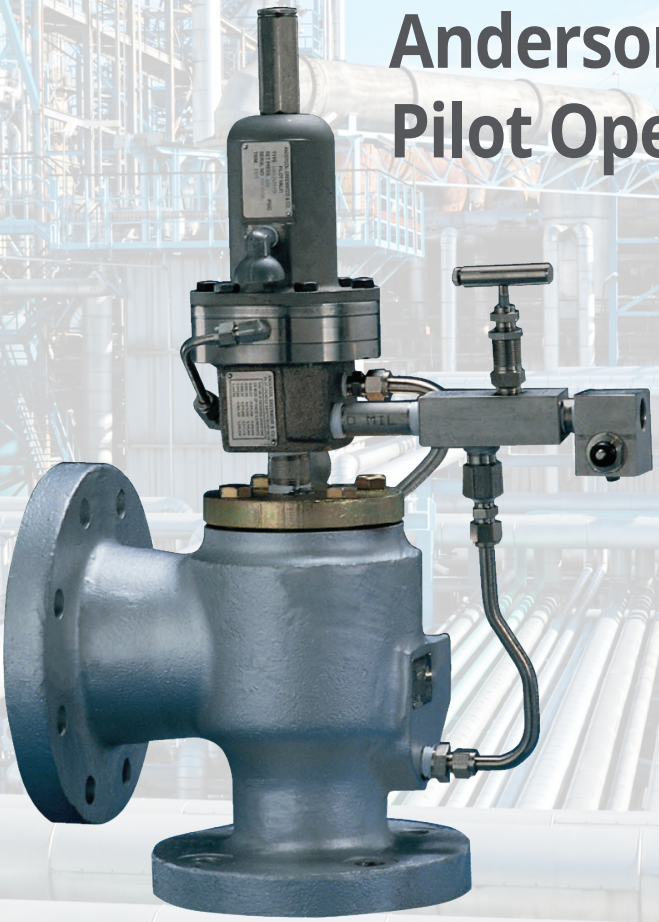
CONTROL SOUTHERN

Emerson Impact Partner

EMERSON™

Anderson Greenwood Series 500 Pilot Operated Relief Valve



- Improved product quality and productivity for **Saturated Steam Systems**
- Set pressure from 15- 720 psig
- Wide temperature applications from -65˚F to 515˚F
- Increased system output **operates closer to set pressure** – total valve tightness of 95% of set pressure
- Balanced for back pressure **eliminates need of** fragile and **expensive bellows**
- Modulating action offers **less product loss**

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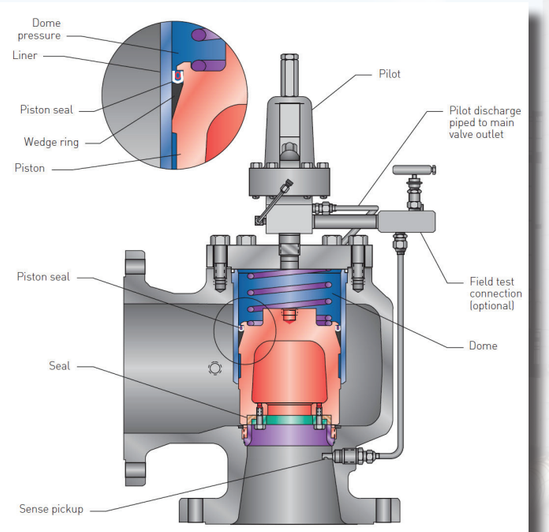
Solutions for Safety, Environmental Protection, and Productivity Improvement.

Series 500 Modulating Safety Relief Valve

The Series 500 is a modulating, soft-seated pilot operated valve offering premium tightness with the ability to handle temperatures from -65°F to 515°F (-54°C to 268°C). It is designed to decrease leakage associated with metal-seated safety relief valves under extreme operating temperature conditions. The soft seat in its main valve is more resistant to particulate damage than a metal seat, has a longer service life and can be replaced quickly while the valve body remains installed in the line.

Additionally, its unique design enables the main valve to be tight at pressures up to set point. After relieving and reseating, it stays bubble-tight, cycle after cycle.



Features

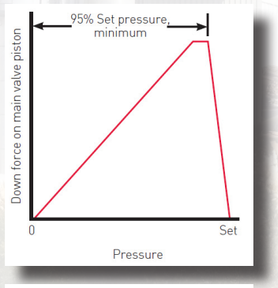
- **Increased system output** with total valve tightness to 95% of set pressure without leakage.
- All plastic seats and seals **provide chemical compatibility**.
- Balanced design ensures proper valve operation and lift **unaffected by back pressure**, eliminating the need for costly and fragile metal bellows.
- **Unique field test capability** allows accurate set pressure **verification with valve in service**.
- No system isolation block valve required.
- Resilient seats greatly extend service life and reduce maintenance cost, **eliminating expensive metal seat lapping**.
- **Reduced product loss** and pollution through soft seats for premium tightness before and after relief cycles.
- Patented pressure responsive **piston drag in larger sizes**.
- Modulating action minimizes flow and resultant noise during normal system upset, reducing noise abatement costs.
- Easy, single set pressure **adjustment is accurate and dependable**.
- ASME Section VIII **Code Stamp for steam, gas and liquid service** and CE mark to European PED 2014/68/EU.

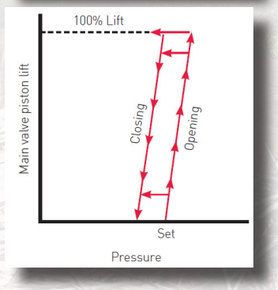
Specifications

- Durable but replaceable PTFE seat in main valve, located on piston to maximize seat sealing ability. A totally captive seat design eliminates seat extrusion at elevated temperatures.
- PTFE/PEEK seals throughout main valve and pilot for optimum chemical resistance, typically in boiler feed water.
- Dual diaphragm pilot for minimum first leak-to-relief pressure.
- Set point indicator button option for field test capability.
- Field replaceable main valve nozzle.
- Remote sense option at no added cost.
- Lettered orifice valves meet API standard 526 dimension requirements.

Technical Data

Sizes	1½" x 2" to 10" x 14" (DN 40 to 250)
Orifices	0.110 to 63.5 in^2 (0.710 to 409.7 cm^2)
Inlet Ratings	ANSI Class 150 to 600
Temperature Range	-65°F to + 515°F (-54°C to + 268°C)
Set Pressures	15 to 720 psig (1.03 to 49.6 barg)
Code	ASME VIII



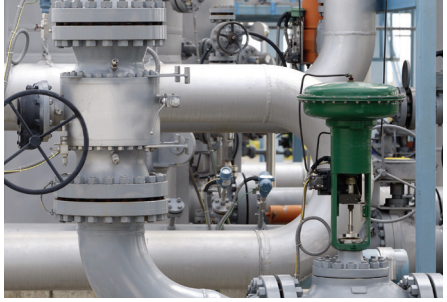


Operation

In normal operation, the system pressure acts on the area contained by the main valve seat at the bottom of the free-floating differential area piston and on the top of the piston. As the top of the piston is larger than the bottom (seat area), there is a large downward net force holding the piston closed. Under static conditions, the seating force increases as the system pressure increases and approaches set point.

When the set pressure is reached, the pilot opens and partially depressurizes the dome. This reduces the force on the top of the piston to the point where the upward force on the seat area can overcome the reduced downward loading. This causes the piston to lift, resulting in modulated flow through the main valve.

When the relief demand has been satisfied, the pilot closes. Full system pressure is diverted to the dome and the piston moves downward, closing the main valve. The pilot exhaust is always discharged to the main valve outlet.

Valve & Mechanical Services

Shop and Field Capabilities

Valve emergencies do not adhere to an 8-to-5 schedule and neither do we. Control Southern's technicians are available for on-call emergency repair at our facilities or yours. For field service, our mobile machine trailers are equipped with test stands, lathes, lapping machines and tools for testing, repair, welding and custom fabrication.

- Valve Asset Optimization Program
- Pressure Relief Valve Services
- Valve and Actuator Repair Services
- Product and Replacement Part Inventory
- Mobile Trailer & Valve Shop Capabilities

MOV Diagnostics Program

AOV and MOV preventive maintenance programs to increase overall health, performance and reliability.

Our Diagnostics Program can offer a unique approach to outage scope identification. Obtaining an accurate health report including details for the performance of both actuators and valves can isolate which specific assets need to be removed and repaired.

- Non-Intrusive
- Fast, easy and accurate
- Tracking & Trending: Custom Reports
- Predictable outage cost and performance
- Improved plant efficiency through optimal valve performance
- Decreased unscheduled, unexpected and non-budgeted repairs by detecting problem valves prior to failure
- Lower repair costs by focusing only on valves that require maintenance
- Ensures proper parts are available and on-hand

CONTROL SOUTHERN
When integrity leads, success follows

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24/7 Emergency Services

SERVICES LOCATIONS: Macon & Atlanta, Georgia | Jacksonville & Lakeland, Florida | Chattanooga, Tennessee | Decatur, Alabama