With this type of joint, 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. Tie rods are used to balance the bellows so that as the line bellows is compressed due to thermal expansion, the other bellows is extended.

For large amounts of lateral movement, we would prefer the use of a Double Pressure Balanced Joint as shown in Figs 24 to 28.

Some typical piping layouts using PBEJ are shown in Figs 25 to 27.

In exceptional circumstances where a PBEJ cannot be incorporated into a change of pipe direction, then an in-line axial Pressure Balanced Expansion Joint can be supplied.