

## 88-TYPE CONNECTING BLOCKS AND ASSOCIATED HARDWARE

### DESCRIPTION AND USE

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and that the 88 *BBW1*-type connecting blocks should be used.

- Include ordering information.
- Update information on tools and add the one-pair insertion tool.
- Include information on 288A1-25 waterproofing adapters and 88A1-5 waterproofing caps.
- Include information on 88A retainers and 188A1 backboard.
- Add information on 88-type connecting blocks and wiring blocks to be used in applications other than Serving Area Interface (SAI)

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

#### 1. GENERAL

**1.01** This section covers the description and use of the 88-type connecting block and the associated hardware for terminating PIC cables.

**1.02** This section is reissued to:

- Indicate that the 88 *ABW1*-type connecting blocks are rated Manufacture Discontinued

**1.03** Procedures for installing 88-type connecting blocks and their associated hardware are outlined in the 631 Division of the Bell System Practices.

**1.04** The procedure for running cross-connecting wires is covered in the 462 Division of the Bell System Practices.

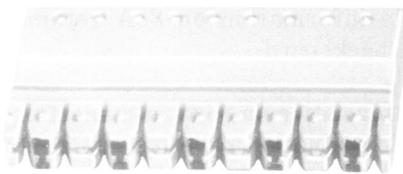
2. DESCRIPTION

88-Type Connecting Block

2.01 The *88-type connecting block* (Fig. 1) is a molded, flame retardant plastic housing, containing gold-plated quick clips with insulation slicing features. The clips will terminate polypropylene insulated conductors in waterproof cable in addition to polyethylene and polyvinylchloride insulated cable. The clips are designed to terminate 22-24-, or 26-gauge conductors without the removal of insulation. These clips are double ended, one end to accept the cross-connecting wire and the other to terminate the cable conductor. The connecting blocks are white on one side and blue on the other. They are installed with alternate colors facing upward to aid in jumper identification.

**Note:** Waterproof cable should not be used for general distribution within buildings. It may be used as an entrance facility provided a transition to air-core cable is made within a metallic, sealed splice case prior to appearance of exposed pairs in any terminal or cabinet. It should never be fanned and terminated directly on protectors and connectors within buildings.

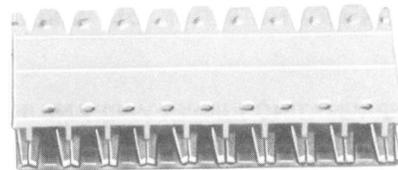
2.02 For SAI and building main terminals the connecting blocks are available in a 5-pair configuration. For riser and distribution terminal application, the connecting blocks are also available in a 3-pair configuration. Refer to Table A for information on color codes and pair sizes.



SIDE FOR  
CROSS-CONNECTING WIRE



MINIATURE  
CLIP



MINIATURE CLIPS MOLDED  
IN PLASTIC—SIDE FOR  
TERMINATING CABLE PAIR

Fig. 1—88-Type Connecting Block

TABLE A

## 88-TYPE WIRING AND CONNECTING BLOCKS

CODE NO.	COLOR	NO. OF PAIRS	APPLICATION
88DG1-300	Green	300	SAI
88DB1-300	Blue	300	SAI
88DW1-300	White	300	SAI
88AG1-100	Green	100	Building Main Terminals
88AG1-300	Green	300	
88AB1-100	Blue	100	
88AB1-300	Blue	300	
88AG1-100	Green	100	Riser And Distribution Terminals
88AG1-300	Green	300	
88AB1-100	Blue	100	
88AB1-300	Blue	300	
88BR1-25	Red	25	
88BR1-25C*	Red	25	
88BR1-75	Red	75	
88BR1-75C*	Red	75	
88AY1-100	Yellow	100	
88AP1-100	Purple	100	
88BBW1-3	BL-W	3	Riser and Distribution Terminals
88BBW1-5	BL-W	5	SAI, Main, Riser and Distribution Terminals

\* Wiring block equipped with 25-pair stub cable.

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**2.03** The following is the coding arrangement for the 88-type connection block illustrated by this example: 88BBW1-5 connecting block. The components of the complete code designation provide the following information.

- (1) 88—Basic family identification.
- (2) B—First suffix letter indicates basic style such as the letter B indicates that the clips are gold plated and protrude from one side of the connecting block.
- (3) BW—Suffix letters denote color of top and bottom surfaces (blue-white).
- (4) 1—Suffix numeral assigned to identify minor design difference resulting from engineering or manufacturing improvement.
- (5) 5—Number following dash indicates the number of pairs.
- (6) Connecting block—Code name.

### 88-Type Wiring Block

**2.04** The *88-type wiring block* is a fire retardant molded plastic block. Each wiring block consists of color coded index strips. Each index strip will terminate 25 pairs and each is marked with the five tip colors to establish pair location. The block when used in SAI is illustrated in Fig. 2. In building main terminals and riser and distribution

terminals the wiring blocks as illustrated in Fig. 3 should be used. Information on color codes, pair sizes, and application is contained in Table A.

**2.05** The following is the coding arrangement of the 88-type wiring block illustrated by this example: 88AB1-300 wiring block. The components of the complete code designation provides the following information.

- (1) 88—Basic family identification
- (2) A—First suffix letter indicates basic style as follows:
  - A—legs with feet—single connection
  - B—legs with feet—5 connections (multiple)
  - D—no legs—single connection

The A and B styles are for wall mountings in customer premises, and the D style is for SAI application in outside plant.

**Note:** The single connection (A style) wiring blocks are primarily used in building main terminals. When these terminals interface with the Key Telephone System (KTS), the multiple connection (B style) wiring blocks are also used. The key equipment when used in riser and distribution terminals is also terminated on the multiple connection (B style) wiring blocks.

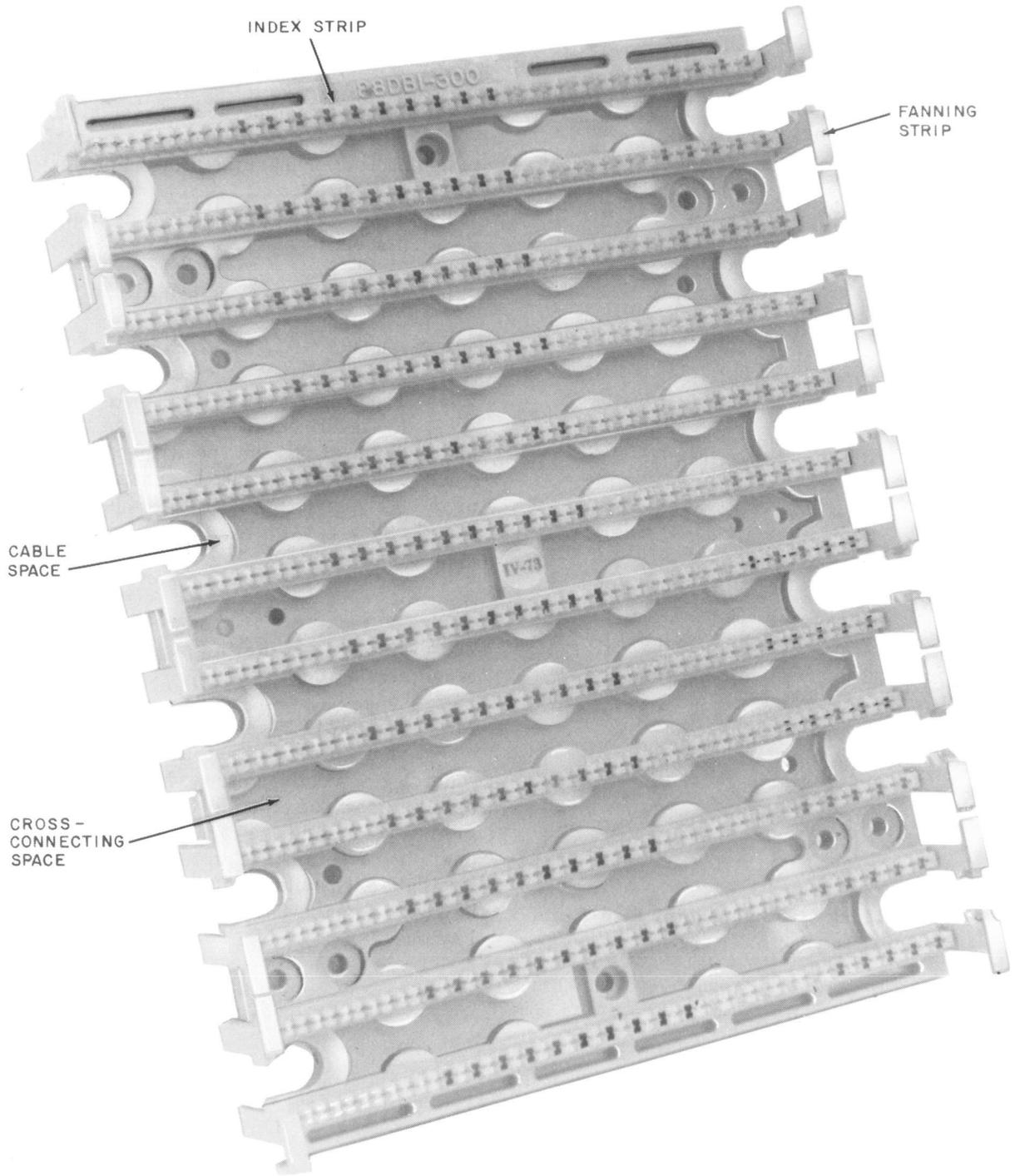
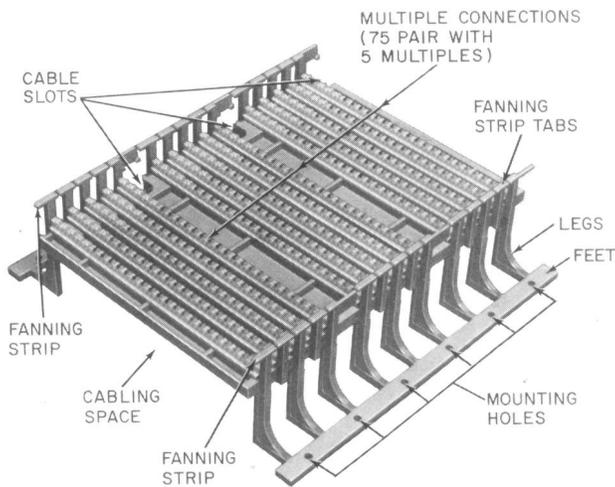
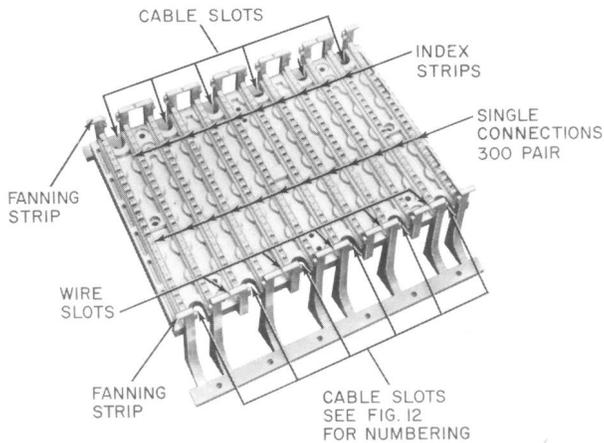


Fig. 2—Wiring Block Used in SAI



**Fig. 3—Wiring Block Used in Main, Riser, and Distribution Terminals**

(3) B—Second suffix letter denotes color. The codes are as follows: B-Blue, G-Green, R-Red, Y-Yellow, P-Purple, and W-White.

(4) 1—Suffix numeral assignment to identify minor design differences resulting from engineering or manufacturing improvement

(5) 300—Number following hyphen indicates number of pairs

(6) Wiring block—Code name

**88A Retainer**

**2.06** The *88A retainer* (Fig. 4) is used to retain the cross-connect wires at the top or bottom of a column of the 88-type wiring blocks. It is a small molded plastic part that attaches to the leg of the 88-type wiring block to complete its fanning strip. The retainer *cannot* be used in SAI application.

**288A1-25 Waterproofing Adapter and 88A1-5 Waterproofing Cap**

**2.07** The *288A1-25 waterproofing adapter* (Fig. 5) is used to protect the cable side of the connector against corrosion. It is a plastic channel open on the top and bottom and filled with a grease compound. Tape is placed over the top opening to retain the grease and to aid in the installation. Installation of the waterproofing adapter is covered in the 631 Division of the Bell System Practices.

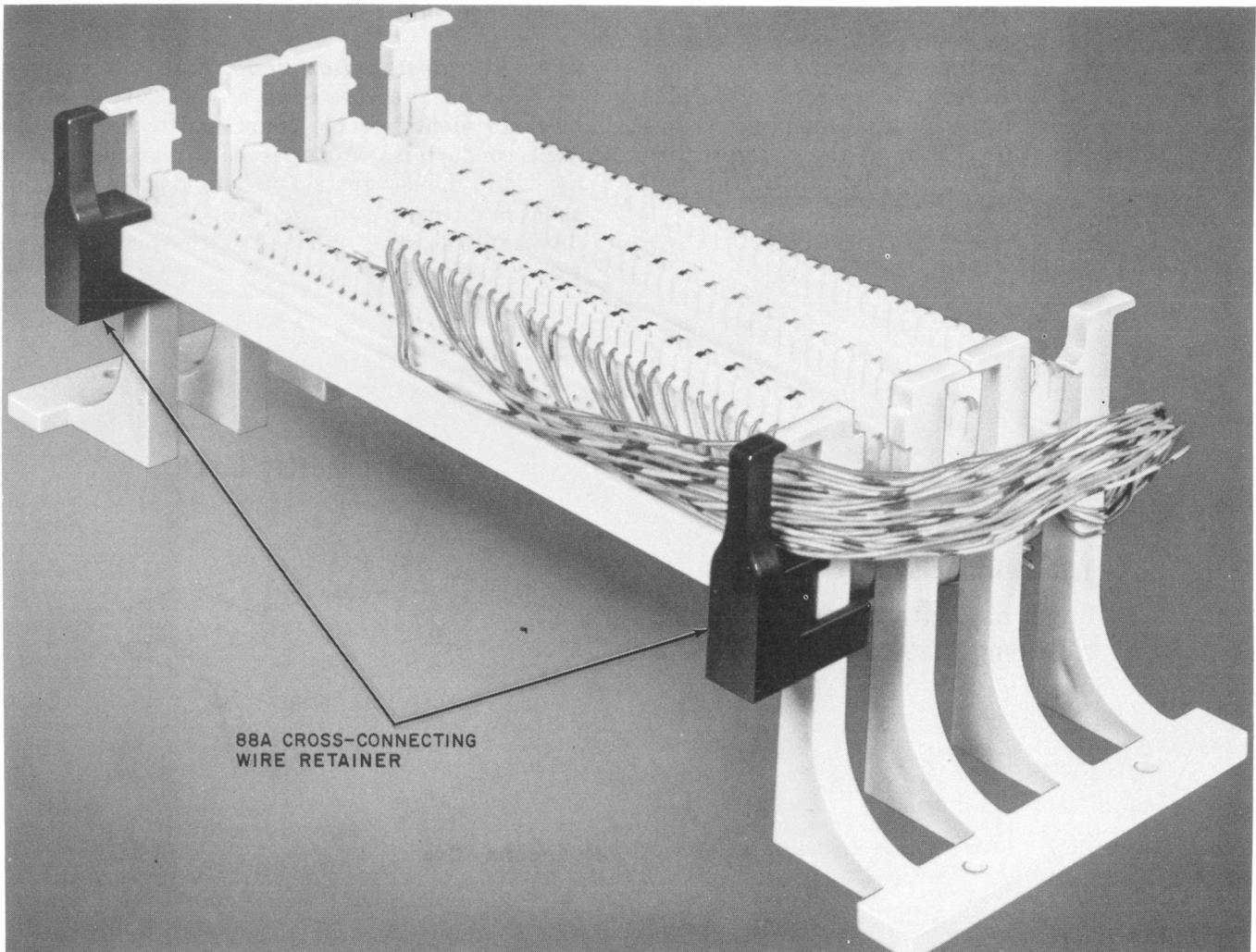


Fig. 4—88A Retainer

- Press grease filled adaptor over the index strip with the long leg covering the wire ends.
- Adaptor must be fully inserted along its length.
- Remove protective tape.

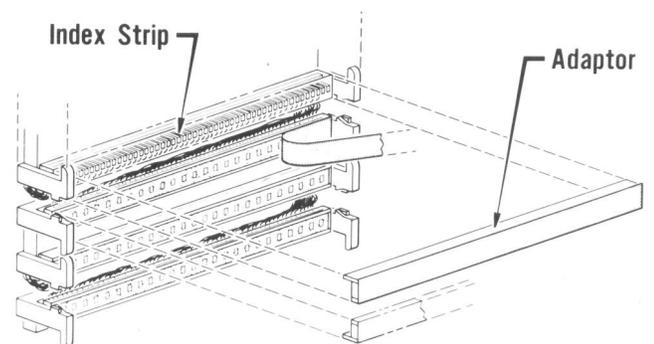


Fig. 5—288A1-25 Waterproofing Adapter

2.08 The *88A1-5 waterproofing cap* (Fig. 6) is used to protect the cross-connect side of the connector. The cap is a plastic detail filled with a grease compound. The cap is disposable and should be replaced by a new cap every time one is removed. Installation of the waterproofing cap is covered in the 631 Division of the Bell System Practices.

**Designation Strip**

2.09 The *designation strip* (Fig. 7) is snapped in on alternate rows of the 88-type wiring block to identify cable count and to conceal the cable conductors. Adhesive back marking tape is applied to the designation strip to identify the cable count in increments of five pairs. A "short legged" designation strip is used with the 288A1-25 waterproofing adapter.

- Trim wires flush.
- Press cap onto connecting block with long side covering wire ends.

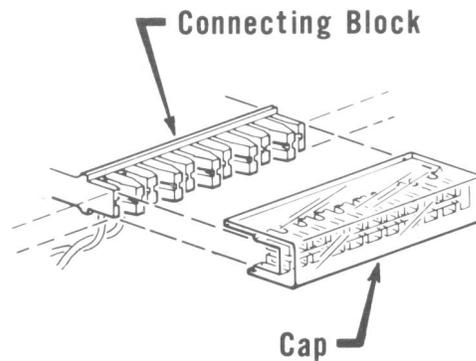


Fig. 6—88A1-5 Waterproofing Cap

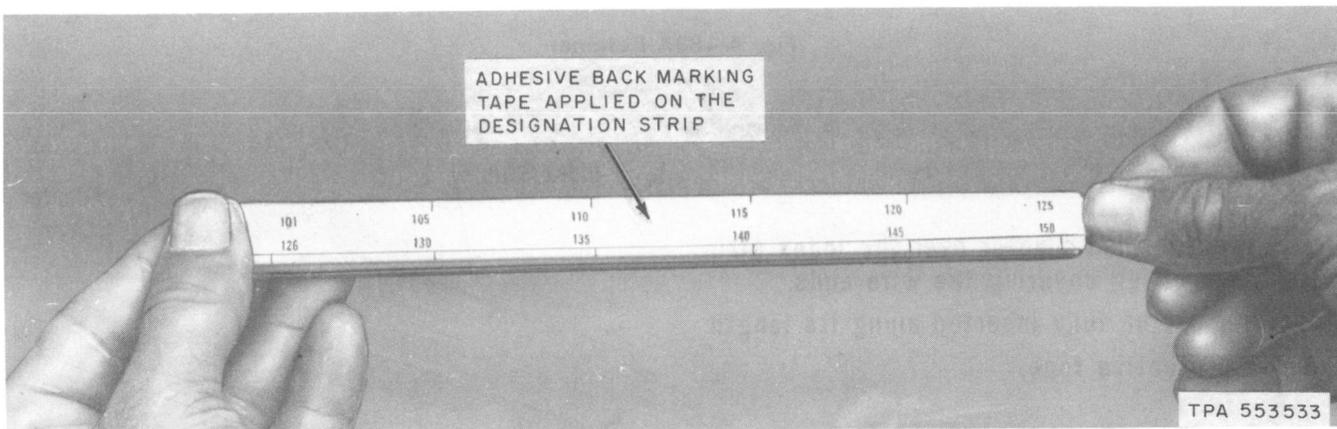


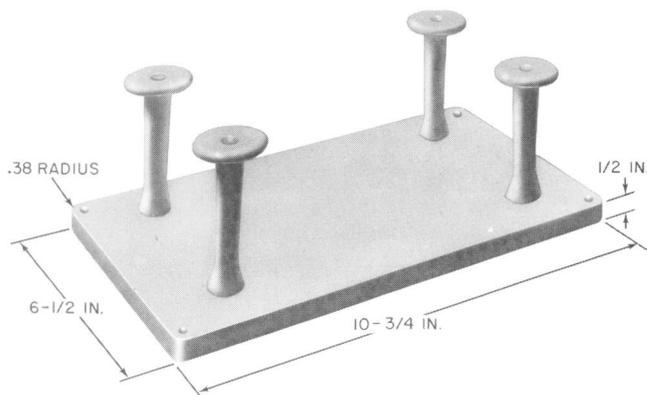
Fig. 7—Designation Strip

**188A1 Backboard**

**2.10** The *188A1 backboard* (Fig. 8) is used to channel the F cross-connect wire between the wiring blocks and to terminate the feeder and distribution cable. It is constructed of a metal-panel and four plastic distributing rings. The 188A1 backboard **cannot** be used in the SAI.

**Special Service Protection (SSP) or Special Safeguarding Measures (SSM)**

**2.11** The AT-8660 *F clip terminal insulator* (Fig. 9) is used to mark special service circuits requiring SSP or SSM. The F clip terminal insulator mechanically protects one pair and may be located in adjacent pair position without interference to protect any number of pairs. The F clip terminal insulators cannot be used if the 88A1-5 waterproofing cap is used.

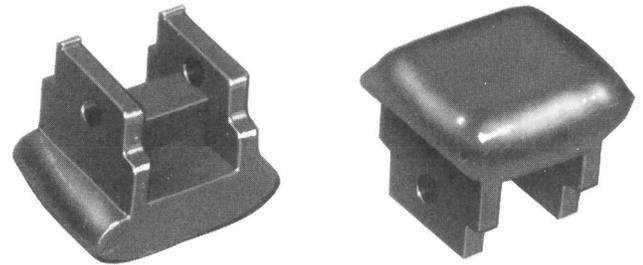


- WHITE STAMPED METAL PANEL WITH FOUR P-43X237 DISTRIBUTING RINGS
- USED WITH 88-TYPE MODULAR CONNECTING BLOCKS TO RETAIN CROSS-CONNECT WIRES

**Fig. 8—188A1 Backboard**

**2.12** When the 88A1-5 waterproofing caps are used the following indicators must be used:

- KS-6660 indicator (Fig. 10) is a **solid** red ring and must be slipped over the jumper wire prior to terminating.
- KS-16847 indicator (Fig. 11) is a **split** red ring and can be installed after the jumper wire has been terminated.

**(SSP) (SSM) 1-PAIR PROTECTOR****Fig. 9—AT-8660 F Clip Terminal Insulator****Fig. 10—KS-6660 Indicator****Fig. 11—KS-16847 Indicator**

**C TEST CORD**

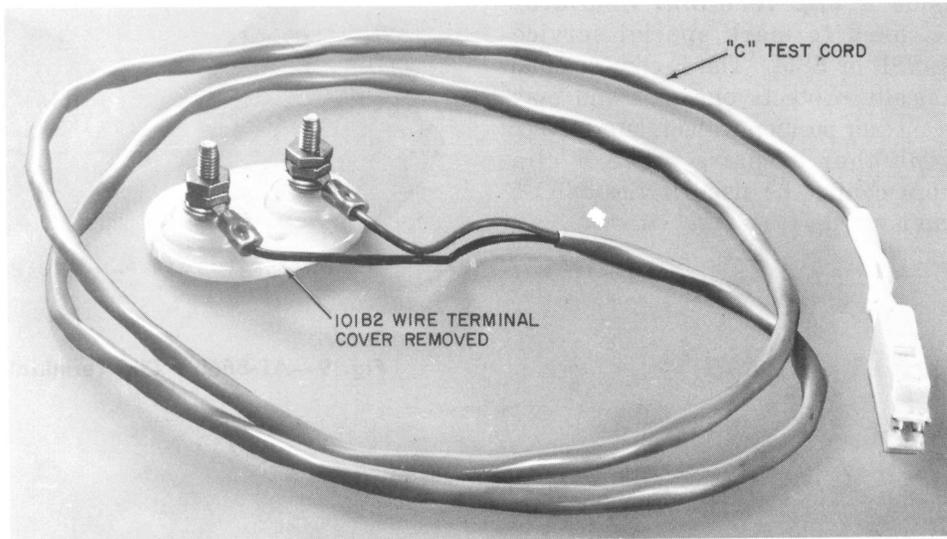
**2.13** The *C test cord* (Fig. 12) is attached to a wall-mounted 101B2 wire terminal located so the cord plug will reach all 88-type blocks and is left in place for testing purposes.

**3. TOOLS**

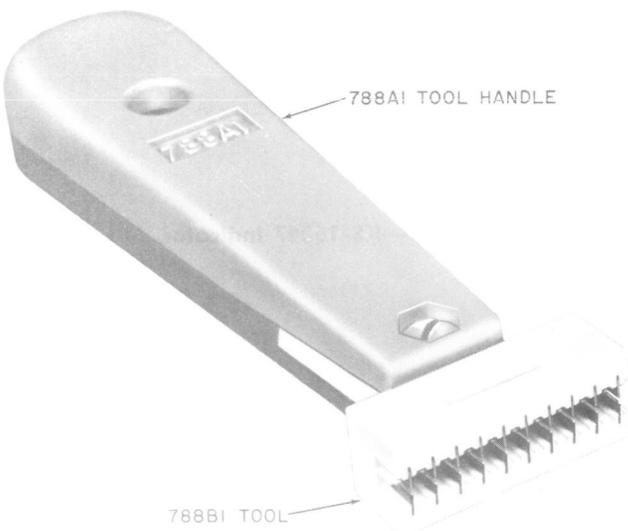
**3.01** The *5-pair insertion tool* (Fig. 13) is used to seat five cable pairs at one time or to

insert a 3- or 5-pair connecting block on the index strip of the wiring block. The tool consists of a 788B1 tool head mounted in the 788A1 tool handle.

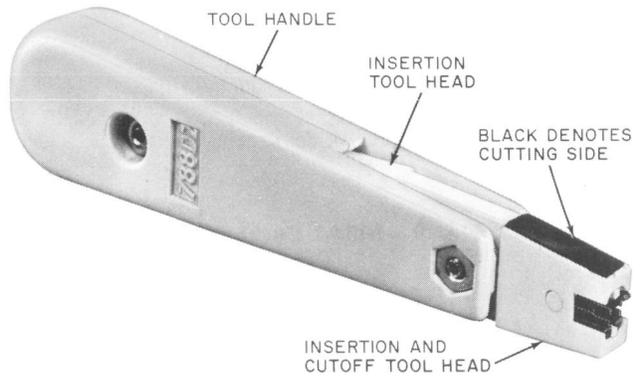
**3.02** The *single pair insertion tool* (Fig. 14), coded 788D2, is a combination tool. The two ends of the rotatable tool head provide either insertion/cutoff or insertion only on a single conductor pair.



**Fig. 12—C Test Cord and Terminal Block**



**Fig. 13—5-Pair Insertion Tool**



**Fig. 14—Single Pair Insertion Tool (788 D2 Tool)**

**3.03** The *5-pair cutoff tool head* (Fig. 15) is used to cut five cable pairs at one time on the index strip after proper insertion. The tool consists of a 788C1 cutoff tool head mounted in the 788A1 tool handle.

#### 4. ORDERING INFORMATION

**4.01** The following information should be used as an ordering guide when placing orders:

- (a) Adapter, Waterproofing, 288A1-25 (12 per pkg.)
- (b) Backboard, 188A1 (as required)
- (c) Block, Connecting, 88-type (use code number from Table A)
- (d) Block, Wiring, 88-type (includes designation strip; use code number from Table A)
- (e) Cap, Waterproofing, 88A1-5 (60 per pkg.)
- (f) Cord, Test C, AT-8662
- (g) Indicator, KS-16847 L1 (100 per pkg)
- (h) Indicator, KS-6660 L4 (100 per pkg)
- (i) Insulator, Terminal, Clip F, AT-8660 (100 per pkg)

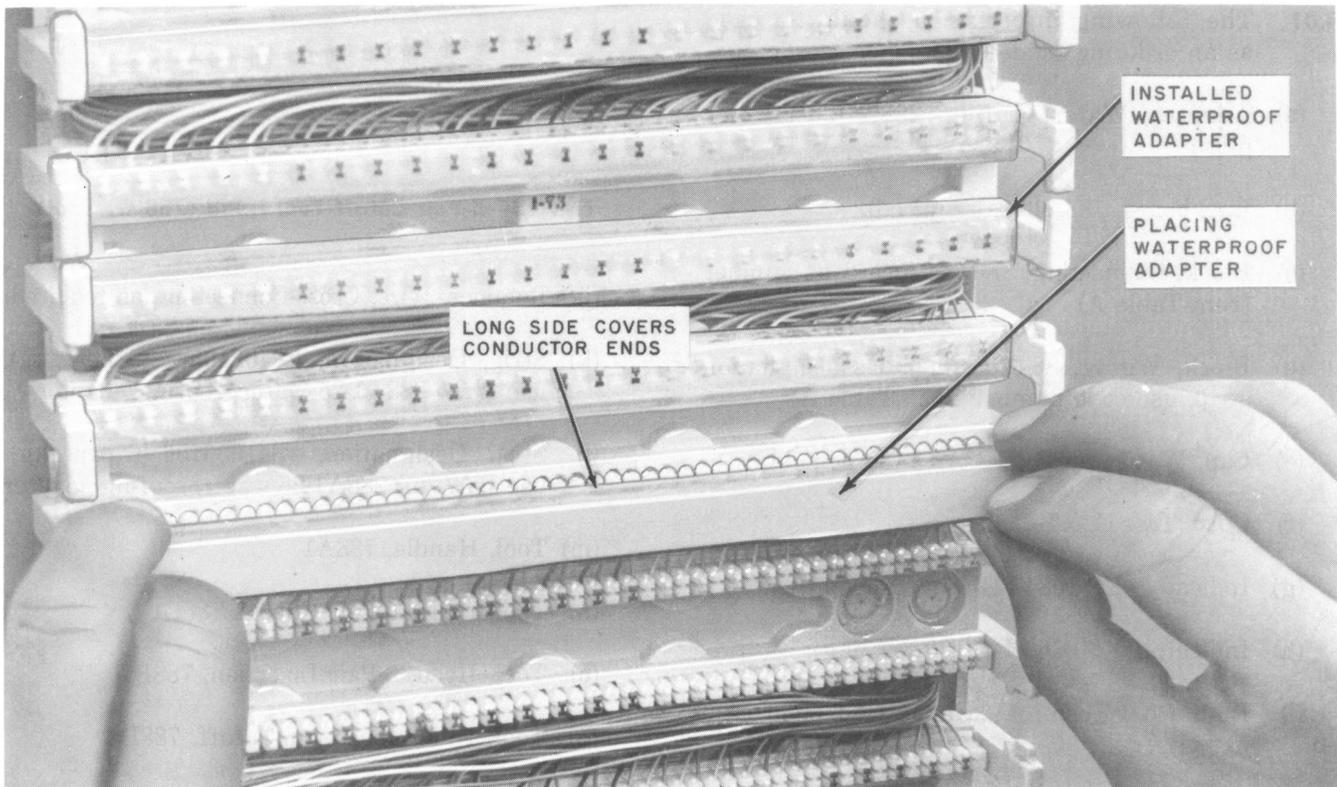


**Fig. 15—5-Pair Cutoff Tool Head (788 C1 Tool)**

- (j) Retainer, Wire, Cross-Connecting (as required)
- (k) Strip, Designation, #840219588 (6 per pkg), use **with** 288A1-25 waterproofing adapter
- (l) Strip, Designation, #841636756 (6 per pkg), use **without** 288A1-25 waterproofing adapter
- (m) Tool, Handle, 788A1
- (n) Tool, Head, 5-Pair Cutoff, 788C1
- (o) Tool, Head, 5-Pair Insertion, 788B1
- (p) Tool, 1-Pair Insertion/Cutoff, 788D2

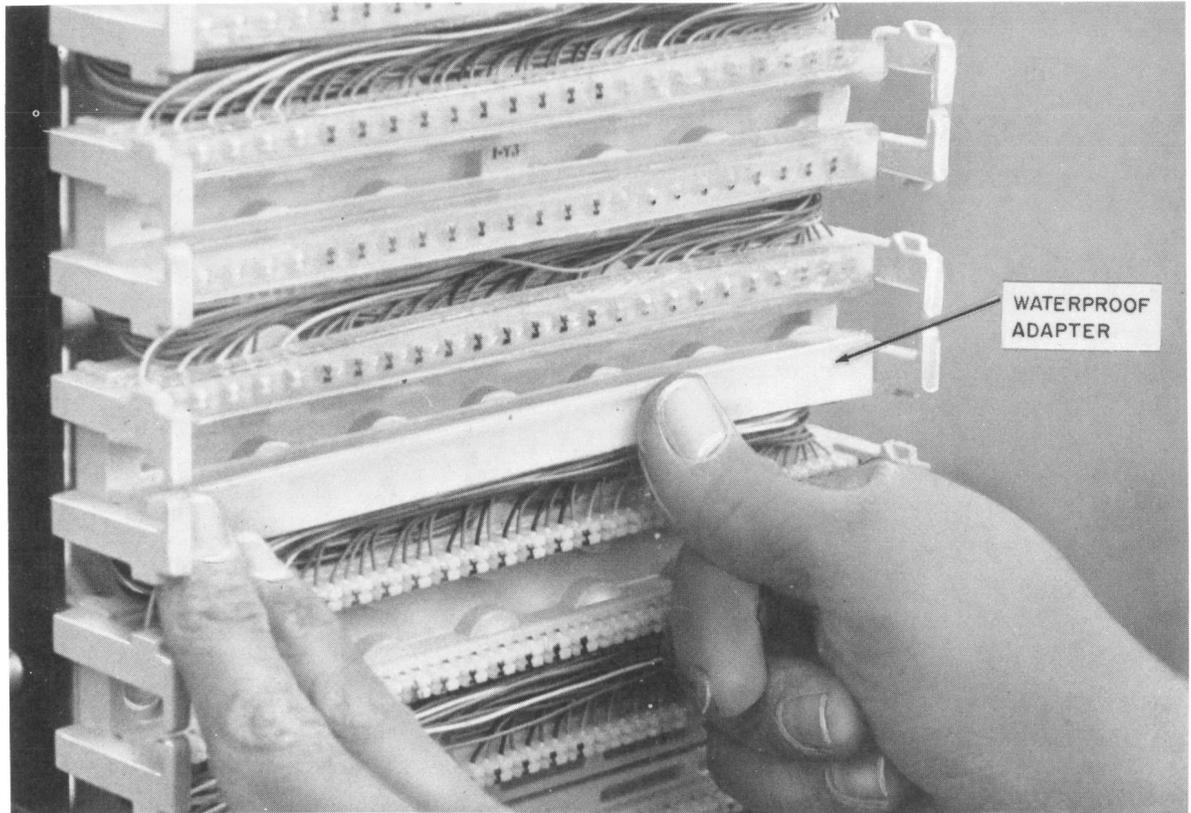
**5. PLACING WATERPROOFING ADAPTER AND CONNECTING BLOCK ON WIRING BLOCK**

**5.01** Position the waterproofing adapter so the long side of the adapter will cover the conductor ends, then place the open end of the adapter over the index strip (Fig. 16).



**Fig. 16—Placing Waterproofing Adapter**

**5.02** Seat the adapter over the index strip, then rub thumb across tape as shown in Fig. 17 to assure grease fills are void.



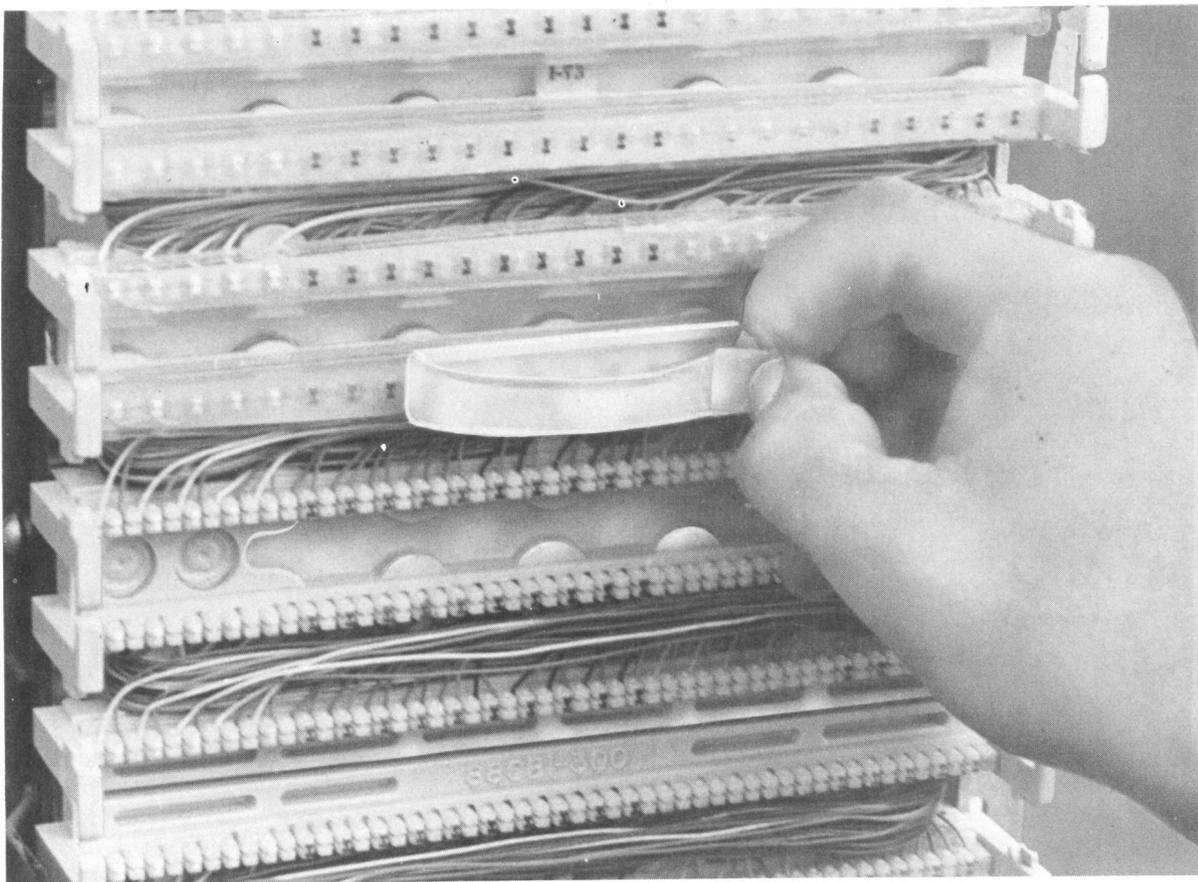
**Fig. 17—Seating Waterproofing Adapter**

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**5.03** Remove tape as shown in Fig. 18.

**5.04** The 88-type connecting blocks are placed on the 88-type wiring block with the 5-pair insertion tool.

**5.05** Properly align connecting block with insertion tool (Fig. 19). Then seat block in insertion tool (Fig. 20).



**Fig. 18—Removing Tape From Adapter**

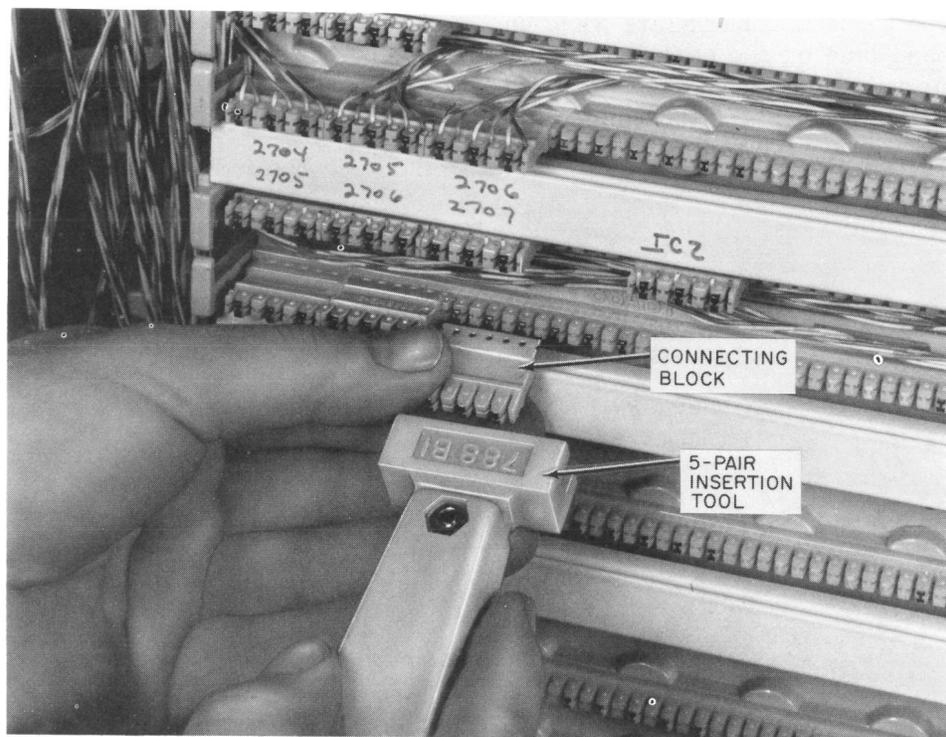


Fig. 19—Aligning Connecting Block With Insertion Tool

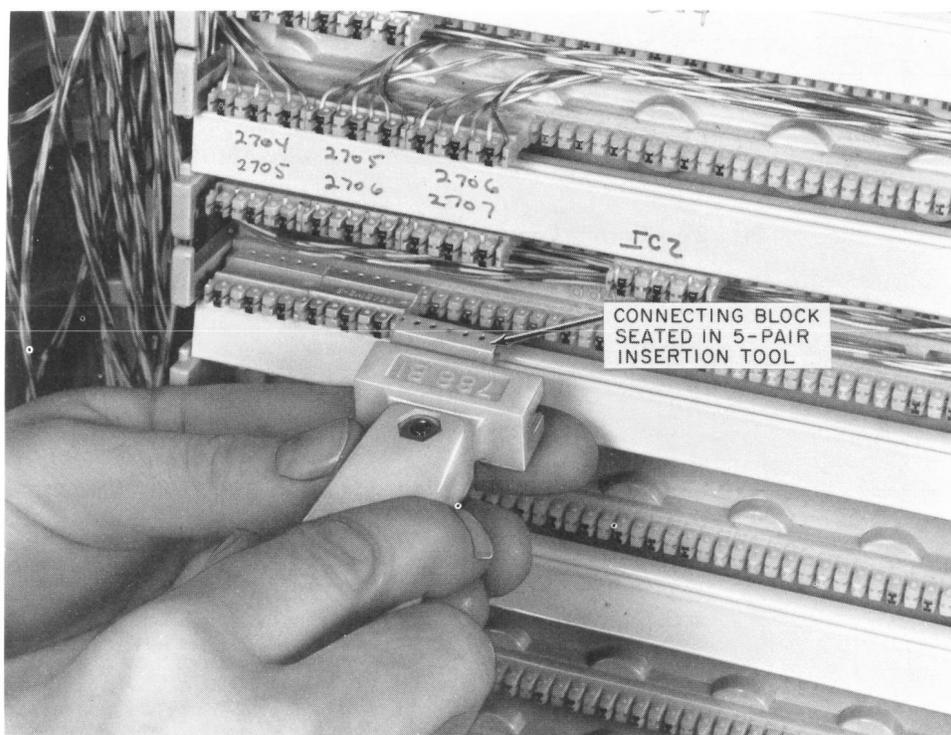
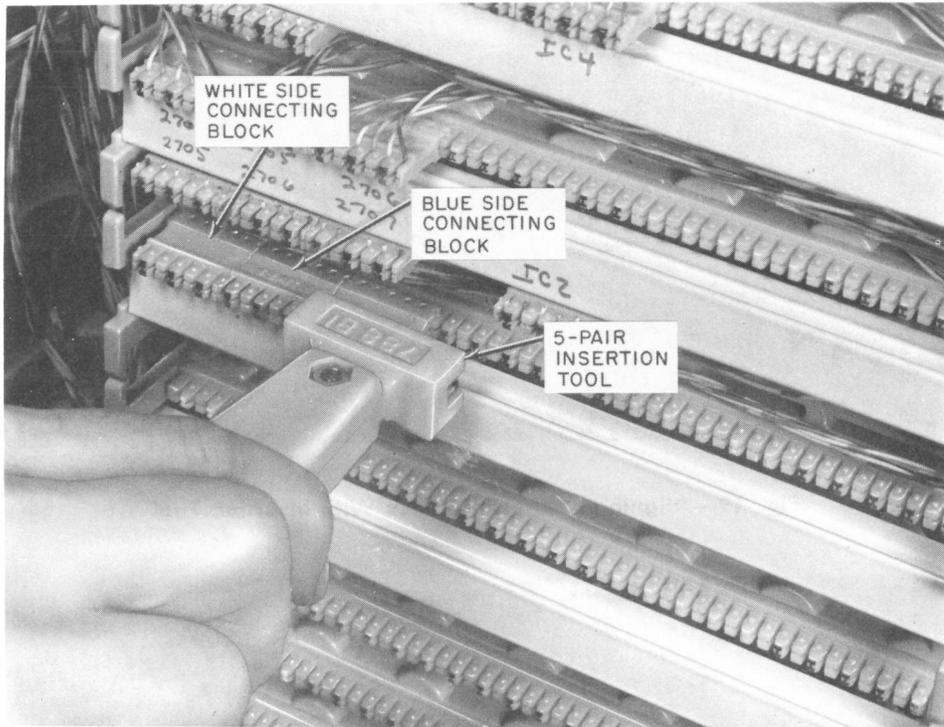


Fig. 20—Connecting Block Seated in Insertion Tool

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**5.06** The 88-type connecting blocks are white on one side and blue on the other. They are installed with alternate colors facing upward to aid in jumper identification. Place the connecting

blocks on the index strip, starting with the *white* side of the connecting block facing up at the extreme left, and alternating colors for the remainder of the setup (Fig. 21).

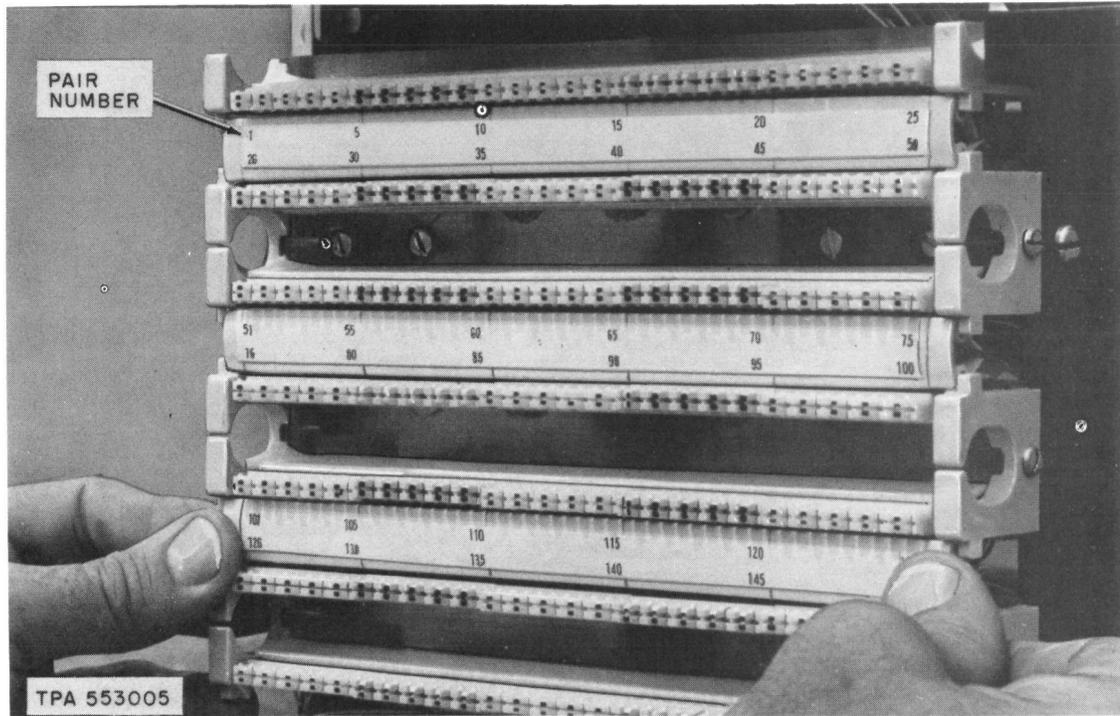


**Fig. 21—Placing Connecting Block on Index Strip**

**Caution:** Be sure to align the clips of the connecting block and the slots in the index strip before applying pressure. This prevents damage to the conductors and reduces the effort required. The connecting

block is properly seated by impacting the insertion tool with the palm of the hand.

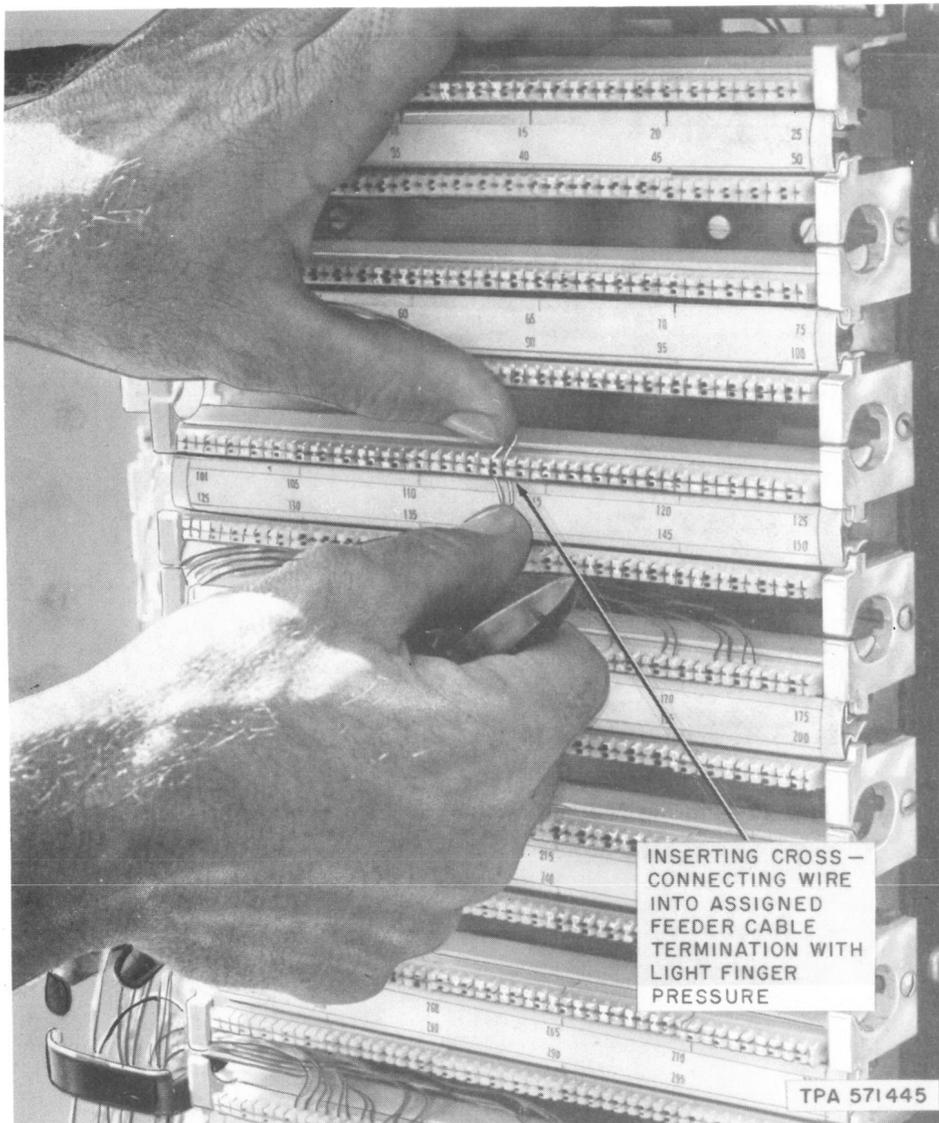
**5.07** After all connecting blocks have been seated, snap the appropriate marked designation strips on the wiring block (Fig. 22).



**Fig. 22—Placing Marked Designation Strip on Wiring Block**

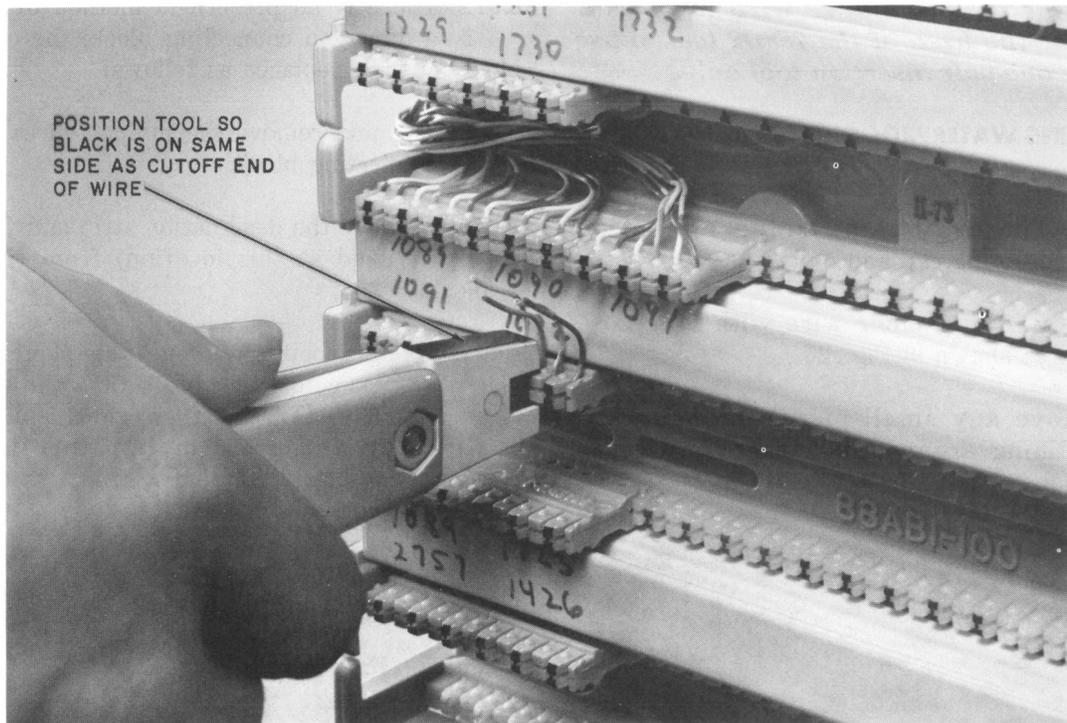
**6. TERMINATING JUMPER WIRE AND INSTALLING WATERPROOFING CAPS**

**6.01** Insert the jumper wire into the connecting block as shown in Fig. 23. Light finger pressure is sufficient to temporarily retain the cross-connecting wire in its proper location.



**Fig. 23—Inserting Jumper Wire**

**6.02** Using the single pair insertion tool, seat the jumper wire into the connecting blocks as shown in Fig. 24.



**Fig. 24—Seating Jumper Wire**

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**6.03** Install the waterproofing caps on the top side of the connecting blocks which have the cross connect wires in place as shown in Fig. 25.

**Caution:** *The cutting side is identified by a black mark on the 788D2 tool head containing the blades. Ensure that the black side of the 788D2 tool head is toward the ends of the jumper wire to be cut. Reverse the head of the 788D2 tool to use it as a one-pair insertion tool only.*

### 7. REMOVING WATERPROOFING CAPS AND JUMPER WIRE

**7.01** Grip fingers behind ridge on top of waterproofing cap and pull off.

**7.02** Remove the jumper wire with long-nose pliers as shown in Fig. 26.

**7.03** Remove any small pieces of insulation remaining around the terminals with an insulated tool.

**7.04** To reterminate a wire which has been removed for rearrangement, cut off the old contact portion and terminate as outlined in Part 6.

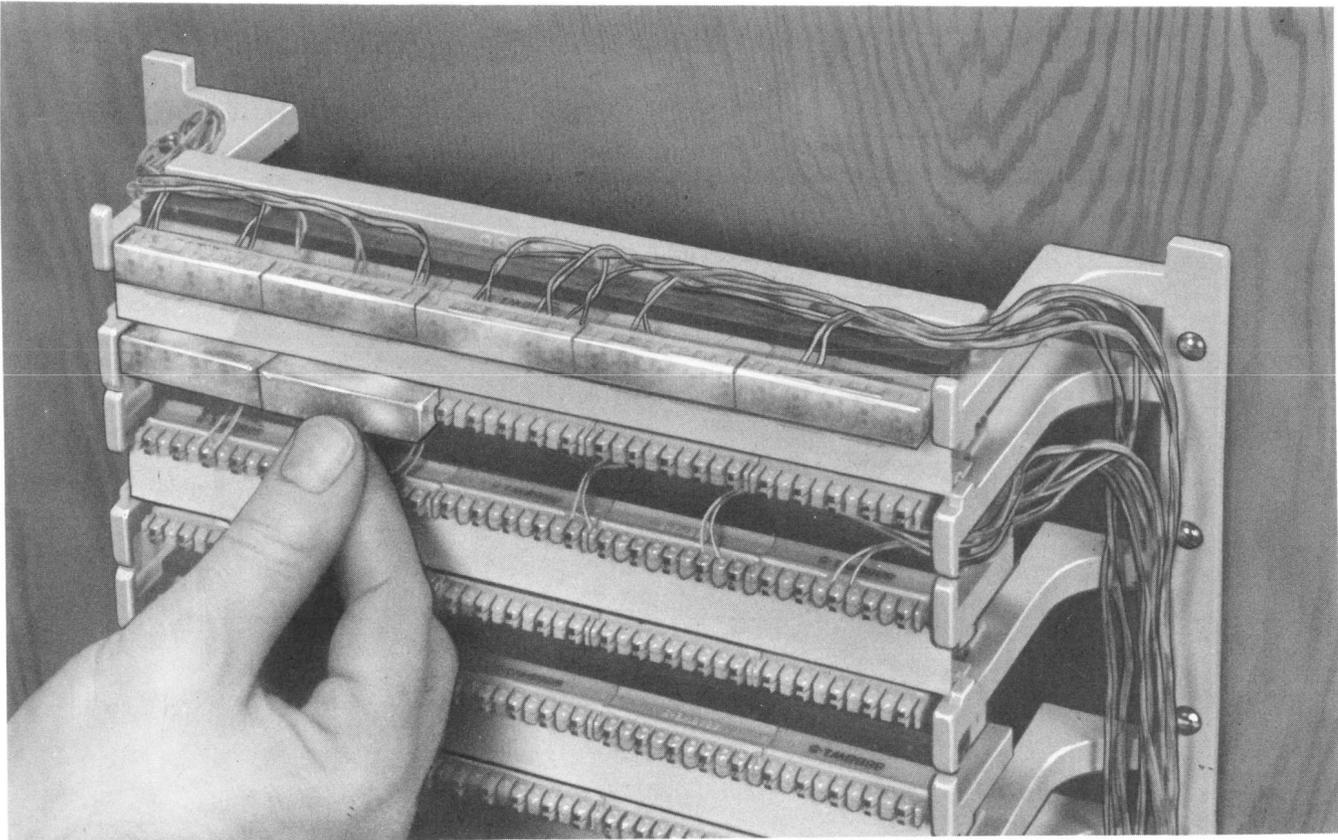
### 8. MAINTENANCE

**8.01** There is no prescribed method of repairing a damaged connecting block; the connecting block must be replaced as follows:

(a) Tag and remove the jumper wires from the connecting block.

(b) Remove the designation strip and foam strip (if used at this location) from the wiring block.

(c) Using a pair of side cutting pliers, grip the 88-type connecting block firmly in the center as shown in Fig. 27, then gently pull with a slight up and down motion to release the connecting block from index strip.



**Fig. 25—Installing Waterproofing Cap on Connecting Block**

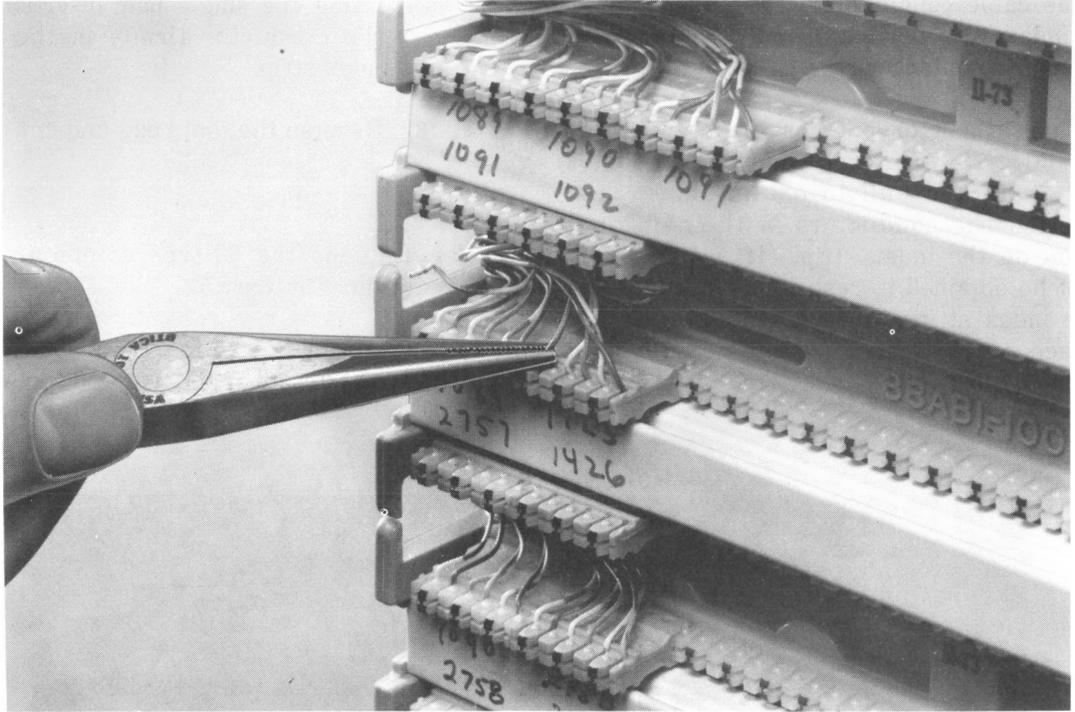


Fig. 26—Removing Jumper Wire

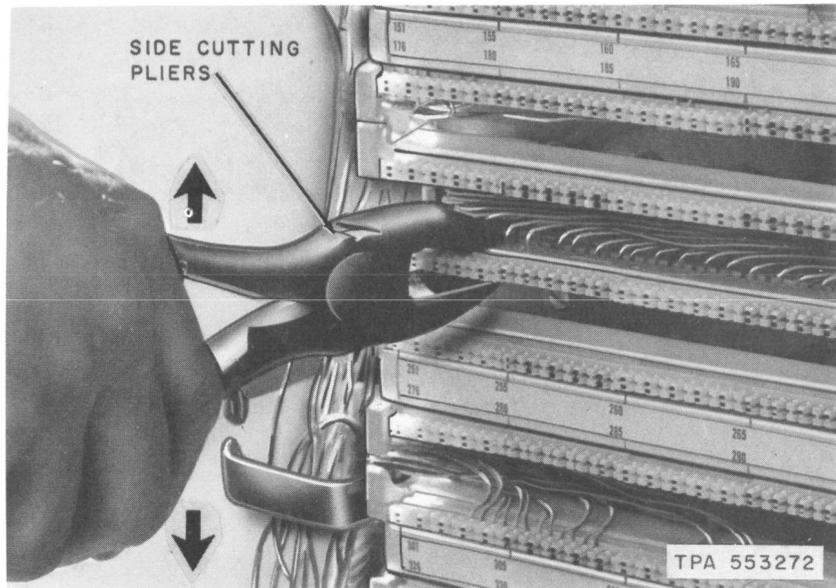


Fig. 27—Removing Connecting Block

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(d) If the cable conductors were pulled out of the index strip replace them as follows after cutting off old contact portion of wire:

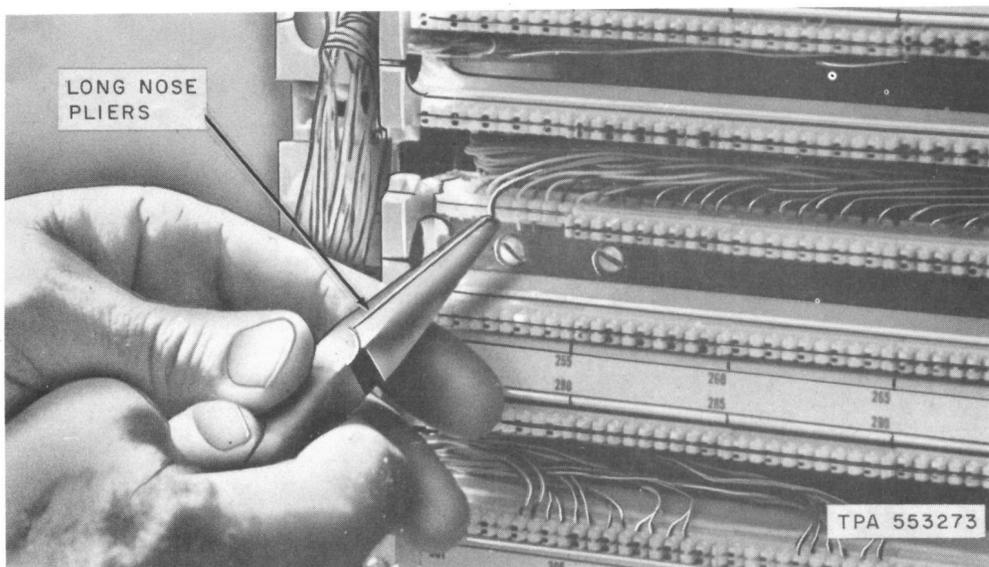
(1) Using a pair of long-nose pliers as shown in Fig. 28, grip each removed conductor individually and pull to obtain slack, then reposition the conductors in their original position on the index strip. If enough slack cannot be obtained to reposition the conductor in the index strips, then it will be necessary to piece out the conductor as outlined in Section 631-620-105.

(2) Using the single pair insertion tool, seat the conductor firmly in the bottom of the index strip.

(3) Reverse the tool head and cut conductor.

(e) Replace the 88-type connecting block as outlined in Part 5.

(f) Replace the tagged cross-connecting wires in their original position as outlined in Part 6.



**Fig. 28—Replacing Conductor With Long-Nose Pliers**