

FIELD INSTRUCTIONS

TERMINATION PROCEDURE

LIGHTWEIGHT COAX
TOW CABLE 0.45-INCH DIAMETER
WITH CABLE GRIP - 8-PIN MICRO

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GENERAL CAUTIONS

- The tow cable must never be coiled haphazardly or twisted excessively, because the damage to the cable caused by a kink is irreversible.
- Perform the procedure carefully and correctly **THE FIRST TIME**. Excessive speed in the performance of this procedure will not only produce an end result which is not up to the standards required, but will also **cost time and money** in the long run because the procedure will have to be redone.

SAFETY SUMMARY

The following are general safety precautions that are not related to any specific procedural step, and therefore, do not appear elsewhere within these instructions. These are recommended precautions that must be understood and applied during all phases of these procedures for the safety of the person(s) involved and for the protection of the cable. As required, specific WARNING and CAUTION notes are highlighted throughout these instructions: WARNING notes appearing within the procedural steps call attention to possible injury hazards which may result if the procedural steps are not correctly followed; CAUTION notes appearing within these instructions call attention to possible equipment damage which may result if specific procedural steps are not strictly followed.

- **GOGGLES MUST BE WORN DURING ALL PROCEDURES THAT REQUIRE THE CUTTING OF WIRES, THE POURING AND MIXING OF CAUSTIC MATERIALS, AND THE USE OF POWER TOOLS.**
- **PROLONGED OR REPEATED EXPOSURE TO OR CONTACT WITH CAUSTIC CHEMICALS MAY CAUSE IRRITATION AND/OR BURNS TO EYES, LUNGS, AND SKIN.** Avoid prolonged breathing of chemical vapors, and always provide adequate ventilation. In case of contact, immediately flush skin or eyes with plenty of fresh water for a minimum of fifteen (15) minutes, and if irritation persists, seek medical attention.
- **CARELESS OR INEXPERIENCED OPERATION OF ELECTRICAL AND MECHANICAL TOOLS MAY LEAD TO UNNECESSARY INJURY.** The use of such equipment must be under the direct supervision of experienced technicians/mechanics and always under the conditions required for safe operation.

NOTE

Cable construction may vary slightly from those described in these instructions.

For lightweight coax tow cable termination, refer to Bill of Material 14103020 and Assembly Drawing 15103020.

The following supplies are required for the safe and proper execution of this coax tow cable termination procedure.

- | | |
|--|---|
| 1. Safety Goggles | 7. Pick or Scribe |
| 2. Vise (or C-clamps) | 8. Crimping Tool |
| 3. Sharp Knife
(or X-ACTO knife and blades) | 9. Ohmmeter |
| 4. Cable Jacket Shears | 10. Solvent
(DSol, MEK, or equivalent) |
| 5. Diagonal Cutting Pliers | 11. Rough Sandpaper |
| 6. Electrical Tape | 12. Manual Adhesive Applicator |

The procedure for the mechanical attachment of the coax cable and the electrical connection of the cable conductors to the conductors of the hose-barbed connector is as follows:

1. Work bail grip (item 2), onto tow cable (item 1), and slide it approximately 1 meter (3 ft.) down from the end of the cable. The loop end of the bail grip must face towards the end of the cable. Refer to Assembly Drawing 15103020.
2. Remove only enough of the rubber boot (item 5), from the tapered end, to allow the boot to slide over the tow cable while maintaining a snug fit on the cable. Abraid the inside of the boot with a rough sandpaper or equivalent. Slide the boot on the cable approximately 12.7 cm (5 inches).
3. Thoroughly cleanse cable jacket with solvent. Measure 6.35 cm (2-1/2 inches) from the end of the cable, and abrade the cable jacket 2.5 cm (1 inch) on both sides of the 6.35 cm (2-1/2 inch) point with rough sandpaper. Again, wipe the cable jacket with solvent.
4. CAREFULLY strip the end 5.1 cm (2 inches) of outer jacket from the cable (exposing the braided Kevlar strain member).

CAUTION

Care must be taken NOT to cut any Kevlar strands.

5. Carefully unbraid the yellow Kevlar strands (exposing black inner cable jacket), and divide the strands into two equal bundles. Configure the two bundles 180 degrees away from each other, and tie each bundle with nylon cable lacing (Item 15).

NOTE

There should now be two Kevlar bundles, with approximately the same number of strands in each, tied off with nylon cable lacing, and pushed back out of the way of the exposed black inner cable jacket.

- Carefully cut away the black inner cable jacket .8 cm (5/16 inches) from where the Kevlar braid exits the cable, exposing the braided shield (see Figure 1).
- Unbraid the shield and form a multi strand conductor with the strands.
- Install adequate length of .3 cm (1/8-inch) shrink sleeving (item 14) over formed conductor to cover entire length, and shrink with heat gun.
- Carefully cut away the insulation on the center conductor, 1.3 cm (1/2 inch) from end of black inner cable jacket.
- Trim the bare center conductor to 1.3 cm (1/2 inch) long.

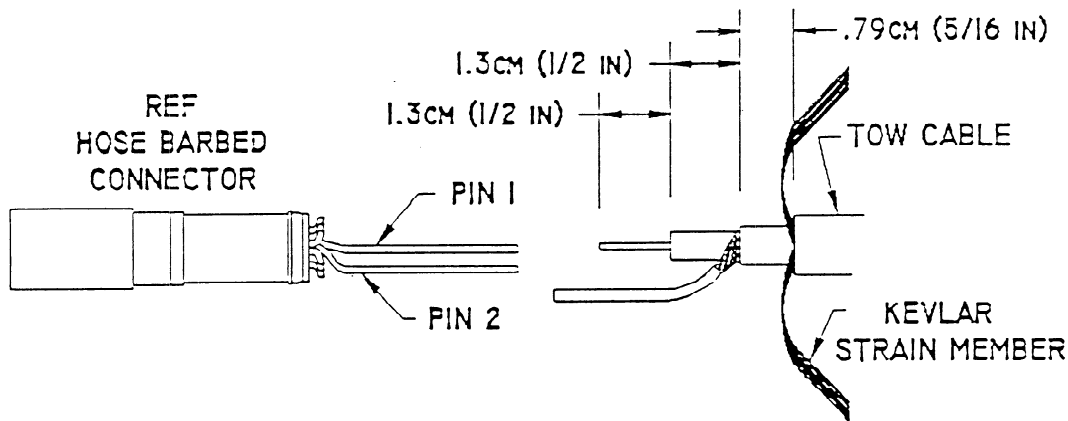


FIGURE 1

NOTE

The termination is now prepared for electrical connection to the 8-pin, hose-barbed connector.

- Cut the leads on the hose-barbed connector (item 3). Cut the leads from pins 1 and 2 to 6.35 cm (2-1/2 inches) long. Cut all remaining leads, 3 to 8, to .63 cm (1/4 inch) long, and bend to outside of the connector housing, spaced around the diameter; see Figure 2.

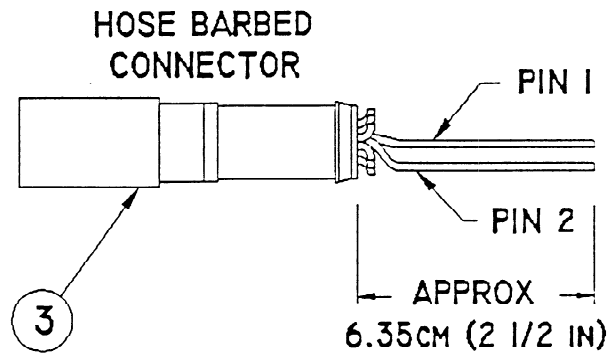


FIGURE 2

12. Abraid the brass barb on the connector with rough sandpaper.
13. Install the locking ring (supplied with locking sleeve) into the groove inside the locking sleeve (item 4). Install locking sleeve on barbed connector; see Figures 3 and 4.

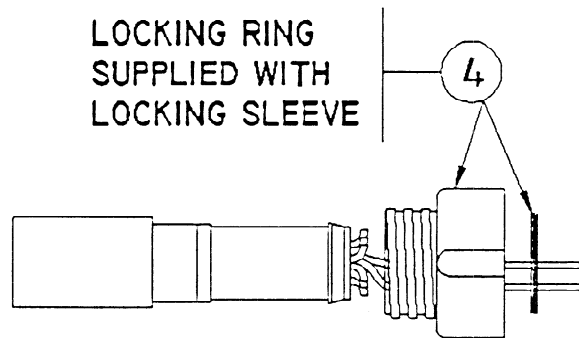


FIGURE 3

14. Cut the tygon tubing (item 12) to 1.3 cm (1/2 inch) long. Clean the brass barb with solvent. Slide the tygon tubing onto the brass barb to a position up against the small shoulder at the other end near connector; see Figure 4.

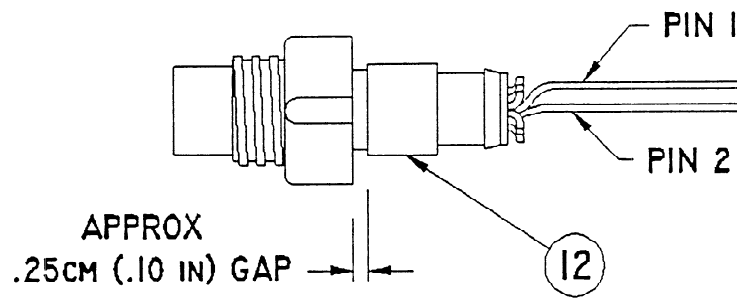
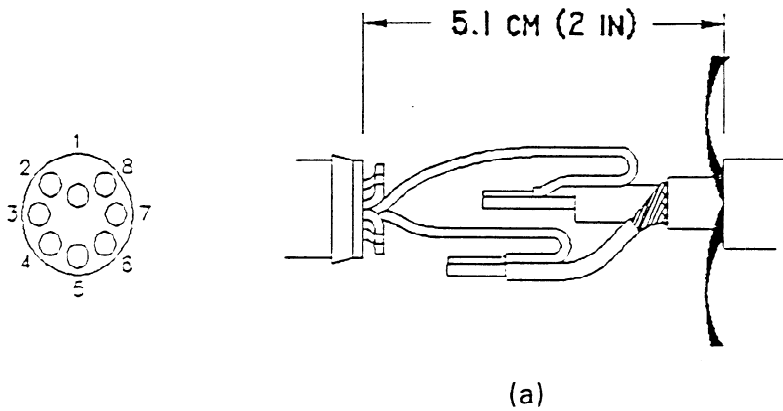
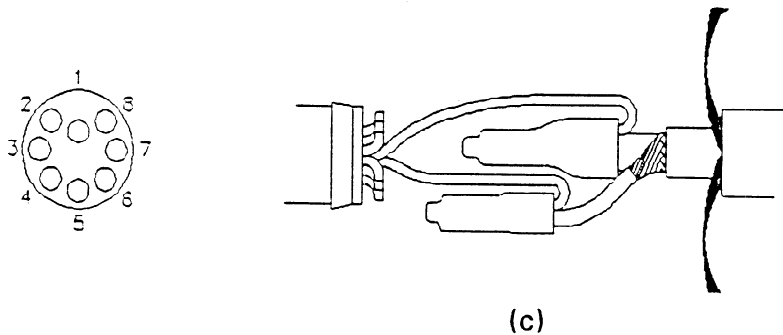
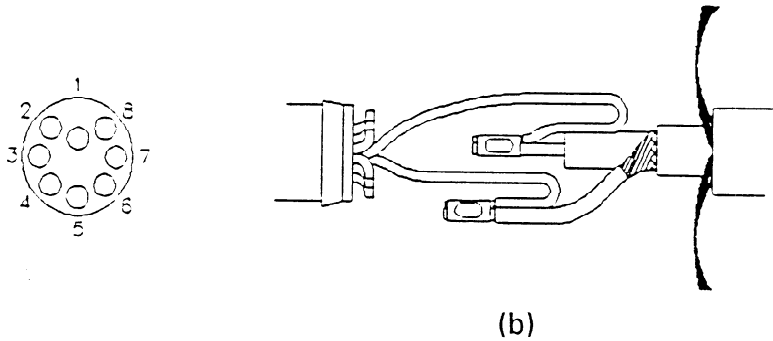


FIGURE 4

15. Create a "service loop" in the conductor that connects to the No. 1 pin of the hose-barbed connector, and lay it parallel to the center conductor of the coax tow cable, as illustrated in (a). Maintain about 5.1 cm (2 inch) dimension between points shown. Trim connector lead as necessary.



16. Using wire strippers, expose 0.6 cm (1/4 inch) of bare wire at the end of the connector conductor.
17. Crimp splice the two conductors with a parallel crimp splice (item 23). Slide a 2.5 cm (1 inch) piece of sleeving (item 13) over the splice, and shrink with a heat gun; see illustrations b and c.



18. Create a "service loop" in the conductor that connects to the No. 2 pin of the hose-barbed connector, and lay it parallel to the shield that has been twisted into a multi-strand conductor and covered with shrink sleeving, from the coax tow

cable, as illustrated in (a). Maintain about 5.1 cm (2 inch) dimension between points shown. Trim connector lead as necessary.

19. Using wire strippers, expose 0.6 cm (1/4 inch) of bare conductor at the end of the two parallel conductors.
20. Crimp splice the two conductors with a parallel crimp splice (item 24). Slide a 2.5 cm (1 inch) piece of sleeving (item 13) over the splice, and shrink with a heat gun (see illustrations b and c).

CAUTION

Ensure that the splices are staggered in order to prevent shorting.

21. Twist the two Kevlar bundles tightly to create neat, individual bundles for the potting material to encase. Pull away and discard any loose strands.
22. Arrange the two Kevlar bundles around the two splices 180° apart. At approximately 4.4 cm (1-3/4 inches) from the strain member entrance, tie together loosely the bundles of Kevlar and the two splices. Cut away the excess cable lacing (item 15). Keep the bundle small enough to fit inside the boot; see Figure 5.

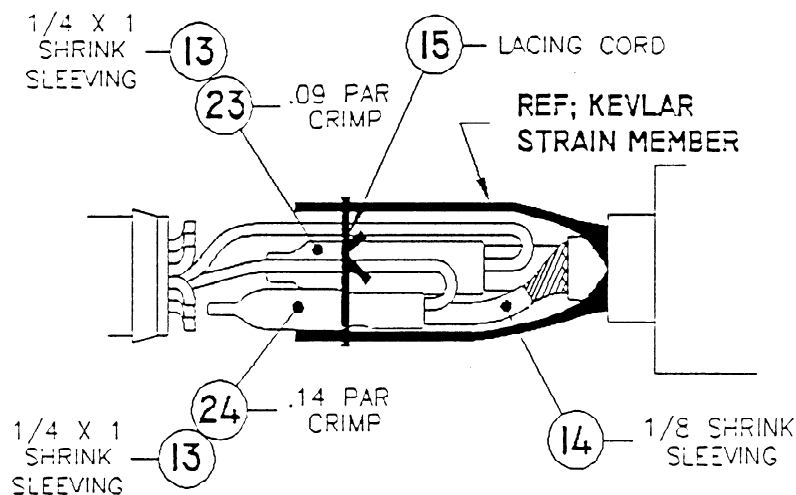


FIGURE 5

23. Cut away the excess from the Kevlar bundles to approximately 1.0 cm (3/8 inch) from the cable lacing. Check that adequate spacing exists between the conductor splices.
24. Check the continuity of the connections with an ohmmeter.

NOTE

The termination is now prepared for potting. Use Klein Potting Kit 14103086 (item 16); see Figure 6 for item identification.

25. Abraid the brass base of the hose-barbed connector.
26. Slide the boot (item 5) up the cable to a point where the open end of the boot is even with the bottom end of the tubing (item 12) on the hose barb of the connector.
27. Support the assembly in a vertical position with the open end of the boot up.
28. Install the epoxy cartridge into an applicator gun with the proper plunger installed. Install the static mixer, with the needle, to the cartridge.
29. Force the two compounds out of the cartridge into the mixing tube and out of the needle. The mixed compound should be a uniform color (gray).
30. Punch a hole in the lower end of the boot about 2.5 cm (1 inch) from the bottom, with a pointed instrument (pick, scribe) for the needle on the end of the mixing tube to penetrate the boot.
31. Insert the needle and fill the boot with potting material, by injection.
32. Caution should be taken to avoid trapping air in the assembly.
33. Slowly move the filled boot into place, with the top of the boot even with the top of the tubing (item 12), keeping it full of potting material and letting any air trapped in the boot and base of the connector escape. Insert a small screwdriver between the top of the boot and the tubing to vent the air out of the boot. Inject more potting in the assembly until it flows out of the top.
34. Once the boot is in place and topped off with potting, remove the vent and wipe away any potting overflow from the outside. Let the assembly set to insure proper setting of the potting material (approximately 1 hour).

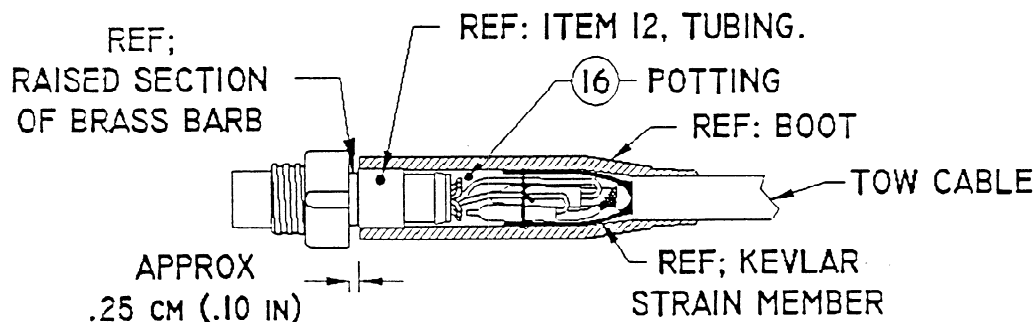


FIGURE 6

NOTE

The cable is now ready for final adjustments. See assembly drawing 15103020 for additional information.

35. Slide the cable grip (item 2) on the cable until the inside of the bail is 21.6 cm (8-1/2 inches) from the face of the connector. Holding the bail of the cable grip, pull on the cable at the far end to set the cable in the grip. Adjust the distance from the face of the connector if necessary.
36. Install 3 cable ties (item 21), as follows: the first at 2.54 cm (1 inch) from the end of the cable grip; the remaining ties at 1.27 cm (1/2 inch) intervals on the cable grip, to allow the spiral wrap to pass between the ties.
37. Install the spiral wrap (item 20) over the cable grip. Start the bail breakout at the end of the grip to 7.62 cm (3 inches) beyond the far end of the grip. Wrap the spiral wrap between the cable ties.
38. Add labels as necessary.

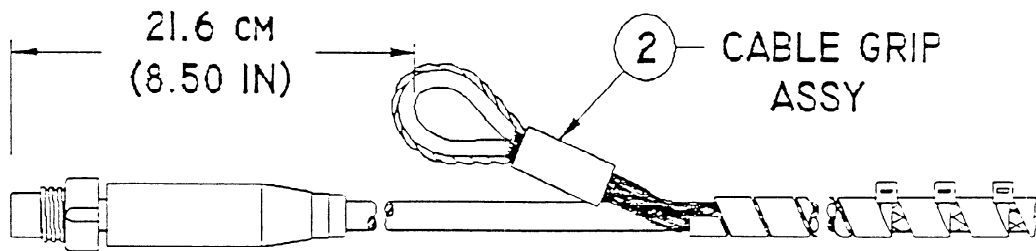


FIGURE 7

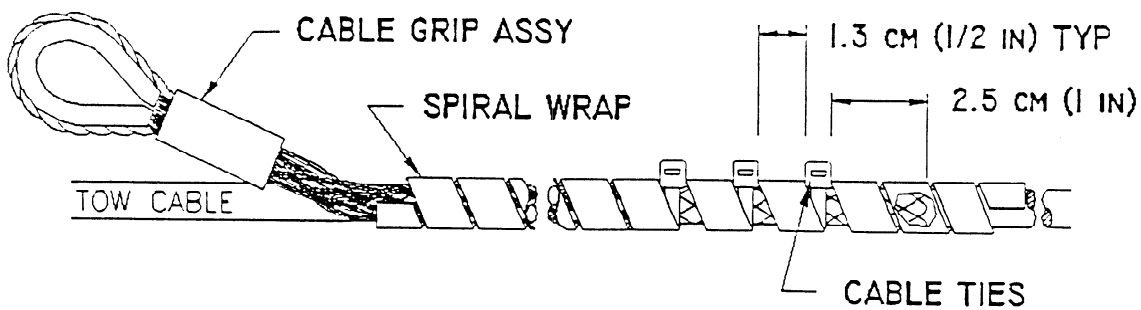


FIGURE 8