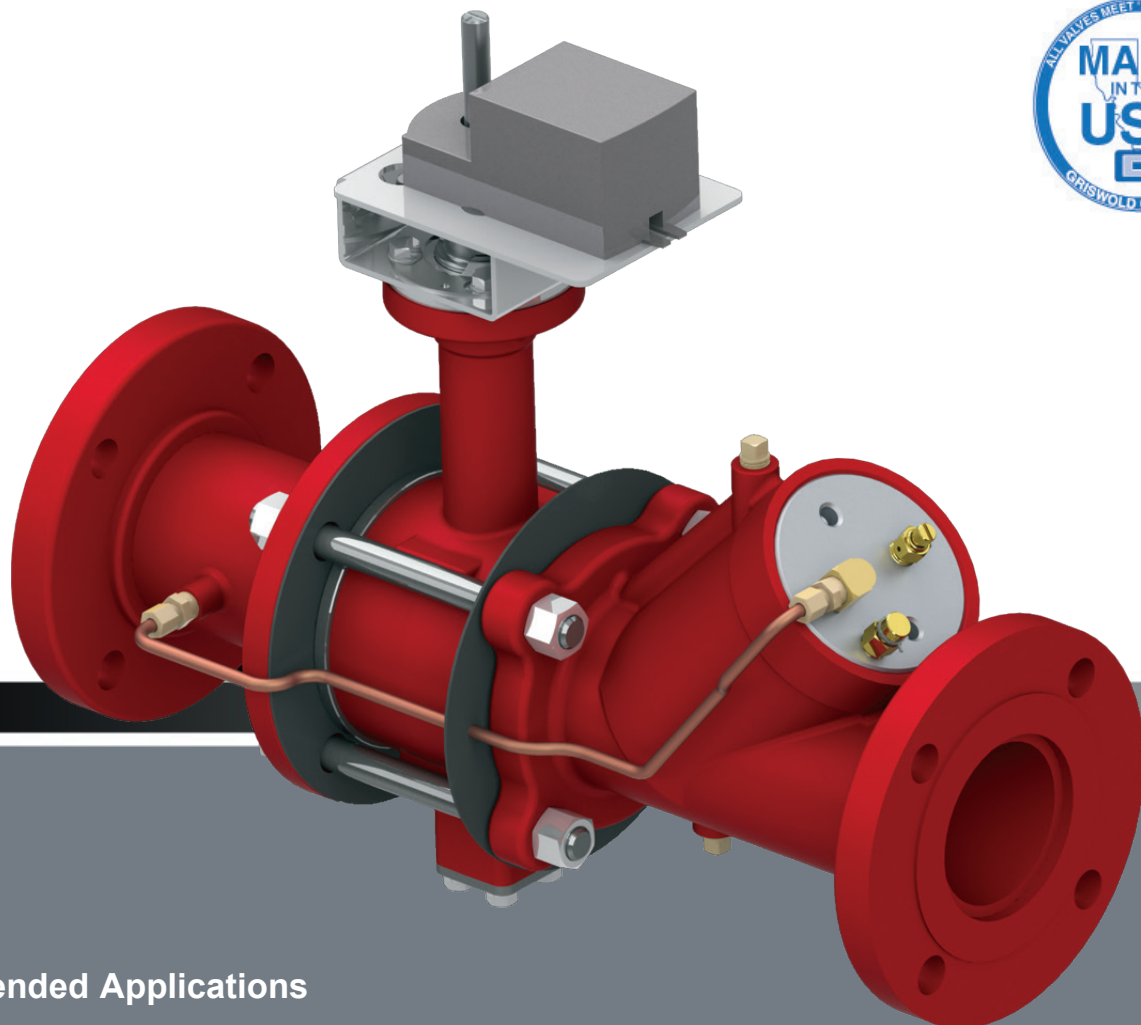


PIM™ - Pressure Independent Module

Maintain Constant Pressure Differential Across Anything!



Recommended Applications

- Where ΔT needs to be improved
- Where HVAC system efficiency needs to be improved and optimized
- Where temperature variance can not be risked, such as hospitals, laboratories or prisons
- Where longer actuator life is required
- Where existing actuated control valves need to be converted to PI technology
- Where existing manual valves, piping branches, or equipment need to be Pressure Independent

Absolute Control. **Optimized Efficiency.**

Ultimate flexibility...mix and match to meet your exact need!

PIM™-A

The Griswold Controls universal pressure regulator (PIM™) can be used with many different valves to provide pressure independent performance, from manual valves to actuated valves. The PIM™ module can also be used to maintain a constant pressure differential across a branch or anything that needs to be independent of pressure changes.

Benefits:

- ✓ Maintain a constant pressure drop across any valve, branch or equipment including products already in service. Can also be combined with other valves from Griswold Controls.
- ✓ +/-5% accuracy through the entire pressure range
- ✓ Operates automatically off system pressure, no electronics required
- ✓ Available in 3", 4" and 6" size with Flanged or Grooved End connections
- ✓ Adjustable pressure drop range of 4-25 psi

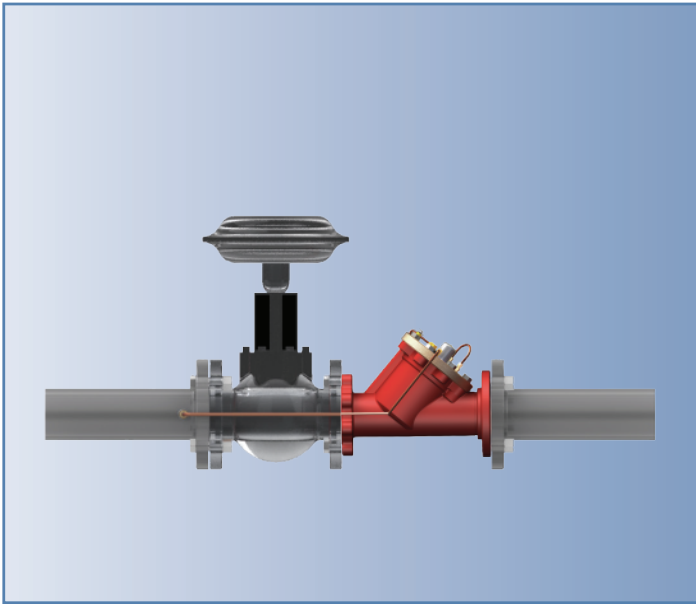


Figure 1 PIM™ Module

PIM™-BV

Use the PIM™ pressure regulating module with the Griswold Controls manually operated ball valve.

Benefits:

- ✓ Equal percentage parabolic port profile provides smooth flow control when manually setting valve
- ✓ Set the valve once and flow will remain constant despite pressure changes. The equivalent of a externally adjustable automatic flow limiting valve!
- ✓ Change flow as required even after system is installed and set up and pressure regulating module will maintain flow +/-5% regardless of pressure changes

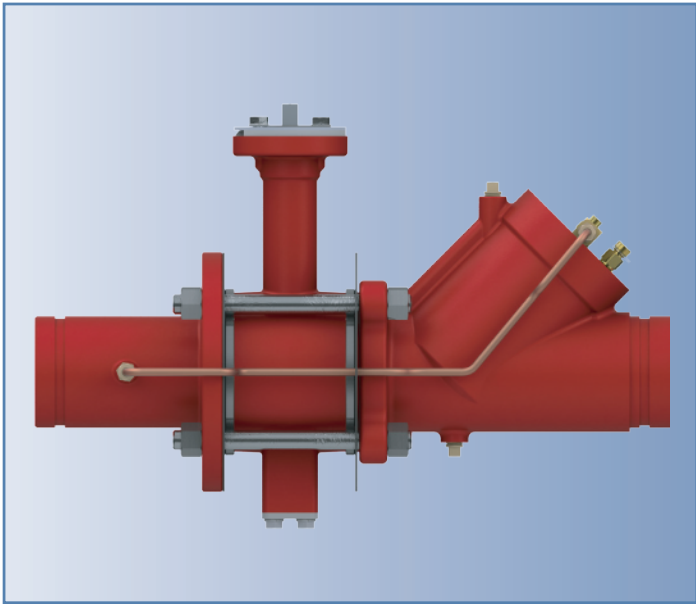


Figure 2 PIM™-BV

PIM™-V

Use the PIM™ Module with the Griswold Controls Unimizer - Actuated Ball Valve for a true Pressure Independent Valve.

Benefits:

- ✓ All the benefits of an actuated PI valve at a fraction of the price
- ✓ Maintain constant flow regardless of pressure changes in system
- ✓ Prevent over flow and under flow in system
- ✓ Improve system delta ΔT and therefore reduce flow required
- ✓ Extend actuator life
- ✓ Use any 1/4 turn LOW torque actuator
- ✓ No actuator to program or set up
- ✓ Control flow up to 165gpm with the 3" valve, 365 gpm with the 4" valve and 505 gpm with the 6" valve

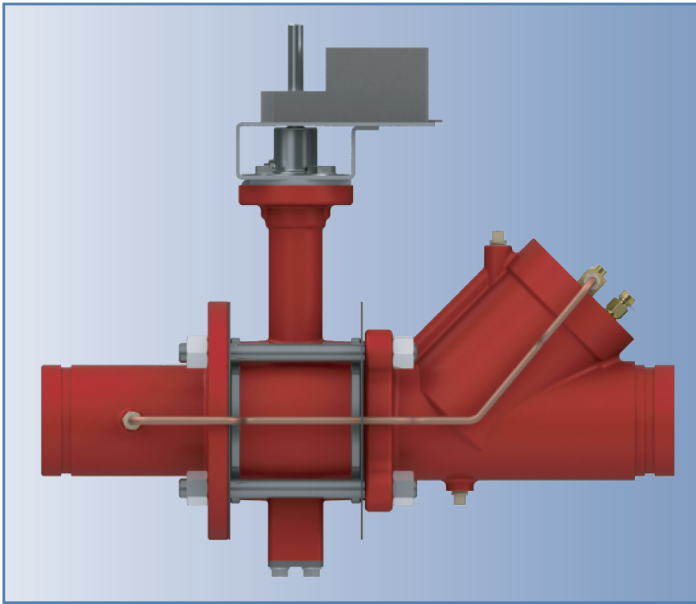


Figure 3 PIM™-V

PIM™-V-MS

Includes PIM™ Module, Actuated Control Valve and Metering Station

Use the PIM™ pressure regulating module with an Actuated Control Valve for a true Pressure Independent Valve with a Metering Station for flow verification

Benefits:

- ✓ Use any 1/4 turn LOW torque actuator compatible with control valve
- ✓ No actuator to program or set up
- ✓ A Venturi Metering Station can be used to verify flow for LEEDs requirements as well as monitor flow usage
- ✓ Control flow up to 165gpm with the 3" valve, 365 gpm with the 4" valve and 505 gpm with the 6" valve

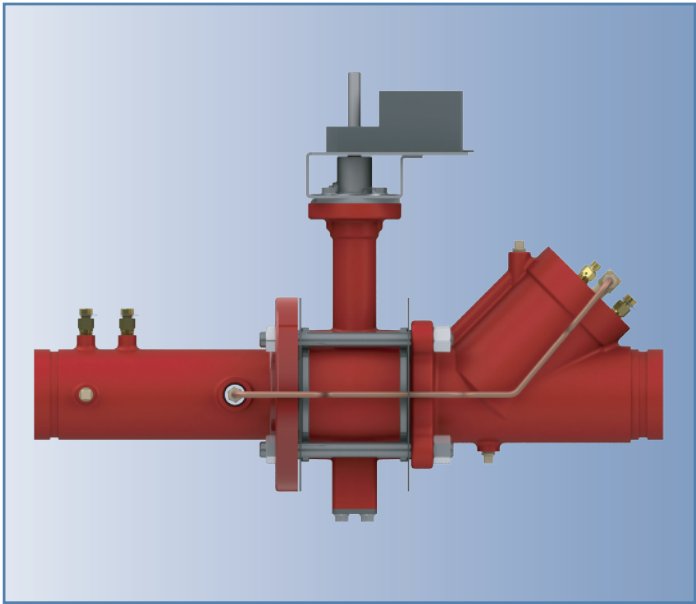


Figure 4 PIM™-V-MS

Pressure Independent Module

Features & Benefits

(See F-5363 for additional information on PI valves)

- Save valuable time by eliminating Cv selection in the valve selection process. Simply choose the smallest Pressure Independent Valve that satisfies the flow requirements and you will have valve authority.
- Control flow exactly-especially at reduced loads or loads less than design
- Control flow exactly-no overflow or underflow at coils ever
- Lower system energy costs through efficient heat transfer by providing relief from many causes of low ΔT at coils
- Increase actuator life expectancy-less valve and actuator movement needed to maintain set point since pressure changes are compensated for by the diaphragm cartridge assembly instead of by actuator position changes.
- Simple retrofit—no need to know exact flow requirement
- Simple retrofit-no balancing required with pressure independent flow control
- Eliminates balancing valves
- Provide more cooling from existing chillers as opposed to buying additional or new chillers
- Multifunction housing reduces piping and installation time as well as number of components required.
- P/T test ports standard for checking and testing valve and coil temperature and pressure.
- Eliminate reverse return piping, oversized main piping, and undersized branch piping hydronic strategies.

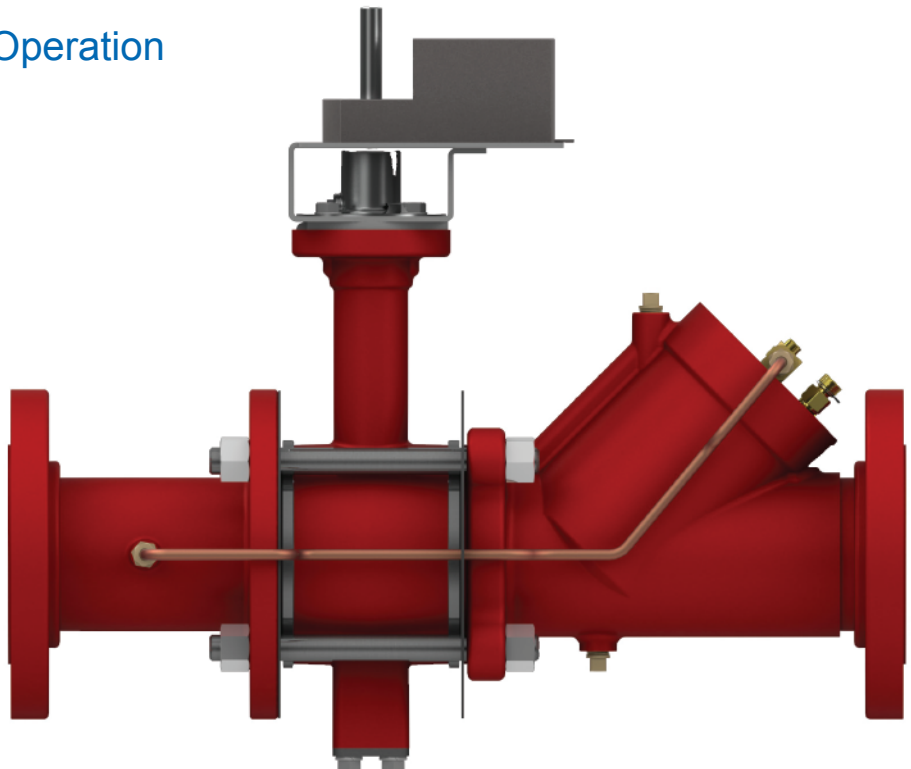
Pressure Independent Valve Operation

When conventional 2-way valves in variable flow systems open or close, it causes a pressure change to other valves in the system.

Pressure Independent Control Valves maintain the required flow rate regardless of these pressure changes.

The actuator modulates the Pressure Independent Control Valve to a required fixed flow based on load (or zone) requirements, independent of pressure. When the zone is satisfied the actuator stops rotating and the valve is now set at optimum flow. If the system pressure changes the internal diaphragm compensates for the pressure change and maintains constant flow rate without cycling by the actuator. The flow does not change until the control system tells the actuator to change the valve position based on load changes.

This stable flow means less work for the actuator, and actuator life is therefore increased.



Pressure Independent Control Valves can limit the flow rate to almost an infinite number of flow rates below the specified maximum, providing balancing at any point below and including the maximum flow rate.

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