

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.

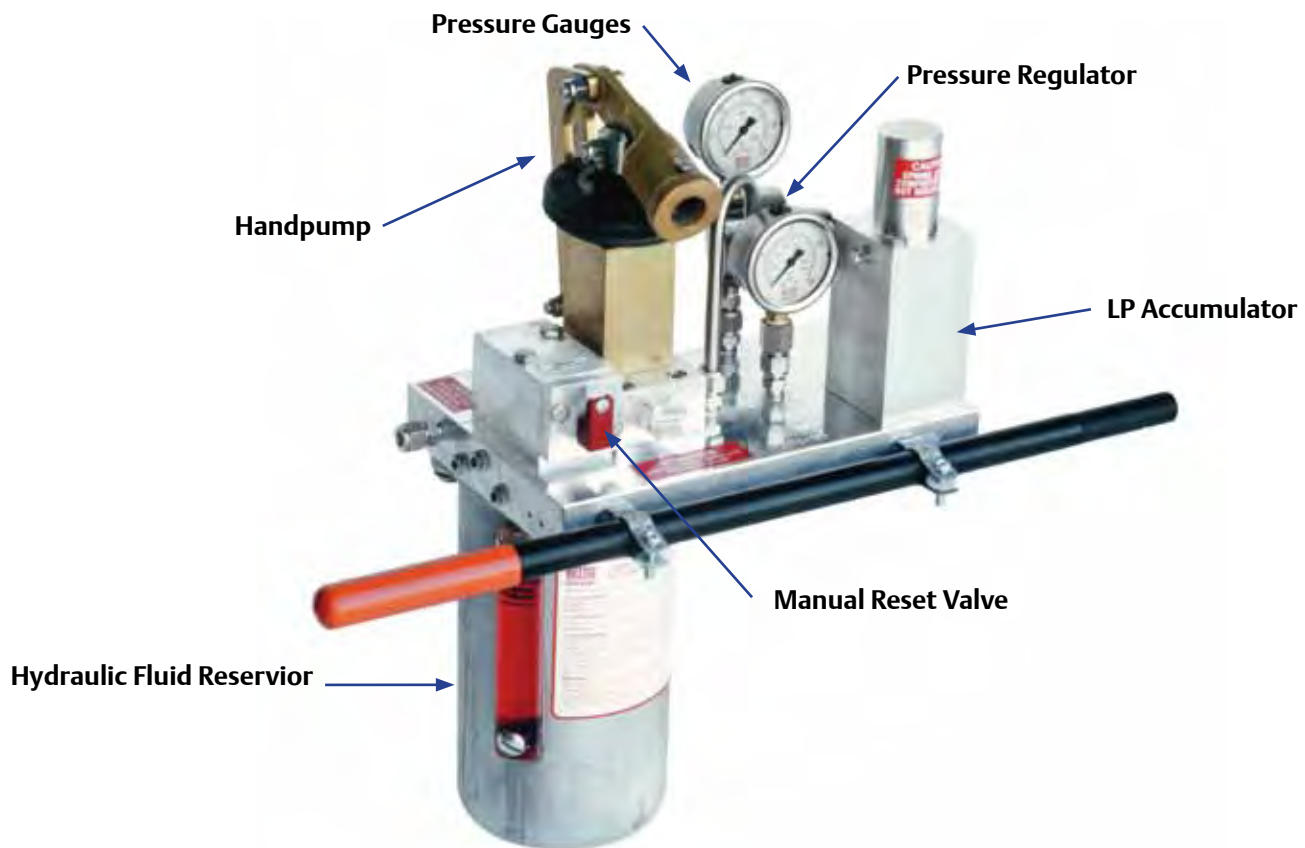
Benefits

- 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

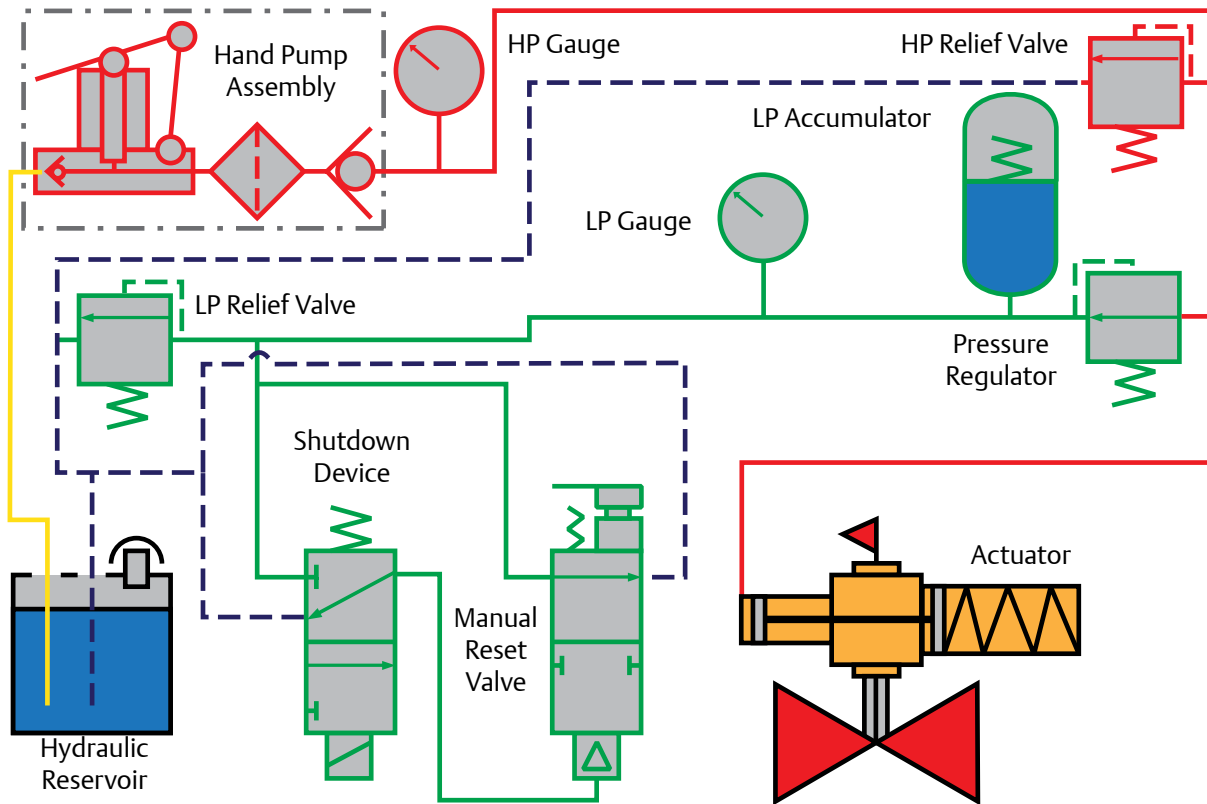
Prevents cyclic transfer of hydraulic fluid from high pressure to low pressure circuits.

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™

Contact Us: Emerson Process Management, Valve Automation facilities at your nearest location:

NORTH & SOUTH AMERICA

18703 GH Circle
PO Box 508
Waller, TX 77484
USA
T +1 281 727 5300
F +1 281 727 5353

2500 Park Avenue West
Mansfield, OH 44906
USA
T +1 419 529 4311
F +1 419 529 3688

9009 King Palm Drive
Tampa, FL 33619
USA
T +1 813 630 2255
F +1 813 630 9449

13840 Pike Road
Missouri City, Texas 77489
USA
T +1 281 499 1561
F +1 281 499 8445

Av. Hollingsworth,
325, Iporanga Sorocaba,
SP 18087-105
Brazil
T +55 15 3238 3788
F +55 15 3228 3300

MIDDLE EAST & AFRICA

P. O. Box 17033
Dubai
United Arab Emirates
T +971 4 811 8100
F +971 4 886 5465

P. O. Box 105958
Abu Dhabi
United Arab Emirates
T +971 2 697 2000
F +971 2 555 0364

P. O. Box 3911
Al Khobar 31952
Saudi Arabia
T +966 3 814 7560
F +966 3 814 7570

P. O. Box 10305
Jubail 31961
Saudi Arabia
T +966 3 340 8650
F +966 3 340 8790

P. O. Box 32281
Doha
Qatar
T +974 4 576777
F +974 4 315448

2 Monteer Road, Isando
Kempton Park, 1600
South Africa
T +27 11 974 3336
F +27 11 974 7005

EUROPE

Asveldweg 11
7556 BR Hengelo (O)
The Netherlands
T +31 74 256 1010
F +31 74 291 0938

Siemensring 112
47877 Willich
Germany
T +49 2154 499 660
F +49 2154 499 6613

25, Rue de Villeneuve
Silic – BP 40434
94583 Rungis
France
T +33 1 49 79 73 00
F +33 1 49 79 73 99

Via Montello 71/73
20038 Seregno (Milan)
Italy
T +39 0362 2285 207
F +39 0362 2436 55

6 Bracken Hill
South West Industrial Estate
Peterlee SR8 2LS
United Kingdom
T +44 191 518 0020
F +44 191 518 0032

2A Szturmowa Str
02-678 Warsaw
Poland
T +48 22 4589237
F +48 22 45 89 231

C/ Francisco Gervás, 1
28108 Alcobendas – Madrid
Spain
T +34 0913 586 000
F +34 0913 589 145

Letnikovskaya Str. 10-2
115114 Moscow
Russia and FSU
T +7 495 981 98 11
F +7 495 981 98 10

ASIA PACIFIC

No. 9 Gul Road
#01-02 Singapore 629361
T +65 6501 4600
F +65 6268 0028

9/F Gateway Building
No. 10 Ya Bao Road
Chaoyang District
Beijing 100020
P.R.China
T +86 10 5821 1188
F +86 10 5821 1100

No.15 Xing Wang Road
Wuqing Development Area
Tianjin 301700
P.R.China
T +86 22 8212 3300
F +86 22 8212 3308

Lot 13112, Mukim Labu
Kawasan Perindustrian Nilai
71807 Nilai, Negeri Sembilan
Malaysia
T +60 6 799 2323
F +60 6 799 9942

471 Mountain Highway
Bayswater, Victoria 3153
Australia
T +61 3 9721 0200
F +61 3 9720 0588

Delphi B Wing, 601 & 602
6th Floor, Central Avenue
Powai, Mumbai – 400 076
India
T +91 22 6662 0566
F +91 22 6662 0500

NOF, Shinagawa Konan Bldg
1-2-5, Higashi-shinagawa
Shinagawa-ku, Tokyo
140-0002 Japan
T +81 3 5769 6873
F +81 3 5769 6902

© 2010 Emerson Process Management. All rights reserved.

The Emerson logo is a trademark and service mark of Emerson Electric Co. "Brand mark listing" are marks of one of the Emerson Process Management family of companies. All other marks are property of their respective owners.

The contents of this publication are presented for information purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available on request. We reserve the right to modify or improve the designs or specifications of our products at any time without notice.

The color orange, U.S. Reg. No. 2,739,393, is a registered trademark of the Bettis Corporation.

BETTIS[™]

DOC.6P.BPG.US 09-11

www.Bettis.com


EMERSON[™]
Process Management