

Spherical moulded type expansion joints / flexible connectors with zinc electroplated floating steel flanges for easy alignment long radius arch bellow design permits substantial movements in all planes.

## Application

Installation of REJFF is recommended as expansion joints within the piping system and at connection points of piping suction discharge.

- Compensate for axial transverse and angular pipe movements thereby protecting the system from stresses and damage due to thermal expansion and contraction of piping, minor pipe misalignment and hydraulic surge effects.
- Eliminate need for pipe expansion loops that are expensive and require considerable space.
- Significantly reduce noise and vibration transmitted in the system through pipe walls.
- Allow vibration isolators to function properly, by providing flexibility at equipment connection.
- Cushion water hammer by expanding volumetrically, thus protecting against sudden startup / surge forces or shocks.

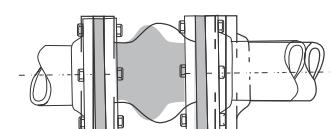
## Typical examples of usage include

- At inlet and outlet of HVAC equipment - Pumps, AHUs, Chillers, Cooling Tower, Condensers.
- In HVAC chilled / hot water piping - risers, circulation lines, across building expansion joints.
- Process Piping, Power Plants, Water Distribution etc.

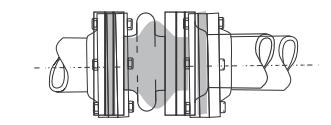
## Features

- The bellows are moulded under high pressure and impregnated with multiply nylon tire cord and spring-steel wire reinforcement. This makes them suitable for both positive pressure and vacuum applications.
- Long radius arch bellow design provides excellent axial, transverse and angular deflection capability.
- Spherical shape of bellow ensures smooth flow of fluid, resulting in negligible pressure drop across the joint.
- Substantial steel-reinforced moulded beads at each end of bellow eliminate the need for gaskets.
- Captive floating flanges facilitate alignment with pipe during installation. These are grooved in order to accommodate the bellow end-beads.
- The floating flanges are epoxy powder coated for corrosion resistance.
- Each unit is individually tested at 150% of rated maximum working pressure before leaving works.

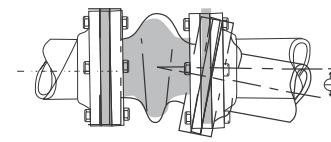
- Due to policy of continual improvement, the specifications are subject to change without prior notice.
- Measurements are subject to 5% tolerance.
- To achieve good results do not over load fitting more than designed parameters as per drawing / catalogue.
- Compliance - As per FSA Standards USA.



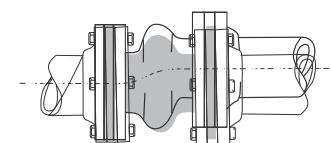
AXIAL  
extension



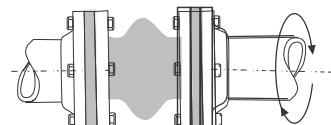
AXIAL  
compression



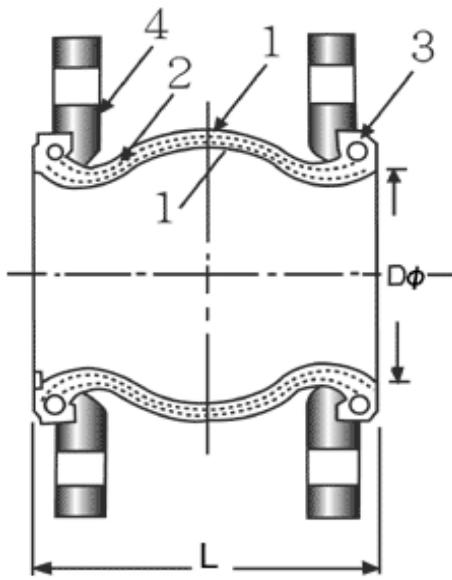
ANGULAR  
bending of the centerline



LATERAL  
shear or perpendicular to centerline



TORSIONAL  
rotation about the centerline, twist



## Standard Structure

Item No.	Part	Material
1	Body	CR (Neoprene)/EPDM or NBR
2	Reinforce	Nylon Cord Fabric
3	Wire	Hard Steel Wire
4	Floating Flange	Carbon Steel Zinc Electroplated/Powder Coated

\* Other Polymers available on Request.

## Temperature/Pressure Ratings

Maximum temperature Vacuum rating	115°C (EPDM/Neoprene or NBR) full vacuum (26"hg)
Working pressure depends on temperature and at higher temperature, the pressure ratings are reduced slightly	

## PN - 10

Nominal Size (I.D.) INS. MM	Length Nominal f.f. MM	Flange Dia Nominal MM	Axial Compression mm	Movements Elongation mm	Lateral mm	Angular Degrees	Expansion Joint Style	BS 10 Table D			Operating Conditions		
								Hole Dia MM	No. of Holes NOS.	B.C.D. MM	Pressure Test Design Bar	Test Design Bar	
1	25	150	114	13	12	13	15°	REJFF	15	4	83	10 Bar	15 Bar
1.25	32	150	121	13	12	13	15°	REJFF	15	4	87	10 Bar	15 Bar
1.5	40	150	133	13	12	13	15°	REJFF	15	4	98	10 Bar	15 Bar
2	50	150	152	13	12	13	15°	REJFF	18	4	114	10 Bar	15 Bar
2.5	65	150	165	13	12	13	15°	REJFF	18	4	127	10 Bar	15 Bar
3	80	150	184	13	12	13	15°	REJFF	18	4	146	10 Bar	15 Bar
4	100	150	215	16	12	16	15°	REJFF	18	4	178	10 Bar	15 Bar
5	125	150	254	16	12	16	15°	REJFF	18	8	210	10 Bar	15 Bar
6	150	150	279	16	12	16	15°	REJFF	18	8	235	10 Bar	15 Bar
8	200	150	337	16	12	16	15°	REJFF	18	8	292	10 Bar	15 Bar
10	250	200	406	16	15	16	15°	REJFF	22	8	356	10 Bar	15 Bar
12	300	200	457	16	15	16	15°	REJFF	22	12	406	10 Bar	15 Bar
14	350	200	527	16	15	16	15°	REJFF	25	12	470	10 Bar	15 Bar

## Other Available

- **Pressure Rating** - REJFF rated for higher pressures can be supplied. Specify required rating.
- **Bellow Material** - Neoprene/EPDM (standard), (for temperature rating up to 115°C), NBR, Chlorobutyl Hypalon available on request.
- **Flange Drilling** - BS 10 Table-D/ANSI 125/150# (standard); any other standard such ANSI, JIS (specify by name).

**Compliance** - ASTM F 1123-87 (2004). Testing & Tolerances as per Fluid Sealing Association Standard USA.

**Other Flange Drilling Available :** BS 10 Table D/E/F, ANSI B16.5 Class 125/150, BS 4504/DIN 2501/BS 4504 PN 16 or as per customer requirement.

## PN - 16

Nominal Size (I.D.) INS. MM	Length Nominal f.f. MM	Flange Dia Nominal MM	Axial Compression mm	Movements			Expansion Joint Style	ANSI Hole Dia MM	125/150# LBS No. of Holes NOS.	B.C.D. (Approx) MM	Operating Conditions	
				Elongation mm	Lateral mm	Angular Degrees					Pressure Design	Test Pressure
1 25	150	108	13	12	13	15°	REJFF	15	4	79	16 Bar	24 Bar
1.25 32	150	118	13	12	13	15°	REJFF	13	4	89	16 Bar	24 Bar
1.5 40	150	127	13	12	13	15°	REJFF	15	4	98	16 Bar	24 Bar
2 50	150	152	13	12	13	15°	REJFF	19	4	121	16 Bar	24 Bar
2.5 65	150	178	13	12	13	15°	REJFF	19	4	140	16 Bar	24 Bar
3 80	150	191	13	12	13	15°	REJFF	19	4	152	16 Bar	24 Bar
4 100	150	229	16	12	16	15°	REJFF	19	8	191	16 Bar	24 Bar
5 125	150	254	16	12	16	15°	REJFF	23	8	216	16 Bar	24 Bar
6 150	150	279	16	12	16	15°	REJFF	23	8	241	16 Bar	24 Bar
8 200	150	343	16	12	16	15°	REJFF	23	8	298	16 Bar	24 Bar
10 250	200	406	16	15	16	15°	REJFF	25	12	362	16 Bar	24 Bar
12 300	200	483	16	15	16	15°	REJFF	25	12	432	16 Bar	24 Bar
14 350	200	533	16	15	16	15°	REJFF	28	12	476	16 Bar	24 Bar

## PN - 20

Nominal Size (I.D.) INS. MM	Length Nominal f.f. MM	Flange Dia Nominal MM	Axial Compression mm	Movements			Expansion Joint Style	ANSI Hole Dia MM	125/150# LBS No. of Holes NOS.	B.C.D. (Approx) MM	Operating Conditions	
				Elongation mm	Lateral mm	Angular Degrees					Pressure Design	Test Pressure
1 25	150	108	13	12	13	15°	REJFF	15	4	79	20 Bar	30 Bar
1.25 32	150	118	13	12	13	15°	REJFF	13	4	89	20 Bar	30 Bar
1.5 40	150	127	13	12	13	15°	REJFF	15	4	98	20 Bar	30 Bar
2 50	150	152	13	12	13	15°	REJFF	19	4	121	20 Bar	30 Bar
2.5 65	150	178	13	12	13	15°	REJFF	19	4	140	20 Bar	30 Bar
3 80	150	191	13	12	13	15°	REJFF	19	4	152	20 Bar	30 Bar
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12 300	200	483	16	15	16	15°	REJFF	25	12	432	20 Bar	30 Bar
14 350	200	533	16	15	16	15°	REJFF	28	12	476	20 Bar	30 Bar

## Temperature/Pressure Ratings

Maximum temperature	115°C (EPDM/Neoprene or NBR)
Vacuum rating	

Working pressure depends on temperature and at higher temperature, the pressure ratings are reduced slightly

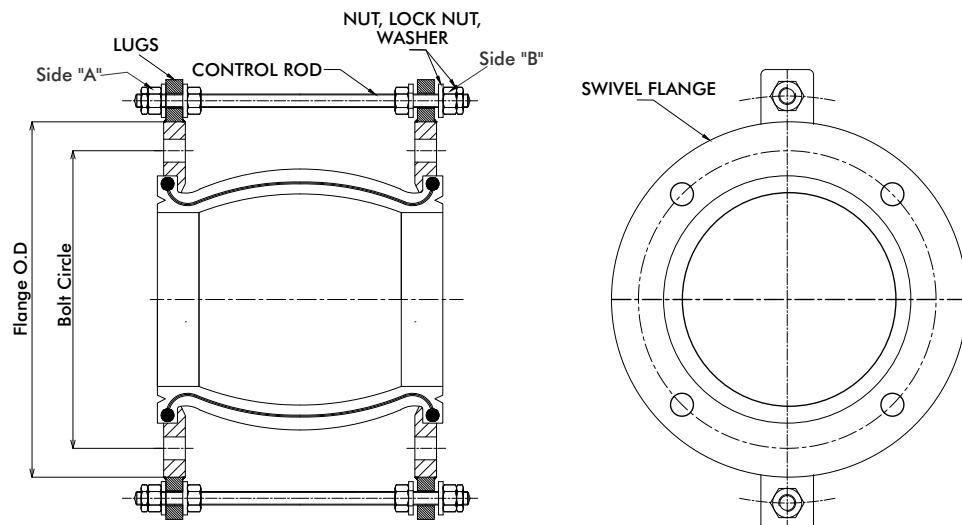
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- **Bellow Material** - Neoprene/EPDM (standard), (for temperature rating up to 115°C), NBR, Chlorobutyl Hypalon available on request.

**Compliance** - ASTM F 1123-87 (2004). Testing & Tolerances as per Fluid Sealing Association Standard USA.

### Why Control Units are Required

- Lack of Proper pipe anchors - Initial surge of pump at an elbow may cause hyper-extension.
- Lack of proper pipe supports - Easyflex expansion joints and vibration dampeners are not designed to support the weight of the piping system.
- Lack of proper alignment guides - Control rods will prevent lateral movement beyond design specifications.
- Wide fluctuations of temperature - The changing from hot to cold media may cause excessive expansion or contraction even when the pipe is properly anchored.
- Testing at elevated pressures - The use of anchors and/or control rods is required to offset the thrust.



### Pre-Installation Check List

- Compare the requirements of the system to ensure the proper number of control rods have been specified. (Minimum of two (2) required.)
- Check Control Units to be sure all parts are included. The unit consists of minimum four (4) lugs, two (2) control rods with six (6) nuts and six (6) metal / rubber washers. For bigger sizes and higher pressures the quantities might increase. Contact our Engg. Dept. or refer drawing.

### Installation

- Bolt the control unit plates to the outer side of the end flanges at the same time while the bolt is being installed through the end flange and the control unit / lugs. They are to be equally spaced around the circumference of the flange.
- Install the control rod through the top hole in each lugs after placing rubber/metal washer on either side of the lugs. (See illustration above.)
- Tighten the first two nuts ("A" location) in the direction of flow tightly. Check the recommended movement for the particular size from our catalogue and keep the second set of nuts ("B" location) loose accordingly. The second check nut should be tightened keeping space/gap for movement capability.

#### Note :

If excessive compression exists, optional compression sleeves should be specified. The compression sleeves will limit the compression to the maximum allowable movement.

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- Measurements are subject to 5% tolerance.
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