89 E, F, G & TB TYPE

CONTENTS

1. GENERAL

1.1 The 89 E, F, G & TB Type Connecting Blocks are designed to provide high density concentration on low profile and conventional type distributing frames. These blocks feature a 180° rotating terminal field which provides for the Solderless Wrap (SW) termination of cable leads on the rear side (closed position), and either the Solderless Wrap (SW) or Quick-Connect (QC) method of terminating jumper wire on the front side (closed position).

1.2 Refer to Table-A for a brief description and current listing of the available 89 E, F, G & TB Type Connecting Blocks. The cable lead terminals for these blocks are all single tang solderless wrap terminals, and the terminal types shown in Table-A are for the cross-connect side.

NOTE: Although some code numbers and their descriptions may appear to be identical, they are arranged for various stamping, strapping, and system usage.

1.3 22 through 26 gauge wire has been approved for termination on the cable lead side of the blocks. However, when a block completely uses 22 gauge cable or an excessive amount of 22 gauge "P" wire, there will be a congestion problem in the fanning strip slot area, special precautions must be followed. See Paragraph 7.1.1.

2. SUPPLIES

R-4266	Tool, Fastening, Cable Tie
R-4473	Stripper, Wire
R-4265	Ties, Nylon Cable
R-2916	Twine
R-756C2	Insertion Tool
R-3795 (724A)	Wire Removal Tool
R-5080 (955A)	Wire Stuffer
KS-22035	Spudger

3. CABLING

3.1 Cables shall enter into the distributing frame horizontal or vertical sides in accordance with the standard cable plan drawing for that particular type of distributing frame involved. For example, use ED-92879-11 drawing for a common system MDF and ED-97952-11 drawing for 89 series Connector Blocks for use on conventional distributing frames. For a listing of other cable plan drawings for other type of distributing frames refer to Handbook 8, Section 340. For special applications, refer to the job specification, notes and drawings.

3.2 Any one cable may be spread across 120 inches (15-8" verticals) of a distributing frame horizontal shelf, therefore, any cable entering the horizontal side from the vertical side, either from above or below, should be butted at the approximate center of the group of connecting blocks being served, or in accordance with the applicable systems method of cabling drawing.

4. BUTT LOCATION

4.1 For ease of cable handling, it may be expedient to butt and strip the cable(s) prior to mounting the connecting blocks. The cable(s) should be butted, stripped, and secured to the transverse arm in a standard manner and at the location shown on the method of cabling drawing.

4.1.1 Be sure the end of the cable extends at least 14 inches (min.) beyond the bottom edge of the farthest 89-block being served. This 14 inches of slack is necessary

to accommodate the fan, form, and connect operations.

5. MOUNTING

5.1 For ease of mounting the connecting blocks, the terminal section can be removed from the plastic housing. Spread one side of the housing out and lift the terminal section out. Mount housing with 4 machine screws #8-32NC-2AX.50 that are provided with each block (see Figure 1).

5.1.1 After the housing is mounted we suggest running the cable through the housing opening as per Paragraph 6.1.1.

6. FAN AND CONNECT

6.1 General

6.1.1 After the connecting blocks have been mounted on the D.F., feed the cable leads through the housing in the following manner:

a. Divide the cable into binder groups. Spread the binder groups evenly across the block. Two binders through each opening in the housing for a 128 pair cable.

b. If a cable with an odd number of binders is used, the binder should be spread across the block as evenly as possible.

c. If only a partial block is being cabled or only "P" wire is being run, place approximately 25 pairs through each opening for a 100 pair block and 32 pairs for a 128 pair block.

d. Secure binders groups together as to keep the cable from backing out of the housing (see Figure 2).

e. Snap terminal section back into housing.

6.1.2 After the binders have been separated and identified, they should be measured and skinned for wire wrapping on a per binder basis, the leads from any given cable binder should be pulled to the terminating point then add 2" plus the skinner length (see Figure 3) cut and skin leads. After the first binder (blue) has been skinned to the proper length, start terminating the cable leads per the connecting sheet information. Remember that when the block has been rotated 180°, the circuit numbering will be reversed top to bottom (horizontal side) or right to left (vertical side).

6.1.3 Once the binder is terminated, the leads are to be dressed back against the block. The spudger, KS-22035 or the wire stuffer (R-5080) can be used (see Figure 4).

6.1.4 Continue to terminate and dress all cable leads until the connecting block is completely wired, dressing each binder group as you proceed.

7. LEAD FORMING

7.1 All the leads should be dressed down along the terminals and positioned as far back as possible.

7.1.1 When running 22 gauge wire, all leads are to be dressed straight over the plastic strip. No crosses can be tolerated (see Figure 5).

7.2 The wire retaining bar is now inserted into the slots to retain the leads and to provide a strain relief (see Figure 6).

7.3 Insert the bar slowly, checking to be sure no leads are caught on the terminals. The bar is pushed on until the raised tabs in the fanning strip lock into the indentations in the bar.

8. PROTECTION

8.1 No additional protection is needed when this connecting block (89 E, F, G or TB Type) is used.

9. STRAPPING

9.1 The terminals of the 89-Type Blocks should be strapped in the following manner:

a. Straps should run parallel to the incoming leads where feasible.

b. Strap perpendicular to the incoming leads on non-adjacent terminals using either BU or BW insulated wire straps.

c. Strap perpendicular to the incoming leads on adjacent terminals using either BU or BW insulated straps or bare wire straps.

10. CLOSURE

10.1 Release the rotation stop spring and carefully fold the form back into the block housing (see Figure 7).

10.2 When the terminal field has been fully rotated into the closed position, check if the cable form has push out the rear of the housing. Be sure this protrusion does not interfere with any jumper running operation. If it does, place a band or two of twine or cable ties around the cable leads in the housing to secure cable from pushing out the rear.

CAUTION:	CARE MUST BE OBSERVED. A FULLY WIRED BLOCK IS SPRING LOADED WHEN IN THE CLOSED POSITION. WHEN OPENING, THE PALM OF THE HAND SHOULD BE AGAINST THE TERMINALS BEFORE THE LATCH IS RELEASED.

11. CONNECTORIZED BLOCKS

11.1 The 89G1A-128, G1B-128, and G1C-128 are connectorized with four 711 connectors. These blocks are used with connectorized cables to #5 ESS equipment.

11.2 The 711 connectors are matched to the correct mate by matching of the color rings. The R-4774 Closing Tool is to be used to correctly mate and press the 711 connectors together.

11.3 The connectorized cables are double-ended. This results in additional slack at the Distributing Frame.

11.4 After the connectors are mated, the cable is dressed back into the vertical chute. The cable is then secured to the horizontal arm. The remaining slack is pulled back into the rack. No slack is to remain in the distributing frame. The additional slack can cause unnecessary congestion.

12. STAMPING

12.1 The 89 E, F, G, and TB Connector Blocks are furnished with a designation cover that has an indentation on the front (outside) where a circuit identifying label is to be placed. A second label detailing the functional designations is furnished for the inside of the cover. Do not stamp this information on the covers.

12.2 The labels are pressure sensitive, adhesive backed. They are furnished prestamped for standard circuits and blank for miscellaneous circuits. Job information shall be stamped on the labels before applying to covers. A set of labels will be furnished for each connector block.

12.3 For specific instructions, refer to ED-97952-11, 12.

12.4 If labels are not received, contact the Line Equipment Engineer.

13. JUMPER WIRE TERMINATION

13.1 The DT22P (IPVC) Jumper Wire or other wire specified by the Operating Company, can be terminated on the solderless wrap terminals with the R-3278 Hand Wrap Tool or any other standard wrapping tool. However, to terminate this wire on the quick-connect terminals, a 756C2 Insertion Tool is required. After September, 1983 the 756C3 or 950A Wire Insertion Tools will be the standard. To remove a jumper wire from the quick-connect terminal, a R-3795 (724A) Removal Tool should be used.

13.1.1 The correct method for terminating jumpers on the quick-clip block is:

1. Insert wire to full depth into wire dress hole in 756C2 or 756C3 Tool.

2. Bend wire across face and through wire dress slot or over hole.

3. Bring wire straight back against tool handle.

4. Angle tool slightly away from center beam. See Figure 8.

13.1.2 Do not terminate more than one wire in a single clip quick connect terminal. One connection will dislodge the other and cause an open.

14. VERIFICATION ITEMS

	Verification Items and Brief Statement	Reference Para. No.	Fig. No.
12.1	Follow special instructions when slot is congested with excessive 22 Ga. wire.	1.3	
12.2	14" slack is necessary to properly form the cable leads.	4.1.1	
12.3	Spread binder groups evenly across block.	6.1.1a	
12.4	Secure binder groups together to keep cable from backing out of housing.	6.1.1d	2
12.5	Leads formed down tight along terminals and as far back as possible.	7.1	4
12.6	Dress leads straight out for 22 Ga. along plastic strip, no crosses.	7.1.1	5
12.7	Strap in following manner:	9.1	
	A. Run parallel to incoming leads where feasible.		
	B. Strap perpendicular to incoming leads using BU or BW insulated wire (nonadjacent terminals).		
	C. Strap perpendicular to incoming using BU or BW insulated wire or bare straps (adjacent terminals).		
12.8	Be sure cable form does not interfere with jumper running - if so, band and secure out of the way.	10.2	
12.9	Excess slack on connectorized cable dressed back into rack.	11.1.3	
12.10	Do not terminate more than one wire in a single clip quick-connect terminal.	12.1.1	

] Indicates information subject to verification.

Engineering Planning Manager
(Installation)

Attachment:
Table A
Figures 1 through 8

TABLE A. BRIEF DESCRIPTION AND USE OF BLOCKS

CONN BLOCK CODE	REPLACING CONN BLOCK CODE	TERM TYP	APPLICATION	MOUNTED HORIZ	MOUNTED VERT	FANNING STRIP
89F1A-100	89A1-100, A3-100	BIFURCATED TERMINALS	TRUNK & MISC EQPT	X		BEIGE
89F2A-100	89B4-100		TRUNK & MISC EQPT		X	BEIGE
89F1B-100	89B3-100		FACILITY TERMINATION	-	X	BLUE
89TBF1A-100	89G1-100	THREE BEAM TERMINALS	TRUNK & MISC EQPT	X		BEIGE
89TBF2A-100	89C1-100		TRUNK & MISC EQPT		X	BEIGE
89TBF1B-100	-		FACILITY TERMINATION	-	X	BLUE
89E1A-128	89B1-128, B2-128	BIFURCATED TERMINALS	TRUNK & MISC EQPT	X		BEIGE
89E2A-128	-		TRUNK & MISC EQPT		X	BEIGE
89E1B-128	-		NO. 5 ESS	X	-	YELLOW
89E2B-128	89A6-96 A7-96		NO. 1 ESS (4:1 LCR)	X	-	YELLOW
89E3B-128	89A4-96		NO. 1 ESS (2:1 LCR) NO. 2 ESS	X	-	YELLOW
89E1C-128	-		TIE PAIRS	X		WHITE
89E2C-128	-		TIE PAIRS		X	WHITE
89TBE1A-128	89C1-128	THREE BEAM TERMINALS	TRUNK & MISC EQPT	X		BEIGE
89TBE2A-128	89C1-128		TRUNK & MISC EQPT		X	BEIGE
89TBE1B-128	-		NO. 5 ESS	X	-	YELLOW
89TBE2B-128	-		NO. 1 ESS (4:1 LCR)	X	-	YELLOW
89TBE3B-128	-		NO. 1 ESS (2:1 LCR) NO. 2 ESS	X	-	YELLOW
89TBE1C-128	-		TIE PAIRS	X		WHITE
89TBE2C-128	-		TIE PAIRS		X	WHITE
89G1A-128	-	CONNECTORIZED (4) 711-CONN TO TIE-CA SIDE	NO. 5 ESS TRUNK UNIT	X	-	BEIGE
89G1B-128	-		NO. 5 ESS LINE EQPT	X	-	YELLOW
89G1C-128	-		NO. 5 ESS METALLIC SERVICE UNIT	X	-	BEIGE

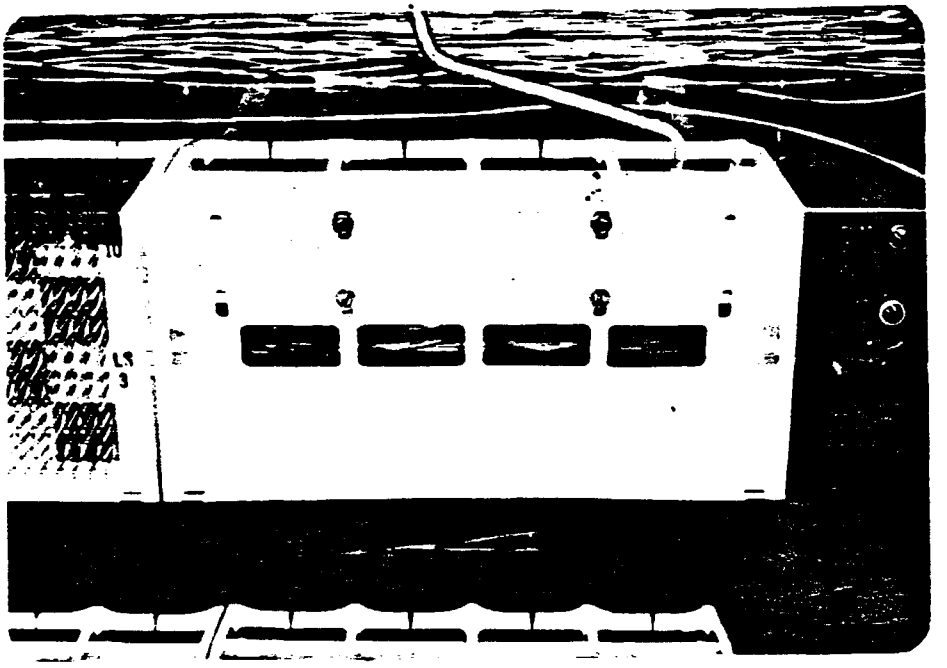

FIG. 1 MOUNT HOUSING

FIG. 2 SECURE BINDERS IN HOUSING

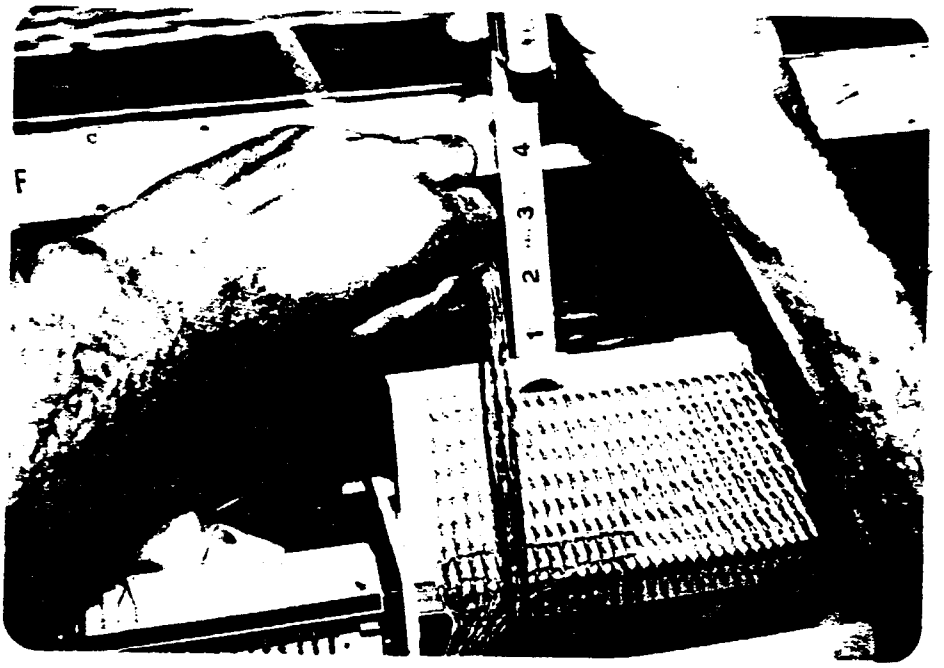

FIG. 3 ADD 2 INCHES PLUS SKINNER LENGTH FROM TERMINATING POINT.

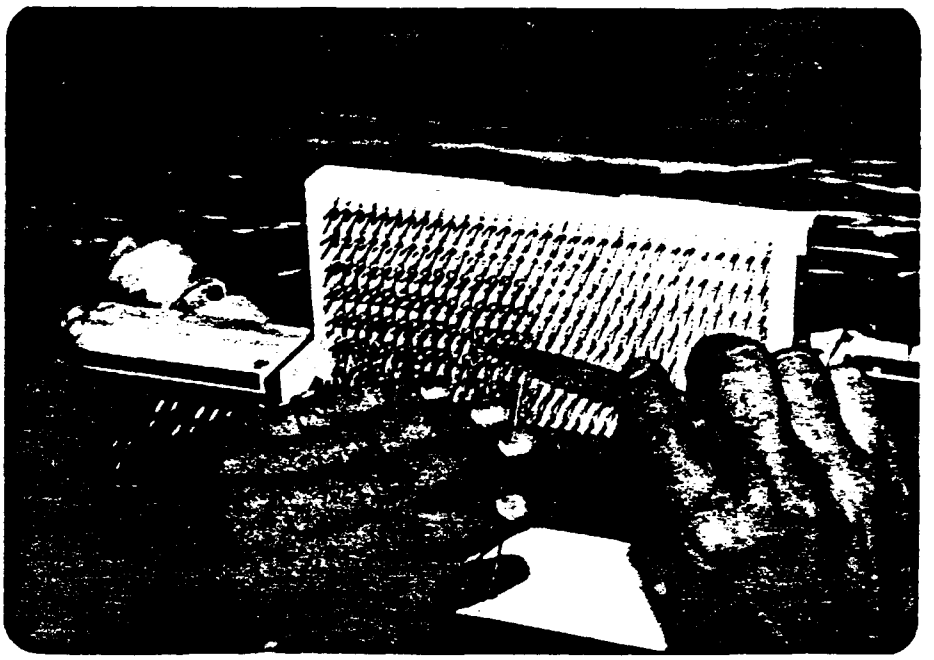

FIG. 4 DRESS LEADS BACK WITH SPUDGER OR WIRE STUFFER.

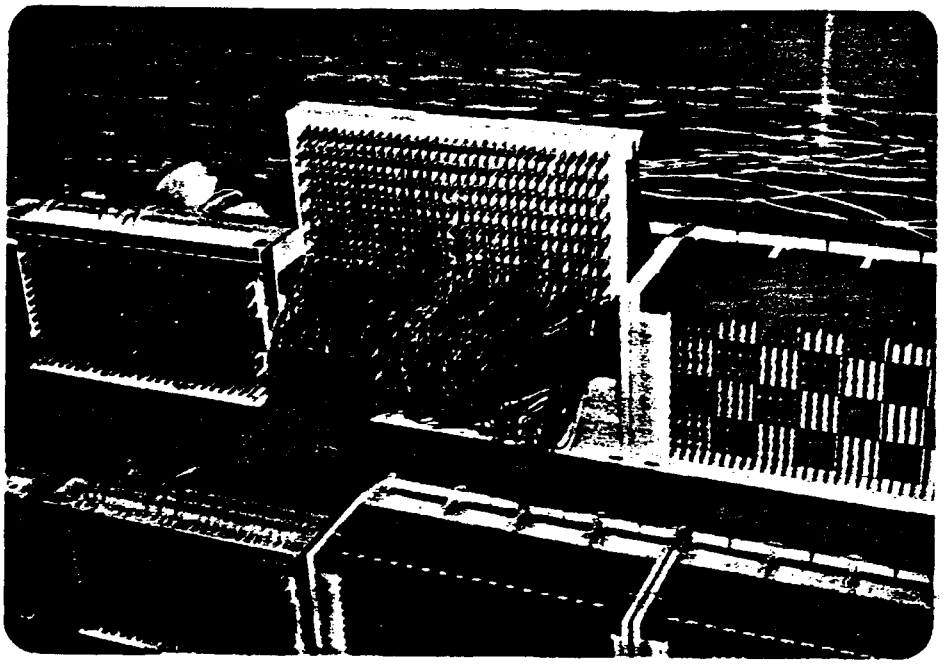

FIG. 5 DRESS LEADS STRAIGHT OVER PLASTIC STRIP, NO CROSSES.

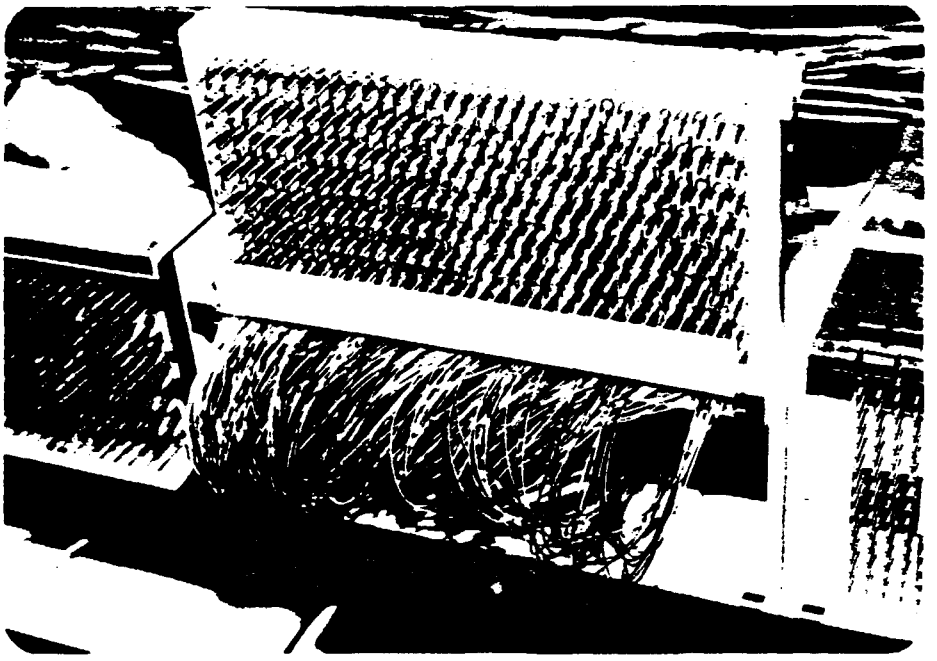

FIG. 6 INSERT WIRE RETAINING BAR TO PROVIDE STRAIN RELIEF.

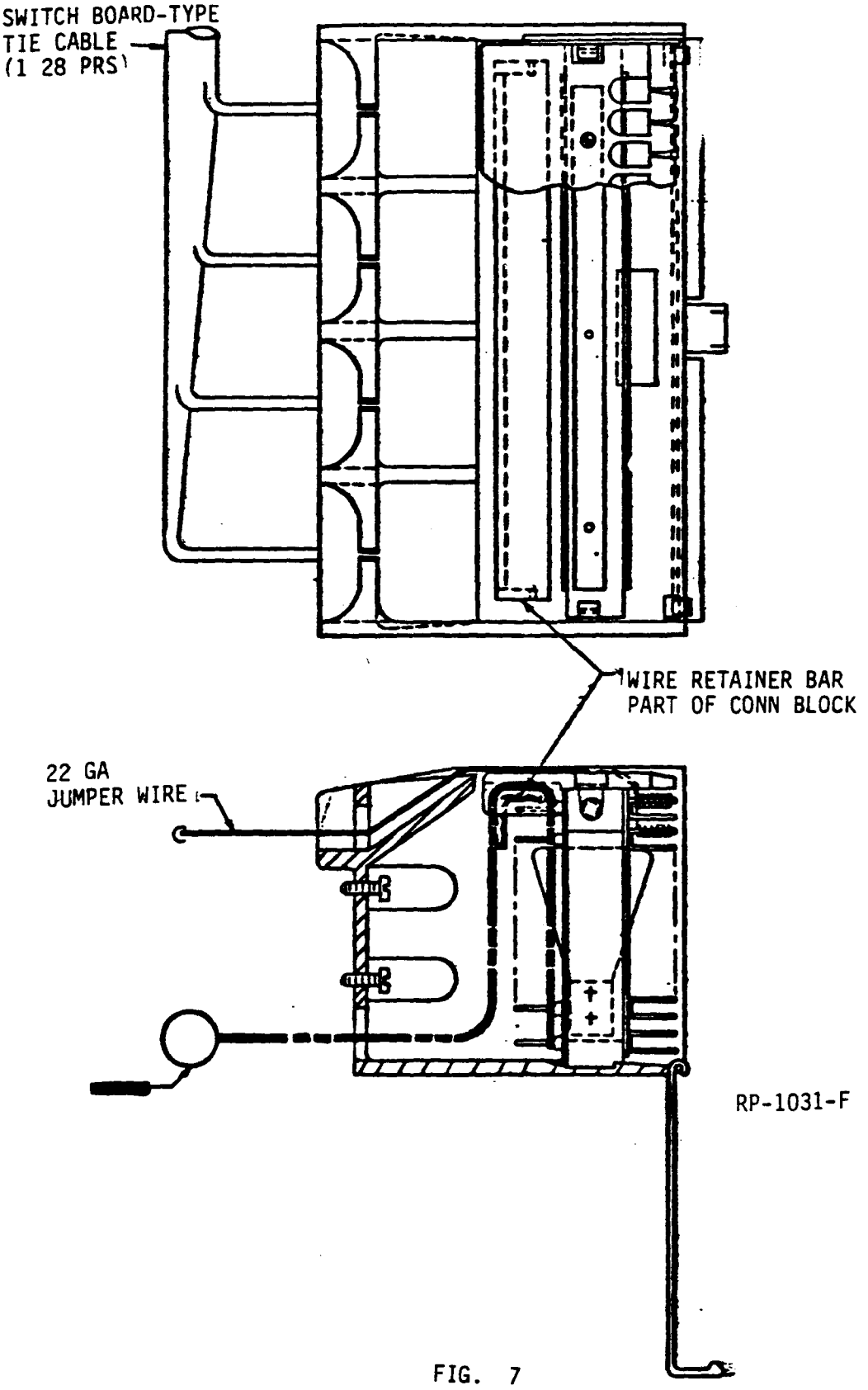
SWITCH BOARD-TYPE
TIE CABLE
(1 28 PRS)
WIRE RETAINER BAR
PART OF CONN BLOCK
22 GA
JUMPER WIRE
RP-1031-F

FIG. 7

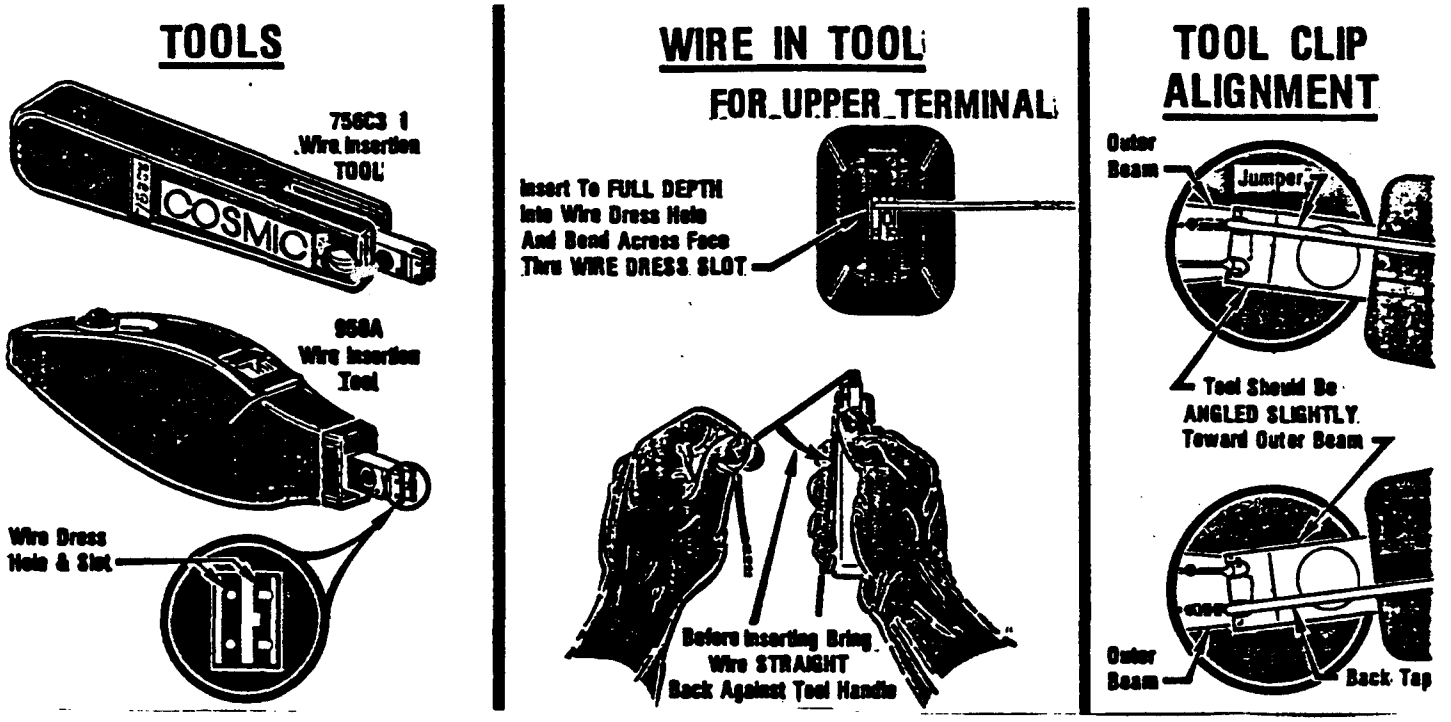

FIG. 8
CROSS-CONNECT TOOLS & METHODS OF USE