

911A CONNECTOR AND
645042 AND 645058 AMP CONNECTORS
REPAIRS



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5. Removing Terminals	3	1.01 This section provides procedures for replacing broken or damaged terminals of the 911A connector, and 645042 and 645058 Amp connectors.	
6. Forming Replacement Terminals	4	1.02 This section is reissued to include the 645042 and 645058 Amp connectors, and to show the replacement procedures for broken or damaged terminals of these connectors. Revision arrows are used to emphasize the more significant changes. The Equipment Test List is not affected.	
7. R-4858 (Amp No. 266187-1) Repair Tool	6	1.03 The following terminals are used in the repair and replacement of the designated connectors as illustrated in Fig. 1, 2, and 3.	
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NOTICE

Not for use or disclosure outside the Bell System except under written agreement

CONNECTOR	TERMINAL	FIG. NO.
911A	P-48C740	1
645042-1	645073-1	2
645058-1	645072-1	3

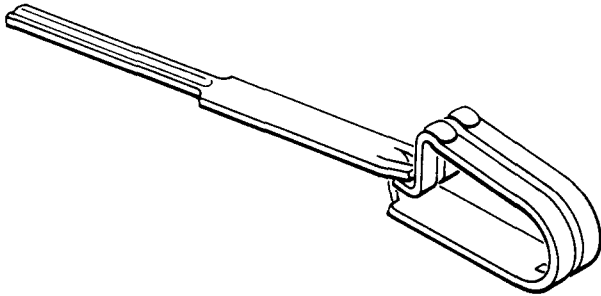


Fig. 1—Replacement Terminal P48C740

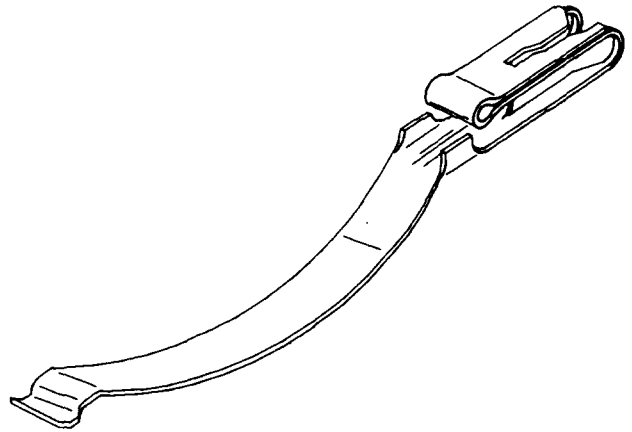


Fig. 3—Replacement Terminal 645072-1

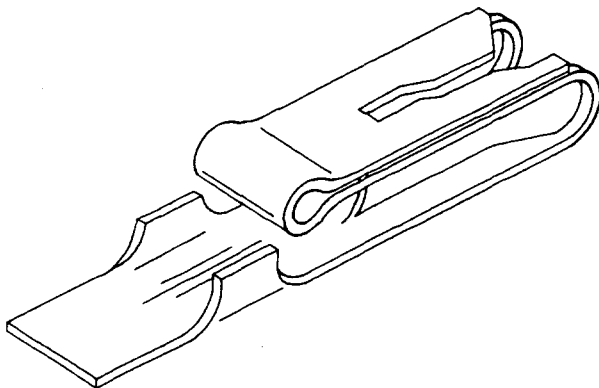


Fig. 2—Replacement Terminal 645073-1

1.04 During replacement of terminals, power must be removed and the circuit pack in the damaged connector and the adjacent circuit pack on each side must be removed. If single-side maintenance only is provided, it may be necessary to loosen the connector shelf to provide access to the wire-wrapped side of the connector.

1.05 Precautions should be observed to prevent excessive strain on the wiring connecting to the 911A connectors. Excessive strain could damage the connectors as described in the caution following subparagraph 3.03(c).

2. APPARATUS

2.01 *List of Tools and Materials:* Tools and materials required to perform routine checks are as follows:

TOOLS	DESCRIPTION
AT-7825	◆C 6-Inch Screwdriver◆
AT-7860	◆B Long Nose Pliers◆
KS-6320	Orange Stick
KS-16363,L3	◆Wire-Wrapping Tool, or equivalent
KS-20963	Wire-Wrapping Sleeve, or equivalent
R-4108	Diagonal Midget Cutter, or equivalent◆
*R-4857	Capsetting Tool (Amp No. 266186-1)
*R-4858	Repair Tool (Amp No. 266187-1)
MATERIALS	
P-48C740	Terminal
◆645072-1	Terminal
645073-1	Terminal◆

* Using the Amp part numbers, these tools may be ordered from: Amp Inc., Harrisburg, Pennsylvania 17105.

3. REPAIRING THE 911A CONNECTOR

3.01 Instructions for removing wire-wrapped connections are given in Section 069-132-811.

3.02 Remove broken or damaged terminals as follows:

- (a) Tag and remove the leads from the terminal(s) which are to be replaced.
- (b) The terminals have a small indentation on the portion of the terminal nearest the connector surface. This portion of the terminal must be removed to allow the contact end of the terminal to be extracted. Using the B long nose pliers, grasp the terminal beyond the wire-wrapped portion as closely as possible to the connector. Work the pliers back and forth in the plane perpendicular to the long dimension of the connector until the entire terminal breaks off between the indentation and surface of the connector (Fig. 4).

- (c) At the contact side of the connector, insert the B long nose pliers into the section containing the remainder of the terminal so that the contact may be pulled free of the block (Fig. 5).

Warning: Care should be taken not to damage the barriers on each side of the terminal being replaced.

3.03 Replace terminal as follows:

- (a) Insert the new terminal into the connector from the contact side. Observe the positioning of adjacent terminals to determine that the new terminal is correctly positioned.
- (b) Apply light pressure to the terminal until the wire-wrapped portion of the terminal protrudes about $\frac{1}{2}$ inch from the wiring side of the connector.
- (c) Using the B long nose pliers, grasp the wire-wrapped end of the terminal and pull gently to ensure proper seating. The contact should be at the same depth as adjacent terminals.

Warning: Do not apply excessive pulling force at the wire-wrapped end of the ter-

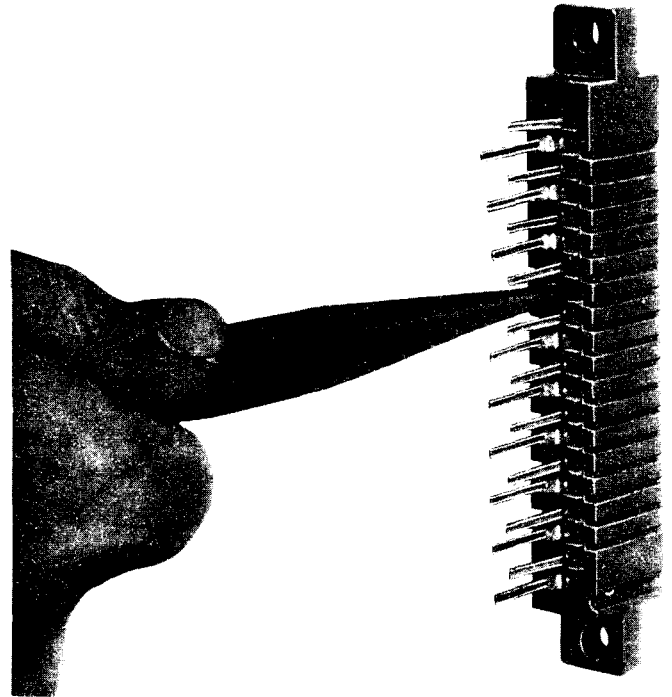


Fig. 4—Breaking Terminals from Connector

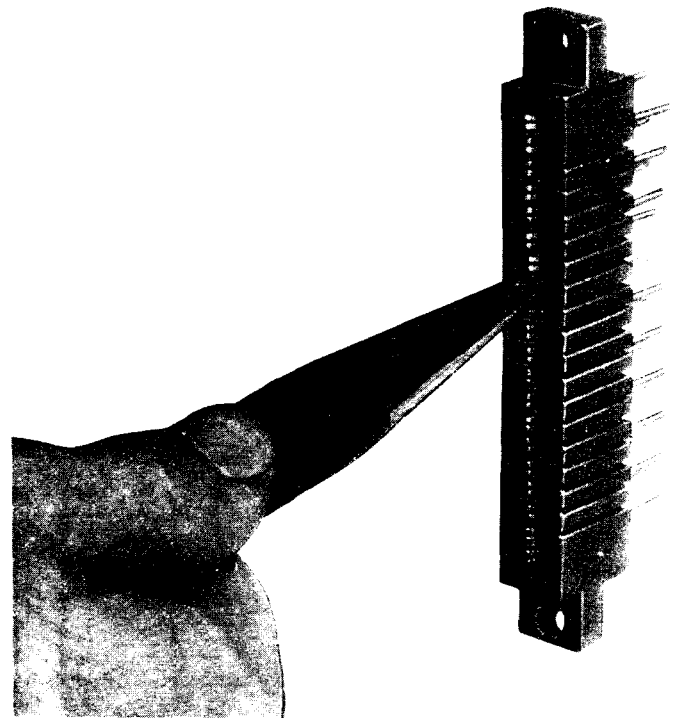


Fig. 5—Removing Terminals

terminal since this could misalign the spring at the opposite end. The spring end of the terminal should seat against the side of the connector. Excessive force will distort the spring, preventing the terminal from seating against the side. This condition prevents insertion of the circuit package into the connector.

- (d) Using an orange stick or small screwdriver, apply pressure to the terminal below the wire-wrap embossing, bending the terminal to a 45-degree angle to the connector. See Fig. 6 (A).

Note: Observe that the terminal is always bent in a direction opposite to the offset of the adjacent terminals.

- (e) Using the B long nose pliers, grasp the terminal as shown in Fig. 6 (B). Apply force as indicated by the arrows, and bend back the end of the terminal so that it is parallel to the adjacent terminals. At the same time, force the 1/16-inch long portion of the terminal flat against the block. The end of the new terminal should not protrude farther than the other terminals.

- (f) Reconnect leads by soldering wire to terminals or by wire-wrapping with appropriate tools

such as the KS-16363, L3 wire-wrapping tool and the KS-20963 sleeve. Refer to Section 074-269-113 for a description.

4. REPAIRING THE 645042 AMP CONNECTOR

- 4.01 The 645042 Amp connector is fully wired and assembled by the manufacturer. The only field repair likely would be contact replacement or wire retermination.

- 4.02 The R-4858 (Amp No. 266187-1) repair tool is used for these procedures and is illustrated in Fig. 7. This is a double-ended tool containing a hook-type device on one end to remove damaged contacts. The other end contains a device for inserting a new terminal or holding a contact in place while removing a wire.

- 4.03 To remove a damaged wire from the 645042 Amp card edge connector, place the hold-down end of the repair tool against the top of the appropriate terminal (Fig. 8). Apply pressure to the contact with the tool and grasp the wire near the connector with a long nose pliers and pull the wire free.

Note: If the terminal is also pulled loose in this operation, do not reinsert the same terminal. Replace the terminal with a new one.

- 4.04 To remove a damaged contact from the connector, use the hook-end of the repair tool as

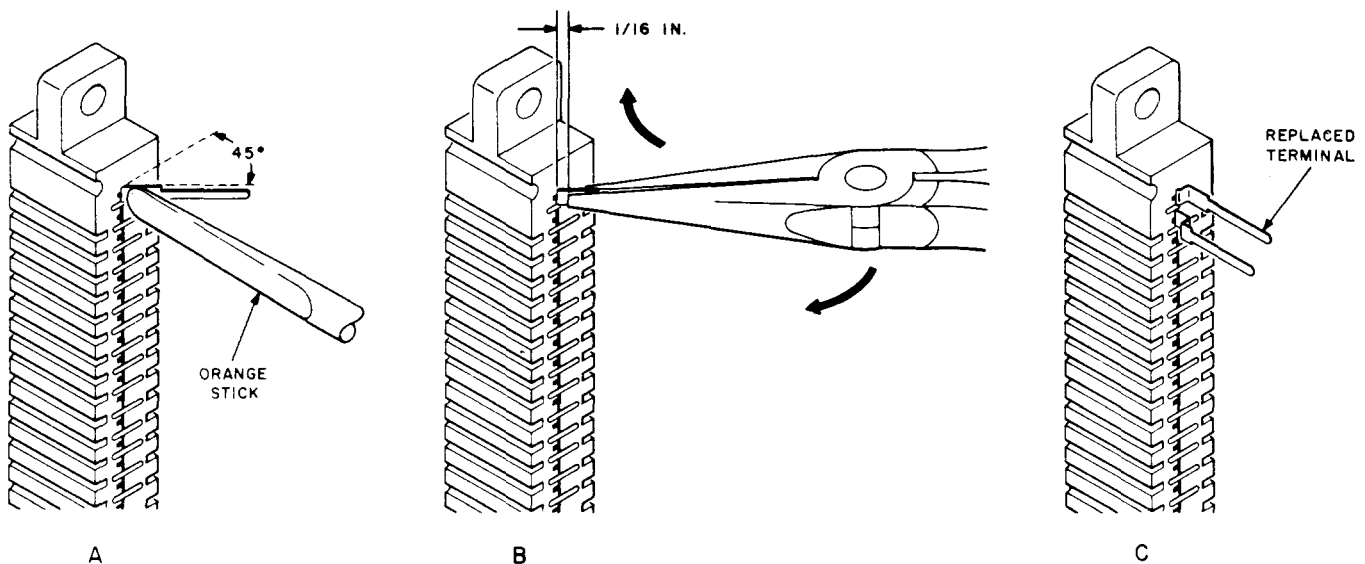


Fig. 6—Forming Replacement Terminals

shown in Fig. 9. Drop the hook through the center of the contact and rotate the tool 90 degrees. Hook the tool under one leg of the slot formed section of the contact and pull straight up. Do not reuse the contact.

4.05 To replace the contact, place the new contact in the connector by hand, and using the repair tool, as shown in Fig. 10, push down on the contact with the insertion end.

4.06 Advance wire approximately $\frac{1}{4}$ inch so that a clean area will contact the terminal as shown in Fig. 11.

4.07 Using the repair tool, align the insertion blade and cut-off blade as shown in Fig. 12. Then, apply force to the wire to lock it in place and cut off the excess.

5. REPAIRING THE 645058 AMP CONNECTOR

5.01 Terminals and wires are replaced on the 645058 Amp connector in accordance with the procedures shown in Part 4 for the 645042 Amp connector. If the cap must be removed for repair, it cannot be reterminated in the same wire position. The cap must be rewired in this situation.

5.02 For cabling the connectors to the equipment bays or wiring the cables to connectors, consult Table A.

5.03 The cap used with this connector is shown in Fig. 13. It is not symmetrical and, therefore, must be aligned with the orientation slot facing out, when used with the connector-base.

5.04 Place each wire so that the previous termination point is beyond the cap. Each cable that will be terminated in the connector should have 8 inches of wire free for use.

5.05 All cables coming into the cap from the left side should be placed in the groove through the center of the cap. Place a small loop of wire in the duct and tie the wire together just outside the cap as

shown in Fig. 14. The slack will be needed if wiring errors should be discovered.

5.06 Bend wires at a 90 degree angle at the point of the tie so that each individual wire in the binder will be free from congestion while wrapping wires around the cap. Press one wire at a time down tightly in each groove starting at the left hand side, facing the orientation slot. Wrap the wires all the way around the cap and snap wires tightly into bottom grooves and vertical grooves. Cut all excess wire leads at the point where wires have the cap, using the R-4108 midget cutters or an equivalent.

5.07 Rotate the cap 180 degrees. Place the wires in the appropriate slots and tie as shown in Fig. 15.

5.08 Make sure the orientation slot is facing the outside of the base and repeat the procedures in paragraphs 5.06 and 5.07 for the second half of the cap.

5.09 Each backplane has two connectors, J40 and J44, which are fed from the right side. They may be treated in the same way as the left handed connectors, as shown in Fig. 16.

5.10 To assemble the cap and base, unsnap the base from the backplane. Attach the two caps required to terminate one connector. Make sure orientation slots are facing out. Now tilt the connector at a 45 degree angle to the backplane (it can only be tilted in the direction it is wired). Slip the R-4857 (Amp No. 266186-1) cap setting tool, as shown in Fig. 17, over the connector. The jaw nearest the handle is the housing for the two caps (Fig. 18). By sight, center the connector in the cap setting tool and exercise care that all wires are clear of the cap setting tool. Now, simply squeeze the handle of the tool until it releases. (Caps may be assembled in this manner, one at a time or together.) Remove the connector and snap into the backplane.

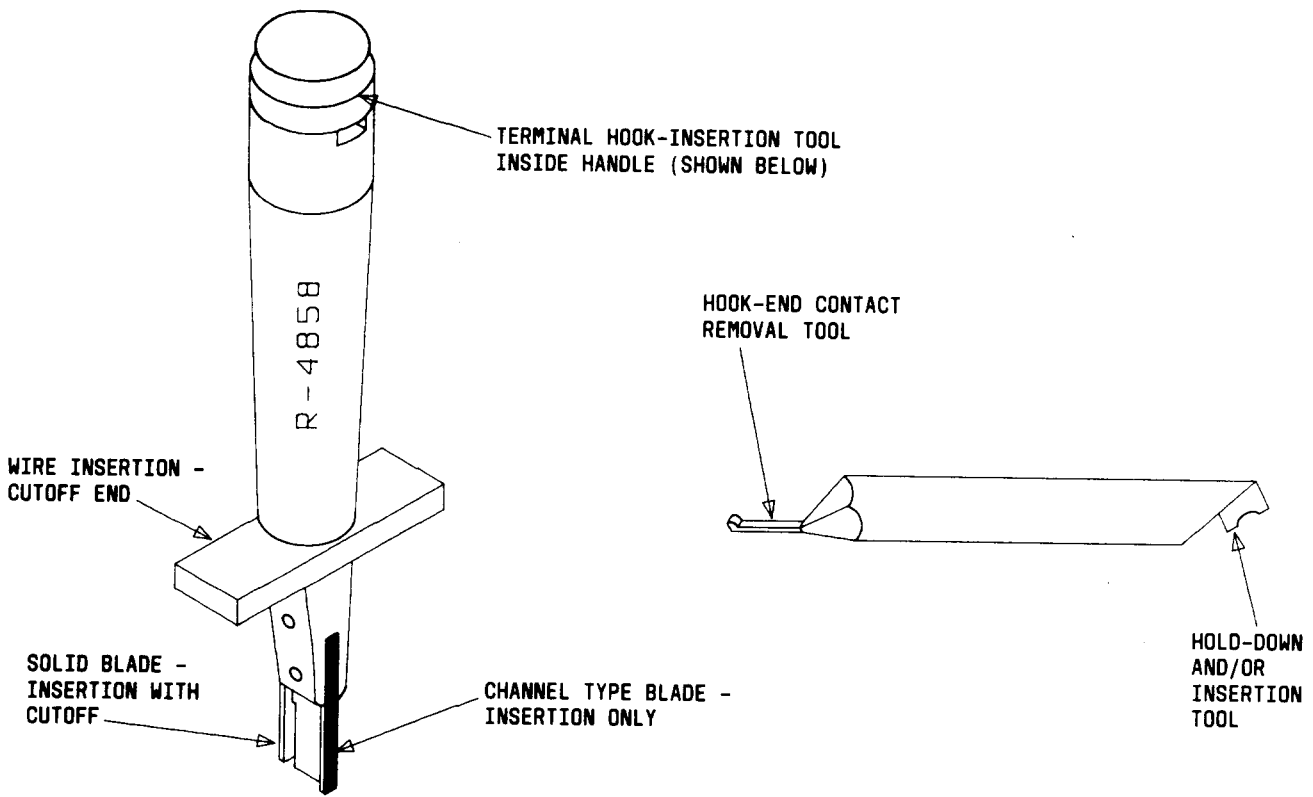


Fig. 7—R-4858 (Amp No. 266187-1) Repair Tool

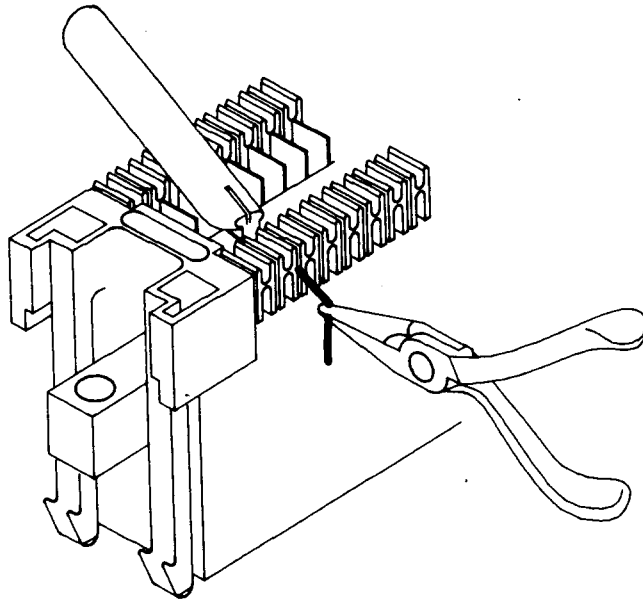


Fig. 8—Removing Damaged Wire From 645042 Amp Connector

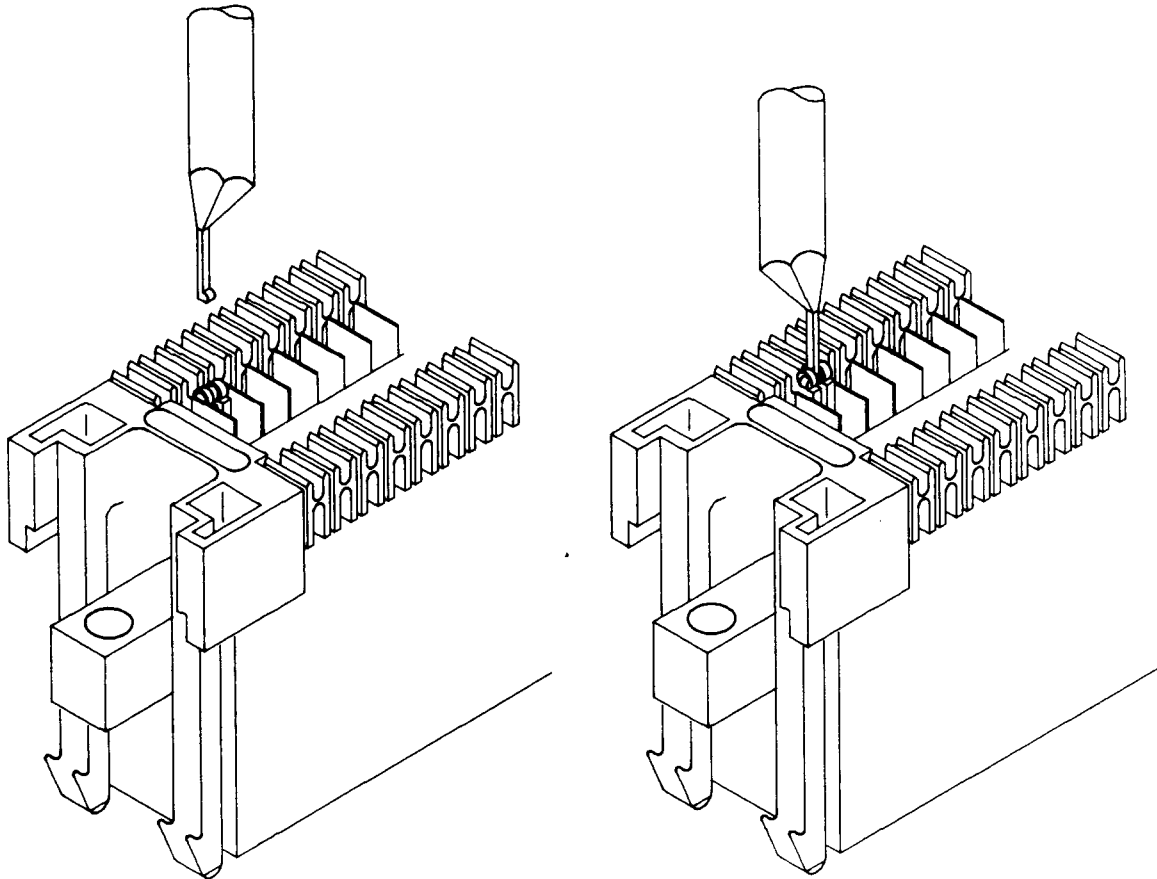


Fig. 9—Removing Damaged Contacts From the 645042 Amp Connector With the R-4858 (Amp No. 266187-1) Repair Tool

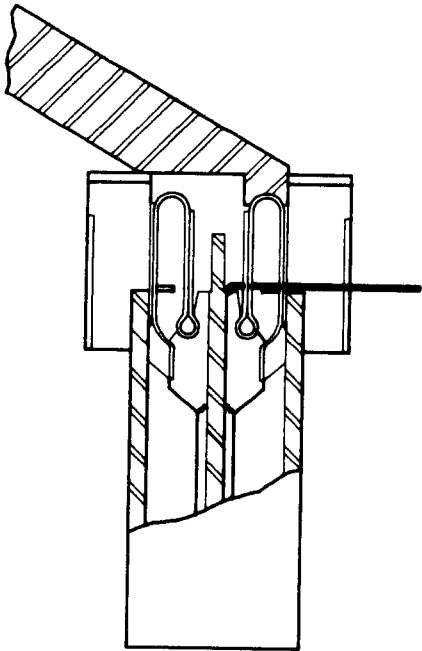


Fig. 10—Replacing Damaged Terminal With the R-4858 (Amp No. 226187-1) Repair Tool on the 645042 Amp Connector

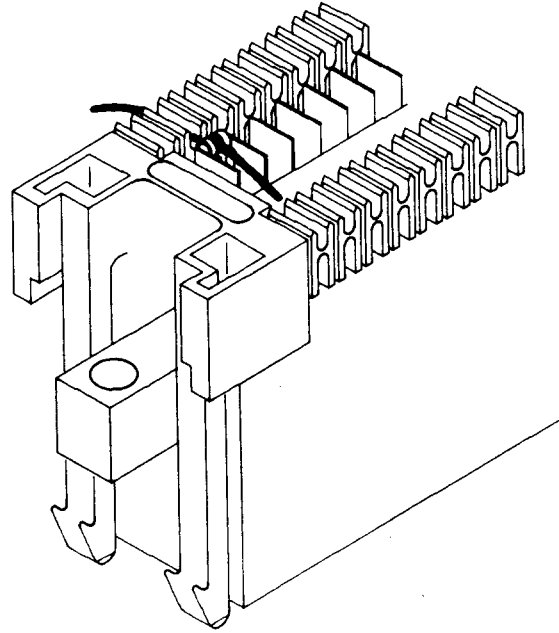


Fig. 11—Wire Inserted in 645042 Amp Connector

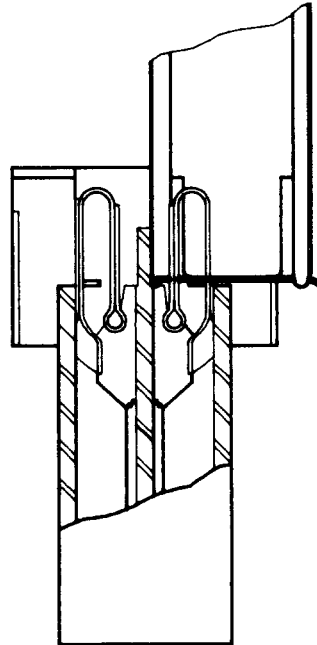


Fig. 12—Wire Insertion—Cut-Off End of R-4858 (Amp No. 266187-1) Repair Tool in Place

TABLE A

CABLE AND WIRE DRAWINGS

CODE	EQUIPMENT	CABLE DRAWING	WIRE DRAWING
J99395A	G Signaling Standalone	ED-7C197-10	T-7C052-40
J99396A	G Signaling Consolidated	ED-7C202-10	T7C087-40
J99397A	G Signaling N4 Unitized	ED-7C20-10	T-7C088-40
J99398A	G Signaling A6B Unitized	ED - (NA)	T - (NA)
J98631A	Mini Reg Bay	ED-97762-10	T-97762-31

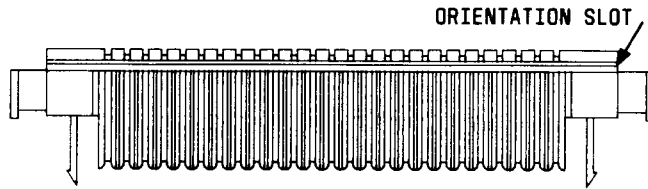


Fig. 13—645058 Amp Cap Showing Orientation Slot

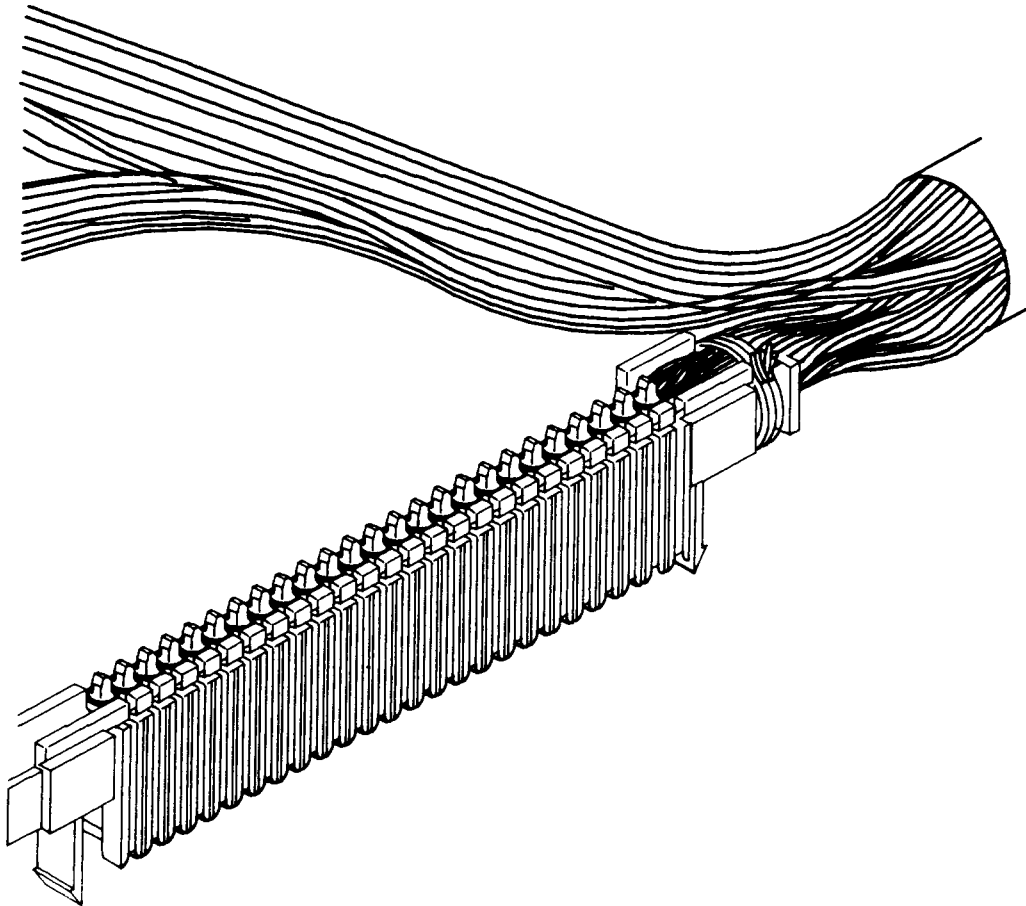


Fig. 14—Wires Placed in Grooves and Bound

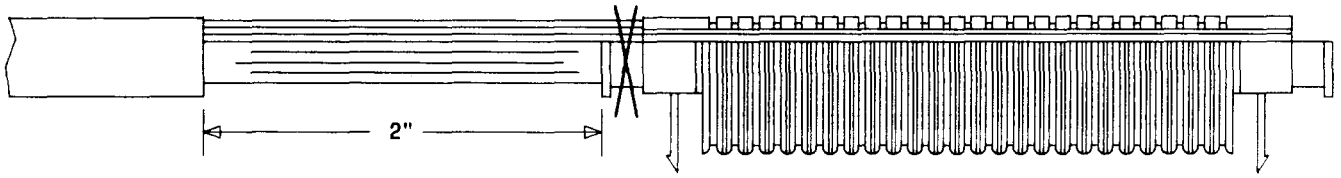


Fig. 15—Alignment of Cable and Cap

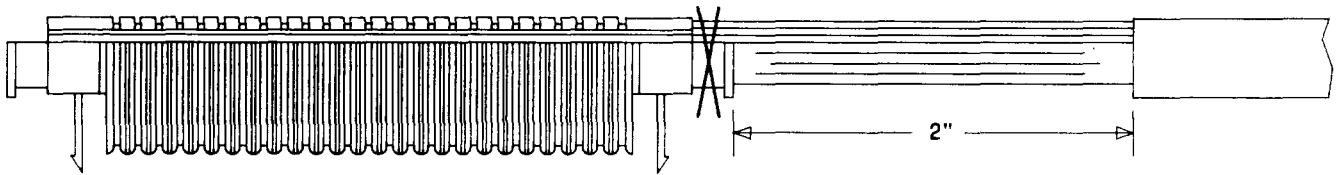


Fig. 16—J40 and J44 Right-Handed Connectors

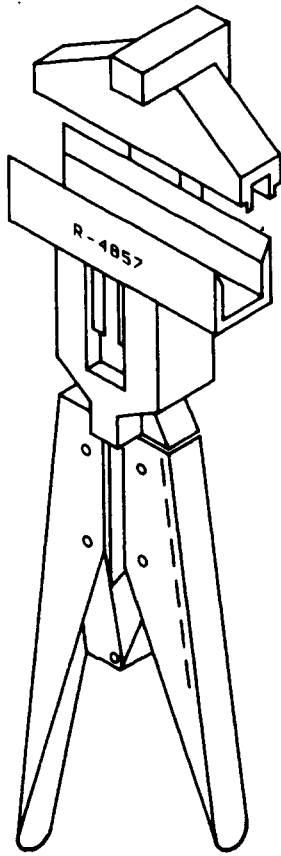


Fig. 17—R-4857 (Amp No. 266186-1) Cap Setting Tool

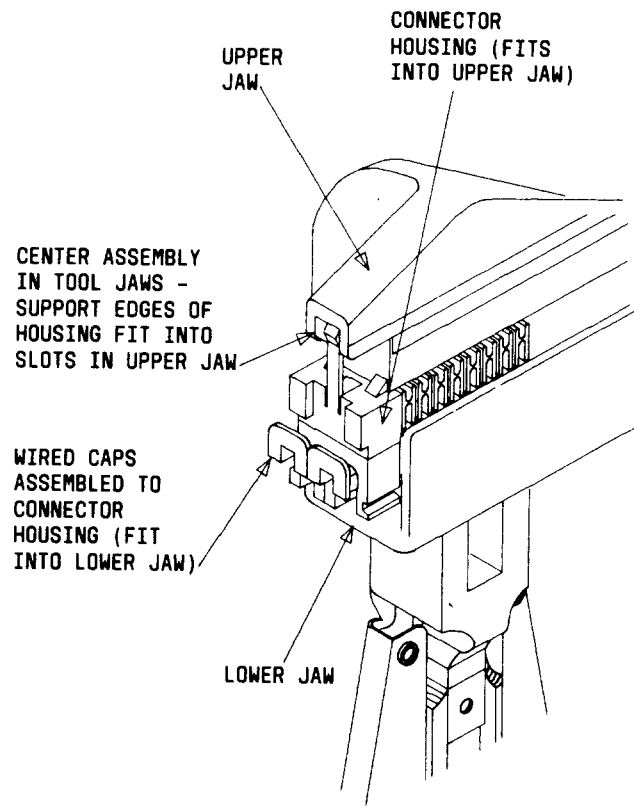


Fig. 18—Connector Placed in R-4857 (Amp No. 266186-1) Cap Setting Tool