

## Hydraulic Rack & Pinion Valve Actuators

RH range rack & pinion actuators are specifically engineered to operate small to medium size ball, butterfly, plug and other quarter-turn valves for either on/off or modulating service. The heavy-duty construction and compact design make this product ideal for skid manufacturers and offshore and process applications which require robust yet space saving valve actuation solutions. It's also suitable for applications requiring medium depth submersion.

The housing is available in five sizes. A hydraulic cylinder can be attached to either or both sides. A spring can cylinder can also be fitted to either side for Emergency Shut Down (ESD) applications.

Modular construction and stocking of components by Rotork Fluid Systems' *Centres of Excellence* and a worldwide network of distributors facilitates quick delivery times.


### Established Leaders in Valve Actuation Technology

In the more than 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 worldwide 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.



*Actuators shown with optional MB1 switchbox*

# Inside the RH Range Actuator

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 their construction ensure optimum performance even in the harshest of environments.

**Operating Pressure:** Up to 3,625 psi (250 bar)

**Torque Output:** Up to 3,700 Nm (29,900 lbf-in)

## Temperature Ranges:

Standard:	-30 to 100°C	(22 to 212°F)
High:	-20 to 160°C	(-4 to 320°F)
Low:	-40 to 160°C	(-40 to 320°F)
Extreme Low:	-60 to 160°C	(-76 to 320°F)

## Override Options

A dependable manual override facility is an important part of many valve/actuator applications. Rotork Fluid Systems has a variety of override options to meet virtually any requirement. Available options include handwheel jackscrew, hydraulic hand pump and gearbox solutions.

## Key Design Features

- Double-acting and spring-return versions.
- Totally enclosed weather-proof housing in nodular ductile iron.
- "Rack guide" transversal thrust support by means of two independent brass bushings.
- Carbon steel or spheroidal graphite cast iron electroless nickel-plated cylinders fitted with mechanical end stop to ensure accurate angular stroke adjustment +/-5°.
- Carbon steel piston with dynamic floating seal to reduce friction and avoid stick-slip effect even after prolonged periods without operation.
- Precision machined alloy steel rack and pinion mechanism to provide minimum friction and efficient operation.
- Totally enclosed carbon steel spring cartridge.
- Visual indicator showing actuator/valve position.

RH range torque output and dimensional data are available directly from [www.rotork.com](http://www.rotork.com)

Rotork Fluid Systems offers a comprehensive line of fluid power valve actuators and controls including other rack & pinion actuators with output ranges both above and below that of RH range. Contact RFS or consult our website.

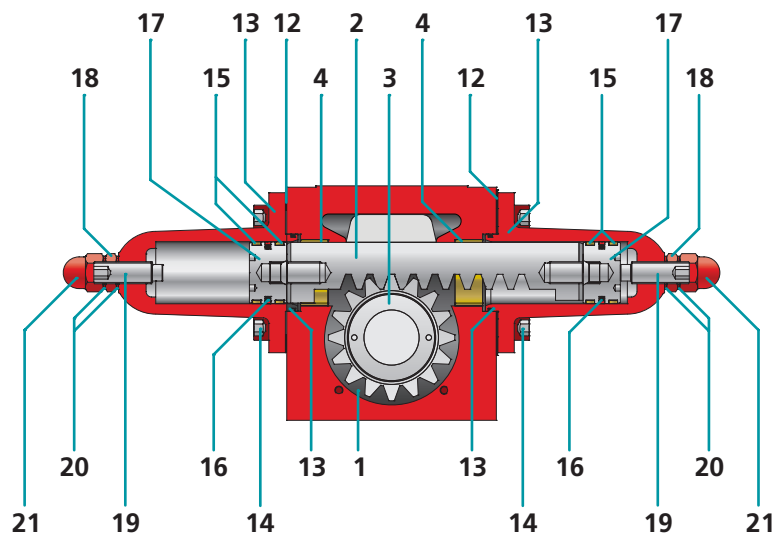
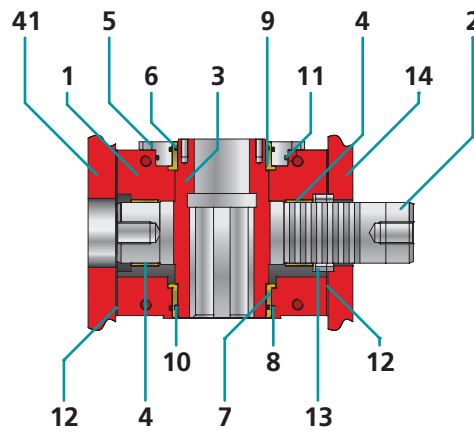
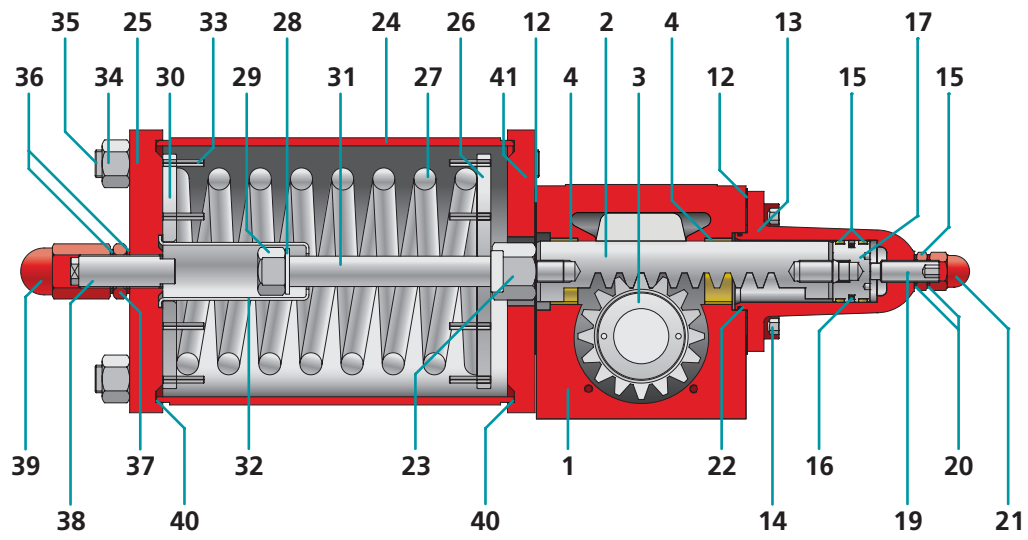
ITEM	DESCRIPTION	MATERIAL	QTY.
1	Housing	Cast Iron	1
2	Rack	Alloy Steel	1
3	Pinion	Alloy Steel	1
4	Bushing	Bronze	1
5	Cover	Carbon Steel	1
6	O-ring	Buna-N	1
7	Housing Bushing	Bronze	1
8	O-ring	Buna-N	1
9	Cover Bushing	Bronze	1
10	O-ring	Buna-N	1
11	O-ring	Buna-N	1
12	Gasket	Vaporflex S/A	2
13	Hydraulic Cylinder	Cast Iron	1
14	Bolt	Carbon Steel	4
15	Wear Ring	PTFE/Bronze	2
16	Piston Seal	PTFE/Bronze/Buna-N	1
17	Piston	Carbon Steel	1
18	Fixing Nut	Carbon Steel	1
19	Washer	Carbon Steel	1
20	Seal Washer	Steel/Buna-N	2
21	Nut	Carbon Steel	4
22	O-ring	Buna-N	1
23	Spacer	Carbon Steel	2
24	Spring Canister	Carbon Steel	1
25	End Flange	Carbon Steel	1
26	Spring Seat	Carbon Steel	1
27	Spring	Spring Steel	1
28	Washer	Carbon Steel	1
29	Nut	Carbon Steel	1
30	Spring Retaining Flange	Carbon Steel	1
31	Safety Tie Rod	Carbon Steel	1
32	Spring Retaining Tube	Carbon Steel	1
33	Pin	Spring Steel	*
34	Nut	Carbon Steel	*
35	Tie Rod	Carbon Steel	*
36	Bushing	Steel/Bronze/PTFE	2
37	Nut	Carbon Steel	1
38	Stop Bolt	Alloy Steel	1
39	Cap Nut	Carbon Steel	1
40	O-ring	Buna-N	2
41	Head Flange	Carbon Steel	1

\* Quantity varies with actuator model.

## Approvals and Industry Standards

- Actuator certified in accordance with ATEX 94/9/EC.
- Flushing to ISO 4406 is available upon request.
- Actuators and controls in accordance with UK health and safety requirements for pipeline safety regulations SI 825.
- Actuator design calculation procedure approval by Lloyds (report number 094/5152).
- Actuators certified to IEC IP66M/67M for environmental protection.

**Established Leaders in Valve Actuation Technology**



Note: Some parts have been removed or simplified to increase the visibility of key components.

### Complete Control Solutions

Rotork has extensive experience in the design and assembly of all types of fluid power control systems to satisfy any customer requirement for on/off, modulating or ESD (emergency shut down) service. Packages can be mounted on a panel or in a cabinet and mounted either on the actuator or at a remote location. We offer components from all leading industry suppliers as well as those of our own design including limit switch housings, quick exhaust valves, pneumatic and hydraulic manifolds, shuttle valves, linebreak safety systems, a torque limiting device and partial stroke solutions.



### Fire Protection Solutions

Rotork Fluid Systems actuators and control systems can be customized to withstand exposure to both fire and vary high environmental temperatures. A range of fireproof systems are available that include flexible protective jackets, intumescent coatings and rigid enclosure systems. Each system offers unique features to meet a wide range of application requirements. The rigid enclosure system offers our maximum protection level of 1,200°C (2,192°F) for up to 120 minutes and can even be retrofit to existing actuator installations.



### Extensive Product Range

Rotork Fluid Systems offers the world's most extensive line of fluid power valve actuators. Products include low- and high-pressure pneumatic, hydraulic and electro-hydraulic actuators. Scotch yoke, linear and rack and pinion designs are available in both double-acting and spring-return configurations. We also manufacture special build actuators for subsea and nuclear power applications and specialty products including a hydraulic damper for swing check valves, a manual/hydraulic power handwheel, and the SVM smart valve monitoring system; a comprehensive, non-intrusive valve/actuator partial stroke test and performance monitor.

