66G- AND 66H-TYPE CONNECTING BLOCKS
METHOD OF TERMINATING CONNECTIONS

1. GENERAL

1.01 The 66G- and 66H-type connecting blocks are provided initially for use on trunk distributing frames and main or intermediate distributing frames, respectively, in the Electronic Switching Systems (ESS).

1.02 This section is reissued to add the KS-20096 L1 needle and its use and to make minor corrections.

1.03 The 714E2 tool is provided to terminate cross-connections on the connecting block and the 724A tool is provided to remove the connections.

2. DESCRIPTION

A. 66G-Type Connecting Block

2.01 This block consists of a molded plastic panel equipped with 128 tin-plated, single-clip connectors arranged in 16 rows with 8 clips in each row. The clips are designed for use with 22 gauge W-type distributing frame wire. A slotted fanning strip is provided on each side of the block. The connectors extend through the block to form solderless wire-wrap terminals on the rear of the block. This block provides a cross-connection capacity of 64 pairs and is intended for use on trunk distributing frames.

B. 66H-Type Connecting Block

2.02 This block is similar to the 66G-type except it is equipped with twin-clip connectors instead of single-clip connectors. The twin-clip connectors provide a capacity of two cross-connections for each of 64 pairs. This block is intended for use on main distributing frames. It is also equipped with slotted fanning strips.

C. ESS Distributing Frames

2.03 The distributing frames are provided in modules, each of which consists of a number of verticals as shown in Fig. 1. Each vertical is made up of 66-type connecting blocks. The main distributing frame or intermediate distributing frame consists of ten verticals per module and nineteen 66H-type blocks per vertical (Fig. 1). The trunk distributing frame consists of six verticals per module and nineteen 66G-type blocks per vertical (Fig. 2).

2.04 Vertical jumper wire troughs and retaining rings are provided alongside each vertical. Upper and lower jumper wire troughs are provided for intervertical jumpers.

D. 714E2 and 714E Tools

2.05 The 714E tool is replaced by the 714E2 tool which is an improved version. Each tool consists of a double-ended wire insertion head held in a plastic handle (Fig. 3). One end of the insertion head is designed for installing a conductor into the single clip of the 66G-type connecting block. The other end is for use on the twin clip of the 66H-type connecting block. The insertion head can be rotated to either position by loosening the screw, rotating the head 180 degrees, and retightening the screw. The improved 714E2 tool has holes in the blade for holding the wire across the opening in the tool face while making connection to the split terminals on the connecting blocks. The 714E2 tool provides the following advantages:

(a) The elimination of the wire forming operation

(b) The elimination of "finger" placement of wire into the terminal hook

(c) When the tool is withdrawn, the free end of the wire remains facing upward and eliminates the possibility of crosses to adjacent terminals.

Since the 714E2 tool has no wire cutoff blade, the conductor must be cut to proper length before making the termination.

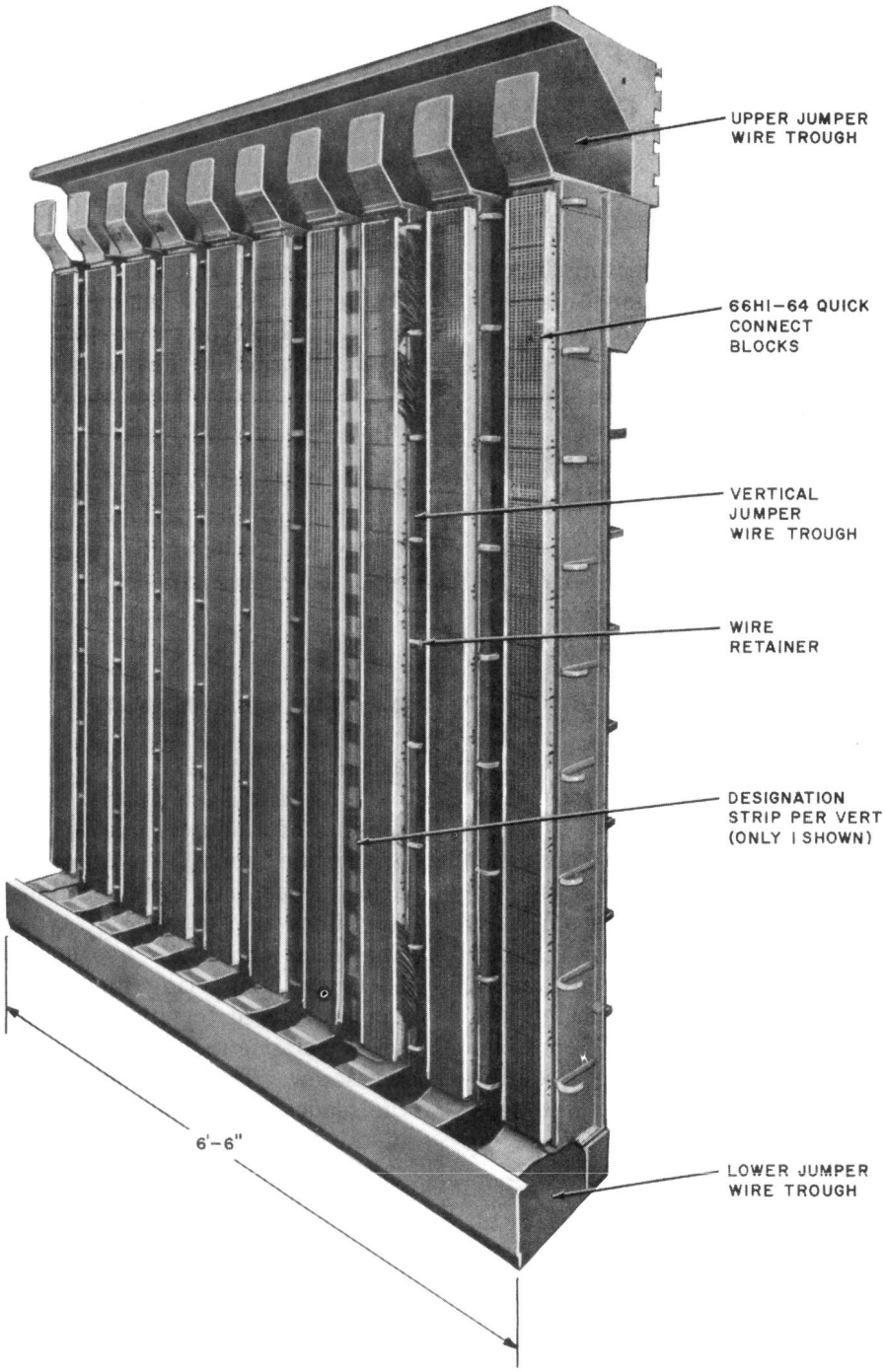


Fig. 1—Main Distributing Frame or Intermediate Distributing Frame

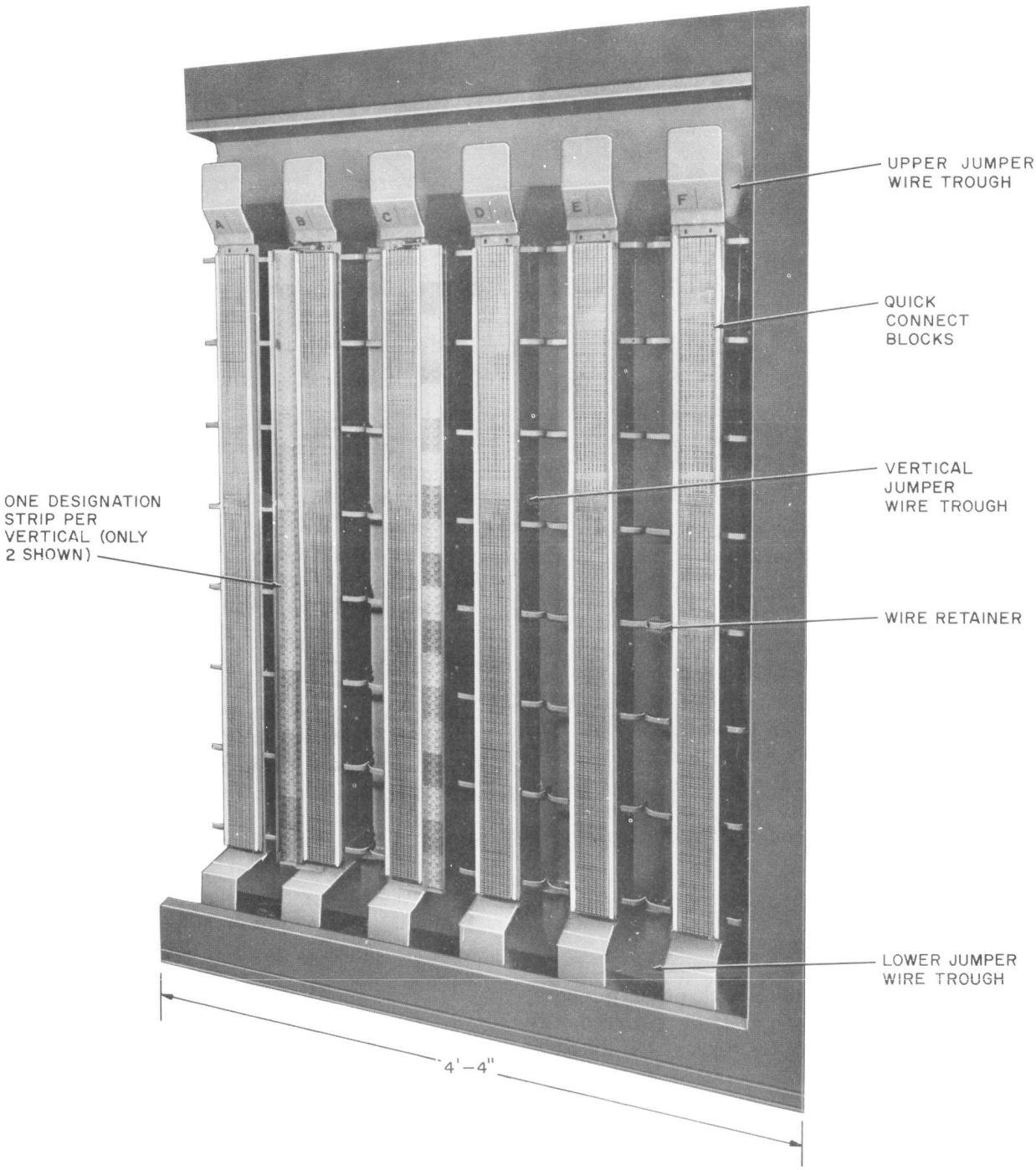


Fig. 2—Trunk Distributing Frame

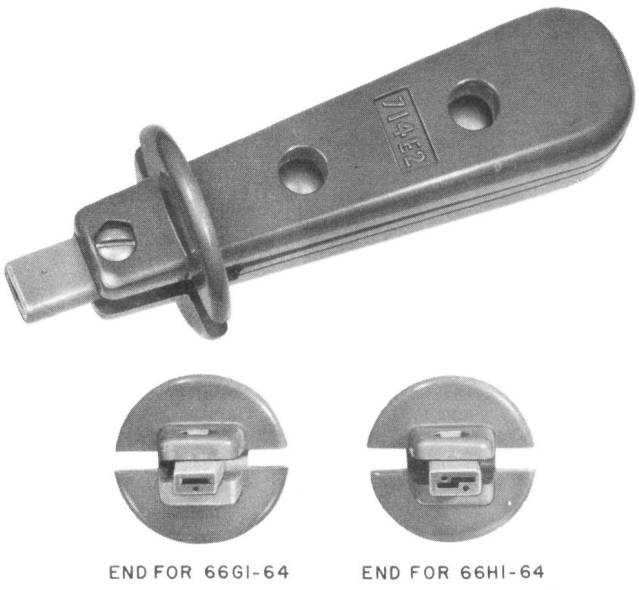


Fig. 3—714E2 Tool

E. 724A Tool

2.06 The 724A tool (Fig. 4) is provided for removing conductors from the 66G- and 66H-type connecting blocks. The tool consists of a two-pronged fork with an insulated handle. The fork is sized to fit around the beam of the clip and underneath the seated conductor. Use of the 724A tool reduces the possibility of disturbing or degrading adjacent wire connections during removal of wire.

3. METHOD

A. Running Jumpers

3.01 To avoid interference with other jumpers, run the jumpers in the most direct way and on top of other jumpers, except as stated in the following note. Jumpers being transferred from one set of terminals to another should not be allowed to catch or twist around other jumpers. The majority of connections will be within the same vertical.

Fig. 4—724A Tool

> ***Note:*** Intravertical cross-connections of 3 feet or less in length should be placed behind the existing cross-connection.

3.02 Dress all jumpers to the back of the vertical troughs as neatly as possible. Place the jumper between the retaining rings and push to the rear.

3.03 Jumpers from one vertical to another (intervertical) should be run through either the upper or lower jumper wire troughs according to which trough provides the shortest path for the jumpers. ▶When placing two cross-connections on a terminal, where one is an intravertical and one is an intervertical, identify the intervertical cross-connection by placing a single wrap of 1/2" gray plastic tape on the wire just outside the fanning strip.◀

3.04 The upper wire trough is accessible through a wiring channel at the top rear of each vertical trough. Jumpers can be passed through this channel by using a KS-20096 L1 wiring needle, (Fig. 5). The needle is passed through the wiring channel into the upper trough where the end of the jumper is attached to the eye of the needle. By withdrawing the needle, the jumper is pulled through the wiring channel into the vertical trough. This procedure is used on both ends of the jumper wire.

B. Amount of Slack

3.05 Leave 10 to 12 inches of slack in all jumpers. When a jumper is transferred, the slack may be used but the jumper should not be taut. The slack should be dressed back from the terminal strip. Avoid excessive slack in the troughs.

C. Terminating Connections

3.06 It is not necessary to strip the insulation from the wire prior to making a connection on the 66-type blocks. The terminal is so designed that the insulation is broken at the point of contact

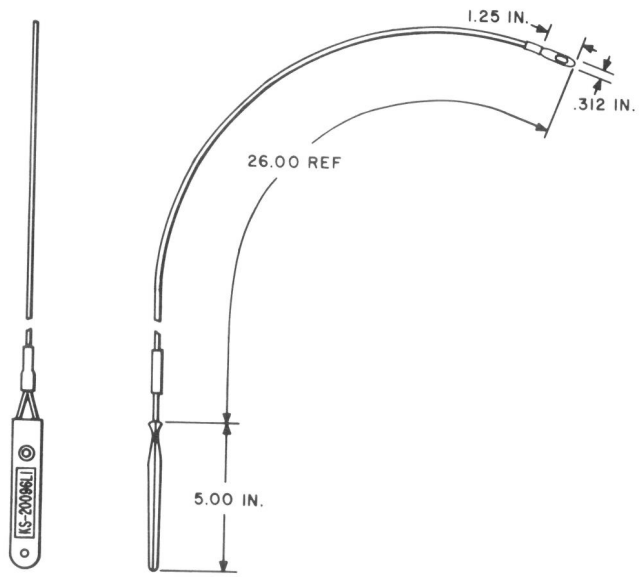


Fig. 5—KS-20096 L1 Needle

sufficiently for electrical contact when the wire is installed.

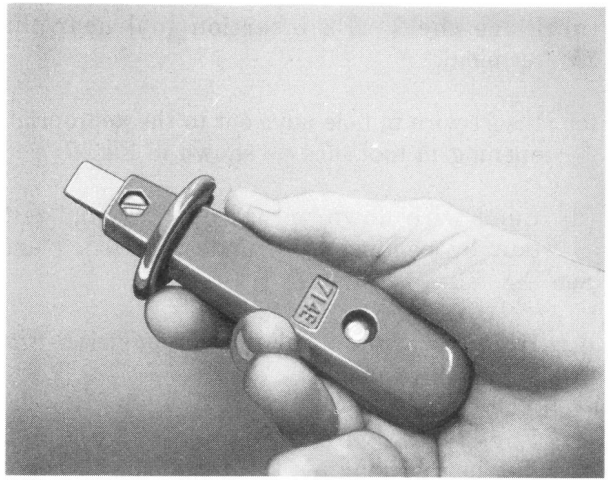
3.07 Before previously connected wires can be reconnected, the end of the wire containing the broken insulation must be cut off.

Caution: Once wires are terminated and are within the confines of the fanning strip, do not remove from the fanning strip for tracing or for identification. A wire being traced may be identified by jiggling the wire in the fanning strip and slipping a piece of spaghetti on the terminal that moves.

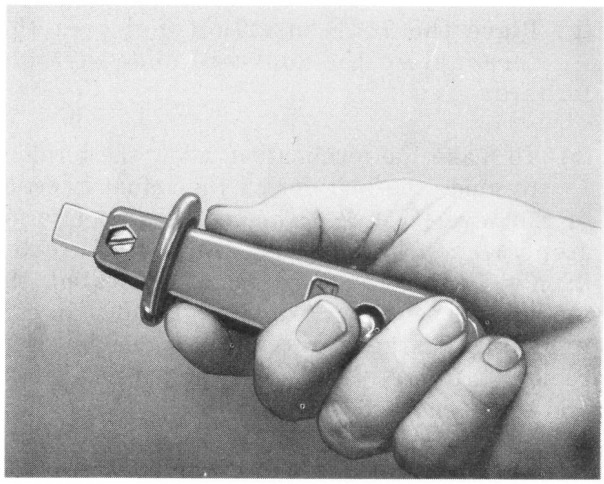
3.08 To place the wire in the terminals, proceed as follows:

(a) Grasp the tool, as shown in A, B, and C of Fig. 6, in such a manner that pressure will be applied with the palm of the hand while holding the tool loosely with the thumb and fingers.

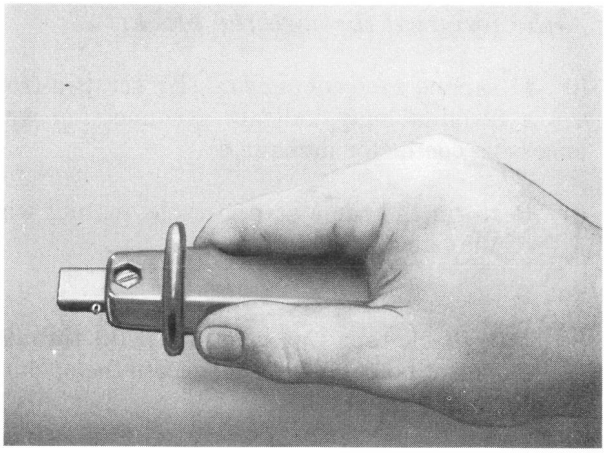
Note: It is recommended that several trial connections be made on unused clips to gain experience in the use of the 714E2 tool before making actual connections.



A



B



C

Fig. 6—Proper Method of Holding 714E2 Tool

(b) Place the 714E2 insertion tool near the terminal.

(c) Insert wire in hole adjacent to the appropriate opening in tool face as shown in Fig. 7.

(d) Bend wire down across opening and pull taut by bending back under the tool blade. See Fig. 7B.

(e) Hold wire and tool in this position and approach terminal.

(f) Engage the wire under hook of terminal, but before making the termination, rotate the wire into the fanning strip slot.

(g) Place the 714E insertion tool over the terminal so the tool will slide straight forward.

(h) To make the termination, allow the terminal to guide the tool during the actual insertion of the wire (Fig. 8). The tool has an internal stop to keep it from inserting the wire too deeply. After the wire has been seated, the tool should be withdrawn, straight out. In case unusual resistance or "feel" is encountered, remove the wire, clip the end, prepare as before, and reconnect.

Caution: Do not wiggle or rock the tool as this may promote wire breakage. Excessive pressure or striking the tool may push the terminal through the block.

(i) ▶Examine each connection. Tin scraped from a terminal may indicate a connection with excessive conductor damage.◀

(j) Perform the same steps for the mating wire of the pair.

(k) For "back taps" proceed as in (a) through (i) except bend the wire up across the opening as shown in Fig. 7C.

3.09 Dress the wire into the slot in the fanning strip on the side of block nearest the clip connections. All wires are to be dressed into the fanning strip, etc, before seating them. See Fig. 9 and 10.

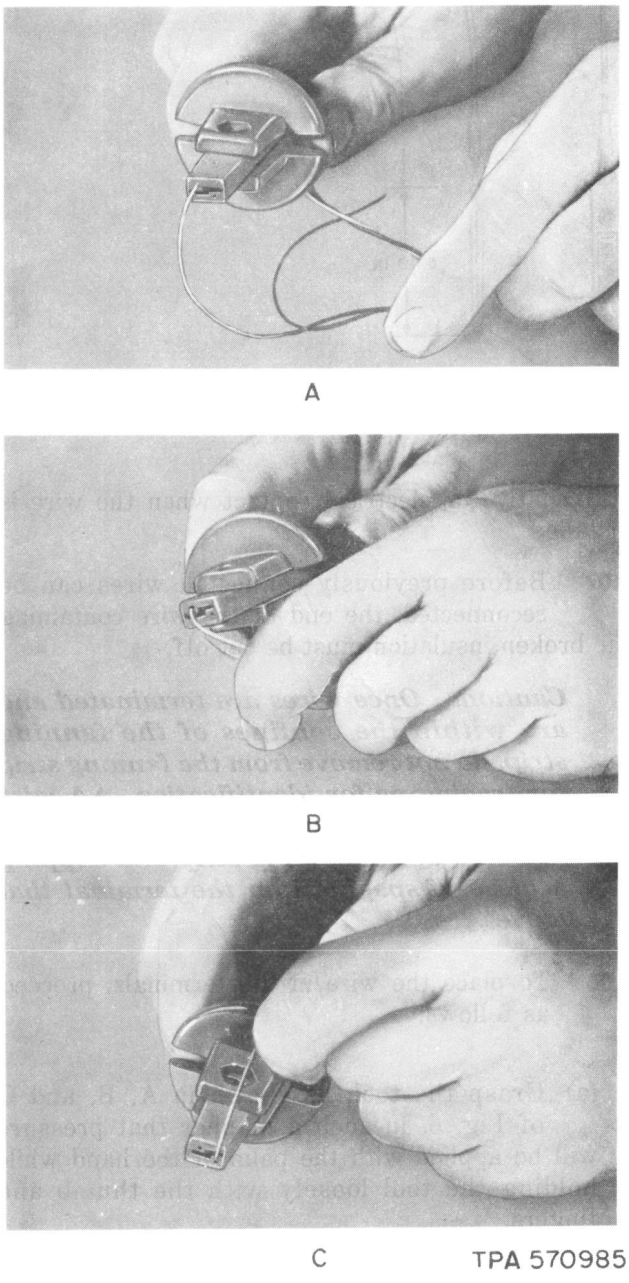


Fig. 7—Proper Method of Using 714E2 Tool

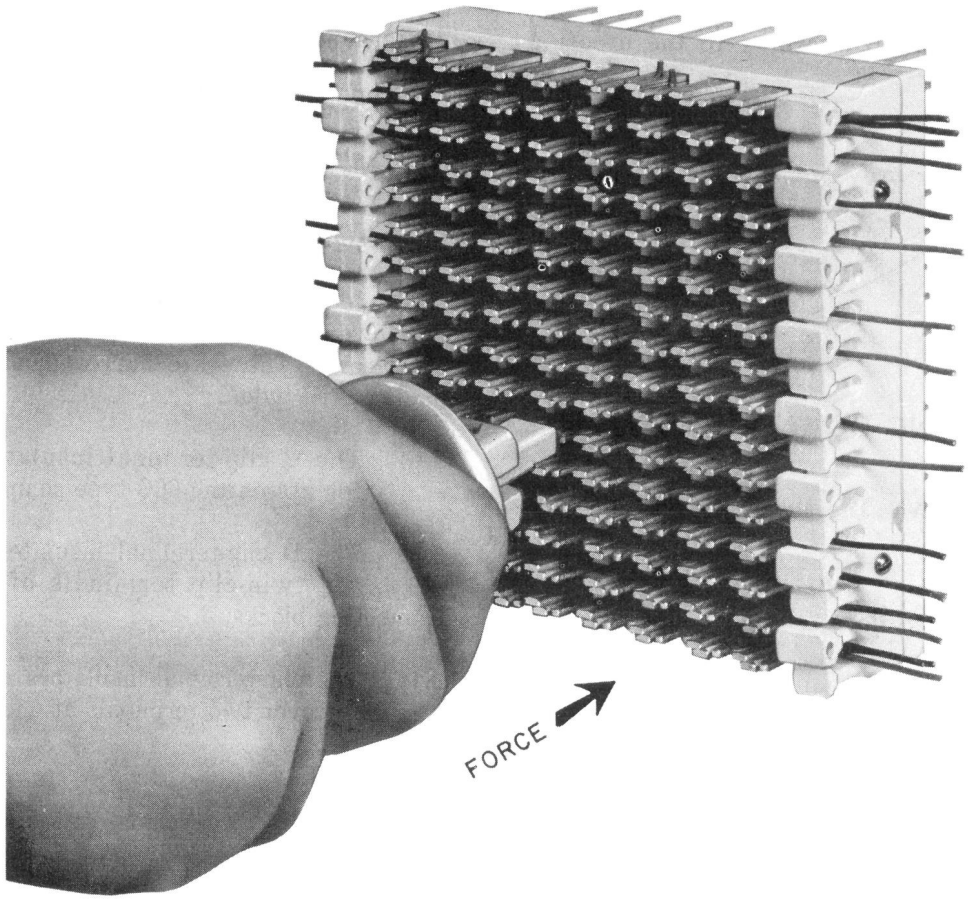


Fig. 8—Use of 714E2 Tool With 66H-Type Block

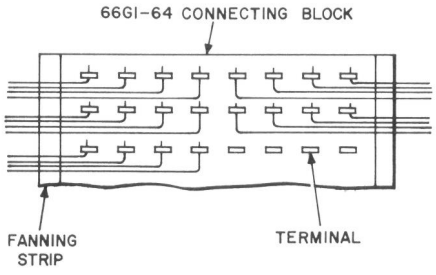


Fig. 9—The Dress of Jumpers on Single-Clip Terminals—(66G1-64 Connecting Blocks) 7 Feet High Distributing Frame

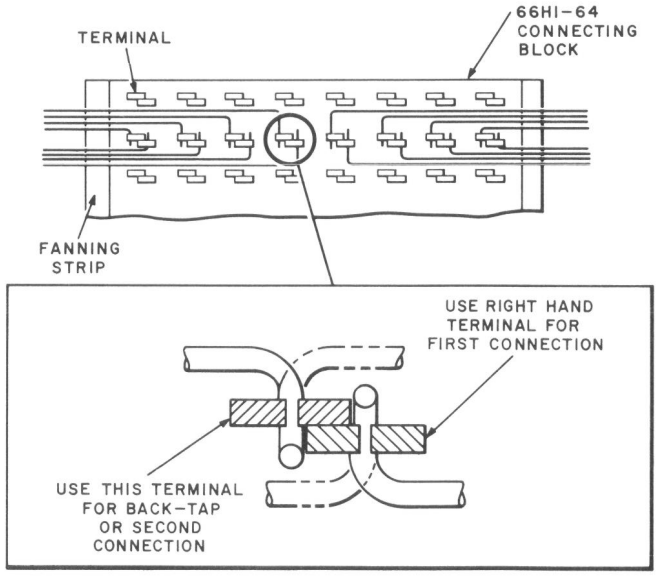
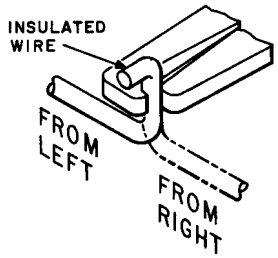


Fig. 10—The Dress of Jumpers on Twin-Clip Connecting Blocks—8 Feet High Distributing Frame

3.10 The wire is placed into the retaining slot of the terminal according to the dressing pattern shown in Fig. 11.



VIEW LOOKING DOWN ON TERMINAL

Fig. 11—Wire Dressing at Terminal

D. Removing Connections

3.11 Place the 724A tool fingers astraddle the terminal beam and under the wire. Grasp the tool as shown in Fig. 12 and pull the wire from the terminal and away from adjacent terminals.

3.12 Remove small pieces of insulation remaining around the terminals with an insulated tool such as the KS-6320 orange stick or R-1102 fiber spudger.

E. Designation of Special Service Lines

3.13 Identification and protection of special service terminals are provided by clip-terminal insulators. These are narrow U-shaped channels made of red nylon.

3.14 The C clip-terminal insulator (Fig. 13) is for use on the 66G-type connecting block.

3.15 The D clip-terminal insulator is for use on the twin-clip terminals of the 66H-type connecting blocks.

3.16 The clip-terminal insulators are long enough to cover two terminals at once.

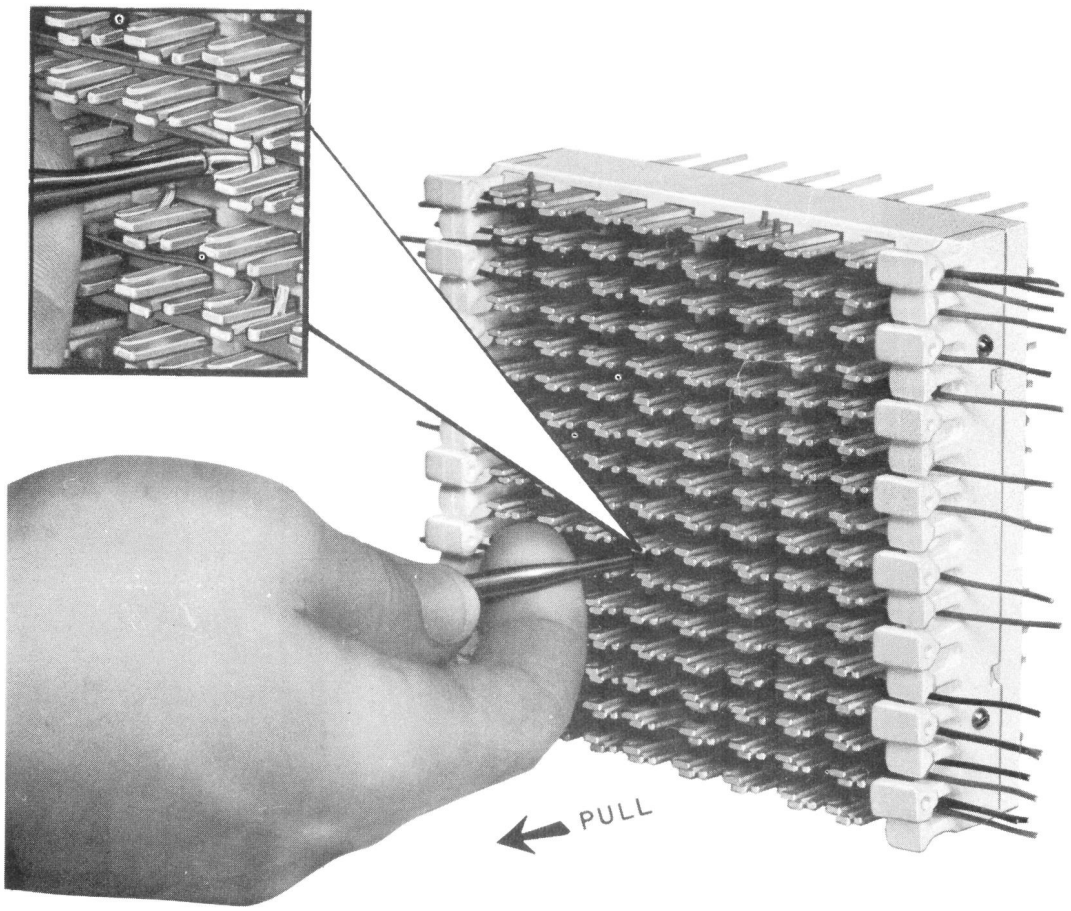


Fig. 12—Use of 724A Tool

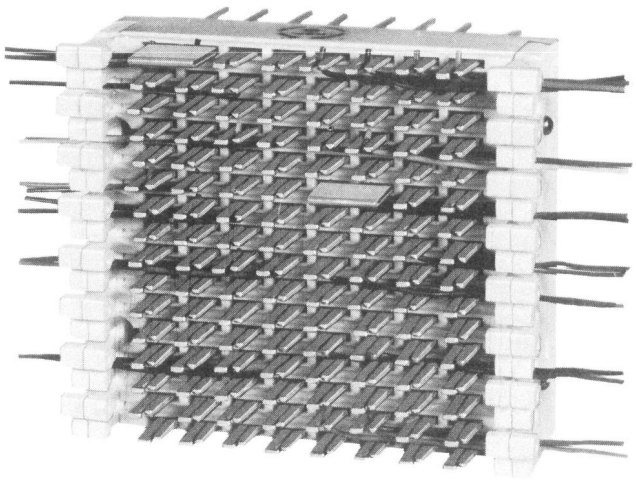


Fig. 13—Special Service Marking on 66G-Type Block