

Group Products and Services



Innovative Flow Control and Asset Management Solutions

rotork®

Keeping the World Flowing





Reliable operation when it matters

Assured reliability for critical applications and environments.

Whether used 24/7 or infrequently, Rotork products will operate reliably and efficiently when called upon.

Quality-driven global manufacturing

Products designed with 60 years of industry and application knowledge.

Research and development across all our facilities ensures cutting edge products are available for every application.

Customer-focused service worldwide support

Solving customer challenges and developing new solutions.

From initial enquiry through to product installation, long-term after-sales care and Client Support Programmes (CSP).

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.

Group Products and Services

Section	Page	Section	Page
Rotork – Keeping the World Flowing	2	Valve Gear Operators and Accessories	22
Electric Actuators and Control Systems	8	Fluid Power Actuators and Control Systems	34
Network Control Systems	18	Instrumentation and Control	42
Rotork <i>Master Station</i> Network Capabilities	19	Site Services	48



Comprehensive product range serving multiple industries

Improved efficiency, assured safety and environmental protection.

Rotork products and services are used throughout industry inclusive of Power, Oil & Gas, Water & Wastewater, HVAC, Marine, Mining, Pulp & Paper, Food & Beverage, Pharmaceutical and Chemical industries around the world.

Global presence

local service

Global company with local support.

Manufacturing sites, service centres, sales offices and *Centres of Excellence* throughout the world provide unrivalled customer services and fast delivery.

Market leader technical innovator

The recognised market leader for 60 years.

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

Corporate social responsibility

A responsible business leads to being the best business.

We are socially, ethically, environmentally responsible and committed to embedding CSR across all our processes and ways of working.

rotork

Keeping the World Flowing

GLOBAL EXPERIENCE STRATEGIC INDUSTRIES

Active in every industry and market sector around the world.

Serving customers and working with partners.

Improving efficiency, assuring safety and protecting the environment.



Our engineering and application knowledge base, built over 60 years, allows us to provide innovative and reliable solutions for all flow control applications.

We work across the globe, servicing a diverse range of markets and critical applications.

Our experience of flow control is second to none.



Oil & Gas

Rotork products are used on upstream, midstream and downstream activities, ranging from offshore production facilities, to refining and processing, to transportation, storage and distribution.

- Onshore and offshore production
- Refining and petrochemicals
- Distribution and storage
- Pipelines
- LNG liquefaction and regasification
- Unconventional oil & gas



Power

Rotork products are found in traditional power stations, including nuclear power stations where its products are certified for use both inside and outside containment. They are also used for renewable energy generation systems such as thermal solar plants, and emission reduction processes such as flue gas desulphurisation.

- Conventional fuels
- Nuclear energy
- Concentrating solar power
- Geothermal and other renewables



Water & Wastewater

Rotork products are used on modern state-of-the-art water treatment and distribution processes, which maximise existing resources such as desalination plants and water re-use projects, together with conventional water and wastewater plants.

- Sludge and sewage treatment
- Water treatment, desalination and re-use
- Environmental control
- Dams, reservoirs and irrigation



Other Industries

- Marine
- Pharmaceutical
- HVAC
- Mining
- Biomedical
- Rail
- Pulp & Paper
- Food & Beverage

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Keeping the World Flowing

ESTABLISHED REPUTATION GLOBAL SUPPORT



Unrivalled global network of manufacturing sites, service centres, sales offices and agents.

Tailored support programmes increase plant efficiency.

Customer focused

Customers can source Rotork products locally in the knowledge that they will be supported by life-of-plant maintenance, repairs and upgrade services wherever they are in the world, with over 400 service engineers available globally to provide support.

We are committed to close customer ties, with our global network supporting operations in some of the most remote and challenging environments.

We understand the importance of being close to our customers and understanding their needs – this is key to driving innovation.







Global network

Rotork operates a truly global network of sales offices, service centres and manufacturing plants sited in Europe, Asia and North America. From heavy-duty gears to nuclear-certified actuators and pressure regulators, we are proud to be delivering the best solutions everywhere we work.

Rotork has more than 3,700 employees around the world who are fundamental to maintaining our reputation for excellence in innovation and the quality of our products and services.

Client support

As an international business, supporting clients wherever their operations and project installations are located is part of our culture.

Our worldwide international sales and service network allows us to support our clients wherever they are based.

In addition to manufacturing sites throughout the world, Rotork has regional *Centres of Excellence* providing local service and support.

Electric Actuators and Control Systems

rotork

Rotork electric actuators are designed and manufactured in strategic global locations such as the UK, USA, Germany, Spain, China, Malaysia and India to ensure complete global coverage for all your site needs.

Rotork delivers state of the art cutting edge products to the valve industry including:

- Intelligent valve actuators multi-turn and part-turn
- Control valve actuators part-turn / rotary and linear
- Specialist products for HVAC, power station and pump metering applications
- Explosionproof actuators, sensors, switches and controls
- Network control systems

Research and Development

Rotork continually researches new technologies and develops innovative and industry leading products.

We have dedicated research and development centres around the world that all work together to produce the strongest line of valve actuation products available on the market today.

Testing and Quality Assurance

Rotork is recognised for being quality driven and committed to providing our customers with robust and reliable products that meet or exceed their expectations.

We have test facilities located at all of our manufacturing facilities so that every product is tested and qualified before shipment to the customer. Our products are manufactured to comply with stringent quality standards around the world.

All Rotork products are designed and manufactured in accordance with ISO 9001, achieving the highest levels of performance and reliability.

Customer Service - the Rotork Advantage

Rotork provides unparalleled world-class service and support locally to you, wherever you are in the world.

Proud to be recognised as the leader in automation products for challenging critical applications.

Unrivalled record of reliability and assured operation in the harshest environments.





Intelligent Integral Non-Intrusive Electric Actuators

IQ range





IQ multi-turn and part-turn electric actuators for arduous environments

Unrivalled industry-leading reliability

- Continuous position tracking at all times, even without power
- The graphical interface, remote indication and data logger are maintained and accessible on power loss
- Extended life and mounting in any orientation with oil bath lubrication
- Water ingress protection, not reliant on terminal cover or cable gland sealing – double-sealed to IP66/68 20 m for 10 days
- Built-in protection by using independent torque and position sensing
- Safe, motor-independent, handwheel operation available at all times
- Explosionproof and certified for safety applications (SIL2/3)
- Drive bush bearings sealed for life no maintenance required
- Integral plug and socket connections available for watertight enclosures

Simple, secure commissioning and configuration

- Rapid and secure commissioning and configuration even without power
- Non-intrusive setting in any environmental conditions no cover removal required, using Rotork Bluetooth® intrinsically safe setting tool
- Easy installation and valve maintenance using detachable thrust bases
- Auto set up function on part-turn variants
- Multilingual backlit display

Asset management and preventative maintenance

- Real-time valve and actuator performance information viewable on screen
- Safe and secure data download via non-intrusive Rotork Bluetooth® Setting Tool Pro
- Field upgradeable and configurable control and indication options using setting tool
- Compatible with Pakscan digital control and monitoring system plus all leading field bus networks

IQ Range performance data

- Multi-turn direct drive:
 10 to 3,000 Nm (7 to 2,200 lbf.ft)
- Multi-turn with IS or IB gearbox: up to 44,000 Nm (32,452 lbf.ft)
- Part-turn direct drive:
 50 to 3,000 Nm (37 to 2,200 lbf.ft)
- Part-turn with IW gearbox: up to 826,888 Nm (609,881 lbf.ft)
- Linear thrust range with linear output: up to 112 kN (25,177 lbf)

Power supply options

1-phase, 3-phase or DC supplies

See PUB002-038 for further details.

RHS



Remote Hand Station

The Remote Hand Station enables duplicated operation, interrogation and configuration of the latest IQ actuators. For use when the actuator is located in a hazardous or inaccessible location.

- Installation using standard data cable, up to 100 m (328 ft) away from the actuator
- Full replication of actuator configuration, control, monitoring and downloadable data
- Powered from the attached actuator, no need for additional power supply

See PUB002-056 for further details.

Intelligent Integral Non-Intrusive Multi-turn & Linear Electric Actuators



IQ 3-phase

IQ 3-phase electric actuators for isolating, regulating or inching duties (S2 & S3 / Class A & B) of up to 60 starts / hour.

Direct torque output range from 10 to 3,000 Nm (7 to 2,200 lbf.ft). With second stage gearboxes, multi-turn output torque up to 44,000 Nm (32,452 lbf.ft) and part-turn up to 826,888 Nm (609,881 lbf.ft).



IQD direct current

DC powered versions of IQ actuators. Voltage ranges available are 24, 48 and 110 VDC.

Direct torque output range 11 to 305 Nm (8 to 225 lbf.ft). With second stage gearboxes, output torque up to 1,500 Nm (1,106 lbf.ft) and part-turn up to 132,000 Nm (97,358 lbf.ft).



IQH high speed

IQH 3-phase electric actuators provide fast operation with positive seating without back driving. High output speeds and generally irreversible operation provide a self-locking ability.

Speeds up to 259 rpm and torque range 75 to 397 Nm (55 to 293 lbf.ft).



IQS 1-phase

IQS actuators are 1-phase versions of IQ actuators.

Direct torque range from 10 to 450 Nm (7 to 332 lbf.ft). With second stage gearboxes, multi-turn output torque up to 9,700 Nm (7,154 lbf.ft) and part-turn up to 208,000 Nm (153,412 lbf.ft).



IQM / IQML modulating

Modulating IQ 3-phase electric actuator with solid state reversing starter in place of the electro-mechanical contactors. Fast-response remote control circuits for rapid control. The solid state starter includes an electronic motor 'brake' feature.

The IQM is suitable for up to 1,200 starts per hour (S4 / Class C). Direct seating torque output range from 10 to 544 Nm (7 to 400 lbf.ft). With second stage gearboxes, output seating torque up to 3,600 Nm (2,655 lbf.ft) and part-turn up to 77,000 Nm (56,790 lbf.ft).

IQML has a linear output drive providing seating thrust output of up to 43 kN (9,667 lbf).

Special designs

If you require an IQ or IQT actuator for duties that are not covered by our standard range, we are happy to discuss customised solutions.

Intelligent Integral Non-Intrusive Part-turn & Linear Electric Actuators



IQT

IQT part-turn 1-phase, 3-phase and DC electric actuators are designed for isolating or regulating duties (S2 & S3 / Class A & B) of up to 1,200 starts per hour.

Direct torque output range from 50 to 3,000 Nm (37 to 2,214 lbf.ft).



IQTM modulating

IQTM 1-phase, 3-phase and DC electric modulating versions of the IQT actuator are designed for modulating duty up to 1,800 starts per hour (S4 / Class C). They feature fast-response remote control circuits for rapid control.

Torque range 50 to 3,000 Nm (37 to 2,214 lbf.ft).



IQT battery backup

For applications requiring operation in the event of loss of mains electrical supply, IQT, IQTM and IQTF* are available with internal battery** or connection to an externally supplied 24 VDC supply. Actuators can be configured to automatically move to a preset position or remain available for control on loss of AC mains.

Note: Not available with IQT3000

- * Limited turns available.
- ** Non-explosionproof only.



IQTF full-turn modulating

IQTF 1-phase, 3-phase and DC electric modulating actuators are capable of multi-turn, rising output, linear output and direct rotary output. Includes special fast switching control inputs for hardwired control. Modulating duty cycle up to 1,800 starts per hour (S4 / Class C). For full IQTF data please refer to *PUB002-006*.

A = Torque range 20 to 250 Nm (14.8 to 184.5 lbf.ft)

B = Torque range 20 to 3,000 Nm (14.8 to 2,214 lbf.ft)

L = Thrust range 7.5 to 75.8 kN (1,693 to 17,036 lbf)

The drive outputs conform to actuator interface standards EN ISO 5210 for multi-turn and BS EN 15714-2 for linear.

Advanced Electric Actuators







CK modular design electric valve actuators

CK range actuators are suitable for valves in non-hazardous locations. The modular product range facilitates a number of different control package configurations to meet your application requirements.

- Multi-turn output torque up to 10,800 Nm (8,000 lbf.ft)
- Part-turn output torque up to 205,600 Nm (151,600 lbf.ft)
- Modular design provides an off-the-shelf solution for spares and upgrading
- Plug and socket connection for easier field wiring
- Continuous valve position indication even during power loss
- Non-intrusive setting via infrared or optional Bluetooth® with the intelligent CKc - Centronik module
- Hollow output drive to accept rising valve stems
- Detachable base options
- Secure manual handwheel drive fully independent of the motor drive train
- IP68 rating (8 m for 96 hrs) as standard provides enhanced environmental protection



CK & CKR actuators

Comprising electric motor, drive gearing, independent handwheel drive, torque and position limit control & indication with plug and socket field wiring correction. The CK range provides the right solution for users with centralised motor control centres or for high temperature and sustained vibration applications.

CKA & CKRA actuators

CKA actuators include the Atronik control module. Atronik provides reliable motor starter with modest integral controls to meet the standard requirements of site specification. Simple status indication and DIP switch configuration ensure quick commissioning and installation on site.

CKc & CKRC actuators

The addition of the Centronik module to the CK provides intelligent, integral control for use with all site control systems. It permits the use of hardwired, fieldbus or analogue control & indication, offering cost-effective implementation with centralised control systems. Centronik actuators allow valvemaker/integrator testing with just the power supply, using local control with no extra wiring or motor control gear required. Non-intrusive, password protected configuration may be carried out using open/close selector switches or by using the optional Rotork Setting Tool, over the infrared or optional Bluetooth interfaces. The Centronik display provides position indication, status and alarms for operation plus simple menu driven configuration screens.

See PUB111-001 for further details.

Precision Modulating Actuators

CMA range









CML 1500 (Linear)

CML (Linear)

CMQ (Part-turn)

CMR (Multi-turn)

Linear, part-turn and multi-turn actuators

The Rotork CMA delivers a range of sizes suitable for almost all linear, part-turn and multi-turn control valves and other applications requiring exact position control and continuous modulation. Suitable for demanding applications including control valves, metering and dosing pumps.

- Powered by 1-phase or DC supplies
- Continuous modulation to S9 (IEC 60034), Class D duty (EN15714-2)
- Optional local controls including positional display
- Optional Reserve Power Pack (RPP) including local controls and positional display

- Permanently lubricated and maintenance free drive train
- Optional configurable ESD input for end of travel or stayput emergency shutdown function
- Accurate and repeatable position control
- 4-20 mA loop powered feedback signal
- Linear: up to 20 kN (4,500 lbf) seating thrust
- Part-turn: up to 124 Nm (1,100 lbf.in) seating torque
- Multi-turn: up to 45 Nm (400 lbf.in) rated torque

See PUB094-001 for further details.









Linear and part-turn precision modulating actuators

- Compact, viable alternative technology when good quality instrument air is not available in hazardous areas
- Ultra-low energy consumption, suitable for solar powered applications
- 1-phase and DC power supply options
- Continuous, unrestricted modulation to S9 (IEC 60034), Class D duty (EN15714-2)
- Unparalleled accuracy, repeatability, resolution and stiffness
- Perfect for demanding applications including control valves and metering pumps
- Comprehensive data logging
- Programmable fail-to-position option

- Analogue, digital and network control options
- Pakscan™, HART®, Profibus®, Foundation Fieldbus® and Modbus® available
- Optional hardwired control
- Watertight IP68, NEMA 4 & 6, and explosion proof enclosures
- Option of intrinsically safe I/O connections
- Non-intrusive setup / calibration using Bluetooth® wireless technology
- Optional manual override
- CVL Linear: thrust range 890 to 22,241 N (200 to 5,000 lbf)
- CVQ Part-turn: torque range 54.2 to 271 Nm (480 to 2,400 lbf.in)

See PUB042-001 for further details.

HVAC Solutions – Explosionproof Actuators and Control Systems

ExMax+Lin/ ExRun

range



ExCos/ ExBin range





Linear explosionproof actuators

ExMax + LIN and ExRun electric linear valve actuators are designed for use in Ex areas for all gases, mists, vapours and dust. ExMax + LIN with spring-return safety function.

- Thrust range 500 to 10,000 N (112 to 2,248 lbf)
- Certificates: ATEX, IECEx, CSA, Inmetro, Kosha, EAC and others
- Optional spring-return configuration (3, 10 or 20 seconds)
- Control modes: On-off, 3 pos., modulating (0-10 VDC, 4-20 mA), depending on type
- 1-phase and DC power supply options
- · Water and dust-tight IP66 rating
- Stainless steel housing option for ExMax
- Temperature range: -40 to +50 °C (-40 to +122 °F)
- Optional extras: Ex-d auxiliary switch with 2 adjustable contacts (2 mounting options available), Ex-e terminal box, manual override

See PUB113-001 for further details.



HVAC explosionproof sensors and switches

ExCos analogue sensors and ExBin binary switches are designed for direct use in hazardous locations. No additional modules in the panel required. No intrinsically safe wiring required. All parameters adjustable on site without additional tools or measuring devices. Sensors and switches for pressure, differential pressure, temperature and humidity available. Explosionproof design for all gases, mists, vapours and dust.

- Operating temperature range -20 to +50 °C (-4 to +122 °F)
- Measurement pressure range 0 to ±7,500 Pa
- Measurement temp. range -40 to +125 $^{\circ}$ C (-40 to +257 $^{\circ}$ F)
- Measurement humidity range 0 to 100% rH
- DC power supply
- Stainless steel housing option
- Certificates: ATEX, IECEx, CSA, Inmetro, Kosha, EAC and others
- Water and dust-tight IP66 rating, integrated junction box

See PUB113-001 for further details.

ExReg range





HVAC explosionproof control systems

ExReg controller system has been designed for use in Ex areas for all gases, mists, vapours and dust. In combination with Ex-Max actuators it is a closed loop control system for volume flow control (VAV, CAV), pressure, temperature and humidity.

- Operating temperature range -20 to +50 °C (-4 to +122 °F)
- Measurement differential pressure range 0 to 300 Pa
- Measurement temp. range -40 to +125 $^{\circ}$ C (-40 to +257 $^{\circ}$ F)
- Measurement humidity range 0 to 100% rH
- 1-phase and DC power supply options
- Stainless steel housing option
- Certificates: ATEX, IECEx, CSA and others
- Water and dust-tight IP66 rating, integrated junction box
- Integral PID loop
- Pre-defined parameter sets for the most common control tasks
- Can be configured on site in the hazardous location

See PUB113-001 for further details.

Damper and Valve Control Electric Actuators

SM-6000



LA-2000

range



Heavy-duty rotary actuators

- Up to 313° rotation
- Torque range up to 35,256 Nm (26,000 lbf.ft)
- Double O-ring sealing
- Continuous unrestricted modulating duty
- HART®, Profibus® and Foundation Fieldbus® available
- Temperature range: -40 to +85 °C (-40 to +185 °F)
- Automatic torque limiting
- Self-locking drive system to hold in last position and prevent backdriving
- Manual override standard

See PUB052-001 for further details.

Heavy-duty linear actuators

- Stroke distance from 6" to 30" (152 to 762 mm)
- Thrust range up to 27,335 N (6,150 lbf)
- Modulating duty: 2,000 starts per hour
- HART® available
- Temperature range: -40 to +65 °C (-40 to +150 °F)
- Automatic thrust limiting
- Self-locking drive system to hold in last position and prevent back driving up to thrust rating
- ATEX approved for LA-2520
- Manual override standard

See PUB045-002 for further details.

ExMax range



Explosionproof part-turn valve actuators

Compact, robust and lightweight electric part-turn valve actuator, designed for use in Ex areas for all gases, mists, vapours and dust.

- On/off duty as standard
- 24-240 VAC/VDC universal power supply
- Standard ISO flanges available
- Torque range 5 to 150 Nm (3.7 to 110.6 lbf.ft)
- Explosionproof to international standards

- UL and CSA certified variants available
- Auto setup and selectable speeds
- Mechanical position indication
- Failsafe option
- Ingress protection IP66/67
- Stainless steel housing option
- Temperature range: -40 to +50 °C (-40 to +122 °F)

See PUB113-003 for further details.

Specialised Electric Actuators

NA range



Nuclear safety related actuators

Rotork NA range actuators have been qualified for safety related applications for the nuclear power industry. Qualification is done in accordance with the relevant industry standard (such as IEEE-382/344/323). Rotork is an internationally audited and approved nuclear actuator manufacturer, all nuclear actuators are manufactured in accordance with strict nuclear industry quality assurance requirements.

- Suitable for 3-phase AC power supply
- Inside or outside containment
- 40 year, 3,000 cycle design life
- Optional torque limiter
- Optional thrust compensator

See PUB004-001 for more details

PAX₁ actuator



Low voltage linear actuators

The PAX1 is a flexible low voltage DC powered linear actuator featuring a 25 mm maximum thrust rod stroke moving at speeds up to 60 mm/min and a maximum thrust of 2,890 N (650 lbf) all in a flameproof enclosure.

- IP rating Type 4X / Type 6P / IP66 / IP68
- FM explosionproof
- Temperature range: -40 to +80 °C (-40 to +176 °F)
- Low power consumption less than 1 Watt during standby, which is ideal for installations in isolated locations
- Optional isolated 4-20 mA position feedback
- Overall stroke and alarm limits are defined by end user

See PUB136-001 for further details.



Multi-turn actuators

Watertight, electro-mechanical, multi-turn actuator.

- Torque range: Direct drive 14 to 3,000 Nm (10 to 2,200 lbf.ft) Part-turn up to 250,000 Nm (185,000 lbf.ft) Multi-turn up to 40,800 Nm (30,000 lbf.ft)
- Oil bath lubricated IP68 double-sealed option
- Complete integral motor control or customer supplied motor control. Separate motor control available where required (SyncroSet actuator)
- 3-phase power supply
- Isolating and regulating duty
- Modulating Syncroset option available

See PUB005-001 for further details.



Specialised Electric Actuators

ROM / ROMpak

range





Part-turn actuators

Compact, lightweight, part-turn actuator with efficient and simple gearing.

- On/off duty; manual override; self-locking; ISO flanges
- Available with local controls and phase rotation correction
- Torque range 8 to 800 Nm (6 to 590 lbf.ft)
- Wide range of supply voltages available
- 1-phase, 3-phase and DC power supply options
- Watertight IP68 rating
- High speed variant available
- Mechanical and LED local position indication
- Options: Bus communication, analogue control and feedback

See PUB008-001 for further details.

Q range



Part-turn actuators

Small, electro-mechanical part-turn actuator environmentally sealed to IP68.

- Torque range 40 to 406 Nm (30 to 300 lbf.ft)
- · Rugged compact, double-sealed
- Positive travel limitation through externally adjustable mechanical stops
- 1-phase power supply
- Marine option
- Simple remote control for basic applications
- Options: Bus communication, analogue control and feedback

See PUB007-001 for further details.

400

range



Multi-turn, part-turn and linear actuators

- Electromechanical setting with optional mechanical position indication
- Part-turn torque: up to 350,000* Nm (258,147 lbf.ft)
 Multi-turn torque: 15 to 2,000 Nm (11 to 1,475 lbf.ft)
- Highly accurate linear stroke 7 to 200 kN (1,574 to 44,961 lbf)
- Torque and position setting
- PTCS, patented planetary gearing system controlling the applied torque with high mechanical efficiency >95%
- Handwheel for manual operation
- IP67 (IP68 optional) and high quality corrosion protection
- Supply voltages ranging from 3-phase to 12 VDC (low power applications)

* Using secondary gearbox or lever arm



Network Control Systems

rotork®

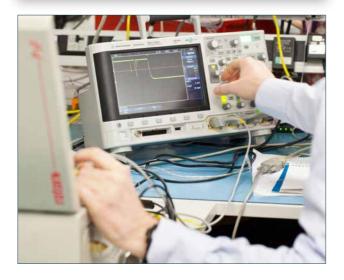
Integration of the plant controls using network connectivity has been a hallmark of Rotork's actuator products for many years. The use of field networks makes the commissioning of a plant, and the subsequent control and monitoring, a simple and reliable task.

All Rotork actuators are compatible with a wide range of communication and process controls systems by including the appropriate option card. The actuator reports status feedback, via the field highway, to the overall plant control system (DCS or PLC) and valve control commands are actioned.

Our own *Pakscan*™ system complements the open systems from Foundation Fieldbus®, Profibus®, Modbus®, HART® and DeviceNet®. Innovative technology together with expert bus system knowledge ensures that Rotork can always provide the ideal solution for your site control system.

A full listing of our worldwide sales and service network is available on our website at www.rotork.com

Modern facilities require up-to-date communications 24 hours a day, right down to plant level.



Rotork Master Station

The Rotork *Master Station* provides a state-of-the-art control interface for your *Pakscan* and Modbus network loops.

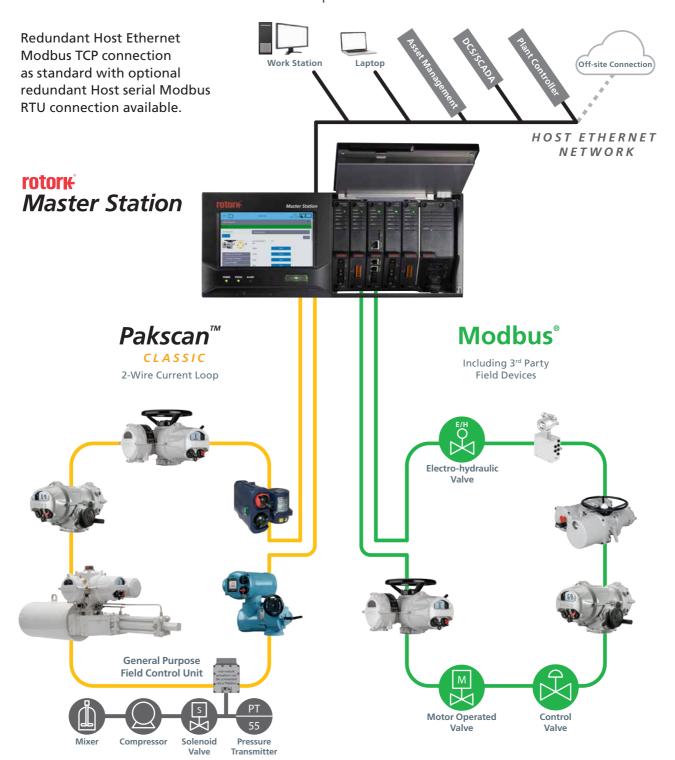
Now with 30 years installed experience *Pakscan* has found preference in all industry sectors and many diverse applications.

At the heart of the *Pakscan* system is the Rotork *Master Station*, providing the vital link between the control system and the devices in the field. The field devices are connected to the Rotork *Master Station* using *Pakscan* networks which have been designed for use in industries and applications where robust and reliable plant control and monitoring is required.

Pakscan: comprehensive solutions for modern plant control and monitoring.

- Automatic network monitoring and fault management
- Rotork Master Station with hot standby capability
- · Redundant, fault tolerant field networks
- Fully pre-configured Rotork Master Station
- Intuitive user interface
- Long distance and high device count without the need for external repeaters
- Well recognised, simple Modbus RTU / TCP host communications
- Field and host communication diagnostics
- Built in webpages for full system diagnostics
- Commission field devices without the need for the host control system
- Field networks open to third party devices
- Efficient low cost installation with minimum cost of ownership
- Multiple host connectivity
- Backed by Rotork global support

Rotork Master Station Network Capabilities



Pakscan Classic field network Add In Module (AIM)

The *Pakscan* Classic redundant loop network has been the network of choice for actuator control for over 30 years. Using robust current loop technology, up to 20 km loop lengths and 240 field devices are possible.

Modbus field network Add In Module (AIM)

Modbus field network with standard highway or redundant loop topology options. Other manufacturers devices integrated into the network by use of a Rotork field device description file.

Pakscan™

CLASSIC

Pakscan Classic

The Pakscan Classic current loop network has now been in service for 30 years, providing numerous plants globally with a robust reliable valve control system. Over 170,000 field units are operating in the field today.

The Rotork Master Station and Pakscan Classic current loop network are interchangeable with previously supplied Rotork Master Station models, interfacing seamlessly with the systems currently running the plant.

- Long loop length, up to 20 km
- Redundant, single fault tolerant, loop
- High noise immunity, current loop
- Up to 240 field devices, on a single highway
- No external repeaters, highway terminators or biasing
- Open to third party devices
- Fast scan time due to 'report by exception' protocol
- Standard instrumentation cable

Profibus®

Profibus is a leading international network protocol (IEC 61158-3). Rotork's Profibus DP module supports DP-V0 cyclic communications, extended actuator diagnostics and configuration is included in the DP-V1 acyclic data. Single highway and dual highway units, with the DP-V2 redundancy feature, are available. EDD and DTM files allow the Rotork device to be incorporated into asset management systems, whilst the GSD file guarantees device interoperability with all Profibus PLCs.

- RS485 Profibus DP VO and V1 compliant
- Single and dual redundant options
- Fully compliant with IEC61158-3 standard
- Profibus PNO certified
- Supports speeds up to 1.5 Mbit/s

See PUB088-001 for further details.

Modbus[®]

Modbus®

Rotork's Modbus module allows actuators to be connected to a 2-wire RS485 network for direct communication to a PLC or DCS using Modbus RTU protocol. Modules are available for standard single and dual (redundant) communication highways. In addition, a redundant loop network can be created with the single and repeater Modbus card. Status, alarms and control functions are available over the Modbus network.

- RS485 2-wire RTU communication
- International open standard
- Single and dual redundant options
- Integral repeater modules included where necessary
- Up to 115 kbps

See PUB091-001 for further details.



DeviceNet®

Devicenet is communications protocol which utilises the CAN bus network. Rotork's DeviceNet module Electronic Data Sheet (EDS) file is used to set up the actuator parameters to allow the systems performance to be optimised. Status, alarms and control functions are available over the DeviceNet network.

- Up to 63 devices on each network
- 4-wire cable, 2 for signal, 2 for power
- Trunk and drop line permitted
- ODVA certified to ensure compatibility
- EDS electronic device description file

See PUB090-001 for further details.





The Rotork Foundation Fieldbus module connects directly onto the standard Foundation H1 bus system (IEC 61158-1). The ability to report extensive actuator feedback within a single input block as well as system diagnostic information makes Rotork the first choice for use with a Foundation Fieldbus system. The device has link active scheduler capability as well as multiple digital and analogue function block capability, inputs and outputs. DD files describe the device capabilities to the host system.

- Foundation ITK inter-operability certified
- Fully compliant with IEC61158-2 standard
- Includes link master and LAS capability
- Independent HIST approval by major DCS vendors
- Full H1 field capability

See PUB089-001 for further details.



HART®

Highway Addressable Remote Transducer (HART) is a process control communication protocol. The HART signal consists of two parts, the analogue 4-20 mA current loop and a superimposed digital (variable frequency) signal. Traditionally the 4-20 mA loop is used for control and the superimposed digital signal for feedback, diagnostics and configuration. Along with the use of standard HART function codes, a DD file describes the device parameters which can be accessed by a host or handheld device. The majority of user configurable settings can be made over the HART interface.

- Up to 63 devices on each network
- Electronic Device Description (DD) files
- HART 7 compatible

See PUB092-001 for further details.



Valve Gear Operators and Accessories

rotork

Rotork are a specialist supplier of gearboxes, adaptations and accessories to the international valve and actuator industry with manufacturing plants in the UK, Netherlands, Italy, China, USA and India.

Rotork offer a wide range of gearboxes spanning the following categories:

- Part-turn output manual gear operators
- Part-turn output motorised gear operators
- Multi-turn output manual gear operators
- Multi-turn output motorised gear operators
- Specialised application gear operators
- Mounting kits and accessories

Engineering and Working Capabilities

Rotork delivers innovative solutions to suit individual needs, backed by Rotork quality and after-sales care.

Advanced application engineering ensures our products are world-class in design and meet or exceed international standards. Quality of our gearbox products is maintained through continuous materials testing and extensive life testing of fully engineered gearbox products.

Testing Facilities

Rotork have extensive multi-turn and part-turn gearbox test facilities at our various manufacturing locations. Rotork in-house testing capabilities include comprehensive performance, endurance, overload and environmental testing to ensure our gearboxes meet the exemplary standards expected by our customers.

Reliability and Quality Assurance

Rotork is committed to fully understanding your needs and expectations and meeting or exceeding these needs. Rotork has an established quality management system that meets the requirements of ISO 9001.

Rotork is committed to:

- Building business success through customer satisfaction
- The promotion and full understanding of customer needs within the organisation
- Continuous improvement of products and customer service operations
- Creating a quality culture by making continuous improvement and quality a fundamental part of every employee's performance and responsibility

Gearboxes and operators designed to withstand harsh environments including subsea and nuclear installations.

Mounting brackets, extension shafts, pedestals and accessories for the valve and actuator industry.





232 range



Light-duty worm gear operators

Light-duty cast aluminium part-turn gearboxes suited for HVAC, fire protection, and general industrial applications.

Torque range up to 1,500 Nm (1,106 lbf.ft). 7 sizes. Ratios from 37:1 to 45:1.

- Lightweight
- Rugged construction
- · Removable output drive sleeves
- IP65
- High pressure aluminium cast housing
- Protected input shaft

See PUB034-001 for further details.

242

range



Part-turn worm gear operators

Robust and lightweight part-turn cast iron gearbox for low torque manual applications. Suitable for ball, plug and butterfly valves.

Torque range up to 2,000 Nm (1,475 lbf.ft). 5 sizes. Ratios 40:1 and 50:1.

- Worm gear
- Manual drive
- Designed using the latest analytical design tools

See PUB099-001 for further details.

AB range



Part-turn worm gear operators

Heavy-duty cast iron part-turn gearboxes suited for ball, plug and butterfly valves serving the water, gas, chemical, power, and demanding industrial applications.

Torque range up to 32,000 Nm (23,600 lbf.ft). 15 sizes. Ratios from 34:1 to 729:1.

- Cast iron
- Axial needle bearings
- Rugged construction for all environments
- IP67
- Options: Stainless steel input shaft. Ductile iron. IP68.
 AWWA. Various environments. Padlockable handwheels.
 Limit switches. High and low temperatures. Buried service.

See PUB033-006 for further details.



Manual part-turn gear operators

Robust, rugged manual gearboxes designed for use in the water and gas pipeline markets.

Torque range up to 150 Nm (111 lbf.ft). Ratio 40:1.

- Output flange F05 / F07
- Bore Ø 22 mm
- Self-locking gearing
- IP65 minimum sealed unit
- Standard temperature range -20 to +120 °C (-4 to +250 °F)
- Optional padlock

See PUB131-001 for further details.

AB-SS

range



Stainless steel gear operators

Heavy-duty stainless steel 316 housing part-turn gearboxes suited for plug, ball and butterfly valves serving the water, gas, chemical and power industries in corrosive environments.

Torque range up to 26,000 Nm (19,177 lbf.ft). 11 sizes. Ratios from 34:1 to 729:1.

- Worm gear
- Manual drive
- Stainless steel 316 housing
- Stainless steel 316 input shaft
- Stainless steel 316 fasteners

See PUB100-001 for further details.





Stainless steel gearboxes

Heavy-duty stainless steel 316 housing part-turn gearboxes suited for plug, ball and butterfly valves serving the water, gas, chemical and power industries in corrosive environments.

Torque range up to 125,000 Nm (92,195 lbf.ft). 2 sizes. Ratios up to 3,795:1.

- Worm gear
- Manual or electric actuator drive
- Stainless steel 316 housing
- Stainless steel 316 input shaft
- Stainless steel 316 fasteners

Contact Rotork for further details.

BR range



Bronze worm gear operators

The BR series gear operators are manufactured from high quality cast aluminium bronze and stainless steel materials and designed for extended life operation of valves in corrosive man hole and vault steam distribution environments where road salts, standing water and elevated temperatures are common.

Torque range up to 7,000 Nm (5,163 lbf.ft). 3 sizes. Ratios from 34:1 to 217:1.

• Temperature range up to +200 °C (+392 °F)

Contact Rotork for further details.



IW range



Motorised part-turn gearboxes

Complete range of heavy-duty cast and ductile iron part-turn worm gearboxes suited for plug, ball and butterfly valves serving the water and waste water, gas, chemical, power, and general industrial applications.

Torque range up to 850,000 Nm (626,890 lbf.ft). 21 sizes. Ratios from 40:1 to 9,600:1.

- Comprehensive gear ratios with a selection of input reducers
- High efficiency
- Angular contact bearings
- Removable output drive sleeves
- IP67
- Options: Ductile iron. IP68. AWWA. Nuclear. All types of environment. High and low temperatures. Lever arms. Travelling nut for applications requiring more or less 90 degrees travel. Buried service.

See PUB028-001 for further details.

W High Torque Duty

range



High torque part-turn worm gear operators

Designed to suit the infrequent motorised operation of ball, plug and butterfly valves, these gearboxes can offer an increased torque rating.

Torque range up to 203,000 Nm (149,725 lbf.ft). 11 sizes. Ratios from 40:1 to 6720:1.

- IP67
- Comprehensive gear ratios with a selection of input spur gear reducers
- Angular contact bearings
- Removable and repositionable output sleeve
- Repositionable baseplate facility
- Inherently self-locking gear componentry
- Options: Flexible extensions. IP68. ATEX. High and low temperatures. All types of environment.

See PUB028-075 for further details.

IW

range

Heavy-duty cast and ductile iron part-turn worm gearboxes suited for plug, ball and butterfly valves serving the water, gas, chemical, power, and general industrial applications.



Manual part-turn operators

Torque range up to 850,000 Nm (626,890 lbf.ft). 21 sizes. Ratios from 40:1 to 9,600:1.

- Comprehensive gear ratios with a combined selection of input reducers
- High efficiency
- Removable output drive sleeves
- IP67
- Angular contact bearings
- Options: Ductile iron. IP68. AWWA. All types of environment. High and low temperatures. Padlockable handwheels. Limit switches. Lever arms. Travelling nut for applications requiring more or less than 90 degrees travel. Buried service.

See PUB028-001 for further details.

ABM

range



Motorised part-turn gearboxes

Part-turn devices for the motorised operation of plug, ball and butterfly valves and power and process dampers.

Torque range up to 2,000 Nm (1,475 lbf.ft). 4 sizes. Ratios 34:1 to 200.7:1.

- Supports electric actuator weight up to 46 kg (101 lbs) and a speed up to 96 rpm
- Input: F/FA10
- Ductile iron housing and C45 carbon steel input shaft
- Axial thrust bearings
- Removable insert
- IP67 and ATEX approved
- Options: High and low temperatures. Firesafe to ISO 10497.
 IP68 marinised and buried service.

See PUB123-004 for further details.

ILG-D range



Override part-turn gear operators

Complete range of manual declutchable sandwich override part-turn gearboxes for double-acting pneumatic actuators.

Torque range up to 17,000 Nm (13,000 lbf.ft). 9 sizes. Ratios from 35:1 to 468:1.

- Protected input shaft
- Cast iron housing
- Axial needle bearings
- IP6^r
- Options: High and low temperature. ISO drive coupling.
 Solenoid valve to evacuate air automatically. IP67.

See PUB038-001 for further details.

ILG-S range



Override part-turn gear operators

Complete range of sandwich manual override part-turn gearboxes for spring-return pneumatic actuators.

Torque range up to 32,000 Nm (23,600 lbf.ft). 10 sizes. Ratios from 34:1 to 729:1.

- Protected input shaft
- Cast iron housing
- Axial needle bearings
- P65
- Options: High and low temperature. ISO drive coupling.

See PUB039-004 for further details.

Mastergear SD

range



WGS

range



Override part-turn gear operators

Mastergear large manual declutchable gearboxes for use on the largest of pneumatic actuators.

- Torque range from 17,100 to 203,000 Nm (13,000 to 149,725 lbf.ft)
- IP67 or IP68
- Unrivalled versatility through various cover and base flange sizes
- Self-locking, high efficiency
- Options: Stainless steel. Fireproof, ATEX and GOST versions. Options for various environments.

Contact Rotork for further details.

Subsea part-turn gearboxes

The WGS range of part-turn gearboxes are designed for heavyduty subsea applications at any depth with carefully chosen materials to offer the highest level of reliability required in this very harsh environment. The operator is equipped with membrane or piston type pressure compensators to balance the pressure and allow them to work at any depth.

Torque range 2,200 to 500,000 Nm (1,623 to 368,800 lbf.ft).

- Worm shaft supported on taper roller bearings
- High strength alloy steel worm screw hardened and ground
- Vertical or horizontal carbon steel ROV input (class 2 to 7)
- Stroke: 0 to 90° (± 5° adjustable)

See PUB036-001 for further details.

Part-turn and Nuclear Safety Related Products

ABLX (FM-UL) range



Part-turn worm gear operators

Cast iron part-turn gearboxes with integrated limit switches for remote position indication suited for fire protection.

Torque range up to 1,620 Nm (1,196 lbf.ft). 4 sizes. Ratios from 34:1 to 40:1.

- Cast iron housing
- Rugged construction
- Removable output drive sleeves
- IP67
- Different types of position indicators
- Suitable for FM/UL/APSAD applications

Contact Rotork for further details.

232LX range



Part-turn worm gear operators

Light-duty cast aluminium part-turn gearboxes with integrated limit switches for remote position indication suited for fire protection.

Torque range up to 500 Nm (366 lbf.ft). 2 sizes. Ratios 37:1 to 45:1.

- High pressure aluminium cast housing with stainless steel input shaft
- Lightweight
- Suitable in corrosive environments
- IP65
- Removable output drive sleeves
- Powder coated
- Different types of position indicators

Contact Rotork for further details.

FB range



Worm gear operators

Part-turn cast iron gearbox suitable for use with fire protection (i.e. sprinkler) systems, includes limit switches to be incorporated into a supervisory electrical circuit. Designed and tested specifically to meet UL1091 specification and FM1112 approval.

Torque range up to 1,000 Nm (737 lbf.ft). 5 sizes. Ratios from 40:1 to 60:1.

- Worm gear
- Manual drive
- 3 x overload capacity
- 1,000 cycles

See PUB093-001 for further details.

IWN, IBN ISN, 242P ranges





Nuclear safety related gearboxes

Rotork's IBN, ISN, IWN, & 242P ranges of gearboxes for the nuclear power industry are designed and tested to meet the latest plant specifications and industry standards such as IEEE, RCC-E and IEC.

Rotork is an internationally audited and approved nuclear actuator manufacturer, and all actuators are manufactured in accordance with strict nuclear industry quality assurance requirements.

- Manual and motorised options (242P manual only)
- Part-turn and multi-turn outputs
- Can be used inside or outside containment (242P outside only)
- Nuclear grade materials and grease
- Various ratios to meet each applications requirements

See PUB027-003 for further details.

AB-AWWA (C504 and C517)

range



Part-turn worm gear operators

Worm gear operators suitable for the manual actuation of AWWA C504 butterfly valves and C517 plug valves.

Torque range up to 2,000 Nm (1,475 lbf.ft). Ratios from 34:1 to 48:1.

- 90% grease filled for life and fully sealed
- Self-lubricating sleeve bearings
- Standard temperature range -20 to +120 °C (-4 to +250 °F)
- Above or buried service
- 300 lbf.ft overload capability
- **Options:** Stem extensions. Square nut. Padlock kit. NAMUR and Westlock position indicator mounting kit. High and low temperatures. Open right service. 450 lbf.ft overload capability (unavailable for AB550AW).

See PUB033-010 for further details.

MOW range



Worm gearboxes

Heavy-duty part-turn modulating gearboxes suited for control valves.

Torque range up to 47,000 Nm (34,500 lbf.ft). 9 sizes. Ratios from 40:1 to 3.000:1.

- Up to 1,200 starts per hour
- Ground and polished worm shaft
- Aluminium bronze worm wheel
- Comprehensive gear ratios combined with a selection of spur input reducers
- Angular contact bearings
- Removable output drive sleeves
- **Options:** All types of environment.

See PUB085-006 for further details.

W-AWWA (C504 and C517)

range



Part-turn worm gear operators

Worm gear operators suitable for the manual actuation of AWWA C504 butterfly and C517 plug valves.

Torque range up to 164,000 Nm (120,960 lbf.ft). Ratios from 48:1 to 2,374:1.

- 90% grease filled for life and fully sealed
- Self-lubricated drive sleeve
- Standard temperature range -40 to +120 °C (-40 to +250 °F)
- Maximum stem acceptance diameter 12" bored with ANSI B17.1 square key
- Above or buried service
- Options: Stem extensions. Padlock kit. NAMUR & Westlock position indicator mounting kit. High and low temperatures. 2" square nut. 450 lbf.ft service. Mitre box - IB2 for FA10 mounting or IB4 for FA14 mounting.

See PUB028-003 for further details.

Lever Arm range



Lever arms for damper operation

Used on dampers to transfer the 90° operation from the worm gearbox to the damper spindle.

Option for IW range: This is an optional feature on all our IW and MTW ranges of worm gearboxes.

Contact Rotork for further details.

Multi-turn Products

IB

range



Motorised multi-turn gearboxes

Complete range of heavy-duty cast iron multi-turn bevel gearboxes suitable for the most demanding motorised applications for cast and fabricated sluice gates, gate valves and globe and pinch valves.

Torque range up to 8,135 Nm (6,000 lbf.ft). Thrust range up to 1,320 kN (296,750 lbf). 13 sizes. Ratios from 1:1 to 120:1.

 Common options for IB: Spring-loaded temperature compensators. Various position indicators. AWWA. High and low temperature. All types of environment. IP68. Cast steel.

See PUB030-001 for further details.



Bevel gear operators

Hand operated bevel gears suited for sluice gates, gate, and globe valves.

Torque range up to 8,018 Nm (5,914 lbf.ft). Thrust range up to 1,557 kN (350,028 lbf). 12 sizes. Ratios from 2:1 to 81:1.

- Cast iron body
- Maintenance free
- ▶ IP67
- Options: All types of environment. Position indicators. IP68.

See PUB032-003 for further details.

IS range



Motorised multi-turn gearboxes

Complete range of heavy-duty cast iron multi-turn spur gearboxes suitable for the most demanding motorised applications where the gearbox input shaft needs to be parallel with the valve stem for globe and gate valves and sluice gates.

Torque range up to 43,386 Nm (32,000 lbf.ft). Thrust range up to 2,900 kN (652,000 lbf). 19 sizes. Ratios from 1:1 to 360:1.

 Common options for IS: Spring-loaded temperature compensators. Various position indicators. AWWA.
 High and low temperature. All types of environment.
 IP68. Cast steel.

See PUB031-001 for further details.



Spur gear operators

Multi-turn devices intended for the manual operation of gate, globe, sluice and penstock valves. For use above and underground with upward or downward input orientation.

Torque range up to 15,917 Nm (11,740 lbf.ft). Thrust range up to 1,557 kN (350,000 lbf). 13 sizes. Ratios from 2.04:1 to 151.9:1.

- Totally enclosed gearing
- Cast iron gearcase
- IP67

See PUB122-001 for further details.

Multi-turn Products

MTW

range



SPI range



Worm gearboxes

The multi-turn worm gearboxes are used for applications such as sluice gates and dampers.

Torque range up to 162,000 Nm (119,000 lbf.ft). 11 sizes. Ratios from 40:1 to 5,760:1.

- Ground and polished worm shaft
- Aluminium bronze worm wheel
- Comprehensive gear ratios combined with a selection of spur input reducers
- Angular contact bearings supporting worm shaft
- Removable output drive sleeves
- Options: Travelling nut for applications requiring mechanical stops. Lever arms. AWWA. All types of environment.

See PUB087-005 for further details.

Smart Position Indicator (SPI)

Limit switches enclosed in an IECEX/ATEX certified protective enclosure, providing an accurate and reliable Open/Close signal to the control room for multi-turn manual valves.

4 sizes. Ratios from 34.8:1 to 1,196:1.

- Manual duty
- ISO 5210 F10 output
- Aluminium housings
- IP67
- Mount to existing F10 input flange, direct mount to rising stem valve
- Options: Pin / key handwheel.

See PUB132-001 for further details.

DSIR range



DSB range



Dual speed gear operators

The Dual Speed Input Reducer is used to reduce the number of input turns required, and therefore the operating time, on manual gearbox applications. It can be used with any manual gearbox which can be fitted with an F14 or FA14 input flange.

Output torque 720 Nm (6,373 lbf.in). Ratio can be switched between 1:1 and 4.25:1.

See PUB040-001 for further details.

Dual shaft bevel gear operators

Complete range of multi-turn bevel gearboxes with two shafts for use with dual stem sluice gates and penstocks.

Torque range up to 8,135 Nm (6,000 lbf.ft). Thrust range up to 1,320 kN (296,750 lbf). 13 sizes. Ratios from 1:1 to 120:1.

- Ductile iron baseplates
- Comprehensive gear ratios combined with a selection of spur input reducers
- Pinions mounted on ball bearings
- IP67
- Options: All types of environment. Various position indications. IP68. Input shafts available at 90° and 180° to each other.

Contact Rotork for further details.

NTB range



Bevel gear operators

Cost effectively designed bevel gearboxes suitable for valves which do not transfer thrust to the operator.

Torque range up to 70,000 Nm (51,590 lbf.ft). 12 sizes.

Various ratios to suit the application.

- Cast iron body
- Maintenance free
- IP67
- **Options:** All types of environment. Various position indicators. IP68.

Contact Rotork for further details.

Mastergear Large Bevel Gear

range



Large bevel gear operators

Complete range of ductile iron multi-turn bevel gearboxes suitable for the most demanding manual and motorised applications. Suitable for cast and fabricated sluice gates, gate valves, globe and pinch valves.

Torque range from 30,000 to 70,000 Nm (22,127 to 51,590 lbf.ft) Thrust range from 3,000 to 6,500 kN (674,427 to 1,461,200 lbf) Ratios from 6:1 to 480:1.

- Thrust / non-thrust taking versions
- IP67
- Options: Spring-loaded temperature compensators.
 Various position indicators. High and low temperature.
 All types of environment. IP68. Cast steel.

Contact Rotork for further details.

Mastergear SS Bevel range

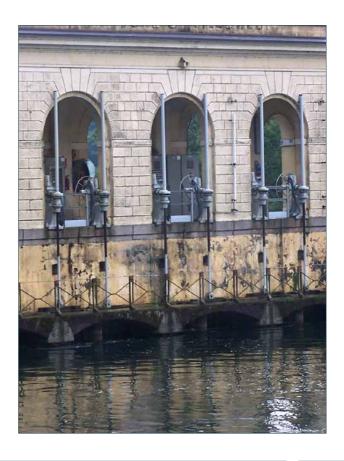


Heavy-duty stainless steel 316 housing multi-turn gearboxes suitable for the most demanding manual and motorised applications. Suitable for cast and fabricated sluice gates, gate valves, globe and pinch valves.

Torque range up to 2,300 Nm (1,696 lbf.ft). Thrust range up to 330 kN (74,200 lbf). 3 Sizes. Ratios from 4.5:1 to 20.25:1.

- Stainless steel 316 input shaft
- Thrust / non-thrust taking versions
- IP67 / IP68
- Options: Spring-loaded temperature compensators.
 Various position indicators. High and low temperature.
 All types of environment.

Contact Rotork for further details.



Mounting kits

ball, butterfly and plug valve kits



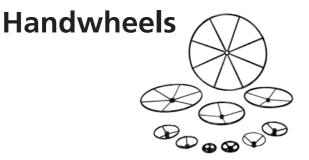


Ball, butterfly and plug valve kits designed to order, precision CNC machined in stainless steel

A complete range of precision CNC machined stainless steel or carbon steel mounting kits. With open or closed construction, mounting kits are engineered from certified material, individually bagged and labelled ready for assembly.

Part-turn valve adaption for rack and pinion or pneumatic actuators can be provided in the form of spool or pedestal type mounting kits. These are fully enclosed carbon steel adaptors with options DD, square or keyed drives.

- To suit valves from ¼" to 48"
- F03 F35 flanges ISO 5211/DIN 3337
- Options: O-ring seals, stress calculations, material certification, alternative materials, custom design, logo or brand names.



Stainless steel and powder coated handles

- 125 to 2,000 mm diameter
- Stainless steel or powder coated
- · Keyed, pinned or square drive
- Fabricated or pressed design
- Oval or round designs for small valves
- Options: Locking flange, handle, specials, galvanised, rotating handle, flat or dished, open and closed indication marking

SOLDO

range





Switch box and position indication

The Soldo range of switch boxes for use on part-turn valves and actuators. They are available in durable polycarbonate, 316 stainless steel and aluminium, and can be used on actuators, valves, or in conjunction with a hand wheel or lever.

- IP66, IP67, IP68, Safe area operation
- Hazardous approval, Exd IIC, Ex ia IIC +H2 -ATEX
- Beacon/Local indicator available
- 4-20 mA
- V3 micro switches or Inductive sensors
- Open/Closed feedback sensors for multi-turn valves are also available

Alcatraz Interlocks

range



Interlocking Systems

Interlocking systems for safe operation. Used to prevent potentially hazardous situations caused by errors in the operating sequence of industrial processes. The operator is forced to follow a predetermined sequence by means of a mechanical coded key transfer.

- Bespoke interlock systems designed to suit individual needs
- Easy to install and operate, maintenance free
- Stainless steel 316
- Fire tested according to API 607
- Test certificate EN 10204 3.1 available on request
- Resistant to dirt, sand and moisture ingress
- Non-intrusive, placed between existing handwheel and gearbox

Remote mounting and extension spindles

Valve and actuator remote mounting and extension spindles.

Remote actuator mounting can be achieved using valve extension spindles or pedestal adaptors. Lengths can be from 500 mm to 8 m, in stainless steel or carbon steel.

Extension spindle

- Underground applications
- Customer specified extension
- Welded construction for weight saving
- Position indication option
- Suitable for manual or actuated drives
- **Options:** Oil filled, environmental sealing, galvanised, plain or dynamic bearings, swivel joints.

Remote position indicator

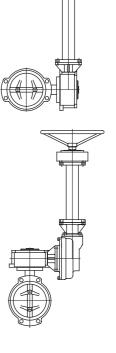
Mechanical remote ECL position indicators for buried service and shaft extension applications. The ECL is available in two versions, one with an F10 base plate to fit any extension with F10, and an ECL BB which has an F14 base plate to fit any extension with F14.

W100 1:1 bevel gearbox

1:1 bevel gearbox designed primarily to be used on AB and manual duty IW part-turn gearboxes to change the input shaft direction by 90° for underground applications.



- 1 Remote position indicator
- 2 Extension spindle
- 3 W100 90° bevel gearbox
- 4 AB880 part-turn gearbox



Roto Hammer Chainwheels



Chainwheels and valve extensions

Roto Hammer offers the very best solutions for hard-to-reach and difficult to operate valves, with the purpose of protecting people and equipment with safe, dependable valve operation.

Roto Hammer manufacture clamp-on sprockets chainwheels to fit handwheels size from 4" to 40". They are made with different materials (ductile, aluminium and stainless steel) and protections to cater for very harsh environments.

Roto Hammer also make a variety of innovative custom solutions.

Chainwheels

range





Direct mount chainwheels

Chainwheels mount directly onto the gearbox input shaft by a pin or coupling. Suitable for use with every Rotork gearbox.

- Cast iron chainwheels 135 to 330 mm (5.32 to 13") diameter
- Chain guides and bearing are standard
- Chain and chainwheel sprockets are to DIN 766
- Galvanized or stainless steel chain available
- Epoxy coating for durability available
- **Options:** AISI316 chainwheel and chain, sheradisation protection, adaption design to suit application.

Fluid Power Actuators and Control Systems

rotork

Rotork has fluid power actuator 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 offer a wide range of fluid power actuators spanning the following categories:

- 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

Rotork maintains a network of *Centres of Excellence* strategically located around the world. 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.





Fluid Power Actuators

GT range



GTS range



Rack and pinion actuators

- Double-acting and spring-return pneumatic actuators
- Fail close/fail open
- Extruded aluminum body with cast aluminum end caps
- Corrosion resistant cylinders and nickel-plated pinion
- Mechanical interfaces to ISO 5211, EN 15714-3-4, NAMUR VDI / VDE 3845
- Torque output up to 15,300 Nm (11,285 lbf.ft)
- Certified to ATEX 2014/34/EU
- Certified suitable for use at SIL3 as a single device (IEC 61508)

See <u>PUB110-001</u> (metric) and <u>PUB110-002</u> (imperial) for further details.

Rack and pinion actuators

- Double-acting and spring-return pneumatic actuators
- Fail close/fail open
- Body and end caps in electro-polished stainless steel 316L
- Pistons in aluminium stainless steel as an option
- Mechanical interfaces to ISO 5211, EN 15714-3-4, NAMUR VDI / VDE 3845
- Torque output up to 1,190 Nm (878 lbf.ft)
- Actuators certified to ATEX 2014/34/EU
- Travel stops in both open and close direction

See PUB110-005 for further details.

RC200 range



CP range



Compact scotch yoke actuators

- Extremely compact scotch yoke pneumatic actuator
- Contained spring module for safety and convenience
- Double-acting and spring-return configurations
- Fail close/fail open
- For on/off and modulating
- Torque output up to 4,400 Nm (3,245 lbf.ft)
- Valve mounting dimensions per ISO 5211/DIN 3337
- Certified to ATEX 2014/34/EU
- Certified to PED 2014/68/EU
- Certified suitable for use at SIL3 as a single device in accordance with IEC 61508
- Optional emergency manual override suitable to operate the actuator in the event of fluid supply failure

See <u>PUB014-001</u> (metric) and <u>PUB014-002</u> (imperial) for further details.

Scotch yoke actuators

- Pneumatic scotch yoke actuators (symmetric yoke)
- Double-acting and spring-return configurations
- Fail close/fail open
- For on/off and modulating
- Torque output to 4,500 Nm (3,319 lbf.ft)
- Certified to IP 66M/67M
- Certified to ATEX 2014/34/EU
- Certified in accordance with PED 2014/68/EU
- Certified suitable for use at SIL3 as a single device in accordance with IEC 61508
- Optional emergency manual override suitable to operate the actuator in the event of fluid supply failure

See PUB013-001 for further details.

GP/ GH ranges



Heavy-duty scotch yoke actuators

- Pneumatic and hydraulic scotch yoke actuators (symmetric or canted yoke)
- Double-acting and spring-return configurations
- Fail close/fail open
- For on/off and modulating
- Torque output to 600,000 Nm (442,537 lbf.ft)
- Certified to IP 66M/67M
- Certified to ATEX 2014/34/EU
- Certified in accordance with PED 2014/68/EU
- Certified suitable for use at SIL3 as a single device in accordance with IEC 61508
- Optional emergency manual override suitable to operate the actuator in the event of fluid supply failure

See PUB011-001 for further details.





Compact part-turn self-contained actuators

The CQ self-contained actuator is a fully concentric design based on a helical mechanism, transforming the linear motion of the piston into a part-turn rotation of the valve stem.

- Pneumatic actuator in double-acting and spring-return configurations
- Fail close/fail open
- For on/off
- Torque output up to 150,000 Nm (110,634 lbf.ft) higher torques are available upon request
- Certified to IP 66M/67M
- Certified to ATEX 2014/34/EU
- Certified in accordance with PED 2014/68/EU
- Certified suitable for use at SIL3 as a single device in accordance with IEC 61508

See PUB119-001 for further details.

LP/ LH



Linear actuators

- Pneumatic and hydraulic actuators in double-acting and spring-return configurations
- Electroless nickel-plated cylinders, chromium-plated piston rods
- Hammer blow and standard valve stem coupling designs available
- Thrust up to 5,500 kN (1,236,449 lbf)
- Certified to IP 66M/67M
- Certified to ATEX 2014/34/EU
- Certified in accordance with PED 2014/68/EU
- Certified suitable for use at SIL3 as a single device in accordance with IEC 61508
- Optional emergency manual override suitable to operate the actuator in the event of fluid supply failure

See PUB020-001 for further details.



RH range



Heavy-duty rack and pinion actuators

- Heavy-duty hydraulic actuators in double-acting and spring-return configurations
- Fail close/fail open
- For on/off and modulating
- Torque output to 3,400 Nm (2,508 lbf.ft)
- Valve mounting dimensions per ISO 5211 DIN 3337
- Certified to IP 66M/67M
- Certified to ATEX 2014/34/EU
- Certified suitable for use at SIL3 as a single device in accordance with IEC 61508
- Optional emergency manual override suitable to operate the actuator in the event of fluid supply failure

See PUB019-004 for further details.

K-TORK range



Vane actuators

- Pneumatic actuators in double-acting and spring-return configurations
- Compact no-sideload, constant-torque design with output to 18,300 Nm (13,497 lbf.ft)
- Certified to IP66M/IP67M and meets NEMA 4/4X
- Certified to ATEX 2014/34/EU
- Complies with ANSI / AWWA C540-02 and C541-08
- Conforms to VDI / VDE 3485 control accessory mounting standards
- · Modulating accuracy of 0.25% or better
- Capable of millions of operations at fast cycle times

See PUB097-001 for further details.

RHQ

range



Extreme-duty rack and pinion actuators

- Hydraulic, double-acting actuators
- Balanced, compact design
- Totally enclosed weatherproof housing
- Electroless nickel-plated cylinders with redundant piston seals
- Mechanical interfaces to ISO 5211
- Torque output up to 700,000 Nm (516,293 lbf.ft), up to 5,650,000 Nm (4,167,220 lbf.ft) available on request
- Lifting lugs designed to support the actuator and the valve.
- Designed for some of the most challenging valve actuation applications on earth

See PUB019-009 for further details.

TYPE K

range



Damper drives

- Direct 'drop-in place' design matches existing damper drive take-out dimensions
- Rotary and linear versions available
- Torque output up to 28,201 Nm (20,800 lbf.ft)
- High-speed operation as quick as 3-5 seconds full scale
- High temperature options up to +149 °C (+300 °F)
- Highly accurate and responsive
- Designed for safety and serviceability in harsh environments
- Infinite duty cycle
- Control options: Profibus®, HART® and Foundation Fieldbus® control. Pneumatic, analogue and digital positioners

See PUB000-062 for further details.

Fluid Power Actuators and Control Systems

GO range



Gas-over-Oil actuators

- Scotch yoke, rack & pinion or linear double-acting actuators
- Hydraulic manual override as standard
- Speed control in both directions as standard
- Torque output to 600,000 Nm (442,537 lbf.ft)
- Extremely wide range of high-pressure control logic options
- Certified to IP 66M/67M
- Certified to ATEX 2014/34/EU
- Certified in accordance with PED 2014/68/EU
- PED or ASME approved gas/oil and power gas storage tanks

See PUB017-001 for further details.



Direct high-pressure gas actuators

- Scotch yoke double-acting actuators
- Hydraulic manual override standard
- Speed control in both directions standard
- Torque output to 600,000 Nm (442,537 lbf.ft)
- Extremely wide range of high-pressure control logic options
- Certified to IP 66M/67M
- Certified to ATEX 2014/34/EU
- Certified in accordance with PED 2014/68/EU
- PED or ASME approved gas/oil and power gas storage tanks

See PUB016-001 for further details.



Pipeline pressure monitoring system

Rotork's ELB, the electronic linebreak detection system is designed to continuously monitor pipeline pressure and provide automatic valve actuator movement to an emergency position.

- Comprehensive data logging with real-time clock
- Configuration and data retrieval via Rotork Bluetooth® Setting Tool or PC (using Rotork's Insight 2 software)
- Configurable fail position to close, open, stay put
- Optional manual reset requirement
- Local controls for open, close, local/remote/stop
- Remote control via either hard-wired connections or Modbus® serial communication protocol
- Certified to IECEX, ATEX Hazardous Area Approvals.
- Certified IP66/IP68 and NEMA 4, 4X & 6

See PUB127-001 for further details.



Skilmatic SI 3rd Generation



Electro-hydraulic actuators

The Skilmatic SI range of intelligent self-contained electrohydraulic actuators designed to meet today's control and safety needs for both two position and positioning control applications. Featuring a large display for position, pressure, diagnostics and status indication and utilising *Bluetooth®* for configuration, setting and downloading actuator data.

- 1-phase, 3-phase or 24 VDC power supply
- Failsafe to close, open or lock in last position
- · Spring-return or double-acting
- Linear output: up to 5,500 kN (1,236,000 lbf)
- Part-turn output: up to 500,000 Nm (368,781 lbf.ft)
- Configurable Partial Stroke Testing (PST)

- Positioning control option 4-20 mA input and output, resolution 0.3%
- Network options Pakscan, Profibus, Modbus, HART and Foundation Fieldbus
- Data logger, recording up to 3,000 events
- Watertight and explosionproof Exdb IIB & IIC T4 –ATEX, IEC and EAC. TÜV Functional Safety SIL certified to IEC 61508:2010
- Operating temperature -50 to +70 °C (-58 to +158 °F)

See PUB021-064 for further details.

RHS



Remote Hand Station

The Remote Hand Station enables duplicated operation, interrogation and configuration of the latest SI actuators. For use when the actuator is located in a hazardous or inaccessible location.

- Installation using standard data cable, up to 100 m (328 ft) away from the actuator
- Full replication of actuator configuration, control, monitoring and downloadable data
- Powered from the attached actuator, no need for additional power supply

See PUB002-056 for further details.

4P/4H





Multi-turn pneumatic and hydraulic actuators

4P Pneumatic Actuator: Reversible vane motor including a wide range of supply pressures 2 to 7 bar.

4H Hydraulic Actuator: Reversible vane motor including a wide range of supply pressures 30 to 120 bar.

- Part-turn: direct on up to 450 Nm (332 lbf.ft)
- Multi-turn: direct on up to 2,000 Nm (1,475 lbf.ft)
- Linear: up to 200 kN (44,962 lbf)
- Mechanical position indicator, limit, torque and potentiometer (4-20 mA option)
- PTCS patented planetary gearing system controlling the applied torque with high mechanical efficiency >95%
- Mechanical interfaces to ISO 5210 or 5211
- IP67/IP68, optional ATEX
- Manual operation: Motor drive priority

See PUB140-001 for further details.

Fluid Power Actuators



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 shutdown) 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, filter regulators, shuttle valves, linebreak safety systems, partial stroke testing and a torque limiting device.



Self-contained failsafe actuator

- The self-contained hydraulics provide high-integrity failsafe valve operation without the need for any external power supply
- Suitable for workshop or field mounting on a wide range of rotary and linear operated valves and dampers.
- Manually energised, spring-return failsafe operation
- Cost-effective solution for infrequently operated valves and dampers
- Watertight or explosionproof construction
- Highly configurable with a multitude of options

See PUB062-002 for further details.







Control and choke valve actuators

The ACS range of modulating actuators are a cost effective solution for the positioning of control and choke valves.

- Extended opening and closing operating speeds with all optional features associated with the double-acting, single-acting and part-turn options
- Remote switching to activate and deactivate stepping function
- Reliable operation reduces cost of ownership
- Compact design reduces installation cost
- Lower cost of maintenance

See PUB025-004 for further details.



Fluid Power Actuators and Control Systems

HPU range

Hydraulic power units

- Hydraulic fluid capacity from 19 to 7,570 litres (5 to 2,000 U.S. gal)
- Operating pressures up to 345 bar (5,000 psi)
- Flow rates up to 3,785 lpm (1,000 U.S. gpm)
- Electrical classifications: NEMA 4, 4X & 7 or comparable CSA or ATEX ratings
- Custom engineered solutions to meet the specific demands of each application
- Sole source responsibility for the complete operating system including field survey, design, fabrication, test, installation and start-up
- Best-in-class documentation and service manuals

See PUB062-001 for further details.

Masso range

Valve Remote Control System (VRCS)

With more than 80 years of experience in specialist design, fabrication and installation of actuators and VRCS, the Masso range provides safety critical hydraulic and electro-hydraulic solutions for the marine and offshore industry.

Standard VRCS – The Standard VRCS is designed for marine applications, in both hydraulic and electro-hydraulic forms. Electric actuators can be further integrated, providing a wide range of solutions. *Refer to PUB121-002 for further details*.

Advanced VRCS – The Advanced VRCS is designed to provide maximum redundancy, while achieving cost reductions in cabling compared to star systems. *Refer to PUB121-003 for further details.*

Both systems are compatible with most Integrated Automation Systems (IAS).

Subsea

range



Subsea actuators

The subsea product range encompasses actuator and gearbox designs for retrievable and non-retrievable applications. We are familiar with supplying subsea products to meet the harsh conditions and stringent demands of subsea applications.

- Hydraulic part-turn and linear subsea actuators in double-acting and spring-return configurations
- Subsea and splashzone trims
- Retrievable and non-retrievable designs
- Multitude of design options available
- Installed base dating back to 1992 at depths up to 2,500 m
- Smart Valve Monitor (SVM) partial stroke testing compatible

See PUB022-001 for further details.



Instrumentation and Control

rotork®

Rotork have a number of instrumentation equipment production facilities throughout the world, complemented by a large network of distribution and support centres.

Worldwide Industry and Application Experience

Rotork offer a complete range of precision control and valve accessory products through our prestigious brands, including Fairchild, YTC, Soldo®, Midland-ACS™, Bifold®, Orange, M&M and Alcon.

Instrument Valves

- Valve actuation accessories
- Solenoid valves
- Piston valves
- Instrument valves
- Medium pressure valves
- Subsea valves and connectors

Controllers

- Valve positioners
- Rail systems
- I/P and E/P converters

Measurement

- Valve position sensors
- Transmitters and switches

Instrument Pumps

- Pumps
- Intensifiers and accumulators

Rotork is proud to offer a diverse range of products which serve many different duties in a wide variety of applications. We also offer a factory customisation service to create one-off units to meet specific needs.

Specialist products for control and measurement of flow and pressure.

Trusted wherever there is a need for high precision and reliability, including oil & gas, pharmaceutical, biomedical, and manufacturing industries.















Group Products and Services

Instrument Valves



Valve actuator accessories

Rotork offers the widest range of precision products for actuation control systems, with the highest flow rates and efficiency factors. System components are available for piped, nipple and modular mounting arrangements and in a range of materials.

- Filters, regulators, flow control, volume boosters, HIPEX
- Relief, pressure sensing and stick pilot valves
- Check and quick exhaust valves
- Pilot and mechanical valves
- Modular manifolds
- Fire safety valves

Contact Rotork and see PUB108-001; PUB126-001 (YTC), PUB103-005 (Fairchild); PUB117-001 / PUB118-001 / PUB117-005 / PUB117-006 / PUB117-009 (Midland-ACS) for further details.



Solenoid valves

Rotork offers a comprehensive range of pneumatic and hydraulic solenoid valves for hazardous and safe area installation. Available in stainless steel, brass and aluminium with threaded and NAMUR connections. Rotork solenoids offer the highest levels of safety factors and global certification.

- Solenoid valves available from ¼" to 8" sizes
- Manual reset and manual override options
- Normally open, normally closed and diverting
- Up to 1,380 bar (20,000 psi) working pressure
- Low temperature and low power versions

Contact Rotork and see PUB124-005 (Alcon, M&M); PUB117-011 (Midland-ACS) for further details.





Piston valves

Rotork piston actuated valves are manufactured with high performing components as a standard. PTFE and FKM seals, together with internals in AISI 316, offer outstanding compatibility and cover a wide variety of industrial applications. A wide choice of connections are available, including flanged, clamped and weld versions.

- Available from ¾" to 2" sizes
- Normally Open, Normally Closed and bi-directional options
- Position indicator
- Built-in exhaust filter
- ON/OFF or modular control configuration

See PUB125-001 for further details.

Instrument Valves



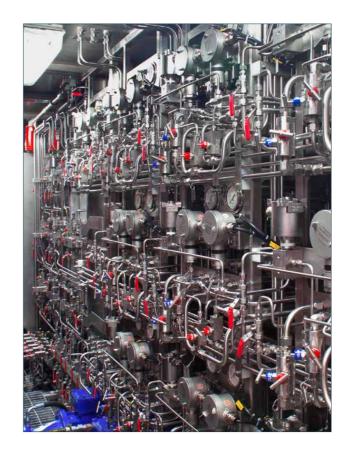
Instrument valves

Rotork offers state of the art, precision engineered instrumentation valve solutions products, such as needle valves, ball valves and Double Block and Bleed (DBB) valves in single or combined valve arrangements.

DBB monoflange and piping valves combine piping and instrument valves in a single assembly, providing weight and space savings as well as a reduction in potential leak paths.

- One piece body construction
- 1/4" to 1" sizes
- Pressure range up to 689 bar (10,000 psi)

Contact Rotork for further details.





Medium pressure valves

The portfolio of medium pressure products allows for the safe and reliable implementation of 1,379 bar (20,000 psi) pressure systems incorporating needle valves, ball valves, single block and bleed manifolds, Double Block and Bleed (DBB) manifolds, check valves, fittings and adaptors. The medium pressure valves are available in 1/4", 3/8", 9/16", 3/4" and 1" tubing sizes comprising of a coned and threaded connection. This connection method allows for increased flow rates due to the larger bore sizes.

- Innovative locking device for ball valves
- Maintenance free stem sealing
- Non wetted threads
- Lower torque to operate

See PUB135-001 for further details.



Subsea valves and connectors

Experience gained since 1987 of successfully applying valves directly immersed in seawater has been applied to develop the technically superior, market leading performance, FPS10 range of shearseal type directional valves. Fully seawater compatible, the standard products operate on fluids with contamination levels greater than NAS 1638 Class 12. These are true failsafe valves offering the benefits of reduced manifold weight, size and cost.

- Subsea valves
- Subsea connectors and stab plates
- Subsea gate, needle, ball and manual valves

Contact Rotork for further details.

Controllers



Valve positioners

Rotork offers a comprehensive range of valve positioners and valve controllers for all actuator types. Applying piezo, torque motor and digital electronics technologies, Rotork provide solutions from the simplest to the most sophisticated valve position control requirements.

- Pneumatic and electro-pneumatic positioners
- SMART positioners
- Electronic digital controllers and SIS systems
- Zero leakage designs
- Partial stroke testing
- HART protocol and diagnostic capabilities

Contact Rotork and see PUB126-001 (YTC) for further details.



Rail systems

Rotork has been providing critical components and safety systems to the rail industry for over 20 years. They range from a simple manual system to an advanced full automated control system.

- Specialist freight rail wagon door systems
- Fully automated control systems for door
- High reliability solutions for brake and traction control
- Double-acting, fully adjustable cushioned metric cylinders to VDMA 24562 and BS ISO 6431 standards
- Train stop braking controls and points motors
- Unique product portfolio for tunnel ventilation solutions

See PUB108-013 for further details.

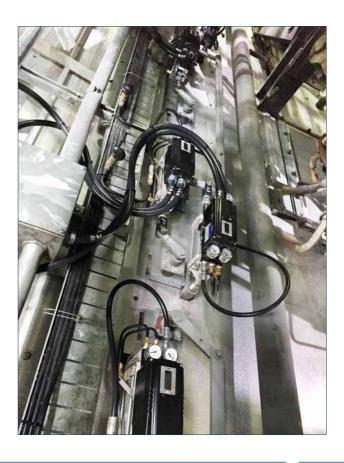


I/P and E/P controllers

Rotork fast response, high flow, compact I/P, E/P, D/P and P/I electro-pneumatic converters have extensive combinations of inputs and outputs, carry standard FM, CSA, ATEX or IECEx agency approvals, and maintain accuracies of up to 0.15%. Fast response, high flow and high accuracy models feature proportional pressure regulation.

- Hazardous and safe area models
- High accuracy
- High performance

See PUB103-005 (Fairchild); PUB126-001 (YTC) for further details.



Measurement



Valve position sensors

Our extensive range of valve position sensors offer visual indication with digital, and analogue feedback, via HART protocol. Our Soldo limit switch range is based on our unique twin shaft design which enables easier and safer disassembly for installation and maintenance. All designs are corrosion resistant and suitable for a wide range of environments in hazardous and safe areas. Material options include polymer, aluminium and stainless steel.

Refer to PUB109-003 for further details.



Transmitters and switches

Rotork manufacture pressure and position sensing components and devices providing digital or 2-20 mA and HART protocol feedback. Suitable for high pressure and high vibration applications, with accurate repeatability giving reliable performance.

- Pressure transmitters
- Position transmitters
- Pressure switches

Contact Rotork and refer to PUB126-001 (YTC) for further details.





Instrument Pumps



Pumps

Rotork offers a range of high quality hydraulic pumps for applications in the upstream and downstream oil and gas industries. These include an extensive range of axial piston oil pumps which provide cost-effective solutions to any flow and pressure requirements. From the 0.23 I/m SM pump to the 193 I/m XH with pressures up to 690 bar (10,000 psi) for most ranges and even up to 1,040 bar (15,000 psi) for the X pump.

- Water/glycol, water and oil service
- Chemical injection applications
- High pressure up to 1,040 bar (15,000 psi)
- Lubricated and rotating swash plate designs

Contact Rotork for further details.





Intensifiers and accumulators

Rotork product range includes a unique range of pressure intensifiers for topside and subsea applications. The innovative designs can boost pressure by a factor of up to 7 without external power, operating with any water-based or mineral / synthetic oil-based fluid. Inlet pressures up to 420 bar (6,000 psi) and outlet pressure up to 1,380 bar (20,000 psi). Once the required high pressure is achieved, the pressure intensifier maintains it without consumption of fluid. Any pressure leak is automatically corrected.

- Ratios from 2:1 to 10:1
- Topside and subsea versions
- Suitable for mineral or synthetic oils or with any water / glycol mix
- Extensive qualification testing at pressures of 207 to 1,000 bar (3,000 to 14,500 psi) to approximately 500,000 cycles

Contact Rotork for further details.



rotork®

Rotork products are recognised as the best-in-class for reliability and safety in the most demanding applications. To maintain this hard-earned leadership position, Rotork is committed to helping clients maximise the continuous, fault-free operation and working life of all their actuators.

With established worldwide service centres we are able to offer same-day or next-day service to the majority of our customers. Our Rotork factory trained engineers have skills in both multi-purpose and industry specific applications and carry spare parts and specialist test equipment with them. Our operations utilise a documented Quality Management system established in accordance with ISO9001.

Rotork aims to be your number one choice for taking care of fault diagnosis, service repairs, scheduled maintenance and system integration needs.

See PUB056-013 for further details.

Rotork has expertise and specialist knowledge of all aspects of flow control.

Our service solutions increase plant efficiency and reduce maintenance costs.

Workshop services return equipment to as-new condition.



Client Support Programme

Rotork offers a tailor-made programme designed to increase reliability and availability of valve actuator and control products via planned maintenance, predictive maintenance and asset management.

The primary goal of our Client Support Programme (CSP) is to prevent the failure of equipment before it occurs. This includes equipment checks, replacement of worn components and partial or complete overhauls at specified periods.

Planned preventative maintenance is a better alternative to risking a potentially damaging breakdown of equipment, and enables our clients to realise the full potential of their business by ensuring the maximum reliability and availability of the assets. Wherever our clients are in the world, Rotork is able to support them. We have workshops strategically located around the world, with trained staff and full test and maintenance facilities.

As part of the CSP, clients have 24/7 access to the Rotork Support Centres, with priority technical assistance, backed by comprehensive resources and dedicated systems. With over 400 directly employed engineers and more service technicians available via agents, we have the infrastructure required to effectively support all of our clients' needs.

In addition, Rotork will help with your site development when you need to expand, diversify or introduce a new process to your plant. Our engineers and technicians will bring 60 years of application experience to help you plan the way ahead.

Through consultation, the CSP is tuned to deliver the optimum level of maintenance through predictive maintenance algorithms.

The CSP covers service and on-site repairs of all brands of actuators used in process industries.

The predictive maintenance strategy is designed to facilitate the highest production demands while providing a tiered approach to maintenance. The Client Support Programme is committed to reducing maintenance downtime and cost.



Features of the Client Support Programme are:

- Fixed term prices for Rotork products and services
- Tailored programme based on equipment criticality to production
- Equipment performance related targets for reliability and availability
- Priority support with customisable response times
- Fully parts and labour inclusive, no additional costs or discounted labour and parts
- Fix or replace options
- Periodic equipment performance and status reports
- Built-in regular health checks on all equipment

Benefits of the Client Support Programme include but are not limited to:

- Year-on-year reduced maintenance costs
- Easy budget management
- Maximised production reduced downtime
- Year-on-year improved reliability and availability
- Optimised resource usage, accelerate in-house projects
- Reduced lifecycle costs

The Client Support Programme covers service and on-site repairs of all brands of actuators for the power, water, utilities and oil & gas sectors.

For further information, or to arrange a consultation please contact one of our dedicated sales team or service managers.









Global Service and Support

Rotork understands the value of prompt and punctual customer site services and aims to supply our customers with superior flow control solutions by providing high quality, innovative products and superior service – *on time, every time.*

Whether you have an actuator requiring on-site servicing, a custom design service requirement or a new actuator installation, we can deliver the fastest turnaround with the least plant disruption.

Actuator Workshop Overhaul

- Rotork and non-Rotork products
- Workshop facilities including torque testing and re-coating
- Large OEM stock in all workshops
- Fully trained and experienced service engineers
- Loan actuator facilities

Field Support

- Site repairs and commissioning
- Upgrades
- Fault finding
- · Maintenance planning and scheduling
- Call-out with fully equipped service vehicles

Planned Shutdown Support

- Preventative maintenance
- Full on-site overhaul and testing facilities
- OEM spares and support
- Support for Rotork and non-Rotork products
- Commissioning support to achieve return to service targets
- Project management and supervision of your plant overhaul and return to service dates

Valve Automation Centres:

On-site - Manual Valve Automation

- Full design, manufacture, supply and installation services to automate your existing manual valves, penstock or dampers
- Power supplies, uninteruptable power supplies, distribution boards, motor control centres
- System integration
- Control system design, PLC, bus systems, logic, flow control systems, PID control, failsafe critical plant
- Full Mechanical, Electrical, Instrumentation, Control and Automation (MIECA) installation by our own qualified installation team

On-site – Actuator Replacement

- Replacement of obsolete or ageing actuators in the field with the latest Rotork product range
- Correct product selection for the right application
- Design and manufacture of adaption components
- Electrical interface design and installation
- Fully commissioned to the plant control room
- Extended warranty on all products installed by Rotork technicians

Off-site - New Valve Automation

- Automation of new or refurbished valves in our dedicated service centre
- Correct product selection to suit the process demands
- Design and manufacture of all engineered components
- Correct assembly of valve and actuator/gearbox combinations
- Selection and procurement of the preferred or specified valve for your application
- Free issue valves accepted for automation in our service centres
- Packed and shipped to the desired destination



Accreditation and Assurance

Rotork is accredited with all major safety authorities around the world, providing our clients with reassurance and peace of mind.

Rotork's engineering teams are experts in the design and implementation of actuation solutions for all circumstances and environments. Our global knowledge base draws upon previous installations and environmental situations.

Our track record and commitment to undertake engineering projects is second to none. Rotork is trusted by major utility and industrial companies to design, install and maintain their actuation stock. We keep their plants operating at peak efficiency, helping them to be more profitable and at the same time meet ever tightening industry watchdog requirements.

Using accredited project managers we have the knowledge and expertise to design, build and install any standard or custom actuator installation for you, on time and in budget.



Rotork is a corporate member of the Institute of Asset Management, the professional body for whole life management of physical assets.



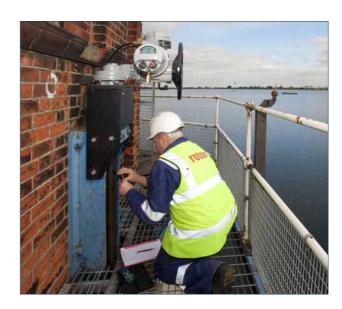


















Rotork plc Brassmill Lane, Bath, UK tel +44 (0)1225 733200 email mail@rotork.com Rotork is a corporate member of the Institute of Asset Management



As part of a process of on-going product development, Rotork reserves the right to amend and change specifications without prior notice. Published data may be subject to change. For the very latest version release, visit our website at www.rotork.com

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