



INSTALLATION INSTRUCTIONS
MODEL NLC, N, C, & EP METAL BELLOWS EXPANSION JOINTS

SERVICE CONDITIONS: Make sure the expansion joint ratings for temperature, pressure, vacuum, and movements match the system requirements.

ALIGNMENT: Expansion joints are not designed to compensate for piping misalignment errors. Piping should be lined up within 1/8". Pipe guides must be installed to keep the pipe aligned and to prevent instability. Guides are required within four pipe diameters of the joint, and then again after fourteen pipe diameters, if applicable. Consult the manufacturer or the Expansion Joint Manufacturers Association for additional proper guide spacing.

ANCHORING: Proper anchoring is required wherever the pipeline changes direction, and expansion joints should be located as close as possible to anchor points. If piping is not adequately anchored, excessive elongation and serious damage to the expansion joints and piping can occur. Expansion joints exert a thrust force on the anchors equal to the pressure times the effective area of the bellows.

PIPE SUPPORT: Piping must be supported with proper pipe supports so expansion joints do not carry any pipe loads.

INSTALLATION POINTS:

- A. Remove shipping bar restraints after installation, but before hydrotesting. Do not remove tie rods that are a permanent part of the assembly.
- B. Handle the joints carefully. The bellows element must be protected from damage.
- C. Do not weld in the near vicinity of the expansion joint unless covering the bellows element with a chloride free fire retardant cloth.
- D. Bellows are not designed to absorb any torque, which can lead to premature failure.
- E. Test pressure should not exceed 1.5 times design pressure.
- F. Liners are to be installed in the proper orientation with respect to the direction of flow. If a drop-in liner is used, a gasket must be installed between the vanstoned bellows face and the liner face.

STORAGE: Ideal storage is a warehouse. If storage must be outdoors, place on a wooden platform to keep expansion joints from coming in contact with exposed ground. Keep in original packaging until installation if possible.

WARNING: Expansion joints may operate in pipelines or equipment carrying fluids and/or gases at elevated temperatures and pressures, and may transport hazardous materials. Precautions should be taken to protect personnel in the event of leakage or splash. Metal joints should not be installed in inaccessible areas where inspection is impossible. Make sure proper drainage is available in the event of leakage when operating personnel are not available.