

DROP AND BLOCK WIRING SPLICING

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1. GENERAL

1.01 This section covers methods for splicing drop and block wires using nicopress sleeves.

1.02 This section is revised to introduce the new method used in splicing NE drop wire. ←

1.03 Observe the following general rules when splicing insulated drop and block wires.

- (a) Exercise care to avoid nicking the conductors when removing the insulation.
- (b) Thoroughly clean the skinned conductor ends before inserting into the nicopress sleeves.
- (c) Splice tracer conductor to tracer conductor and plain conductor to plain conductor.
- (d) When a splice is to be placed in a wire span, exercise care in splicing so as to equalize the tension in the conductors as near as practicable.
- (e) Thoroughly tape all splices.

1.04 For convenience in describing splicing procedures covered in these instructions, the wires to be spliced shall be referred to as Pair No. 1 and Pair No. 2.

2. NICOPRESS SLEEVES

2.01 Nicopress sleeves are single-tube sleeves provided for use with the 17BA Nicopress Tool in splicing the insulated wires employed in drop and block wiring work. The types and sizes of sleeves for such work and the diameters of the conductors with which they are to be employed are shown in the following table:

Nicopress Sleeve

Type	Size Designation	Length (In.)	Wire Diameter (Mils)	
Straight	32A	3/4 or 1-1/4	25 or 28	
Straight	40B	1-1/4	40 or 45	←
Straight	64B	1-1/4	64	
Combination	32 x 40B	1-1/4	25 or 28 to 40	
Combination	40 x 64B	1-1/4	40 or 45 to 64	←
Split	40B*	3/4	25, 28 or 40 Bridge	

Note: The letter in the size designation indicates the groove of the 17BA Nicopress Tool in which the sleeve is to be pressed. The smaller outside groove of the tool is designated A and the larger inside groove is designated B.

*Press in the B groove of the tool in all cases, and then in the A groove when the conductor is 32 mils, or smaller.

3. USE OF THE 17BA NICOPRESS TOOL

3.01 The 17BA Nicopress Tool has been provided for pressing Nicopress sleeves. For the description, care and maintenance of the 17BA Nicopress Tool see Section 081-750-107.

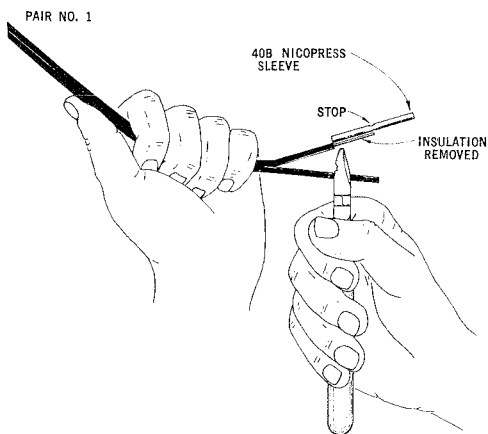
3.02 The joint in the wires being joined is made by placing the Nicopress sleeve, into which the conductors have been inserted, into the proper groove of the tool and pressing the handles until the jaws are brought together. This is repeated at a specified number of points along the length of the sleeve.

4. SPlicing DROP WIRE TO DROP WIRE

4.01 Splice NE drop wire as follows:

(1) Prepare NE drop wire for splicing as outlined in 462-030-100. Separate the conductors for approximately $1\frac{1}{2}$ inches.

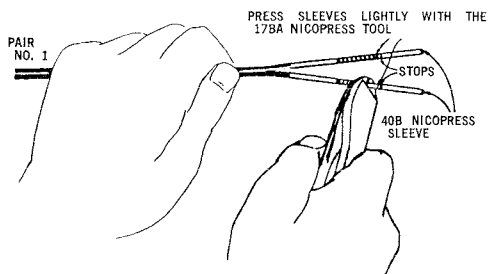
(2) Remove the jacket and insulation from both conductors of Pair No. 1 for a distance of half the length of a Nicopress sleeve, as illustrated below, exercising care not to nick the conductors. Make sure that the ends of the insulation on the conductors are even. Clean the skinned conductors with either diagonal pliers or abrasive cloth.



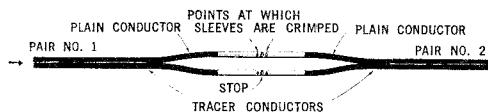
CAUTION: WHEN REMOVING INSULATION FROM CONDUCTORS WITH THE DIAGONAL PLIERS PULL AWAY FROM BODY.

(3) Treat the conductors of Pair No. 2 as described for Pair No. 1 in (1) and (2).

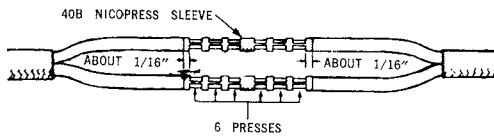
(4) Slip a 40B Nicopress sleeve over each skinned conductor of Pair No. 1 up to the indentation in the sleeve. Crimp each sleeve lightly near midpoint to keep it from slipping off.



(5) Match tracer conductors and insert conductors of Pair No. 2 into the sleeves on conductors of Pair No. 1 up to the indentation in the sleeve. Crimp the sleeves lightly with the 17BA Nicopress Tool to hold Pair No. 2 in place. (See below)



(6) Starting over the light presses made in (4) and (5) above and ending approximately $1/16$ in. from the end of the sleeve, press each sleeve six times in the larger groove of the Nicopress 17BA tool. One-half of the total number of presses should be made at equidistant intervals on each side of the indentation at the mid-point of the sleeve as shown in the following illustration. The pressing operations are facilitated if, after each press, the handles of the 17BA tool are opened only sufficiently to slide the tool to the location of the next press.



(7) Straighten the spliced conductors and determine whether they are of equal length. If one conductor is shorter than the other, lengthen it by pressing one or more of the unpressed portions of the sleeve, which are shown in the previous illustration, until equalization is obtained.

(8) Place a splice Separator between the two sleeves, and wrap both the sleeves and the separator with two half-lapped layers of $\frac{3}{4}$ " DR Tape starting and ending at the centre. The DR Tape should overlap the jacket one inch at each end.



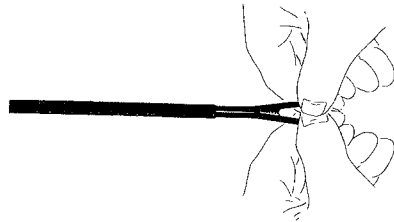
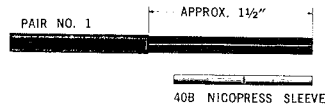
(9) Cover the DR Tape with two half-lapped layers of $\frac{3}{4}$ " black friction tape.



4.02 Splice NC drop wire as follows:

(1) Strip the outside covering from the end of Pair No. 1 for a length of about $1\frac{1}{2}$

inches with a braid stripper, as illustrated in 462-030-100. Separate the insulated conductors as shown below.



(2) Remove insulation from both conductors of Pair No. 1 for a distance of half the length of a 40B Nicopress sleeve as illustrated in Para. 4.01 exercising care not to nick the conductors. Make sure that the ends of the insulation on the conductors are even. Clean the skinned conductors with either diagonal or abrasive cloth.

(3) Slip a 40B Nicopress sleeve over each skinned conductor of Pair No. 1 up to the indentation in the sleeve. Crimp each sleeve lightly near midpoint to keep it from slipping off.

(4) Treat the conductors of Pair No. 2 as described for Pair No. 1 in (1) and (2).

(5) To complete the splice for NC drop wire, proceed as described and illustrated in Paras. 4.01 (5) through (9).

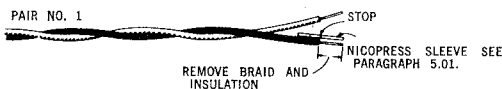
5. SPlicing TWISTED PAIR WIRE TO TWISTED PAIR WIRE

5.01 Use the following Nicopress Sleeves in splicing the types of twisted wires indicated:

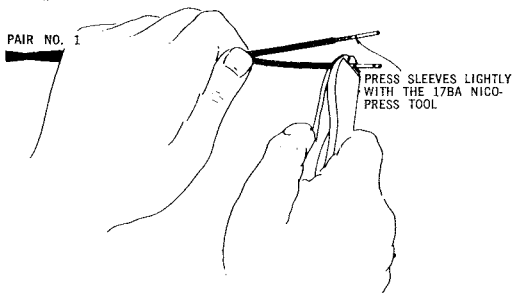
Type of Wire	Nicopress Sleeve
Block Wire	32A
HD Drop Wire	64B

5.02 Splice twisted pair drop wire to twisted pair drop wire as follows:

- (1) Remove the jacket and insulation from both conductors of Pair No. 1 for a distance equal to one-half the length of the proper size Nicopress sleeve as illustrated, exercising care not to nick the conductors. Clean the conductors thoroughly, using either Diagonal Pliers or abrasive cloth. Make sure that the ends of the jacket and insulation and also the ends of the conductors are even.

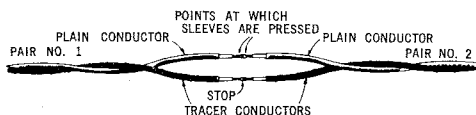


- (2) Place a Nicopress sleeve of the proper size on each conductor of Pair No. 1, with the ends of the sleeves touching the insulation, and press each sleeve lightly with the 17BA Nicopress Tool as illustrated, to hold them in place.



- (3) Remove the jacket and insulation from the conductors of Pair No. 2 as described in (1).
- (4) Matching the tracer conductors, insert the conductors of Pair No. 2 into the sleeves on the conductors of Pair No. 1 so that the insulation touches the ends of the sleeves. Press

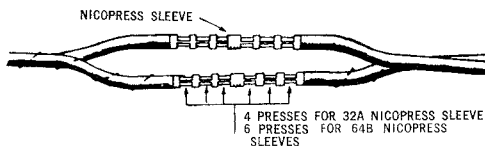
each sleeve lightly with the 17BA Nicopress Tool as illustrated, to hold the conductors of Pair No. 2 in place.



- (5) Starting over the light presses made in (2) and (4) above and ending approximately 1/16 in. from the end of the sleeve, press each sleeve the number of times and in the groove of the 17BA Nicopress Tool specified in the following table.

Size of Sleeve	Size of Groove in 17BA Nicopress Tool	Number of Presses
32A	Small	4
64B	Large	6

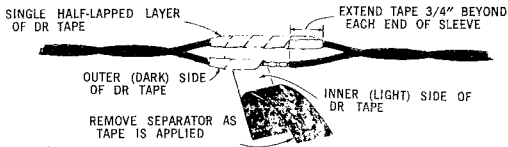
One-half of the total number of presses should be made at equidistant intervals on each side of the indentation at the mid-point of the sleeve as shown in the following illustration. The pressing operations are facilitated if, after each press, the handles of the 17BA Nicopress Tool are opened only sufficiently to slide the tool to the location of the next press. Exercise care in pressing 32A Nicopress Sleeves and in disengaging the 17BA Nicopress Tool from these sleeves to avoid bending the conductors at the ends of the sleeves.



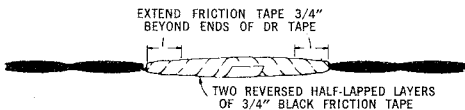
- (6) Straighten the spliced conductors and determine whether they are of equal length. If one conductor is shorter than the other, lengthen it by pressing one or more of the unpressed portions of the sleeve, which are shown in the previous illustration, until equalization is obtained.

- (7) Wrap each joint with a single half-lapped layer of DR Tape as illustrated. A piece of DR Tape approximately 2-1/2 in. long is required for wrapping the 32A Nicopress Sleeve and one approximately 4 in. long for wrapping

the 64B Nicopress Sleeve. Apply the tape under a slight tension, which will about double its original length, and remove the separator as the taping progresses. Press the taped joint firmly between the fingers to cement the layers of the tape together.



(8) Wrap the entire splice with two reversed half-lapped layers of $\frac{3}{4}$ in. Black Friction Tape as illustrated. Starting at the centre of the splice, wrap to $\frac{3}{4}$ in. beyond one end of the rubber tape, reverse, wrap to $\frac{3}{4}$ in. beyond the other end of the rubber tape, reverse, and end the wrapping at the centre of the splice.



6. SPLICING PARALLEL WIRE TO TWISTED PAIR WIRE

CAUTION: Splice block wire only to unexposed drop wire or to drop wire on the station side of a fuseless protector.

6.01 Use the following Nicopress combination sleeves in splicing the types of Wire indicated:

Types of Wires to be Joined	Combination Nicopress Sleeve
NE or NC Drop Wire to Block Wire	32 x 40B
NE or NC Drop Wire to HD Drop Wire	40 x 64B

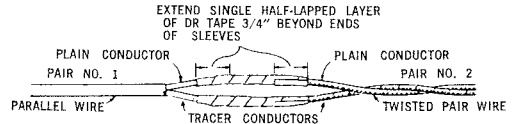
6.02 Splice parallel drop wire to twisted pair drop wire as follows:

(1) Prepare the parallel wire (Pair No. 1) and the twisted pair wire (Pair No. 2) splice the conductors of these wires, and apply DR Tape to the joints as outlined in Paras. 4.01 (1 to 8) and Paras. 5.02 (1 to 7), respectively. Press each sleeve the number of times

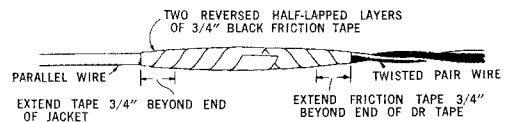
and in the groove of the 17BA Nicopress Tool specified in the following table:

Size of Sleeve	Size of Groove in 17BA Nicopress Tool	Number of Presses
32 x 40B	Large	4
40 x 64B	Large	6

The appearance of the splice upon completion of these operations is shown in the following illustration.



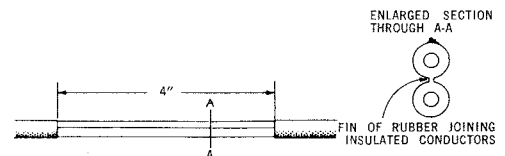
(2) Wrap the entire splice with two reversed half-lapped layers of $\frac{3}{4}$ in. Black Friction Tape as illustrated. Starting at the center of the splice, wrap to $\frac{3}{4}$ in. beyond the end of the rubber tape toward the twisted pair wire, reverse, wrap to $\frac{3}{4}$ in. beyond the end of the parallel wire braid, reverse, and end the wrapping at the center of the splice.



7. BRIDGING PARALLEL AND TWISTED PAIR WIRES

7.01 Using the 40B Split Nicopress Sleeve, bridge parallel Drop Wire to parallel drop wire or Block Wire as follows:-

(1) Remove approximately 4 in. of jacket from the through parallel drop wire, using a Braid Stripper. Exercise care not to damage the rubber insulation of the conductors.

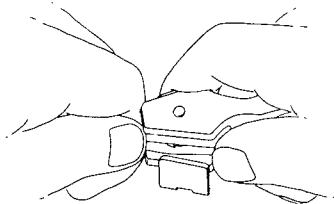


(2) Where the insulation of the two conductors is joined by a fin of rubber, cut through the fin by means of the Braid Stripper as outlined, exercising care not to damage the

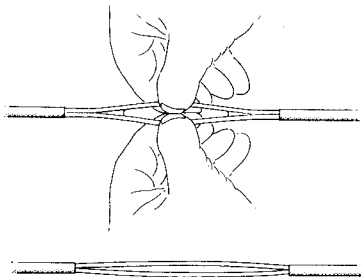
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insulation. Keeping the Drop Wire under tension facilitates this operation.

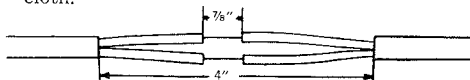
- (a) Lay wire in groove of Braid Stripper which is normally used for cutting the jacket of Multiple Drop Wire, keeping the guard raised in order that the wire may be visible during the cutting operation. Center wire over blade so that when a slight pressure is applied upward on Braid Stripper the blade can be distinguished between the conductors.



- (b) With blade in position between conductors, increase upward pressure on Braid Stripper and slowly draw it along the wire until blade has cut approximately $\frac{1}{2}$ in. of the fin.
- (c) Remove Braid Stripper and separate the conductors by hand for the remaining length.



- (3) Midway between the ends of the jacket remove the insulation from each conductor for a length of $\frac{7}{8}$ in., exercising care not to nick the conductors. Clean the conductors thoroughly using Diagonal Pliers or abrasive cloth.

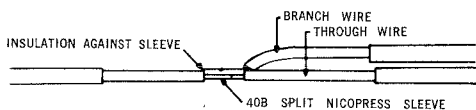


- (4) Cut evenly the end of the Drop Wire or Block Wire which is to be bridged to the through parallel drop wire.

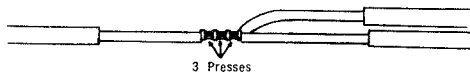
- (5) From the parallel drop wire which is to be bridged remove approximately $2\frac{1}{2}$ in. of jacket, separate the conductors and remove approximately $\frac{3}{4}$ in. of insulation in a similar manner to that set forth in Para. 4.01 (1) and (2).

- (6) When Bridle Wire is to be bridged to the through parallel drop wire, remove approximately $\frac{3}{4}$ in. of jacket and insulation from the conductors in a similar manner to that set forth in Para. 5.02 (1).

- (7) Place a 40B Split Nicopress Sleeve on each of the bare conductors of the through wire. Match plain and tracer conductors of the through and branch wire runs. Turn one of the split sleeves on the through conductor so the split is at the side. Then lift the sleeve so the through conductor is at the bottom of the elliptical bore. Insert the branch conductor in the upper part of the bore. Repeat these operations with the other conductor of the through and branch wire runs.



- (8) With the split in the sleeve toward the tool, press the sleeve three times in the large groove of a 17BA Nicopress Tool.



- (9) Cover each joint completely with a single half-lapped layer of DR Tape and extend the tape over the insulation of the through conductor at each end of the joint for $\frac{3}{4}$ in. Cover the insulation of the branch conductor with a second strip of DR Tape of $\frac{3}{4}$ in. starting at the far end of the split sleeve.



(10) Wrap the completed splice with two half-lapped layers of $\frac{3}{4}$ in. Black Friction Tape as shown. Starting at the centre of the splice, wrap to $\frac{3}{4}$ in. beyond one end of the jacket, reverse, wrap to $\frac{3}{4}$ in. beyond the end of the jacket at the other end of the splice, reverse, and end the wrapping at the centre of the splice.

7.02 Proceed similarly when bridging Block Wire to Block Wire, except that the jacket

of the through wire is to be removed for only the same $\frac{7}{8}$ in. as the insulation and the 40B Split Nicopress Sleeve must be pressed in the small groove of the 17BA Nicopress Tool *after* pressing in the large groove.

