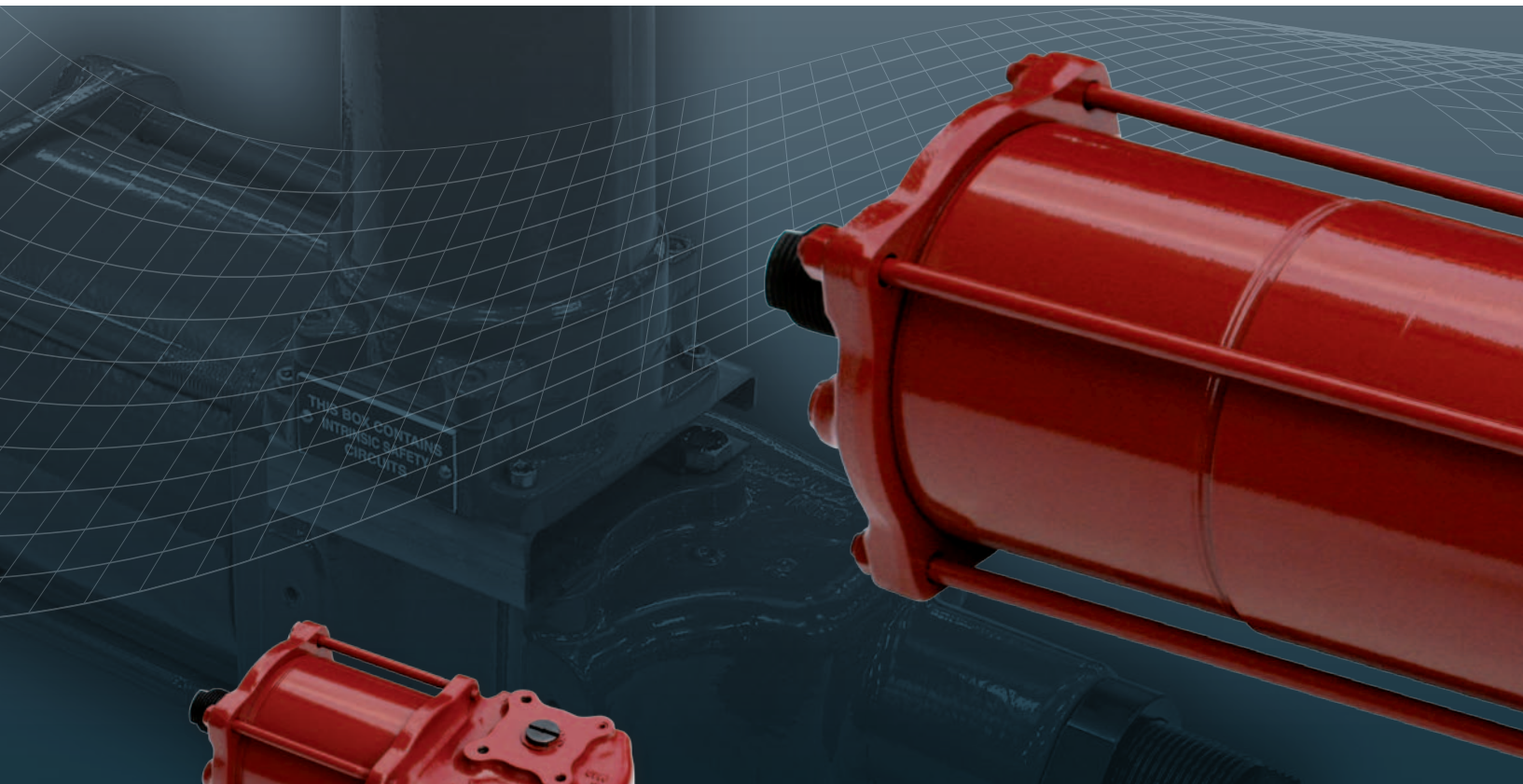


# rotork<sup>®</sup> Fluid Systems

**CP** Range



**Compact Pneumatic Actuators  
for Quarter-Turn Valves**

**Established Leaders in Actuation Technology**

## Rotork Actuators – Quality Controlled

Rotork is a global leader in valve actuation technology. We provide a comprehensive range of valve actuators, controls and associated equipment, as well as a variety of valve actuator services including commissioning, preventive maintenance and retrofit solutions.

Rotork Fluid Systems specialises in the production and support of fluid power actuators and control systems. We are dedicated to providing the marketplace with the latest technology, consistently high quality, innovative design, excellent reliability and superior performance.

Rotork Fluid Systems maintains dedicated engineering groups for Applications, Product Improvement and New Product Development so that our customers can gain all the benefits that ever advancing technologies have to offer and to ensure our efforts are in step with the continually evolving needs of our customers.

Most importantly, we have a long-standing commitment to meeting the special needs of a wide range of applications including: oil and gas exploration and transportation; municipal water and wastewater treatment; power generation; and the chemical and process industries.

With over fifty years of engineering and manufacturing expertise, we have tens of thousands of successful valve actuator installations throughout the world.

## CP Range – Compact Pneumatic Actuators

### Reliability by Design

CP range actuators are a versatile, modular, scotch yoke design available in both double-acting and spring-return configurations. The compact and efficient design yields surprisingly high torques even at low pressures. The design concepts found in Rotork's large, heavy-duty actuators has been applied to the CP range, which brings heavy-duty actuator qualities to small, quarter-turn actuators.

### Safety by Design

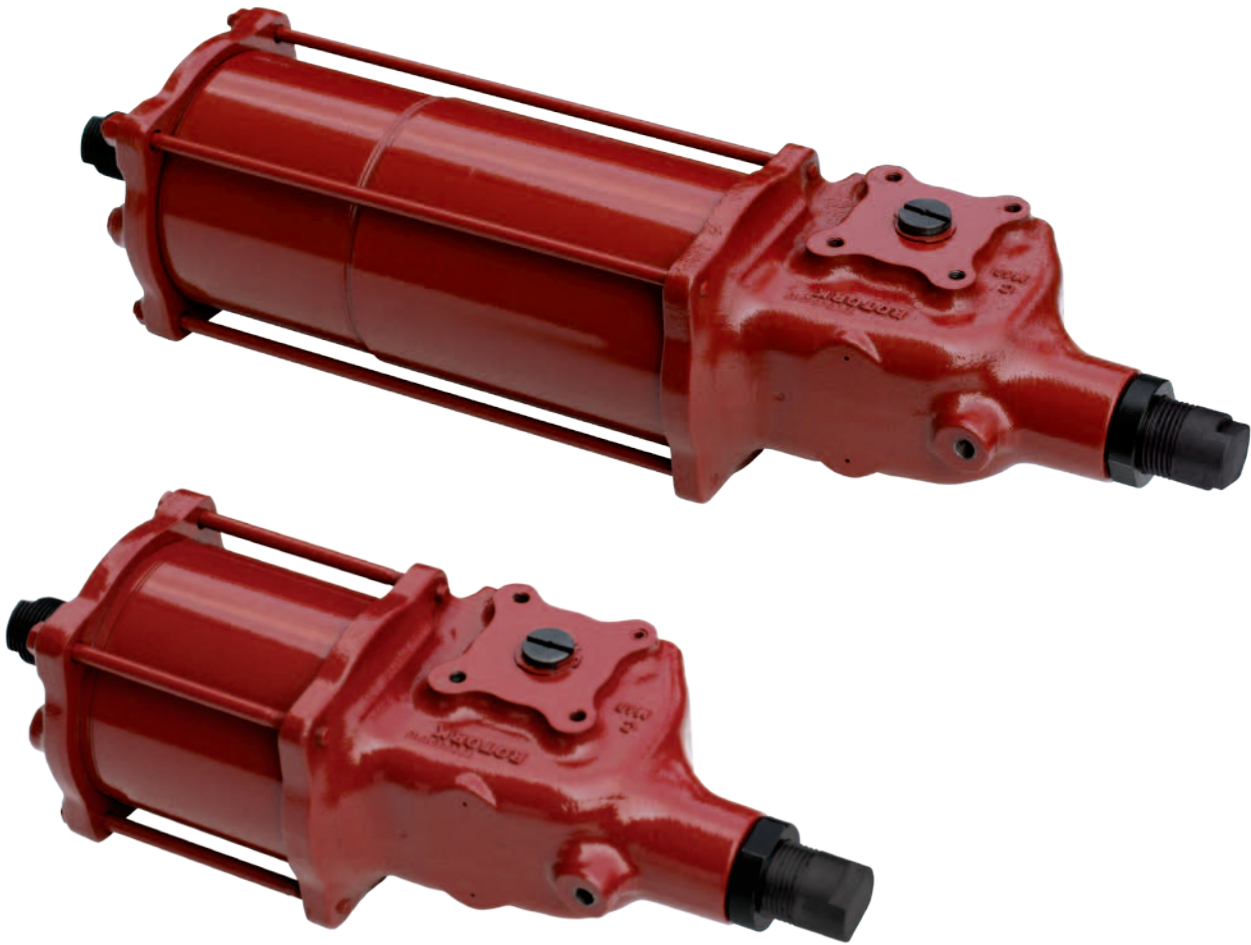
The CP range has been designed to be inherently safe and serviceable. The springs, within the cartridge on the inboard side of the pneumatic cylinder, are contained by the piston and piston rod thus eliminating the possibility of inadvertent release of spring force. The design also allows access to the piston seal without disassembly of the spring cartridge.

### High Performance by Design

Product enhancements have resulted in an even more compact and lighter actuator that produces more torque output while retaining a robust, dependable design.

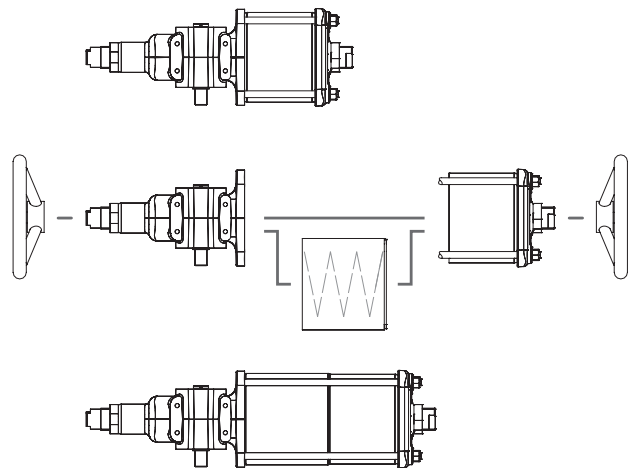


## CP Range Quarter-Turn Pneumatic Actuators



### Versatility

The CP range modular design enables complete actuators to be easily configured for a variety of applications. Most components are common to both double-acting and spring-return configurations. Different springs may be used with the same spring container to yield different torque characteristics and can be changed with ease if necessary. Jackscrew manual overrides may be easily fitted at any time, even in the field. The centrebody may be fitted with cylinders of a variety of materials and configurations to meet specific application requirements.



## Inside the CP Range Actuator

Every Rotork Fluid Systems actuator is built to provide long and efficient service with minimum maintenance. The design, engineering and materials used in their construction ensure optimum performance even in the harshest of environments.

**Operating Pressure:** Up to 12 bar (174 psi)

**Torque Output:** Up to 4,500 Nm (39,828 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)

### Efficiency and Long Life

Extended service life is provided by precisely aligned and balanced steel/bronze/teflon piston rod support bearings. These bearings eliminate the misalignment, higher friction and wear found in other designs.

### Corrosion Resistance

Enhanced seal and bearing life and excellent wear resistance are provided by Nit-ox® treatment of all wearing surfaces. The process provides increased surface hardness, reduced surface roughness as well as extremely high resistance to corrosion.

### Easy Mounting of Accessories

NAMUR topworks mounting interface facilitates easy installation of industry standard switch box and positioner assemblies. Likewise, the valve interface conforms to ISO 5211.

### Environmental Protection

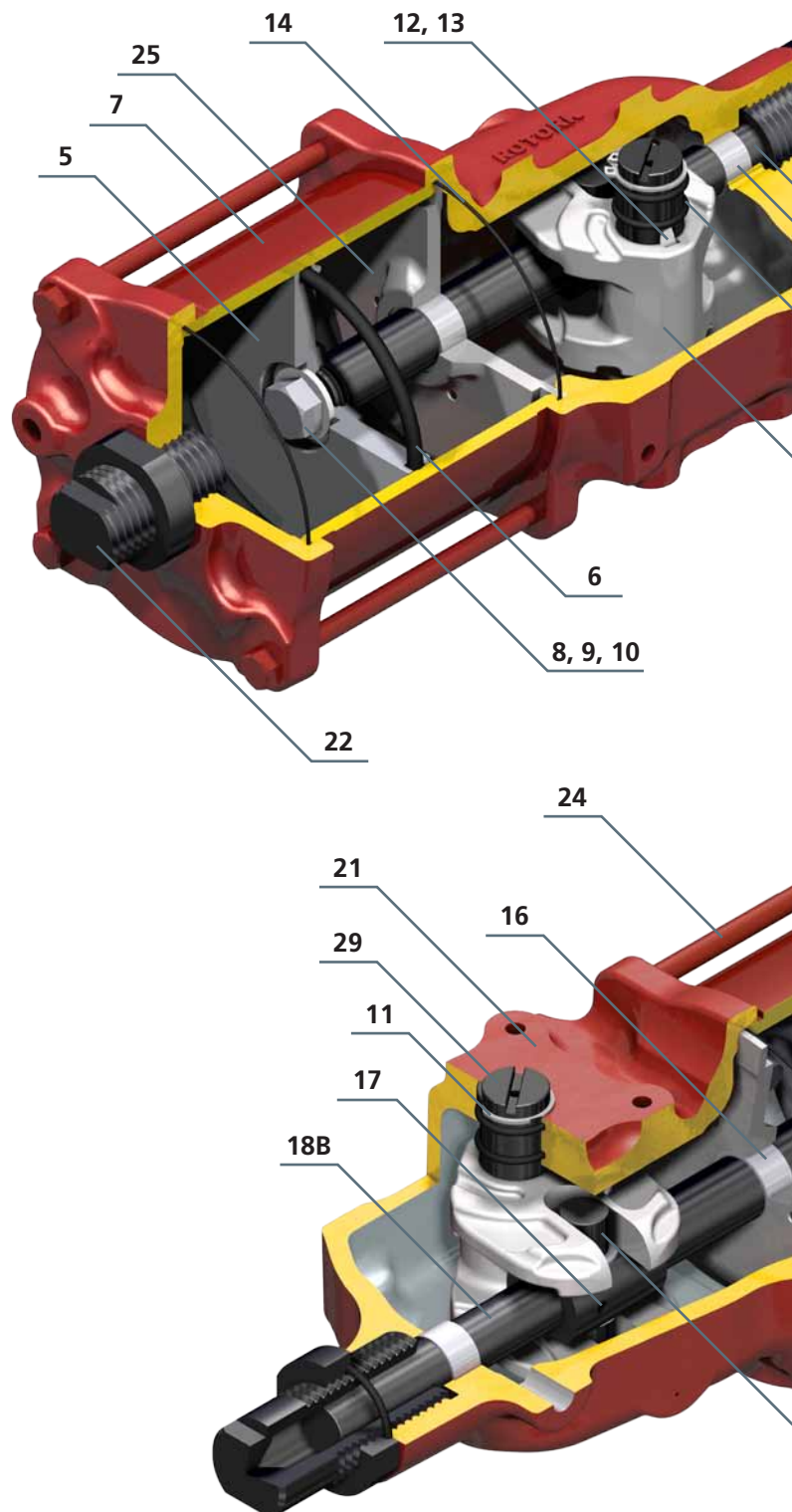
O-ring sealing provides protection certified to IEC IP66M, IP67M.

### Robust Yet Lightweight Design

A ductile iron housing provides an excellent strength to weight ratio. The intelligent CAD/CAM design eliminates all unnecessary mass yet allows for higher operating pressures than competitive designs.

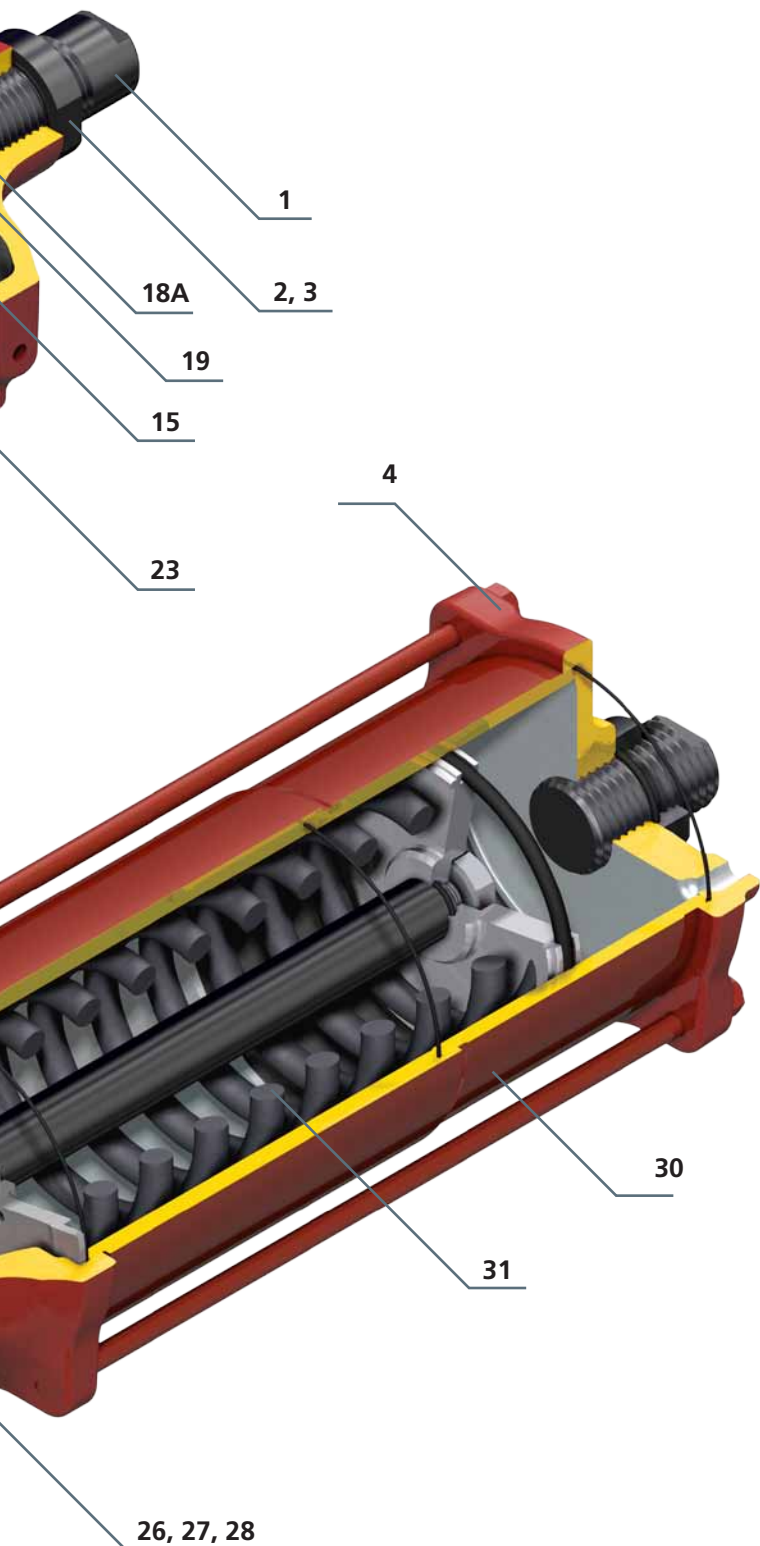
### Available Options

- Integral manual override.
- Stainless steel (316) cylinders and tie rods.
- Custom paint specifications.
- Electroless nickel-plated cylinders.



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

For quarter-turn applications with torque requirements beyond that of the CP range, Rotork Fluid Systems offers a larger series of scotch yoke actuators with outputs up to 600,000 Nm (5.3 million lbf-in). Consult GP/GH range brochure PUB011-001.



ITEM	DESCRIPTION	MATERIAL	QTY.
1	Stop Screw - Housing	Carbon Steel	1
2	Stop Nut	Carbon Steel	2
3	O-ring	Buna-N	2
4	End Flange	Ductile Iron	1
5	Piston	Carbon Steel	1
6	O-ring	Buna-N	1
7	Cylinder Tube	Carbon Steel (Nit-ox® treated)	1
8	Washer	Carbon Steel	1
9	O-ring	Buna-N	1
10	Piston Retaining Bolt	Alloy Steel	1
11	Retaining Ring	Spring Steel	1
12	Key	Carbon Steel	1
13	Spring	Spring Steel	1
14	O-ring	Buna-N	*
15	O-ring	Buna-N	4
16	Bushing	Steel/Bronze/Teflon	1
17	Spring Pin	Spring Steel	1
18A	Axial Bar - Double-Acting	Alloy Steel (Nit-ox® treated)	1
18B	Axial Bar - Spring-Return	Alloy Steel (Nit-ox® treated)	1
19	Bushing	Steel/Bronze/Teflon	1
20	Housing Plug (not shown)	Carbon Steel	1
21	Housing	Ductile Iron	1
22	Stop Screw - End Flange	Carbon Steel	1
23	Yoke	Ductile Iron	1
24	Tie Rod	Alloy Steel	4
25	Adapter Plate	Ductile Iron	1
26	Washer	Carbon Steel	2
27	Bushing	Steel/Bronze/Teflon	2
28	Yoke Pin	Alloy Steel (Nit-ox® treated)	1
29	Shaft	Alloy Steel (Nit-ox® treated)	1
30	Spring Container	Carbon Steel	1**
31	Spring	Spring Steel	1**

\* Quantity (2) for double-acting, (3) for spring-return.

\*\* Spring-return units only.

### Approvals and Industry Standards

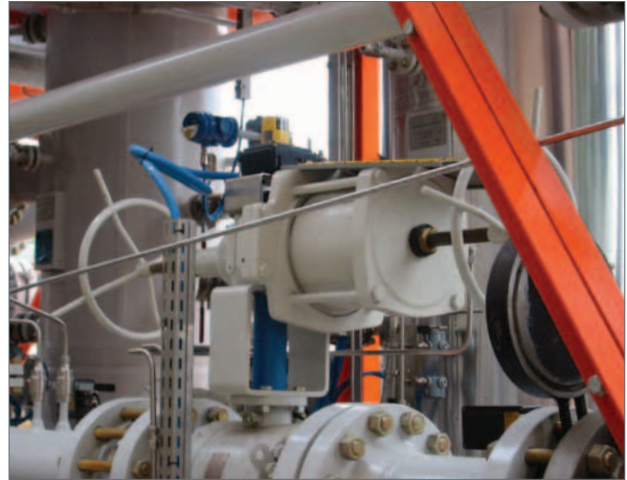
- Actuators certified in accordance with ATEX 94/9/EC.
- Actuators certified in accordance with PED 97/23/EC.
- GOST-R Russian certificate of conformity.
- GGTR-R Russian Rostechandzor RTN Permit.
- Complies with EN60529 (1991) + (A1:2000) for IP66M/67M.
- Management system in accordance with ISO 9001:2008.
- Certified suitable for use at SIL3 as a single device in accordance with IEC 61508.
- ABS Product Design Assessment.

See publication G101 or rotork.com for SIL data.

## Optional Features

### Manual Override

CP range actuators have an integral jackscrew manual override option available. The override may also be easily retrofitted to standard units. A single jackscrew is supplied for spring-return units. Double-acting actuators are supplied with jackscrews at each end for manual operation in either direction. Jackscrews are designed with wrench flats and may also be fitted with handwheels.



### Complete Control Systems

Control component packages are a part of any actuator/valve installation. 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. Rotork offers 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 and a torque limiting device.



### Fire Protection Systems

Rotork Fluid Systems actuators and control systems can be customized to withstand exposure both to fire and very high environmental temperatures. A range of fire-proof systems is available that include flexible protective jackets, intumescent coatings and rigid enclosure systems.

For further information on Rotork's fire protection solutions, consult publication PUB000-004.



## Model Number Designation

Example Model Number	C	P	/	S	035	-	100	A	/	BA	-	MH
<b>ACTUATOR TYPE</b> C = Compact Scotch Yoke												
<b>SUPPLY TYPE</b> P = Pneumatic												
<b>EXECUTION TYPE</b> S = Spring-Return D = Double-Acting												
<b>CENTRE BODY SIZE</b> Nominal movement arm (mm) 035, 045, 055, 065												
<b>CYLINDER SIZE</b>												
<b>TEMPERATURE</b> A = Standard B = High C = Low E = Extreme Low												
<b>SPRING CONFIGURATION</b> A, B, C, D, E												
<b>BUILD VARIANT</b> A, B												
<b>MANUAL OVERRIDE TYPE</b> M, MH, MHD												

### 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 and a manual/hydraulic power handwheel. Through other divisions, Rotork also offers complete lines of electric actuators and gearboxes.





Electric Actuators and Control Systems  
Fluid Power Actuators and Control Systems  
Gearboxes and Gear Operators  
Projects, Services and Retrofit



Corporate headquarters  
Rotork plc  
tel +44 (0)1225 733200  
fax +44 (0)1225 333467  
email mail@rotork.com

A full listing of our worldwide sales and service network is available on our website.

[www.rotork.com](http://www.rotork.com)

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