PISTON BALANCED THROTTLING
MODEL LP

APPLICATIONS:

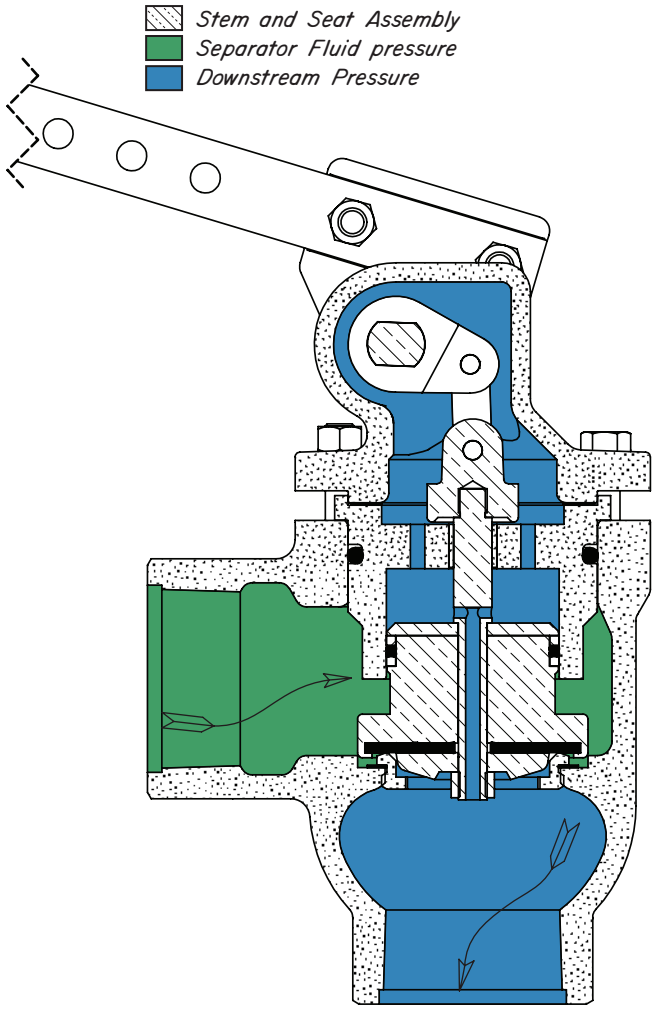
As oil or water dump valves on separators, treaters, knock-outs, and other similar liquid accumulators. Designed for high pressure erosive service.

FEATURES:

Class VI shut off
Teflon packed, rotary stuffing box
All internal parts can easily be removed with valve in line

CERTIFICATIONS:

Canadian Registration Number (CRN):
0C16234.24567890NTY (Ductile)
Kimray is an ISO 9001- certified manufacturer



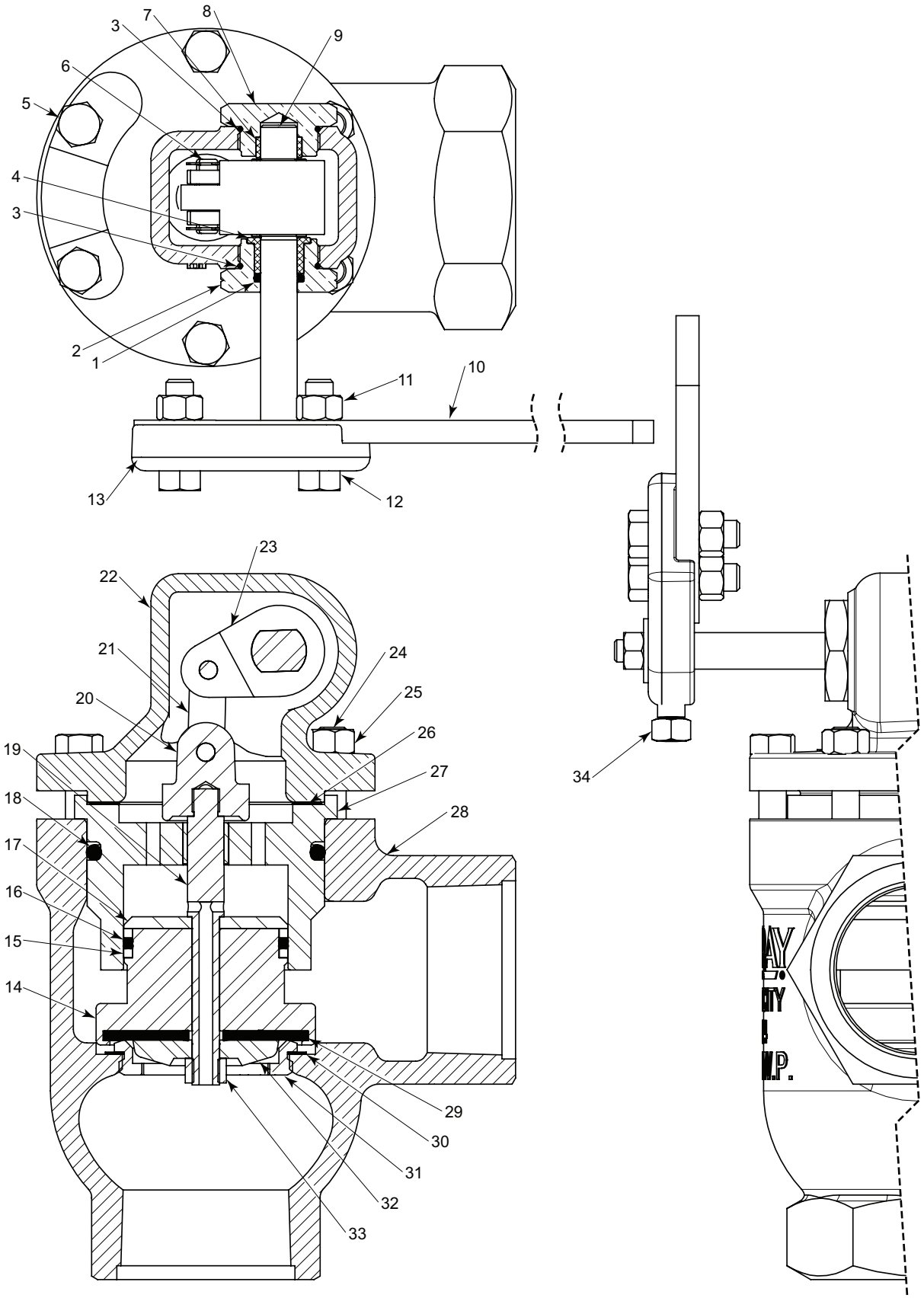
Standard Configuration Code †	Order Code	Line Size	Connection Type	Body Type	Inner Valve Size	Max Δ P psig	Max. W.P. psig ††	Cv	Cf
DLP2SAADFLS	CAZ	2"	NPT	Angle	2"	250	500	47.0	0.75
DLP2SATDFLS	CXA5				1 1/2"			22.7	
DLP2ARADFLS	CGU			Thru	2"			47.0	
DLP2ARADFLS	CAK		150RF	Angle			250		
DLP3SAADFLS	CVA	3"	NPT	Angle	3"		500	89.0	
DLP3ARADFLS	CVB		150RF				250		

NOTES:

For standard & optional seals, metals, Cf Cv values, material specifications & dimensions see technical data on pages 03:I - 03:VI
† For Corrosive service remove last "S" & replace with "C"
† For KimCoat option remove last "S" & replace with "K"
† For code builder see page 03:00.2
†† 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.

PISTON BALANCED THROTTLING
MODEL LP PARTS DRAWING



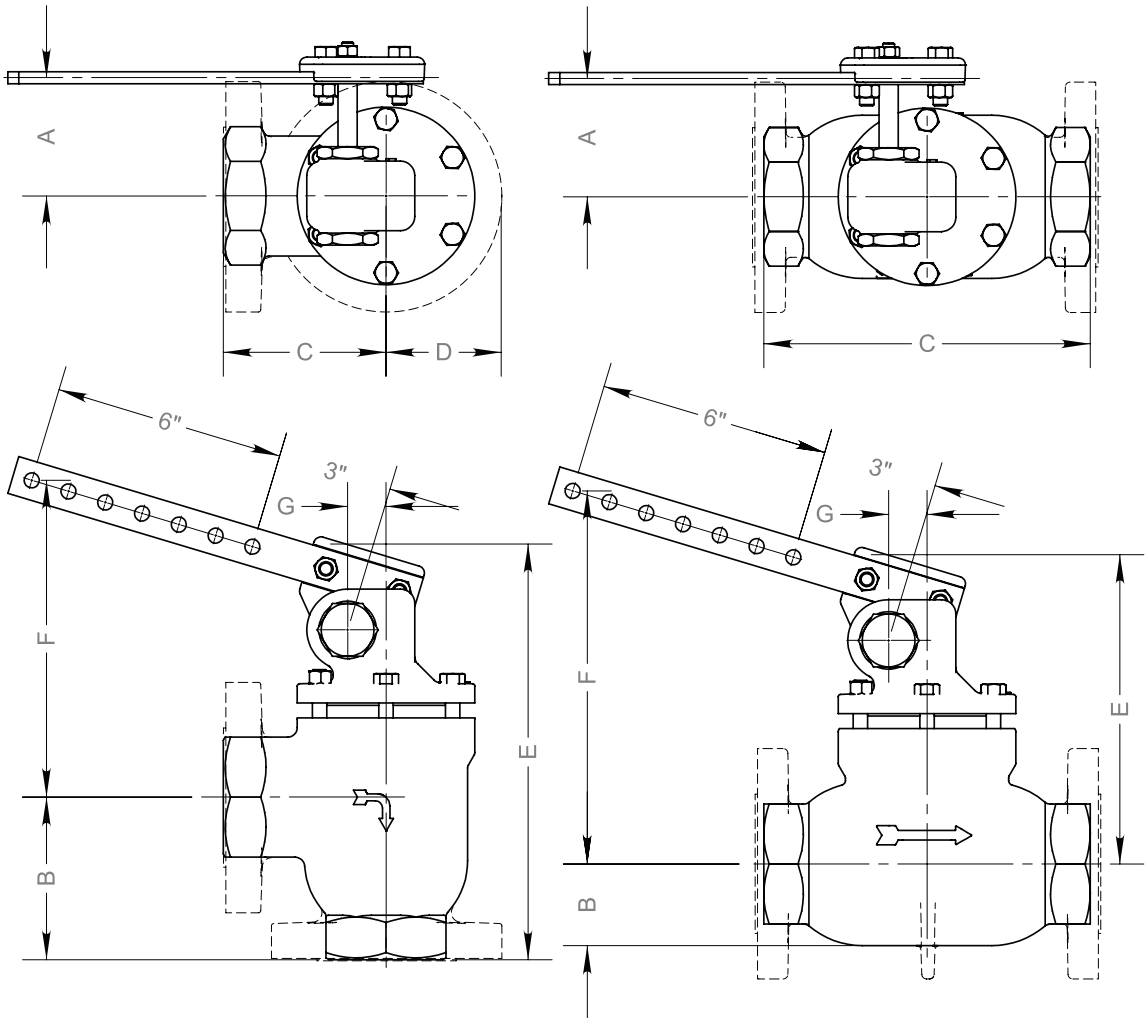
All Pictures shown are for illustration purpose only. Actual product may vary due to product enhancement.

ITEM	QTY.	DESCRIPTION			PART NO. STANDARD 2 INCH	PART NO. STANDARD 3 INCH	PART NO. CORROSIVE 2 INCH only
1	1	O-Ring ✱			154HSNPS	491HSNPS	154HSNPS
2	1	Stuffing Box			7661	7593	7661S6
3	2	O-Ring ✱			2131HSN	5226HSN	2131HSN
4	1	Bushing ✱			7660	7592	7660
5	(Qty)	Bolt			833 (4)	833 (5)	833 (4)
6	2	Link Pin w/ Snap Ring ◊ ✱ (kit includes Snap Rings only)			316	317	316SS6
7	1	Packing ✱			7662	355	7662
8	1	Trunnion Plug			7522	7523	7522S6
9	1	Shaft	Old Style		7404	7408	7404S6
			New Style		7609	7610	7609S6
10	1	Lever Bar	Standard		340		340
			Optional	16 inches	340L16		340L16
				20 inches	340L20		340L20
				24 inches	340L24		340L24
				30 inches	340L30		340L30
				36 inches	340L36		340L36
11	2	Bolt			247		247
12	2	Nut			241		241
13	1	Lever Hub			7600	7601	7600
14	1	Piston	Full Port ◊		6787S6	7138	6787S6
			Reduced ◊		7557	----	7557S6
15	2	Back Up	Full Port ◊ ✱		1458	772	1458
			Reduced ◊ ✱		7558	----	7558
16	1	O-Ring	Full Port ◊ ✱		774QHSN	329HSN	774QHSN
			Reduced ◊ ✱		808HSN	----	808HSN
17	1	Seal Retainer	Full Port ◊		5205	5206SS6	5205SS6
			Reduced ◊		----		----
18	1	O-Ring ◊ ✱			329HSN	330HSN	329HSN
19	1	Stem ◊			6790	7142	6790S6
20	1	Trunnion Nut ◊			2972	2973	2972SS6
21	2	Link ◊			318SS6	319SS6	318SS6
22	1	Bonnet			7164	296	7164 ‡
23	1	Trunnion Hub	Old Style ◊		7403	7407	7403S6
			New Style		7613S6	7614S6	7613S6
24	(Qty)	Stud			5108 (2)	5108 (1)	5108
25	2	Nut			5109 (2)	5109 (1)	5109
26	(Qty)	Gasket ◊ ✱			5199	5223	5199
27	1	Cylinder	Full Port ◊		6785	7137	6785
			Reduced ◊		7556	----	7556
28	1	Body					
		NPT Angle			6786	7139	6786 ‡
		NPT Thru			7163	----	7163 ‡
		Flanged Angle			7655	7319	7655
29	1	Seat	Full Port ◊ ✱		311HSN	165HSN	311HSN
			Reduced ◊ ✱		7498HSN	----	7498HSN
30	1	Gasket ◊ ✱			276	277	276
31	1	Removable Seat	Full Port ◊		6789	7140	6789
			Reduced ◊		7554	----	7554
32	1	Ratio Plug	Full Port ◊		177SS6	178	177SS6
			Reduced ◊		7553	----	7553S6
33	1	Lock Nut ◊ ✱			173SS6	906	173SS6
34	1	Set Screw			7608		7608
	2	Lifting Ring (not shown)			----	7559	----
					‡ Coated Parts available with "K" service type		
Plug Assemblies		Full Port			CLC	CLD	CLCS6
		Reduced			CLC5	----	CLC5S6
					◊ These parts are stocked as Cage Assemblies.		
Repair Kits					RUV	RVU	RUV
✱ These parts are recommended spare parts and are stocked as repair kits.							

Table 1 - Flow Coefficient(Cv) for Lever Operated Dump Valves												
Line Size	**Trim Size in. (mm)**	**Trim Type**	**Cf**	Valve Opening Percentage								
				10	20	30	40	50	60	70	80	90	100
LD - 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	139.0	179.7	217.6	250.2	277.0
LP - Piston Balanced Throttling													
2"	**1 1/2 in (38mm)**	**Linear (Nominal)**	**0.75**	3.5	5.0	7.4	9.6	11.8	13.9	16.2	18.4	20.4	22.7
	2 in (51 mm)		**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
LB - Piston Balanced													
2"	**2 in (51 mm)**	**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"	**3 in (76 mm)**		**0.79**	6.7	11.1	15.6	20.3	24.8	29.2	33.4	37.2	40.7	43.8
4"	**4 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

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

DIMENSIONS
MODEL: LP



LINE SIZE	MATERIAL	BODY TYPE & END CONNECTION	A	B	C	D	E	F	G
2 in	DUCTILE	NPT / ANGLE	3 3/4 in	4 1/4 in	4 1/4 in	2 5/16 in	11 in	7 15/16 in	1 in
		NPT / THRU	3 11/16 in	2 1/8 in	8 1/2 in	2 5/16 in	8 3/16 in	9 3/8 in	1 in
		FLANGED / ANGLE	3 11/16 in	4 1/4 in	4 1/4 in	3 in	8 3/16 in	9 3/8 in	1 in
3 in	DUCTILE	NPT / ANGLE	3 3/4 in	6 1/8 in	5 1/2 in	3 1/16 in	14 1/16 in	10 1/4 in	1 3/8 in
		FLANGED / ANGLE	3 3/4 in	5 1/2 in	5 1/2 in	3 3/4 in	13 3/16 in	10 1/4 in	1 3/8 in
FLANGE DIMENSIONS ARE ANSI 125/150 STANDARD.									

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

Table 3 - Seal Options Trunnion Assemblies		
Part	**Standard Material**	**Optional Material**
O-rings	HSN	FKM

Table 4 - 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 5 - Material Options Diaphragm Balanced Dump Valves		
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 Ductile (ASTM A395)	316SS (ASTM A351)
Cage	2 & 3 inch Delrin (ASTM D4181), 4 & 6 inch Ductile (ASTM A395)	316SS (ASTM A351)
Stuffing Box	2 & 3 inch 303SS (ASTM A582), 4 & 6 inch Brass (ASTM B-16)	316SS (ASTM A479)
Bonnet	Ductile (ASTM A395)	Ductile (ASTM A395) + Kimcoat
Seat Disc	4 & 6 inch Ductile (ASTM A395)	4 inch 316SS (ASTM A351)
Stem	2, 3 & 4 inch 303SS (ASTM A582), 6 inch 316SS (ASTM A213)	316SS (ASTM A351)

Table 6 - Material Options Piston Balanced Throttling Dump Valves		
Part Description	**Standard Material**	**Corrosive Material**
Body	Ductile (ASTM A395)	Ductile (ASTM A395) + Kimcoat
Ratio Plug Full Port	2 inch 316 Powder Metal (ASTM 316-N1-25), 3 inch Powder Metal (F-008)	316 Powder Metal (ASTM 316-N1-25)
Stuffing Box	303SS (ASTM A582)	316SS (ASTM A479)
Bonnet	Ductile (ASTM A395)	Ductile (ASTM A395) + Kimcoat
Stem	303SS (ASTM A582)	316SS (ASTM A484)
Piston	2 inch 316SS (ASTM A484) , 2 inch reduced & 3 inch 303SS (ASTM A582)	316SS (ASTM A484)
Cylinder	303SS (ASTM A582)	316SS (ASTM A484)

Table 7 - Material Options Piston Balanced Dump Valves		
Part Description	**Standard Material**	**Corrosive Material**
Body	Ductile (ASTM A395)	Ductile (ASTM A395) + Kimcoat
Ratio Plug	2 & 3 inch Delrin (ASTM D4181), 4 inch Ductile (ASTM A395)	316SS (ASTM A351)
Cage	Ductile (ASTM A395)	316SS (ASTM A351)
Stuffing Box	2 & 3 inch 303SS (ASTM A582), 4 inch Brass (ASTM B-16)	316SS (ASTM A479)
Bonnet	Ductile (ASTM A395)	Ductile (ASTM A395) + Kimcoat
Seat Disc	4 inch Ductile (ASTM A395)	4 inch 316SS (ASTM A351)
Stem	303SS (ASTM A582)	316SS (ASTM A479)
Piston	316SS (ASTM A351)	316SS (ASTM A351)
Cylinder	2 & 3 inch 303SS (ASTM A582), 4 inch 316SS (ASTM A351)	316SS (ASTM A249)

Table 8 - Material Options Trunnion Assemblies		
Part Description	**Standard Material**	**Corrosive Material**
Bonnet	Ductile (ASTM A395)	
Plate	Steel SA515 Grade 70 Plate	
Stuffing Box	Brass B-16 C-36000 HO2	316SS (ASTM A479)
Union Nut	Ductile (ASTM A395)	
Weld Neck	Schedule 100 Pipe ASTM A-106 grade C	

KIMRAY INC.®

CODE BUILDER
D SERIES

Series:

D = Dump Valve

Model:

LD = Lever Operated Diaphragm Balanced
LP = Lever Operated Piston Balanced Throttle (2 & 3 inch only)
LB = Lever Operated Piston Balanced

Line Size:

2 = 2 NPS
3 = 3 NPS
4 = 4 NPS
6 = 6 NPS

End Connection:

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

Body Type:

A = Angle
T = Thru

Shell Material:

D = Ductile Iron

Inner Valve Size:

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

Actuator:

L = Lever Operated

Service Type:

S = Standard
C = Corrosive
K = Corrosive with Coated Shell Components

D	LD	2	SA	A	D	F	L	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 03:10.1 - 03:20.7 for available options