

DLO(S)-2 CONTROL VALVE

SIZES 1/2" – 4"

ANSI CLASS 125/250, 150/300

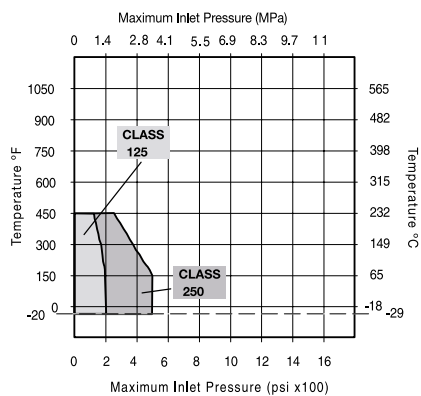


DLO CONTROL VALVE

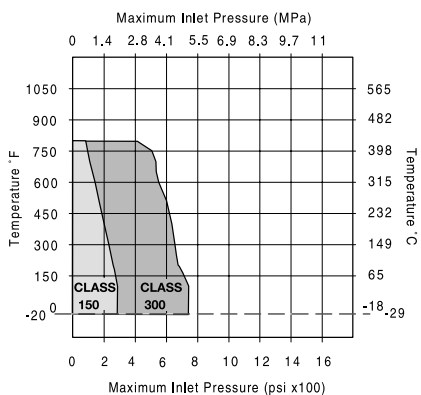
APPLICATION DATA

- 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

CAST IRON A126 CLASS B



CARBON STEEL A216WCB



- **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

MODELS

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

OPTIONS

- Soft Seats
- Threaded, Flanged, Butt weld or Socket weld Connections
- Reduced Port Trim

APPLICABLE CODES *See Reference Section*

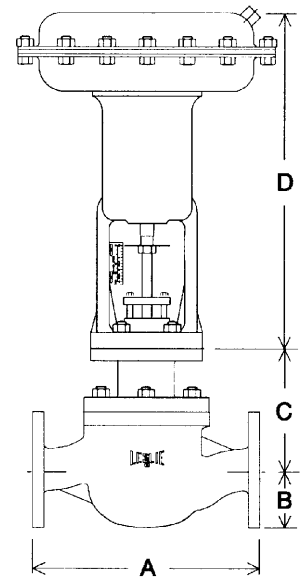
Valve Size	Full Port Cv	Cv's-Reduced Trim									
		1/4" MT	1/4"	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	
1/2"	4	.5	1.5								
3/4"	9	.5	1.5	4.1							
1"	15	.5	1.5	4.1	9.1						
1 1/2"	30				9.3	15.2					
2"	57					15.4	30.3				
2 1/2"	83						30.9	57.4			
3"	120						30.9	58			
4"	201							58.9		126	



DLO(S)-2 CONTROL VALVE

DIMENSIONS† inches (mm) AND WEIGHTS pounds (kg)

SIZE	A		B		C	D	WEIGHT				
	THD, 250,300 (ND25,40)	125,150 (ND16)	CI	CS			THD	125 (ND16)	150 (ND16)	250 (ND25)	300 (ND40)
½ (15)	7¼ (197)	—	2¾ (60)	—	5½ (145)	12¾ (314)	54 (23.6)	—	—	—	—
¾ (20)	7¼ (197)	—	2¾ (60)	—	5½ (145)	12¾ (314)	54 (23.6)	—	—	—	—
1 (25)	7¼ (197)	7¼ (184)	2¼ (57)	2¼ (57)	5½ (145)	12¾ (314)	54 (23.6)	54 (28.6)	54 (28.6)	56 (25.4)	65 (25.4)
1½ (40)	9¼ (235)	8¾ (222)	2¾ (60)	2¾ (60)	7 (187)	12¾ (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)	7½ (194)	15¼ (387)	70 (31.8)	91 (41.3)	91 (41.3)	95 (43.2)	95 (43.2)
2½ (65)	11½ (292)	10½ (276)	3½ (92)	3½ (98)	8 (203)	15¼ (387)	—	108 (59)	107 (57.7)	114 (51.7)	115 (52.7)
3 (80)	12½ (318)	11¼ (298)	3½ (98)	3½ (98)	8 (213)	15¼ (387)	—	130	127	141 (64.1)	138 (62.7)
4 (100)	14½ (393)	13¾ (385)	5 (127)	4¾ (123)	10¾ (259)	19½ (499)	—	231 (104.8)	271 (98.5)	248 (112.5)	236 (107.1)



† Threaded Cast Iron available in 1/2" to 2" only.
Threaded Carbon Steel available in 1", 1-1/2" and 2" only.
Flanged valves available in 1" to 4" only.

DLO 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, 460°F (238°C)
DLOS-2 - Graphite filled Inconel* 600
750°F (399°C)

TRIM SIZES:

Full, reduced port, Microtaper*

TRIM MATERIAL:

316SS; 316SS/Stellited

FLOW CHARACTERISTICS:

Linear or equal percent - standard
Modified linear - optional

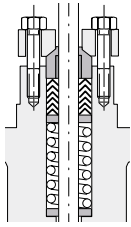
SHUT-OFF CLASS:

Metal/metal seats - ANSI/ISA 70-2 Class IV,
Class V optional to 750°F (399°C)
Metal/PTFE seats - ANSI/ISA 70-2 Class VI,
bubble-tight to 460°F (238°C)

Linear Valve Specification Form

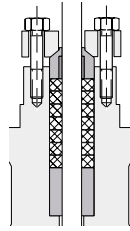


PACKING CONFIGURATIONS



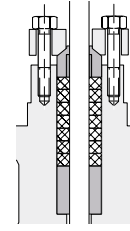
PTFE - V-RING

PTFE V-ring packing provides the most maintenance free stem seal. The V-ring packing is both pressure and spring energized to automatically compensate for packing wear. Maximum service temperature is 460°F (238°C). V-rings can be inverted for vacuum service.



PTFE/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.



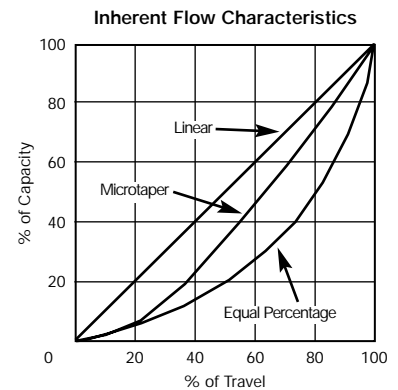
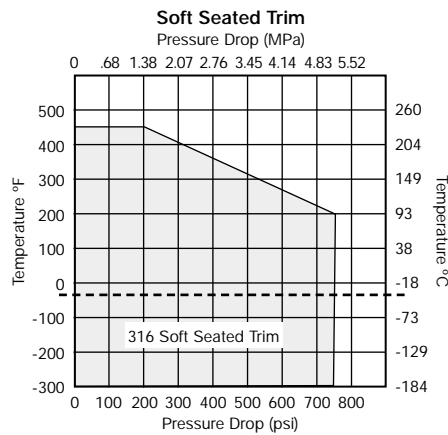
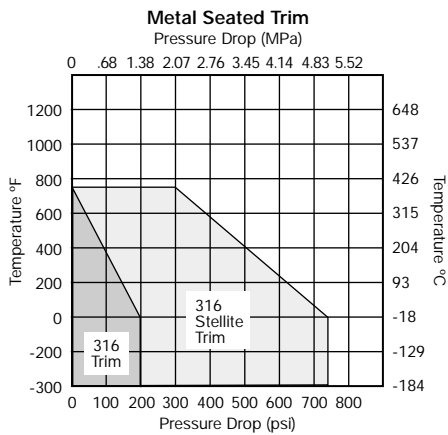
HIGH TEMPERATURE LAMINATED GRAPHITE

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

DLO TRIM SELECTION

Table 1	Maximum Service Temp.	Plug†	Seat Ring	Stem	Cage	Guide Bushings	ANSI/ISA 70-2 Shutoff
Standard Trim	450/750°F†††† (232/398°C)††††	AISI Type 316 SS	AISI Type 316 SS	AISI Type 316 SS	ASTM A351 CF8M SS	Nitronic 60	IV,V†††
High Temp. Trim	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†††
Soft Seated Trim	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

† Microtaper plugs are solid stellite alloy. †† Stellite seat optional. ††† On application. †††† Maximum is 450°F when used with Cast Iron bodies.



LINEAR
CONTOURED



EQUAL
PERCENTAGE



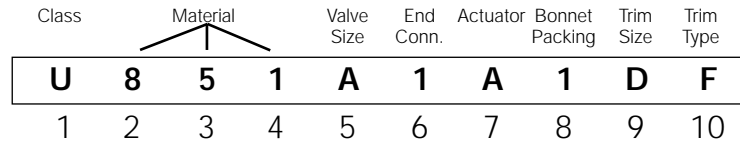
MICROTAPER®

RANGEABILITIES

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



DLO ORDER CODE



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† = 55A H† = 55AR I = 55 HOD J = 55R HOD K† = 55A HOD L† = 55AR HOD M = 85 N = 85R P = 85 HOD Q = 85R HOD X = w/o Actuator

Bonnet & Packing - Position 8 1 = Std. Bonnet, Braided Teflon® Graphite Pkg. 2 = Std. Bonnet, Teflon® Pkg. 3 = Std. Bonnet, Laminated Graphite Pkg. 4 = Std. Bonnet, Double Teflon® Pkg.
Trim Size - Position 9 B = ¼ D = ½ G = ¾ J = 1 L = 1½ M = 2 N = 2½ P = 3 R = 4
Trim Type - Position 10 B †† = Micro-Taper F = Equal % 316 SS G = Equal % 316 SS/TFE H = Equal % 316 SS/Stellite J = Linear 316 SS K = Linear 316 SS/TFE L = Linear 316 SS/Stellite

†† Microtaper is available in 1/4" Stellite only Code BB. Resilient seat DLOA, DLOAS available with full size trim.

† 55A(R) used on 2", 3" and 4" D(D)LO(A)(S)-2 only. 55R used on all other applicable valves.

TRIM AVAILABILITY CHART

TRIM DIA	CV	STROKE	BODY SIZE (IN)								ACTUATOR				
			½	¾	1	1½	2	2½	3	4	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	—	—	—	—	—	—	—	—	●	—	—	—	●

* Consult factory.

