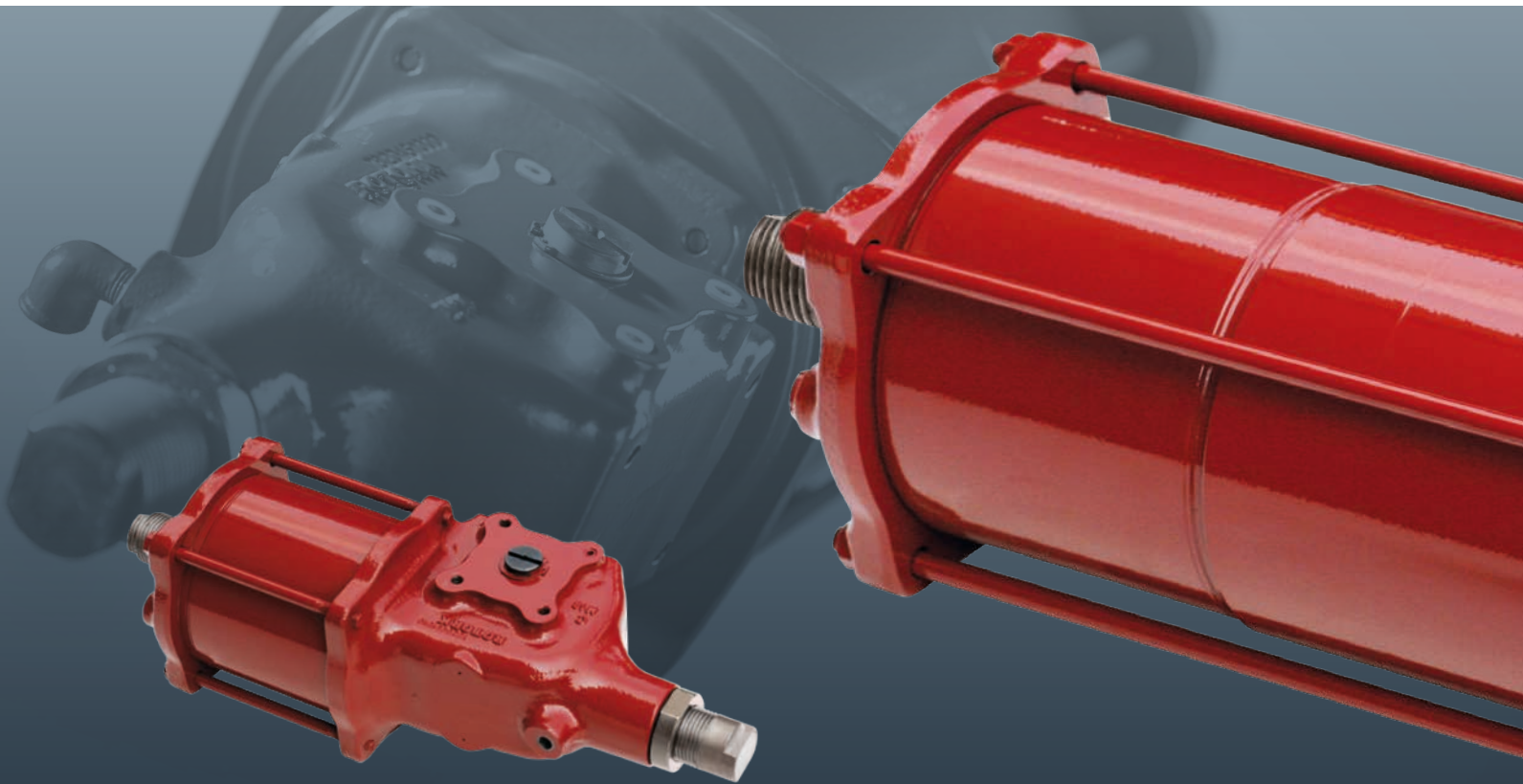


# rotork®

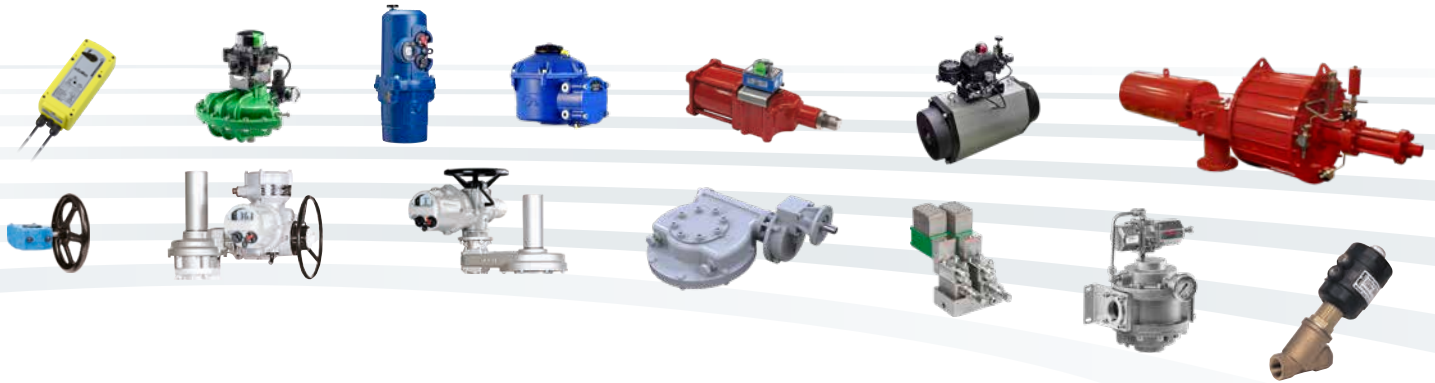
Keeping the World Flowing  
for Future Generations

**CP** Range



Compact Pneumatic Actuators for Quarter-Turn Valves

## Reliability in critical flow control applications



### › Reliable operation when it matters

Assured reliability for critical applications and environments. Whether used infrequently or continuously, Rotork products will operate reliably and efficiently.

### › Quality-driven global manufacturing

We offer products that have been designed with over 60 years of industry and application knowledge.

Our research and development ensures cutting edge products are available for multiple applications across multiple industries.

### › Customer focused service and worldwide support

Rotork solve customer challenges and develop new solutions that are tailored to the needs of our clients.

We offer dedicated, expert service and support from initial inquiry, to product installation, to long-term after-sales care.

### › Low cost of ownership

Long-term reliability prolongs service life.

Rotork helps to reduce long-term cost of ownership and provides greater efficiency to process and plant.

## CP Range

Section	Page	Section	Page
Rotork	2	Inside the CP Range Actuator	6
Fluid Power Actuators and Control Systems	4	Model Number Designation	9
CP Range – Compact Pneumatic Actuators	5	Site Services	10



### Comprehensive product range serving multiple industries

Rotork products offer improved efficiency, assured safety and environmental protection across sectors such as the Power, Oil & Gas, Water & Wastewater, HVAC, Marine, Mining, Pulp & Paper, Food & Beverage, Pharmaceutical and Chemical sectors.

### Market leaders and technical innovators

We have been the recognised market leader in flow control for over 60 years.

Our customers rely upon Rotork for innovative solutions to safely manage the flow of liquids, gases and powders.

### Global presence, local service

We are a global company with local support.

Manufacturing sites, service centres and sales offices throughout the world provide unrivalled customer services, fast delivery and ongoing, accessible support.

### Environmental, Social and Governance is at the heart of our business

Our ambition is to become recognised as a sustainability leader within our industry. We are positioning ourselves to better understand and predict customers' needs and play our fullest role in enabling smart solutions for global sustainability challenges.



Rotork has manufacturing facilities in Italy, Sweden, China, the UK and the USA, providing the capacity to produce a high volume of products, ensuring that you deliver your projects on time.

Rotork delivers the following product ranges:

- Pneumatic rotary and linear valve actuators
- Hydraulic rotary and linear valve actuators
- Electro-hydraulic valve actuators
- Subsea valve actuators
- Vane-type pneumatic valve actuators
- Control systems

### Centres of Excellence

In addition to manufacturing sites throughout the world, Rotork has regional operation centres that play a pivotal role in innovation, service and support. These centres hold stock, provide application engineering and packaging of control components as well as providing sales, service, installation and commissioning support.

### Design and Testing

Rotork has dedicated research and development facilities around the world combined with test facilities that include bespoke specialist testing systems, ensuring reliable operation and lifetime functionality of our products.

Our test systems incorporate the following features:

- Static continuous and dynamic analysis on a full range of torques throughout the complete stroke of the actuator
- Cyclic and repetitive tests, with variable parameters such as load, cycle times and temperature
- Automatic or manual setting and recording of pressure, position and temperature parameters
- Hydraulic filtration and flushing capabilities
- Torque testing up to 600,000 Nm (5,000,000 lbf.in)
- Thrust testing up to 10,000 kgf (22,046 lbf)
- Pneumatic pressures up to 120 bar (1,740 psi)
- Hydraulic pressures up to 360 bar (5,220 psi)

Most comprehensive range of pneumatic, hydraulic and electro-hydraulic actuators available.

Superior performance actuators for on/off duty, ESD, HIPPS, protective service and special valve applications.



## 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.

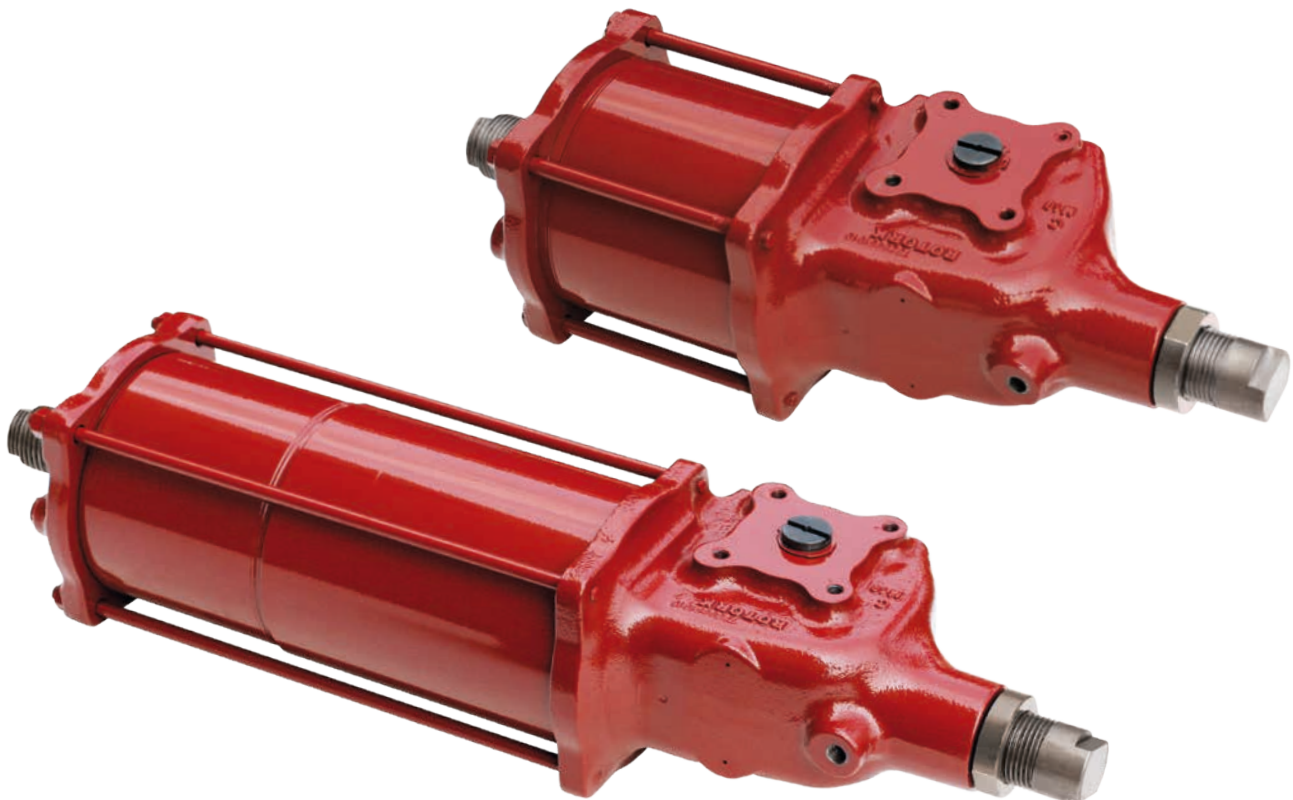
### High Performance by Design

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



### 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.



*CP Range Quarter-Turn Pneumatic Actuators*

## Inside the CP Range Actuator<sup>1</sup>

Every Rotork 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)

Low: -40 to +100 °C (-40 to +212 °F)

Extreme Low: -60 to +100 °C (-76 to +212 °F)

For high temperature range up to 160 °C (320 °F), please contact Rotork.

**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 as well as excellent wear resistance are provided by treating all wearing surfaces with either electroless-nickel/chromium plating or a nitro-oxidation process. These processes provide increased surface hardness, reduced surface roughness and 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**

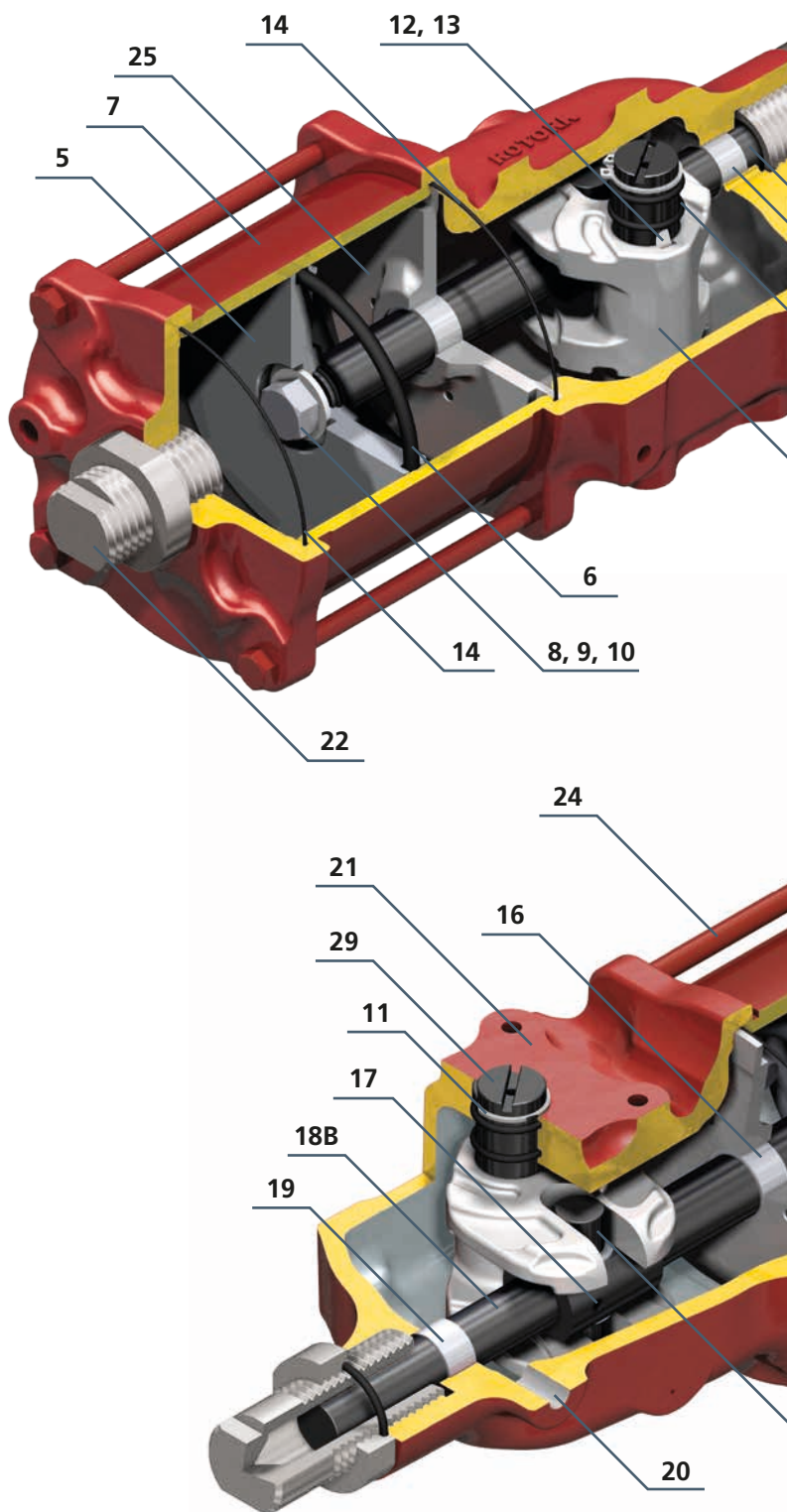
O-ring sealing provides protection certified to IEC IP66M, IP67M.

**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.

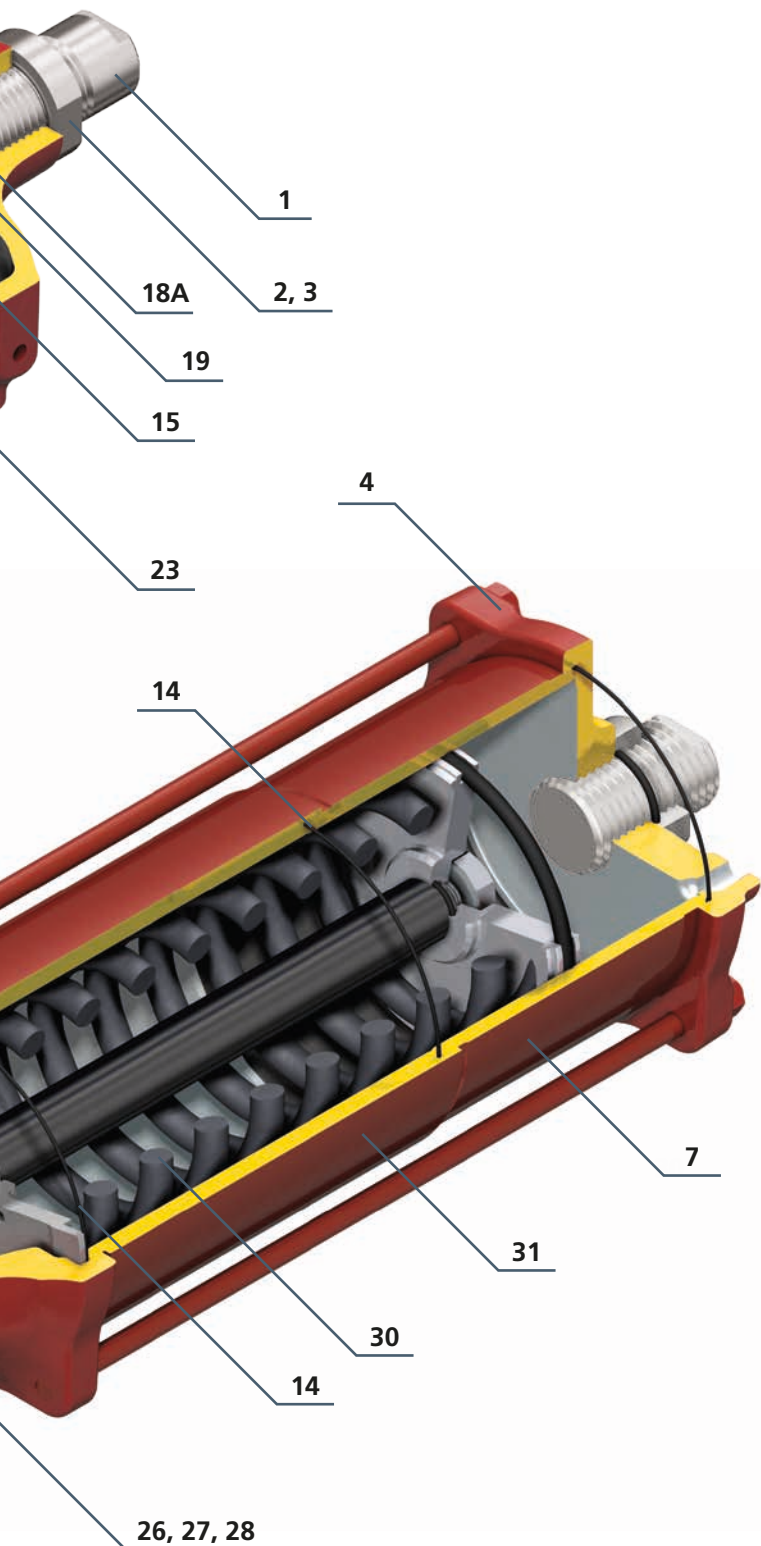
**Available Options**

- Integral manual override
- Control systems
- Custom actuator-to-valve adaptors and stem couplings
- Custom paint specifications



1. The illustration and parts list contained on p6-7 are relevant for CP/D 35, 45, 55, 65 (double-acting) and CP/S 55, 65 (spring-return). See page 8 for equivalent information on CP/S 35 and 45.

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



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	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	1
18B	Axial Bar - Spring-Return	Alloy Steel	1
19	Bushing	Steel/Bronze/Teflon	1
20	Housing Breather	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	1
29	Output Shaft	Alloy Steel	1
30	Spring	Spring Steel	1**
31	Spring Container	Carbon 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 Directive
- TR TS 010 and TR TS 012 Certificates of Conformity
- 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

See publication PUB000-012 or [rotork.com](http://rotork.com) for SIL data.

## Inside the CP Range Actuator

The illustration and parts list on this page are applicable only to body size 35 and 45 spring-return units.

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

**Torque Output:** Up to 800 Nm (7,000 lbf.in)

**Temperature Ranges:**

- Standard: -30 to +100 °C (-22 to +212 °F)
- Low: -40 to +100 °C (-40 to +212 °F)
- Extreme Low: -60 to +100 °C (-76 to +212 °F)

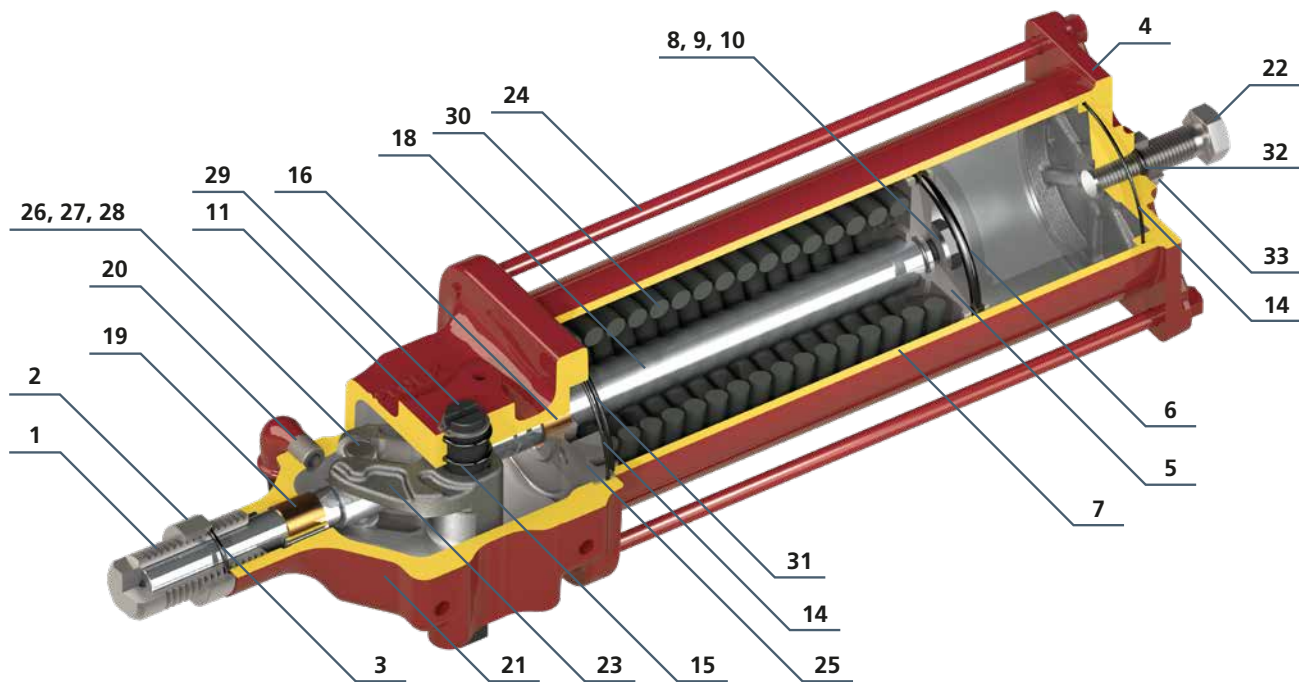
For high temperature range up to 160 °C (320 °F), please contact Rotork.

### Approvals and Industry Standards

- Actuators certified in accordance with ATEX 94/9/EC
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- Management system in accordance with ISO 9001:2008
- Certified suitable for use at SIL3 as a single device in accordance with IEC 61508

See publication PUB000-012 or [rotork.com](http://rotork.com) for SIL data.

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	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 (not shown)	Carbon Steel	1
13	Spring (not shown)	Spring Steel	1
14	O-ring	Buna-N	2
15	O-ring	Buna-N	4
16	Bushing	Steel/Bronze/Teflon	1
18	Axial Bar	Alloy Steel	1
19	Bushing	Steel/Bronze/Teflon	1
20	Housing Breather	Carbon Steel	1
21	Housing	Ductile Iron	1
22	Stop Screw - End Flange	Stainless 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	1
29	Output Shaft	Alloy Steel	1
30	Spring	Spring Steel	1
31	O-ring	Buna-N	1
32	O-ring	Buna-N	1
33	Stop Nut	Stainless Steel	1





## Model Number Designation

Example Model Number **C P / S 055 - 100 A / CB - MH**

### ACTUATOR TYPE

C = Compact Scotch Yoke

### SUPPLY TYPE

P = Pneumatic

### EXECUTION TYPE

S = Spring-Return

D = Double-Acting

### CENTRE BODY SIZE Nominal movement arm (mm)

035, 045, 055, 065

### CYLINDER SIZE

### SEALS

A = NBR: -30 to +100 °C (-22 to +212 °F)

B = Viton: -20 to +100 °C (-4 to +212 °F)

C = Fluorosilicone: -40 to +100 °C (-40 to +212 °F)

E = Fluorosilicone: -60 to +100 °C (-76 to +212 °F)

### EXECUTION TYPE

A = Double-Acting

AA-EA = Spring-Return 55, 65 without spacer

CB, DB = Spring-Return 55, 65 with spacer

AL-EL = Spring-Return 35, 45 without spacer

CM, DM = Spring-Return 35, 45 with spacer

### MANUAL OVERRIDE TYPE

M, MH

### Extensive Product Range

Rotork 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 applications. Rotork also offers complete lines of electric actuators and gearboxes.



## Site Services

Rotork understand the value of prompt, punctual and superior site services. Rotork Site Services have specialist expertise, insight and experience in service support for mission-critical flow control and instrumentation solutions for oil and gas, water and wastewater, power, chemical process and industrial applications. We offer global frontline support backed by dedicated in-house experts.

Our service solutions increase plant efficiency and reduce maintenance costs, while workshop services return equipment to as-new condition. Our experience and understanding of the flow control industry means we have extensive insight and ideas of what we can do to provide significant value to our customers and their operations.

Rotork Site Services is comprised of two main areas; Lifetime Management and Site Services. Lifetime Management is the suite of services within Rotork Site Services which help you manage the risk associated with aging assets and includes our Reliability Services offering. Site Services comprises essential actuator service, repair, maintenance and upgrades.

Rotork has specialist expertise, insight and experience in flow control.

We provide insight into how we can deliver value to our customers.

Our service solutions increase plant efficiency and reduce maintenance costs.



## Site Services

### Lifetime Management

The services available within Lifetime Management offer a complete solution to managing the risks associated with the life cycle of your equipment and their obsolescence (which compromise reliable performance and valuable uptime).

The aim of Lifetime Management is to provide you with constant support and minimum- to- no disruption to your production flow. It is a customisable service offering designed to seamlessly maintain and improve your assets. We manage the inherent risks associated with advances in technology, component obsolescence and ageing equipment for you. We are committed to helping customers maximise the continuous, fault-free operation and working life of their actuators. Supporting the continuous and reliable operation of your plant allows for improved performance and increases in valuable uptime.

#### Lifetime Management covers:

- Reliability Services
  - Health Check
  - Planned Maintenance
  - Enhanced Warranty
  - Predictive Maintenance
- Upgrade Services (retrofit)
- Planned Shutdown Support (service or run time)
- Life Cycle Services (based on years in service or run time)
- Overhauls/Refurbishment
- Customised Spares Programme
- Training
- Consultancy



### Site Services

Rotork's Site Services comprises the essential on-site actuator service, repair, maintenance and upgrades part of our service offering, plus the commissioning of new actuators and applications. It includes off-site work completed at a Rotork Support Centre including recertification, automation, testing and product selection.

Our decades of experience in the industrial actuation and flow control markets means that customers can rely on us to understand their problems and to deliver reliable, economic solutions. Rotork's talented and experienced engineers have an in-depth understanding of the problems that are faced in the field and they know how to fix them.

On sites where providing evidence of valid asset certification is a legal requirement, Rotork engineers can carry out the necessary OEM level inspections and provide the statutory paperwork to comply with regulations.

- Planned Shutdown Support
- Actuator Workshop Overhaul
- Field Support
- Valve Automation Services
  - On-site
  - Off-site
- Global Support



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

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

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