

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

SECTION G31.136.1
Issue 4, February, 1957
AT&T Co Standard

OPEN WIRE
BRIDGING SLEEVES

Contents	Page
1. General	1
2. Application of Bridging Sleeves	2
3. Placing Bridging Sleeves at Bridling Points	3
4. Placing Bridging Sleeves at Side Lead Terminations or at Buck Arm Corners	7
5. Disconnections and Reconnections	8

1. GENERAL

1.01 This section describes the method of installing bridging sleeves. These sleeves may be used for making bridging connections to 109 size steel line wires, to 104 or 128 copper or copper-steel line wire, or to 165 copper line wire as indicated in Part 2.

1.02 This section is reissued to include information on the 128 and 165 copper bridging sleeves and to include information for pressing bridging sleeves with the 31-QC or the 51-JE Nicopress Tool.

1.03 The bridging sleeve is shown in Fig. 1.



FIG. 1

2. APPLICATION OF BRIDGING SLEEVES

2.01 The following table indicates the available sizes of bridging sleeves and their intended use.

Sizes and Uses of Bridging Sleeves

<u>Kind</u>	<u>Size</u>	<u>Tool Groove</u>		<u>Use</u>
		<u>Rolling Tool</u>	<u>Nico-press</u>	
Copper	104 x 064	Middle	Q	Bridging AL or HD Wire to 104 copper or 104 copper-steel line wire.
Copper	104 x 104	Middle	Q	Bridging 104 copper or 104 copper-steel line wire to 104 copper or 104 copper-steel line wire. Bridging No. 10 A.W.G. (.102" diam.) protector lead wires to 104 copper or 104 copper-steel line wire.
Copper	128 x 064	Middle	Q	Bridging AL or HD Wire to 128 copper or 128 copper-steel line wire.
Copper	165 x 064	Large	J	Bridging AL or HD Wire to 165 copper line wire.
Aluminum	109 x 064	Middle	Q	Bridging AL or HD Wire to 109 galvanized steel line wire.
Aluminum	109 x 109	Middle	Q	Bridging 109 galvanized steel line wire to 109 galvanized steel line wire. Bridging No. 10 A.W.G. (.102" diam.) protector lead wire to 109 galvanized steel line wire.

2.02 99A Protectors are equipped with No. 10 A.W.G. (.102" diam.) leads as indicated in the table in Paragraph 2.01. These leads may be connected to the 104 and 109 sizes of line wire with bridging sleeves. Inasmuch as such protector installations are almost always of a permanent nature, bridging sleeves should be used wherever possible for making these connections. 118A Protectors are equipped with No. 8-

A.W.G. (.128" diam.) leads which cannot be installed with bridging sleeves.

3. PLACING BRIDGING SLEEVES AT BRIDLING POINTS

3.01 Run the bridle wire on the pole or crossarm in the usual manner. Provide enough bridle wire to reach beyond the dead end or insulator tie, as shown in Figs. 2, 3, and 4.

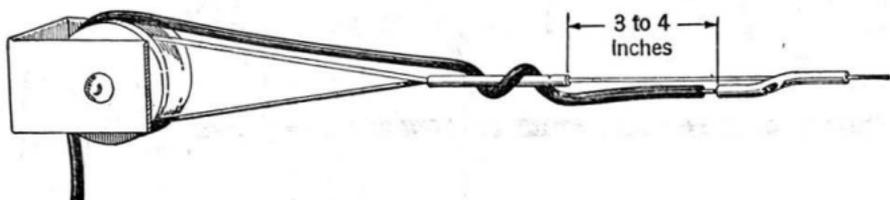


FIG. 2

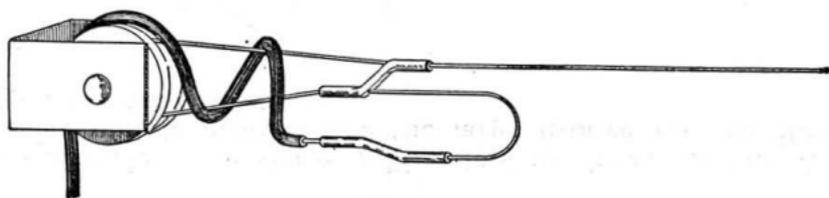


FIG. 3

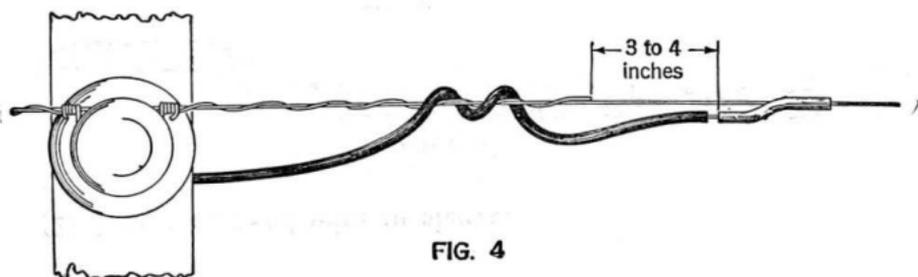


FIG. 4

3.02 Install bridging sleeves with the sleeve rolling tool in the following manner.

- (1) Remove insulation from bridle wire. Clean the copper conductor thoroughly with standard abrasive cloth.

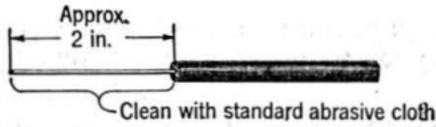


FIG. 5

(2) Insert cleaned wire in sleeve.

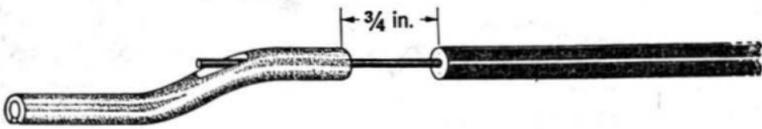


FIG. 6

(3) Place sleeve in sleeve rolling tool as shown in Fig. 7. Use middle groove. Use the large groove for the 165← copper bridging sleeve.

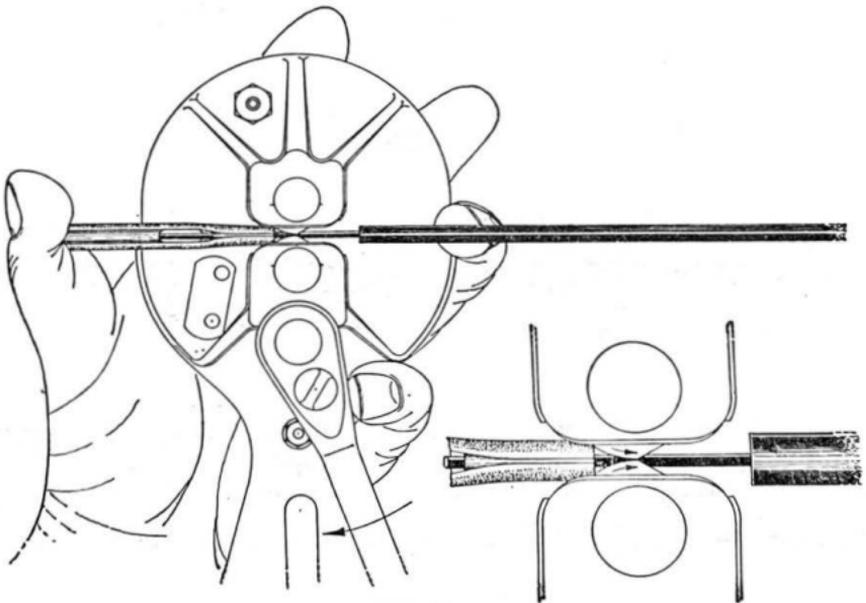


FIG. 7

- (4) Roll the sleeve until the rolls reach the offset portion of the sleeve, then reverse the Ratchet Reversing Latch and roll the tool back off the sleeve. If an aluminum bridging sleeve is being used, a single rolling may leave a sharp fin on the sleeve. To remove this sharp fin, roll aluminum bridging sleeves a second time, with the sleeve entering the rolls about 90° away from the original rolling position.
- (5) Wrap the bridle wire around the line wire as shown in Figs. 2, 3, and 4. Clean the line wire thoroughly with standard abrasive cloth. Place the split sleeve on the line wire.
- (6) Close the split end of the sleeve down on the line wire throughout its length, by pressing with side cutting pliers as shown in Fig. 8.

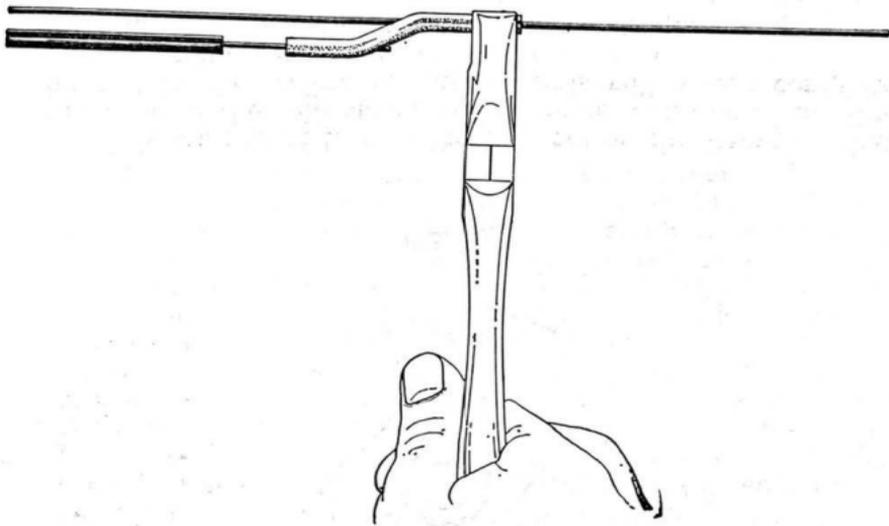


FIG. 8

- (7) Place the sleeve in the rolling tool as shown in Fig. 9.

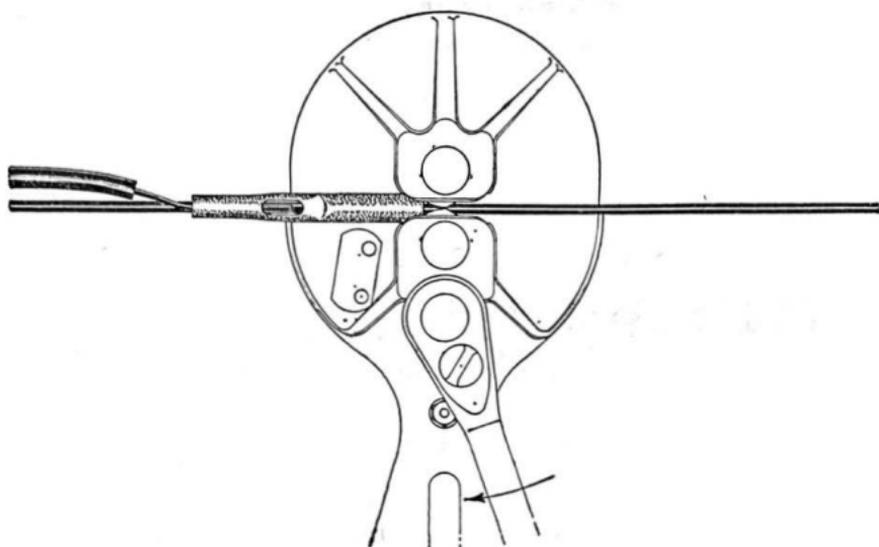


FIG. 9

It is important to position the tool on the sleeve so that the seam of the split sleeve will coincide with one of the fins formed in the rolling operation. This will insure complete closure of the seam.

- (8) Roll the sleeve until the rolls reach the offset in the sleeve, reverse the Ratchet Reversing Latch and roll the tool back off the sleeve. If an aluminum bridging sleeve is being used, it may be rolled a second time, as outlined in Paragraph 3.02(4).

3.03 Install bridging sleeves with a nicopress tool in the following manner.

- (1) Remove 1-1/2 inches of insulation from bridge wire. Clean the copper conductor thoroughly with standard abrasive cloth.
- (2) Insert cleaned wire in sleeve so end of insulation is 1/4 inch from end of sleeve.
- (3) Make at least 5 presses with the Q groove of the 31-QC Nicopress Tool, starting at the inner end and working toward the outer end with adjacent presses overlapping slightly. When making the last press the side of the presser jaws should extend slightly beyond the end of the sleeve. No

attempt should be made to remove the fin by pressing a second time. With 165 x 064 B Copper Bridging Sleeves use the J groove of the 51-JE Nicopress Tool.

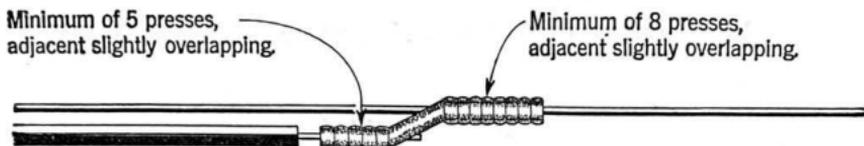


FIG. 10

(4) Wrap the bridle wire around the line wire as shown in Figs. 2, 3, and 4. Clean the line wire thoroughly with standard abrasive cloth. Place the split sleeve on the line wire, and close the split end of the sleeve down on the line wire throughout its length by pressing with side cutting pliers as shown in Fig. 8.

(5) Make a minimum of 8 presses with the Q groove of the 31-QC Nicopress Tool, starting at the inner end of the split portion and working toward the outer end with adjacent presses overlapping slightly so as to result in a complete closure of the seam. When making the last press the side of the presser jaws should extend slightly beyond the end of the sleeve. The pressing tool shall be positioned on the split sleeve so the seam will coincide with one of the fins formed in the pressing operation. This also is necessary to insure complete closure of the seam. With the 165 x 064 B Copper Bridging Sleeve use the J groove of the 51-JE Nicopress Tool making a minimum of 8 presses. No attempt should be made to remove the fin by pressing a second time.

(6) With the 104 x 104 B Copper Bridging Sleeves and 109 x 109 B Aluminum Bridging Sleeves the number of presses should be the same on the solid end of the sleeve as on the split end.

4. PLACING BRIDGING SLEEVES AT SIDE LEAD TERMINATIONS OR AT BUCK ARM CORNERS

4.01 Bridging sleeves may be used for connecting open wire side lead circuits to circuits in the main lead, as shown in Fig. 11. 104 copper line wire should be used for bridging 104 copper or 104 copper-steel wire, and 109 steel line wire for

bridging all kinds of 109 steel line wire. This method may also be used at buck arms for bridging the circuits on the inside of the corner.

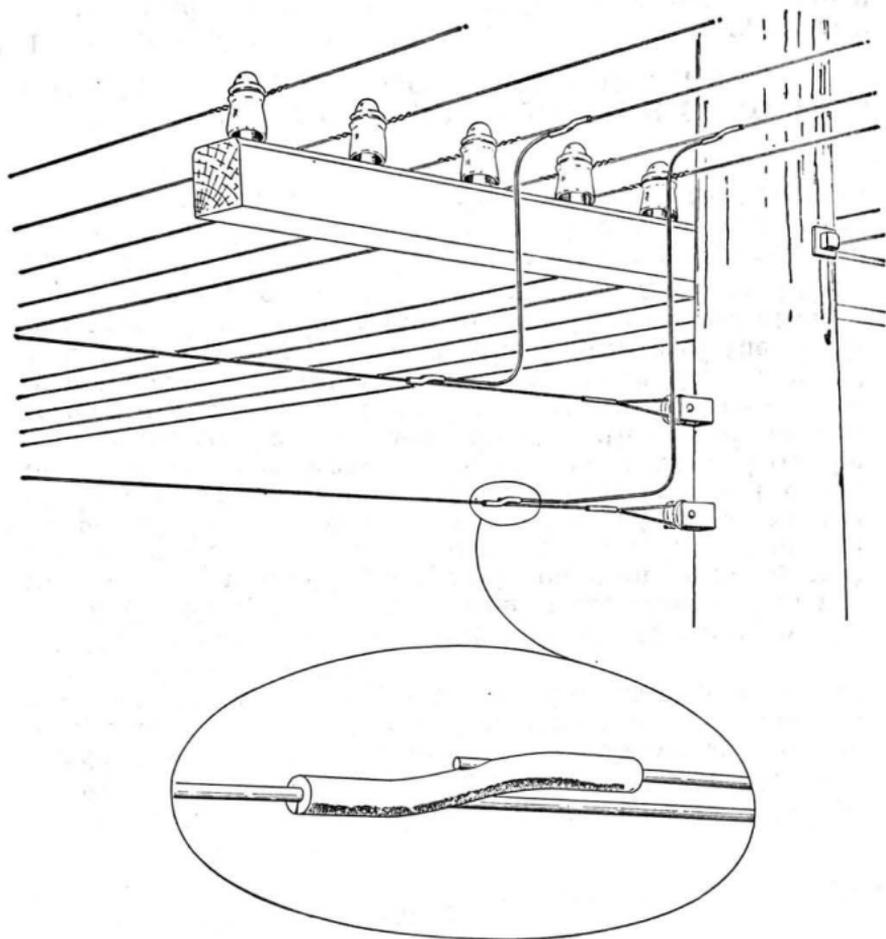


FIG. 11

5. DISCONNECTIONS AND RECONNECTIONS

5.01 In disconnecting a bridging sleeve connection, cut the sleeve as closely as possible to the line wire. When making a reconnection, place the new bridging sleeve adjacent to the previous attachment.