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Welcome to the Tamo Presentation
On
Valves, Regulators and Instruments for Hydrogen & Other Gases

We thank our partners



For their assistance with
this presentation

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TAMO

Control Valves for Gases and Cryogenic Temperatures

Cryogenic Options, Actuation Shown is Pneumatic Spring return & Double Acting.

All types of I to P and Positioners as well as Electric Actuation options can be supplied



For cryogenic services with temperatures as low as -320°F (-194°C).

2 body Designs that offers control for Low to Very high pressures +420bar (Material Dependant)

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Control Valves for Gases and Cryogenic Temperatures



Mark 708BS Series with Bellow Stem Seals



8000BS Series- Bellows Stem Seals

Bellows Stem Seals for Secure Sealing ensuring no leaks to atmosphere

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Control Valves for Gases and Cryogenic Temperatures

Options for 3 Way Control (Gas Mixing) and also an option for very high gas pressures



Mark 709 Three Way
Valve



8000T Series Three Way
Body



Mark 708HPA Series
Control Valve 12,000psi
827bar Pressure Rating

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Control Valves for Gases and Cryogenic Temperatures

Other Options



Mark 708HT Series
With Finned Bonnet
For High Temp Applications



Mark 15 Series
Top Mounted Positioner



Mark 708MV Series
with Motor Valve

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Mark 708 Series Low Flow Pneumatic Control Valve

The Mark 708 was developed to provide the most accurate control available for fractional flow services: whether for pilot plant installations, test stands, R & D facilities or for specialized processes such as dosing, injection and venting applications. With Cv's ranging from 0.00001 to 4.0 available in 1/4" through 3/4" line sizes (0,000009 to 3,4 Kv in sizes DN8 through DN20), the Mark 708 offers design features that will provide enhanced performance to insure precision control on your most critical micro-flow applications.



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8000 Series Control Valve

The Mark 8000 Series is a group of heavy-duty control valves specifically designed for process applications requiring full flow or fractional flow control. Available in a wide selection of body sizes and styles, this valve can be configured in two-way or three-way designs, for diverting or mixing service, and with globe or angle valve style seats. It can be ordered with a bellows stem seal, or an extended bonnet extension for cryogenic applications down to -194°C , or with an electric actuator. It has a totally enclosed multi-spring actuator, which minimizes deadband and is field reversible without the use of special tools or extra parts. LowFlow Valve can also install a wide variety of positioners and actuators on the Mark 8000 to provide a valve that meets specific requirements. The Mark 8000 Series valve subassembly is manufactured completely from bar stock, which combined with the standard heavy-duty yoke and actuator, gives the valve the ability to handle pressure up to 6000 psi (414 bar), while still being able to offer Cv's ranging from 0.05 – 17 (Kv's 0,04 to 14.6). The bar stock body design also allows greater flexibility when specialty materials are required. While the standard body materials are Stainless Steel and Carbon Steel, the Series 8000 can be manufactured in almost any exotic alloy, including Alloy 20, Hastelloy, Inconel and Monel. The Mark 8000 body material is not limited to alloys. It can also be manufactured in PVC or Kynar for applications where thermoplastics offer a better solution over alloy materials.



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Pressure Regulators, Spring, Proportional Dome Loaded, Dome Loaded & Pilot Dome Loaded

CIRCOR | Hale Hamilton



Spring



Proportional
Dome
Loaded



Dome Loaded



Pilot
Dome Loaded

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Pressure Regulators, Spring Loaded

SPRING LOADED REGULATORS

A comprehensive range of Spring-Loaded pressure regulators / pressure controllers / pressure reducers.

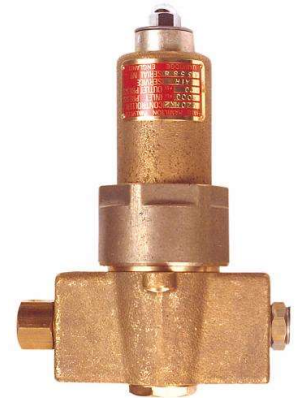
Available in a variety of materials, the Hale Hamilton range of pressure regulators are suitable for a variety of applications, including; Military, Industrial Gases, Hydrogen, Medical Oxygen and Hydraulic fluids.

Many of the products carry NATO, BAM, CTE (adiabatic shock tested EN ISO 7291), PED and TPED approvals. With pressure ranges up to 1000bar and port connections to G3/4" can fulfil most applications requirements. Series 28 Spring Loaded Regulator to 1000 bar and port connections to G3/4 Hale Hamilton can fulfil most application requirements.

Series 28 - Available in G3/8, G1/2, G3/4, 1/2NPT & 3/4NPT in Brass, Aluminium, Nickel Aluminium Bronze and Stainless Steel with operating pressures from 1.5 to 655 bar and CV values of 0.08 to 2.0

Series G & L 15 to 21 range of Precision Pressure regulators - Available in G3/8, G1/2 and G3/4, in Brass or Aluminium with operating pressures from 0.03 to 276 bar and CV values of 0.08 to 0.7

Other options are Non & Self-Relieving, Gauge Ports, Locked, Inline and Panel Mount.



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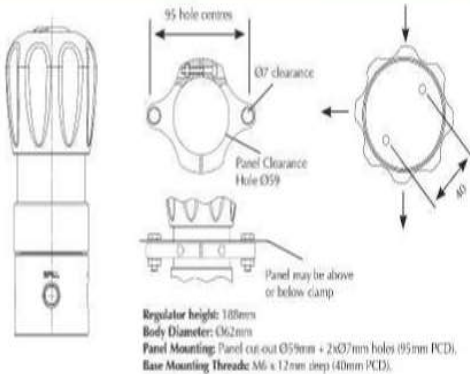


Pressure Regulators, Spring Loaded

Series 2835 Our Latest Generation of Hydraulic Pressure Regulator

Specification

- Maximum Inlet Pressure: 690 barg (10,000 psig).
- Outlet Pressure Ranges: see ordering sheet above.
- Temperature range: -20 to +70°C
- Cv: 0.08 (main / spill valve)
- Body Material: 316 Stainless Steel
- Seating Materials: 17/4 PH & ANSI 440C
- Outboard seals: Viton, EPDM, Nitrile
- Mounting Options: Base Mounting or Panel Mounting Kit

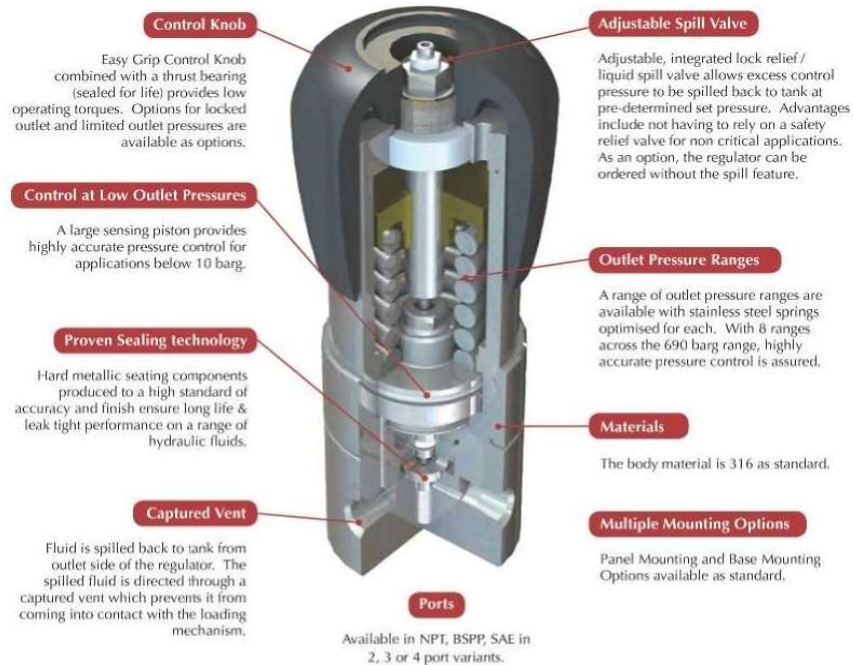


Excellent Pressure Control ■ Ergonomic / Compact Design ■ Highly Reliable



Hale Hamilton

The Series 2835 Hydraulic Pressure Regulator is a compact, durable, highly accurate and stable regulator for application in hydraulic systems and offers a number of useful features that make it the right choice for use in systems requiring accurate pressure control, integrated and accurate spill control, low operating torques and reliable functioning / sealing over an extended service period in applications involving pressures up to 690 barg / 10,000psig.



Optional Features

- Alternative body and sealing materials available upon request to meet the requirements of NACE or low temperature applications.
- Alternative port configurations available.
- Manifoldd solutions for integrating system components together available – see HH website for examples of manifolded product.

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Pressure Regulators Proportional Dome Loaded

RH5, 6, 7, 11, 15 & 17 are dome-loaded, proportional regulators that provide a flow of gas or liquid at controlled pressure. The outlet pressure is set by adjusting the pressure in the dome. A flexible diaphragm in the dome acts on a piston which in turn is acted on by the outlet pressure. The ratio of the area of the diaphragm to the area of the piston gives a proportional loading on the regulator. Except for RH5, the control pressure (i.e. the pressure in the dome) is always in the range 0 to 7bar (100psi). The range of outlet pressure that corresponds to this control pressure is selected by choosing inappropriately sized piston. The outlet pressure is substantially unaffected by flow rate or by changes in the inlet pressure. Additional outlet ports can be provided for convenient direct fitting of pressure gauges and/or relief valves. We can provide suitable electro-pneumatic programmable controls for these regulators.



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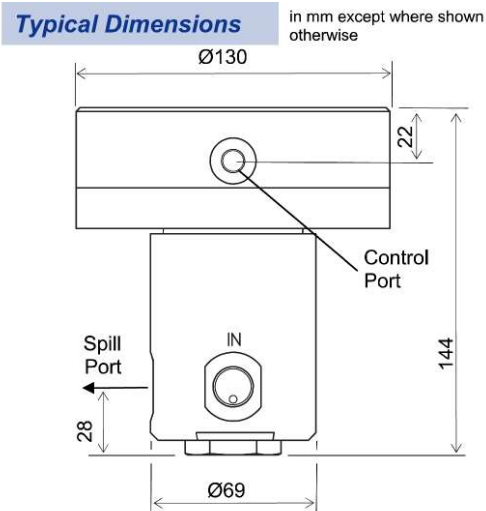
Pressure Regulators Proportional Dome Loaded

RH6 (2mm) Relieving

Specification

A relieving valve is included in the mechanism. This vents the outlet pressure to a spill port if it is higher than the set pressure.

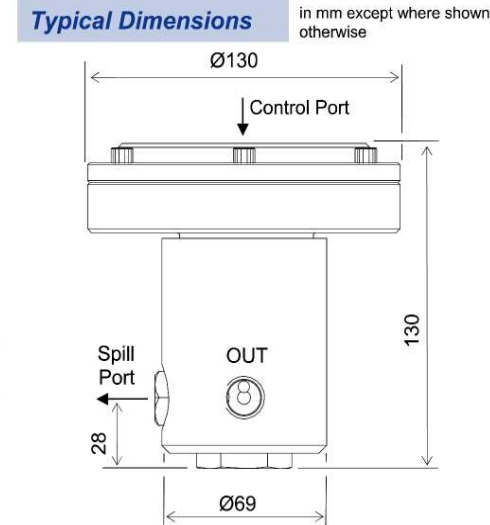
- Nominal Bore: 2 mm
- Flow capacity (Cv): 0.08
- Inlet pressure: up to 465 bar (6750 psi) for gas, up to 690 bar (10000 psi) for liquid
- Outlet pressure ranges: 0 to 90bar (1300psi), 0 to 140bar (2000psi), 0 to 240bar (3500psi), 0 to 300bar (4350psi), 0 to 400bar (5800psi)
- Weight: less than 2kg (Aluminium body)
- Inlet & outlet Ports G3/8 female (alternative ports can be supplied. Note that alternative port configurations may affect the overall dimensions)



RH7 (2mm) Non relieving

Specification

- Nominal Bore: 2 mm
- Flow capacity (Cv): 0.08
- Inlet pressure: up to 465 bar (6750 psi) for gas, up to 690 bar (10000 psi) for liquid
- Outlet pressure ranges: 0 to 90bar (1300psi), 0 to 140bar (2000psi), 0 to 240bar (3500psi), 0 to 300bar (4350psi), 0 to 400bar (5800psi)
- Weight: less than 2kg (Aluminium body)
- Inlet & outlet Ports G3/8 female (alternative ports can be supplied. Note that alternative port configurations may affect the overall dimensions)



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Pressure Regulators Proportional Dome Loaded

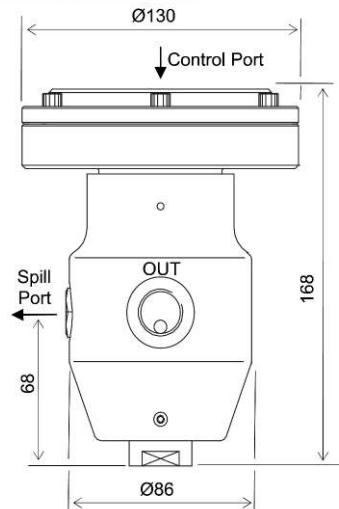
RH11 (7mm) Non relieving

Specification

- Nominal Bore: 7 mm
- Flow capacity (Cv): 0.6
- Inlet pressure: up to 465 bar (6750 psi) for gas, up to 690 bar (10000 psi) for liquid
- Outlet pressure ranges: 0 to 90bar (1300psi), 0 to 140bar (2000psi), 0 to 240bar (3500psi), 0 to 300bar (4350psi), 0 to 400bar (5800psi)
- Weight: less than 2.6kg (Aluminium body)
- Inlet & outlet Ports G1/2 female (alternative ports can be supplied. Note that alternative port configurations may affect the overall dimensions)

Typical Dimensions

in mm except where shown otherwise



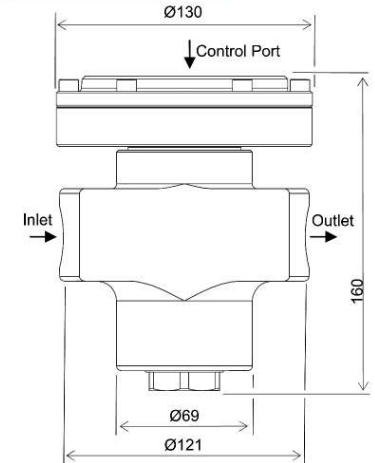
RH15 (12mm) Non relieving

Specification

- Nominal Bore: 12.7 mm (1/2")
- Flow capacity (Cv): 2.5
- Inlet pressure: up to 300 bar (4350 psi)
- Outlet pressure range: 0 to 50bar
- Temperature range: -20 to +70°C
- Weight: less than 3kg (Aluminium body)
- Inlet & outlet Ports G1/2 or 1/2" NPT female (alternative ports can be supplied. Note that alternative port configurations may affect the overall dimensions)

Typical Dimensions

in mm except where shown otherwise



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Pressure Regulators Proportional Dome Loaded

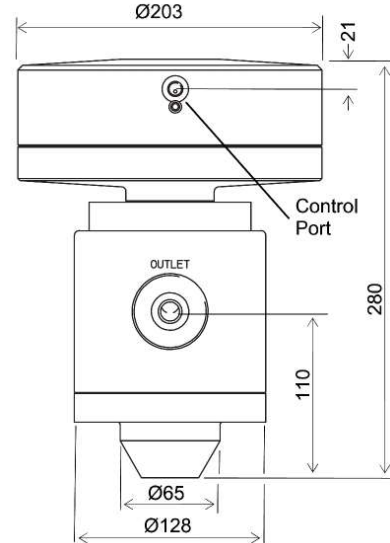
RH5 (12mm) Non relieving

Specification

- Nominal Bore: 12.7 mm (1/2")
- Flow capacity (Cv): 2.5
- Inlet pressure: up to 420 bar (6090 psi)
- Control pressure range: 2 to 20bar
- Outlet pressure range: 40 to 250bar
- Temperature range: -20 to +70°C, intermittent operation at -40°C
- Weight: less than 30kg (Brass body)
- Inlet & outlet Ports 2-12UN female (alternative ports can be supplied. Note that alternative port configurations may affect the overall dimensions)

Typical Dimensions

in mm except where shown otherwise



RH17 (20mm) Flow Applications

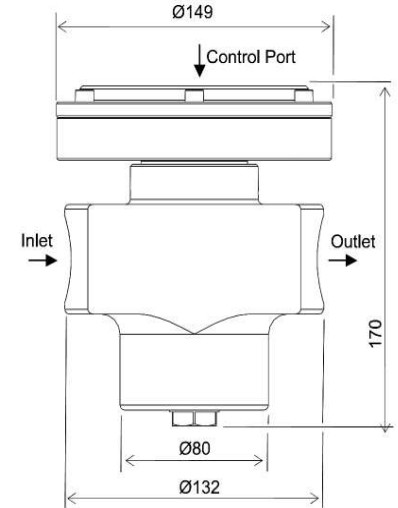
Specification

This regulator does not have a gas tight seal at shut off so it is only suitable for flowing applications.

- Nominal Bore: 20 mm
- Flow capacity (Cv): 6
- Inlet pressure: up to 300 bar (4350 psi)
- Outlet pressure range: 0 to 50bar
- Temperature range: -20 to +70°C
- Weight: less than 7.3kg (Stainless steel body)
- Inlet & outlet Ports G1 female (alternative ports can be supplied. Note that alternative port configurations may affect the overall dimensions)

Typical Dimensions

in mm except where shown otherwise



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Pressure Regulators Dome Loaded & Piloted Dome Loaded

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Pressure Regulators Piloted Dome Loaded

SERIES DR & DFR

Dome Regulators & Filter Dome Regulators 1" & 1 1/2" (DN25, DN40)

Series D(F)R provides a fully configurable Dome Regulator/ Dome Filter Regulator product offering performance and a complete solution, optimised for your application.

This solution eliminates applications engineering for our clients together with non-added value components like adaptors, couplings, pipe, etc as all components bolt directly to one another.

These high quality regulators offer fast, accurate pressure control. Performance can be improved using our high accuracy pilot regulator and external sensing functions – see product selection notes.

For Over-Pressure Protection solutions, see our Slam Shut Valve range. This offers high integrity, fast acting shut off for mission critical applications.

Highlights

- > No client engineering required to set-up all functions delivered in one assembly.
- > Inlet Filter protects pilot, main regulator and downstream components.
- > Dynamic Piloting offers improved delivery pressure accuracy.
- > External Feedback further improves delivery pressure accuracy.
- > Fail Safe In-field repairs made easy with fully tested replacement assemblies for main valve seat, filters and pilot regulators.

Ideal uses

- > Any Critical Pressure Reduction Application.
- > Test Systems including those requiring a fast response during start up and shut down.
- > H₂/CNG/Biomethane Systems (in conjunction with our Slam Shut Valves for full pressure safety on flammable gas systems).
- > Trailer Decanting (especially where high flow is required, even at low trailer pressure).
- > HP Air Systems (Maritime, Industrial).



DR – Dome Regulator

IN:
420
barg
(6000 psig)

OUT:
0 – 250
barg
(0 – 3625 psig)



DFR – Dome Filter Regulator

Cv
0 – 12

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Pressure Regulators Piloted Dome Loaded

SERIES DR & DFR

Dome Regulators & Filter Dome Regulators 1" & 1 1/2" (DN25, DN40)



Features and Specifications

Piloting Options

- > Closed Dome charged via a needle valve block (used for applications where pressure control is less critical).
- > SRH6 High Pressure Pilot Regulator (as shown) provides improved performance dynamic piloting over a wide range of control pressures.
- > SRL15 High Pressure Pilot Regulator provides excellent pressure control accuracy for delivery

Inlet/Outlet Flange Adaptors

Available in ISO G(BSP), NPT, Weld Stub/Socket to suit your pipe or a DIN/ASME flange (bolted to the main regulator).

Note: See Hale Hamilton's fully welded regulator Data Sheet for a fully welded flanged body

Inlet Filter

Critical for preventing contamination from damaging the valve seat. The T design ensures easy servicing. The element is stainless steel 316L and withstanding high differential pressures.

External Feedback Options

- > Via connection to pilot regulator (high sensitivity option).
- > Via connection direct to main regulator (improved performance & higher

Large Diaphragm

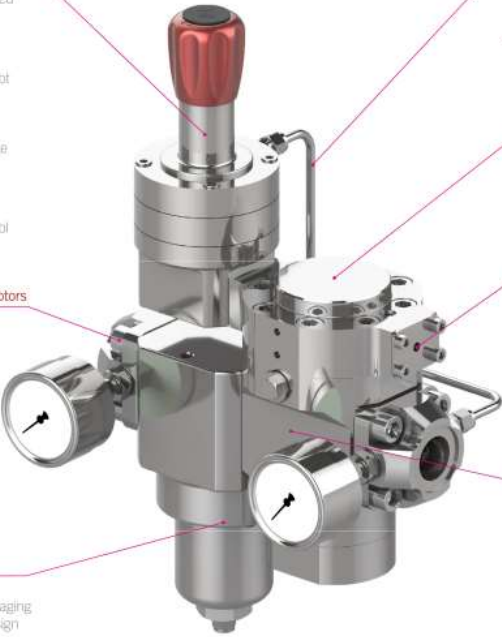
Provides a high degree of sensitivity for excellent pressure control and high degree of stability under large pressure drops.

Easy Servicing

The entire seat assembly can be replaced with a factory acceptance tested seat cartridge eliminating uncertainty regarding the effectiveness of an in-field repair.

Seat Assemblies

All seat options are supplied in interchangeable, fully tested seat assemblies allowing the user to change flow capacity as required.



Product Specification Data

| Series D(F)R | D(F)RH25 | D(F)RH40 |
|---|---|--------------------------|
| Inlet Pressure | 420 barg (6000 psig) | |
| Seat Sizes | 1/4", 3/8", 1/2" (6mm, 10mm, 13mm) | 3/4", 1" (20mm, 25mm) |
| Regulator Cv | 2, 3, 4, 5 | 9, 12 |
| Outlet Pressure (Dome Regulator Rating) | 250 barg (3625 psig) | |
| Pilot Regulator Setting Ranges (SRH6) | 0 – 250 barg (0 – 3625 psig) 0 – 150 barg (0 – 2175 psig) 0 – 100 barg (0 – 1450 psig) 0 – 25 barg (0 – 363 psig) | |
| Pilot Regulator Setting Ranges (SRL6) | 0 – 20 barg (0 – 290 psig) 0 – 10 barg (0 – 145 psig) | |
| Filtration (microns) | 10 & 20 | |
| Service Temperature Range (HNBR – Standard Option) | -40°C to +80°C | |
| Service Temperature Range (FPM) | -20°C to +150°C | |
| Service Temperature Range (EPDM) | -20°C to +150°C | |
| Seat and Outboard Leakage (standard) | Bubble Tight | |
| Body / Dome Material | Stainless Steel 316L | |
| He Mass Spec Leak Test – Seat / Outboard (Option at Extra Cost) | He leak testing available at additional costs. Please contact sales@halehamilton.com for additional information | |



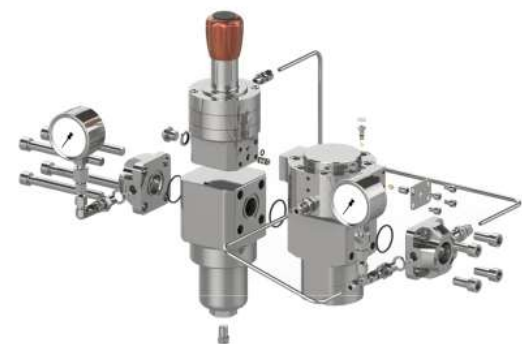
Pressure Regulators Piloted Dome Loaded

SERIES DR & DFR

Dome Regulators & Filter Dome Regulators 1" & 1 1/2" (DN25, DN40)



Features and Specifications



| Required Information |
|--|
| When placing an enquiry, please advise the following: |
| > Inlet Pressure Range |
| > Outlet Pressure Range |
| > Flow Rate Range |
| > Fluid Temperature Range |
| > Ambient Temperature Range |
| > Fluid Type |
| > Connections Required (if threaded or flanges) or Pipes Sizes and Material (if welded connections required) |
| > Application Details – Tell us what you're trying to achieve. |
| > Gauge Required (yes/no) |
| > Filter Required 'recommended' (yes/no) |
| > Any Special Requirements (materials, etc) |
| We will respond with a quotation and sizing assessment including default flow for safety valve sizing |



SRH6 - Pilot Regulator

- > Control Range: (0 – 250 barg/0 – 3625 psig)
- > Dynamic Piloting provides a stable outlet pressure, irrespective of ambient temperature changes.



SRL15 - High Accuracy Pilot Regulator

- > Control Range: (0 – 20 barg/0 – 290 psig)
- > High Accuracy
- > Dynamic Piloting
- > External Sensing provides almost zero droop in outlet pressure across flow range.

| Feature | Considerations |
|--|---|
| Regulator Size (DN) and Seat Size | > Consult HH sales for optimal set-up for your process conditions. The questions in the 'Required Information' section will make it easier for HH to specify the optimal solution. > Consult HH sales for default flow (failure flow) rates required to size downstream safety valves. |
| Filter | Fitting a filter direct to the regulator is a fail safe way of ensuring the regulator will continue to work well, regardless of how clean the upstream system is. Most new installations have some level of contamination regardless of how well the pipes have been flushed. Particularly for high inlet pressure applications, filters are a must. |
| Needle Valve Block for Dome Charging | This feature allows the dome to be charged internally within the regulator. The expected performance is illustrated later in this Data Sheet (see 'Selecting The Right Piloting Option' section). This is a good option where accuracy and adjustability are not a priority for regulator selection. |
| SRH6 – High Pressure Pilot Regulator | The SRH6 (Spring Regulator, High Pressure, DN6 - 1/4"), used with dynamic piloting, provides an easy way to set & adjust set pressure. It ensures delivery pressure is stable regardless of variations in ambient temperature. It mounts direct to the Dome regulator minimising leak paths and ensuring the client avoids the applications engineering usually required to attach a pilot regulator. |
| SRL15 – High Accuracy, Low Pressure Pilot Regulator. | The SRL15 (Spring Regulator, Low Pressure, DN6) is used in applications where delivery pressure accuracy is critical. This feature is often used with external sensing where the regulator takes feedback for the piping downstream of the regulator and drives the main dome regulator to deliver less droop under flow (i.e. a pressure very close to the original set pressure). |
| Gauges (in/out) | All flange adaptors (inlet and outlet) have a pressure tapping allowing the connection of a centre back gauge. |
| Pipe Fittings (Inlet/Outlet) | The D(F)R Series comes with flanges installed to suit your installation. The interface on the flange can be threaded, a weld stub or a DIN/ASME flange. In all cases for this range, the flange bolts to the regulator body and seals on an o-ring. |
| Fully Welded ASME/DIN Flanged Assemblies | Versions of our Tee Filters and DR Series Regulators with DIN/ASME flanges welded to the body are detailed on... |
| Special Features | Special features such as alternative materials, non-standard pipe interfaces, alternative temperature ranges, etc. can be provided. Please contact 'sales@halehamilton.com' |



Pressure Regulators Piloted Dome Loaded

SERIES DR & DFR

Dome Regulators & Filter Dome Regulators 1" & 1 1/2" (DN25, DN40)



Typical Configurations



DR25 - Regulator (Closed Dome)

- > Inlet 420 barg (6000 psig)
- > Outlet Range:
(0 – 250 barg/0 – 3625 psig)
- > Outlet pressure set by charging dome via needle valves



DFR25 - Filter Regulator (Closed Dome)

- > Inlet 420 barg (6000 psig)
- > Outlet Pressure Range:
(0 – 250 barg/0 – 3625 psig)
- > Filter Protects Dome Regulator Seat
- > Outlet pressure set via needle valves



DR25 - Regulator (Piloted)

- > Inlet 420 barg (6000 psig)
- > High Pressure Pilot
(0 – 250 barg/0 – 3625 psig)
- > Dynamic Piloting provides improved delivery pressure



DFR25 - Filter Regulator (Piloted)

- > Inlet 420 barg (6000 psig)
- > High Pressure Pilot
(0 – 250 barg/0 – 3625 psig)
- > Filter Protects Pilot & Dome Regulator Seats
- > Dynamic Piloting provides improved delivery pressure



DR25 Piloted with External sensing

- > Inlet 420 barg (6000 psig)
- > High Pressure Pilot
(0 – 250 barg/0 – 3625 psig)
- > Dynamic Piloting with feedback provides improved delivery pressure



DFR25 Piloted with filter and Gauges

- > Inlet 420 barg (6000 psig)
- > High Pressure Pilot
(0 – 250 barg/0 – 3625 psig)
- > Filter Protects Pilot & Main Regulator Seats
- > Dynamic Piloting provides improved delivery pressure
- > Inlet & Outlet pressure indication Regulator Seats



DFR25 Piloted with 2" Sch40 Weld Stub Connector (See Enquiries and Orders)

- > 1" Inlet 420 barg (6000 psig)
- > High Pressure Pilot
(0 – 250 barg/0 – 3625 psig)
- > Filter Protects Pilot & Dome Regulator Seats
- > Dynamic Piloting with feedback to body provides improved delivery pressure with significantly reduced droop



DFR40 Piloted with 3" Sch10 Weld Stub Connector (See Enquiries and Orders)

- > 1.5" Inlet 420 barg (6000 psig)
- > High Pressure Pilot
(0 – 250 barg/0 – 290 psig)
- > High Accuracy Pilot provides excellent pressure control
- > Dynamic Piloting with feedback to Pilot Regulator provides the most accurate delivery pressure with significantly reduced droop



Pressure Regulators Piloted Dome Loaded

SERIES DR & DFR

Dome Regulators & Filter Dome Regulators 1" & 1 1/2" (DN25, DN40)



Enquiries and Orders

Your DR/DFR Pressure Control Assemblies can be selected in full using the ordering system set out below.

Alternatively, you can contact Hale Hamilton sales at (sales@halehamilton.com) with information on fluid type, pressures, flow rates, fluid temperatures and the application (i.e. tell us what you're trying to achieve).

Our Sales Team will be happy to help you.

> Standard options highlighted in 'bold' will be associated with our shortest lead time.



| 'D' | 'F' | 'RH' | '25' | '1' | '1' | '4' | '10' | 'H' | 'K' | | | | | | |
|-----------|------------------|-------------------------------|------------------------|---|---|----------------------|------------------|-------------------|-----------------------|---|-----------------------------------|--------------------------------|--------------------------------|---------------------------|---|
| Type | Filter | Pressure Category | Series (Nominal Size) | Port Type (Inlet) | Port Type (Outlet) | Seat Size | Micron Rating | Elastomer Type | DRH, SR Seat Material | Loading Option | External Feedback | Inlet Gauge | Outlet Gauge | Special | Special Feature |
| Mandatory | Omit If Not Used | Mandatory | Mandatory | Mandatory | Mandatory | Mandatory | Omit If Not Used | Mandatory | Mandatory | Mandatory | Omit If Not Used | Mandatory | Mandatory | Omit If Not Used | Omit If Not Used |
| 'D' | 'F' - Filter | RH - High Pressure (420 barg) | '25' - (1" / DN25) | '1' - ISO G | '1' - SIO G | '2' - 8.5 mm (0.33") | '10' - 10 Micron | 'H' - HNBR | 'K' - PCTFE | 'N' - Needle Valve Block | 'P' - Feedback to Pilot Regulator | 'X' - None | 'X' - None | '1' Oxygen Clean | 'XX' Special Features (alternative materials, etc. New codes allocated on client request. |
| | | | '40' - (1 1/2" / DN40) | '2' - NPT | '2' - NPT | '4' - 11 mm (0.44") | '20' - 20 Micron | 'F' - FKM (Viton) | 'P' - PEEK | '1' - Pilot Regulator, SRHG 0-22 barg | 'B' - Sensed from Regulator Body | '1' - 0-50 barg (0-725 psig) | '1' - 0-5 barg (0-73 psig) | '2' Breathing Air Service | |
| | | | | 'X' - No Flange or Non-Threaded Flange (See below) | 'X' - No Flange or Non-Threaded Flange (See below) | '6' - 14 mm (0.54") | | 'E' - EPDM | | '2' - Pilot Regulator, SRHG 0-105 barg | | '2' - 0-100 barg (0-1450 psig) | '2' - 0-10 barg (0-145 psig) | | |
| | | | | 'WXX' - Weld Stub. Please refer to table on page 6 for code | 'WXX' - Weld Stub. Please refer to table on page 6 for code | '12' - 19 mm (0.73") | | | | '3' - Pilot Regulator, SRHG 0-135 barg | | '3' - 0-200 barg (0-2900 psig) | '3' - 0-20 barg (0-290 psig) | | |
| | | | | 'EXX' - DIN Flange. Please specify type required | 'EXX' - DIN Flange. Please specify type required | '16' - 22 mm (0.86") | | | | '4' - Pilot Regulator, SRHG 0-250 barg | | '4' - 0-400 barg (0-5800 psig) | '4' - 0-50 barg (0-725 psig) | | |
| | | | | 'AXX' - ASME Flange. Please specify type required | 'AXX' - ASME Flange. Please specify type required | | | | | '5' - Pilot Regulator - High Sensitivity, SRL15 0-9 barg | | '5' - 0-500 barg (0-7250 psig) | '5' - 0-100 barg (0-1450 psig) | | |
| | | | | | | | | | | '6' - Pilot Regulator - High Sensitivity, SRL15 0-20 barg | | | '6' - 0-200 barg (0-2900 psig) | | |
| | | | | | | | | | | 'X' - without loading feature fitted (internal orders only) | | | '7' - 0-400 barg (0-5800 psig) | | |



MANUAL STOP VALVE



- Series SV47, 60 & 130 area range of Manually actuated high pressure stop valves available in 6, 12, 16 & 20mm orifice diameters, G1/4 to 2 5/16 -12 UNF port connections & cartridge mounted with operating pressures up to 420 bar and body materials of Nickel Aluminium Bronze, Brass or Stainless Steel.



N Series are a range of fully Balanced, Manually actuated, high pressure stop valves available in 6, 11, 19 & 25mm orifice diameters, G1/4" to G1 1/2" threaded connections, welded inline and flange mounted with operating pressures to 500 bar, CV values from 0.8 to 11 and body materials of Nickel Aluminium Bronze, Brass or Stainless Steel.

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Hale Hamilton

Stop Valves
Flanged, High-Pressure, TPED

Description

N62 is a body ported, non-rising stem, balanced stop valve. It is ideal for use with non-oxidising and non-corrosive gases in high pressure applications (up to 500bar) where tight shut off is required.

The pressure balanced spindle prevents the process pressure from loading the operating thread. This means that handwheel torque is low even at the maximum operating pressure of the valve. A visual/tactile indicator shows when the valve is open.

Connection is via flanged adaptors which either have industry standard threaded ports or profiles suitable for brazing or welding to pipework. We can provide adaptors to special requirements on request.

N62 is "Pi marked" and may be used a primary closure for transportable pressure vessels (e.g. cylinder banks on trailers).

Features

- Conforms to Transportable Pressure Equipment Directive 2010/35/EU (TPED) and ADR
- Meets the requirements of BS EN ISO 10297:2006
- Polymer seat provides tight shut off.
- Connection via adaptors which either have industry standard threaded ports or can be brazed or welded to pipework.

N62 Mk1

Specification

- Max. Working pressure: up to 500 bar (7250 psi)
Some adaptors may have a lower pressure rating - see adaptor data sheet
- Flow factor (Cv): approx. 6
- Nominal Bore: 15 mm
- Port Adaptors: see adaptor options. Other port adaptors can be supplied
- Temperature range: -20 to +70°C
- Weight: approx. 6kg



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Actuated Stop Valves

Description

ASV157 and 158 are body ported, pneumatically actuated stop valves. They are ideal for use with non-oxidising and non-corrosive gases in high pressure & Vac / Vent applications where tight shut off is required.

ASV157 has a Stainless steel body and ASV158 is brass.

ASV158 Mk1/OXB is suitable for use with Medical & Industrial Oxygen, Hydrogen & inert gases, including CO₂.

Standard Materials

- Body: Stainless Steel (ASV157) or Brass (ASV158 Mk1 and ASV158 Mk1/OXB)
- Actuator: high strength Aluminium Alloy
- Port adaptors: see adaptor data sheet
- Seat: PEEK
- O rings in contact with process gas: Polyurethane and EPDM (ASV157 and ASV158 Mk1/OXB) or Viton (ASV158 Mk1)
- Back up rings: PEEK and Nylon
- Spindle: Monel



ASV157 and 158

Specification

- Inlet pressure: up to 420 bar (6090 psi)
Some adaptors may have a lower pressure rating - see adaptor data sheet
- Flow factor (Cv): 5.5
- Nominal Bore: 13 mm (1/2")
- Port Adaptors: see adaptor options. Other port adaptors can be supplied
- Actuator Ports: Rc1/8 (1/8" BSP taper) female
- Actuator Pressure: 6 to 10bar (87 to 145psi)
- Temperature range: -40 to +70°C (-10 to +70°C for ASV158 Mk1)
- Weight: approx. 8kg

Features

- Conforms to Pressure Equipment Directive 97/23/EC (PED)
- ASV158 Mk1/OXB has been Adiabatically Shock tested by CTE to EN ISO 7291
- Polymer seat provides tight shut off.
- Bi-directional operation
- Connection via adaptors which either have industry standard threaded ports or can be brazed or welded to pipework.
- Normally closed or normally open (can be changed using the same parts except for the spring)
- The actuator can be rotated in 90° increments to bring the actuator ports into the required position.
- Mechanical indication of valve position with optional fine dust protection.
- Optional ATEX proximity sensors for indication of valve position

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Solenoid Valves
Direct Acting

Description

Direct acting solenoid valves are two-way (i.e. two-position) with spring return. The solenoid is connected directly to the flow control components. Two port (open/close) and three port (changeover) types are available.

The valves are suitable for use with gases or liquids where tight shut-off is required in small-bore, low-flow, high-pressure lines.

The solenoid is isolated from the process flow. The solenoid mounting is standardised so the coil unit may be an industrial type or a rugged, water resistant type. Coils suitable for explosive atmospheres are also available. The coils are described in a separate data sheet.

The coil may be rotated on the valve body to allow the cable outlet to point in any direction.



Standard Specification

See next page for specification of individual types

- Temperature range: -20 to +70°C (extended temperature range versions can be supplied)

Materials

- The standard materials are listed for each type. Alternative materials can be supplied
- Suitable combinations of materials can be supplied for various applications such as Oxygen service, marine or petrochemical (NACE).

Options

Please contact us for details

- Ports: alternative port configuration can be supplied
- Various coil voltages are available (see Coil Data Sheet)
- Certification: variants are available approved for use with Oxygen, for medical Oxygen service or for ATEX service

Ordering Information

Please supply the following information when ordering

- Valve size
- Type and voltage of coil
- Maximum working pressure
- Flow medium
- Port configuration
- Operating and storage temperature ranges
- Certification and QA requirements

In addition to our standard product range, we have an extensive range of special designs and offer a custom build service. Contact our Sales office if you don't see what you want in our catalogue. The information contained within this catalogue is for reference purposes only and is subject to change.

When selecting a product, the total system design must be considered to ensure safe, trouble free performance. Component function, material compatibility, adequate ratings, proper installation, operation and maintenance are the responsibility of the system designer and user.

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Solenoid Valves
Piloted

Description

Piloted valves consist of a solenoid operated pilot valve and a hydraulically operated main valve. Both valves are two-way (or two-position) with spring return.

The operating pressure for the pilot stage is taken from the main flow inlet with an internal filter to prevent blockage in the small passages. The pilot stage vents to a spill port. If required, the pilot stage can be isolated from the main stage with an independent inlet.

The valves are suitable for use with gases or liquids where tight shut-off is required in high-pressure lines. Two port (open/close) and three port (changeover) types are available and high flow capacities can be achieved.

The solenoid is isolated from the process flow. The solenoid mounting is standardised so the coil unit may be an industrial type or a rugged, water resistant type. Coils suitable for explosive atmospheres are also available. The coils are described in a separate data sheet.

See next page for specification of individual types

- Temperature range: -20 to +70°C (extended temperature range versions can be supplied)
- All piloted valves use the standard power coil (see Coil Data Sheet)

Options

Please contact us for details

- Ports: alternative port configuration can be supplied
- Alternative valve configurations such as normally open pilot stage and/or main stage can be supplied
- Various coil voltages are available (see Coil Data Sheet)
- Independent pilot inlet
- Certification: variants are available approved for use with Oxygen, for medical Oxygen service or for ATEX service



The coil may be rotated on the valve body to allow the cable outlet to point in any direction.

Materials

- The standard materials are listed for each type. Alternative materials can be supplied
- Suitable combinations of materials can be supplied for various applications such as Oxygen service, marine or petrochemical (NACE).

Ordering Information

Please supply the following information when ordering

- Valve size and configuration
- Type and voltage of coil
- Maximum working pressure
- Flow medium
- Port configuration
- Operating and storage temperature ranges
- Certification and QA requirements

In addition to our standard product range, we have an extensive range of special designs and offer a custom build service. Contact our Sales office if you don't see what you want in our catalogue. The information contained within this catalogue is for reference purposes only and is subject to change.

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Solenoid Valves
Miniature

Description

Miniature solenoid valves are normally closed, two-way (i.e. two-position) with spring return.

The valves are suitable for use with gases or liquids where tight shut-off is required in small-bore, low-flow, high-pressure lines.

A stainless steel wire mesh filter may be fitted in the inlet.

The inlet pressure acts to hold the valve closed so the valve is not bi-directional. The standard coil is rated to open the valve at maximum working pressure. Coils with lower power consumption are available for operation at lower working pressures.

The solenoid is isolated from the process flow. The coil unit may be an industrial type or a rugged, water resistant type.

The coil may be rotated on the valve body to allow the cable outlet to point in any direction.

A manifold mounted version of the valve is available. We can supply manifolds to your requirements with the valves installed.

Standard Specification

See next page for specification of individual types

- Temperature range: -20 to +50°C (extended temperature range versions can be supplied)

Options

Please contact us for details

- Ports: alternative port configuration can be supplied
- Various coil voltages are available

Materials

- The standard materials are listed for each type. Alternative materials can be supplied
- Suitable combinations of materials can be supplied for various applications such as marine or petrochemical (NACE).

Ordering Information

Please supply the following information when ordering

- Valve size
- Type and voltage of coil
- Maximum working pressure
- Flow medium
- Port configuration
- Operating and storage temperature ranges
- Certification and QA requirements



In addition to our standard product range, we have an extensive range of special designs and offer a custom build service. Contact our Sales office if you don't see what you want in our catalogue. The information contained within this catalogue is for reference purposes only and is subject to change.

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Circle Seal Controls



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Relief Valves with Connections 1/8" – 1 1/4" Thread Connections.

Inline & Direct Vent Options as well as Custom Connections

Set Point Pressures from 0.5psi to 10,500psi (724bar) Gases and Hydraulic Options

Options for Cryogenic Temperatures Down To -196C.

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Circle Seal Controls



Hale Hamilton

With Circle Seal and Hale Hamilton Tammo can supply High Pressure Check (Non-Return) Valves for pressures up to 10,000psi and Hale Hamilton have a version that uses the same Flange connection as used on the DR & DFR Regulators meaning you can have Check Valve Function included with your Regulator Assembly. Sizes ¼" NPT up to 1" . Circle Seal also offer a "Cartridge" Version that can be inserted into your own Manifold or Machined Part, reducing size, weight and total envelop size.



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Process transmitter & manifold solutions



Smart signal interfaces solutions



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Signal conditioners solutions



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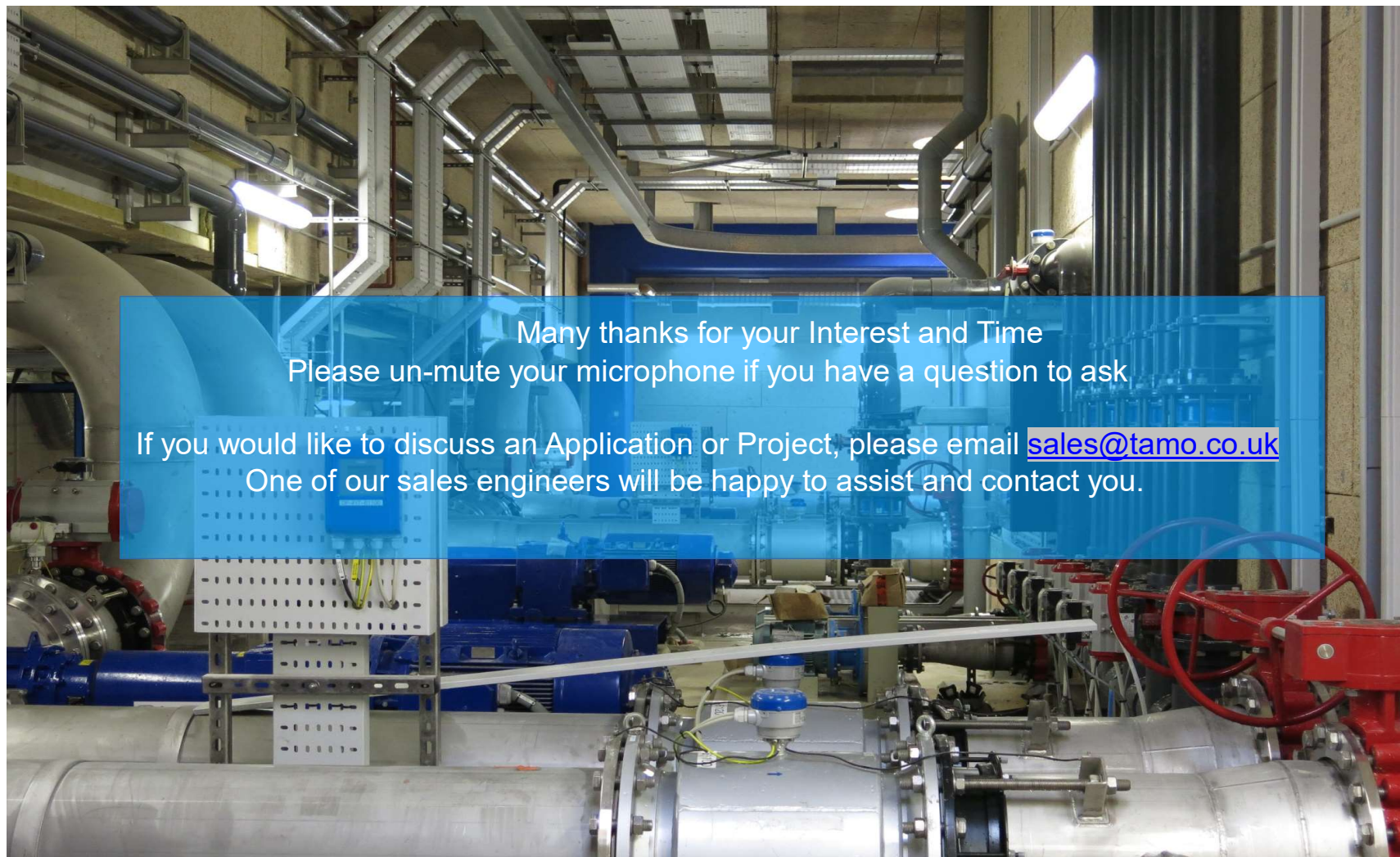


Storage



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Many thanks for your Interest and Time
Please un-mute your microphone if you have a question to ask

If you would like to discuss an Application or Project, please email sales@tamo.co.uk
One of our sales engineers will be happy to assist and contact you.

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