

OIL, GAS AND CHEMICAL TECHNOLOGIES



Oil, Gas and Chemical solutions from Norgren



SAFE, RELIABLE AND COST-EFFECTIVE

Norgren's Oil, Gas and Chemical industry products and engineered solutions are in use throughout offshore extraction and onshore storage and distribution processes. With references from some of the key major players in the industry, Norgren has proven expertise and reliability.



Each part of the technology is proven, field tested and validated through years of experience with certification requirements and environmental conditions, to offer continued reliability and quality integrated solutions.



Dedicated facilities • Applications expertise Legislation aware • Integrated solutions

With products and solutions supporting the improvement of your process efficiency and product quality, ensuring safe working environments based on IEC 61 508, TUV, ATEX and IEC Ex, Norgren is focussed on adopting your goals as our own.

With technologies developed from world renowned product ranges including **Herion**, **Buschjost**, **Maxseal** and **Watson Smith**, we develop solutions contributing to a reduction in waste, total cost of ownership and maintenance.



>> PARTNERING to develop solutions

‘Tried and tested solutions’

From instrumentation for accurate, precision control, to rapid speed of response on/off control, actuation and control systems, Norgren has a wealth of experience and knowledge developing solutions to problems unique to the oil and gas industry as well as a range of tried and tested products for improving efficiency, productivity and quality of the end product.



>> PETROLEUM PROCESS INDUSTRY

The Norgren oil and gas instrumentation range covers a wide range of applications, in many of the processes all the way through onshore and offshore extraction through to distribution. With references from partnerships and agreements from the Global Valve manufacturers through to written specifications from End-Users in the Oil Gas and Chemical Sector, our range and reputation is moving from discrete operational focus to a combined product portfolio, that combines competencies, quality, field knowledge and market presence. This approach brings a full range of benefits to our customers, most importantly the range of oil, gas and chemical expertise that Norgren offers.

Petrochemical



Customer: Global Valve & Actuator Manufacturers

End User: Shell GTL Qatar Project

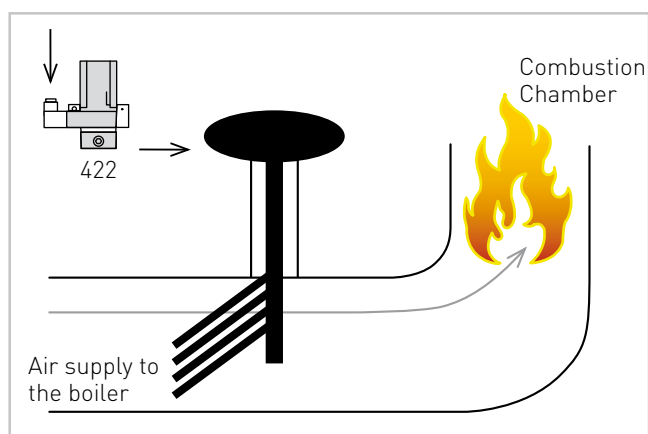
Application: Valve Automation

Solution: Herion Solenoid Valves

Description: These solenoid valves are used for the control of all pneumatically operated valves in this plant. Due to the environment on this plant in Qatar, highresistant, explosion proof products are requested for the highest safety levels.



British Gas - Transco



Customer: Transco

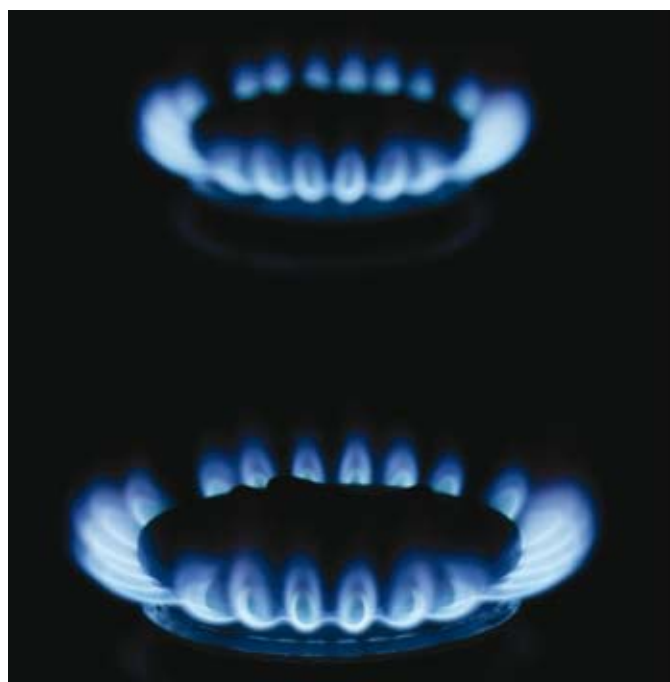
End User: Transco/British Gas

Application: Domestic Distribution of gas

Solution: Type 422 and MGPC

Description: The type 422 has unique characteristics in a stand-alone package, in that the output pressure remains constant for a period if the power to the unit fails or is lost. In domestic distribution of gas this proves a critically required aspect, in that if during a power failure the gas lines fail to zero, the start up of these lines is extremely costly with the re-purging/cleaning of the lines before the system can be restarted. The time that the unit keeps the pressure at a constant level has proved critical to Transco in getting the distribution of gas to homes back to normal as quickest and as efficiently as possible.

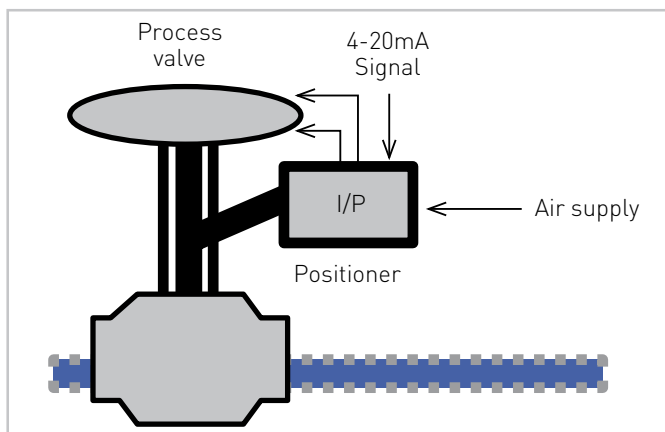
These units are typically also used in damper valves and cooling systems to ensure that the pressure and coolant remain constant even if a failure occurs to the power system, which in thermal power plants is critical.



On-shore Refineries

Solution: A variable electronic signal ensures accurate positioning of the process valve to allow the valve to not only open and close but gives the ability to allow varying levels of fluid through the valve.

This solution offers efficiency, speed of response and increased productivity. This is achieved through flexibility of control and by combining different fluid requirements through one control valve as opposed to having multiple sized valves to control the same fluid.



Terminal LNG de Altamira

Customer: Mitsui

End User: Shell and Total

Application: LNG Storage Tanks

Solution: Maxseal IC02

Description: The Terminal consists of two 150,000 cubic metre capacity containment tanks for LNG storage. The harsh sea environment that exists in this application means that only the most durable and reliable of solenoids can operate under these conditions.

The Intrinsically Safe, Stainless Steel, IC02 Solenoid from Maxseal was introduced and deemed successful in critical safety applications, due to its robust pneumatic operation, longevity of coil operation and its' design for protection against the most harsh environmental conditions.



Petrobras

Customer: Local Distributor

End User: Petrobras

Application: Catalytic Cracking

Solution: 24000 Series

Description: These direct acting, spring return 3/2 solenoid valves are explosion proof certified and are used for driving the blowers on turbine systems in the catalytic cracking process. They are also used for emergency shut down with an incorporated trip function.



Zauner Automation

Customer: Zauner Automation

Enduser: Dushanzi Chemical Plant China

Solution: PE Pipeline Control Systems

Description: Stainless Steel Panels from Zauner, equipped with Norgren instrumentation to integrate and control the Zauner Product, which is a Pro Control Scotch-Yoke-Actuator for a 40" Flap.

Dushanzi Chemical Plant are building a PE-Pipeline and require the instrumentation to deal with the flows and controls necessary with equipment of this size. Norgren has a range of various solenoid orifice sizes to accommodate varied requirements of instrumentation control, in both Stainless Steel and Aluminium.

This allows for standardisation across the range of panel assemblies, utilising Norgren's wide range of solenoid valves and air preparation equipment.



Shell Project Alpha

Customer: Centertech Armaturen Germany to Aker Kvaerner

End User: Shell - Project Alpha

Application: Offshore

Solution: The 97105 solenoid valve series combined into a control panel.

Description: Centertech manufacture butterfly valves for various markets. In this application these butterfly valves are used in a diesel generator room on an off-shore oil rig for use in Aker Kvaerner's safety control circuit.

In an emergency the butterfly valve in this safety system is required to close immediately. The use of the 97105 series offered a level of reliability and speed of response required for this safety critical application. Norgren were able to meet the strict requirements of this application by building the 97105 solenoid valves into a stainless steel panel, incorporating a manual reset and increased filtration for added protection of the equipment.





>> PROVEN SOLUTIONS FOR THE OIL, GAS AND CHEMICAL INDUSTRY

Norgren's oil, gas & chemical product portfolio comprises many of the industry's most trusted brands such as Maxseal, Buschjost, Watson Smith, Herion and Norgren.

Within the following pages you will find a quick guide to our offering for the Oil, Gas and Chemical markets. Contact us for detailed information on these products and advice on any type of application.

Certifications including: Atex Exd - Atex Exme - Atex Exia - CSA Class 1, Division 1 - FM Class 1, Division 1 (Pending) - Inmetro - Gost R - Gost K - IEC Ex - IP 66 - Nema 4X



WatsonSmith



Maxseal



In line & Namur valves



Maxseal solenoid valves



Air line



I/P converters



2/2-way valves



Pressure switches





ENGINEERING ADVANTAGE





“Our strengths lie in applications within the field of pneumatic motion and fluid control”

Norgren is a leading global supplier of motion and fluid control solutions, with a reputation for solving customers problems through the application of industry leading products. We understand that Oil, Gas and Chemical customers rely on quality assurance, testing validation, and approvals to recognised national and international standards.

All our plants apply quality managements systems according to **QS 9000, VDA 6.1, ISO/TS 16949, ISO 14001, ISO 9001, OHSAS 18001, and Environmental Management Systems ISO 14001**. We are committed to helping customers achieve their goals by working with them as a partner rather than just as a supplier.

Norgren employs approximately 6,000 people worldwide including 300 design and development engineers located throughout its global manufacturing and technical centres. We have dedicated Oil, Gas and Chemical competence centers in the UK, Germany, Asia and the USA to support our global business.

Norgren is part of the publicly traded IMI Group that has over 14,000 people and worldwide revenues of \$3billion. The company innovates continuously and explores new options with creativity. Our objective is to become an integral part of a customer's business, a valued partner driven by their goals.

‘Innovate, explore and create’