



## Installation Instructions

### Models 112 and 113

### Heavy Duty Patch Clamps

Read instructions before starting installation\*

Review of "Tricks of the Trade" on the reverse will assist with installation.

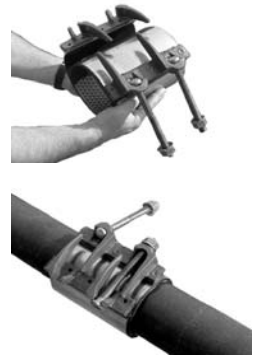
For purposes other than water, contact JCM Industries for application and product assistance.

1. Clean and scrape pipe. Remove any scale, pipe wrap, debris or dirt that may interfere with the complete sealing of the gasket. Inspect pipe for integrity, size, outside diameter and surface irregularities. Confirm the proper size and range of repair clamp. Inspect fitting to ensure all parts are included.

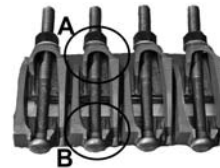


For fittings furnished with stainless steel hardware, see reverse for fastener management.

2. Lubricate the pipe and the fitting gasket with soapy water. **Do not use oil base pipe lubricant.** Loosen nuts of bolts and back nuts to the end of the bolt (complete removal of bolts is not necessary). Release oval necked bolts from lug ears and open the clamp.
3. **Single Band Clamps** - Place clamp on pipe and center gasket pad over damaged area. Engage bolts in slotted finger lugs. Finger tighten to hold in place. Begin bolt tightening.



**Multi Band Clamps** - with multi lug segments. One section has "closed ears" (A) and "open ears" (B) for bolt engagement. Locate lug segment with open "ear" to loosen bolts. Loosen bolts of other lug segments. Do not remove bolts.



Open clamp at open ear lug segment and place clamp on pipe. Bring back half of clamp around pipe. Mesh top lug fingers into "open ears" and engage bolts. Finger tighten bolts to hold in place. Begin tightening bolts to proper torque values. Continue around pipe at each lug segment. Avoid tightening lugs to metal bound at any one segment - *gaps between lugs should be approximately even on both sides. Continue bolting sequence to proper torque values below.*



4. Tighten all bolts evenly to the following torque values, ensure torque values with calibrated field torque wrench:



**5/8" Bolts to 70 Foot Pounds**  
**3/4" Bolts to 90 Foot Pounds**

5. Complete installation of fitting, return after approximately 15 minutes and confirm minimum bolt torque levels have been maintained.



INT112-0115

\*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



## Tricks of the Trade for Installation

### Models 112 and 113

### Heavy Duty Patch Clamps

#### JCM Quality Fitting Equipped With 18-8 Stainless Steel Bolts and Nuts

When not properly handled it is the nature of stainless steel fasteners to gall and freeze (seize up). This is due to the inherent properties of the stainless material. Galling and freezing is often triggered by the presence of metal chips, burrs and grains of sand on the threads of the bolts and nuts. Extra care has been taken by JCM prior to assembly and packing of this fitting to assure a trouble-free installation.

1. The nuts and bolts are made from material of different hardness so that they have different strengths.
2. Standard 5/8" and 3/4" nuts are coated with a special blue or green (antiseize) coating. Additional lubricant may be needed. Uncoated stainless steel hardware is provided without lubrication to prevent a build up of dirt, sand or grit during shipment. **A Molybdenum-Base lubricant is recommended.**
3. Each nut is assembled by hand to be sure that it went on the bolt freely.
4. The bolts and nuts are handled carefully to avoid damage to the threads.
5. The bolts and nuts are made to exacting specifications to assure that the correct material is used and that the thread form is correct.

Stainless hardware is especially susceptible to galling. JCM supplies specially coated nuts to eliminate the galling caused by overtightening, but **the bolt threads must be kept clean, free from nicks and not pitched or thrown into the tool bucket during the installation process.** Use of the **JCM 901 Master Wrench or JCM 905 Torque Wrench with Deep Socket is highly recommended.** Use of pneumatic wrench for installation could cause hardware to seize and is not recommended.

**Years of field experience, special applications and product testing have revealed many subtleties regarding application and installation of repair clamps. For maximum performance under adverse conditions take advantage of the JCM "Tricks of the Trade."**

- Always clean and lubricate pipe with water or soapy water. This helps overcome friction when positioning the clamp. Do not use oil base pipe lubricant; the oil does not disperse, leaves residue and prevents the gasket from sealing/adhering to the pipe wall. Use water solvent lubricant. Use of a mirror will assist inspection of backside of pipe or pipe in cramped, limited space.
- Place a reference mark on the pipe back from the damaged area to help in centering clamp over break. Clamps provide maximum performance when centered over damage area.
- For installation on pipe under pressure: lubricate the clamp gasket with soap/water mixture, assemble clamp on the pipe beside the damaged area, lightly engage bolts and slid the clamp over the damaged area; proceed with installation steps.
- Damage involving large holes or massive pitted areas - use stainless steel plate over large holes (under repair clamp) to provide the gasket a surface to seal against.
- Leave sufficient pressure on a broken line to prevent intrusion of foreign matter to prevent excessive line contamination.
- Lubricating clamp bolts will ease clamp installation and assure proper torquing of bolts.