300-TYPE CONNECTORS AND ASSOCIATED PROTECTOR UNITS INCLUDING 121-TYPE PROTECTORS PIECE-PART DATA AND REPLACEMENT PROCEDURES

1. GENERAL

1.01 This section covers the information necessary for ordering parts to be used in the maintenance of 300-type connectors and 121-type protectors used on distributing frames. It also covers approved procedures for replacing these parts.

1.02 This section replaces Section 201-208-801 titled 300-Type Connectors, 121-Type Protectors, Piece-Part Data, and Replacement Procedures.

1.03 The information shown for the 300-type connectors (code marking shown on the test panel of the connector) is applicable to the 21-type protectors (no code marking shown).

1.04 Part 2 of this section covers the piece-part numbers and the corresponding names of the parts which it is practicable to replace in the field in the maintenance of the above apparatus. No attempt should be made to replace parts not designated. Part 2 also contains explanatory figures showing the different parts. This information is called Piece-Part Data.

1.05 Part 3 of this section covers the approved procedures for the replacement of the parts covered in Part 2. This information is called Replacement Procedures.

2. PIECE-PART DATA

2.01 The figures included in this part show the various piece parts in their proper relation to other parts of the apparatus. The piece-part numbers of the various parts are given together with the names of the parts as listed by the Western Electric Company Merchandise Department.

2.02 When ordering piece parts for replacement purposes, give both the number and name of the piece part. For example: P-181434 Screw. Do not refer to the BSP number or to any information shown in parentheses following the piece-part numbers.

2.03 Information enclosed by parentheses ( ) is not ordering information. It may be references to notes, parts referred to in other portions of the section and not considered replaceable, or part names in general use in the field if these names differ from those assigned by the manufacturer.

2.04 A design change on the 300-type connector eliminates the aluminum finger-type holder and replaces it with a prestenciled holder which is molded as a part of the phenolic block.

3. REPLACEMENT PROCEDURES

3.01 ***List of Tools and Test Apparatus***

CODE OR SPEC NO.	DESCRIPTION
TOOLS	
73B	Bracket
411A (2 reqd)	Test Pick
KS-6320	Orange Stick
KS-7139	Notched Diagonal Pliers
KS-14250, List 1	Flashlight
KS-14440, List 2	Soldering Copper
KS-16567	Tool (Protector Unit Wrench)
TP-75765	Pull Spring Hook
—	Long-Nose Pliers
—	4-Inch E Screwdriver
TEST APPARATUS	
— (2 reqd)	Cord Consisting of One No. 893 Cord, 6 Feet Long, Equipped With Two No. 360A Tools (1W13B)

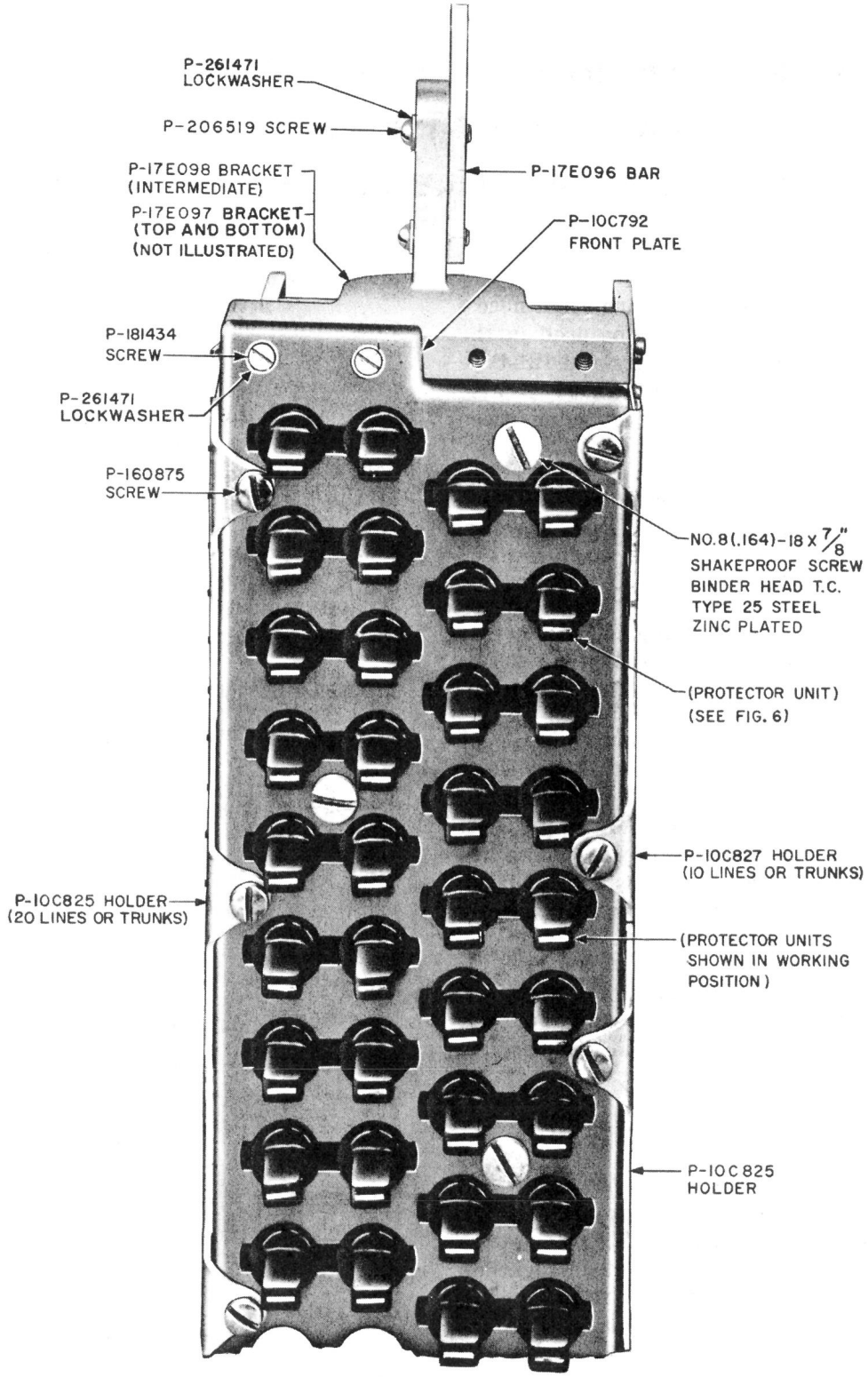


Fig. 1 — Front View of Connector

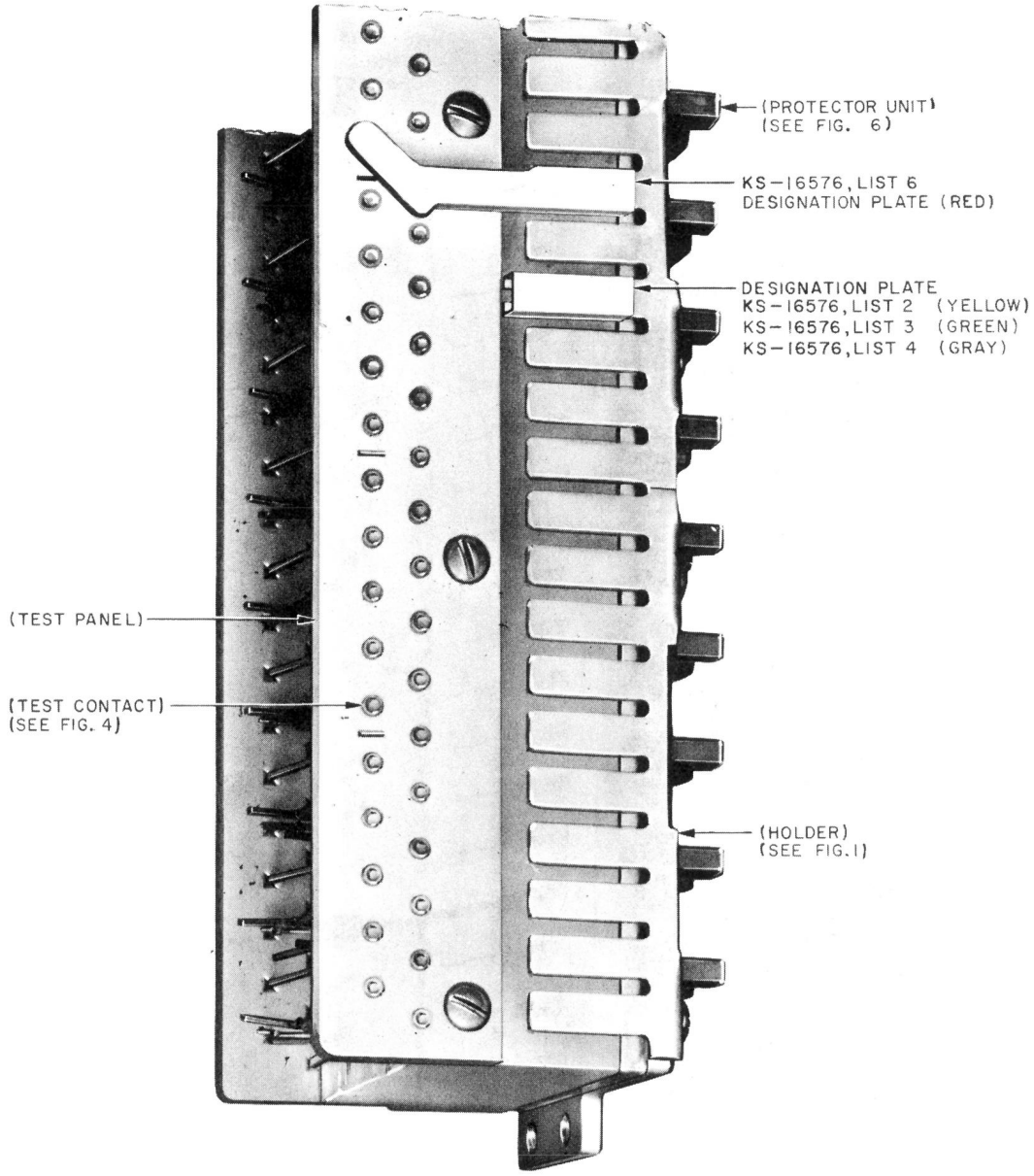


Fig. 2 — Test Panel Side of Connector

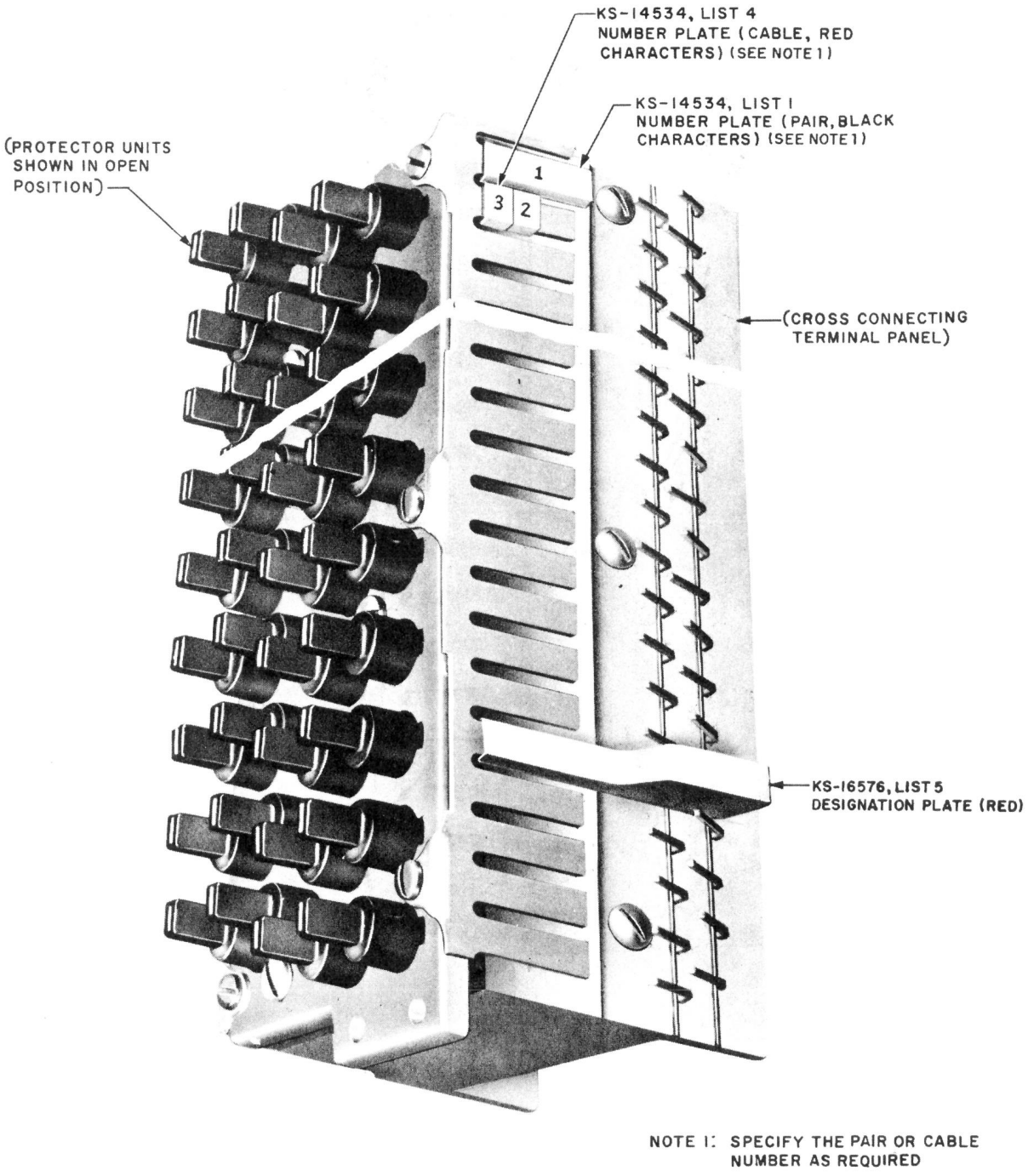


Fig. 3 — Cross-Connecting Terminal Panel Side of Connector With Aluminum Finger Type Holder

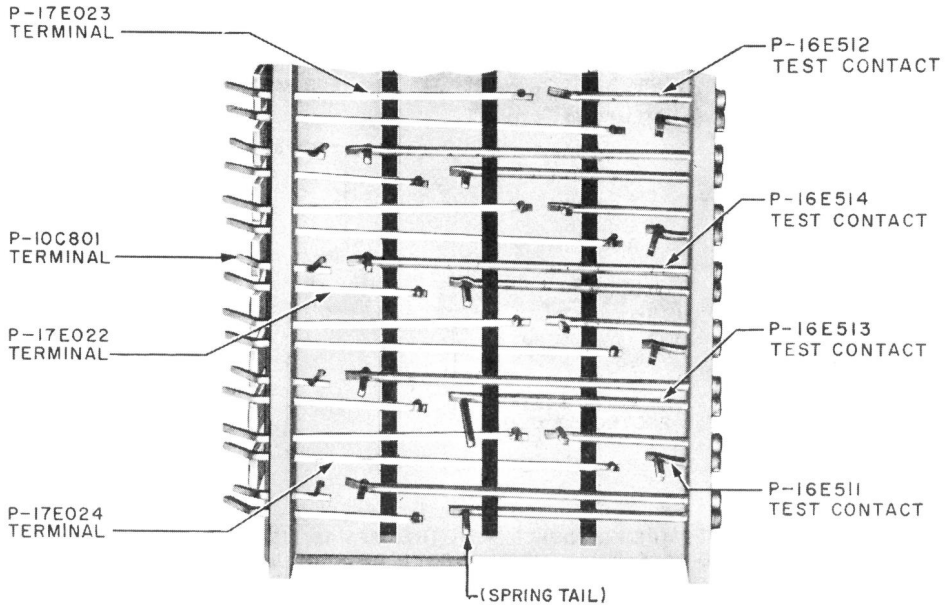
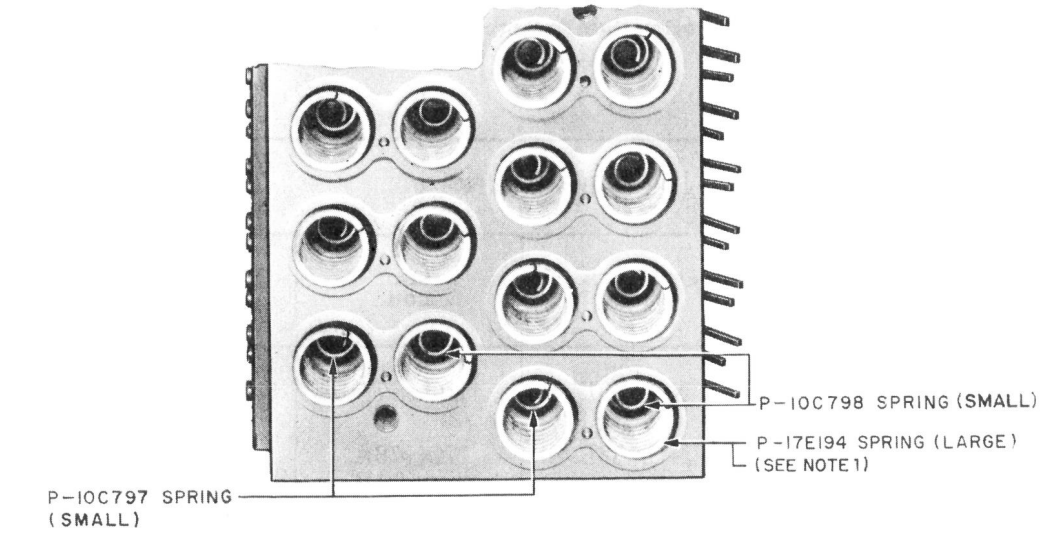
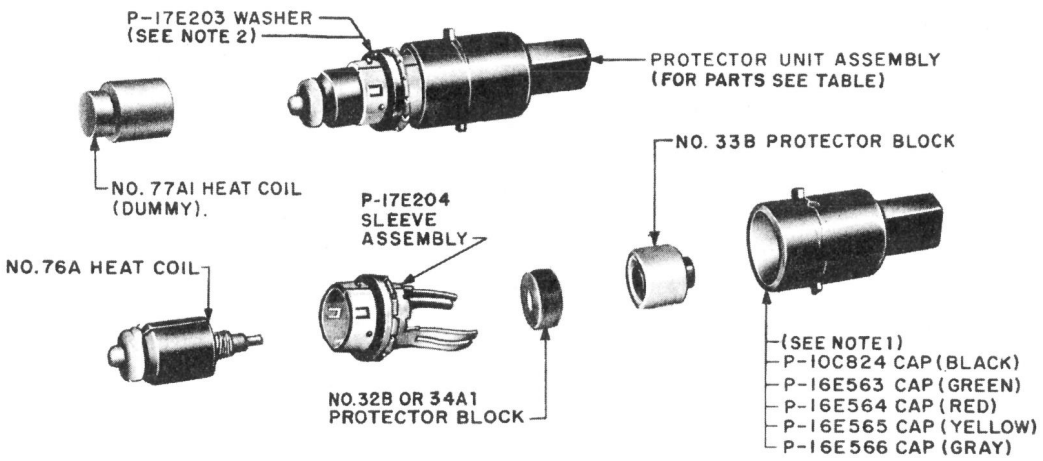


Fig. 4 — Rear View of Connector Showing Terminals and Test Contacts



NOTE 1 : WHEN REPLACING A LARGE SPRING MAKE CERTAIN THAT A P-17E203 WASHER IS ASSEMBLED ON THE ASSOCIATED PROTECTOR UNIT. (SEE FIG. 6)

Fig. 5 — Housing With Front Plate Removed Showing the Springs



NOTE 1: PROTECTOR UNITS ARE FURNISHED WITH THE CAPS AS LISTED IN THE TABLE. OTHER COLORED CAPS SHOULD BE ORDERED AS REQUIRED.

NOTE 2: THE P-17E203 WASHER, WHICH IS PART OF THE P-17E204 SLEEVE ASSEMBLY, IS REQUIRED WHEN THE PROTECTOR UNIT IS USED IN 300-TYPE CONNECTORS. THE WASHER IS ALSO REQUIRED WHEN THE UNIT IS USED IN A 121-TYPE PROTECTOR MOUNTING IN WHICH THE LARGE SPRING HAS BEEN REPLACED. IN ALL OTHER SITUATIONS WHERE THE UNIT IS USED IN 121-TYPE PROTECTORS, THE WASHER MAY BE LEFT IN PLACE UNLESS DIFFICULTY IS EXPERIENCED IN INSERTING THE UNIT. IN SUCH CASES THE WASHER MAY BE REMOVED LOCALLY.

Fig. 6 — Protector Unit Assemblies and Parts (See Table)

TABLE FOR FIG. 6

PROTECTOR UNIT	PROTECTOR BLOCK	PROTECTOR BLOCK	HEAT COIL	CAP (SEE NOTE 1)	SLEEVE ASSEMBLY
1A1A	NO. 32B	NO. 33B	*NO. 77A1	P-10C824	P-17E204
1A1C	NO. 32B	NO. 33B	NO. 76A	P-10C824	P-17E204
1A1D	*NO. 34A1	NO. 33B	*NO. 77A1	P-16E566	P-17E204

* Dummy

3.02 No replacement procedures are specified for screws or other parts where the procedure consists of a simple operation.

3.03 Before making any replacement of parts of connectors, appropriate steps should be taken to remove from service any associated circuit or adjacent circuits which may be affected.

3.04 ***Protector Unit, Heat Coils, Sleeve, and Protector Blocks:*** To replace any of these parts, remove the protector unit from the connector as follows. If the protector unit is in the working position (mark shown horizontal), turn the protector unit 45 degrees counterclockwise and remove it. The KS-16567 protector unit wrench may be used for this operation. If the protector unit is in the open position (mark shown vertical), turn the protector unit 45 degrees clockwise and remove it. Disassemble the protector unit and replace the parts as required. Reassemble the protector unit in the reverse order.

> ***Note:*** Handle protector blocks carefully to prevent damaging them. Avoid sliding motion between the blocks as any such movement will tend to loosen carbon particles which may cause service trouble.

Remount the protector unit in the connector, using the KS-16567 protector unit wrench, if necessary.

SPRINGS, TEST CONTACTS, AND TERMINALS (CROSS-CONNECTION)

General

3.05 To make any replacement of these parts, it will be necessary to remove a 50-pair section of the connector from the frame. Before doing this provide a suitable ground from the front plate to the frame. Then remove the screws that attach faceplate of the connector to the mounting brackets. Rotate the connector toward the fanning strip. Attach the 73B bracket to the top of the connector unit and to the mounting bracket as shown in Fig. 9. The superseded 73A bracket is installed in the same manner but cannot be used on 300-type connectors with attached fanning strips.

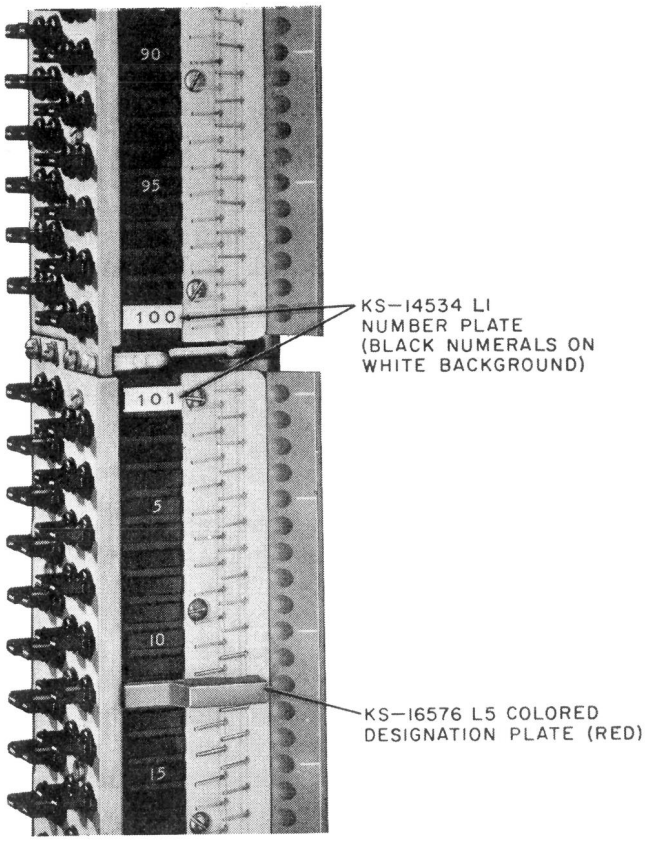


Fig. 7 — Cross-Connecting Terminal Panel Side of Prestenciled Connector

3.06 Where necessary to remove any wrapped connections, proceed as covered in the section covering making and removing wrapped connections on punched- or wire-type terminals not having notches or perforations.

3.07 Solder all connections of parts replaced. Soldered joints should be made on clean surfaces. The surface opposite a weld may be used if it is clean. Some difficulty may be experienced in soldering old parts. If so, replace both parts by new parts.

Cross-Connection Terminals and Small Springs

3.08 To replace a cross-connection terminal, cut the terminal, using the KS-7139 pliers, as cleanly as possible to separate it from the spring. Cut the terminal in two, if necessary, and remove the parts. Substitute a terminal of the proper length.

3.09 To replace a small spring, cut the terminal end of the small spring at a point as near the housing as possible, using the KS-7139 pliers. Cut the rest of the spring, using the pliers, as cleanly as possible to separate it from the cross-connection terminal. Remove the loose portion of the small spring. Remove the protector unit. Remove the small spring using the TP-75765 pull spring hook. Substitute a new small spring, taking care that the long straight end of the spring is inserted into the hole in the housing and that the spring is not distorted when pushing it into place. Mount and secure the protector unit in the working position (mark shown horizontal).

3.10 Solder the terminal and tail of the small spring together, using the KS-14440, L2 soldering copper as follows. Pull on the spring tail, using the long-nose pliers until the spring is fully seated in the housing. Using the KS-6320 orange stick, hold the cross-connection terminal in contact with the terminal end of the small spring and as close to the housing as possible and solder the two parts together. Cut the cross-connection terminal, using the KS-7139 pliers, to give approximately 1/8-inch clearance between the cross-connection terminal and the test contact.

3.11 Check for continuity and shorts as follows, using the KS-14250, L1 flashlight and two 1W13B cords connected to 411A test picks.

(1) With the protector unit in the working position (mark shown horizontal), make a continuity check between springs. If an open circuit is indicated, clear the trouble or replace the springs.

(2) With the protector unit in the open position (mark shown vertical), make a check between springs to be sure that they are not shorted. If they are found to be shorted, clear the trouble or replace the springs.

(3) With the protector unit removed, make a check between springs to be sure that they are not shorted. If they are found to be shorted, clear the trouble or replace the springs.

3.12 Reconnect the wrapped connections as covered in the section covering making and removing wrapped connections on punched- or wire-type terminals not having notches or perforations.

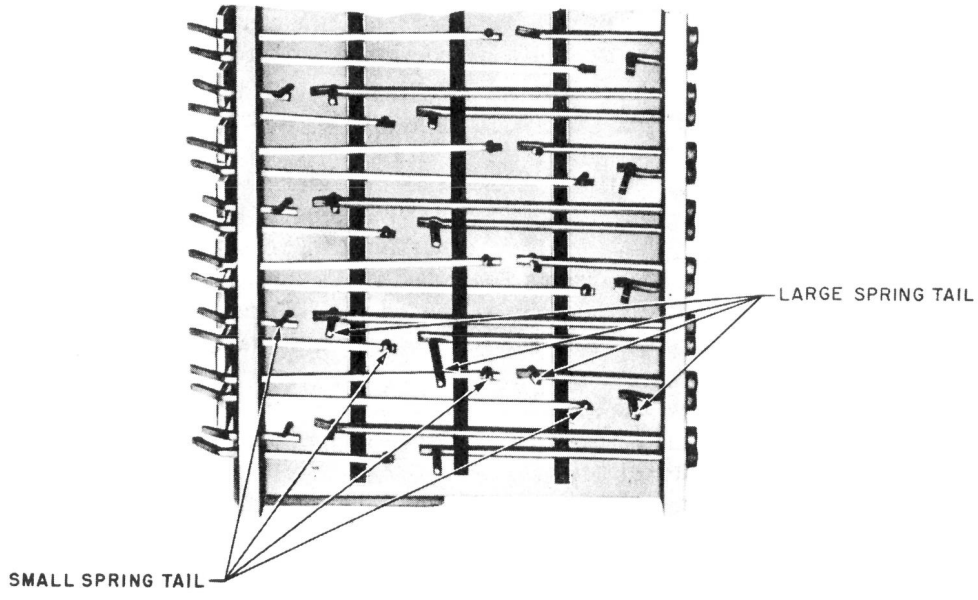


Fig. 8 — Rear View of Connector Showing Spacers and Springs

3.13 After making any replacement of parts, an overall operational check should be made and the circuits restored to service.

Test Contacts and Large Springs

3.14 To replace a test contact, cut it as cleanly as possible to separate it from the large spring, using the KS-7139 pliers. Cut the test contact in half, if necessary, and remove the parts. Substitute a test contact of the proper length.

3.15 To replace a large spring, cut the terminal end of the large spring at a point as near the housing as possible, using the KS-7139 pliers. Cut the rest of the large spring, using the pliers, as cleanly as possible to separate it from the test contact. Remove the loose portion of the large spring. Remove the protector unit. Remove the large spring, using the TP-75765 pull spring hook. Substitute a new large spring, taking care that the long straight end of the spring is inserted into the hole in the housing and that the spring is not distorted when pushing it into place. Mount and secure the protector unit in the working position (mark shown horizontal).

3.16 Solder the test contact and tail of the large spring together, using the KS-14440, L2 soldering copper as follows. Pull on the spring tail, using the long-nose pliers until the spring is fully seated in the housing. Using the KS-6320 orange stick, hold the test contact in contact with the terminal end of the large spring as close to the housing as possible and solder the two parts together. Cut the test contact, using the KS-7139 pliers, to give approximately 1/8-inch clearance between the test contact and the cross-connection terminal.

3.17 Check for continuity and shorts as follows, using the KS-14250, L1 flashlight and two 1W13B cords connected to 411A test picks.

(1) With the protector unit in the working position (mark shown horizontal), make a continuity check between springs. If an open circuit is indicated, clear the trouble or replace the springs.

(2) With the protector unit in the open position (mark shown vertical), make a check between springs to be sure that they are not shorted. If they are found to be shorted, clear the trouble or replace the springs.

(3) With the protector unit removed, make a check between springs to be sure that they are not shorted. If they are found to be

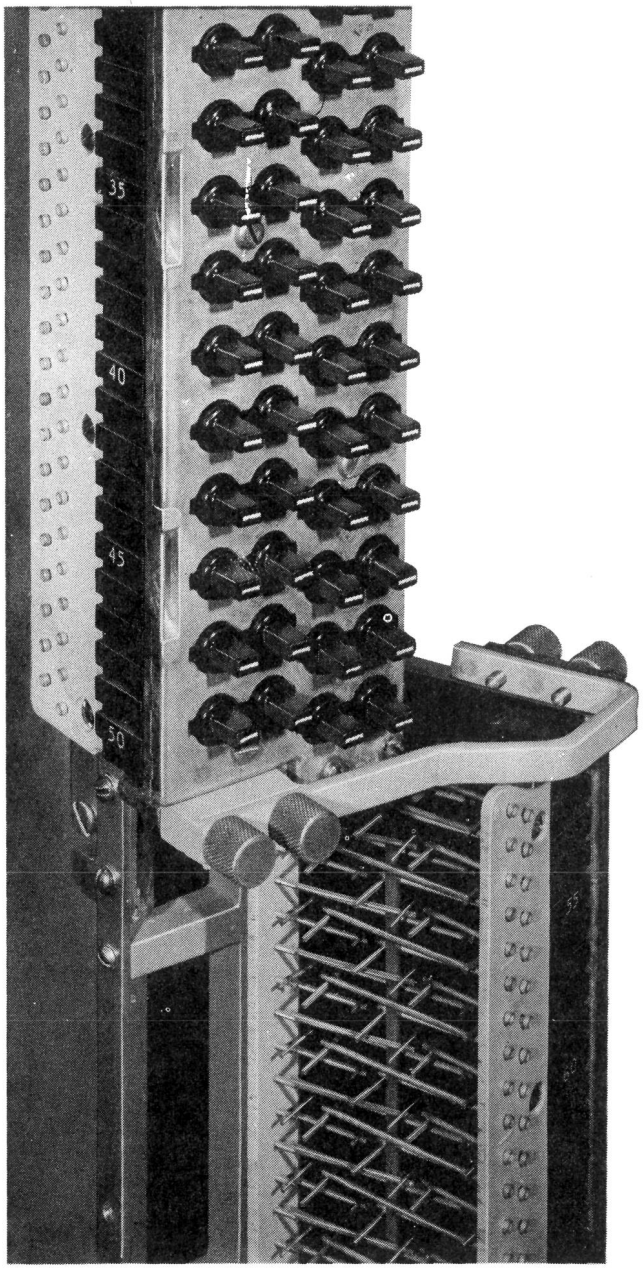


Fig. 9—73 Bracket Supporting a 300-Type Connector

shorted, clear the trouble or replace the springs.

3.18 Reconnect the wrapped connections as covered in the section covering making and removing wrapped connections on punched- or wire-type terminals not having notches or perforations.

3.19 After making any replacement of parts, an overall operational check should be made and the circuits restored to service.