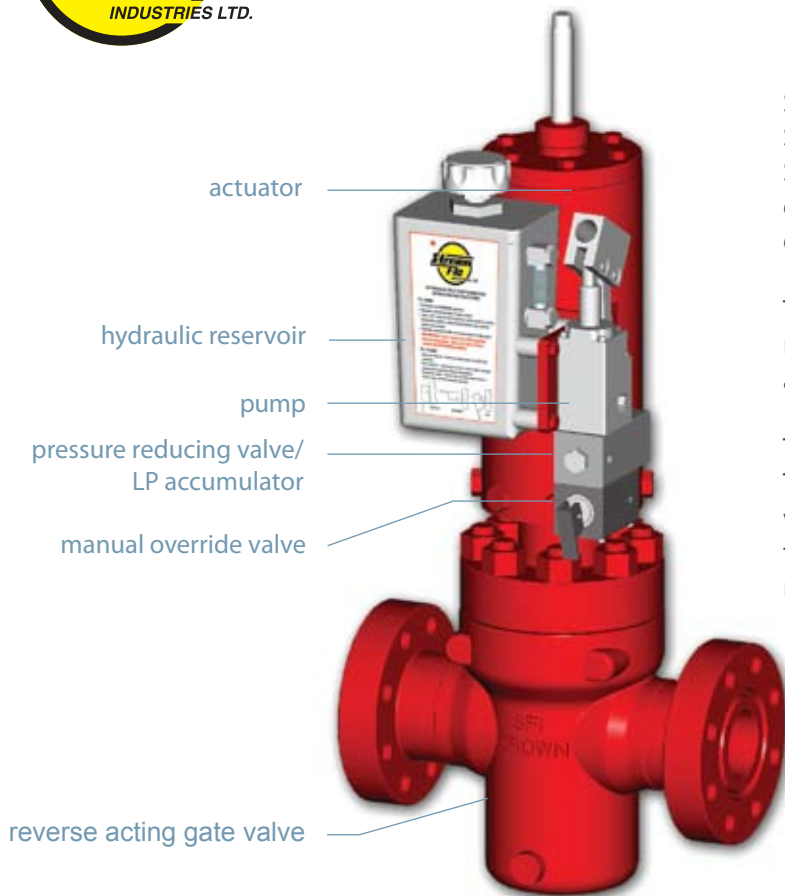




ESD TECHNOLOGY

Crown Hydraulic Self-Contained Emergency Shutdown System



Stream-Flo's Crown Hydraulic Self-Contained, Spring-Fail Closed Emergency Shutdown (ESD) System is used for the automatic closing of gate valves on wellheads and flow lines under emergency conditions.

The system consists of a hydraulic actuator, a manual hydraulic pump and control assembly, and a reverse-acting gate valve.

The system can be tripped by several means. The most common mean is a pressure pilot which trips the system when it senses pressure fluctuations outside of the specified control range.

DESIGN FEATURES

Actuator

The actuator is spring-return, hydraulically opened for use on reverse-acting gate valves. The valve is opened and closed by the application and release of hydraulic pressure.

Modular design allows the actuator to be changed independently of the gate valve and bonnet assembly, providing ease of service or replacement.

Fail-safe operation is ensured with the optimized valve stem diameter. Upon loss of hydraulic pressure, the combined forces of the actuator spring and the line pressure acting on this optimally-sized valve stem will, in every circumstance, close the emergency shutdown system when required.

Excellent serviceability of the hydraulic seals. Seals can be accessed from the top of the actuator even with the actuator mounted on the valve, providing ease of maintenance and minimum downtime.

Safely contained spring is precompressed and assembled in the spring canister. The spring cannot be released inadvertently, providing a safe operating and service environment.

External position indicator is connected directly to the valve stem and protrudes from the top of the actuator. It provides visual indication of valve position as well as mounting for accessories such as limit switches and lock-open devices.

Sealed spring canister protects all internal components including the spring from hostile environments such as moisture, salt, dust and sand.

DESIGN FEATURES

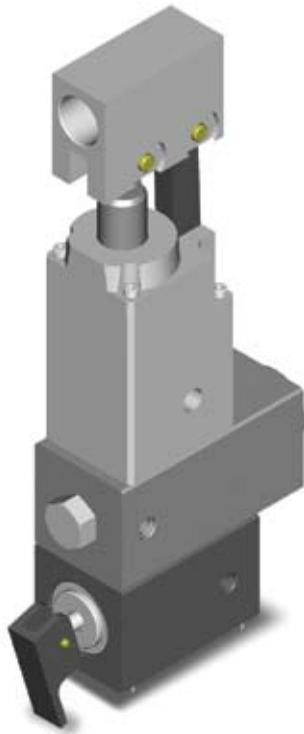
Bonnet Assembly

Built-in gate stops both upper and lower are incorporated in the bonnet. This enables the valve and bonnet to be completely assembled and stroke set independent of the actuator.

Metal-to-metal stem back seat provides a means of sealing to isolate the stem packing cavity in the event of a stem packing failure in addition to providing an upper travel stop for the gate.

Pump Control Unit

This unit consists of a manual pump, a pressure-reducing valve with a built-in accumulator, and a manual override valve. This unit is designed for ease of removal and modular component replacement.



Self-energized stem packing can operate in a wide range of temperatures from -50°F/-46°C to +350°F/+177°C.* The Teflon seal material is suitable for extreme operating environments.

Rugged check valve in the pump assembly provides leak-tight checking of the high pressure hydraulic fluid back flow, ensuring reliable performance and low maintenance services.

Large suction filter in the pump provides high flow and extended trouble-free service life.

Large capacity low pressure accumulator accommodates changes in control fluid volume due to thermal expansion. The large capacity allows for flexibility in pilot and pump placement.

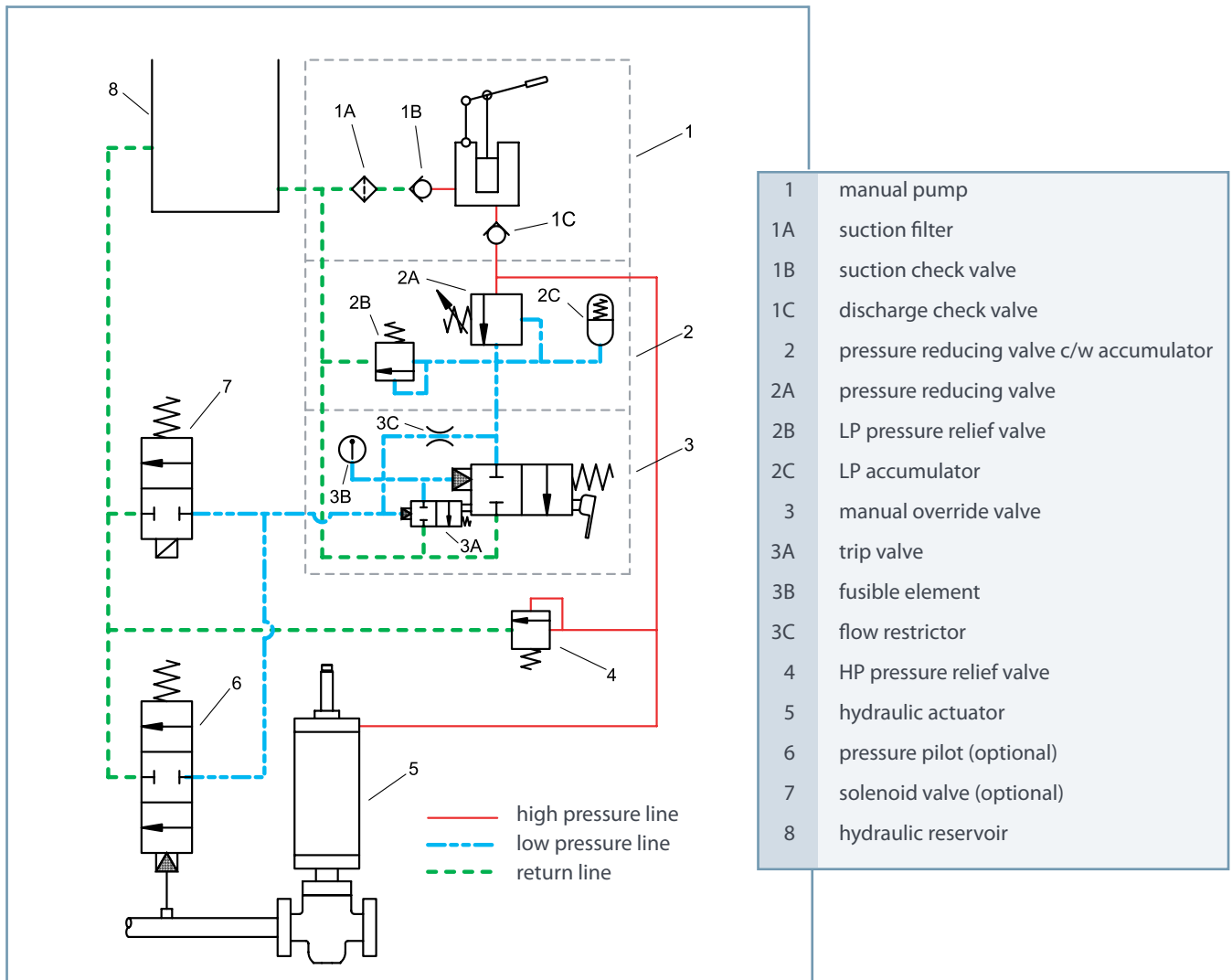
Low pressure relief valve ensures reliable supply of low pressure, protecting tripping devices from damage and malfunction caused by excessive control pressure.

Responsive trip valve provides rapid system tripping and valve closure. It also serves as the manual valve closing mechanism.

Fire Protection is incorporated into the pump control unit by means of a fusible plug which in the event of fire will trip the system to close the valve.

Minimum valve closing time is ensured due to the optimally-sized hydraulic fluid flow path.

Typical Hydraulic Schematic



General Specifications*

Actuator	maximum operating pressure temperature range operating media	3500 psi -50°F/-46°C to +180°F/+82°C clean hydraulic fluid
Bonnet Assembly	maximum operating pressure service condition temperature range	up to 15,000 psi API Material Class AA thru HH API Temperature Class L thru X (-50°F/-46°C to +350°F/+177°C)
Pump Control Unit	temperature range seals component materials	-50°F/-46°C to +180°F/+82°C Teflon, polyurethane and nitrile anodized aluminum and stainless steel

*General specifications only. Please contact Stream-Flo Industries for other requirements.



CANADIAN EXPERTISE | GLOBAL STRENGTH

www.streamflo.com



Stream-Flo Industries Ltd.
Head Office and
Manufacturing Facility
 4505 - 74 Avenue
 Edmonton Alberta
 Canada T6B 2H5
 t 780.468.6789
 f 780.469.7724

Marketing Office
 400 Bow Valley Square One
 202 - 6 Avenue SW
 Calgary Alberta
 Canada T2P 2R9
 t 403.269.5531
 f 403.266.3307

Canadian Sales, Service and
Distribution Centres
 Brooks AB 403.362.7600
 Edson AB 780.712.5505
 Estevan SK 306.634.4719
 Fort McMurray AB 780.743.0744
 Fort Nelson BC 250.775.6789
 Fort St. John BC 250.785.9500
 Grande Prairie AB 780.532.1433
 Rainbow Lake AB 780.956.3655
 Red Deer AB 403.346.2550
 Slave Lake AB 780.849.6100

International Sales
 Houston Texas 832.912.1022
 Kilgore Texas 903.983.2992
 Granbury Texas 817.326.5341
 Beeville Texas 361.375.2400
 Longview Texas 903.753.6785
 Indiana Pennsylvania 724.349.6090
 Jakarta Indonesia 62.21.7918.1234
 Dubai United Arab Emirates 971.4.870.4012
 Abu Dhabi United Arab Emirates 971.2.679.7779
 Hassi Messaoud Algeria 213.2.973.8910