Pressure Transducer

A very common dial-type, gas pressure gauge is based on a Bourdon tube illustrated in Fig. 6. The tube is a curved, flat, hollow, thin-walled tube that changes its curvature as the gas pressure builds up inside. Four strain gauges are placed on the tube, as shown, and are connected into a Wheatstone bridge identical to the bridge used for the force transducer as shown in Fig. 5b. As the Bourdon tube bends due to the internal pressure, the pressure is indicated by $\Delta V$ from the Wheatstone Bridge. You can use the gauge itself as a standard to determine the pressures.