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PLIDCO® TAP+ENCLOSURE DOMED WELD-ON STYLE INSTALLATION INSTRUCTIONS

!! WARNING!!

IMPROPER SELECTION OR USE OF THIS PRODUCT CAN RESULT IN EXPLOSION, FIRE, DEATH, PERSONAL INJURY, PROPERTY DAMAGE AND/OR HARM TO THE ENVIRONMENT.

Do not use or select a Domed Style PLIDCO Tap+Enclosure until all aspects of the application are thoroughly analyzed. Do not use the Domed Style PLIDCO Tap+Enclosure until you read and understand these installation instructions. If you have any questions, or encounter any difficulties using this product, please contact PLIDCO.

READ CAREFULLY

The person in charge of the repair must be familiar with these instructions and communicate them to all personnel involved in the repair crew.

Safety Check List

- ❑ Read and follow these instructions carefully. Follow your company's safety policy and applicable codes and standards.
- ❑ Whenever a PLIDCO product is modified in any form by anyone other than the Engineering and Manufacturing Departments of The Pipe Line Development Company, the product warranty is voided. Products that are field modified do not have the benefit of the material traceability, procedural documentation, quality inspection and experienced workmanship that are employed by The Pipe Line Development Company.
- ❑ Observe the maximum allowable operating pressure (MAOP) and temperature on the label of the PLIDCO product. Do not exceed the MAOP or temperature as indicated on the unit.
- ❑ When repairing an active leak, extreme care must be taken to guard personnel. Severe injury or death could result.
- ❑ During the *Installation* procedure, those installing the PLIDCO product must wear, at minimum, Z87+ safety eyewear and steel toe safety footwear. Proper welding gear must also be worn while welding is being performed.

- ❑ If the pipeline has been shut down, re-pressuring should be done with extreme caution. Re-pressuring should be accomplished slowly and steadily without surges that could vibrate the pipeline and fitting. Industry codes and standards are a good source of information on this subject. Except for testing purposes, do not exceed the design pressure of the PLIDCO product. Personnel should not be allowed near the repair until the seal has been proven.

Installation

1. Remove the pipe plug from the Domed Style Tap+Enclosure before welding. This eliminates pressure build-up inside the Tap+Enclosure while welding.
2. Dependent on the pipe size and your company's purchase requirements, the Domed Style Tap+Enclosure may or may not have been supplied contoured to fit the pipe. It may be required to contour the bottom of the Enclosure to match the pipeline in the field.
3. Lower the Tap+Enclosure on the pipe over the obstruction to be encased and tack weld it to the pipeline. The Tap+Enclosure is designed with approximately 1/8" root opening to ensure complete joint penetration during welding.

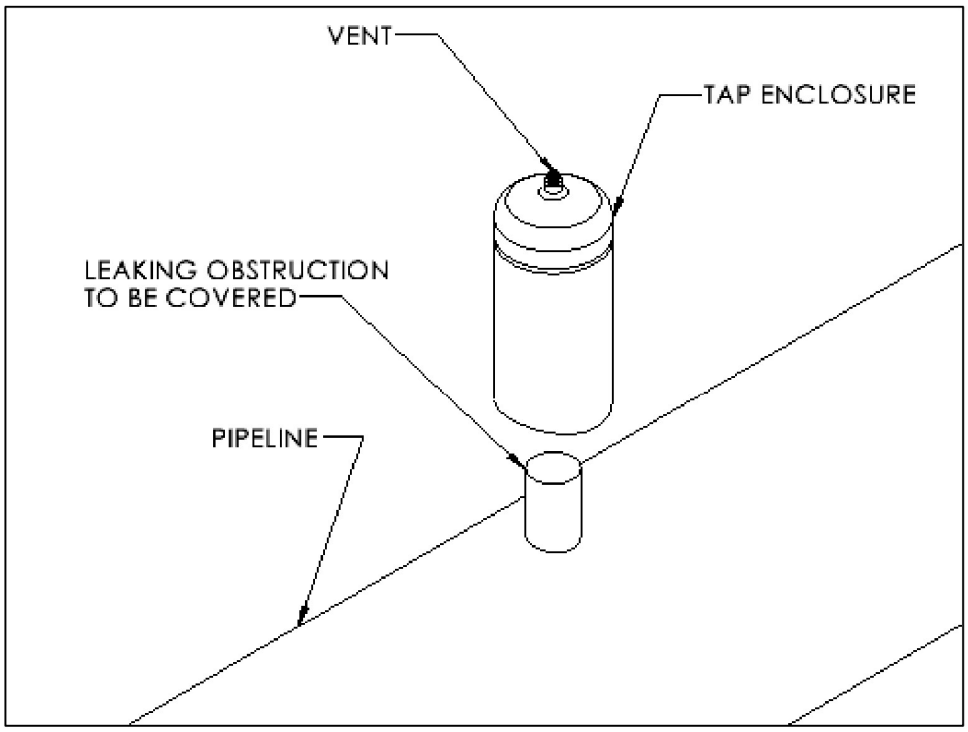

Figure 1

4. To complete, weld the Tap+Enclosure to the pipe using a qualified weld procedure. The weld profile should match Figure 2. It must be a complete joint penetration weld with a fillet weld reinforcing weld that matches Figure 3 where Tc is the minimum of ¼" or 0.7xTmin. Tmin is the smaller of wall thickness of the pipeline (Tnh) or the wall thickness Tap+Enclosure (Tnb).

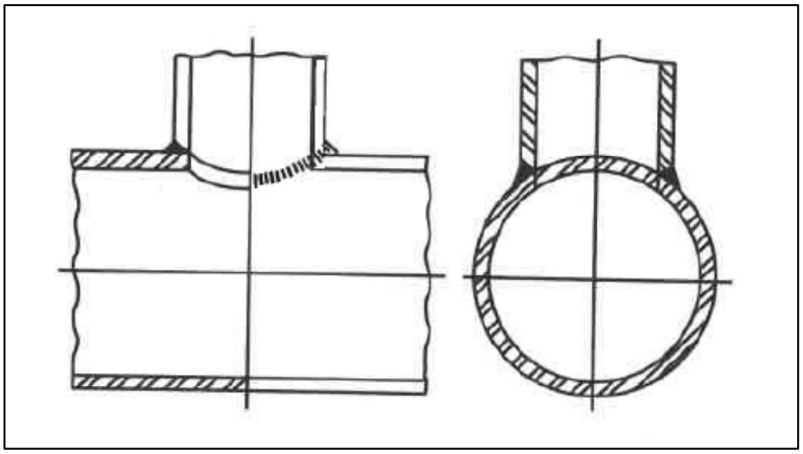

Figure 2

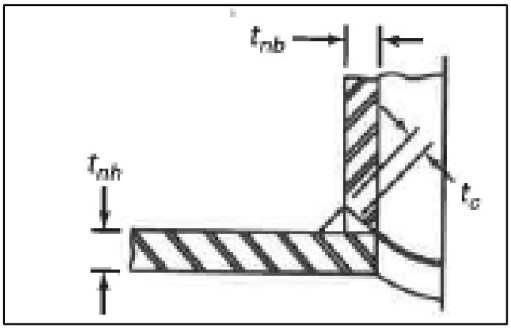

Figure 3

5. After welding completely, the PLIDCO Tap+Enclosure can be pressure tested through the vent hole.
6. Insert the pipe plug in the vent hole and seal weld if required.

Re-pressuring and Field Testing

If the pipeline has been shut down, re-pressuring should be done with extreme caution. Re-pressuring should be accomplished slowly and steadily without surges that could vibrate the pipeline or produce a sudden impact load. Industry codes and standards are a good source of information on this subject.

Except for testing purposes, do not exceed the design pressure of the PLIDCO fitting. The PLIDCO fitting is designed to be tested up to 1½ times its design pressure. However, PLIDCO recommends following API Recommended Practice 2201, Procedures for Welding or Hot Tapping on Equipment in Service, Section 6.5. The test pressure should be at least equal to operating pressure of the line or vessel, but not to exceed internal pressure by 10%. This is meant to avoid possible internal collapse of the pipe or vessel wall. However, if prevailing conditions could cause collapse of the pipe or pressure walls, the test pressure may be reduced. (See API Standard 510 Section 5.8 for pressure testing precautions.) Personnel should not be allowed near the repair until the seal has been proven.

Traceability

Domed style PLIDCO Tap+Enclosures, as most PLIDCO products, have a unique serial number by which the product is fully traceable.

Field Welding Considerations

!! WARNING!!

Failure to follow field welding instructions could result in explosion, fire, death, personal injury, property damage and/or harm to the environment.

All of the aspects for in-service welding of Domed Style PLIDCO Tap+Enclosure are not addressed by this document. ASME PCC-2, API 1104 Appendix B, ASME Section IX, PRCI L52047, PRCI Hot Tap® Model, and other industry information pertaining to in-service welding must be considered when planning in-service welding. Refer to IP-019, Welding Considerations for addition information.

It is recommended that the pipeline should be full and under flow.

Welders and weld procedures should be qualified in accordance with API Standard 1104, *Welding of Pipelines and Related Facilities*, Appendix B, *In-Service Welding* or other welding code. We strongly recommend the use of a low hydrogen welding process such as GMAW or SMAW using low hydrogen electrodes (E-XX18) because of their high resistance to moisture pick-up and hydrogen cracking. SMAW electrodes must be absolutely dry.

Use weld material with equal or greater tensile strength than the pipe. Carefully control the size and shape of the circumferential fillet welds. Strive for a concave faced fillet weld, with streamlined blending into both members; avoid notches and undercuts. The smoother and more streamlined the weld, the greater the resistance to fatigue failure. The worst possible shape would be a heavy reinforced convex weld with an undercut. Improper weld shape can lead to rapid fatigue failure, which can cause leakage, rupture or an explosion with attendant serious consequences.

It is very important that the field welding procedure closely follow the essential variables of the qualified weld procedure so that the quality of the field weld is represented by the mechanical tests performed for the procedure qualification.

Recommended Inspection Schedule

1. After the pipeline is re-pressurized and field tested (see *Re-pressuring and Field Testing* for precautions), PLIDCO recommends performing a Magnetic particle Inspection for all bevel and fillets weld approximately 24 hours after welding.
2. 6 months after installation it is recommended that a visual inspection occurs that checks for visible signs of leakage, and general wear or corrosion.
3. After the 6-month inspection occurs, a yearly visual inspection is recommended that checks for visible signs of leakage, and general wear or corrosion.