

BURIED PLANT
SPLICING B SERVICE WIRE

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1. GENERAL

1.01 This section describes the method of splicing B Service Wire.

1.02 This section is reissued to include B Service Wire provided with inner and outer jacket slitting cords. Since this reissue covers a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 B Service Wire is a 2-pair, quadded, polyethylene insulated wire used for underground service connections. B Service Wire is now furnished with inner and outer jacket slitting cords. Earlier type B Service Wire does not have the slitting cords. B Service Wire with slitting cords usually can be distinguished from the earlier wire by a slight ridge made in the outer jacket by the slitting cord.

1.04 The conductors are made from 20 A.W.G. copper-steel wire. The insulation of the conductors is colored for purposes of identification. The opposite wires of the quad, red-green and yellow-black, are the pairs. The red wire and the yellow wire are the ring conductors of the two pairs.

1.05 B Service Wire has a spiral wrapping of aluminum tape over the inner jacket. At splices, this tape is rewound over the spliced and insulated conductors to provide the tape with electrical continuity across the splice.

2. LIST OF TOOLS AND MATERIALS

Tools	Use
Diagonal Pliers	For cutting jackets and conductors and for skinning insulation from conductors
Long Nose Pliers	For grasping slitting cords
B Sleeve Presser	For compressing 032-025 S Brass Sleeves
C Sheath Slitter	For removing jackets from conductors (where slitting cords are not provided)
Materials	Use
032-025 S Brass Sleeves	For splicing conductors
3/4-Inch DR Tape	For insulating conductors and wrapping completed splice
1-Inch Vinyl Tape	For protecting completed splice from mechanical damage

3. PREPARING WIRE ENDS

Jackets With Slitting Cords

3.01 Remove the outer (black) and inner (brown) jackets as follows:

(1) Using diagonal pliers, make approximately a 1/2-inch slit in the end of the outer jacket along the ridge of the jacket, to expose the outer jacket slitting cord.

(2) Grasp the slitting cord firmly between the flat jaw portions of the long nose pliers. Pull the cord with the long nose pliers and slit the outer jacket back approximately 5 inches from the end of wire, as shown in Fig. 1. Remove the slit portion of the jacket, using the diagonal pliers.

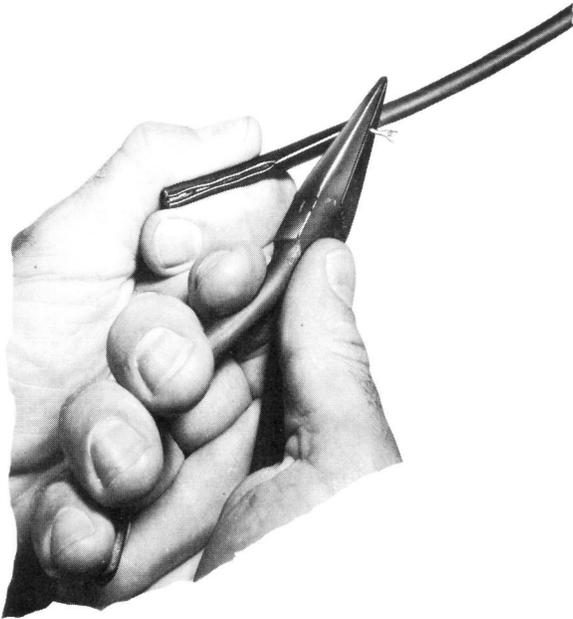


Fig. 1 — Slitting Outer Jacket, Using Slitting Cord

(3) Unwind the aluminum tape to the end of the outer jacket. If the free end of the tape lies under the preceding wrap, it can be released by twisting the entire wire opposite to the lay of the tape near the free end. This will cause the tape to bulge so that it can be grasped with long nose pliers.

(4) Slit and remove the inner jacket for a distance of 4 inches from the end of the wire, as shown in Fig. 2, using the procedures in (1) and (2).

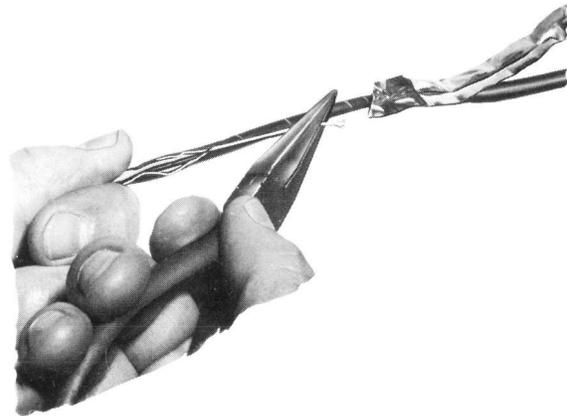


Fig. 2 — Slitting Inner Jacket, Using Slitting Cord

(5) Measure 2 inches from the end of the inner jacket and cut off the excess portion of the conductors, as shown in Fig. 3.

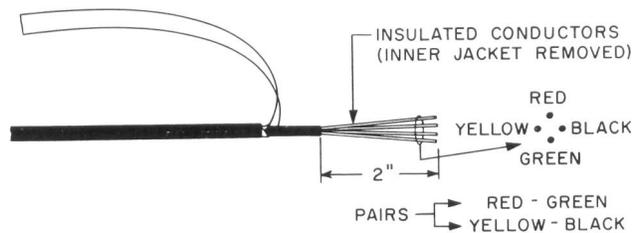


Fig. 3 — B Service Wire With Inner and Outer Jackets Removed

(6) Using the skinning hole of diagonal pliers, remove 1/2 inch of insulation from the end of each conductor, as shown in Fig. 4.

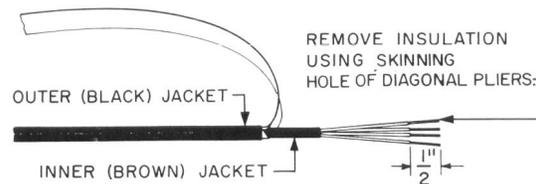


Fig. 4 — Wire Ready for Splicing

3.02 Repeat the procedures described in 3.01 with the end of the other wire to be spliced.

Jackets Without Slitting Cords

3.03 Remove the outer (black) and inner (brown) jackets as follows:

- (1) Measure about 5 inches from the end of the wire and at that point puncture the outer jacket with diagonal pliers or C Scissors. Cut only deep enough to pierce the jacket without cutting the aluminum tape.
- (2) Place the wire on a flat surface and insert the toe of the C Sheath Slitter into the cut in the outer jacket with the toe toward the end of the wire, as shown in Fig. 5.

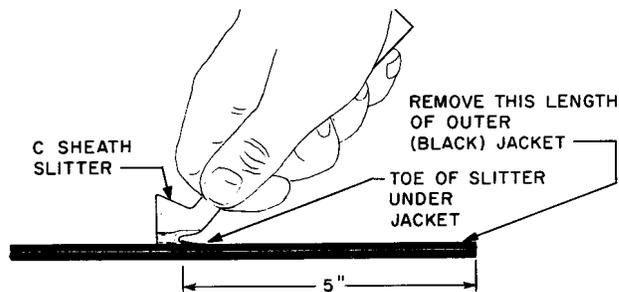


Fig. 5 – Slitting Outer Jacket, Using C Sheath Slitter

- (3) Hold the slitter so the toe is slightly raised, to avoid catching the aluminum tape. Slit the outer jacket to the end of the wire and remove the jacket.
- (4) Unwind the aluminum tape to the end of the outer jacket. If the free end of the tape lies under the preceding wrap, it can be released by twisting the entire wire opposite to the lay of the tape near the free end. This will cause the tape to bulge so that it can be grasped with long nose pliers.
- (5) Measure 3 inches from the end of the outer jacket and cut off the excess portion of the inner (brown) jacket and conductors, as shown in Fig. 6.

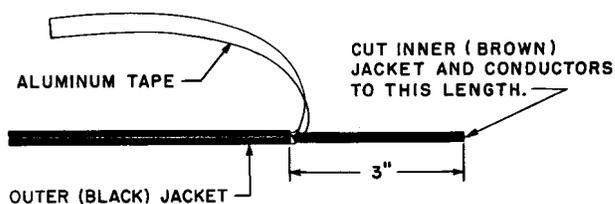


Fig. 6 – Inner Jacket Cut to Proper Length

(6) Remove the inner jacket for a distance of about 2 inches from the end of the wire. This can be done by using the sheath slitter as before or by cutting the jacket with diagonal pliers, starting at the open end of the jacket. Exercise care not to damage the conductor insulation.

(7) Using the skinning hole of diagonal pliers, remove 1/2 inch of insulation from the end of each conductor, as shown in Fig. 4.

3.04 Repeat the procedures described in 3.03 with the end of the other wire to be spliced.

4. SPLICING CONDUCTORS**Joining Conductors**

4.01 Place 032-025 S Brass Sleeves on the bared end of each conductor. Make certain that each sleeve is pushed fully onto its conductor, then crimp the sleeve lightly with diagonal pliers to hold the sleeve in place, as shown in Fig. 7.

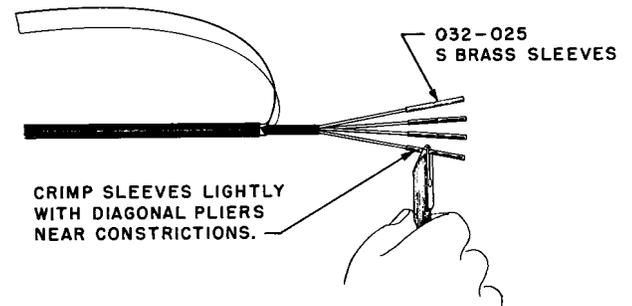


Fig. 7 – Placing Sleeves on Conductors

4.02 Insert the prepared conductor ends of the other wire into the sleeves, matching the wires, color to color. Again crimp the sleeves lightly with the diagonal pliers to hold the conductors, as shown in Fig. 8.

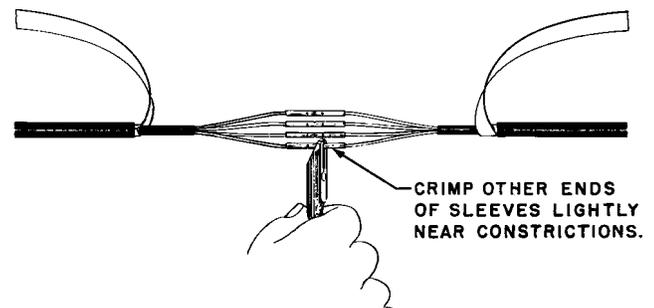


Fig. 8 – Wires Joined and Ready to be Pressed

4.03 Complete the wire joints by pressing the sleeves in the smaller groove of the B Sleeve Presser, as shown in Fig. 9.

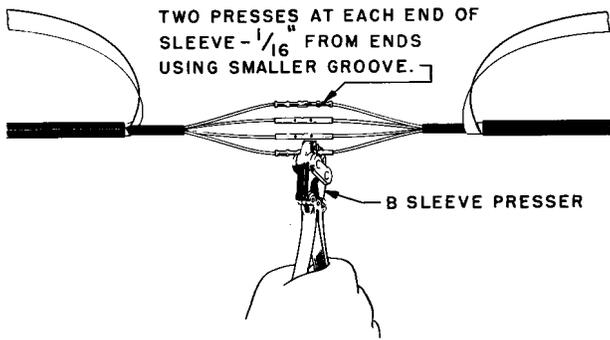


Fig. 9 – Pressing Wire Joints

Insulating Conductors

4.04 Spread the joined conductors, as shown, to provide adequate clearance for applying the insulation. Over each pressed sleeve fold a 2-1/2 inch length of 3/4-inch DR Tape, as shown in Fig. 10.

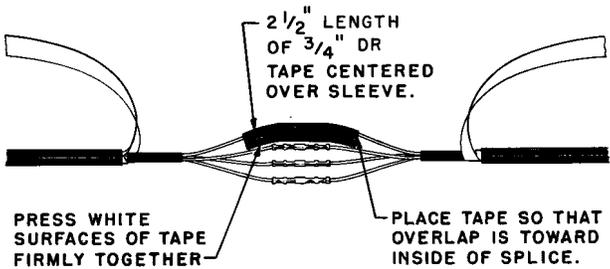


Fig. 10 – Insulating Conductors

4.05 Bunch the insulated sleeves closely together.

Rewinding Aluminum Shield

4.06 Rewind the aluminum tape from each end of the splice back over the wires and insulated sleeves. Make certain that the tapes from each end overlap at the center of the splice for a full turn, as shown in Fig. 11.

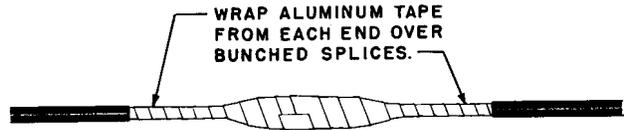


Fig. 11 – Aluminum Tape Wrapped and Overlapped

4.07 Starting at the center of the splice, cover the splice with two half-lapped layers of 3/4-inch DR Tape, as shown in Fig. 12.

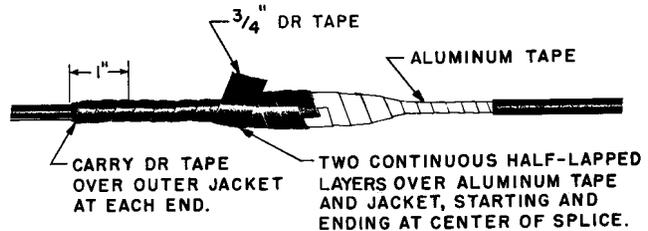


Fig. 12 – Taping Splice

4.08 To provide protection for the splice against damage and deterioration of the DR Tape wrappings, it is recommended that the DR Tape be covered with a half-lapped layer of 1-inch vinyl tape over the entire length of the splice.