89-TYPE CONNECTING BLOCKS
DESCRIPTION, METHOD OF CROSS-CONNECTING, AND REPAIR PROCEDURES
CONVENTIONAL DISTRIBUTING FRAMES

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1. GENERAL

1.01 This section describes the various 89-type connecting blocks used on conventional distributing frames. It also describes the method of cross-connecting, piece-part data, and repair procedures.

1.02 The reasons for reissuing this section are listed below. Revision arrows have been used to highlight significant changes. The Equipment Test List is not affected.

(a) Add information in paragraph 2.18 covering the blue fanning strips on connecting blocks used for loop cable terminations

(b) Add the AT-7858 C diagonal cutters, the 980A wire removal tool, and the 950A wire insertion and removal tool to the list of tools in paragraph 2.19, and add references to 22-gauge wire in the columns describing the R-4473 skinning tool and the KS-16734 and KS-20963 wire-wrapping tools

(c) Add reference to the combination skinning tool, diagonal cutters, and 950A tool in paragraph 3.02

(d) Add a major heading preceding paragraph 3.05

(e) Add 89 TB-type connecting blocks in paragraph 3.06

(f) Add paragraph 3.08, describing the 950A wire insertion and removal tool, and add a major heading preceding the paragraph

(g) Change numerical designation of Fig. 18 to Fig. 19 and add a new Fig. 18 showing the 950A wire insertion and removal tool

(h) Change the note following paragraph 4.08 to a warning admonition and place it at the beginning of paragraph 4.08

(i) Change Fig. 6(a) and 7(a) terminal strip callouts to fanning strip callouts

(j) Change Fig. 9 through 14 to show the correct T and R stamping on the connecting blocks.

2. DESCRIPTION

GENERAL

2.01 These high-density connecting blocks can be used on both sides of tall and low-profile conventional distributing frames.

2.02 The earliest manufactured 89-type connecting blocks (89A1- through 89D1-) have closed fanning strips in both the housing and the block. The newer types (89E1A- through 89TBF1B-) have slotted fanning strips in the housing and 1-way, gated, replaceable, color coded fanning strips on the block.

2.03 The connecting block fanning strip provides pair identification and isolates jumper wire tension induced during manual jumper tracing. The terminals are protected by the ◗housing◖ and the fanning strip. This protection makes a cover unnecessary. However, the space taken up by the terminals reduces the identification surface. The cover is particularly important when the blocks are used for trunk and miscellaneous circuit terminations to provide an additional identification surface.

2.04 The 89-type connecting block is available in various terminal configurations. Tables A and B list the codes of the blocks, the number and type of terminals, and the application of each block.

HOUSING

A. 89A1- Through 89D1- Connecting Blocks

2.05 The housing for the 89A1- through 89D1-type connecting blocks is shown as part of Fig. 1. It is plastic; colored blue-gray; and measures 7.94 inches wide, 4.04 inches high, and 4.25 inches deep. The back of the housing has two cable wire entry ports at the bottom and four jumper wire ports at the top. The jumper ports are considered the block fanning strip. There are eight holes in the back for fastening the housing to the frame. The holes for the terminal block pivot screws are located near the top front corner of each side of the housing. **The two captive screw holes for fastening the terminal block assembly and the designation cover (if provided) are located on either side of the bottom portion of the housing about 1.5 inches from the front edge.** The terminal block assembly does not protrude beyond the front of the housing. The housing and terminal block assembly are mounted on the frame as a unit.

B. 89E1A- Through 89TBF2A- Connecting Blocks

2.06 The housing for the 89E1A- through 89TBF2A-type connecting blocks (Fig. 2) is plastic; colored white; and measures 8 inches wide, 4 inches high, and 4.75 inches deep. The rear of the housing has four cable wire entry ports at the bottom, eight slotted mounting holes, and four slotted jumper wire ports at the top (the housing fanning strip). The two pivot pins for the terminal block assembly are part of the housing and are located near the top front corner of each side of the housing. **A cable shield, which isolates the upper portion of the housing from the cable wire or lower portion of the housing, is an integral part of the housing.** An integral part of the bottom of the housing is a latch for locking the terminal block assembly in place and hinge cutouts for a designation cover. The housing is mounted on the frame before the terminal block assembly is placed in the housing.

TERMINAL BLOCK ASSEMBLY

A. 89A1- Through 89D1- Connecting Blocks

2.07 The terminal block assembly of the 89A1- through 89D1- connecting blocks has a for-

TABLE A

89A1- THROUGH 89D1- CONNECTING BLOCKS

CODE NO	TERMINAL FIELD ROW COLUMN	TERMINAL TYPE	APPLICATION	OPTIONAL KS-21876 DESIGNATION COVER
89A1-100	8 × 25	Bifurcated Wire-Wrap	Decimal Equipment	List 2
89A1-96	8 × 24	Bifurcated Wire-Wrap	Octal Equipment	List 4
89A1-64	4 × 32	Bifurcated Wire-Wrap	Octal Equipment	List 1
89A1-50	4 × 25	Bifurcated Wire-Wrap	Decimal Equipment	List 2
89A2-100	8 × 25	Bifurcated Wire-Wrap	No. 1 CSBR Subscriber	*
89A3-100	8 × 25	Bifurcated Wire-Wrap	No. 5 CSBR Subscriber	*
89A4-96	8 × 24	Bifurcated Wire-Wrap	2ESS Switch — 1ESS Switch — (2:1 LCR), Ferreed & Remreed	*
89A6-96	8 × 24	Bifurcated Wire-Wrap	1ESS Switch — (4:1 LCR), Ferreed & Remreed (1 Concentrator + 1/2 Concentrator	*
89A7-96	8 × 24	Bifurcated Wire-Wrap	1ESS Switch — (4:1 LCR), Ferreed & Remreed (1 Concentrator + 1/2 Concentrator	*
89A11-96	8 × 24	Bifurcated Wire-Wrap	3ESS Switch — (6:1 LCR), Switches (0-3)	*
89A12-96	8 × 24	Bifurcated Wire-Wrap	3ESS Switch — (6:1 LCR), Switches (4-7)	*
89B1-128	8 × 32	Single Wire-Wrap	Trunk & Special Services (Octal)	List 1
89B1-100 †	8 × 25	Single Wire-Wrap	Trunk & Special Services (Decimal)	List 2
89B1-75	6 × 25	Single Wire-Wrap	Toll & Special Services (Decimal)	List 2
89B1-64	8 × 32	Single Wire-Wrap	1ESS Switch — universal trunk, strapped for ring and tip reversal (plates 01-08 when UT frame is cabled directly to HMDF)	*

See footnotes at end of table.

TABLE A (Contd)

89A1- THROUGH 89D1- CONNECTING BLOCKS

CODE NO	TERMINAL FIELD ROW COLUMN	TERMINAL TYPE	APPLICATION	OPTIONAL KS-21876 DESIGNATION COVER
89B2-100 †	8 × 25	Single Wire-Wrap	Outside Plant Cable	*
89B2-64	8 × 32	Single Wire-Wrap	1ESS Switch — universal trunk strapped for ring and tip reversal (plates 09-16 when UT frame is cabled directly to HMDF)	*
89B3-64	8 × 32	Single Wire-Wrap	1ESS Switch — universal trunk strapped for ring and tip reversal (plates 01-08 when UT frame is cabled via an IDF)	*
89B4-64	8 × 32	Single Wire-Wrap	1ESS Switch — universal trunk strapped for ring and tip reversal (plates 09-16 when UT frame is cabled via an IDF)	*
89B3-100	8 × 25	Single Wire-Wrap	Outside plant cable	*
89B4-100	8 × 25	Single Wire-Wrap	Decimal equipment	List 5
89B2-128	8 × 32	Single Wire-Wrap	1ESS Switch — universal trunk (plates 01-16 when UT frame is cabled via an IDF)	*
89B3-128	8 × 32	Single Wire-Wrap	1ESS Switch — universal trunk (plates 01-16 when UT frame is cabled directly HMDF).	*
89C1-128 †	8 × 32	Single Quick-Clip	Trunk & Special Services (Octal)	List 1
89C1-100 †	8 × 25	Single Quick-Clip	Trunk & Special Services (Decimal)	List 2
89D1-64 †	4 × 32	Single Quick-Clip (Strap 8 × 32)	Octal equipment	List 3
89D1-50 †	4 × 25	Single Quick-Clip (Strap 8 × 25)	Decimal equipment	List 3

* Block contains factory installed identification labels. Under normal circumstances, cover is not required.

† Block has been rated Additions and Maintenance (A&M).

TABLE B

89E1A- THROUGH 89TBF2A- CONNECTING BLOCKS

CODE	TERMINAL FIELD ROW COLUMN	TERMINAL TYPE	APPLICATION
89E1A-128	8×32	Bifurcated Wire-Wrap	Trunks & Misc Equip
89E1B-128	8×32	Bifurcated Wire-Wrap	5ESS Switch
89E2B-128	8×32	Bifurcated Wire-Wrap	1ESS Switch (4:1 LCR)
89E3B-128	8×32	Bifurcated Wire-Wrap	1 & 2ESS Switches (2:1 LCR)
89F1A-100	8×25	Bifurcated Wire-Wrap	Trunk & Misc Equip
89F1B-100	8×25	Bifurcated Wire-Wrap	Loop Pairs — Vert
89F2A-100	8×25	Bifurcated Wire-Wrap	Trunk & SS — Vert
89G1A-128	8×32	Bifurcated Wire-Wrap	5ESS Switch — Trunks
89G1B-128	8×32	Bifurcated Wire-Wrap	5ESS Switch — Sub Lines
89G1C-128	8×32	Bifurcated Wire-Wrap	5ESS Switch — MSU
89TBE1A-128	8×32	3-Beam Quick-Clip	Trunks & Misc Equip
89TBE1B-128	8×32	3-Beam Quick-Clip	5ESS Switch
89TBE2B-128	8×32	3-Beam Quick-Clip	5ESS Switch (4:1 LCR)
89TBE3B-128	8×32	3-Beam Quick-Clip	1 & 2ESS Switches (2:1 LCR)
89TBF1A-100	8×25	3-Beam Quick-Clip	Trunk & Misc Equip
89TBF1B-100	8×25	3-Beam Quick-Clip	Loop Pairs — Vert
89TBF2A-100	8×25	3-Beam Quick-Clip	Trunk & SS — Vert

ward facing terminal field of 50, 64, 75, 96, 100, or 128 pairs. Figures 3 and 4 show the features of a typical 100-pair terminal block assembly of this series of connecting blocks. The closed fanning strip at the top is an integral part of the block. The front of the fanning strip provides space for identification strips. There is additional space for identification at the bottom of the block. The assembly is held in place by two captive screws. The terminal field has a blue and white checkerboard pattern and is equipped with one of the three types of terminals shown in Fig. 5.

2.08 By loosening the two captive screws, the terminal block assembly can be rotated upward 180° to reveal the cable wiring side of the block (Fig. 4). It is held in this position by a spring mounted on the right side of the block. The cable wires are fed through a slotted vertically mounted fanning strip and fanned horizontally across the block. An aluminum guard between the vertical fanning strip and the edge of the block helps to shield the cable wires from the housing.

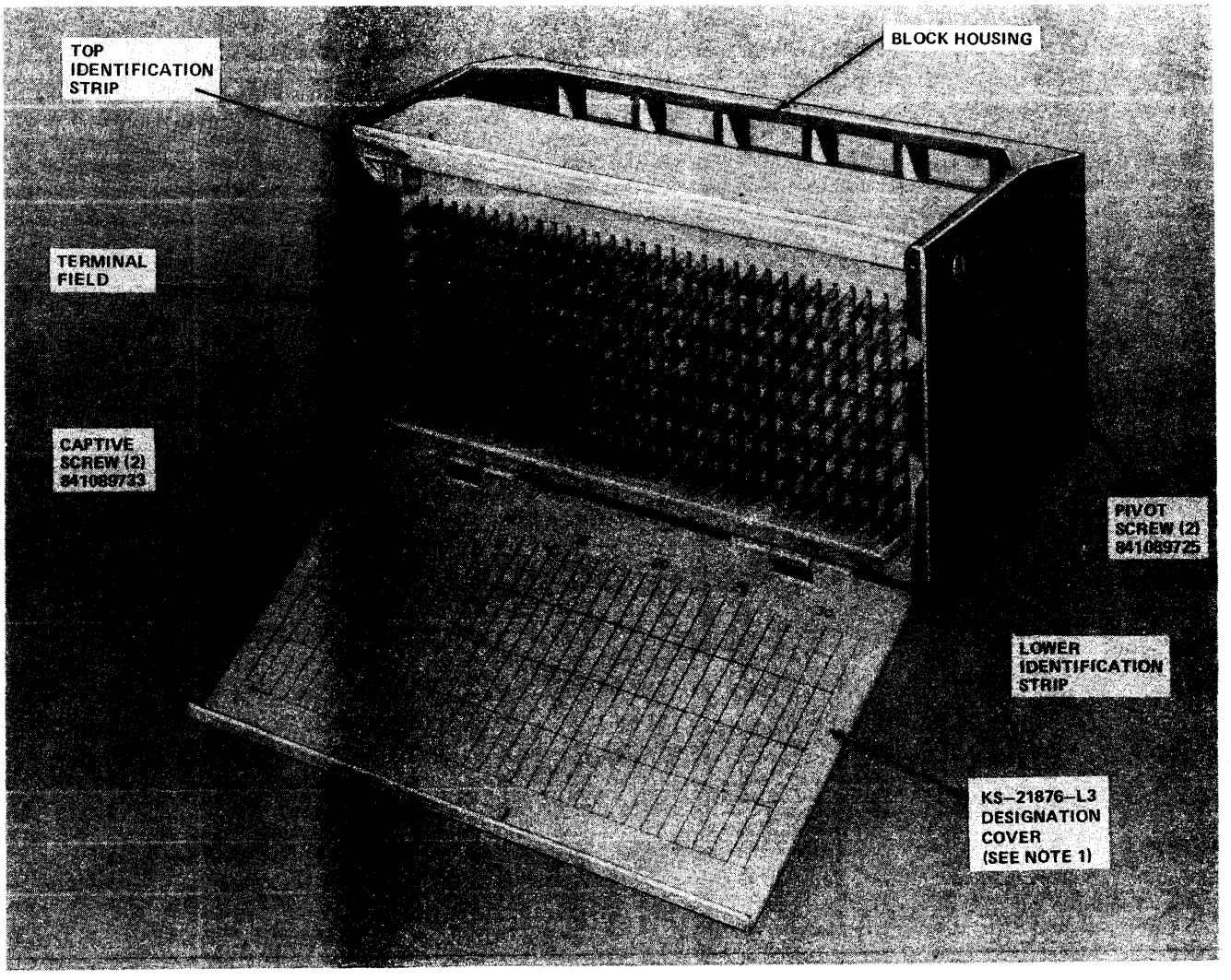
2.09 The 89B1-128, 89B2-128, 89B3-128, and 89C1-128 type connecting blocks have horizontally mounted cable wire fanning strips. These blocks are equipped with single wire-wrap terminals, except for the 89C1-128 type which is equipped with single quick-clip terminals.

B. 89E1A- Through 89TBF2A- Connecting Blocks

2.10 Like the terminal block assemblies described in paragraphs 2.07 through 2.09, these terminal block assemblies have forward facing terminal fields, a blue and white checkerboard pattern, and a spring mounted on the right side of the block to hold it upright when it is rotated 180° degrees upward in the housing. The additional features of this terminal block assembly differ from those described for the 89A1- through 89D1-terminal block assembly.

2.11 A replaceable, slotted, color coded fanning strip is mounted at the top of the block and is fastened by three screws.

2.12 Figures 6 through 8 show the additional features of the newer 89-type connecting block assembly. Only two types of terminals are used on these blocks, bifurcated wire-wrap and 3-beam quick-



NOTE:

1. KS-21876 DESIGNATION COVERS FOR 89-TYPE CONNECTING BLOCKS

LIST NO.	USED ON	PATTERN
L1	64– AND 128–PAIR BLOCKS	CONTAINS 1 ROW BY 8 COLUMN CHECKERBOARD PATTERN
L2	50– , 75– , AND 100–PAIR BLOCKS	CONTAINS 1 ROW BY 5 COLUMN CHECKERBOARD PATTERN
L3	ANY 89-TYPE BLOCK	DOES NOT CONTAIN ANY CHECKERBOARD PATTERN
L4	USED ON 96–PAIR 89-TYPE BLOCKS	CONTAINS 1 ROW BY 8 COLUMN CHECKERBOARD PATTERN
L5	USED ON 100–PAIR 89-TYPE BLOCKS	CONTAINS 1 ROW BY 5 COLUMN NON-CONSECUTIVE PATTERN

Fig. 1—89C1-128 Connecting Blocks

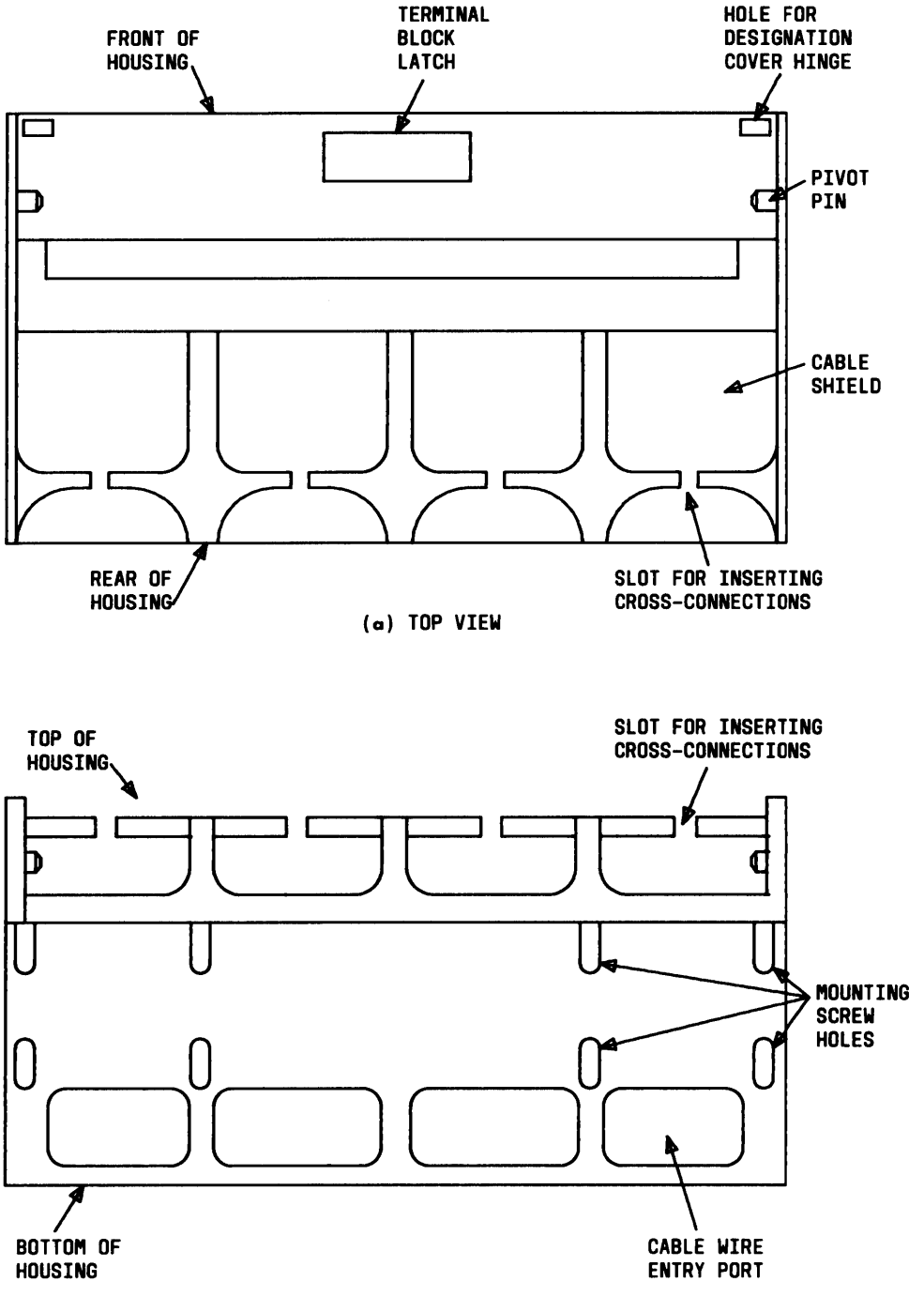


Fig. 2—Housing for 89E2A- Through 89TBF2A- Connecting Blocks

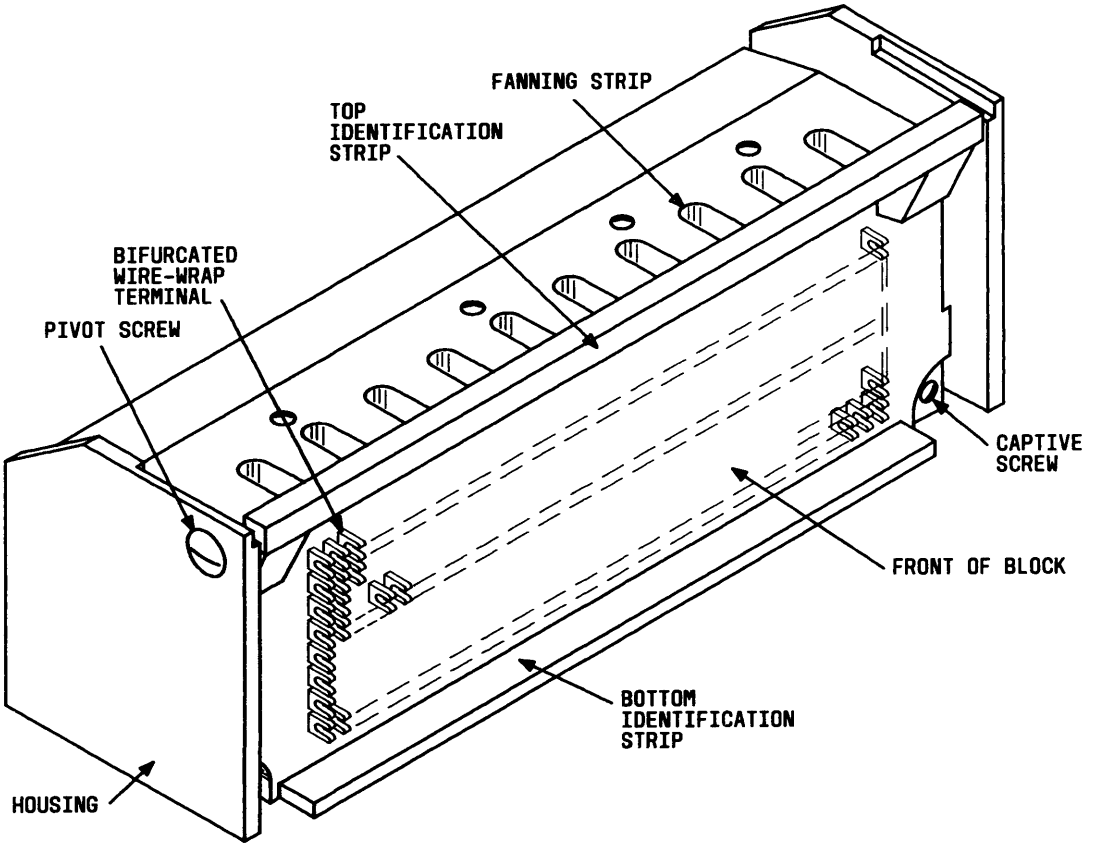


Fig. 3—89A-Type Connecting Block

clip (Table B). The blocks are equipped with either 100 or 128 pairs of terminals. Both the top and the front facets of the terminal strip can be used to identify terminations. The cable wires are fanned horizontally and a wire retention bar (Fig. 6 and 7) holds them securely in place.

2.13 Three codes, 89 G1A-128, 89G1B-128, and 89G1C-128 are connectorized (Fig. 8). They are used for terminating the 5ESS switch and feature 711-type central office splicing connectors.

LABELS

A. 89A1- Through 89D1- Connecting Blocks

2.14 Connecting blocks in the 89A2- through 89A7-series are used to terminate subscriber lines in various switching systems. They are furnished with factory applied identification labels as shown in Fig. 9 through 14.

2.15 Connecting blocks in the 89B2-series are used to terminate outside plant cables and are furnished with factory applied identification lables. Figure 15 shows the 89B2-100 connecting block identification labels.

2.16 Connecting blocks in the 89A1-, 89B1-, 89C1-, and 89D1-series are used for special applications and are not provided with labels.

2.17 A KS-21876 designation cover is available for those connecting blocks without labels. It can also be used on connecting blocks with labels to provide additional identification and to also provide protection to the terminal field. Figure 1 shows a designation cover and also associates the KS-21876 list number for each type of connecting block.

B. 89E1A- Through 89TBF2A- Connecting Blocks

2.18 The fanning strips on these connecting blocks are factory stamped. The fanning strip color

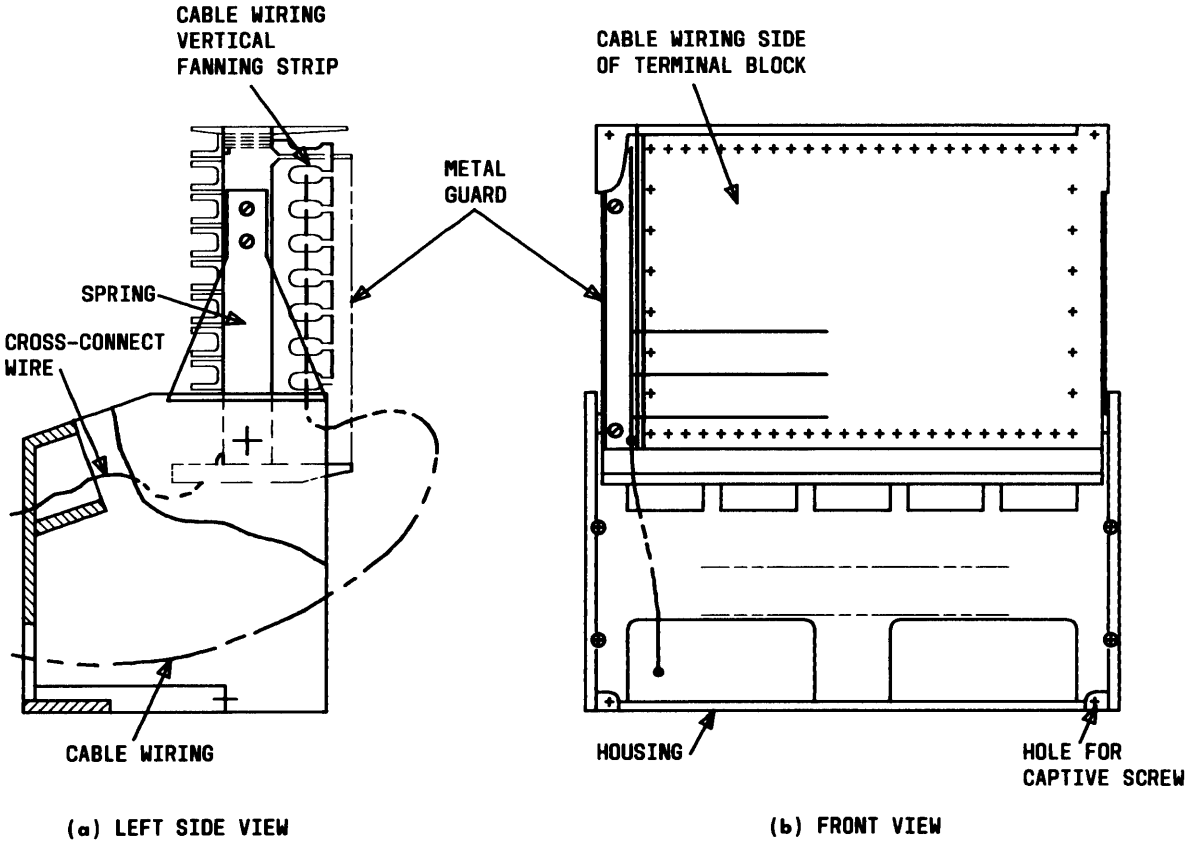


Fig. 4—89A-Type Connecting Block (Open Position)

code denotes the connecting block application. ▶Only three colors are provided, beige, blue, and yellow. Blocks for trunk and miscellaneous circuit terminations have beige fanning strips. Blocks for subscriber line terminations (1, 2, and 5ESS switches) have yellow fanning strips. Blocks for loop cable terminations have blue fanning strips.◀ A designation cover (Fig. 16) is available which protects the terminal field and provides space for additional circuit identification. Stick-on label sets, preprinted with functional designations for some of the more common circuit terminations, are available for placing on the designation cover. For those multilead circuit terminations that are not common, blank label sets are available for stencilling or typing circuit information.

TOOLS

2.19 The following listing contains a description of the tools used with the 89-type connecting blocks.

CODE OR SPEC. NO.	DESCRIPTION
AT-7825	4-inch E screwdriver
▶AT-7858	C cutters, diagonal◀
AT-7860	B-long nose pliers
R-4473	Combination skinning tool
	DETAIL 18 (for 26-gauge wire—blue dot on blade)
	DETAIL 19 (for ▶22- and◀ 24-guage wire—orange dot on blade)
KS-16363,L3	Wire-wrapping tool
KS-16734,L1	Wire-wrapping bit (red, for ▶22- and◀ 24-guage wire)

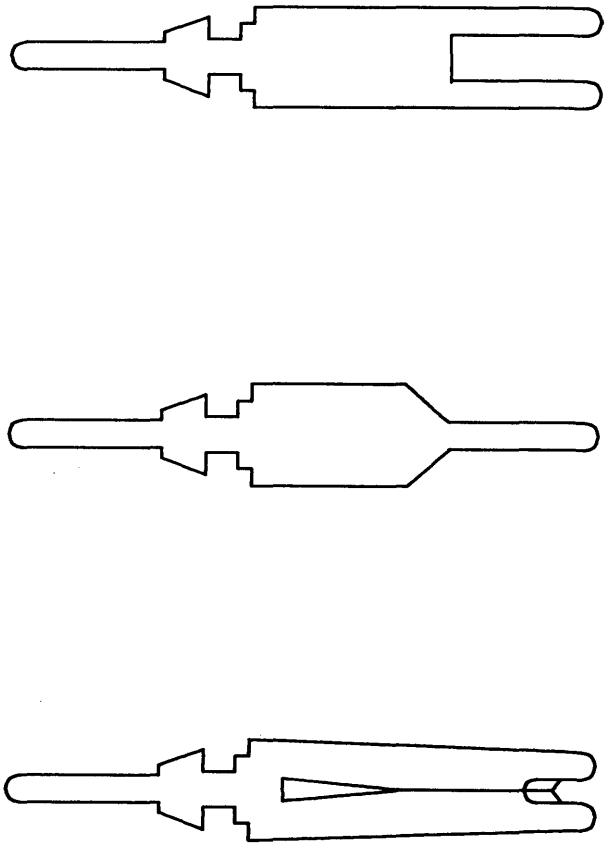


Fig. 5—Terminals Used on 89A1- Through 89D1-Type Connecting Blocks

CODE OR SPEC. NO.	DESCRIPTION
KS-16903,L1	Wire-wrapping bit (orange, for 26-gauge wire)
KS-20827,L1	Wire-unwrapping tool
KS-20962,L1	Distributing frame bag
LS-20963,L2	Wire-wrapping sleeve (red, for ▶22- and◀ 24-gauge wire)
KS-20963,L3	Wire-wrapping sleeve (yellow, for 26-gauge wire)
KS-22035	Plastic spudger
▶724A,980A	Wire removal tool
756C-2, 756C-3	Wire insertion tool
950A	Wire insertion and removal tool◀

CABLE AND WIRE

2.20 Polyvinyl chloride (PVC) cable is used for terminating circuits on the connecting block. Twenty-four or twenty-six gauge cable is preferred.

2.21 Twenty-two gauge irradiated polyvinyl chloride (IPVC) wire is used for cross-connections. It may be single, paired, tripled, or quad.

SPECIAL SERVICE PROTECTION

2.22 Terminal insulators protect the tip and ring terminals of circuits requiring special service protection. They are narrow, red plastic, with a U-shaped channel which fits over the tip and ring terminals.

2.23 Three types of terminal insulators are used:

- AT-8300—C clip terminal insulator for single wire-wrap and single quick-clip terminals
- AT-8819—G clip terminal insulator for bifurcated wire-wrap terminals
- AT-8993—J clip terminal insulator for 3-beam quick-clip terminals.

3. METHOD OF PLACING CROSS-CONNECTIONS

3.01 Before placing connections on connecting blocks having wire-wrap terminals, craft personnel should be familiar with the contents of Section 069-132-811, Punched or Wire-Type Terminals (Not Having Notches or Perforations) Method of Making and Removing Wrapped Connections.

3.02 After feeding the wire through both the housing and connecting block terminal strips, measure approximately 1 foot from the terminal and cut the wire, ▶using either the combination skinning tool, the diagonal cutters, or the 950A tool.◀

WIRE-WRAP TERMINALS

3.03 Wire previously used for a solderless connection must be cut off and the proper length of

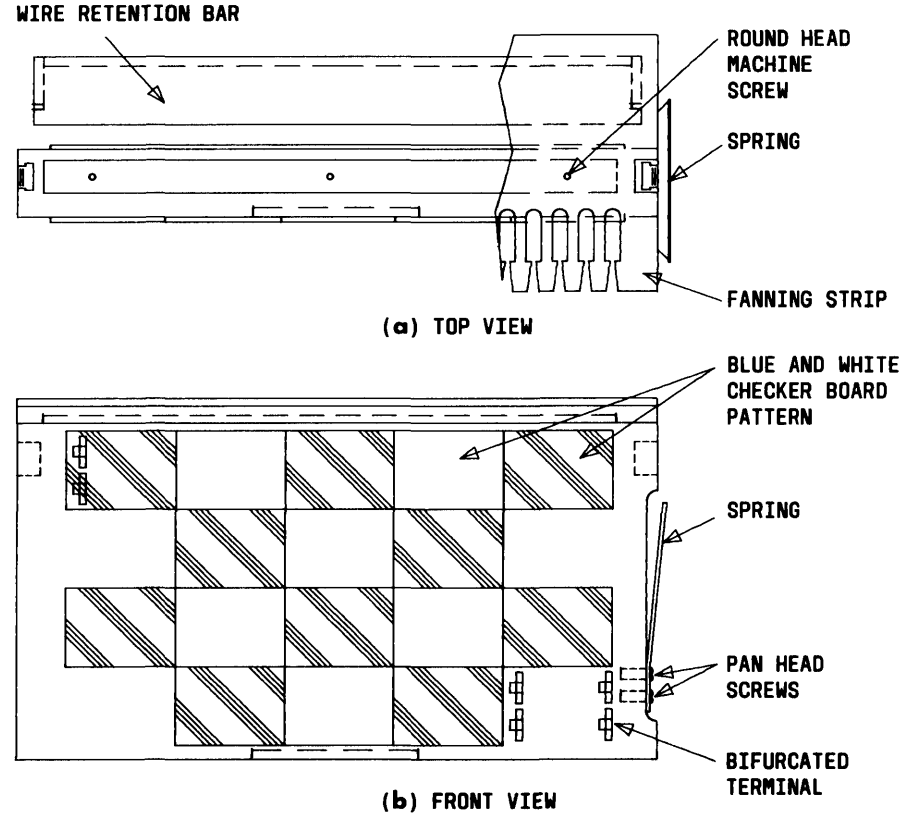


Fig. 6—Views of 100-Pair Connecting Block Assembly

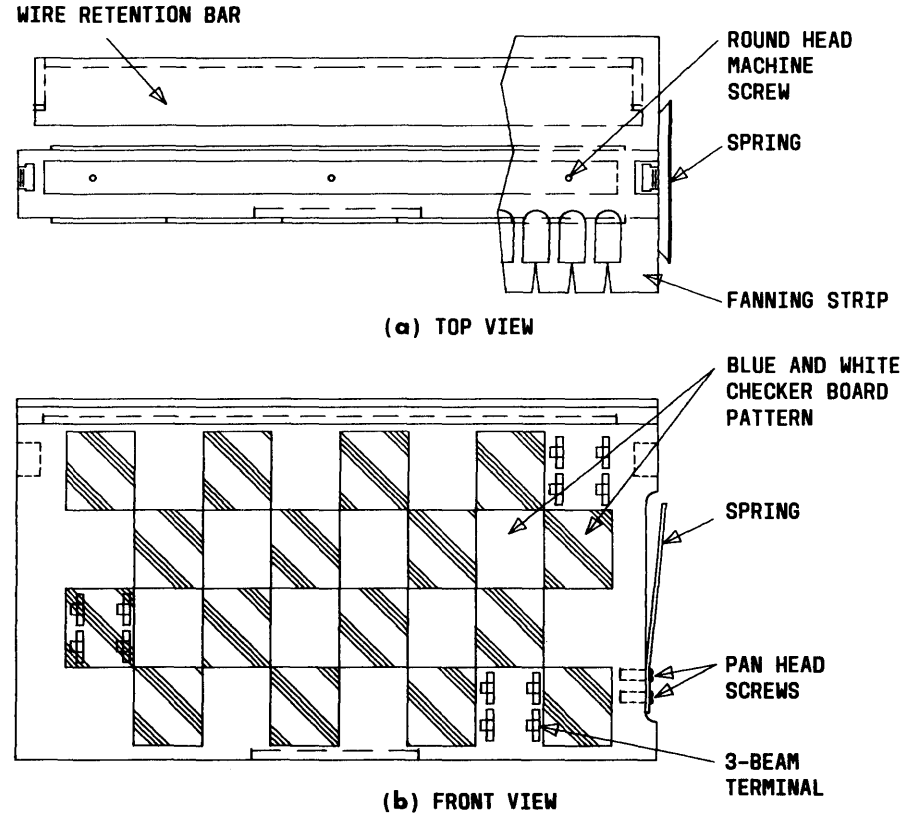


Fig. 7—Views of 128-Pair Connecting Block Assembly

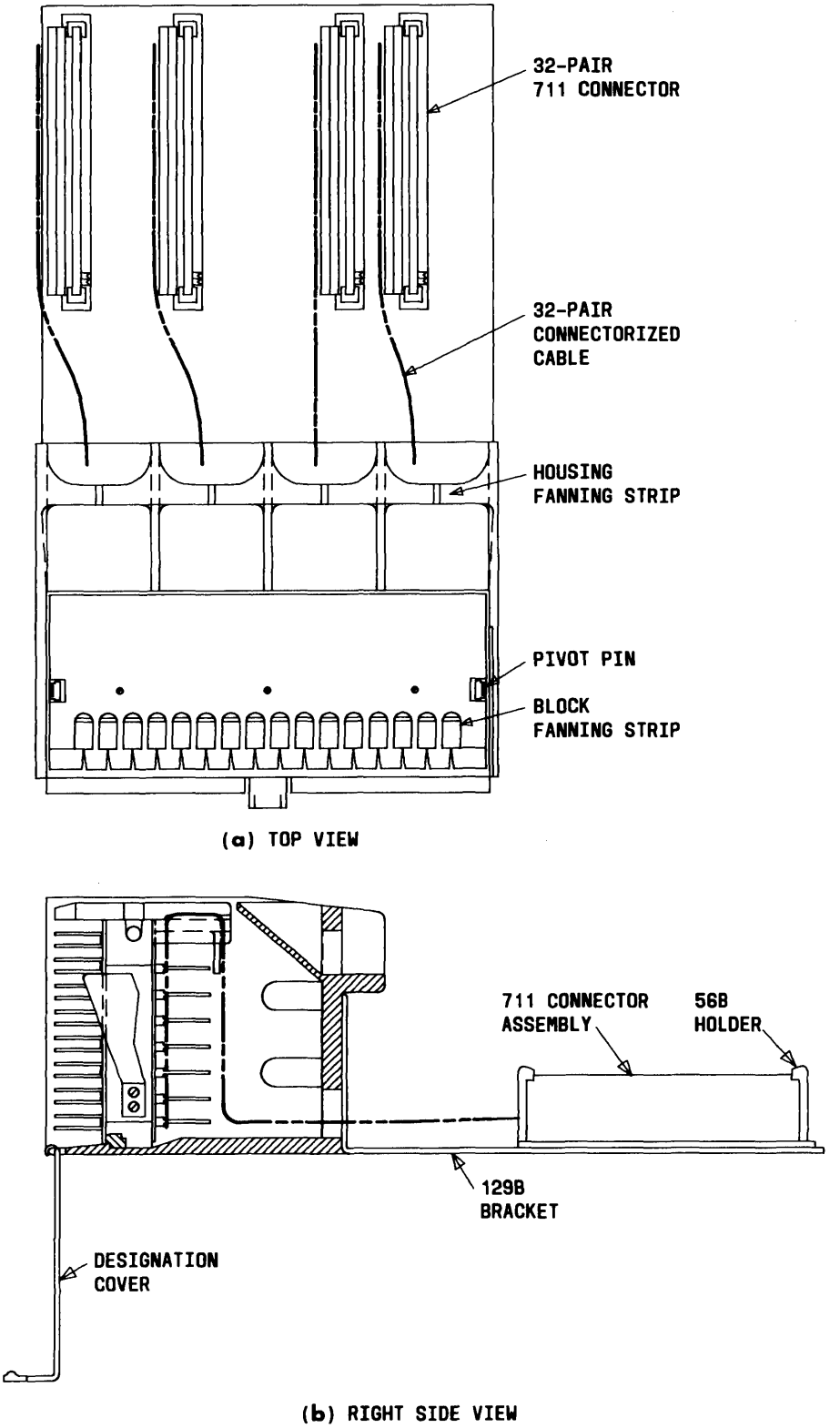


Fig. 8—Connectorized 89G-Type Connecting Block Assembly (128 Pairs)

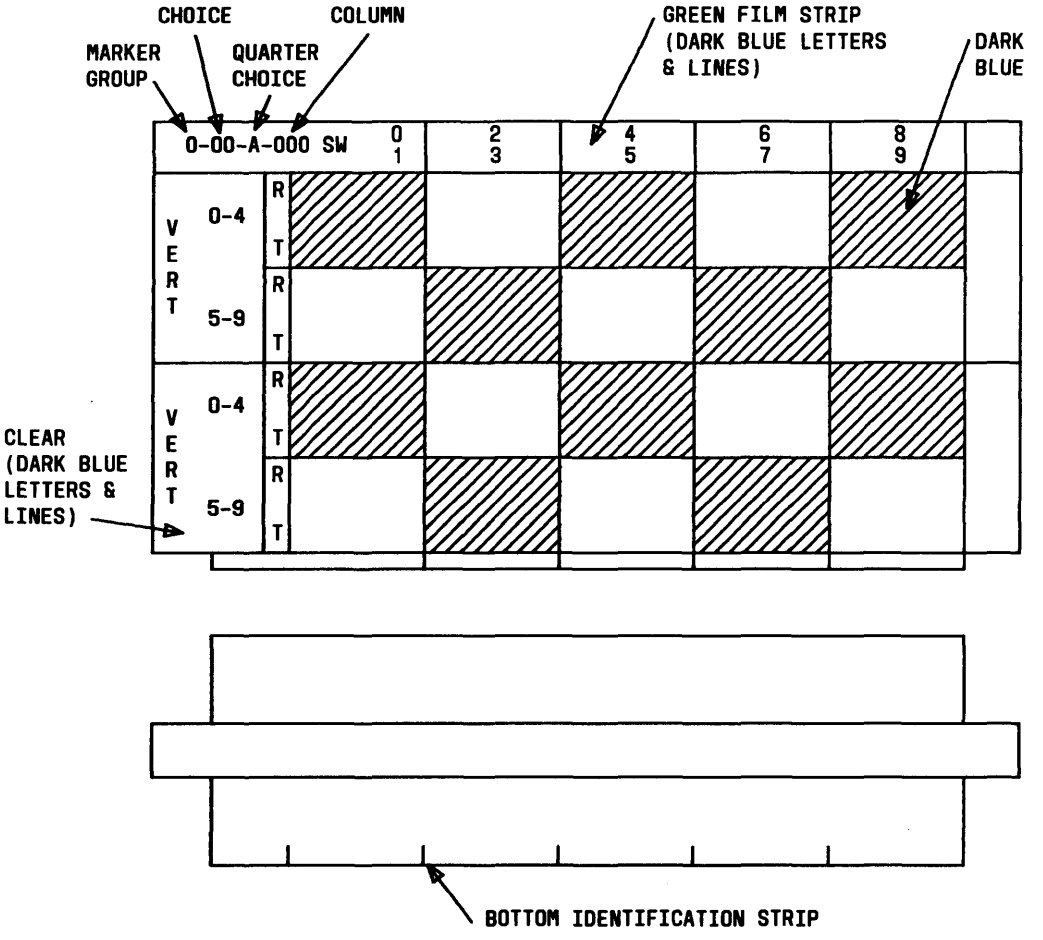


Fig. 9—▶89A2-100 Connecting Block Labels—No. 1 Crossbar Subscriber Lines◀

insulation removed. If there is insufficient slack after the wire has been cut, the cross-connection must be rerun.

3.04 Using the proper wire-wrapping tool, connect the wire to the ring terminal of the pair. If the terminal is bifurcated, connect to the upper half of the terminal. The lower half is used for bridging connections. Next, connect the wire to the tip terminal of the pair. Dress the slack back on the frame and make sure there is clearance between the bare wires on adjacent terminals.

QUICK-CLIP TERMINALS

▶A. Using the 756C-2 or 756C-3 Wire Insertion Tool◀

3.05 Use the 756C-2 ▶or 756C-3◀ wire insertion tool for making connections on both single and 3-beam quick-clip terminals (Fig. 17). The tool has two insertion heads. One head with a blue dot is used for connecting wires on 3-beam terminals. By loosening the pivot screw, the insertion head can be rotated 180° to expose the head with a red dot which is used for connecting wires on single quick-clip terminals.

3.06 The terminal is insulation-piercing so the wire does not have to be skinned before inserting it into the tool as shown in Fig. 17. To make a connection to a 3-beam terminal ▶(89TB-type connecting blocks)◀, proceed as follows:

(1) Rotate the insertion tool to the head with the blue dot.

(2) Hold the tool so that pressure is applied to the tool with the palm of the hand, with the thumb

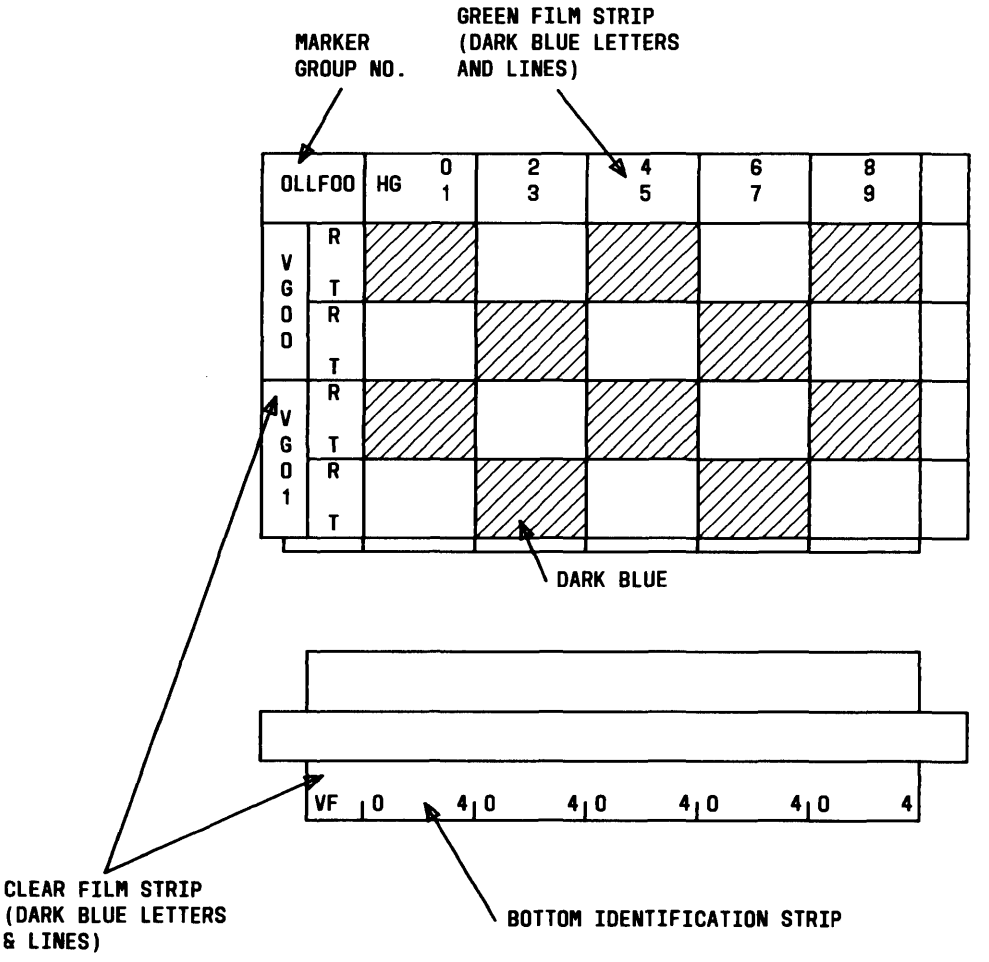


Fig. 10—89A3-100 Connecting Block Labels—No. 5 Crossbar Subscriber Lines

and fingers loosely holding the tool with the tool head in a vertical position.

(3) Insert the wire into the upper hole on the right hand side of the face of the insertion head and bend the wire across the opening, along the handle, and hold the wire against the left side of the tool handle with the fingers.

Note: The upper beam of a 3-beam terminal is used for the permanent cross-connection.

(4) Position the tool so that the slotted guide in the tool head is aligned with the center beam of the terminal.

(5) Gently push the tool forward as far as it will go. The wire is now inserted to the proper depth.

(6) Withdraw the tool from the terminal by gently pulling it straight back.

(7) Inspect the connection. If it is defective, remove it by using the wire removal tool. Cut back the wire to remove the portion where the insulation has been pierced and reconnect it.

(8) Repeat Steps 3 through 7 for the mating wire.

(9) To bridge another connection on the terminal, use the same procedure except, in Step 3, the wire is inserted into the bottom hole of the face of the head.

3.07 To connect a wire on a single quick-clip terminal, rotate the tool to the head with the red dot and follow Steps 2 through 8 in paragraph 3.06.

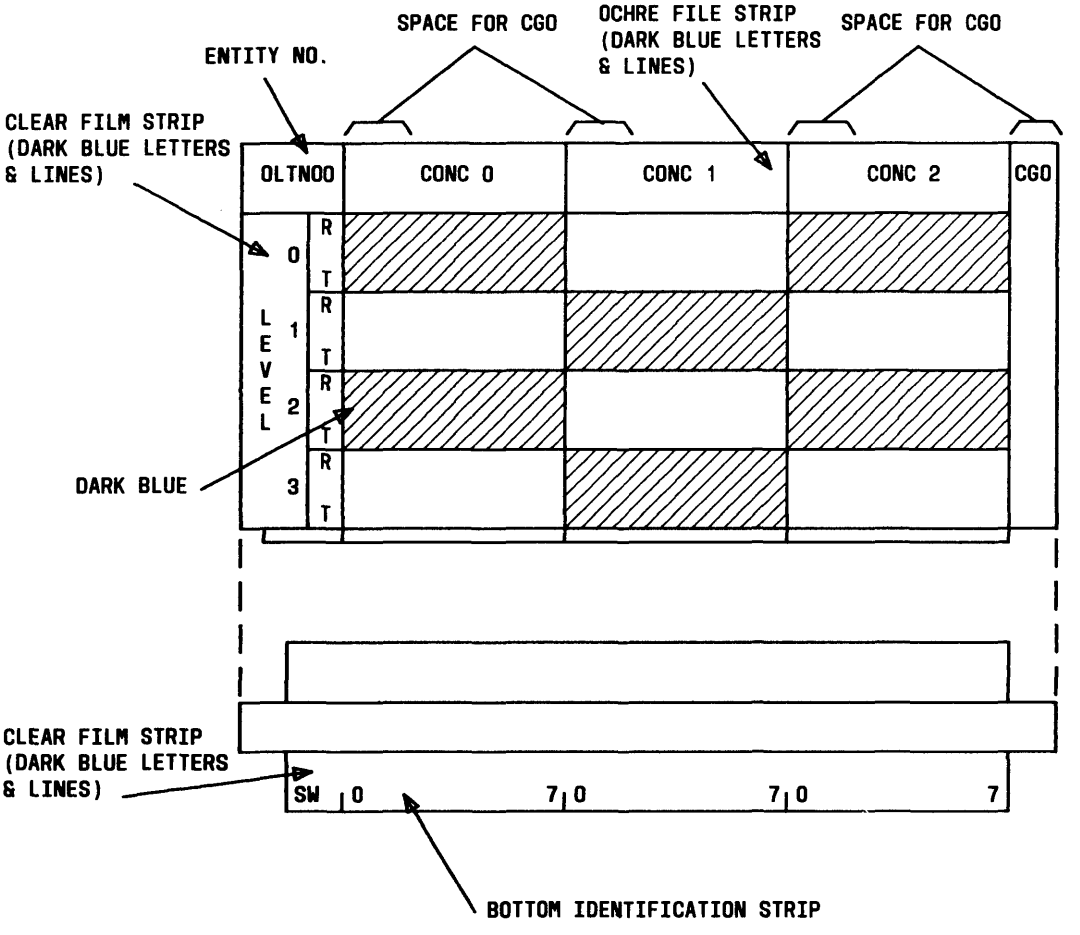


Fig. 11—89A4 Connecting Block Labels—Subscriber Lines—2ESS Switch

B. Using the 950A Wire Insertion and Removal Tool

3.08 The 950A wire insertion and removal tool (Fig. 18) is used for inserting the cross-connection into a 3-beam terminal (89TB-type connecting blocks). The procedure for making a connection is the same as Steps 1 through 9 in paragraph 3.06 except, in Step 7, the 950A tool can also be used to remove a defective connection.

4. REMOVING CROSS-CONNECTIONS

4.01 Several precautionary measures should be observed before removing wires from terminals. The distributing frame bag should be placed on the shelf below the work area.

4.02 The cross-connection should be removed from the horizontal side of the frame. An exception to this is a vertical to vertical jumper less than 20 feet.

WIRE-WRAP TERMINALS

4.03 The KS-20827,L1 wire unwrapping tool is used to remove wires from wire-wrap terminals.

4.04 Place the tool on the terminal so the sleeve completely covers the wrapped connection and the end of the unwrapping spindle engages the first turn of the connection.

4.05 Maintain light pressure on the tool toward the terminal and slowly rotate the tool counterclockwise until the connection is loose on the terminal. Remove the tool, with the turns of the unwrapped connection, from the terminal.

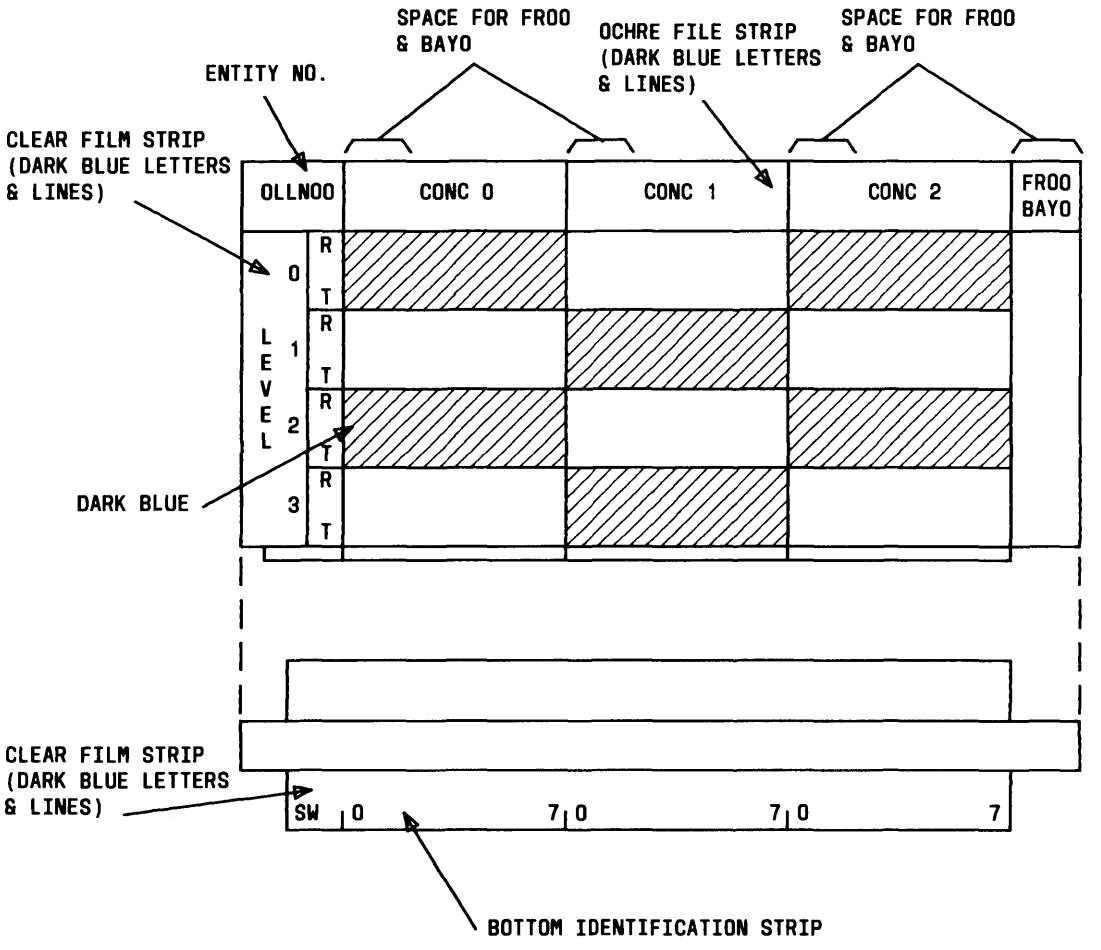


Fig. 12—▶89A4 Connecting Block Labels—Subscriber Lines (2:1 Concentration)—1ESS Switch◀

4.06 The turns of wire are removed from the tool by pulling back the knob on the sleeve toward the handle or by rotating the handle clockwise.

4.07 Cut the bare wire and deposit it into the distributing frame bag before removing it from the frame.

QUICK-CLIP TERMINALS

4.08 ***▶Warning: If the wire is removed by any means other than the 724A, 980A, or 950A tool, the future reliability of the terminal can be greatly reduced. Other methods of removal might also disturb adjacent connections.◀*** The 724A, ▶980A, or 950A◀ tool is used to remove connections on both types of quick-clip terminals. The fingers of the tool should be placed around the terminal beam and behind the wire. Hold the tool as shown in Fig. 19 and lift the wire from the terminal and away from adjacent terminals.

5. PIECE-PART DATA

5.01 Only parts that are replaceable are listed in this part. When ordering replacement parts, give both the part or comcode number and the name of the part. Do not refer to the section number or to any information shown in parenthesis.

5.02 Information enclosed in parenthesis may be references to notes, or parts referred to in other portions of the section not considered replaceable, or part names in general use in the fields if they differ from those assigned by the manufacturer.

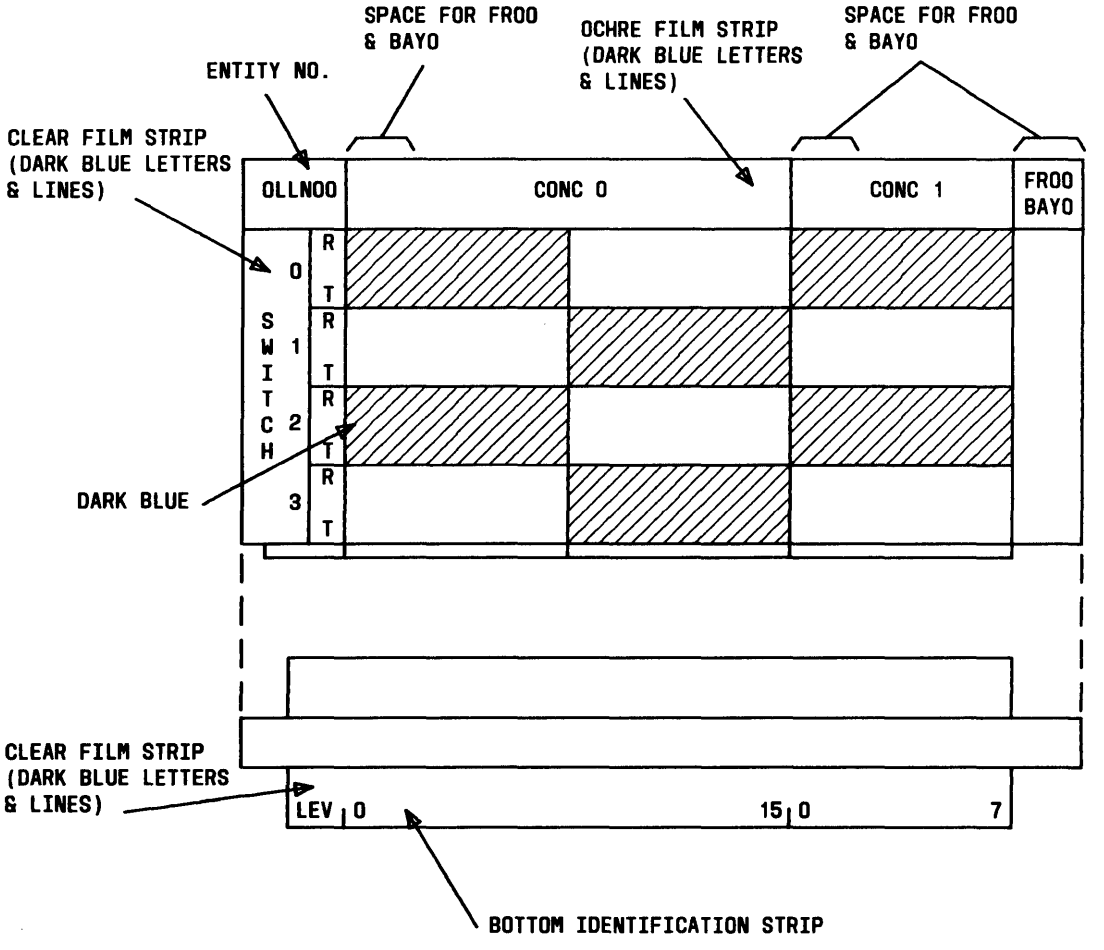


Fig. 13—89A6-96 Connecting Block Labels—Subscriber Lines (4:1 Concentration—Using 2/3 of Block for CONC-0)—1ESS Switch

89A1- THROUGH 89D1- CONNECTING BLOCKS

5.03 Parts that are ***not*** common to these connecting blocks are listed in Table C. Parts that are common are listed below:

COMCODE	DESCRIPTION
841089683	Guard, aluminum
841089733	Screw, captive
841089675	Spring

89E1A- THROUGH 89TBF2A- CONNECTING BLOCKS

5.04 Parts that are ***not*** common to these connecting blocks are listed in Table D. Parts that are common are listed below:

COMCODE	DESCRIPTION
843264714	Designation cover
841089675	Spring
843264722	Wire retention bar

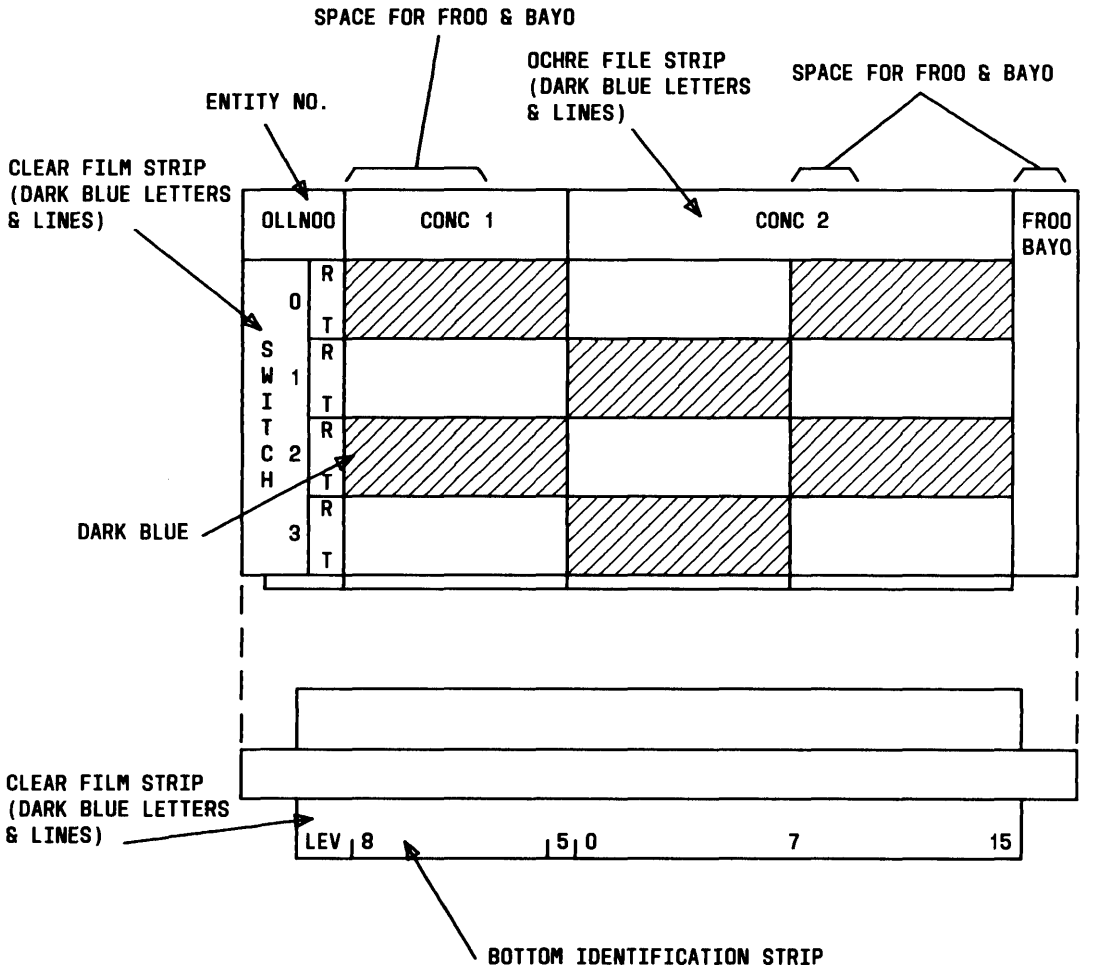


Fig. 14—89A7-96 Connecting Block Labels—Subscriber Lines (4:1 Concentration—Using 1/3 of Block for CONC-1)—1ESS Switch

6. REPAIR PROCEDURES

6.01 No procedures are given for screws or other parts where the procedure is obvious and consists of a simple operation.

6.02 Exercise extreme care when removing and connecting wires and replacing terminals to prevent damage to adjacent connections and to avoid interference with working circuits.

6.03 The ends of wire previously used for a solderless wrapped connection should not be reused. The end of the wire must be cut off and reconnected by solderless wrapping. Except in cross-connection fields, it will be necessary to splice the wire if there is not enough slack to provide the number of turns required for solderless wrapped connections. In cross-connection fields, the wire should be rerun.

89A1- THROUGH 89D1- CONNECTING BLOCKS

A. Designation Cover

6.04 Since the designation cover is optional, installation procedures will be covered rather than removal procedures. To install the designation cover, proceed as follows:

(1) Remove the two captive pan head screws from the connecting block.

(2) Align the designation cover screw holes with the screw holes in the block.

(3) Hold the block in a closed position and replace the two captive pan head screws.

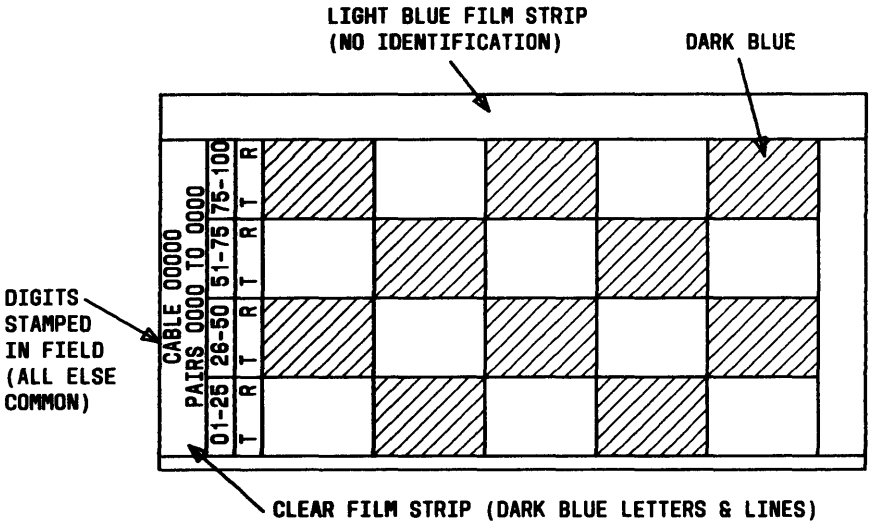


Fig. 15—89B2-100 Connecting Block Labels—Cable and Pair (Loop) Terminations

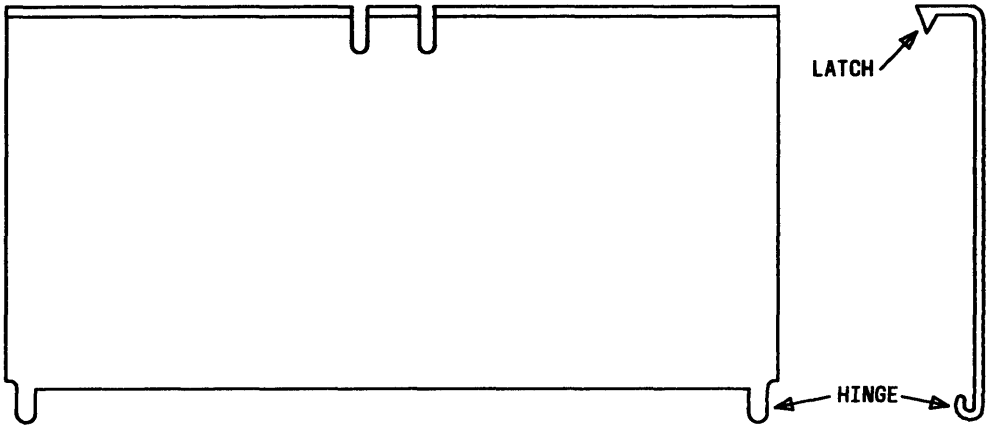


Fig. 16—Designation Cover

(4) Tighten the pan head screws and close the cover over the fanning strip.

Note: If the cover is too loose, bend the latch downward slightly. If the cover is too tight, bend the latch upward slightly.

B. Cable Fanning Strip or Aluminum Guard

6.05 The cable fanning strip located on the rear of the connecting block provides for organization of the equipment cabling. Listed below are the procedures for replacing the fanning strip.

(1) Loosen the two pan head captive screws and rotate the block upward to the locked position.

(2) Remove ties holding the cable to the housing.

(3) Remove ties holding wires in the fanning strip.

(4) Tag and remove each group of wires held by the fanning strip.

(5) Remove the two mounting screws.

(6) Replace the fanning strip or the aluminum guard.

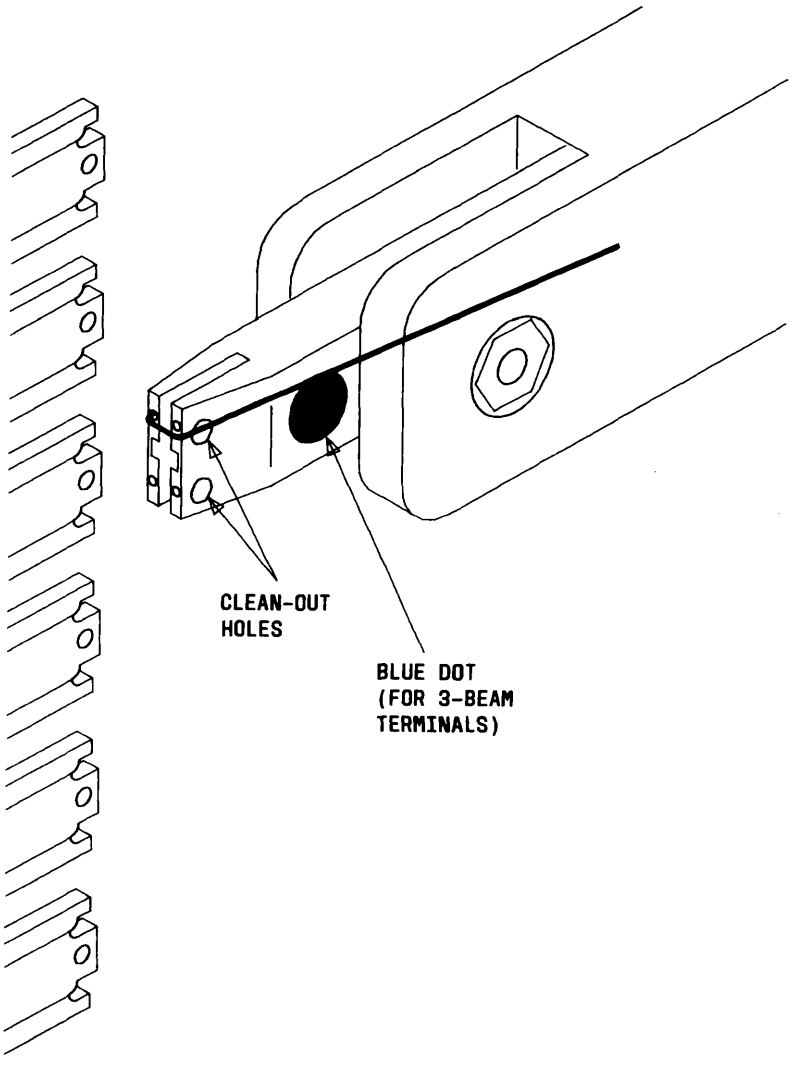


Fig. 17—Using the Wire Insertion Tool

(7) Fasten the two mounting screws.

(8) Insert each group of wires into the correct fanning strip slot and remove tags.

(9) Replace ties to hold wires in the fanning strip.

(10) Replace ties to hold the equipment cable to the housing.

(11) Rotate the block downward and fasten the two pan head captive screws.

(12) Close designation cover, if provided.

C. Spring

6.06 The spring, which locks the terminal block assembly in an upright position when opened, is replaced as follows:

(1) Loosen the two pan head captive screws and rotate the block to the upright position.

(2) Remove the spring mounting screws.

(3) Replace the spring and fasten the mounting screws.

(4) Close and secure the block.

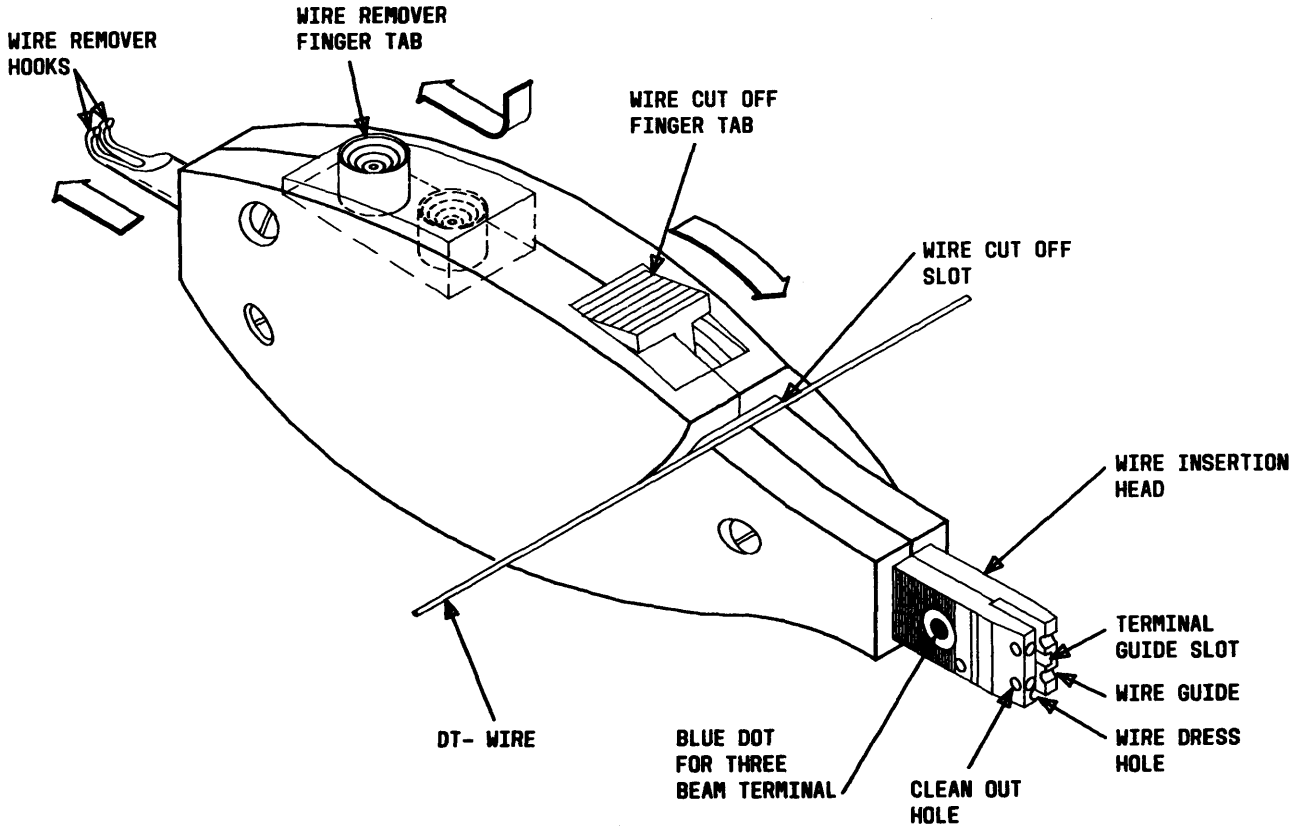


Fig. 18—◆950A Wire Insertion and Removal Tool◆

D. Terminal

6.07 Choose the correct replacement terminal and proceed as follows:

(1) Remove the cross-connection wire from the terminal.

(2) Loosen the two captive pan head screws and rotate the block upward into the locked position.

Note: The pan head screws only need to be removed from the housing. The screws can be left in the block to hold the designation cover in place, if equipped.

(3) Remove the equipment cable wire(s) from the terminal.

(4) Grasp the terminal, with the long-nose pliers, as close to the block as possible and twist it clockwise and counterclockwise until it breaks.

(5) Release the block and rotate it downward to the closed position.

(6) Use the long-nose pliers to remove the defective terminal.

(7) Insert the new terminal by using the long-nose pliers and pushing the terminal into the block, with a steady pressure, until a "click" is heard.

(8) Rotate the block upward to the locked position.

(9) Reconnect the equipment cable wire(s).

(10) Rotate the block downward and fasten it to the housing.

(11) Reconnect the cross-connection wire.

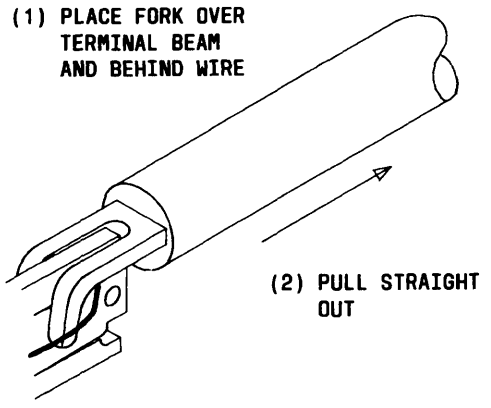


Fig. 19—Using the Wire Removal Tool

89E1A- THROUGH 89TBF2A- CONNECTING BLOCKS

A. Designation Cover

6.08 To remove the designation cover, use the following procedure:

(1) Pull cover open by unlatching at the top.

(2) Keep cover in an upright position and push down at upper left corner and then the upper right corner of the cover to release the lower hinged portion from the housing.

6.09 To install the designation cover, use the following procedure:

(1) Align the hinges on the bottom of the cover with the hinge cutouts on the housing.

(2) Tilt the cover upward until it touches the fanning strip and press upward under the cover hinges until they "snap" onto the housing.

(3) Press the top center of the cover until it "snaps" onto the fanning strip.

B. Wire Retention Bar

6.10 To replace the wire retention bar, use the following procedure:

(1) Remove the designation cover (paragraph 6.08).

(2) Rotate the terminal block assembly upward until it locks in place.

TABLE C

COMCODES — 89A1- THROUGH 89D1- CONNECTING BLOCKS

CONNECTING BLOCK CODE	FANNING STRIP COMCODES (EQUIPMENT) CABLE)	DESIGNATION COVER KS-21873, L-	TERMINAL (NOTE)
89A1-100	841089626	2	1
89A1-96	841089626	4	1
89A1-64	841089642	1	1
89A1-50	841089626	2	1
89A2-100	841089626	*	1
89A3-100	841089626	*	1
89A4-96	841089626	*	1
89A6-96	841089626	*	1
89A7-96	841089626	*	1
89A11-96	841089626	*	1
89A12-96	841089626	*	1
89B1-128	841089642	1	2
89B1-100	841089642	2	2
89B1-75	841089634	2	2
89B1-64	841089642	*	2
89B2-128	841089642	*	2
89B2-100	841089642	*	2
89B2-64	841089642	*	2
89B3-128	841089642	*	2
89B3-100	841089642	*	2
89B3-64	841089642	*	2
89B4-100	841089642	5	2
89B4-64	841089642	*	2
89C1-128	841089642	1	3
89C1-100	841089634	2	3
89D1-64	841089642	3	3
89D1-50	841089634	3	3

Note: Terminals designated 1 are bifurcated wire-wrap, comcode 841634744. Terminals designated 2 are single wire-wrap, comcode 841634751. Terminals designated 3 are single quick-clip, comcode 841089717.

* Block contains factory installed identification labels. Under normal circumstances, a cover is not required.

TABLE D

COMCODES — 89E1A- THROUGH 89TBF2A- CONNECTING BLOCKS

CONNECTING BLOCK CODE	FANNING STRIP COMCODES:	TERMINAL (NOTE)
89E1A-128	843830688	1
89E1B-128	843830696	1
89E2B-128	843830670	1
89E3B-128	843830704	1
89F1A-100	843830753	1
89F1B-100	843830779	1
89F2A-100	843830763	1
89G1A-128	843830688	1
89G1B-128	843830696	1
89G1C-128	843830688	1
89TBE1A-128	843830688	2
89TBE1B-128	84383696	2
89TBE2B-128	843830670	2
89TBE3B-128	843830704	2
89TBF1A-100	843830753	2
89TBF1B-100	843830779	2
89TBF2A-100	843830763	2

Note: Terminals designated 1 are bifurcated, wire-wrap, comcode 841634744. Terminals designated 2 are connector, 3-beam quick-clip, comcode 843834771.

Note: To release the terminal block assembly from the housing, push downward at the middle of the housing.

(3) Slide the retention bar out and insert a new retention bar [Fig. 6(a), top view]. The clear plastic cover, which is assembled as part of the fanning strip, is slotted to provide a track for the retention bar.

(4) Release the spring holding the block upright and rotate the block downward until it snaps over the lower housing latch, and replace designation cover (paragraph 6.09).

C. Spring

6.11 To replace the spring, use the following procedure.

(1) Rotate the block upward to the locked position.

(2) Remove the two pan head screws holding the spring [Fig. 6(b) and 7(b), front view] and replace the spring.

(3) Fasten the spring with the two pan head screws.

(4) Release the spring and return the block to its normal position.

D. Fanning Strip

6.12 To replace the fanning strip, proceed as follows:

(1) Open the designation cover.

(2) Remove the cross-connection wires from the fanning strip, one column at a time, and tie and tag each group.

(3) Remove the three screws holding the fanning strip to the block.

(4) Replace the fanning strip and fasten it to the block with the three screws.

(5) Insert the wires into the fanning strip and remove the ties and tags.

(6) Inspect the terminal field to be sure that the connections have not been disturbed.

(7) Close the designation cover.

E. Terminals

6.13 To replace a terminal, observe the local procedures for service interruption and proceed as follows:

(1) Open the designation cover.

(2) Remove the cross-connection wire(s) from the terminal.

(3) Rotate the block upward to the locked position.

(4) Remove the equipment cable wire(s) from the terminal.

(5) Using the long-nose pliers, grasp the terminal as close to the block as possible and twist it clockwise and counterclockwise until it breaks.

(6) Release the block and rotate it down to its normal position.

(7) Using the long-nose pliers, remove the defective terminal and insert the new terminal. With the long-nose pliers, apply a steady pressure and push the terminal into the block until a click is heard. This click is caused by the nylon spurs on the rear of the block gripping the terminal.

(8) Rotate the block upward to the locked position.

(9) Connect the equipment cable wire(s).

(10) Release the block and rotate it down to its normal position.

(11) Connect the cross-connection wire(s).

(12) Close the designation cover.