

Series M116FM / M1116FM

ACV: Fire Pump Relief Valve

Size: DN50-DN200

The Watts M116FM (Globe) and M1116FM (Angle) Fire Pump Relief Valves meet all requirements for UL listed fire protection service. They automatically maintain a constant pressure in the fire protection system by relieving excess pressure. Available as Globe in Flanged and Grooved, and Angle in Flanged.

Features

- Pressure relief control is normally closed, held closed by an adjustable spring setting to maintain a constant inlet pressure to the main valve
- Stainless steel trim as standard, for greater reliability & service life
- Pressure gauges as standard, for ease of setting and confidence in performance
- Factory tested to assure accurate control, and long life.

Operating Pressure

- 150# Flanged: ANSI B16.42, Max WP 12 bar (1200 kPa)
300# Flanged: ANSI B16.42, Max WP 20.7 bar (2070 kPa)
- Grooved End: Max WP 20.7 bar (2070 kPa)
- Pilot Spring: 1.4 -13.8 bar (140-1380 kPa)
6.9 -20.7 bar (690-2070 kPa)

Specification

- Design Standard: UL 1478
- Connection Standard: Flanged to ANSI B16.42
Grooved to AWWA C606

Operating Principle

The main valve is controlled by a Pressure Relief Control. The Pressure Relief Control is normally closed, held closed by an adjustable spring setting to maintain a constant inlet pressure to the main valve.

When upstream pressure increases above the relief set-point, the Relief Control throttles open, increasing flow through the control tubing. Pressure is decreased in the main valve cover chamber, causing the main valve to modulate towards open, relieving excess upstream pressure. The desired system pressure is maintained. As the upstream pressure decreases below the relief set-point, the Relief Control throttles closed, restricting flow through the control tubing. Pressure is increased in the main valve cover chamber, causing the main valve to modulate towards closed, maintaining the desired upstream pressure. Should upstream pressure drop below and remain below the set-point, the main valve closes drip tight.

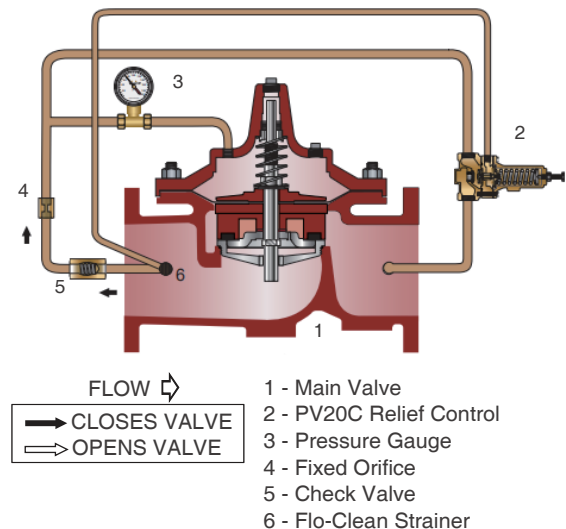
Approval



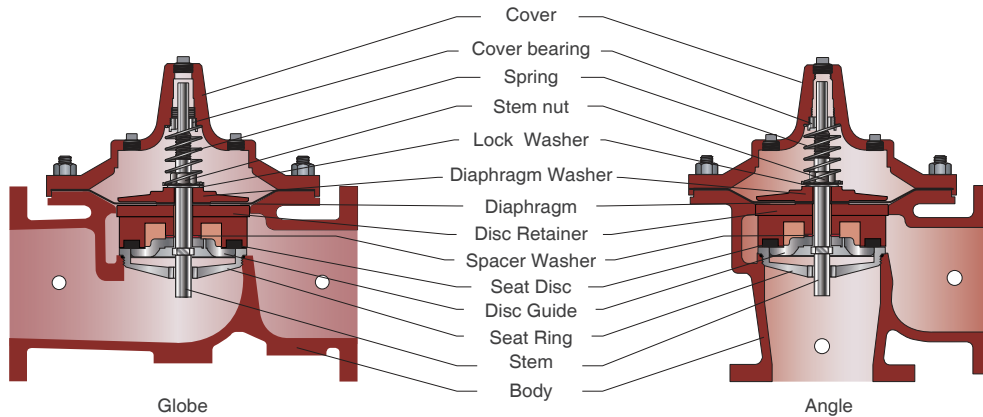
M116FM Globe



M1116FM Angle

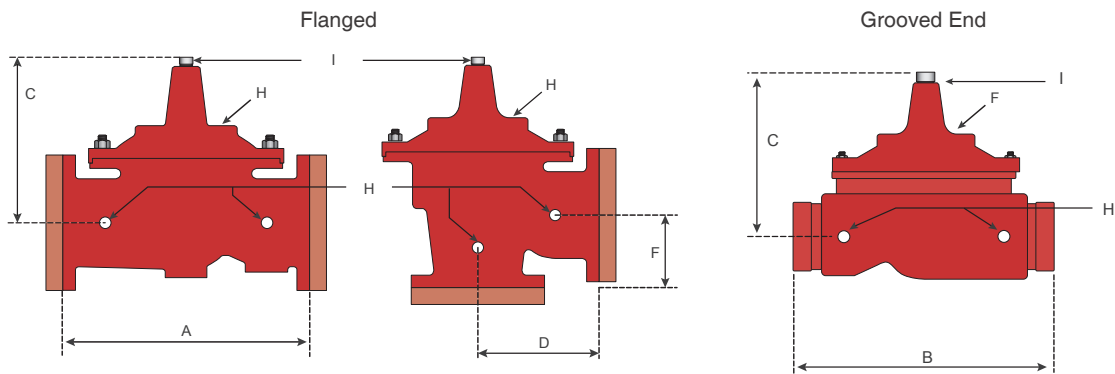


Material



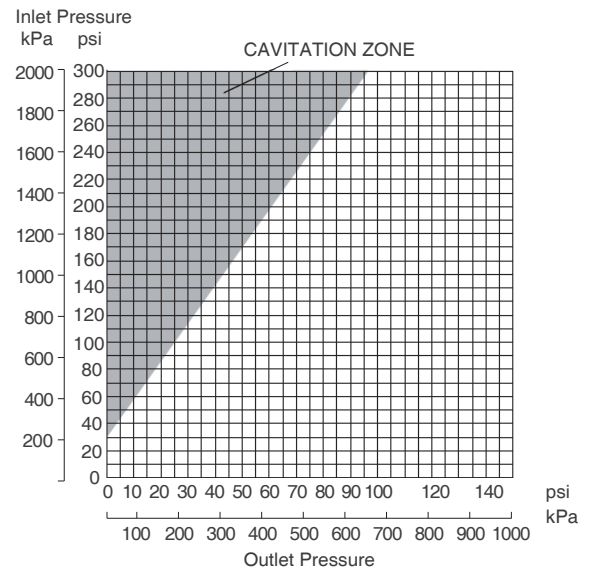
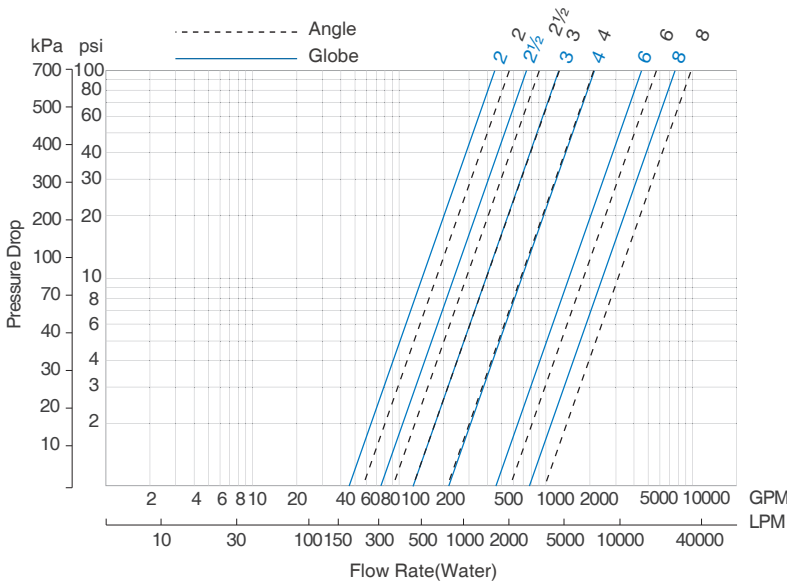
Component	Material
Body & Cover	Ductile Iron Fused Red Epoxy inside and out
Seat (Trim)	Stainless Steel - Xylan Coated (Optional)
Stem	Stainless Steel - Xylan Coated (Optional)
Spring	Stainless Steel
Elastomers	Buna-N
Pilot	Body: Copper Silicon Alloy Internals: Stainless Steel Elastomers: BUNA-N (Nitrile)
Pilot System	Strainer Flo-Clean: Brass or Stainless Steel Body, Monel Screen Fittings: Lead Free* Brass or Stainless Steel Control Tubing: Copper or Stainless Steel
Pressure Gauge	UL Approved 0-2070 kPa

Installation Dimensions



Size		Globe Flanged 150#	Globe Flanged 300#	Globe Grooved	Center	Angle	Angle	Port Size NPT	Port Size NPT
		A	A	B	C	D	F	H	I
in	DN	mm	mm	mm	mm	mm	mm	mm	mm
2	50	238	245	229	165	121	83	10	15
2½	65	279	295	279	191	140	102	15	15
3	80	305	337	318	210	152	102	15	15
4	100	381	397	381	270	191	127	20	20
6	150	508	533	508	340	254	152	20	20
8	200	645	670	645	406	324	203	25	25

Characteristic Curves



Flow Rate

Valve Size - Inches		2	2½	3	4	6	8
Suggested	Maximum Continuous Flow Rate	795	1135	1836	3028	7000	11730
	Maximum Intermittent Flow Rate	1003	1476	2233	3785	8700	15140
	Minimum Flow Rate	23	34	57	60	65	95
CV	CV Factor (Globe)	182	284	425	710	1465	2890
	CV Factor (Angle)	216	344	473	785	2160	3365

LPM (Water)

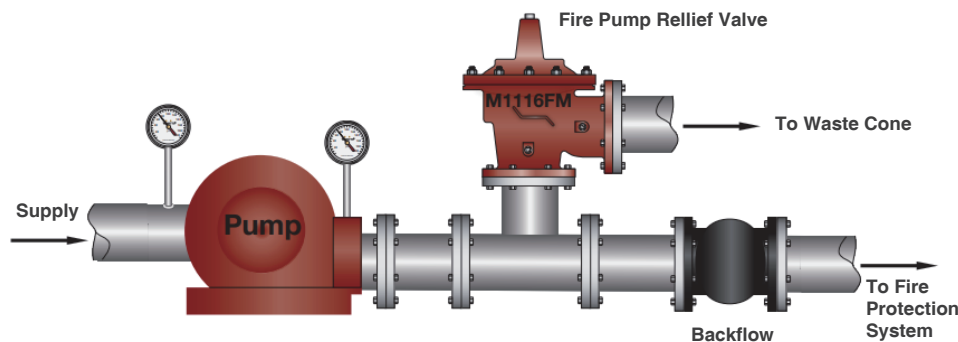
Installation & Start-Up

Start-up of an Automatic Control Valve requires following proper procedures. Time must be allowed for the valve to react to adjustments and the system to stabilize. The objective is to bring the valve into service in a controlled manner to protect the system from damaging overpressure.

NOTICE: Avoid mounting valves in a vertical discharge position (valve stem horizontal or cover pointed sideways.) Valves mounted in this position may not perform as tested and approved.

- Clear the line of slag and other debris.
- Install the valve so that the FLOW ARROW marked on the valve body matches the flow through the line.
- Install pressure gauge (supplied) in the fitting on valve tubing.

1. Turn the Relief Control adjustment screw counterclockwise (out). This lowers the initial relief set-point, allowing the setpoint to be increased to the desired setting.
2. Loosen a tube fitting at a high point on the valve. This allows the cover to vent trapped air during initial filling of the valve.
3. Start the pump to supply fluid / pressure to the valve.
4. Tighten the tubing when all air is vented from the cover as indicated by continual flow of fluid.
NOTICE: THE RELIEF SET-POINT SHOULD BE LOWER THAN DESIGNED AT THIS TIME.
5. Turn the Relief Control adjustment screw clockwise (in) slowly, allowing time for the pressure to gradually increase to the desired set-point.



NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

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