



590-01
(Full Internal Port)
MODEL
6590-01
(Reduced Internal Port)

Pressure Reducing Valve



- Sensitive and Accurate Pressure Control
- High Corrosion Resistance
- Easy Adjustment and Maintenance
- Optional Check Feature
- Fully Supported Frictionless Diaphragm

The Cla-Val Model 590-01/6590-01 Pressure Reducing Valve automatically reduces a higher inlet pressure to a steady lower downstream pressure regardless of changing flow rate and/or varying inlet pressure. All metal parts are 316L Stainless Steel for high corrosion resistance in many industrial applications. This valve is an accurate, pilot-operated regulator capable of holding downstream pressure to a pre-determined limit. When downstream pressure exceeds the pressure setting of the pilot control, the valve and close drip-tight.

If a check feature is added, and a pressure reversal occurs, the downstream pressure is admitted in the main valve cover chamber, closing the valve to prevent return flow.

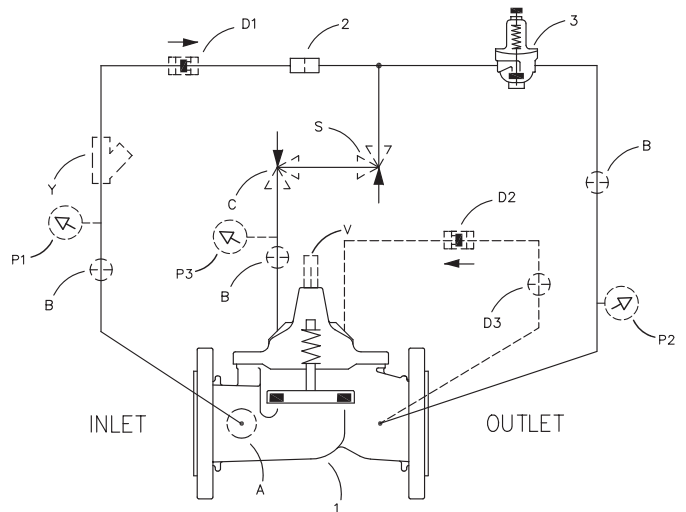
Schematic Diagram

Item	Description
1	Hytrol (100-46 Main Valve - Full Internal Port) Hytrol (100-44 Main Valve - Reduced Internal Post)
2	X58C Restriction Fitting
3	CRD Pressure Reducing Control

Optional Features

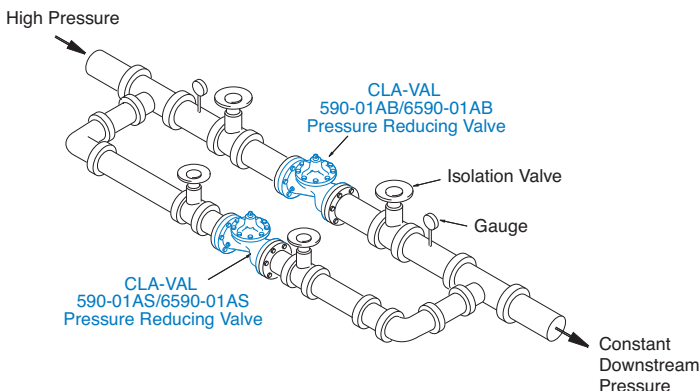
Item	Description
A	X46A Flow Clean Strainer
B	CK2 (Isolation Valve)
C	CV Flow Control (Closing)*
D	Check Valves with Isolation Valve
P	X141 Pressure Gauge
S	CV Flow Control (Opening)
V	X101 Valve Position Indicator
Y	X43 "Y" Strainer

*The closing speed control (optional) on this valve should always be open at least three (3) turns off its seat.

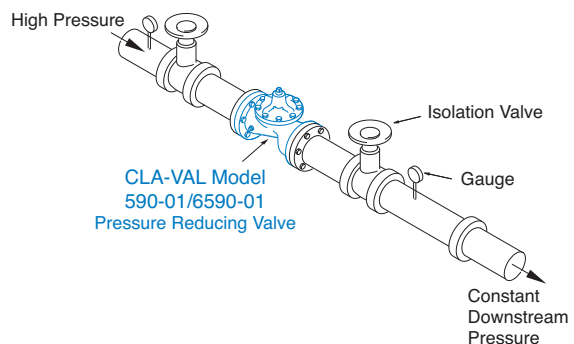


Typical Applications

Typical pressure reducing valve station using Model 6590-01AB and Model 590-01AS in parallel to handle wide range of flow rates. Larger Model 590-01AB/6590-01AB valve takes care of peak loads. Smaller Model 590-01/6590-01AS handles low flows.



The 590-01D/6590-01D Combination Pressure Reducing and Check Valve is installed downstream of a pump where a constant system pressure is required. The check feature is to prevent reverse flow through the pump and to hold system pressure when the pump is off.



Specifications

Sizes

Globe (inch):
1½", 2", 2½", 3", 4", 6"

End Detail

Slip-on Two Piece Flange
Dimensions Per ANSI B16.5

Pressure Rating

ANSI Class 150:
Maximum 285 psi
ANSI Class 300:
Maximum 400 psi

Higher Pressure Available
Please Contact Factory

Operating Temperature

Fluids Compatible with Valve
Materials
-40° to 180° F (-40° to 82° C)

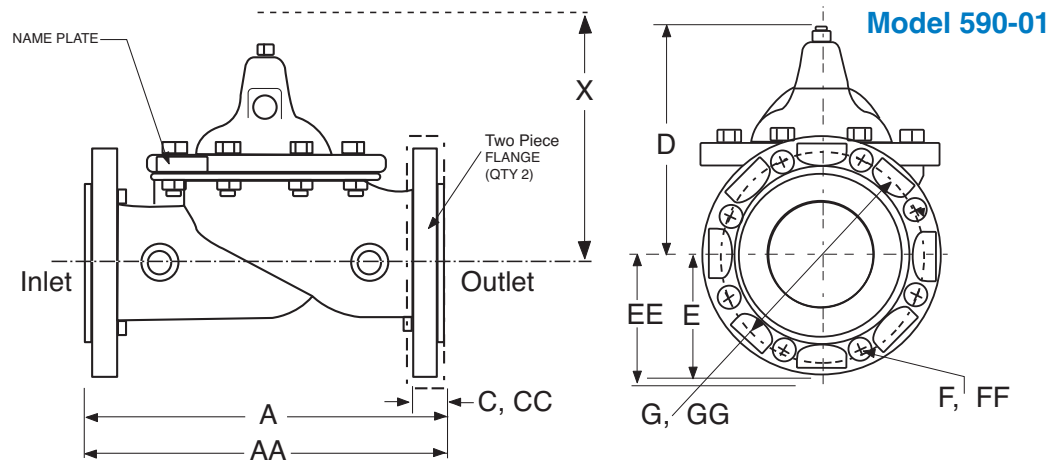
Materials

Body, Cover, Trim,
Diaphragm Assembly,
Flanges, and Fasteners
316 Series
Stainless Steel
Electropolished

Disc:
Buna-N® Rubber*

Diaphragm:
Nylon Fabric Reinforced
Synthetic Buna-N® Rubber*

*Contact Factory for Other
Disc or Diaphragm Materials



Dimensions

Size (In)	1½	2	2½	3	4	6
(mm)	40	50	65	80	100	150
A 150 ANSI	7.87	9.38	11.00	12.00	15.00	20.00
AA 300 ANSI	7.87	9.38	11.00	12.00	15.00	20.00
B	5.62	6.61	8.00	9.13	11.50	15.75
C	.56	.62	.69	.75	.94	1.00
CC 300 ANSI	.81	.88	1.00	1.12	1.25	1.44
D	5.90	6.25	7.25	8.20	10.21	13.32
E	2.56	3.05	3.54	3.75	4.53	5.61
EE 300 ANSI	3.05	3.25	3.74	4.13	5.02	6.30
F	.62	.75	.75	.75	.75	.88
FF 300 ANSI	.88	.75	.88	.88	.88	.88
G	3.88	4.75	5.50	6.00	7.50	9.50
GG 300 ANSI	4.50	5.00	5.88	6.62	7.88	10.62
Flange Bolts (150 Class)	4	4	4	4	8	8
Flange Bolts (300 Class)	4	8	8	8	8	12
Approx. Ship Wt. Lbs.	25	35	55	75	160	290
Approx. Ship Wt. Kgs.	11.4	16	25	35	73	132

100-46 Full Port Functional Data

Size (Inches)	Cv (gpm)*	Cv (l/s)**
1½	32	8
2	54	13
2½	85	20
3	115	27
4	200	48
6	440	105

*Cv = gpm flow at 1 psi drop

**Cv = l/s flow at 1 bar drop



Specifications

Model 6590-01

Sizes

Globe (inch):
2", 2½", 3", 4", 6", 8", 10", 12"

End Detail

Slip-on Two Piece Flange
Dimensions Per ANSI B16.5

Pressure Rating

ANSI Class 150:
Maximum 285 psi

ANSI Class 300:
Maximum 400 psi

Higher Pressure Available
Please Contact Factory

Operating Temperature

Fluids Compatible with Valve
Materials
-40° to 180° F (-40° to 82° C)

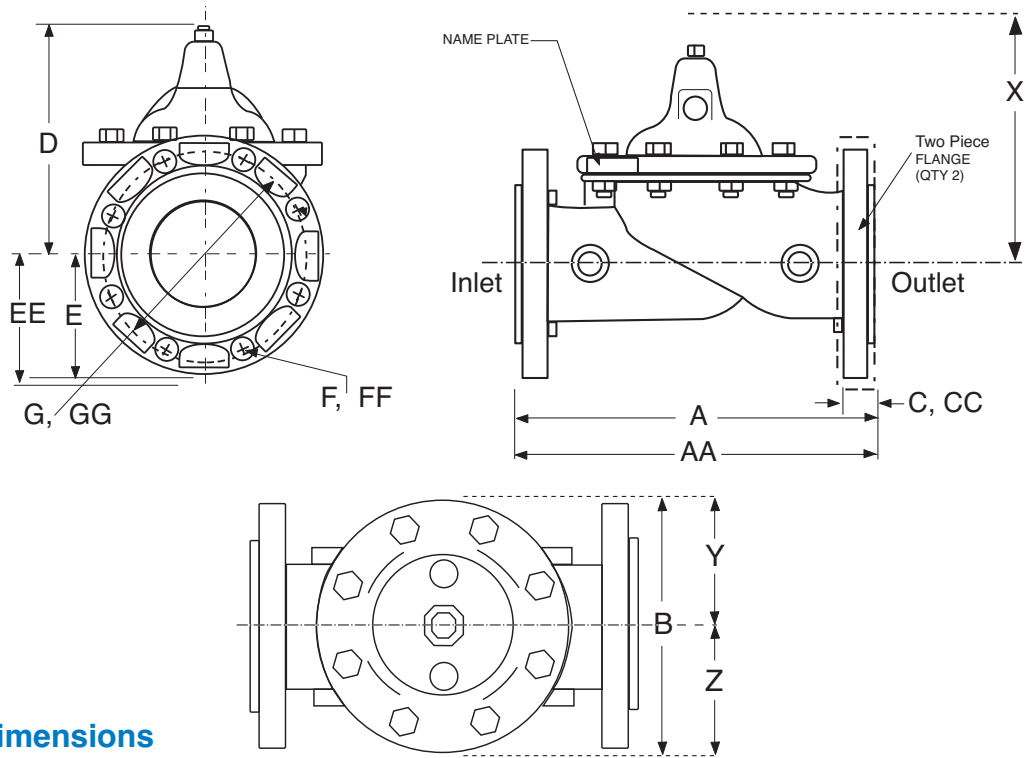
Materials

Body, Cover, Trim,
Diaphragm Assembly,
Flanges, and Fasteners
316 Series
Stainless Steel
Electropolished

Disc:
Buna-N® Rubber*

Diaphragm:
Nylon Fabric Reinforced
Synthetic Buna-N® Rubber*

*Contact Factory for Other
Disc or Diaphragm Materials



Dimensions

Size (Inches)	2	2 ½	3	4	6	8	10	12
Size (mm)	50	65	80	100	150	200	250	300
A 150 ANSI	9.06	11.42	12.20	13.78	18.90	23.62	28.74	33.46
AA 300 ANSI	9.06	11.42	12.20	13.78	18.90	23.62	28.74	33.46
B	5.70	8.06	6.69	9.25	11.61	15.75	20.08	23.62
C	.89	.89	.93	.93	1.02	1.15	1.15	1.25
CC 300 ANSI	.96	.96	1.00	1.00	1.10	1.15	1.46	1.50
D	6.50	7.95	8.20	10.12	13.32	16.39	19.12	20.95
E	3.05	3.54	3.74	4.53	5.61	6.79	7.97	9.55
EE 300 ANSI	3.25	3.75	4.13	5.01	6.30	7.48	8.76	10.24
F	.71	.71	.71	.71	.91	.87	1.02	1.02
FF 300 ANSI	.71	.75	.87	.87	.87	1.03	1.16	1.34
G	4.75	5.50	6.00	7.50	9.50	11.75	14.25	17.00
GG 300 ANSI	5.00	5.88	6.62	7.88	10.62	13.00	15.25	17.72
Flange Bolts (150 Class)	4	4	4	8	8	8	12	12
Flange Bolts (300 Class)	8	8	8	8	12	12	16	16
Approx. Ship Wt. Lbs.	25	40	40	75	160	290	419	728
Approx. Ship Wt. Kgs.	11.4	19	19	35	73	132	190	330
X Pilot System	13.00	14.00	15.00	17.00	29.00	31.00	33.00	36.00
Y Pilot System	9.00	10.00	11.00	12.00	20.00	22.00	24.00	26.00
Z Pilot System	9.00	10.00	11.00	12.00	20.00	22.00	24.00	26.00

100-44 Reduced Port Functional Data

Size (Inches)	Cv (gpm)*	Cv (l/s)**
2	38	9
2 1/2	50	12
3	67	16
4	138	33
6	242	58
8	555	133
10	923	222
12	1492	359

*Cv = gpm flow at 1 psi drop

**Cv = l/s flow at 1 bar drop



590-01 Valve Selection	100-01 Pattern: Globe (G), Angle (A), End Connections: Threaded (T), Grooved (GR), Flanged (F) Indicate Available Sizes						
	Inches	1½	2	2½	3	4	6
	mm	40	50	65	80	100	150
Basic Valve 100-46	Pattern	G	G	G	G	G	G
	End Detail	F	F	F	F	F	F
Suggested Flow (gpm)	Maximum	125	210	460	460	800	1800
	Maximum Intermittent	160	260	580	580	990	2250
	Minimum	1	1	2	2	4	10
Suggested Flow (Liters/Sec)	Maximum	8	13	29	29	50	113
	Maximum Intermittent	10	16	37	37	62	142
	Minimum	.03	.06	.09	0.13	0.25	0.63

100-46 Series is the full internal port Hytrol. For Lower Flows Consult Factory *Globe Grooved Only

6590-01 Valve Selection	100-20 Pattern: Globe (G), Angle (A), End Connections: Flanged (F) Indicate Available Sizes								
	Inches	2	2½	3	4	6	8	10	12
	mm	50	65	80	100	150	200	250	300
Basic Valve 100-44	Pattern	G	G	G	G	G	G	G	G
	End Detail	F	F	F	F	F	F	F	F
Suggested Flow (gpm)	Maximum	160	260	260	580	1025	2300	4100	6400
	Minimum	1	2	1	2	4	10	15	35
Suggested Flow (Liters/Sec)	Maximum	8	16	16	37	65	145	258	403
	Minimum	.06	.13	.06	.13	.25	.63	.95	2.2

100-44 Series is the reduced internal port size version of the 100-01 Series. For Lower Flows Consult Factory

Pilot System Specifications

Adjustment Ranges

- 2 to 30 psi
- 15 to 75 psi
- 20 to 105 psi
- 30 to 300 psi*

*Supplied unless otherwise specified
Other ranges available, please consult factory

Temperature Range

Water: to 180°F

Materials

Standard Pilot System Materials

- Pilot Control: Stainless Steel Type 303
- Trim: Stainless Steel Type 303
- Rubber: Buna-N® Synthetic Rubber

Optional Pilot System Materials

Pilot Systems are available with optional 316 Stainless Steel or Monel materials.

Note: Available with remote sensing control.

When Ordering, Please Specify

1. Catalog No. 590-01 or No. 6590-01
2. Valve Size
3. Pattern - Globe
4. Pressure Class
5. Flanged (150 / 300)
6. Trim Material
7. Adjustment Range
8. Desired Options
9. When Vertically Installed



E-590-01/6590-01 (R-8/2011)

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