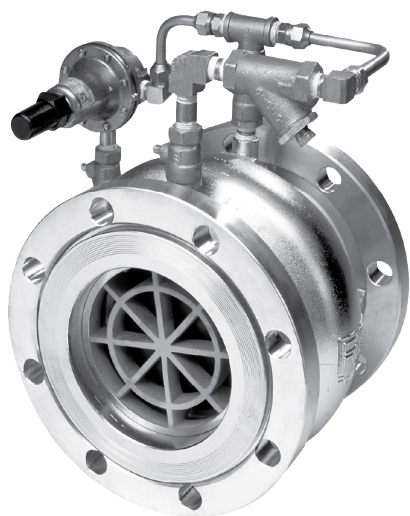




Model 790-01

PRESSURE REDUCING VALVE

ENGINEERING DATA SHEET



The Cla-Val Model 790-01 is a hydraulically operated, pilot actuated automatic control valve for pressure reducing service. The main valve consists of only two parts: a stainless steel body, and an elastomeric liner or control element.

Pressure reducing valves are used to lower pipeline pressure to a predetermined set point. Cla-Val Model 790-01 automatically controls downstream pressure, from no flow to full open flow, without regard to changes in inlet pressure. Outlet pressure control is smooth and precise since the friction and hysteresis of the valve and pilot is negligible.

Because the valve will not chatter or slam under low flow conditions, it is not necessary to parallel Cla-Val Model 790-01 with a second smaller size control valve to obtain accurate pressure control at low flow rates. In any size, Cla-Val Model 790-01 will control pressure right down to shutoff.

Pressure reducing valves can be supplied as a combination with check valve. Control systems are fully piped at the factory and the Cla-Val Model 790-01 is shipped ready for installation.

Purchase Specification

Valve and control system shall lower line pressure to a predetermined set point and shall maintain that set point regardless of variations in flow or inlet pressure. Control valve shall be constructed of two parts: a stainless steel body, and an elastomeric liner or control element.

Minimum rangeability shall be 500:1 based on capacity at flowing pressure conditions. Cf shall be greater than or equal to 0.9. Valve and control system shall be similar in all respects to Cla-Val Model 790-01 as manufactured by Cla-Val, Newport Beach, California.

Design Specification

Performance Specification

Capacity: See Technical Data Sheet

Cf Factor: 0.9

Cavitation: See Technical Data Sheet

Rangeability: 500:1

Bearing Friction: No friction from slip-type bearings

Design Specification

Sizes:

2, 3, 4, and 6 inch wafer style
6, 8, 10, and 12 inch flanged

End Detail Wafer:

Fits ANSI B16.5 class 125, 150, 250, and 300 flanges

End Detail Flanged:

ANSI B16.5 class 150 (fits class 125) or
ANSI B16.5 class 300 (fits class 250)

Operating Pressure: 720 psi maximum

Maximum Differential:

150 psid continuous,
225 psid intermittent*

Reverse Pressure: 125 psid maximum

Approvals:

PUB Listed. Sizes 2" through 6"

Temperature Range: 32 to 160 degrees F*

Flange Operating Pressure:

Class 125-175 psi maximum

Class 150-275 psi maximum

Class 250-300 psi maximum

Class 300-720 psi maximum

*Standard natural rubber 65 durometer in water service. Temperature range depends on liner material. Higher differential pressure ratings available.

For other than standard ANSI flanges consult factory

Din drilling available on all sizes

CLA-VAL™

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E-790-01 (R-05/2026)

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Material Specification

Material Specification

Body: 316L Stainless Steel
 Liner: Natural Rubber, 65 durometer (std)
 Viton, EPDM, Nitrile, Silicone (available)
 Liner Retainer: 316 Stainless Steel

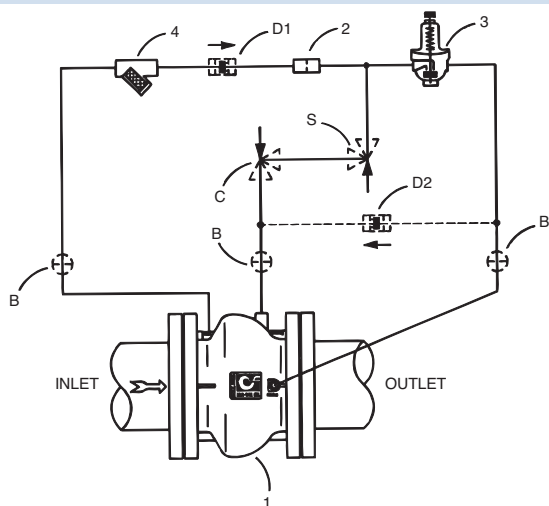
Pilot

Body: ASTM B62 Bronze*
 Spring Cover: ASTM B62 Bronze*
 Wetted Parts:
 Bronze, Stainless Steel*, Buna-N®

Accessories

Shut-off Isolation Valve: 316 stainless steel
 Speed Controls: Brass*
 Check Controls: 316 stainless steel
 "Y" Strainer: 316 stainless steel
 Control Piping: Copper*
 Control Fittings: Brass*
 *316 stainless steel available

790-01 Schematic



Basic Components	
Item	Description
1	100-42 Roll Seal Main Valve
2	X58C Restriction Fitting
3	CRD Pressure Reducing Control
4	X43 "Y" Strainer

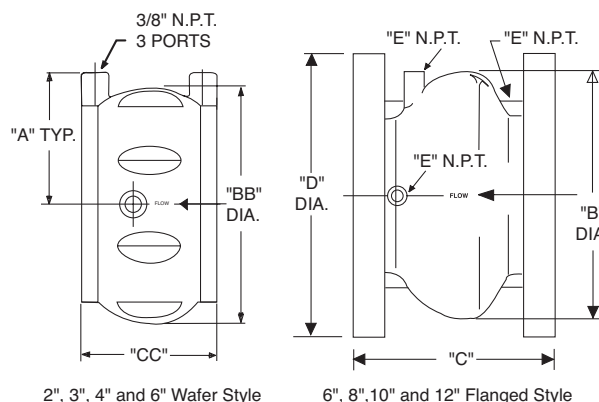
Optional Features	
Item	Description
B	CK2 (Isolation Valves)
C	CV Flow Control (Closing)*
D	Check Valves with Isolation Valve
S	CV Speed Control (Opening)*

*The opening speed control (optional) on this valve should always be open at least 3 turns off their seats, at start-up

Dimensions (100-42 Main Valve)

Valve Size (Inches)	2	3	4	6	8	10	12
A	2.875	3.563	4.125	5.25	--	--	--
B	--	--	--	10.875	14.375	18	21.625
BB	4.375	5.875	7.375	91.188	--	--	--
C	--	--	--	9	11	13	15.125
CC	2.5	3.125	4	5.5	--	--	--
D (ANSI 150)	--	--	--	11	13.5	16	19
D (ANSI 300)	--	--	--	12.5	15	17.5	20.5
E (Ports) NPT	--	--	--	0.375	0.375	0.5	0.5
Approx. wt. lbs. (ANSI 150)	4	7.5	14	58	115	190	290
Approx. wt. lbs. (ANSI 300)	4	7.5	14	87	155	250	375
Max. Continuous Flow (gpm)	224	469	794	1787	3177	4964	7148

Valve Size (mm for ANSI)	50	80	100	150	200	250	300
A	73	90	105	133	--	--	--
B	--	--	--	276	356	457	549
BB	111	149	187	249	--	--	--
C	--	--	--	229	279	330	387
CC	64	83	102	140	--	--	--
D (ANSI 150)	--	--	--	279	343	406	483
D (ANSI 300)	--	--	--	318	381	445	521
E (Ports) NPT	--	--	--	0.375	0.375	0.5	0.5
Approx. wt. kgs. (ANSI 150)	1.81	3.63	6.35	30	54.43	89	151.5
Approx. wt. kgs. (ANSI 150) with Studs & Nuts	2.72	4.54	10	--	--	--	--
Approx. wt. kgs. (ANSI 300)	1.81	3.63	6.35	41.73	72.57	116.57	191
Approx. wt. kgs. (ANSI 300) with Studs & Nuts	5	6.35	11.8	--	--	--	--
Max. Continuous Flow (l/s.)	14	30	50	113	200	301	451



When Ordering, Please Specify

- Catalog No. 790-01
- Valve Size
- Fluid being handled
- Fluid temperature range
- Inlet pressure range
- Outlet pressure range
- Maximum differential pressure
- Minimum differential pressure
- Maximum flow rate
- Pilot Set Point