



**Recommended Field Welding Guidelines Repair Fittings on
Carbon or Stainless Steel Waterlines Under Pressure and Flow**

**Model 177 Carbon Steel Repair Sleeve
Model 137 Stainless Steel Repair Sleeve**

Read instructions before starting installation*

Review of “Considerations for Installation” on the reverse will assist with installation.

For purposes other than water, contact JCM Industries for application and product assistance.

Prior to welding, clean and scrape pipe. Remove any scale, pipe wrap, debris or dirt that may interfere with the welding of the fitting. Inspect pipe for type and integrity, size, outside diameter and surface irregularities. Ultrasound may be performed if pipe wall thickness is in question. Confirm the proper size of repair sleeve. Inspect fitting to ensure all parts are included. See pipe flow considerations on reverse. Ensure system design, pressure, temperature and flow rate accommodates the application and welding process.

Position half of body on pipe over damaged area. Position back half of body. The gap between sleeve halves should be no more than 1/8” between halves.

1. Field weld the longitudinal sides of the sleeve first. Do NOT weld the side seams to the pipe. Side seams are designed to be welded to the mating half of the fitting, NOT to the host run pipe. If needed, install a backing strip behind the side seams prior to field welding.
2. Weld first circumference end only
3. Allow the first circumference end to cool
4. After cooling time, weld the other end
5. After installation and cool down, fitting should be tested for leaks. Re-weld any areas as indicated by pressure test.

Note: Welding both ends of the fitting at the same time can cause a stress riser in one or both ends of the connection and subsequent weld failure under pressure.

Positioning and support of the repair sleeve is the responsibility of the end user, per best engineering practice, industry standard practice, or local code. For inquires, contact JCM Industries, Inc.

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*Ensure fitting is suitable for application (confirm size, materials, pressure ratings, line content, meets local governing & association standards, etc.). Pipeline operation forces, including pressure fluctuations, thermal expansion/contraction, movement/shifting, etc. will influence the success of the application. Proper anchorage, restraint, harnessing, thrust blocks or other devices must be provided to prevent pipe movement (lateral, angular, axial) or pipe pullout from the bolt-on fitting. Inspection of the pipe integrity is the responsibility of the end user. JCM recommends the use of calibrated torque wrench. Failure to follow installation instructions will result in voided product warranty.

For application review or questions contact JCM Industries at 1-800-527-8482, 903-832-2581





Considerations for Installation

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Pipe Flow Considerations

Flow of line content during field installation has direct impact on the quality of the weld process. High flow rates in the system at the time of field welding can cause weld "under bead" cracking of the weld to the pipe. Under bead weld cracks severely diminish the quality of the weld and lead to future weld failure. Flow rates should be at a minimum - 0 flow rate and maximum of 3 feet per second flow. With water application temperature below 70°F (21°C) and a flow rate beyond 3 feet per second, a special water backed weld procedure should be qualified and implemented in the field.

Fitting field welding test inspection process:

After the fitting has been welded to the host run, it should be tested for welding quality. This test is strictly a leak test, NOT a fitting design or structural test. This was determined by the fitting design criteria. Repair weld as required.

If the fitting is to be hydro- tested the test MUST NOT EXCEED pipeline operating pressure at the time of testing. This is to be certified by a pipeline pressure gauge. Exceeding the actual operating condition increases the possibility of "damaging the pipe" inside the split teed fitting. Testing weld quality by magnetic particle or dye penetrate process are acceptable methods.

Field Welder Qualifications

The field welder should be qualified to an American Welding Society (AWS) procedure as a minimum. Additionally, qualified to and ASME Code per Section IX fore Pipeline Under Pressure with 6-G Weld Test Certification.