



307-Type Connectors Description, Use, Installation, and Repair Procedures

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1. Overview

1.01 This practice covers the description, use, installation, and repair procedures for the 307-type connectors and the connecting blocks and stub cables used with the 307-type connectors.

1.02 This practice is reissued to include the 307-type connectors that are tested by Underwriters Laboratories. The UL* Listed connectors are used for large pair cross-connects where UL Listing is desired, such as customer premise locations. These listed connectors described in Section 6 can also be used in CO applications if desired.

1.03 The standard 307-type connectors covered in Part 2 are used for telephone company premises. The standard connectors are not UL Listed.

1.04 This practice contains a **CAUTION** admonishment.

1.05 AT&T welcomes your comments on this practice. Your comments will aid us in improving the quality and usefulness of AT&T documentation. Please use the Feedback Form provided at the end of this practice.

1.06 Additional copies of this practice and any associated appendixes may be ordered from the AT&T Customer Information Center as follows:

- Call 1-800-432-6600
or
- Complete Form IND 1-80.80 and mail to:

AT&T Customer Information Center
Attention: Order Entry Department
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P.O. Box 19901
Indianapolis, IN 46219-1999

1.07 The 307-type connectors are used on the **COSMIC**® † II, **COSMIC** IIA, and **COSMIC** II Mini Distributing Frame Systems. They are also used in the wall-mounted AT-9049 protector frames and for **SLC** carrier applications in 80- and 51A-type cabinets.

* Registered trademark of Underwriters Laboratories, Inc.

† Main distributing frame

- 1.08** The two main components of the 307-type connector are the protector panel and the connecting block, which are interconnected with a 100-pair wiring harness. This harness consists of 200 individual leads of 26-gauge (0.6 mm) wire or for 25-pair, 24-gauge (0.5 mm), twisted-pair cable. The twisted-pair cables are equipped with either wire-wrap or quick-clip connecting blocks.
- 1.09** The standard 307-type connectors are available with standard 78-type block (4-beam terminals), or 112-type blocks equipped with either 3-beam terminals (bifurcated quick clips) or wire-wrap terminals.
- 1.10** High density 307H-type connectors can be used on **COSMIC** IIA frames to provide 10,200 protected pairs and 1,800 unprotected pairs per facility module. Ten 307H-type connectors can be installed on a shelf with space for two additional 112H-100-type connecting blocks. The 307H-type connectors can be used on **COSMIC** II frames with shelf adapters per ED-6C142-30 G3 and G4 (See AT&T 201-222-101).
- 1.11** Other standard 307 codes available include the 307C1-100 which is used for T1 Carrier terminations for which cross-connect capability is not required. Special 307C2 through C7-100 connectors are used with **SLC** carrier systems.
- 1.12** The standard 307-type connectors have additional backplane wiring which interconnects the protector panel to four 710-SD-25 connectors. These connectors provide for rapid connection to 100-pair cable stubs (11C- or 11D-type) equipped with mating 710-BD-25 connectors. The 11-type stub cables must be ordered separately from the connectors.
- 1.13** The 307-type connectors use 4-type protector units (see AT&T 201-208-100).
- 1.14** The 307-type connectors, with protector units, provide features for voltage protection, current protection, testing, identification of special circuits, and disconnection of the outside cable pair from the central office equipment.
- 1.15** This practice is issued by:

Document Development Organization
AT&T Network Systems
Reynolda Road
Winston-Salem, NC 27106-4696

2. 307-Type Connector (Standard Codes) (Non-UL Listed)

- 2.01** Table A lists the various codes of the standard (Non-UL Listed) 307-type connectors, codes of attached connecting blocks, and the frame applications.

Table A. 307-Type Connector — Frame/Cabinet Applications

Application Frame/Cabinet	Shelf	Equipped with Connecting Block	Terminal Type (Note)	Connector Item Code	Comcode
COSMIC II	2-10	78C1B-100	BQC	307A1-100†	103069985
COSMIC II	1 or 11	78C1B-50 78C2B-50	BQC	307B1-100†	103069993
COSMIC II, IIA	2-10	112C1B-100	BQC	307D1-100	103318309
COSMIC II, IIA	1 or 11	112C1B-50 112C2B-50	BQC	307E1-100	103318317
COSMIC II, IIA	2-10	112H1B-100	BQC	307F1-100‡	104367768
COSMIC II, IIA	1 or 11	112H1B-50 112H2B-50	BQC	307G1-100‡	104367776
COSMIC II, IIA	2-10	112C1BB-100	BWW	307D1B-100	104447818
COSMIC II, IIA	2-10	112C1BS-100	SWW	307D1S-100	104447826
COSMIC II, IIA	1 or 11	112C1BB-50 112C1BB-50	BWW	307E1B-100	104447834
COSMIC II, IIA	1 or 11	112C1BS-50 112C2BS-50	SWW	307E1S-100	104447842
COSMIC II, IIA, Mini Twisted Pair	2-10¶	112C1B-100	BQC	307D2-100	103554747
COSMIC II, IIA, Mini Twisted Pair	2-10¶	112C1BB-100	BWW	307D2B-100	104471699
COSMIC II, IIA, Mini Twisted Pair	2-10¶	112C1BS-100	SWW	307D2S-100	105571707
COSMIC II, IIA Twisted Pair	2-10	112H1BS-100	SWW	307H1S-100‡	105571715
COSMIC II, IIA, Mini	—	None*	N/A	307C1-100§	103334009
SLC 96 on AT-9049	—	None*	N/A	307C2-100§	103835120
SLC 5 — Used in 80-Type Cabinet	—	None*	N/A	307C3-100§	104179858
		None*	N/A	307C4-100§	104179866
		None*	N/A	307C5-100§	104179874
SLC 5 — Used in 51A-Type Cabinet	—	None*	N/A	307C6-100§	104387667
		None*	N/A	307C7-100§	104387675

Note: BQC = Bifurcated quick-clip, SWW = Single wire-wrap, BWW = Bifurcated wire-wrap
This code is equipped with 25-pair 710-type connectors instead of a connecting block.

† LA (Limited Availability).

‡ Requires shelf adapter for **COSMIC II** frames.

§ Outside plant side is 22-gauge (0.6 mm) and equipment side is 26-gauge (0.4 mm).

¶ Shelves 1-10 on **COSMIC II** Mini frames.

307A1-100 Connector

2.02 The 307A1-100 connector (Figures 1 and 2) is rated Limited Availability (LA). The connector has a protector panel interconnected to one 100-pair, 78C1B-100 connecting block. The block is stenciled 01-100 and represents any 100-pair complement in an outside plant cable. The 307A1-100 connector has additional backplane wiring that interconnects the protector panel to four 710 fire-retardant connectors. The connectors provide for rapid connection to 11CA or 11DA cable stubs equipped with mating 710 bridge modules. The 307A1-100 connector is mounted on shelves 2 through 10 of the **COSMIC II** main distributing frame.

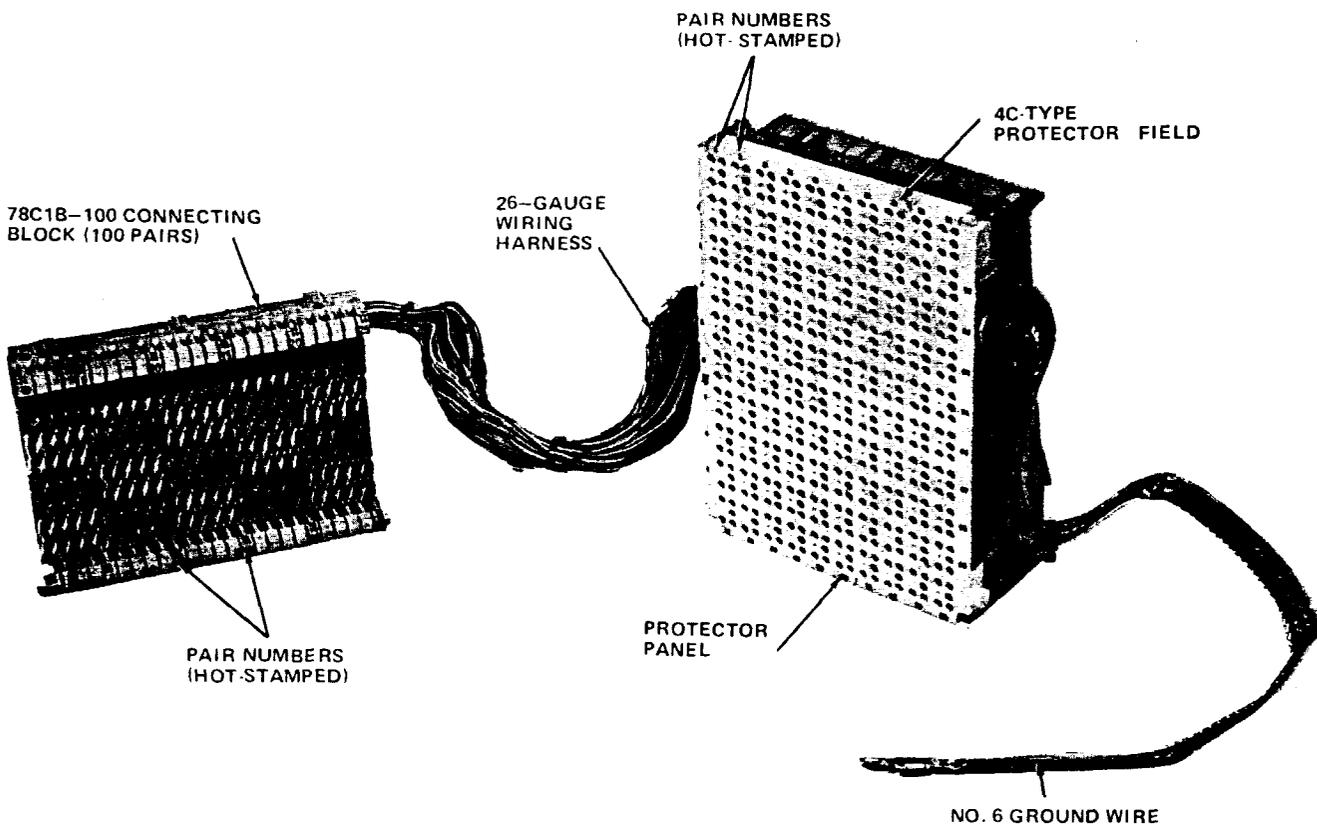


Figure 1. 307A1-100 Connector — Front View

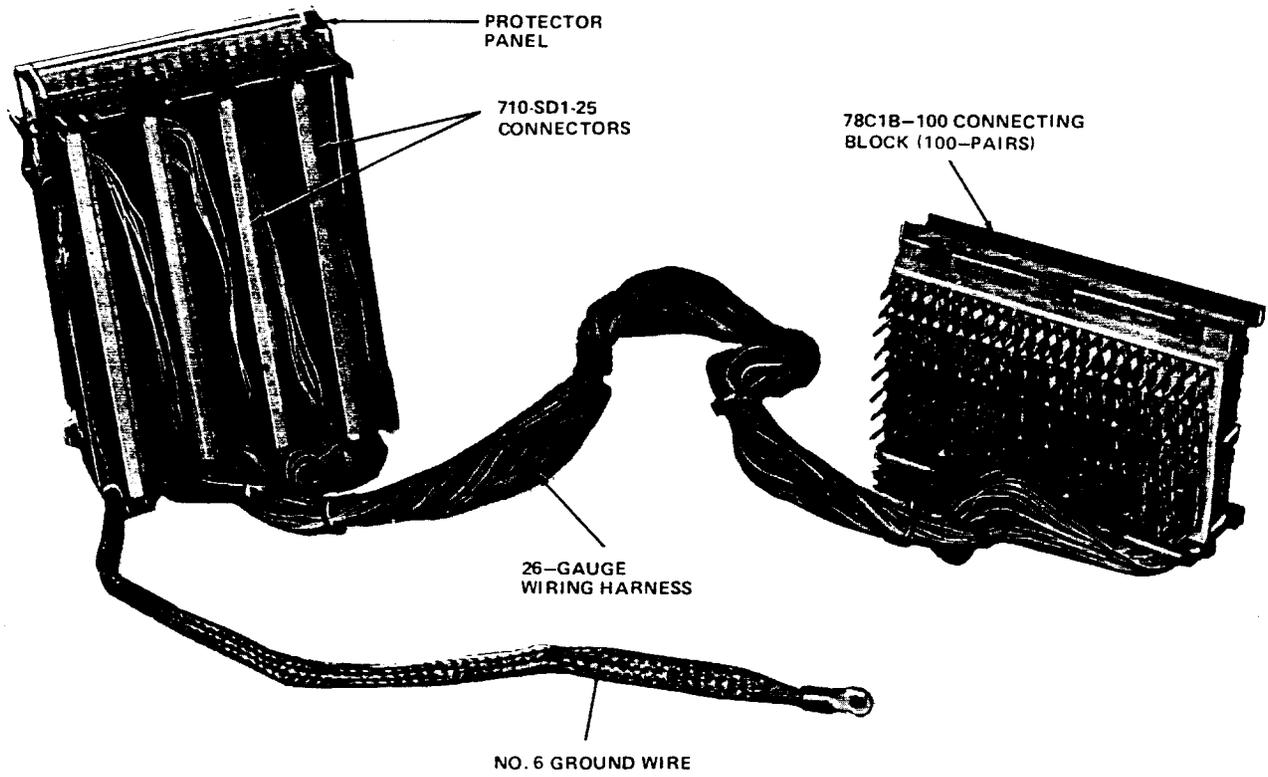


Figure 2. 307A1-100 Connector — Back View

307B1-100 Connector

2.03 The 307B1-100 connector (Figures 3 and 4) is rated Limited Availability (LA). The connector has a protector panel interconnected to one 50-pair 78C2B-50 connecting block and to one 50-pair 78C1B-50 connecting block. The 78C1B-50 connecting block is stenciled 01-50, and the 78C2B-50 connecting block is stenciled 51-100. The combination of these two 50-pair connecting blocks can represent any 100-pair complement in an outside plant cable. The 307B1-100 connector has additional backplane wiring that interconnects the protector panel to four 710 fire-retardant connectors. The connectors provide for rapid connection to 11CA or 11DA cable stubs equipped with mating 710 bridge modules. The 307B1-100 connector is mounted on shelves 1 and 11 of the *COSMIC II* main distributing frame.

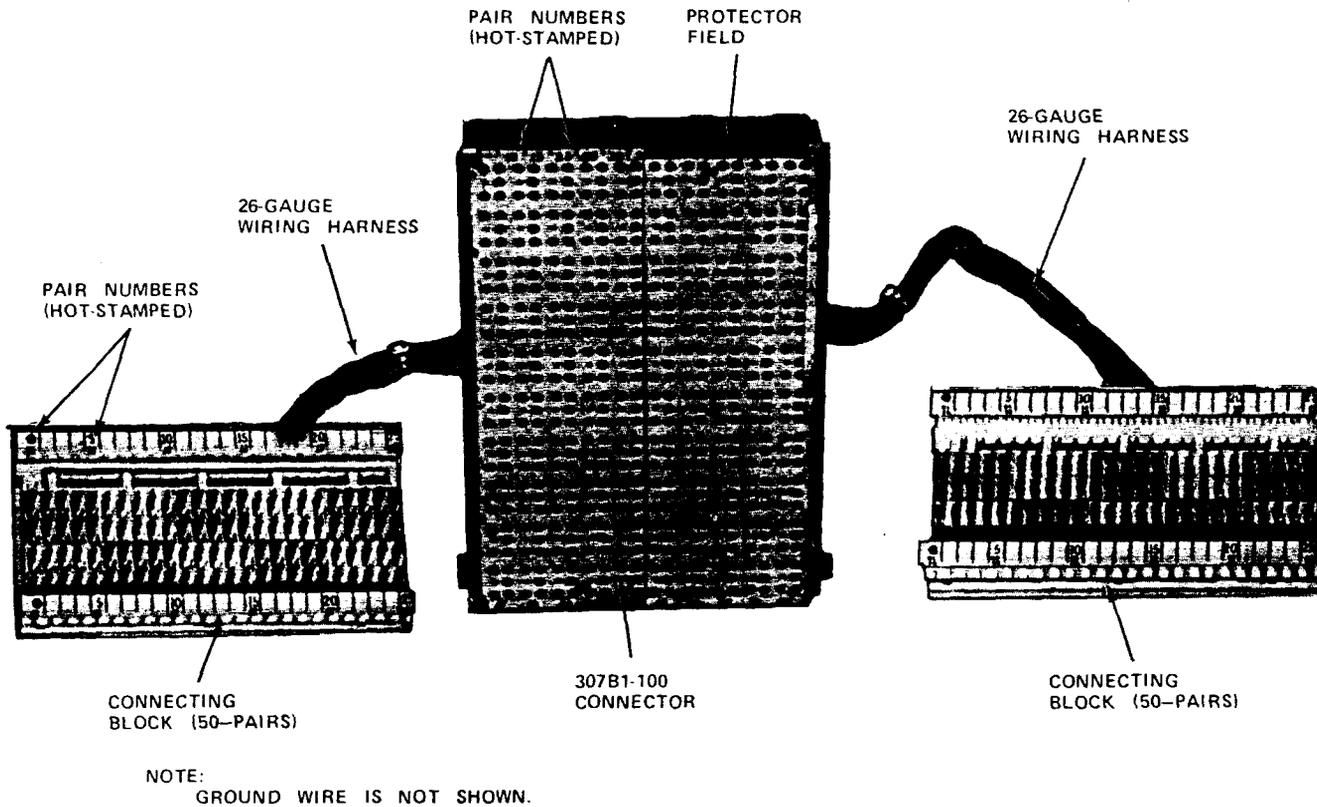


Figure 3. 307B1-100 Connector — Front View

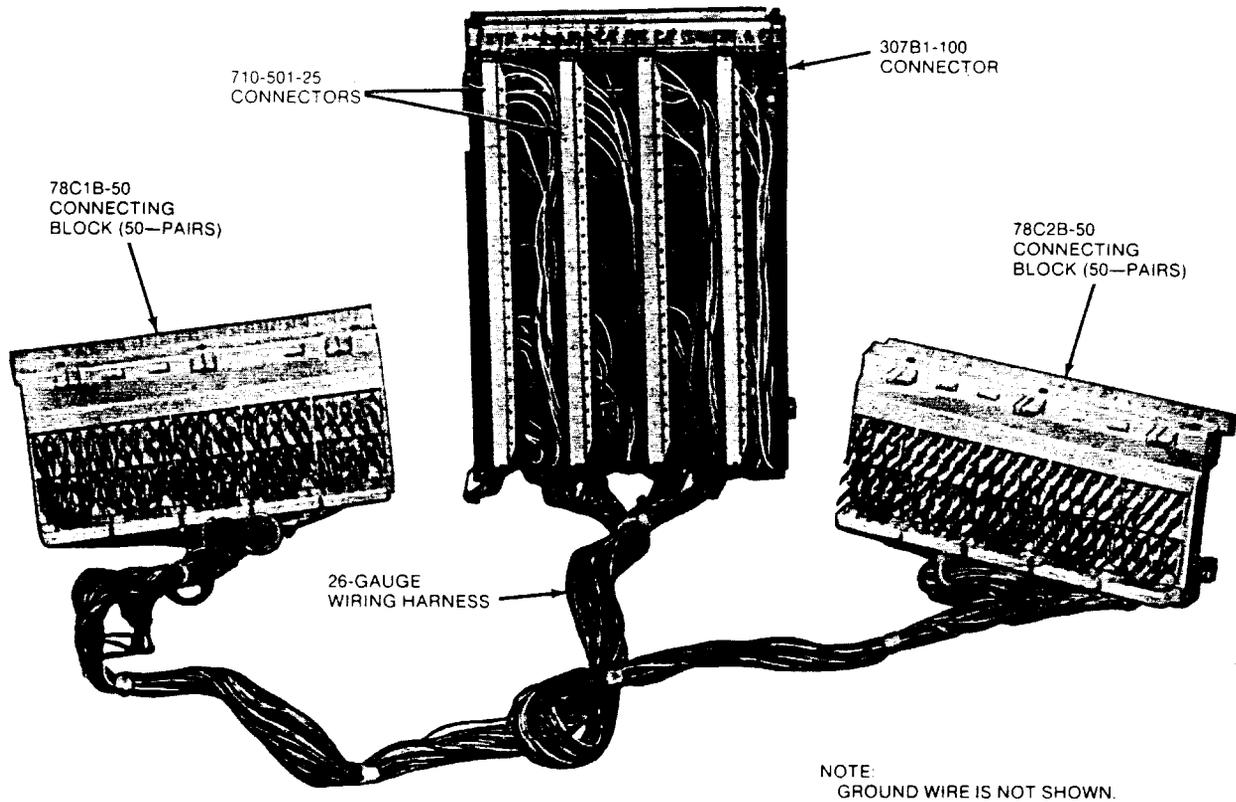
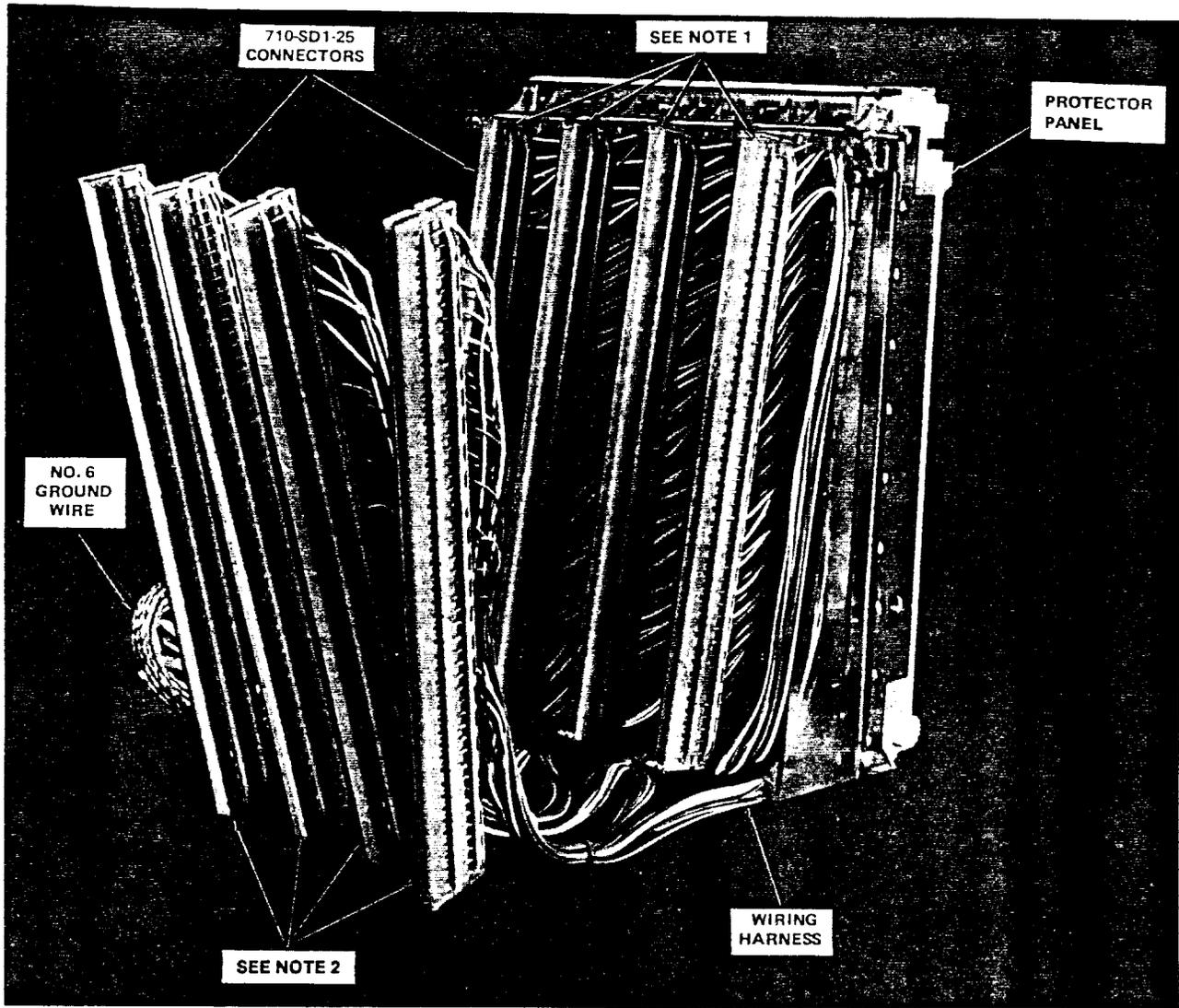


Figure 4. 307B1-100 Connector — Back View

307C1-100 Connector

2.04 The 307C1-100 connector (Figure 5) is used for protection and test access for T-carrier systems. The connector has a protector panel, but is not interconnected to any connecting block. It consists of eight 710-SD1-25 splicing module connectors. Four of the connectors are provided to allow connection to the T-carrier office repeater bay. The other four connectors provide connection to two 50-pair or one 100-pair tip cable. The connectors provide rapid connection to 11-type cable stubs equipped with mating 710 bridge modules. The 307C1-100 is mounted on shelves 1 and 2 on the combined distributing frame, block position 1 only. For subscriber main distributing frames or trunk main distributing frames on the *COSMIC* II, IIA, and Mini frame, the 307C1-100 connector can mount on shelves 1 and 11 of the facility modules and in the vacant connector positions or as needed on other shelves.



NOTES:

1. CONNECTS TO ONE 11CA (22 GAUGE) OR ONE 11DA (24 GAUGE) 100 PAIR CONNECTORIZED STUB CABLE FROM THE CABLE ENTRANCE FACILITY OR TWO 11CB (22 GAUGE ONLY) 50 PAIR CONNECTORIZED STUB CABLES FROM THE CABLE ENTRANCE FACILITY
2. CONNECTS TO FOUR 11EA (25-PAIR 609B CABLE [ABAM]) CONNECTORIZED TIE CABLES TO THE CENTRAL OFFICE REPEATER BAY OR TWO 11EB (50-PAIR 610B CABLE [ABAM]) CONNECTORIZED TIE CABLES TO THE CENTRAL OFFICE REPEATER BAY

Figure 5. 307C1-100 Connector — Back View

307C2-100 Connector

2.05 The 307C2-100 connector (Figure 6) is intended for use in the AT-9049 type protector and cable enclosures used in **SLC** 96 carrier remote terminal applications. It is similar to the 307C1-100 connector except for the gauge size of the conductors. As with the 307C1-100 connector, the 307C2-100 connector is arranged with two sets of splice 710-SD1-25 connectors. One set of four connectors (J1 through J4) is attached to a 30-inch (76.2 cm) long, 22-gauge (0.6 mm) wire harness and serves as an interface to the outside plant cable. The other set of four connectors (J5 through J8) is terminated with 26-gauge (0.4 mm) conductors and used for connecting to intermediate derived and digital cables.

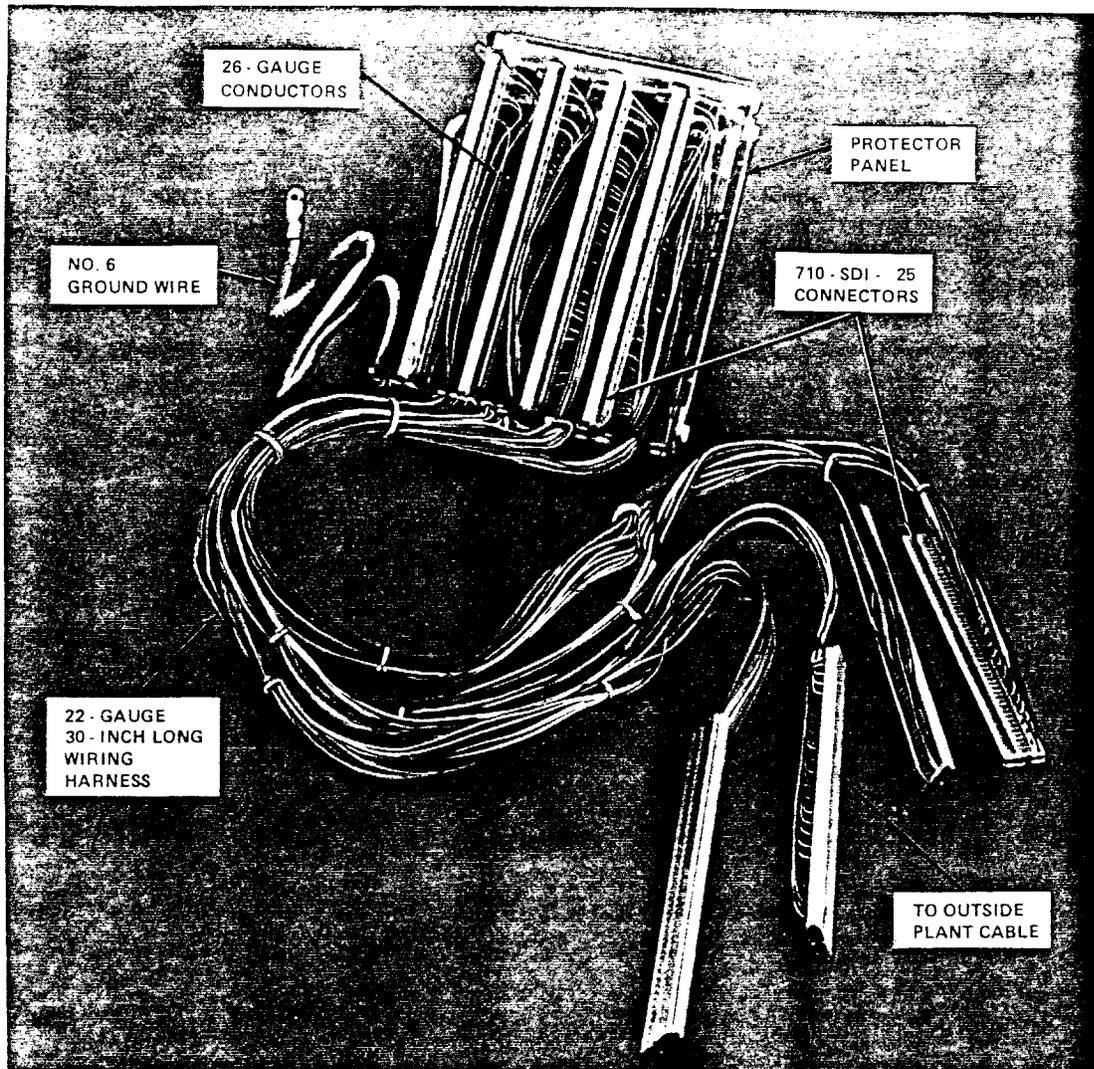


Figure 6. 307C2-100 Connector

307C3-100 Connector

2.06 The 307C3-100 connector (Figure 7) has a protector panel with connectorized harnesses to be used in 80-type cabinets for the T1 transmit and receive pairs, and the miscellaneous pairs for the **SLC** Series 5 Carrier System remote terminal. Pairs 1 through 20 are for the transmit pairs, pairs 51 through 58 are for the miscellaneous pairs, and pairs 81 through 100 are for the receive pairs. Shielded 5-pair cable is used for pairs 1 through 20 and pairs 81 through 100, and 8-pair cable is used for pairs 51 through 58. Each of the 5-pair cables in the harness for the equipment side is connectorized into individual 710-BB1-25 connectors, as is the 8-pair cable. On the outside plant side of the harness, two 5-pair cables are connectorized onto each 710-SC1-25 connector, such that pairs 1 through 10, pairs 11 through 20, pairs 81 through 90, and pairs 91 through 100 are on separate connectors. Pairs 51 through 58 of the outside plant side of the harness are left raw ended. The lengths of the cables making up the harness are such that the cables can be routed through the cabinet to the appropriate position.

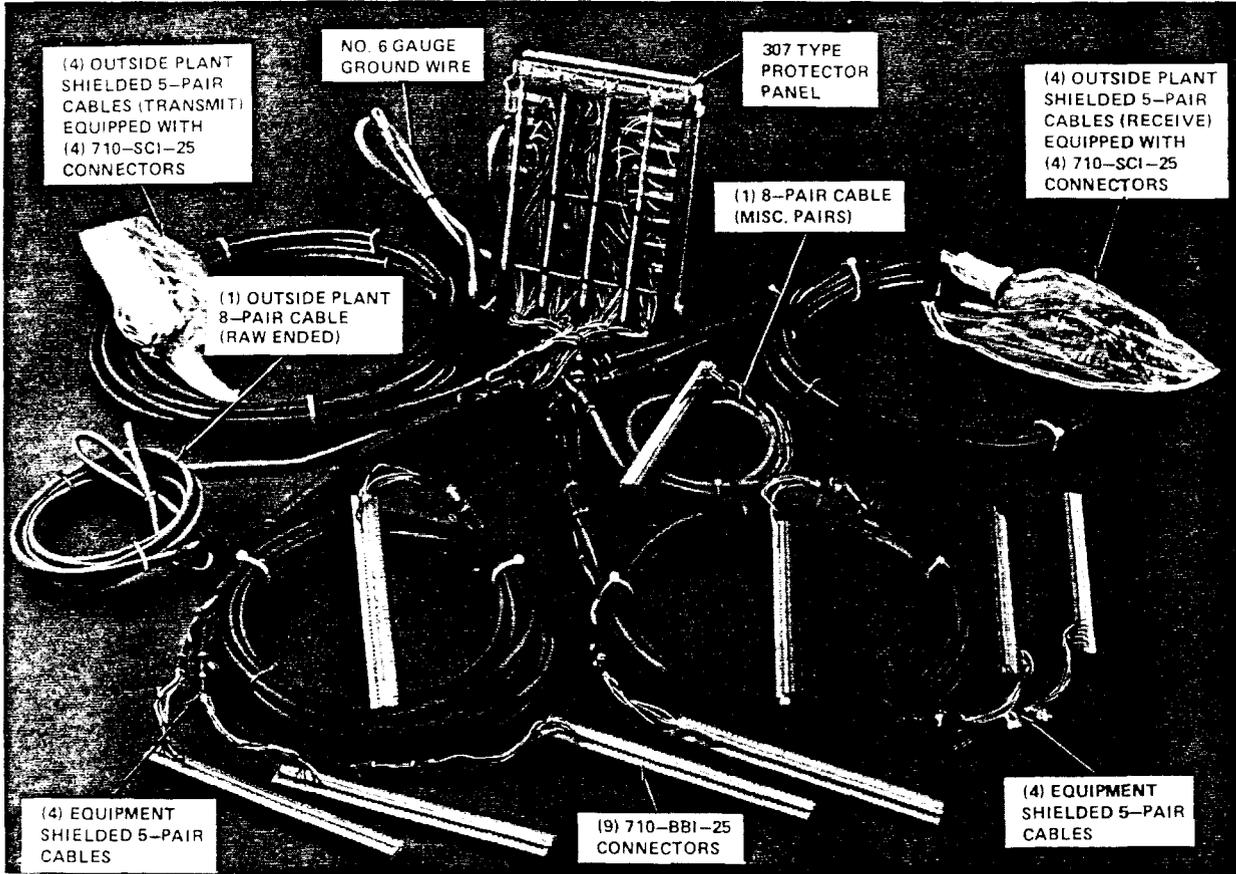


Figure 7. 307C3-100 Connector

307C4-100 Connector

2.07 The 307C4-100 connector has a protector panel with connectorized harnesses to be used in 80-type cabinets for the derived cable pairs for the **SLC** Series 5 Carrier System remote terminal. The harness for the equipment side is made from four 25-pair cables 5 feet 10 inches (1.8 m) long, which are connectorized into 710-BB1-25 connectors, and is routed through the cabinet to the channel bank splice area for either position 1 or position 3. The harness for the outside plant side is made of four 25-pair cables 8 feet long, (2.4 m) which are connectorized into 710-SC1-25 connectors, and is routed through the cabinet to the outside plant cable splice area. The 307C4-100 connector is identical to the 307C5-100 connector except for harness lengths.

307C5-100 Connector

2.08 The 307C5-100 connector (Figure 8) has a protector panel with connectorized harnesses to be used in 80-type cabinets for the derived cable pairs for the **SLC** Series 5 Carrier System remote terminal. The harness for the equipment side is made from four 25-pair cables 4 feet (1.2 m) long, which are connectorized into 710-BB1-25 connectors, and is routed through the cabinet to the channel bank splice area for either position 2 or position 4. The harness for the outside plant side is made from four 25-pair cables 10 feet (3.1 m) long, which are connectorized into 710-SC1-25 connectors, and is routed through the cabinet to the outside plant cable splice area.

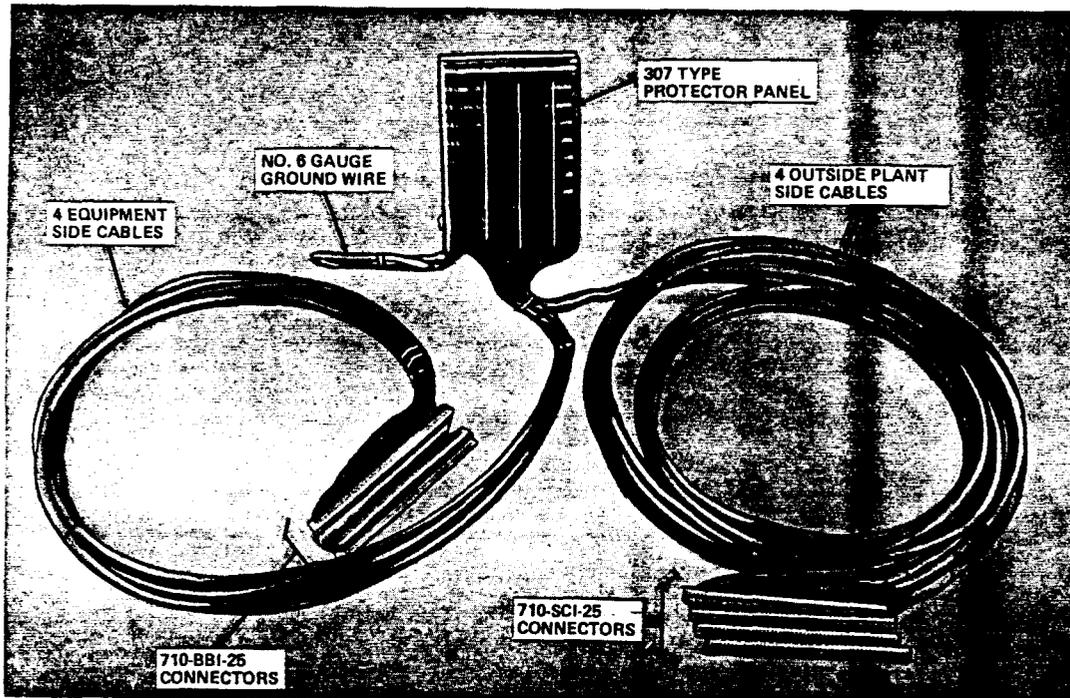


Figure 8. 307C5-100 Connector

307C6-100 Connector

2.09 The 307C6-100 connector has a protector panel with connectorized harnesses to be used in 51A-type cabinets for the derived cable pairs for the **SLC** Series 5 Carrier System remote terminal. The harness for the equipment side is made from four 25-pair cables, which are connectorized into 710-BB1-25 connectors, and is routed through the cabinet to the channel bank splice area. The harness for the outside plant side is made from four 25-pair cables, which are connectorized into 710-BB1-25 connectors, and is routed through the cabinet to the channel bank splice area. The harness for the outside plant side is made from four 25-pair cables, which are

connectorized into 710-SC1-25 connectors, and is routed through the cabinet to the outside plant cable splice area. The 307C6-100 connector is the same as the 307C5-100 except the 25-pair cables are shorter in length and the associated 710-type connectors are oriented differently.

307C7-100 Connector

2.10 The 307C7-100 connector has a protector panel with connectorized harnesses to be used in 51A-type cabinets for the T1 transmit and receive pairs, and the miscellaneous pairs for the *SLC* Series 5 Carrier System remote terminal. The 307C7-100 connector is similar to the 307C3-100 connector except the 307C7-100 connector has eight 5-pair cables, two 8-pair cables, three 710-SC1-25 connectors, and eight 710-BB1-25 connectors.

307D1-100 Connectors

2.11 The 307D1-100 connector (Figures 9 and 10) has a protector panel interconnected to one 100-pair 112C1B-100 connecting block. The block is stenciled and used on the *COSMIC* II and IIA frames.

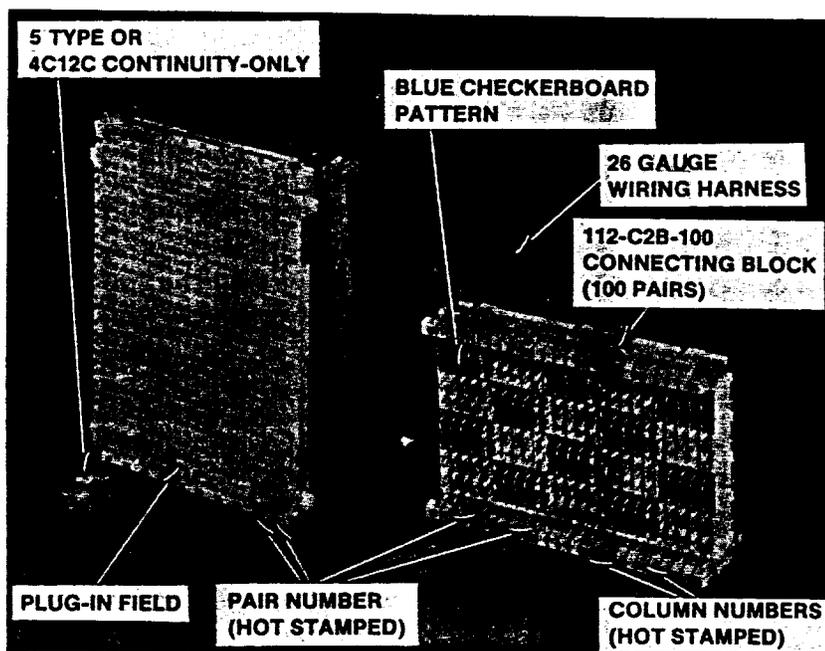


Figure 9. 307D1-100 Connector — Front View

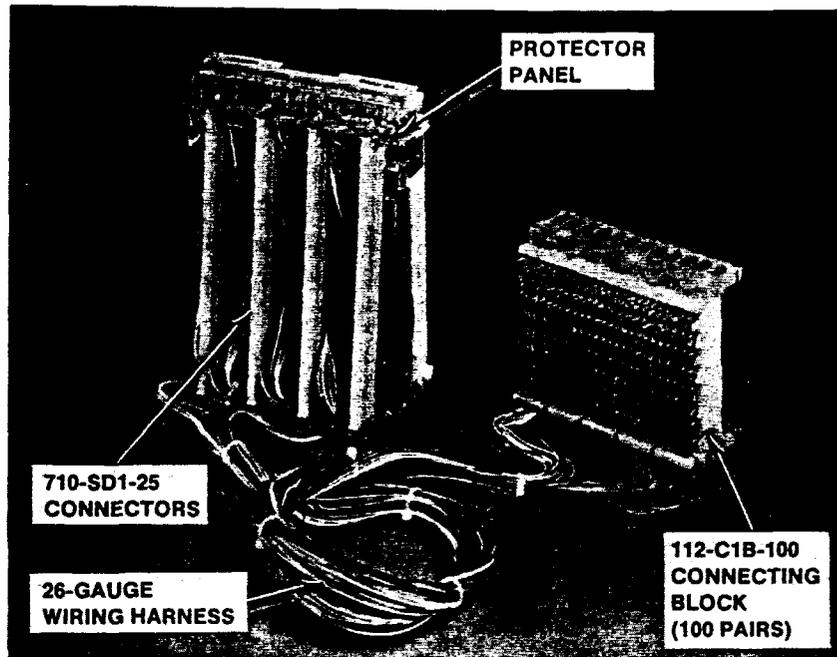


Figure 10. 307D1-100 Connector — Back View

307D1B-100 Connector

2.12 The 307D1B-100 connector has a protector panel interconnected to one 100-pair 112C1BB-100 connecting block. The 307D1B-100 connector is the same as 307D1-100 except the connecting block is equipped with bifurcated wire-wrap terminals. The connector is used on the *COSMIC* II and IIA frames.

307D1S-100 Connector

2.13 The 307D1S-100 connector has a protector panel interconnected to one 100-pair 112C1BS-100 connecting block. The 307D1S-100 connector is the same as 307D1-100 except the connecting block is equipped with single wire-wrap terminals. The connector is used on *COSMIC* II and IIA frames.

307D2-100 Connector

2.14 The 307D2-100 connector has a protector panel interconnected to one 100-pair 112C1B-100 connecting block. The 307D2-100 connector is similar to the 307D1-100 except the connecting block is connected to the panel with four 25 twisted-conductor pair cables. The 307D2-100 connector is used on the *COSMIC* II, IIA, and Mini frames.

307D2B-100 Connector

2.15 The 307D2B-100 connector has a protector panel interconnected to one 100-pair 112C1BB-100 connecting block. The 307D2B-100 connector is similar to the 307D2-100 connector except the connecting block has single wire-wrap terminals and is connected to the panel with four, 25 twisted-conductor pair cables. The 307D2B-100 connector is used on the **COSMIC** II, IIA, and Mini frames.

307D2S-100 Connector

2.16 The 307D2S-100 connector has a protector panel interconnected to one 100-pair 112C1BS-100 connecting block. The 307D2S-100 connector is similar to the 307D2B-100 except the connecting block has single wire wrap terminals and is connected to the panel with four, 25 twisted-conductor pair, cables. The 307D2S-100 connector is used on the **COSMIC** II, IIA, and Mini frames.

307E1-100 Connector

2.17 The 307E1-100 connector (Figures 11 and 12) has a protector panel interconnected to one 50-pair 112C1B-50 connecting block and to one 50-pair 112C2B-50 connecting block. The blocks are stenciled and used on shelves 1 and 11 of the **COSMIC** II and IIA frames.

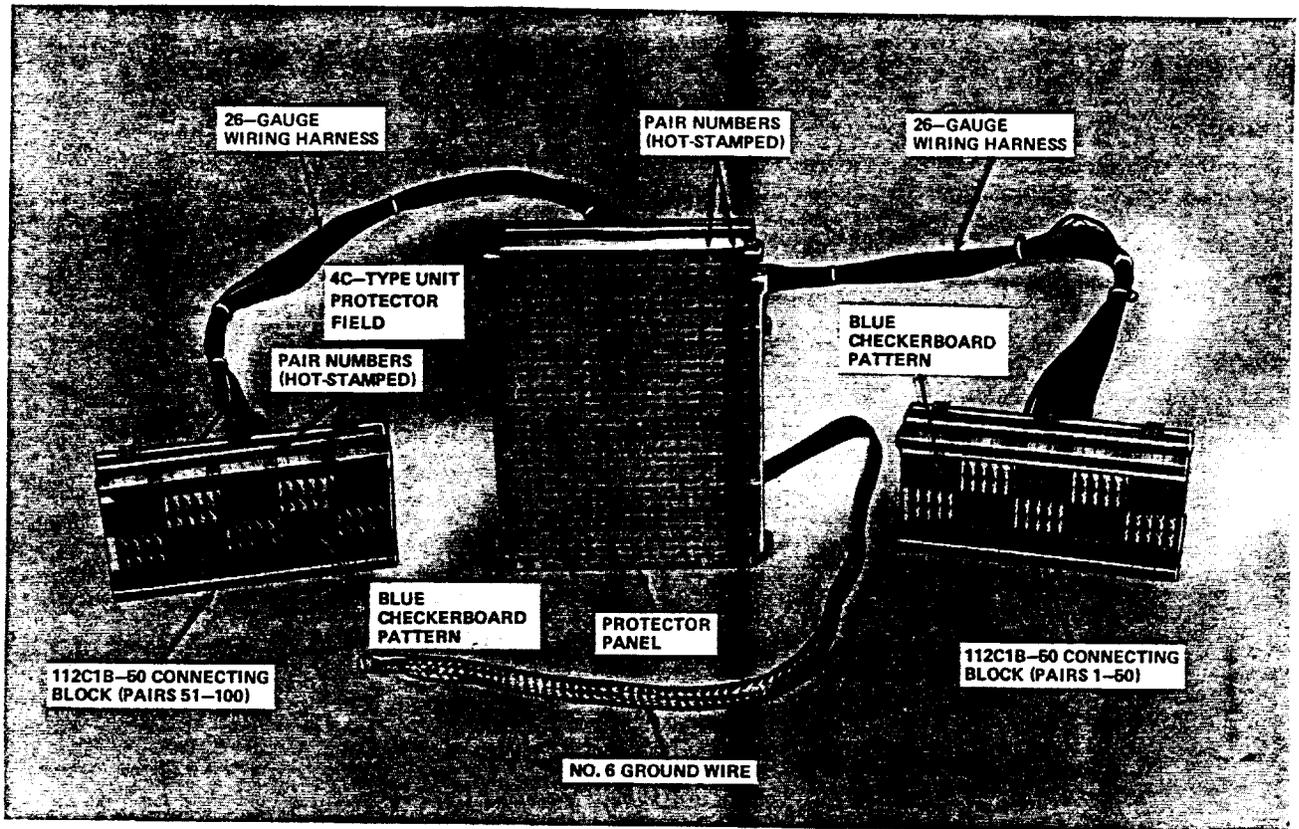


Figure 11. 307E1-100 Connector — Front View

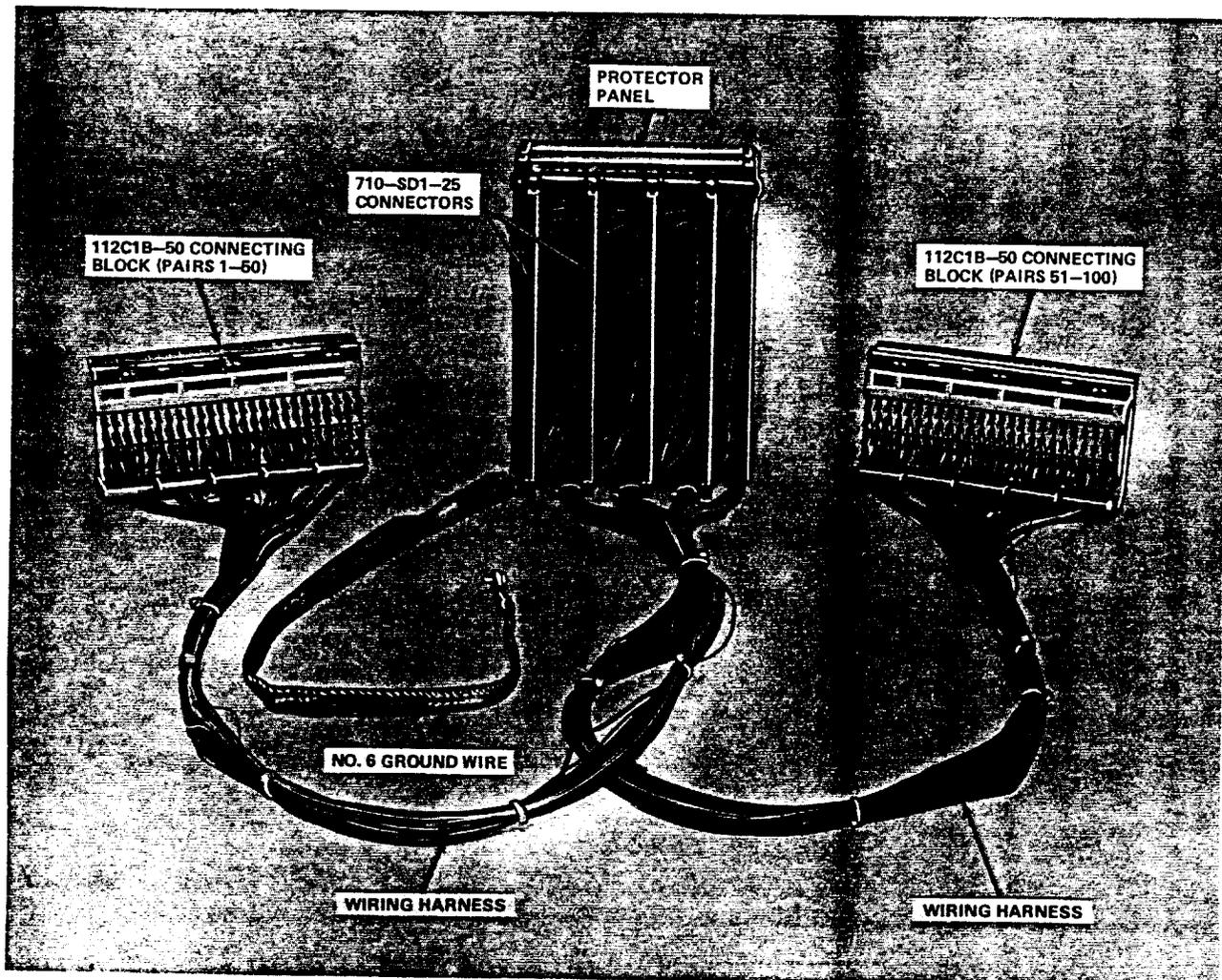


Figure 12. 307E1-100 Connector — Back View

307E1B-100 Connector

2.18 The 307E1B-100 connector has a protector panel interconnected to one 50-pair 112C1BB-50 connecting block and one 50-pair 112C2BB-50 connecting block. The 307E1B-100 connector is equipped with bifurcated wire-wrap terminals on the connecting blocks. The 307E1B-100 connector is used on the *COSMIC* II and IIA frames.

307E1S-100 Connector

2.19 The 307E1S-100 connector has a protector panel interconnected to one 50-pair 112C1BS-50 connecting block and one 50-pair 112C1BS-50 connecting block. The 307E1S-100 connector is equipped with single wire-wrap terminals on the connecting blocks. The 307E1S-100 connector is used on the **COSMIC II** and IIA frames.

307F1-100 Connector

2.20 The 307F1-100 connector has a protector panel interconnected to one 100-pair 112H1B-100 "high density" connecting block. The connector mounts on shelves 2 through 10 of the **COSMIC II** and IIA frames. These high density connecting blocks provide shelf space for two additional 112H1B-100 connecting blocks per shelf.

307G1-100 Connector

2.21 The 307G1-100 connector has a protector panel interconnected to one 50-pair 112H1B-50 connecting block and one 50-pair 112H2B-50 connecting block. These high density connecting blocks increase the termination capacity of each shelf by 100 pairs. The 307G1-100 connector mounts on shelves 1 and 11 of the **COSMIC II** and IIA frames.

307H1S-100 Connector

2.22 The 307H1S-100 connector has a protector panel interconnected to one 100-pair 112H1BS-100 connecting block. The 307H1S-100 connector is similar to the 307F1-100 except the connecting block has single wire wrap terminals and is connected to the panel with four, 25 twisted-conductor pair, cables. The 307H1S-100 connector is used on **COSMIC II** and IIA frames.

3. Connecting Blocks

78C-Type Connecting Blocks

3.01 The 78C-type connecting blocks (Figures 1, 2, 3, and 4), used as part of the 307A1-100 and 307B1-100 connectors, have 50- or 100-pair termination capacities. The blocks are made of molded plastic and have bifurcated, insulation slicing-type, quick clip terminals for cross-connections on the front plane of the block. Solderless wire-wrap terminals are used for hard-wired cable terminations on the rear. The front face of the block body contains a red and white checkerboard pattern separating five loop cable pairs. This pattern also delineates rows of paired (tip and ring) terminals. The rear face of the block has a plastic grid pattern that groups the terminals

in the same manner as the front pattern. Cross-connect wires are inserted into slotted plastic fanning strips provided on the top and bottom of the block.

3.02 Terminal identification on the 78C-type connecting blocks is provided by factory-stamped characters on the front face and upper and lower facets of the fanning strip. Two identification schemes are used.

- (1) Row and Column designations for computer assignment systems appear on the front face of the fanning strip and indicates the terminal field column number. This scheme provides coordinate information to facilitate terminal location during jumper running. Cross-connect wire assignments usually contain information on outside plant cable pairs, line equipment, and tie pairs, referenced to Row and Terminal (Column).
- (2) Specific cable pair or equipment designations are duplicated on both the upper and lower facets of the fanning strip so that the information can be seen when viewing the block from either above or below.

3.03 Since the outside plant blocks are factory-wired to the 307-type connector assembly, no wiring of these connecting blocks is necessary at the frame.

Both the outside plant connecting block and the protector panel are designed to snap in the framework for mounting.

112-Type Connecting Blocks

3.04 The 112-type connecting blocks (Figures 9 through 12) have 50- or 100-pair termination capabilities. The 112-type connecting blocks differ from the 78C-type connecting blocks as follows:

- The 112-type connecting blocks have bifurcated wire wrap, bifurcated quick clip, and single wire-wrap terminals and the 78C-type connecting blocks have only bifurcated quick clip terminals.
- On the face of the 112C-type block body, a blue and white checkerboard pattern designates loop cable or switching equipment increments (for example, horizontal groups, switches, etc.). The 78C-type blocks have a red and white checkerboard pattern.

3.05 The 78C- and 112-type connectors are described in AT&T 201-222-105.

4. 11-Type Connectorized Stub Cables

4.01 Stub cables (Figure 13) are used with 307-type connectors and to interconnect to outside plant cables, and must be ordered separately. Table B is a guide for selecting stub cable gauges.

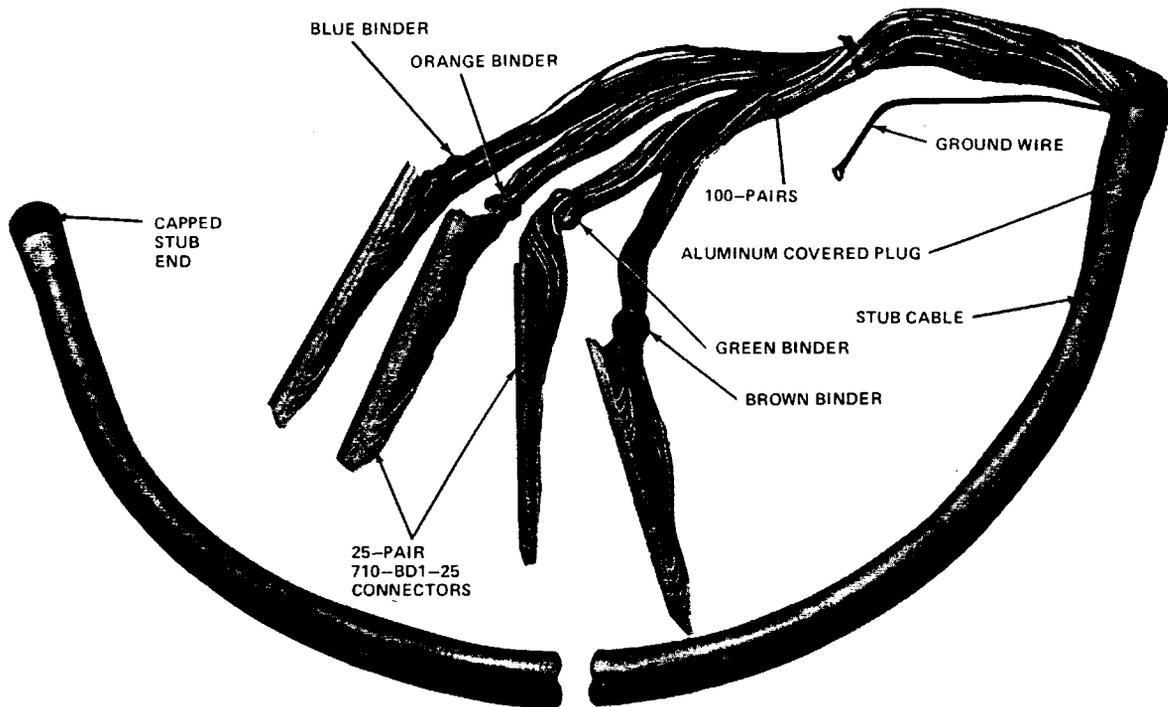


Figure 13. 11-Type Connectorized Stub Cable

Table B. Stub Cable Gauge Selection Guide

Entrance Cable Gauge	Connector Stub Cable
26 Exposed or unexposed (0.4 mm)	22 or 24
24 Exposed or unexposed (0.5 mm)	22
22 Exposed (0.6 mm)	22*
19 Exposed (0.9 mm)	22*
22 Unexposed (0.6 mm)	22
19 Unexposed (0.9 mm)	22

* Provide a length of 24- or 26-gauge (0.5 mm or 0.4 mm) protective fusing cable.

4.02 These stubs are 22- or 24-gauge (0.6 mm or 0.5 mm) copper conductors and are insulated with color-coded polyvinyl chloride (PVC). One end of the stub is terminated with 25-pair 710-BD1-25 bridging modules. The core has a mylar tape wrap, a corrugated aluminum shield, an outer PVC sheath, and an aluminum-covered moisture plug at the connectorized end of the stub cable.

4.03 Both the 22- and 24-gauge (0.6 mm or 0.5 mm) stub cables have a nonflammable light olive-gray sheath. The 22-gauge (0.6 mm) stub cable can be identified by a red binder around the core wrapper; the 24-gauge (0.5 mm) cable has a white binder. The stub cable applications, codes, and specifications are given in Table C.

Table C. 11-Type Connectorized Stub Cables

Application	Used with Connector	Stub Cable			Equipped with Bridge Module	Item Code	Comcode
		Wire Gauge	Length (Feet)	Cabling Pairs			
Tip Cable (The 11CA and 11DA cables are generally spliced to feeder/riser cables.)	307A1, B1 D1, D2, and E1. Also 309G1-200	22 (0.6 mm)	40 (12.2 m)	100	Four 25-Pair 710BD1-25	11CA-40	103271334
			60 (18.3 m)			11CA-60	103271342
			80 (24.4 m)			11CA-80	103226486
			100 (30.5 m)			11CA-100	103226494
			120 (36.6 m)			11CA-120	103271359
			150 (45.7 m)			11CA-150	103226502
			200 (61 m)			11CA-200	103226510
			24 (0.5 mm)			40 (12.2 m)	11DA-40
		60 (18.3 m)		11DA-60		103271375	
		80 (24.4 m)		11DA-80		103226551	
		100 (30.5 m)		11DA-100		103226569	
		120 (36.6 m)		11DA-120		103271383	
		150 (45.7 m)		11DA-150		103226577	
		200 (61 m)		11DA-200		103226528	

* Each 307C1-100 requires two 50-pair 11CB stub cables.

Table C. 11-Type Connectorized Stub Cables (Contd)

Application	Used with Connector	Stub Cable			Equipped with Bridge Module	Item Code	Comcode
		Wire Gauge	Length (Feet)	Cabling Pairs			
T-Carrier Facility Cables (Split 50-Pair Transmit and Receive Counts)	307C1-100	22 (0.6 mm)	40 (12.2 m)	50*	Two 25-Pair 710BD1-25	11CB-40	103681474
			60 (18.3 m)			11CB-60	103681482
			80 (24.4 m)			11CB-80	103681490
			100 (30.5 m)			11CB-100	103681508
			120 (36.6 m)			11CB-120	103681516
			150 (45.7 m)			11CB-150	103681524
			200 (61 m)			11CB-200	103681532
			T-Carrier Office Repeater Bay			307C1-100	22 (0.6 mm)
60 (18.3 m)	11EA-60	103318598					
80 (24.4 m)	11EA-80	103318606					
100 (30.5 m)	11EA-100	103318549					
120 (36.6 m)	11EA-120	103318556					
150 (45.7 m)	11EA-150	103318564					
200 (61 m)	11EA-200	103318572					
40 (12.2 m)				11EB-40	103681540		
60 (18.3 m)				11EB-60	103681557		

Table C. 11-Type Connectorized Stub Cables (Contd)

Application	Used with Connector	Stub Cable			Equipped with Bridge Module	Item Code	Comcode
		Wire Gauge	Length (Feet)	Cabling Pairs			
			80 (24.4 m)	50‡	Two 25-Pair 710BD1-25	11EB-80	103681565
			100 (30.5 m)			11EB-100	103681573
			120 (36.6 m)			11EB-120	103681581
			150 (45.7 m)			11EB-150	103681599
			200 (61 m)			11EB-200	103681607

Note: Different lengths or gauge of stub cable can be provided on a special order basis, such as 26-gauge (0.4 mm) 300-foot (91.4 mm) stub cable.

† Each 307C1-100 requires four 11EA stub cables.

‡ Each 307C1-100 requires two 11EB stub cables.

5. Installation

Precautions

- 5.01 Store the 307-type connectors in a dry location. Do not leave these units on loading docks or in locations exposed to the weather.
- 5.02 When unpacking the connector, open the carton on the side marked "OPEN FROM THIS SIDE."
- 5.03 Do not remove the packing material from the connector until it is ready for installation.

Installing 307-Type Connectors

- 5.04 The 307-type connectors are installed on the **COSMIC** II and IIA main distributing frames, **COSMIC** II Mini combined distributing frames, and **SLC** carrier remote terminals. Table A shows the frame or cabinet applications and the shelf for each connector.
- 5.05 Installation information for the various types of 307-type connectors is provided in the AT&T installer handbook and ED6C114-10 **COSMIC** Systems Framework Cabling and ED6C114-11 **COSMIC** Systems Cable Routing and Installation.

6. 307-Type Connectors (UL Listed)

6.01 The 307-type UL Listed connectors are available with the standard 112-type blocks (also UL Listed) (3-beam terminals) having bifurcated quick-clips (Figure 14). All the exposed loose wires from the stub cable are encased in a metal casing (Figure 15). The twisted-pair harness between the protector panel and the 112-type block is also provided with fire retardant PVC jacket.

6.02 These 307-type connectors come with 26-gauge (0.4 mm) shielded stub cable of different lengths. Table D lists the various codes of the 307-type UL Listed connectors and associated connecting blocks.

Table D. 307-Type UL Connector Codes

Application	Shelf	Equipped with Connecting Block	Term. Type	Cable		Description	Comcode
				Length (Feet)	Gauge		
COSMIC II, IIA, MINI	2-10	112C1B-100	BQC	30 (9.1 m)	26 (0.4 mm)	307LD2-100-30	106060387
		"		50 (15.2 m)	26 (0.4 mm)	307LD2-100-50	106287089
		"		100 (30.5 m)	26 (0.4 mm)	307LD2-100-100	106287121

6.03 The 307-type connectors, with the protector units, provide features for voltage protection, test access, identification of special circuits, and the disconnection of the outside plant cable pairs from the office equipment. Only UL listed 5-pin plug-in units should be used with these connectors.

6.04 The 307LD2-100 connector has a protector panel interconnected to one 100-pair 112C1B-100 connecting block. The block is stenciled and is listed to be used on the **COSMIC II**, IIA, and Mini Frames (Figure 14). The connecting block is connected with four 25-pair, 24-gauge (0.5 mm) jacketed cables. The outside plant stub cable 26-gauge (0.4 mm) is directly wire-wrapped to the backplane of the protector panel and comes in 30-foot (9.1 m), 50-foot (15.2 m), and 100-foot (30.5 m) lengths (See Table D). All the exposed loose wires are enclosed in a metal casing (Figure 15).

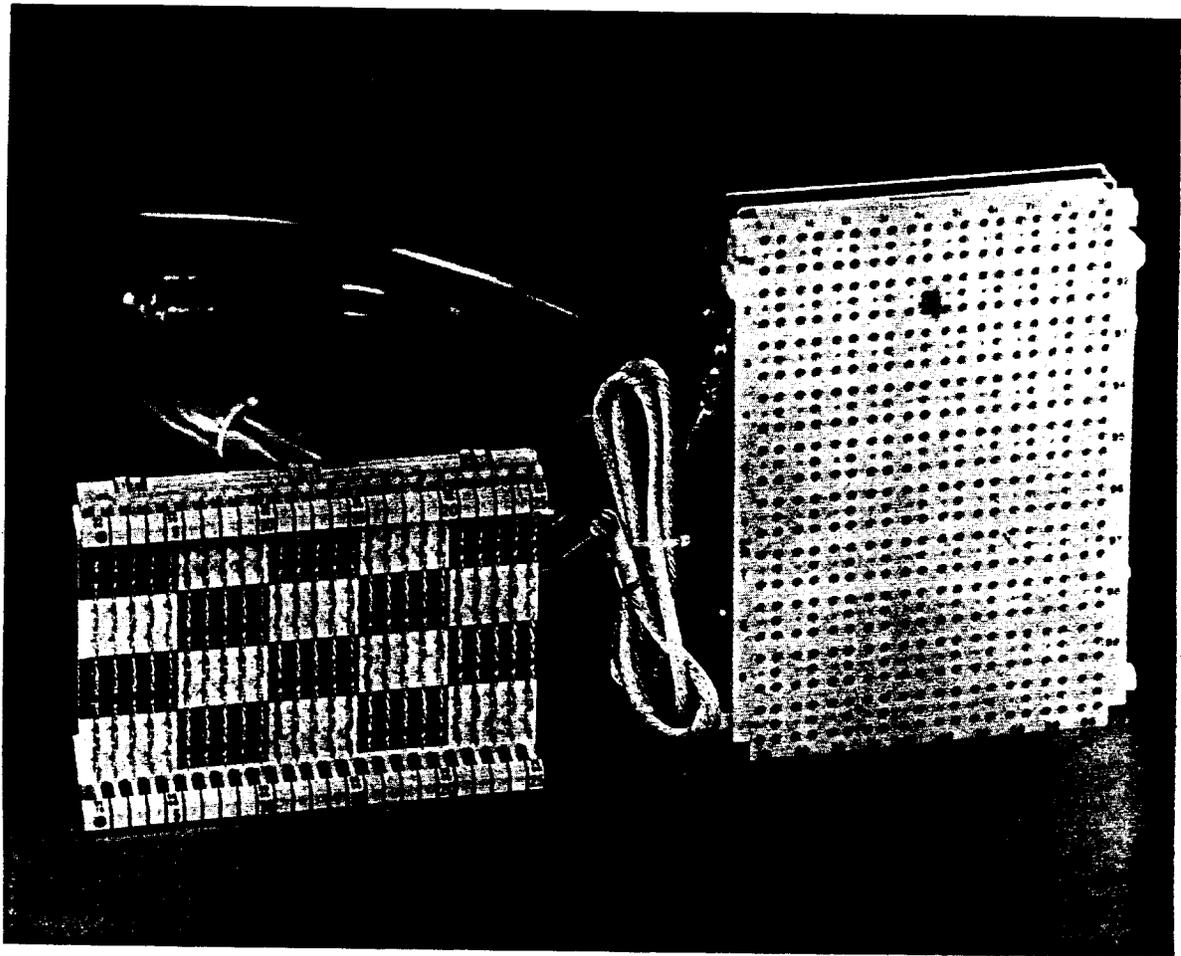


Figure 14. 307LD2-100 Connector — Front View

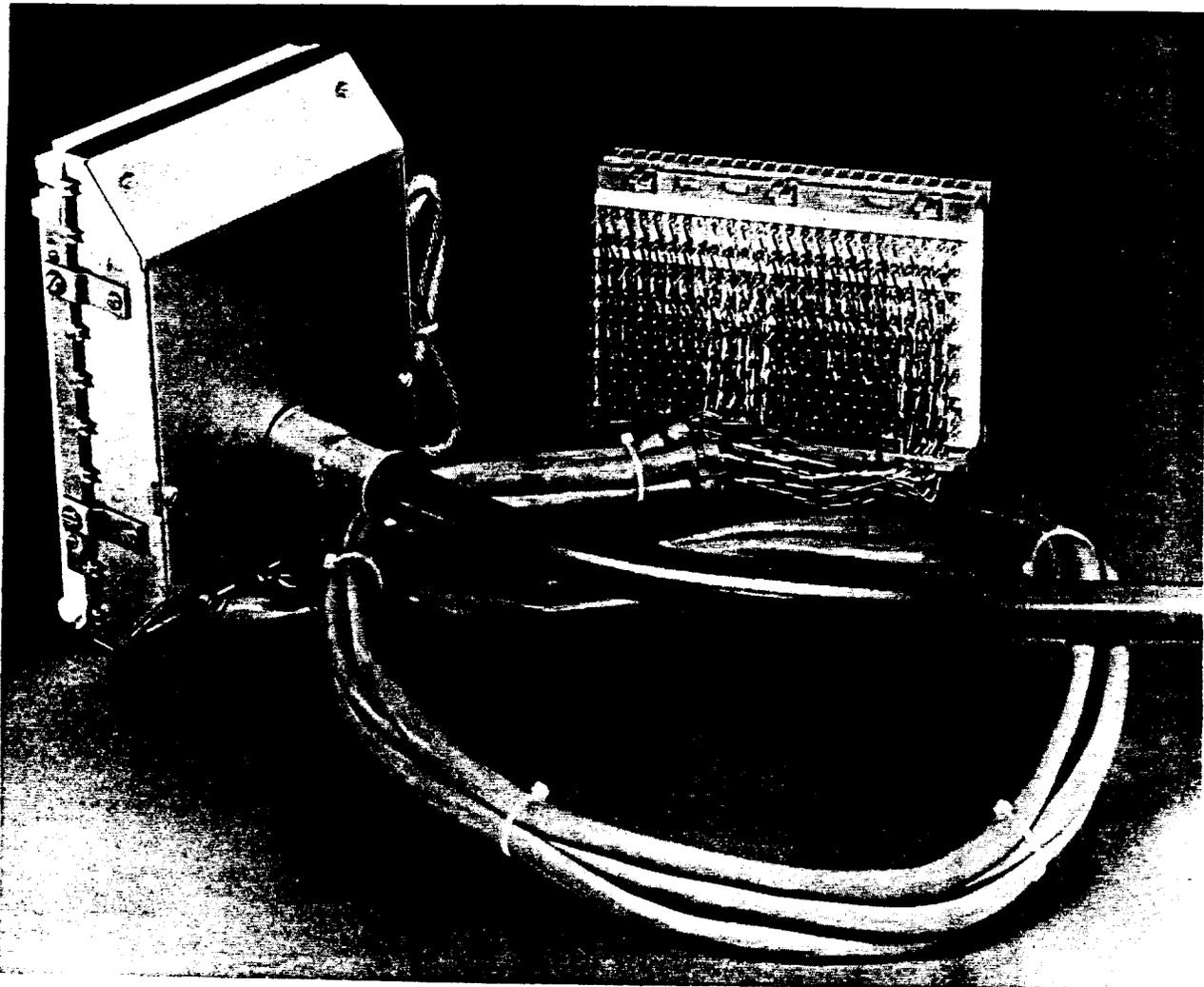


Figure 15. 307LD2-100 Connector Casing — Rear View

7. Installation

7.01 This practice should be used along with the installation information for the standard 307-type connectors provided with AT&T Installation Handbook and ED6C114-10 (*COSMIC* Systems Framework Cabling) and ED6C114-11 (*COSMIC* Systems Cabling Routing and Installation).

7.02 The UL connector shown in Figure 14 comes with the stub cable of 30-foot (9.1 m), 50-foot (15.2 m), and 100-foot (30.5 m) lengths. The following procedure is to be followed for installing the UL Listed connector:

- **COSMIC II and COSMIC IIA Installation**

The factory-equipped fixed stub on the UL Listed 307-type connectors require a unique method of cabling. Two persons may be required to perform this operation; one supporting the protector panel and associated connecting block at the rear of the framework, and a second pulling and routing the loose end of the stub through the frame shelf and into the cabling trough (Figure 16).

- After routing the cable, sufficient slack should be provided to permit opening and removal of the 307 assembly for maintenance. The stub cable may now be secured, and the corresponding connecting block passed through the shelf and snapped in place on the front side of the frame (Figure 17).

- The braided ground lead from the protector panel may now be secured to the hole provided in the shelf directly behind the protector panel (Figure 18). Place the pivot pins located the bottom of the panel into the appropriate vertical hinge brackets (Figure 19), and raise the unit up and into the closed position (Figure 20). The addition of the appropriate plug-in units completes the installation.

- **COSMIC MINI INSTALLATION**

The installation of UL Listed 307-type connectors on the **COSMIC MINI DF** is very similar to the methods used on the **COSMIC II** and **IIA Frames**. However, the Mini can be cabled from either side. When the Mini is mounted against a wall, the work must be performed from the front. In this incident, it is recommended that the corresponding connecting block be mounted prior to the protector panel (Figure 21). With this done, the stub cable can be routed and pulled through the frame as prescribed in the Method of Cabling, BD-6C316-10 (Figure 22). The braided ground lead should be secured to the framework as shown in Figure 23, and the protector panel snapped into place to complete the installation (Figure 24).



Figure 16. Positioning UL Connector Stub Cable

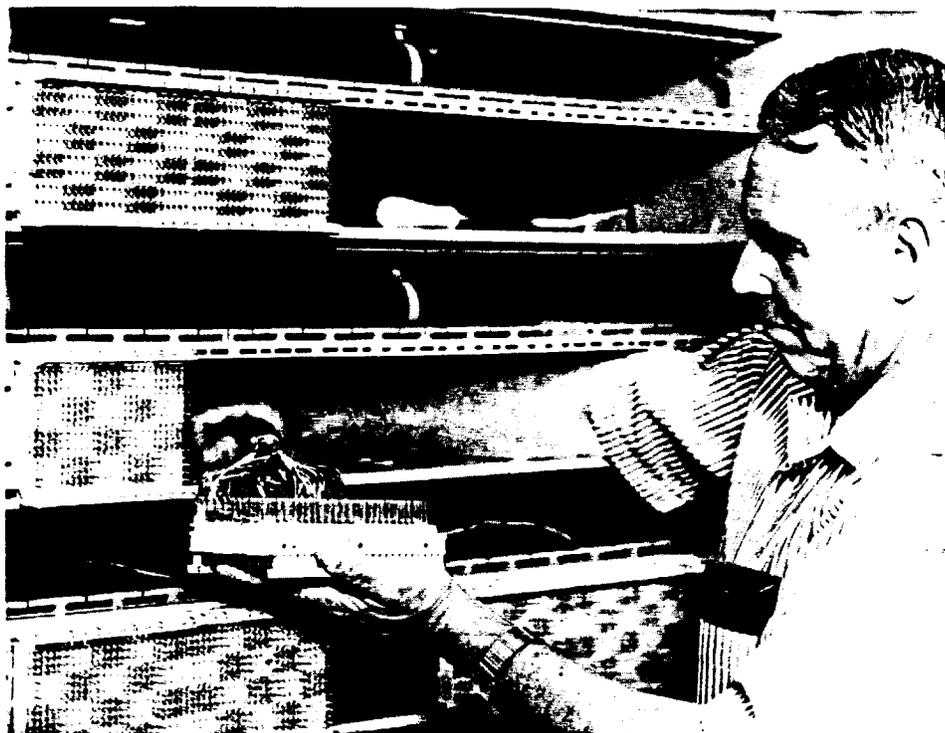


Figure 17. Connecting Block Being Placed in Frame

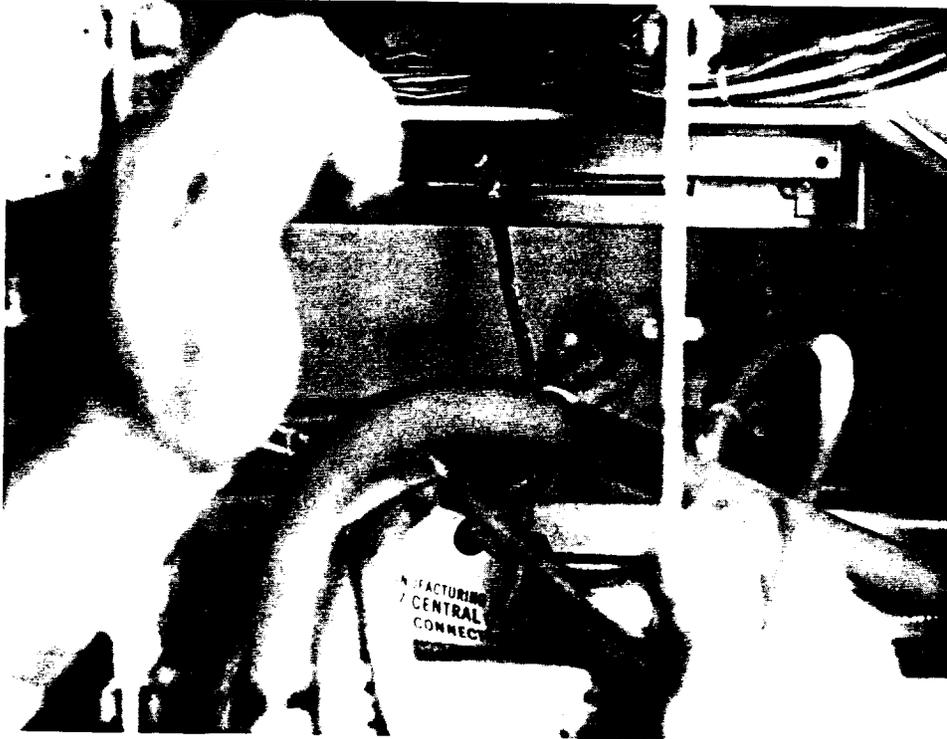


Figure 18. Securing Connector Ground Lead on *COSMIC* IIA Frame (Back View)

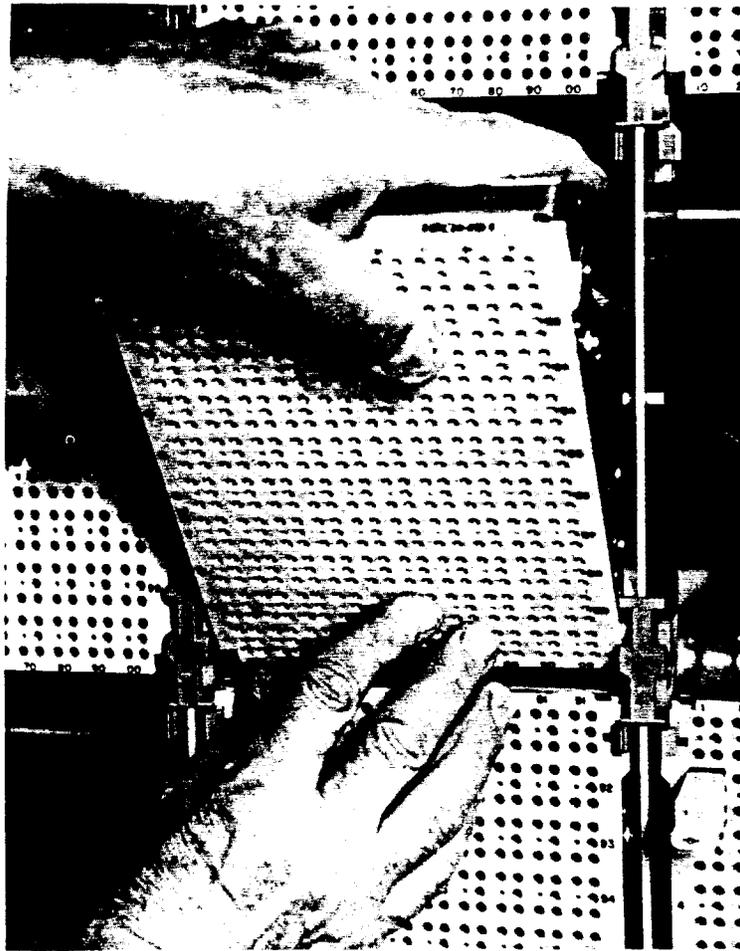


Figure 19. Positioning UL Listed Connector Panel

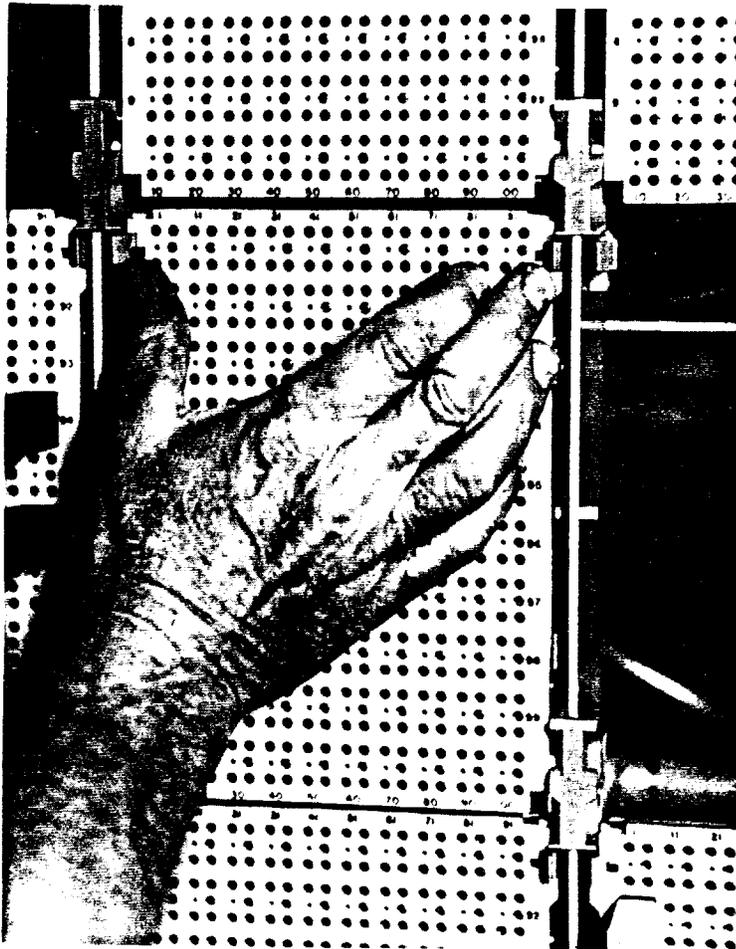


Figure 20. Latching Connector Panel—*COSMIC II*, IIA Frame

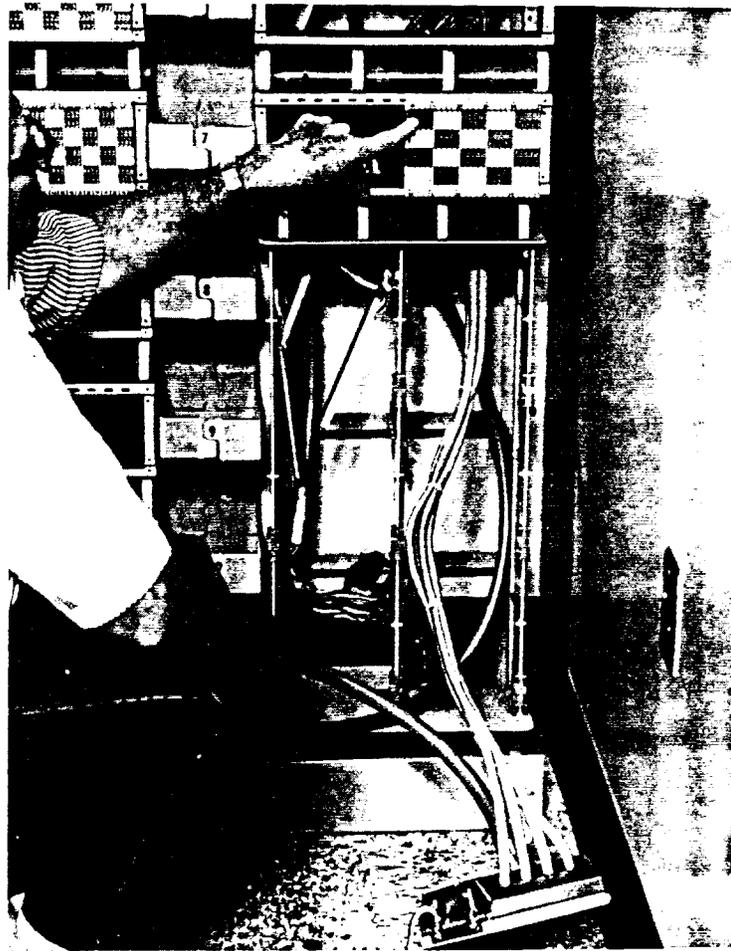


Figure 21. Mounting of 112-Type Block Assembly on Mini *COSMIC* Frame (Front View)



Figure 22. Routing UL Connector Stub Cable on Mini *COSMIC* Frame (Front View)

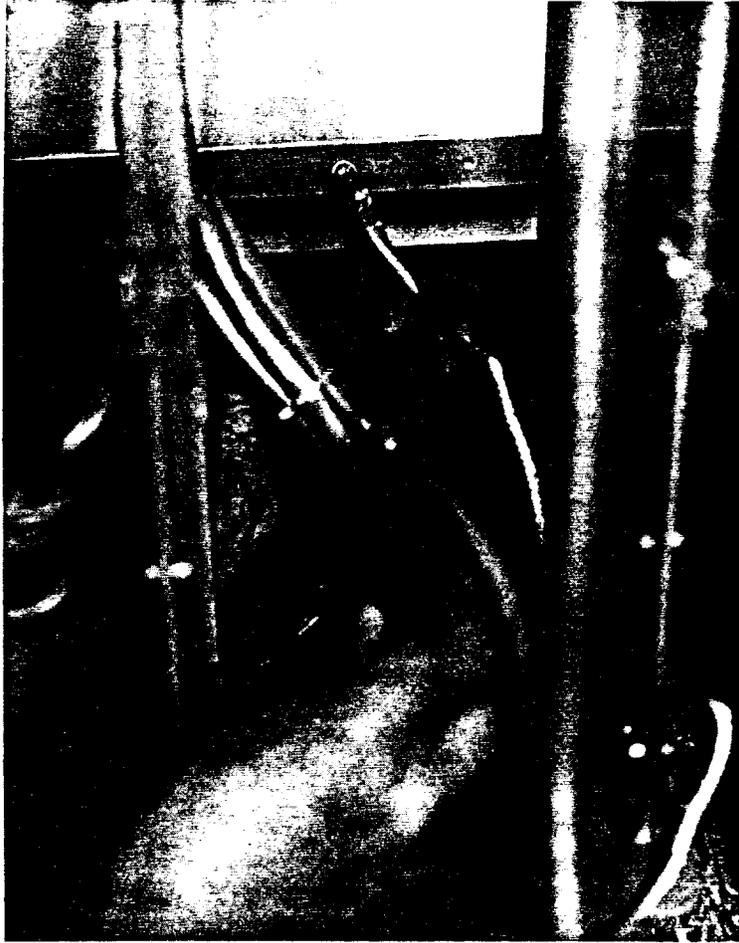


Figure 23. Securing UL Connector Ground Lead on Mini *COSMIC* Frame

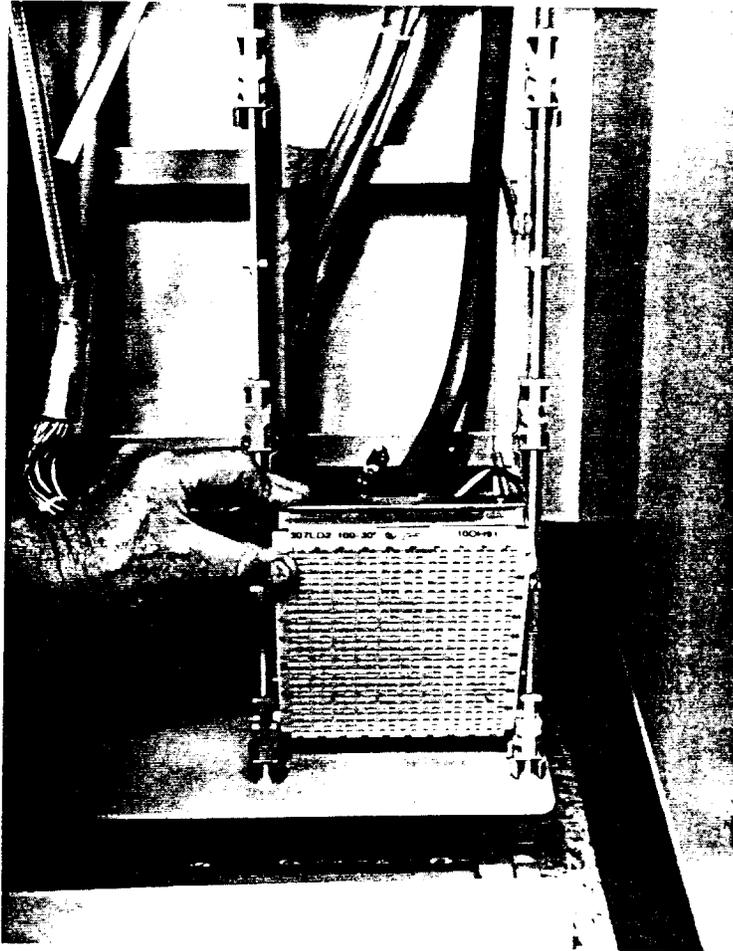


Figure 24. Latching UL Connector Panel on Mini *COSMIC* Frame

8. Repair Procedures

8.01 Before making repairs, technicians should be familiar with the contents of the following practices:

Number	Title
069-132-811	<i>Punches or Wire-Type Terminals (Not Having Notches or Perforations)— Method of Making and Removing Wrapped Connections</i>
069-140-811	<i>Soldered Connections— Using Soldering Coppers—Method of Making and Removing</i>
640-250-237	<i>51A Remote Terminal Cabinet (ED-7C601-30)— Placement —SLC Series 5 Carrier System</i>
640-250-248	<i>Precabled Structures Using Bulk Protection—Remote Terminal Splicing (Metallic)—SLC Series 5 Carrier System</i>
640-252-310	<i>Concrete Hut (ED-7C285- 30)—Splicing (Metallic and Fiber)— Combined SLC 96 and SLC Series 5 Carrier System</i>
640-252-311	<i>C Equipment Platform (ED-97973-31)—Splicing (Metallic and Fiber)— Combined SLC 96 and SLC Series 5 Carrier Systems</i>
640-252-312	<i>80-Type Cabinet— Description, Installation, and Splicing— Combined SLC 96 and SLC Series 5 Carrier Systems</i>

Precautions

8.02 This practice covers only those parts that can be replaced in the field. No attempt should be made to replace parts not designated. **Only** the connector terminals are designated as replaceable parts on the 307-type connector. (AT&T 201-222-301 describes the repair procedures for the connecting blocks.)

8.03 Exercise extreme care when removing and connecting wires or replacing terminals to prevent damage to adjacent connections and to avoid crosses to operating circuits.

8.04 The end of a wire previously used for a solderless wrapped connection or soldered connection shall not be reused for subsequent connections. The end of the wire must be cut off and the insulation removed before reconnecting. 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. (See AT&T 069-132-811.)

Tools

8.05 The following tools are needed to perform the repair procedures.

Code	Description
AT-7424	E Rosin-core solder
AT-7860	B Long-nose pliers
R-4773	Combination skinning tool
Detail 18	(For 26-gauge (0.4 mm) wire—blue dot on blade)
Detail 19	(For 24-gauge (0.5 mm) wire—orange dot on blade)
KS-22271	Connector panel removal tool
KS-6320	Spudger
KS-20962	Distributing frame bag
KS-22325, L1	Service bracket
KS-8740	Soldering copper (or other KS-copper rated at 95 watts)
KS-16363, L2	Wire-wrapping gun
KS-20551	Wire unwrapping gun
KS-20827, L1	Wire unwrapping tool

Materials

8.06 The following tools are needed to perform the repair procedures.

Code/Spec No.	Description
814648622	Ground terminal, P46D862
842360976	Tip or ringing terminal
842362188	Mounting bracket
402066104	Cable tie (blue)
402066088	Cable tie (orange)
402066096	Cable tie (green)
402066070	Cable tie (brown)
401787726	Cable tie (gray)
402633168	Cable tie (white)
R-2916	Twine

Replacing Defective Terminals

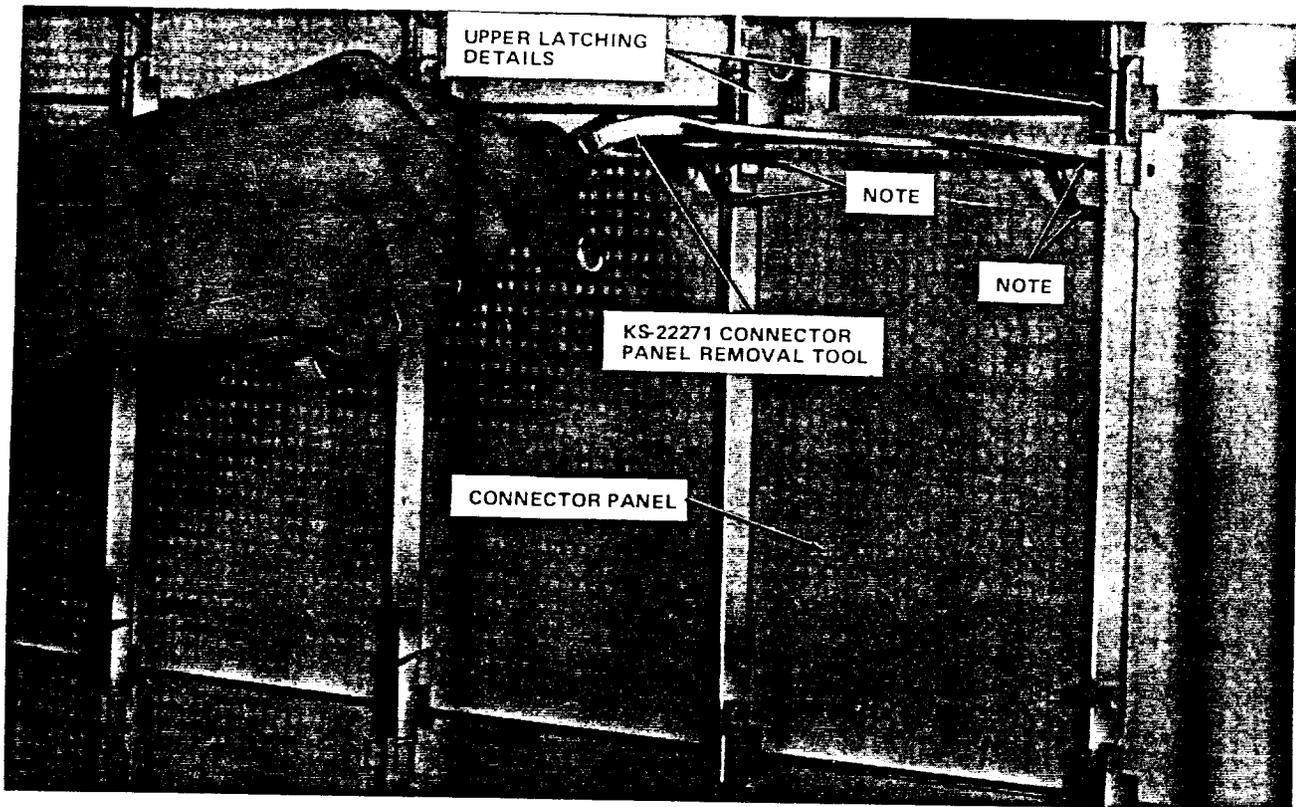
A. General

8.07 To replace a tip, ring, or ground terminal, the connector panel must be removed from the frame and placed in a service bracket to gain access to the wiring side of the terminal. After the new terminal is installed, the connector panel is placed back on the frame.

B. Removing the Connector Panel from the Frame

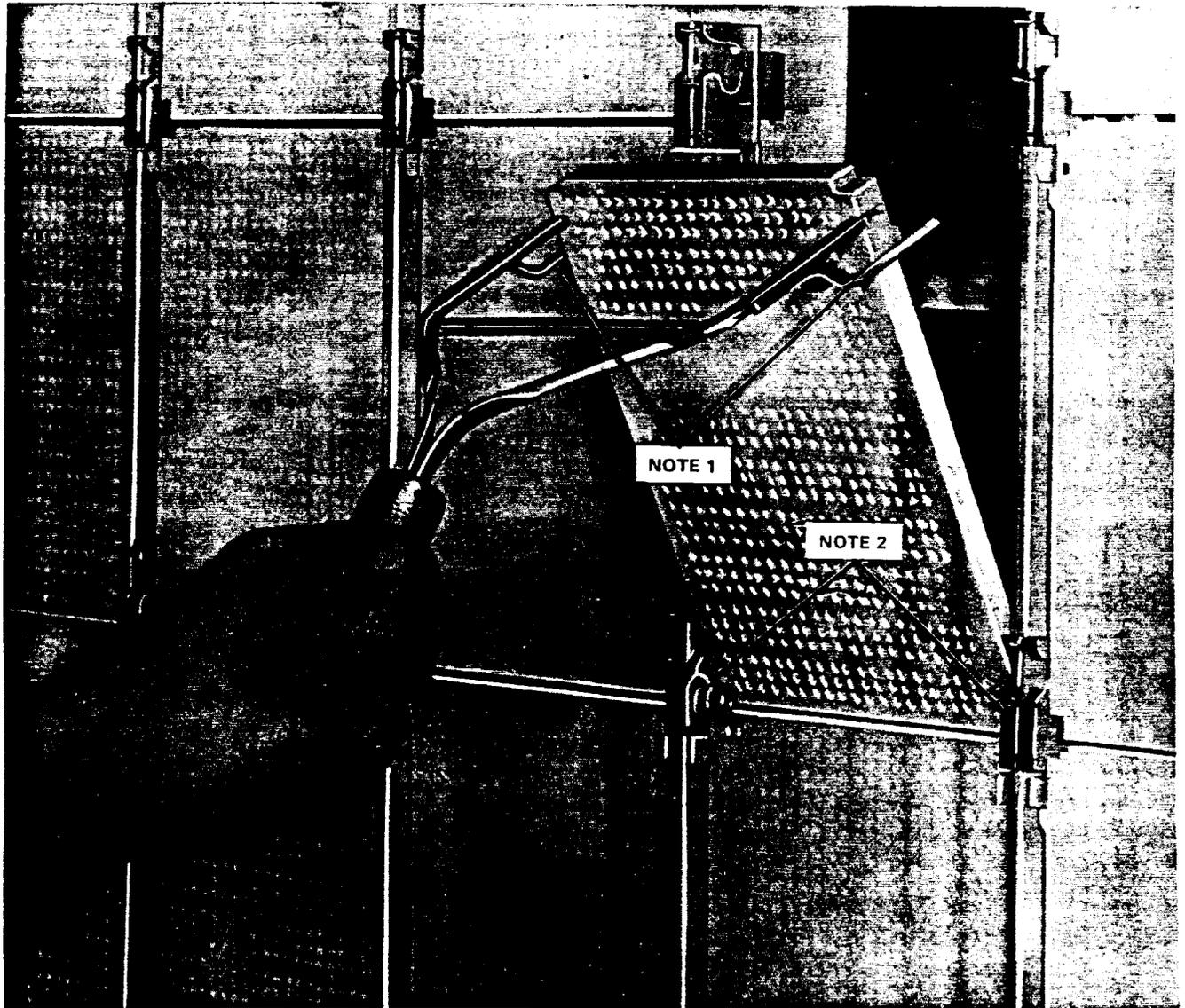
8.08 To remove the connector panel from the frame, proceed as follows:

- (1) Remove the 3C- or 4C-type protector unit from the defective circuit.
- (2) Insert the connector panel removal tool (Figures 25 and 26) into the connector panel.



NOTE
INSERT UPPER PRONGS OF 307 PANEL REMOVAL TOOL
INTO SLOTS IN 307-TYPE PANEL LOWER PRONGS WILL
BE PROPERLY ENGAGED AT THE SAME TIME

Figure 25. Engaging Connector Panel Removal Tool into Panel

**NOTES:**

1. PUSH TOOL IN TO DISENGAGE UPPER LATCHING DETAILS AND TILT 307-TYPE PANEL WITH TOOL DOWN AND OUTWARD.
2. MANUALLY RELEASE LOWER PIVOT PINS AND REMOVE 307-TYPE PANEL.

Figure 26. Removing Connector Panel

- (3) Apply a slight downward pressure on the handle to release the upper latching details.
- (4) Tilt the top of the connector panel outward and downward.
- (5) Lift the connector panel off the bottom pivot pins.
- (6) Hold the connector panel in one hand and use the other hand to place the service bracket (Figure 27) on the frame pins. Figure 28 shows a service bracket in place on a new frame installation.
- (7) Place the lower connector panel pins into the upper slots of the service bracket.

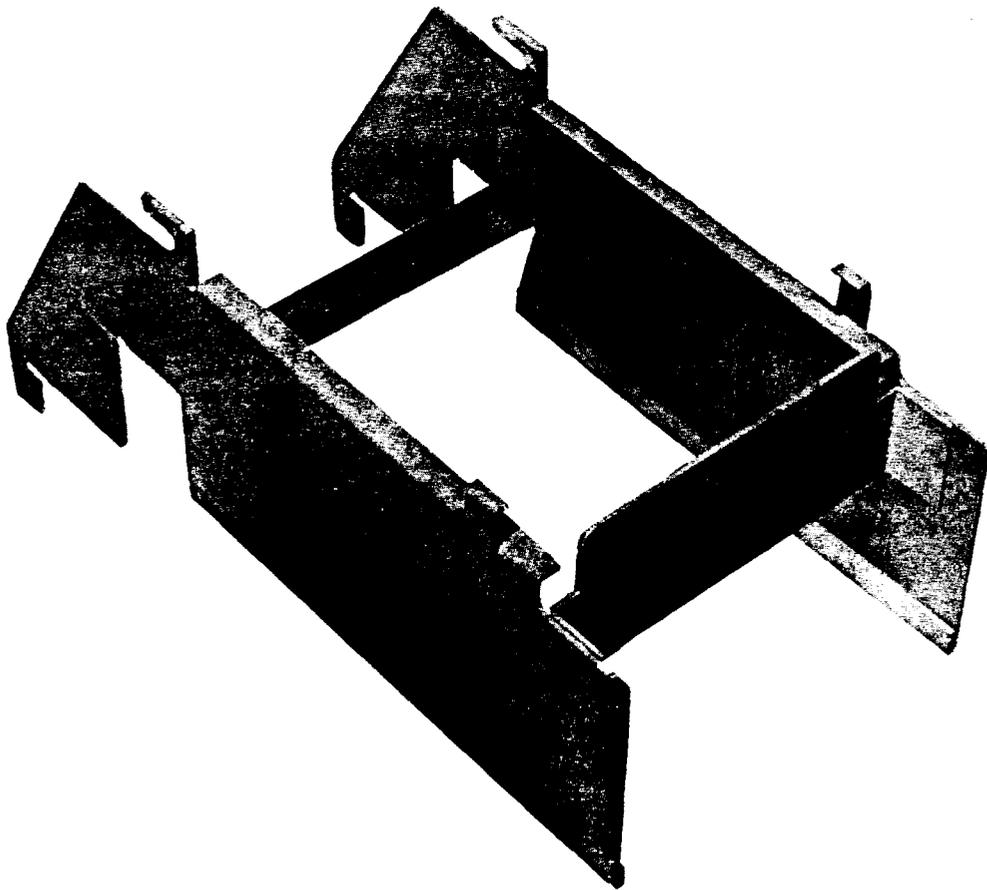
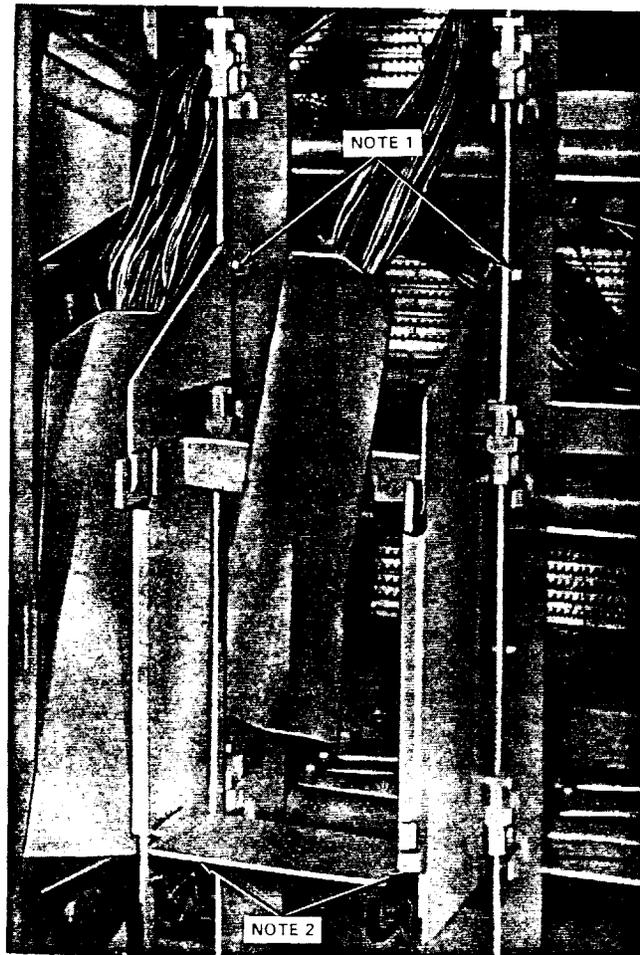


Figure 27. Service Bracket (KS-22325, L1)



NOTES

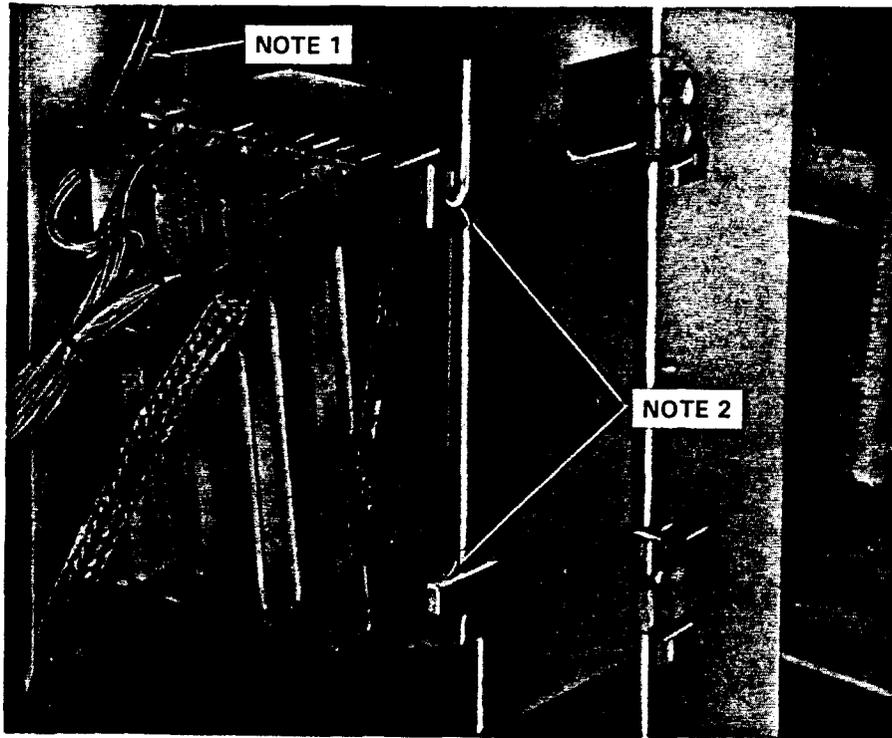
- 1 WITH BOTTOM OF SERVICE BRACKET TILTED TOWARD THE AISLE, ALIGN AND ENGAGE FRAME PINS AND SERVICE BRACKET SLOTS
- 2 PIVOT BOTTOM OF SERVICE BRACKET TOWARD FRAME UNTIL IT RESTS AGAINST FRAME AND SNAP IN LOCKS

Figure 28. Installing KS-22325, L1 Service Bracket

- (8) Rotate the connector panel downward so that the top is resting against the bottom of the service bracket and the wiring side of the connector is facing outward (Figure 29).
- (9) Remove the plastic mounting bracket which houses the 710-connectors and the ground strap as follows.

C. Standard Connectors

- (1) Tie each individual group (25 pairs) of connecting block leads or carrier bay leads (307C1-100 connector) using twine or tape.
- (2) Identify each group according to the color of the cable tie (blue, orange, green, or brown) presently fastened to the mounting bracket.
- (3) Cut and remove the cable ties.
- (4) Disengage the two tangs at the top of the plastic bracket and then disengage the two tangs at the bottom.
- (5) Remove the bracket, with the 710-connectors in place, and carefully place it back toward the frame to gain access to the wiring side of the connector panel terminals.
- (6) Follow the steps in paragraph 8.14 to replace a tip or ring terminal or follow the steps in paragraph 8.15 to replace a ground terminal.



NOTES:

1. MOVE CONNECTORIZED END OF STUB CABLE TO SIDE OF SERVICE BRACKET.
2. MOUNT 307 CONNECTOR PIN INTO UPPER SLOT OF SERVICING SHELF, BOTTOM AND SIDES OF CONNECTOR RESTS AGAINST SERVICE BRACKET.

Figure 29. Installing 307 Connector on KS-22325, L1 Service Bracket

D. UL Listed Connectors

- 8.09 Place the lower connector panel pins into the upper slots of the service bracket.
- 8.10 Rotate the connector panel downwards so that the top is resting against the bottom of the service bracket and the casing is facing outwards (Figure 30).

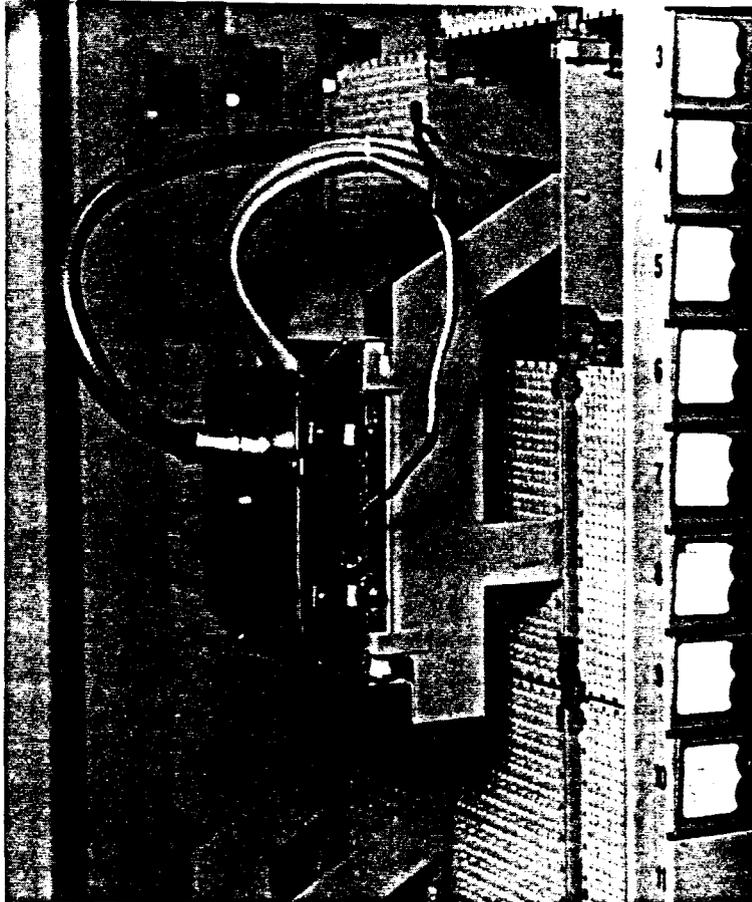


Figure 30. Connecting Casing Facing Outwards

- 8.11 Remove the casing by removing the top plate and the four screws on the side of the panel (Figures 31, 32, and 33). Rotate the back top plate and expose the back panel wires.
- 8.12 Cut and remove the cable ties
- 8.13 Follow the steps in paragraph 8.14 to replace a tip and ring terminal or follow the steps in paragraph 8.15 to replace a ground terminal.

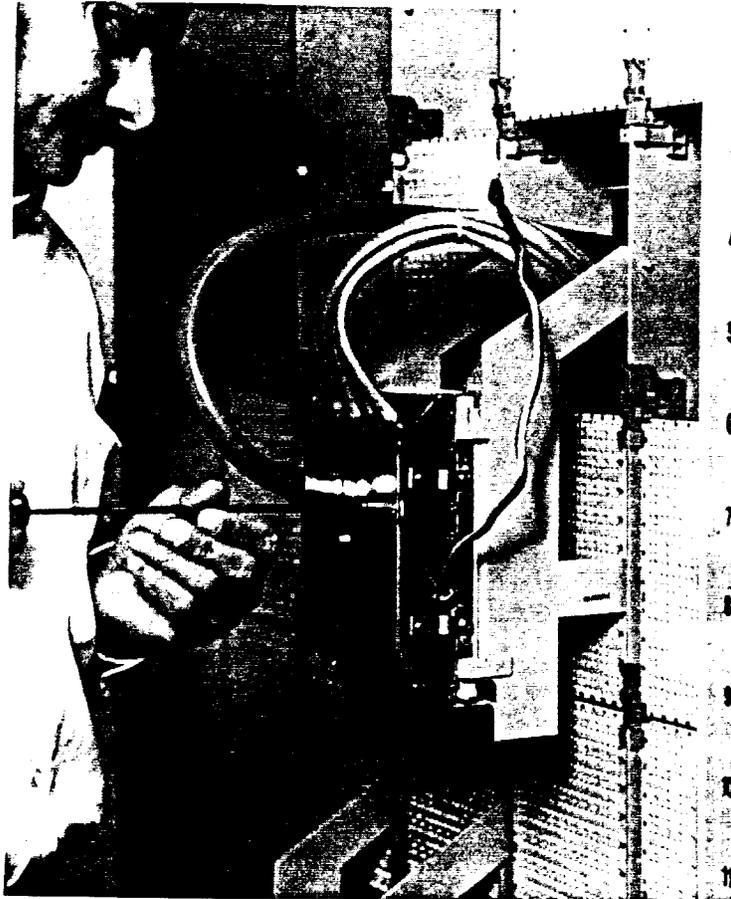


Figure 31. Remove Top Plate

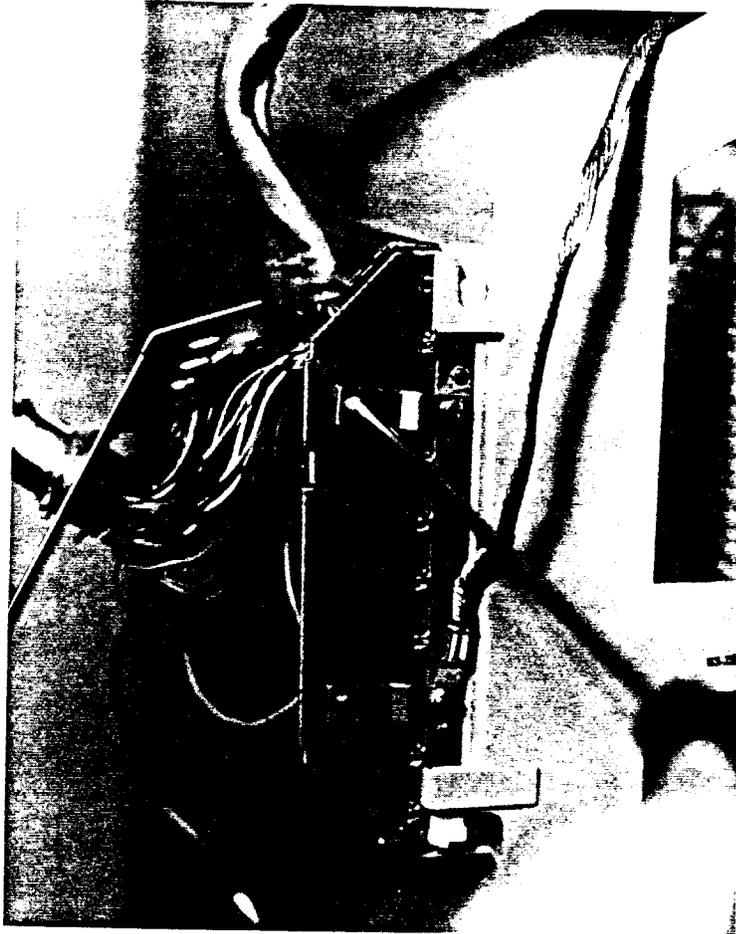


Figure 32. Remove Screws on Side of Panel

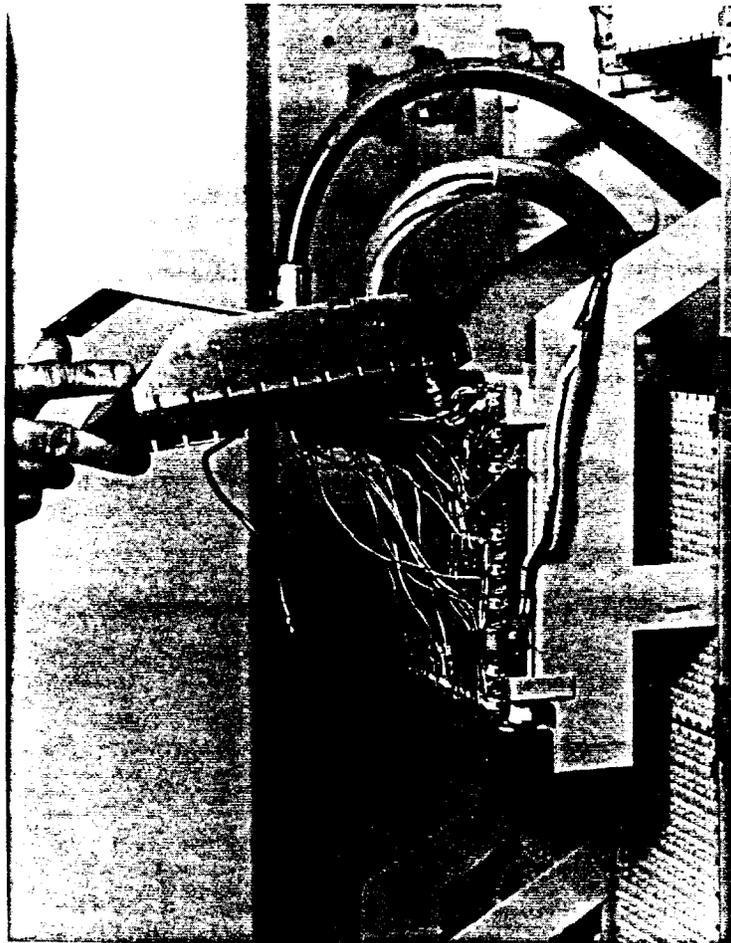


Figure 33. Rotate Back Top Plate — Expose Back Panel Wires

E. Replacing a Tip or Ring Terminal

8.14 To replace a tip or ring terminal (Figure 34), proceed as follows:

- (1) Remove the wire-wrap termination, cut and dispose of the bare wire.
- (2) Use the wire stripping tool to remove insulation [1-5/8 inches (4.1 cm) for 22- or 24-gauge (0.6 mm or 0.5 mm) wires and 1-7/8 inches (4.8 cm) for 26-gauge (0.4 mm) wire] or the remaining wire for the new termination. The wire is now prepared for connection to the new terminal.
- (3) Use the long-nose pliers to bend the tangs on the defective terminal until they line up with the slots in the connector panel.
- (4) Use the long-nose pliers and twist the terminal until it breaks.

- (5) Have the proper replacement terminal handy before proceeding with the next step.
- (6) Lift the connector panel from the bottom of the service bracket (as though it were hinged at the top) high enough to remove the defective terminal.
- (7) Use the long-nose pliers to remove the defective terminal and note the position of the tangs as the terminal is removed.
- (8) Using the position of the tangs as a reference, insert the new terminal into the connector panel.
- (9) Use the tip of the long-nose pliers to push the terminal until it is fully seated in the connector panel.
- (10) Lower the connector panel onto the service bracket.
- (11) Use the long-nose pliers to bend the tangs approximately 45 degrees to hold the terminal in the connector panel.
- (12) Connect the previously skinned wire to the terminal.
- (13) Follow the steps in paragraph 6.11 for reinstalling the connector panel on the frame.

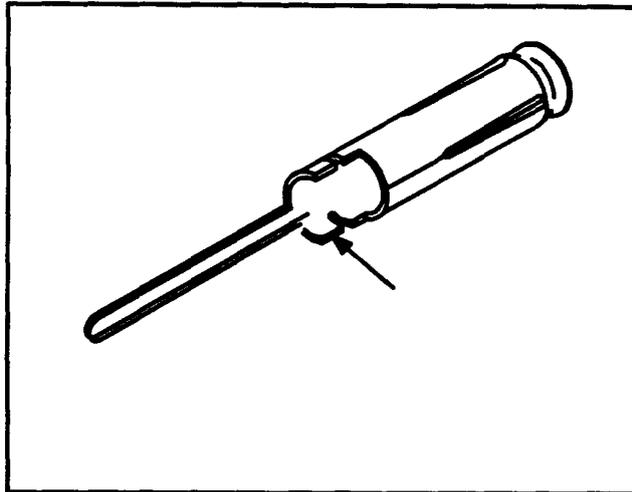


Figure 34. Tip or Ring Terminal

F. Replacing a Ground Terminal

8.15 To replace a ground terminal (Figure 35), proceed as follows:

- (1) Use the soldering copper to heat the terminal connection to remove as much solder from the terminal as possible. The terminal should move freely once the soldered connection to the ground bar is broken.
- (2) Perform Steps 3 through 11 in paragraph 8.14 before proceeding to the next step.
- (3) Use the soldering copper to solder the new terminal to the ground bar.
- (4) Follow the steps in paragraph 8.16 for reinstalling the connector panel on the frame.

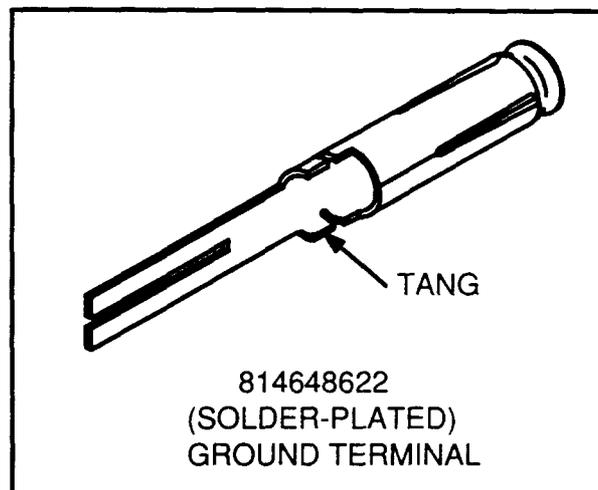


Figure 35. Ground Terminal

G. Reinstalling the Connector Panel on the Frame

8.16 To reinstall the connector panel on the frame, proceed as follows:

- (1) Place the plastic mounting bracket containing the 710-connectors onto the connector panel. Be sure the four tangs are properly seated on the connector panel.
- (2) Fasten the wire groups (removed in paragraph 8.08, Steps 9 a, b, and c) to the plastic mounting bracket. Use the correct colored cable ties.
- (3) Remove the twine or tape that had been used to separate the wires into group.

- (4) Inspect each portion of the plastic mounting bracket housing to be sure the 710-connectors are contained properly in their portion of the housing and the ground strap is placed into the channel provided in the housing.
- (5) Remove the connector panel from the service bracket.
- (6) Support the connector panel with one hand and remove the service bracket from the frame with the other hand.
- (7) Dress the connecting block wiring and stub cabling back onto the frame.
- (8) Place the connector panel into the lower snap-in locks on the frame.
- (9) Pivot the connector panel upright and toward the frame until the upper latching details are engaged.
- (10) Insert the proper 3C- or 4C-type protector unit.

9. Testing

Protector Units

9.01 The 3- and 4-type protector units are used with the 307-type connectors to provide electrical protection. The 3C- or 4C-type protector units are used on the 307-type connectors for **COSMIC** II and IIA main distributing frames and **COSMIC** Mini combined distributing frames. The 3C-type protector units can be used for **SLC** 96 and **SLC** Series 5 carrier system remote terminal applications. The protector units are ordered separately from the connectors. The 3- and 4-type protector units are described in AT&T 201-208-100. Only UL-listed 5-pin modules are to be used in UL-Listed 307LD2 connectors.

9.02 All standard plug-in protector units are equipped with four gold-plated tip and ring pins and a solder-plated ground pin.

9.03 Protector units with gold-plated pins should be used with connectors containing gold-plated socket terminals (i.e., all current protector unit and connector codes). Protector units with gold-plated or solder-plated pins can be used in vintage connectors containing solder-plated socket terminals.



CAUTION:

Protector units with solder-plated pins should not be used on connectors with gold-plated socket terminals. This combination of plating and contact surfaces results in higher contact resistance, and surface degradation of gold-plated socket terminals.

9.04 Before installing the 3- or 4-type protector units onto the connector, each unit may be tested. The KS-20100, L5 test set (Figure 36) is used to test for the presence or absence of tip and ring continuity and ground and also provides a burnout feature to clear protector units shorted by carbon or dust particles. The 182A test set (Figure 37) is used to test the minibridge lifter protector units for tip and ring continuity and for shorted protector blocks. It also tests the function of the 410A switch contained in the protector unit. See AT&T 201-208-100 for the test procedures.

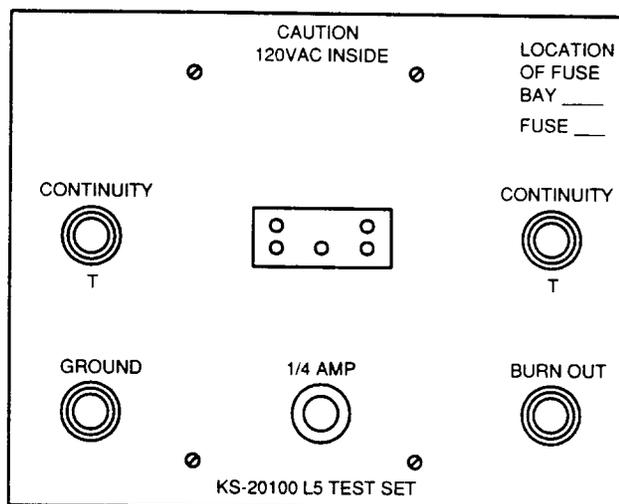


Figure 36. KS-20100, L5 Test Set

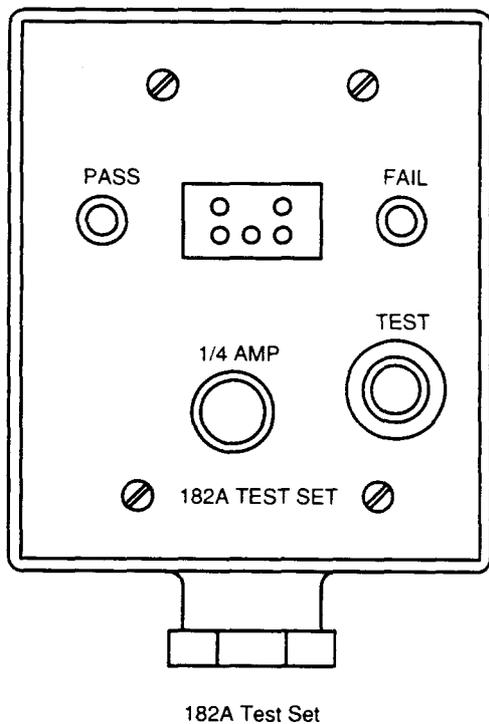


Figure 37. 182A Test Set

⇒ NOTE:

The jacks (receptacles) for the protector units in the 303-, 305-, 307-, 309-, 310-, 310M-, and 311 connectors have reversed tip and ring orientation from the 302- and 308-type connectors (see Figures 38 and 39).

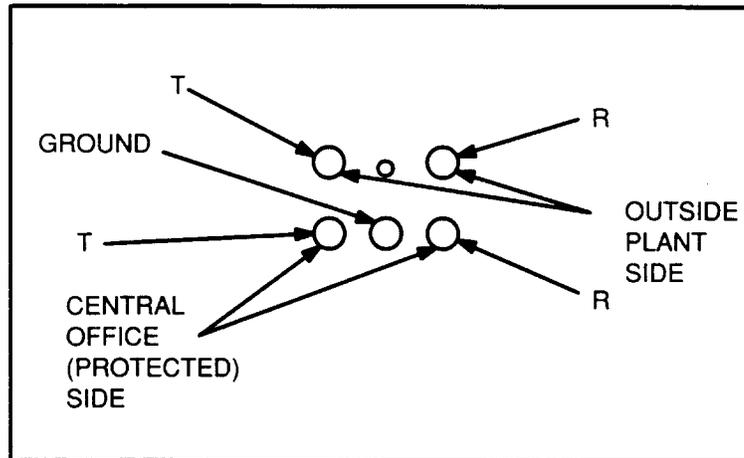


Figure 38. Jack for Protector Unit on 302- and 308-Type Connectors

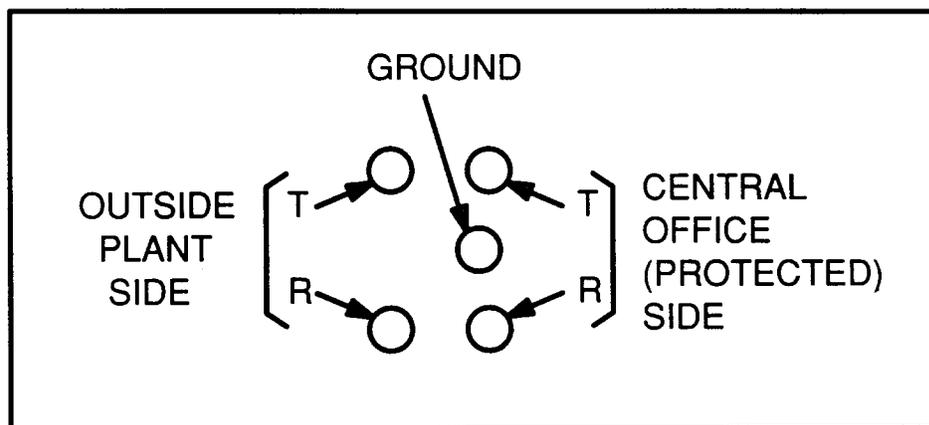


Figure 39. Jack for Protector Unit on 303-, 305-, 307-, 309-, 310-, 310M-, and 311-Type Connectors

Test Adapters

9.05 The 299A and 299B test adapters (Figures 40 and 41) are used in testing the 307-type connector. The 299A test adapter provides testing with or without the 3C- or 4C-type protector units. The 299B provides testing with the protector units in the service position or in the detent position. See AT&T 201-208-106 for description and use.

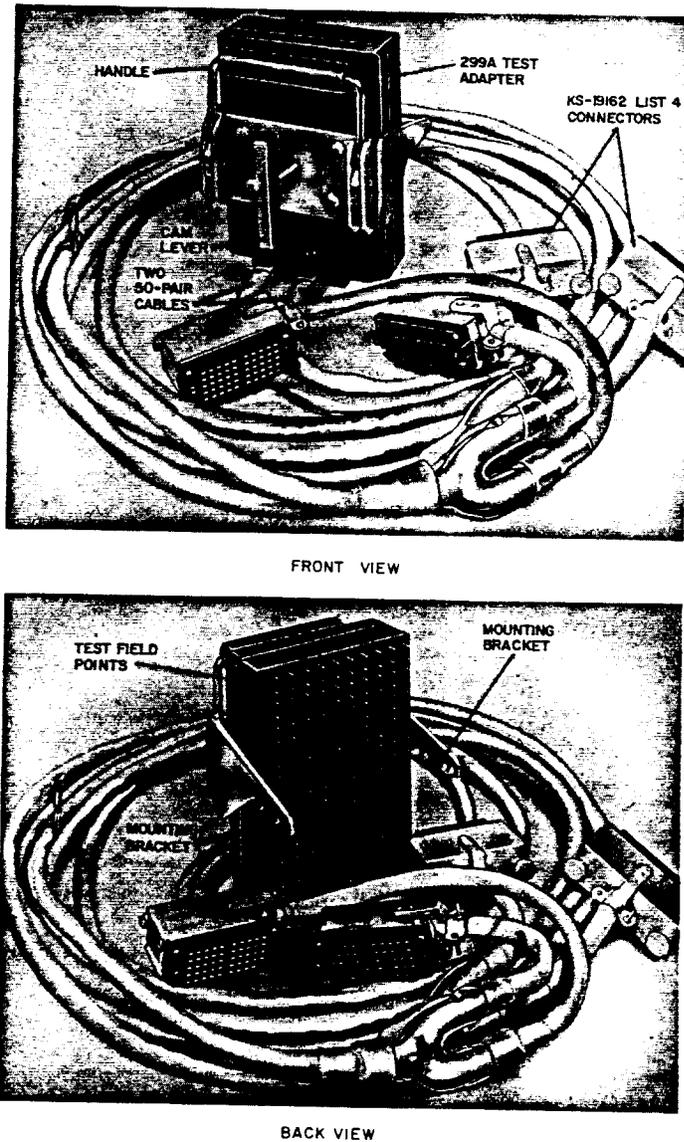


Figure 40. 299A Test Adapter

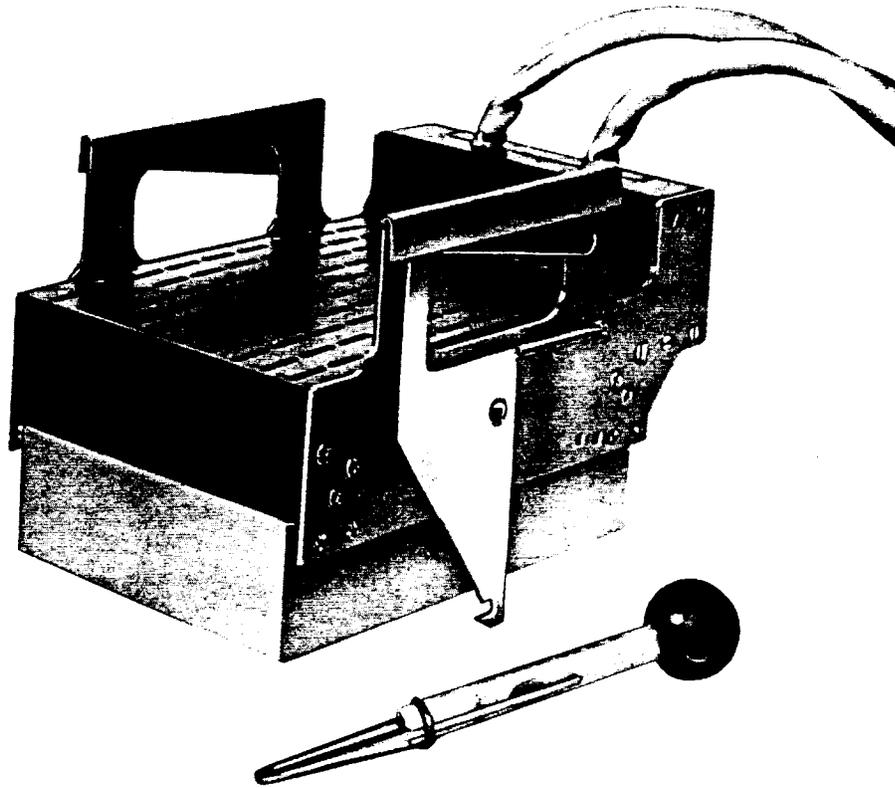


Figure 41. 299B Test Adapter

Cords, Plugs, Warning Markers, and Indicators

9.06 Cords and plugs may be used with the 307-type connector for testing purposes, and warning markers, and indicators are used on special service circuits to provide additional visibility and protection. See AT&T 201-208-106 for description and use of these items.

9.07 The P2FL test cord (Figure 42) is used to short the tip and ring or to ground the tip and/or ring of an individual cable pair by inserting the plug end into the test points of a 4C-type protector unit on the 307-type connector.

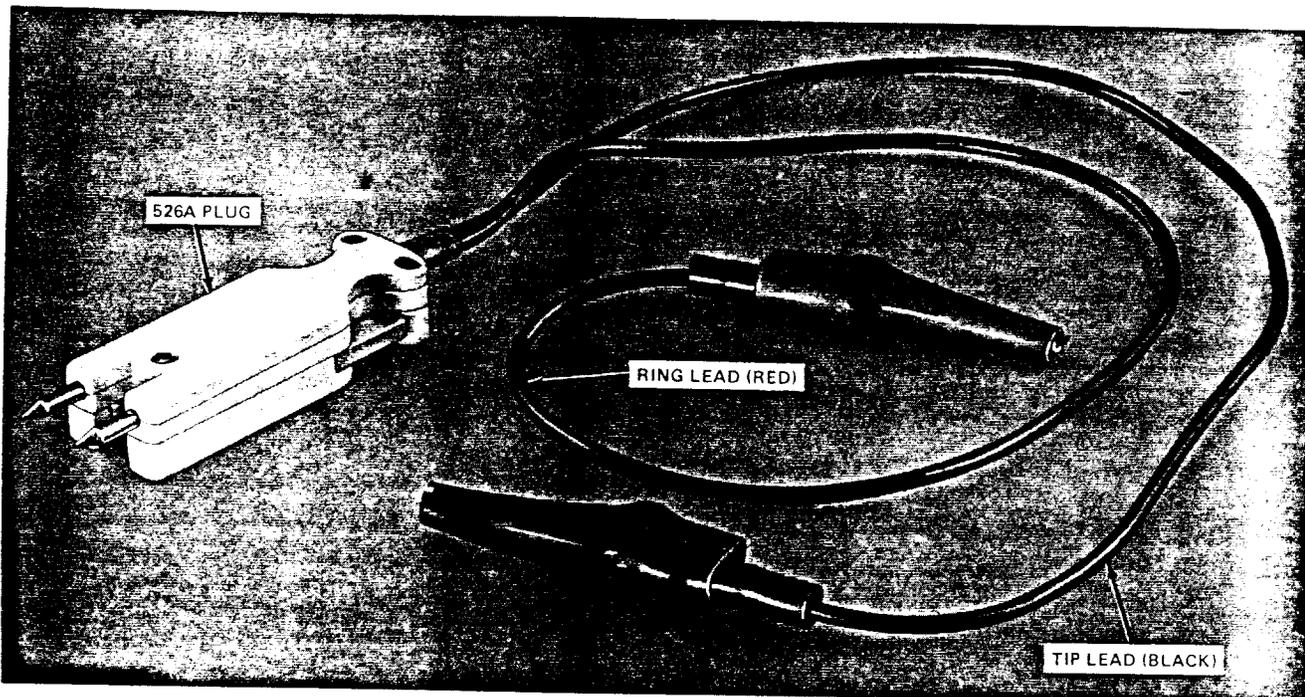


Figure 42. P2FL Test Cord

10. Associated Equipment and References

Associated Equipment

3- and 4-Type Protector Units (AT&T 201-208-100)

11-Type Connectorized Stub Cables

ED-6C142-30, G3 & G4—112H Series Connecting Block Mounting Adapters—For use on earlier **COSMIC** II frames (G3 is for shelves 2-10 and G4 is for shelves 1 and 11). (AT&T 201-222-101)

Test Equipment (AT&T 201-208-106)

299A Test Adapter (Comcode 103 065 819)

299B Test Adapter (Comcode 105 053 862)

P2DB Test Cord (Comcode 101 433 852)

P2FL Test Cord (Comcode 103 105 268)

W2GL Test Cord (Comcode 101 945 590)

W3GM Test Cord (Comcode 102 490 935)

Warning Markers and Indicator (AT&T 201-208-106)

E Warning Marker (Comcode 400 614 202)

E Sign (Comcode 400 359 196)

KS-16847 Indicator (Comcode 997 726 088)

Tools and Aids (AT&T 201-208-103)

756C3	Wire Insertion Tool (Comcode 104 012 018)
756C4	Wire Insertion Tool (Comcode 104 378 351)
756C5	Multipurpose Quick-Clip Wire Insertion Tool (Comcode 105 564 827)
756C5-1	Replacement Bit for 756C3, 756C4, and 756C5 Tools (Comcode 105 611 545)
950A	Cutoff/Insertion/Removal Tool (Comcode 103 318 614)
950B	Cutoff/Insertion/Removal Tool (Comcode 104 378 369)
950C	Multipurpose Quick-Clip Wire Insertion Tool (Comcode 105 564 835)
950C-1	Replacement Bit for 950A, 950B, and 950C Tools (Comcode 105 611 537)
KS-22271, L1	Connector Removal Tool (Comcode 402 470 553)
KS-22325, L1	Service Bracket (Comcode 402 446 504)

References

Number	Title
069-140-811	<i>Soldered Connections— Using Soldering Coppers—Method of Making and Removing</i>
201-208-100	<i>3-, 4-, and 5-Type Protector Units—Description, Use, Maintenance, and Test Procedures</i>
201-208-103	<i>Tools and Aids— Distributing and Protector Frames</i>
201-208-106	<i>Test Equipment, Cords, Plugs, Warning Markers, Guards, Insulators, and Indicators—Description and Use—Distributing and Protector Frames</i>
201-222-101	<i>COSMIC I, IA, II, and IIA Main Distributing Frame Systems—Description</i>
201-222-105	<i>78C- and 112-Type Connecting Blocks— Description and Use—COSMIC II Distributing Frames</i>
201-222-120	<i>COSMIC II Mini Combined Distributing Frame System—Description</i>
201-222-301	<i>78C- and 112-Type Connecting Blocks, Method of Making Connections, Repair and Replacement Procedures—COSMIC Distributing Frames</i>

Number	Title
201-222-501	<i>Inspections—COSMIC Distributing Frames</i>
640-250-237	<i>51A Remote Terminal Cabinet—(ED-7C601-30) Placement—SLC Series 5 Carrier System</i>
640-250-248	<i>Precabled Structures Using Bulk Protection—Remote Terminal Splicing (Metallic)—SLC Series 5 Carrier System</i>
640-252-310	<i>Concrete Hut (ED-7C285-30)—Splicing (Metallic and Fiber)—Combined SLC 96 and SLC Series 5 Carrier Systems</i>
640-252-311	<i>C Equipment Platform (ED-97973-31)—Splicing (Metallic and Fiber) —Combined SLC 96 and SLC Series 5 Carrier Systems</i>
640-252-312	<i>80-Type Cabinet— Description, Installation, and Splicing— Combined SLC 96 and SLC Series 5 Carrier Systems</i>
801-005-164	<i>(J90610)—COSMIC II Frame Systems</i>