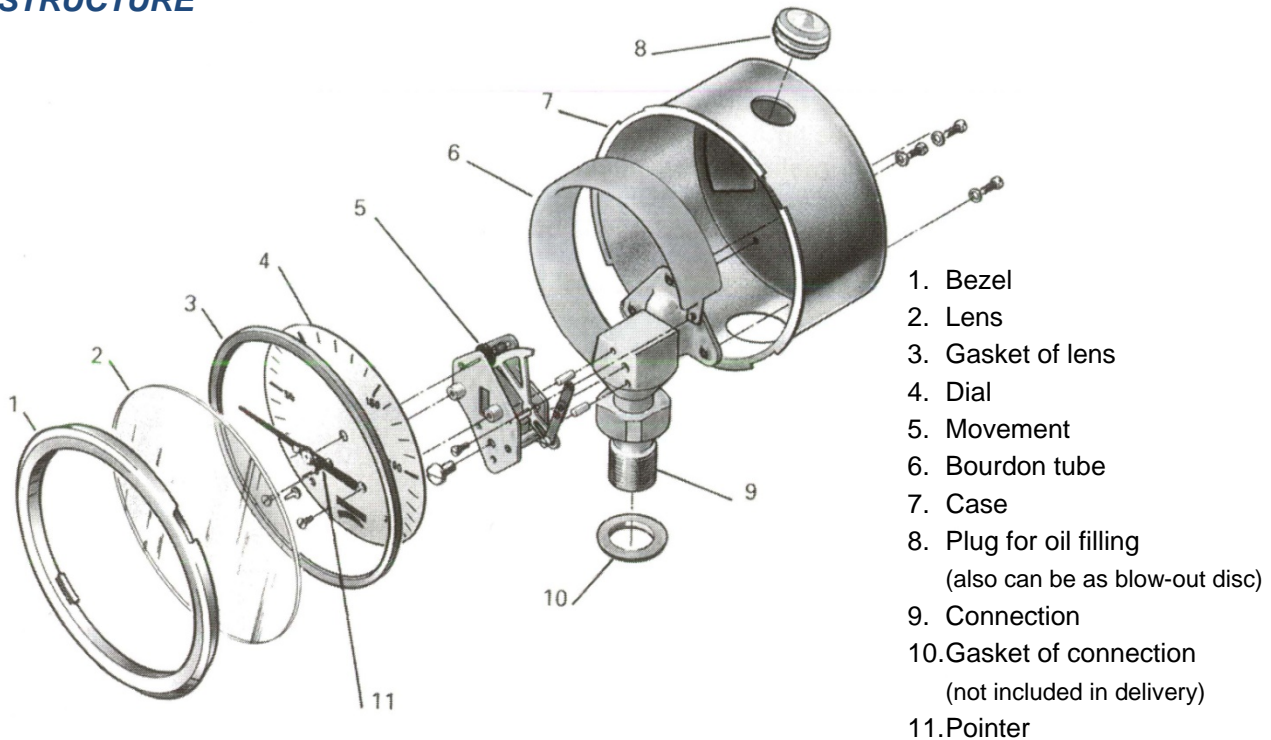


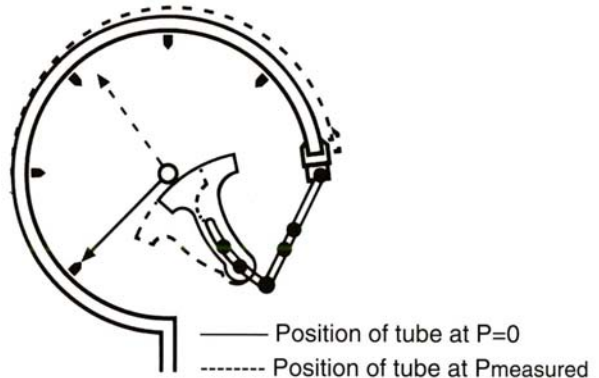
TECHNICAL INFORMATION OF PRESSURE GAUGE

STRUCTURE



PRINCIPLE OF OPERATION

The bourdon tube consists of a thin walled tube of oval cross-section that is semicircular or also spirally wound. The tube expands when a pressure is internally applied. By means of a geared movement this expansion is converted into rotation of a concentric pointer to be indicated on a dial scale. The value indicated is proportional to the pressure applied.



* Invented by E. Bourdon in 1849.

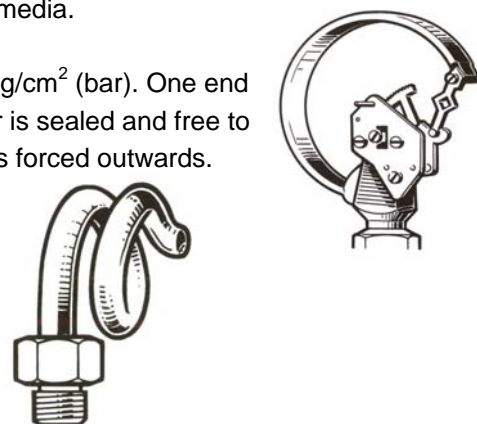
ELEMENTS OF MEASURING PRINCIPLE

◆ The Bourdon tube

Bourdon tube pressure gauges are intended for measurement of pressure and vacuum and are generally suitable for all clean and non-obstructive liquid and gases media.

C form tube is commonly used for ranges from 0.6 to 70 kg/cm² (bar). One end is fixed and connected to the pressure circuit and the other is sealed and free to move. When pressure is applied to the tube, the free end is forced outwards.

Helical tube is with greater resistance to fatigue due to better stress distribution. Measuring ranges from 70 to 1000 kg/cm² (bar).



Spiral tube is with the deflection of the free end of the tube amplified due to the spiral shape. It is mainly used in small size pressure gauge with high pressure.



◆ The Capsule

The element consists of two thin corrugated sections and sealed about their circumference. The capsule thus formed acts as a cavity and slightly deforms when a pressure is applied. By means of a link and geared movement this deflection is converted into rotation of a concentric pointer to be indicated on a dial scale. Capsule pressure gauges are intended for measurement of low negative and positive pressure. Several capsules may be combined to enable measurement of very low pressure. Measuring ranges from 0 to 600 mbar.



◆ The Bellows

The element consists of a thin walled tube of harmonica-like shape. The pressure is normally applied to the inside of the bellows. The bellows will expand in length when a pressure is applied. By means of a link and geared movement this deflection is converted into rotation of a concentric pointer to be indicated on a dial scale. Bellows pressure gauges are intended for measurement of very low pressure. They are mainly used in differential pressure gauges.



◆ The Diaphragm

The element consists of a thin convoluted membrane which is held between two flange halves, where the bottom half incorporates the pressure entry. The diaphragm deflects when a pressure is applied. By means of a geared movement this deflection is converted into rotation of a concentric pointer to be indicated on a dial scale. The value indicated is proportional to the pressure applied.

