

Pressure Balanced Expansion Joint

One of the main problems when installing high pressure bellows particularly with large diameters is that these units must be properly anchored and guided. There are certain installations where this is not practical, nor economical. These types of expansion joints are used in application where main anchoring is not practical and in piping system where pressure loads are critical, and where complex axial and lateral movements are involved with limited space and also seen in piping connecting two load sensitive equipments

Features

- Absorb axial and small amounts of lateral movement
- Eliminate pressure thrust
- Reduce piping costs
- Eliminate main anchors
- No volume change
- Stable at high pressures
- Simple to manufacture

Elbow Pressure Balanced Expansion Joint

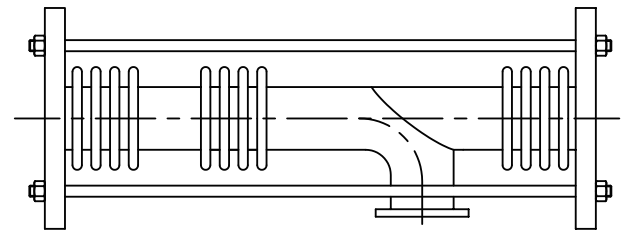
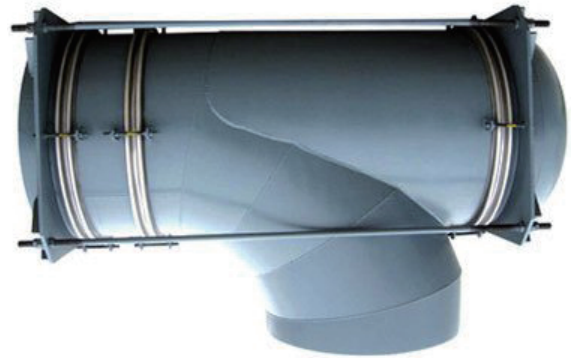
Elbow pressure balanced expansion joint is designed to restrain and balance the pressure thrust so that main anchor of the pipe or adjacent equipment is not required. This type of expansion joint consists of one or two flow bellows and one balancing bellows. The pressure is balanced by allowing the pressure to pass through a hole in the back of the bend into a sealed bellows having the same effective area.

When large amounts of lateral movement are required, we would prefer the use of double pressure balanced joint. In this design two bellows are used in the flow line end of the expansion joint and a single bellows in the balancing end. The balancing bellows is subjected to axial deflection only, while the flow bellows absorbs lateral and/or axial deflections. These bellows can be also used at the bends of the piping or change in direction of piping, where adequate support or main anchors is not possible.

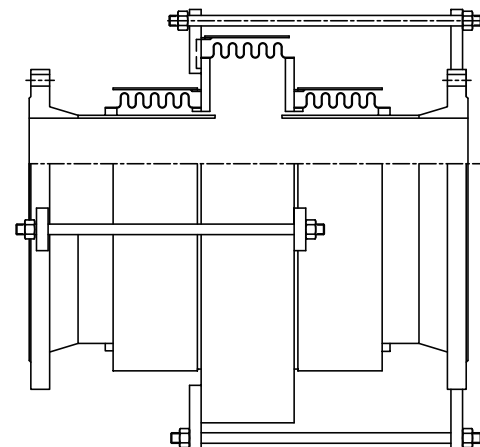
In-Line Pressure Balanced Expansion Joint

Inline pressure balanced expansion joint is designed to absorb axial, lateral and angular deflection while restraining the pressure thrust by use of tie rods, without a change of direction in a piping run. This type of expansion joint consists of two flow bellows and one balancing bellow. The effective area of the balancing bellow is twice that of the flow bellow. When flow bellows are compressed by thermal expansion, the balancing bellows extend an equal amount due to tie rod arrangement. As no volume change occurs, the pressure forces remain in balance. So the forces exerted on the pipe anchors or the adjacent equipments is eliminated.

Solution to Many Excessive Loading Problems on Piping and Equipment



Elbow Pressure Balanced Expansion Joint



In-Line Pressure Balanced Expansion Joint