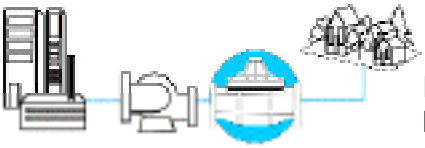
Flow Control Valve
Model C1001/CF1001

The Model C1001/CF1001 Hydraulic Check Valve opens and closes at controlled, adjustable speeds to provide for smooth operation and reduce pressure surges associated with conventional check valves.

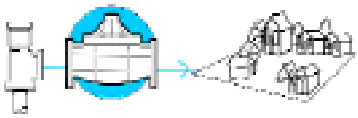
When the upstream (inlet) pressure is greater than the downstream (outlet) pressure, the valve moves to the open position at a controlled speed by exhausting control water from above the diaphragm to the downstream side through an adjustable needle valve.

When the upstream pressure becomes less than the downstream pressure, the valve closes to prevent reverse flow at a controlled speed by introducing control water above the diaphragm from the downstream side through a second needle valve.

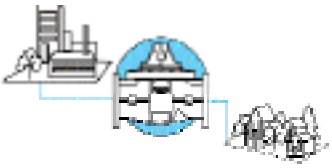
Typical Applications



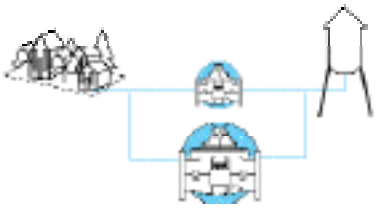
Prevent back flow in a booster pump station



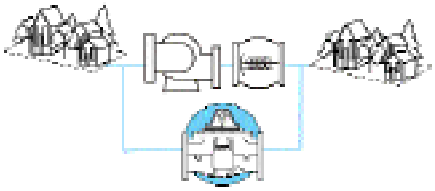
Prevent back flow in a deep well pump station



Prevents reverse flow between two distribution systems with different pressures



Bypass a single acting altitude valve - flow from tank to system



Bypass a booster pump to permit flow with pump off.

Specifications

FLOMATIC® VALVES

- C1001 - Full Port Globe Style
- CA1001- Full Port Angle Body Globe
- CF1001 - Reduced Port Globe Style
- CFA1001- Reduced Port Angle Body Globe Style

Sizes

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

Temperature Rating

- Water up to 180º F (82ºC)

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

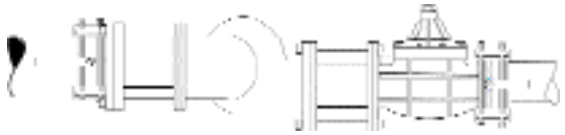
- Stainless Steel Seat Trim (Standard 12" and larger sizes)
- Heavy Spring for Vertical Installation
- Viton Disc Seal
- Stainless Steel Stem Bushing
- Indicator Rod Sizes 1 1/2" thru 4" (Standard 6" and larger sizes)

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 Flow Control Valve is a modulation valve which throttles to control and limit flow. 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 (CA1001)

(Model CFA1001 Reduced Ported)

FLOMATIC® VALVES

High Quality Valves Built to Last...

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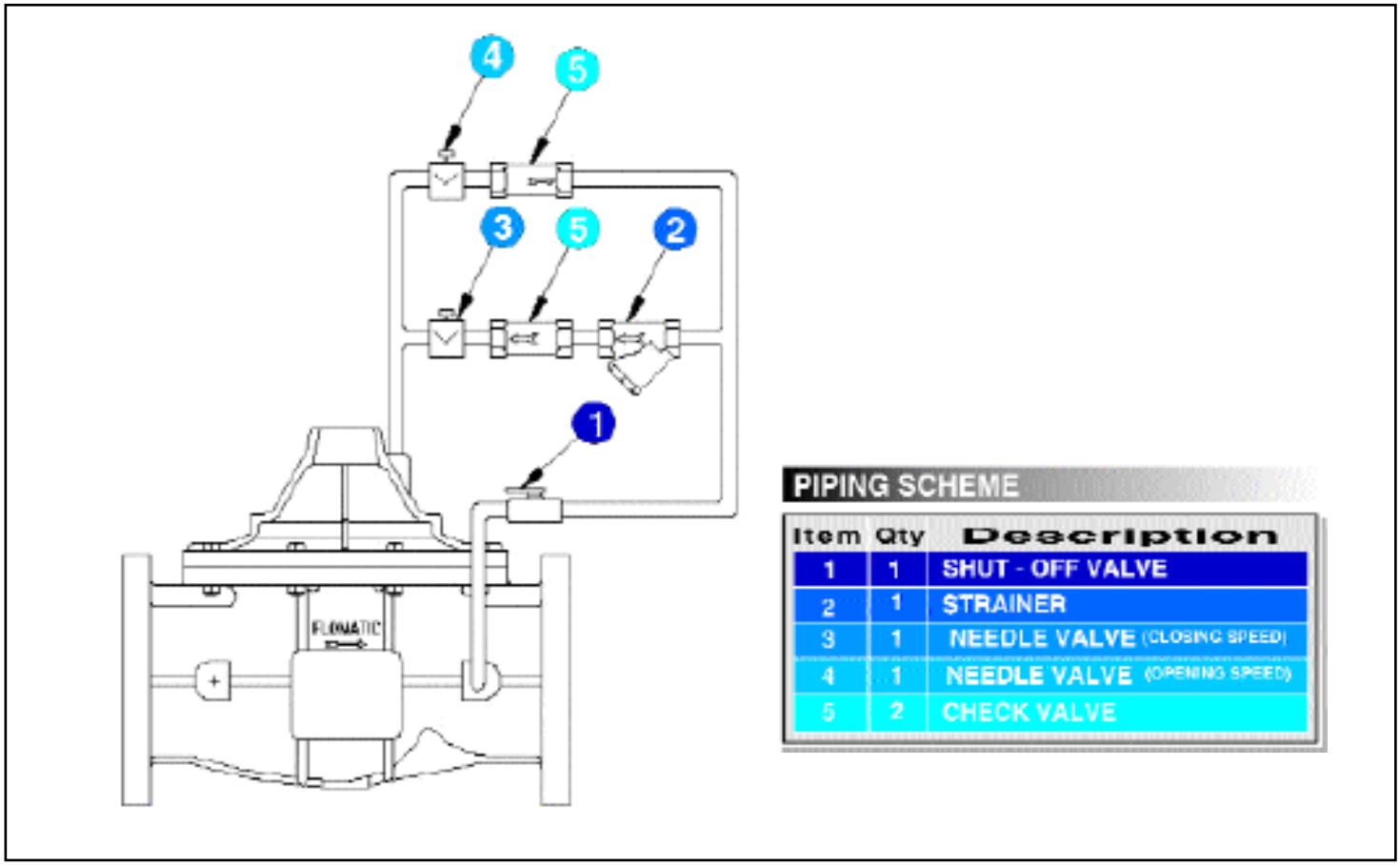
SIZING GUIDE for THROTTLING VALVES

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 factor, 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 ft 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 (Reduced ported valves) in the table below are less as they have smaller valve orifice or seat areas.

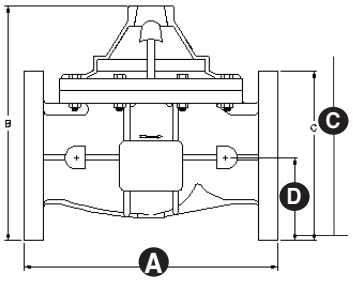
The tables below indicate the desired throttling valve size (inches) for designated maximum and minimum flow rates in gallons per minute (GPM):

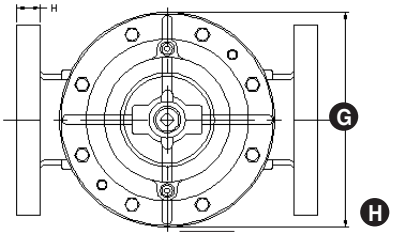
Valve Body Type (Size)	Flow	1.5″	2″	2.5″	3″	4″	6″	8″	10″	12″	14″	16″	18″	20″	24″	30″	36″
Model C & CA Full Ported	Min	2.5	4	7	11	20	40	80	120	180	240	300	400	500	700	1,000	-
	Max	90	160	230	340	600	1,300	2,400	3,700	5,200	7,200	9,500	12,000	14,000	21,000	32,000	-
Model CF & CFA Reduced Ported	Min	-	-	-	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 Diaphram	Min	-	2	2	2	5	8	25	-	-	-	-	-	-	-	-	-
	Max	-	110	132	132	264	1,020	1,790	-	-	-	-	-	-	-	-	-

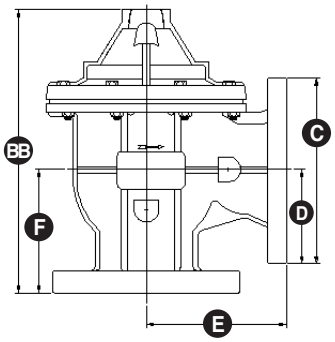


Model C1001 / CA1001 Full Ported Valves

SIZE		1.5"	2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"	20"	24"	30"
A	150	8.5	9.375	11	12	15	20	25.375	29.75	34	39	41.375	43.3125	61.5	63.75
	300	9	10	11.625	13.25	15.625	21	26.375	31.125	35.5	40.5	43.5	44.75	63.25	65.5
B	150	8	7.5	9.75	10.0312	12.1875	15.6875	23.2812	24.6875	28.9687	36.375	41	51.25	61.5	69.25
	300	8.5625	7.8125	9.875	10.25	12.75	16.375	24.1562	26.5	30.375	37.375	42	52.75	63.5	73.625
BB	150	7.9687	7.9867	10.375	10.4062	12.625	16.5	22.1562	25.75	33.3437	N/A	N/A	N/A	N/A	N/A
	300	8.25	8.2187	N/A	10.7656	21.9375	16.9375	22.6562	26.4375	34.0937	N/A	N/A	N/A	N/A	N/A
C	150	5	6	7	7.5	9	11	13.5	16	19	21	23.5	27.5	32	38.875
	300	6.125	6.5	7.5	8.25	10	12.5	15	17.5	20.5	23	25.5	30.5	36	43.25
D	150	2.375	2.8125	3.375	3.625	5.125	6.25	7.5625	9.375	10.375	11.7812	14	15.5	18.25	21.75
	300	2.875	3.125	3.5	3.875	4.8125	5.8.25	7.125	8.5	9.375	11.625	12.7812	15.5	18.25	21.75
E	150	4	4.75	5.5	6	7.5	10	12.75	14.875	17	N/A	N/A	N/A	N/A	N/A
	300	4.25	5	5.375	7.875	10.5	15.5625	17.75	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F	150	4	3.25	4	4	5	6	8	8.625	13.75	N/A	N/A	N/A	N/A	N/A
	300	4.25	3.5	4.3125	5.375	6.5	8.5	9.3125	14.5	N/A	N/A	N/A	N/A	N/A	N/A
G	150	6.8675	6.8675	8.125	8.125	11	14.25	19	22.5	27.25	34	36	42	54	62
	300	6.8675	6.8675	8.125	8.125	11	14.25	19	22.5	27.25	34	36	45	54	62
H	150	.5625	.375	.6875	.75	.9375	1	1.125	1.1875	1.25	1.375	1.4375	1.6875	1.875	2.125
	300	.8125	.875	1.125	1.125	1.25	1.4375	1.625	1.875	2	2.125	2.25	2.5	2.75	3
APROX WEIGHT															







Model CF1001 / CFA1001 Reduced Ported Valves

SIZE		2.5"	3"	4"	6"	8"	10"	12"	14"	16"	20"	24"	30"	36"
A	150	10.75	10.875	11.9375	16.3437	20.5625	26	30	39	35	48	48	63.25	76
	300	N/A	11.625	12.5	17.25	21.5625	27.375	31.5	40.5	36.625	49.625	49.75	65	78
B	150	8.1875	8.25	10.75	13.0625	16.9531	21.8125	26.4062	34	37.5	43	53.5	65	73.75
	300	N/A	8.6562	11.2812	13.875	17.8125	22.8125	27.9062	34	38.5	44.5	55.5	67.3125	44.25
BB	150	8.5156	8.5625	11.375	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	300	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	150	7	7.5	7.5	10.625	13.125	15.5	19	21	23.5	27.5	32	38.875	46
	300	N/A	8.0468	9.8437	12.1875	14.75	17.25	20.5	23	25.5	30.5	56	43.25	50
D	150	3.5	3.75	4.5	5.125	6.4062	7.5	9.25	10.375	11.5	13.7812	17	21	24
	300	N/A	3.9843	4.8906	5.9375	7.2812	8.5	1	11.375		15.2812	19	23.125	25.5
E	150	5.5	5.5625	6.75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	300	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F	150	3.7968	3.8437	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	300	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
G	150	6.6875	6.6875	8.125	11	14.25	19	22.5	27.25	34	36	45	54	62
	300	N/A	6.6875	8.125	11	14.25	19	22.5	29.25	34	36	45	54	62
H	150	.6875	.75	.9375	1	1.125	3.1875	1.25	1.375	1.4375	1.6875	1.875	2.125	2.375
	300	N/A	1.125	1.25	1.4375	1.625	1.875	2	2.125	2.25	2.5	2.75	3	3.375
APROX WEIGHT														

Bulletin No:C1001/CF1001 11.21.05

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