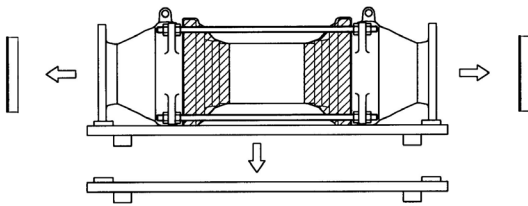


# INSTALLATION INSTRUCTIONS

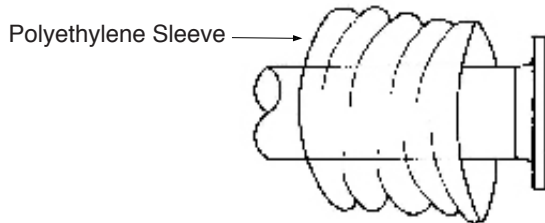
Read installation instructions first before installing. Check parts to ensure that no damage has occurred during transit and that no parts are missing. Also check the diameter of the pipe and the size marked on the FJ-Restraint to ensure you have the proper size.

## FJ-Restraint™

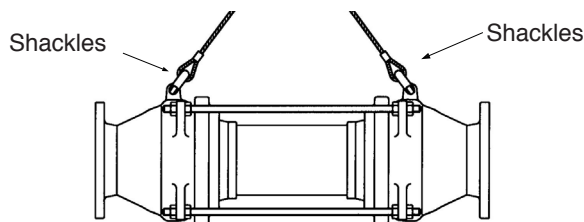
**Step 1** • Remove the protective covers and packing material from the FJ-Restraint. Remove straps attaching FJ-Restraint to the shipping crate.



**Step 2** • Slide the polyethylene sleeve over one pipe end to which the FJ-Restraint will be connected.

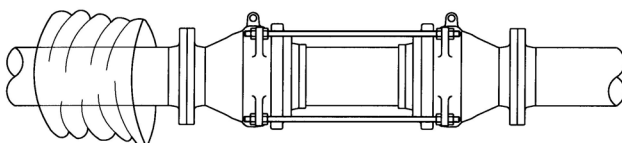


**Step 3** • Using a suitable hoist, lift the FJ-Restraint horizontally from the crate into position.

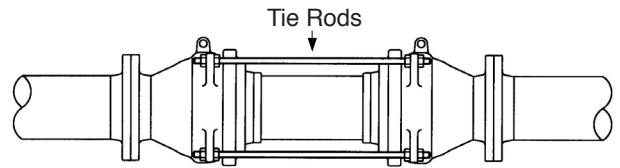


**NOTE:** Use lifting slings and shackles to connect to the lifting eyes on the FJ-Restraint.  
**DO NOT** lift the FJ-Restraint by the tie rods.

**Step 4** • Connect the ends of the FJ-Restraint to the pipe ends. For FJ-Restraints with MJ ends, place restrainer glands on pipe ends.



**Step 5** • Remove the tie rods.



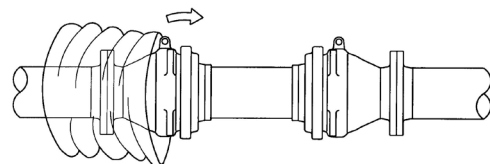
**NOTE:** The tie rods are provided to prevent change to the end-to-end dimensions during transportation and installation. If the FJ-Restraint is used with the tie rods in place, it will neither expand, contract or deflect as the product was intended.

If a pressure test is required before the site is backfilled, the tie rods may remain in the FJ-Restraint until the test is completed. See table below for maximum test pressure with tie rods installed. Consult Romac Engineering for higher pressures.

SIZE	3	4	6	8	10	12	14	16	18	20	24
MAX TEST PSI	350	350	350	350	250	250	150	150	100	100	100

If the FJ-Restraint is offset, the tie-rods will be removed. The piping system must be restrained on each end to prevent movement.

**Step 6** • Pull the polyethylene sleeve over the FJ-Restraint so that it completely covers the FJ-Restraint from one pipe end to the other.

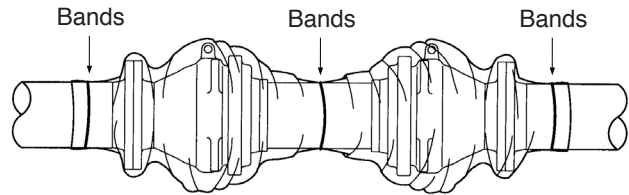


Installation Instructions continued on back

## FJ-Restraint™

**Step 7** • Fasten the polyethylene sleeve to the pipe and the FJ-Restraint with the rubber bands.

**NOTE:** Leave plenty of slack in the polyethylene sleeve to allow the FJ-Restraint to expand, contract and deflect as intended.



### PRECAUTIONS

1. Remove tie rods after the installation is complete. See step 5.
2. Make sure no foreign materials lodge between gasket and pipe.
3. Keep threads free of foreign material to allow proper tightening.
4. Pressure test for leaks before backfilling.

#### MJ Style \_\_\_\_\_

1. MJ ends must be used with a restraint system, such as the Romac Grip Ring™ or the RomaGrip™.
2. Check diameter of pipe to make sure you are using the correct size fitting.
3. Clean pipe to remove dirt and corrosion from pipe surface. Lubrication and additional cleaning should be provided by brushing both the gasket and pipe end with soapy water or approved pipe lubricant per ANSI/AWWA C111/A21.11.
4. MJ gasket must comply with ANSI/AWWA C111/A21.11.
5. Proper pipe insertion into MJ bell.
6. Take extra care to follow proper bolt tightening procedures and torque recommendations. Bolts are often not tightened enough when a torque wrench is not used.

#### Flanged Style \_\_\_\_\_

1. Check flange size and drilling to make sure they match.
2. Make sure gaskets are lubricated and free of dirt and debris.

### COMMON INSTALLATION ERRORS

1. Not removing the protective caps from the ends.
2. Not sliding the protective polyethylene sleeve over the pipe end before installing the FJ-Restraint.
3. Using the tie rods to lift the FJ-Restraint.
4. Not removing the tie rods after installation is complete.
5. Not keeping joint free of dirt and debris before covering FJ-Restraint with the polyethylene sleeve and banding it down.