50 YEARS in control

1957 - 2007

Today, valve actuators are taken for granted as an integral and vital part of the industrial valve industry, but it was not always so. The development of the modern valve actuator can be traced over a period extending back to the 1950's. It is no coincidence that this timescale should equate with the first fifty years in the history of Rotork.

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50 YEARS 1957 - 2007

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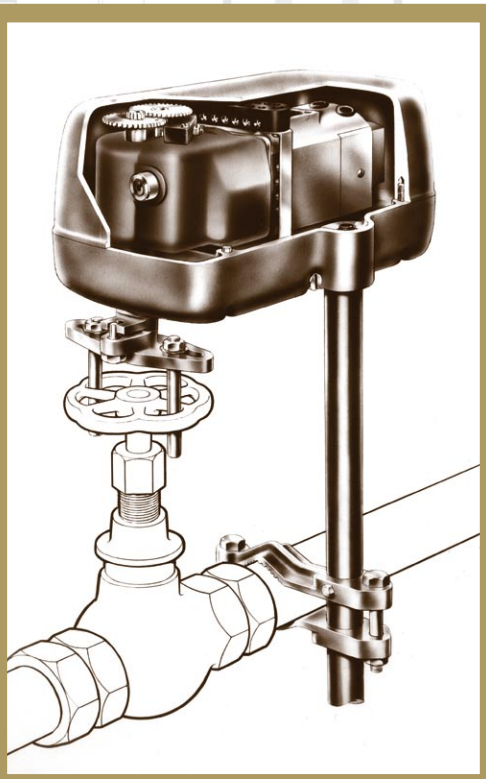
Jeremy Fry 1924 - 2005

In 1945 Rotork was a small general electrical and mechanical engineering company based in Bristol, England, which was subsequently acquired by the Frenchay Products Group, owned by David Fry and his brother Jeremy. At that time the Rotork department was concerned with 'fringe' interests of valve motorisation, a sphere of engineering which was barely acknowledged as a separate field of great significance.

Jeremy Fry recognised the future growth potential for a business prepared to specialise exclusively in this branch of engineering and he formed a separate company which, initially buying and motorising valves, became the research and design team from which the present Rotork organisation has stemmed.

In 1957 the Rotork Engineering Company Ltd, as it was then known, began trading from Widcombe Manor, Jeremy's home in Bath, staffed by a dozen people and supported with the goodwill of a number of sub-contractors who were making parts for the small number of Rotork actuator designs from which the company's future products would be developed.

The first valve actuator to bear the Rotork name was a one-horsepower (0.75 kilowatt) device, weighing 170kgs, built in 1952, but by 1957 the first recognisable features of a modern, modular actuator design were already in evidence, with the thrust taking arrangement incorporated into the design in 1953 and actuator output measured by axial displacement of the wormshaft in 1956. It was Jeremy Fry's ambition to introduce numerous more radical design advancements in order to create the finest range of electric actuators in the world.



Above: Actuators at the Manor 1957
Left: 1F Actuator - 'Fry's first'

The 100A actuator on site

Significant progress was soon being made, largely as a result of the expansion of the oil industry in Europe, for which Rotork actuators were redesigned to obtain flameproof certification. This development enabled Rotork to introduce stator/rotor assembly motors with the associated benefit of reduced rotor kinetic energy, resulting in less overrun and less risk of damage to valves requiring torque seating - another design benchmark.

Orders for BP and the Kuwait Oil Company led the way to a major series of contracts for ESSO's European refineries at Fawley, Milford Haven, Rotterdam and Cork. Following on, it was not long before Shell placed substantial orders for installations in Venezuela whilst Rotork's penetration of the Middle East increased with orders for Kharg Island, Iran and Iraq. Meanwhile, a landmark in the power generation industry had been passed with an order from the CEGB's new South Denes 64MW power station, for actuators on the water cooling systems.

By the end of 1958, annual production of Rotork actuators was approaching 600 units (more than double the previous year), and most British valvemakers were referring their motorisation applications to Widcombe Manor, safe in the knowledge that the expertise available was not only reliable, but also independent from the interests of any competing valvemaker.

The importance of export business had also been recognised with the appointment of Rotork's first overseas agent, M.B. John & Hattersley of Ballarat, Victoria in Australia.

On the design side, 1958 saw the introduction of the first integral reversing contactor starters, evidence of the direction in which the Rotork design team was heading although further developments in these areas would have to await improvements in the efficiency of environmental sealing.

It was common practice on flameproof equipment at that time to allow the internal parts including electrical equipment to "breathe" to account for temperature fluctuations, and breathers and drains were provided to let out the associated condensation.

To help to preserve internal electrics, heaters could be installed, but the overall situation served to strengthen the argument for keeping the amount of electrical equipment inside the actuator to an absolute minimum, since water and electricity don't mix!

In 1960, Rotork introduced 'O' ring sealing, which dispensed with the need for breathers and drains, since from then on, the actuator enclosure would be totally sealed from the environment when all the covers were in place. The fundamental breakthrough in environmental sealing had thus been achieved, enabling the

Journal bearing faces.

Rotork's first 'A' Range design to feature an integral starter and local controls

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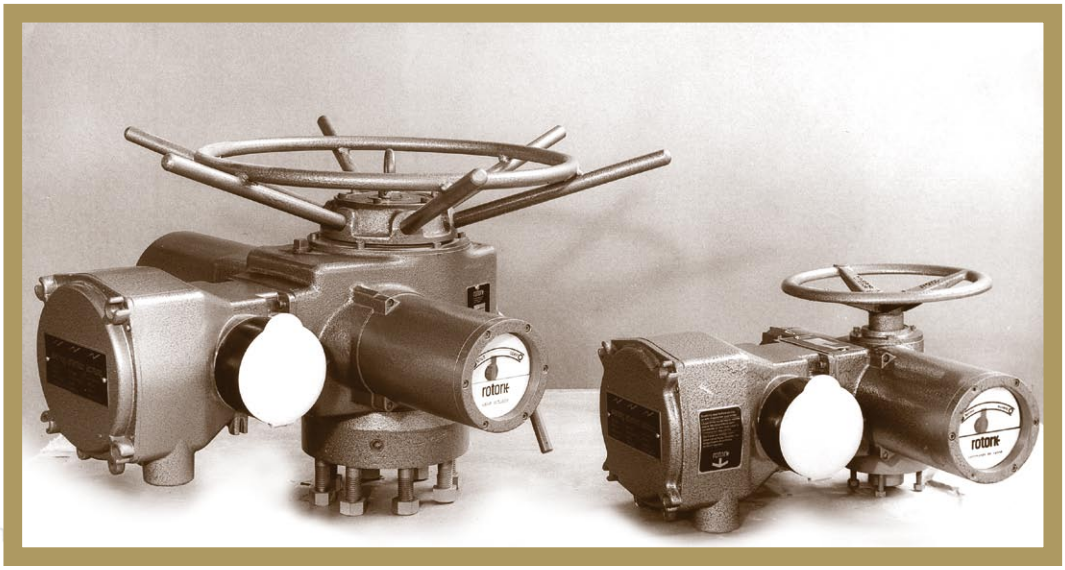


30A and 6A size Syncropak Mk1 actuators

actuator to develop into an increasingly self-contained and sophisticated device, with the potential to contain its own starter, control and indication circuity and therefore reduce overall installed cost by removing the need for these devices to be housed and cabled to in separately sited installations.

Also in 1960, Rotork radically simplified the torque and travel limit setting procedures for all valve designs with the introduction of the self-resetting Syncroset switch mechanism. By utilising the same end of travel switch for both torque and limit functions, the Syncroset switch mechanism enabled wiring diagrams for the first time to be standardised for any valve type.

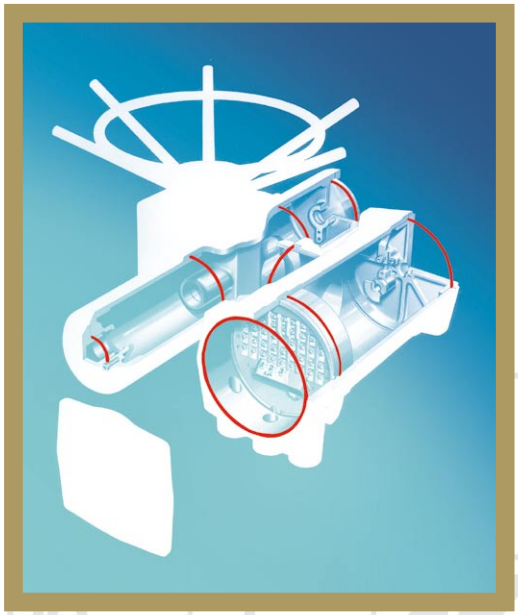
In addition, only one setting was required for all open limit switches, and one for all closed limit switches, instead of the conventional individual setting of every switch. A mechanical latch was also incorporated to prevent torque switch 'hammer' during and at the end of travel and torque switch tripping during valve unseating.

These two major innovations of 1960 completed the creation of the first recognisable basic 'A' range Syncroset actuator, which would be the focus of all future developments and on which Rotork's growth into the world's leading valve actuation company would be secured.

The early 1960's witnessed this growth with dramatic commercial and organisational developments. Sub-contracted manufacturing of the 50's was replaced by the first Rotork factory and production line, in an old mill building, whilst a deliberate expansion of sales activities in Europe was pursued, heralded by an enthusiastic salesman setting off for France in a Morris Minor pick-up truck with a demonstration valve and actuator mounted on the back.

His efforts produced one of the largest orders in the company's history - over 1000 actuators for the uranium isotope separation plant for the French Atomic Energy Authority - and ultimately led to the establishment of Rotork's first service company in France, followed by manufacturing licensee agreements in France, Italy and Germany to service major contracts including a new Russian pipeline project.

Syncropak II double-sealed enclosure cutaway



With production now exceeding 1000 units a year, Rotork was established as a major force with European and American contractors and valvemakers who were also involved in international projects. By 1962, Rotork agencies had also been established in Canada and South Africa, both with local assembly facilities, and the UK operation had outgrown the old mill in which it was situated.

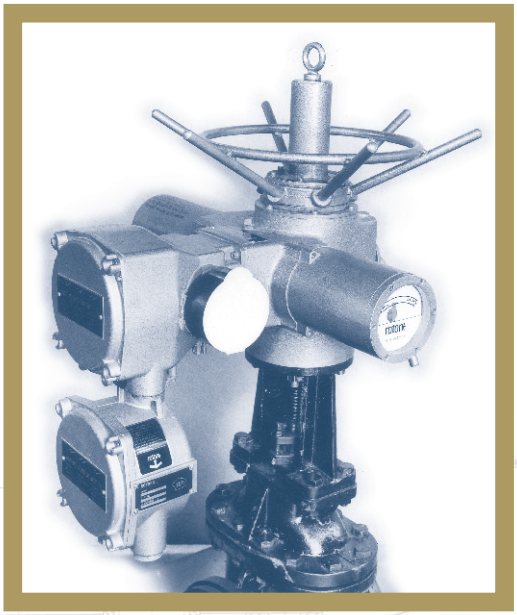
The decision was made to build a purpose designed production plant at Brassmill Lane in Bath, which was completed in April 1962 and remains as the company's international headquarters. The original buildings, which have since been incorporated within a much larger manufacturing complex as the company has grown, were created with the same careful attention to design which Jeremy Fry instilled in every part of Rotork, and drew favourable remarks from the local and national press and architectural journals of the time.

The markets for valve actuators continued to grow during the 1960's due to the ever increasing demand for the automation of plants and processes. Rotork's market share continued to grow, assisted by the expansion of the company's world-wide organisation and further product innovations.

The most significant of these was the introduction of the Syncropak actuator in 1964, born out of the 'O' ring sealing philosophy introduced in 1960 and offering the benefits of an integral starter and standard control circuitry as a factory built and tested unit.

At the time the concept was revolutionary, but the potential for reduced installed costs, improved plant reliability and increased efficiency through centralised control was attractive to the majority of Rotork's markets, and actuator production flourished. Annual output at Brassmill Lane increased to 4000 units by 1966, and by the end of the decade was over 6000, more than 50% being Syncropak versions. During the same time a manufacturing licensee was established in Japan and a Rotork office was opened in New York to develop the US market, the cradle of valve actuation and rightly seen by the directors as the greatest potential market for Rotork's actuators.

Brassmill Lane factory used a Canadian triodetic roof design



Left: Early "Buxton" explosion proof actuator with separately sealed terminals

Below: Construction conditions at Oasis Oil, Libya, 1969

Expansion here and elsewhere, however, was an expensive, long term investment, putting considerable additional pressures on the company's finances beyond those normally experienced by an organisation which was already exporting more than half of its production.

In 1968 it was therefore agreed that the company should be introduced to the London Stock Exchange with the offer of 1,500,000 two-shilling (10p) shares. At the same time the company name was changed to Rotork Controls Ltd. to reflect its activities more accurately.

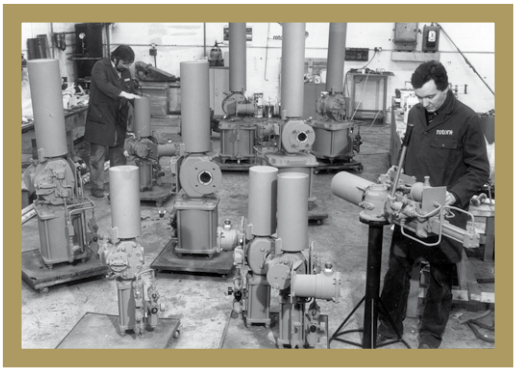
The opening of dealings was greeted by one of the "wildest scramblings" ever witnessed on the exchange floor, during which time the share price rocketed to over 45 shillings before settling at 27 shillings and ninepence (£1.39p), valuing Rotork Controls Ltd. at £2 million, with Jeremy Fry holding a majority share, giving him millionaire status, much publicised at the time.

By 1970 manufacturing facilities at the Bath factory had more than doubled in size, as the last major refinement was added to the standard design of all market leading 'A' range actuators.

A separately sealed terminal housing - 'double-sealing' as it is known and an important Rotork improvement on the basic design requirements of the British flameproofing authorities in the early 1960's - finally ensured that internal electrics could be isolated from the outside environment at virtually all times, even during site wiring, when experience had shown that a cover could be removed for many days or even weeks, therefore not allowing moisture and dirt to enter the actuator. Double sealing was a unique feature of Rotork actuators for over a decade, helping the company to successfully negotiate the often turbulent conditions at home and abroad that the 1970's were about to bring.

In the USA, the decade started positively with the opening of a new manufacturing plant in Maryland, following major order breakthroughs with US oil companies and contractors by Rotork Inc. under the leadership of Tom Eassie. Shortly after, Tom returned to Bath as head of world-wide actuator operations, eventually becoming Group Chief Executive and retiring in 1996 after thirty-four years with Rotork.

'A' Range 1400 Series



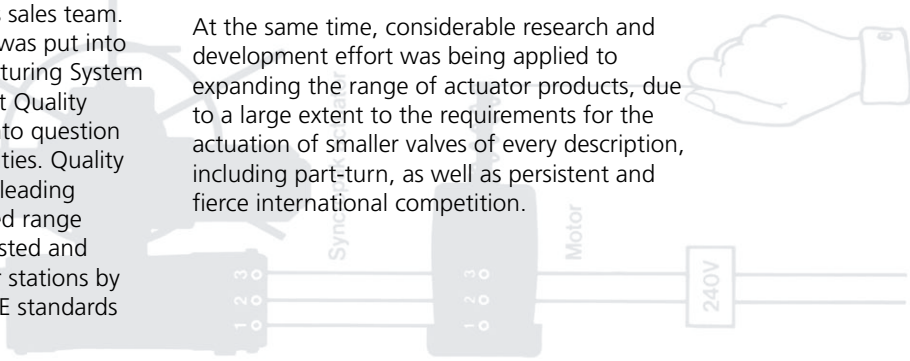
Early days 'P' Range production in Bath

Keeping Rotork actuators in pole position was a challenging but ultimately rewarding task. Throughout the world competitors were beginning to wake up to the benefits of Rotork's actuator design and imitations began to appear, adding to the pressure on Rotork's sales team. Meanwhile, a great deal of effort was put into establishing a Controlled Manufacturing System for Rotork products, to ensure that Quality Assurance could never be called into question in any area of the company's activities. Quality Assurance discipline also played a leading role in getting a specially developed range of Rotork actuators successfully tested and approved for use in nuclear power stations by the internationally leading USA EEE standards authorities.

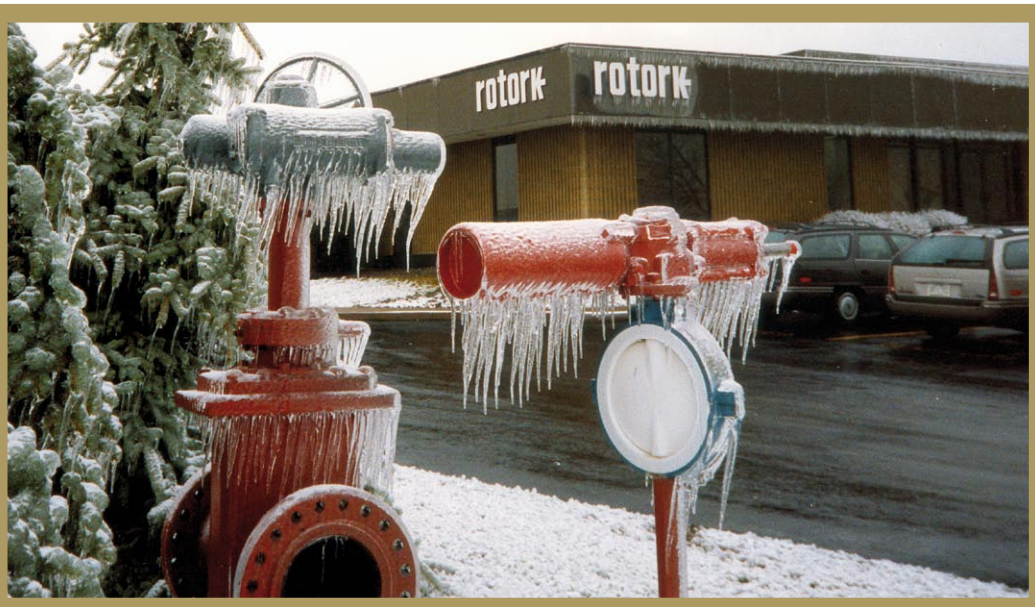
In the UK, industrial unrest in the first half of the decade culminated in the miners' strike and three-day week of 1974. Nevertheless, Rotork's international network of sales offices and agents was active on every continent, successfully winning a steady stream of orders for projects throughout the world. Consequently, even in 1974 production was at a record level, with over 13,000 units built. By now Rotork was employing over 450 staff in the UK, and a further 80 overseas, creating an annual sales value for actuators of £5 million.

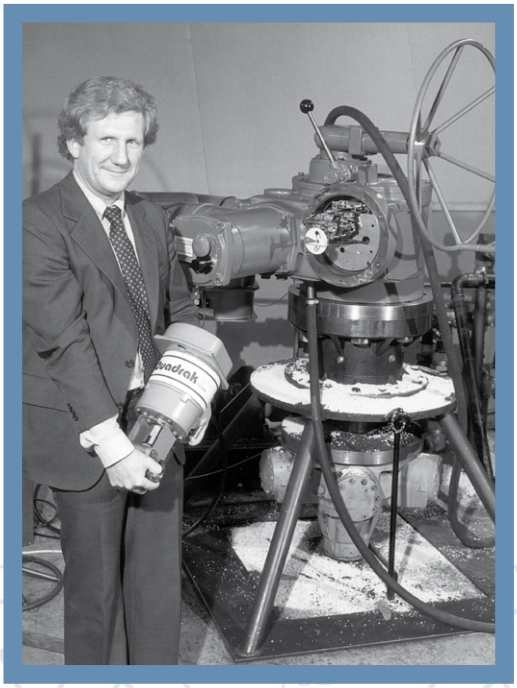
Product development at this time concentrated on the rearrangement of Syncropak electrical circuits to provide additional monitoring facilities for interfacing with computer control systems, driven by the increasing emphasis on automation and centralised control in virtually every industry.

At the same time, considerable research and development effort was being applied to expanding the range of actuator products, due to a large extent to the requirements for the actuation of smaller valves of every description, including part-turn, as well as persistent and fierce international competition.



Jet View Drive, Rotork's first factory in Rochester, NY.





Pierre Pavy, Sales Director, showing the largest and the smallest actuators of the time

Back in the late 1960's Rotork had manufactured manual and fluid power quarter turn actuators, many of which had been used on British Gas pipelines. This business had declined by the early seventies, however later in the decade a new range of heavy duty fluid power actuators would be successfully introduced, with manufacture this time centred on Rotork's large US factory at Rochester, NY, in order to be closer to the hub of the international oil and gas production industries.

In every part of the changing world of the 70's, Rotork was increasing its activities. Further expansion of the Bath factory provided a production capacity increase of 50% by the end of 1975, spurred by the continued increase in demand for actuators. Paradoxically, in a number of areas, the markets were beginning to look less buoyant.

Brassmill Lane factory floor in the early 1970s

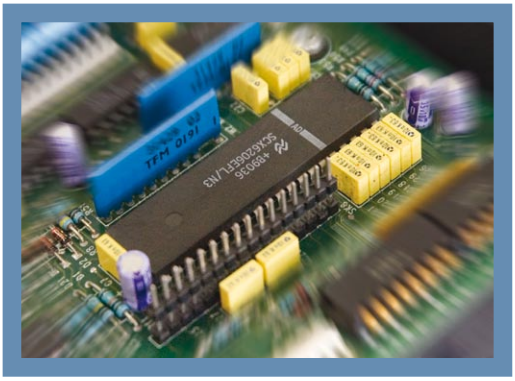
Throughout the rest of the decade, and into the early 1980's, Rotork's best strengths and skills were needed to overcome many stern tests including periods of high inflation, areas of international uncertainty, wars in the Middle East, unrealistically strong currencies and fluctuating exchange rates.

Nevertheless, the policy of expanding the company's international representation was not deflected by such difficulties, and sales continued to increase as a result. European manufacture was centralised in Bath and a manufacturing joint venture agreement in India was signed in 1977
to provide actuators for that country's burgeoning industrialisation.

In 1979 a new Rotork company opened in Germany. Much of this activity was associated with the development and launch of a lower cost range of electric actuators, designed to appeal to markets where highly sophisticated valve control solutions were not in demand.

By the end of the decade, the addition of a further range of electric actuators for very large valves and an innovative quarter-turn actuator for small ball valves, together with hydraulic and gas-over-oil product lines to complement existing heavy duty pneumatic actuators enabled Rotork to claim an unrivalled actuator product package to service all the valve industries' requirements. Thus, as the improved economic climate of the 1980's began to unfold, Rotork was in excellent shape to take advantage of the new opportunities presenting themselves.

Early indicators were not optimistic, with a world-wide recession, the Three-Mile Island nuclear accident and an apparently endless Iran-Iraq war limiting sales opportunities. Against the odds, however, by 1982 Rotork was once again celebrating another record year, especially in the USA and Canada, increasing turnover by 20%.



'A' Range 1600 solid state gate array

'AQ' Range actuator

1983 proved to be a temporary setback, although new Rotork offices were opened in Spain and Singapore and further product developments were introduced.

The most significant of these was the 1600 Series 'A' range actuator control package, Rotork's first use of solid state electronics in place of electro-mechanical equipment, providing the intelligence and flexibility of 'CMOS' logic circuits to meet the requirements of plc based control systems.

The introduction of the 1600 Series was an immediate success and heralded the abandonment of those actuator products which were designed to be 'lowest-cost' solutions in favour of a universal 'designed for excellence' policy, utilising new technologies wherever possible for maximum customer benefit.

Within twelve months almost half the orders received for 'A' range actuators were specifying the 1600 Series solid state version, and 1984 proved to be another record year for actuator sales.

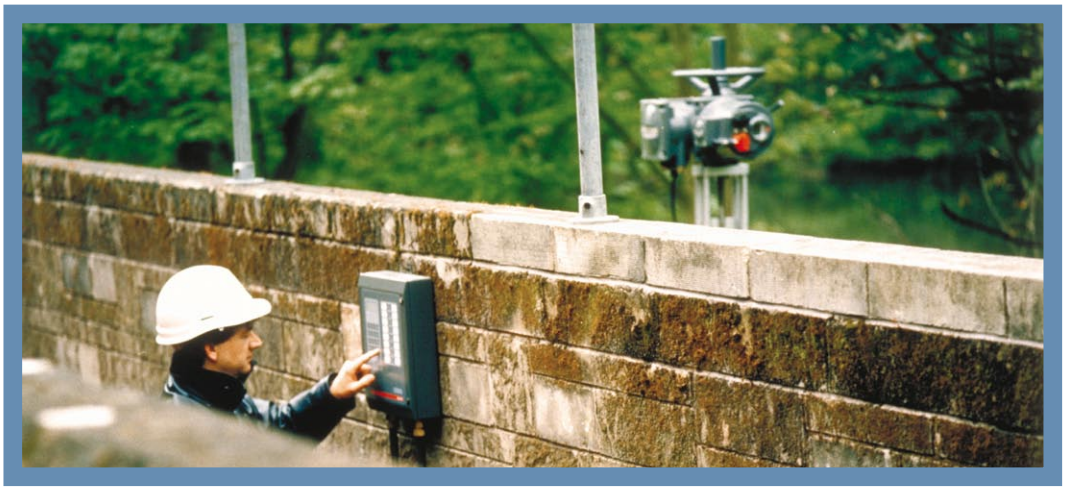
Jeremy Fry retired in 1984, having directed his company over a period of twenty seven years from a workbench operation in his garage into a substantial international engineering group with annual actuator sales of £21 million.

With the addition of Rotork Saudi Arabia, there were now Rotork actuation companies in nine countries, together with the joint venture in India and Japanese licensee, making Rotork the most comprehensive and international valve actuator enterprise in the world. The strategic policy of opening new Rotork offices wherever markets could support them was well established as bringing the company closer to its customers, resulting in the best available service and support. The coming years would therefore witness a significant increase in the number of new Rotork offices, anticipating or reflecting economic awakenings throughout the Far East, former Eastern Block states and Third World countries in Africa, Asia and South America.

On the product front, the next few years produced the first inventive results of the revolution in electronic technologies which was impacting virtually every aspect of industry. The Rotork AQ quarter-turn actuator was a completely new design featuring customer selectable control voltages and variable operating speeds as standard. Designed for direct attachment to ball, butterfly and plug valves or dampers, the AQ which was also available with explosionproof certification facilitated the stocking of a standard product which could be quickly customised to suit diverse operating criteria, including failsafe requirements.

Industry's ever increasing need for small quarter-turn motorised valves was subsequently further recognised with the introduction of the Q Range, a smaller and simpler design than the AQ, but retaining Rotork's superior design philosophy.

Some of the thousands of 'Q' Range actuators fitted to oil well head manifolds on Lake Maracaibo



Rotork's purchase of an instrumentation company in 1985 was planned in part to hasten the development of dedicated control systems for valve actuators which would enable the company to offer a complete package from the valve to the control room interface.

The resulting product, 'Pakscan', was launched in 1986, offering microprocessor based control of large numbers of actuators or other plant equipment on a single two-wire loop (or 'bus'). Pakscan's ability to dramatically reduce actuator installation costs and communicate directly with the most sophisticated plant supervisory systems has ensured its popularity with customers from day one.

Thousands of systems have been sold and today more than 25% of all Rotork actuator sales include Pakscan, which has been continuously developed and is now in its third generation.

Market areas for actuators continued to develop throughout the world during the 80's and 90's and wherever they could support it, a Rotork subsidiary office was opened. The Far East proved to be the major area of expansion.

In 1987 Rotork Australia took over from the agency in that country, whilst Rotork Singapore became the head office for regional subsidiaries in South Korea, Malaysia, Indonesia, Thailand and Hong Kong.

The changes within the Peoples Republic of China also witnessed the opening of Rotork offices in Shanghai, Guangzhou and Beijing, with licensed manufacture in Shanghai for the power industry and a joint venture marketing operation for the oil industry in Shenzhen.

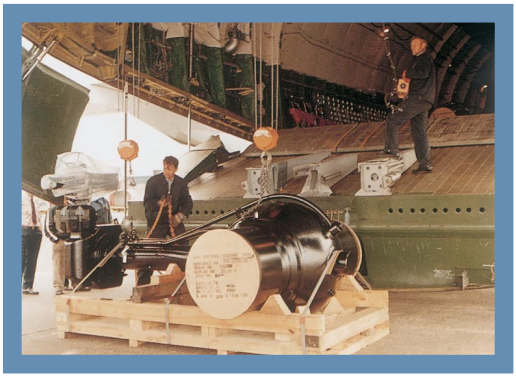
In the mature American markets Rotork opened further regional offices: four in Canada, four in the USA and a new company in Venezuela.

A Rotork office was also opened in the Netherlands. In the old USSR (CIS), Rotork established a subsidiary in Moscow whilst agents throughout Eastern Europe actively pursued the business generated by the modernisation of industries in their own areas.

Bold expansion yielded further increases in turnover and profit; by 1990 actuator turnover was approaching £40 million, double the 1984 figure, whilst results in the 90's were even more remarkable, boosted by the redefinement of strategic company policy under the leadership of Bill Whiteley and the swift market acceptance of a radical new product development.

Above: Rotork engineer Peter Hirst operating an IQ Mk1 actuator via a Pakscan IIS Master Station

Below: Pakscan IIE Master Station



A completed, motorised valve is loaded onto an Antonov air freighter, bound directly for Siberia

In 1989, Rotork won the valve actuator order for the urgent rebuilding of a major Russian oil pipeline, involving more than 900 'A' range actuators, many with pneumatic failsafe motors and most designed for very low temperature operation. The first deliveries were required within four weeks of the receipt of the order and completion would be demanded within sixteen weeks.

The ability of Rotork and its suppliers to successfully achieve the increased production dictated by this contract was instrumental in refocusing future company policy to aim for significant growth in market share. The resultant policy, spurred on by the expanding network of subsidiaries and agents, meant that production figures had already grown considerably by 1992, when a vitally important new product was launched.

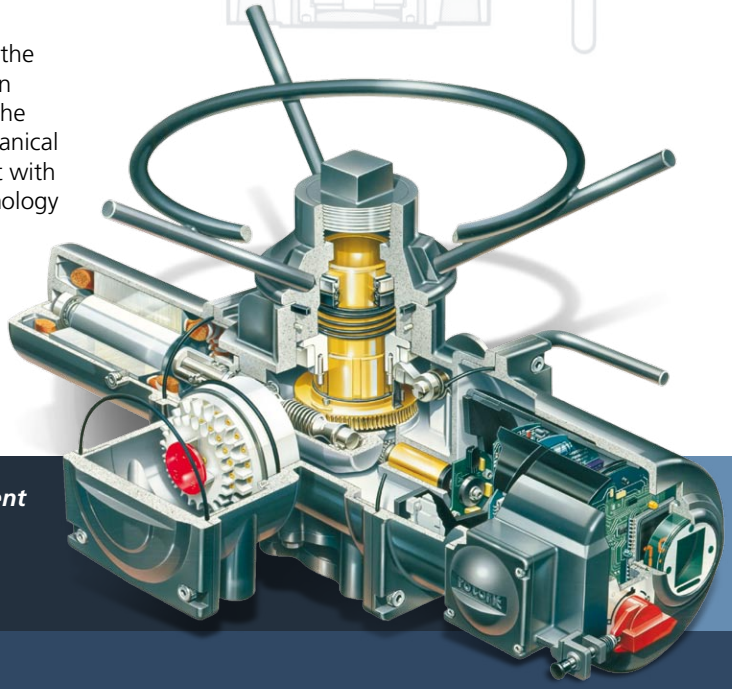
The 'IQ' actuator was designed to replace the long established 'A' range, which had been the cornerstone of Rotork's success since the 1960's. The 'IQ' retained the proven mechanical simplicity of the 'A' range and combined it with state-of-the-art intelligent electronic technology to achieve enhanced reliability, increased features and flexibility.

At the centre, the 'custom gate array', introduced during the last days of the 'A' range electronic 1600 series, brought proven reliability to complex switching and logic circuitry by means of only one component. Electronics also replace the mechanical switch mechanism, removing the need for springs, levers and gears.

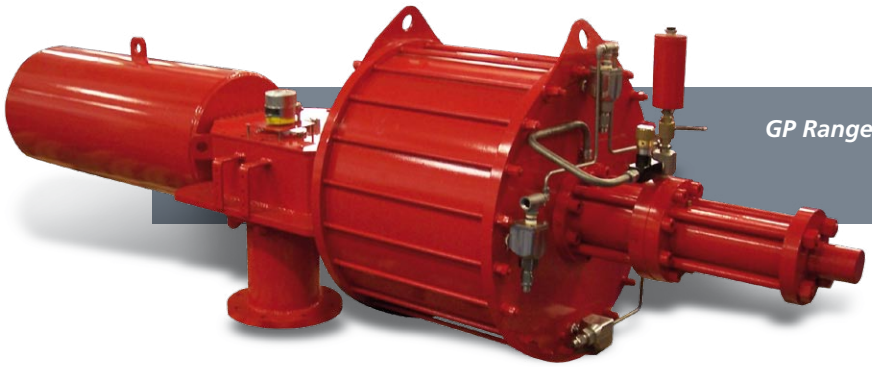
Overall, the number of parts per actuator was reduced from 320 in a typical 'A' range to 140 in the 'IQ'. The 'IQ' also broke new ground with the introduction of 'non-intrusive' commissioning and interrogation by means of a hand-held infra-red setting tool, enabling actuators to be commissioned, even in wet or hazardous locations, without the necessity of removing any electrical covers. The 'non-intrusive' design also embodied local control switches that do not penetrate the actuator enclosure, further protecting internal components from environmental harm and therefore further ensuring reliability.

Replacing the 'A' range was Rotork's most significant single task in three decades, and the subsequent success of the 'IQ' proved that the design engineers got it right. It took four years for a competitive response to appear, during which time the 'IQ' had become the largest selling Rotork product as well as the world's best selling 'intelligent' electric actuator.

In fact, with the 'IQ', production figures doubled in the five years to 1997 and Rotork became the largest single supplier of heavy duty electric valve actuators in the world, with more than 30% of the market.



IQ Mk1 non-intrusive intelligent actuator introduced in 1993



GP Range Fluid Power actuator

In 1995 a dedicated Fluid Power Division was set up, operating from Rochester in the USA, Leeds in the UK and Singapore. Pneumatic and hydraulic sales grew as a result and also as a result of product developments including high pressure gas pipeline actuators. In 1999 a step change in the level of fluid power actuator business was heralded by the acquisition of the respected manufacturer Fluid System Srl, situated in Lucca, at the heart of the Italian valvemaking industry.

Fluid System's products included well established pneumatic and hydraulic actuators as well as subsea and other specialised derivatives. Lucca became the main manufacturing plant for fluid power actuators and over the following years the complete product range underwent successive programmes of review, rationalisation and development to create an unrivalled range of products.

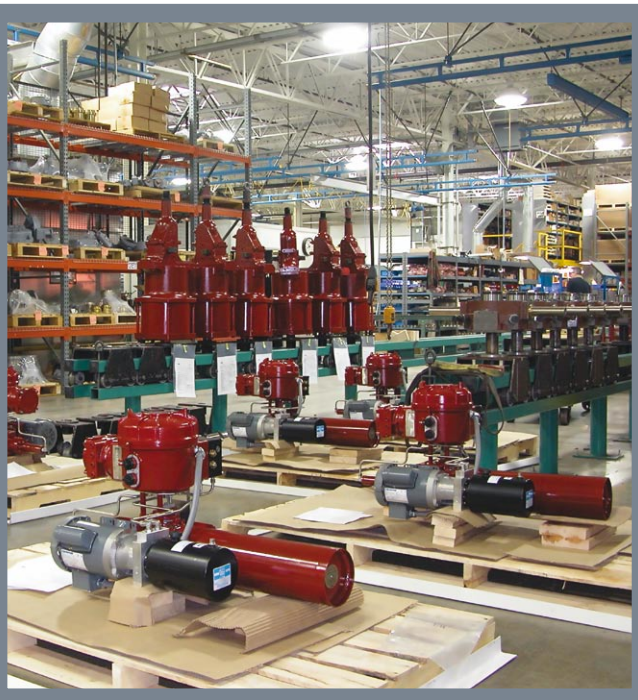
Overall, the investments made in engineering and product development since the acquisition of Fluid System have produced enormous benefits in terms of growth and market coverage.

In 2003 the entire Lucca operation was moved to new premises, four times larger than the old factory, as the level of business continued to grow. Another important factor has been the growth of business from subsidiary offices in addition to further strategic acquisitions. In 2004 Deanquip Valve Automation was purchased in Australia and a year later PC-Intertechnik in Germany was acquired, giving greater access to important oil and gas markets in eastern Europe and Russia.

In addition to manufacturing plants that serve the key markets of Europe, Russia and the USA, Rotork Fluid Systems has also developed a global network of agents and Centres of Excellence. These centres - now established in the UK, Singapore, Canada, Australia, USA and Spain – meet the needs of local valve markets, offering an immediate response to customers' day-to-day project requirements.

These developments have combined to produce a Rotork Fluid Systems Division which has become a global player and one of the largest fluid power actuator manufacturers in the world. At present Rotork Fluid Systems contributes approximately 20% of the total Rotork business, much of which has been achieved by success on large international projects, often when the customer is able to take advantage of Rotork's ability to supply a complete package of electric and fluid power actuators.

During the last ten years, dramatic growth has also been prevalent in Rotork's electric actuator business.



Manufacturing plant at Rotork Fluid System, Rochester, USA

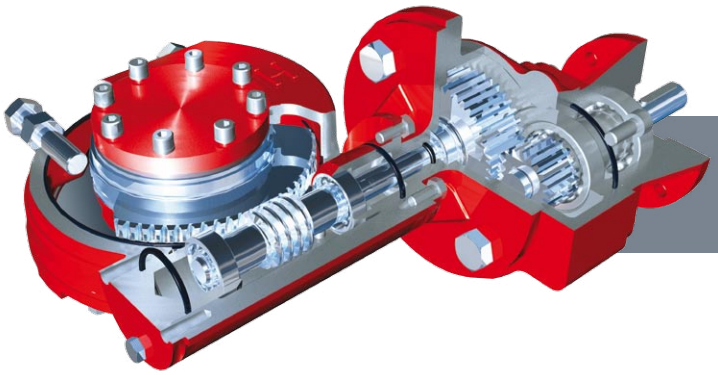
John Pratt performs the 'non-intrusive' commissioning of an IQ Mk 1 actuator inside the hazardous environment of an oil storage depot

The IQ intelligent actuator has been developed and enhanced, creating the IQ Mk2 actuator in 2000 and the even more advanced IQ Pro in 2006. In 2004 direct quarter-turn actuators were upgraded by the introduction of the IQT, which has proved to be a popular addition to the intelligent actuator family.

Meanwhile, a new electric actuator range has been engineered to meet the requirements of industries that demand the robustness and reliability of the Rotork mechanical design without the electronic sophistication of IQ intelligence. Known as the AWT, this range is manufactured in the Malaysian and in a new Rotork facility that was established in 2002 for the purpose.

Further expansion has resulted from the acquisition of specialised electric actuator designs. Skilmatic actuators, purchased in 2000, are self-contained electro-hydraulic units offering modulating, double-acting or failsafe valve control from an electrical supply. Under Rotork ownership Skilmatic actuators have been further developed to encompass the 'non-intrusive', intelligent technologies of the IQ range. In 2002 Rotork acquired Jordan Controls, a manufacturer of specialist electric rotary and lever arm actuators, well established in industries including power generation, oil and gas, coal, water and waste, pulp, paper and chemical processing. Some of these actuators are particularly suitable for environmental improvement programmes such as the enhanced combustion control demanded by strict emissions legislation introduced in the power generation and associated industries.

IQ Pro actuator introduced 2006



IW quarter-turn gearbox

The last decade has also seen the establishment and expansion of the Rotork Gears division, manufacturing valve gearboxes, adaptation kits and accessories and supplying switchboxes, positioners and ancillaries. In 1998 a company called Alecto, manufacturing small manual gearboxes in Holland, was purchased and added to the division and, in 2006, Omag – a specialised Italian manufacturer whose product range includes very large and subsea gearboxes – was also acquired and renamed Rotork Gears srl.

Hand-in-hand with the expanded product range, Rotork's worldwide network of sales and service companies, agencies and manufacturing plants has also undergone dramatic growth. Since 1997, new Rotork companies have been established in Malaysia, Thailand, Japan, Russia and China, increasing Rotork's total number of offices and agencies throughout the world to 150 in 75 countries.

China continues to be the focus of much business activity, recently marked by the establishment of a manufacturing plant in Shanghai, building gearboxes for both the Chinese indigenous and export markets.

With an installed pedigree of products stretching back for fifty years, site service, maintenance, upgrading and retrofitting have always been significant parts of Rotork's business.

In recent years these activities have grown in importance to the extent that they now warrant a separate divisional identity for further global development.

rotork® Site Services

The new Rotork Site Services Division has therefore been established and is dedicated to providing lifetime asset management for Rotork products and those from other manufacturers, relieving site owners from these tasks and enabling them to focus on their core business activities.

Looking forward, the industries which Rotork serves will continue to bring improvements to the lives of more and more of the world's population. Rotork's success in all its international markets is won by ensuring that its products and every aspect of its organisation are of the finest quality and meet the highest environmental standards.

Rotork's first fifty years have witnessed many changes as new technologies have been introduced. The culture of innovation that has brought the company to the position of world leader in actuation solutions is every bit as alive as we enter the next fifty years as it was in the previous ½ century. In a world experiencing unprecedented levels of climate change and environmental uncertainties, Rotork will continue to play its full part in securing safe, efficient and responsible energy sources, clean water and effluent treatment.

The latest genaration of Rotork's 2 wire control system, Pakscan P3 launched in 2006

rotork® today

Whilst its roots lie in electric actuators, Rotork today manufactures an extensive range of products. During the last ten years the acquisition of specialist manufacturers including Fluid System srl, Jordan Controls, Skil Controls, Alecto, Omag and Valvekits has enabled Rotork to expand into diverse areas of valve actuator activity, including pneumatic, hydraulic, gas-over-oil and electric failsafe actuators, manual gearboxes, sub-sea gearboxes, positioners, switchboxes, mounting kits and accessories.

Electric actuator development has forged ahead, especially in the field of intelligent, digital control and instrumentation. The flagship IQ actuator – now in its third generation, designated IQ Pro – features an unrivalled level of user-friendly functionality to provide optimised plant utilisation with a low, long term cost of ownership that is widely recognised throughout the world.

The quarter-turn IQT has proved to be a very popular addition to the intelligent electric actuator family, bringing the inherent benefits of IQ technology to the compact, direct drive operation of ball, butterfly and plug valves, dampers and other part-turn devices.

Today, the IQ range sets the "gold standard" for electric valve actuation. The large, clear icon and text display with multilingual capability facilitates programming and interrogation by means of the intrinsically safe hand-held two-way communication setting tool. Valve torque signature profiling and the status and monitoring diagnostic abilities of Rotork IQ-Insight software combine to minimise the risk of valve breakdowns, making over-cautious routine maintenance schedules a thing of the past.

Rotork Pakscan links Rotork actuators and associated plant equipment with the plant control centre by means of a 2-wire digital network, with up to 240 actuators supported on a single master station loop. The latest, third generation Pakscan P3 system combines increased information capacity with improved user-friendliness to achieve an unprecedented potential for asset management.

Using Ethernet connectivity, up to ten concurrent hosts can be actively communicating with the master station from literally anywhere with an internet connection. Pakscan can justifiably claim to be the most popular and efficient system for dedicated valve actuator digital control, with thousands of installations operating worldwide.

Left to right: Jeremy Fry, Bill Whiteley and Graham Ogden during Jeremy's last visit to Rotork Bath in 2003

Rotork Fluid Systems has grown during the last decade to become one of the largest fluid power actuator manufacturers in the world with the most extensive product range available from a single company.

Products encompass pneumatic, hydraulic and electro-hydraulic scotch-yoke, linear and rack and pinion designs in double-acting and spring-return configurations. Dedicated to providing the marketplace with the latest technologies, consistent high quality, innovative design, excellent reliability and superior performance, Rotork Fluid Systems maintains dedicated engineering groups for applications, product improvement and new product developments.

Major industries served include oil and gas exploration and transportation, water and waste treatment, power generation and chemical processing.

The main Fluid Systems manufacturing plant, situated in Lucca at the heart of the Italian valvemaking industry, is supported by two additional facilities at Rochester in the USA and Melle in Germany. In total, over 22,000 square metres of manufacturing space is devoted to actuator production.

In addition, a network of Centres of Excellence strategically located around the world hold stocks and provides application engineering and packaging of control components as well as offering sales, service, installation and commissioning support.

When the above activities are combined with the other specialised actuators, gearboxes, accessory products and site services available from the other divisions, Rotork can today claim to offer an unrivalled single source for valve actuation expertise, not only during the selection and supply of new equipment but throughout the entire life of the plant.

This trusted service is available from the largest dedicated network of valve actuation sales and service centres in the world, meaning that expertise is always on hand locally, on every continent and in every language.

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