

METAL BELLOWS EXPANSION JOINTS

1] WHAT ARE METAL BELLOWS ?

Flexible metal bellows are made from a thin metal sheet that has been rolled into a cylindrical shape, seam welded and then formed into a bellows. The bellows consists of individual annular corrugations or convolutions.

2] HOW ARE METAL BELLOWS USED?

Metal bellows are gas and liquid tight and are usually supplied with any of a wide variety of fittings that are welded to the bellows. The bellows, complete with end fittings is commonly referred to as an **Expansion Joint**. Bellows expansion joints are installed into piping systems in order to absorb movements caused by thermal expansion / contraction of piping, ducting, tanks etc. Bellows expansion joints are also effective in absorbing vibration generated by mechanical equipment and by other sources. Expansion joints are mainly used in order to protect the entire system from the forces generated by these movements.

3] WHERE ARE METAL BELLOWS EXPANSION JOINTS USED?

Metal bellows expansion joints are used in a wide range of industrial applications where it is necessary to compensate for thermal expansion / contraction / vibration present in mechanical systems.

Some user industries include:

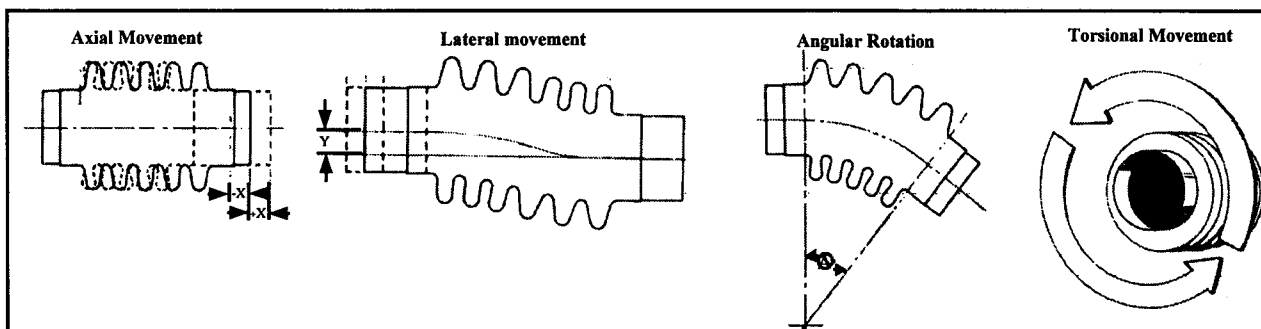
- * Power Generation * Chemical and Petrochemical * Metal Processing
- * Marine * Cryogenics * Aerospace * Nuclear Energy
- * Transportation * Pulp and Paper * Commercial Plumbing and Heating

4] HOW IS THE CORRECT STYLE OF ASSEMBLY DETERMINED?

Choosing the correct style of bellows and fitting arrangement is important to ensure the expansion joint performs well and also to achieve the longest service life in each application.

In general you must determine the following criteria:

- a) Minimum and maximum temperatures expected.
- b) Minimum and maximum pressures expected.
- c) Length of pipe between anchors.
- d) Movements expected, vibration.
- e) Type of media, ie: gas, liquid, granular, corrosive.
- f) Pipe size, overall length restrictions and fittings required each end.



The following data tables should assist you in this process. If you require any assistance do not hesitate to contact a Flextech representative who will be happy to make recommendations.

