

SPlicing STATION WIRE AND INSIDE WIRING CABLE

1. GENERAL

1.01 This section covers the general factors to be considered when splicing station wire and inside wiring cable with metal sleeve-type pressed on splices.

1.02 This section is reissued to:

- Change title
- Rearrange text and illustrations.
- Delete reference to lead-covered cable.
- Delete reference to block, drop, and HD wire.
- Include D Station Wire.

Since this reissue covers a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 Sections covering splicing of lead-covered cables will be found in outside plant series practices. Splicing of block, drop, and HD wire is covered in Section 462-200-200. See also sections covering connecting blocks.

2. SPlicing STATION WIRE

2.01 Whenever possible, connecting blocks should be used to splice wires rather than using sleeve-type splices. When sleeve splices must be used, consider the following:

- Do not conceal splices.
- Do not place fasteners over splice or taped part of wire.
- Use care to assure that splice does not cause future trouble.
- Where appearance is a factor, use same color wire and tape as present run, or remove old wire back to an inconspicuous point and make the splice.

2.02 Extend station wires by splicing on additional wire when:

- Present wire run is in good condition, securely fastened, and longer than 20 feet.
- Present wire run replacement would cause an unsightly appearance.
- Present wire run is less than 20 feet, but to splice it would save considerable time.

2.03 Location of splice:

- Locate splice at point where it may be inspected.
- Locate splice in an inconspicuous place.
- Do not place splices in walls, conduits, ducts, etc.
- Locate splice so it will not appear at turns or corners.
- Place splice in dry location.

2.04 The 032-025 S brass sleeve is a single tube sleeve, 1-inch long, with a bore diameter the same size throughout its length. An indentation in the center insures insertion of the proper length of conductor ends when the splice is made. This sleeve is used to splice jacketed station wire or inside wiring cables having the same size conductors.

2.05 The 045-040 X 032 combination S brass sleeve is a single tube sleeve having two different bore diameters, one on each half of the sleeve. This sleeve is 1-inch long, marked with a black and a gray color band, and is used to splice jacketed station wire to drop wire.

2.06 Prepare D Station Wire, JKT (MD) Station Wire, or GS Station Wire for splicing as follows:

- (1) Remove outer covering for about 6 inches.
- (2) Cut conductors so position of splices will be staggered (Fig. 1).

SECTION 461-200-205

- (3) In order to splice conductors of like color, reverse order of staggering on mating wire. For example, cut one yellow conductor long and yellow conductor of other wire short.
- (4) Strip and clean each conductor carefully to ensure a good connection. Avoid nicking wire.

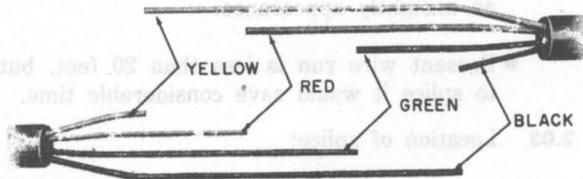


Fig. 1—Jacketed Wire

2.07 Complete splice as follows:

- (1) Place a brass S-032-025 sleeve on each conductor of one wire and using C Long-Nose Pliers or B Sleeve Presser Tool, make a single press on sleeve near outer end.
- (2) Insert associated conductor in other half of sleeve and make single press on this end.
- (3) Repeat for each conductor of two wires being spliced.
- (4) Finish pressing sleeves using pliers or presser tool. If pliers are used make four presses on each side of sleeve center (Fig. 2). If presser tool is used, make two presses on each side of sleeve center. Close handles of sleeve-presser tool until stops are brought together (Fig. 3).
- (5) Cover each sleeve with a single, half-lapped layer of friction tape and then wrap entire splice with a single, half-lapped layer of tape extending tape 2-1/2 inches beyond each end of area from which outer covering was removed (Fig. 4).
- (6) Where damp or outdoor locations are encountered, use rubber tape before placing friction tape.

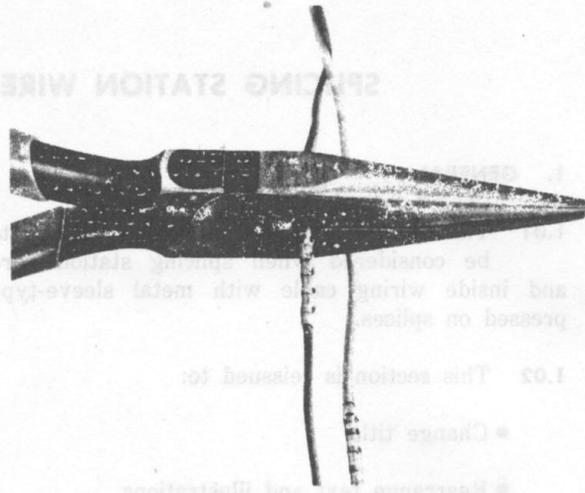


Fig. 2—Pressing Sleeve with C Long-Nose Pliers

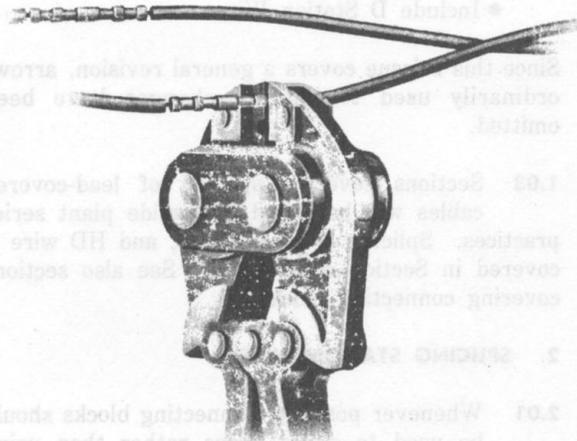


Fig. 3—B Sleeve Presser

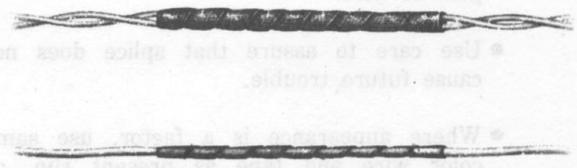


Fig. 4—Taping Splice

2.08 When it is necessary to splice shielded wire, electrical continuity of the shield as well as the conductors must be maintained. The following steps provide a method of splicing SK Shielded Wire.

- (1) Remove outer covering for about 6 inches being careful not to cut or break shielding braid.
- (2) Unwind shielding wire from around paper covering of conductors and remove paper covering (Fig. 5).
- (3) Twist shielding wire so as to simulate a single wire.
- (4) Splice conductors in normal manner using S-032-025 brass sleeves.
- (5) Splice ends of twisted shielding wire by twisting together and soldering the twist. A 1/2- to 3/4-inch soldered joint is sufficient (Fig. 6).
- (6) Tape the splices and the soldered joint as outlined in 2.07(5).
- (7) At end of wire run, a tail may be made for grounding shield wire by following steps (1), (2), and (3).

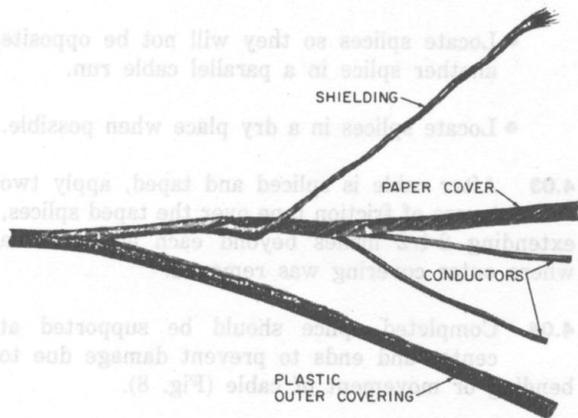


Fig. 5—Unwinding Shield of SK Shielded Wire

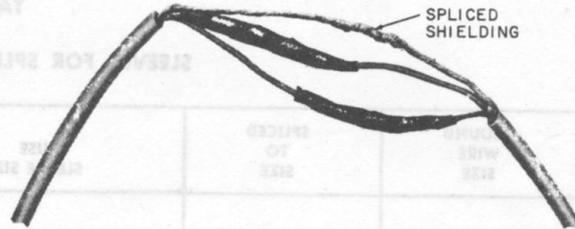


Fig. 6—Shielded Wire Splice

2.09 In general, splices in twisted wire are made the same as jacketed wire except longer lengths for the splices are needed to retain the twist in the wire. S Brass Sleeves are used to make the splices which should be taped the same as for jacketed wire.

3. SPlicing GROUND WIRE

3.01 Ground wire may be spliced, using sleeve type splices, if the run is in good condition and is so long (over 10 feet) as to make splicing the most expeditious method of repair or extension. Table A lists the sizes and identity of sleeves available for use with ground wire.

3.02 When splicing ground wire, consider the following:

- Do not splice new ground wire runs.
- Do not splice existing ground wire runs of less than 10 feet.
- When splicing an existing ground wire, do not use a smaller gauge wire to extend a larger gauge wire.
- Concealed ground wire runs may be spliced with the proper size sleeve and wire if the continuity of existing wire is checked and the splice will be accessible.
- Do not tape ground wire splices (Fig. 7).

TABLE A
SLEEVES FOR SPlicing GROUND WIRE

GROUND WIRE SIZE	SPLICED TO SIZE	USE SLEEVE SIZE	COLOR MARKING	SLEEVE PRESSING TOOL
6	6	165S Copper	None	51-JE Nicopress Tool
10	10	104S Copper	None	31-QC Nicopress Tool
12	12	080S Copper	None	
14	14	064S Brass	Blue	B Sleeve Presser
6	10	165Sx104S Copper Combination	None	51-JE Nicopress Tool
10	12	104Sx080S Copper Combination	None	31-QC Nicopress Tool
10	14	104Sx064S Copper Combination	None	

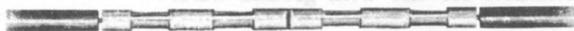


Fig. 7—Ground Wire Splice Made with "B" Sleeve

3.03 Refer to Section 081-750-105 for description of 31-QC and 51-JE Nicopress tools.

4. SPlicing INSIDE WIRING CABLE

4.01 Inside wiring cables should be spliced only when absolutely necessary. Use cable terminals or connecting blocks whenever possible.

4.02 Plastic covered inside wiring cables are spliced the same as jacketed wire covered in Part 2 of this section. When locating the splices consider the following:

- Locate splices where they may be inspected.
- Place splices in an inconspicuous place.

- Locate splice so as to not appear at corners or turns.
- Locate splices so they will not be opposite another splice in a parallel cable run.
- Locate splices in a dry place when possible.

4.03 After cable is spliced and taped, apply two layers of friction tape over the taped splices, extending 2-1/2 inches beyond each end of area where outer covering was removed.

4.04 Completed splice should be supported at center and ends to prevent damage due to bending or movement of cable (Fig. 8).



Fig. 8—Completed Inside Wiring Cable Splice