BELLOWS

Product Information

RUBBER BELLOWS

Rubber bellows - Compensators - Expansion Joints

Eliminate	Pipe Stress & Water Hammer
Reduce	Pump & Fluid Borne Noise
Isolate	Vibration & Start Up Deflections
Absorb	Pipe Work Expansion & Contraction
Compensate	Small Misalignment of Pipes

EPDM	20°C to +120°C	High temperature capability and ozone resistance. Weak acids, alkalis, esters and ketones
NITRILE	40°C to + 90°C	Mineral and vegetable oils, butane, propane, acetylene, weak acids, demineraliseed water and natural gas.
NEOPRENE	40°C to + 90°C	Light oil contamination. Good ozone and sunlight resistance.
NATURAL	20°C to + 80°C	Excellent abrasion resistance. Suitable for use with acid and alkalis
BUTYL	40°C to +120°C	Good chemical resistance and high temperature capability.
FOOD GRADES		Available in natural, Neoprene and Nitrile elastomers

Control Rods - Tie Bars

The pressure applied to a pipeline bellows generates a force which tends to extend the bellows - the pressure reaction force. If this force is not controlled by the main anchors securing the pipeline, it must be contained by control rods or tie bars.
Tie bars are required when pressures exceed :

Vacuum Rings

Must be fitted inside the bellows convolutions when the pressure is below 400mm.

NB	P Bar
25-100mm	10
125-250mm	9
300-350mm	6
400-600mm	2

INSTALLATION GUIDELINES

Pipe Supports and Anchors

Only one bellows should be installed between two anchors and the anchors must be strong enough to take the force generated by pressure in an untied bellows.
Pipe guides must be used either side of the bellows. The first guide should be as close as possible to the bellows and the second spaced at approximately 14 pipe diameters.

Bolting

Flange bolts must be inserted with the bolt heads adjacent to the bellows arch.
Bolts should be tightened evenly around the flange to the following torque values:

Size NB	Torque Rating
-80mm	6 KPM
+80mm	8-10KPM

Alignment

Ensure that the pipe work is aligned and that the gap in which the bellows is to fit does not exceed the rated movement. Do not apply torsion to the bellows.

Flanges

Mating flanges must be clean and free from burrs or irregularities. They must be flat in the seating area, slip-on flanges require to be welded flush with the pipe end.

Storage

Bellows should be stored in cool dry conditions away from direct sunlight.

SINGLE SPHERE BELLOWS with TIE BARS

Swivel Flanges Galvanized
Flange Ratings BS10 Table E or F
BS4504, PN10 an PN16
ANSI B16.5 150lbs
Pressure Ratings : 25 - 200 NB 16 Bar @ 100°C
250 - 300 NB 10 Bar @ 100°C

Product Group Code	Nominal Bore Size		Available Lengths F/F	Axial Comp/Extn		Lateral Deflection	Angle of Deflection
Group P030	Ins	mm	mm	mm	mm	mm	Deg
10002032	1.1/4"	32	125/130/150	12.5	10	12.5	15
10002040	1.1/2	40	125/130/150	12.5	10	12.5	15
10002050	2	50	125/130/150	12.5	10	12.5	15
10002080	3	80	125/130/150	12.5	10	12.5	15
10002100	4	100	125/130/150	16	10	12.5	15
10002125	5	125	125/130/150	16	10	12.5	15
10002150	6	150	125/130/150	16	10	12.5	15
10002200	8	200	125/130/150	16	10	12.5	15

SINGLE SPHERE BELLOWS
Type: BB Untied

Chlorobutyl rubber membrane with untied flanges suitable for use with hot water and chilled water at 4 Bar working pressure with a maximum temperature of up to 105 Degrees.

Product Group Code Group P031	Nominal Bore Size mm	Available Lengths F/F mm	Movement Comp mm
10054015	15	125	25
10054020	20	135	25
10054025	25	150	25
10054032	32	165	25
10054040	42	190	25
10054050	50	210	25

TYPE AU-BSP UNION ENDS

Construction : Bellows Membrane - AISI 321 Stainless Steel
BSP Union Ends - Malleable iron, gunmetal or stainless steel
Performance : Pressure Max Working 6 Bar. Test Pressure 9 Bar
Temperature 150°C
Installation : Take to avoid applying torsion on the bellows. Ensure pipework is adequately anchored and guided. All AU are supplied pre-extended, and do not require cold pull.

Product Group Code Group P031	Nominal Bore Size mm	Available Lengths F/F mm	Movement Comp mm
10025032	32	95	8
10025040	40	95	8
10025050	50	105	8
10025065	65	115	12
10025080	80	130	12
10025100	100	135	18
10025125	125	170	18

INGLE SPHERE BELLOWS

Swivel Flanges Galvanized
Flange Ratings BS10 Table E or F
BS4504, PN10 an PN16
ANSI B16.5 150lbs
Pressure Ratings : 25 - 200 NB 16 Bar @ 100°C
250 - 300 NB 10 Bar @ 100°C

Product Group Code	Nominal Bore Size		Available Lengths F/F	Axial Comp/Extn		Lateral Deflection	Angle of Deflection
Group P030	Ins	mm	mm	mm	mm	mm	Deg
10000032	1.1/4"	32	125/130/150	12.5	10	12.5	15
10000040	1.1/2	40	125/130/150	12.5	10	12.5	15
10000050	2	50	125/130/150	12.5	10	12.5	15
10000065	2.1/2	65	125/130/150	12.5	10	12.5	15
10000080	3	80	125/130/150	12.5	10	12.5	15
10000100	4	100	125/130/150	16	10	12.5	15
10000125	5	125	125/130/150	16	10	12.5	15
10000150	6	150	125/130/150	16	10	12.5	15
10000200	8	200	125/130/150	16	10	12.5	15

SINGLE SPHERE BELLOWS with TIE BARS
Type: BB Untied

Chlorobutyl rubber membrane with untied flanges suitable for use with hot water and chilled water at 4 Bar working pressure with a maximum temperature of up to 105 Degrees.

Product Group Code	Nominal Bore Size		Available Lengths F/F	Axial Comp/Extn		Lateral Deflection	Angle of Deflection
Group P030	Ins	mm	mm	mm	mm	mm	Deg
10025032	1.1/4"	32	95	8	4	8	15
10025040	1.1/2	40	95	8	4	8	15
10025050	2	50	105	8	4	8	15
10025065	2.1/2	65	115	12	6	8	15
10025080	3	80	130	12	6	10	15
10025100	4	100	135	18	10	10	15
10025125	5	125	170	18	10	12	15
10025150	6	150	180	18	10	12	15

TYPE AU-CPR SPIGOT ENDS

Construction : Bellows Membrane - AISI 321 Stainless Steel
Copper Spigot Ends Table X Copper Ends
Performance : Pressure Max Working 6 Bar. Test Pressure 9 Bar
Temperature 150°C
Installation : Take to avoid applying torsion on the bellows. Ensure pipework is adequately anchored and guided. All AU are supplied pre-extended, and do not require cold pull.