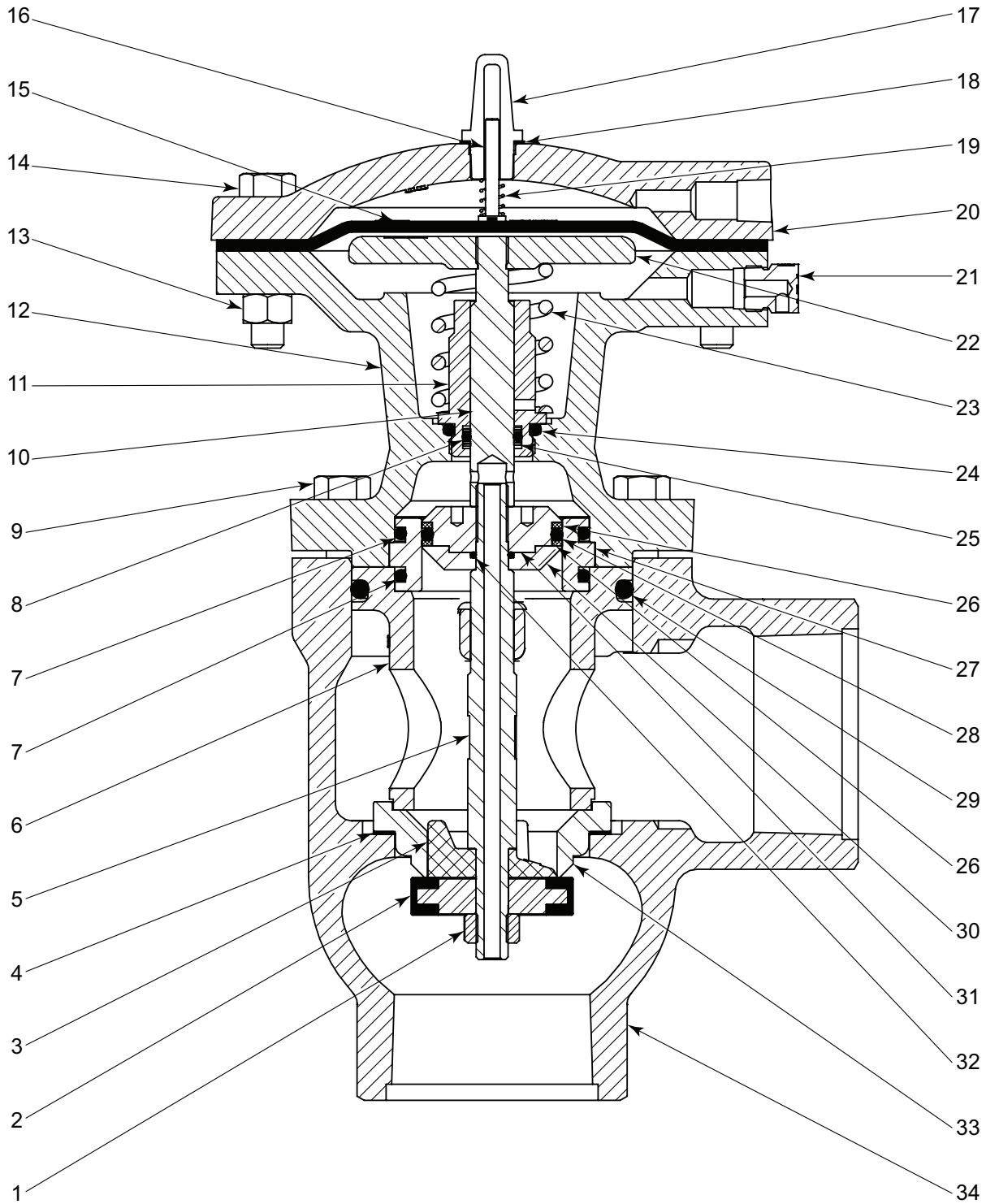
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LIQUID DUMP VALVES PNEUMATIC OPERATED



PISTON BALANCED FAIL CLOSE
MODEL PB PARTS DRAWING



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LIQUID DUMP VALVES PNEUMATIC OPERATED

**PISTON BALANCED FAIL CLOSE
MODEL PB PARTS LIST**

ITEM	QTY.	DESCRIPTION	PART NO.								
			STANDARD			CORROSIVE					
			2 INCH	3 INCH	4 INCH	2 INCH	3 INCH	4 INCH			
1	1	Lock nut \diamond *	173	906			173SS6	906SS6			
2	1	Seat \diamond *	7498HSN	7499HSN	----		7498HSN	7499HSN	----		
		Seat \diamond *	----		165HSN	----		165HSN	----		
		Seat disc \diamond *	----		160	----		160	----		
3	1	Ratio plug \diamond	332DEL	333DEL	334		332DEL	333DEL	334		
4	1	Gasket \diamond *	276	277	309		276	277	309		
5	1	Stem \diamond	1809	327	328		1809SS6	327SS6	328SS6		
6	1	Cage \diamond	1751	1759	1761		1751	1759	1761		
7	2	O-Ring \diamond *	774HSN	329HSN	1872		774HSN	329HSN	1872		
8	1	O-Ring *	154HSN	155HSN	155		154HSN	155HSN	155		
9	(Qty)	Bolt	1672 x (6)		1672 x (8)		1672 x (6)		1672 x (8)		
10	1	Stem assembly	1808	1858		1808SS6	1858SS6				
11	1	Stem guide	2463	2464		2463SS6	2464SS6				
12	1	Housing	1689	1868D	1869D		1689 ‡	1868D ‡	1869D ‡		
13	(Qty)	Nut	241 x (8)		241 x (10)		241 x (8)	241 x (10)			
14	(Qty)	Bolt	236 x (8)		191 x (10)		236 x (8)	191 x (10)			
15	1	Diaphragm *	6810	6811		6810	6811				
16	1	Travel indicator stem	1687	1733		1687	1733				
17	1	Travel indicator housing	1686			1686					
18	1	Gasket *	1784			1784					
19	1	Spring	1936	551		1936	551				
20	1	Bonnet	1671	1867		1671 ‡	1867 ‡				
21	1	Breather plug	147			147					
22	1	Diaphragm plate	133	134		133	134				
23	1	Spring	1678	2268		1678	2268				
24	1	O-Ring	1107HSN	639HSN	639		1107HSN	639HSN	639		
25	2	Back up *	149T	150T		149T	150T				
26	2	Back up \diamond *	1685	1870	1871		1685	1870	1871		
27	1	Cylinder \diamond	1679	1861	1865SS6		1679SS6	1861SS6	1865SS6		
28	1	O-Ring \diamond *	808HSN	802HSN	2083		808HSN	802HSN	2083		
29	1	O-Ring \diamond *	329HSN	330HSN	331		329HSN	330HSN	331		
30	1	Piston seal retainer \diamond	1806	1860	1864SS6		1806SS6	1860SS6	1864SS6		
31	1	Piston \diamond	1807	1859	1863SS6		1807SS6	1859SS6	1863SS6		
32	1	O-Ring \diamond *	265HSN	154HSN	154		265HSN	154HSN	154		
33	1	Removable seat \diamond	1752PH	1760PH	1762PH		1752PH	1760PH	1762PH		
34	1	Body									
		NPT Angle	1819	2379	----		1819 ‡	2379 ‡	----		
		NPT Thru	3081	3086	----		3081 ‡	3086 ‡	----		
		150RF Angle	4348	2382	2383		4348 ‡	2382 ‡	2383 ‡		
		150RF Thru	3083	3087	3090		3083 ‡	3087 ‡	3090 ‡		
2	1	Lifting Ring (not shown)	7559			7559					
						‡ Coated Parts available with "K" service type					
Cage Assemblies			CBH1	CBI1	CBJ1	CBH1S6	CBI1S6	CBJ1S6			
						\diamond These parts are stocked as Cage Assemblies.					
Repair Kits			RFPHSN	RTRHSN	RTT	RFPHSN	RTRHSN	RTT			
						* These parts are recommended spare parts and are stocked as repair kits.					

Table 1 - Flow Coefficient(Cv) for Pneumatic Dump Valves													
Line Size	Trim Size in. (mm)	Trim Type	Cf	Valve Opening Percentage									
				10	20	30	40	50	60	70	80	90	100
Diaphragm Balanced													
2"	1 1/2 in (38mm)	Linear (Nominal)	0.79	5.0	8.5	11.7	14.6	17.0	19.0	20.5	21.6	22.6	23.3
3"	2 1/4 in (57 mm)		0.79	6.7	11.1	15.6	20.3	24.8	29.2	33.4	37.2	40.7	43.8
4"	3 in (76 mm)		0.79	12.0	18.9	25.8	32.8	39.9	46.9	53.7	60.0	65.7	70.1
6"	4.88 in (124 mm)		0.79	14.2	21.0	31.6	61.2	98.3	139	179	217	250	277
Low Pressure High Volume Piston Balanced Throttling													
2" thru	1 1/2 in (38mm)	Linear (Nominal)	0.75	5.7	8.4	12.0	14.9	17.6	19.8	22.3	24.4	26.2	28.9
	2 in (51 mm)		0.75	8.3	15.3	21.5	27.2	31.6	36.0	39.3	41.6	44.0	45.8
2" angle	1 1/2 in (38mm)		0.75	3.7	7.9	12.5	15.7	18.6	21.4	24.1	27.2	30.1	33.3
	2 in (51 mm)		0.75	9.7	16.1	23.3	29.2	35.1	39.3	43.6	46.5	49.4	51.4
3" thru	2 in (51 mm)		0.75	11.6	21.5	30.5	38.6	45.7	51.3	55.6	59.1	61.6	64.0
	3 in (76 mm)		0.75	17.0	32.3	46.0	58.6	70.4	79.6	87.4	94.0	98.7	103
3" angle	2 in (51 mm)		0.75	12.5	22.9	32.2	41.8	49.4	56.2	60.8	65.3	68.4	71.7
	3 in (76 mm)		0.75	18.8	34.8	49.0	63.7	75.6	86.7	93.9	101	107	113
4" thru	3.75 in (95 mm)		0.75	17.8	32.9	48.6	61.2	73.1	84.8	94.5	102	108	114
	3 in (76 mm)		0.75	22.7	42.0	61.3	76.2	91.3	106	118	128	135	142
4" angle	3.75 in (95 mm)		0.75	18.4	35.5	52.0	67.9	84.7	96.4	110	120	130	137
	3 in (76 mm)		0.75	23.6	44.7	64.2	83.2	103	117	132	142	154	162
Piston Balanced Throttling													
2"	2 in (51 mm)	Linear (Nominal)	0.75	6.6	12.3	18.4	24.2	29.5	34.1	38.0	41.2	44.0	47.0
3"	3 in (76 mm)		0.75	12.7	18.7	29.0	41.0	52.9	63.4	71.9	78.4	83.7	89.0
4"	3 in (76 mm)		0.75	11.7	18.1	24.8	36.8	58.3	86.1	114	137	152	160

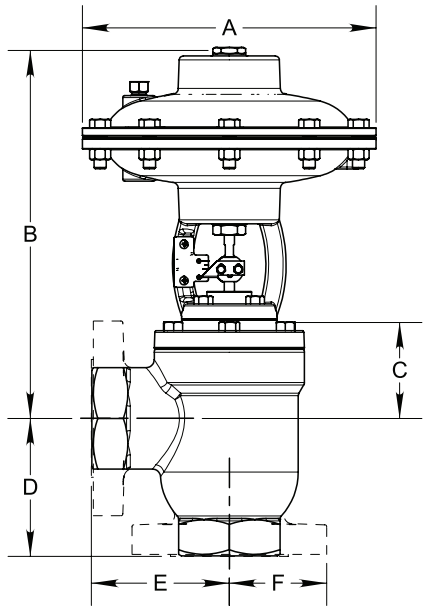
Kimray flow equations conform to ANSI/ISA - 75.01.01-2002
Kimray inherent flow characteristics conform to ANSI/ISA 75.11.01 -1985

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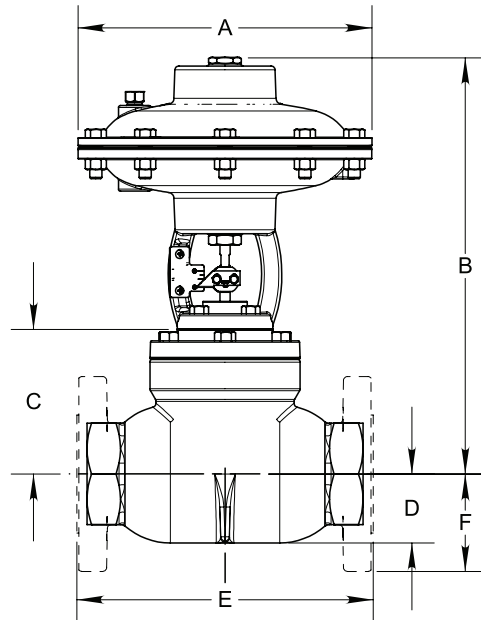


DIMENSIONS

PH ANGLE DIMENSIONS



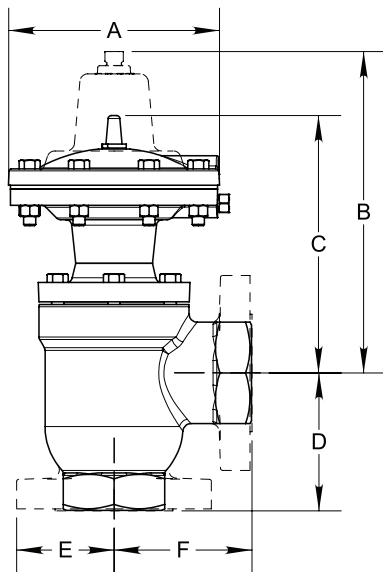
PH THRU DIMENSIONS



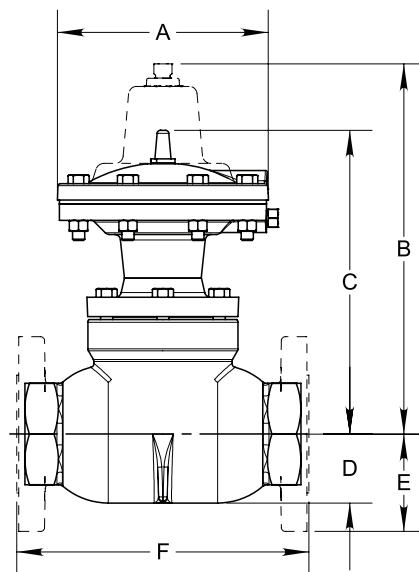
VALVE	A	B	C	D	E	F
2" SA & AR	9 1/16	11 9/32	2 29/32	4 1/4	4 1/4	3
3" SA & AR	12 7/8	15 9/32	4 1/32	5 1/2	5 1/2	3 3/4
4" AR	12 7/8	15 5/32	3 7/8	6 1/2	6 1/2	4 1/2

VALVE	A	B	C	D	E	F
2" SA	9 1/16	12 13/16	4 7/16	2 1/8	8 1/2	3
2" AR	9 1/16	12 13/16	4 7/16	2 1/8	9 1/8	3
3" SA	12 7/8	17 5/32	5 29/32	2 7/8	12	3 3/4
3" AR	12 7/8	17 5/32	5 29/32	2 7/8	12 3/16	3 3/4
4" AR	12 7/8	15 5/32	6 7/32	3 21/32	15	4 1/2

PD, PE ANGLE DIMENSIONS



PD, PE ANGLE DIMENSIONS



VALVE	A	B	C	D	E	F
2" SA & AR	6 1/2	9	8 1/2	4 1/4	3	4 1/4
3" SA & AR	8 1/2	11 3/4	10 1/4	5 1/2	3 3/4	5 1/2
4" SA & AR	8 1/2	12 1/2	11	6 1/2	4 1/2	6 1/2
6" SA & AR	10 3/4	—	19 3/4	10 1/4	5 1/2	7 11/16

VALVE	A	B	C	D	E	F
2" SA	6 1/2	10 3/8	9 7/8	2 1/8	—	8 1/2
2" AR	6 1/2	10 3/8	9 7/8	—	3	9
3" SA	8 1/2	13 5/16	11 9/16	2 7/8	—	12
3" AR	8 1/2	13 5/16	11 9/16	—	3 3/4	12 3/16
4" SA	8 1/2	14 7/8	13 3/8	—	4 1/2	15 1/8
6" SA	10 3/4	—	19 3/4	—	5 1/2	22

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SEALS SPECIFICATIONS

Table 2 - Seal Options		
Part	Standard Material	Optional Material
O-rings	HSN	FKM
Diaphragm	HSN	FKM
Seat	HSN	FKM

Table 3 - Seal Specifications			
		HIGHLY SATURATED NITRILE	FKM
Kimray Suffix		HSN	V
Resistance	Abrasion	G-E	G
	Acid	G-E	G-E
	Chemical	F	E
	Cold	G	P
	Flame	P	E
	Heat	E	E
	Oil	E	E
	Ozone	G	G-E
	Set	G	G-E
	Tear	F	F
	Water/Steam	E	P
	Weather	G	E
	CO2	G	G
	H2S	F	P
	Methanol	E	P
Properties	Dynamic	G	G
	Electrical	F	F
	Impermeability	G	G
	Tensile Strength	G-E	G
	Temp. Range		-20° to +300°F
		-29° to +149°C	-26° to +204°C
RATINGS: P-POOR, F-FAIR, G-GOOD, E-EXCELLENT			

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MATERIAL SPECIFICATIONS



Table 5 - Material Options - Diaphragm Balanced

Part Description	Standard Material	Corrosive Material
Body	Ductile (ASTM A395)	Ductile (ASTM A395) + Kimcoat
Ratio Plug	2 & 3 inch Delrin (ASTM D4181), 4 & 6 inch (ASTM A395)	17-4PH (ASTM A564)
Cage	2 & 3 inch Delrin (ASTM D4181), 4 & 6 inch (ASTM A395)	Ductile (ASTM A395) + Kimcoat
Stem	303SS (ASTM A582)	316SS (ASTM A479)
Bonnet	Ductile (ASTM A395)	Ductile (ASTM A395) + Kimcoat
Piston	303SS (ASTM A582)	316SS (ASTM A479)
Cylinder	303SS (ASTM A582)	316SS (ASTM A479)

Table 6 - Material Options - Low Pressure High Volume

Part Description	Standard Material	Erosive Material	Corrosive Material
Body	Ductile (ASTM A395)		
Bonnet	Ductile (ASTM A395)		
Cylinder	303SS (ASTM A582)		316SS (ASTM A479)
Piston	303SS (ASTM A582)		316SS (ASTM A479)
Ratio Plug	303SS (ASTM A582)	D-2 (ASTM A681)	316SS (ASTM A479)
Removable Seat	303SS (ASTM A582)	D-2 (ASTM A681)	316SS (ASTM A479)
Stuffing Box	Ductile (ASTM A395)		
Stuffing Box Stem	17-4PH (ASTM A564)		316SS (ASTM A479)
Piston Stem	303SS (ASTM A582)		316SS (ASTM A479)
Seat Disc	316SS (ASTM A479)		

LIQUID DUMP VALVES PNEUMATIC OPERATED



CODE BUILDER D SERIES

Series:

D = Dump Valve

Model:

PD = Pneumatic Operated Diaphragm Balanced Fail Close
PE = Pneumatic Operated Diaphragm Balanced Fail Open

Line Size:

2 = 2 NPS
3 = 3 NPS
4 = 4 NPS
6 = 6 NPS (PD ONLY)

End Connection:

SA = FNPT (2 & 3 NPS only)
AR = 150RF

Body Type:

A = Angle
T = Thru

Shell Material:

D = Ductile Iron
E = Ductile Iron w/Coating

Inner Valve Size:

F = Full Port
R = Reduced Port (PP only)

Actuator:

P = Pneumatic

Service Type:

S = Standard
C = Corrosive

D PD 2 SA A D F 1 S

Options: Additional cost and lead times will apply
If multiple options required input in sequential order
Leave blank if no options required

- 1 = NACE Certification (Corrosive Option Only)
- 2 = Hydrostatic Test Certification
- 3 = MTR (Shell Components)
- H = HSN Elastomers
- V = FKM Elastomers
- X = Export (Hydrostatic test, MTR & 3.1)

Not all selections available on all products listed.
See product pages 04:10.1 - 04:10.7 & 04:30.1 - 04:40.7
for available options