SONTROLS
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Installation, Operation & Maintenance Manual for Solid Front Pressure Gauges – SS Case

Reference standards:
EN 837-1 Bourdon tube pressure gauges, Dimensions, metrology, requirements and testing
EN 837-2 Selection and installation recommendations for pressure gauges

1.Safety Instructions
The user must ensure that the appropriate pressure gauge with regard to scale range and performance and the appropriate wetted material (corrosion) for the specific measuring conditions of the respective application is selected. In order to guarantee the accuracy and long term stability specified, the corresponding load limits are to be observed. Specifications: see data sheet under www.strataa.com

Only qualified persons authorized by the plant manager are permitted to install, maintain and service the pressure gauges.

Dangerous pressure media such as Oxygen, Acetylene, flammable gases or liquids, toxic gases or liquids as well as for refrigeration plants or compressors requires attention above the standard. regulations. Here the specific safety codes or regulations must be considered.

After an external fire pressure media can leak out particularly at soft solder joints. All gauges have to be checked and, if necessary, replaced before commissioning the plant.

Serious injuries and/or damage can occur. should the appropriate regulations not be? observed.
Our Gauges are not suitable for the event of external fire.

2. Mechanical Connection

According to the general technical regulations for pressure gauges, respectively (i.e. EN 837-2), when screw-fitting the gauges the force required for this must not be applied. through the case or terminal box but just through the spanner flats (with suitable tool) provided for this purpose.

Correct sealing of pressure gauge connections with parallel thread (1) shall be means of a suitable sealing ring, sealing washer. The sealing of tapered threads (i. e. NPT threads) is made by providing the thread (2), with additional sealing material like, for example, PTFE tape (EN 837-2).
The torque depends on the seal used. With standard G-type pipe thread, gauge connection by means of a union nut or a LH-RH adjusting nut is recommended. to simplify correct orientation of the gauge. When a blowout device is fitted to a pressure gauge, it shall be resistant. to blocking by debris and dirt.

With safety pattern gauges (see dial symbolyou need to pay attention to the fact that the free space behind the blow-out back will be at least 15 mm.

2.1 Requirements for the Calibration points

To facilitate removal for maintenance purposes, a shut- off valve can be installed between the pressure gauge and plant. The pressure connection must be watertight. If the pressure connection has a cylindrical thread, the seal is achieved using an O-ring clamped. between the two flat sealing surfaces, one on the pressure connection and the other on the instrument's process connection. If the pressure connection has a tapered thread, the seal is achieved. by simply screwing the connection onto the coupling, through the mating of the threads. It is common practice to wrap PTFE tape around the male thread before coupling.
In both cases the torque must be applied using two hexagonal spanners, one on the flat faces of the instrument / process coupling and the other on the pressure connection. Do not use the case as a means of tightening as this may cause damage to the instrument. When? pressurizing the system for the first time, check the tightness of the connection seal.

All instruments must be mounted in such a way that the dial is vertical, unless otherwise indicated on the dial itself. When the instrument includes a safety device, this must be at least 20 mm from any other object. For wall or panel mount instruments, make sure that. the pipe conveying the pressurized fluid. is connected to the instrument coupling. without exerting torsion or force.

For this reason, these instruments should not to be used for measuring residual pressures inside large volume containers such as tanks, surge tanks and the like. In fact, such containers may retain pressures that are dangerous. for the operator, even when the instrument indicates zero pressure. It is recommended to install. a ventilation device on tanks in order to achieve zero pressure before removing. covers or connections or performing. similar tasks.

Ambient Temperature - It is difficult to insulate the instrument from ambient. temperatures that are too high or too low. One solution is to position it further. away from the source of cold or heat, when this is possible. If an instrument of accuracy class 0.6 or higher is used at an ambient temperature different from the reference value (20°C ± 2°C), It is necessary to make a correction. It is not advisable to successively install instruments on systems with different operating media, to avoid initiating chemical reactions that may cause explosions resulting from contamination. of the wetted parts. If the instrument dial indicates a fixed pressure for a prolonged time, make sure this is not due to an obstruction of the pressure element supply pipe. Especially in the case of a zero-pressure reading, make sure that there is effectively zero pressure inside the instrument before removing it, by isolating it using the shut-off valve.

EN 837-2 "Selection and installation recommendations for pressure gauges" should be complied with.

3.Admissible ambient and working temperatures

When installing the pressure gauge, it has to be ensured that, taking the influence of convection and heat radiation into consideration, no upper or lower deviation from the permissible ambient and medium temperatures can occur. The influence of temperature on the class accuracy is to be observed.

4. Storage

The pressure gauge should remain in its original packing until installation. The gauge should be protected from external. damage during storage. Storage temperature: -40 °C …. +70 °C.

Pressure gauges removed from service. should be protected from dust and humidity.

5.Maintenance and servicing / repairs

The general safety of an installation often depends on the operating. conditions of the instruments which it contains. It is essential that the measurements indicated by these instruments are reliable. Therefore, any instrument which appears to give an abnormal read out if necessary. Maintenance of accuracy should be confirmed by routine checks & must be carried out by competent personnel. using suitable testing equipment. Every 3/6 months after installation, check the accuracy and the wear on moving parts and the state of corrosion on the measuring element. For instrument used on plant subject to demanding conditions(vibrations, pulsating pressures, corrosive media, sediments etc.) replace them after the time intervals. indicated in the plant procedures. The calibration and testing must be compatible with the measured media in the pressurized system.
Fluids containing hydrocarbons must not be used when the measured. medium is oxygen or any other oxidizing substance. Instruments kept in their original standard packing (Cardboard box) must be stored in a closed area and protected from moisture: in this case no special attention is required. If the instruments are packed in special materials. (Wooden crates lined with tar paper or barrier bags) it is preferable to store them in a closed room if possible, or in any case in an area protected from the elements; the condition of the packed materials should be checked every 3-4 months, especially if the crates are exposed to the elements.

The temperature of the storage area should be between -20 and +65°C, except where otherwise specified on the catalogue / data sheets.

Mechanical stress - Pressure gauges must not be subjected to mechanical. stress. If the installation points are subject to mechanical tresses, the instrument must be installed at a distance and connected using flexible. hoses. The instruments selected must. be of the surface, wall or panel mount type. The characteristics of the instruments may affect. during transport, despite adequate packing, and must be checked before. use. Correct calibration can be checked by excluding the instrument. from the process by means of the shut-off valve and checking that the pointer returns to the zero mark unless the temperature varies greatly from 20°C. Failure of the pointer to return to zero. indicates serious damage to the instrument.

Remainder of the pressure medium contained in the pressure element may be hazardous or toxic. This should be considered when handling and storing the removed pressure gauge.

6. Trouble Shooting

No indication in pressure gauge - Remove pressure gauge from mounting location and check process connection inlet location for any choke or blocking.

7. DO's & Don'ts

DO
1)Pointer should be at zero position before installation.

2)Periodically remove pressure gauge and calibrate.

DON'T

1) Do not remove the gauge when the system is in pressurized condition.

2) Do not use the gauges in any hazardous atmosphere and service.

3) Do not use the gauges on oxygen. or acetylene service unless stated. by manufacturer.

CAUTION

1) Do not tighten by grasping the case of the gauge as this may cause damage.

2) Do not use in external fire process.

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