

# LIQUID DUMP VALVES

PNEUMATIC OPERATED



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**DIAPHRAGM BALANCED FAIL CLOSE:** . . . . . **04:10.1 - 04:10.4**  
APPLICATIONS: Used as oil or water dump valves on separators, treaters, knockouts, and other similar liquid accumulators.  
OPERATING PRESSURE RANGES: 5 psig to 250 psig

**DIAPHRAGM BALANCED FAIL OPEN:** . . . . . **04:10.5 - 04:10.8**  
APPLICATIONS: Used as oil or water dump valves on separators, treaters, knockouts, and other similar liquid accumulators.  
OPERATING PRESSURE RANGES: 5 psig to 250 psig

**PISTON BALANCED THROTTLING LOW PRESSURE HIGH VOLUME REVERSIBLE:** . . . . . **04:20.1 - 04:20.3**  
APPLICATIONS: Used as oil or water dump valves on separators, treaters, knockouts, and other similar liquid accumulators. Designed for higher pressures or erosive service.  
OPERATING PRESSURE RANGES: 10 psig to 500 psig

**PISTON BALANCED THROTTLING FAIL CLOSE:** . . . . . **04:30.1 - 04:30.3**  
APPLICATIONS: Used as oil or water dump valves on separators, treaters, knockouts, and other similar liquid accumulators. Designed for higher pressures or erosive service.  
OPERATING PRESSURE RANGES: 10 psig to 500 psig

**PISTON BALANCED THROTTLING FAIL OPEN:** . . . . . **04:30.5 - 04:30.7**  
APPLICATIONS: Used as oil or water dump valves on separators, treaters, knockouts, and other similar liquid accumulators. Designed for higher pressures or erosive service.  
OPERATING PRESSURE RANGES: 10 psig to 500 psig

**FLOW COEFFICIENT** . . . . . **04:I**  
**VALVE DIMENSIONS** . . . . . **04:II**  
**SEALS** . . . . . **04:III**  
**MATERIAL SPECIFICATIONS** . . . . . **04:IV**

**Throttling**

# 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  
 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

Series:

**D = Dump Valve**

Model:

**PH = Pneumatic Operated Piston Balanced High Volume**

Line Size:

**2 = 2 NPS**

**3 = 3 NPS**

**4 = 4 NPS**

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**

Actuator:

**0 = No Actuator**

**2 = 6 - 30 psi Spring Fail Close**

**5 = 6 - 30 psi Spring Fail Open**

Service Type:

**S = Standard**

**C = Corrosive**

**E = Erosive**

**D PH 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)
- V = FKM Elastomers
- X = Export (Hydrostatic test, MTR & 3.1)

Not all selections available on all products listed.  
See product pages 04:20.1 - 04:20.3 for available options

**NOTES:**

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Kimray is an ISO 9001- certified manufacturer.

#### APPLICATIONS:





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

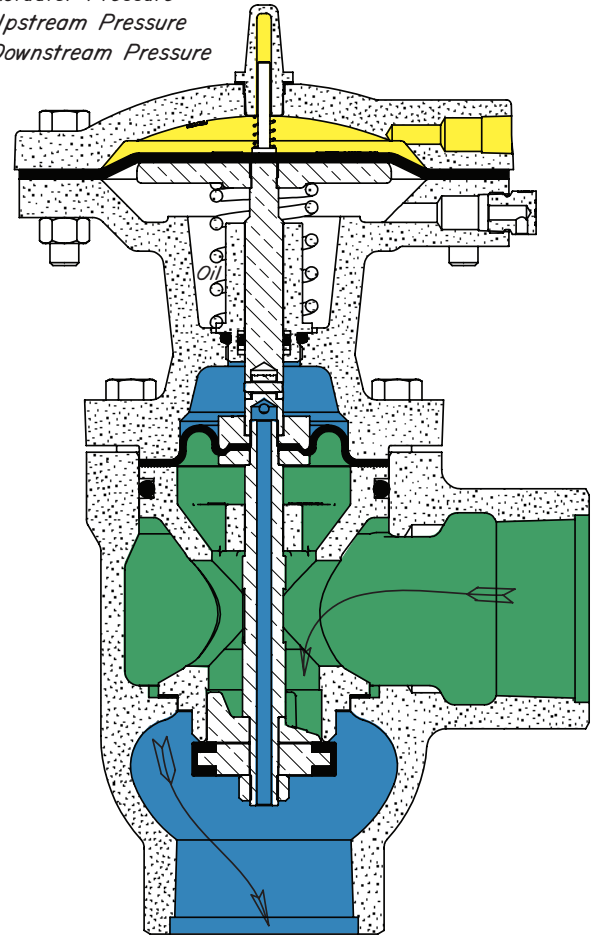
#### FEATURES:

- 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.

-  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	
DPD2SAADF1S	EKI	2"	NPT	Angle	125	400	23.3	0.79	
DPD2SATDF1S	EXI			Thru					
DPD2ARADF1S	EKK		150RF	Angle					
DPD2ARTDF1S	EXK			Thru					
DPD3SAADF1S	EKO	3"	NPT	Angle		250	43.8		0.79
DPD3SATDF1S	EXO			Thru					
DPD3ARADF1S	EKQ		150RF	Angle					
DPD3ARTDF1S	EXQ			Thru					
DPD4ARADF1S	EKU	4"	150RF	Angle	277.0		70.1	0.79	
DPD4ARTDF1S	EXU			Thru					
DPD6ARADF1S	EKX	6"	150RF	Angle					
DPD6ARTDF1S	EXX			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"

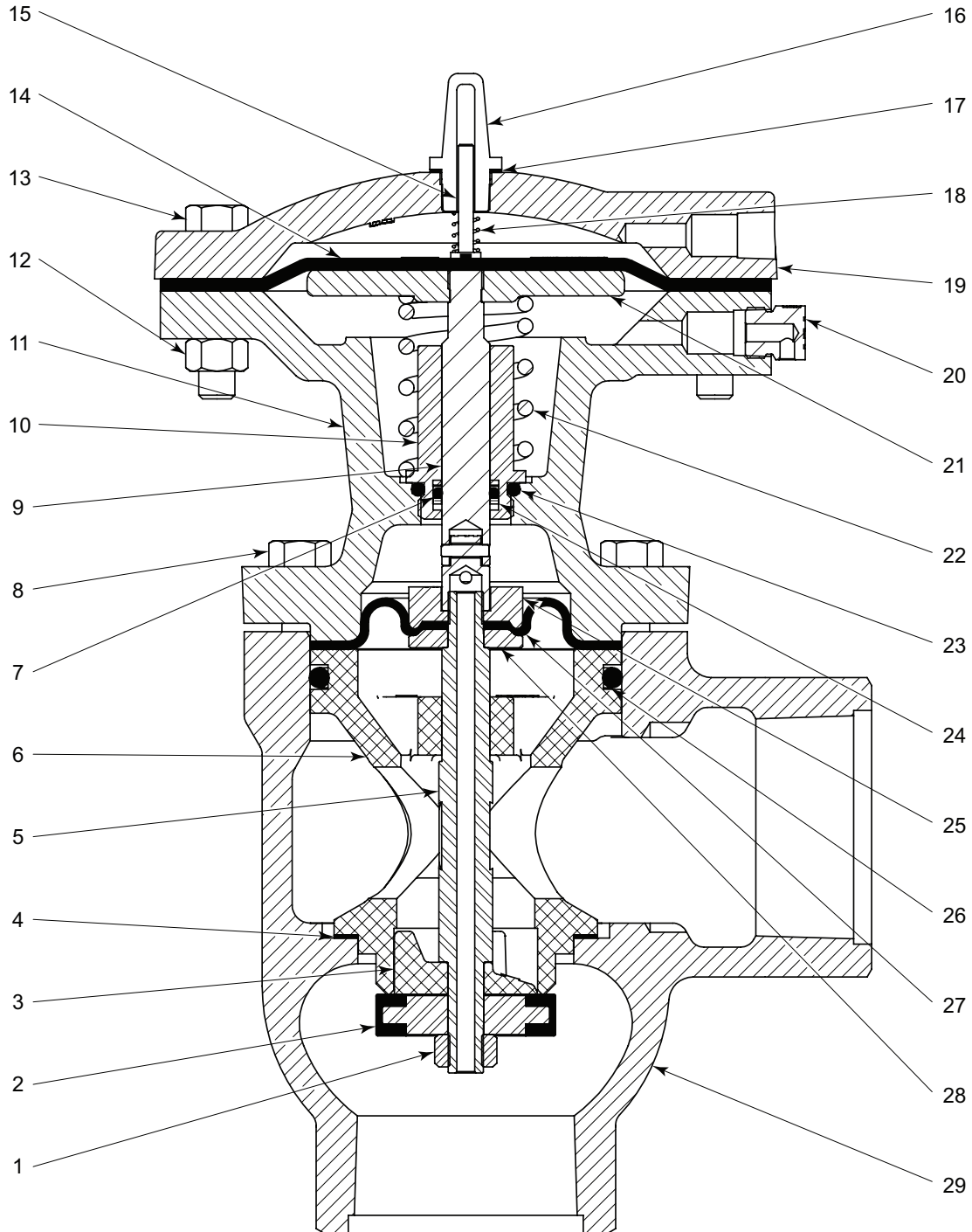
† For code builder see page 04:00.2

†† Max W.P. values based on -20°F to 100°F.

**LIQUID DUMP VALVES PNEUMATIC OPERATED**



DIAPHRAGM BALANCED FAIL CLOSE  
MODEL PD PARTS DRAWING



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





**LIQUID DUMP VALVES PNEUMATIC OPERATED**

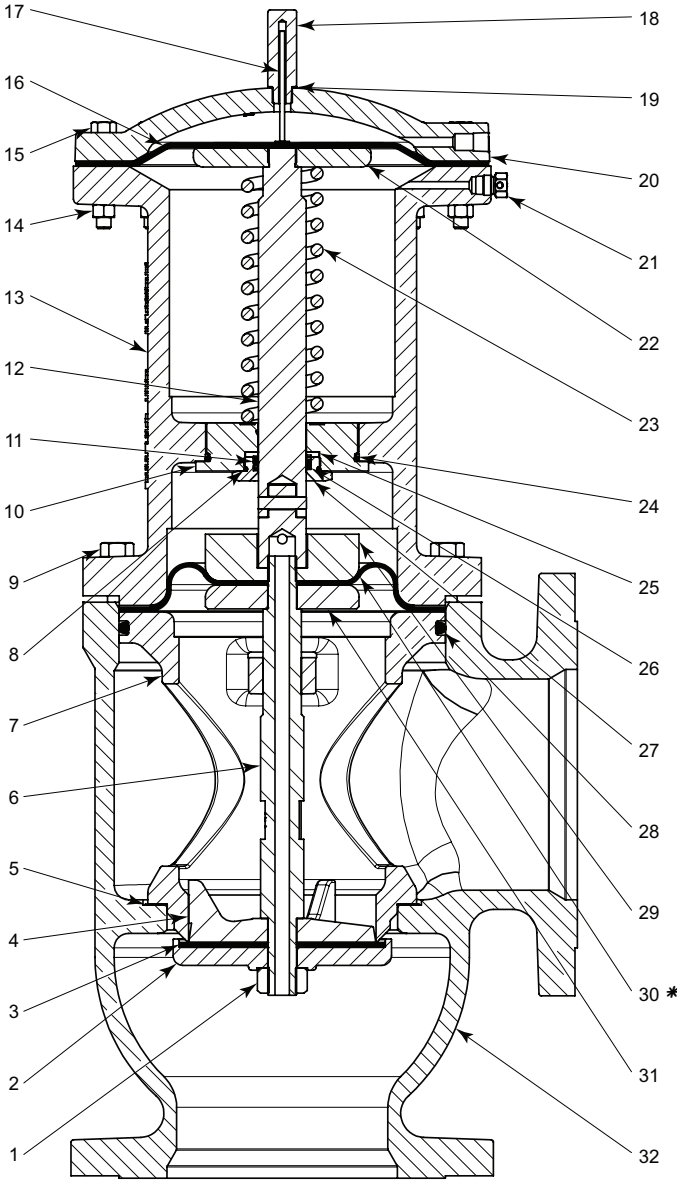
**DIAPHRAGM BALANCED FAIL CLOSE  
MODEL PD PARTS LIST**

ITEM	QTY.	DESCRIPTION	PART NO.						
			STANDARD			CORROSIVE			
			2 INCH	3 INCH	4 INCH	2 INCH	3 INCH	4 INCH	
1	1	Lock Nut	◇ *	173	906		173SS6	906SS6	
2	1	Seat	◇ *	7498HSN	7499HSN	----	7498HSN	7499HSN	----
		Seat	◇ *	----	165HSN		----	165HSN	
		Seat Disc	◇	----	160		----	2494SS6	
3	1	Ratio Plug	◇	332DEL	333DEL	334	2976SS6	2977SS6	2978SS6
4	1	Gasket	◇ *	276	277	309	276	277	309
5	1	Stem	◇	326	327	328	326SS6	327SS6	328SS6
6	1	Cage	◇	304DEL	305DEL	306	2966SS6	2967SS6	2968SS6
		Gasket		----	----	----	7575	7576	920
7	1	O-Ring	*	154HSN	155HSN	155HSN	154HSN	155HSN	155HSN
8	(Qty)	Bolt		1672 x 6	1672 x 6	1672 x 8	1672 x 6	1672 x 6	1672 x 8
9	1	Stem Assembly		1469	1470		1469SS6	1470SS6	
10	1	Stem Guide		2463	2464		2463SS6	2464SS6	
11	1	Housing		1670	1467	1468	1670 ‡	1467 ‡	1468 ‡
12	(Qty)	Nut		241 x (8)	241 x (10)		241 x (8)	241 x (10)	
13	(Qty)	Bolt		236 x (8)	191 x (10)		236 x (8)	191 x (10)	
14	1	Diaphragm	*	6810	6811		6810	6811	
15	1	Travel Indicator Stem		1687	1733		1687	1733	
16	1	Travel Indicator Housing		1686			1686		
17	1	Gasket	*	1784			1784		
18	1	Spring		1936	551		1936	551	
19	1	Bonnet		1671	1867		1671 ‡	1867 ‡	
20	1	Breather Plug		147			147SS6		
21	1	Diaphragm Plate		133	134		133	134	
22	1	Spring		1678	2268		1678	2268	
23	1	O-Ring	*	1107HSN	639HSN	639HSN	1107HSN	639HSN	639HSN
24	2	Back Up	*	149T	150T		149T	150T	
25	1	Diaphragm Nut	◇	1471SS6	1472SS6	1473	1471SS6	1472SS6	1473SS6
26	1	O-Ring	◇ *	329HSN	330HSN	331	329HSN	330HSN	331
27	1	Diaphragm	◇ *	335	336	4700	335	336	4700
28	1	Plate	◇	323SS6	324SS6	325SS6	323SS6	324SS6	325SS6
29	1	Body	NPT Angle	1819	2379	----	1819 ‡	2379 ‡	----
			NPT Thru	3081	3086	----	3081 ‡	3086 ‡	----
			150RF Angle	2540	2382	2383	2540 ‡	2382 ‡	2383 ‡
			150RF Thru	3083	3087	3090	3083 ‡	3087 ‡	3090 ‡
2	1	Lifting Ring (not shown)		7559		7559			
							‡ Coated Parts available with "E" shell material		
Cage Assemblies				CBH	CBI	CBJ	CBHS6	CBIS6	CBJS6
				◇ These parts are stocked as Cage Assemblies.					
Repair Kits				RFL-HSN	RFR-HSN	RFW-HSN	RFL-HSN	RFR-HSN	RFW-HSN
				* These parts are recommended spare parts and are stocked as repair kits.					

# LIQUID DUMP VALVES PNEUMATIC OPERATED



## DIAPHRAGM BALANCED FAIL CLOSE MODEL PD PARTS DRAWING & LIST



ITEM	QTY.	DESCRIPTION	PART NO.		
			STANDARD 6 INCH	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.

#### APPLICATIONS:





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

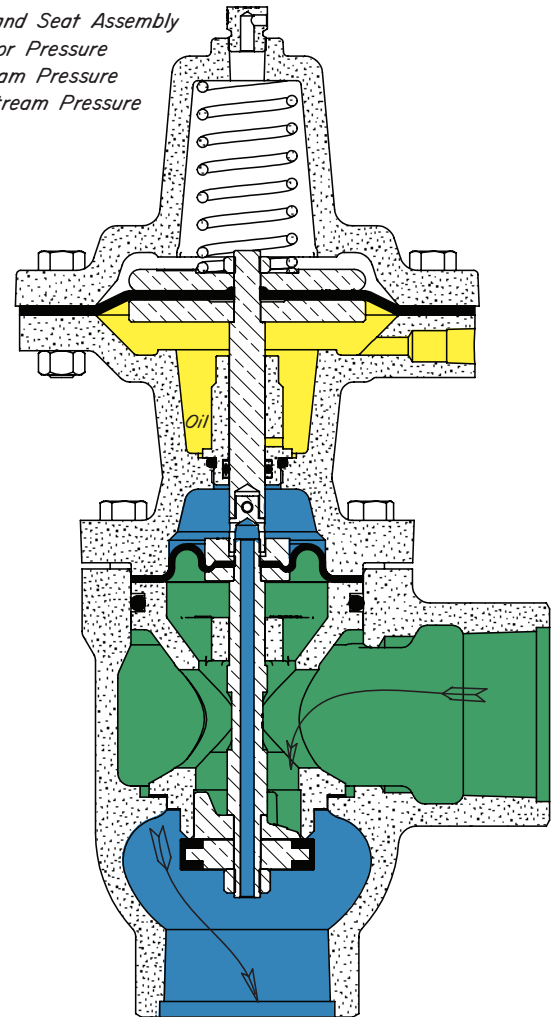
#### FEATURES:

- Diaphragm balanced single seat.
- 10 to 35 psig diaphragm pressure.
- Fail Open 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.

-  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	
DPE2SAADF4S	EKJ	2"	NPT	Angle	125	400	23.3	0.79	
DPE2SATDF4S	EXJ			Thru					
DPE2ARADF4S	EKL		150RF	Angle					
DPE2ARTDF4S	EXL			Thru					
DPE3SAADF4S	EKP	3"	NPT	Angle		250	43.8		70.1
DPE3SATDF4S	EXP			Thru					
DPE3ARADF4S	EKR		150RF	Angle					
DPE3ARTDF4S	EXR			Thru					
DPE4ARADF4S	EKW	4"	150RF	Angle	70.1	70.1	70.1		
DPE4ARTDF4S	EXW		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"

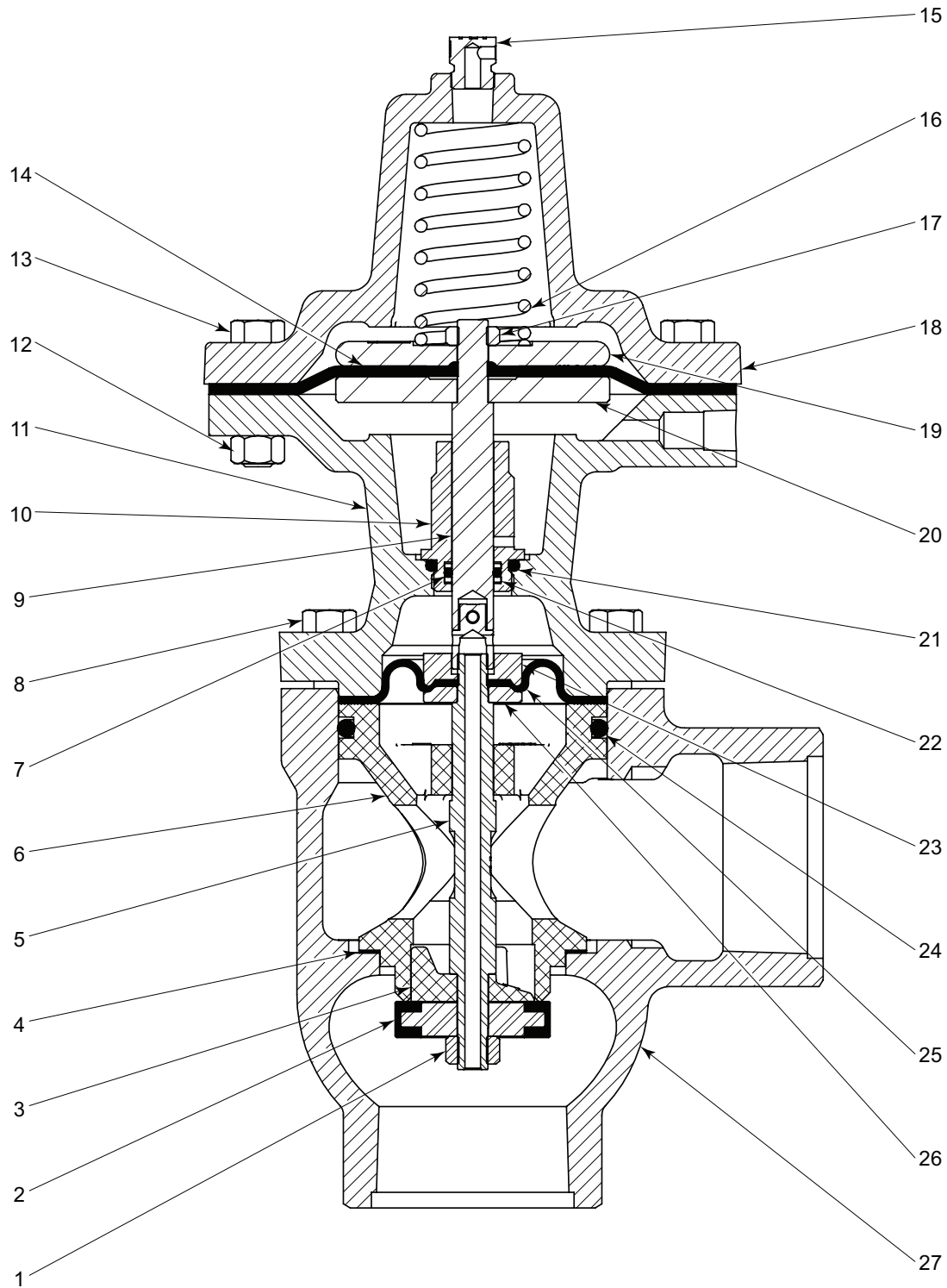
† For code builder see page 04:00.2

†† Max W.P. values based on -20°F to 100°F.

**LIQUID DUMP VALVES PNEUMATIC OPERATED**



DIAPHRAGM BALANCED FAIL OPEN  
MODEL PD PARTS DRAWING



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



**LIQUID DUMP VALVES PNEUMATIC OPERATED**

**DIAPHRAGM BALANCED FAIL OPEN  
MODEL PD 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	◇ *	173	906		173SS6	174SS6			
2	1	Seat	◇ *	7498HSN	7499HSN	----	7498HSN	7499HSN	----		
		Seat	◇ *	----	165HSN		----	165HSN			
		Seat Disc	◇	----	160		----	2494SS6			
3	1	Ratio Plug	◇	332DEL	333DEL	334	2976SS6	2977SS6	2978SS6		
4	1	Gasket	◇ *	276	277	309	276	277	309		
5	1	Stem	◇	326	327	328	326SS6	327SS6	328SS6		
6	1	Cage	◇	304DEL	305DEL	306	2966SS6	2967SS6	2968SS6		
		Gasket		----	----	----	7575	7576	920		
7	1	O-Ring	*	154HSN	155HSN	155HSN	154HSN	155HSN	155HSN		
8	(Qty)	Bolt		1672 x (6)	1672 x (6)	1672 x (8)	1672 x (6)	1672 x (6)	1672 x (8)		
9	1	Stem Assembly		1474	1475		1474SS6	1475SS6			
10	1	Stem Guide		2463	2464		2463SS6	2464SS6			
11	1	Housing		1670	1467	1468	1670 ‡	1467 ‡	1468 ‡		
12	(Qty)	Nut		241 x (8)	241 x (10)		241 x (8)	241 x (10)			
13	(Qty)	Bolt		430 x (8)	191 x (10)		430 x (8)	191 x (10)			
14	1	Diaphragm	*	7053	743		7053	743			
15	1	Breather Plug		147			147SS6				
16	1	Spring		723	724		723	724			
17	1	Lock nut	*	173	1478		173SS6	1478SS6			
18	1	Bonnet		1665	1655		1665 ‡	1655 ‡			
19	1	Upper Diaph. Plate		732	1476		732	1476			
20	1	Lower Diaph. Plate		737	738		737	738			
21	1	O-Ring	*	1107HSN	639HSN	639HSN	1107HSN	639HSN	639HSN		
22	2	Back up	*	149T	150T		149T	150T			
23	1	Diaphragm Nut	◇	1471SS6	1472SS6	1473	1471SS6	1472SS6	1473		
24	1	O-Ring	◇ *	329HSN	330HSN	331	329HSN	330HSN	331		
25	1	Diaphragm	◇ *	335	336	4700	335	336	4700		
26	1	Plate	◇	323SS6	324SS6	325SS6	323SS6	324SS6	325SS6		
27	1	Body	Screwed Angle	1819	2379	----	1819 ‡	2379 ‡	----		
			Screwed Thru	3081	3086	----	3081 ‡	3086 ‡	----		
			Flanged Angle	2540	2382	2383	2540 ‡	2382 ‡	2383 ‡		
			Flanged Thru	3083	3087	3090	3083 ‡	3087 ‡	3090 ‡		
	2	Lifting Ring (not shown)		7559			7559				
						‡ Coated Parts available with "E" shell material					
Cage Assemblies				CBH	CBI	CBJ	CBHS6	CBIS6	CBJS6		
						◇ These parts are stocked as Cage Assemblies.					
Repair Kits				RFM	RFSHSN	RFX	RFM	RFSHSN	RFX		
						* These parts are recommended spare parts and are stocked as repair kits.					

**NOTES:**

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Kimray is an ISO 9001- certified manufacturer.

#### APPLICATIONS:

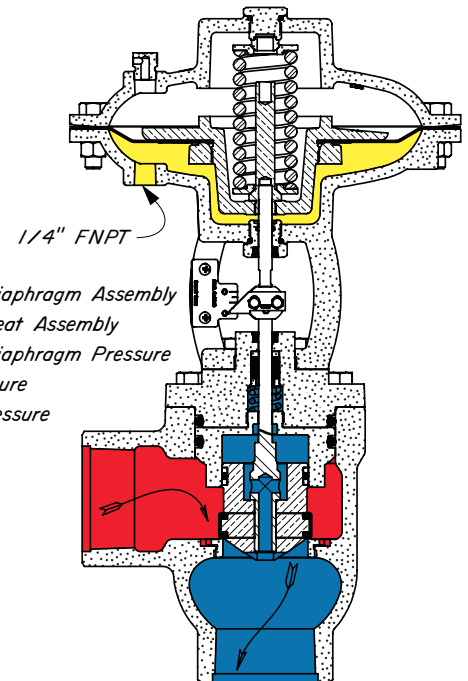
This valve operates in conjunction with a pneumatic liquid level controller for discharge of liquid from separators, treaters, knockouts and other similar liquid accumulators in erosive or standard applications. It can also be used in back pressure or pressure reducing applications when paired with pressure pilots.

#### FEATURES:

- Soft seat
- Bubble tight shut-off at full range of pressure
- Piston balanced seat assembly
- Full line size & reduced orifice available
- Trim contoured for throttle or on/off service and specifically designed for erosive applications
- Field-reversible actuator: standard is fail closed, with easy reversibility to fail open

#### CERTIFICATIONS:

Canadian Registration Number (CRN):  
0C22175.234567890NTY  
Kimray is an ISO 9001- certified manufacturer.



Standard Configuration Code †	Order Code	Line Size	Connection Type	Body Type	Inner Valve	Actuator W.P. psig ††	Max Δ P psig	Max. W.P. psig ††	Cv	Cf	
DPH2SAADF2S	MYA	2"	FNPT	Angle	2.0"	6 - 30	500 †††	500	51.4	0.75	
DPH2SAADR2S	MYA5				1.5"				33.3		
DPH2ARADF2S	MYB				150RF				2.0"		51.4
DPH2ARADR2S	MYB5								1.5"		33.3
DPH2SATDF2S	MYC		FNPT	Thru	2.0"		500 †††	500	45.8		
DPH2SATDR2S	MYC5				1.5"				28.9		
DPH2ARTDF2S	MYD				150RF				2.0"		45.8
DPH2ARTDR2S	MYD5								1.5"		28.9
DPH3SAADF2S	MYE	3"	FNPT	Angle	3.0"	6 - 30	500 †††	500	113	0.75	
DPH3SAADR2S	MYE5				2.0"				71.7		
DPH3ARADF2S	MYF				150RF				3.0"		113
DPH3ARADR2S	MYF5								2.0"		71.7
DPH3SATDF2S	MYG		FNPT	Thru	3.0"		500 †††	500	103		
DPH3SATDR2S	MYG5				2.0"				64.0		
DPH3ARTDF2S	MYH				150RF				3.0"		103
DPH3ARTDR2S	MYH5								2.0"		64.0
DPH4ARADF2S	MYQ	4"	150RF	Angle	4.0"	6 - 30	250	250	162	0.75	
DPH4ARADR2S	MYQ5				3.0"				137		
DPH4ARTDF2S	MYR				Thru				4.0"		142
DPH4ARTDR2S	MYR5								3.0"		114

#### 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 Erosive option remove last "S" & replace with "E"

† For code builder see page 04:00.2

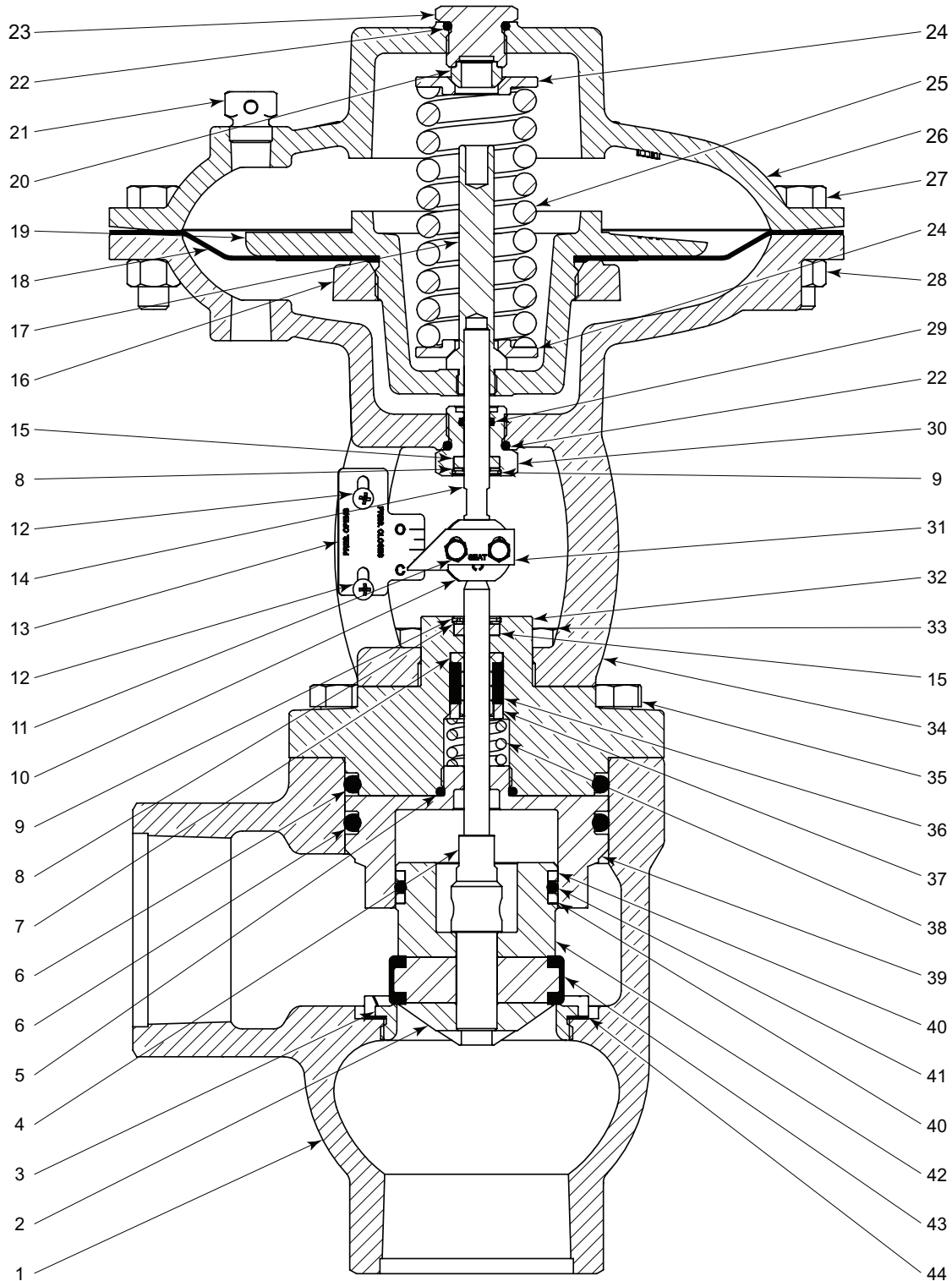
†† Max W.P. values based on -20°F to 100°F.

††† Pressure drops above 250 psig could cause fluid hammer, potentially leading to premature wear.

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# LIQUID DUMP VALVES PNEUMATIC OPERATED

PISTON BALANCED THROTTLING LOW PRESSURE HIGH VOLUME  
MODEL PP PARTS DRAWING



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





**LIQUID DUMP VALVES PNEUMATIC OPERATED**

**PISTON BALANCED THROTTLING LOW PRESSURE HIGH VOLUME  
MODEL PP PARTS LIST**

ITEM	QTY.	DESCRIPTION	PART NO.									
			STANDARD			CORROSIVE			EROSIVE			
			2 INCH	3 INCH	4 INCH	2 INCH	3 INCH	4 INCH	2 INCH	3 INCH	4 INCH	
1	1	Body	NPT Angle	6786	7139	----	6786	7139	----	6786	7139	----
			150RF Angle	7655	7319	7906	7655	7319	7906	7655	7319	7906
			NPT Thru	7163	7693	---	7163	7693	---	7163	7693	---
			150RF Thru	7694	7695	7907	7694	7695	7907	7694	7695	7907
2	1	Ratio Plug Δ	Full Port	7625	7647S3	7904	7625S6	7647S6	7904S6	7625D2	7647D2	7904D2
			Reduced Port	7644S3	7625	7647S3	7644S6	7625S6	7647S6	7644D2	7625D2	7647D2
3	1	Removable Seat Δ	Full Port	7630	7653S3	7910	7630S6	7653S6	7910S6	7630D2	7653D2	7910D2
			Reduced Port	7554	7654S3	7909	7554S6	7654S6	7909S6	7554	7654D2	7909D2
4	1	Stem Δ	Full Port	7628PH	7646PH		7628S6	7646S6		7628PH	7646PH	
			Reduced Port	7643PH	7649PH	7646PH	7643S6	7649S6	7646S6	7643PH	7649PH	7646PH
5	1	O-Ring Δ *	----			7901HSN			----			7901HSN
6	(Qty)	O-Ring *	329HSN (2)	330HSN (2)	331HSN (1)	329HSN (2)	330HSN (2)	331HSN (1)	329HSN (2)	330HSN (2)	331HSN (1)	
7	1	Packing Sleeve *	485	534		485	534		485	534		
8	2	Retainer *	486	528		486	528		486	528		
9	2	Snap Ring	938	940		938	940		938	940		
10	1	Coupling Block	1659			511			1659			511
			Travel Indicator	Full Port	7729	7728	7931	7729	7728	7931	7729	7728
		Reduced Port		7730	6769	7728	7730	6769	7728	7730	6769	7728
11	2	Screw	7617	512		7617	512		7617	512		
12	2	Screw	7534			7534			7534			
13	1	Indicator Scale	488	536		488	536		488	536		
14	1	Upper Stem	1643	522		1643	522		1643	522		
15	2	Felt Wiper *	480	527		480	527		480	527		
16	1	Retainer Ring	476	4356		476	4356		476	4356		
17	1	Pivot Sleeve	466	510		466	510		466	510		
18	1	Diaphragm	475	519		475	519		475	519		
19	1	Diaphragm Plate	469	4357		469	4357		469	4357		
20	1	Pivot	459	504		459	504		459	504		
21	1	Breather Plug	147			147SS6			147			
22	2	O-Ring *	491HSN	537HSN		491HSN	537HSN		491HSN	537HSN		
23	1	Upper Adjusting Screw	457	502		457	502		457	502		
24	2	Spring Plate	462	507		462	507		462	507		
25	1	Spring	464	508		464	508		464	508		
26	1	Bonnet	461	506		461	506		461	506		
27	(Qty)	Nut	241 (10)	241 (16)		241 (10)	241 (16)		241 (10)	241 (16)		
28	(Qty)	Bolt	247 (10)	430 (16)		247 (10)	430 (16)		247 (10)	430 (16)		
29	1	O-Ring *	153HSN	530HSN		153HSN	530HSN		153HSN	530HSN		
30	1	Lower Adjusting Screw	458	503		458	503		458	503		
31	1	Position Tag	----	677		----	677		----	677		
32	1	Stuffing Bonnet	7623	7656	7888	7623	7656	7888	7623	7656	7888	
33	4	Bolt	694	524		694	524		694	524		
34	1	Yoke	460	505		460	505		460	505		
35	(Qty)	Bolt	1672 (6)		1672(8)	1672 (6)		1672(8)	1672 (6)		1672(8)	
36	(Qty)	Packing Ring *	484HSN (4)	533HSN (6)		484HSN (4)	533HSN (6)		484HSN (4)	533HSN (6)		
37	1	Packing Follower *	482SS6	531SS6		482SS6	531SS6		482SS6	531SS6		
38	1	Packing Spring *	465	509		465	509		465	509		
39	1	Cylinder Δ	Full Port	7624	7657S3	7912	7624S6	7657S6	7912S6	7624	7657S3	7912
			Reduced Port	7651S3	7658S3	7911	7651S6	7658S6	7911S6	7651S3	7658S3	7911
40	2	Back Up Δ *	Full Port	7683	7684	7902	7683	7684	7902	7683	7684	7902
			Reduced Port	7558	7683	7684	7558	7683	7684	7558	7683	7684
41	1	Piston Seal Δ *	Full Port	801HSN	4768HSN	4992HSN	801HSN	4768HSN	4992HSN	801HSN	4768HSN	4992HSN
			Reduced Port	808HSN	801HSN	4768HSN	808HSN	801HSN	4768HSN	808HSN	801HSN	4768HSN
42	1	Piston Δ	Full Port	7626	7652S3	7905	7626S6	7652S6	7905S6	7626	7652S3	7905
			Reduced Port	7642S3	7648S3	7652S3	7642S6	7648S6	7652S6	7642S3	7648S3	7652S3
43	1	Seat Disc Δ *	Full Port	7669HSN	7685HSN	7903HSN	7669HSN	7685HSN	7903HSN	7669HSN	7685HSN	7903HSN
			Reduced Port	7498HSN	7669HSN	7685HSN	7498HSN	7669HSN	7685HSN	7498HSN	7669HSN	7685HSN
44	1	Gasket Δ *	276	277	196	276	277	196	276	277	196	
2		Lifting Ring (not shown)	----	7559		----	7559		----	7559		

‡ Coated Parts available with "E" shell material

Plug Assemblies	Full Port	MYM	MYO	MYT	MYMS6	MYO26	MYTS6	MYMD2	MYOD2	MYTD2
	Reduced Port	MYN	MYP	MYS	MYNS6	MYPS6	MYSS6	MYND2	MYPD2	MYSD2

Δ These parts are stocked as Plug Assemblies.

Repair Kits	Full Port	RYW	RYX	RYZ	RYW	RYX	RYZ	RYW	RYX	RYZ
	Reduced Port	RYW5	RYX5	RYZ5	RYW5	RYX5	RYZ5	RYW5	RYX5	RYZ5

\* These parts are recommended spare parts and are stocked as repair kits.

**NOTES:**

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Kimray is an ISO 9001- certified manufacturer.

### PISTON BALANCED THROTTLING FAIL CLOSE MODEL PP

#### APPLICATION:





Used as oil or water dump valves on separators, treaters, knockouts, and other similar liquid accumulators. For back pressure or pressure reducing applications with pressure pilots.

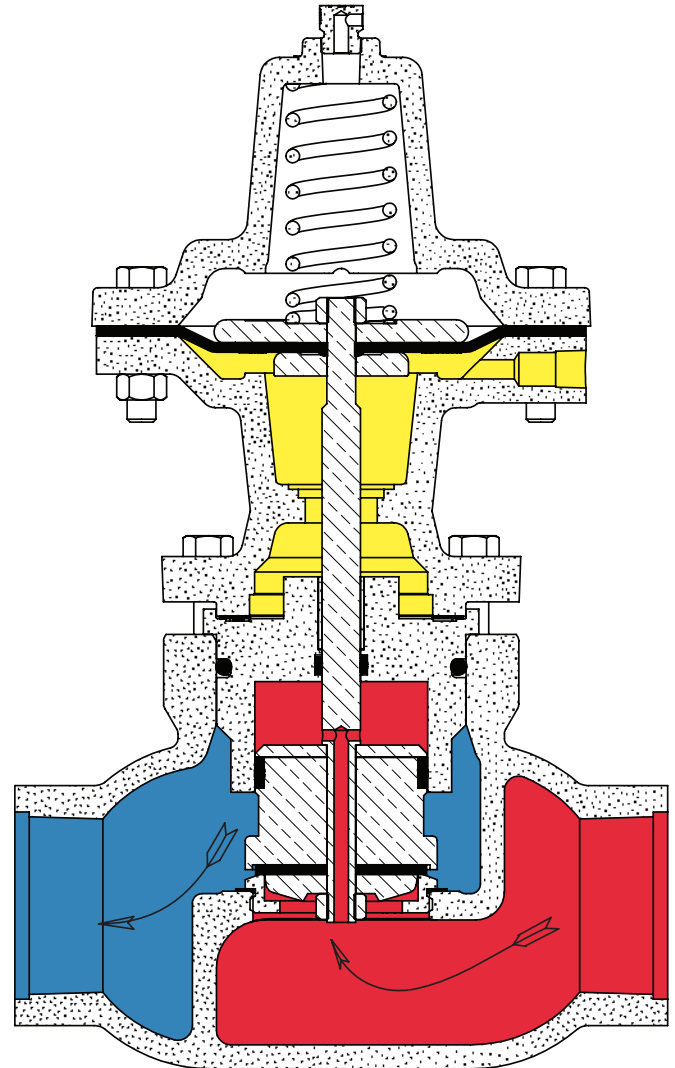
#### FEATURES:

- Piston balanced seat assembly
- 30 psig maximum actuating pressure
- Fail Close service.
- All internal parts can be removed with valve in-line
- Reinforced oil resistant synthetic rubber diaphragms & seats
- Trim contoured for throttle or on/off service
- Bubble tight shut-off at full range of pressure

#### 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



2" & 3" have been discontinued



Standard Configuration Code †	Order Code	Line Size	Connection Type	Body Type	Max Δ P psig	Max. W.P. psig ††	Cv	Cf
DPP2SATDF1S	EMS	2"	NPT	Thru	125	500	47.0	0.75
DPP2ARTDF1S	EMT		150RF					
DPP3SATDF1S	EMU	3"	NPT					
DPP3ARTDF1S	EMV		150RF					
DPP4ARTDF1S	EMW	4"	150RF			250	89.0	
							160	

#### 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"

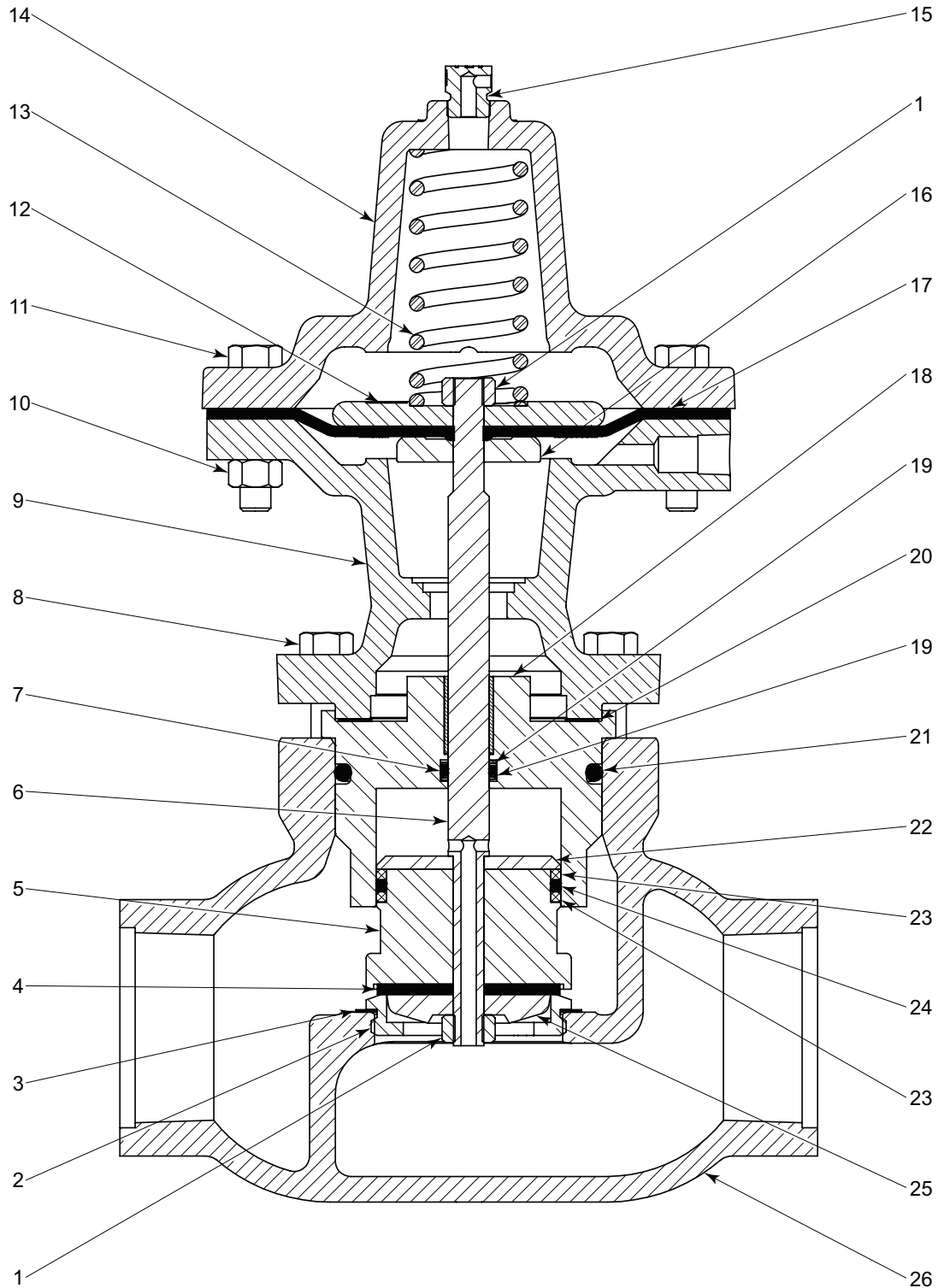
† For code builder see page 04:00.2

†† Max W.P. values based on -20°F to 100°F.

**LIQUID DUMP VALVES PNEUMATIC OPERATED**



PISTON BALANCED THROTTLING FAIL CLOSE  
MODEL PP PARTS DRAWING



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



**LIQUID DUMP VALVES PNEUMATIC OPERATED**

**PISTON BALANCED THROTTLING FAIL CLOSE  
MODEL PP PARTS LIST**

**2" & 3" have been discontinued**

ITEM	QTY.	DESCRIPTION	PART NO.					
			STANDARD			CORROSIVE		
			2 INCH	3 INCH	4 INCH	2 INCH	3 INCH	4 INCH
1	2	Lock Nut ◇ *	173	174SS6		173SS6	174SS6	
2	1	Removable Seat ◇	5214	5215D	5216	5214SS6	5215SS6	5216SS6
3	1	Gasket ◇ *	276	277	196	276	277	196
4	1	Seat ◇ *	5211HSN	5212HSN	5213HSN	5211HSN	5212HSN	5213HSN
5	1	Piston ◇	5208	5209	5210SS6	5208SS6	5209SS6	5210SS6
6	1	Stem ◇	5193	5194	5195	5193SS6	5194SS6	5195SS6
7	1	Quad Ring ◇ *	154QHSN	155QHSN	155Q	154QHSN	155QHSN	155Q
8	(Qty)	Bolt	833 x (6)		833 x (8)	833 x (6)		833 x (8)
9	1	Housing	1689	1868D	5200	1689 ‡	1868D ‡	5200 ‡
10	(Qty)	Nut	241 x (8)	241 x (10)	241 x (12)	241 x (8)	241 x (10)	241 x (12)
11	(Qty)	Bolt	236 x (8)	191 x (10)	192 x (12)	236 x (8)	191 x (10)	192 x (12)
12	1	Upper Diaph. Plate	732	1476	734	732	1476	734
13	1	Spring	5188	621	5192	5188	621	5192
14	1	Bonnet	1665	718	719	1665 ‡	718 ‡	719 ‡
15	1	Breather Plug	147			147		
16	1	Lower Diaph. Plate	5289	5224	739	5289	5224	739
17	1	Diaphragm *	7053	743	744	7053	743	744
18	1	Cylinder	5202	5203SS6	5204SS6	5202SS6	5203SS6	5204SS6
19	2	Back Up ◇ *	149T	150T		149T	150T	
20	1	Gasket ◇ *	5199	5223	1901	5199	5223	1901
21	2	O-Ring ◇ *	329HSN	330HSN	331	329HSN	330HSN	331
22	1	Seal Retainer ◇	5205	5206SS6	5207	5205SS6	5206SS6	5207SS6
23	2	Back Up ◇ *	1458	772	5201	1458	772	5201
24	1	Quad Ring ◇ *	774QHSN	329QHSN	1872Q	774QHSN	329QHSN	1872Q
25	1	Ratio Plug ◇	177SS6	178	179	177SS6	178	179
26	1	Body						
		NPT Thru	5217D	5219D	----	5217D ‡	5219D ‡	----
		150RF Thru	5218D	5220D	5222D	5218D ‡	5220D ‡	5222D ‡
2	Lifting Ring (not shown)	7559			7559			
					‡ Coated Parts available with "E" shell material			
Cage Assemblies			CLE	CLG	CLI	CLES6	CLGS6	CLIS6
			◇ These parts are stocked as Cage Assemblies.					
Repair Kits			RUMD	RUND	RUOD	RUMD	RUND	RUOD
			* These parts are recommended spare parts and are stocked as repair kits.					

NOTES:



Kimray is an ISO 9001- certified manufacturer.

### PISTON BALANCED THROTTLING FAIL OPEN MODEL PQ

#### APPLICATION:





Used as oil or water dump valves on separators, treaters, knockouts, and other similar liquid accumulators. For back pressure or pressure reducing applications with pressure pilots.

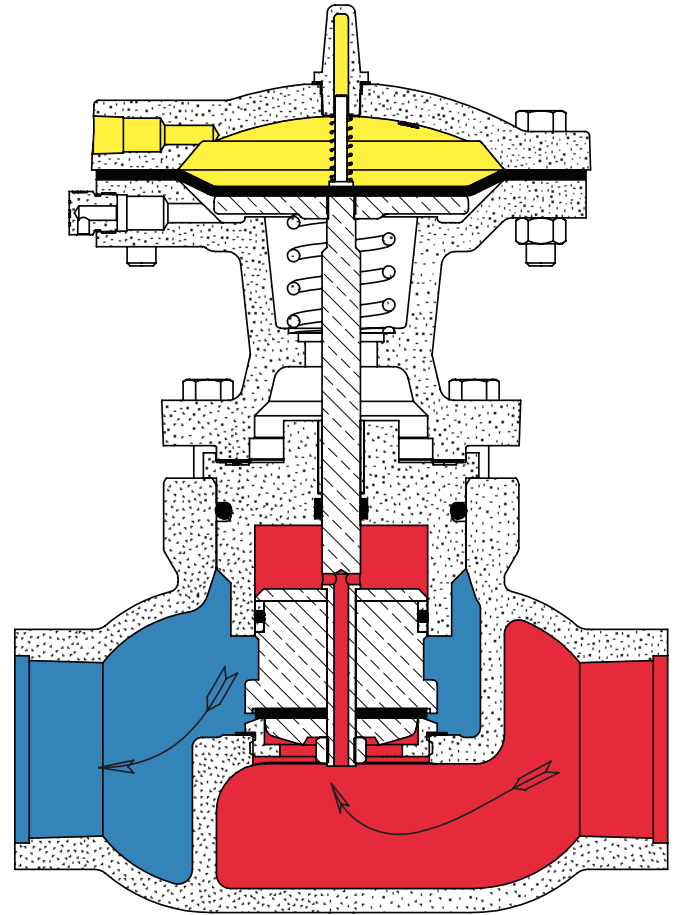
#### FEATURES:

- Piston balanced seat assembly
- 30 psig maximum actuating pressure
- Fail Open service.
- All internal parts can be removed with valve in-line
- Reinforced oil resistant synthetic rubber diaphragms & seats
- Trim contoured for throttle or on/off service
- Bubble tight shut-off at full range of pressure

#### CERTIFICATIONS:

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

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



**2" & 3" have been discontinued**

Standard Configuration Code †	Order Code	Line Size	Connection Type	Body Type	Max Δ P psig	Max. W.P. psig ††	Cv	Cf
DPQ2SATDF4S	EUS	2"	NPT	Thru	125	500	47.0	0.75
DPQ2ARTDF4S	EUT		150RF					
DPQ3SATDF4S	EUU	3"	NPT					
DPQ3ARTDF4S	EUV		150RF					
DPQ4ARTDF4S	EUW	4"	150RF			250	89.0	
							160	

#### 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"

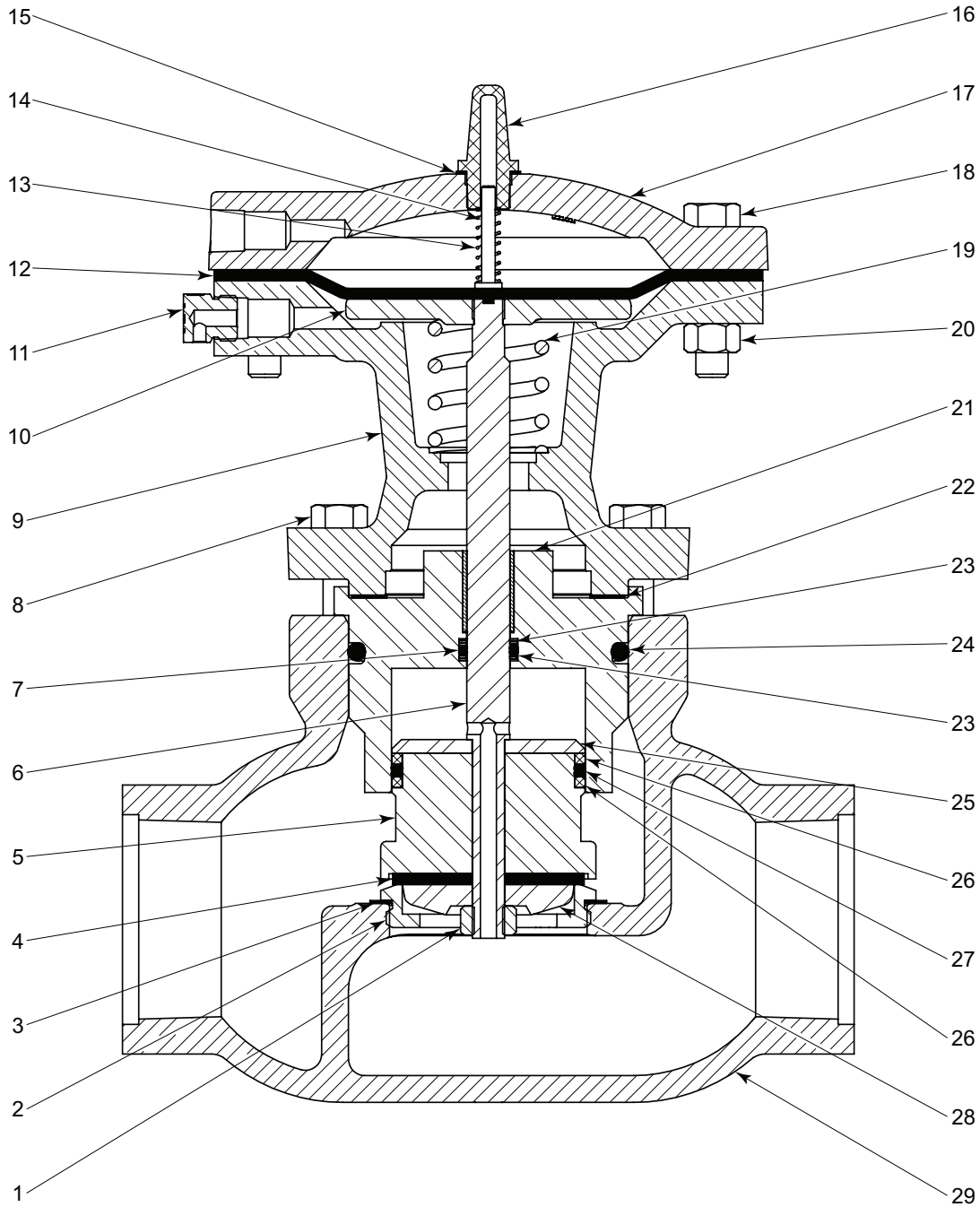
† For code builder see page 04:00.2

†† Max W.P. values based on -20°F to 100°F.

# LIQUID DUMP VALVES PNEUMATIC OPERATED



PISTON BALANCED THROTTLING FAIL OPEN  
MODEL PP PARTS DRAWING



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





**LIQUID DUMP VALVES PNEUMATIC OPERATED**

**PISTON BALANCED THROTTLING FAIL OPEN  
MODEL PP PARTS LIST**

**2" & 3" have been discontinued**

ITEM	QTY.	DESCRIPTION	PART NO.					
			STANDARD			CORROSIVE		
			2 INCH	3 INCH	4 INCH	2 INCH	3 INCH	4 INCH
1	1	Lock Nut ◇ *	173	174SS6		173SS6	174SS6	
2	1	Removable Seat ◇	5214	5215D	5216	5214SS6	5215SS6	5216SS6
3	1	Gasket ◇ *	276	277	196	276	277	196
4	1	Seat ◇ *	5211HSN	5212HSN	5213HSN	5211HSN	5212HSN	5213HSN
5	1	Piston ◇	5208	5209	5210SS6	5208SS6	5209SS6	5210SS6
6	1	Stem ◇	5196	5197	5198	5196SS6	5197SS6	5198SS6
7	1	Quad Ring ◇ *	154QHSN	155QHSN	155Q	154QHSN	155QHSN	155Q
8	(Qty)	Bolt	833 x (6)		833 x (8)	833 x (6)		833 x (8)
9	1	Housing	1689	1868D	5200	1689 ‡	1868D ‡	5200 ‡
10	1	Diaphragm Plate	133	134	135	133	134	135
11	1	Breather Plug	147			147		
12	1	Diaphragm *	6810	6811	6812	6810	6811	6812
13	1	Spring	1936	551		1936	551	
14	1	Travel Indicator Stem	1687	1733	7670	1687	1733	7670
15	1	Gasket *	1784			1784		
16	1	Travel Indicator Housing	1686		5159	1686		5159
17	1	Bonnet	1671	1867	2588	1671 ‡	1867 ‡	2588 ‡
18	(Qty)	Bolt	236 x (8)	191 x (10)	192 x (12)	236 x (8)	191 x (10)	192 x (12)
19	1	Spring	1678	5191	5192	1678	5191	5192
20	(Qty)	Nut	241 x (8)	241 x (10)	241 x (12)	241 x (8)	241 x (10)	241 x (12)
21	1	Cylinder ◇	5202	5203SS6	5204SS6	5202SS6	5203SS6	5204SS6
22	1	Gasket ◇ *	5199	5223	1901	5199	5223	1901
23	2	Back Up ◇ *	149T	150T		149T	150T	
24	1	O-Ring ◇ *	329HSN	330HSN	331	329HSN	330HSN	331
25	1	Seal Retainer ◇	5205	5206SS6	5207	5205 ‡	5206SS6	5207SS6
26	2	Back Up ◇ *	1458	772	5201	1458	772	5201
27	1	Quad Ring ◇ *	774QHSN	329QHSN	1872Q	774QHSN	329QHSN	1872Q
28	1	Ratio Plug ◇	177SS6	178	179	177SS6	178SS6	179SS6
29	1	Body						
		NPT Thru	5217D	5219D	----	5217D ‡	5219D ‡	----
		150RF Thru	5218D	5220D	5222D	5218D ‡	5220D ‡	5222D ‡
2	Lifting Ring (not shown)	7559			7559			
			‡ Coated Parts available with "E" shell material					
Cage Assemblies			CLF	CLH	CLJ	CLFS6	CLHS6	CLJS6
			◇ These parts are stocked as Cage Assemblies.					
Repair Kits			RUWD	RUXD	RUYD	RUWD	RUXD	RUYD
			* These parts are recommended spare parts and are stocked as repair kits.					

*LIQUID DUMP VALVES PNEUMATIC OPERATED*



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
<b>Diaphragm Balanced</b>													
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
<b>Low Pressure High Volume Piston Balanced Throttling</b>													
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
<b>Piston Balanced Throttling</b>													
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

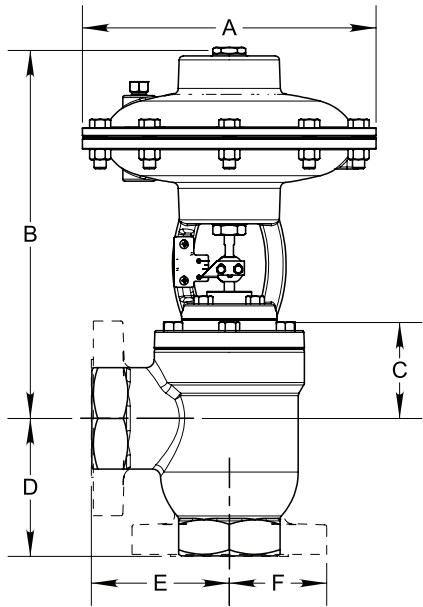
Kimray flow equations conform to ANSI/ISA - 75.01.01-2002  
 Kimray inherent flow characteristics conform to ANSI/ISA 75.11.01 -1985

# LIQUID DUMP VALVES PNEUMATIC OPERATED

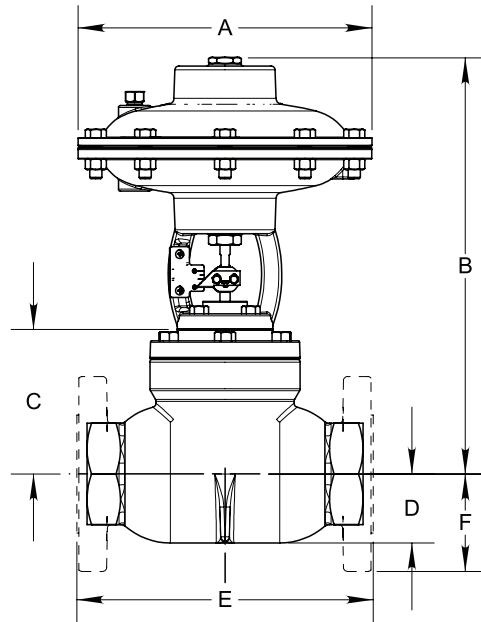


## DIMENSIONS

PH ANGLE DIMENSIONS



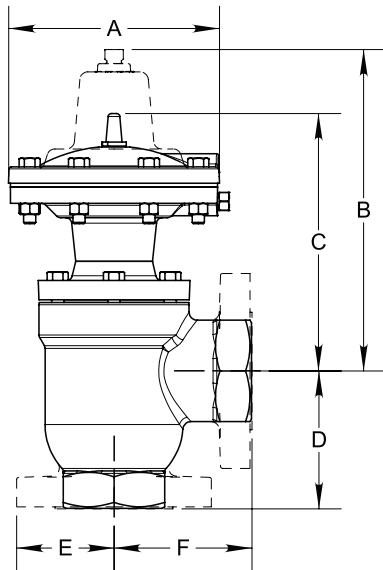
PH THRU DIMENSIONS



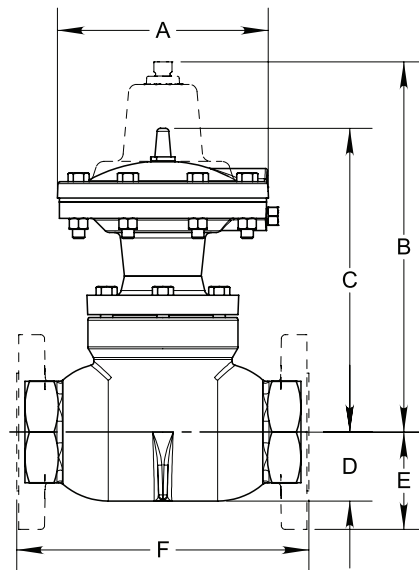
VALVE	A	B	C	D	E	F
2" SA & AR	9 1/16	11 9/32	2 29/32	4 1/4	4 1/4	3
3" SA & AR	12 7/8	15 9/32	4 1/32	5 1/2	5 1/2	3 3/4
4" AR	12 7/8	15 5/32	3 7/8	6 1/2	6 1/2	4 1/2

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, PP, PQ ANGLE DIMENSIONS



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

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

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

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			

**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)		