

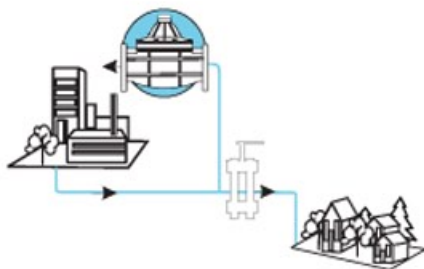


Pressure Relief Valve Model C401/CF401

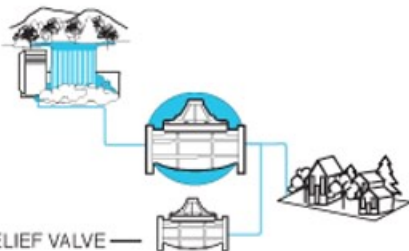
The Model C401/CF401 Pressure Relief Valve protects against excessive pressure in pump stations, distribution systems, and transmission mains by opening when the inlet pressure exceeds a preset value and discharges high pressure water to waste, pump, suction, or a zone of lower pressure.

The hydraulic pilot valve senses inlet pressure and reacts rapidly to an overpressure, causing the relief valve to open to a throttled position which permits discharge of a sufficient volume of high pressure water to prevent a pressure rise above its setting.

Typical Applications

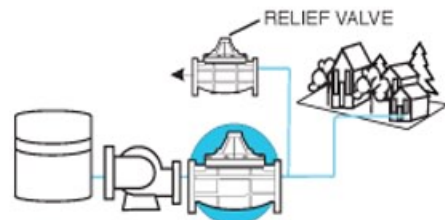


Protects against excessive pressure caused by quick closing valve (manual or automatic)

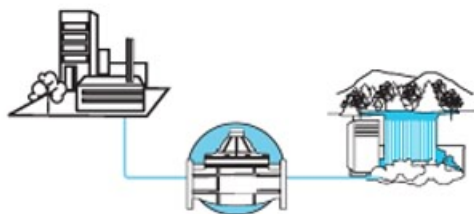


RELIEF VALVE —

Protects system or transmission main from excessive pressure in the event of a pressure reducing valve failure.



Protects against excessive pressure during pump station failure when the pump discharge valve is a slow opening and slow closing pump control valve; also protects against system pressure rise by bypassing excess water during low demand periods in a closed distribution system.



Protects against excessive pressure in a distribution system during periods of low demand (discharge to a reservoir or low pressure zone)



FLOMATIC VALVES

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MADE IN THE
USA

Specifications



- C401 - Full Port Globe Style
- CA401- Full Port Angle Body Globe
- CF401 - Reduced Port Globe Style
- CFA401-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

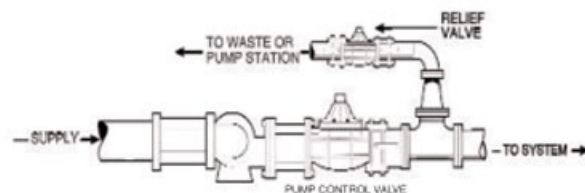
- Stainless Steel Seat Trim (Standard 12" and larger sizes)
- Heavy Spring for Vertical Installation
- Viton Disc Seal
- Stainless Steel Stem Bushing
- Indicator Rod Sizes 1 1/2" thru 4" (Standard 6" and larger sizes)

WARRANTY

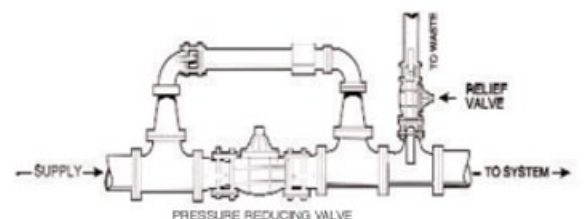
LIMITED THREE YEAR WARRANTY: Danfoss Flomatic Corporation warrants that its Automatic Hydraulic Control Valves are free from defects in material and workmanship for a period of three (3) years after shipment. Danfoss Flomatic will repair or replace any parts or components found to be defective within three years from the date of shipment. All removal and installation of equipment or parts shall be at buyer's expense. Danfoss Flomatic 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

A Relief Valve, which discharges to waste (atmosphere) should have a main line shut off valve at the **outlet side** as well as the inlet side to facilitate closure and avoid waste of a large volume of water when the relief valve is placed in service.



PRESSURE REDUCING STATION



PRESSURE REDUCING STATION

Note: Australian and Japanese Flange Connections are Available



Also Available with Full Port Angle Body Globe Style (CA401)

(Model CFA401 Reduced Ported)

FLOMATIC VALVES

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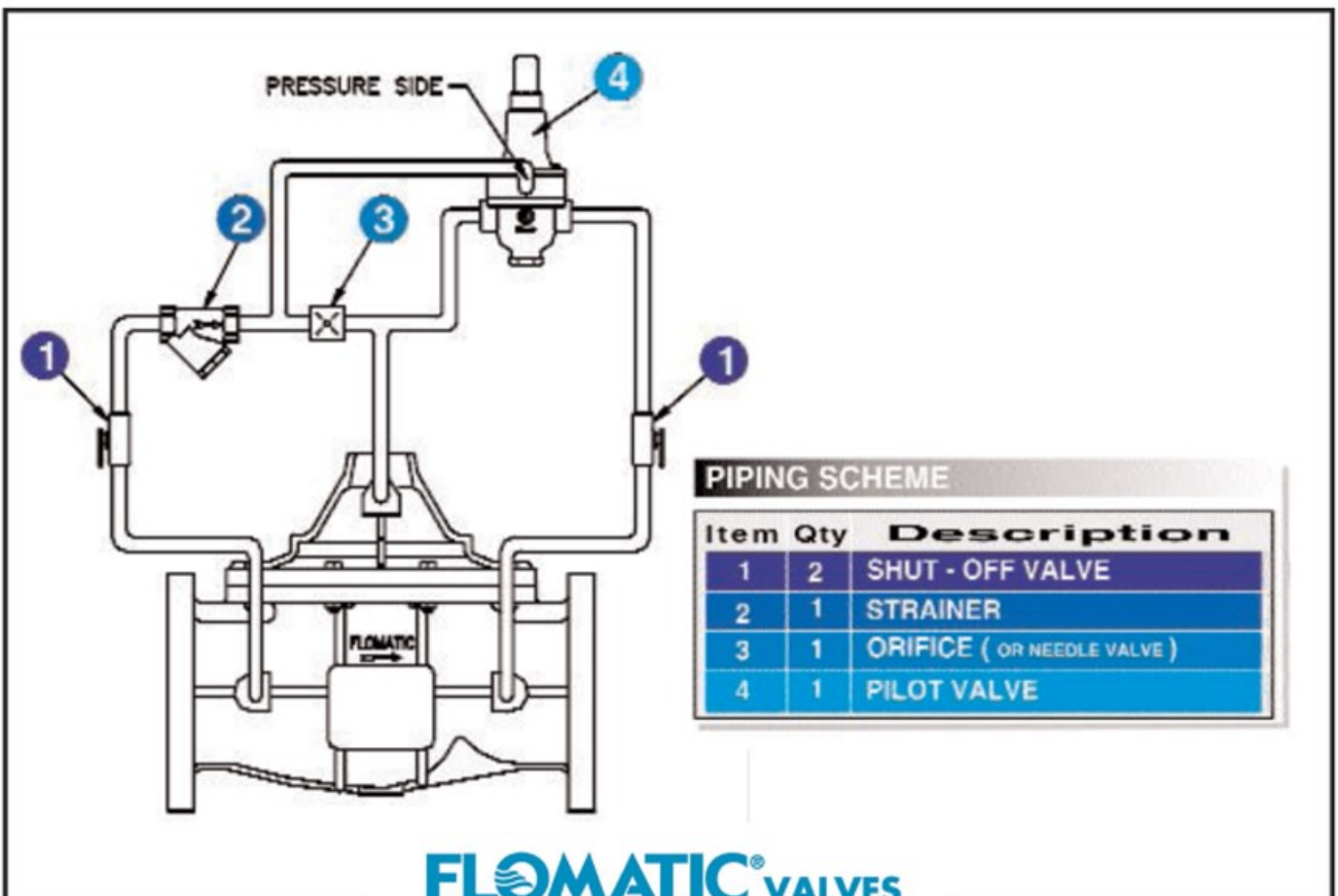
SIZING GUIDE for THROTTLING VALVES

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.

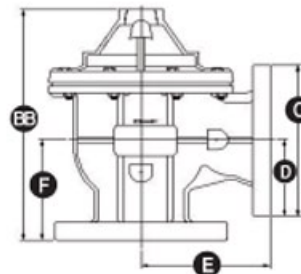
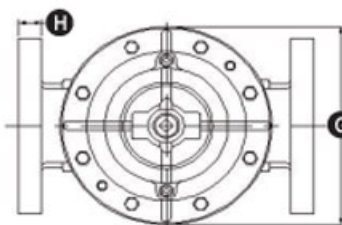
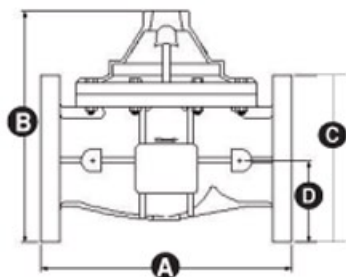
The tables below indicate the desired throttling valve size (inches) for designated maximum and minimum flow rates in gallons per minute (GPM):

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	-	-	-	-	-	-	-	-	-



Inches Model C401/CA401 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 CF401/CFA401 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										