

# ENGINEERING SPECIFICATIONS

## RUBBER EXPANSION JOINTS

Spherical, rubber expansion joints will be used on all pumps and equipment as indicated within the specifications, drawings and equipment schedules. Rubber expansion joints will be located perpendicular to pump inlet and outlet. Piping elbows at these areas should be supported with anchors to support full weight loads, as well as static pressure thrust forces. Piping system must be aligned prior to installation of rubber expansion joints. The rubber expansion joints cannot be used to correct piping misalignment during installations.

Rubber expansion joints are constructed of synthetic rubber tube and cover, which are molded and cured in hydraulic presses. They are reinforced with multi-ply Nylon tire cord fabric. Internal reinforcing of metal wire or embedded rings will not be used.

Utilize single or double sphere rubber expansion joints as indicated on the drawings. Double sphere flanged rubber expansion joints have a factory installed steel body ring installed externally between the two spheres to control ballooning under high pressure/temperature situations. Spherical rubber expansion joints installation instructions are provided by the manufacturer and are wire tagged to the expansion joint.

Rubber expansion joints for pipe sizes 2" or smaller will have threaded ends and connectors for pipe sizes 2-1/2" and larger will have floating steel flanges. The mating surface will be 100% rubber.

Neoprene connectors rated for a maximum of 170° F and working pressure of at least 225 PSIG will be utilized in chilled water installations. EPDM expansion joints rated for a maximum of 210°F and working pressure of at least 225 PSIG will be utilized in heating water applications.

Control rods can be installed on connectors to prevent excessive elongation and to control the static pressure thrust in the piping system. Control rods should utilize 1/4" thick neoprene grommets to limit vibration transfer. Thread-on nuts should be snug against the plate after installation.

Control rod installation instructions will be provided by the manufacturer and will be wire tagged to the control unit assemblies.

Flanged single sphere connectors will be TCH Series MS1 Neoprene or EPDM.  
Flanged double sphere connectors will be TCH Series MS2 Neoprene or EPDM.  
Spool type expansion connectors will be TCH Series S1 Neoprene or EPDM.  
Threaded connectors will be TCH Series MSFU Neoprene or EPDM with female union ends.  
Flanged reducing connectors will be TCH Series MRCE Neoprene or EPDM.