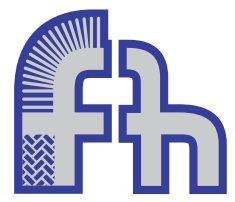


***FLEX-HOSE CO., INC.***



# FLEXZORBER



**THE MOTION ABZORBER**

# FLEXZORBER Rubber Connectors and Expansion Joints by *FLEX-HOSE CO., INC.* fh

## Features and Benefits

The FLEXZORBER styles NNS, NND, and NNDFU expansion joints are Flex-Hose Co.'s cost-effective solutions to reducing pipeline stress.

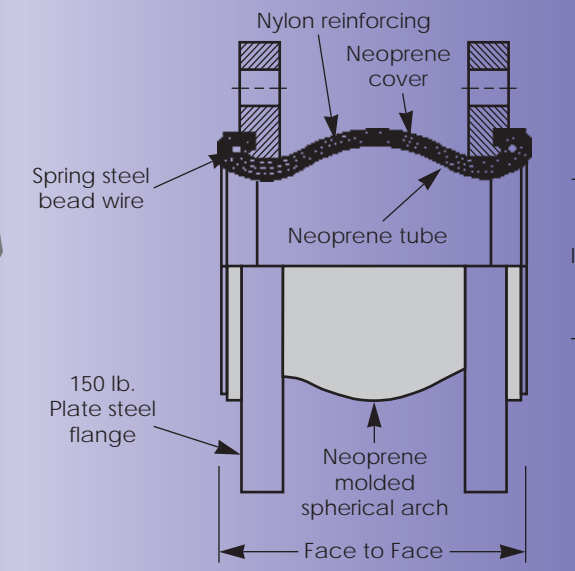
Flexzorber expansion joints are precision molded under high pressure to ensure joint integrity. Flexzorber's spherical arch design is ideal for solving motion problems in a piping system because the forces to deflect or move the joint are inherently low since the shape allows pressure to be exerted uniformly in all directions.

The ease of movement exhibited by Flexzorber joints provides an excellent choice for use with plastic piping systems. The molded spherical flowing arch is referred to as self-cleaning and is thus suited for slurries or applications with potential sediment build up or turbulence. The nylon tire cord reinforcement is bonded within the elastomer to avoid exposure to atmosphere or media. The elastomeric cover being neoprene provides excellent resistance to oils, sunlight, ozone, and heat aging. Flexzorber spherical connectors are manufactured with a neoprene tube which provides resistance to a wide variety of media including glycol applications.

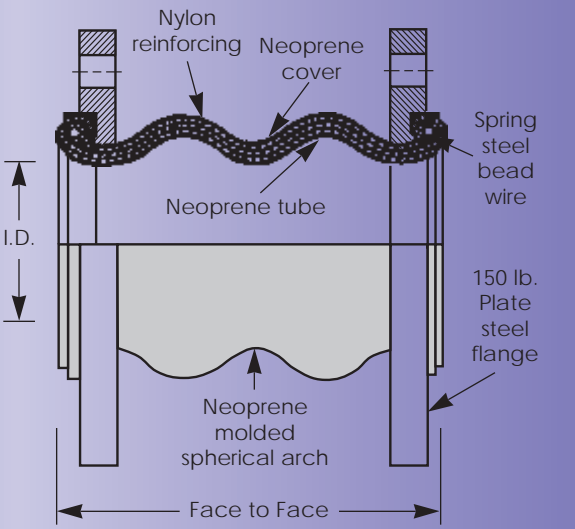
Flexzorber spherical expansion joints have ANSI class 150 lb. steel floating flanges or female unions that are zinc-coated for corrosion protection and also allows simple installation. The neoprene flange face eliminates the need for a gasket.



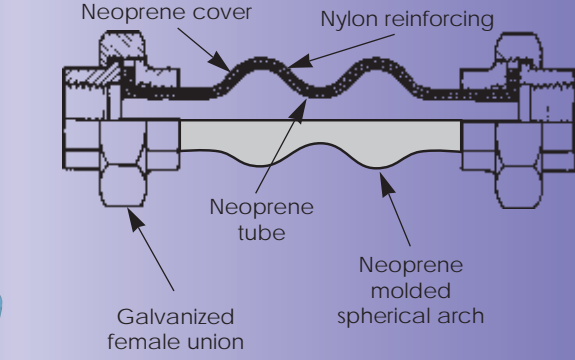
FLEXZORBER NNS Single Sphere



FLEXZORBER NND Double Sphere



FLEXZORBER NNDFU



## FLEXZORBER NNS Single Sphere Flanged

I.D. (IN)	LENGTH (IN)	PRESSURE (PSI)		VAC RATING (in Hg.)	MOVEMENT CAPABILITY			ANGULAR (Deg)	WT. (LBS)
		170°F	220°F		COMPRESSION (IN)	EXTENSION (IN)	PARALLEL (IN)		
1.5	6	225	150	26	1/2	3/8	1/2	15°	7
2.0	6	225	150	26	1/2	3/8	1/2	15°	9
2.5	6	225	150	26	1/2	3/8	1/2	15°	13
3.0	6	225	150	26	1/2	3/8	1/2	15°	14
4.0	6	225	150	26	5/8	3/8	1/2	15°	18
5.0	6	225	150	26	5/8	3/8	1/2	15°	23
6.0	6	225	150	26	5/8	3/8	1/2	15°	27
8.0	6	225	150	26	5/8	3/8	1/2	15°	38
10.0	8	225	150	26	3/4	1/2	3/4	15°	56
12.0	8	225	150	26	3/4	1/2	3/4	15°	83
14.0	8	125	105	26	3/4	1/2	3/4	15°	115
16.0	8	125	105	26	3/4	1/2	3/4	15°	165
18.0	8	125	105	26	3/4	1/2	3/4	15°	168
20.0	8	125	105	26	3/4	1/2	3/4	15°	170

I.D. (mm)	LENGTH (mm)	PRESSURE (kPa)		VAC RATING (mm Hg.)	MOVEMENT CAPABILITY			ANGULAR (Deg)	WT. (kg)
		77°C	104°C		COMPRESSION (mm)	EXTENSION (mm)	PARALLEL (mm)		
40	150	1550	1030	660	12.5	9.5	12.5	15°	3.18
50	150	1550	1030	660	12.5	9.5	12.5	15°	4.09
65	150	1550	1030	660	12.5	9.5	12.5	15°	5.90
80	150	1550	1030	660	12.5	9.5	12.5	15°	6.35
100	150	1550	1030	660	15.5	9.5	12.5	15°	8.17
125	150	1550	1030	660	15.5	9.5	12.5	15°	10.43
150	150	1550	1030	660	15.5	9.5	12.5	15°	12.25
200	150	1550	1030	660	15.5	9.5	12.5	15°	17.24
250	200	1550	1030	660	19	12.5	19	15°	25.40
300	200	1550	1030	660	19	12.5	19	15°	37.65
350	200	860	720	660	19	12.5	19	15°	52.17
400	200	860	720	660	19	12.5	19	15°	74.85
450	200	860	720	660	19	12.5	19	15°	76.21
500	200	860	720	660	19	12.5	19	15°	77.11

## FLEXZORBER NND Double Sphere Flanged

I.D. (IN)	LENGTH (IN)	PRESSURE (PSI)		VAC RATING (in Hg.)	MOVEMENT CAPABILITY			ANGULAR (Deg)	WT. (LBS)
		170°F	220°F		COMPRESSION (IN)	EXTENSION (IN)	PARALLEL (IN)		
2.0	7	225	150	26	1	3/4	1	30°	9
2.5	7	225	150	26	1	3/4	1	30°	13
3.0	7	225	150	26	1	3/4	1	30°	15
4.0	9	225	150	26	1 1/4	1	1 1/4	30°	20
5.0	9	225	150	26	1 1/4	1	1 1/4	30°	26
6.0	9	225	150	26	1 1/4	1	1 1/4	30°	29
8.0	13	225	150	26	1 1/2	1	1 1/2	30°	45
10.0	13	225	150	26	1 1/2	1	1 1/2	30°	63
12.0	13	225	150	26	1 1/2	1	1 1/2	30°	95

I.D. (mm)	LENGTH (mm)	PRESSURE (kPa)		VAC RATING (mm Hg.)	MOVEMENT CAPABILITY			ANGULAR (Deg)	WT. (kg)
		77°C	104°C		COMPRESSION (mm)	EXTENSION (mm)	PARALLEL (mm)		
50	175	1550	1030	660	25	19	25	30°	4.08
65	175	1550	1030	660	25	19	25	30°	5.90
80	175	1550	1030	660	25	19	25	30°	6.81
100	230	1550	1030	660	31.5	25	31.5	30°	9.08
125	230	1550	1030	660	31.5	25	31.5	30°	11.80
150	230	1550	1030	660	31.5	25	31.5	30°	13.16
200	330	1550	1030	660	38	25	38	30°	20.41
250	330	1550	1030	660	38	25	38	30°	28.58
300	330	1550	1030	660	38	25	38	30°	43.10

## FLEXZORBER NNDFU Double Sphere Union

I.D. (IN)	LENGTH (IN)	PRESSURE (PSI)		VAC RATING (in Hg.)	MOVEMENT CAPABILITY			ANGULAR (Deg)	WT. (LBS)
		170°F	220°F		COMPRESSION (IN)	EXTENSION (IN)	PARALLEL (IN)		
3/4	8	150	150	16	7/8	1/4	7/8	45°	2
1.0	8	150	150	16	7/8	1/4	7/8	45°	3
1.25	8	150	150	16	7/8	1/4	7/8	45°	3
1.5	8	150	150	16	7/8	1/4	7/8	45°	4
2.0	8	150	150	16	7/8	1/4	7/8	45°	6

I.D. (mm)	LENGTH (mm)	PRESSURE (kPa)		VAC RATING (mm Hg.)	MOVEMENT CAPABILITY			ANGULAR (Deg)	WT. (kg)
		77°C	104°C		COMPRESSION (mm)	EXTENSION (mm)	PARALLEL (mm)		
20	200	1030	1030	400	22	6	22	45°	.91
25	200	1030	1030	400	22	6	22	45°	1.36
30	200	1030	1030	400	22	6	22	45°	1.36
40	200	1030	1030	400	22	6	22	45°	1.82
50	200	1030	1030	400	22	6	22	45°	2.73

## FLEXZORBER Maxi-Flex HPV



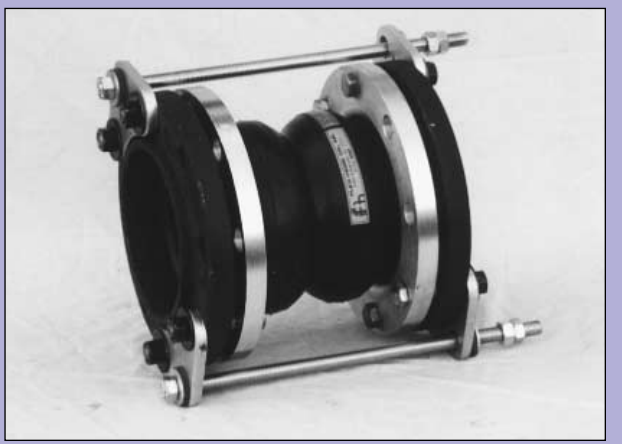
Flex-Hose Co.'s MAXI-FLEX wide-arch molded rubber expansion joint provides greater motion capability than conventional spool type rubber expansion joints.

The Maxi-Flex chlorobutyl construction, combined with high strength fabric reinforcement, provides working pressures up to 200 PSI and service temperatures up to 250°F.

The integral rubber flanges utilize metal retaining rings to assure uniform sealing against mating flanges.

NOTE: Sizes available up to 72" I.D.

I.D. (IN)	LENGTH (IN)	PRESSURE (PSI)	VACUUM (IN HG)	MOVEMENT CAPABILITY		ANGULAR DEFLECTION (Deg)
				AXIAL EXTENSION (IN)	PARALLEL OFFSET (IN)	
1.5	6.0	200	26	5/8	1/4	15°
2.0	6.0	200	26	3/4	3/4	30°
2.5	6.0	200	26	3/4	3/4	30°
3.0	6.0	200	26	3/4	3/4	30°
4.0	6.0	200	26	3/4	3/4	25°
5.0	6.0	200	26	3/4	3/4	25°
6.0	6.0	200	26	3/4	3/4	20°
8.0	6.0	190	26	3/4	3/4	20°
10.0	8.0	190	26	3/4	3/4	15°
12.0	8.0	190	26	3/4	3/4	15°
14.0	8.0	130	26	2	7/8	12°
16.0	8.0	110	26	2	7/8	12°
18.0	8.0	110	26	2	7/8	9°
20.0	8.0	110	26	2	7/8	9°



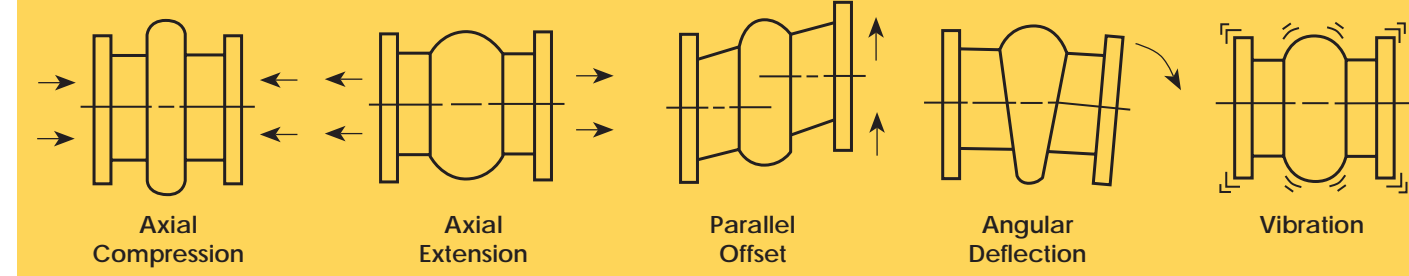
## Control Units

- Control units consist of two or more tie rods connecting mating flanges.
- Control units prevent damage due to excessive movement.
- Units are not designed as a replacement for proper pipeline anchoring.
- Additional protection against over-compression may be controlled by installation of pipe sleeves over tie rods.
- Each control unit end plate is triangular with three-hole drilling. Two holes bolt the plate securely to flange. The final hole accommodates the plate connection to the tie rod.
- Rubber washers between the plate, rod head, and rod nuts substantially reduces noise and vibration.
- Flex-Hose Co. recommends the use of control units in all rubber expansion joint applications.

Consult factory for materials such as Viton, Hypalon, EPDM, Buna-N, etc. and for larger sizes or higher working pressures.

## FLEXZORBER MOVEMENTS

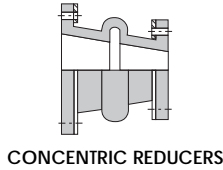
Flex-Hose Co.'s FLEXZORBER rubber connectors and expansion joints are capable of handling the following movements:



# Design Variations

## Tapered

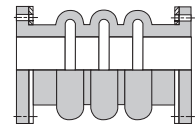
Flex-Hose Co.'s Tapered expansion joints can be designed to connect piping of unequal diameters.



## Multiple Arch

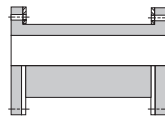


Standard joint with two or three arches. Recommended for greater movement where face-to-face dimensions are not limited.



## Flexible Rubber Pipe

Replaces steel or cast iron pipe in straight runs or specified bends in working pressures up to 250 psi. Rubber pipe is used to control vibration and reduce noise from pumps, compressors, etc. Also available in slip-on ends for low pressures.



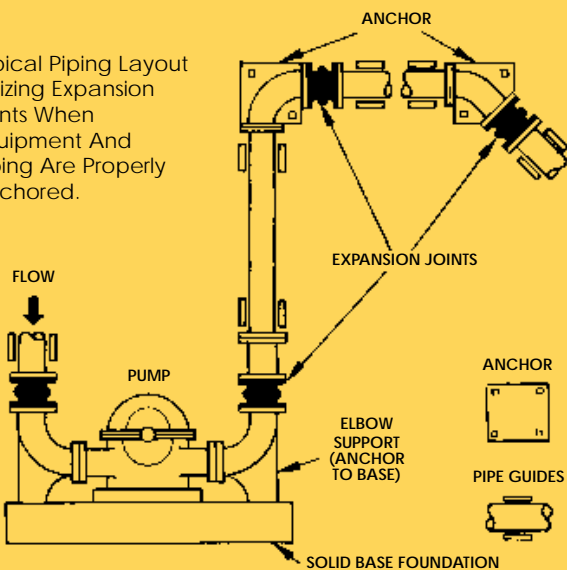
## Metal Retaining Rings

Retaining rings must be used with all rubber flange applications. Retaining rings are installed on the back side of the expansion joint rubber flange and are utilized to distribute bolt pressure evenly. Standard material is ASTM A-36 carbon steel, 3/8" thick. Alternate materials are available upon request.

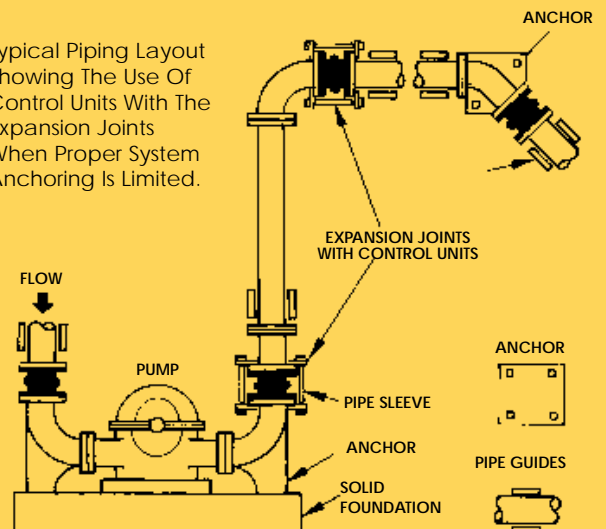


## INSTALLATION GUIDELINES

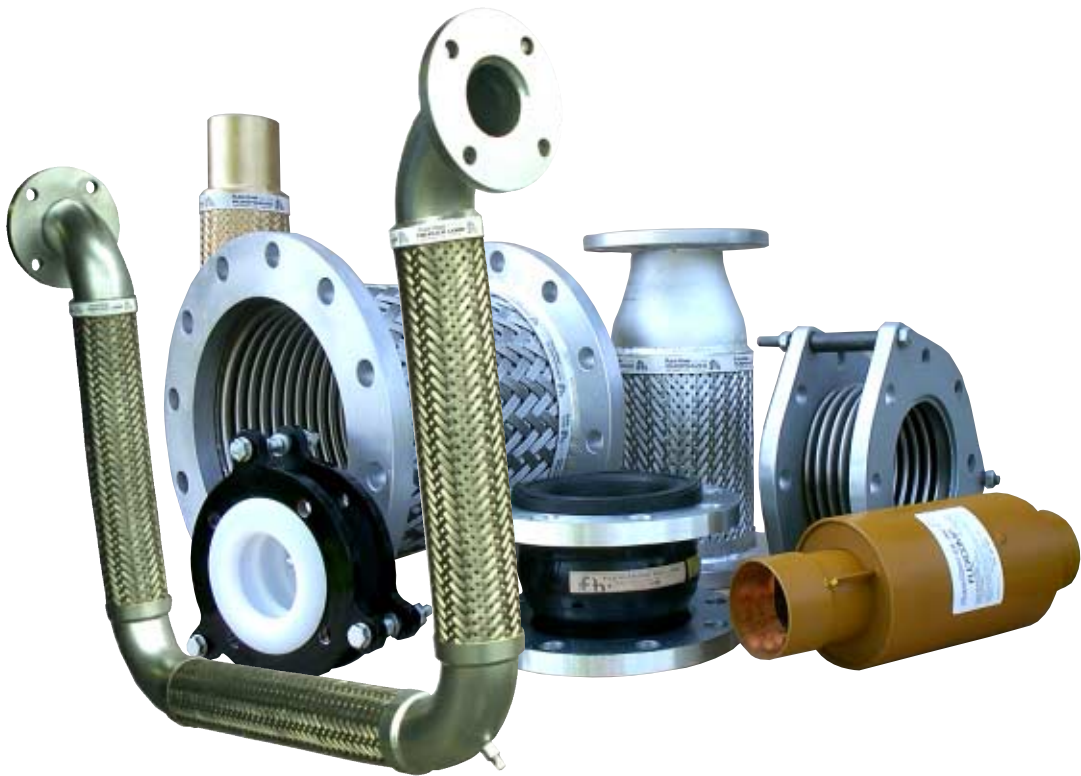
Typical Piping Layout Utilizing Expansion Joints When Equipment And Piping Are Properly Anchored.



Typical Piping Layout Showing The Use Of Control Units With The Expansion Joints When Proper System Anchoring Is Limited.



Make the Right Connection with our Representative:



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