

300-TYPE CONNECTORS AND ASSOCIATED PROTECTORS

DESCRIPTION

1. GENERAL

1.01 This section describes the 300-type connector and the associated protector unit.

1.02 The reasons for reissuing this section are listed below. Since this reissue is a general revision, no revision arrows have been used to denote significant changes.

- (1) To increase protector unit information
- (2) To add information concerning warning markers
- (3) To add information affecting guards, insulators, and indicators.

1.03 The 300-type connector supersedes a similar arrangement, coded the 121-type protector. All references in this section to the 300-type connector shall be considered to apply to the 121-type protector.

Note 1: When the protector units are removed from the 121-type protector, the cable conductors may be automatically grounded. Before removing these protector units from circuits which have potential on the cable side (carrier circuits, etc), the associated equipment should be taken out of service. It may be necessary to disconnect the equipment from the cable pair to prevent equipment damage.

Note 2: The term *connector* is applied to distinguish the newer cable terminating devices (300-, 301-, 302-, 305-type, etc, connectors) from the term *protector* which has been applied to cable terminating mounting assemblies such as the C50, E50, etc.

1.04 The 300-type connector is used to terminate exposed outside cable conductors on main distributing frames.

1.05 On conventional (B-type) main distributing frames, the connectors are mounted on the vertical side of the frame. On double-sided protector frames, the connectors are mounted on the verticals of both sides of the frame.

1.06 The classes of conductors entering a central office and the protection required are covered in Section 201-220-102.

1.07 The E-5293-A pair designation number plates (black numerals) and E-5293-G cable designation number plates (red numerals) used in marking 300-type connectors are described in Section 636-200-011.

2. DESCRIPTION

2.01 The basic component of the 300-type connector is the 50-pair connector block with an attached fanning strip as shown in Fig. 1 and 2.

2.02 300-type connectors are also supplied in 100-pair size.

2.03 Raised ribs are molded into the phenolic block on each side of the connector and are located adjacent to the terminal and test contacts for each pair. E-5293-A type pair designation number plates may be installed on these ribs as required. The connector is factory stenciled from 1 to 95 at intervals of 5 pairs (see Fig. 3).

Marking Pair Terminations

2.04 Normally, only the first and last pair on each side of the 100-pair, 300-type connector will require identification, since the intermediate pairs are factory stenciled at 5-pair intervals. Identification is made by applying E-5293-A-type pair designation number plates onto the raised molded ribs of the connector.

NOTICE

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SECTION 201-207-101

- 2.05** The E-5293-A pair designation number plates are adhesive-backed labels with black numerals on an aluminum background and are furnished with a paper backing.
- 2.06** Install the pair designation number plate after removing it from the paper backing by pressing the plate firmly onto the rib surface until it adheres. Avoid touching the adhesive during handling, as this affects its adhesion quality.
- 2.07** The marking of a prestenciled 300-type connector with pair designation number plates is illustrated in Fig. 3.
- 2.08** If pair numbers are assigned that differ from those factory stenciled on the 300-type connector, pair designation number plates may be placed over the prestenciled numbers.
- 2.09** Blank plates may be used to cover a prestenciled number if renumbered pairs do not coincide with the prestenciled numbers.
- 2.10** The superseded 300-type connector with aluminum fingers requires the use of pair designation number plates for marking the first and last pair and all intermediate pairs ending in 0 or 5 (see Fig. 4).

Marking Cable Numbers

- 2.11** Cable numbers are marked on 300-type connectors with E-5293-G cable designation number plates. These plates are adhesive-backed labels with red numerals on an aluminum background and are furnished with a paper backing.
- 2.12** The cable number is formed by selecting the required numerals and assembling the number plates in the proper sequence. Install the cable designation number plates as described in paragraph 2.06.
- 2.13** Cable numbers shall be placed on the raised rib below the first numbered pair of each cable and also on the rib below the numbered pair at the top of each vertical. If an insulating guard is installed over the rib specified for the cable number, place the cable number on the next available rib below that position. The marking of a cable number is shown in Fig. 5.

3. PROTECTOR UNITS

- 3.01** Protector units (Fig. 6) are not supplied with the 300-type connector and should be ordered separately. The types of protection provided are shown in Table A. Protector units used for standard circuits on the 300-type connector are equipped with either black or gray colored caps as shown in Table A. For circuits other than standard, colored caps are available to indicate various type circuits (see Table A).
- 3.02** When the white or blue line on the cap of the protector unit is in a vertical position, protection is provided to the outside plant cable pair but the circuit is open to the central office side of the connector (Fig. 2).
- 3.03** A connection is made between the outside plant cable pair and the central office side of the connector by depressing the protector unit and turning it clockwise until it locks in position with the white or blue line on the cap in a horizontal position (Fig. 2).
- 3.04** When the protector unit is removed, the central office equipment is disconnected from the outside plant cable pair and no protection is provided.
- 3.05** In either the working or open position of a protector unit, ground continuity is provided through the tab projections (ground feeder) of the protector cap which makes contact with the undersurface of the connector faceplate. This ground path continues through the ground feeder to the carbon insert of the 33B protector block.
- 3.06** When the 76A heat coil operates, the tip of the coil passes through the hole in the 32B carbon block and makes contact with the grounded carbon insert of the 33B protector block (Fig. 7).
- 3.07** The protector units are inserted into and removed from the connector with a KS-16567 tool (protector unit wrench) as shown in Fig. 8. To remove a protector unit, grasp the protector unit cap and rotate it 45° counterclockwise; then withdraw the protector unit.
- 3.08** When it is necessary to remove protector units from circuits that are suspected of having abnormally high voltages present, insulating

gloves should be worn and the KS-16567 tool should be used in all cases.

Note: Insulating gloves shall be mechanically inspected immediately prior to use in accordance with Section 075-141-501.

Storage and Use of Heat Coils, Protector Blocks, and Protector Units

3.09 Protector units and associated components shall be handled and stored carefully. They should be kept in either the original shipping cartons or in approved containers or cabinets.

3.10 When protector units are removed from equipment for any reason, they should be tested prior to reuse.

3.11 Before reusing heat coils, they shall be inspected for dirty or defective contact surfaces. Heat coils which show signs of having operated, loose connections or winding, or damaged contact pin shall not be reused.

4. WARNING MARKERS

4.01 The C warning marker (Fig. 9) should be installed on a pair when a high voltage breakdown test is being performed. The C warning marker should not be removed, or the pair restored to normal, until notified by the test desk or cable locating bureau according to local instructions.

Note: When performing a breakdown test, set up a talking path with an observer at the distributing frame and the employee with the breakdown test set. If arcing or smoke is seen, the breakdown test should be discontinued immediately.

5. GUARDS, INSULATORS, AND INDICATORS

5.01 The KS-21369, L1 guard (Fig. 10) is a red, flame retardant plastic wrap-around guard designed to insulate, protect, and designate special service protection (SSP) and special safeguarding measures (SSM) circuit pairs on the 300-type connectors. The KS-21369, L1 guard is used when **SSP** is required; when **SSM** is required, a KS-20986 cable tie is used to secure the guard to

the fanning strip on the 300-type connector. The KS-21369, L1 guard replaces the KS-16576, L5 and L6 designation plates which are rated MD.

5.02 The KS-21369, L1 guard is installed as shown in Fig. 11. The hook on the end of the left arm is attached to the rear of the left edge of the 300-type connector, covering the test points of the special circuit with the cap on the left arm. The guard is then wrapped around the front of the panel, over both protector units, and the right arm is snapped into place on the ribs of the right edge of the connector, thereby enclosing the wire-wrap terminals.

5.03 When **SSM** is required, the KS-21369, L1 guard can be secured to the fanning strip of the 300-type connector by threading a KS-20986 self-locking, nonreleasing cable tie through the hole in the end of the right arm of the guard and through the fanning strip slot. The KS-20986, L4 can be used on the latest design of the 300-type connector, which is equipped with a fanning strip as an integral part of the connector. For the older version of the 300-type connector, which requires a fanning strip added to the vertical, a longer cable tie, such as the KS-20986, L3 is required.

5.04 The KS-16604, L1 terminal punching insulators (red), and the KS-6660 or KS-16847, L1 indicator (red) are used to protect special service lines on 300-type connectors (Fig. 12). The KS-16604, L1 is used where double wrapped (back-tapped) cross connections are connected to the terminals.

5.05 The older (MD) KS-16576, L5 designation plate is for use on the cross-connection side of the connector where a single cross-connection is connected to the terminals (Fig. 12). If the connector has aluminum fingers, the designation plate should be slipped on with movement toward the front. On connectors with molded ribs, the designation plate should be snapped on with movement toward the rear. The (MD) KS-16576, L6 designation plate is for use on the test terminal side of the connector.

5.06 P-16E564 red caps are used with the protector units to indicate a special circuit and to forestall accidental opening of the line.

TABLE A
PROTECTOR UNIT ASSEMBLIES

PROTECTOR UNIT	USE	CAP COLOR	STRIPE COLOR	PROTECTOR BLOCKS	HEAT COIL
1A1A	Voltage Protection Only	Black	Blue	32A & 33B	77A1 (Note 1)
1A1C	Voltage and Sneak Current Protection	Black	White	32B & 33B	76A
1A1D	No Protection	Gray	White	34A1 (Note 2)	77A1 (Note 1)
P-16E564 (Note 5)	Special Circuits-Voltage and Sneak Current Protection	Red	White	32A & 33B	77A1 (Note 1)
				32B & 33B	76A
P-16E565 (Note 5)	PBX Battery - Voltage and Sneak Current Protection	Yellow	Black	32B & 33B	75A (Note 4)
P-16E563 (Note 5)	Service Denied	Green	Black	32A & 33B	None (Note 3)

Note 1: Protector unit has a dummy heat coil.

Note 2: Protector unit has a dummy protector block.

Note 3: Protector unit has no heat coil, provides no continuity to central office equipment.

Note 4: Protector unit must use 75A heat coil.

Note 5: No protector unit code, colored cap replaces standard (black or gray) protector cap.

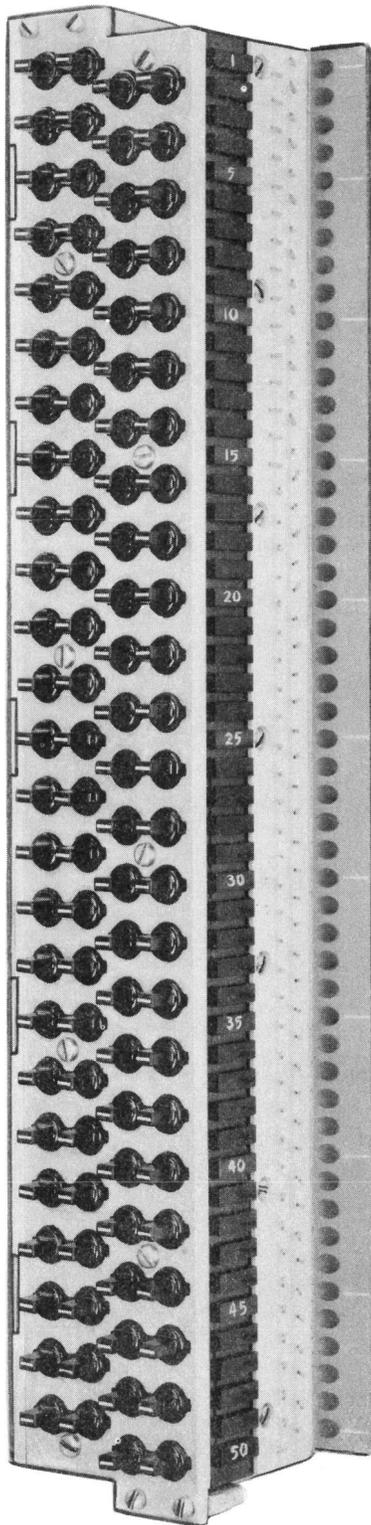


Fig. 1—300-Type Connector

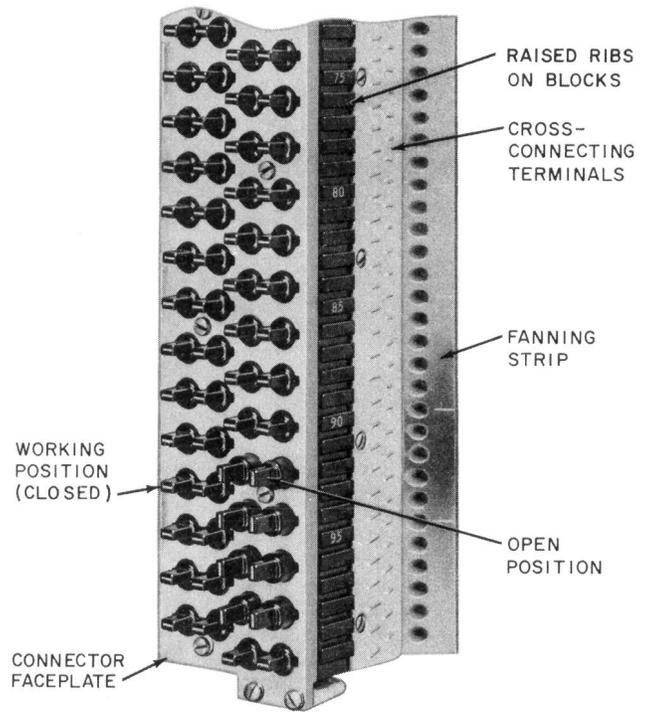


Fig. 2—Open and Working Positions of Protector Units

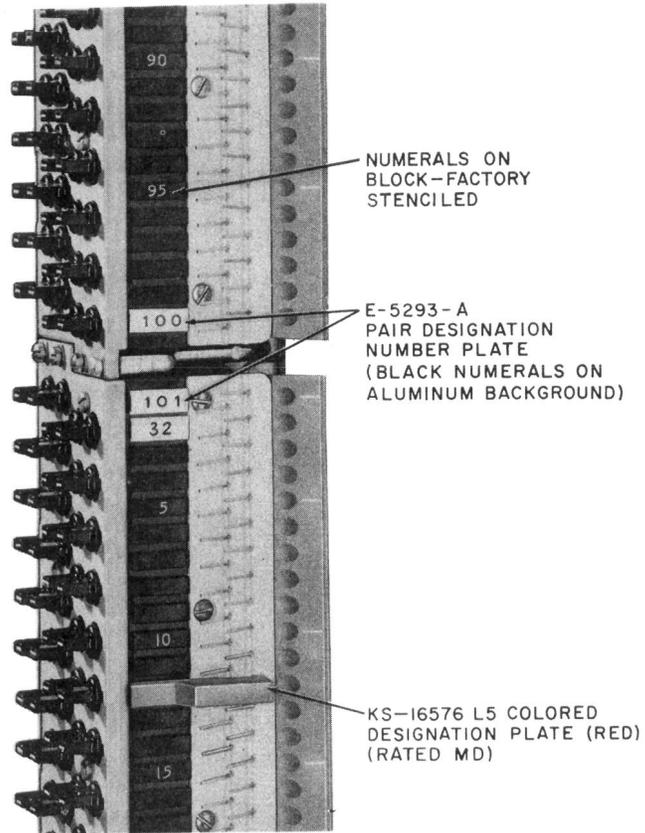


Fig. 3—Pair Designation Number Plates on 300-Type Connector

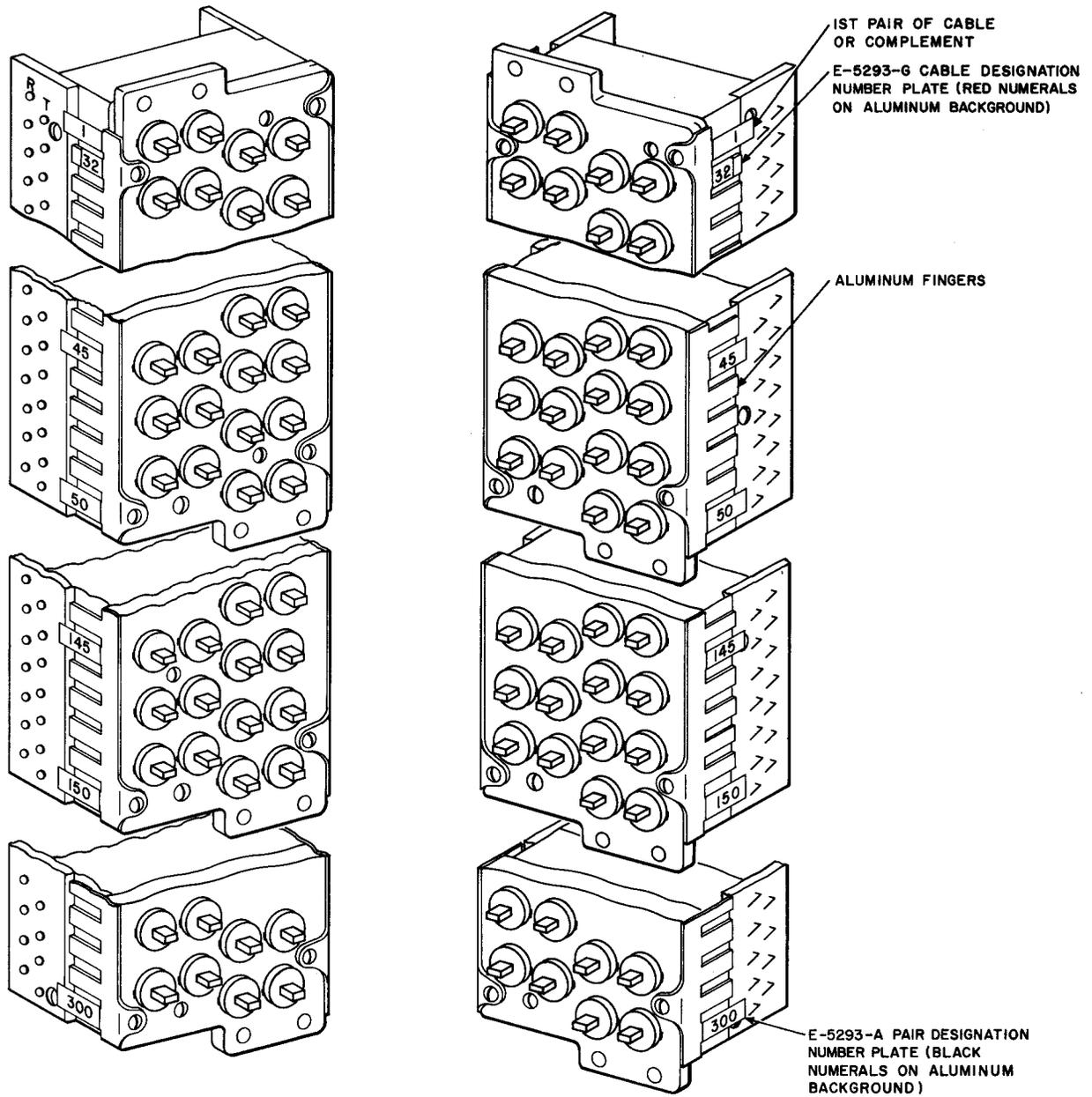


Fig. 4—Number Plates on Aluminum Fingers of Superseded 300-Type Connector

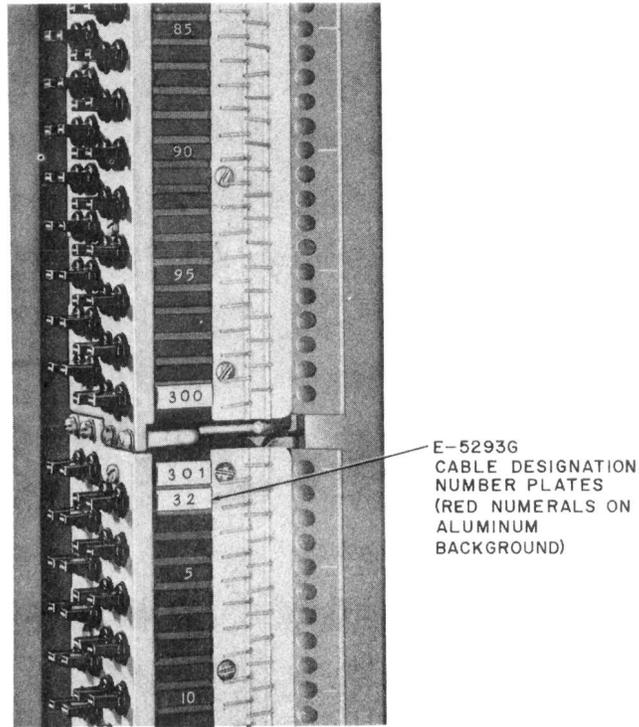


Fig. 5—Cable Designation Number Plate on 300-Type Connector

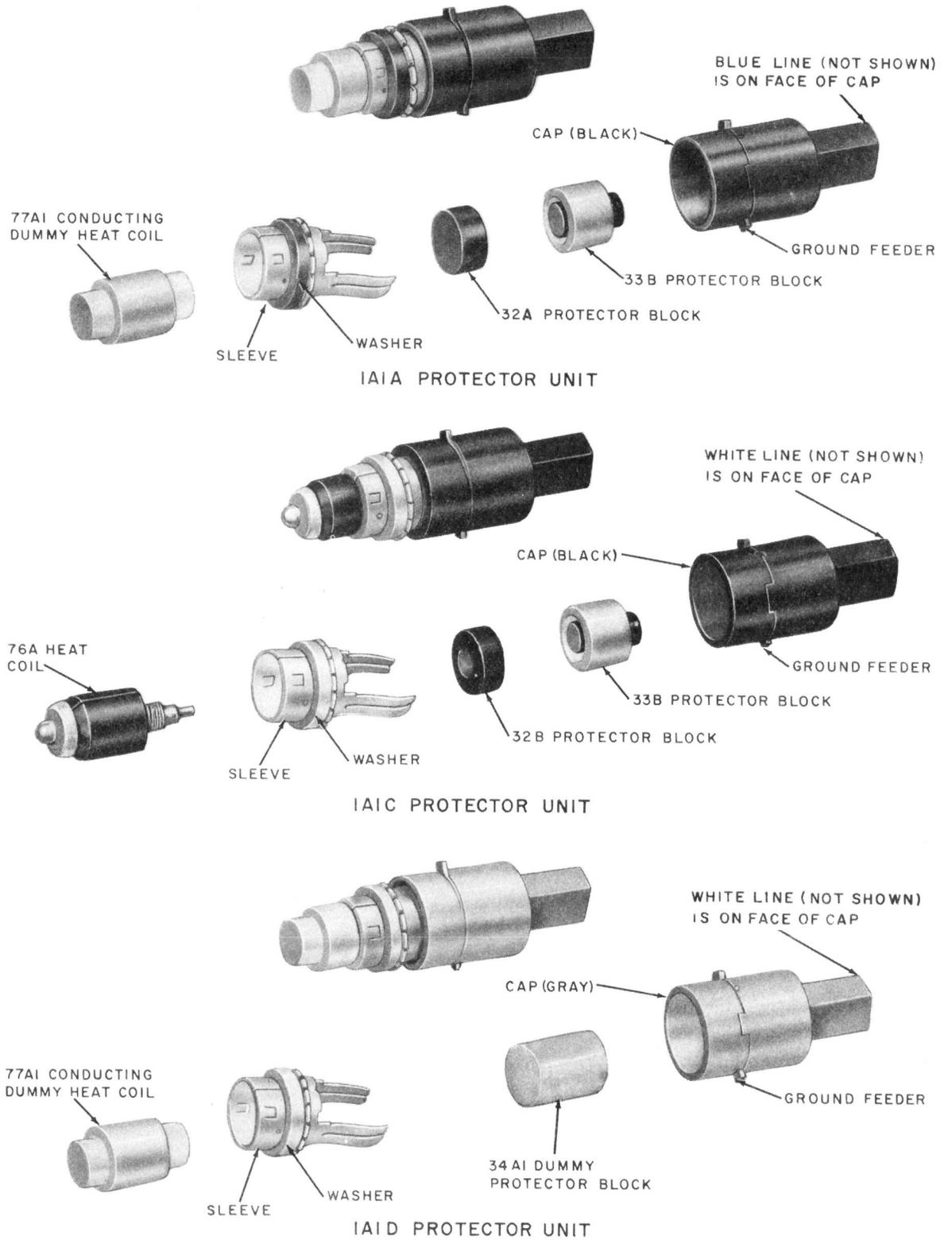


Fig. 6—IAIA, IAIC, IAID Protector Unit Assemblies

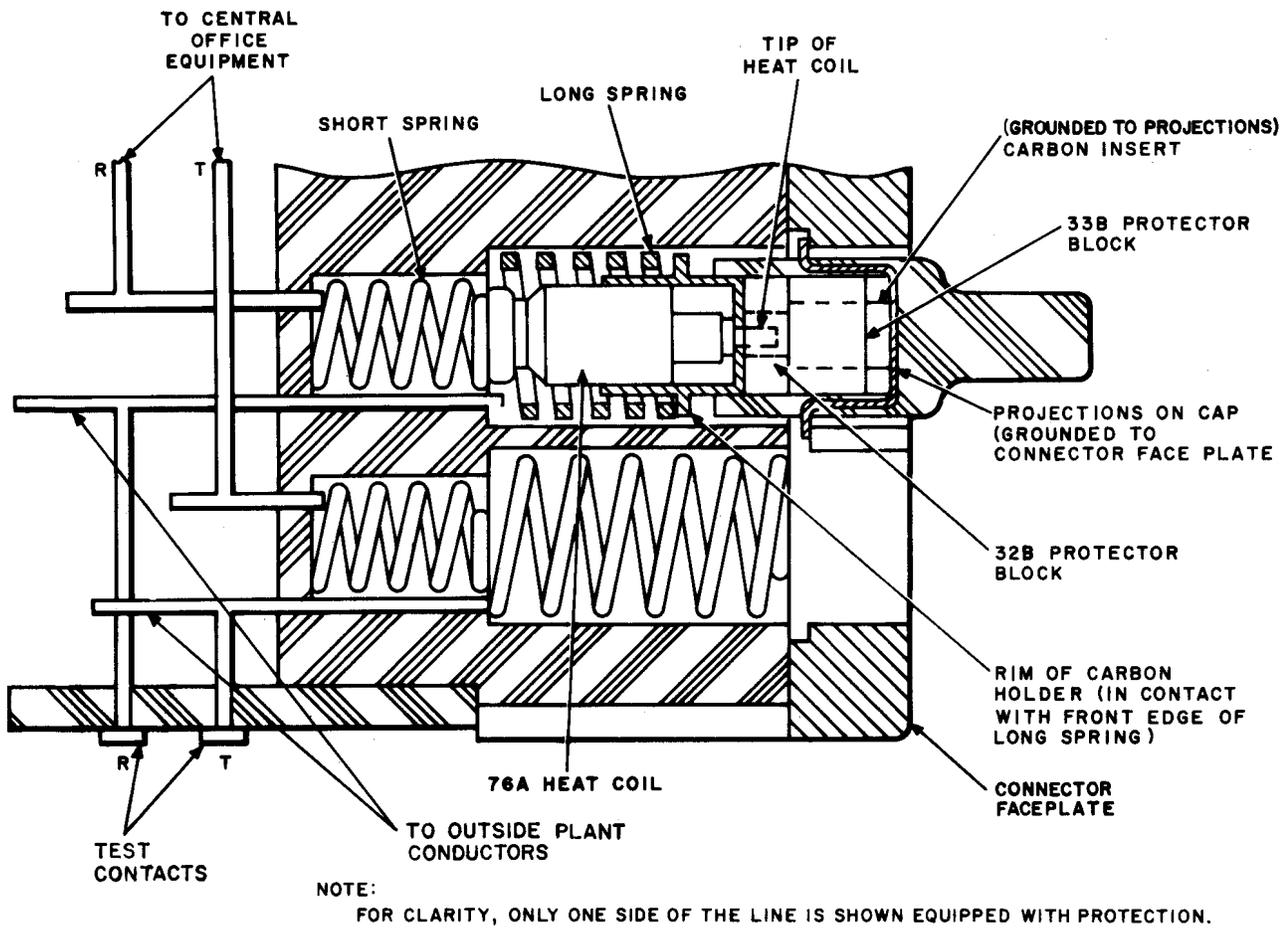


Fig. 7—Operation of Protector Unit

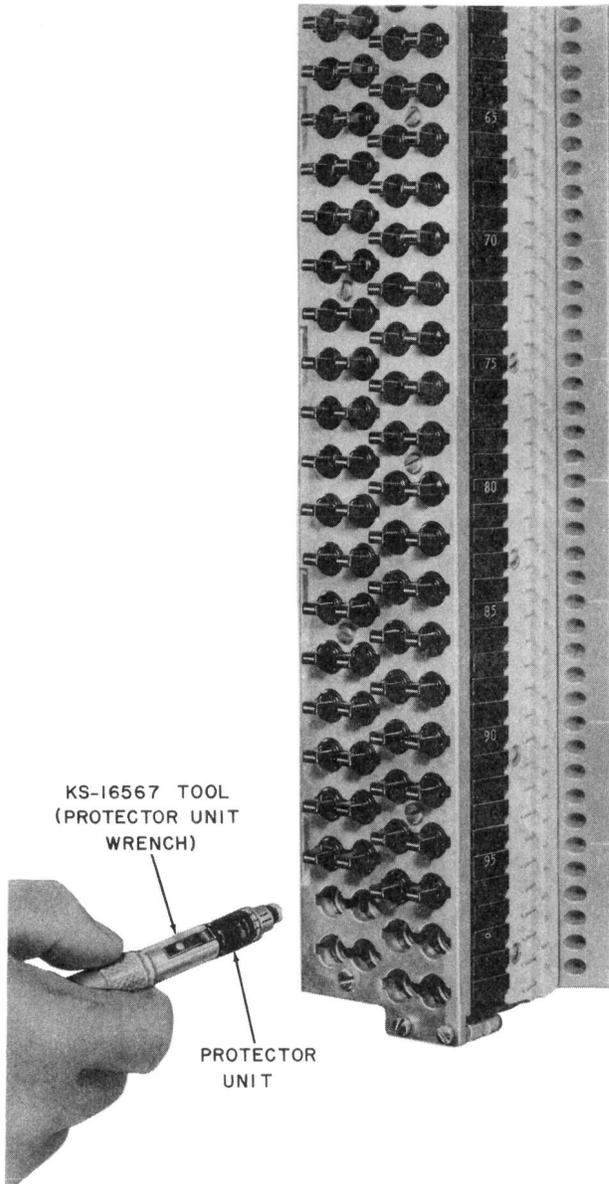


Fig. 8—Installing Protector Units Into Connector Block

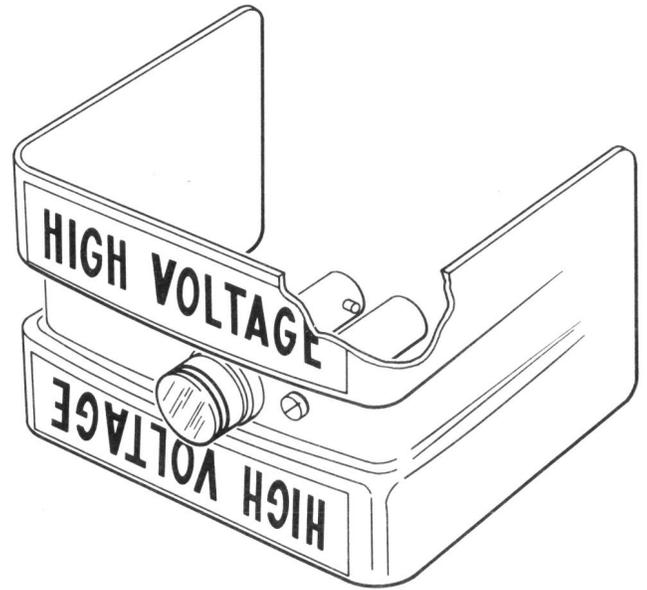


Fig. 9—C Warning Marker

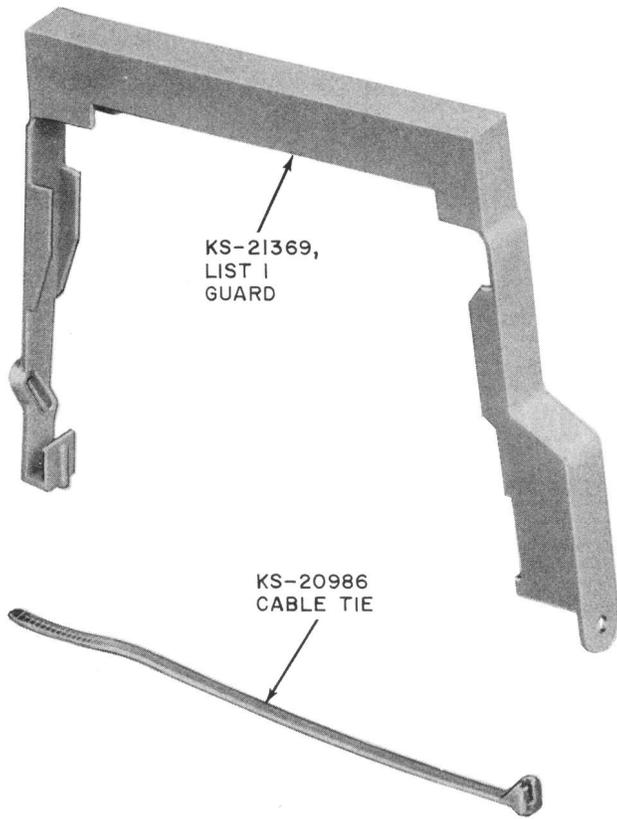


Fig. 10—KS-21369, L1 Guard and KS-20986 Cable Tie

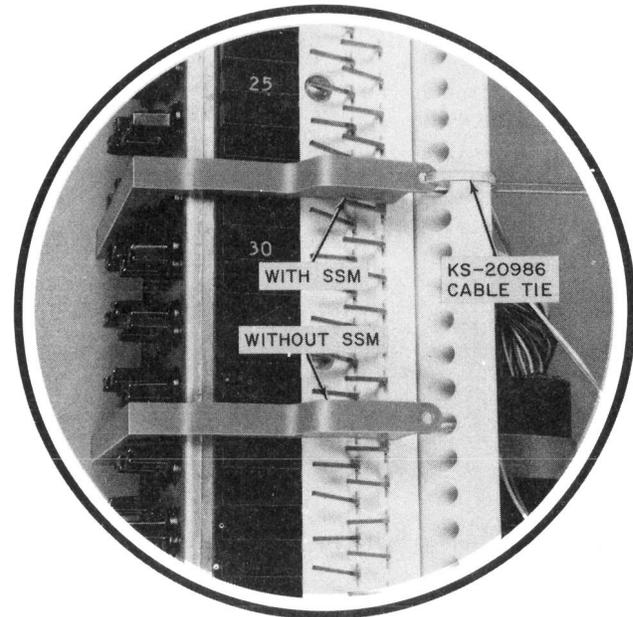
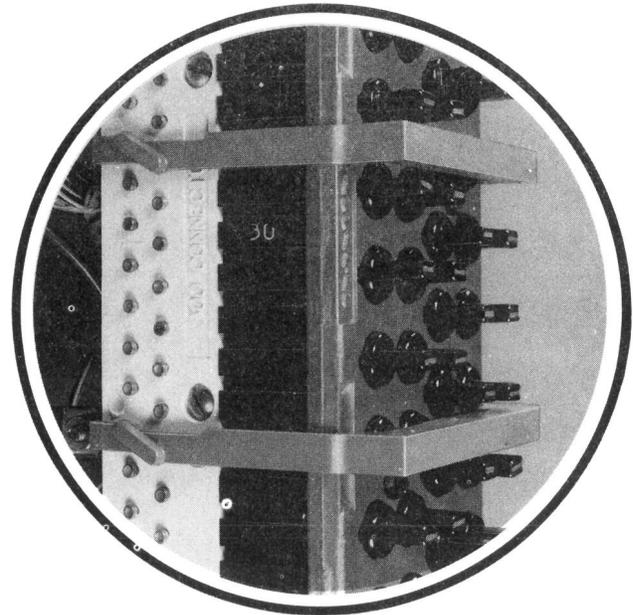


Fig. 11—KS-21369, L1 Guard Installed With and Without SSM

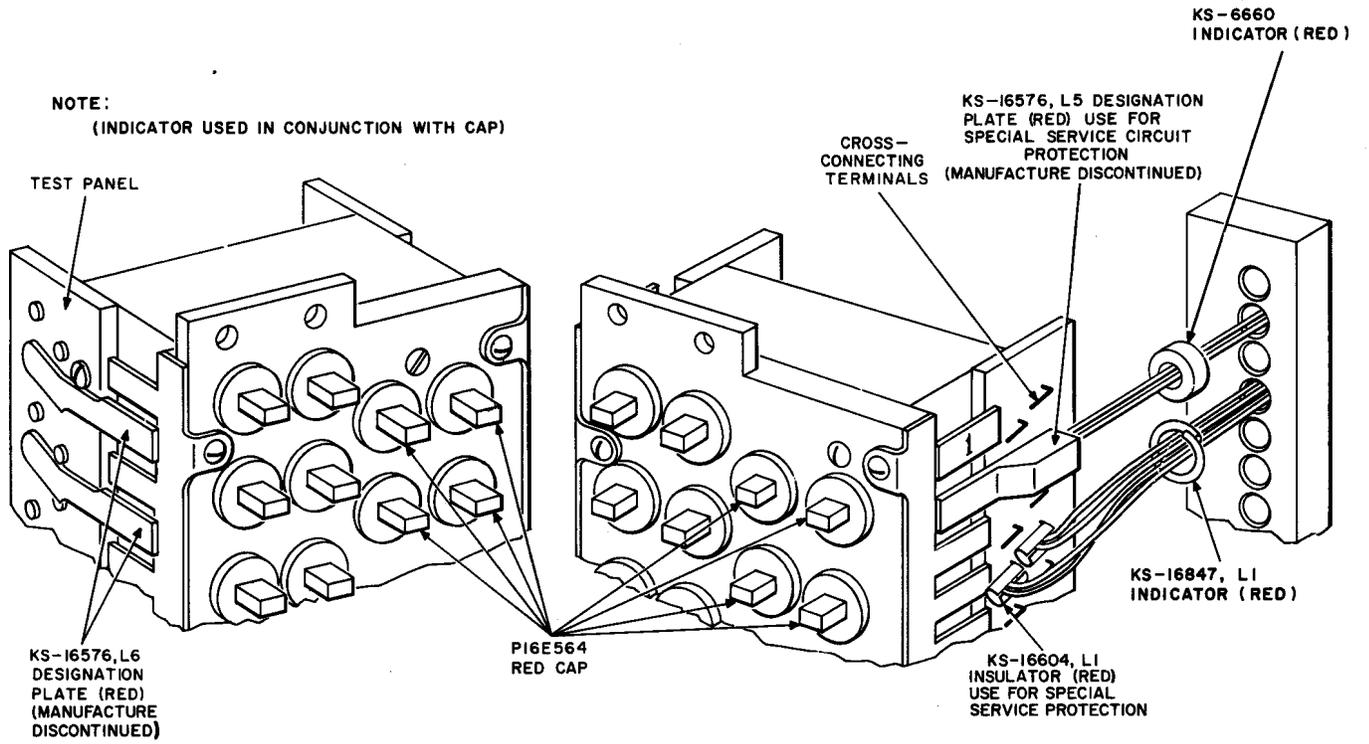


Fig. 12—Protection of Special Service Lines—Typical 300-Type Connector