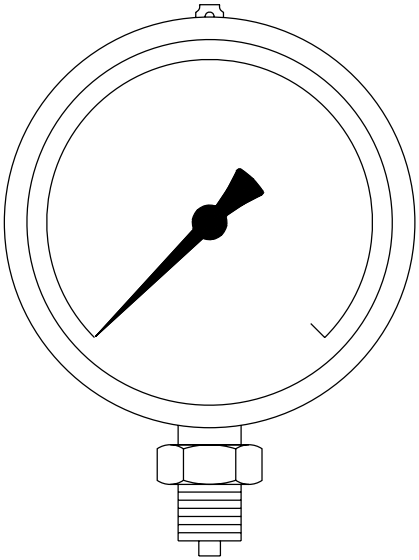
IM-P027-02
ST Issue 5

BSP and NPT
Pressure Gauges With Syphon And Cock
Installation and Maintenance Instructions



1. General safety information

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1. General safety information

Safe operation of these units can only be guaranteed if they are properly installed, commissioned and maintained by a qualified person (see Section 11 of the attached Supplementary Safety Information) in compliance with the operating instructions. General installation and safety instructions for pipeline and plant construction, as well as the proper use of tools and safety equipment must also be complied with.

Isolation

Consider whether closing isolating valves will put any other part of the system or personnel at risk. Dangers might include; isolation of vents and protective devices or alarms. Ensure isolation valves are turned off in a gradual way to avoid system shocks.

Pressure

Before attempting any maintenance consider what is or may have been in the pipeline. Ensure that any pressure is isolated and safely vented to atmospheric pressure before attempting to maintain the product, this is easily achieved by fitting Spirax Sarco depressurisation valves type DV (see separate literature for details). Do not assume that the system is depressurised even when a pressure gauge indicates zero.

Temperature

Allow time for temperature to normalise after isolation to avoid the danger of burns and consider whether protective clothing (including safety glasses) is required.

Disposal

The product is recyclable. No ecological hazard is anticipated with the disposal of this product providing due care is taken.

2. General product information

2.1 General description

These pressure gauges have 100 mm (4") diameter dials with units marked in bar, psi and inches Hg for vacuum as appropriate. The gauge is supplied with either:-
Ring-type syphon tube and cock or a 'U' type syphon tube and cock. Bourdon tube gauge, constructed in accordance with DIN 16005.
Note: For further information see the following Technical Information Sheets: TI-P027-01, TI-P027-03, which give full details.

2.2 Sizes and pipe connections

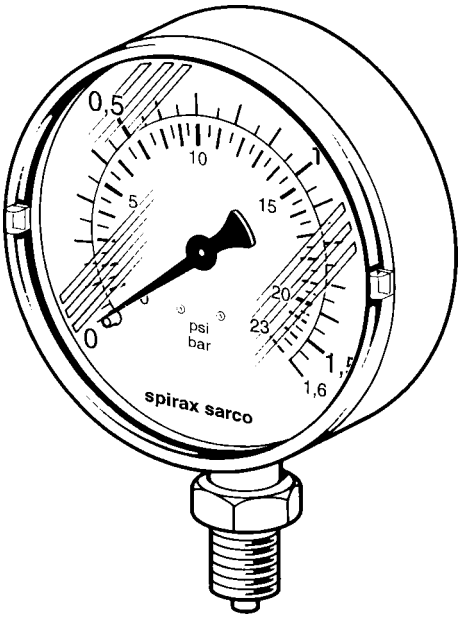
		BSP	NPT
Pressure gauge:		⅜" male (BS2779)	½" male
Gauge cock:	Gauge end	⅜" female (BS2779)	½" female
	Syphon end	⅜" female parallel (BS21)	½" female
Ring / 'U' syphon:	Cock end	⅜" male taper (BS21)	½" male
	Process end	⅜" male parallel (BS21)	½" male

2.3 Limiting conditions

Maximum design conditions = full scale reading

Maximum design temperature 217°C (422°F) ('U' or ring syphon must be fitted to achieve this).

Range 6 (0 - 25 bar g)(0 - 360 psi), where on compressed air and steam services the operating limit is 21 bar g (BS 1387 - heavy grade tube) for BSP model.
Range 6 (0 - 400 psi), where on compressed air and steam services the operating limit is 300 psi (BS1387 - heavy grade tube), for NPT model.
Maximum service temperature, if the syphon tube is not fitted, is 60°C. On applications with a service temperature above 60°C, a syphon tube must be fitted.
The pressure gauge has an IP rating of 34 and should be used in an indoor dry environment.



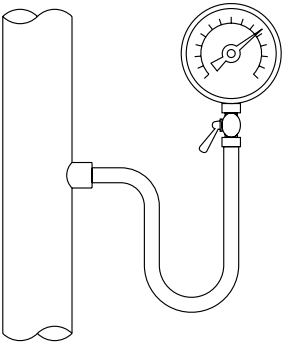
3. Installation

Note: Before actioning any installation observe the 'Safety information' in Section 1.

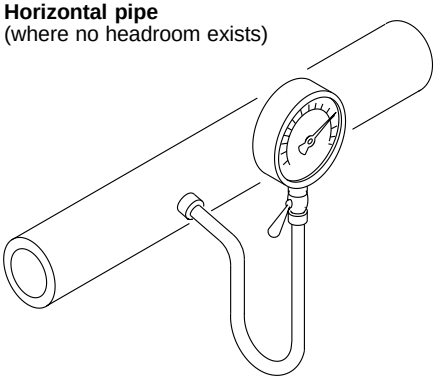
As with all instrumentation, the Spirax Sarco pressure gauge is a delicate measuring device and care has to be taken in its installation and use if it is to remain reliable.
It is recommended that all gauges are fitted with a gauge cock to assist when calibration or maintenance is necessary. When used on steam or other hot gases, gauges **must** be protected from heat by the use of a 'U' syphon or ring syphon tube and gauge cock. The syphon pipe should be primed with water prior to fitting the gauge. Care should be taken if the installation is exposed to frost as gauges can burst.
Gauges should be adequately protected from either mechanical vibration or rapid system pulsation.
Tighten the gauge with care using a 22 mm A/F spanner not by twisting the gauge case. Gauges should be selected so as not to exceed 75% of maximum scale reading during normal use.

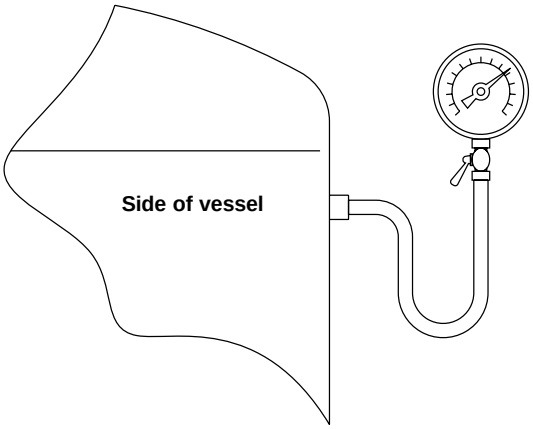
Typical uses of a 'U' syphon and gauge

Vertical pipe

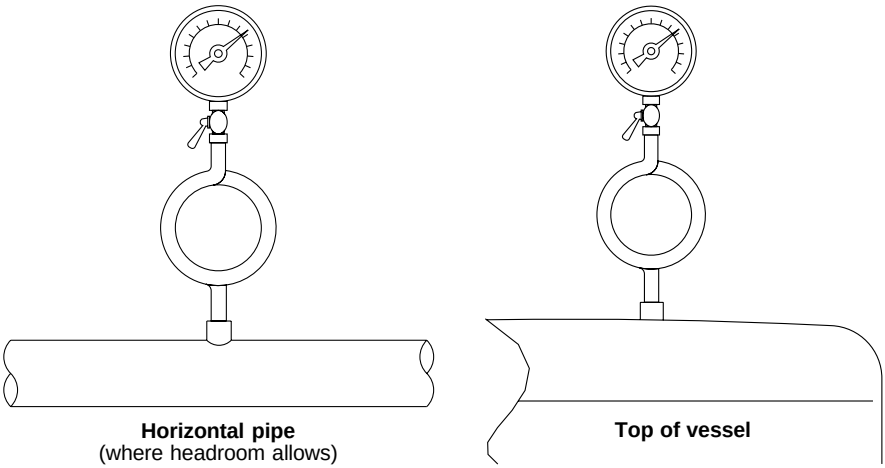


Horizontal pipe
(where no headroom exists)





Typical uses of a ring syphon and gauge



Horizontal pipe
(where headroom allows)

Top of vessel

4. Commissioning

After installation or maintenance ensure that the system is fully functioning. Carry out tests on any alarms or protective devices.

5. Operation

The Spirax Sarco pressure gauge is designed to indicate the pressure within the system.
As pressure is admitted, the bourdon tube tends to straighten out, converting pressure to displacement. The tube is linked to a pinion which is attached to a pointer, this then display's the pressure reading on a circular scale.

6. Maintenance

There are no spare parts for the Spirax Sarco pressure gauge: the only maintenance work necessary is regular cleaning of the perspex window and recalibration. Solvents should not be used to clean the perspex window as it may impair clarity.
Note: Gauge cocks should always be opened and closed slowly to avoid pressure shocks to the gauges.
During recalibration the perspex window can be removed, using a narrow flat-faced screwdriver, placed in the slots on the edge of the window. The pointer can be gently pulled off its spindle and replaced at the correct reading by gently pushing back on to the spindle. After calibration, push fit the window back into position. Refit the gauge to the system.

7. Spare parts

There are no spare parts available for the Spirax Sarco pressure gauge.

How to order a new product

Example: 1 off BSP Spirax Sarco pressure gauge, Range 1 (0 to 1.6 bar).