PRESSURE TECH

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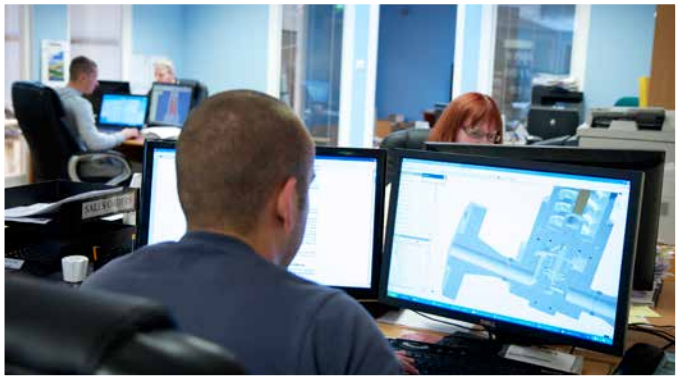
Total Pressure Regulator Solutions

www.pressure-tech.com

Working with customers to support their exact needs

A pressure regulator is a critical component to any fluid control system. At Pressure Tech, we offer high quality products with all design and manufacture performed at our UK facilities in Glossop, Derbyshire. We work closely with our customers to ensure they achieve the specific control they require on their system. Pressure Tech regulators are predominantly machined from 316SS, but we also supply products in Titanium, Inconel, Hastelloy, and other exotic alloys. From regulators used subsea to regulators used in aircraft, our flexible and rapid response to "engineered solutions" provides a distinct advantage to our customers. Pressure Tech has a range of pressure regulators covering pressure control from 0.1bar to 1380bar (20,000psi) and port sizes from 1/8" to 3".



Leading the market through innovation

Our innovative approach to product design, means that we consider materials that last longer in service, and downtime is reduced due to features that allow the regulators to be easily maintained. Our knowledge of pressure regulator principles and our rapid response to problem solving, has allowed us to develop an extensive range of products supplied worldwide on various systems from gas analysers to hydraulic wellhead panels.

Quality design & manufacture

A committed and continual investment in our CNC machine centres ensures we have total control over production to minimise lead times, allow flexibility in our scheduling, and provide components to the highest quality standard – including traceability of material on all pressure retaining parts. Pressure Tech regulators are designed and manufactured within the UK and are covered by ISO-9001-2008.

Working closely with our customers

Our ability to work closely with our customers and listen to their needs means we can be flexible and innovative in our supply. A strategic network of distributors provides local support to our international customer base. Combining the marketing advantages of a distributor network with an 'open approach' to technical requirements provides a win-win situation for all our customers. Ultimately, we lead the market in design, and allow ease of access via our distributors.

Pressure Regulator Range

DATA SHEETS : Please refer to www.pressure-tech.com for individual data sheets on all our products.

ANALYSER/INSTRUMENT RANGE

Typically incorporating Inconel X750 diaphragm sensed elements to provide strength and flexibility, our instrumentation range of regulators cover gas cylinder regulators to ATEX certified (94/9/EC) heated regulators. Our versatile range has endured extensive cycle tests and includes design features that make us the market leaders in this sector.

HIGH PRESSURE RANGE

An extensive range of piston sensed regulators for use on liquid and gas applications. Precision machined sensing elements provide control to 1380bar (20,000psi) on liquid applications, and self venting is available on several models. Port sizes from 1/4" to 3/4" and are available with ratio or dome loaded options. Special designs cover subsea and CNG applications.

HIGH FLOW RANGE

The 'HF Series' includes diaphragm and piston sensed regulators with port sizes ranging between 1/2" and 4" with either threaded or flanged connections. Pressure control options up to 10bar (150psi) with a diaphragm sensed element and 210bar (3000psi) with a piston. The standard high pressure inlets have a balanced main valve, whilst the optional lower pressure inlets (50bar) have an unbalanced main valve.

BACK PRESSURE RANGE

For accurate control of inlet pressures to any process, the back pressure regulators include all the design features of the other product ranges and cover from 1/8" to 2". The complete range of back pressure regulators controls pressures from 0.1bar to 690bar on both gas or liquid applications. The designs provide accurate and repeatable shut off due to the large sensing area and minimised loading on the seating area.

ANALYTICAL & INSTRUMENTATION REGULATORS

MINI-300

A compact and economical regulator with two piston sensed options that provide control from 1bar to 100bar.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/8”	0.06	Gas	210bar 300bar	PCTFE PEEK	100bar	Piston	Non venting

LF-230

A Teflon lined diaphragm provides accurate control of low pressure and low flow within a relatively compact design. Optional diaphragm materials available on request.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/4”	0.06	Gas	210bar 10bar	PCTFE PTFE	2bar	Elastomeric Diaphragm	Non venting

LF-300

A Single Stage Regulator with Inconel X750 diaphragm for ultimate strength and reliability on clean or corrosive applications.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/4”	0.06	Gas	210bar 300bar	PCTFE PEEK	35bar	InconelX750 Diaphragm	Non venting

TS-300

A Two Stage Regulator incorporating the same features as the LF-300 but with a two stage let down to maintain stable outlet pressure under changing inlet conditions.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/4”	0.06	Gas	210bar 300bar	PCTFE PEEK	20bar	InconelX750 Diaphragm	Non venting

CYL-300

Basic regulator models adapted into gas cylinder regulator assemblies with full safety pattern gauges, bottle connectors, relief valves, isolation valves and flexible hoses.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/4”	0.06	Gas	210bar 300bar	PCTFE PEEK	35bar	InconelX750 Diaphragm	Non venting

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ACU-300

Basic Auto-Changeover Regulator to maintain continual supply of gas between banks of gas bottles. A simple1/2 turn of the handwheel determines cylinders as primary supply and standby. A 2nd stage regulator maintains steady outlet.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/4”	0.06	Gas	210bar	PCTFE	20bar	Diaphragm	Non venting

ACS-300

Complete Auto-Changeover System to maintain continual supply of gas between banks of gas bottles with additional block and vent purge valves, 2nd stage regulator, pressure gauges, flexible hoses, bottle connectors, and safety relief valve.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/4”	0.06	Gas	210bar	PCTFE	20bar	Diaphragm	Non venting

XHS-300
XHS-301

Heated regulator with single 100W heater cartridge to prevent condensing of gas samples prior to analysis. Approved to ATEX and IECEx for use in hazardous areas.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/4”	0.06	Gas	210bar 300bar	PCTFE PEEK	35bar 180bar	Diaphragm Piston	Non venting

XHR-300
XHR-301

Unique Dual Heated regulator with two 100W heater cartridges to preheat and reheat gas samples prior to analysis, or vapourise liquid hydrocarbons. Approved to ATEX for use in hazardous areas.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/4”	0.06	Gas or Liquid	210bar 300bar	PCTFE PEEK	35bar 180bar	Diaphragm Piston	Non venting

XHM-300

Simple heater manifold block to heat sample stream or probes with two 1/4” flow channels. Approved to ATEX and IECEx for use in hazardous areas.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/4”	N/A	Gas or Liquid	300bar	N/A	N/A	N/A	N/A

HIGH PRESSURE REGULATORS - GAS

LF-301

Economical piston sensed regulator with two sensor sizes to control to 70bar (12mm sensor) or 180bar (8mm sensor).

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/4”	0.06	Gas	210bar 300bar	PCTFE PEEK	180bar	Piston	Non venting

LF-540

High Pressure regulator with sensitive piston sensed elements and unbalanced main valve for positive shut off. Two sensor sizes provide accurate control with low torque adjustment. None captured self vent or none venting options.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/4”	0.1	Gas	550bar	PEEK	414bar	Piston	Non / Self venting

LF-550

Same features as LF-540 but with higher inlet pressure rating and removable seat cartridge assembly. Three sensor sizes provide accurate control with low torque adjustment. None captured self vent or none venting options.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/4”	0.1	Gas	690bar	PEEK	690bar	Piston	Non / Self venting

LF-692

High spec high pressure regulator with 3 sensor ranges to control up to 690bar. Lower entry plug for quick access and servicing of PEEK seat cartridge. Self venting with captured vent port.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/4”	0.1	Gas	690bar	PEEK	690bar	Piston	Non / Self venting

MINI-301

Extremely compact regulator with high inlet pressure rating to 690bar - originally designed for use on Hydrogen Fuel Cell applications. Balanced Main Valve helps maintain steady outlet pressure under decaying inlet conditions.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/4”	0.06	Gas	690bar	PCTFE	350bar	Piston	Non venting

MF-101

Simple and accurate piston sensed regulator for medium flow applications on liquid or gas applications. As standard with an unbalanced main valve or optional balanced main valve allows inlet pressure to 300bar.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/4”	0.5	Gas	100bar 300bar (mod)	PCTFE PEEK	35bar	Piston	Non venting

MF-230

Versatile and economical regulator for gas applications. Teflon lined diaphragm and piston sensed options, with balanced main valve to minimise load on seat and provide stable control. Easy to access seat cartridge from base of regulator.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/2”	1.0	Gas	230bar	PCTFE	10bar 200bar	Diaphragm Piston	Non / Self venting

MF-301

Economical piston sensed regulator with two precision machined sensing elements for accurate control of pressure on ‘Medium Flow’ applications. Balanced main valve to minimise load on seat and provide stable control.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/2” 3/4”	2.0	Gas	300bar	PCTFE	250bar	Piston	Non venting

MF-400
MF-401

Versatile none venting regulator for liquid and gas applications. Diaphragm sensed element for sensitive control to 10bar and range of piston elements for higher outlet ranges to 400bar.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/2” 3/4”	2.0	Gas	400bar	PCTFE PEEK	10bar 400bar	Diaphragm Piston	Non venting

MF-414G

Piston sensed regulator with captured self vent to safely pipe away flammable or toxic gases. Long spring chamber to minimise droop effect under flowing conditions.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/2” 3/4”	2.0	Gas	414bar	PEEK	414bar	Piston	Self Venting

HIGH PRESSURE REGULATORS - LIQUID

HYD-690

Economical hydraulic regulator with metal to metal seating and captured self vent all built into a compact design. Ideal for oil based applications.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/4” 3/8”	0.1	Liquid	690bar	17-4 SS	690bar	Piston	Self venting

LGC-690

Specially designed regulator for control of low outlet pressures typically used on logic control systems where control of setpoint has to be within +/-1bar accuracy. Features include balanced main valve, diaphragm sensed element, and lower entry access to seating cartridge with built in filter.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/4” 3/8”	0.3	Liquid	414bar	PEEK	10bar	Diaphragm	Self venting

LF-690 LF-691

Innovative market leading design with ceramic seating that lasts 5 times longer than metal seated alternatives. Easy to access seat cartridge and fully supported main valve to minimise unstable resonating. Supplied with segregated captured vent as standard. Ideal for water glycol.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/4” 3/8”	0.05 0.1	Liquid	1380bar	Ceramic Vespel	1380bar	Piston	Self venting

MF-414H

Medium Flow regulator with same ceramic seating features as LF-690. Balanced Main Valve to minimise load on seats and ensure stable pressure control. Also supplied with segregated captured vent as standard.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1/2” 3/4”	2.0	Gas	414bar	Ceramic Vespel	414bar	Piston	Self venting

HIGH FLOW REGULATORS

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HF-300G/H
HF-301G/H

High flow regulator with diaphragm or piston sensed options for use on liquid or gas applications.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1”	4.0	Gas Liquid	300bar	PCTFE Vespel	10bar 250bar	Diaphragm Piston	Non venting

HF-250G/H
HF-251G/H

High flow regulator with diaphragm or piston sensed options for use on liquid or gas applications.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
1 1/2”	7.0	Gas Liquid	250bar	PCTFE Vespel	10bar 250bar	Diaphragm Piston	Non venting

HF-210G/H
HF-211G/H

High flow regulator with diaphragm or piston sensed options for use on liquid or gas applications.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
2”	13.0	Gas Liquid	210bar	PCTFE Vespel	10bar 200bar	Diaphragm Piston	Non venting

HF-200G/H
HF-201G/H

High flow regulator with diaphragm or piston sensed options for use on liquid or gas applications.

Port size	Cv	Service	Max inlet	Seat	Max outlet	Sensing element	Venting option
3”	30.0	Gas Liquid	200bar	PCTFE Vespel	10bar 150bar	Diaphragm Piston	Non venting

BACK PRESSURE REGULATORS

BP-300

Economical low pressure back pressure regulator with a convoluted Inconel diaphragm, ideal for clean or corrosive gases.

Port size	Cv	Service	Max rating	Seat	Max inlet control	Sensing element
1/4”	0.1	Gas	35bar	Viton EPDM	20bar	Diaphragm

BP-301

Versatile and compact piston sensed regulator with two sensor ranges and two seating sizes to provide excellent control on liquid or gas applications.

Port size	Cv	Service	Max rating	Seat	Max inlet control	Sensing element
1/4”	0.1 0.5	Gas Liquid	300bar	PCTFE PEEK	150bar 35bar	Piston

BP-MF400
BP-MF401

Diaphragm or piston sensed elements with balanced main valve ensure accurate control across the full range of inlet pressures.

Port size	Cv	Service	Max rating	Seat	Max inlet control	Sensing element
1/2” 3/4”	2.0	Gas	400bar	PCTFE PEEK	10bar 400bar	Diaphragm Piston

BP-LF690

A combination of precision machined elements and heavy duty springs provide control of inlet pressures to 690bar on gas or liquid applications.

Port size	Cv	Service	Max rating	Seat	Max inlet control	Sensing element
1/4”	0.1	Gas Liquid	690bar	PEEK 17-4 SS	690bar	Piston

BP-MF690

Unique ceramic seating for liquid applications provides excellent protection from cavitation and positive shut off on medium flow applications. A PEEK seat is used for gas applications.

Port size	Cv	Service	Max rating	Seat	Max inlet control	Sensing element
1/2” 3/4”	0.5 1.5	Gas Liquid	690bar	PEEK Ceramic	414bar 300bar	Piston

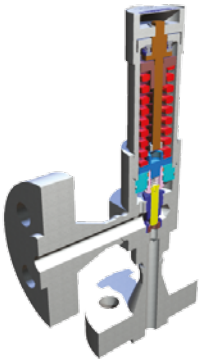
CUSTOM SOLUTIONS

Not every system is the same and hence pressure regulators need to be sized and selected to provide an exact solution. The ability for a pressure regulator to provide stable control depends on pressures and flow rates within the system being able to pass through the seating area and cross holes within the valve. Other factors such as temperature, media and external environment provide variations that mean 'off the shelf' products may not be acceptable for many systems.

Pressure Tech has 12 years experience of working closely with our customers to design unique pressure regulators that provide exact solutions to their needs. Our innovative approach to using special materials such as ceramics, special alloys and elastomerics ensures that our objective of becoming a market leader is recognised and accepted in the oil and gas sector by customers throughout the World.

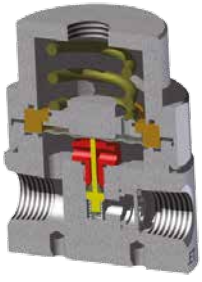
Examples of custom solutions are listed below but we welcome the opportunity to discuss any specific application that requires an engineered product when 'off the shelf' won't do.

FLANGED PRESSURE REGULATORS



Pressure Tech developed the flanged back pressure regulator opposite for use on Menthonal on a chemical injection system on board an FPSO. The 17-4PH seating provided positive shut off at 300bar set point, with flow capacity up to 80lpm. The regulator body was machined to accept class 2500 RTJ flanges, which were assembled by a coded welder and independently X-rayed before a full customer witness test. The option of flanged connections, and various flange types, can be applied to several of our pressure regulators. Please contact the office for further details.

BIASED PRESSURE REGULATORS



Various applications require a combination of dome loading and biased spring loading to provide stable control under varying operating conditions. Maintaining a constant differential pressure across a fixed orifice provides a constant flow rate. Pressure Tech have supplied a range of positive and negative biased regulators on pressure reducing and back pressure regulators. Other biased designs include subsea regulators for use on hyperbaric chambers that must maintain a positive pressure within the chamber to prevent implosion as the depth of seawater increases.

Designed and manufactured in the UK

ISO 9001 : 2008

REPRESENTED BY:

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