



LOOP EXPANSION JOINT SEISMIC MOVEMENT

OPERATION, INSTALLATION AND MAINTENANCE INSTRUCTIONS

OPERATION: An EFP Loop is designed to allow pipe movement in the +/- X, +/- Y, and +/- Z planes of direction. It is typically installed spanning a building's seismic joint and/or on connections of equipment.

INSTALLATION: A loop can be installed in any orientation with the pipe vertical, horizontal or any angle in-between. The only critical element is that the return bend must be free to move as the loop moves.

Steam applications: Ideally the loop should be installed horizontally to minimize the entrapment of condensate

WARNING: Steam condensate, when allowed to collect, can create potentially hazardous operating conditions. Steam condensate must be allowed to drain to a location where it can be removed from the system. The loop must be oriented at installation so that steam condensate drains from the loop and does not collect in the loop. Questions regarding orientation must be determined by the authority having responsibility for the piping system.

Shipping Bar must be removed after installation

The return bend support should be designed with enough slack to allow the return bend to move 100% of the loop's designed movement. For example: a loop designed for +/- 4" of seismic movement will see the return bend move +/- 4".

Combination Movement: Thermal and Seismic – Use the guidelines for both movements.

Centered in a pipe run: When a loop is installed in the middle of a pipe run, the loop will flex symmetrically and the return bend will move toward and away from the pipe. The return bend support should be designed with enough slack to allow the return bend to move 10% of the loop's designed movement. For example, a loop designed for +/-4" of axial movement will see the return bend move 4 tenths (0.4") of an inch.

Guided Requirements: Seismic Movement – When spanning a building's seismic expansion joint, guides are not required.

Maintenance: Loops require no field adjustments and they only have no serviceable parts – no operation or maintenance required.



LOOP EXPANSION JOINT THERMAL APPLICATION

INSTALLATION INSTRUCTIONS

INSTALLATION: The EFP loop can be installed in any orientation with the pipe vertical, horizontal or any angle in-between. The only critical element is that the return bend must be free to move as the loop expands and contracts.

Loops can be installed in neutral, pre-compressed or pre-extended condition as required for the application.

Steam applications: Ideally the loop should be installed horizontally to minimize the entrapment of condensate. **WARNING: ENTRAPPED CONDENSATE CAN BE HAZARDOUS. IT IS THE RESPONSIBILITY OF THE SYSTEM DESIGNER AND THE INSTALLER TO ELIMINATE THE COLLECTION OF CONDENSATE.**

Shipping Bar must be removed after installation.

Centered in a pipe run: When the loop is installed in the middle of a pipe run, the loop will flex symmetrically and the return bend will move toward and away from the pipe. The return bend support should be designed with enough slack to allow to move 10% of the loops designed movement. For example: a loop designed for +/-4" of axial movement will see the 180° return bend move four-tenths (0.4") of an inch.

One end anchored: When installed at or near an anchor the return bend will have a lateral component to its movement, in addition to the movement described above ("Centered in a pipe run") the lateral movement will be 50% of the thermal expansion or contraction and will be in the same direction as the pipe movement. Again a sufficiently slack hanger rod or slide support is all that is required.

Guiding Requirements: Thermal movement – Being the most flexible component of your piping system, the loop is the path of least resistance. As long as the loop design parameters are not exceeded, the loop does not need guides.

However, the Mechanical Contractors Association of America "Guidelines for Quality Piping Installations: section 3; Pipe Hangers and Supports, suggests that to ensure movement is directed as expected and if your piping is supported on pipe hangers that will swing more than 4 degrees from vertical when the pipe moves, it is recommended that a pipe guide be installed within 15 pipe diameters on each side of the Loop. Loops anchored one side only need one guide on the "traveling" side.