

YOUR CREATIVE ENGINEERING PARTNER

The trusted choice for inspired innovation that you can depend on.

We don't believe in a one-size-fits-all approach. Acting as an extension of your team, we quickly get to the heart of your challenge, bringing our unique perspective to everything we do.

Hale Hamilton.
Your Creative Engineering Partner.



 UK Head Office

 Sales office locations

EXPERTS IN PRESSURE AND FLOW CONTROL SOLUTIONS

Industry Sectors



For further information go to

www.circor.com

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We are proud to be a part of the Circor group, a global manufacturer specialising in highly engineered, complex and severe environment products that serve long-term, high growth infrastructure markets, including oil & gas, power generation, industrial and aerospace & defence.

Circor's strong global presence serves over 7,000 customers in 100+ countries. With primary manufacturing facilities in the United States, Canada, Western Europe, Morocco and India, Circor serves an ever-increasing range of markets on a local, national and global level.

The Circor mission

Delivering smart, reliable flow and motion control solutions for mission-critical applications.



CUSTOMER INTIMACY



TEAM BEFORE SELF



COMMITMENT AND ACCOUNTABILITY



SPEED, EXCELLENCE AND INNOVATION

CUSTOMER FOCUS:

We take pride in our customer focus, believing that building relationships is the key to better service. While we're our own independent company, we have the privilege to access Circor's wealth of expertise, technology and support. This means we can explore solutions in sectors such as aerospace, energy and cryogenics alongside our core offering.

Together, we can deliver the solution and support you need to prosper.



Since 1947, we have been developing fluid control solutions for process and safety critical systems in a range of demanding applications.

Industrial sectors served including Alternative Fuels (CNG, Biomethane and H2), Industrial Gas, Oil & Gas, manufacturing and process industries.

In meeting our clients' needs, we utilise a range of pressure and flow control technologies with the scope of our supply ranging from individual valves to fully integrated fluid control systems.

Supporting growth in our chosen markets is a dedicated team of engineers, application specialists and sales/aftersales support staff committed to delivering the solutions and customer support you demand.

For pressure or flow control application where quality matters, visit www.circor.com or contact us via our local sales office.

Hale Hamilton.
Your Creative Engineering Partner.



OUR SERVICES INCLUDE:

Collaborative Solution Development

We develop innovative fluid control solutions to meet the needs of our clients.

Project Management

We have a full project management service, encompassing all aspects of supply while maintaining close contact with customers to ensure all projects are delivered on time and within budget.

Project Delivery

From initial design through to final commissioning and training, we ensure successful project delivery and handover to our clients' satisfaction.

After Sales Support

Our Aftermarket team is focused on ensuring complete aftersales care from supply of spares, valve repair and ad hoc field service to full maintenance contracts and remote online support for those systems fitted with health monitoring.

Your Creative Engineering Partner

Our team of Applications Experts, Engineers and Project Managers have a broad range of experience in delivering cost-effective solutions with projects delivered to specification, time and cost.

All projects are delivered with a view to delivering great aftersales support.

Solution Development

- > Valve/pressure control technology related projects delivered in partnership with our client through design & prototyping to qualification and in-field testing
- > System level projects delivered as 'Turnkey', i.e. from concept to fully commissioned solution

Research and Development

- > Development of valve and pressure control technologies supporting our key applications related to Hydrogen, CNG/Biomethane and Industrial gases
- > Client specific R&D activities undertaken to meet specific project requirements

Qualification Testing

- > Our qualification test programmes are written around specific project requirements, typical in safety & process critical situations
- > Mechanical shock, adiabatic shock, vibration, cycle testing and extreme temperature tests may be undertaken during qualification testing

We are a trusted solutions provider for process and safety-critical applications. Our expertise is backed up by 70 years worth of knowledge and product service. Our core offering includes:



Pressure Control

Dome, Spring and Closed Loop.
Forward and Back Pressure



Stop Valves

Manual, Actuated, Solenoid



Filtration



Over Pressure Protection

Slam Shut Valves



Direction Control Valves



Valve Manifolds

High Pressure Valve Manifolds
for Industrial Gases



Safety Relief Valves



Check Valves



Gas Supply Panels 'Cylinder to Process'



Industrial Gas Cylinder Filling Skid Module



Integrated Fluid Control System

Pressure/Temperature
and Flow Control



Custom-Pressure Reduction Modules



Containerised Pressure Reduction Unit for Biomethane



Breathing Air Cylinder Drying/Filling Unit



Charging Units

Oxygen & Nitrogen

MARKET APPLICATION SOLUTIONS

We pride ourselves on quality. Our products help companies in a diverse range of industries for applications of all sizes.

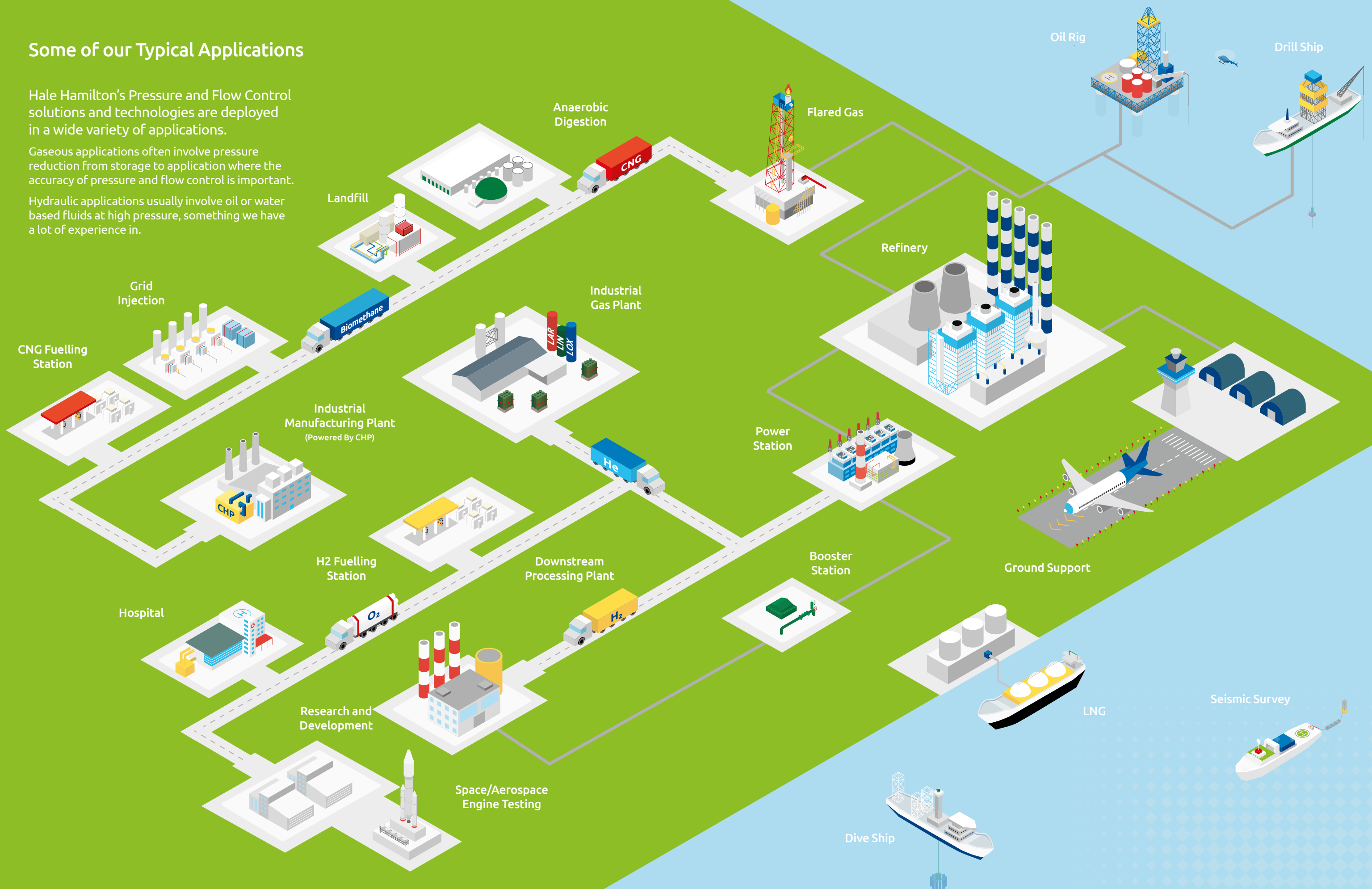
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Some of our Typical Applications

Hale Hamilton's Pressure and Flow Control solutions and technologies are deployed in a wide variety of applications.

Gaseous applications often involve pressure reduction from storage to application where the accuracy of pressure and flow control is important.

Hydraulic applications usually involve oil or water based fluids at high pressure, something we have a lot of experience in.



CNG & Biomethane

Our solutions for Trailer Loading, Trailer Offloading and Pressure Reduction, Process Control are modular and provide for the range of flow rates demanded by our clients, (100-5000 Nm³/hr).

Our solutions are most commonly used for Grid Injection or Fuel Gas Supply to Dual Fuel Engines used in Land, Rail and Ship based applications.

- PRS** Pressure Reduction System
- CNG** Compressed Natural Gas
- CHP** Combined Heat & Power Plant

PRS with Optional Trailer Hook-up, Metering & Analysis

- > Dual trailer connection with sequenced change over
- > TD13 compliant Pressure Reduction
- > Gas Heating (forced water or electrical)
- > Flow Control & Fiscal metering
- > Gas Analysis
- > Control System with remote support package including condition monitoring
- > Aftersale support integral part of original equipment offer



Grid Injection



CNG Fuelling Station



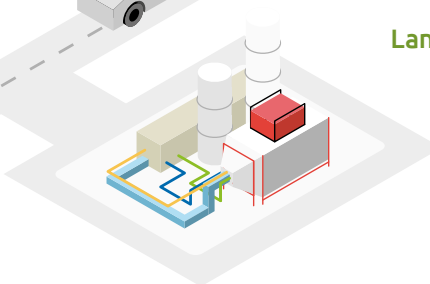
Industrial Manufacturing Plant
(Powered by CHP)



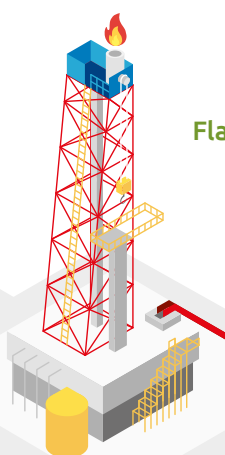
Anaerobic Digestion



Landfill



Flared Gas



Trailer Off loading Stanchion

- > Control Panel (Start / Status / ESD)
- > Drive away protection (break aways)
- > Earthing system
- > Automatic valve
- > Coalescing Filter with drain (option)
- > Traffic Light queuing system
- > Available with on-site control system for sequencing fill between trailers



Trailer Loading Stanchion

- > High Flow, Dual Hose design for low residual pressure in storage
- > Drive away protection (break aways)
- > Earthing system
- > Manual valve
- > Traffic Light queuing system
- > Available with on-site control system for sequencing fill between trailers



PRS (Pressure Reduction System)

- > Dual trailer connection with sequenced change over
- > Can be supplied with separate offload stanchions
- > TD13 compliance Pressure Reduction down to 200 mbarg
- > Gas Heating (forced water or electrical)
- > Control System with remote support package including condition monitoring
- > Aftersale support integral part of original equipment offer



CNG & Biomethane – Highlights

- > PRS (Pressure Reduction Systems) set up for Grid Injection or Engine Supply
- > Trailer Upload Stanchions
- > Trailer Offload Stanchions (High capacity for low residual trailer pressure)
- > Control system with condition based monitoring and remote support
- > Full After Sales Service Support offering

Containerised PRS Modules

Low to Medium flow.

- > Modular System
- > Flows ranges 150, 500, 750, 1100, 1500 Nm³/hr
- > Trailer connection either via integrated hoses/earthing or via separate trailer stanchion
- > Heating matched to process
- > Gas detection
- > 3 stage let down or >2 barg via 2 stages
- > Set up to cope with a steady flow demand or vastly varying flow rates (application dependent)
- > Over pressure protection based on containment
- > Integrated control system

Options:

- > Set up for connection via separate trailer stanchion
- > Coalescing Filters on inlet lines
- > Analysis package
- > Full process redundancy (excludes heaters)
- > Forced water or electrical heating
- > Volumetric metering (flow control & fiscal metering)



Containerised PRS Modules

High flow.

- > Modular System
- > Flow ranges 1500–5000 Nm³/hr
- > Balanced off feature per low/medium flow units

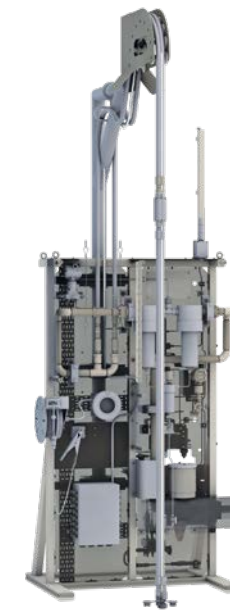
Highlights:

- > Electrical and Forced Water Heating Systems
- > Bypass for low residual pressure in trailer
- > Over pressure protection system TD13 compliant
- > Control panel with remote condition based monitoring
- > Optional 3rd stage pressure reduction for millibar delivery pressures
- > Optional flow metering



Trailer Loading Stanchion

- > Hose on 'non-drop' support arm
- > Drive away protection (break aways)
- > Earthing system
- > Automatic valve
- > Coalescing Filter with drain (option)
- > Traffic Light queuing system
- > Available with on-site control system for sequencing fill between trailers

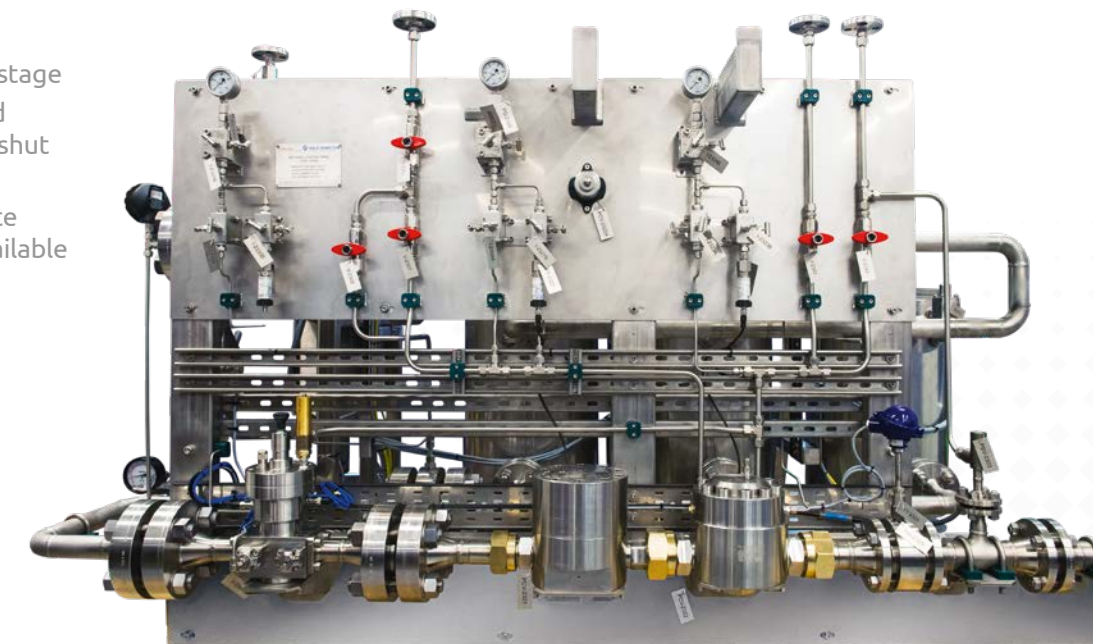


Trailer Off loading Stanchion

- > High Capacity Dual Hose
- > Pilot air feed for auto valves on trailer
- > 'Non-drop' support arm
- > Drive away protection (break aways)
- > Earthing system
- > Automatic valve with speed control
- > Coalescing Filter(s) with fluid collector and oil carryover alarm / trip
- > Analysis line with auto-valve and heated regulator (option)
- > Traffic Light queuing system
- > Available with on-site control system for sequencing fill between trailers

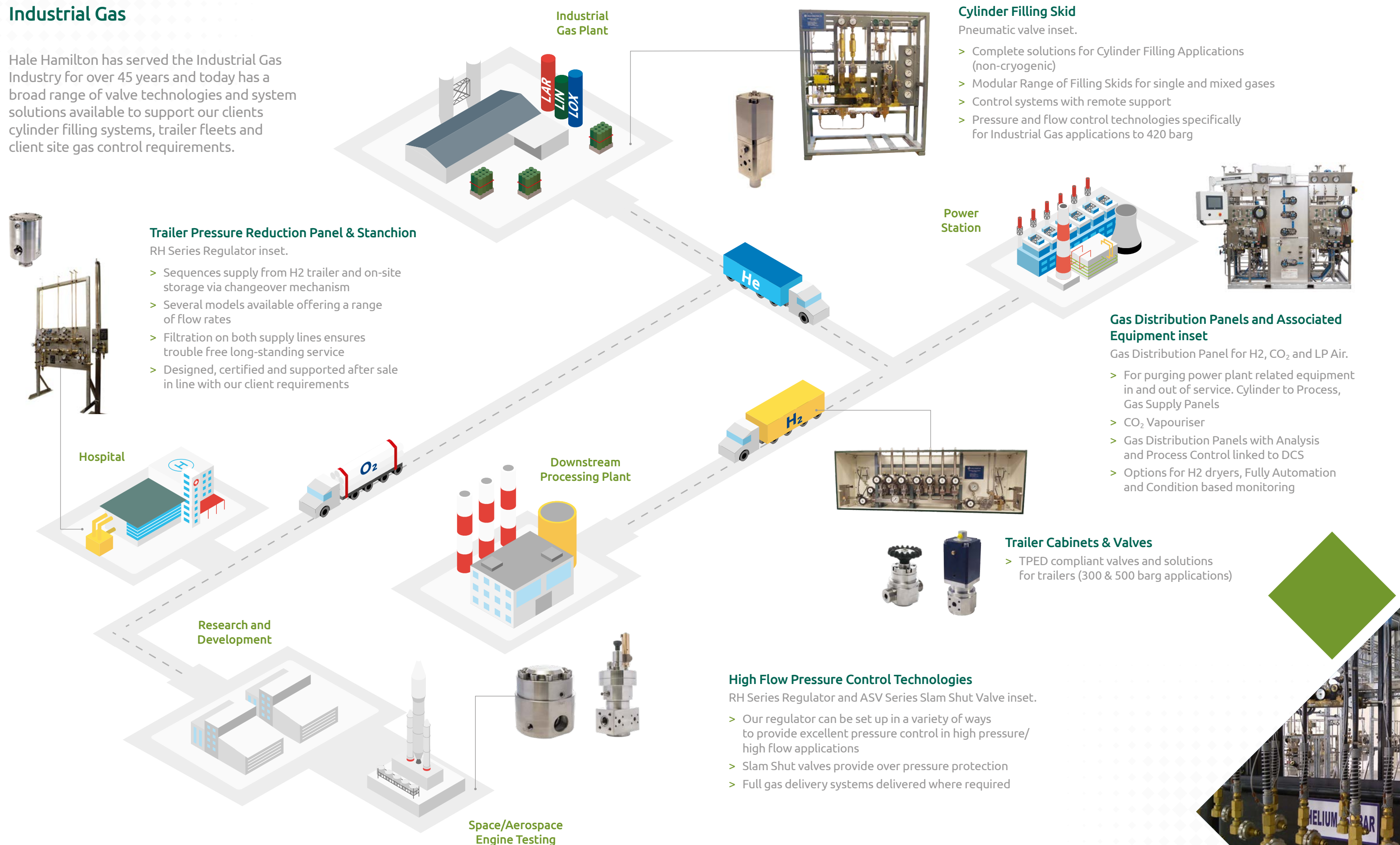
Marine Service PRS

- > (1000–2500 Nm³/hr typical)
- > Electrically Heated Unit, single stage
- > Over pressure protection based on containment using HH slam shut valve technology
- > Control system including remote condition based monitoring available
- > Lloyds approved



Industrial Gas

Hale Hamilton has served the Industrial Gas Industry for over 45 years and today has a broad range of valve technologies and system solutions available to support our clients cylinder filling systems, trailer fleets and client site gas control requirements.



Industrial Gas – Highlights

- > Cylinder Filling Solutions for Pallet/Racks and Single Cylinder Filling
- > Pressure and Flow Control System Solutions for Gas Supply Applications
- > Trailer Loading/Trailer Offloading Equipment
- > Wide range of valve technologies for Industrial Gases
- > Valves & Regulators for mobile applications to 500 barg

Cylinder Filling Systems

Pallet/Rack Filling.

Line Fill System

Controls filling to individual filling pallet/rack.

Auto-Fill System

Controls fill, vent, vac processes for multiple filling positions.

Single Gas System

Semi-Automatic Filling System with HMI Touch Screen.

Double Single Gas System

Sequenced Filling between two sets of filling racks.

Mixed Gas System

Semi-Automatic Filling System with HMI Touch Screen.

Double Single Gas System

Sequenced Filling between two sets of filling racks.

Synchronisation System

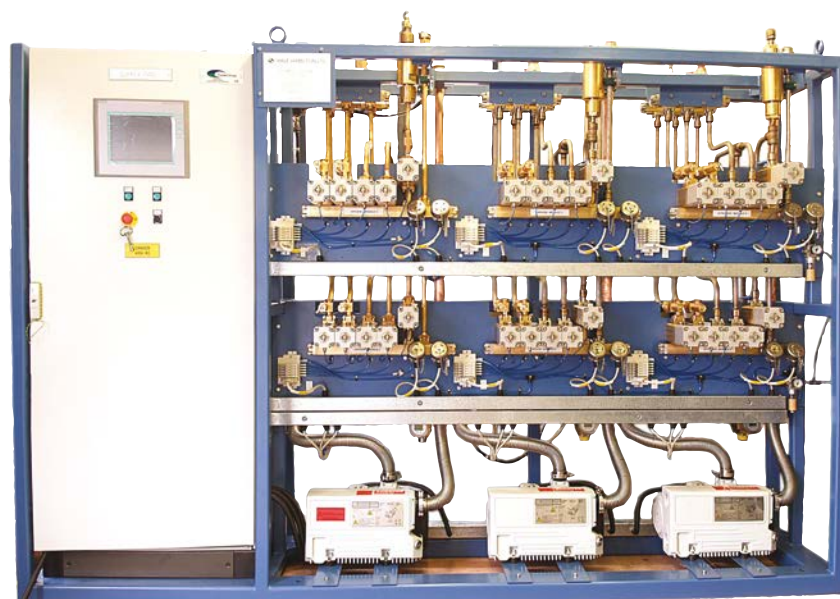
Sequencing of Filling Plant Resources to optimise process, Fill records, etc.

Pump Control Panels

Custom Manual Fill Modules

Key Attributes:

- > **Excellent Fill Control** via HH's proportional filling technology which is proven generally more flexible/accurate than control valve technology
- > **Modular/Configurable Packages** future proofed with additional space for additional ramp valves, transmitter, etc
- > **Flexible/Robust Control Packages** allow adjustment to recipe/process parameters and reporting. On single/mixed gas fill system, control via 10" HMI Touch Screen
- > **High Duty Cycle Valves** used on pallet filling automatic systems as standard with qualified cycle life of 100,000 cycles
- > **Remote Support** via ethernet connection enable most control related issues to be solved without a site visit
- > **After Sales Service Support** available via our Service Support team anywhere in the world



Manual Cylinder Filling Panels

For simple filling system requirements.

Configured to Client Specification

Using our standard range of valves and components.

Balanced Valve Technology

Assures a long service life, low operating torque and better control during valve opening.

Reverse Flow Protection

Through Swing-Arm, Hose connection, Block & Bleed or valve/check valve combination – as the client prefers.

Easy Maintenance

With all valves & connections zero clearance. The manifold valve arrangement also prevents pipe strain.



Manual Cylinder Filling Panel for Mixtures

Single Cylinder Filling System

Specific solution for small medical cylinders.

Absolute Certainty of Gas Quality

Is achieved through the individual filling of cylinders.

Productivity Optimised

Through single piece flow and the optimal sequencing of fill and vacuum resources.



Single Cylinder Filling System – 4 Slot

Pressure & Flow Control Solutions

For Gas User Applications.

Solution Development

For a wide range of end user applications from high flow test systems to low flow gas supply applications.

Wide Range of Pressure and Flow capacities

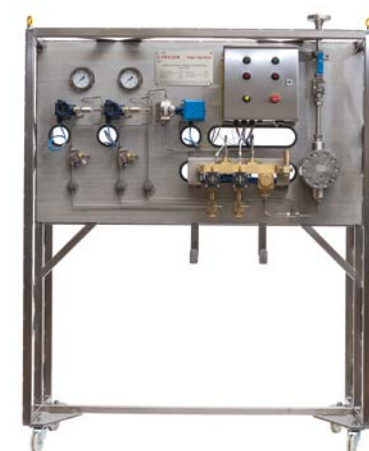
Met with inlet pressures to 500 barg, outlet pipe sizes to 6" at low pressure.

Control System Integration

With health monitoring and remote support available to optimise system availability.

Through Life Support

Via the service offering of our Service Support team who offer emergency responses through to full service support contracts.



Gas Control Panel for use with cylinders/cylinder pallets



Semi-Automatic Cylinder Filling System for small oxygen cylinders



Gas Distribution System

Oil & Gas

Hale Hamilton serve a wide range of applications in the Oil & Gas Industry across both gas and hydraulic applications.

We provide solutions through selecting components to optimise client system performance or through engineered system solutions including a range of technologies, fluid control components and control systems engineering.

Our After Sales Service team are always on hand to assist clients with on-site assistance wherever that may be.



Valves, Filters & Regulators

O₂ valve inset.

- > Range of oxygen products adiabatically shock tested (CTE/BAM)
- > Proven in use products we know last for years
- > Panels and modules through custom design service



Fuel Gas Supply Skid (Associated Gas)

- > Control of Supply to Engine, Vent and Blowdown systems
- > Control Cabinet with gas detection and ventilation
- > Health monitoring of skid condition through telemetry



Hydraulic Pressure Regulators

2835 Low Flow Hydraulic Regulator inset.

- > Series 2835 for Wellhead Control
- > Series 2820 for HPU & Ballast Control
- > RH Series for HPU and Managed Pressure Drilling

Dive Ship

Dive Gas Control Skid

- > O₂, Heliox & Therapeutic Gas mixture pressure controlled to application
- > Design & Testing Certified by Lloyds
- > Line components manifolded together reducing leakage points and optimising user interface

Oil Rig



LNG

PRS Feeding Ship Engines with Boil Off Gas

Safety Slam Shut inset.

- > RH Series Regulators provide stable pressure to engine
- > Over-Pressure Protection based on containment via a combination of our fully mechanical HP slam shut (inset) and electrically fired slam shut valves
- > Electrical heaters overcome the cooling effect of gas expansion
- > Control system provides telemetry including health monitoring of the system
- > HH Service Support team commission the unit on the ship



High Flow Regulators for Tensioning, Breathing Air and Fire Suppression (DIFF) System Applications

RH Series Regulator/Module & F Series filter inset.

- > Sizes from 1" to 4" ports
- > Performance optimised per application through a range of seat and piloting options
- > Connections including flanges, NPT and ISO G Ports
- > Often used with F series filter to protect seats and slam shut valves for over pressure protection without gross gas leakage

Portable Charging (Oxygen & Nitrogen)

- > Charging tyres and emergency floats with nitrogen
- > Charging crew bottles with O₂
- > Unit sits by the helipad and then carried out when required saving more awkward manual handling of large cylinders, etc
- > All equipment including cylinder, hoses and control panel included

Pressure Control Equipment

- > Regulators for charging seismic guns
- > Panel, Skid and Manifold assemblies

Seismic Survey



PRODUCT RANGE

We pride ourselves on quality. Our products help companies in a diverse range of industries for applications of all sizes.

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Pressure Regulators – General Industrial Application

Our Pressure Regulators can be sold as standalone units, configured into customer solutions (i.e. with Piloting arrangements, filtration, flanges, etc) or built into full system solutions.

Contact our sales team for advise on the best solution to meet the needs of your application.



Series 2815
3/8" ported Gas Regulators offer pressure control for static and low flow applications.



Series 2820
1/2" ported Gas Regulators offer pressure control for static and low flow applications.



Series 28(35)s
Hydraulic Regulators provide pressure control in high pressure/low flow applications such as wellhead control.



RH6 and RH11 Series
Proportional Regulators provide the possibility for automatic pressure control via interface with a control system.



RH Series
High Pressure Dome Loaded Regulators offer excellent pressure control for medium to high flow applications.



RL Series
Low/Medium Dome Loaded Regulators offer excellent pressure control for medium to high flow applications.

	2815	2820	2835	GLP44	RH25	RH35	RH40	RH65	RL5D	RL6D
Inlet Rating (barg)	465	465	690	310 SS 260 BR	400	310/400	400	400	70	70
Outlet (barg)	0.5–414	10–414	1–690	0.7–103	241	241	200	150	70	70
Seat (mm)	2.0	6.35	2	10	10	13, 20, 25	25, 38	25, 50	20, 25	51
Balancing	2mm seats Unbalanced/All seats above 2mm to be balanced.									
Cv	0.08	0.6	0.08	2.0	1.8	3, 8, 12	12, 24	12, 28	8, 12	50
Port Size	3/8"	1/2"	1/4"–1/2"	3/4"	1"	1 1/2"	2"	3"	2"	3"
Port Types	ISO G G	ISO G NPT	NPT SAE	ISO G NPT	ISO G NPT	ISO G NPT	ISO G	ISO G	ISO G	ISO G
Flange	NPT		MP				ANSI/DIN	ANSI/DIN		
External Sensing	No	No	No	No	Option	Option	Yes	Yes	Yes	Yes
Gauge Ports	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Materials (body)	AA SS	AA SS	SS	SS BR	AA SS	AA SS	SS	SS	AA AB	AA AB
Prime Applications	General Purpose Low Flow High Pressure Applications	General Purpose Medium Flow High Pressure Applications	Wellhead control	CNG, Diving, Industrial Gas	CNG Oil & Gas Ind. Gas HP OEM Space	CNG Oil & Gas Ind. Gas HP OEM Space	Oil & Gas Research Space	Oil & Gas Research Space	CNG Oil & Gas Ind. Gas HP OEM Space	CNG Oil & Gas Ind. Gas HP OEM Space
Purpose					1" Dome For Low & High Pressure Applications	1 1/2" Dome For Low & High Pressure Applications	2" Dome For High Pressure Applications	3" Dome For High Pressure Applications	2" Dome For Low Pressure Applications	3" Dome For Low Pressure Applications

Other Fluid Control Technologies

Our broad range of fluid control products combine to offer most functions needed in a fluid control system.

These products can be offered individually or as part of manifold valve based solutions or as full system solutions.



F Series Filters
Are specified to match our regulators and generally fit directly to the inlet port.



NRS Series
Non-return valves (or check valves) are available in a range of sizes up to 1".



N Series
Stop valves are available in Oxygen and Non-oxygen types.



ASV158
Is our standard 1/2" pneumatically operated valve used in CNG and Cylinder Filling systems.



ASV145
Is our standard 1/4" pneumatically operated valve used in Cylinder Filling systems.



N62.Mk1
Are 15mm NB valves rated to 500 barg. The N62.Mk1 is TPED.



AN62
Are 15mm NB valves rated to 500 barg.



RS series
Relief valves are used for low/medium flow applications and match well with our spring and small dome regulators.



RV series
Relief valves are used for low/medium flow applications and match well with our spring and small dome regulators.



ASV167 Series
Slam shut valves provide over pressure protection in systems where gas release is undesirable.

	RH6/RH11	F Series	NRS38 .Mk9/OXB	N6 Series	ASV158	ASV145	N62.Mk1	AN62	RS	RV	ASV167
Function	Proportional Regulators	Filters	Check Valve	Manual Stop Valve	Actuated Stop Valve	Actuated Stop Valve	Manual Stop Valve	Actuated Stop Valve	Differential Relief Valve	Direct Acting Relief Valve	Mechanical Slam Shut Valve
Maximum Rating (barg)	420	420	420	420	420	420	500	500	3.5-320	420	300 barg
Seat (mm)	2.0, 6.35	–	6	11	13	6	15	15	10	6–9	25, 38
Cv	0.08, 0.6	10-50	0.8	4.5	5.5	0.8	7	7	2	0.8	20, 45
Port Size	1/4", 1/2"	1/4" – 2"	1/4"	1/2"	1/2"	1/4"	3/8"	3/8"	3/8"	1/2", 3/4"	1", 1 1/2"
Port Types	ISO G	ISO G	ISO G Flange	Flange	Flange	Flange	Flange	Flange	ISO G	ISO G	Flanged
Instrument Ports	–	–	–	1/4"	1/4"	1/4"	–	–	–	–	1/4"
Materials (body)	AA SS BR	AA SS	BR	BR	BR SS	BR	SS	SS	SS	BR	SS
Prime Applications	Cylinder Filling, Piloting Test Bench	Energy/ Industrial Gas related applications.	Industrial Gas	Industrial Gas CNG	Industrial Gas CNG	Industrial Gas CNG	Primary Isolation (trailers)	Industrial Gas CNG	Industrial Gas CNG General Application	Industrial Gas General Application	CNG TD13 systems High Integrity Fluid control Systems
Purpose	Automation of pressure control systems & excellent cyl. fill control	Protection of gas system from contamination	Isolation	High cycle application, low torque, safe control of HP gas	Used in automated gas systems	Used in automated gas systems	Primary isolation, resistance to vibration, etc under HP	ESD applications	Over pressure protection in low flow systems.	Over pressure protection.	Over Pressure Protection (no venting)

Aftermarket Support

We provide outstanding global Aftermarket care with our regional through-life servicing. Our combined expertise, 24/7 support and customer-focus makes us the right partner to build the confidence you need to prosper.

Being a solutions provider and helping our clients maintain high productivity is at the core of what we do. A critical element is the Maintenance, Repair and Overhaul of our products. In our core industry,

operational and support costs can run extremely high and budgets are always under pressure. That's why it's important to have through-life support solutions tailored to each individual system, product and situation.

Our technicians provide a bespoke service based on the individual company's or authorities' requirements from provision of OEM spares Kits through to full on-site operational support contracts.

OUR SERVICES INCLUDE:



Repairs

Focused MRO support so products are always in 'as new' condition.



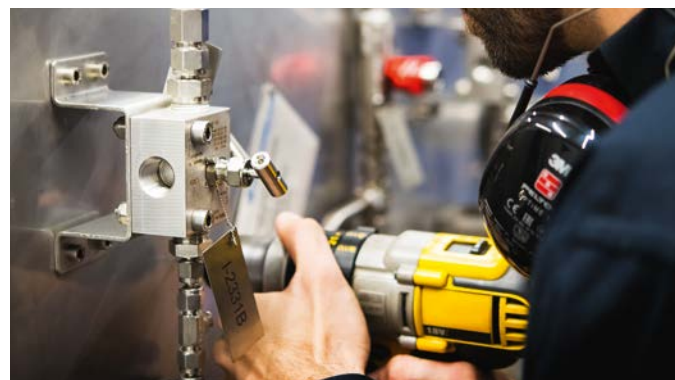
Maintenance & Service Contracts

To maintain optimum operational up time and performance we provide a range of on-site service support contracts including Preventative maintenance inspection and service schedules plus remote performance monitoring capability on our system solutions.



Spare Parts

Our spare component parts are genuine OEM-approved products.



Field Service

We supply fully-qualified technicians in controlled environments to carry out your essential on-site repairs, maintenance and product training programmes.



For further information go to

www.circor.com

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