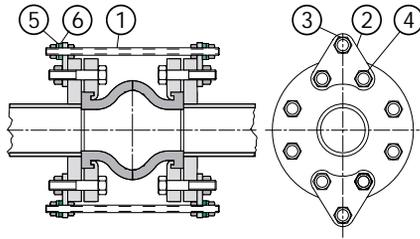


# CONTROL RODS FOR EXPANSION JOINTS

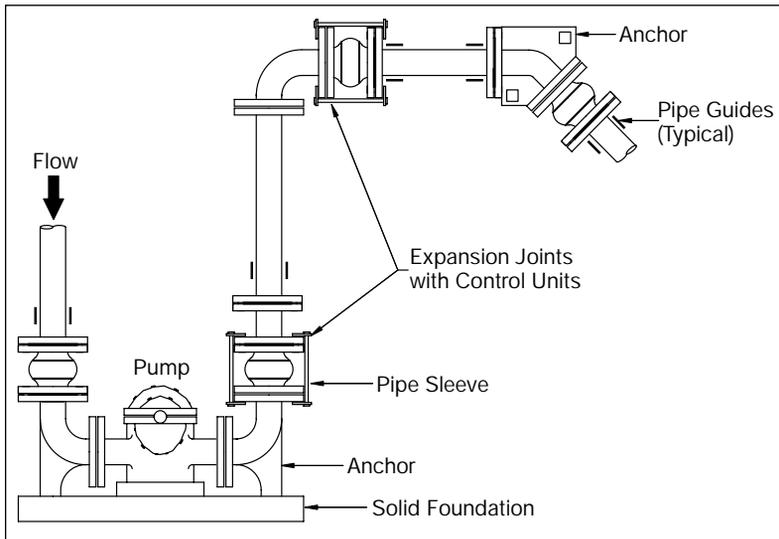
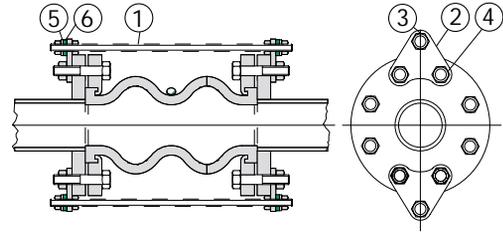
## INSTALLATION AND MAINTENANCE INSTRUCTIONS

### Series ASM With Control Rods

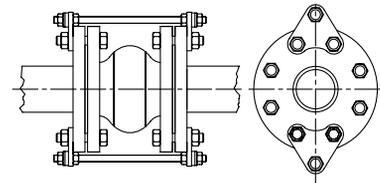


1. ROD
2. PLATE
3. NUT
4. HEAD NUT
5. STEEL WASHER
6. RUBBER WASHER

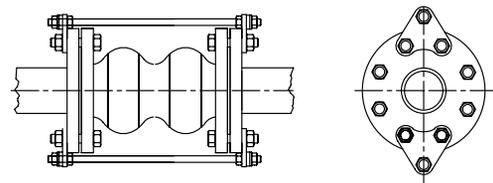
### Series ATM With Control Rods



**Figure 1.** Typical piping layout showing the use of Control Rods with Expansion Joints, when proper system anchoring is limited.



### Series ASM with Control Rods



### Series ATM with Control Rods

## WARNING

Expansion joints may operate in pipelines or equipment carrying fluids and or gases at elevated temperatures and pressures. Normal precautions should be taken to make

sure these parts are installed correctly and inspected regularly. Caution should be taken to protect personnel in the event of leakage of fluids or gasses.

## FUNCTION

Expansion joints are not designed to withstand excessive end thrusts, wide temperature fluctuations or high pressure changes (i.e. starting a pump). When pressures or temperatures exceed the unit's design capability, premature failure of the expansion joint will occur. To prevent excessive movement, Expansion joints must be installed in an anchored system, between two fixed anchor points in a piping system, to control expansion or contraction of the line. Piping anchors must be capable of withstanding the line thrust generated by internal pressure or wide temperature fluctuations. The failure of these anchors can cause excessive pipeline motion. When proper anchoring cannot be provided, control rods are required (See Figure 1).

A control rod assembly is a set of two or more control rods placed across an expansion joint, from flange to flange, to minimize or prevent damage to the expansion joint caused by excessive extension, compression or motion of a pipeline and to absorb static pressure thrust. Control rods allow specified expansion joint movement (axial extension) and pipe contraction (axial compression) which will then preclude the possibility of motion that would over-elongate and damage the joint. The control rod assembly can also be set at the maximum allowable expansion and or contraction of the expansion joint. Control rods are not required in systems that are anchored. However, when used in this manner, control units are an additional safety factor and minimizes possible damage to adjacent equipment. Control rods are always required in unanchored systems.

# CONTROL RODS FOR EXPANSION JOINTS

## INSTALLATION AND MAINTENANCE INSTRUCTIONS

### CONTROL RODS MOUNTING INSTRUCTIONS

- Anchors are required whenever a piping system changes direction. Expansion joints should be located as close as possible to anchor points. If an anchoring system is not used, it is recommended that control rods be installed on the expansion joint to prevent excessive movement from occurring due to pressure thrust in the line (See Figure 1).
- To determine end thrust, multiply thrust factor by operating pressure of system. This is the end thrust in PSIG.
- Vacuum rating is based on installed length, without external load. Product should not be installed "extended" on vacuum applications.
- Joints must be precompressed approximately 1/8" to 3/16" in order to obtain a correct installed face-to-face dimension. During installation, the precompression should not exceed 3/16" (5 mm).
- The alignment of the piping system should be adjusted and secured with fixation points as close as possible on each side of the expansion joint at a distance less than three times the pipe's nominal diameter.
- These fixation points must be installed when mounting an expansion joint with control rods or an elbow pipe. If there is considerable distance between two fixation points, guiding points can be installed in order to support and guide the pipe (cf. installation scheme).
- Before installation, check the interior, exterior and flange faces of the expansion joint for cuts and gouges.
- When installing, make sure that the rubber expansion joints do not support compression or extension due to the weight of the upstream or downstream pipe.
- When installing the rubber expansion joint, make sure that the connector is not twisted (especially for Series AUM).
- Mounting order: (1) upstream pipe – anchor, (2) downstream pipe – anchor, (3) expansion joint.
- Verify that the upstream and downstream pipe alignment does not deviate more than 1/8" (3 mm) and that the expansion joint does not support heavy weight.
- To prevent damage to the expansion joint surface, verify that the surfaces, coming in contact with the expansion joint, are clean and without cutting edges (pipe).
- Avoid direct contact with the expansion joint rubber surface by inserting the bolts on the arch side of the joint.
- If welding is carried out within close range, cover or dismount the expansion joint.
- Do not paint or coat the joint with insulation.
- Store the joint in a flat position avoiding humidity and extreme temperatures.
- Bolt tightness should be checked daily within the first month after services and checked periodically.