

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

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CABLE SPLICING—GENERAL

SPLICING FLEXIBLE SHIELDED VIDEO CABLE

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1. GENERAL

1.01 This section describes the method of splicing flexible shielded video cable. The cable consists of a twisted pair of No. 18 or 19 gauge solid conductors. Each conductor is insulated with polyethylene and the twisted pair is embedded in polyethylene and covered with two braided copper shields and a plastic jacket. The superseded cables have stranded conductors and only one outer shielding braid. Issue 1 is replaced.

1.02 This section has been rewritten to cover a new method of splicing brought about by the use of two shielding braids on the flexible shielded video cable. Different materials are used in some portions of the work, and a change has been made from pressed to soldered sleeves.

2. MATERIALS

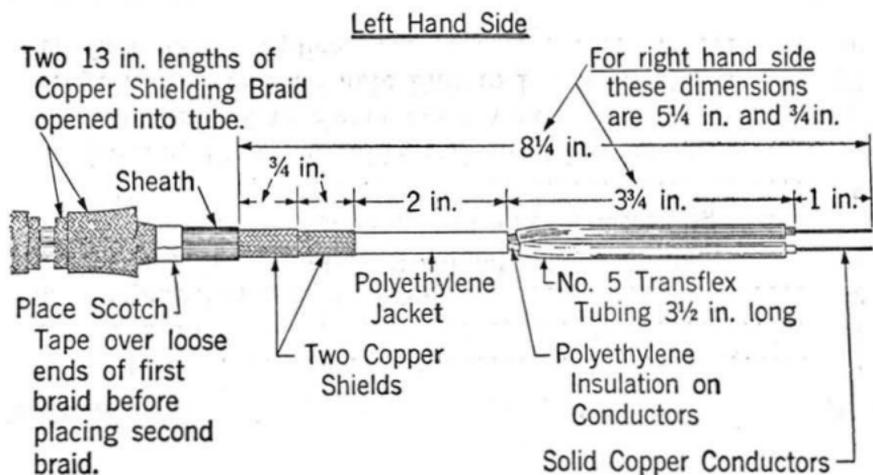
2.01 The following materials are required in addition to those generally carried by splicers.

2.02 **Materials:**

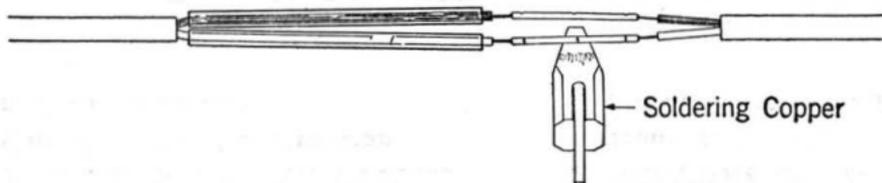
- Braid, Shielding, Copper** Two 13-inch lengths required to make the shield continuous through the splice.
- Sleeve, Copper Tinned, No. 16** Two required per pair. For joining conductors.
- Tape DR, 3/4 inch** Two separate wrappings are used to cover the splice.
- Tape, Electrical, Scotch, No. 27, 1-inch x 36-yard roll:** Glass-cloth tape. For wrapping auxiliary sleeve.
- Tubing, Transflex No. 5** For insulating the tinned copper sleeves.

3. **PREPARATION AND SPLICING**

- 3.01 Place two 13-inch lengths of copper shielding braid over one of the cables.
- 3.02 Prepare the conductors, as illustrated below, placing the transflex tubing over the left-hand conductors.



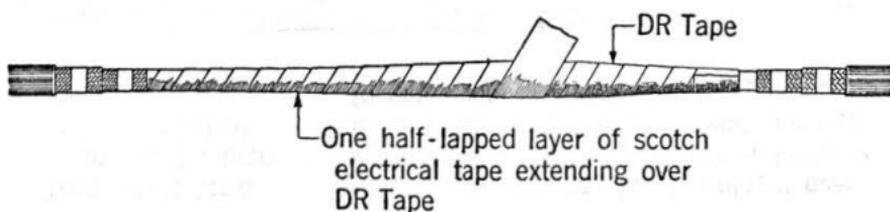
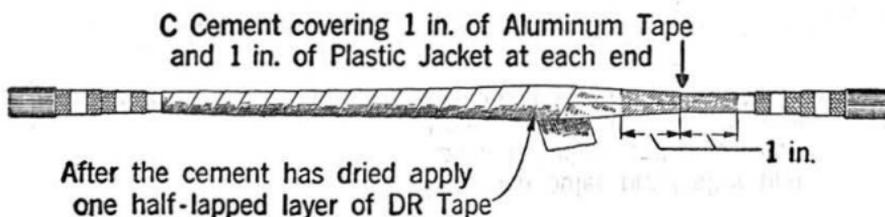
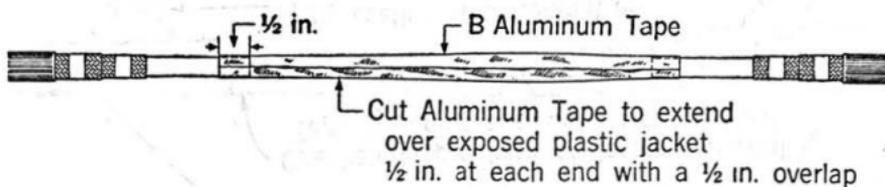
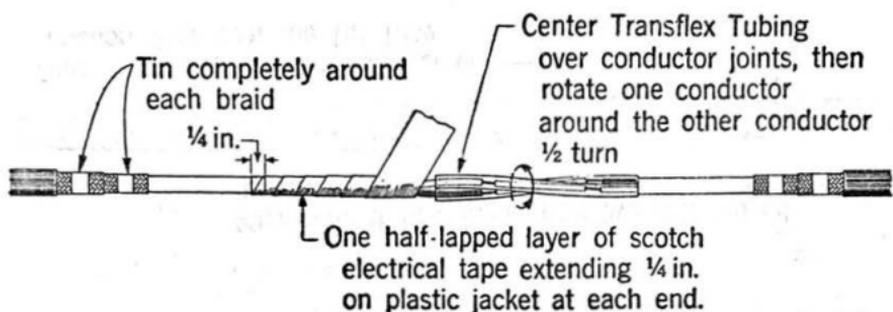
- 3.03 Insert the conductors in No. 16 tinned copper sleeves as illustrated below and solder with rosin core solder. Avoid excessive heat which may damage the polyethylene. Remove any burrs from soldered joints.



3.04 After the joints cool, slide the transflex tubing over the conductors, butting them against the plastic jacket on the right-hand side to center them on the copper sleeves.

3.05 Using rosin core solder, tin the middle of each of the four 3/4-inch lengths of copper shielding. Tin completely around the cable, as shown on the following drawing. Avoid excessive heating which may damage the polyethylene.

3.06 Then wrap the completed splice as shown.



Trim inside braid
 $\frac{3}{4}$ in. shorter than
 outside braid at
 each end

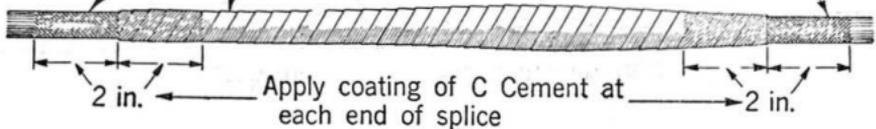
Inner copper shielding braid centered over
 splice opening secured at each end with 2
 turns of copper lashing wire and soldered
 to inner copper shield of cable



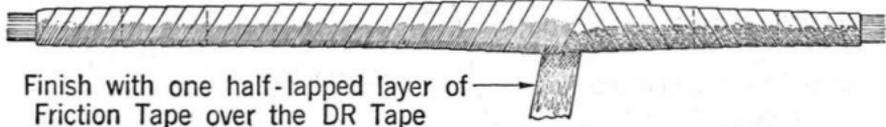
Lengthen outer braid after first
 braid is lashed and soldered.
 Lash and solder to outer copper
 shield of cable.

Scuff 2 in. of Sheath with carding brush

One half-lapped layer of Scotch Electrical
 Tape extending over outer Copper Braid



After cement has dried apply two half-lapped
 layers of $\frac{3}{4}$ inch wide DR Tape



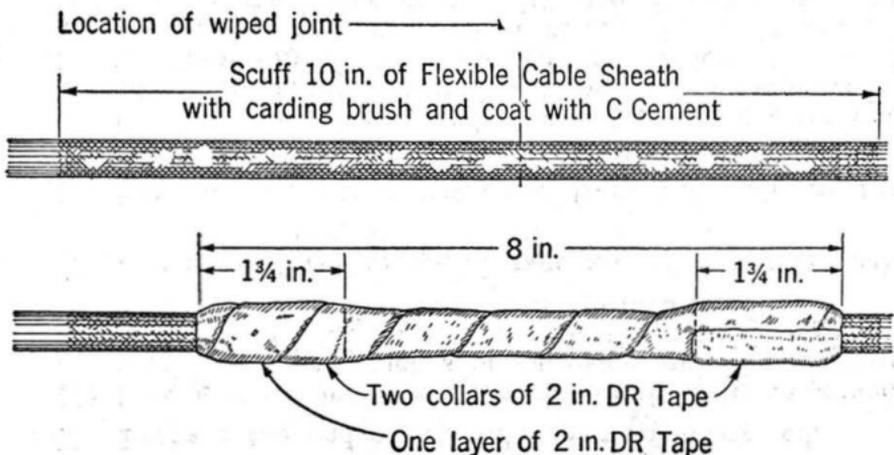
Finish with one half-lapped layer of
 Friction Tape over the DR Tape

4. SUPERSEDED FLEXIBLE SHIELDED VIDEO CABLE

4.01 Where flexible shielded video cable having the double layer of shielding is spliced to flexible video cable having only one layer of shielding, or where a splice is made in cable having only one layer of shielding, use two concentric tubes of the copper shielding braid. Follow the procedure outlined in Part 3, except that each braid should be soldered separately to the shield on the cable.

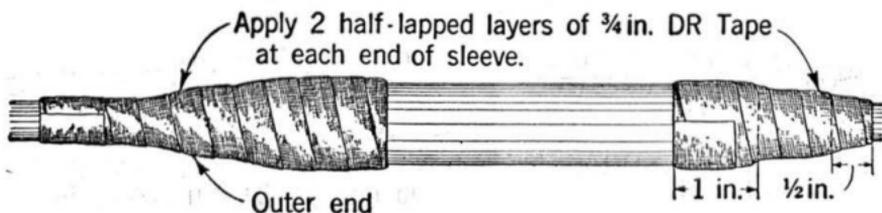
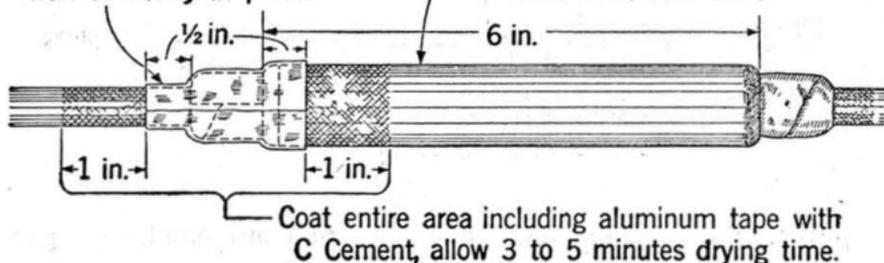
5. PREPARATION FOR SPLICING TO CABLES CONTAINING VIDEO PAIRS

5.01 If the flexible video cable is to be joined to a regular video pair in a lead sheath cable or to a paper insulated cable, an auxiliary lead sleeve should be prepared and placed over the flexible cable to permit wiping, as illustrated.



Apply a 1 1/4 turn collar of B Aluminum tape to extend 1/2 in. over sleeve and sheath, iron smoothly in place.

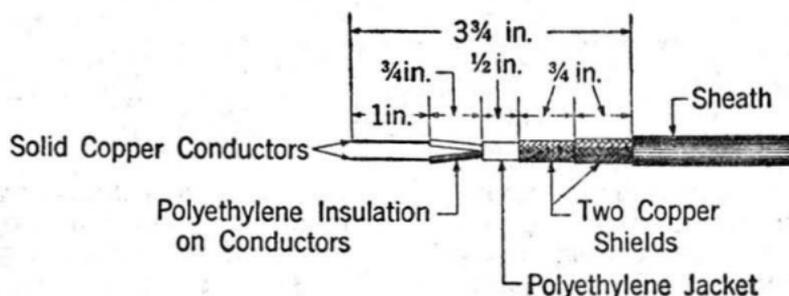
Scuff 1 1/2 in. of lead sleeve, 3/4 in. Diam. x 6 in. long and center sleeve over tape and beat in at both ends.





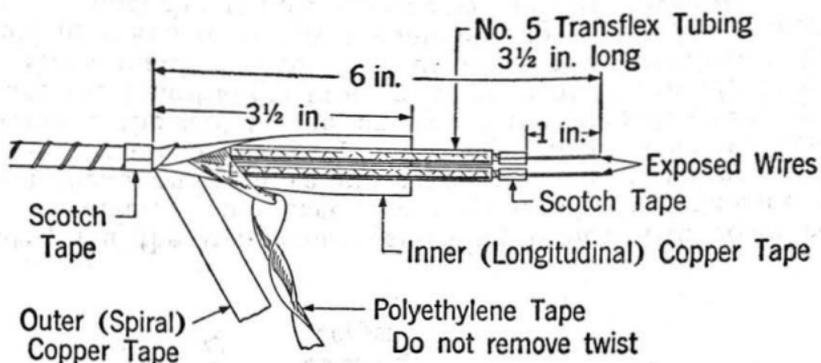
6. JOINING FLEXIBLE CABLE PAIR TO VIDEO PAIR

6.01 Prepare the end of the flexible cable as illustrated.

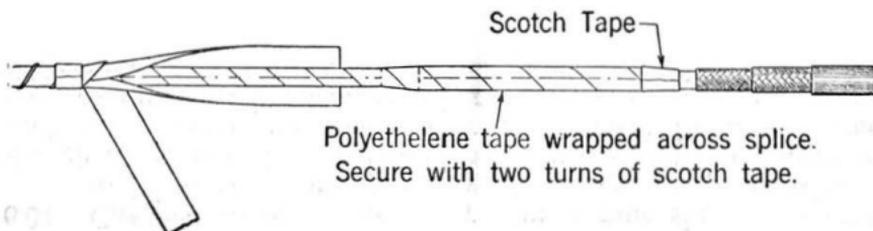
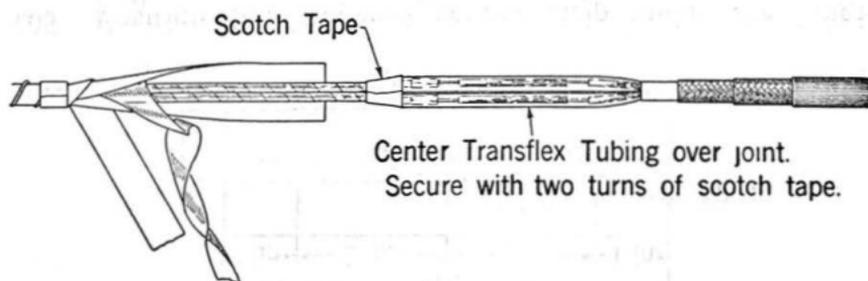
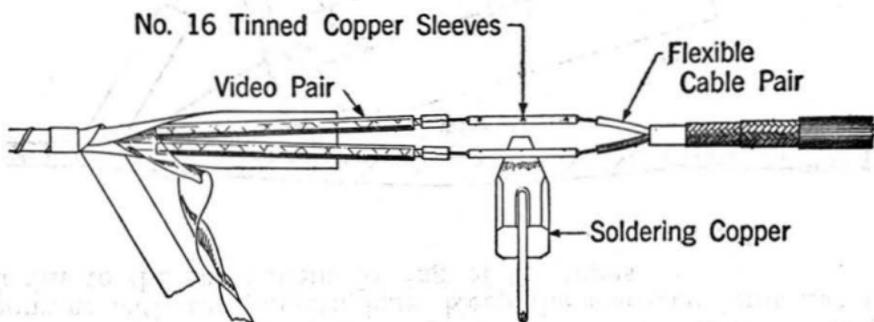


6.02 Prepare the end of the video pair as illustrated.

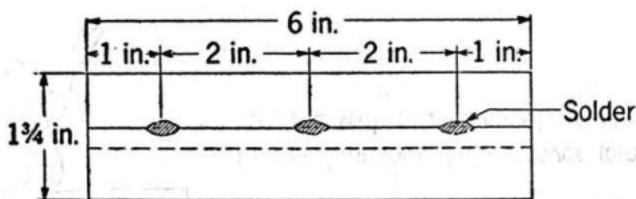
- (1) Locate the point where the video pair is to be joined, mark the pair 6 inches on one side and 14 inches on the other side of the joint to provide the necessary shielding tape. Cut the video pair at the 14-inch mark.
- (2) Place two turns of scotch tape around the video pair at the 6-inch mark.
- (3) Remove the paper wrapping from the pair to the scotch tape marker.
- (4) Unwind the outer (spiral) copper tape, and open and cut off the inner (longitudinal) copper tape as indicated below. Then unwind the $\frac{7}{8}$ -inch polyethylene tape. Cut off and remove the polyethylene string fillers. Do not cut the outer copper tape or the $\frac{7}{8}$ -inch polyethylene tape.
- (5) Cut off the conductors six inches from the scotch tape markers. Place two turns of $\frac{1}{2}$ -inch scotch tape over the polyethylene tape on each conductor as indicated below and remove one inch of the polyethylene tape and the underlying polyethylene string to the scotch tape. Place a $3\frac{1}{2}$ -inch length of No. 5 transflex tubing over each conductor.



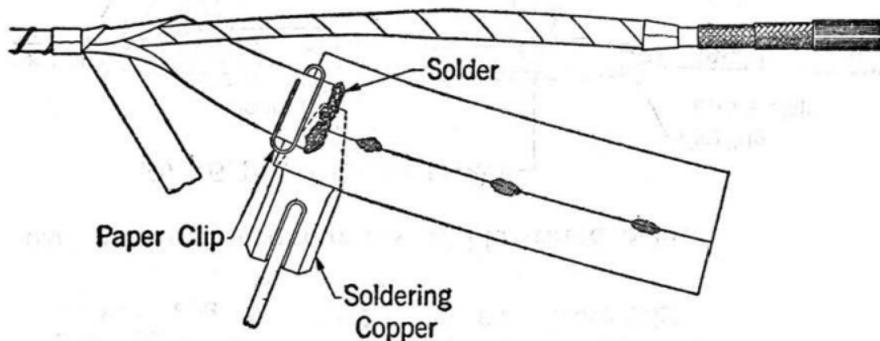
6.03 Join the conductors as illustrated below:



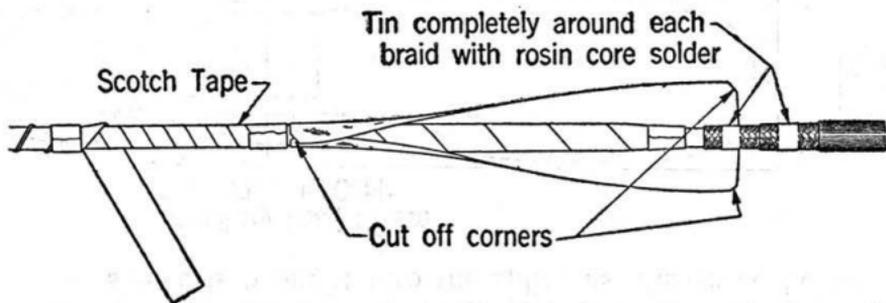
6.04 Cut two strips of the inner copper tape six inches long and flatten them, then lay the strips together with a 1/4-inch overlap and secure them temporarily with a length of scotch tape. Turn the strips over and solder them at three points as illustrated below, making the solder spots as flat as practicable. Then remove the scotch tape.



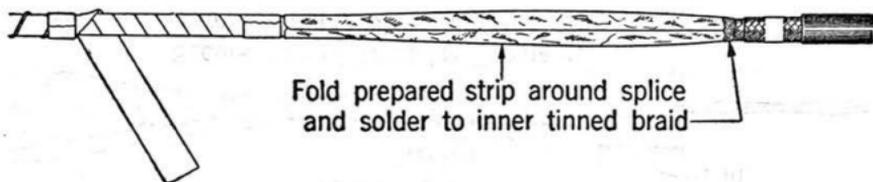
6.05 Position the prepared copper strip under the longitudinal copper tape and, holding it in position with a paper clip, solder with the iron as indicated below, avoiding contact with the polyethylene. Keep the soldered joint flat to facilitate the subsequent folding of the tapes.



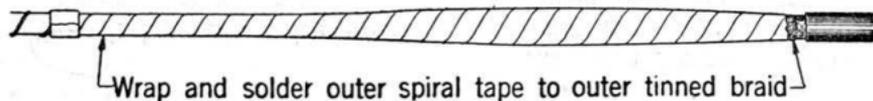
6.06 Tin the two copper shielding braids with rosin core solder. Avoid excessive heat which may damage the polyethylene, and remove any burrs from the tinned areas. Cut off the corners of the prepared copper strip as shown below. Starting at the scotch tape marker on the left side of the splice restore the longitudinal tape to its original lay, in 1/2 to one-inch steps, making as much of an overlap as practicable. Care should be taken to ensure a complete closure of the copper so that the underlying polyethylene is entirely covered.



6.07 Fold the prepared copper strip around the splice as smoothly as practicable. Solder the right end to the tinned portion of the inner copper shielding braid.



6.08 Rewind the outer (spiral) copper tape as smoothly as practicable until it covers the tinned portion of the outer copper shielding braid and secure the end with scotch tape. Solder the tape to the tinned portion of the outer shielding braid.

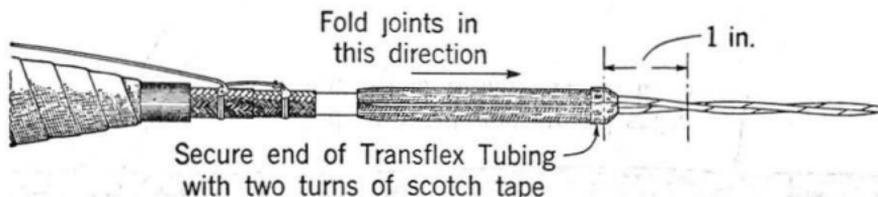
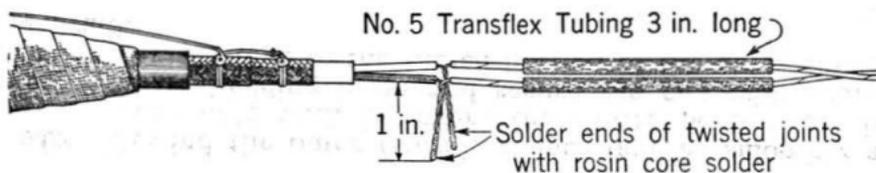
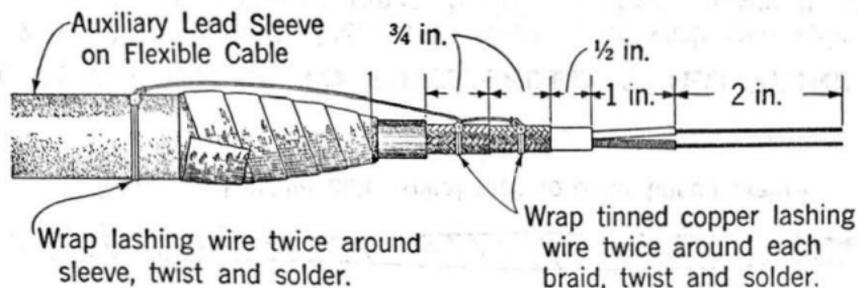


7. CONNECTIONS TO SUPERSEDED VIDEO PAIRS

7.01 The original video pairs were made with two spirally wrapped copper tapes. In joining them to the flexible cable pair follow the procedure outlined in Part 6 except that the two spirally wrapped copper tapes should be returned as nearly as possible to their original lay. Solder the inner spiral tape to the inner copper shield and the outer spiral tape to the outer copper shield of the flexible cable.

8. JOINING FLEXIBLE CABLE PAIR TO PAPER INSULATED PAIR

8.01 Bond each copper shielding braid to the auxiliary sleeve and prepare and join the conductors as illustrated below.



Wrap with one half-lapped layer of scotch electrical tape from inner edge of DR Tape across splice to cover about 1 in. of paper insulated conductors.

9. COMPLETING SPLICE

9.01 The flexible shielded video pair with the auxiliary lead sleeve is brought into the splice as illustrated below.

