BELL SYSTEM PRACTICES
Outside Plant Construction and Maintenance

SECTION G32.101.2
Issue 1, August, 1951
AT&T Co Standard

DROP AND BLOCK WIRING
TWISTED SLEEVE SPLICES

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1. GENERAL

1.01 This section covers the procedures for making twisted sleeve splices in drop and block wires through the use of double-barrel copper sleeves. This section in combination with Section G32.101.1 replaces Section G32.101 Issue 2.

1.02 In splicing drop or block wires in the field observe the following general rules.

(1) Exercise care to prevent nicking conductors when removing insulation.

(2) Thoroughly clean the portion of the skinned conductor which is to be inserted into the sleeve using abrasive cloth or diagonal pliers.

(3) Splice tracer conductor to tracer conductor and plain conductor to plain conductor. (The conductor with the raised ridge or ridges on its neoprene jacket is considered the tracer conductor.)

(4) Carefully follow the instructions herein pertaining to the method for equalizing tension in spliced wire.

1.03 For convenience in describing the wire splicing operations in this section the two wires to be spliced are designated as Pair No. 1 and Pair No. 2.

2. DESCRIPTION OF COPPER SLEEVES

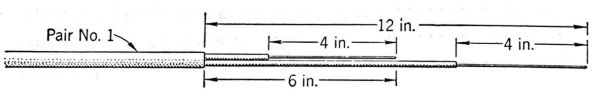
2.01 The copper sleeves designated for use in splicing wire in accordance with this section are of the double tube copper type. The sizes of sleeves and the types of wire for which they are intended are tabulated below.

Copper Sleeves		
Size	**Length**	**Type of Wire to be Spliced**
045 Half	2″	Drop to Drop (18 Ga)
032	1-1/2″	Block to Block (20 Ga)
045 x 032	2″	Drop to Block
064 Half	2″	HD to HD (14 Ga)

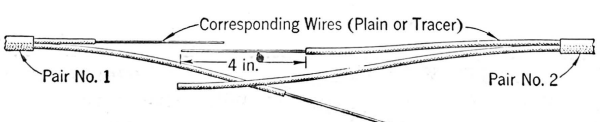
3. SPLICING DROP WIRE TO DROP WIRE

3.01 Proceed as follows:

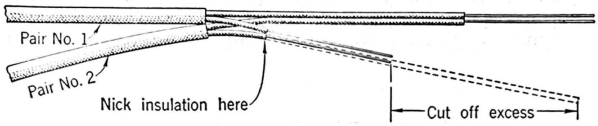
(1) Remove approximately 12 inches of the outside jacket from Pair No. 1 by means of the B Braid Stripper. Separate the two conductors and cut one conductor approximately 6 inches shorter than the other. Remove the rubber insulation from each conductor for about 4 inches and clean the conductor.



(2) Remove approximately 12 inches of outside jacket from Pair No. 2, separate the conductors and remove 4 inches of rubber insulation from the conductor of Pair No. 2 corresponding to the short conductor (plain or tracer) of Pair No. 1.

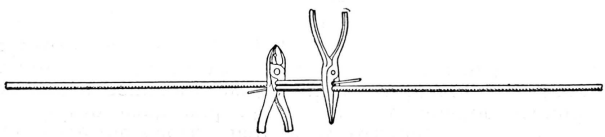


(3) Place the long conductor of Pair No. 1 and the skinned conductor of Pair No. 2 side by side with the ends of the insulation touching. Place the two remaining conductors side by side and nick the insulation of the unskinned conductor of Pair No. 2 opposite the end of the insulation on the short conductor of Pair No. 1. Cut off the excess length of the Pair 2 conductor, skin and clean for the same length as the associated Pair 1 conductor.

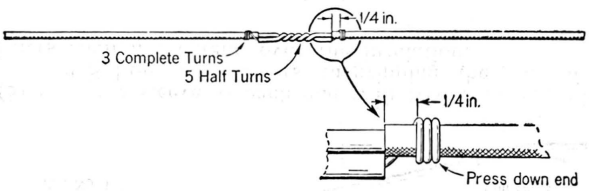


(4) Place a sleeve on each conductor of Pair No. 1 and push back to within about 1/2 inch from the end of the insulation. (Rotating the sleeve will make it go on more easily.) Bend up ends of conductors slightly. Insert one conductor of Pair No. 2 in the sleeve on the corresponding conductor of Pair No. 1. Push the conductor through the sleeve until it projects beyond end of sleeve. Pull ends of conductors through sleeve until insulation is tight against both ends of sleeve and bend over the ends of conductors slightly. Proceed in the same way for the other conductors and then give the temporarily spliced drop wire a sufficient pull away from the sleeves to equalize the tension in the conductors.

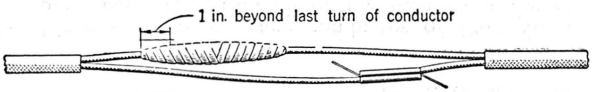
(5) Grip the sleeve at each end with SW Diagonal Pliers and S Long Nose Pliers. In gripping, the jaws of the Pliers shall not extend over the insulation.



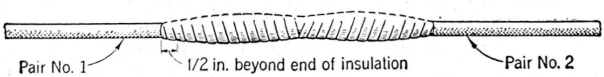
(6) Give the sleeve 5 half turns, twisting it from both ends. Wrap each end of the bare conductor around the insulated conductor in the direction in which it tends to wrap when the sleeve is twisted, as shown in the following illustration.



(7) Cover the joint in each conductor with 2 wrappings of 3/4 inch DR tape put on in reversed layers with an overlap equal to 1/2 the width of the tape. Start wrap at center, wrap 1 inch beyond last turn of bare conductor around insulation, reverse wrap to 1 inch beyond last turn of bare conductor at other end of sleeve, reverse and end at center. Keep the tape under tension while it is being wrapped. Press the joint firmly between the fingers or in the palm of the hand to cement the two layers of tape together.



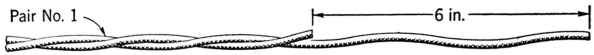
(8) Splice other conductor of Pairs 1 and 2 in similar manner and wrap two layers of 3/4 inch black friction tape over the entire splice. The completed splice is shown below.



4. SPLICING BLOCK WIRE TO BLOCK WIRE AND HD WIRE TO HD WIRE

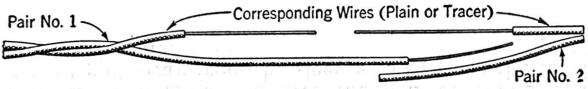
4.01 Proceed as follows:

(1) Cut one conductor of Pair No. 1 about 6 inches shorter than the other.

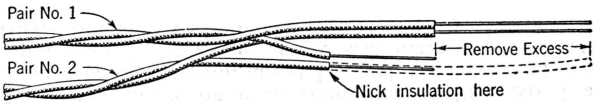


(2) Carefully remove insulation from each conductor of Pair No. 1 for about 4 inches and clean the conductors.

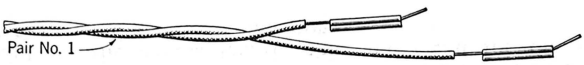
(3) Skin the conductor of Pair No. 2 corresponding to the short conductor of Pair No. 1 for a length of about 4 inches.



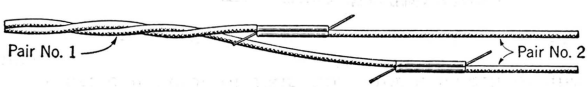
(4) Separate the conductors of Pair No. 2 for about 12 inches back from the end. Place the long conductor of Pair No. 1 and the skinned conductor of Pair No. 2 side by side with the ends of the insulation touching. Place the two remaining conductors side by side and nick the insulation of the unskinned conductor of Pair No. 2 opposite the end of the insulation on the short conductor of Pair No. 1. Cut off the excess length, skin and clean for the same length as the other conductor.



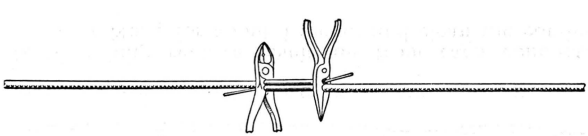
(5) Place a sleeve on each conductor of Pair No. 1 and push back to within about 1/2 inch from the end of the insulation. (Rotating the sleeve will make it go on more easily.) Bend up ends of conductors slightly.



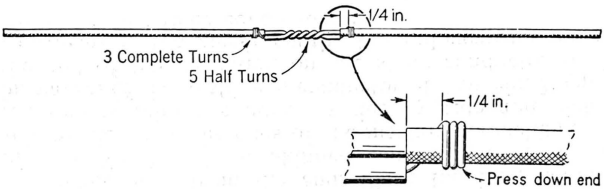
(6) Insert one conductor of Pair No. 2 in the sleeve on the corresponding conductor of Pair No. 1. Push the conductor through the sleeve until it projects beyond end of sleeve. Pull ends of conductors through sleeve until insulation is tight against both ends of sleeve and bend over the ends of conductor slightly. Proceed in the same way for the other conductors and give the pair of conductors a sufficient pull away from the sleeves to equalize the tension in the conductors.



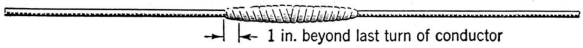
(7) Grip the sleeve at each end with SW Diagonal Pliers and S Long Nose Pliers. In gripping, the jaws of the Pliers shall not extend over the insulation.



(8) Give the sleeve five half turns, twisting it from both ends. Wrap each end of the bare conductor around the insulated conductor in the direction in which it tends to wrap when the sleeve is twisted, as shown in the following illustration.



(9) Cover the joint, first, with 2 wrappings of 3/4 inch DR tape put on in reversed layers with an overlap equal to 1/2 the width of the tape. Start wrap at center, wrap to 1 inch beyond last turn of conductor around insulation, reverse wrap to 1 inch beyond last turn of conductor at the opposite end of sleeve, reverse and end at center. Keep the tape under tension while it is being wrapped. Press the joint firmly between the fingers or in the palm of the hand to cement the two layers of tape together.



(10) Cover the joint with 2 layers of 3/4 inch Black Friction Tape in a similar manner, except that the friction tape shall be carried 1/2 inch beyond the DR tape at each end.

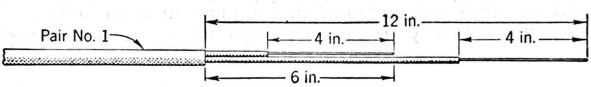
(11) Twist the free conductor about the spliced conductor, with as nearly as possible the original lay, allowing just enough to remain untwisted for convenient splicing of the other conductor.

(12) Make splice as before, exercising care not to bend or twist the conductor already spliced. Adjust lay of conductors so that a strain will be divided equally between the two.

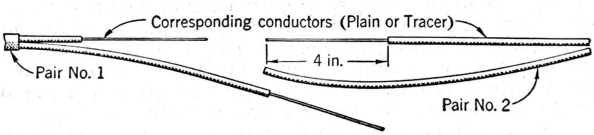
5. SPLICING DROP WIRE TO BLOCK WIRE

5.01 Proceed as follows:

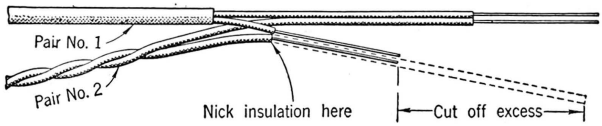
(1) Remove approximately 12 inches of outside jacket from the drop wire (Pair No. 1) by means of a B Braid Stripper. Cut one conductor approximately 6 inches shorter than the other. Remove rubber insulation from each conductor for about 4 inches and clean.



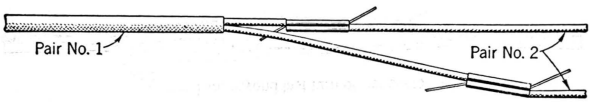
(2) Remove insulation from the conductor of block wire (Pair No. 2) corresponding to the short conductor of Pair No. 1 for a length of about 4 inches.



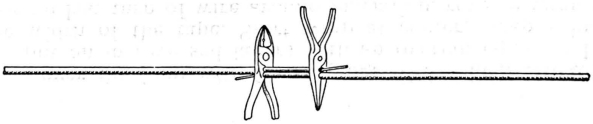
(3) Separate the conductors of Pair No. 2 for about 12 inches back from the end. Place the long conductor of Pair No. 1 and the skinned conductor of Pair No. 2 side by side with the ends of the insulation touching. Place the two remaining conductors side by side and nick the insulation of the unskinned conductor of Pair No. 2 opposite the end of the insulation on the short conductor of Pair No. 1. Cut off the excess length, skin and clean for the same length as the other conductor.



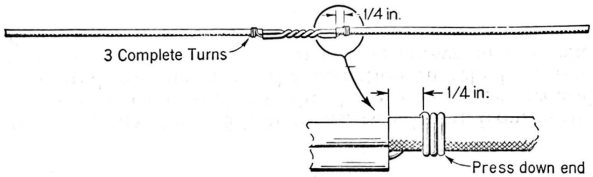
(4) Place a sleeve on each conductor of Pair No. 1 and push back to within about 1/2 inch from the end of the insulation. (Rotating the sleeve will make it go on more easily.) Bend up ends of conductors slightly. Insert one conductor of Pair No. 2 in the sleeve on the corresponding conductor of Pair No. 1. Push the conductor through the sleeve until it projects beyond end of sleeve. Pull ends of conductors through sleeve until insulation is tight against both ends of sleeve and bend over the ends of conductor slightly. Proceed in the same way for other conductors and then give the pair of conductors a sufficient pull away from the sleeve to equalize the tension in the conductors.



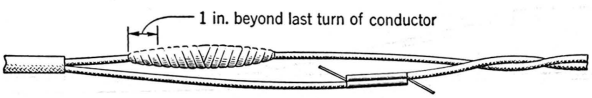
(5) Grip the sleeve at each end with SW Diagonal Pliers and S Long Nose Pliers. In gripping, the jaws of the Pliers shall not extend over the insulation.



(6) Give the sleeve 5 half turns, twisting it from both ends. Wrap each end of the bare conductor around the insulated conductor in the direction in which it tends to wrap when the sleeve is twisted, as shown in the following illustration.



(7) Cover the joint with 2 wrappings of 3/4 inch DR tape put on in reversed layers with an overlap equal to 1/2 the width of the tape. Start wrap at center, wrap 1 inch beyond last turn of wire around insulation, reverse wrap to 1 inch beyond last turn of wire at other end of sleeve, reverse and end at center. Keep the tape under tension while it is being wrapped. Press the joint firmly between the fingers or in the palm of the hand to cement the two layers of tape together.



(8) Splice other two conductors in similar manner and wrap two layers of 3/4 inch Black Friction Tape over entire splice. Wrap tape as specified in (7).