

Installation Instructions: Sanitary F/J/R Expansion Joint

- 1) Piping should be lined up accurately before installing the connector. Angular, lateral, and axial misalignment, and / or torquing, will cause shearing stresses, so the system must be piped to **eliminate excessive misalignment** at the connector. If there is system vibration, the piping must be anchored immediately following the connector.
- 2) Check to be sure that the face to face opening between the mating flanges on the piping is the proper dimension for the connector and that the flanges are parallel. It is important that the **connector fit correctly** between the mating flanges. Tighten up the flange bolts evenly using the criss-cross method. Do not torque the flange bolts beyond 25 ft / lbs.
- 3) Don't rotate or torque the connector to match the bolt holes in the mating flanges. Piping and flanges should be installed straight and true so that the bolt holes are properly lined up. Flange bolts **should not be used** to correct system piping alignment problems.
- 4) Be sure to install the control rods, but don't pull them up tight. Leave about 1/4" between the nut and the flange face. Do not use the control rods for a piping system anchor or for piping hanger rods. **The control rods are important.** They restrain the connector from hyper-extending due to excessive system pressure or movement.
- 5) Mount the connector close to the pump or equipment. The piping **must be securely anchored** next to the connector, at the end opposite to the source of vibration. When the connector is used to absorb rated thermal motion in a piping system, the adjacent piping must be properly anchored and guided.
- 6) Don't let the connector support any weight except its own. System piping **must be properly supported** and hung. Since the connector is flexible, any extra weight will stress it.
- 7) This quality connector is lined with a space-age silicone *SILOFLEX* elastomer. **Do not** install it for continuous steam service.
- 8) **Never** install a connector where its temperature or pressure ratings could be exceeded. Be sure you know the ratings of the connector and of the system.
- 9) This is the finest quality equipment connector available. Install it with quality piping practices. This unique product is manufactured with pride **in the U.S.A.**

Guiding:

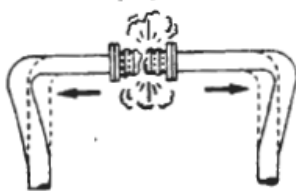
Piping systems which contain expansion joints tend to buckle under the compressive forces in the system. Due to the flexibility of the expansion joint and internal pressure thrust loading, the pipe acts as a column that must be properly guided to prevent buckling.

The piping must be properly guided with at least two concentric pipe guides on each side of the expansion joint so neither the expansion joint nor the piping can squirm out of the piping centerline. Pipe hangers and supports are not guides. Guides are not for supporting piping.

Pipe guide location: (150 PSI System Working Pressure)

Nominal Pipe size	From Joint to 1st Guide	From 1st to 2nd Guide	Other	Between all Guides
3"	1.00 ft	4 ft		22 ft
4"	1.25 ft	5 ft		30 ft
5"	1.50 ft	8 ft		35 ft
6"	2.00 ft	10 ft		40 ft
8"	2.75 ft	10 ft		50 ft
10"	3.50 ft	12 ft		62 ft
12"	4.00 ft	14 ft		68 ft

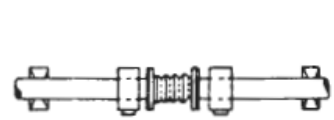
Effect of internal pressure thrust load without proper anchors



Effect of thermal expansion of piping without guides



Proper installation with alignment of anchors & guides



Anchoring:

Pipeline and/or expansion joint failures can be caused by under-designed and / or inadequate anchors on the piping system.

Main anchors must be able to withstand the bellows generated pressure thrust load, the deflection forces, and the guiding frictional forces. Anchors are required at each pipeline direction change, blind end, valve, major branch connection, or change in pipe diameter.

Pressure Thrust Load is the outward force of the bellows, when pressurized, on the piping system and anchors. These forces can be considerably more than the system operating pressure, and the anchors should be designed with an ample safety factor in addition to these forces.