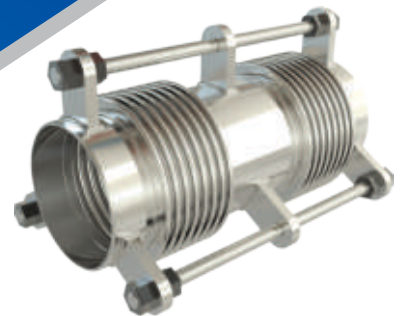
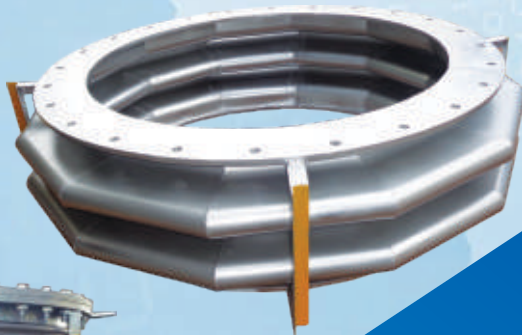
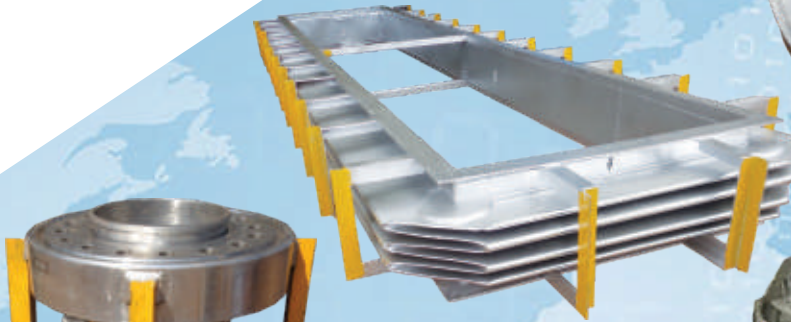


STARFLEX BELLOWS

(An ISO 9001:2015 Certified Company)



Manufacturer of

- ➔ Metallic Expansion Bellows
- ➔ Hoses Pipe Assemblies
- ➔ Rubber Expansion Bellows
- ➔ Pressure Balance Bellows
- ➔ Hinge Bellows
- ➔ Tied Lateral Bellows
- ➔ Gimbal Bellows
- ➔ Rectangular Bellows
- ➔ Single Axial Bellows
- ➔ Fabricated Bellows
- ➔ Fabric/Non Metallic Expansion Bellows
- ➔ Dismantling Expansion Joints
- ➔ Insulation Jackets
- ➔ Vibration Dampers
- ➔ FRP Bellows

Site work / Replacement for all type of Metallic and Non-Metallic Expansion Bellows



About Company

Starflex Bellows is a prestigious manufacturing company from Vadodara (Gujarat) that specializes in producing the finest grade metallic expansion joints and hoses assemblies. The company is recognized as an established manufacturer and supplier of premium quality metallic expansion bellows, metallic expansion joints, fabric expansion joints, metallic flexible hose pipe, metallic hose assembly, and non metallic expansion joints. Additionally, we also serve as a dependable service provider, offering one of a kind fabric expansion joint replacement service, bellow replacement service, liner bellows replacement services, metallic expansion joints replacement service, metallic hose replacement service, on site bellow replacement services, on site bellows maintenance service, pressure balanced bellow replacement service, and rectangular bellow replacement service. We specialize in the design and manufacture of these products in standard as well as buyers' custom requirements using materials like CS, SS, Hastalloy, Inconel, Monel, Incoloy, Aluminum, Copper etc.

Established in the year 2012, Starflex Bellows is capable of supplying client approved products, as we have tie-ups with third party quality inspection companies. The company has been running smoothly under the astute leadership of company owner i.e. Mr. Dilip Singh, who incessant guidance has enabled the company to do better for customers' satisfaction

Our Team : Efficient human resource serves as the driving force behind the successful journey of an organization. By keeping this in mind, we have recruited experienced and diligent team of experts, who assists us in offering high quality products and services. The professionals working with us are selected after a stringent examination process and work in the direction to improve quality productivity in the manufacturing process. Our professionals are highly experienced and knowledgeable in meeting the variegated demands of the clients.

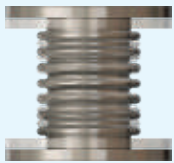
Infrastructure : We are backed with the most appropriate and advanced infrastructure, equipped with all latest machinery and advanced tools, which assists us in offering supreme quality range of products. Our team of experts ensures that each product is manufactured from optimum quality raw material to meet international quality standards. Furthermore, our infrastructural unit is further divided into various specialized departments such as procurement, manufacturing, quality testing, sales & marketing that help us in timely delivery of products.

Client Satisfaction : With firm determination to achieve maximum client satisfaction, we are offering a distinguished range of machines. Our on time delivery, easy payment modes, client-centric approach and ethical business practices are some of the factors that enable us to develop a strong client base across the country. By keeping in mind clients' different requirements, we offer the entire range in various technical specifications. Before the final delivery from our end, we ensure that these products comprise of features like operational fluency, high efficiency and trouble-free functionality.

Quality Assurance : Being a renowned organization, we pay all our attention towards providing optimum quality products. Highly acclaimed for their non-interrupted functionality, long functional life and low maintenance, our offered products are manufactured using fine quality raw material. Moreover, our team of quality inspectors tests the entire range on various parameters ensuring its overall quality. Our quality testing process starts right from the very first stage of procurement of raw material and continues till the final dispatch of products from our end.



Working of Bellow



AXIAL MOVEMENT



LETERAL MOVEMENT



ANGULAR MOVEMENT

1. The material bellows is a flexible seal and is designed to flex when thermal movements occurs in the piping system it is the basic element of expansion joints.

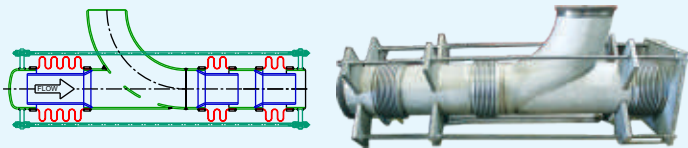
2. Expansion joint may be subjected to axial movement, lateral movement, angular movement any combination of these movements thermal or function (mechanical).

Type of Metallic Expansion Bellows as per Application

1. Nuclear projects, refractories, processing and instrument industries, power plants, steel plant, cement plant, defense, railways and other high tech, precision industries & water line.

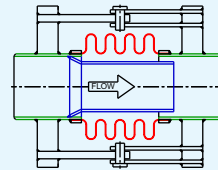
Pressure Balance Bellows

Pressure balanced bellows are used in piping systems where pressure loads are critical, and where complex axial and lateral movements are involved when space is limited. Using a pressurized bellows outside the system to counteract forces generated by bellows inside the systems. Large axial and lateral movements can be absorbed.



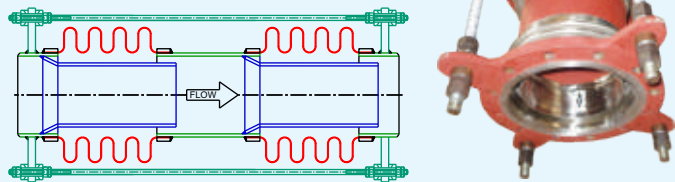
Hinge Bellows

Generally installed in a pair of two are designed for angular movements in one plane only. A hinged mechanism contains the pressure loads and ties back to an integral flange or box restraint lug. Limit stops control the degree of angular movements. These units can be fitted with either pipe ends or flanges, can be supplied with two hinged system also.



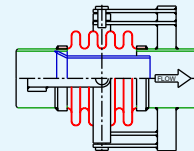
Tied Lateral Bellows

Tied lateral bellows is a simple pressure thrust restraint. It will allow reasonable lateral movement but not axial movement; it can allow axial compression if the pressure thrust is overcome by the piping movement.



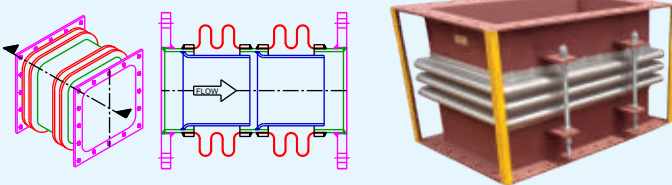
Gimbal Bellows

The gimbal restraint is designed to absorb system pressure thrust and torsion twist while allowing angular movement in any plane. Gimbal assemblies, when used in pairs or with a single hinged unit, have the advantage of absorbing movements in multi-planar piping systems. The gimbal works the same as an automobile's universal drive shaft.



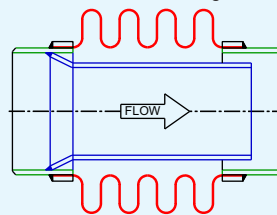
Rectangular Bellows

Rectangular type expansion joints are mostly used in low pressure ducting systems including gas turbine exhaust systems, turbine/condenser connections, boiler reaching, flue gas ducts, regenerators, precipitators. Universal rectangular bellows are used for lateral & angular movement and single axial rectangular bellows for axial movement & small lateral movement.



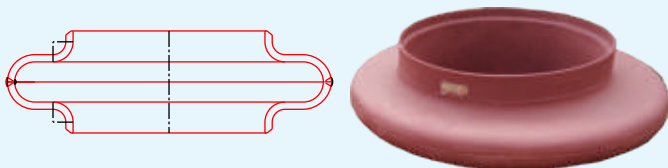
Single Axial Bellows

The simplest type of expansion joint consists of a single bellows element welded to end fittings, normally flange or pipe ends. The single bellows can absorb small amounts of axial, lateral and angular movement.



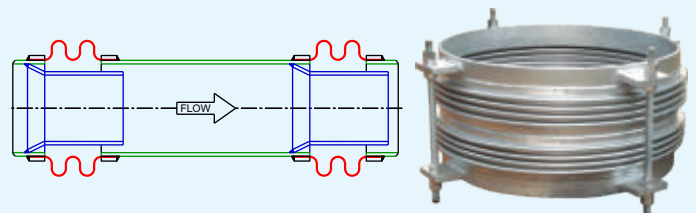
Fabricated Bellows

Heavy wall thickness expansion joints are an integral part of many shell and tube heat exchanger designs where process conditions produce differential expansion between the shell and the tubes. Movements are in an axial direction in either compression or extension conditions.



Universal Bellows

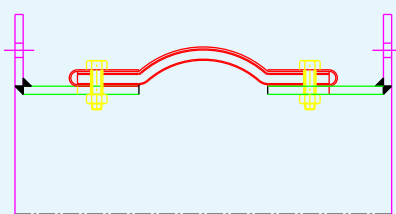
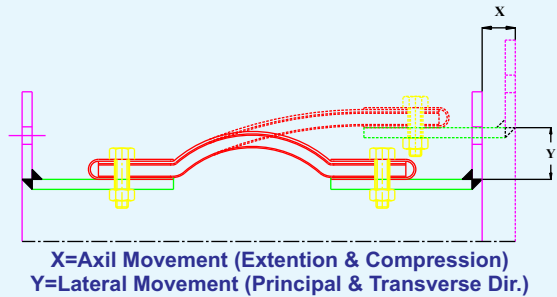
Two bellows elements are joined together by a center pipe and fitted with either pipe ends or flanges. The assembly is capable of both axial and lateral movements but because of center pipe instability, is limited to low pressure application.



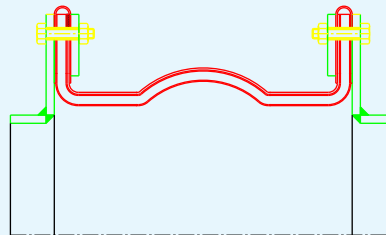
Fabric Bellows

Fabric bellows manufactured by us take up movements in several directions simultaneously, have almost no reactive forces, need little space for installation, are easy to adapt to existing physical conditions and are convenient to transport and install. We have a large range of fabric expansion joints which include one of single layer expansion joints, consisting of specially developed materials, which cover a temperature range of -65°C to $+200^{\circ}\text{C}$. We also manufacture a range of multi-layer expansion joints, insulation bolster covering most operating conditions in air or gas duct systems.

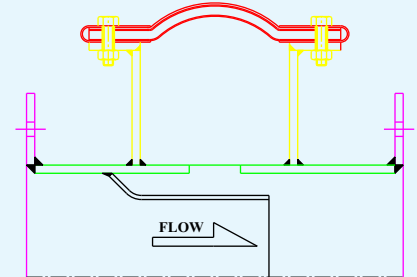
The individual type of expansion joint is chosen on the basis of flow medium, Maximum operation temperature, Flow, Pressure etc. These can be supplied with or without membrane which is impervious and resistant to chemicals. Similarly, The type of outer cover can also be varied depending upon the operation and customer requirement. fabric expansion joints with fibrous insulation and/or refractory lining are also a part of our manufacturing. apart from these we have a range of fabric expansion joint products developed exclusively for the power plants, Steel plants, Ships, cement plant, Defense, Railways and other high tech, precision industries. the special feature of this series is its outer cover, Which provides mechanical protection to the fabric expansion joints.



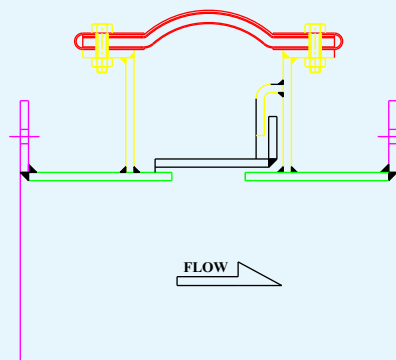
Angle Flange Sleeve



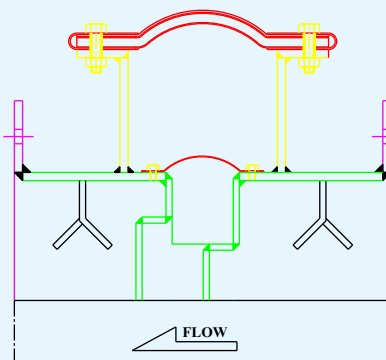
Weld End Type



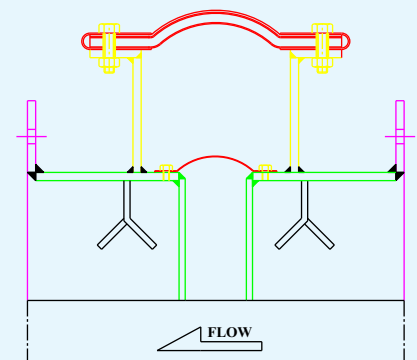
High Neck Loesche Sleeve
With DT & Bolster



High Neck Floting Sleeve



High Neck CB Sleeve with DT
& Bolster Refractory



High Neck CB Sleeve with DT
& Bolster Refractory

FRP - Expansion - Joints



FRP Bellows made of Fibre Reinforced Polymer or FRP are poised as the modern day material owing to its superiority in terms of its adjustable characteristics (based on resin selection) such as high strength-to-weight ratio, commendable thermo - mechanical, and corrosion resistant properties. One can easily comprehend the usefulness of this material from these physical properties. Treadwell and many markets recognise the immense potential in making durable structural systems.

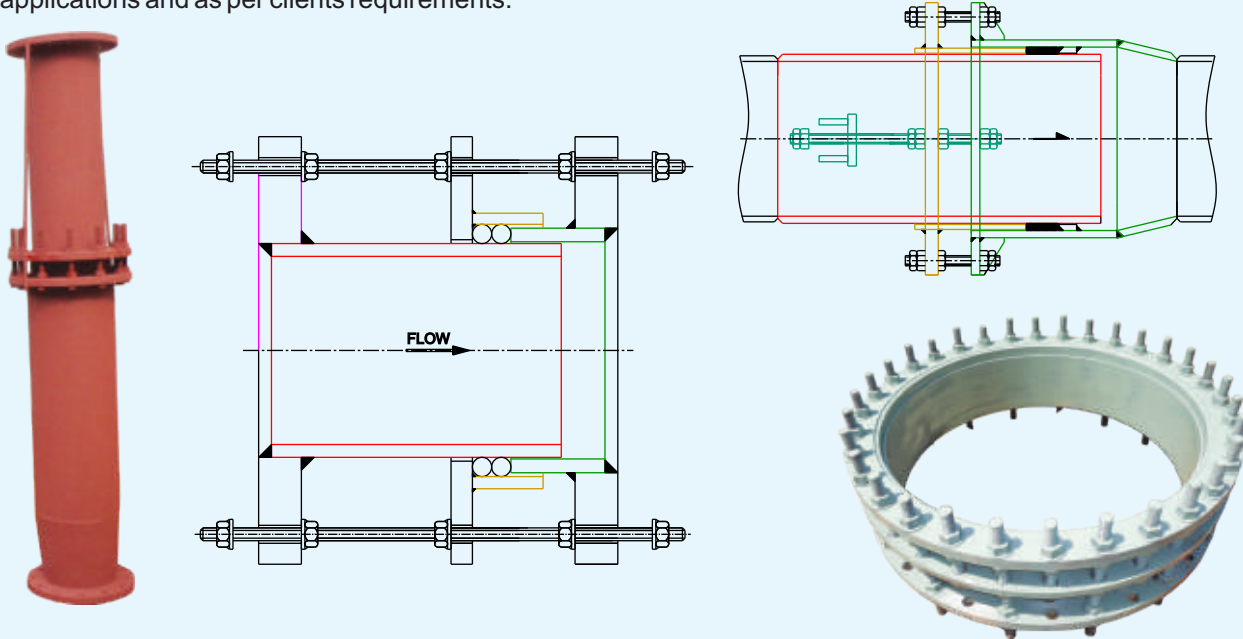
Advantage

- FRP Bellows are light in weight and helps in cutting expenses on labour and installation. FRP increases construction speed that further reduces environmental impacts.
- FRP Bellows are not just durable; they also have high strength as compared to traditional materials. Users can expect less material usage to attain better or similar performance compared to conventional materials which result in lessened resource use as well as waste production.
- FRP Bellows has great potential in further maximising the longevity of existing as well as new and structures that can resist the harsh effects of weathering, degradation, and aging in severe environments.
- FRP Bellows are extremely resistant to corrosion and rot. Besides these, they present a longer and yet more efficient service life. FRP Bellows hardly require an energy-intensive replacement nor much maintenance.

Dismantling Joints

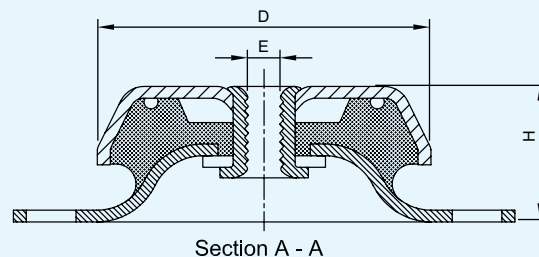
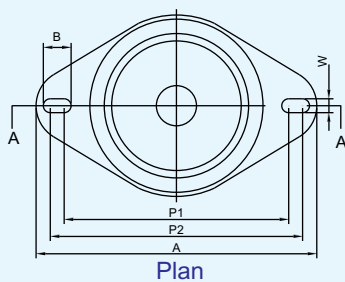
Dismantling joints find major application in water, sewage and other liquid medium. The dismantling joint can be supplied which are suitable to be used with flanged pipe.

We can offer dismantling joints that can be used with valve, pumps and other application design to perfection and easy to dismantle. We can offer dismantling joints from 50 mm nb to 2500 mm nb with varying thickness to suit various applications and as per clients requirements.



Vibration Damper

Also we manufacture Vibration dampers which absorb Vibration as well as Shocks produced by Electrical or Mechanical Machines / Equipments / Devices like as transformers, Electric Motors, Mechanical Pumps, Generators, Centrifugal Pumps, Blowers, Combustion Engines and many more



| Model | D mm | H mm | P1 mm | P2 mm | W mm | B mm | A mm | E mm | Load Kgs/Pc. |
|-----------|---------|---------|----------|----------|---------|---------|---------|---------|-----------------|
| SFB-60-1 | 65 | 33 | 77.0 | 91 | 9 | 16 | 110 | M10 | 30-75 |
| SFB-60-2 | 65 | 33 | 77.0 | 91 | 9 | 16 | 110 | M10 | 80-120 |
| SFB-60-3 | 65 | 33 | 77.0 | 91 | 9 | 16 | 110 | M10 | 100-140 |
| SFB-85-1 | 85 | 37 | 105.5 | 116 | 10 | 15 | 135 | M12 | 100-200 |
| SFB-85-2 | 85 | 37 | 105.5 | 116 | 10 | 15 | 135 | M12 | 160-350 |
| SFB-85-3 | 85 | 37 | 105.5 | 116 | 10 | 15 | 135 | M12 | 240-450 |
| SFB-90-1 | 90 | 36 | 105.5 | 116 | 10 | 15 | 135 | M12 | 100-200 |
| SFB-90-2 | 90 | 35 | 105.5 | 116 | 10 | 15 | 135 | M12 | 160-350 |
| SFB-90-3 | 90 | 36 | 105.5 | 116 | 10 | 15 | 135 | M12 | 240-450 |
| SFB-105-1 | 111 | 42 | 135.0 | 149 | 14 | 21 | 175 | M16 | 200-360 |
| SFB-105-2 | 111 | 42 | 135.0 | 149 | 14 | 21 | 175 | M16 | 300-500 |
| SFB-105-3 | 111 | 42 | 135.0 | 149 | 14 | 21 | 175 | M16 | 420-700 |
| SFB-120-1 | 121 | 45 | 156.0 | 164 | 14 | 21 | 186 | M20 | 250-400 |
| SFB-120-2 | 121 | 45 | 156.0 | 164 | 14 | 21 | 186 | M20 | 400-700 |
| SFB-120-3 | 121 | 45 | 156.0 | 164 | 14 | 21 | 186 | M20 | 500-900 |
| SFB-150-1 | 151 | 53 | 176.5 | 188 | 14 | 20 | 218 | M16 | 600-900 |
| SFB-150-2 | 151 | 53 | 176.5 | 188 | 14 | 20 | 218 | M16 | 900-1300 |
| SFB-150-3 | 151 | 53 | 176.5 | 188 | 14 | 20 | 218 | M16 | 1200-2000 |

Insulation Jacket



Description

Barrel Jackets can be used on any brand of Injection Molding Machine. Their primary use lies in Saving Money by insulating the barrel from the Heat Loss. This in turn requires the Heater Bands to cycle less and lower electricity consumption.

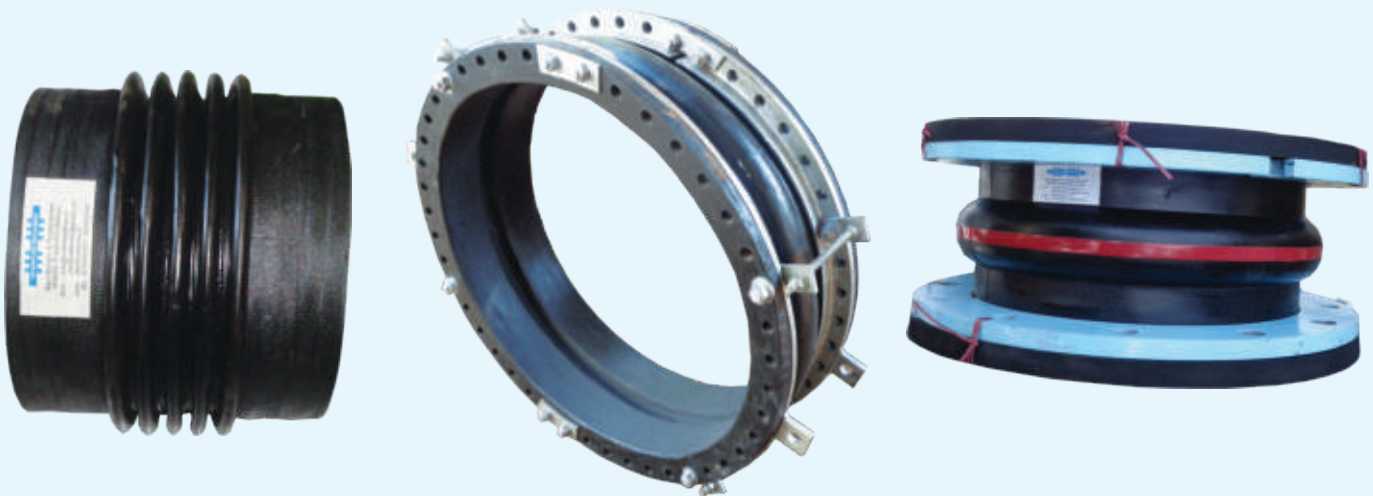
By using these insulation jackets, you establish a thermal barrier that impedes temperature dissipation released to its surrounding which permits us to keep the heat generated where it should be, inside the barrel of the machinery.

Insulating Material – High Density Ceramic Fiber Wool, resistant to high temperature while maintaining its original state, durability and flexibility throughout its useful life. Resists temperature upto 125° degree C

Benefits :

- ▶ Energy saving of upto 30-40%
- ▶ Increases Heater Life
- ▶ Increases safety when working on or around the machines
- ▶ Easy Fixing and Removal
- ▶ Short payoff period
- ▶ Maximum personal protection
- ▶ Provides good thermal as well as electrical insulation

Rubber Expansion bellows



This type of bellows protects equipment's and piping from damage caused by vibration and thermal movements and accommodate equipment misalignments.

It provides superior flexibility, movement absorption, and cycle life, while resisting chemical attack and abrasion.

Useful over a wide range of temperatures & pressures, making them the preferred expansion joint for most liquid and slurry applications, though gases & solids are also frequently conveyed by rubber expansion joints.

Testing Facilities

We Provides following testing facilities

- ▶ DP Test
- ▶ Pneumatic Test
- ▶ Hydro Test
- ▶ Vacuum Test
- ▶ Radiography Test
- ▶ Helium Test
- ▶ Spring Rate Test
- ▶ Cycle Life Test
- ▶ Deflection Test
- ▶ UT Test
- ▶ MPT Test etc....

and also as per client requirement.



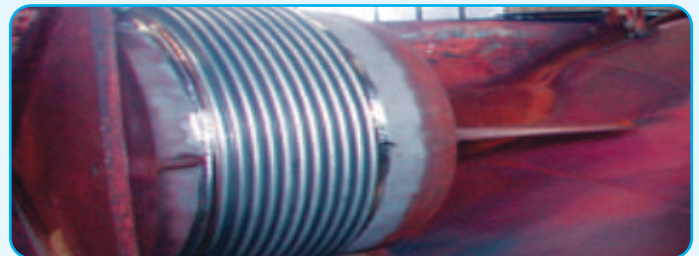
Hydro Test



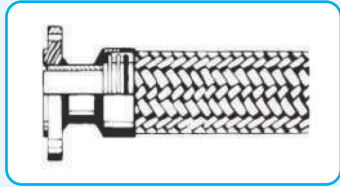
DP Test

Onsite Services

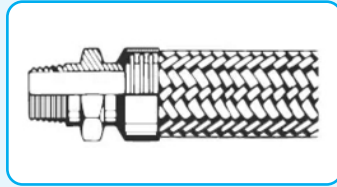
- ▶ Support and guidance for Installation of Expansion Joint after Sales
- ▶ We have all necessary tools / tackles, machinery and manpower which can be shifted at site for maintenance and replacement jobs.
- ▶ Repairing and Replacement of Metal Bellow Element and Fabric / Bolster At site in order to avoid production loss and minimize shut down time.
- ▶ We have adequate man power and expertise for onsite Erection, Supervision and commissioning.
- ▶ Capacity and know how to handle erection and replacement of all type of expansion joint i.e. Single, Double, Universal, Hinged, Gimbal, Pressure Balanced Expansion Joints & Fabric Expansion Joints.
- ▶ Ability to Manufacturer / Handle even large size bellow expansion joints with our Equipments / Machinery at site.



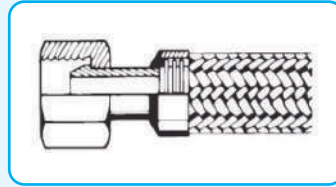
METALLIC EXPANSION HOSES



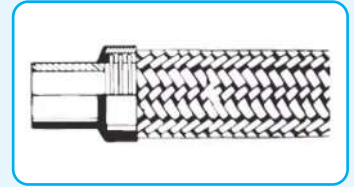
FIXED FLANGE ON PIPE END



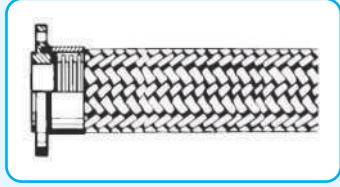
FIXED MALE CONNECTOR



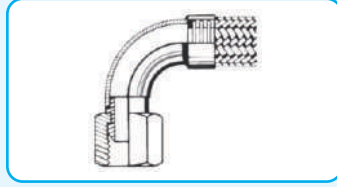
SWIVEL FEMALE UNION



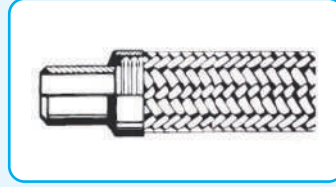
STAND PIPE



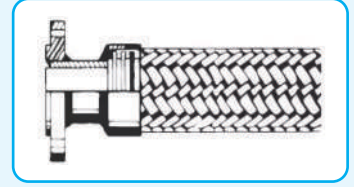
FIXED FLANGE



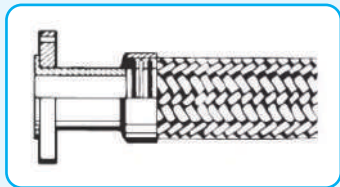
FEMALE UNION SWEPT ELBOW 90°



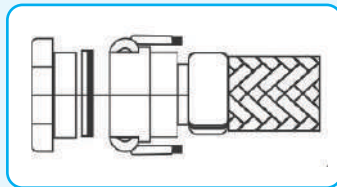
PIPE END



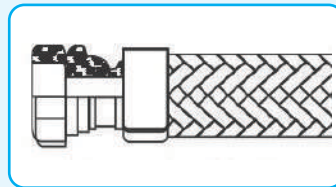
FIXED FLANGE ON PIPE END



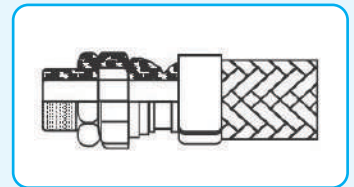
SWIVEL FLANGE



CAM ACTION COUPLING



FULL MALE UNION SWIVEL MALE



FEMALE UNION NUT/NIPPLE

TECHNICAL DATA (TABLE - 1)

| SIZE | | Max Working Pressure Kg/cm ² | Test Pressure Kg/cm ² | SINGLE BRAID | | Dynamic Bend Pressure mm | Max Working Kg/cm ² | Test Pressure Kg/cm ² | DOUBLE BRAID | | Dynamic Bend Radius mm |
|-----------------|------|---|----------------------------------|-----------------------------------|-----------------------|--------------------------|--------------------------------|----------------------------------|-----------------------|-----------------------|------------------------|
| Nominal Size DN | Inch | | | Burst Pressure Kg/cm ² | Static Bend Radius mm | | | | Burst Pressure Radius | Static Bend Radius mm | |
| 1/4 | 6 | 100 | 150 | 400 | 25 | 100 | 160 | 240 | 640 | 25 | 100 |
| 3/8 | 10 | 90 | 135 | 360 | 40 | 150 | 144 | 216 | 576 | 40 | 150 |
| 1/2 | 12 | 80 | 120 | 320 | 50 | 200 | 128 | 192 | 512 | 50 | 200 |
| 5/8 | 16 | 70 | 105 | 280 | 50 | 200 | 112 | 168 | 448 | 50 | 200 |
| 3/4 | 20 | 64 | 96 | 256 | 70 | 200 | 102 | 153 | 408 | 70 | 200 |
| 1 | 25 | 50 | 75 | 200 | 90 | 200 | 80 | 120 | 320 | 900 | 200 |
| 1 1/4 | 32 | 40 | 60 | 160 | 110 | 250 | 64 | 96 | 256 | 110 | 250 |
| 1 1/2 | 40 | 32 | 48 | 128 | 130 | 250 | 48 | 72 | 192 | 130 | 250 |
| 2 | 50 | 28 | 42 | 112 | 175 | 350 | 44 | 66 | 176 | 175 | 350 |
| 2 1/2 | 265 | 24 | 36 | 96 | 200 | 410 | 38 | 57 | 152 | 200 | 410 |
| 3 | 80 | 18 | 27 | 72 | 205 | 450 | 28 | 42 | 112 | 205 | 450 |
| 4 | 100 | 16 | 24 | 64 | 230 | 560 | 26 | 39 | 104 | 230 | 560 |
| 5 | 125 | 12 | 18 | 48 | 280 | 660 | 20 | 30 | 80 | 280 | 660 |
| 6 | 150 | 10 | 15 | 40 | 320 | 815 | 16 | 24 | 64 | 320 | 815 |
| 8 | 200 | 8 | 12 | 32 | 435 | 1015 | 12 | 18 | 48 | 435 | 1015 |

- ◆ 250mm nb & 300mm nb hoses also available
- ◆ We can also supply the above hoses for higher pressure



Regd. Off. : 14-Sanskar Tenament-2, Opp. Voltamp Transformers, Makarpura, Maneja, Vadodara-390 13. Gujarat, India.

Mobile : +91-8153054857 / 9825437991 / 9023506477

E-mail : starflexbellows@gmail.com / info@starflexbellows.in

Website : www.starflexbellows.in / www.starflexbellows.com

Works 1 :

199, G.I.D.C. Industrial Estate,
Makarpura, Vadodara-390 010.
Gujarat, India.

Works 2 :

Aatmiya Brookfieldz, Industrial Park,
Plot No. : 73 & 80, N.H. No. 8,
Beside Suzlon Electricals, Ltd.
Vadodara-391243. Gujarat, India.