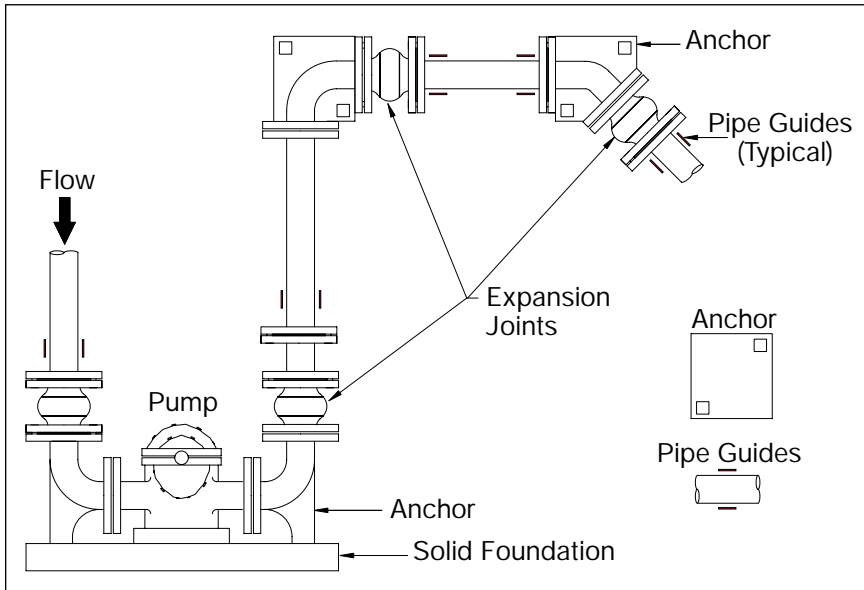


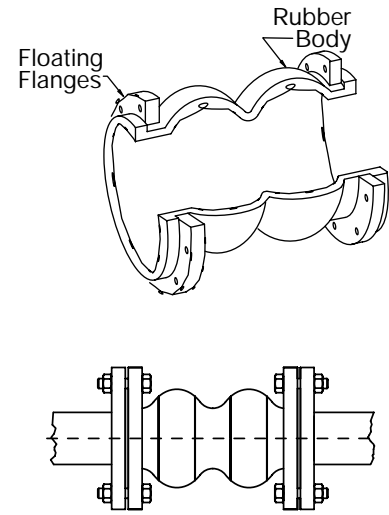
# CONNECTORS (EXPANSION JOINTS)

## INSTALLATION AND MAINTENANCE INSTRUCTIONS

### TYPICAL INSTALLATION



**Figure 1.** Typical piping layout utilizing Expansion Joints and the proper use of anchors in branch locations.



Series ATM Twin Sphere Expansion Joint

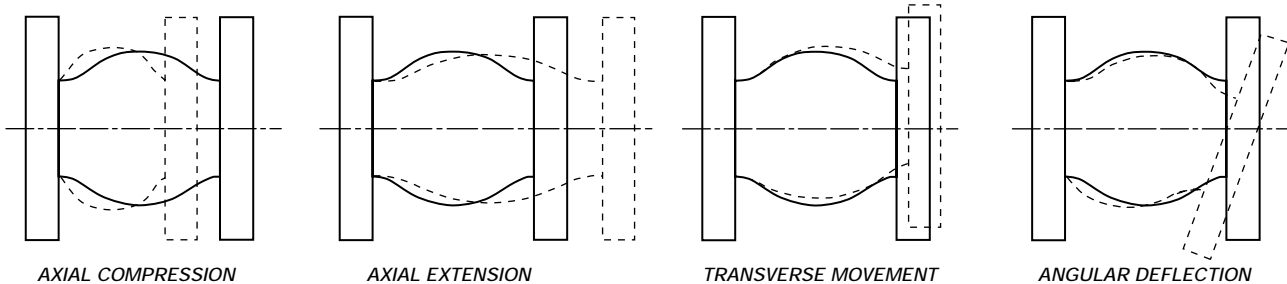
### WARNING

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

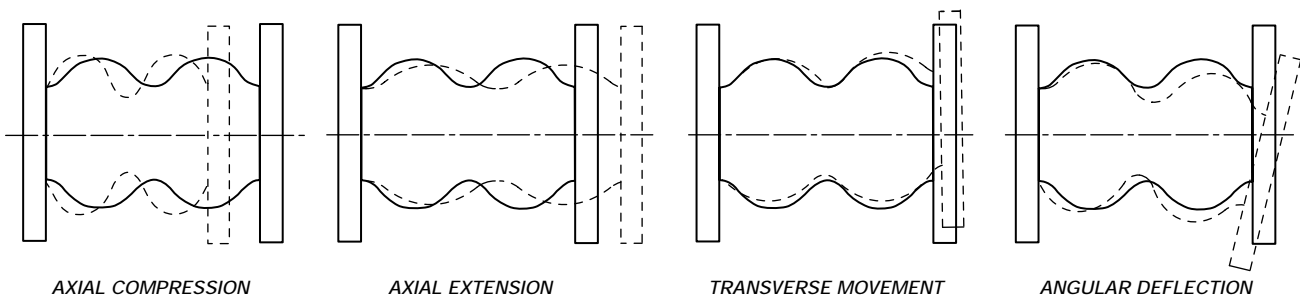
parts are installed correctly and inspected regularly. Caution should be taken to protect personnel in the event of leakage of fluids or gases.

### ALLOWABLE MOVEMENT

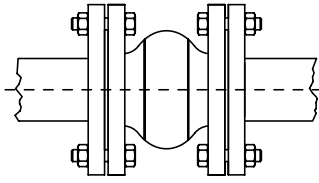
#### SERIES ASM



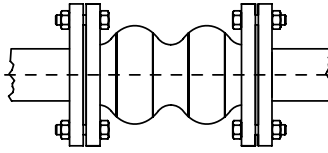
#### SERIES ATM



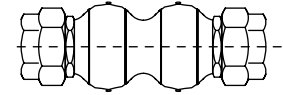
# CONNECTORS (EXPANSION JOINTS) INSTALLATION AND MAINTENANCE INSTRUCTIONS



Series ASM Single Sphere Connector



Series ATM Single Sphere Connector



Series AUM Connector

## CONNECTOR (EXPANSION JOINT) MOUNTING INSTRUCTIONS

- Make sure that the expansion joint rating, for temperature, pressure, vacuum, movement and elastomeric materials, matches the systems requirements.
  - Anchors are required whenever a piping system changes direction. Expansion joints should be located as close as possible to anchor points (See Figure 1).
  - For piping that is not anchored, control rods must be used to prevent excessive movement from occurring (See Installation & Maintenance Instructions Control Rod For Expansion Joints).
  - Expansion joints are not designed to make up for piping misalignment errors. Piping misalignments of more than 1/8", in any direction, will reduce the rated movement, stress the materials and reduce service life of the expansion joint.
  - Before installation, check the interior, exterior and flange faces of the expansion joint for cuts and gouges.
  - Piping must be supported so that expansion joint does not carry any weight. 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 not be twisted in any case (especially for Series AUM).
  - To determine end thrust, multiply thrust factor by PSIG.
  - Vacuum rating is based on installed length, without external load. Product should not be installed "extended" on vacuum applications.
  - Install at the face to face dimension shown on the drawing. Make sure the mating flanges are clean and are standard steel flat faced or no more than the 1/16" raised face type (See Figure 2).
  - Joints must be pre-compressed approximately 1/8" to 3/16" in order to obtain a correct installed fact-to-face dimension.
  - Floating metallic flanges freely rotate on the bellow to compensate for mating flange misalignment.
  - Install the expansion joint against the mating pipe flanges and install bolts so that the bolt head is against the expansion joint flange.
  - Flange-to-flange dimensions of the expansion joint must match the breech opening.
  - Make sure mating flanges are clean and are FLAT FACED TYPE. When attaching beaded end flange expansion joints to raised face flanges, a ring gasket is required to prevent metal flange faces from cutting rubber bead during installation.
  - Never install expansion joints next to wafer type check or butterfly valves. Serious damage to the rubber flange bead can result due to lack of flange mating surface and/or bolt connection.
  - Do not use gaskets. Care must be taken when pushing the joint into the breach between the mating flanges so as not to roll the leading edge of the joint out of its flange groove.
  - Do not bolt directly to another component with an elastomer face or to a specialty flange such as the Victualic® type without inserting a solid full-face metallic gasket.
  - Cross tighten the bolts. Minimum recommended flange bolt torque foot pounds for the following joint sizes are: 1" to 2" – 28.90ft-lbm 2-1/2" to 8" – 43.40 ft-lb., 10" to 20" – 57.90 ft-lb.
  - Do not over tighten to the point where there is metal to metal contact between the joint flange and the mating flange. Never tighten an expansion joint to the point that there is metal-to-metal contact between the expansion joint flange and the mating flange. NOTE: Over torquing bolts can cause deformation of the rubber expansion joint flanges, this resulting in possible premature failure.
- NOTE: Due to rubber's tendency to relax after initial tightening, it is necessary to retighten the flange bolts, typically within 1 week of initial installation.
- If bolt threads are facing the joint, trim the length of the bolts so they do not extend past the nut more than 1/8" to avoid contact with the joint.
  - Insulation over expansion joints is not recommended. However, if insulation is required, it should be a design that is easy to remove to allow access to the flanges.
  - Store expansion joints face down, in a cool dry location on a wooden pallet.
  - Check the tightness of retaining rings two or three weeks after installation and re-tighten as necessary.