

# ashford instrumentation



Diving & Subsea Division

Edition two



[www.divinggauges.co.uk](http://www.divinggauges.co.uk)

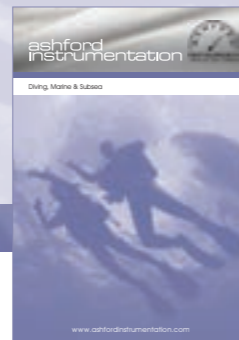
Ashford Instrumentation Ltd was established in 2003 and specialises in Pressure, Temperature, Level and Flow Measurement. We work in conjunction with many of the largest organisations within the instrumentation field and can therefore find a solution to meet just about any measurement requirement you may have. Our Technical Team has a wealth of application knowledge upon which we can draw when the process demands.

## Diving & Subsea

Our Diving, Marine & Subsea division has established a product range which is arguably the most comprehensive in the world.

We specialise in the supply of Depth, Pneumo, Caisson & Subsea Instrumentation.

Our comprehensive stock and short lead times provide customers with the support they require when the situation demands.



## Process, Industrial & Utility

Pressure, Level, Temperature and Flow Instrumentation for the Process and OEM Industries



## HVAC

Pressure, Level, Temperature and Flow Instrumentation for the HVAC Engineer

Specifications and photographs shown in this brochure are representative of our engineering capabilities at the time of printing. We reserve the right to change any product or product details without prior notice. Images, text and product descriptions in this brochure have been used in good faith and to the best of our knowledge do not infringe good business practice. Please contact our sales office for full technical specification of all items prior to ordering.

Pneumo Gauges	4
Pneumo Gauges	5
Caisson Gauges	6
Caisson Gauges	7
Dive Panel Gauges	8
Calibration Equipment	9
Sealed Case Subsea Gauges	10
Compensated Subsea Gauges	11
Subsea Pressure & Depth Transmitters	12
Miscellaneous Instruments	13
Subsea Valves	14
Calibration & Bespoke Solutions	15

## Standard Pneumo Gauge

The Standard Pneumo Gauge is a precision pressure gauge used for diver depth monitoring or for measuring the pressure within a hyperbaric chamber offering it to zero the pointer via an adjustment screw located on the front of the gauge. Available in 150mm, 200mm, 250mm and 300mm diameters with a black powder coated steel case and 160mm diameter with a 304 stainless steel case, the Standard Pneumo Gauge is fully degreased and is designed for commercial diving applications where breathing air is being used.

With an accuracy of 0.25% full scale, an easy to read mirror band dial and knife edge pointer, the Standard Pneumo Gauge is built to the same high standards as our Premium Pneumo Gauge but does not feature the full safety pattern case required for oxygen service or for applications in Europe where the instrument range exceeds 25 Bar (250 metres sea water). Bezels available in Black, Red, Green or Yellow.

- Diameters 150mm, 200mm, 250mm and 300mm
- 0.25% Accuracy & Fully Degreased
- Powder Coated Case With Coloured Bezels
- 160mm Diameter Stainless Steel Option
- Supplied with Calibration Certification



## Mini Pneumo Gauge

The Mini Pneumo Gauge offers 0.25% accuracy in a compact 100mm diameter case. Offered with a stainless steel case in the standard version and black powder coated finish on the full safety pattern design, the gauge features a mirror band dial and knife edge pointer.

- 0.25% Accuracy with Compact 100mm Diameter Case
- Stainless Steel Case On Standard Design
- Powder Coated Case On Full Safety Pattern Design
- Supplied with Calibration Certification



## Digital Display & GL/DNV Transmitter

Offered as an alternative to an analogue pressure gauge, our 4-digit LED 144mm x 72mm display is easy to read and offers 0.25% accuracy.

- Red or Green LED Display
- 144mm x 72mm with 38mm High Characters
- GL / DNV Approved Pressure Transmitter
- Overall Accuracy 0.25% Full Scale
- 2 Adjustable Switch / Alarm Points



## Premium Pneumo Gauges

Available in 160mm, 200mm, 250mm and 300mm diameters, the Premium Pneumo Gauge is a precision pressure gauge used for diver depth monitoring or for measuring the pressure within a hyperbaric chamber.

The Premium Pneumo Gauge features the ability to zero the pointer via an adjustment screw located on the front of the gauge as well as having a Full Safety Pattern design to 'S3' standard as defined in the European Standard EN837-1. The gauge is fully degreased and suitable for oxygen applications.

Manufactured with a powder coated steel case and featuring an accuracy of 0.25% full scale, easy read mirror band dial and knife edge pointer, the instrument can be supplied with bezels powder coated in a variety of colours including Black, Red and Yellow.

- Full Safety Pattern Design for Oxygen Service
- Available in 160mm, 200mm, 250mm & 300mm diameters
- Through Dial Zero Adjustment
- Accuracy 0.25% Full Scale
- Supplied with Calibration Certification



## 3D Instruments Inc. Pneumo Gauges

In 2014 Ashford Instrumentation Ltd were appointed the official United Kingdom Sales Agent for the American manufacturer 3D Instruments Inc. Their range of 4.5", 6", 8.5" and 12" Pneumo Gauges feature a helically-wound Bourdon Tube made from Inconel x-750.

This design together with the Inconel tube has the advantage of just one moving part preventing the Bourdon Tube from losing its shape ensuring long term accuracy. With no mechanical components vulnerable to wear, this direct drive design can last longer than a C-shape Bourdon Tube and the manufacturer backs this up with an extended warranty.

- 4.5", 6", 8.5" & 12" Diameters
- Black, Red, Yellow & Green Case Options
- ABS Plastic Case
- Supplied with Calibration Certification



## Caisson Gauges

### Standard Caisson Gauges

Available in 160mm and 200mm diameters, Standard Caisson Gauges are a lower cost alternative to our Premium Caisson Gauge. They are still manufactured to the same 0.25% accuracy but the internal reference chamber is formed by sealing the Bourdon Tube from the ambient pressure within the chamber. This design of the Caisson Gauge still features a mirror band dial and knife edge pointer but does not have the external zero adjuster and cannot be bench calibrated. Calibration must be performed in a pressure chamber.

- Standard Ranges 0-40 MSW, 0-70 MSW, 0-140 MSW & 0-390 MSW
- Accuracy 0.25% FSD
- Must be calibrated in a Pressure Chamber
- Custom Ranges & Customer logo on dial readily available
- Supplied with Calibration Certification to National Standards

### Wet Bell Caisson Gauges

Available in 160mm diameter, the Wet Bell Caisson Gauges features a sealed stainless steel case with IP68 protection meaning the gauge can be splashed or submerged in water. It is ideal for wet bells or other applications where the environment may be wet or corrosive. The instrument is manufactured with an accuracy of 0.25% FSD and features a balance chamber valve and mirror band dial with knife edge pointer but due to the high degree of ingress protection does not have an external zero adjuster. The Wet Bell Caisson Gauge can be bench calibrated.

- Standard range 0-400 Metres Sea Water
- Accuracy 0.25% FSD
- Mirror Dial & Knife Edge Pointer
- Balance Chamber Valve & Bench Calibration Possible
- Supplied with Calibration Certification to National Standards

### Mini Caisson Gauges

This compact and rugged 63mm diameter gauge features a sealed case which will withstand an external pressure of 45 Bar (450 MSW) and will measure depth or chamber pressure if the process connection is left open to the atmosphere. Its rugged design is ideal for wet bells.

- 63mm Back Entry Design with Integral Panel Mounting Clamp
- Accuracy Class 1.6% Full Scale
- 316 Stainless Steel Case & Wetted Parts
- Bench Calibration Possible



## Caisson Gauges

### Premium Caisson Gauges

Available in 160mm, 200mm, 250mm and 300mm diameters, Premium Design Caisson Pressure Gauges are used for mounting inside hyperbaric chambers, caissons, living chambers and decompression chambers and are used for measuring the simulated depth (pressure) inside the chamber. The Premium Caisson Gauge features a large internally sealed brass encapsulated pressure reference chamber and is usually surface mounted within the chamber. As this instrument is constructed around the workings of a conventional Bourdon Tube Pressure Gauge the Premium Caisson Gauge can be bench calibrated in a similar fashion to other oxygen cleaned Bourdon Tube Pressure Gauges.

The gauge is accurate to 0.25% FSD and features zero adjustment through the front window as well as a valve to balance the reference chamber with atmospheric pressure as and when required. The Premium Caisson Gauge can also be used to accurately measure the pressure within separate pressure systems within the chamber such as bottled gas or hydraulic lines or it can be piped to atmosphere outside of the chamber to give a very accurate measurement without the need for an internal reference chamber.

- Standard Ranges 0-40 MSW, 0-70 MSW, 0-140 MSW & 0-390 MSW
- Accuracy 0.25% FSD
- Through Window Zero Adjustment
- Bench Calibration
- Custom Ranges & Customer Logo On Dial Readily Available
- Supplied with Calibration Certification to National Standards



### 3D Instruments Inc. Caisson Gauges

In 2014 Ashford Instrumentation Ltd were appointed the official United Kingdom Sales Agent for the American manufacturer '3D Instruments Inc.' Their range of 4.5", 6", 8.5" and 12" Caisson Gauges feature a helically-wound Bourdon Tube made from Inconel x-750. This design has the advantage of just one moving part preventing the Bourdon Tube from losing its shape and ensuring long term accuracy. With no mechanical components vulnerable to wear, this direct drive design can last longer than a C-shape Bourdon Tube and the manufacturer backs this up with an extended warranty.

- 4.5", 6", 8.5" & 12" Diameters
- Black, Red, Yellow & Green Case Options
- Surface and Panel Mounting Options
- Supplied with Calibration Certification



## Dive Panel Gauges

The European Standards EN837-1 states that any pressure gauges used on a gas ranged above 25 Bar must be of a 'safety pattern design' designated either S2 (without a baffle wall) or S3 (with a baffle wall) depending on the gauge chamber. All gauges used on oxygen shall also be of a 'safety pattern design'.

The Ashford Instrumentation range of 63mm gauges specifically designed for dive panels meet the above safety requirements of the European Standards EN837-1 for use on oxygen and compressed gasses and are manufactured to two distinctly different designs.

The S2 safety design have a simple blow-out safety device but have been tested to meet the Energy Release Test as defined in the European Standard EN837-1 and can be supplied with an EC Declaration of Conformity confirming it has met and passed this test. The S3 safety design offers greater protection to the operator and features an internal solid baffle wall between the measuring element and the window, an entire blow-out back and a laminated safety glass window.



### 63mm Safety Gauges S2

The Ashford Instrumentation S2 63mm Diameter Safety Gauge has been designed for commercial diving companies wishing to comply with the S2 specification safety guidelines of the European Standards EN 837 - 1 relating to pressure gauges for use on gas and oxygen applications. The gauge also conforms to IMCA Life Support Gauge specification as per Detail Sheet 19 of the February 1999 Code of Practice.

- 63mm Diameter Pressure Gauge
- Oxygen & Crossed Oil Can Marked On Dial
- Meets IMCA Requirements
- Bottom, Back & Panel Mounting Options available

### 63mm Safety Gauges S3

The Ashford Instrumentation S3 63mm diameter safety gauge offers greater protection than the S2 design with a solid baffle wall, blow out back and laminated safety pattern window. Ideal for use on air, gas and oxygen applications the gauge conforms to IMCA Life Support Gauge specification as per Detail Sheet 19 of the February 1999 Code of Practice.

- 63mm Diameter Full Safety Pattern Pressure Gauge
- Oxygen & Crossed Oil Can Marked On Dial
- Solid Baffle Wall, Blow Out Back & Laminated Safety Window
- Meets IMCA Requirements



## Calibration Equipment

### DiveCal Calibration Test Kit

The Ashford Instrumentation Portable Calibration Laboratory is ideal for the commercial diving market and is suitable for calibrating pneumo and pressure gauges from 10 Metres sea water to 400 Metres sea water (higher and lower ranges optionally available). The kit includes everything needed to calibrate pressure gauges, Pneumo Gauges and Caisson Gauges, we can even help by providing the necessary calculations for different sea water specific gravities which is something that is often overlooked.

The kit comprises:

- 700 Series Digital Test Gauges With Accuracy 0.25% Full Scale
- 213H Pneumatic Portable Bench Mounted Comparator Pump
- BSP & NPT Stainless Steel Adaptors
- High Pressure Gas Connection Pipe (for in-situ testing)
- Robust Aluminium Carry Case



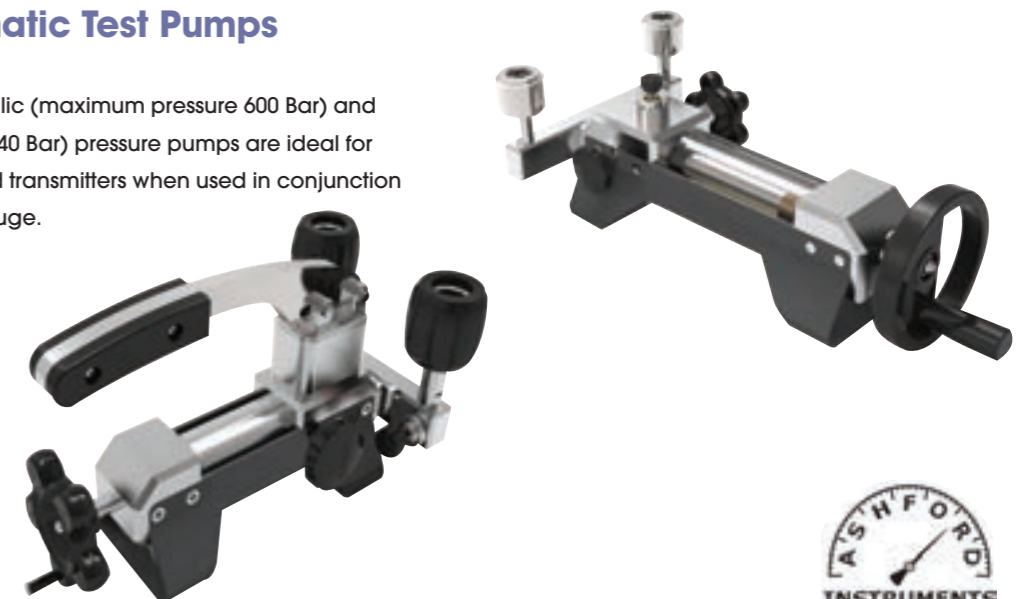
### Master Digital Test Gauge

With advanced microprocessor technology and high-tech silicon pressure sensors, the 700 series digital pressure gauge provides an accurate, reliable and economic solution for a wide range of pressure measurement and test applications. With pressure ranges available to 2500 Bar (36000 PSI), the 700 series features a large screen backlit display and 10 selectable pressure values. With standard accuracy of 0.025% Full Scale the 700 series is ideally suited for the calibration of Pneumo Gauges and bench calibrated Caisson Gauges.



### Hydraulic & Pneumatic Test Pumps

Hand operated portable hydraulic (maximum pressure 600 Bar) and pneumatic (maximum pressure 40 Bar) pressure pumps are ideal for calibrating pressure gauges and transmitters when used in conjunction with the 700 series digital test gauge.



## Sealed Case Subsea Gauges

Sealed subsea pressure gauges rely on the strength of the case and window to withstand the external pressure of sea water at depth. The process media entering the measuring system is measured against the air pressure trapped within the case which will be approximately equal to atmospheric or gauge pressure at the surface (i.e. the zero point equals 1 atmosphere or approximately 1 Bar absolute). As this style of gauge effectively has its own internal reference pressure, as well as being used to measure a pressure system subsea, it can also be used to measure depth if the pressure port is left open to the sea water. Care must be taken to ensure the case is correctly rated to the depth at which it will be operating and that the measuring element is protected from the ambient pressure of the sea water if this is greater than the full scale range of the gauge.

### 450 Series Dive Bell & Caisson Gauge

The 450 Series is a compact and robust 63mm diameter sealed case subsea pressure gauge suitable for depths to 450 metres. The design features an integral panel mounting ring so it can be conveniently mounted direct back entry or panel mounted. The 450 Series is ideal for use on diving bell air or oxygen cylinders and for caisson pressure measurement since it can be used inside or outside the bell. Manufactured with a 316 stainless steel case with a Bourdon Tube in ranges from 10 Bar to 400 Bar.

- Suitable for depths to 450 Metres Subsea
- 316 Stainless Steel Case & Ranges to 400 Bar
- Universal Panel or Direct Mount Centre Back
- Ideal for Gas Bottles & Subsea Regulators / Manifolds

### Sealed Case Subsea Gauges

Sealed case subsea gauges can be manufactured in diameters from 63mm to 160mm and are available in a range of direct mount or panel mounting options. Each design of gauge will have a maximum depth rating that is printed on the dial face which should never be exceeded. Sealed subsea gauges can be used to measure a system pressure subsea or used to measure sea water depth.

- 316 Stainless Steel Case & Wetted Parts
- Standard Pressure Ranges from 0-6 Bar to 0-1000 Bar
- Maximum Depth Ratings
  - o 63mm Diameter 2000 metres Subsea
  - o 100mm Diameter 6000 metres Subsea
  - o 160mm Diameter 450 metres Subsea

### Diver 'Bail Out' Gauge

This compact and robust 50mm diameter subsea gauge is suitable for depths up to 400 metres subsea and is used for measuring the contents of diver breathing air cylinders.

- Degreased for Oxygen Service
- Luminous Dial
- 316 Stainless Steel Case & Float Glass Window
- Individually serial numbered for traceability
- Protective Rubber Boot available
- Calibration certification supplied upon request



## Compensated Subsea Gauges

Conventional subsea pressure gauges rely on the strength of the case and window to withstand the external pressure of the water in much the same way as a submarine. Compensated subsea pressure gauges work on a different principle featuring a liquid filled case that incorporates a special compensating device that allows the gauge internals to be pressurised equal to the increase in ambient pressure of the water as the gauge is submerged. The benefit of this method is that as the internal and external pressure remains in balance there is no need for a pressure proof case and window to be fitted and in theory there is no limit to which this gauge can be submerged. There are however application limitations on using this design of gauge.

A conventional subsea gauge will compare the subsea reading to atmospheric or gauge pressure at the surface (i.e. the zero point equals 1 Atmosphere or approximately 1 Bar absolute). However, the compensated gauge will compare the subsea reading with the local ambient pressure at depth with the zero point being equal to the ambient pressure.

Provided the system being measured is also affected by this increase in ambient pressure then the gauge reading will be correct. If however the pressure system is not affected by the increase in ambient pressure (such as in the case of a gas cylinder) the gauge will start to read increasingly lower as the depth increases.

### Stainless Steel Case Compensated Subsea Gauges

Stainless steel case compensated subsea gauges are available in diameters from 63mm to 160mm and can be manufactured with black on white or white on black dial faces. Always liquid filled, compensated subsea gauges can be manufactured in all the conventional mounting arrangements in ranges from 0-1 Bar through to 0-2500 Bar.

- Case Incorporates Special Depth Compensating Diaphragm
- Compares Process Pressure to Ambient Depth Pressure
- 316 Stainless Steel Case & Wetted Parts
- Available In Diameters 63mm to 160mm
- Black On White or White On Black Dials



### SPAN (Thuemling) Compensated Subsea Gauges

Ashford Instrumentation Ltd are the official European Sales Agents for the SPAN (Thuemling) range of compensated subsea gauges which are manufactured in the USA. SPAN compensated subsea gauge features a Zytel nylon case with patented internal breathing diaphragm allowing 100% liquid fill with no expansion bubble which is essential in any subsea or ROV deep water application. SPAN subsea gauges have been tested to a depth of 3000 metres with no significant effect on accuracy or performance and are available in ranges from 0-15 PSI to 0-15000 PSI.

- Zytel Nylon Case Features Patented Internal Compensating Diaphragm
- Available In Diameters 2.5", 3.5" and 4.5"
- Stainless Steel Wetted Parts & 100% Liquid Filled Case
- White On Black Dials with White Pointer Standard
- Tested To 3000 metres Subsea with no effect on accuracy



## Subsea Pressure & Depth Transmitters

The Ashford Instrumentation range of subsea pressure transmitters includes transmitters to measure sea water depth, to measure a pressure system or to measure pressure subsea. We also have a lighter duty submersible transmitter that can be used to measure shallower depths or can also be used to measure liquid level in tanks or vessels. For greater depths, the transmitter features an internal sealed reference chamber. For shallower depths the measuring cell is vented to atmosphere via a vented cable to the surface.

### Subsea Depth Transmitter 2000 Metres

Subsea depth transmitter designed for such applications as diver depth or ROV depth measurement down to 2000 metres seawater subsea. The pressure transmitter can be attached to the diver umbilical or the ROV and accompanies them during their descent. The transmitter measures the hydrostatic head of seawater and transmits this in the form of a 4-20mA signal to the support vessel through the umbilical. Depth can be indicated on a suitably ranged digital display mounted onboard the support vessel such as our Digital Pneumo Panel Display. The transmitter features a sealed internal reference chamber that can be fully evacuated when the transmitter is specified for 'absolute pressure' measurement or set at 1 Bar pressure when 'gauge pressure' measurements are required.



### Depth Transmitter – 250 Metres Depth

Depth transmitter for continuous level measurement in vented tanks & vessels or in open water courses such as rivers, weirs, lakes, reservoirs and sea water. The standard version is supplied with vented cable to enable the transmitter to be vented to atmosphere. The transmitter is temperature compensated and optionally available as an absolute version with an internal reference chamber. For sea water application we suggest marine bronze housing is used.



### Subsea Pressure Transmitter – Absolute and Gauge Pressure Measurement

The Ashford Instrumentation Model SSTA range of Subsea Absolute Pressure or Gauge Pressure Transmitters feature a sealed evacuated internal pressure chamber and is designed for pressure system monitoring (such as hydraulic systems on Remote Operating Vehicles (R.O.V's) down to 2000 metres subsea.

The submersible pressure transmitter is fitted directly to the pressure system to be monitored and can accurately measure pressure up to 700 Bar. Electrical connection is typically via a Wetcon or Seacon connector with 4-20mA output offered as standard.

Please note that since the reference chamber in the transmitter is sealed, pressure readings will be against 'Absolute' or 'Gauge' pressure at sea level and not compensated for the ambient sea water pressure at depth.



## Miscellaneous Instruments

### Subsea Thermometers

Subsea gas filled system thermometers are available in diameters 63mm, 100mm and 160mm in ranges from -50 to +600C. Manufactured from 316 stainless steel, depths down to 4000 metres subsea are possible on certain models. Direct mounting bottom and back entry with various process connections and immersion lengths. Subsea thermometers can be supplied with or without fabricated or solid drilled thermowells.

- 100mm version available with rating to 4000 metres subsea
- Ranges -50 to +600C gas filled system
- Supplied with optional fabricated or solid drilled thermowells
- Threaded or flanged process connections
- Bottom or back entry with a wide range of immersion lengths



### Warm Water Feed Thermometer (Diving Suit Thermometer)

- Typical range 0-100C
- All stainless steel construction
- Direct Mount Back Entry ½" NPT Male Thread
- Stem typically 42mm under thread x 8mm diameter



### Extended Vacuum Scale Gauges

Conventional vacuum or compound gauges only offer negative scales to -1 Bar vacuum. Where the application is comparing vacuum to the increased ambient pressure at depth it is necessary to have vacuum scales to much lower ranges.

- 100mm & 160mm Diameters
- Vacuum scales typically -4, -7, -10 & -20 Bar
- Glycerine Filled Case Options
- Can be supplied degreased for oxygen service



### Liquid & Air Variable Flowmeters

Commonly used in dive control panels to measure breathing air or oxygen flow rates.

- Available with 83mm or 120mm mounting centres
- Brush finished stainless steel chassis with stainless steel end blocks
- Nickel plated brass end blocks available as an option
- Simple mechanism with easy to read window scale, even at low flow rates
- Accuracy +/- 3% for calibrated scales



## Subsea Valves

### Subsea ROV Operated Needle Valves - 3000 Metres Subsea

The Ashford Instrumentation range of subsea ROV operated needle valves are designed for upstream subsea applications where precision and high quality performance are required. They are commonly used with natural gas or more viscous fluids like hydraulic oil at high pressures.

The glandless design with full bore ports up to 13mm are available in 4 different pressure ratings up to 20000 PSI depending on the port type which include BSP and NPT threads, IC and Medium Pressure. X, Y and T Bar Handles are available with natural stainless steel finish or colour coded powder coating. An ROV paddle operator is also available. A full range of materials is also available such as 316 stainless steel, Duplex, Super Duplex, Inconel 625, Incoloy 825 and Monel.

The Ashford Instrumentation range of subsea valves is available configured as single isolation, single block & bleed and double block & bleed.



### Subsea ROV Operated Single Block & Bleed 3000 Metres Subsea

The Ashford Instrumentation range of subsea ROV operated single block & bleed valves are designed for upstream subsea applications where precision and high quality performance is required. They are commonly used with natural gas or more viscous fluids like hydraulic oil at high pressures.

The glandless design with full bore ports up to 13mm are available in 4 different pressure ratings up to 20000 PSI depending on the port type which include BSP and NPT threads, JIC and Medium Pressure. X, Y and T Bar Handles are available with natural stainless steel finish or colour coded powder coating. An ROV paddle operator is also available. A full range of materials is also available such as 316 stainless steel, Duplex, Super Duplex, Inconel 625, Incoloy 825 and Monel.

The Ashford Instrumentation range of subsea valves are available configured as single isolation, single block & bleed and double block & bleed.



### Subsea ROV Operated Double Block & Bleed 3000 Metres Subsea

The Ashford Instrumentation range of subsea ROV operated double block and bleed valves are designed for upstream subsea applications where precision and high quality performance are required. They are commonly used with natural gas or more viscous fluids like hydraulic oil at high pressures. The glandless design with full bore ports up to 13mm are available in 4 different pressure ratings up to 20000 PSI depending on the port type which include BSP and NPT threads, JIC and Medium Pressure.

X, Y and T Bar Handles are available with natural stainless steel finish or colour coded powder coating. An ROV paddle operator is also available. A full range of materials is also available such as 316 stainless steel, Duplex, Super Duplex, Inconel 625, Incoloy 825, and Monel.

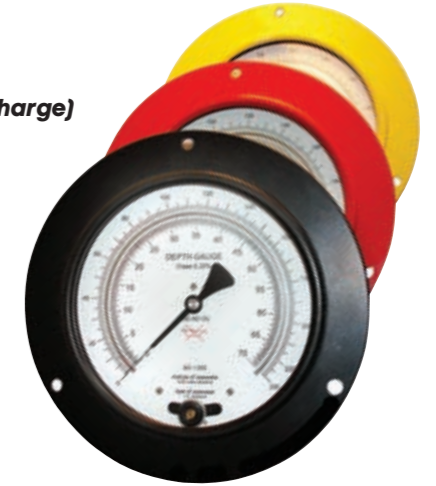
The Ashford Instrumentation range of subsea valves are available configured as single isolation, single block & bleed and double block & bleed.



## Calibration & Bespoke Solutions

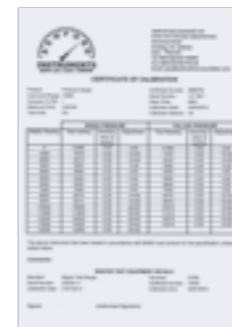
If you cannot see the exact instrument for your application, please feel free to call us with your specific requirements.

- **Coloured Bezels (available on our Pneumo Gauge range)**
- **Optional Scales**
- **Bespoke Dials (with Company name or logo - occasionally free of charge)**
- **Thread types**
- **Mounting configurations**
- **Materials of construction**



### Calibration Service

- Instruments can be supplied with a Standard Test Certificate or a more comprehensive 'Point to Point' Calibration Certificate
- Both are directly traceable to National Standards
- Certificates can be issued for instruments used on clean gas and oxygen systems
- 3.1b Material Certification can be supplied





# ashford instrumentation



Measurably different...

## *Metres Water Conversion Factors*

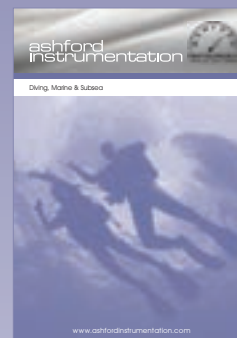
### *UK manufactured gauges*

*Fresh Water @4C: 1m = 0.09806 Bar / 1 Bar = 10.1972 MSW*

*Sea Water S.G 1.025: 1m = 0.1005 Bar / 1 Bar = 9.9502 MSW*

### *USA manufactured gauges*

*1 Metre Sea Water = 1.46042 PSI / 0.10069 Bar*



ashford  
instrumentation

Units 2 & 3 Fairview Industrial Park, Hamstreet Road, Ruckinge, Kent TN26 2PL United Kingdom

t: **0044 (0)1233 730999** f: **0044 (0)1233 731133**

e: [sales@ashfordinstrumentation.com](mailto:sales@ashfordinstrumentation.com) [www.divinggauges.co.uk](http://www.divinggauges.co.uk)