

## DIAPHRAGM SEAL WELDED SCREWED CONNECTION



The WSE is a high integrity Diaphragm Seal Gauge designed to withstand the high pressures and temperatures normally associated with Chemical and Oil / Gas applications.

The WSE has an all welded construction thereby eliminating many potential leak paths and provides a screwed\* process connection a range of sizes up to 1".

A unique feature of the unit is the ability to set the diaphragm to 'lock off' at set pressures thereby protecting the unit from major overload conditions up to and including 400 Bar. This eliminates the need for expensive overload protection valves.

Available in a wide range of options including a choice of dial sizes, connections, materials, filling fluids and options to permit operation at temperatures in excess of 440 Degrees Celsius.



WSE-1

WSE-2

WSE-P

### Applications

Designed for continuous operation on gases or liquids where the pressure element could be become corroded or clogged by the process media. Versions are available to withstand pressure pulsations, vibrations and operation at very high temperatures.

### Dial Sizes

63mm, 100mm & 150mm are standard.

### Pressure Gauges

See separate Pressure Gauge Datasheets for suitable gauges for use on diaphragm seals.

### Accuracy Class

1.0% as EN837

### Pressure Range

The welded seal units is available in a range of configurations dependant upon the required Dial Size and Operating pressure range as follows:

Dial Size	Seal Diameter	Min Range	Max Range
63mm Gauge	with 42 mm Seal	1 Bar to 400 Bar	
100 / 150mm Gauge	with 42 mm Seal	5 Bar to 400 Bar	
100 / 150mm Gauge	with 69 mm Seal	1 Bar to 400 Bar	

### Over range protection

All units will withstand 130% overload as standard up to 200 Bar. Optionally the diaphragm can be set to 'lock off' allowing the unit to withstand an overload up to the maximum pressure rating of the seal unit. This unique feature can be used to avoid the use and cost of additional overload protection valves.

### Materials of Construction

Due to the welded construction, all materials including the diaphragm and connection are of the same material  
Standard - 316L Stainless Steel  
Options (WSE-R) - Hastelloy C276, Titanium or Monel 400.  
Other materials available upon request

### Process connections

Model number **WSE** has male connections of:

1/4", 3/8", 1/2", 3/4", 1" BSP or NPT

Model number **WSI** has female connections of:

1/4", 3/8", 1/2", 3/4" BSP or NPT

Other connections are available

### Filling Fluids

A wide range of filling fluids are available to suit most applications including high temperature and pharmaceutical applications.

Standard Options are Mineral Oil, Silicon HT Oil, Medicinal Paraffin, Glycerine, Syltherm XLT & 400.

Inert Fluorine based fluids can be specified for oxygen and chlorine applications as well as a range of FDA approved fluids for food and pharmaceutical applications.

### Temperature

Normal process operating temperature range: -60 to +200 oC  
Elevated temperature operation up to 450 oC can be achieved by the selection of an extended neck option and an associated high temperature filling fluid. See relevant datasheet.

Serial Number printed on the dial.

traceable to National Standards is supplied free of charge.

### Certification

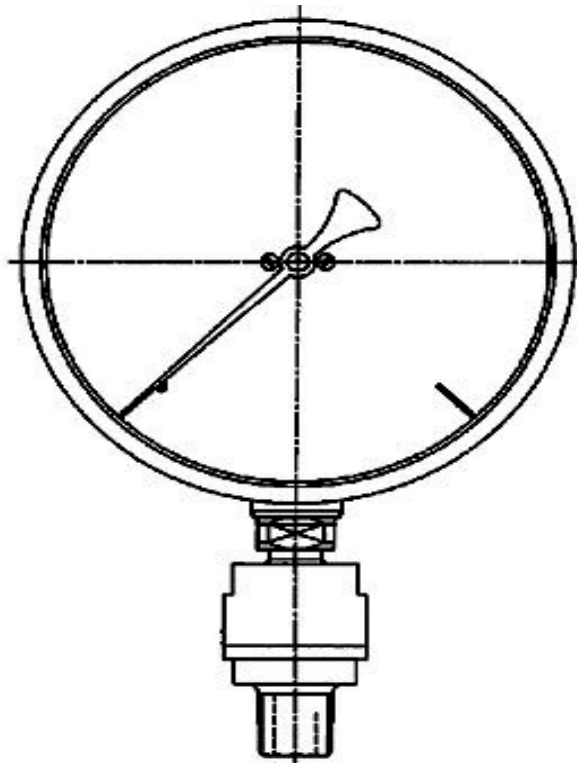
A Certificate of conformity traceable to National Standards is supplied free of charge.

### Safety

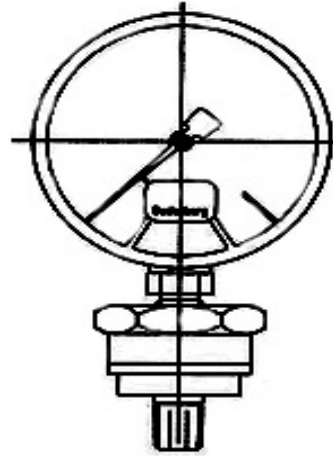
All units are manufactured to comply with EN 837-1 and other regulatory standards including P.E.D.

### Design Note

WSE-R are of a round construction with 2 flats milled in the upper chamber for installation, whilst WSE have a Hexagon.



**WSE-R with 150mm Gauge**



**WSE with 80mm Gauge**

**Options**

- WSE-1** Small Dial Gauges 50 /63/ and 80mm Pressure Gauges
- WSE-2** Large Dial Gauges 100 and 150mm Pressure Gauges
- WSE-P** Purge in lower chamber for cleaning and or venting.
- WSE-R** Rare materials such as Hastelloy C276, Monel 400 & Titanium.

**Vent Port (WSE-P)**

Units can be supplied with an additional integral connection port for use as either as a vent / drain or connection of a transmitter or used or in-situ calibration purposes

**Extended Neck**

For use in elevated temperatures up to 300 °C we can dissipate the effect of heat from the Pressure Gauge by inserting an extended neck between the WSE and the pressure gauge.

**Anti Tamper**

Designed to prevent disassembly

**Remote Mounting**

St/steel capillary can be fitted between gauge and seal to protect instrument from heat or vibration

**Fitting Transmitters**

We have a range of standard and 'Smart' Transmitters that can be used in combination with the WSE and WSI or we can fit customers own free issue transmitters to most diaphragm seal units

**Accessories**

**Valves and Adaptors**

A full range of Needle and Ball Valves to fit the WSE and WSI - See separate Datasheets.

Specifications and dimensions in this leaflet, are subject to change without prior notice.

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