

rotork®

Keeping the World Flowing

Precision Control Product Overview

Electro-pneumatic Transducers, Pressure Regulators,
Pneumatic Relays, Volume Boosters and Accessories



A **rotork** Brand
FAIRCHILD
precision pneumatic & motion control

rotork®

Keeping the World Flowing



**RELIABILITY
IN FLOW CONTROL
CRITICAL
APPLICATIONS**



› **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

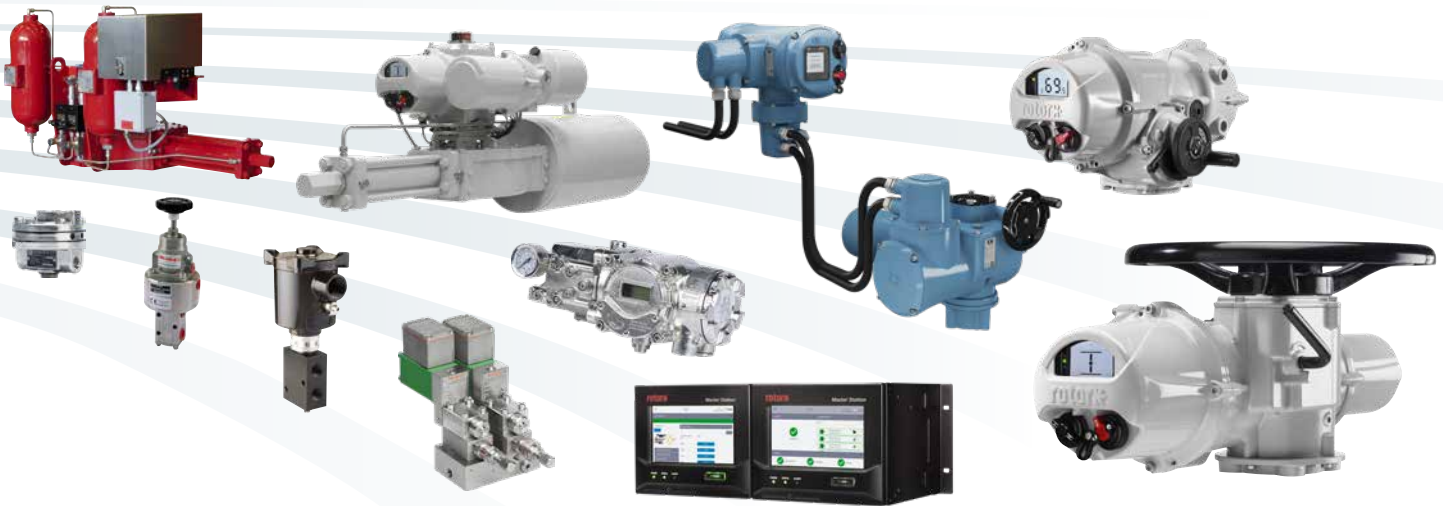
Solving customer challenges and developing new solutions. From initial enquiry through to product installation, long-term after-sales care and Client Support Programmes (CSP).

› **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.

Precision Control Product Overview

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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.

> Industry knowledge

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
- Chemical
- Industrial Automation
- Power Generation
- Automotive
- Textile Manufacturing

Instrumentation and Control

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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
- Pressure Regulators
- Volume Boosters
- Pneumatic Relays

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.

Bifold®
A rotork® Brand

FAIRCHILD
A rotork® Brand
precision pneumatic & motion control

YTC
A rotork® Brand

SOLDO
CONTROLS
A rotork® Brand

m&m
International
A rotork® Brand

MIDLAND-ACS
A rotork® Brand





A **rotork** Brand

The Widest Range of Products for Diverse Market Applications

For over 60 years, Fairchild Industrial Products Company has maintained an excellent reputation as a manufacturer of precision, high quality, pneumatic, and electro-pneumatic controls.

Our line of industrial control products offers one of the largest varieties of precision pneumatic and electro-pneumatic control devices available for process, machine tool, robotic and OEM applications. Our developing technology in four main product groups pneumatic pressure regulators, volume boosters, relays and electro-pneumatic transducers has been the basis for our growth and leadership.

Fairchild Industrial Products Company is ISO 9001 approved. We are authorized to display the CE mark on our electro-pneumatic products.



Many of our electro-pneumatic products are also approved for intrinsically safe, explosion-proof, and NEMA 4X (IP65) ratings by FM, CSA and ATEX.

Our worldwide network of stocking distributors can assist you with application support at the local level. At the factory, our applications engineering staff can solve your problems with new or existing applications. We can work with your plant and design engineers to develop a custom product to suit a specific application.

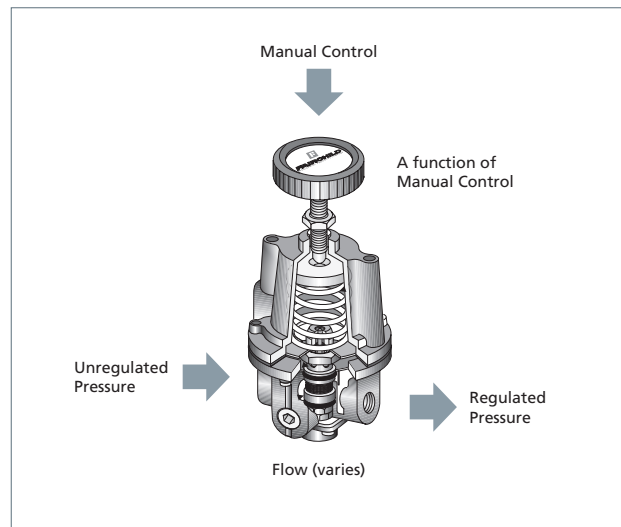
At Fairchild Industrial Products Company, we have built our reputation on providing quality products, excellent customer service, quick delivery, and immediate response to customer emergencies.

	Oil & Gas	Chemical	Pharmaceutical	Industrial Automation	Medical/ Biotech	Food & Beverage	Power Generation	Pulp & Paper	Automotive	Textile Manufacturing
I/P and E/P Transducers and Actuators	T6000 T7800 TXI7800 PAX1	T5200 T6000 TXI7800 T9000 PAX1	T5700 T6000 T7800 TXI7800	T5220 T6000	T5700 T6000 T7800 TXI7800	T5220 T5700 T6000 T7800 TXI7800 T8000	T7800 TXI7800 T8000 PAX1	T5220 T5221 T6000 T7800 TXI7800 T8000 T9000	T5200 T5220 T6000 T7800 T9000	T5700 T6000 T7800 TXI7800
Pressure Regulators	10 10BP 63 65 100 PAX1	10BP 63 65 81 PAX1 4100A	17 18 55 65 66 66BP 70B 81 81 1600A	10 11 16 30 65 70 81 1000 1600A 4000A 4100A	17 18 55 65	10 30 65 200 2000 4000A	63 65 PAX1	10 16 30 65 70 80 81 85 100 4000A	10 16 30 65 70 80 81 1600A 4000A	10 30
Pneumatic Relays	14 24 90 91	24	24	-	15	14 24	-	14 15 21 22 25 90 91 1500	90 91	14 15 21
Volume boosters	20 200 200XLR 4500A 4800A	20 200 4500A 4800A	20 200 4500A	4500A 4900A	20 4500A 4900A	20 200 4500A 4900A	20 200 4500A 4800A	20 200 2000 4500A	20 200 4500A 4900A	20 4500A

Product Range – Methods of Operation

Pneumatic Pressure Regulators

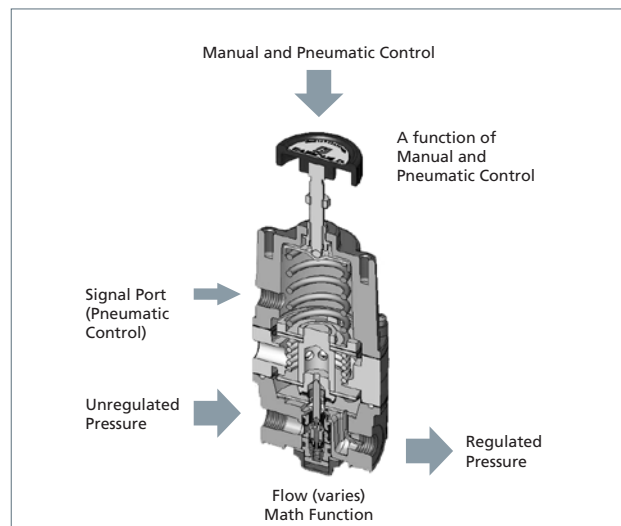
A pressure regulator reduces an unregulated high input pressure to a regulated lower output pressure. Its primary function is to maintain the regulated output pressure under flowing and non-flowing conditions.



Pneumatic Relays

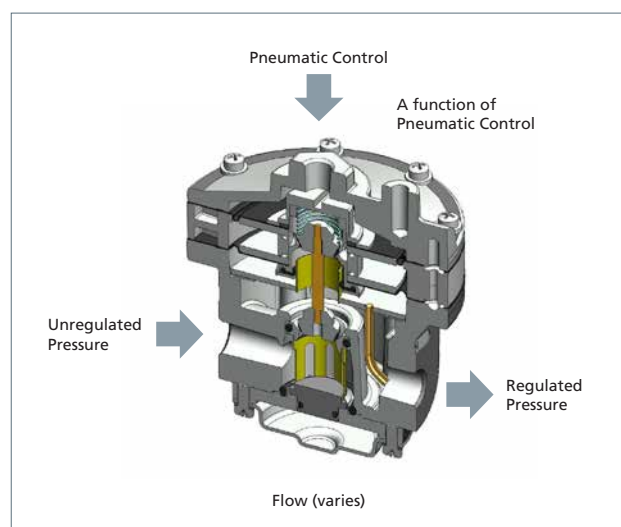
Pneumatic relays perform mathematical functions on one or more input signals that result in a single regulated pneumatic output including:

- Average
- Sum
- Differential
- Multiplying
- Dividing
- High / Low Selection
- Reversing
- Snap-acting (NC or NO)



Pneumatic Volume Boosters

A pneumatic air volume booster reproduces a low flow control signal with a greater flow regulated output pressure. It uses an unregulated input pressure to maintain a regulated output pressure under flowing and non-flowing conditions.



Product Range – Methods of Operation

Electronic Control of Pressure

In today's world of computerized electronic control of processes, there exist the need for electronically controlled devices for controlling pressure. These devices form the important interface between the electronic world and the pneumatic world.

Rotork Fairchild has a number of products employing different technologies for electronic control of pressure.

Motor Set Pressure Regulator

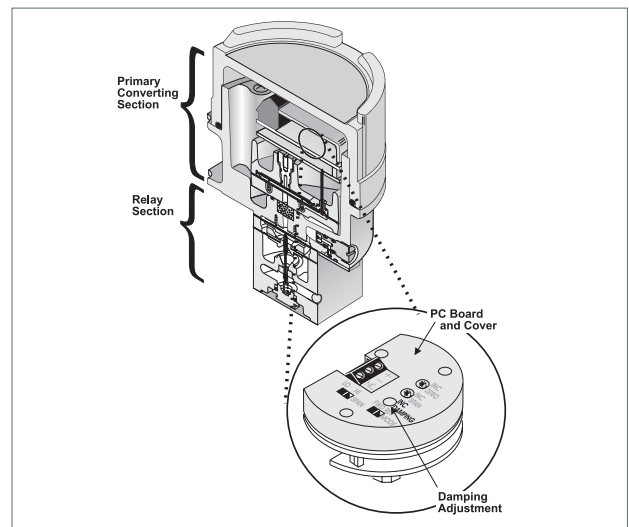
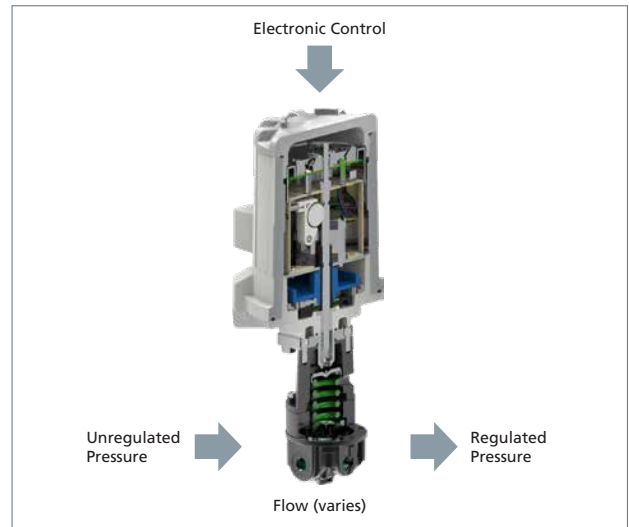
Rotork Fairchild's Motorized Pressure Regulator provides the utmost in bullet proof electronic pressure control. Inherently lock in last place and coupled with virtually any of Rotork Fairchild's time proven pressure regulators, these devices can endure the harshest of pneumatic pressure control environments. The actuator portion of these instruments are housed in an explosion proof, IP66 & IP68 enclosure. Digital pulse as well as analog control, fully configurable end travel limits and NO & NC position limit switches round out the control interface.

Electro-Pneumatic Transducers

Rotork Fairchild's Electro-pneumatic transducers employ simple but highly robust voice coil Flapper Nozzle technology as the primary electro-mechanical converting element for controlling pressure. This is a cost effective, signal powered solution to many electro-pneumatic interface applications. These compact, light weight I/P and E/P transducers are offered in a variety of inputs, outputs and connection options that enable solutions to virtually any application.

Electronic Feedback Transducers

Rotork Fairchild's feedback Electronic transducers are a step up from the voice coil flapper nozzle controlled pressure transducers. These piezo-ceramic flapper nozzle transducers feature vibration resistant piezo-ceramic actuator and high accuracy closed loop pressure feedback control of the output pressure. A high accuracy pressure sensor monitoring the output pressure provides highly accurate and stable feedback pressure control. These transducers are available in a variety of inputs and outputs, and connection methods. These are offered in IP66 intrinsic safety, and explosionproof versions for satisfying both general industrial and hazardous area applications.



Product Range – Methods of Operation

Microprocessor Controlled Pressure Controllers

Rotork Fairchild's microprocessor controlled pressure controllers are feature rich PID controlled pressure controllers. Primarily intended for machine control applications, these have a push button and LCD display user interface providing the utmost in flexibility and configurability. The feed and bleed solenoid valve technology primary pressure control system is highly accurate and efficient and can be configured to be non-consuming in steady state conditions. This technology is also resistant to vibration and shock and changes in position. These pressure controllers feature optional electronic feedback output and are offered in three pressure ranges up to 10 bar.



Product Range – Accessories and Service Kits

Accessories

Fairchild offers a variety of accessories for product support.

These items are:





- Mounting brackets
- Automatic drain filters are available to remove dirt, water, oil and other foreign matter from supply air lines.
- Manifold and rack kits for high density mounting T6000, T7800, T8000 and T9000 Series transducers.

Service Kits

Service kits are available for most products. These kits include elastomers and other wear items that are necessary to restore the unit to its original operating condition.



Product Specifications – High Precision Pressure Regulators

Vacuum Regulators			
			
16	17	18	1600A

Flow Capacity - SCFM (m³/hr) @ Supply Pressure of 100 psig (700 kPa)	2.5 (4) @ Vacuum ⁴ or 40 (68) Positive Flow	12 (20.4)	8 (13.6) ⁴	28 (48) @ Vacuum ⁴ or 150 (255) Positive Flow
Exhaust Capacity - SCFM (m³/hr) Downstream pressure 5 psig (35 kPa) above 20 psig (150 kPa) set point	5.5 (9.4)	2.0 (3.4) (Relief Capacity)	Not Applicable	20 (34)
Sensitivity - inches of WC (cm of WC)	0.5 (1.27)	0.125 (0.32)	0.125 (0.32)	1.0 (2.54)
Supply Pressure Variation - psig (kPa) For Supply Pressure Change - psig (kPa)	< 0.1 (< 0.7) 100 psig (700 kPa)	< 0.1 (< 0.7) % Vacuum Change	Not Applicable	< 0.1 (< 0.7) 100 psig (700 kPa)
Maximum Supply Pressure - psig (kPa)	250 (1700)	Minimum 30 inHg (762 Torr) to "Full" Vacuum	Minimum 30 inHg (762 Torr) to "Full" Vacuum	250 (1700)
Dimensions (Approx.) - Inches (mm)	Dia. 3" H 8" (Dia. 76 H 165)	Dia. 3" H 6½" (Dia. 76 H 165)	Dia. 3" H 6½" (Dia. 76 H 165)	Dia. 3" H 8" (Dia. 76 H 165)
Output Pressure Range - psig (kPa)	Vacuum-2 (Vacuum-15) Vacuum-10 (Vacuum-70) Vacuum-30 (Vacuum-200) Vacuum-100 (Vacuum-700) Vacuum-150 (Vacuum-1000)	0-5 inHg (127 Torr) 0-15 inHg (381 Torr) 0-30 inHg (762 Torr)	4 inHg (140 mBar) 20 inHg (700 mBar) 30 inHg (1000 mBar)	Vacuum-10 (Vacuum-70) Vacuum-30 (Vacuum-200) Vacuum-150 (Vacuum-1000)
Port Size (NPT, BSPT or BSPP)	¼", ⅜", ½"	¼", ⅜", ½"	¼", ⅜", ½"	⅜", ½", ¾"

⁴ - at 29 inHg of vacuum with inlet port open

Miniature Regulators		
		
70B	72	55

Flow Capacity - SCFM (m³/hr) @ Supply Pressure of 100 psig (700 kPa)	2.5 (4.25)	2.5 (4.25)	9 (17)
Exhaust Capacity - SCFM (m³/hr) Downstream pressure 5 psig (35 kPa) above 20 psig (150 kPa) set point	0.28 (0.48)	0.28 (0.48)	2 (3.4)
Sensitivity - inches of WC (cm of WC)	Not Applicable	Not Applicable	Not Applicable
Supply Pressure Variation - psig (kPa) For Supply Pressure Change - psig (kPa)	< 0.05 (< 0.35) 5 psig (35 kPa)	< 0.05 (< 0.35) 5 psig (35 kPa)	< 0.1 (< 0.7) 10 psig (70 kPa)
Maximum Supply Pressure - psig (kPa)	250 (1700)	300 (2000)	150 (1000)
Dimensions (Approx.) - Inches (mm)	Dia. ¾" H 3¾" (Dia. 22 H 81)	Dia. 1" H 3¾" (Dia. 25.4 H 81)	1½" x 1½" x 4¼" (38 x 38 x 108)
Output Pressure Range - psig (kPa)	0-5 (0-35) 0-15 (0-100) 0.5-30 (3.5-200) 1-60 (7-400) 2-100 (15-700)	0-5 (0-35) 0-15 (0-100) 0.5-30 (3.5-200) 1-60 (7-400) 2-100 (15-700)	0-10 (0-70) 0.5-30 (3.5-200) 1-60 (7-400) 2-100 (15-700)
Port Size (NPT, BSPT or BSPP)	⅛" (NPT only), M5 x 0.8	⅛" (NPT only), M5 x 0.8	⅛" (NPT only)

Client Support and Site Services

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 every aspect of flow control.

Our service solutions increase plant efficiency and reduce maintenance costs.

Workshop services return equipment to as-new condition.



Client Support and Site Services

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.

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 undertaken 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.

Asset Management

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



***Giving You Peace of Mind,
Guaranteed Quality and
Improving Your Site Efficiency***



Actuator Workshop Overhaul

- Supporting 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 and maintenance
- Call-out with fully equipped service vehicles

Client Support Programme (CSP)

- Select a level of service tailored for you – gold, silver or bronze
- Improves production throughput
- Reduces the cost of maintenance year-on-year
- Allows customers to manage the challenge of 'Risk vs Budget' in maintenance operations
- Lifecycle management includes planned and predictive maintenance with a focus on equipment reliability and availability as well as asset management
- Generated reports detail cost savings and performance improvements

Planned Shutdown Support

- Preventative maintenance
- On-site overhaul and testing
- OEM spares and support
- Support for Rotork and non-Rotork products
- Achieve tight shutdown return to service targets
- Project management and supervision

Valve Automation Centres

- Actuator upgrade
- Manual valve automation
- Control and automation
- System integration