DIAPHRAGM BALANCED FAIL CLOSE
MODEL PD

APPLICATIONS:

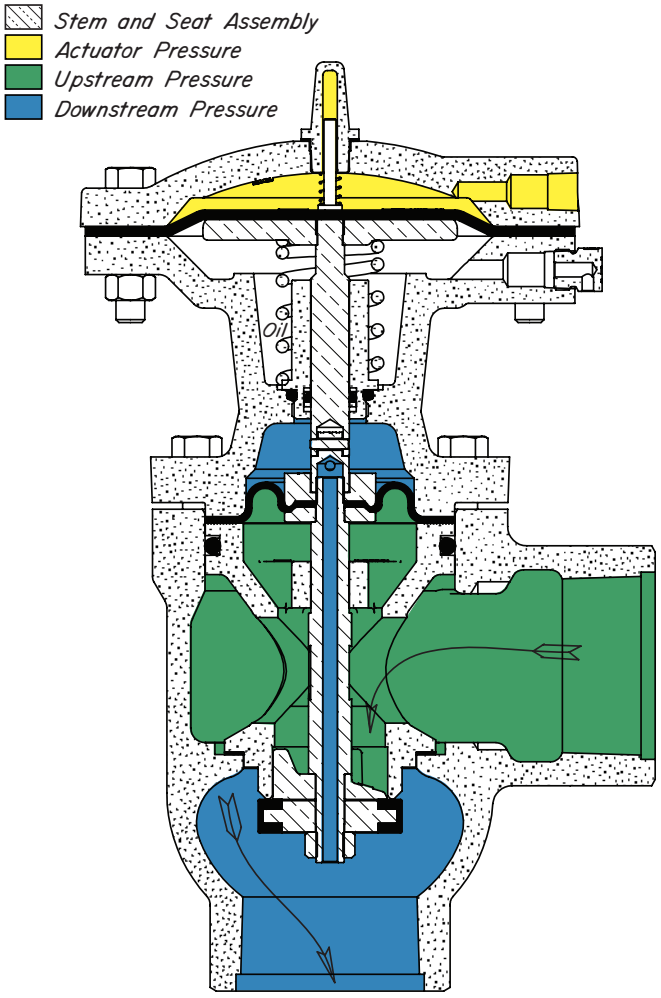
Used as oil or water dump valves on separators, treaters, knockouts, and other similar liquid accumulators where a reduced signal pressure is available.

FEATURES:

Diaphragm balanced single seat.
10 to 35 psig actuation 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)
0C15621.24567890NTY (Steel)
Kimray is an ISO 9001- certified manufacturer.



Standard Configuration Code †	Order Code	Line Size	Connection Type	Body Type	Max Δ P psig	Max. W.P. psig ††	Cv	Cf
DPD2SAADF1S	EKI	2"	NPT	Angle	125	400	23.3	0.79
DPD2SATDF1S	EXI			Thru				
DPD2ARADF1S	EKK		150RF	Angle		250		
DPD2ARTDF1S	EXK			Thru				
DPD3SAADF1S	EKO	3"	NPT	Angle			43.8	
DPD3SATDF1S	EXO			Thru				
DPD3ARADF1S	EKQ		150RF	Angle				
DPD3ARTDF1S	EXQ			Thru				
DPD4ARADF1S	EKU	4"	150RF	Angle			70.1	
DPD4ARTDF1S	EXU		150RF	Thru				
DPD6ARADF1S	EKX	6"	150RF	Angle			277.0	
DPD6ARTDF1S	EXX		150RF	Thru				

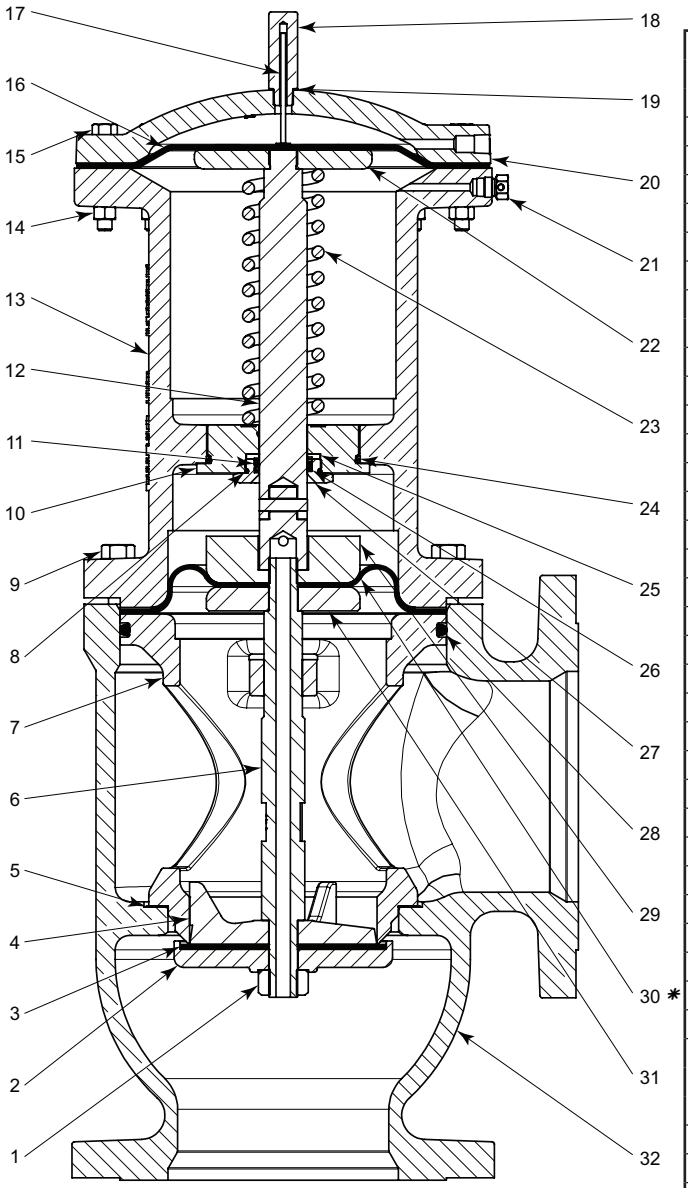
NOTES:

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

All Pictures shown are for illustration purpose only. Actual product may vary due to product enhancement.

KIMRAY INC.®

DIAPHRAGM BALANCED FAIL CLOSE
MODEL PD PARTS DRAWING & LIST



ITEM	QTY.	DESCRIPTION	PART NO. STANDARD 6 INCH	PART NO. CORROSIVE 6 INCH
1	1	Lock Nut ◊ ✱	175	175SS6
2	1	Seat Disc ◊	2349	3077SS6
3	1	Seat ◊ ✱	2356HSN	2356HSN
4	1	Ratio Plug ◊	2348	3072SS6
5	1	Gasket ◊ ✱	2354	2354
6	1	Stem ◊	2350SS6	2350SS6
7	1	Cage ◊	2345	3071SS6
		Gasket	----	920
8	1	O-Ring ✱	4086	4086
9	8	Bolt	81	81
10	1	Stem Guide	4372	4372
11	1	O-Ring ✱	157	157
12	1	Stem Assembly	2452PH	2452SS6
13	1	Housing	4370	4370 ‡
14	12	Nut	241	241
15	12	Bolt	193	193
16	1	Diaphragm ✱	6812	6812
17	1	Travel Indicator Stem	2456	2456
18	1	Travel Indicator Housing	5159	5159
19	1	Gasket ✱	1784	1784
20	1	Bonnet	2588	2588 ‡
21	1	Breather Plug	147	147SS6
22	1	Diaphragm Plate	2450	2450
23	1	Spring	2415	2415
24	1	O-Ring ✱	4371	4371
25	1	Spacer	4571DS6	4571DS6
26	2	Back up ✱	152T	152T
27	1	Stem Seal Retainer	4571ES6	4571ES6
28	1	O-Ring ◊ ✱	2353	2353
29	1	Diaphragm Nut ◊	2453	2453SS6
30	1	Diaphragm ◊ ✱	4315	4315
31	1	Plate ◊	2454	4045SS6
32	1	Body		
		150RF Angle	2344	2344 ‡
		150RF Thru	3091	3091 ‡
‡ Coated Parts available with "E" shell material				
Cage Assemblies			CBK	CBKS6
◊ These parts are stocked as Cage Assemblies.				
Repair Kits			RGB	RGB-HSN
✱ These parts are recommended spare parts and are stocked as repair kits.				

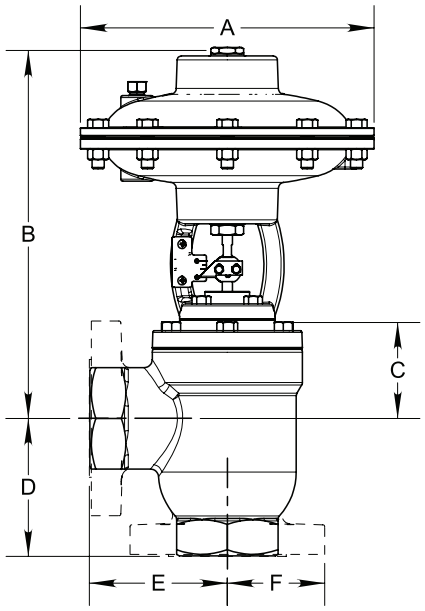
All Pictures shown are for illustration purpose only. Actual product may vary due to product enhancement.

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

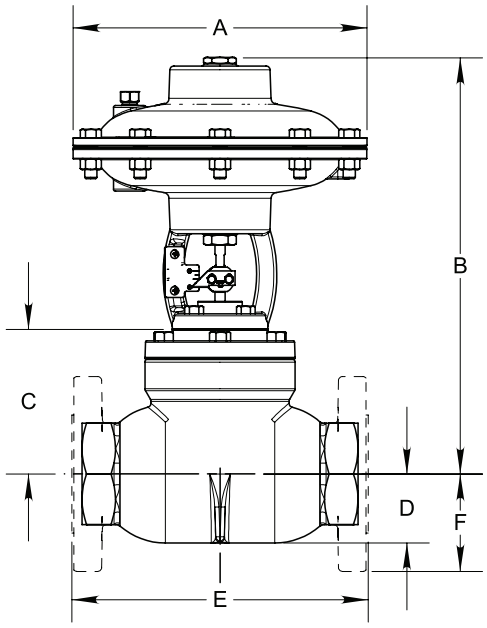
DIMENSIONS

PH ANGLE DIMENSIONS



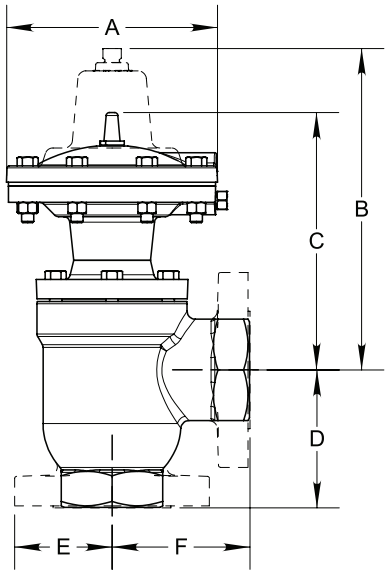
VALVE	A	B	C	D	E	F
2" SA & AR	9 1/16	11 9/32	2 29/32	4 1/4	4 1/4	3
3" SA & AR	12 7/8	15 9/32	4 1/32	5 1/2	5 1/2	3 3/4
4" AR	12 7/8	15 5/32	3 7/8	6 1/2	6 1/2	4 1/2

PH THRU DIMENSIONS



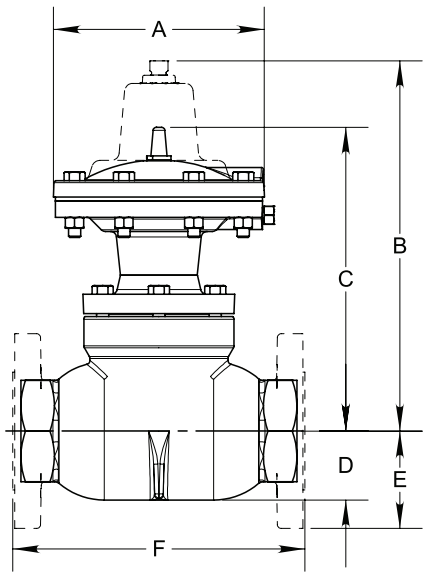
VALVE	A	B	C	D	E	F
2" SA	9 1/16	12 13/16	4 7/16	2 1/8	8 1/2	3
2" AR	9 1/16	12 13/16	4 7/16	2 1/8	9 1/8	3
3" SA	12 7/8	17 5/32	5 29/32	2 7/8	12	3 3/4
3" AR	12 7/8	17 5/32	5 29/32	2 7/8	12 3/16	3 3/4
4" AR	12 7/8	15 5/32	6 7/32	3 21/32	15	4 1/2

PD, PE, PP, PQ 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

PD, PE, PP, PQ ANGLE DIMENSIONS



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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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	-15° to +400°F
		-29° to +149°C	-26° to +204°C
RATINGS: P-POOR, F-FAIR, G-GOOD, E-EXCELLENT			

Table 4 - Material Options - Diaphragm Balanced & Piston Balanced Throttle			
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 5 - Material Options - Piston Balance 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)		

KIMRAY INC.®

CODE BUILDER
D SERIES

Series:

D = Dump Valve

Model:

PD = Pneumatic Operated Diaphragm Balanced Fail Close
PE = Pneumatic Operated Diaphragm Balanced Fail Open
PP = Pneumatic Operated Piston Balanced Throttle Fail Close 4" only
PQ = Pneumatic Operated Piston Balanced Throttle Fail Open 4" only

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