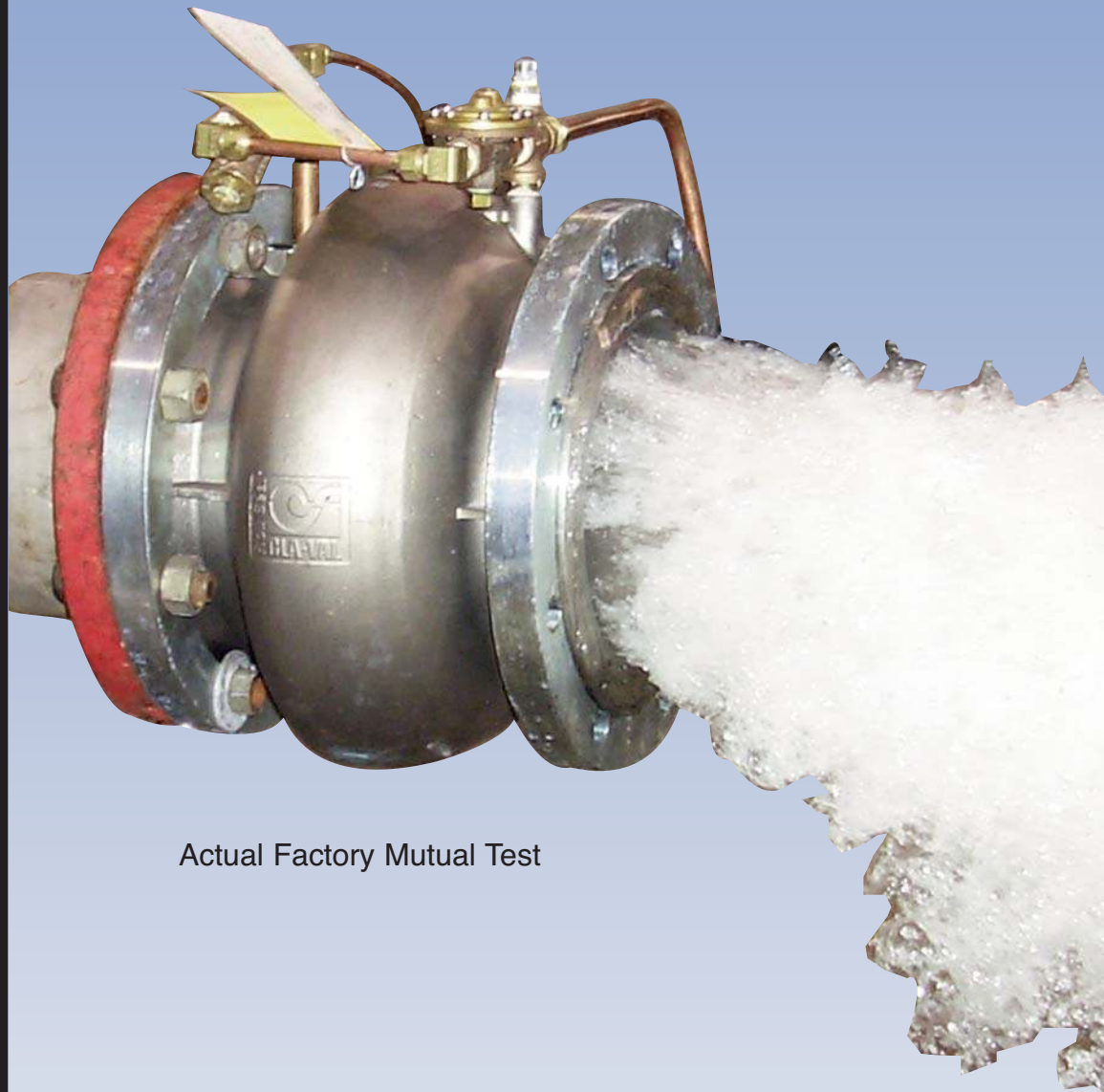
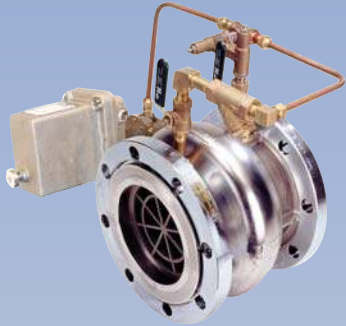




RollSeal

AUTOMATIC CONTROL VALVES



Actual Factory Mutual Test



Quality you can depend on!

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The 700 Series Roll Seal Valve is Your Best Choice for All Your Special Applications:

- *Pressure Reducing Valves*
- *Pressure Relief Valves*
- *Pressure Sustaining Valves*
- *Solenoid Operated Valves*
- *Rate of Flow Valves*
- *Surge Control Valves*
- *Check Valves*
- *Hydrant Control Valves*

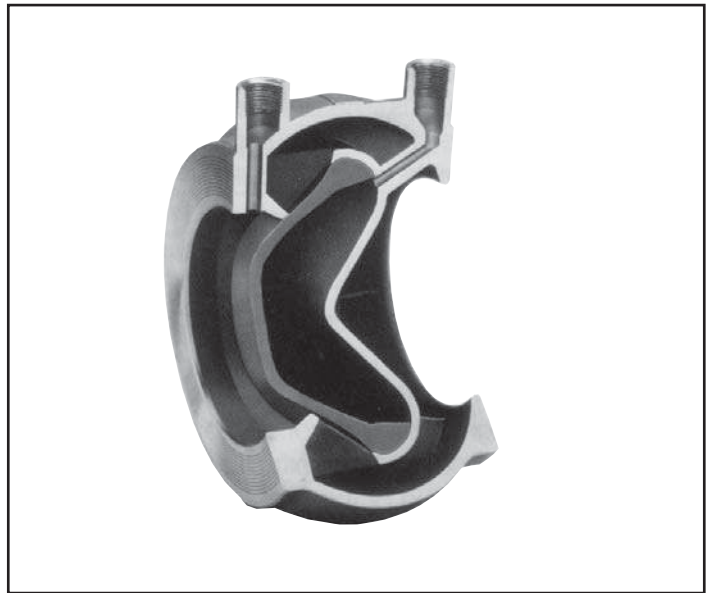
One-Moving Part

The Cla-Val 700 Series Roll Seal main valve consists of a one piece, investment cast body and an elastomeric liner. The valve body is constructed with internal ribs and slots forming a grillwork which surrounds the liner to provide support. Installation of the liner into the body is accomplished by inserting the liner through the inlet of the body, allowing the liner to seat against both the control chamber cavity and the seating surface of the body casting as shown.



Cross Sectional View of Valve Body

A cross sectional view of the investment cast valve body reveals the multiple rib/slot construction, referred to as the "grillwork", and the raised seat surface contained within the body.



Cross Sectional View of Valve Body with Liner

A cross sectional view of the liner installed in the valve body shows how the liner covers the grillwork and firmly seats against the raised seating surface in the body. The 700 Series is a normally closed type valve, i.e., when unpressurized, the valve remains in the closed position.

Cla-Val 700 Series Roll Seal Valve Features

General

The Cla-Val 700 Series control valve is a hydraulically operated valve used to control liquid flow by means of a unique flexible control element.

Operated by pipeline fluid pressure, this basic valve may be used for a variety of services by simply incorporating the appropriate pilot control. Services include on-off, pressure reducing, pressure sustaining, pressure relief, liquid level.

Design Advantages

The 700 Series introduces an entirely new concept in the design of liquid control valves with features unequaled in the industry. Simplicity of construction and operation are the fundamental principles that create an abundance of operational benefits. These valves are your best choice for liquid control applications for these reasons:

Two-Part Design

The 700 Series valve is the first pilot operated control valve to be made of only two components, a one piece investment cast body and an elastomeric liner. Only two parts means high reliability with fewer parts to create problems. The one piece valve body eliminates potential leak paths and provides a rigid, reliable valve structure in a compact design. Two part design means simplified maintenance as well; only one part to replace with a spare parts list that begins and ends with one item.

Extremely High Rangeability

The unique design of the control element (the liner) enables the valve to exhibit nearly infinite rangeability. The rolling action of the liner relative to the body seating surface and adjacent grillwork area provides the variable throttling opening in response to loading pressure change. Consequently, the liner face is not subjected to high velocity Bernoulli effects which could develop unstable dynamic forces affecting throttling position. Additionally, because the liner is flexible, it will unseat at one point on the seating circumference first as the valve begins to open. These factors result in smooth and stable valve operation regardless of flow rate requirements.

Low Pressure Recovery

The flow path design of the Cla-Val 700 Series valve enables exceptional low pressure recovery characteristics to be realized. Flow through the valve is turned radially outward past the control element and then channeled downstream by the contour of the valve body. This radial flow deflection into the valve body minimizes pressure recovery by reducing fluid velocity and dissipating energy within the body.

One main benefit of low pressure recovery is resistance to cavitation. The 700 Series valves can handle significantly higher pressure drop applications than most conventional valves without experiencing cavitation and its damaging effects.

Another benefit of low pressure recovery is low exit velocity. High recovery valves require a substantial length of downstream piping to fully recover static pressure in order to achieve their stated flow capacities. The valve, however, develops a uniformly low exit velocity and therefore is insensitive to downstream piping configuration.

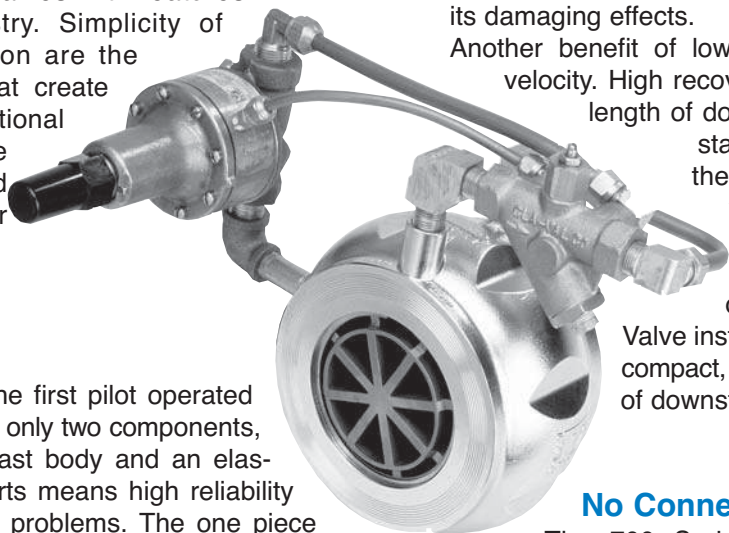
Valve installations can accordingly be more compact, not requiring a substantial length of downstream piping.

No Connecting Linkage

The 700 Series valves contain no springs, levers, stems, shafts, guides or other bearing surfaces. There is only one moving part, the liner, to position. And since movement is achieved simply through the rolling action of the flexible liner, the valve is nearly frictionless in operation. The valve provides fast and smooth valve action with extremely low hysteresis.

Extremely Quiet

The 700 Series valve is noticeably quieter in both low and high flow conditions than any other valve on the market. This has been proven and verified in actual field installations. The 700 Series valves are also unaffected by precipitated deposits, such as from dissolved minerals in water, which can cause conventional globe valves to jam due to close clearance fits of sliding metallic parts.



Cla-Val 700 Series valves are also unaffected by precipitated deposits, such as from dissolved minerals in water, which can cause conventional globe valves to jam due to close clearance fits of sliding metallic parts.

Stainless Steel Body

High corrosion resistance is a benefit from the standard valve body which is constructed of low carbon 316 grade stainless steel. This one-piece body is precision cast by the investment casting process and is available in other materials for special applications. Contact the factory customer service department for applications involving special materials.

Multiple Flange Rating Compatibility

One basic valve is compatible with ANSI 125, 150, 250 or 300 class flanges.

The 2", 3", & 4" valves are designed to mount between standard pipe flanges as a wafer-type valve; structurally equivalent to a thick gasket.

Valve sizes 6" through 12" are constructed to include separable "slip-on" style flanges. The flanges are removable and interchangeable thus permitting one standard valve to service the various ANSI flange classes.

Compact Lightweight Design

Extremely compact size and minimal weight are inherent benefits realized from the unique 700 Series valve design. The small size permits the valve to be installed in tight quarters. Low weight means low support requirements compared to other valves of similar capacity. A 4" valve, for example, only weighs a little over 14 lbs. compared to most hydraulically operated globe valves weighing 140 lbs. or more.

Vault size, a major factor in overall station design can usually be significantly reduced using Cla-Val 700 Series valves resulting in a far lower installed cost.

High Flow Capacities

Even though 700 Series valves are considerably more compact and weigh much less, flow capacity is not sacrificed. In fact, valve capacities are greater, size for size, than offered by most hydraulically operated globe valves.

Submersible

Due to its 316 Stainless Steel construction this valve stands up well when submerged.

Higher Pressure Ratings

Cla-Val 700 Series valves are efficiently but ruggedly designed. The joint free investment cast body has a maximum operating pressure rating of 720 psi. Every valve is pressure tested at the factory to one and one-half the rated working pressure.

The Cla-Val 700 Series Roll Seal Valve

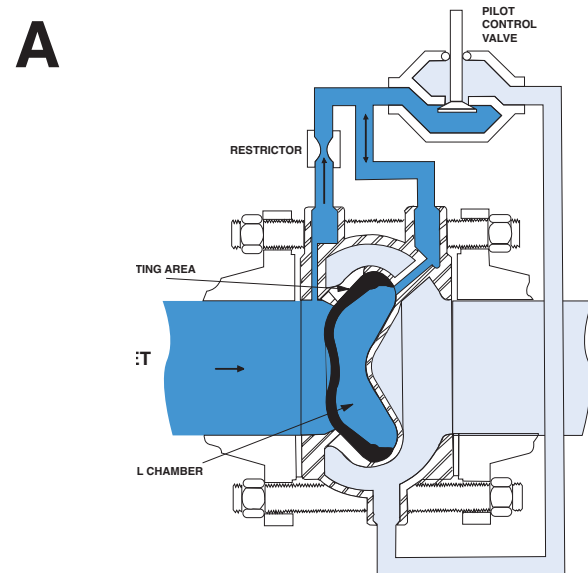
Because of the simple overall design, 700 Series valves can be your first choice for control and relief applications providing low installed cost, low maintenance cost and excellent performance. A variety of control systems, designed by Cla-Val engineers are available to meet your system needs.

Principle of Operation

The operating principle of the Cla-Val 700 Series valve is quite simple. The valve is actuated by upstream pressure as the loading pressure (pressure supplied to the control chamber) is varied by an external control means.

The liner is the only moving element. Drip tight closing, full opening, or modulating control of flow is provided by the rolling action of the liner over radial slots in the valve body.

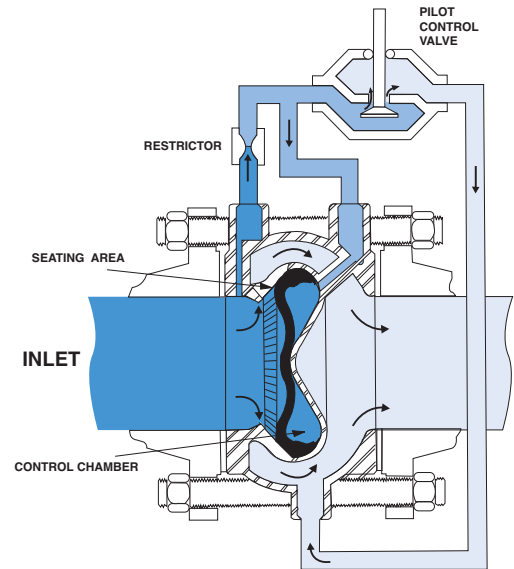
A typical control circuit used to operate the valve consists of a restriction and a suitable pilot connected to the valve as shown below.



Valve in Closed Position

Upstream pressure is introduced to the control chamber (the chamber formed behind the liner) of the valve through the control piping and restrictor. When the pilot is closed, full inlet pressure is supplied to the control chamber thus balancing the force developed by inlet pressure acting on the upstream face on the liner. Under these conditions, the liner remains in the fully closed position. Since the loading pressure in the control chamber is greater than the outlet pressure, an additional closing force is developed across the liner, pressing the liner against the surrounding slotted grillwork area and seating surface.

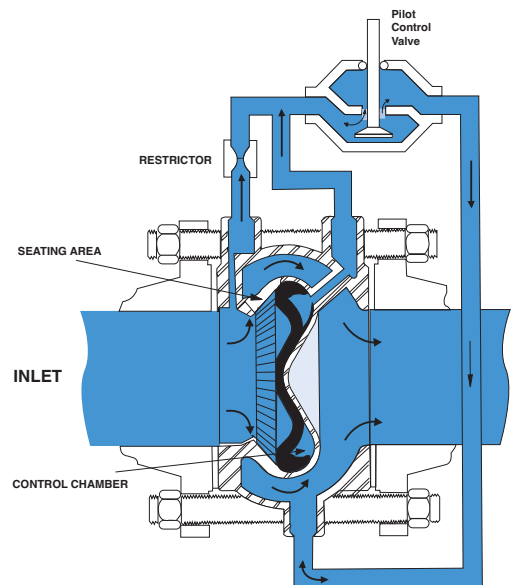
B



Valve in Partially Open Position

As loading pressure is lowered slightly below inlet pressure, the central portion of the liner is forced to invert and come to rest against the tip of the control chamber cavity. Reducing the loading pressure further (but still higher than outlet pressure) causes the liner to drape over the cone shaped portion of the control chamber cavity. This action causes the outer section of the liner to roll off the seating surface and a portion of the grillwork to partially open the valve.

C



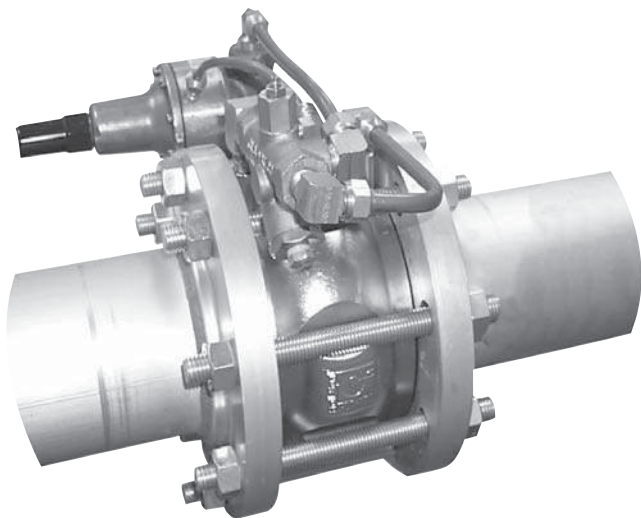
Valve in Fully Open Position

The valve is fully opened when loading pressure is sufficiently reduced to allow the liner to roll back completely and expose the full slot area. Restoring loading pressure reverses the liner rolling action to return the liner to the fully closed position.

Unidirectional Flow

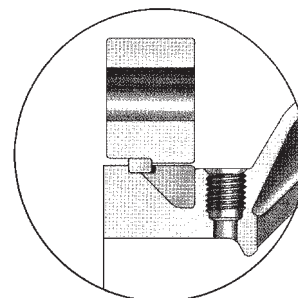
Cla-Val 700 Series valves have a unidirectional flow capability. When subjected to slight reverse pressure conditions, the valve can function as a check valve to prevent backflow. The standard liner retainer allows reverse pressure capability to a continuous 125 psid* rating.

*Rating based on use of standard liner.
Contact factory for ratings with other liner materials.



4" Valve Installed Between Flanges

The 2", 3", and 4" valves are flangeless type valves designed for easy installation between standard pipe flanges. When bolted between the flanges, these wafer style valves become structurally equivalent to a thick gasket. Proper port alignment with the piping is assured by the self centering valve body construction. The outer portion of the valve body is constructed with fluted (recessed) sections to provide clearance for the ANSI 125 and 150 class bolt pattern while the basic outside diameter of the body centers within the ANSI 250 and 300 class bolting.



6" Valve with Section View of Flange

The 6" through 12" valve sizes are constructed to include separable "slip-on" style flanges. Furnished in either ANSI class 150 or 300 raised face style, the flanges are removable and interchangeable thus permitting one standard valve to serve the various ANSI flange ratings; class 125, 150, 250, and 300.

Notes:

For other than standard ANSI flanges consult factory
Din drilling available on all sizes



- Compact Design, Proven Reliable
- Light Weight Materials
- High Pressure Rating Availability
- Easy Installation and Maintenance

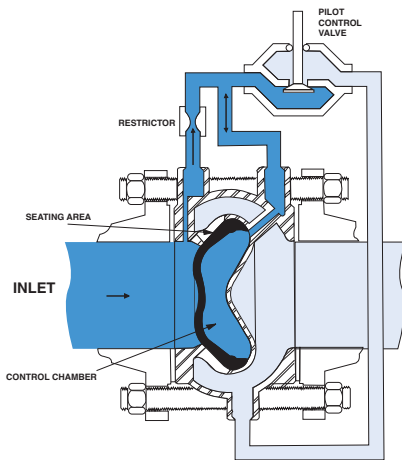
The Cla-Val Model 100-42 Roll Seal valve is a hydraulically operated valve used to control liquid flow by means of a flexible control element: the liner.

The basic valve consists of only two parts: a one piece, investment cast body and an elastomeric liner. The valve body is constructed with internal ribs and slots forming a grillwork which surrounds the liner to provide support. A normally closed type valve is formed by the installed liner which covers the grillwork and seats against the raised seating surface in the valve body.

Upstream pressure actuates the valve to produce valve opening by rolling the liner off the seating surface and the slotted grillwork.

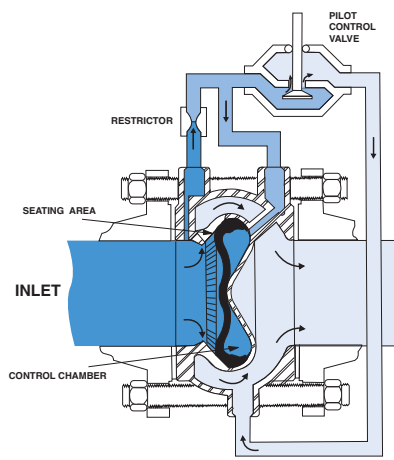
The valve is actuated by upstream pressure as the loading pressure (pressure supplied to the control chamber) is varied by an external pilot control system. A typical pilot control system used to operate the Model 100-42 valve consists of a restriction and a suitable pilot connected to the valve.

Principle of Operation



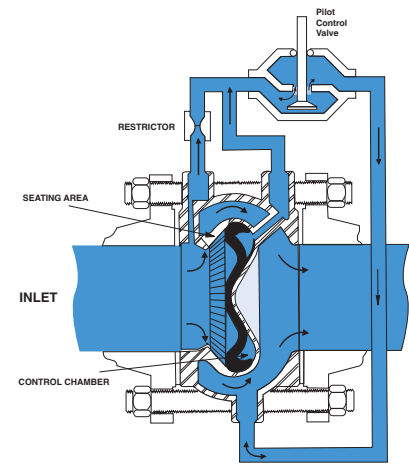
**Model 100-42 Valve
in Closed Position**

Upstream pressure is introduced to the control chamber (the chamber formed behind the liner) of the Cla-Val Model 100-42 Roll Seal valve through the control piping and restrictor. When the pilot is closed, full inlet pressure is supplied to the control chamber, thus balancing the force developed by inlet pressure acting on the upstream face on the liner. Under these conditions, the liner remains in the fully closed position. Since the operating pressure in the control chamber is greater than the outlet pressure, an additional closing force is developed across the liner, pressing the liner against the surrounding slotted grillwork area and seating surface.



**Model 100-42 Valve
in Partially Open Position**

As loading pressure is lowered slightly below inlet pressure, the central portion of the liner is forced to invert and come to rest against the tip of the control chamber cavity. Reducing the loading pressure further (but still higher than outlet pressure) causes the liner to drape over the cone shaped portion of the control chamber cavity. This action causes the outer section of the liner to roll off the seating surface and a portion of the grillwork to partially open the valve.



**Model 100-42 Valve
in Fully Open Position**

The valve is fully opened when loading pressure is sufficiently reduced to allow the liner to roll back completely and expose the full slot area. Restoring loading pressure reverses the liner rolling action to return the liner to the fully closed position.

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
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

Performance Specification

Capacity:	See Technical Data Sheet
C _f Factor:	0.9
Cavitation:	See Technical Data Sheet
Rangeability:	500:1
Bearing Friction:	No friction from slip-type bearings

Material Specification

Body:	316L Stainless Steel
Flanges: (Slip on)	Carbon Steel/Clear Cad. Plated**
Bolt Kit:	Carbon Steel/Zinc Plated
Liner:	Natural Rubber, 65 duro (standard) Viton, EPDM, Nitrile, Silicone (available)
Liner Retainer:	316 Stainless Steel

Optional Materials

Escaloy 45D
Duplex Stainless Steel
Super Duplex Stainless Steel
Nickel Aluminum Bronze
Titanium

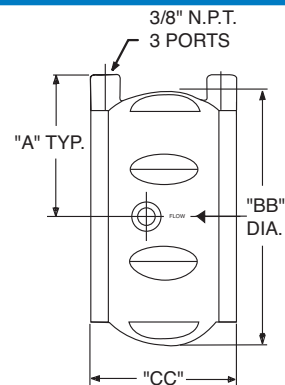
Dimensions (100-42 Main Valve)

Valve Size (Inches)	2	3	4	6	8	10	12
A	2 7/8	3 9/16	4 1/8	5 1/4	—	—	—
B	—	—	—	10 7/8	14 3/8	18	21 5/8
BB	4 3/8	5 7/8	7 3/8	9 13/16	—	—	—
C	—	—	—	9	11	13	15 1/4
CC	2 1/2	3 1/4	4	5 1/2	—	—	—
D (ANSI 150)	—	—	—	11	13 1/2	16	19
D (ANSI 300)	—	—	—	12 1/2	15	17 1/2	20 1/2
E (Ports) NPT	—	—	—	3/8	3/8	1/2	1/2
Approx. Wt. (150 lbs.)	4	7 1/2	14	58	115	190	290
Approx. Wt. (300 lbs.)	4	7 1/2	14	87	155	250	375

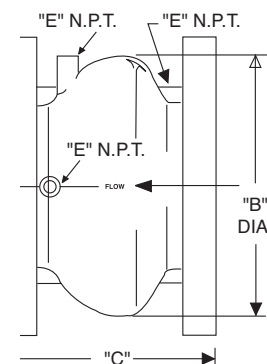
VALVE SIZE (mm for ANSI)	50	80	100	150	200	250	300
A	73	90	105	140	-	-	-
B	-	-	-	276	365	457	549
BB	111	149	187	249	-	-	-
C	-	-	-	229	279	330	387
CC	64	83	120	140	-	-	-
D (ANSI 150)	-	-	-	279	343	406	483
D (ANSI 300)	-	-	-	318	381	445	521
E (Ports) NPT	-	-	-	3/8	3/8	1/2	1/2
Approx. kg. (150lbs.)	1.81	3.63	6.35	30	54.43	89	151.50
Approx. kg. (150lbs.) with Studs & Nuts	2.72	4.54	10	-	-	-	-
Approx. kg. (300lbs.)	1.81	3.63	6.35	41.73	72.57	116.57	191
Approx. kg. (300lbs.) with Studs & Nuts	5	6.35	11.80	-	-	-	-



NSF Approved 2" thru 12"



2", 3", 4" and 6" Wafer Style



10" and 12" Flanged Style

When Ordering Please Specify:

- Catalog No. 100-42
- Valve Size
- Fluid Being Handled
- Fluid Temperature Range
- Inlet Pressure Range
- Outlet Pressure Range
- Maximum Differential Pressure
- Minimum Differential Pressure
- Maximum Flow Rate



E-100-42 (R-07/2014)

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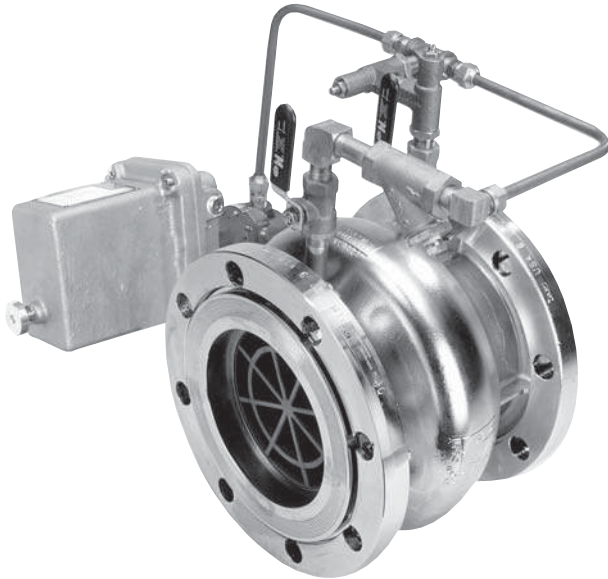
www.cla-val.com

Represented By:



— MODEL — **730-01**

Hydraulic Control Valve with Integral Controller



- Ideal For Use with SCADA Systems
- Accepts Local or Remote Set Point
- Accurate Flow and Pressure Control
- Reliable Hydraulic Operation
- Rugged Durable Design

Description

The Cla-Val Model 730-01 Control Valve offers precise control using accurate dependable field proven Cla-Val hydraulic pilots and the convenience of on site or remote set point control. The on board electronic controller accepts a set point and compares it with the flow, pressure or level signal and automatically makes incremental adjustments to the hydraulic pilot until the process is satisfied.

Fully adjustable limit switches eliminate or greatly reduces the possibility of over ranging if the system is prone to upsets. In the event of a power or transmitter failure the hydraulic pilot(s) remain in control virtually assuring system stability even under changing conditions.

Optional features such as: alarms, loop power supply, retransmission, transmitter/set point scaling and NEMA type enclosures are also available.

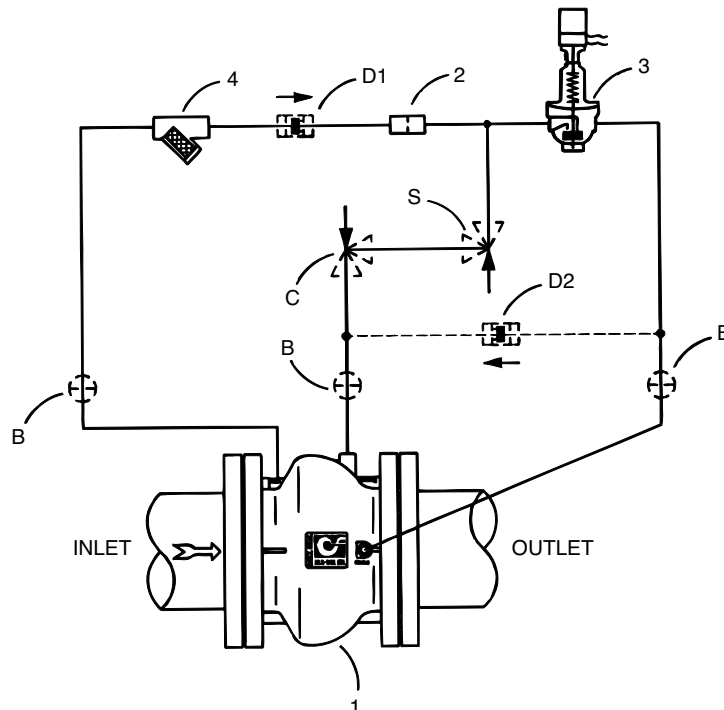
730-01 Basic Components

Item	Description
1	100-42 Roll Seal Main Valve
2	X58 Restriction Fitting
3	CRD30 Electronic Pressure Reducing Control
4	X43 "Y" Strainer

Optional Features

Item	Description
B	CK2 Cock (Isolation Valve)
C	CV Flow Control (Closing)
D	Check Valve (125 psid max. reverse pressure)
S	CV Flow Control (Opening)

* The opening & closing speed controls (optional) on this valve should always be open at least 3 turn off their seats, at start-up.



Performance Specification

Capacity:	See Technical Data Sheet
C _f 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
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.

Din drilling available on all sizes

Material Specification

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

Pilot

Body:	ASTM B62 Bronze*
Wetted Parts:	Bronze/Stainless Steel*, Buna-N®
"Y" Strainer:	Bronze*

Accessories

Shut-off Cock:	Brass*
Speed Controls:	Brass*
Check Controls:	Brass*
Control Piping:	Copper*
Control Fittings:	Brass*

*316 stainless steel available

Variable Rate Actuator

Duty Cycle:	Unrestricted
Input Voltage:	120/240 Vac +/- 10%, 50/60 Hz
Operating Current:	Less than 2 Amperes at 120 Vac
Process Variable:	Accepts one powered 4-20mA transmitter supplied by others
Input Signal Monitor:	If process variable is lost, actuator holds in present position
Operating Mode:	Single actuator operating alone. Process variable (PV) is compared to the set point (SP). When not equal, actuator rotates shaft in one direction when PV is greater than SP and the opposite direction when PV is less than SP. Direction is field selectable.
Electronic Set Point:	Field selectable between local and remote 4-20 mA
Manual Set Point:	Non-rotating handwheel
Limit Switches:	Full range adjustable
Terminations:	Terminal blocks accepting up to #16 AWG solid or stranded wire
Storage Temperature:	-40 F to 150 F (-40 C to 65 C)
Operating Temperature:	0 F to 150 F (-18 C to 65 C)
Environmental Rating:	Enclosure rated NEMA type 4 indoor/outdoor, corrosion resistant

When Ordering, Please Specify

1. Catalog No. 730-01
2. Valve Size
3. Fluid Being Handled
4. Fluid Temperature Range
5. Inlet Pressure Range
6. Outlet Pressure Range
7. Maximum Differential Pressure
8. Minimum Differential Pressure
9. Maximum Flow Rate
10. Voltage



E-730-01 (R-07/2014)

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Lausanne, Switzerland
Phone: 41-21-643-15-55
Fax: 41-21-643-15-50

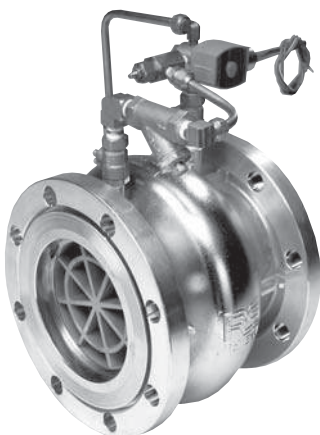
www.cla-val.com

Represented By:



— MODEL — **731-01**

Electronic Interface Control Valve



- Ideal For Use with SCADA Systems
- Accepts Local or Remote Set Point
- Accurate Flow and Pressure Control
- Reliable Hydraulic Operation
- Rugged Durable Design

Description

The Cla-Val Model 731-01 Electronic Interface Control Valves are designed specifically for applications where control of the valve with electrical signals is preferred. It is a hydraulically operated, pilot control actuated automatic valve. The solenoid pilot controls are actuated by electrical signals from the optional electronic controller. The solenoid pilots either add or relieve line pressure from the loading chamber of the valve, causing it to open or close as directed by the electronic controller.

Series 731-01 valves can be configured to perform a wide range of functions, such as; pressure reducing, pressure sustaining, flow control, or level control. The electric controls can also be combined with hydraulic controls to create dual function, or fail-safe capability.

Performance Specification

Capacity:	See Technical Data Sheet
C _f 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
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
Solenoid Enclosure:	NEMA IV Watertight (std) NEMA VII Explosion Proof (available)
Solenoid Voltages:	115, 230, 460 for 50, 60 HZ 6, 12, 24, 120, 240 VDC

*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

Purchase Specification

The two-way solenoid pilots alternately applies pressure to or exhausts pressure from the loading chamber of the main valve which in turn causes the main valve to open or close.

The 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. C_f shall be greater than or equal to 0.9. Valve and control system shall be similar in all respects to Cla-Val Model 731-01 as manufactured by Cla-Val, Newport Beach, California.

Material Specification

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

Solenoid Pilot

Body:	Brass*
Wetted Parts:	Brass/Stainless Steel, Buna-N®*

Accessories

Shut-off Cock:	Brass*
Speed Controls:	Brass*
Check Controls:	Brass*
"Y" Strainer:	Bronze*
Control Piping:	Copper*
Control Fittings:	Brass*

*316 stainless steel available



731-01 Basic Components

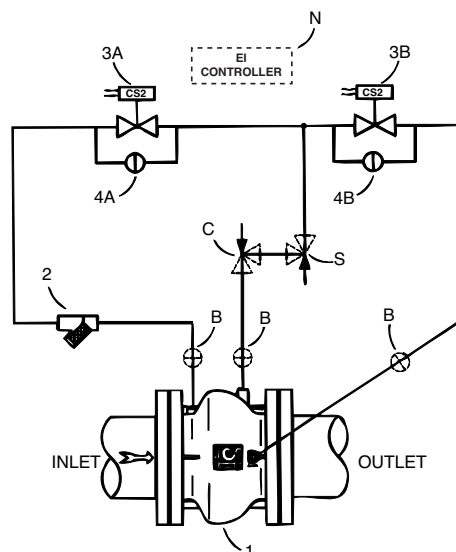
Item	Description
1	100-42 Roll Seal Main Valve
2	X43 "Y" Strainer
3	CS2 Solenoid Control
4	CK2 Cock (Solenoid Bypass)

Optional Features

Item	Description
B	CK2 Cock (Isolation Valve)
C	CV Flow Control (Closing)
N	Electronic Controller (Single)
S	CV Flow Control (Opening)

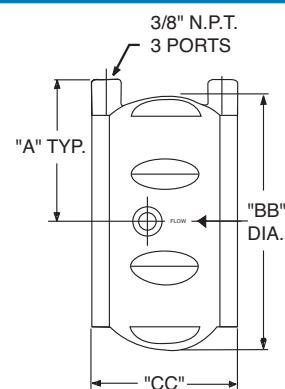
* The opening & closing speed controls (optional) on this valve should always be open at least 3 turns off their seats, at start-up.

** Solenoid requires operating voltage, enclosure type, and normally open or normally closed.



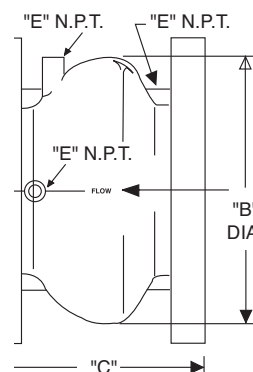
Dimensions (100-42 Main Valve)

Valve Size (Inches)	2	3	4	6	8	10	12
A	2 7/8	3 9/16	4 1/8	5 1/4	—	—	—
B	—	—	—	10 7/8	14 3/8	18	21 5/8
BB	4 3/8	5 7/8	7 3/8	9 13/16	—	—	—
C	—	—	—	9	11	13	15 1/4
CC	2 1/2	3 1/4	4	5 1/2	—	—	—
D (ANSI 150)	—	—	—	11	13 1/2	16	19
D (ANSI 300)	—	—	—	12 1/2	15	17 1/2	20 1/2
E (Ports)	—	—	—	3/8	3/8	1/2	1/2
Approx. Wt. (150 lbs.)	4	7 1/2	14	58	115	190	290
Approx. Wt. (300 lbs.)	4	7 1/2	14	87	155	250	375



2", 3", 4" and 6" Wafer Style

VALVE SIZE (mm)	50	80	100	150	200	250	300
A	73	90	105	140	-	-	-
B	-	-	-	276	365	457	549
BB	111	149	187	249	-	-	-
C	-	-	-	229	279	330	387
CC	64	83	120	140	-	-	-
D (ANSI 150)	-	-	-	279	343	406	483
D (ANSI 300)	-	-	-	318	381	445	521
E (Ports) -	-	-	10	10	13	13	-
Approx. kg. (150lbs.)	1.81	3.63	6.35	30	54.43	89	151.50
Approx. kg. (150lbs.)with Studs & Nuts	2.72	4.54	10	-	-	-	-
Approx. kg. (300lbs.)	1.81	3.63	6.35	41.73	72.57	116.57	191
Approx. kg. (300lbs.)with Studs & Nuts	5	6.35	11.80	-	-	-	-



0" and 12" Flanged Style

When Ordering Please Specify:

- Catalog No. 731-01
- Valve Size
- Fluid Being Handled
- Fluid Temperature Range
- Inlet Pressure Range
- Outlet Pressure Range
- Maximum Differential Pressure
- Minimum Differential Pressure
- Maximum Flow Rate
- Voltage & NO, NC



E-731-01 (R-07/2014)

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Represented By:



— MODEL — **736-01**

Solenoid Control Valve



- **Fast Acting Solenoid Control**
- **Reliable Drip Tight Shut-off**
- **Simple Design, Proven Reliable**
- **Optional Check Feature**
- **Easy Installation & Maintenance**

Description

The Cla-Val Model 736-01 Solenoid Control Valve is an on-off control valve which either opens or closes upon receiving an electrical signal to the solenoid pilot control. This valve consists of a Cla-Val Model 100-42 main valve and a three-way solenoid valve which alternately applies pressure to or relieves pressure from the loading chamber of the main valve. It is furnished either normally open (de-energize solenoid to open) or normally closed (energize solenoid to open).

If the check feature option is added and a pressure reversal occurs, the downstream pressure is admitted into the main valve loading chamber and the valve closes to prevent return flow.

Performance Specification

Capacity:	See Technical Data Sheet
C_f 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
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
Solenoid Enclosure:	NEMA IV Watertight (std) NEMA VII Explosion Proof (available)
Solenoid Voltages:	115, 230, 460 for 50, 60 HZ 6, 12, 24, 120, 240 VDC

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

Purchase Specification

The three-way solenoid pilot alternately applies pressure to or exhausts pressure from the loading chamber of the main valve which in turn causes the main valve to open or close.

The 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. C_f shall be greater than or equal to 0.9. Valve and control system shall be similar in all respects to Cla-Val Model 736-01 as manufactured by Cla-Val, Newport Beach, California.

Material Specification

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

Solenoid Pilot

Body:	Brass*
Wetted Parts:	Brass/Stainless Steel*, Buna-N®

Accessories

Shut-off Cock:	Brass*
Speed Controls:	Brass*
Check Controls:	Brass*
"Y" Strainer:	Bronze*
Control Piping:	Copper*
Control Fittings:	Brass*

*316 stainless steel available

For other than standard ANSI flanges consult factory
Din drilling available on all sizes



736-01 Basic Components

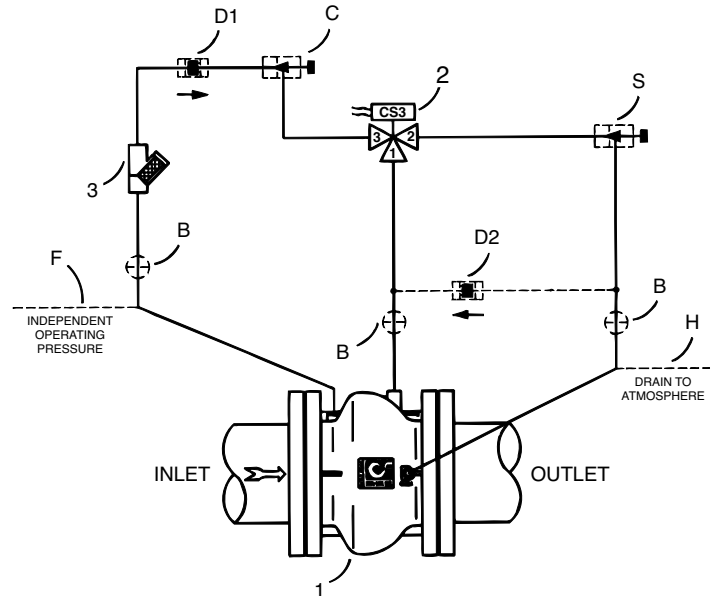
Item	Description
1	100-42 Roll Seal Main Valve
2	CS3 Solenoid Control**
3	X43 "Y" Strainer

Optional Features

Item	Description
B	CK2 (Isolation Valve)
C	CNA Needle Valve (Closing)*
D	Check Valves (125 psid max. reverse pressure)
F	Independent Operating Pressure
H	Atmospheric Drain
S	CNA Needle Valve (Opening)*

* The opening & closing speed controls (optional) on this valve should always be open at least ¼ turn off their seats.

** Solenoid requires operating voltage, enclosure type, and normally open or normally closed main valve.

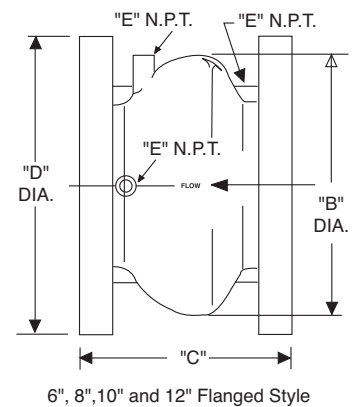
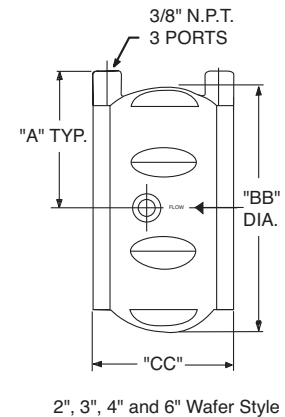


Dimensions (100-42 Main Valve)

Valve Size (Inches)	2	3	4	6	8	10	12
A	2½	3⅞	4½	5¼	--	--	--
B	--	--	--	10½	14½	18	21½
BB	4½	5½	7½	9⅝	--	--	--
C	--	--	--	9	11	13	15¼
CC	2½	3¼	4	5½	--	--	--
D (ANSI 150)	--	--	--	11	13½	16	19
D (ANSI 300)	--	--	--	12½	15	17½	20½
E (Ports) NPT	--	--	--	¾	¾	½	½
Approx. Wt. (150 lbs.)	4	7½	14	58	115	190	290
Approx. Wt. (300 lbs.)	4	7½	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	--	--	--	¾	¾	½	½
Approx. kg. (150 lbs.)	1.81	3.63	6.35	30	54.43	89	151.5
Approx. kg. (150 lbs.) with Studs & Nuts	2.72	4.54	10	--	--	--	--
Approx. kg. (300 lbs.)	1.81	3.63	6.35	41.73	72.57	116.57	191
Approx. kg. (300 lbs.) with Studs & Nuts	5	6.35	11.8	--	--	--	--
Max. Continuous Flow (l/s.)	14	30	50	113	200	301	451



NSF Approved 2" thru 12"



When Ordering Please Specify:

- Catalog No. 736-01
- Valve Size
- Fluid Being Handled
- Fluid Temperature Range
- Inlet Pressure Range
- Outlet Pressure Range
- Maximum Differential Pressure
- Minimum Differential Pressure
- Maximum Flow Rate
- Voltage & NO, NC (Main Valve)



CLA-VAL™

E-736-01 (R-11/09)

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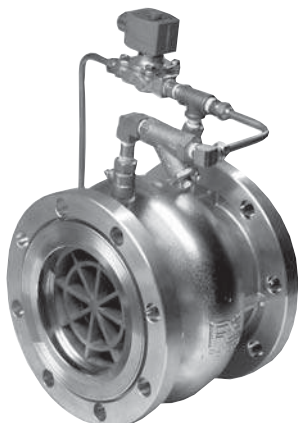
Represented By:



— MODEL —

736-09

Solenoid Control Valve Equipped with 2-Way Solenoid Control



- **Fast Acting Solenoid Control**
- **Reliable Drip Tight Shut-off**
- **Simple Design, Proven Reliable**
- **Easy Installation & Maintenance**

Description

The Cla-Val Model 736-09 Solenoid Control Valve is an on-off control valve which either opens or closes upon receiving an electrical signal to the solenoid pilot control. This valve consists of a Cla-Val Model 100-42 main valve and a two-way solenoid valve which alternately applies pressure to or relieves pressure from the loading chamber of the main valve. It is furnished either normally open (de-energize solenoid to open) or normally closed (energize solenoid to open).

If the check feature option is added and a pressure reversal occurs, the downstream pressure is admitted into the main valve loading chamber and the valve closes to prevent return flow.

Performance Specification

Capacity:	See Technical Data Sheet
C _f 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
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
Solenoid Enclosure:	NEMA IV Watertight (std.) NEMA VII Explosion Proof (available)
Solenoid Voltages:	115, 230, 460 for 50, 60 HZ 6, 12, 24, 120, 240 VDC

*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

Purchase Specification

The two-way solenoid pilot alternately applies pressure to or exhausts pressure from the loading chamber of the main valve which in turn causes the main valve to open or close.

The 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. C_f shall be greater than or equal to 0.9. Valve and control system shall be similar in all respects to Cla-Val Model 736-09 as manufactured by Cla-Val, Newport Beach, California.

Material Specification

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

Solenoid Pilot

Body:	Brass*
Wetted Parts:	Brass/ Stainless Steel*, Buna-N®

Accessories

Shut-off Cock:	Brass*
Speed Controls:	Brass*
"Y" Strainer:	Bronze*
Control Piping:	Copper*
Control Fittings:	Brass*

*316 stainless steel available



736-09 Basic Components

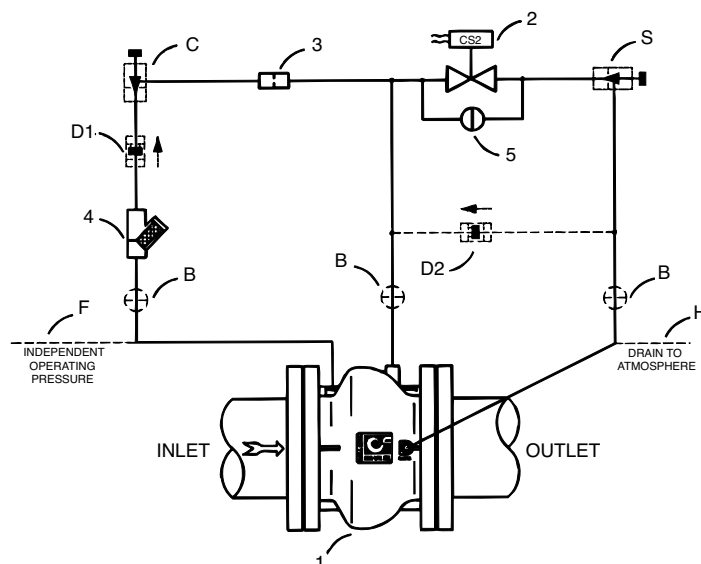
Item	Description
1	100-42 Roll Seal Main Valve
2	CS2 Solenoid Control**
3	X58C Restriction Assembly
4	X43 "Y" Strainer

Optional Features

Item	Description
B	CK2 Cock (Isolation Valve)
C	CNA Needle Valve (Closing)*
D	Check Valves (125 psid max. reverse pressure)
F	Independent Operating Pressure
H	Atmospheric Drain
S	CNA Needle Valve (Opening)*

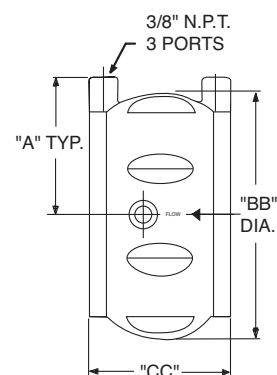
* The opening & closing speed controls (optional) on this valve should always be open at least 1/4 turn off their seats.

** Solenoid operating voltage, enclosure type, and normally open or normally closed main valve.



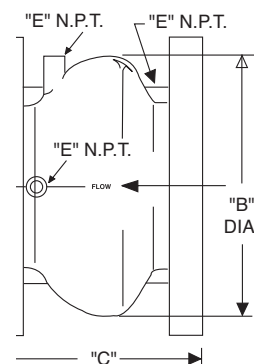
Dimensions (100-42 Main Valve)

Valve Size (Inches)	2	3	4	6	8	10	12
A	2 7/8	3 9/16	4 1/8	5 1/4	—	—	—
B	—	—	—	10 7/8	14 3/8	18	21 5/8
BB	4 3/8	5 7/8	7 3/8	9 13/16	—	—	—
C	—	—	—	9	11	13	15 1/4
CC	2 1/2	3 1/4	4	5 1/2	—	—	—
D (ANSI 150)	—	—	—	11	13 1/2	16	19
D (ANSI 300)	—	—	—	12 1/2	15	17 1/2	20 1/2
E (Ports)	—	—	—	3/8	3/8	1/2	1/2
Approx. Wt. (150 lbs.)	4	7 1/2	14	58	115	190	290
Approx. Wt. (300 lbs.)	4	7 1/2	14	87	155	250	375



2", 3", 4" and 6" Wafer Style

VALVE SIZE (mm)	50	80	100	150	200	250	300
A	73	90	105	140	-	-	-
B	-	-	-	276	365	457	549
BB	111	149	187	249	-	-	-
C	-	-	-	229	279	330	387
CC	64	83	120	140	-	-	-
D (ANSI 150)	-	-	-	279	343	406	483
D (ANSI 300)	-	-	-	318	381	445	521
E (Ports) -	-	-	10	10	13	13	-
Approx. kg. (150lbs.)	1.81	3.63	6.35	30	54.43	89	151.50
Approx. kg. (150lbs.) with Studs & Nuts	2.72	4.54	10	-	-	-	-
Approx. kg. (300lbs.)	1.81	3.63	6.35	41.73	72.57	116.57	191
Approx. kg. (300lbs.) with Studs & Nuts	5	6.35	11.80	-	-	-	-



0" and 12" Flanged Style

When Ordering Please Specify:

- Catalog No. 736-09
- Valve Size
- Fluid Being Handled
- Fluid Temperature Range
- Inlet Pressure Range
- Outlet Pressure Range
- Maximum Differential Pressure
- Minimum Differential Pressure
- Maximum Flow Rate
- Voltage & NO, NC (Main Valve)



E-736-09 (R-07/2014)

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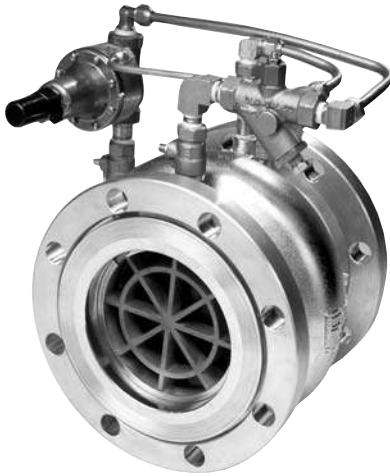
www.cla-val.com

Represented By:



— MODEL — **750-01**

Pressure Relief, Sustaining & Back Pressure Valve



Description

The Cla-Val Model 750-01 is a hydraulically operated pilot actuated automatic control valve for pressure sustaining, relief and/or back pressure service. The main valve consists of only two parts, a stainless steel body and an elastomeric liner or control element.

The main valve will open when inlet pressure begins to exceed a preset pressure and will allow enough flow to maintain that inlet pressure. In pressure sustaining service, Model 750-01 will conserve pressure in an upper system during periods of high demand in a system below. In pressure relief service, the Model 750-01 will modulate to exhaust line pressure to keep it below a set point maximum. On a pump bypass system, the valve will allow flow back to the pump suction when pump discharge pressure exceeds the set point.

Cla-Val Model 750-01 will control from no flow to full open flow without any chattering or slamming under low flow conditions. For this reason, on by-pass, relief, and pressure sustaining service, there is never a region of control instability. There is no slip-type friction because the valve has no bearings. Cla-Val Model 750-01 valves have excellent resistance to cavitation with a C_f factor of 0.9.

These valves can be supplied as combination control valve with check. Pilot controls, options, and accessories are fully piped at the factory and the Cla-Val Model 750-01 is shipped ready for installation.

Performance Specification

Capacity:	See Technical Data Sheet
C_f Factor:	0.9
Cavitation:	See Technical Data Sheet
Rangeability:	500:1
Bearing Friction:	No friction from slip-type bearings

Design Specification

Sizes:	2, 3, 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
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.

Purchase Specification

Valve and control system shall maintain inlet pressure at a predetermined set point; shall open as pressure starts to increase above the set point, and close as pressure falls below the set point. 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. C_f shall be greater than or equal to 0.9. Valve and control system shall be similar in all respects to Cla-Val Model 750-01 as manufactured by Cla-Val, Newport Beach, California.

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:	Brass*
Speed Controls:	Brass*
Check Controls:	Brass*
"Y" Strainer:	Bronze*
Control Piping:	Copper*
Control Fittings:	Brass*

*316 stainless steel available

For other than standard ANSI flanges consult factory

Din drilling available on all sizes



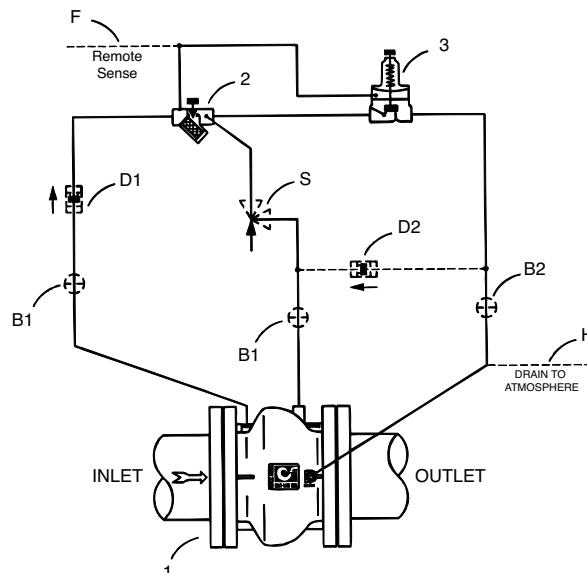
750-01 Basic Components

Item	Description
1	100-42 Roll Seal Main Valve
2	X42N-2 Strainer & Needle Valve (1/4 turn min. opening)
3	CRL Pressure Relief Control

Optional Features

Item	Description
B	CK2 (Isolation Valve)
D	Check Valves (125 psid max. reverse pressure)
F	Remote Pilot Sensing
H	Drain to Atmosphere
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

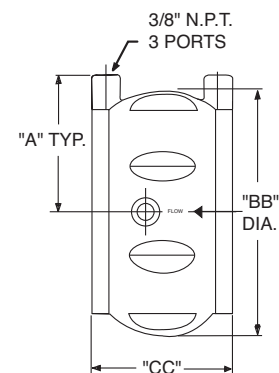


Dimensions (100-42 Main Valve)

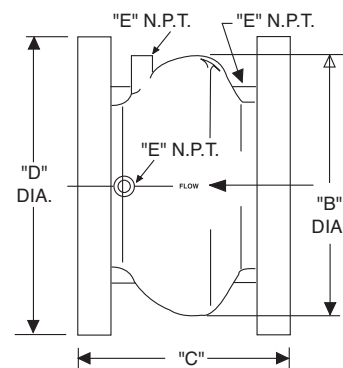
Valve Size (Inches)	2	3	4	6	8	10	12
A	2 $\frac{7}{8}$	3 $\frac{3}{16}$	4 $\frac{1}{8}$	5 $\frac{1}{4}$	--	--	--
B	--	--	--	10 $\frac{5}{8}$	14 $\frac{5}{8}$	18	21 $\frac{5}{8}$
BB	4 $\frac{3}{8}$	5 $\frac{5}{8}$	7 $\frac{7}{8}$	9 $\frac{1}{16}$	--	--	--
C	--	--	--	9	11	13	15 $\frac{1}{4}$
CC	2 $\frac{1}{2}$	3 $\frac{1}{4}$	4	5 $\frac{1}{2}$	--	--	--
D (ANSI 150)	--	--	--	11	13 $\frac{1}{2}$	16	19
D (ANSI 300)	--	--	--	12 $\frac{1}{2}$	15	17 $\frac{1}{2}$	20 $\frac{1}{2}$
E (Ports) NPT	--	--	--	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$
Approx. Wt. (150 lbs.)	4	7 $\frac{1}{2}$	14	58	115	190	290
Approx. Wt. (300 lbs.)	4	7 $\frac{1}{2}$	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	--	--	--	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$
Approx. kg. (150 lbs.)	1.81	3.63	6.35	30	54.43	89	151.5
Approx. kg. (150 lbs.) with Studs & Nuts	2.72	4.54	10	--	--	--	--
Approx. kg. (300 lbs.)	1.81	3.63	6.35	41.73	72.57	116.57	191
Approx. kg. (300 lbs.) with Studs & Nuts	5	6.35	11.8	--	--	--	--
Max. Continuous Flow (l/s.)	14	30	50	113	200	301	451



NSF Approved 2" thru 12"



2", 3", 4" and 6" Wafer Style



6", 8", 10" and 12" Flanged Style

When Ordering, Please Specify

- | | | | | |
|--------------------------|----------------------------------|----------------------------------|----------------------------|-------------------------|
| 1. Catalog No. 750-01 | 2. Valve Size | 3. Fluid Being Handled | 4. Fluid Temperature Range | 5. Inlet Pressure Range |
| 6. Outlet Pressure Range | 7. Maximum Differential Pressure | 8. Minimum Differential Pressure | 9. Maximum Flow Rate | |
| 10. Pilot Set Point | | | | |



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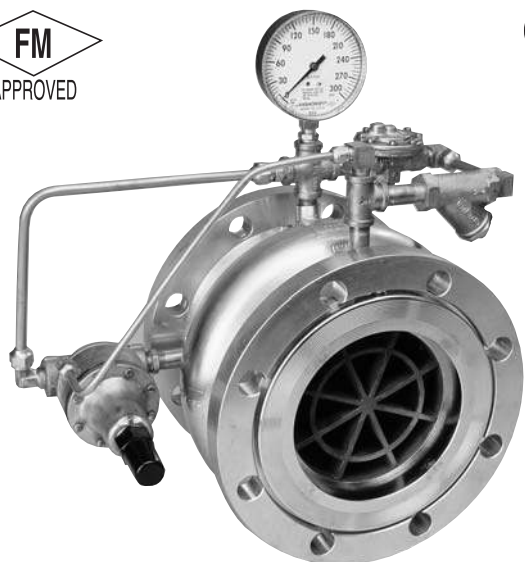
Represented By:



— MODEL —

750B-4KG1

Fire Protection Pressure Relief Valve



Description

The Cla-Val Model 750B-4KG1 Pressure Relief Valve is a hydraulically operated pilot actuated automatic control valve designed specifically to automatically relieve excess pressure in fire protection pumping systems. Pilot controlled, it maintains constant system pressure at the pump discharge within very close limits as demands change. The main valve consists of a stainless steel body and only one moving part, an elastomeric liner or control element.

Cla-Val Model 750B-4KG1 will control from no flow, to full open flow, without any chattering or slamming. For this reason, there is never a region of control instability. There is no slip-type friction because the valve has no bearings. Cla-Val Model 750B-4KG1 valves have excellent resistance to cavitation with a C_f factor of 0.9.

Pilot controls are fully piped at the factory and the Cla-Val Model 750B-4KG1 is shipped complete, ready for installation.

For Seawater Service Options See 750-20 E-sheet

Operation Sequence

At pump start, the Cla-Val Pressure Relief Valve modulates to relieve excess pump capacity, maintaining positive system pressure at the pump discharge.

When fire demand slows or ceases, the main valve opens, diverting the entire pump output to discharge, allowing the fire pump to be stopped without causing surging in the lines.

(Please note that when the Model 750B-4KG1 is to be used on a continuous duty basis to maintain fire-system pressure, suitable back pressure must be provided on the valve to prevent cavitation damage. Consult the factory for details.)

Material Specification

Body: 316L Stainless Steel
Liner: Nitrile, 70 durometer
Liner Retainer: 316 Stainless Steel

Pilot

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

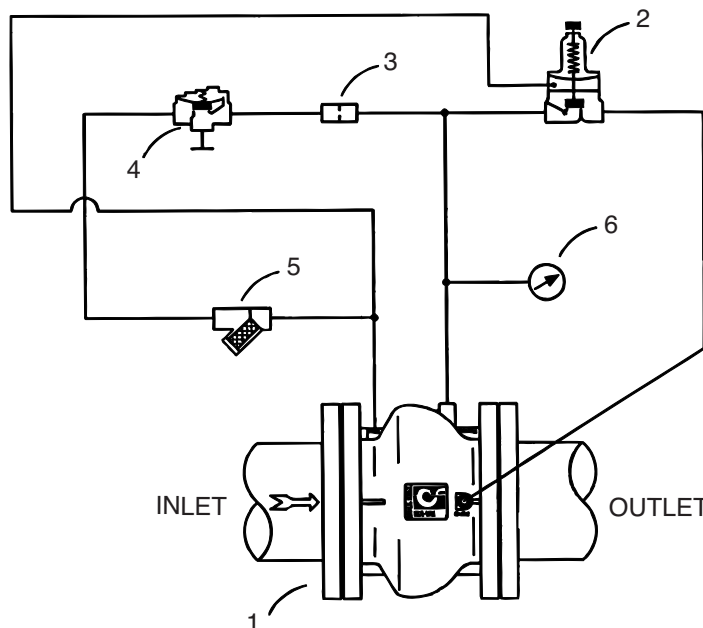
Accessories

Check Control: Brass*
Control Piping: Copper*
"Y" Strainer: Bronze*
Control Fittings: Brass*

* 316 stainless steel available

For other than standard ANSI flanges consult factory

Din drilling available on all sizes



750B-4KG1 Basic Components

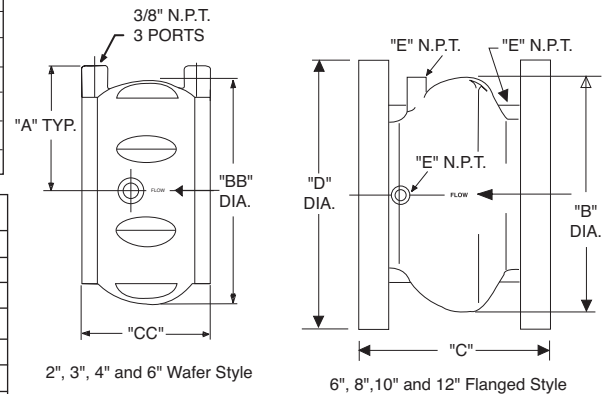
Item	Description
1	100-42 Roll Seal Main Valve
2	CRL5A Pressure Relief Control
3	X58A Restriction
4	81-01 Check Valves (125 psid max. reverse pressure)
5	X43 Y-Strainer
6	Pressure Gauge



Dimensions (100-42 Main Valve)

Valve Size (Inches)	2	3	4	6	8	10	12
A	2 7/8	3 9/16	4 1/8	5 1/4	—	—	—
B	—	—	—	10 7/8	14 3/8	18	21 5/8
BB	4 3/8	5 7/8	7 3/8	9 13/16	—	—	—
C	—	—	—	9	11	13	15 1/4
CC	2 1/2	3 1/4	4	5 1/2	—	—	—
D (ANSI 150)	—	—	—	11	13 1/2	16	19
D (ANSI 300)	—	—	—	12 1/2	15	17 1/2	20 1/2
E (Ports)	—	—	—	3/8	3/8	1/2	1/2
Approx. Wt. (150 lbs.)	4	7 1/2	14	58	115	190	290
Approx. Wt. (300 lbs.)	4	7 1/2	14	87	155	250	375

VALVE SIZE (mm)	50	80	100	150	200	250	300
A	73	90	105	140	-	-	-
B	-	-	-	276	365	457	549
BB	111	149	187	249	-	-	-
C	-	-	-	229	279	330	387
CC	64	83	120	140	-	-	-
D (ANSI 150)	-	-	-	279	343	406	483
D (ANSI 300)	-	-	-	318	381	445	521
E (Ports) -	-	-	10	10	13	13	-
Approx. kg. (150lbs.)	1.81	3.63	6.35	30	54.43	89	151.50
Approx. kg. (150lbs.)with Studs & Nuts	2.72	4.54	10	-	-	-	-
Approx. kg. (300lbs.)	1.81	3.63	6.35	41.73	72.57	116.57	191
Approx. kg. (300lbs.)with Studs & Nuts	5	6.35	11.80	-	-	-	-



Performance Specification

Capacity:	See Technical Data Sheet
C _f 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)

Maximum Relief Pressure: 3" thru 10" 150 lb. class - 200 psi
3" thru 10" 300 lb. class - 300 psi

Approvals: **U.L. Listed.....Sizes 3" thru 10"**
FM Approved....Sizes 3" and 4"
Not UL or FM.... Sizes 2" and 12"

Maximum Differential: 150 psid continuous,
225 psid intermittent*
Reverse Pressure: 125 psid maximum
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

*Temperature range depends on liner material. Higher differential pressure ratings available.

When Ordering Please Specify

- Catalog No. 750B-4KG1
- 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

Purchase Specification

The Fire Pump Pressure Relief Valve shall modulate to relieve excess pressure in a fire protection system. It shall maintain constant pressure in the system regardless of demand changes. It shall be pilot controlled and back pressure shall not affect its set point. It shall be actuated by line pressure through a pilot control system and open fast in order to maintain steady system pressure as system demand decreases. It shall close gradually to control surges and shall re-seat drip-tight within 5% of its pressure setting. This valve shall be UL Listed and Factory Mutual approved. The control valve shall be constructed of a 316L stainless steel body and only one moving part, an elastomeric liner or control element. Minimum rangeability shall be 500:1 based on capacity at flowing pressure conditions. C_f shall be greater than or equal to 0.9. Valve and control system shall be similar in all respects to Cla-Val Model 750B-4KG1 as manufactured by Cla-Val, Newport Beach, California.



CLA-VALTM

E-750B-4KG1 (R-11/09)

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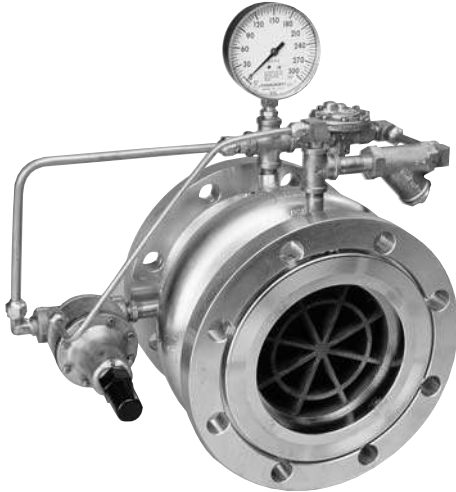
Represented By:



— MODEL — 750-20

(Special Alloy Version of Model 750B-4KG1)

Seawater Service Pressure Relief Valve



Description

The Cla-Val Model 750-20 Seawater Pressure Relief Valve is a hydraulically operated pilot actuated automatic control valve designed specifically to automatically relieve excess pressure in fire protection pumping systems. Pilot controlled, it maintains constant system pressure at the pump discharge within very close limits as demands change. The main valve consists of a stainless steel body and only one moving part, an elastomeric liner or control element.

Cla-Val Model 750-20 will control from no flow to full open flow without any chattering or slamming under low flow conditions. For this reason there is never a region of control instability. There is no slip-type friction because the valve has no bearings. Cla-Val Model 750-20 valves have excellent resistance to cavitation with a C_f factor of 0.9.

Pilot controls are fully piped at the factory and the Cla-Val Model 750-20 is shipped complete, ready for installation.

Operation Sequence

At pump start, the Cla-Val Pressure Relief Valve modulates to relieve excess pump capacity, maintaining positive system pressure at the pump discharge.

When fire demand slows or ceases, the main valve opens, diverting the entire pump output to discharge, allowing the fire pump to be stopped without causing surging in the lines.

(Please note that when the Model 750-20 is to be used on a continuous duty basis to maintain seawater fire system pressure, suitable back pressure must be provided on the valve to prevent cavitation damage. Consult the factory for details.)

Material Specification

Body:	See below*
Liner:	Natural Rubber, 65 durometer (std.) Viton, EPDM, Nitrile, Silicone (avail.)
Liner Retainer:	316 Stainless Steel

Pilot

Body:	ASTM B61 Naval Bronze
Spring Cover:	ASTM B61 Bronze
Wetted Parts:	Bronze/Monel Buna-N®

Accessories

Check Control:	ASTM B61
Control Piping:	316 Stainless Steel (Standard)
Control Fittings:	316 Stainless Steel (Standard)

* 316L Stainless Steel (standard)

Escoloy 45D

Duplex Stainless Steel

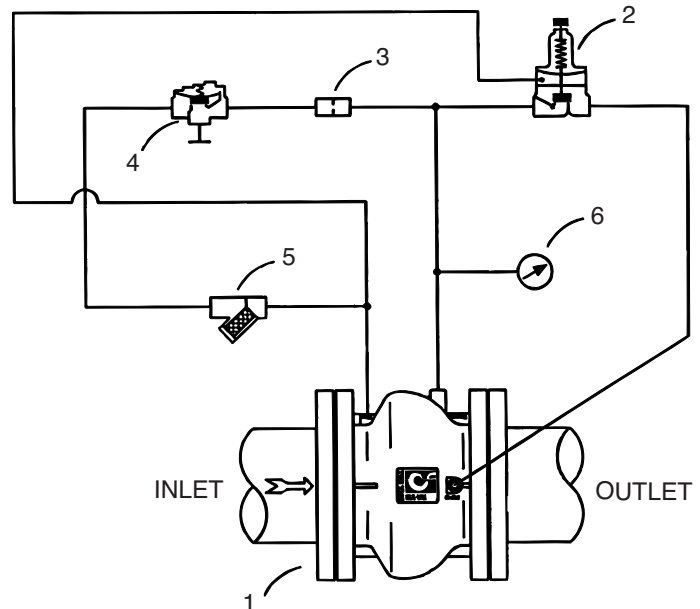
Super Duplex Stainless Steel

Nickel Aluminum Bronze

Titanium

For other than standard ANSI flanges consult factory

Din drilling available on all sizes

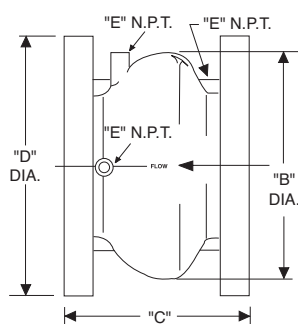


750-20 Basic Components

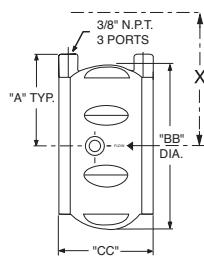
Item	Description
1	100-42 Roll Seal (Main Valve)
2	CRL5A Pressure Relief Control
3	X58A Restriction
4	81-01 Check Valves (125 psid max. reverse pressure)
5	X43 Y-Strainer
6	Pressure Gage (supplied by customer)



Dimensions (100-42 Main Valve)



Flanged Style
6", 8", 10", & 12" sizes



Wafer Style
2", 3", & 4" sizes



NSF Approved 2" thru 12"

Performance Specification

Capacity:	See Technical Data Sheet
C _f Factor:	0.9
Cavitation:	See Technical Data Sheet
Rangeability:	500:1
Bearing Friction:	No friction from slip-type bearings

Design Specification

Sizes:	2, 3, and 4 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)
Maximum Relief Pressure:	400 psi maximum
Maximum Differential:	150 psid continuous, 225 psid intermittent*
Reverse Pressure:	125 psid maximum
Temperature Range:	32° to 185° 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.

Valve Size (Inches)	2	3	4	6	8	10	12
A	2 $\frac{7}{8}$	3 $\frac{3}{8}$	4 $\frac{1}{2}$	5 $\frac{1}{4}$	--	--	--
B	--	--	--	10 $\frac{1}{2}$	14 $\frac{1}{2}$	18	21 $\frac{1}{2}$
BB	4 $\frac{1}{2}$	5 $\frac{1}{2}$	7 $\frac{1}{2}$	9 $\frac{1}{2}$	--	--	--
C	--	--	--	9	11	13	15 $\frac{1}{2}$
CC	2 $\frac{1}{2}$	3 $\frac{1}{4}$	4	5 $\frac{1}{2}$	--	--	--
D (ANSI 150)	--	--	--	11	13 $\frac{1}{2}$	16	19
D (ANSI 300)	--	--	--	12 $\frac{1}{2}$	15	17 $\frac{1}{2}$	20 $\frac{1}{2}$
E (Ports) NPT	--	--	--	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Approx. Wt. (150 lbs.)	4	7 $\frac{1}{2}$	14	58	115	190	290
Approx. Wt. (300 lbs.)	4	7 $\frac{1}{2}$	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	--	--	--	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Approx. kg. (150 lbs.)	1.81	3.63	6.35	30	54.43	89	151.5
Approx. kg. (150 lbs.) with Studs & Nuts	2.72	4.54	10	--	--	--	--
Approx. kg. (300 lbs.)	1.81	3.63	6.35	41.73	72.57	116.57	191
Approx. kg. (300 lbs.) with Studs & Nuts	5	6.35	11.8	--	--	--	--
Max. Continuous Flow (l/s.)	14	30	50	113	200	301	451

Purchase Specification

The Seawater Pressure Relief Valve shall modulate to relieve excess pressure in a seawater fire protection system. It shall maintain constant pressure in the system regardless of demand changes. It shall be pilot controlled and back pressure shall not affect its set point. It shall be actuated by line pressure through a pilot control system and open fast in order to maintain steady system pressure as system demand decreases. It shall close gradually to control surges and shall re-seat drip-tight within 5% of its pressure setting. The control valve shall be constructed of a18-8 (316) stainless steel body and only one moving part, an elastomeric liner or control element. Minimum rangeability shall be 500:1 based on capacity at flowing pressure conditions. C_f shall be greater than or equal to 0.9. Valve and control system shall be similar in all respects to Cla-Val Model 750-20 as manufactured by Cla-Val, Newport Beach, California, or approved equal.

U.L. Listed..... Sizes 3" thru 8"
U.L.C. Listed..... Sizes 2" thru 10"

When Ordering, Please Specify

- Catalog No. 750-20
- 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



CLA-VALTM

E-750-20 (R-07/2014)

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Represented By:



— MODEL — **750-60**

Fire Hydrant Pressure Relief Valve



Performance Specification

Capacity: See Technical Data Sheet

C_f Factor: 0.9

Cavitation: See Technical Data Sheet

Rangeability: 500:1

Bearing Friction: No friction from slip-type bearings

Design Specification

Sizes: 2 1/2" and 4"

End Detail Inlet: Female American National Fire Hose Connection (Section Thread NFPA -194-1974)

End Detail Outlet: Male American National Fire Hose Connection (Section Thread NFPA -194-1974)

Operating Pressure: Determined by components as high as 720 psi maximum

Maximum Differential: 150 psid continuous, 225 psid intermittent*

Reverse Pressure: 125 psid maximum

Temperature Range: 32 to 160 degrees F*

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

Description

The Cla-Val 750-60 Fire Hydrant Pressure Relief Valve is a hydraulically operated, pilot actuated automatic control valve for pressure relief service. The main valve is made of 316L stainless steel with only one moving part, an elastomeric liner. The valve has a female fire hose connection on the inlet side of the valve and male hose on the outlet side. The valve is available for 2 1/2" or 4" threaded end connections.

The Cla-Val Fire Hydrant Pressure Relief Valve will open when inlet pressure begins to exceed the preset pressure and will allow enough flow to maintain that inlet pressure. The valve will modulate to exhaust line pressure to keep it below the set point maximum. The set point is adjustable over the entire pilot spring range.

The Cla-Val Fire Hydrant Pressure Relief Valve will control from no flow to full open flow without any chattering or slamming under low flow conditions. There is no slip-type friction because the main valve has no bearings.

Control systems are fully piped at the factory and the Cla-Val Fire Hydrant Pressure Relief Valve is shipped complete, ready for installation.

Material Specification

Body: 316L Stainless Steel
Liner: Natural Rubber, 65 durometer (standard)
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

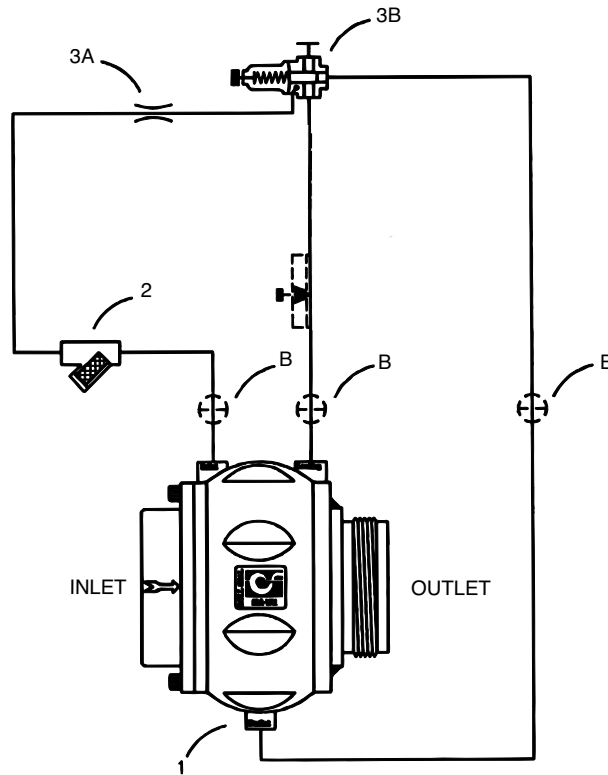
Shut-off Cock: Brass*
"Y" Strainer: Bronze*
Control Piping: Copper*
Control Fittings: Brass*

* 316 stainless steel available



750-60 Pressure Relief Valve for Fire Hydrant Service

Maximum inlet pressure 720 psi



Basic Components

- 1 100-42FH Roll Seal (Main Valve)
- 2 X43 "Y" Strainer
- 3 RCBP Pressure Relief Control w/ Built in Restrictor

Optional

- B CK2 Cock (Isolation Valve)

Adjustment Spring Ranges

- 10 - 90, 25-150, 50-300
100-500 (10-90 standard)

Purchase Specification

Valve and control system shall maintain inlet pressure at a predetermined set point; shall open as pressure starts to increase above the set point, and close as pressure falls below the set point. Control valve shall be constructed of two parts: an 316L 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 Fire Hydrant Pressure Relief Valve as manufactured by Cla-Val, Newport Beach, California.

When Ordering, Please Specify

1. Catalog No. 750-60
2. Valve Size, 2 1/2" or 4"
3. Inlet Pressure Range
4. Outlet Pressure Range
5. Maximum Differential Pressure
6. Minimum Differential Pressure
7. Maximum Flow Rate
8. Pilot Set Point



CLA-VAL

E-750-60 (R-11/09)

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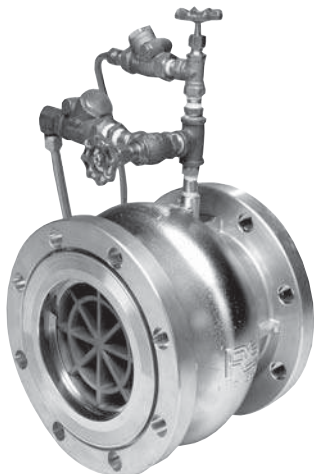
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Represented By:



— MODEL — **781-02**

Check Valve Equipped with High Capacity Dual Speed Controls



- **No-Slam Operation**
- **Drip Tight Shut Off**
- **Dual Speed Control**

Description

The Model 781-02 Check Valve is a hydraulically operated no-slam check valve with dual speed controls. This valve opens when the pressure at the inlet exceeds the discharge pressure. A gradual rate of opening prevents sudden opening surges. When a pressure reversal occurs the higher downstream pressure is applied to the loading chamber through the control tube lines, and the valve closes drip tight.

This valve is ideally suited for use where a positive shutoff is required. The elastomeric liner assures tight sealing even if the fluid contains grit or other small-size particles. The simple packless design insures reliable operation and freedom from leaks.

Note: The effectiveness of this valve is related to pipeline velocity. We recommend a maximum flow based on pipeline velocity of 6 feet per second. If pipeline velocities exceeds 6 feet per second, consideration should be given to adding a Cla-Val 750-01 Pressure Relief valve or a 752-01 Surge Control valve to the system.

Performance Specification

Capacity:	See Technical Data Sheet
C _f 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
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.

Purchase Specification

Valve shall remain open when the pressure at the inlet exceeds the discharge pressure. A gradual rate of opening prevents sudden opening surges. When a pressure reversal occurs the higher downstream pressure is applied to the loading chamber through the control tube lines, and the valve closes drip tight. 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. C_f shall be greater than or equal to .9. Valve and control system shall be similar in all respects to Cla-Val Model 781-02 as manufactured by Cla-Val, Newport Beach, California.

Material Specification

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

Pilot

Body:	ASTM B62 Bronze, Brass*
Wetted Parts:	Bronze/Stainless Steel* Buna-N®

Accessories

Shut-off Cock:	Bronze*
Control Piping:	Copper*
Control Fittings:	Brass*

*316 stainless steel available

For other than standard ANSI flanges consult factory
Din drilling available on all sizes



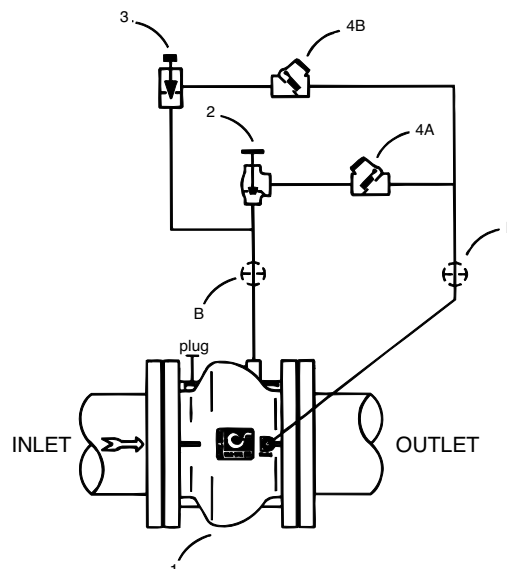
781-02 Basic Components

Item	Description
1	100-42 Roll Seal Main Valve
2	CGA Angle Valve (Closing)*
3	CNA Needle Valve (Opening)*
4	CSC Swing Check Valve (125 psid max. reverse pressure)

Optional Features

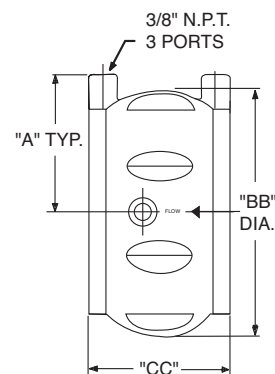
Item	Description
B	CK2 Cock (Isolation Valve)

* The opening & closing speed controls (optional) on this valve should always be open at least 1/4 turn off their seats.



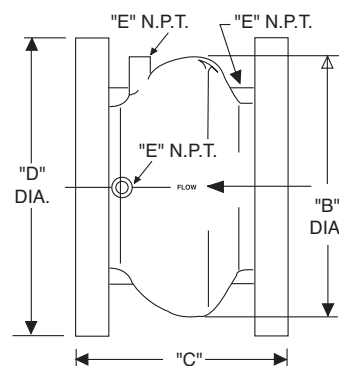
Dimensions (100-42 Main Valve)

Valve Size (Inches)	2	3	4	6	8	10	12
A	2 7/8	3 9/16	4 1/8	5 1/4	—	—	—
B	—	—	—	10 7/8	14 3/8	18	21 5/8
BB	4 3/8	5 7/8	7 3/8	9 13/16	—	—	—
C	—	—	—	9	11	13	15 1/4
CC	2 1/2	3 1/4	4	5 1/2	—	—	—
D (ANSI 150)	—	—	—	11	13 1/2	16	19
D (ANSI 300)	—	—	—	12 1/2	15	17 1/2	20 1/2
E (Ports)	—	—	—	3/8	3/8	1/2	1/2
Approx. Wt. (150 lbs.)	4	7 1/2	14	58	115	190	290
Approx. Wt. (300 lbs.)	4	7 1/2	14	87	155	250	375



2", 3", 4" and 6" Wafer Style

VALVE SIZE (mm)	50	80	100	150	200	250	300
A	73	90	105	140	-	-	-
B	-	-	-	276	365	457	549
BB	111	149	187	249	-	-	-
C	-	-	-	229	279	330	387
CC	64	83	120	140	-	-	-
D (ANSI 150)	-	-	-	279	343	406	483
D (ANSI 300)	-	-	-	318	381	445	521
E (Ports) -	-	-	10	10	13	13	-
Approx. kg. (150lbs.)	1.81	3.63	6.35	30	54.43	89	151.50
Approx. kg. (150lbs.)with Studs & Nuts	2.72	4.54	10	-	-	-	-
Approx. kg. (300lbs.)	1.81	3.63	6.35	41.73	72.57	116.57	191
Approx. kg. (300lbs.)with Studs & Nuts	5	6.35	11.80	-	-	-	-



6", 8", 10" and 12" Flanged Style

When Ordering Please Specify:

1. Catalog No. 781-02
2. Valve Size
3. Fluid Being Handled
4. Fluid Temperature Range
5. Inlet Pressure Range
6. Outlet Pressure Range
7. Maximum Differential Pressure
8. Minimum Differential Pressure
9. Maximum Flow Rate



E-781-02 (R-07/2014)

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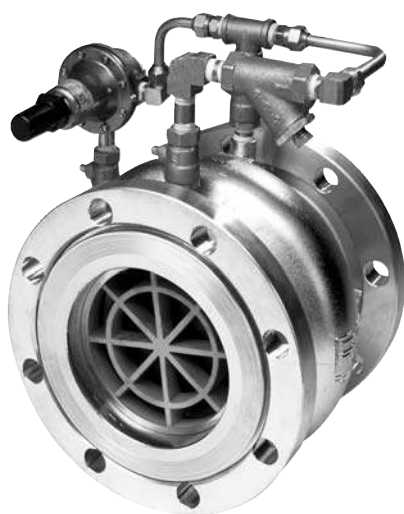
CLA-VAL EUROPE

Chemin des Mesanges 1
CH-1032 Romanel/
Lausanne, Switzerland
Phone: 41-21-643-15-55
Fax: 41-21-643-15-50

www.cla-val.com

Represented By:

Pressure Reducing Valve



Description

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.

Performance Specification

Capacity:	See Technical Data Sheet
C _f 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:	225 psid For higher differential consult factory
Reverse Pressure:	125 psid maximum
Approvals:	PUB Listed.....Sizes 2" thru 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

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. C_r 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.

Material Specification

Body:	316L Stainless Steel
Liner:	Natural Rubber, 65 durometer (standard) 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 Cock:	Brass*
"Y" Strainer:	Bronze*
Speed Controls:	Brass*
Check Controls:	Brass*
Control Piping:	Copper*
Control Fittings:	Brass*

*316 stainless steel available

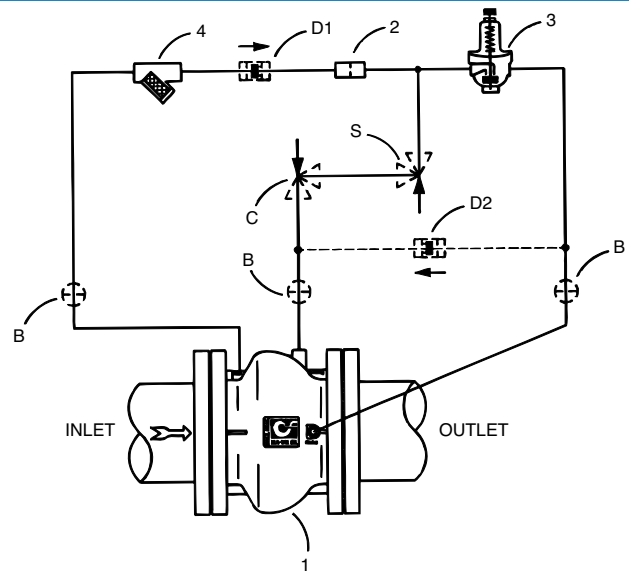
790-01 Basic Components

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

Optional Features

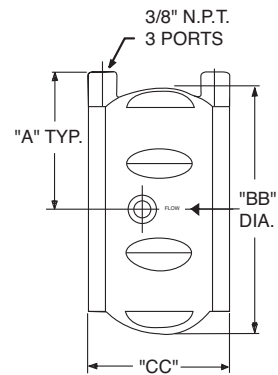
Item	Description
B	CK2 Cock (Isolation Valve)
C	CV Flow Control (Closing)*
D	Check Valves (125 psid max. reverse pressure)
S	CV Flow Control (Opening)*

* The opening & closing speed controls (optional) on this valve should always be open at least 3 turns off their seats.



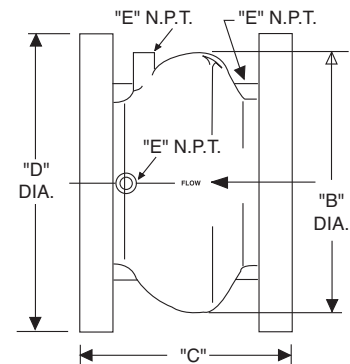
Dimensions (100-42 Main Valve)

Valve Size (Inches)	2	3	4	6	8	10	12
A	2 7/8	3 9/16	4 1/8	5 1/4	—	—	—
B	—	—	—	10 7/8	14 3/8	18	21 5/8
BB	4 3/8	5 7/8	7 3/8	9 13/16	—	—	—
C	—	—	—	9	11	13	15 1/4
CC	2 1/2	3 1/4	4	5 1/2	—	—	—
D (ANSI 150)	—	—	—	11	13 1/2	16	19
D (ANSI 300)	—	—	—	12 1/2	15	17 1/2	20 1/2
E (Ports)	—	—	—	3/8	3/8	1/2	1/2
Approx. Wt. (150 lbs.)	4	7 1/2	14	58	115	190	290
Approx. Wt. (300 lbs.)	4	7 1/2	14	87	155	250	375



2", 3", 4" and 6" Wafer Style

VALVE SIZE (mm)	50	80	100	150	200	250	300
A	73	90	105	140	-	-	-
B	-	-	-	276	365	457	549
BB	111	149	187	249	-	-	-
C	-	-	-	229	279	330	387
CC	64	83	120	140	-	-	-
D (ANSI 150)	-	-	-	279	343	406	483
D (ANSI 300)	-	-	-	318	381	445	521
E (Ports) -	-	-	10	10	13	13	-
Approx. kg. (150lbs.)	1.81	3.63	6.35	30	54.43	89	151.50
Approx. kg. (150lbs.) with Studs & Nuts	2.72	4.54	10	-	-	-	-
Approx. kg. (300lbs.)	1.81	3.63	6.35	41.73	72.57	116.57	191
Approx. kg. (300lbs.) with Studs & Nuts	5	6.35	11.80	-	-	-	-



6", 8", 10" and 12" Flanged Style

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



E-790-01 (R-07/2014)

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www.cla-val.com

Represented By:



— **MODEL** **790-63**
790-67
High Pressure

Fire Hydrant Pressure Reducing Valve



Description

The Cla-Val Model 790-63/790-67 Fire Hydrant Pressure Reducing Valve is a hydraulically operated, pilot actuated automatic control valve for pressure reducing service. The main valve is made of 316L stainless steel with only one moving part, an elastomeric liner. The valve has a female fire hose connection on the inlet side of the valve and male hose on the outlet side. The valve is available for 2 1/2" or 4" threaded end connections. In either size, the Cla-Val Fire Hydrant Pressure Reducing Valve will control pressure right down to shutoff.

Pressure reducing valves are used to lower pipeline pressure to a predetermined set point. The Cla-Val Fire Hydrant Pressure Reducing Valve 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.

Control systems are fully piped at the factory and the Cla-Val Fire Hydrant Pressure Reducing Valve is shipped complete, ready for installation.

Performance Specification

Capacity:	See Technical Data Sheet
C _f Factor:	0.9
Cavitation:	See Technical Data Sheet
Rangeability:	500:1
Bearing Friction:	No friction from slip-type bearings

Design Specification

Sizes:	2 1/2" and 4"
End Detail Inlet:	Female American National Fire Hose Connection (Section Thread NFPA -194-1974)
End Detail Outlet:	Male American National Fire Hose Connection (Section Thread NFPA -194-1974)
Operating Pressure:	Determined by components as high as 720 psi maximum
Maximum Differential:	225 psid For higher differential consult factory
Reverse Pressure:	125 psid maximum
Temperature Range:	32 to 160 degrees F*

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

Material Specification

Body:	316L Stainless Steel
Liner:	Natural Rubber, 65 durometer (standard) 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

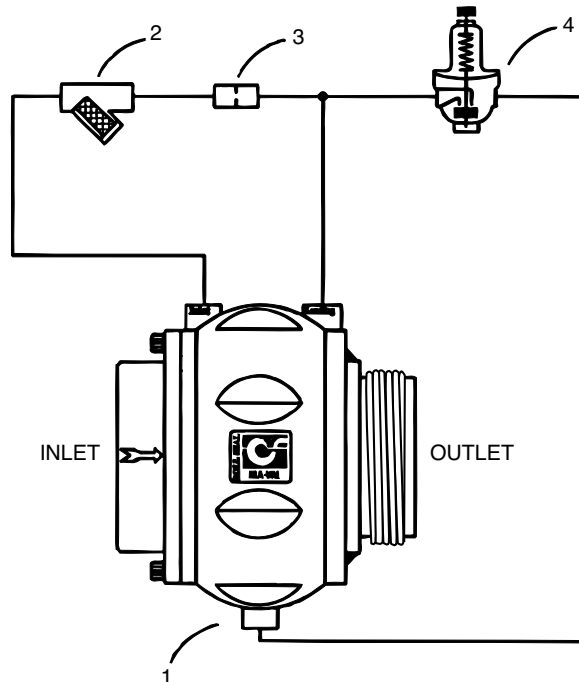
Shut-off Cock:	Brass*
"Y" Strainer:	Bronze*
Control Fittings:	Brass*

* 316 Stainless Steel



790-63 Pressure Reducing Valve for Fire Hydrant Service

Maximum inlet pressure 400 psi



Basic Components

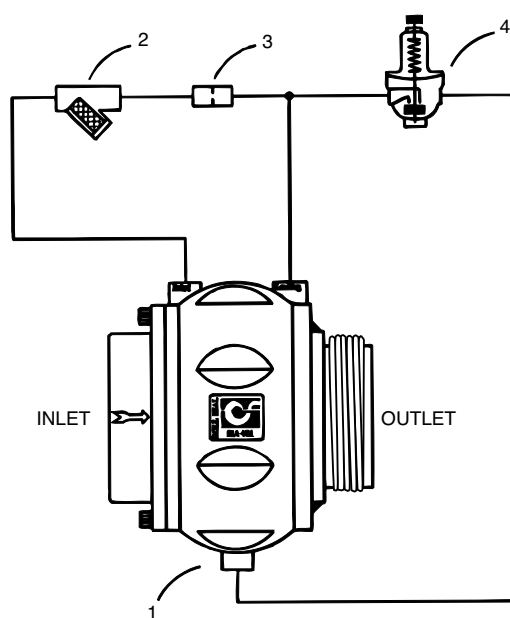
- 1 100-42FH Roll Seal (Main Valve)
- 2 X43 "Y" Strainer
- 3 X58C Restriction Fitting
- 4 CRD Pressure Reducing Control

Adjustment Spring Range:

2-30, 15-75, 30-300
(30-300 standard)

790-67 Pressure Reducing Valve for High Pressure Fire Hydrant Service

Maximum inlet pressure 720 psi



Basic Components

- 1 100-42FH Roll Seal (Main Valve)
- 2 RX43HP "Y" Strainer
- 3 X58C Restriction Fitting
- 4 RCRDHP Pressure Reducing Control

Adjustment Spring Range:

0-50, 25-150, 100-250, 200-400
(for higher pressure ranges,
please consult factory)
(25-150 standard)

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 a stainless steel body and only one moving part, an elastomeric liner or control element. Minimum rangeability shall be 500:1 based on capacity at flowing pressure conditions. C_v shall be greater than or equal to 0.9. Valve and control system shall be similar in all respects to the Cla-Val 790-63/790-67 Fire Hydrant Pressure Reducing Valve as manufactured by Cla-Val, Newport Beach, California.

When Ordering, Please Specify

1. Catalog No. 790-63 or 790-67
2. Valve Size, 2 1/2" or 4"
3. Inlet Pressure Range
4. Outlet Pressure Range
5. Maximum Differential Pressure
6. Minimum Differential Pressure
7. Maximum Flow Rate
8. Pilot Set Point



E-790-63/790-67 (R-7/04)

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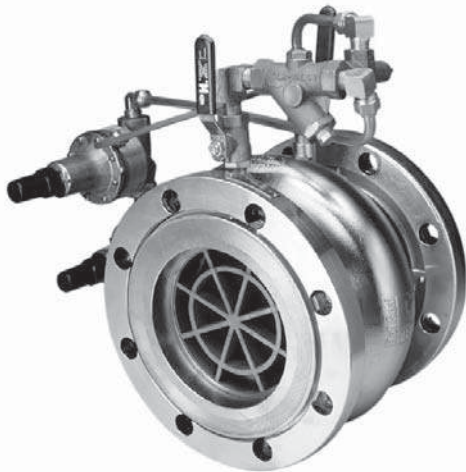
www.cla-val.com

Represented By:



— MODEL — **792-01**

Combination Pressure Reducing & Pressure Sustaining Valve



Description

The Cla-Val Model 792-01 is a hydraulically operated pilot actuated automatic control valve for combination pressure reducing and pressure sustaining service. The main valve consists of a stainless steel body with a elastomeric liner or control element.

The Cla-Val Model 792-01 valve remains closed until inlet pressure rises above a preset minimum setting (pressure sustaining). Above this minimum inlet pressure setting, the valve will open and control outlet pressure to a desired setting without regard to flow rate.

Because Cla-Val Model 792-01 valves will not chatter or slam at low flow rates, it is never necessary to parallel Cla-Val Model 792-01 with a second smaller size control valve for rangeability. In addition, because of its rangeability, Cla-Val Model 792-01 makes the transition from pressure reducing to pressure sustaining control very smoothly, as there is no unstable low flow rate condition.

Pilot controls, options, and accessories are fully piped at the factory, and the Cla-Val Model 792-01 is shipped ready for installation.

Performance Specification

Capacity:	See Technical Data Sheet
C _f 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:	225 psid For higher differential consult factory
Reverse Pressure:	125 psid maximum
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.

Purchase Specification

Valve shall remain closed when inlet pressure is below a specified minimum level. Above this minimum inlet pressure level, valve will open and lower line pressure to a predetermined outlet pressure set point regardless of variations in flow. 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. C_f shall be greater than or equal to 0.9. Valve and control system shall be similar in all respects to Cla-Val Model 792-01 as manufactured by Cla-Val, Newport Beach, California.

Material Specification

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

Pilot

Body:	ASTM B62 Bronze, Brass*
Wetted Parts:	Bronze/Stainless Steel* Buna-N*

Accessories

Shut-off Cock:	Bronze*
Speed Controls:	Brass*
Check Controls:	Brass*
"Y" Strainer:	Bronze*
Control Piping:	Copper*
Control Fittings:	Brass*

*316 stainless steel available

For other than standard ANSI flanges consult factory
Din drilling available on all sizes



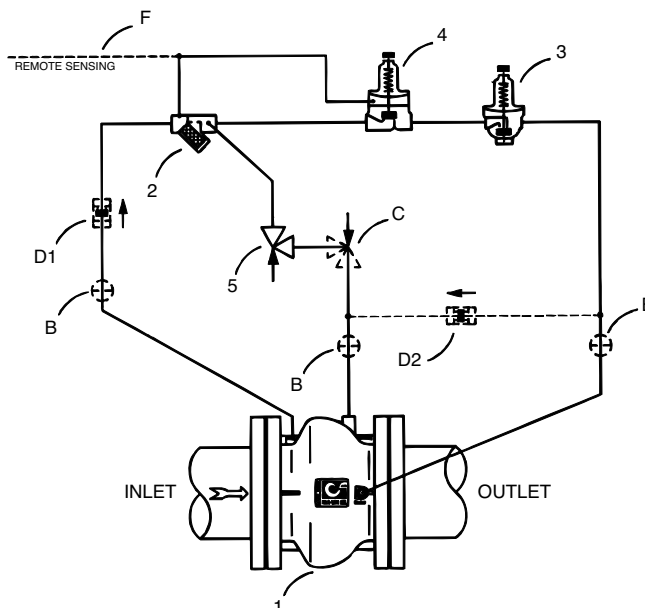
792-01 Basic Components

Item	Description
1	100-42 Roll Seal Main Valve
2	X44A Strainer & Orifice
3	CRD Pressure Reducing Control
4	CRL Pressure Relief Control
5	CV Flow Control (Opening)

Optional Features

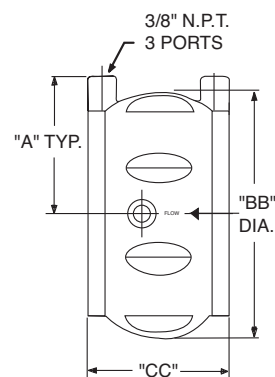
Item	Description
B	CK2 Cock (Isolation Valve)
C	CV Flow Control (Closing)*
D	Check Valve (125 psid max. reverse pressure)
F	Remote Pilot Sensing

* The opening & closing speed controls on this valve should always be open at least 3 turns off their seats, at start-up.



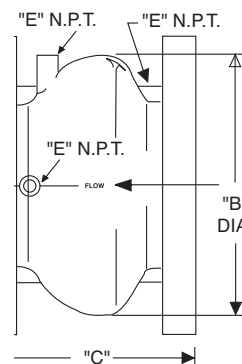
Dimensions (100-42 Main Valve)

Valve Size (Inches)	2	3	4	6	8	10	12
A	2 7/8	3 9/16	4 1/8	5 1/4	—	—	—
B	—	—	—	10 7/8	14 3/8	18	21 5/8
BB	4 3/8	5 7/8	7 3/8	9 13/16	—	—	—
C	—	—	—	9	11	13	15 1/4
CC	2 1/2	3 1/4	4	5 1/2	—	—	—
D (ANSI 150)	—	—	—	11	13 1/2	16	19
D (ANSI 300)	—	—	—	12 1/2	15	17 1/2	20 1/2
E (Ports)	—	—	—	3/8	3/8	1/2	1/2
Approx. Wt. (150 lbs.)	4	7 1/2	14	58	115	190	290
Approx. Wt. (300 lbs.)	4	7 1/2	14	87	155	250	375



2", 3", 4" and 6" Wafer Style

VALVE SIZE (mm)	50	80	100	150	200	250	300
A	73	90	105	140	-	-	-
B	-	-	-	276	365	457	549
BB	111	149	187	249	-	-	-
C	-	-	-	229	279	330	387
CC	64	83	120	140	-	-	-
D (ANSI 150)	-	-	-	279	343	406	483
D (ANSI 300)	-	-	-	318	381	445	521
E (Ports) -	-	-	10	10	13	13	-
Approx. kg. (150lbs.)	1.81	3.63	6.35	30	54.43	89	151.50
Approx. kg. (150lbs.)with Studs & Nuts	2.72	4.54	10	-	-	-	-
Approx. kg. (300lbs.)	1.81	3.63	6.35	41.73	72.57	116.57	191
Approx. kg. (300lbs.)with Studs & Nuts	5	6.35	11.80	-	-	-	-



8" and 12" Flanged Style

When Ordering Please Specify:

1. Catalog No. 792-01
2. Valve Size
3. Fluid Being Handled
4. Fluid Temperature Range
5. Inlet Pressure Range
6. Outlet Pressure Range
7. Maximum Differential Pressure
8. Minimum Differential Pressure
9. Maximum Flow Rate
10. Pilot Set Point



E-792-01 (R-07/2014)

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www.cla-val.com

Represented By:



— MODEL — **792-07**

Combination Pressure Reducing, Pressure Sustaining, and Solenoid Control Valve



Performance Specification

Capacity:	See Technical Data Sheet
C _f 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:	225 psid For higher differential consult factory
Reverse Pressure:	125 psid maximum
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
Solenoid Enclosure:	NEMA IV Watertight (std.) NEMA VII Explosion Proof (available)
Solenoid Voltages:	115, 230, 460 for 50, 60 HZ 6, 12, 24, 120, 240 VDC

*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

Description

The Cla-Val Model 792-07 is a hydraulically operated pilot actuated automatic control valve for combination pressure reducing, pressure sustaining and solenoid on/off service. The main valve consists of a stainless steel body with an elastomeric liner or control element.

The Cla-Val Model 792-07 valve remains closed until inlet pressure rises above a preset minimum setting (pressure sustaining). Above this minimum inlet pressure setting, the valve will open and control outlet pressure to a desired setting without regard to flow rate.

Because Cla-Val Model 792-07 valves will not chatter or slam at low flow rates, it is never necessary to parallel Cla-Val Model 792-07 with a second smaller size control valve for rangeability. In addition, because of its rangeability, Cla-Val Model 792-07 makes the transition from pressure reducing to pressure sustaining control very smoothly, as there is no unstable low flow rate condition.

Pilot controls, options, and accessories are fully piped at the factory, and the Cla-Val Model 792-07 is shipped ready for installation.

Purchase Specification

Valve shall remain closed when inlet pressure is below a specified minimum level. Above this minimum inlet pressure level, valve will open and lower line pressure to a predetermined outlet pressure set point regardless of variations in flow. 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. C_f shall be greater than or equal to 0.9. Valve and control system shall be similar in all respects to Cla-Val Model 792-07 as manufactured by Cla-Val, Newport Beach, California.

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, Brass*
Wetted Parts:	Bronze/Stainless Steel* Buna-N®

Accessories

Shut-off Cock:	Bronze*
Speed Controls:	Brass*
Check Controls:	Brass*
Solenoid On-off:	Brass*
"Y" Strainer:	Bronze*
Control Piping:	Copper*
Control Fittings:	Brass*

*316 stainless steel available



792-07 Basic Components

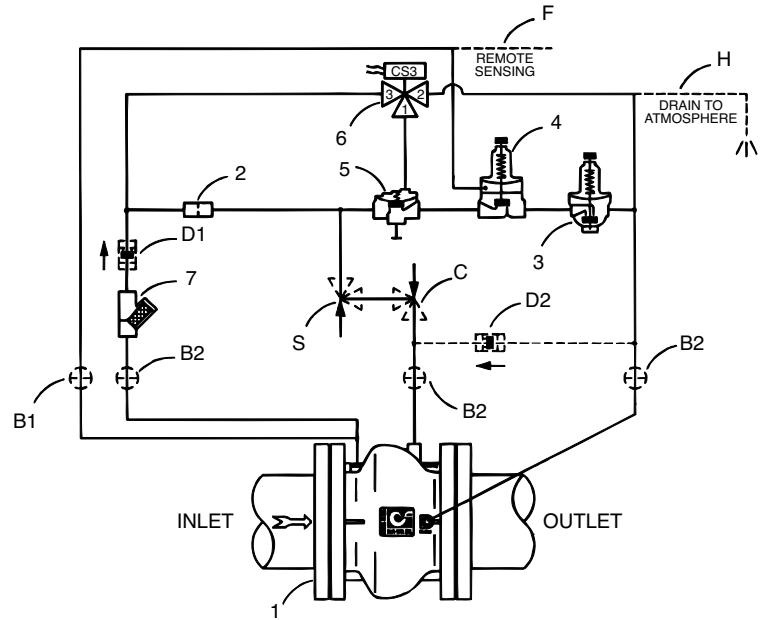
Item	Description
1	100-42 Roll Seal Main Valve
2	X58C Restriction Assembly
3	CRD Pressure Reducing Control
4	CRL Pressure Relief Control
5	100-01 Hytrol (Reverse Flow)
6	CS3 Solenoid Control**
7	X43 "Y" Strainer

Optional Features

Item	Description
B	CK2 Cock (Isolation Valve)
C	CV Flow Control (Closing)*
D	Check Valve (125 psid max. reverse pressure)
F	Remote Sensing Line
H	Solenoid Drain to Atmosphere
S	CV Flow Control (Opening)*

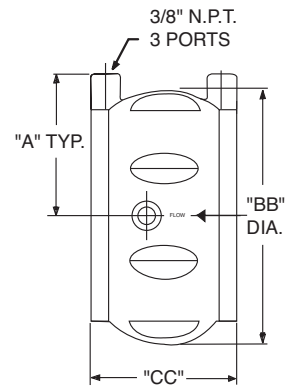
* The opening and closing speed controls (optional) on this valve should always be open at least 3 turns off its seat, at start-up.

** Solenoid requires operating voltage enclosure type, and normally open or normally closed main valve, (see design specification).

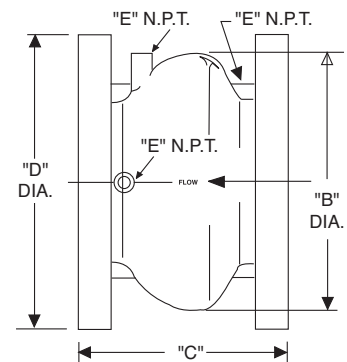


Dimensions (100-42 Main Valve)

Valve Size (Inches)	2	3	4	6	8	10	12
A	2 7/8	3 9/16	4 1/8	5 1/4	—	—	—
B	—	—	—	10 7/8	14 3/8	18	21 5/8
BB	4 3/8	5 7/8	7 3/8	9 13/16	—	—	—
C	—	—	—	9	11	13	15 1/4
CC	2 1/2	3 1/4	4	5 1/2	—	—	—
D (ANSI 150)	—	—	—	11	13 1/2	16	19
D (ANSI 300)	—	—	—	12 1/2	15	17 1/2	20 1/2
E (Ports)	—	—	—	3/8	3/8	1/2	1/2
Approx. Wt. (150 lbs.)	4	7 1/2	14	58	115	190	290
Approx. Wt. (300 lbs.)	4	7 1/2	14	87	155	250	375



2", 3", 4" and 6" Wafer Style



6", 8", 10" and 12" Flanged Style

VALVE SIZE (mm)	50	80	100	150	200	250	300
A	73	90	105	140	-	-	-
B	-	-	-	276	365	457	549
BB	111	149	187	249	-	-	-
C	-	-	-	229	279	330	387
CC	64	83	120	140	-	-	-
D (ANSI 150)	-	-	-	279	343	406	483
D (ANSI 300)	-	-	-	318	381	445	521
E (Ports) -	-	-	10	10	13	13	-
Approx. kg. (150lbs.)	1.81	3.63	6.35	30	54.43	89	151.50
Approx. kg. (150lbs.)with Studs & Nuts	2.72	4.54	10	-	-	-	-
Approx. kg. (300lbs.)	1.81	3.63	6.35	41.73	72.57	116.57	191
Approx. kg. (300lbs.)with Studs & Nuts	5	6.35	11.80	-	-	-	-

When Ordering Please Specify:

- Catalog No. 792-07
- 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 Points
- Voltage & NO, NC (Main Valve)



E-792-07 (R-07/2014)

CLA-VAL

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Phone: 949-722-4800 • Fax: 949-548-5441

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Fax: 41-21-643-15-50

www.cla-val.com

Represented By:



— MODEL — **793-01**

Combination Pressure Reducing and Solenoid Shutoff Valve



Description

The Cla-Val Model 793-01 is a hydraulically operated, pilot actuated automatic control valve for pressure reducing and solenoid shut-off 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 793-01 automatically reduces higher inlet pressure to a steady lower downstream pressure regardless of changing flow rate and/or varying 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 793-01 with a second smaller size control valve to obtain accurate pressure control at low flow rates. In any size, Cla-Val Model 793-01 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 793-01 is shipped ready for installation.

Performance Specification

Capacity:	See Technical Data Sheet
C _f 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:	225 psid For higher differential consult factory
Reverse Pressure:	125 psid maximum
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
Solenoid Enclosure:	NEMA IV Watertight (std) NEMA VII Explosion Proof (available)
Solenoid Voltages:	115, 230, 460 for 50, 60 HZ 6, 12, 24, 120, 240 VDC

*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

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. C_f shall be greater than or equal to 0.9. Valve and control system shall be similar in all respects to Cla-Val Model 793-01 as manufactured by Cla-Val, Newport Beach, California.

Material Specification

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

Pilot

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

Accessories

Shut-off Cock:	Brass*
"Y" Strainer:	Bronze*
Speed Controls:	Brass*
Check Controls:	Brass*
Control Piping:	Copper*
Control Fittings:	Brass*

*316 stainless steel available

Din drilling available on all sizes



793-01 Basic Components

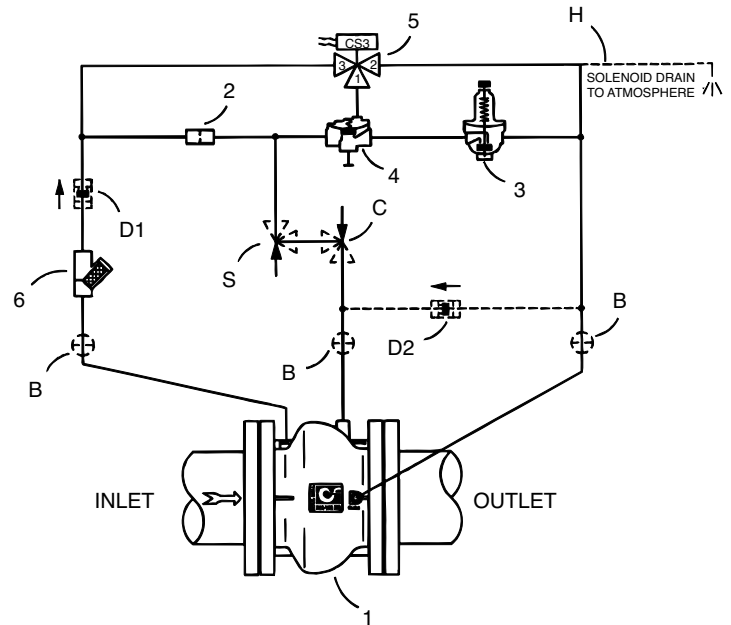
Item	Description
1	100-42 Roll Seal Main Valve
2	X58C Restriction Assembly
3	CRD Pressure Reducing Control
4	100-01 Hytrol (Reverse Flow)
5	CS3 Solenoid Control**
6	X43 "Y" Strainer

Optional Features

Item	Description
B	CK2 Cock (Isolation Valve)
C	CV Flow Control (Closing)*
D	Check Valve (125 psid max. reverse pressure)
H	Solenoid Drain to Atmosphere
S	CV Flow Control (Opening)*

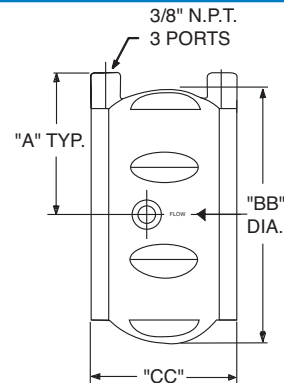
* The opening and closing speed controls (optional) on this valve should always be open at least 3 turns off its seat, at start-up.

** Solenoid requires operating voltage enclosure type, and normally open or normally closed, (see design specification).

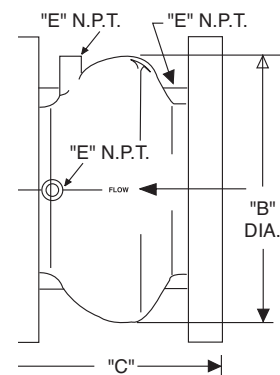


Dimensions (100-42 Main Valve)

Valve Size (Inches)	2	3	4	6	8	10	12
A	2 7/8	3 9/16	4 1/8	5 1/4	—	—	—
B	—	—	—	10 7/8	14 3/8	18	21 5/8
BB	4 3/8	5 7/8	7 3/8	9 13/16	—	—	—
C	—	—	—	9	11	13	15 1/4
CC	2 1/2	3 1/4	4	5 1/2	—	—	—
D (ANSI 150)	—	—	—	11	13 1/2	16	19
D (ANSI 300)	—	—	—	12 1/2	15	17 1/2	20 1/2
E (Ports)	—	—	—	3/8	3/8	1/2	1/2
Approx. Wt. (150 lbs.)	4	7 1/2	14	58	115	190	290
Approx. Wt. (300 lbs.)	4	7 1/2	14	87	155	250	375



2", 3", 4" and 6" Wafer Style



,10" and 12" Flanged Style

VALVE SIZE (mm)	50	80	100	150	200	250	300
A	73	90	105	140	-	-	-
B	-	-	-	276	365	457	549
BB	111	149	187	249	-	-	-
C	-	-	-	229	279	330	387
CC	64	83	120	140	-	-	-
D (ANSI 150)	-	-	-	279	343	406	483
D (ANSI 300)	-	-	-	318	381	445	521
E (Ports) -	-	-	10	10	13	13	-
Approx. kg. (150lbs.)	1.81	3.63	6.35	30	54.43	89	151.50
Approx. kg. (150lbs.)with Studs & Nuts	2.72	4.54	10	-	-	-	-
Approx. kg. (300lbs.)	1.81	3.63	6.35	41.73	72.57	116.57	191
Approx. kg. (300lbs.)with Studs & Nuts	5	6.35	11.80	-	-	-	-

When Ordering Please Specify:

- Catalog No. 793-01
- 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 Points
- Voltage & NO, NC



E-793-01 (R-07/2014)

CLA-VAL

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Represented By:



— MODEL — 700 Series

Capacity Information

Valve Sizing Coefficient - C_v

A very useful expression often used in determining the head loss and/or flow rate capacity of control valves is the C_v factor. Commonly referred to as the flow coefficient or valve sizing coefficient, this empirically determined factor describes the flow capacity of a valve.

The C_v factor is defined as the number of U.S. gallons per minute of water (at 60°F flowing temperature) discharged through a flow restriction with a head loss of one psi. In the case of a control valve, the C_v value is normally stated for the valve in the fully open position. For conditions other than full open, (i.e. modulating valves), contact Cla-Val Technical Services.

Cla-Val 700 Series Valves - Full Open C_v Factors

Valve Size	2"	3"	4"	6"	8"	10"	12"
C_v Factor	48	84	128	451	764	1443	2048

Liquid Flow Equation

The basic flow to pressure drop relationship for liquid service is expressed by the formula:

$$Q = C_v \sqrt{\frac{\Delta P}{G}} \quad \text{or} \quad Q = C_v \sqrt{\Delta P} \times \frac{1}{\sqrt{G}}$$

Where: Q = Flow rate in U.S. gallons per minute (GPM).
 C_v = Valve sizing coefficient.
 ΔP = Head loss across valve in psi.
 G = Specific gravity of liquid at flowing temperature referred to water (1.0) at standard conditions (60°F).

However, the above stated relationship only remains valid if the flowing conditions are both turbulent (non-viscous) and non-cavitating. Fortunately, these conditions are the most common encountered in liquid flow applications. In those cases where viscous or cavitating ⁽¹⁾ flow conditions are possible, consult factory for guidance in selection of valve size.

Example:

Determine the maximum flow rate capability of a 4" Cla-Val Roll Seal valve in fresh water service with an upstream pressure of 90 psi and downstream pressure of 77 psi. From table, a 4" Cla-Val 700 Series valve has a full open C_v factor of 128; hence:

$$Q = 128 \sqrt{13} \times \frac{1}{\sqrt{1}} = 128 (3.61) = 462 \text{ GPM}$$

(1) Note: For further information on cavitation, see technical data sheet "RS-Cavitation".

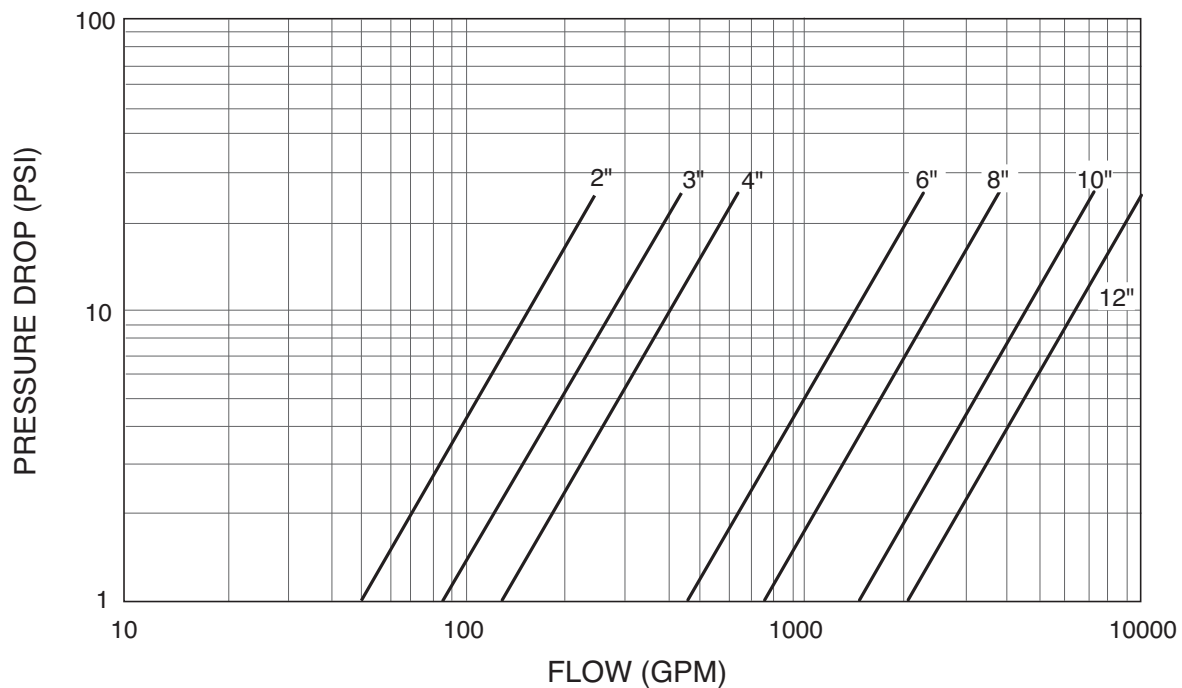


Specific Gravity Correction Table

Specific Gravity "G"	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.15	1.20	1.30	1.40
Correction Factor $\frac{1}{\sqrt{G}}$	1.15	1.12	1.08	1.05	1.03	1.00	0.98	0.95	0.93	0.91	0.88	0.85

To obtain flow capacity of a liquid other than water (specific gravity of 1.00), multiply water flow capacity obtained by the appropriate specific gravity correction factor.

2" THRU 12" ROLL SEAL FLOW CURVES STANDARD VERSION WITH LINER RETAINER (COVER TO ATMOSPHERE)



NOTE: The flow rate vs. head loss data presented here is based on a fully open valve condition. The maximum recommended velocity is 20 ft./sec.

Maximum Continuous Flow (U.S. GPM)

Valve Size	2"	3"	4"	6"	8"	10"	12"
Maximum Continuous Flow	224	469	794	1787	3177	4964	7148

Cavitation Information

Cavitation

When control valves are used on higher pressure drop applications with liquids, the possibility of incurring cavitation and its detrimental effects should be considered.

Cavitation may be briefly defined as the formation of vapor bubbles in the low pressure regions of a flowing liquid, accompanied by the subsequent collapse of these bubbles when they enter a higher pressure region. The flow of liquid through a control valve meets the criteria for establishing cavitation.

As liquid flows through the throttling section of a control valve, its velocity must increase, resulting in a corresponding decrease in static pressure. If the pressure falls below the vapor pressure of the liquid, vapor bubbles are formed. Once beyond the throttling section, the fluid stream then expands into the larger flow area downstream, with a reduction in stream velocity and increase or "recovery" in static pressure. If the recovered static pressure exceeds the vapor pressure, the vapor bubbles collapse rapidly thereby creating severe shock waves in the flow stream.

Dependent upon the extent of cavitation developed, its effects can range from a mild hissing sound with little or no resulting equipment damage to a highly noisy installation and severe physical damage to the valve and downstream piping.

Cavitation Influenced by Pressure Recovery

Not all control valves will cavitate at the same pressure drop conditions. This is attributable to the individual "pressure recovery" characteristics of the valve. Specifically, the degree of pressure recovered downstream of the throttling section.

An expression relating the tendency of a valve to recover pressure is the Critical Flow factor C_f . Valves with low C_f factors will exhibit high pressure recovery whereas those with C_f factors close to unity produce little recovery. Hence a valve with a C_f rating of 0.9 will be more cavitation resistant than one with a C_f of 0.6.

Cavitation Prediction

The Critical Flow factor may be used to determine the maximum pressure drop a valve may be subjected to without experiencing cavitation damage as computed from the following formula:

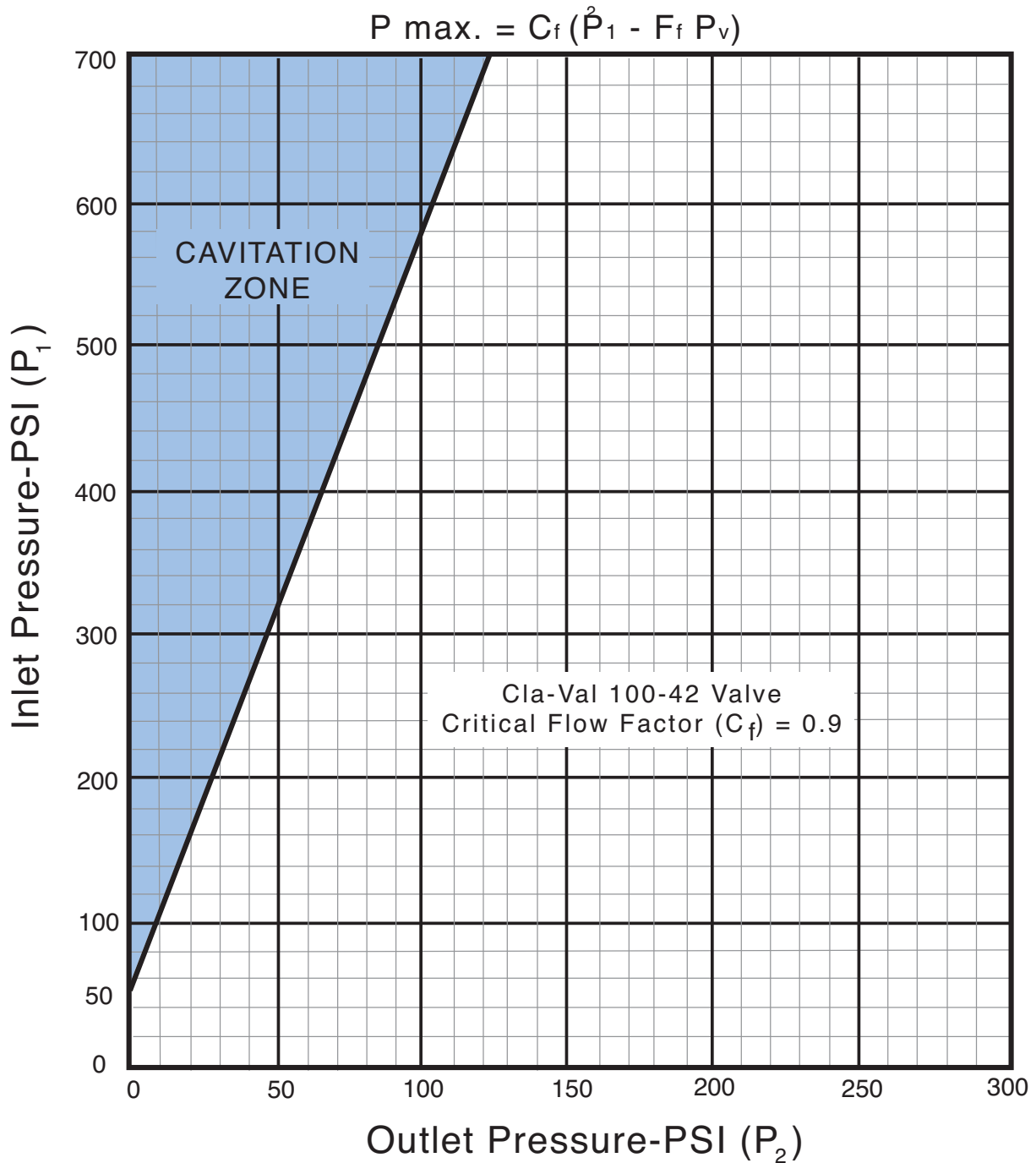
Where:		$\Delta P \text{ max.} = C_f^2 (P_1 - F_f P_v)$
$\Delta P \text{ max.}$	=	Maximum allowable pressure drop, psi
C_f	=	Critical flow factor, dimensionless
P_1	=	Inlet pressure (Absolute), psia
P_v	=	Vapor pressure of liquid at inlet temperature, psia
F_f	=	Liquid critical pressure ratio factor, dimensionless

For most water applications a value of 0.96 may be assigned for the F_f factor.

Hence:

$$\Delta P \text{ max.} = C_f^2 (P_1 - 0.96 P_v)$$

Cla-Val 100-42 Valve Cavitation Chart for water applications





700 Series Product Identification

How to Order

Proper Identification

For ordering repair kits, replacement parts, or for inquiries concerning valve operation it is important to properly identify Cla-Val products already in service. Include all nameplate data with your inquiry. Pertinent product data includes valve function, size, material, pressure rating, end details, type of pilot controls used and control adjustment ranges.

Identification Plate

For product identification, cast in body markings are supplemented by the identification plate illustrated on this page. The plate is mounted in the most practical position. **It is extremely important that this identification plate is not painted over, removed, or in any other way rendered illegible.**

Limited Warranty

Automatic valves and controls as manufactured by Cla-Val are warranted for one year from date of shipment against manufacturing defects in material and workmanship that develop in the service for which they are designed, provided the products are installed and used in accordance with all applicable instructions and limitations issued by Cla-Val. Electronic components manufactured by Cla-Val are warranted for one year from the date of shipment.

We will repair or replace defective material, free of charge, which is returned to our factory, transportation charges prepaid, provided that, after inspection, the material is found to have been defective at time of shipment. This warranty is expressly conditioned on the purchaser's giving Cla-Val immediate written notice upon discovery of the defect.

Components used by Cla-Val but manufactured by others, are warranted only to the extent of that manufacturer's guarantee.

This warranty shall not apply if the product has been altered or repaired by others, and Cla-Val shall make no allowance or credit for such repairs or alterations unless authorized in writing by Cla-Val.

Terms Of Sale

ACCEPTANCE OF ORDERS

All orders are subject to acceptance by our main office at Newport Beach, California.

CREDIT TERMS

Credit terms are net thirty (30) days from date of invoice.

PURCHASE ORDER FORMS

Orders submitted on customer's own purchase order forms will be accepted only with the express understanding that no statements, clauses, or conditions contained in said order form will be binding on the Seller if they in any way modify the Seller's own terms and conditions of sales.

PRODUCT CHANGES


The right is reserved to make changes in pattern, design or materials when deemed necessary, without prior notice.

PRICES

All prices are F.O.B. Newport Beach, California, unless expressly stated otherwise on our acknowledgement of the order. Prices are subject to change without notice. The prices at which any order is accepted are subject to adjustment to the Seller's price in effect at the time of shipment. Prices do not include sales, excise, municipal, state or any other Government taxes. Minimum order charge \$75.00.

RESPONSIBILITY

We will not be responsible for delays resulting from strikes, accidents, negligence of carriers, or other causes beyond our control. Also, we will not be liable for any unauthorized product alterations or charges accruing there from.

SIZE & CAT. NO.		CODE
	STOCK NO.	MFD. BY CLA-VAL NEWPORT BEACH, CALIF. U.S.A.
	CLA-VAL AUTOMATIC CONTROL VALVES	

Specify when ordering

- Model Number
- Adjustment Range (As Applicable)
- Valve Size
- Optional Features
- Pressure Class

How To Order

There are many valves and controls manufactured by Cla-Val that are not listed due to the sheer volume. For information not listed, please contact your local Cla-Val representative.

Unless Otherwise Specified

- X43 "Y" Strainer is included.
- CK2 Isolation Valves is included in price on 6" and larger valve sizes.

Disclaimer Of Warranties And Limitations Of Liability

The foregoing warranty is exclusive and in lieu of all other warranties and representations, whether expressed, implied, oral or written, including but not limited to any implied warranties or merchantability or fitness for a particular purpose. All such other warranties and representations are hereby cancelled.

Cla-Val shall not be liable for any incidental or consequential loss, damage or expense arising directly or indirectly from the use of the product. Cla-Val shall not be liable for any damages or charges for labor or expense in making repairs or adjustments to the product. Cla-Val shall not be liable for any damages or charges sustained in the adaptation or use of its engineering data and services. No representative of Cla-Val may change any of the foregoing or assume any additional liability or responsibility in connection with the product. The liability of Cla-Val is limited to material replacements F.O.B. Newport Beach, California.

Risk

All goods are shipped at the risk of the purchaser after they have been delivered by us to the carrier. Claims for error, shortages, etc., must be made upon receipt of goods.

EXPORT SHIPMENTS

Export shipments are subject to an additional charge for export packing.

RETURNED GOODS

1. Customers must obtain written approval from Cla-Val prior to returning any material.
2. Cla-Val reserves the right to refuse the return of any products.
3. Products more than six (6) months old cannot be returned for credit.
4. Specially produced, non-standard models cannot be returned for credit.
5. Rubber goods cannot be returned for credit, unless as part of an unopened repair kit which is less than six months old.
6. Goods authorized for return are subject to a 35% (\$75 minimum) restocking charge and a service charge for inspection, reconditioning, replacement of rubber parts, retesting and repackaging as required.
7. Authorized returned goods must be packaged and shipped prepaid to Cla-Val., 1701 Placentia Avenue, Costa Mesa, California 92627-4475.

Approved By



PUBLIC UTILITIES BOARD - SINGAPORE

111 SOMERSET ROAD #15-01 SINGAPORE 236164 • REPUBLIC OF SINGAPORE
TEL: 2358888 E-MAIL: pubweb@pub.gov.sg



CLA-VAL 316L STAINLESS STEEL FLOAT OPERATED VALVES

MARKING : CLA-VAL
MODELS : 724-01
SIZES : 50, 75, 100 & 150 MM (2" - 6")
MANUFACTURER : M/S CLA-VAL, USA
APPROVAL No. : VG0901299

CLA-VAL 316L STAINLESS STEEL PRESSURE REDUCING VALVES

MARKING : CLA-VAL
MODELS : 790-01
SIZES : 50, 75, 100 & 150 MM (2" - 6")
MANUFACTURER : M/S CLA-VAL, USA
APPROVAL No. : VG015032000/VG02032000



NSF International

RECOGNIZES

CLA - VAL
COSTA MESA, CA

AS COMPLYING WITH ANSI/NSF 61.
PRODUCTS APPEARING IN THE NSF OFFICAL LISTING ARE
AUTHORIZED TO BEAR THE NSF MARK.



Certification Program
Accredited by the
American National
Standards Institute



Certification Program
Accredited by KVA,
the Dutch Council
for Accreditation



Certification Program
Accredited by the
Standards Council
of Canada

This certificate is the property of NSF International and must be returned upon request. To verify certification, call 800 NSF-MARK or (1) 734 769-8010.

Stan S. Hazin, General Manager
Drinking Water Additives

Certification #54290/54290B

CLA-VAL WARRANTY

1 Year Warranty on Cla-Val 700 Series Quality Products

This is a Limited Warranty

Roll Seal automatic valves and controls as manufactured by Cla-Val are warranted for one year from date of shipment against manufacturing defects in material and workmanship that develop in the service for which they are designed, provided the products are installed and used in accordance with all applicable instructions and limitations issued by Cla-Val. Electronic components manufactured by Cla-Val are warranted for one year from the date of shipment.

We will repair or replace defective material, free of charge which is returned to our factory, transportation charges prepaid, provided that after inspection the material is found to have been defective at time of shipment. The warranty is expressly conditioned on the purchaser's giving Cla-Val immediate written notice upon discovery of the defect.

Components used by Cla-Val, but manufactured by others, are warranted only to the extent of that manufacturer's guarantee.

This warranty shall not apply if the product has been altered or repaired by others, and Cla-Val shall make no allowance or credit for such repairs or alterations unless authorized in writing by Cla-Val.

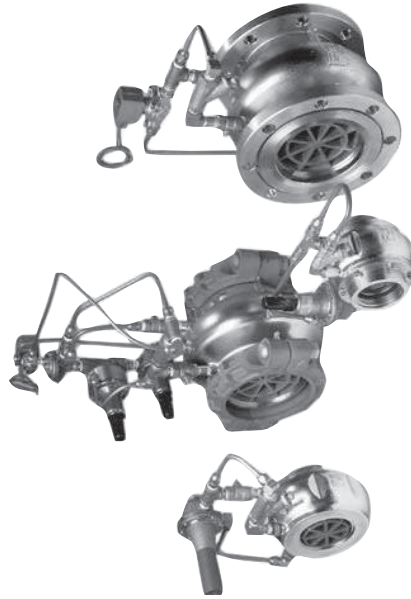
Disclaimer of Warranties & Limitation of Liability

The foregoing warranty is exclusive and in lieu of all other warranties and representations whether expressed, implied, oral or written, including but not limited to, any implied warranties or merchantability or fitness for a particular purpose. All such other warranties and representations are hereby cancelled.

Cla-Val shall not be liable for any incidental or consequential loss, damage or expense arising directly or indirectly from the use of the product. Cla-Val shall not be liable for any damages or charges for labor or expense in making repairs or adjustments to the product. Cla-Val shall not be liable for any damages or charges sustained in the adaptation or use of its engineering data and services.

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