

RUBBER BELLOWS



DESCRIPTION

Rubber Bellows (expansion joints) are used to

- Prevent vibration and sound insulation
- Accommodate axial, lateral or angular movements or a combination of these
- Prevent stress due to expansion and contraction
- Compensate misalignment

They are widely used in

- Refineries
- Chemical plants
- Cement plants
- Agro/fertilizers
- Tyre industry
- Nuclear & thermal power stations

DESIGN

The expansion joints are designed, fabricated and tested to provide an accurate and effective solution to the customer's requirements. Rubber bellows are manufactured as per manufacturer's standard. The number, shape and construction of the convolution depend on the movement, pressure, temperature, media and fatigue life.

A combination of experience, calculation and practical testing make a good bellow, which is critical in order to give the level of performance as required.

While designing a bellow following parameters are taken into consideration, Pressure, Temperature, Corrosion resistance, Minimum maintenance, Durability, Reliability, Long life, Economy, Performance and Safety.

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CONSTRUCTION

Tube

The tube is a single piece of extruded leak-proof lining extending from flange to flange. Tubes shall be made of different rubber polymer for different application as per customer's requirement

Reinforcements

Carcass

High strength woven polyester fabric between the tube and cover, this fabric is thoroughly impregnated with a special friction compound to give medium adhesion under pressure, vacuum and stress conditions

Steel

To give maximum strength to bellows while under pressure or vacuum service, solid round steel rings embedded in the carcass. Helical wire also embedded to give additional strength.

Cover

This is the exterior portion of Bellow, and shall be made of abrasion resistant neoprene rubber or as per customer's requirement.

Rubber Moulded Flanges

Flanges are full faced and made an integral part of the joint. No gasket is required for joining the mating flange to the bellow.

Steel retaining rings

Steel retaining rings are made of flat steel and can be of split, beveled or plated as per installation requirement.

TYPES

- No arch
- Single/wide arch
- Multiple arches
- Rectangular

BELLOW MOTION / MOVEMENT

Axial Compression	Reduction of face to face dimension measured along the axis
Axial Elongation	Increase of face to face dimensions measured along the axis
Transverse or Lateral Movement	The movement of the joint perpendicular to the axis
Vibration absorption	The movement of the joint due to vibrations which are effectively intercepted and insulated against transmission to remainder of system
Angular Movement	The displacement of the longitudinal axis of the joint from its initial straight line position (a combination of axial elongation and axial compression)

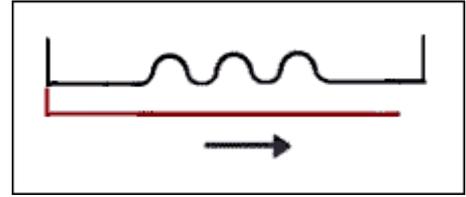
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RUBBER BELLOWS ACCESSORIES

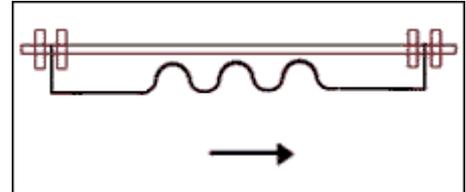
Flow Liner

The flow liner protects the corrugated rubber bellows from dirt and reduced build-up of particulate. The liner also helps to promote laminar flow. Available in materials like carbon steel, copper, stainless steel.



Control Rods/Limit Rods

Control rods provide stability and/or limit movements. This helps prevent over-extension or compression of the joint, which could cause damage.



End Connection

Flanged or clamped.

