



## M-XF Series

### Safety Excess Flow Valves

#### Description

GVS<sup>®</sup> Malema valves provide instant shut-off in the event of a line break, preventing the release of hazardous or flammable products to the area which could result in a disastrous fire or explosion that could harm personnel, equipment, and the environment.

#### Operation

As the fluid enters the valve, it flows through the orifice to the outlet. The orifice and tapered piston create a venturi effect, accelerating the flow through the valve. At a preset flow rate, the pressure differential offsets the spring-loading of the piston and shuts off the valve. Fluid can flow through the valve in either direction, however, the flow will be shut off in the direction indicated on the valve.

Adjustment is achieved by means of an externally adjustable screw that positions the piston closer or farther away from the orifice. Turning the adjusting screw clockwise to reduce the flow area causes actuation at lower preset flows.

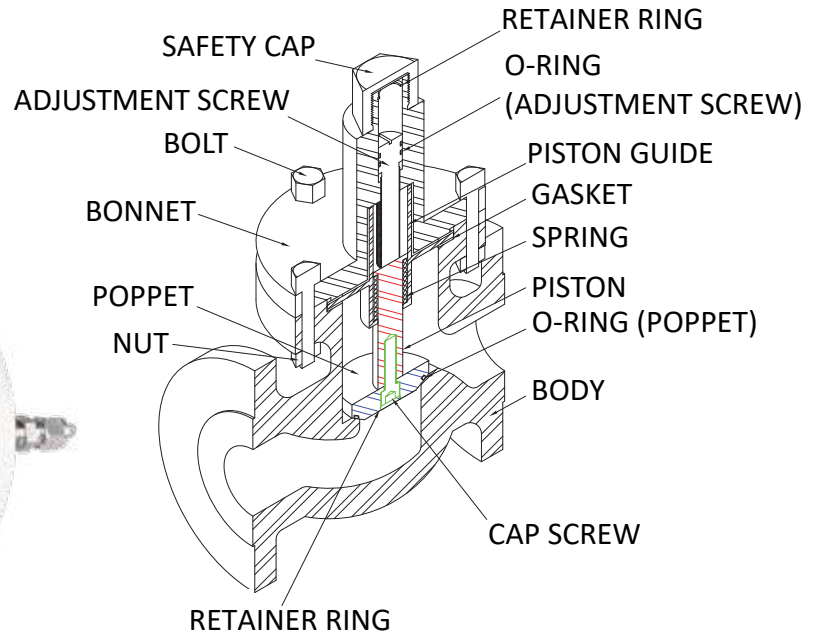
#### Applications

All LPG tank cars and transport trucks are required by law to have excess flow valves installed. In addition, state LPG regulatory bodies require excess flow valves on all LPG storage vessels storing products for domestic delivery and consumption.

#### Features

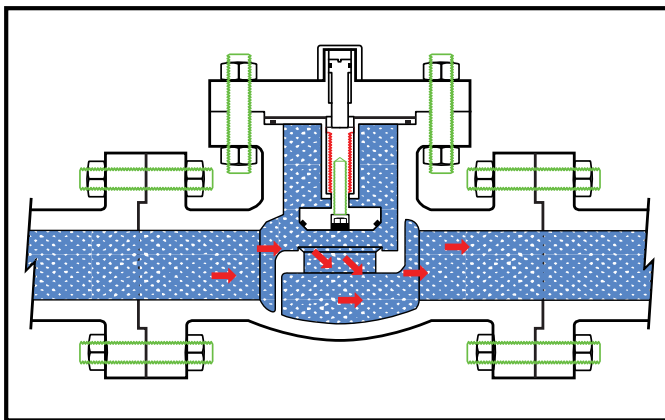
- In-line repairable (repair or inspection without removal of body from pipeline)
- Broad calibration range
- Effective operation with liquids or gases
- In-line flow
- Available in sizes from 3/4" to 12"
- ANSI classes 150 to 2500
- Flanged, Socket Weld, Butt Weld, or Threaded connections
- Fuel lines
- Pollution control
- Chemical processing
- Gas and hydraulic lines
- Petroleum and gas installations

## Cut-Away Illustration

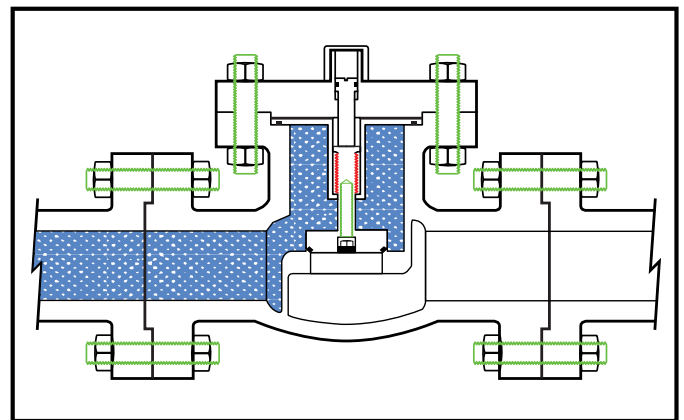


The mounting position for this excess flow valve is horizontal. These valves can also be mounted vertically; this will change trip settings by approximately 15% (this is easily corrected since one can adjust the valve to counter for this change). The valve can be easily maintained in the field without removing from the pipeline as all of the components slide out of the top upon disassembly.

## How It Works



Valve Open = Normal Flow



Line Break = Flow Shut-Off

## Built-in Reset Valve

Reset mechanism is integrated to the excess flow valve which has several advantages:

- Eliminates additional piping and hardware required in upstream of the valve.
- Reduces the cost of installation.
- Ease of installation.

## How Reset Valve Works

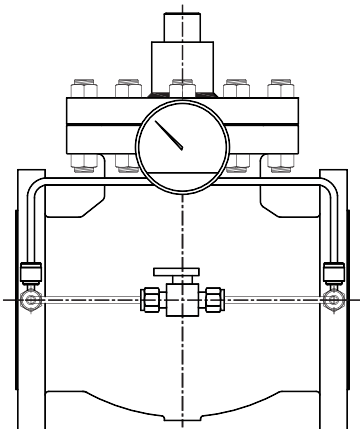
Execution of below steps will result in valve reset because of equalized pressure on the both sides of valve:

- 1- Close the isolation valves in both sides of excess flow valve (upstream and downstream) on the pipeline
- 2- Open the isolation valve on the upstream side of the excess flow valve
- 3- Open the built-in reset valve on the bypass line of excess flow valve
- 4- Pressure equalization on both sides of the valve will cause the reset of the excess flow valve (valve opens)
- 5- Open the downstream isolation valve
- 6- Close the built-in reset valve on the bypass line of excess flow valve

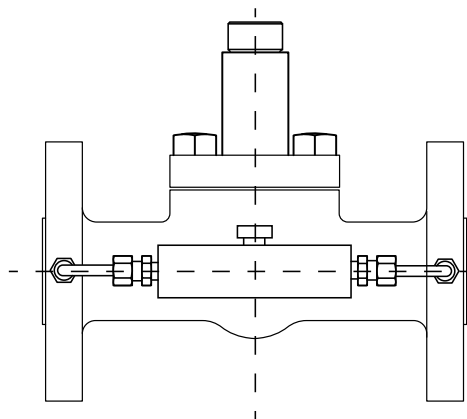


## Additional Accessories

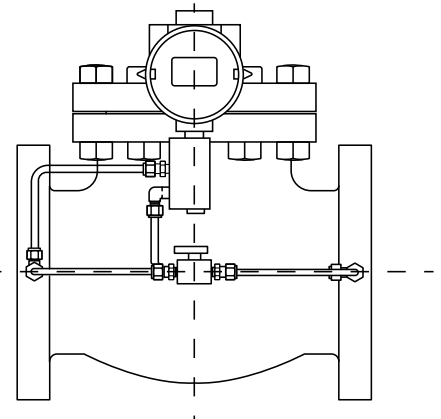
- OPEN/CLOSE indication can be provided with a use of differential pressure gauge.
- Remote OPEN/CLOSE contact signal can be provided with a use of differential pressure switch.
- A combination of built-in reset with above features is also available as an option which is useful for integrating with safety shutdown systems and other control strategies.



**Built-in Reset Valve with  
Differential  
Pressure Gauge**



**Built-in Reset Valve with  
Differential  
Pressure Switch**



**Built-in Reset Valve with  
Explosion Proof Differential  
Pressure Switch**

Please contact the factory for other solutions and recommendations.

## Specifications

Calibration Range	Air* : 0.5 - 40,000 scfm    Water : 0.1 - 2,500 gpm    (All valve sizes combined)
Set Point Accuracy	±10% maximum
Repeatability	±2%
Material Versions	<ul style="list-style-type: none"> <li style="width: 33%;">• Carbon Steel</li> <li style="width: 33%;">• Forged Carbon Steel</li> <li style="width: 33%;">• LT-Carbon Steel</li> <li style="width: 33%;">• 316 Stainless Steel</li> <li style="width: 33%;">• Forged 316 Stainless Steel</li> <li style="width: 33%;">• Exotic Alloys</li> </ul>
Port Sizes	• 3/4"   • 1"   • 1 1/2"   • 2"   • 3"   • 4"   • 6"   • 8"   • 10"   • 12"

\* Air Pressure at 14.7 psig & temperature at 70° F

## Ordering Code

**Example: 1.00-M-XF-SS-300- RF-VT-\*\***

Standard Part Numbering												
Valve Size		Model	Body Material			ANSI Class	Connection Type		Adj. Screw O-Ring	Poppet O-Ring	** Reset Valve	
Code	Size		Code	Type	ASTM	Code	Code	Type	Code	Type	Code	
0.75	3/4"	M-XF	CS	Carbon Steel	A216 WCB	150	RF	Raised Face	V	Viton®	0	
1.00	1"		SS	316 SS	A351 CF8M	300	RTJ	Ring Type Joint	K	Kalrez®	1	
1.50	1 1/2"		FCS	Forged CS	A350 LF2 Cl1	600	FN	FNPT	E	EPDM	2	
2.00	2"		FSS	Forged SS	A182 F316	800	SW	Socket Weld	F	FKM	3	
3.00	3"		LCC	LT CS Steel		1500	BW	Butt Weld	N	NBR	4	
4.00	4"					2500			T	PTFE		
6.00	6"											
8.00	8"											
10.0	10"											
12.0	12"											

**NOTE: Additional valve sizes and materials are available upon request.**

- \*\* 0: No built-in reset valve
- 1: Built-in reset valve
  - 2: Built-in reset valve with DP gauge
  - 3: Built-in reset valve with DP switch
  - 4: Built-in reset valve with explosion proof DP switch

## Standards

Valve design per ASME B16.34

Flanged and Butt Weld ends are in accordance with ASME B16.5 and B16.25

Socket Weld and Threaded ends are in accordance with ASME B16.11

Flange dimensions are in accordance with ASME B16.5

Manufactured per: ISO 9001: 2015: Cert.no 0052985-01

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