

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

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PRESSURE TESTING

VALVES, FLANGES AND ELLS

ALPETH OR STALPETH CABLE

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1. GENERAL

1.01 This is a new section outlining the method of installing valves, flanges and lead pipe connections on alpeth or stalpeth cable at locations other than splice points. At splice points, the pressure fittings are installed in the lead sleeve as in lead sheath cable.

1.02 For cable 2 inches and larger in diameter the method consists of soldering the pressure fitting to a lead or brass plate formed to fit the cable. The plate is then attached to the cable by a cemented gasket and BT-1 Aero-Seal Clamps.

1.03 For cables less than 2 inches in diameter it is necessary to place a short split lead sleeve. A wrapped joint is constructed at each end of the sleeve. The pressure fitting is soldered to the sleeve in the standard manner.

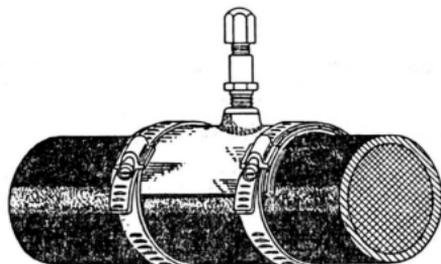
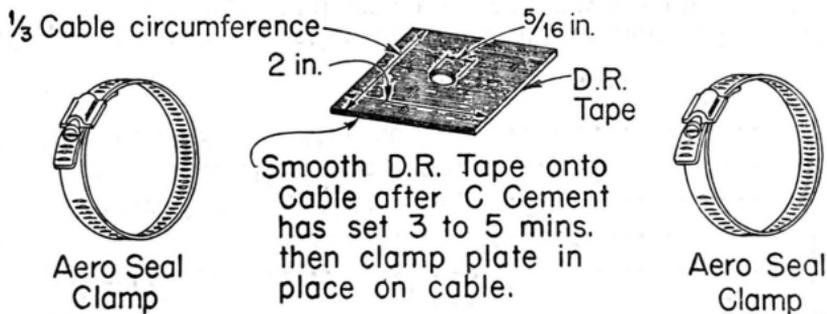
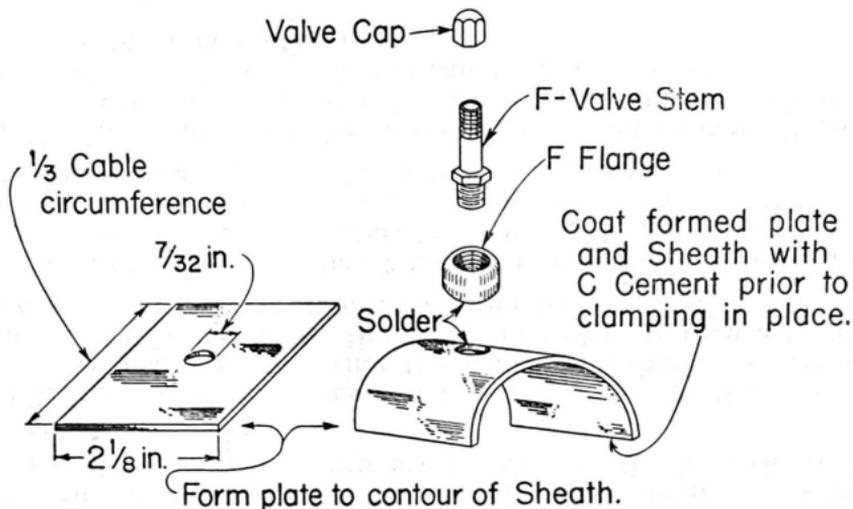
1.04 In aerial cable the valves, flanges and copper ell connections should be offset from the strand or positioned on the side of the cable in the same manner as for lead cable described in other sections.

2. GASKET PLATE METHOD

Preparation of Gasket Plate

2.01 Prepare a rectangular piece of lead sheath or 22-gauge semihard brass sheet with a width of 2-1/8 inches and length equal to 1/3 the circumference of the cable.

2.02 Drill a hole in the center of the plate using a cable drill for lead sheath and a 7/32-inch metal drill for the brass plate. Form the plate to the shape of the cable as indicated in the following illustration.



ASSEMBLY OF F-VALVE ON CABLE

2.03 Solder the **F Flange or C Valve** to the formed plate in the same manner as for lead sheath cable. Smooth the inside of the plate with a small round file where valve or solder particles project below the plate.

2.04 Solder the **Copper Ell** and lead pipe connection to the formed plate as follows:

(1) Clean the plate around the hole with a carding brush and coat with stearine. Place a 7/8-inch cable soldering form around the hole.

(2) Clean a copper ell and coat with stearine.

(3) Ream the end of the lead pipe with the scissors or shave hook to form a small chamfer in the bore, and coat with stearine.

(4) Place a ring of C stearine core solder around the ell and then insert the long end 1/2 inch into the lead pipe. Keep the lead pipe vertical while soldering. Melt the solder ring with a torch or soldering copper by applying the heat to the copper ell until the solder melts and runs into the chamfer.

(5) Place the copper ell and lead pipe in position on the gasket plate and solder in place employing a soldering copper. Exercise care to prevent unsoldering the lead pipe.

(6) Smooth off the inside of the plate with a small round file where the valve protrudes below the surface.

Installation of Gasket Plate

2.05 Cut a rectangular gasket of DR tape 2 inches wide and the same length as the lead or brass plate. Then cut a hole about 5/16 inch in diameter, in the center.

2.06 Clean the inner surface of the plate with a carding brush and coat with C cement. Allow the cement 3 to 5 minutes to dry.

2.07 Remove the fabric protection from the DR tape and carefully center the gasket over the hole, with the white side toward the plate. Press the gasket firmly into place with the fingers.

2.08 Drill a hole through the polyethylene sheath with a cable drill. Remove the core from the cable drill and then drill through the aluminum on alpeth cable, or terne plate and aluminum on stalpeth cable. Exert only very light pressure on the drill to avoid depressing cut edges of metal into the core. Remove the cut pieces of terne plate and aluminum with tweezers.

2.09 Prepare the sheath by the muslin spacing method described in the section on sheath preparation for fittings on lead cable.

2.10 Clean the sheath surface where the gasket will make contact and also clean the black surface of the DR tape on the gasket assembly, using a carding brush. Coat both of the cleaned surfaces with C cement and allow to dry 3 to 5 minutes.

2.11 Place the aero-seal clamps loosely around the cable so they will be ready when the gasket assembly is placed.

2.12 Center the gasket assembly over the hole drilled in the sheath and tighten the clamps until the DR tape begins to turn up around the edges of the plate.

2.13 Flash test the completed installation.

3. SPLIT LEAD SLEEVE METHOD

3.01 Prepare a split lead sleeve the next size larger in diameter than the cable. Use a sleeve 7 inches long for a C valve or F flange installation and 8 inches long for a copper ell connection. Bevel the split edges to 1/2 the sleeve thickness and remove the identification ridges from the sleeve.

3.02 Mark the center of the sleeve opposite the split and drill a hole in the sleeve with a cable drill. Bevel the hole inside the sleeve.

3.03 Drill a hole through the polyethylene sheath of the cable at the desired location of the pressure fitting. Remove the core from the cable drill and then drill through the aluminum on alpeth cable, or terne plate and aluminum on stalpeth cable. Exert light pressure on the drill to avoid depressing cut edges of metal into the core. Remove cut edges of terne plate and aluminum with tweezers.

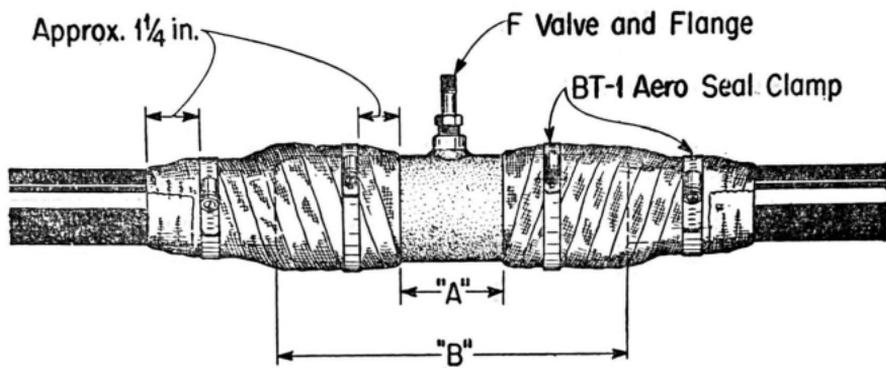
3.04 Place the lead sleeve on the cable and solder the seam. Wrap the polyethylene with muslin to prevent damage to the plastic while soldering the sleeve.

3.05 Remove the muslin wrapping and position the sleeve on the cable with the hole in the sleeve over the hole in the sheath. Beat in each end of the sleeve to the polyethylene sheath.

3.06 Construct a wrapped joint on each end of the sleeve in the same manner as covered in the sections describing auxiliary sleeve wrapped joints on alpeth or stalpeth cable.

3.07 Solder the pressure fitting to the sleeve in the standard manner. Position two BT-1 Aero-Seal Clamps on each wrapped joint as described for joints on cable under continuous pressure. The clamps should be placed after the sleeve has cooled.

3.08 Following is an illustration of the complete installation.



"A" - 2 in. for C Valve or F Flange - 3 in. for Copper Ell Connection.
"B" - 7 in. for C Valve or F Flange - 8 in. for Copper Ell Connection.