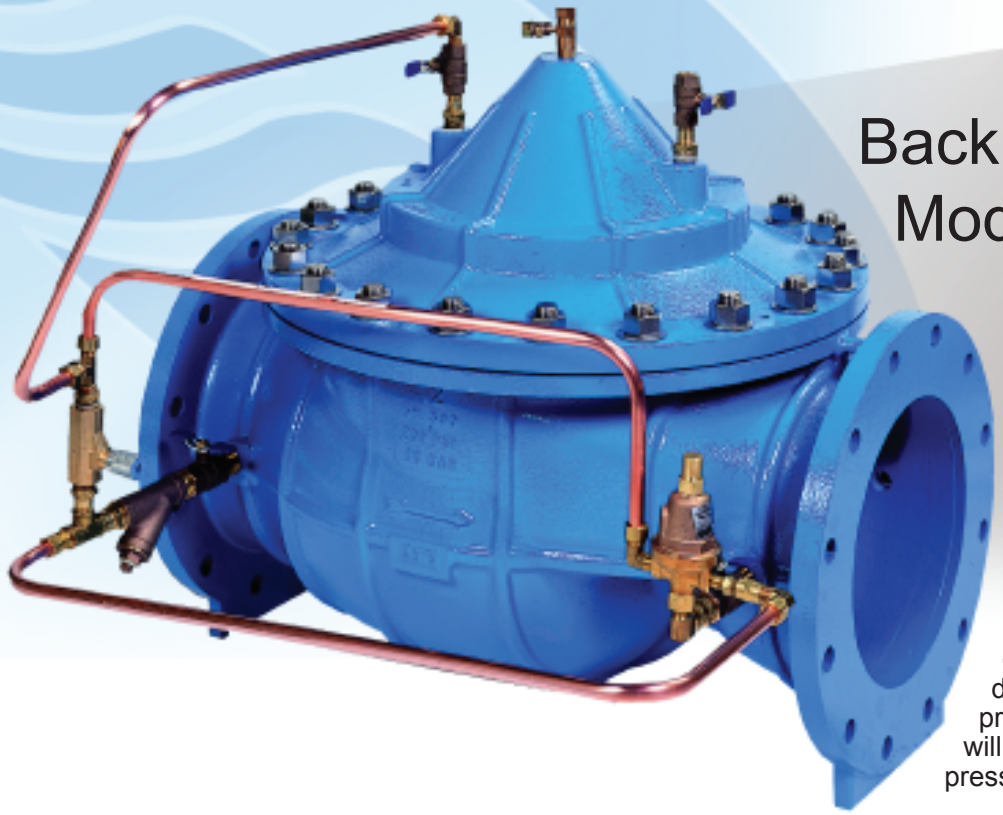
FLOMATIC® VALVES

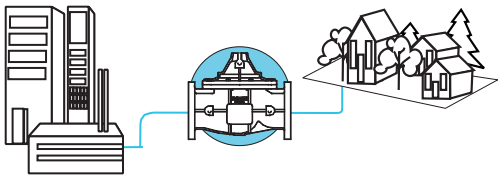


Back Pressure Valve
Model C301/CF301

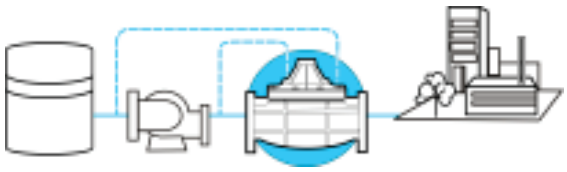
The Model C301/CF301 Back Pressure (Sustaining) Valve throttles to maintain a minimum upstream (inlet) pressure regardless of changes in demand downstream.

The throttled position of the main valve diaphragm assembly is controlled by a pilot valve which senses the upstream pressure. The pilot valve reacts immediately to changes in pressure and in turn causes a repositioning of the main valve diaphragm assembly to sustain the desired preset upstream pressure. This main valve will gradually close when the upstream pressure drops below the pilot valve setting.

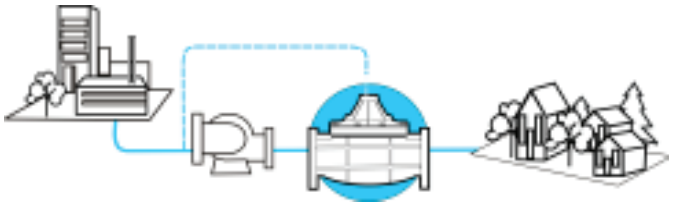
Typical Applications



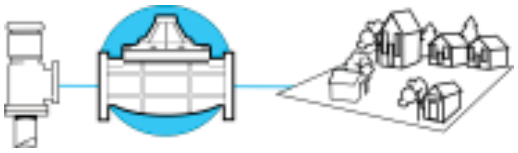
Prevents overdrafting of high pressure zone when supplying water to a low-pressure zone.



Maintains a constant differential pressure accross a pump (differential back pressure and relief valve) to maintain a constant flow rate.



Prevents a fire pump from lowering its suction pressure (supply system pressure) below a desired safe operating minimum



Prevents overpumping of both deep well and booster pump installations if the system demand exceeds the pumping capacity.

Specifications

FLOMATIC® VALVES

- C301 - Full Port Globe Style
- CA301 - Full Port Angle Body Globe Style
- CF301- Reduced Port Globe Style
- CFA301-Reduced Port Angle Body Globe Style

Sizes

- 1 1/4" - 3" Threaded NPT / BSPP
- 1 1/2" - 36" Flanged

Temperature Rating

- Water up to 180° F (82°C)

Pressure Rating

Pressure Class							
ANSI Standard B16.1				British Standard BS4504			
Ductile Iron Grade	150 lb	300lb	NPT Threaded	Ductile Iron Grade	PN10/16	PN 25	BSPP Threaded
ASTM A536	250	400	400	BS 2789	250	400	400

Standard Materials

Component	Material		
	Sizes 1 1/4" - 4"	Sizes 6" - 10"	Sizes 12" - 36"
Body & Cover	Ductile Iron	Ductile Iron	Ductile Iron
Intermediate Chamber	Ductile Iron	Ductile Iron	Ductile Iron
Coating	Fusion Epoxy	Fusion Epoxy	Fusion Epoxy
Spool & Diaphragm Plate	Unleaded Bronze	Ductile Iron	Ductile Iron
Seat Ring & Seat Plate	Unleaded Bronze	Unleaded Bronze	Stainless Steel
Cover Bushing	Bronze	Bronze	Bronze
Disc Seal	Buna-N	Buna-N	Buna-N
Diaphragm	Nitrile Nylon	Nitrile Nylon	Nitrile Nylon
Stem, Nuts & Spring	Stainless Steel	Stainless Steel	Stainless Steel

Options

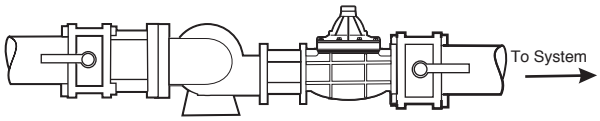
- Stainless Steel Seat Trim (Standard 12" and larger sizes)
- Heavy Spring for Vertical Installation
- Viton Disc Seal
- Stainless Steel Stem Bushing
- Indicator Rod Sizes 1 1/2" thru 4" (Standard 6" and larger sizes)

WARRANTY

LIMITED THREE YEAR WARRANTY: Flomatic Valves warrants that its Automatic Hydraulic Control Valves are free from defects in material and workmanship for a period of three (3) years after shipment. Flomatic Valves will repair or replace any parts or components found to be defective with in three years from the date of shipment. All removal and installation of equipment or parts shall be at buyer's expense. Flomatic Valves shall not under any circumstances be liable for special or consequential damages. This warranty will be void if the valve or its controls have been modified without factory authorization or if it is subjected to unusual operating conditions which were not described or specified at the time of purchase.

Typical Installation

The back pressure valve is a modulating valve which throttles to maintain a minimum upstream pressure. To correctly size this valve and and avoid undesirable operating characteristics (noise, excessive wear and poor pressure control) which result from oversizing (or undersizing) use the Sizing Guide Section and choose the smallest valve size which satisfies the maximum flow requirement.



Note:Australian and Japanese Flange Connections are Available

Also Available with Full Port Angle Body Globe Style (CA301)

(Model CFA301 Reduced Ported)

FLOMATIC® VALVES

High Quality Valves Built to Last...

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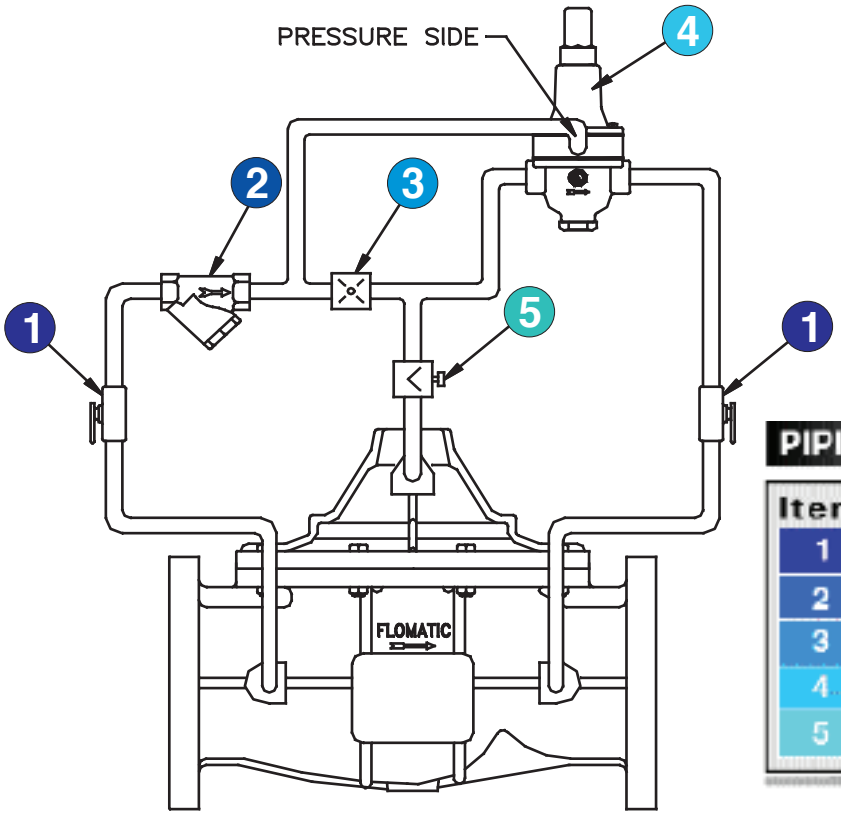
SIZING GUIDE for THROTTLING VALVES

In order to insure pressure control and avoid excessive noise and maintenance expense, extreme care must be taken when sizing the throttling valve for a specific application. Although both pressure conditions and flow (velocity) are contributing factors, field experience has determined that flow rate is the most critical factor and that proper valve sizing can be attained through consideration of the flow rate alone.

The maximum flow rates in tables below for Model C (Full ported valves) are based on a velocity of 15 feet per second, fps or (4.6 meter per second, m/s). The throttling valve is capable of handling larger flows for short periods of time; however, the increase in maximum flow should be limited to 25% of the above values. Minimum flow rates are based on 0.5 feet/second flow rate (0.15 meter per second, m/s). Valve should be selected to be opened between 20-80% for best efficiencies and service life. The flow values for Model CF (Reduce ported valves) in the table below are less as they have smaller valve orifice or seat areas.

The tables below indicate the desired throttling valve size (inches) for designated maximum and minimum flow rates in gallons per minute (GPM):

Valve Body Type (Inch)	Flow	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"
Model C Full Ported	Min	2.5	4	7	11	20	40	80	120	180	240	300	400	500	700	1,000	-
	Max	90	160	230	340	600	1,300	2,400	3,700	5,200	7,200	9,500	12,000	14,000	21,000	32,000	-
Model CF Reduced Ported	Min	-	-	-	7	11	30	40	80	120	180	240	300	400	500	700	900
	Max	-	-	-	160	340	600	1,300	2,400	3,700	5,200	7,200	9,500	12,000	14,000	21,000	32,000
Model CI Diaphragm	Min	-	2	2	2	5	8	25	-	-	-	-	-	-	-	-	-
	Max	-	110	132	132	264	1,020	1,790	-	-	-	-	-	-	-	-	-

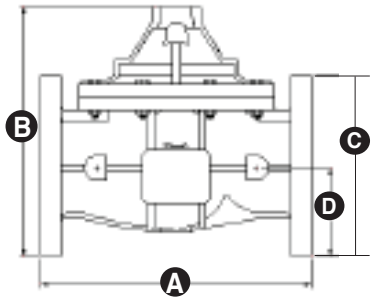


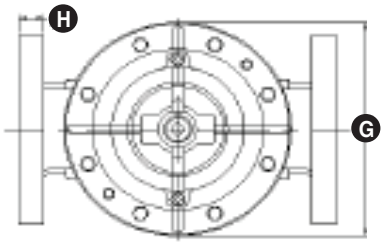
PIPING SCHEME

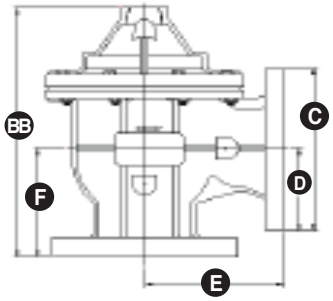
Item	Qty	Description
1	2	SHUT - OFF VALVE
2	1	STRAINER
3	1	ORIFICE (OR NEEDLE VALVE)
4	1	PILOT VALVE
5	1	FLOW CONTROL

Inches | Model C301 / CA301 | Full Ported Valves

Size	Class	Model C Dimension									Weight lbs.
		A	B	BB	C	D	E	F	G	H	
1 1/2" Threaded	300	7 1/4	6 5/8	7 3/8	2 7/8 HEX	N/A	3 1/4	1 7/8	6 11/16	N/A	17
2" Threaded	300	9 3/8	6 13/32	7 31/32	3 HEX	N/A	4 3/4	3 1/4	6 11/16	N/A	17
1 1/2"	150	8 1/2	8	7 31/32	5	2 3/8	4		4	6 11/16	9/16	20
	300	9	8 9/16	8 1/4	6 1/8	2 7/8	4 1/4		4 1/4	6 11/16	13/16	26
2"	150	9 3/8	7 1/2	7 31/32	6	2 13/16	4 3/4		3 1/4	6 11/16	5/8	21
	300	10	7 13/16	8 7/32	6 1/2	3 1/8	5		3 1/2	6 11/16	7/8	28
2 1/2"	150	11	9 3/4	10 3/8	7	3 3/8	5 1/2		4	8 1/8	11/16	44
	300	11 5/8	9 7/8	N/A	7 1/2	3 1/2	5 7/8		4 5/16	8 1/8	1 1/8	49
3"	150	12	10 1/32	10 13/32	7 1/2	3 5/8	6		4	8 1/8	3/4	44
	300	13 1/4	10 1/4	10 49/64	8 1/4	3 7/8	6 3/8		4 3/8	8 1/8	1 1/8	59
4"	150	15	12 3/16	12 5/8	9	4 1/4	7 1/2		5	11	15/16	104
	300	15 5/8	12 3/4	21 15/16	10	4 13/16	7 7/8		5 5/16	11	1 1/4	127
6"	150	20	15 11/16	16 1/2	11	5 1/8	10		6	14 1/4	1	270
	300	21	16 3/8	16 15/16	12 1/2	5 13/16	10 1/2		6 1/2	14 1/4	1 7/16	303
8"	150	25 3/8	23 9/32	22 5/32	13 1/2	6 1/4	12 3/4		8	19	1 1/8	450
	300	26 3/8	24 5/32	22 21/32	15	7 1/8	13 1/4		8 1/2	19	1 5/8	500
10"	150	29 3/4	24 11/16	25 3/4	16	7 9/16	14 7/8		8 5/8	25	1 3/16	780
	300	31 1/8	26 1/2	26 7/16	17 1/2	8 1/2	15 9/16		9 5/16	25	1 7/8	815
12"	150	34	28 31/32	33 11/32	19	9 3/8	17		13 3/4	28	1 1/4	761
	300	35 1/2	30 3/8	34 3/32	20 1/2	9 3/8	17 3/4		14 1/2	28	2	1067
14"	150	39										
	300	40 1/2										
16"	150	41 3/8										
	300	43 1/2										
20"	150	43 5/16										
	300	44 3/4										
24"	150	61 1/2										
	300	63 1/4										
30"	150	63 3/4	69 1/4	N/A	38 7/8	19 1/2	N/A		N/A	62	2 1/8	7468
	300	65 1/2	73 5/8	N/A	43 1/4	21 3/4	N/A		N/A	62	3	8035







Inches | Model CF301 / CFA301 | Reduced Ported Valves

Size	Class	Model CF Dimension									Weight lbs.
		A	B	BB	C	D	E	F	G	H	
2 1/2" Threaded	300	N/A	N/A	8 7/32	4 HEX	N/A	5 1/2	3 1/2	6 11/16	N/A	30
3" Threaded	300	N/A	N/A	8 7/32	4 HEX	N/A	5 1/2	3 1/2	6 11/16	N/A	30
2 1/2"	150	10 3/4	8 3/16	8 33/64	7	3 1/2	5 1/2	3 51/64	6 11/16	11/16	30
	300	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3"	150	10 7/8	8 1/4	8 9/16	7 1/2	3 3/4	5 9/16	3 27/32	6 11/16	3/4	31
	300	11 5/8	8 21/32	N/A	8 3/64	3 63/64	N/A	N/A	6 11/16	1 1/8	45
4"	150	11 15/16	10 3/4	11 3/8	7 1/2	4 1/2	6 3/4	5	8 1/8	15/16	57
	300	12 1/2	11 9/32	N/A	9 27/32	4 57/64	N/A	N/A	8 1/8	1 1/4	79
6"	150	16 11/32	13 1/16	N/A	10 5/8	5 1/8	N/A	N/A	11	1	56
	300	17 1/4	13 7/8	N/A	12 3/16	5 15/16	N/A	N/A	11	1 7/16	167
8"	150	20 9/16	16 61/64	N/A	13 1/8	6 13/32	N/A	N/A	14 1/4	1 1/8	275
	300	21 9/16	17 13/16	N/A	14 3/4	7 9/32	N/A	N/A	14 1/4	1 5/8	325
10"	150	26	21 13/16	N/A	15 1/2	7 1/2	N/A	N/A	19	1 3/16	550
	300	27 3/8	22 13/16	N/A	17 1/4	8 1/2	N/A	N/A	19	1 7/8	600
12"	150	30	26 13/32	N/A	18 3/4	9 1/4	N/A	N/A	25	1 1/4	900
	300	31 1/2									
14"	150	39									
	300	40 1/2									
16"	150	35	30 1/2	N/A	23 1/4	11 1/2	N/A	N/A	28	1 7/16	1151
	300	36 5/8									
20"	150	48									
	300	49 5/8									
24"	150	48									
	300	49 3/4									
30"	150	63 1/4									
	300	65									
36"	150	76									
	300	78									

Flomatic Valves
Glens Falls, NY 12801
Phone (518) 761-9797
Fax (518) 761-9798