

PressureGuard™

Self-Contained Hydraulic Emergency Shutdown Systems



BETTIS™


EMERSON™
Process Management

Design and Construction

Emerson Process Management - Valve Automation is a recognized leader in automated valve control in remote areas of the world.

Bettis™ actuators provide THE reliable solution for Emergency Shutdown (ESD) service.

PressureGuard™ ESD systems do not depend on an external power source.

Emerson Process Management – Valve Automation has been providing reliable solutions for the pipeline, process and production segments of the energy industry and myriad other industries for more than 55 years. They have established themselves as an innovator, with products that fully automate valves under the most rigorous conditions and in some of the most remote areas in the world. Our product quality is supported by ISO 9001 designations indicating full compliance with global standards for quality and documentation.

PressureGuard™ Self-Contained Hydraulic Emergency Shutdown (ESD) Systems provide reliable valve shutdown capability when an external power source is either not available or not dependable. They can be used with either rotary or linear hydraulic operators to provide a fail-safe system for use with ball, plug, and other quarter-turn valves, as well as reverse-acting gate and other linear operated valves.

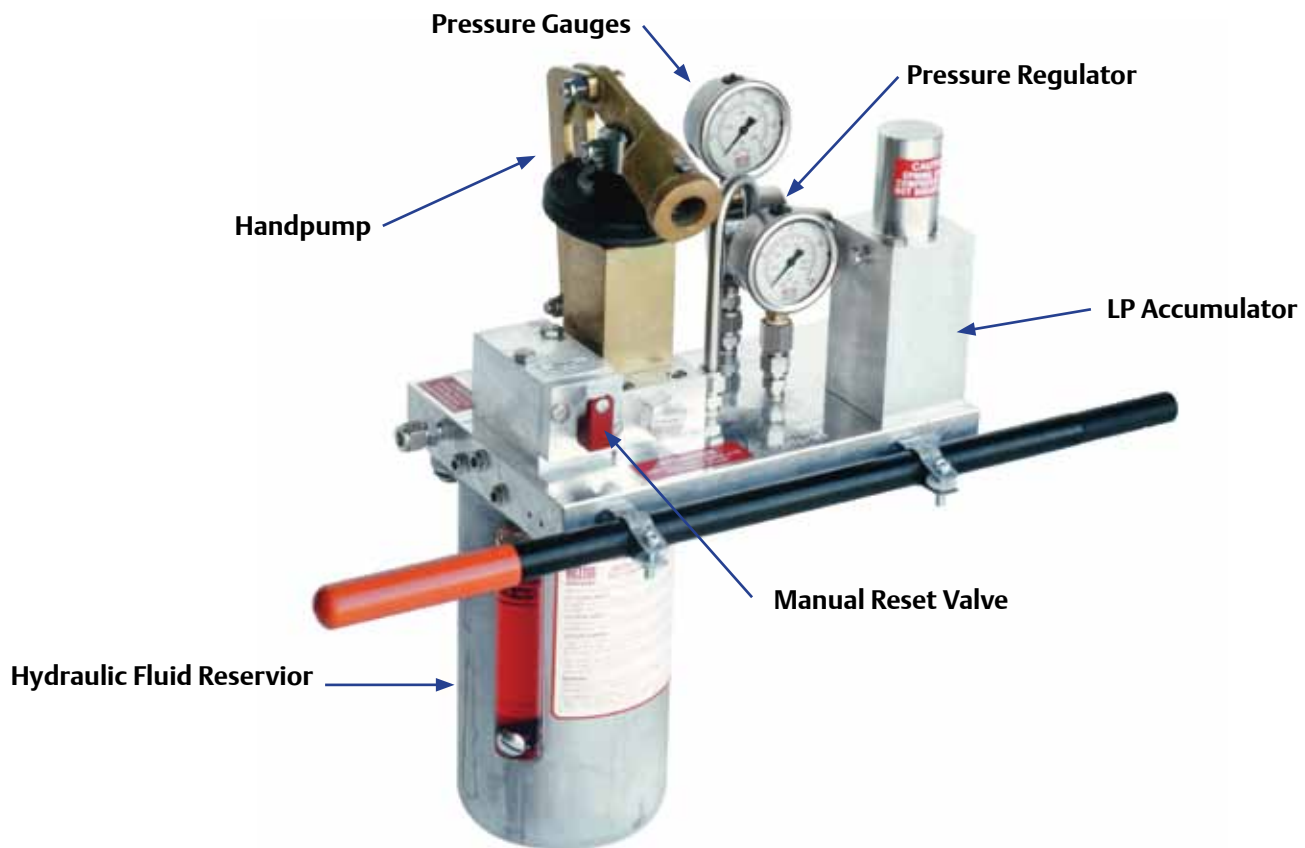
Benefits

- Suitable for remote, unmanned, unpowered and critical service.
- Adaptable for service with quarter-turn or linear actuators.
- Standard hydraulic model available for all valve sizes and configurations.
- Modular design to simplify maintenance.
- Eliminates need for plant air, fuel gas, electricity or nitrogen backup.
- High pressure, zero leakage control.
- Minimum of working parts
- Adaptable for use with SCADA systems or remote signals.
- Fail safe design.



Product Features – Control System Module

The Pressure Guard self-contained hydraulic control systems are supplied with a basic manifolded control package that provides a one-way local control using the handpump. In addition to its reliability, it provides quick and simple maintenance.



Hydraulic Fluid Reservoir

Available in 200-5,000 cu. in. displacements. Fitted with snubber and level indicator.

Handpump

Manually transfers hydraulic fluid from the reservoir to force it under pressure into the actuator and control system.

Pressure Gauges

High pressure (top) gauge monitors hydraulic pressure supplied to the actuator. Low pressure (bottom) monitors pressure in the low pressure control circuit.

Pressure Regulator

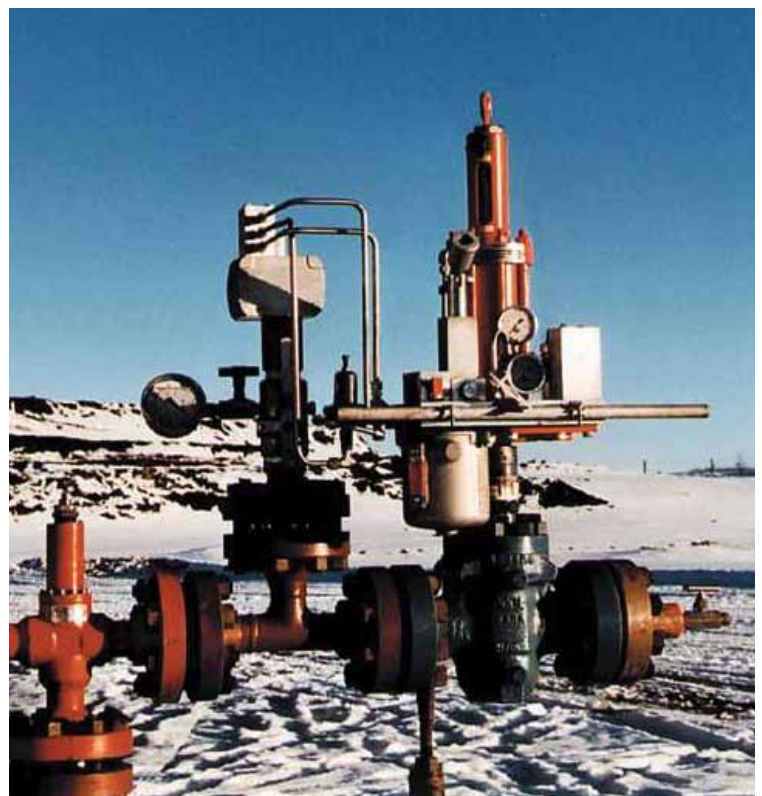
Reduces actuator high pressure to 100 psig for use of low pressure control components.

LP Accumulator

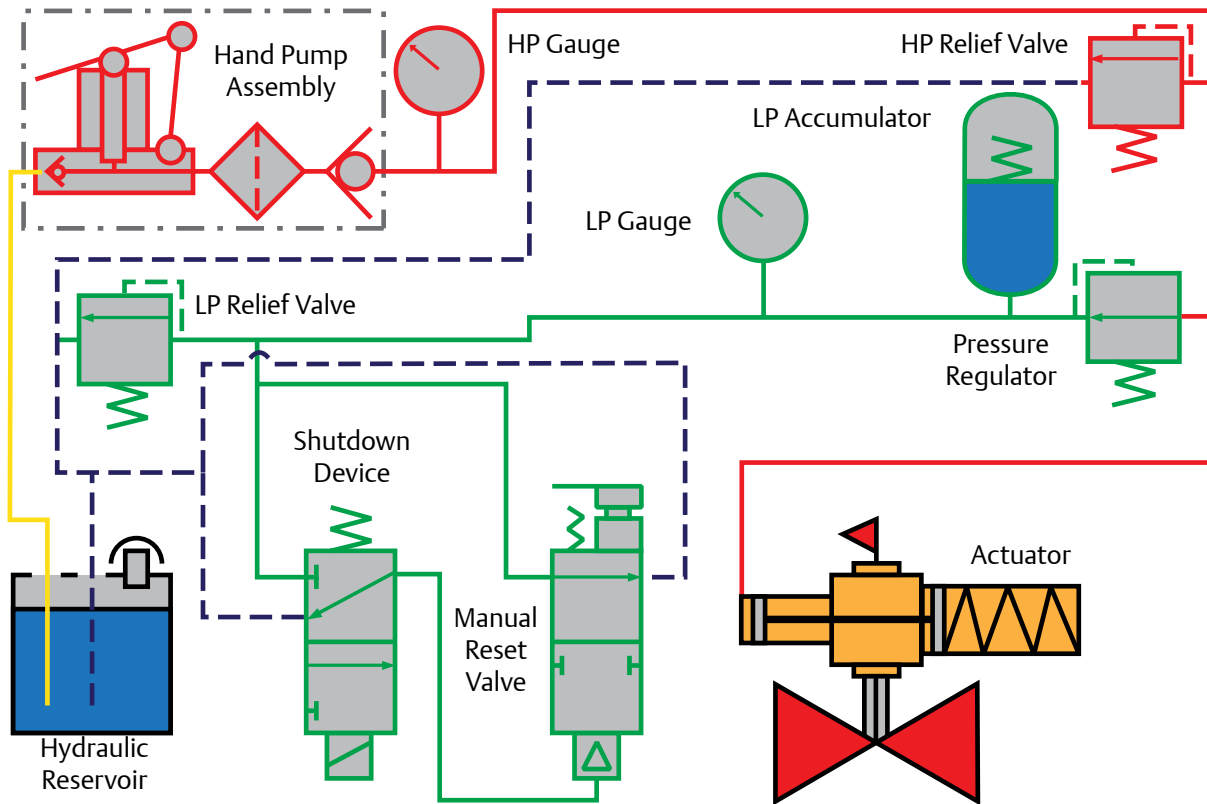
Prevents cyclic transfer of hydraulic fluid from high pressure to low pressure circuits.

Manual Reset Valve

Used to bypass the shutdown device, allowing use of hand pump even when shutdown device is in fail position.



PressureGuard Operation



The PressureGuard self-contained hydraulic module operates in tandem with the Bettis actuator and control signal devices.

Options

PressureMatic™ High/low Pressure Pilot

PressureMatic senses pipeline or process pressure and outputs a pneumatic or hydraulic signal, responding to high or low pressure conditions. It operates under maximum working pressures to 6,000 psig with field adjustable high set points to 4,450 psig and low set points to 20 psig, determined according to piston size, spring rate and mechanism adjustments. Available as automatic reset pilot valve (P-AR) or manual reset pilot valve (P-MR) .



ISO Test Valve

The ISO Test Valve used with the PressureMatic, enables its calibration without shutting down the flow line. It is compact, safe and has a blowout proof stem that prevents removal when the valve is under pressure. The ISO test Valve has a maximum working pressure range of 3,000 psig to 6,000 psig.



Flow/Sensing Tee

The Flow Tee is used with the ISO test valve to assist with installation and calibration of the PressureMatic. It is pressure rated for designated service and is available in a range and materials to cover all type of pipeline media. It has a threaded NPT configuration available.



Bettis PressureGuard™ is manufactured to these worldwide standards as follows;



ISO – 9001
Cert. Num 93-13



Accredited by the Dutch Council
for certification

Emerson brands for most common control accessories:

Digital Valve Controllers:	Fisher®
Positioners:	Fisher®
Regulators:	Fisher®
Switch boxes:	TopWorx
Wireless position monitor:	TopWorx
Solenoid valves:	ASCO Numatics™

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