300-TYPE CONNECTORS

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 used on distributing frames. It also covers approved procedures for replacing these parts.

1.02 This section is reissued to revise the piece-part information and to refer to the 300-type connectors which replace the 121-type protectors. Since this reissue covers a general revision, arrows ordinarily used to indicate changes, have been omitted.

1.03 The information shown for the 300-type connectors is applicable to the 121-type protectors.

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 aparatus. 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.

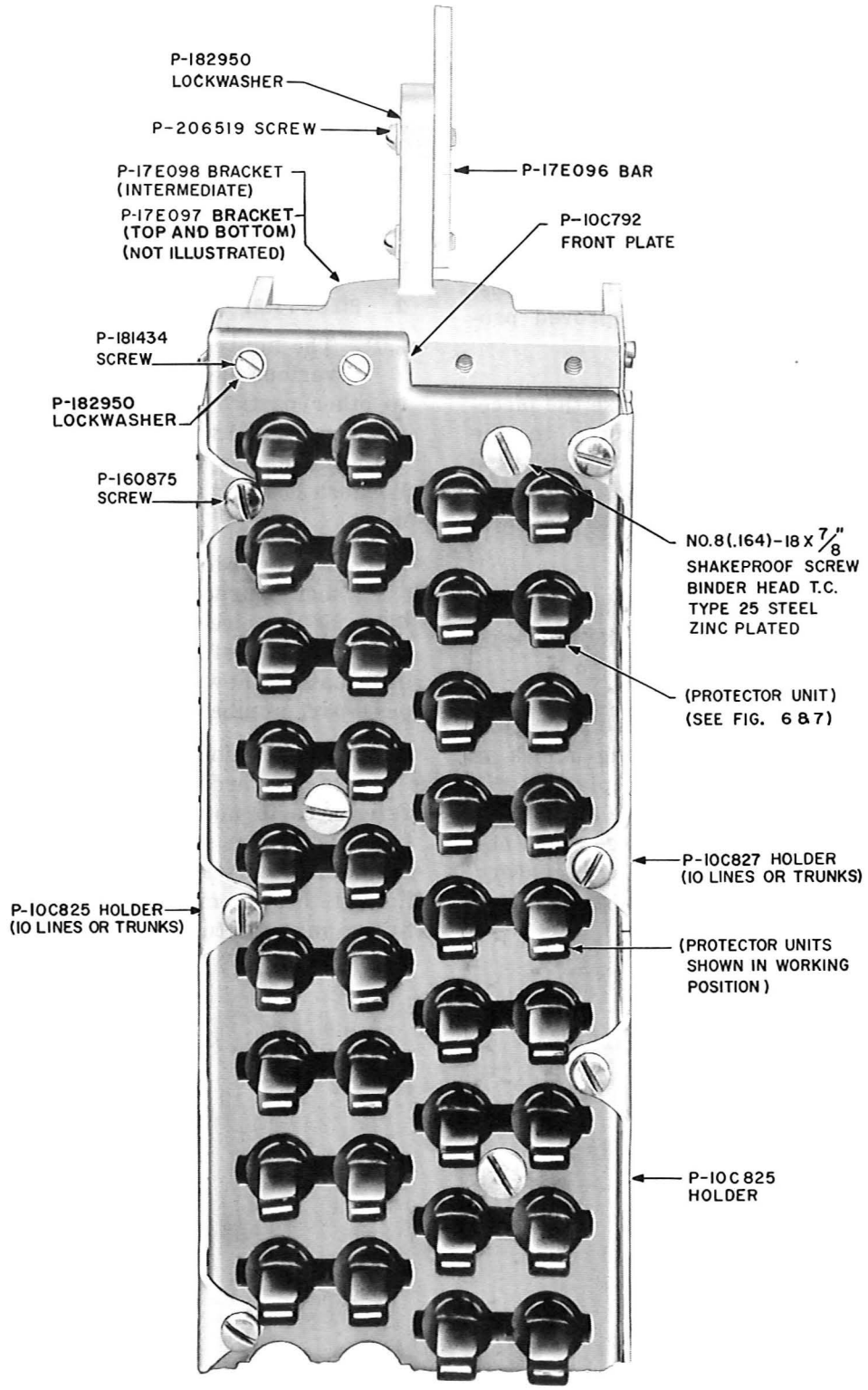


Fig. 1 – Front View of Connector

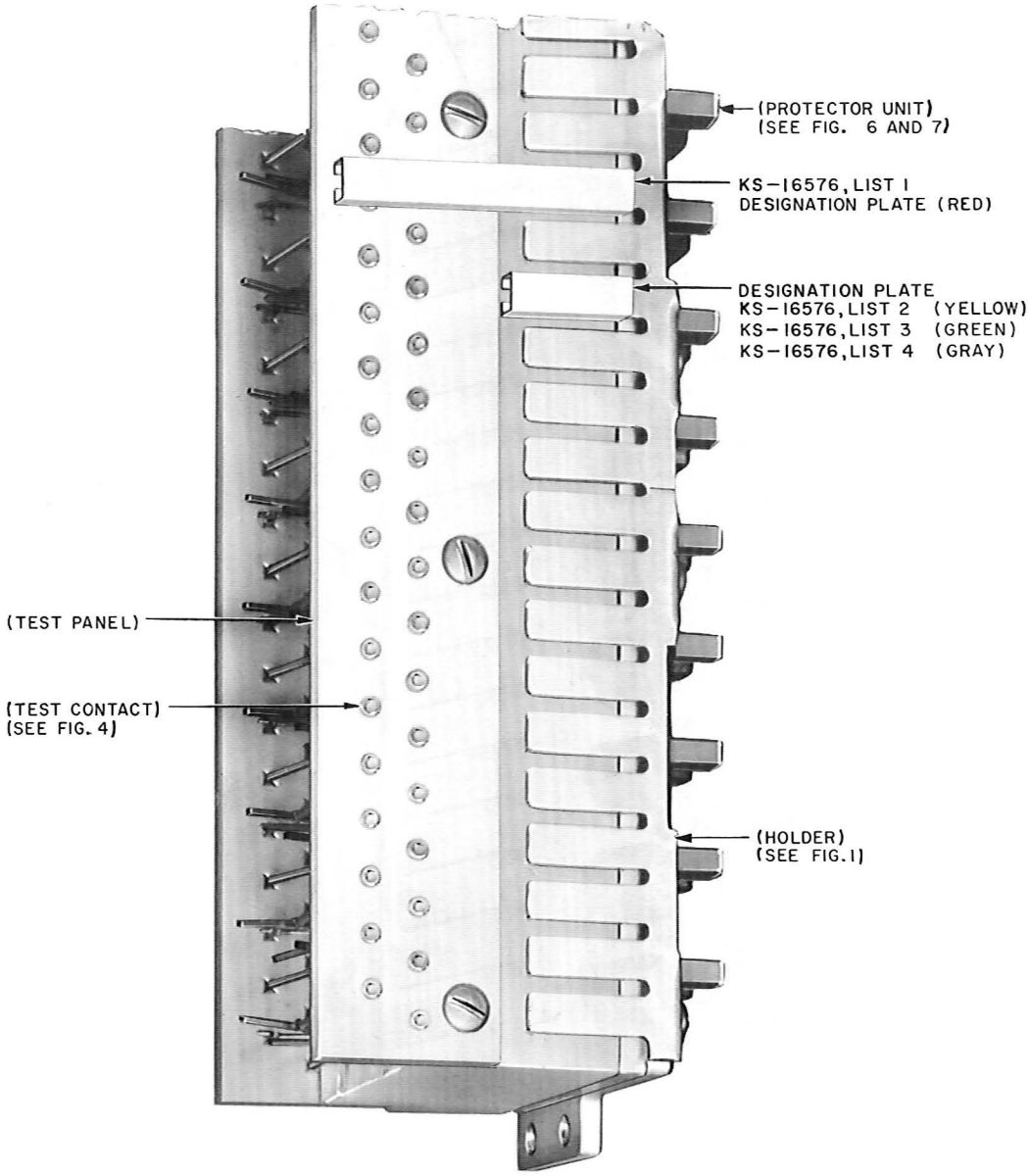


Fig. 2 – Test Panel Side of Connector

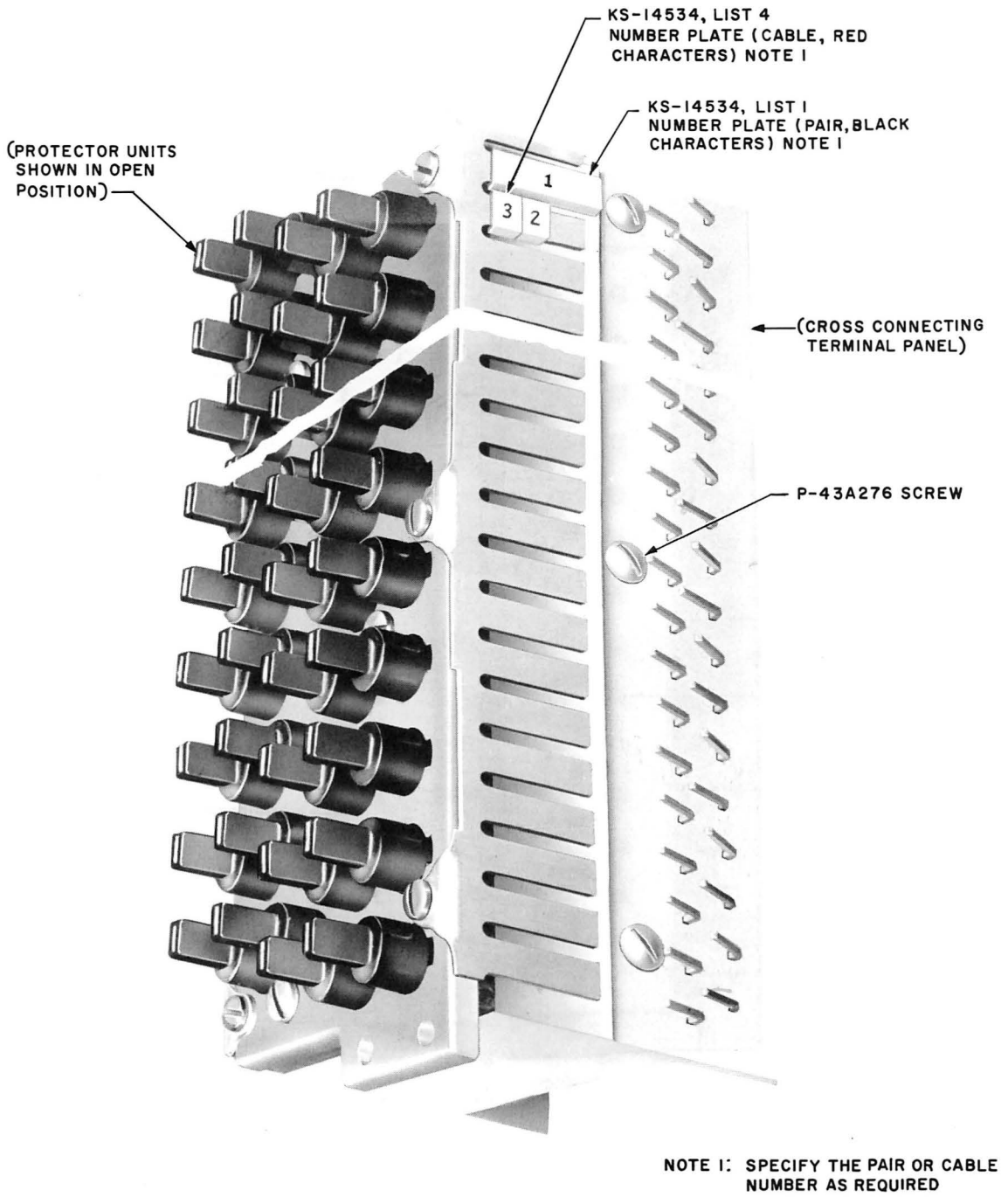


Fig. 3 – Cross-connecting Terminal Panel Side of Connector

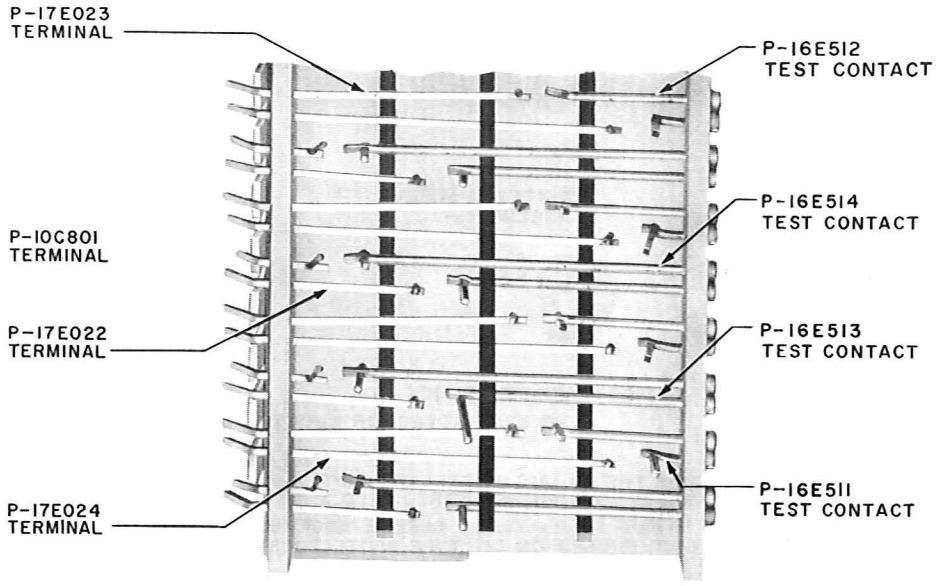
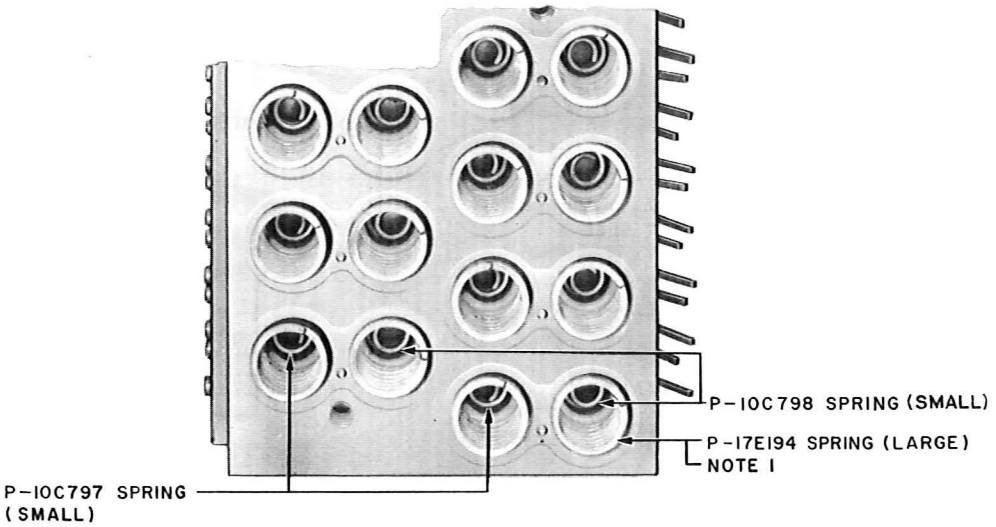
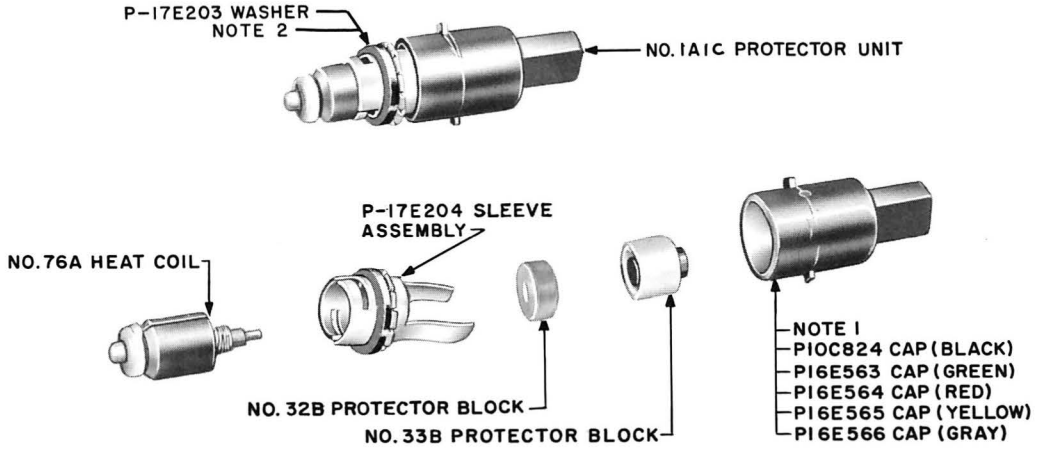


Fig. 4 – Rear View of Connector Showing Terminals and Test Contacts



NOTE 1 : WHEN REPLACING A LARGE SPRING MAKE CERTAIN THAT A P-17E203 WASHER IS ASSEMBLED ON THE ASSOCIATED PROTECTOR UNIT. (SEE FIG. 6 AND 7)

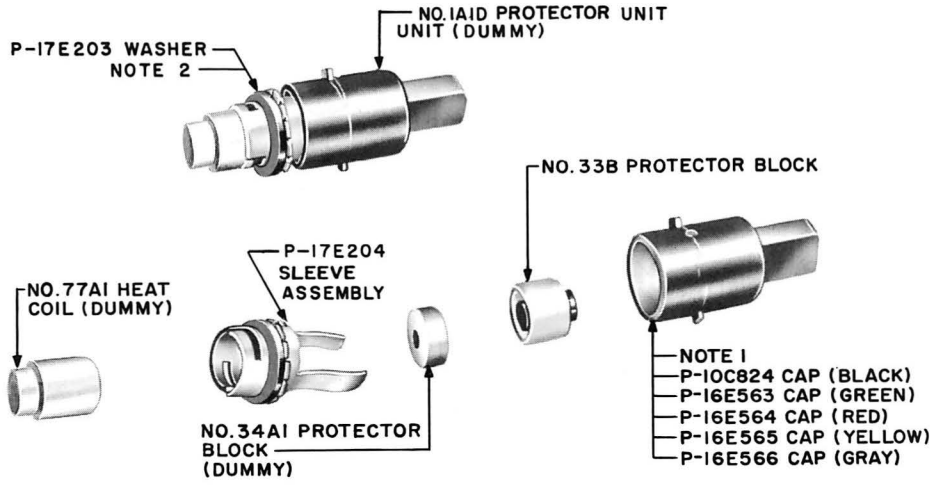
Fig. 5 – Housing With Front Plate Removed Showing the Springs



NOTE 1: P10C824 CAP IS PART OF THE NO. 1A1C PROTECTOR UNIT. OTHER COLORED CAPS SHOULD BE ORDERED AS REQUIRED.

NOTE 2: THIS WASHER, WHICH IS PART OF P-17E204 SLEEVE ASSEMBLY, IS NOT REQUIRED WHEN THE NO. 1A1C PROTECTOR UNIT IS USED ON 121 TYPE PROTECTORS AND IT MAY BE REMOVED LOCALLY.

Fig. 6 – 1A1C Protector Unit Assembly and Parts



NOTE 1: P-16E566 CAP IS PART OF THE NO. 1A1D PROTECTOR UNIT. OTHER COLORED CAPS SHOULD BE ORDERED AS REQUIRED.

NOTE 2: THIS WASHER, WHICH IS PART OF P-17E204 SLEEVE ASSEMBLY, IS NOT REQUIRED WHEN THE NO. 1A1D PROTECTOR UNIT IS USED ON 121 TYPE PROTECTORS AND IT MAY BE REMOVED LOCALLY.

Fig. 7 – 1A1D Protector Unit Assembly (Dummy) and Parts

3. REPLACEMENT PROCEDURES

3.01 *List of Tools and Test Apparatus*

CODE OR SPEC NO.	DESCRIPTION
TOOLS	
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	
1W13B (2 reqd)	Cord (One No. 893 cord, 6 feet long, equipped with two No. 360A tools)

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 when making any replacement of parts.

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 two top connector mounting screws using the 4-inch E screwdriver. Loop several strands of insulated wire through the mounting holes in the top of the connector and secure the wire to the frame cross members. Remove the two bottom mounting screws and carefully rotate the connector to the right until the rear of the connector is accessible. Do not allow the connector cross-connection terminals to touch or rest against the framework or to put an undue strain on the connections. Rest the connector on the bracket mounting below the connector.

3.06 Where necessary to remove any wrapped connections, proceed as covered in Section A502.009.

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 small spring together using the KS-14440, List 2 soldering copper, as follows. Pull on the spring 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, List 1 flashlight and two No. 1W13B cords connected to No. 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 Section A502.009.

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

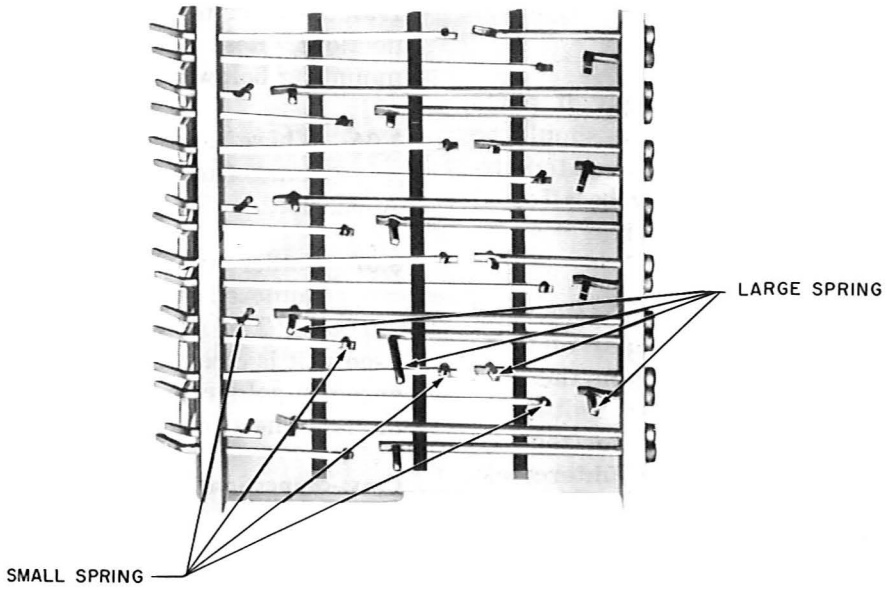


Fig. 8 – Rear View of Connector Showing Spacers and Springs

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 two 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 large spring together, using the KS-14440, List 2 soldering copper, as follows. Pull on the spring 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, List 1 flashlight and two No. 1W13B cords connected to No. 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.

3.18 Reconnect the wrapped connections as covered in Section A502.009.

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