DLO(S)-2 CONTROL VALVE

SIZES 1/2" – 4"
ANSI CLASS 125/250, 150/300

DLO CONTROL VALVE

- **Cage Retained Seat** eliminates threaded internal parts
- **Top Entry** permits easy in line maintenance
- **Highest Cv's** of any comparable single seated valve
- **Two Point Stem Guide** minimizes trim wear and seat leakage
- **Tight Shutoff** with choice of seat materials for Class IV, V or VI
- **Multiple Trim Selections** to suit a wide variety of applications
- **One Piece Plug and Stem** ensures proper alignment and will not separate
- **Bolted Actuator Yoke** guarantees easy disassembly
- **Ultra Compact Actuators** install in tight spaces

Application Data

- Process control systems for food, pulp and paper, chemical, petrochemical & other industries
- HVAC systems
- Feed water and fuel system controls in boiler rooms
- Packaged systems (OEM) such as heat exchangers, water purification systems & vaporizers, metal cleaning and plating

Options

- Soft Seats
- Threaded, Flanged, Buttweld or Socketweld Connections
- Reduced Port Trim

Models

- U851 — Cast Iron
- U853 — Cast Steel
- U854 — SST

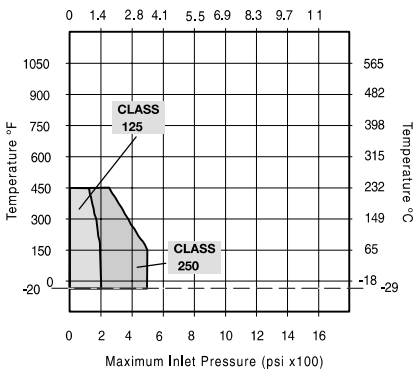
Applicable Codes *See Reference Section on page* 195

RANGEABILITIES

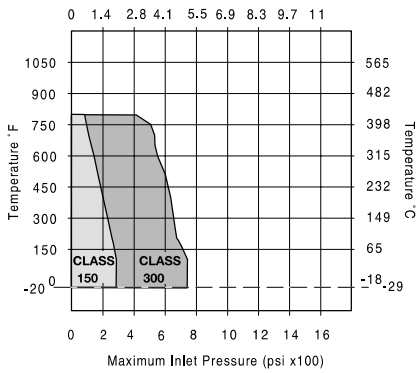
Trim Type	Ratio
¼" MT (Microtaper®)	55:1
¼-½"	25:1
¾-2"	35:1
2½-3"	40:1
4"	50:1

Valve Size	Full Port Cv	Cv's-Reduced Trim								
		¼"MT	¼"	½"	¾"	1"	1½"	2"	2½"	3"
½	4	.5	1.5	—	—	—	—	—	—	—
¾	9	.5	1.5	4.1	—	—	—	—	—	—
1	15	.5	1.5	4.1	9.1	—	—	—	—	—
1½	30	—	—	—	9.3	15.2	—	—	—	—
2	57	—	—	—	—	15.4	30.3	—	—	—
2½	83	—	—	—	—	—	30.9	57.4	—	—
3	120	—	—	—	—	—	30.9	58.0	83.0	—
4	201	—	—	—	—	—	—	58.9	83.0	120

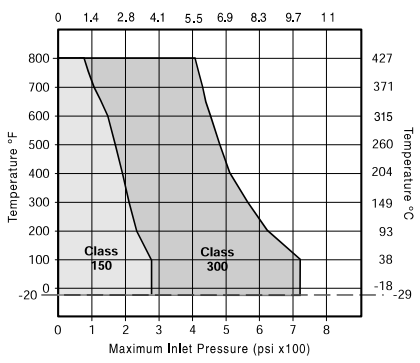
CAST IRON
A126 CLASS B
Maximum Inlet Pressure (MPa)



CARBON STEEL
A216 Gr. WCB - Standard Class
Maximum Inlet Pressure (MPa)



316 STAINLESS STEEL CF8M
CLASS A - Standard
Maximum Inlet Pressure (MPa)



DLO(S)-2 CONTROL VALVE

SPECIFICATION

BODY ASSEMBLY:
Style: Single seated, top entry bolted bonnet, globe style body, cage retained seat, unbalanced plug

ANSI Body Ratings:
Cast Iron: Class 125 & 250
(DIN ND16 & ND25)
Steel and alloys: Class 150 & 300
(DIN ND 16 & ND40)

BODY/BONNET MATERIALS:
Cast Iron, ASTM A126 Class B
Carbon Steel, ASTM A216 Gr WCB
316 stainless steel, ASTM A351 Gr CF8M

Note: See ANSI B16.1 (cast iron) or ANSI B16.34 (other materials) for pressure/temp. limits of body/bonnet assemblies.

SIZES: ½" - 4"

END CONNECTIONS:
ANSI Class 125/150 Integral Flanged, 1"- 4"
ANSI Class 250/300 Integral Flanged, 1"- 4"
Threaded, NPT -½"- 2":
Cast iron - ANSI Class 250 rated
Steel & alloys - ANSI Class 300 rated
Socketweld ends (Sch. 40) ½" - 2"
Buttweld ends (Sch. 40) 2½" - 4"
DIN Flanges: ND-16, ND-25,
ND-40

BONNET:
Through-bolted bonnet

BODY/BONNET BOLTING:
ASTM A-193 GRB7 Studs
ASTM A-194 GR2H Nuts

STEM PACKING:
PTFE V-Rings, -40 to 460°F (-22 to 238°C)
Braided PTFE/Graphite (Split-ring),
-40 to 500°F (-22 to 260°C)
Laminated Graphite,-320 to 800°
(-195 to 426°C)

PACKING STUDS, NUTS & FOLLOWER:
300 Series Stainless Steel

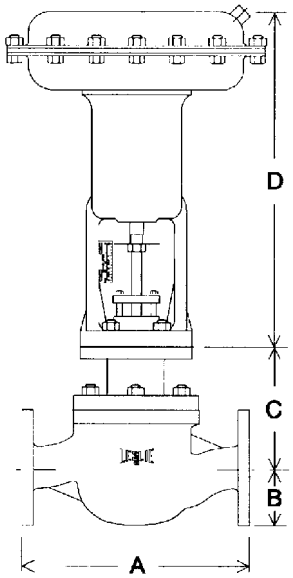
GASKETS:
Body gasket: Spiral wound AISI Type 316L
Seat/Body Gasket:
DLO-2 - Filled PTFE, 460ºF (238ºC)
DLOS-2 - Graphite filled Inconel* 600
750ºF (399ºC)

TRIM SIZES:
Full, reduced port, Microtaper®

TRIM MATERIAL:
316SS; 316SS/Stellited

FLOW CHARACTERISTICS:
Linear or equal percent - standard
Modified linear - optional

SHUT-OFF CLASS:
Metal/metal seats - ANSI/ISA 70-2 Class IV,
Class V optional to 750ºF (399ºC)
Metal/PTFE seats - ANSI/ISA 70-2 Class VI,
bubble-tight to 460ºF (238ºC)

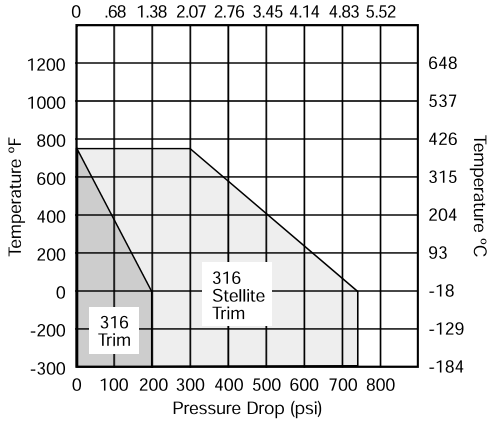


DIMENSIONS[1] inches (mm) **AND WEIGHTS** pounds (kg)

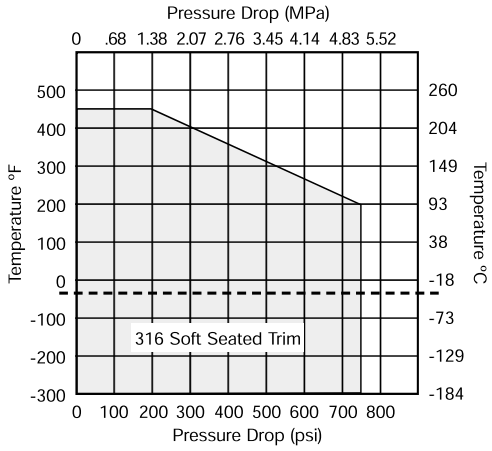
SIZE	A		B		C	D	WEIGHT				
	THD, 250,300[2] (ND25,40)	125,150 (ND16)	CI	CS			THD	125 (ND16)	150 (ND16)	250 (ND25)	300 (ND40)
½ (15)	7¾ (197)	— —	2⅜ (60)	— —	5 11/16 (145)	12⅜ (314)	54 (23.6)	— —	— —	— —	— —
¾ (20)	7¾ (197)	— —	2⅜ (60)	— —	5 11/16 (145)	12⅜ (314)	54 (23.6)	— —	— —	— —	— —
1 (25)	7¾ (197)	7¼ (184)	2¼ (57)	2¼ (57)	5 11/16 (145)	12⅜ (314)	54 (23.6)	54 (28.6)	54 (28.6)	56 (25.4)	65 (25.4)
1½ (40)	9¼ (235)	8¾ (222)	2⅜ (60)	2⅜ (60)	7⅜ (187)	12⅜ (314)	63 (28.6)	70 (31.8)	70 (31.8)	70 (32.7)	72 (32.7)
2 (50)	10½ (267)	10 (254)	3 (76)	3 (76)	7⅝ (194)	15¼ (387)	70 (31.8)	91 (41.3)	91 (41.3)	95 (43.2)	95 (43.2)
2½ (65)	11½ (292)	10⅞ (276)	3⅝ (92)	3⅞ (98)	8 (203)	15¼ (387)	— —	108 (59)	107 (57.7)	114 (51.7)	115 (52.7)
3 (80)	12½ (318)	11¾ (298)	3⅞ (98)	3⅞ (98)	8⅜ (213)	15¼ (387)	— —	130	127	141 (64.1)	138 (62.7)
4 (100)	14½ (393)	13⅞ (385)	5 (127)	4¾ (123)	10 3/16 (259)	19⅝ (499)	— —	231 (104.8)	271 (98.5)	248 (112.5)	236 (107.1)

1. Threaded available in 1/2" to 2" only.
2. BWE same as 300# Flanged.

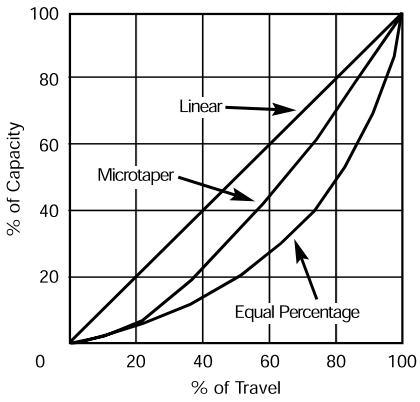
Metal Seated Trim



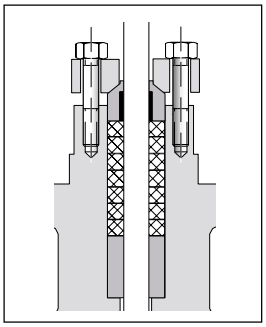
Soft Seated Trim



Inherent Flow Characteristics

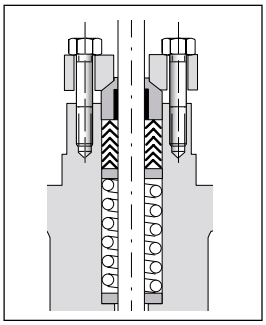


PACKING CONFIGURATIONS



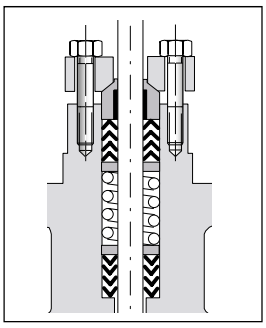
BRAIDED TEFLON GRAPHITE

Split rings allow packing replacement without removal of actuator. Graphite impregnated PTFE provides 500˚F (260˚C) service temperature, better memory and sealing than pure PTFE rings, lowered stem hysteresis, and is ideal for fluids that contain suspended particles.



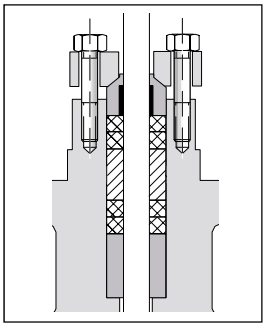
PTFE - V-RING

Live-loaded PTFE V-ring packing provides the most maintenance free stem seal. The V-ring packing is both pressure energized and live-loaded by a 304 stainless steel spring to automatically compensate for packing wear. Maximum service temperature is 460˚F (238˚C).



DOUBLE PTFE V-RING

Inverted sets of PTFE V-ring packing provide tight sealing in valves which may be controlling pressure or vacuum at different times. Maximum temperature 460˚F (238˚C).



HIGH TEMPERATURE LAMINATED GRAPHITE

Precision die-cut laminated graphite rings provide a reliable, tight stem seal to operating temperatures of 800˚F (426˚C).

DLO TRIM SELECTION

LINEAR CONTOURED

EQUAL PERCENTAGE

MICROTAPER®

Trim	Maximum Service Temp.	Plug[1]	Seat Ring	Stem	Cage	Guide Bushings	ANSI/ISA 70-2 Shutoff
Standard	450/750˚F[2] (232/398˚C)[2]	AISI Type 316 SS	AISI Type[3] 316 SS	AISI Type 316 SS	ASTM A351 CF8M SS	Nitronic 60	IV,V[4]
High Temperature	750˚F (398˚C)	AISI Type 316 SS Stellite	AISI Type 316 SS Stellite	AISI Type 316 SS	ASTM A351 CF8M SS	Nitronic 60	IV,V[4]
Soft Seated	460˚F (238˚C)	AISI Type 316 SS	AISI Type 316 SS w/PTFE Insert	AISI Type 316 SS	ASTM A351 CF8M SS	Nitronic 60	VI

1. Microtaper plugs are solid stellite alloy.
2. Maximum is 450ºF when used with Cast Iron bodies.
3. Stellite seat optional.
4. On application.

DLO(S)-2 Order Code

Class	Material			Valve Size	End Conn.	Actuator	Bonnet Packing	Trim Size	Trim Type	Acces-sories
U	8	5	1	A	1	A	1	D	F	0
1	2	3	4	5	6	7	8	9	10	11

Class - Position 1
- U

Material - Position 2, 3 & 4
- 851 = Iron
- 853 = Carbon Steel
- 854 = SST

Valve Size - Position 5
- A = ½
- B = ¾
- C = 1
- E = 1½
- F = 2
- G = 2½
- H = 3
- J = 4

End Connection - Position 6
- 1 = Threaded
- 2 = Flanged 125/150
- 3 = Flanged 250/300
- 4 = SWE Sch. 40 (steel only)
- 5 = BWE Sch. 40 (steel only)
- 6 = ND16 (steel only)
- 7 = ND40
- 8 = SWE Sch. 80 (steel only)
- 9 = BWE Sch. 80 (steel only)
- 0 = Other (Specify)

Actuator - Position 7
- A = 35
- B = 35R
- C = 35 HOD
- D = 35R HOD
- E = 55
- F = 55R
- G[1] = 55A
- H[1] = 55AR
- I = 55 HOD
- J = 55R HOD
- K[1] = 55A HOD
- L[1] = 55AR HOD
- M = 85
- N = 85R
- P = 85 HOD
- Q = 85R HOD
- X = w/o Actuator

Bonnet & Packing - Position 8
- 1 = Std. Bonnet, BTG
- 2 = Std. Bonnet, Teflon® V-Ring
- 3 = Std. Bonnet, LG
- 4 = Std. Bonnet, Double Teflon®

Trim Size - Position 9
- B[2] = ¼
- D = ½
- G = ¾
- J = 1
- L = 1½
- M = 2
- N = 2½
- P = 3
- R = 4

Trim Type - Position 10
- B[2] = Micro-Taper
- F = Equal % 316 SS
- G[3] = Equal % 316 SS/TFE (RES)
- H = Equal % 316 SS/Stellite
- J = Linear 316 SS
- K[3] = Linear 316 SS/TFE (RES)
- L = Linear 316 SS/Stellite

Number of Accessories - Position 11
- 1 = 1 accessory
- 2 = 2 accessories
- 3 = 3 accessories
- 4 = 4 accessories
- 5 = 5 accessories
- 6 = 6 accessories
- 7 = 7 accessories
- 8 = 8 accessories
- 9 = 9 accessories
- 0 = 0 accessories

TRIM AVAILABILITY CHART

TRIM DIA	CV[4]	STROKE	BODY SIZE (IN) ½	¾	1	1½	2	2½	3	4	ACTUATOR[1] 35(R)	55 (R)	55A(R)	85(R)
¼MT	0.5	¾	●	●	●	—	—	—	—	—	●	●	—	—
¼	1.5	¾	●	●	●	—	—	—	—	—	●	●	—	—
½	4	¾	●	●	●	—	—	—	—	—	●	●	—	—
¾	9	¾	—	●	●	●	—	—	—	—	●	●	—	—
1	15	¾	—	—	●	*	●	—	—	—	●	●	—	—
1½	30	¾	—	—	—	●	*	●	●	—	●	●	—	—
2	57	1	—	—	—	—	●	*	*	●	—	—	●	●
2½	83	1¼	—	—	—	—	—	●	—	—	—	—	●	●
3	120	1½	—	—	—	—	—	—	●	—	—	—	●	●
4	201	2	—	—	—	—	—	—	—	●	—	—	●	●

1. 55A(R) used on trim sizes 2 through 4 only (Stem Connection 1/2").
2. Microtaper is available in 1/4" Stellite only Code BB.
3. Resilient seat DLOA, DLOAS available with full size trim only.
4. Minimum Cv controllable is Cv from table divided by rangeability.

* Consult factory.

DLO(S)-2 Linear Valve Specification Form

LESLIE CONTROLS, INC.
A division of CIRCOR International, Inc.
12501 Telecom Drive · Tampa, Florida 33637
(813) 978-1000 · FAX: (813)-978-0984

CONTROL VALVE SPEC SHEET

Project/Job _____ Data Sheet _____ of _____
Unit/Customer _____ Spec _____
P.O./LCO File #_____ Tag_____
Item _____ Dwg_____
Contract_____ Service _____
MFR Serial# _____

Fluid ■ Steam ■ Water ■ Gas_____ ■ Liquid_____ Crit Pres PC

Service Conditions

Flow ■ #/hr ■ gpm ■ scfh ■ _____
Inlet Pressure ■ psig ■ psia ■ _____
Outlet Pressure ■ psig ■ psia ■ _____
Temperature ■ °C ■ °F _____
Max Press/Temperature:_____ /_____
Density/MW/SG _____/_____/_____
Viscosity _____CP
Vapor Pressure ■ psia ■ _____
Required C_V _____

Max. Flow	Norm. Flow	Min. Flow	Shut-off Pressure

Noise (dBA) Allowable_____

Line Info Pipe Size In_____/Sch_____ Pipe Size Out_____/Sch_____

Valve, Body & Bonnet

Body Size in. ■ ½ ■ ¾ ■ 1 ■ 1½ ❑ 2 ■ 2½ ■ 3 ■ 4
ANSI Class ■ 125 ■ 150 ■ 250 ■ 300 ❑ Other_____
Body/Bonnet Material: ■ Cast Iron ■ Cast Steel ❑ SST ■ Other_____
End Conn. Inlet/Outlet: ■ NPT ■ SWE ■ BWE Sch._____ ■ Int. Flanges ■ Other_____
Packing Material: ■ PTFE ■ BTG ■ Laminated Graphite ■ DTFE ❑ Other_____

Trim Size
■ MT ■ ¼ ■ ½ ❑ ¾ ■ 1 ■ 1½ ■ 2 ❑ 3 ■ 4
■ MT ■ =% ■ Linear
■ 316SS ■ 316SS / Stellite ■ 316SS / TFE

Actuator
Spring Action: ■ Air to Open ■ Air to Close ■ Last Position ■ Other_____ ■ None
Available Air Supply Pressure: Max._____ Min._____
Manual Override: ■ Yes ■ No ■ Type_____

Solenoid ■ Yes ■ No ■ Type_____ ■ Voltage_____

Positioner ■ Yes ■ No ■ Type_____ ■ Pneu ■ E/P

Switch ■ Yes ■ No ■ Type_____ ■ Voltage_____

Air Set ■ Yes ■ No ■ Type:_____ ■ Range:_____

Other Accessories ■ Yes ■ No ■ Type_____

Test ANSI/FCI Leakage Class: ■ IV ■ V ■ VI

QUESTIONS? CALL LESLIE CONTROLS @ (813) 978-1000 PLEASE FAX COMPLETED FORM TO: (813) 977-0174