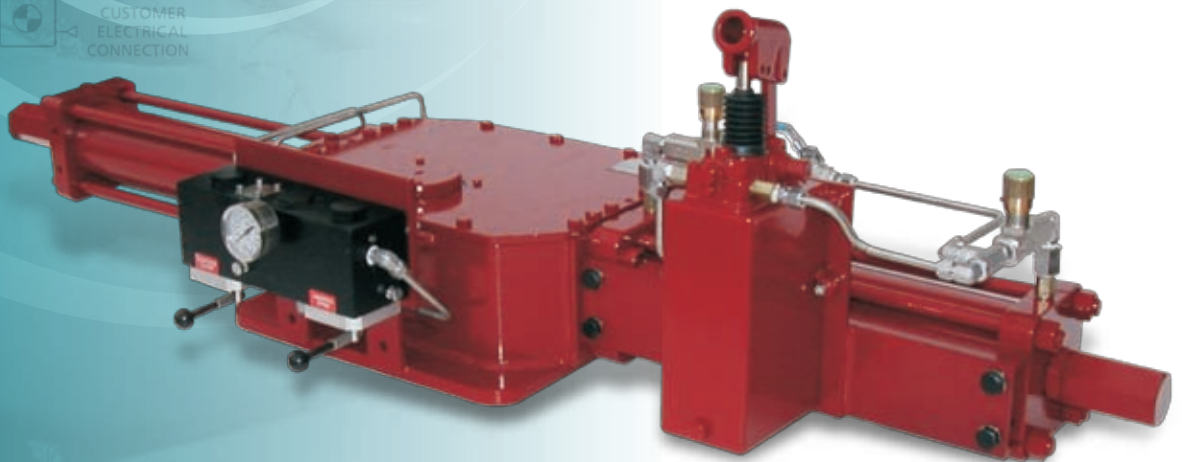


Fluid Power Actuators and Control Systems

rotork® Fluid Systems

Established Leaders in Valve Actuation



HPG Range

Direct High-Pressure Gas Actuators

Rotork Actuators – Quality Controlled

In the 50 years since the company was founded, Rotork has become the standard for excellence in the field of valve and damper automation for the oil, gas, power, water and waste treatment industries around the world.

As established leaders in actuation technology, we owe our success to a commitment to quality at every stage, and at every level, of Rotork's operations.

At the heart of the company is an exceptional workforce – the highly trained, forward thinking engineers, technicians, and sales support staff who each play a crucial role in maintaining Rotork's unrivaled reputation for innovation, reliability and first class after sale support.

With several fluid power manufacturing facilities in Europe and the United States, and additional *Centres of Excellence* strategically located around the globe, we are able to offer solutions and design systems for virtually any application — from subsea hydraulics to the most sophisticated yet simple control system.

Contact Rotork for your operational or safety application requirements. We will work with you from conception, to design, to manufacture, to installation, and finally to maintenance and service support.



HPG Range – Direct High-Pressure Gas Actuators

Reliability by design

Every Rotork Fluid Systems actuator is built to provide long and efficient service with a minimum of maintenance. The design, engineering and materials used in the construction ensure optimum performance even in the harshest of environments. Our modular construction design facilitates stocking by allowing a minimal amount of components to meet a wide range of valve torque requirements.

Rotork's HPG range of pipeline actuators are designed to use pipeline gas as the motive power source. Using our industry recognised and proven hydraulic scotch yoke quarter-turn actuator as the valve prime mover, we have experience designing and supplying direct gas actuators to many end user specifications. Our actuators are complemented with a variety of Rotork Fluid Systems designed and manufactured high-pressure gas controls.

Manual override is a standard feature of the range. The design incorporates a separate cylinder for hydraulic override to ensure complete separation of high-pressure pipeline gas from the hydraulic fluid. The use of an independent override cylinder allows replacement of power cylinder seals without removal of the actuator from the valve and will even allow for manual operation while the power cylinder is disassembled.



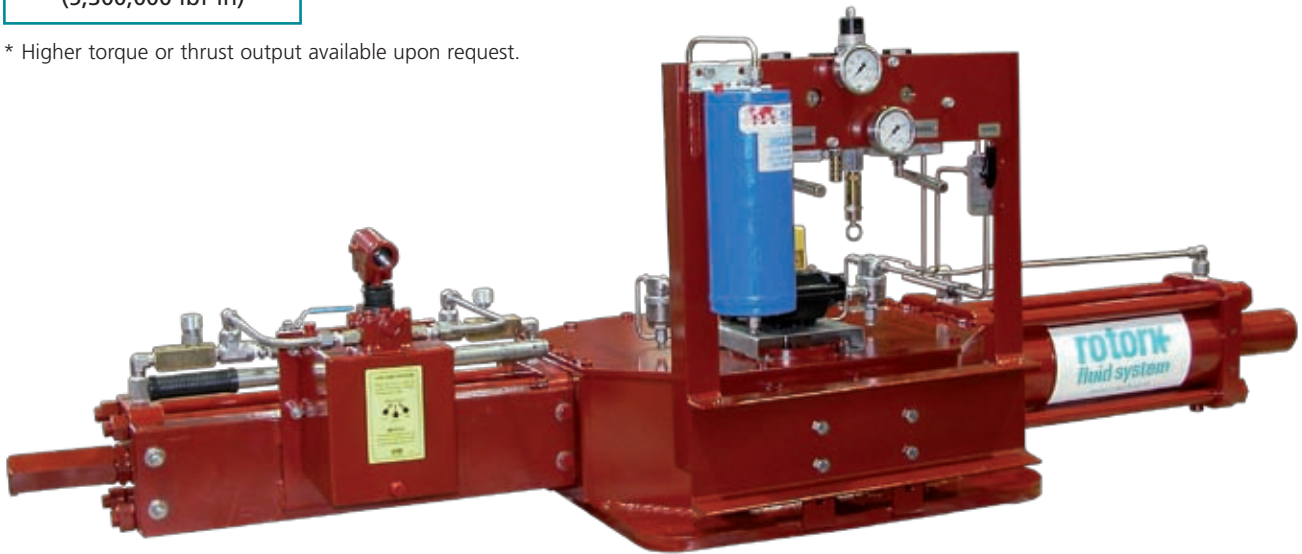
The gas control manifold employs poppet style control valves – a reliable design trusted throughout the industry. They are pilot operated for remote control. Operation is simple and intuitive.

HPG Range – Quarter-turn Actuators

Torque Output

Up to 600,000 Nm
(5,300,000 lbf-in)

* Higher torque or thrust output available upon request.



Design Features

Standard Features:

- Scotch yoke quarter-turn actuators with either symmetric or canted yoke designs for optimum sizing of actuator to valve.
- Actuators are IP67M/IP68 third party certified and approved for environmental protection.
- Actuators are CE and ATEX 94/9/CE third-party certified and approved.
- Manual override hand pump for emergency or local operation.
- Working pressure up to 105 barg (1500 psig) – higher on application.
- Dedicated override cylinder.
- Chromium plated piston rod and electroless nickel-plated cylinder to provide enhanced durability of critical sealing surfaces.
- Modular and compact gas control manifold.
- Local control via lever operated poppet valves on the multi-function manifold.
- Remote control via low-pressure or high-pressure solenoids.
- Options with either low-pressure or high-pressure control logic design.

Optional Features:

- Remote shutdown capabilities.
- Pressure sensing valves with optional manual reset to monitor pipeline pressure.
- Pressure differential valves with optional manual reset to monitor the differential across the valve.
- Linebreak detection safety systems sensing pipeline pressure drop over time.
- PED or ASME approved power gas storage tanks to provide power upon loss of main pipeline pressure – other approvals on application.
- ESD (emergency shut down) control configurations to suit specific customer shutdown logic requirements.
- Actuator torque limiting devices for the protection of the valve or drive train.
- Custom gas filtration.

High-Pressure Gas Control Systems

A comprehensive range of control systems and schematics have been developed to meet the requirements of end user direct high-pressure gas applications.

A variety of standard Rotork direct high-pressure gas schematics are listed below. Please contact our international sales departments for further options.

High-Pressure Gas Control Schematics

Schematic	Double Acting Qtr. Turn	Double Acting Linear	Hydraulic Manual Override	Local Manual Control	Low Pressure Close	Linebreak	2-Way Electric Remote
HPG100	X	-	X	X	-	-	-
HPG101	X	-	X	X	X	-	-
HPG102	X	-	X	X	-	X	-
HPG200	X	-	X	X	-	-	X
HPG201	X	-	X	X	X	-	X
HPG202	X	-	X	X	-	X	X

See these typical schematics on our website www.rotork.com

Parts List for HPG200 & HPG201 Schematics

ITEM	DESCRIPTION	QTY.
1	Rotork Double Acting Actuator	1
2	End of Travel Limit Switch Housing (see note)	1
4a	Poppet DCV (Close)	1
4b	Poppet DCV (Open)	1
5a	Solenoid 3/2 NC Valve (Close)	1
5b	Solenoid 3/2 NC Valve (Open)	1
6	Gas Vent Protector Valve	1
8	Gas Shuttle Valve	1
9	Pilot Gas Pressure Gauge	1
10	Supply Gas Pressure Gauge	1
12	Pilot Gas Regulator	1
13	Pressure Relief	1
15	Remote Lockout Valve	1
16a	Gas Filter (40 Micron)	1
16b	Gas Dryer	1
16c	Drain	1
20a	Gas Storage Tank	1
20b	Relief Valve	1
20c	Check Valve	1
20d	Drain Valve	1
23	Low Pressure Sensor	1
28	Hydraulic Manual Override With Speed Control	1

LEGEND	
Solenoid Connection	-----
High Pressure Gas Line	=====
Low Pressure Gas Line	-----
Hydraulic Fluid Line	===== H=====

Manual Operation

Remote Lockout Valve (15) must be in the Manual Operation position.

Depress hand lever on valve (4a) to CLOSE.

Depress hand lever on valve (4b) to OPEN.

The actuator may also be manually operated via the Hydraulic Override (28).

Remote Operation

Remote Lockout Valve (15) must be OPEN to allow control pilot gas to the solenoids.

Energise solenoid (5a) to CLOSE.

Energise solenoid (5b) to OPEN.

Low Pressure Close

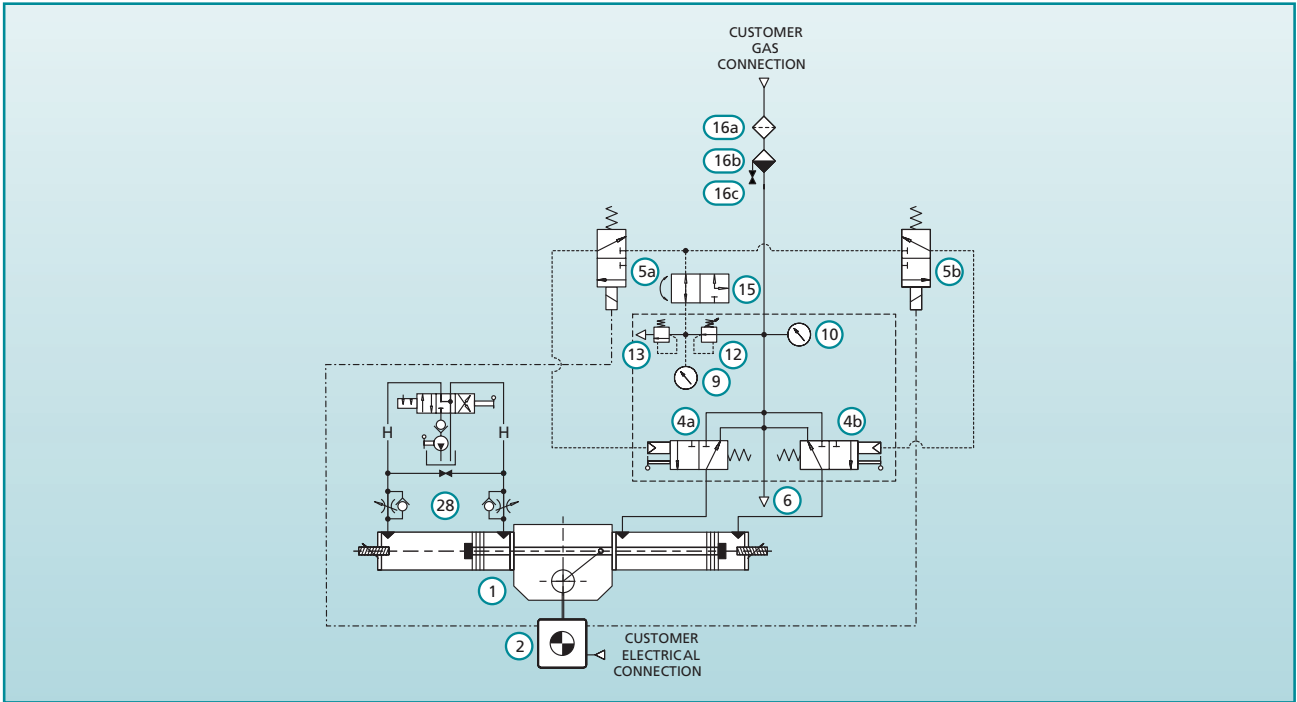
Pressure sensor valve (23) is normally piloted by an external source. If the pilot pressure drops below the setpoint pressure, poppet valve 4a closes the actuator.

Note: A travel limit switch may be used to de-energise the solenoid when the actuator reaches the end of travel.

Valves are shown de-energised and in the fail position.

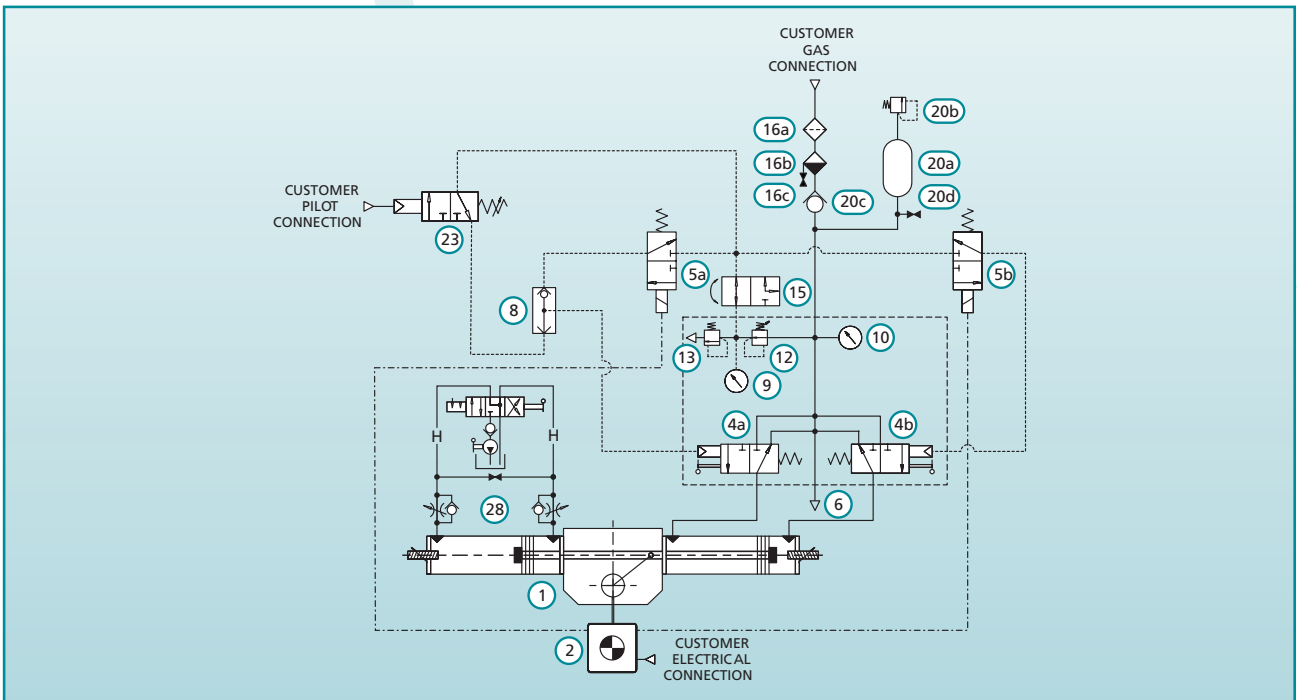
HPG 200

2-way Electric Remote Operation



HPG201

2-way Electric Remote Operation with Low-Pressure Close



Key Control Components

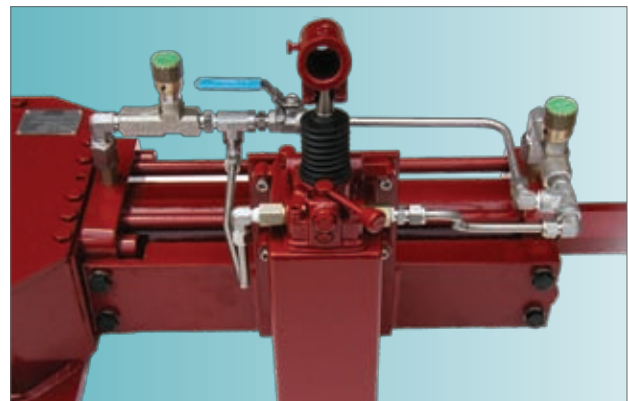
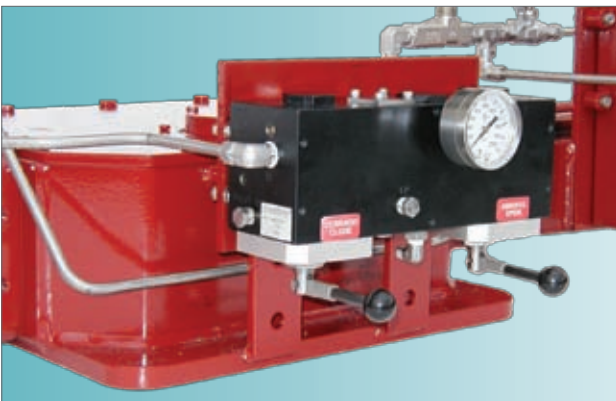
Complementing the modular design of our high-pressure gas systems are the Rotork designed and manufactured control options ranging from simple local/remote pilot operated valves to pressure sensing and linebreak controls.

At the centre of our control systems is our multifunction manifold block. The high-pressure, high-flow manifold system allows us to configure a wide variety of control options. Both high and low-pressure control logic designs are available.



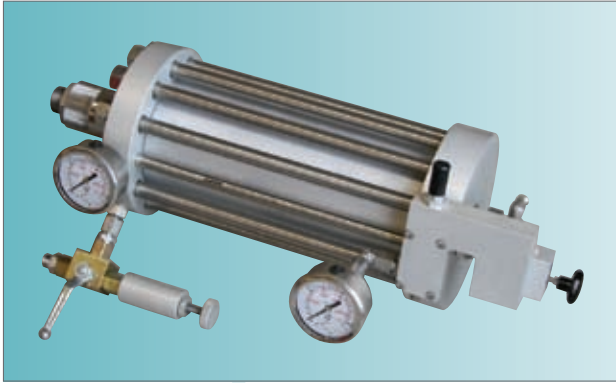
Multi-Function Manifold Block

- Integral flow control valves for both directions.
- Integral gas filter.
- Leak free high flow poppet valve design.
- Anodised aluminium construction.
- Tamper-proof cover (optional).



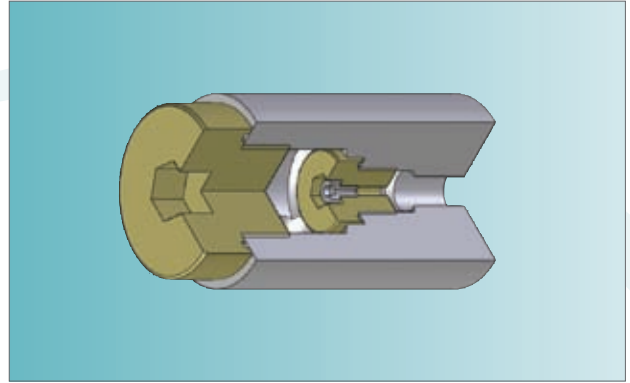
Linebreak Safety System

Pipeline pressure monitoring device that will signal the actuator if a set rate of pressure drop is detected.



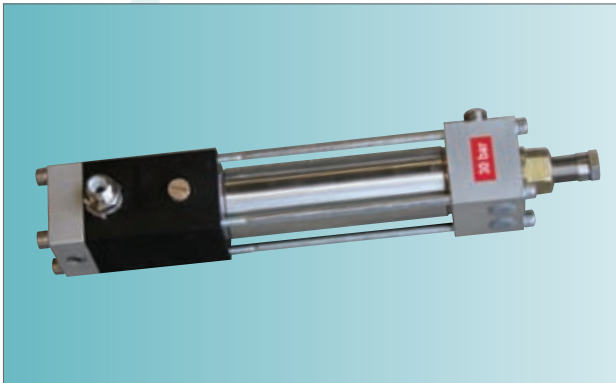
Calibrated Orifice

Designed for use with the Rotork Linebreak Safety System and allows in-house or on-site calibration.



Torque limiting Device

Protects the valve from excessive torque loads. User definable settings.



Shuttle Valve

Used as a high-pressure selector valve.



Differential Pilot Valve

Used to prevent opening the actuator when a preset differential pressure is exceeded across the pipeline valve.



Dehydrator Filter

For gas conditioning with the filter element selected to meet operating conditions.



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rotork®
Fluid Systems

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Latest product information and a full listing of our worldwide sales and service network is available on our website.

www.rotork.com

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