

711 CONNECTOR SYSTEM  
GENERAL SPLICING INFORMATION

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1. GENERAL

1.1 Scope of Section

1.1.1 The purpose of this section is to provide installation with a general description of the 711 Connector, the approved usage within the Bell System, and a complete listing of the tools and associated details required to properly install the 711 Connector System.

1.2 Associated Information

1.2.1 Refer to the following sub-paragraphs in this series for application information on where and how the 711 Connector can be applied into the various switching systems. The 711 Connectors can be located in the frame vertical uprights, or they may be located on the overhead cable rack above the frames. Refer to job drawings for connector locations.

1.2.2 The 711 Connector can be used as a straight "in-line" splice, butt splice, bridge, or a half-tap. Refer to drawing ED-2C531-10 for general application information.

1.2.3 The 711 Connector is used for cable-to-cable and equipment-to-cable interconnections of 22 to 26 ga. wire with PVC and other insulations. The connector is intended as a quick disconnect device in new and re-used equipment applications where few (10 or less) reconnects are required.

1.2.4 See 900 Series Sections of Handbook 9 for testing information.

1.3 Precautions

1.3.1 Precautions to be taken against personal injury, equipment damage, and service interruptions are covered in Handbook 0, and they shall be observed at all times as they apply to the operations being performed. Specific precautions, when applicable, are included in the section associated with the

particular application being performed.

2. AUTHORIZATION AND APPROVAL

2.1 Authorization

2.1.1 Splicing recabling, etc., may be done only if authorized in Operating Company or Western Electric Specifications, by other instructions from the Equipment Engineering Organization, or by a Operating Company letter applying to the particular cables involved.

2.2 Approval

2.2.1 The 711 Connector System has a BTL approval for splicing, half-tapping, and bridging switchboard cables within a Central Office. See Table A for approved wire types and gauges.

3. INSTALLING EQUIPMENT

3.1 Supplies

3.1.1 The design of the 711 Connector was formulated around the concept of securing each set of wire ends into separate plastic wire holders or receptacles. These receptacles are then subsequently joined together by a module containing insulation displacing slotted beam contacts. This arrangement affords considerable flexibility in that the Connector Module can be added to either Receptacle, to form the male side of the connector, or 2 Receptacles can be joined with a single Connector Module at the time of splicing. The following is a list and description of the component parts required to assemble a 711 Connector.

3.1.2 The Receptacle is a three-part plastic assembly consisting of 2 Mandrels, around which the wire ends are formed, and a Receptacle Housing. Typically, the tip and ring wires can be placed side-by-side (preferred) in the Mandrel or alternatively; the tip wires can be placed on one Mandrel and the

ring wires on the opposite Mandrel (see Figure 1).

3.1.2.1 The Mandrel is simply a plastic block that ~~allows~~ the wires to be formed around it in a "U" shaped manner, and then the small protrusions within the wire retention slots grip the conductor insulation and hold it in place. The wire retention feature, in addition to the bent shape of the wire, provides an excellent strain relief (see Figure 2). Openings are provided in both the top and bottom of the receptacle housing to allow contact entry. An assembled unit with typical wire dress is shown in Figure 3.

3.1.2.2 Because of the wire gripping arrangement, the Mandrel is sensitive to the size of the outside diameter of the wire. Consequently, there are several Mandrel sizes, and they are color-coded so that they may be distinguished from one another. For example, the gray Mandrel will accept 22 BU and 24 BU wires. The white Mandrel takes 26 BY wire. Should it be necessary, it is possible to mix mandrel types in a single common housing (see Table B).

3.1.3 A Connector Module contains an array of slotted beam contacts with electrically joined wires in the 2 Receptacles. The contacts are arranged in 4 rows and staggered to permit close wire spacing. The plastic towers surrounding the contacts act as guides during assembly and serve to protect the contacts (see Figure 4).

3.1.4 The assembled connector, comprised of 2 Receptacles and 1 Connector Module is shown in Figure 5.

3.1.5 The 711 Connector can be furnished in 3 sizes; they are the 64 wire (32 pair), 50 wire (25 pair), and the 24 wire (12 pair). These assemblies are 1.0" wide by 0.780" high. The 64 wire size is 3.56" long, the 50 wire size is 2.7" long, and the 24 wire size is 1.56" long.

3.1.6 Refer to Table C for a list of 711 coded part numbers and their associated description.

3.1.7 When the 2 receptacles and the Connector Module are pressed together, the slotted beam contacts of the Connector Module displace the conductor insulation, and provide an electric metallic connection between the wires secured in the top and bottom Receptacles.

### 3.2 Tooling

3.2.1 Tool Set 546 - Composed of 1025A Connectorization Kit and 710A Tool Mount.

3.2.1.1 1025A Connectorization Kit.

3.2.1.1.1 The R-4773 (850A) is a Cutter-Presser T-Bar type tool into which the wires are fanned, cut off, and pressed into the wire retention slots of the Mandrels

(see Figure 6).

3.2.1.1.2 The R-4774 (851A) is a hand-held lever action closing tool (see Figure 7) which is used to press the Connector Module into the mating Receptacles.

3.2.1.1.3 The R-4775 (852A) is a hand-held type tool used to reseat (press) single wires back into the Mandrel where wire ends had to be removed due to fanning errors, cut-sheet information, or other job conditions (see Figure 8).

3.2.1.1.4 The R-4871 tool is used for mass cutting of half-tapped wires from the 711 Receptacles. The tool contains an array of electrically isolated cutting blades which are positioned to cut wires at the receptacle windows (see Figure 9). The tool comes in 3 sizes to mate with 24, 50, and 64 lead connectors.

NOTE: AFTER USING THIS TOOL, A CONNECTOR MODULE CANNOT BE ATTACHED TO THE CUT OFF SIDE OF THE RECEPTACLE FOR ELECTRICAL CONTACT.

3.2.1.1.5 The R-4773, Details 5 through 17, Wiring Identification Plates are used to aid the craftsman in the wiring of the Receptacle in the specified configuration (see Figure 10).

3.2.1.1.6 The Accessory Kit contains support tools and parts for minor repair of the R-4773 Cutter-Presser (see Figure 11).

3.2.1.1.7 R5041 Carrying Case

3.2.1.2 710A Tool Mount

3.2.1.2.1 The 710A Tool Mount contains various mounting details that will allow the R-4773 Cutter-Presser to be mounted in a number of different positions and on a number of different pieces of hardware (see Figure 12).

## 4. R-4773 USAGE

### 4.1 Set-up Procedure

4.1.1 Depending on the system involved and the location of the 711 Connector splice, set up the R-4773 Cutter-Presser utilizing the mounting details of the 710A. Refer to Paragraph 8 of this section and following subsections in this series for detailed instructions on the set-up procedures.

4.1.2 After the splice location has been determined from the job drawings and the Cutter-Presser has been mounted and set up for splicing, check to be sure that the correct wiring identification (ID) plate is mounted on the tool head.

4.1.2.1 This tool has 3 basic wiring ID plates for each of the 3 different wiring configurations (X, Y or Z). (See Figures 10 and 13.) Therefore, refer to the standard wiring documentation or job cut

sheets to obtain the correct ID plate information. In the absence of such information, select the appropriate configuration based on Figure 13.

NOTE: NORMALLY, ALL EQUIPMENT SIDE CONNECTORS SHOULD BE USING THE "X" WIRING ID PLATE.

4.1.2.2 Set tool for proper size connector. (See paragraph 7.1.1.) Mount correct ID plate on the front of the Cutter-Presser.

4.1.2.3 The ID plates are slotted and the screws are preset in the tool head so it is only necessary to loosen the screws to mount or change plates (see Figure 14).

#### 4.2 Operational Procedure

4.2.1 With the Operator facing the front side (opposite the cable entry side) of the Cutter-Presser, the procedures shown below should be followed.

- A. This tool is normally received and mounted in the closed position; therefore, slide the level selector handle A from the "PRESS" position (extreme right) into the "LOAD" position (extreme left). This will release the lock and allow the tool to open. Refer to Figure 15 for selector handle location.
- B. Open the tool by lifting up on the compression head B assembly and allowing the head (with lever C latched in place - see Figure 15) to rotate backward and into the open position. Do not allow the head to fall freely.
- C. The "X, Y, or Z" wiring ID plates will show 2 symbols, which indicate where the notched ends of the two plastic mandrels are to fit. Insert these mandrels into the spring-loaded latches with the wire separation peaks upward (smooth side down) and be sure they are properly seated (see Figures 16 and 17).

#### 4.3 Wiring Procedures

The following subparagraphs will relate to methods which should be used for applying 711 Connectors on in-line (straight), half-tap, and butt type splices.

4.3.1 In-Line (Straight) Splice: After the tool has been set up, the mandrels properly seated and the correct ID plate mounted, the following procedures should be followed:

- A. Where a single connector serves a cable with 32 pair or less and is to be spliced or stubbed-off, it is only necessary to remove a

minimum of 9" of cable sheathing from the cable end. However, where several connectors serve one cable, refer to Table D for sheath removal.

- B. When several connectors serve one cable (over 32 pair), separate the cable into binder groups and identify. That is with each binder group serving one connector, attach a tape mark according to Table D and secure the first wire bundle to the rear cable platform of the Cutter-Presser using the elastic tie (see Figure 18).
- C. Refer to the job wiring documentation or cut sheets and commence fanning the cable leads into the correct Mandrel positions. Again, be sure the correct ID plate is mounted on the tool head. Dress the first pair of leads in between the 2 wire dressing posts and into the proper comb position away from the operator. Bring the leads from the rear comb, across the Mandrel, and into the front comb (closest to the operator). (See Figure 19.) Proceed to bring the leads down directly through the front comb and into the spring wire retainer. Leave uniform slack behind the Mandrel (see figure 20).

NOTE: THE SPRING WIRE RETAINER WILL ACCOMMODATE 22 THROUGH 26 GA. WIRE. HOWEVER, IT IS SENSITIVE TO STRETCHING. DO NOT STRETCH SPRING.

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CAUTION: IF INSUFFICIENT SLACK IS PROVIDED, WIRES WILL BE PULLED OUT OF POSITION IN THE MANDREL (FIGURE 21) OR IN THE CASE OF 26 GA. CONDUCTORS MIGHT BE BROKEN.

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- D. Finish fanning the leads into the tool until the first Mandrel is filled according to your job requirements. Refer to the ID plate and note the direction in which the position numbers increase. (Some configurations build up left to right while others right to left.) Proceed

- to fan the leads into the second Mandrel until it is also completed (see Figure 22).
- E. After the leads have been fanned into both Mandrels, do a visual check to be sure that there are no wiring errors or 2 leads in the same Mandrel slot.
- F. After the visual check has been made, swing the T-bar up into its top position.
- G. With the T-bar in place, press downward on the head and slide the level selector handle from the ~~extreme left position~~ into the next or center position. By moving the selector handle into this position, you have set the tool into the "cutting" cycle (see Figure 23).
- H. With the T-bar locked into position, release and rotate the handle downward into the maximum bottom position (minimum 180 degrees) and then back into the top locked position. This operation will cut off the ends of the cable leads. The loose wire ends can now be removed from the spring wire retainer.
- I. While the T-bar is in the upright position, slide the level selector handle into the extreme right position. This operation sets the tool into the "presser" cycle. A slight downward pressure on the tool head will allow the level selector handle to slide easier.
- J. Again, rotate the T-bar downward into its bottom position and then back into the top locked position. This operation wraps and seats the leads into the notched wire slots of the Mandrels.
- K. Slide the level selector handle into the extreme left outside position; and then with the finger tips, lift up on the T-bar and allow it to swing down into its bottom position (see Figure 24).
- L. The fanning operation is now complete; therefore, release the elastic band holding the cable.
- M. Again, refer to the ID plate and look for the alignment bar symbol (polarity mark). This bar is colored red and identifies Position #1 on the housing. Place the housing over the Mandrel with the alignment bar down and positioned per the polarity mark on the ID plate. Press down firmly on the housing until you feel it "snap" on both ends of the Mandrel (see Figure 25).
- N. Lift up on the housing and the Mandrel assembly will pull out of the spring-loaded latches. The release of the Mandrel assembly from the spring load can be heard.
- O. Swing the housing containing the first Mandrel 180 degrees over to the opposite side (see Figure 26) and place it on top of the second Mandrel. Again, press firmly down on the housing until the second Mandrel is seated in place.
- P. The Receptacle is now complete. Verify that the Mandrels are fully seated in the housing. If not, press them in by hand.

4.3.2 Half-Tap: The half-tap arrangement can be used for equipment retrofits where the old equipment is being removed and replaced with a new vintage of equipment. This arrangement can also be used on buss distribution systems and other similar applications where a continuous cable requires a half-tap splice.

4.3.2.1 The procedures for half-tapping are similar to those used in straight splicing. Therefore, only the variations in procedure are described below:

- Step 1: Remove the 4 screws in the forward comb with an allen wrench to release the cutting blades (see Figure 27). Remove the 2 cutting blades from the tool (Figure 28) and mount the "Y" ID plate on the tool head.

NOTE: STORE SCREWS IN THE BLADE FOR SAFE KEEPING.

- Step 2: Identify the cable(s) to be half-tapped and set up the Cutter-Presser in the area where the 711 Connectors are to be located. The tool setup is covered in Paragraph 8.

- Step 3: Locate the first cable to be half-tapped and prepare to remove a section of the cable sheathing necessary to accommodate the number of 711 Connectors to be applied. Refer

NOTE: AT THIS POINT, VISUALLY CHECK THE MANDRELS TO MAKE SURE ALL LEADS ARE SEATED AND RETAINED CORRECTLY IN THE SLOTS.

NOTE: ALWAYS HOLD ONTO THE T-BAR HEAD WHEN RELEASING SLIDE TO PREVENT IT FROM PIVOTING BACKWARD.

to Sketch A and Table E for the recommended method of determining the length of cable sheathing to be removed.

- Step 4: Attempt to obtain 18" of cable slack in the cable receiving the connectors. A minimum of 12" is required.
- Step 5: After the cable sheath has been removed, cut the colored binder wrappings near the center of the opening and slide the loose ends down to both butt locations for binder identification. Proceed to place PVC tape bands around each binder, or group of leads, according to Table E and Steps 5a, b and c. These tape bands will pinpoint the locations where each group of leads should be secured to the tool with the elastic band.
- Step 5a - 32 Pair Connectors:  
Measure out from the butt mark (of the remaining side) and place the tape bands as follows: group 1 - 3", group 2 - 8", group 3 - 13", group 4 - 18", and group 5 - 23" (see Table E).
- Step 5b - 25 Pair Connectors:  
Set up in the same manner as above using dimensions from Table E.
- Step 5c - 12 Pair Connectors:  
Set up in the same manner as above using dimensions from Table E.
- Step 6: Select the first binder or group of wires to be fanned and secure them to the tool. When half-tapping, always secure the side of the cable that is to remain in place after completion of the equipment relocation. Dress the rest of the cable leads down under the left side of the tool and up into the wire protection trough as shown in Figure 29. In equipment retrofit application, the outgoing cable leads will be cut off at a later time. Always be sure to identify the cut-off cable side and eliminate possible service interruptions.
- Step 7: Unless otherwise instructed, fan the cable leads into the Mandrels in a straight sequential order; that is, the first cable pair leads, tip and ring, would fan into positions 1 and 2. As an example, let us assume that you are half-tapping into a 257A cable. This cable has two 20 pair binders for a total of 80 leads; therefore, you would have to use two 25 pair connectors. The blue binder would fan into the first 25 pair connector using positions 1 through 40. The orange binder would fan into the second 25 pair connector using positions 1 through 40. Positions 41 through 50 would be

empty in both connectors.

NOTE: DO NOT SPLIT BINDERS BETWEEN CONNECTORS UNLESS OTHERWISE DIRECTED IN THE SPECIFICATION.

- Step 8: Dress the wires into the rear fanning comb, across the Mandrel(s), through the front fanning comb, and down into the spring wire retainer. Bring the leads from the right side (facing the tool) into the protection trough as shown in Figure 29. This will eliminate the possibility of snagging leads while closing the tool head.
- Step 9: With the level selector handle in the "load" position (far left), swing the T-bar up over the top of the seated Mandrels. With a slight downward pressure on the tool head, slide the level selector into the "cut" position (center). Release the T-bar handle and rotate it downward as before and then back up into the top locked position.
- NOTE: STEP 9 IS REQUIRED TO SET THE TOOL IN THE PROPER CYCLE.
- Step 10: Again, apply a slight downward pressure on the tool head and slide the level selector handle into the "press" position (far right). Rotate the tool head handle downward and then back up to the top locked position. This seats the leads in the Mandrel slots.
- Step 11: Apply the receptacle housing and remove the Mandrels from the tool as described in Paragraph 4.2.1.M through 4.2.1.P.
- Step 12: After removing the Receptacle from the tool, hand form the wires on the outgoing side to provide a neat wire dress (see Figure 30).
- Step 13: Set the next group of wires up on the tool platform and secure them at the tape mark locations with the elastic band. Fan and press the leads on the Mandrels as previously described. Continue applying the Mandrels and housings until the cable is completely connectorized.
- Step 14: After applying all the 711 Receptacles to the cable, each housing shall be stamped with 1/8" black characters on the outside (opposite the connector module side) of the housing. It shall be stamped approximately in the center with the cable designation and a sequential number corresponding to the binder or group of leads. For example, let us assume we are applying 711 Connectors to a 262A cable (5 binders), which is functionally designated as "XB3." The housing on the blue

binder would be stamped "XB3-1," and the slate binder for that cable would be stamped "XB3-5." Refer to drawing ED-2C531-10 for stamping information.

- Step 15: Identify the associated cable(s) going to the new equipment which is to be part of the half-tap. If the final splice configuration ends up being an "in-line" straight splice, a "Z" wiring configuration should be applied to the cable ends (see Figure 13). Slide the heat shrink tubing over these cable ends and push it down far enough on the cable to be out of the way prior to connectorization (see Table F).

NOTE: The "Y" wiring configuration is always applied to the old existing through cable. When a straight "in-line" type splice is required, a "Z" wiring configuration must be applied to the cable ends of the new equipment. However, when, due to cable rack congestion or the location of the new equipment, a "butt" type splice will be required, the new equipment cable ends should have a "Y" wiring configuration applied to them. Always avoid using an "X" wiring configuration on new cable ends when half-tapping is being planned.

Use the "Z" or "Y" configuration in conjunction with the "Y" configuration applied to the through (existing) cable. The "Z" or "Y" configuration can be applied to the back side of the "Y" through cable and the the old equipment leads can easily be cut off on the front side of the "Y" through cable. Again, as a reminder, when half-tapping into an existing through cable, always secure the side of the cable that is going to remain in place to the tool head platform (see Step 6 and Sketch B).

- Step 16: Pick out the first new cable to be joined and remove the sheathing from the cable end (10" more than sheath opening). Identify the binders or groups of wires near the butt locations and apply tape bands as described in Table F. However, the tape band nearest the butt mark will now be the slate binder or the last group of leads. Remember to reverse the distance the tape bands are to be located from the butt location.
- Step 17: Remove the "Y" identification (ID) plate from the tool head and replace it with a "Z" (ID) plate if an "inline" splice is desired. If a "butt" splice is desired, leave the "Y" (ID) plate in place. Reinsert and secure the 2 cutter blades in the T-bar tool head and proceed to

apply the appropriate 711 Receptacles.

- Step 18: Identify each receptacle housing on the side away from the connector Contact Module using 1/8" black characters. Again, use the cable designation with sequential numbering (see Step 14).

- Step 19: After the receptacles have been applied to the new cable(s), lay them alongside the existing (old) cable(s) and prepare to press the Connector Module in between the 2 Receptacles with the R-4774 Closing Tool (see Figure 31). Refer to Paragraph 5.1 for the use of this tool.

4.3.2.2 Half-Tap Wire Removal: Where half-tapped cables are used in conjunction with equipment retrofits, it will be necessary at some later date to remove the old equipment termination cables from the Receptacle.

4.3.2.2.1 The R-4871 tool is used for mass cutting of half-tapped wires from the 711 Receptacles. The tool contains an array of electrically isolated cutting blades which are positioned to cut the wires at the Receptacle windows (see Figure 32).

NOTE: THE END OF THE R-4871 WITH THE RED BAR MUST BE ON THE END OF THE MODULE WITH THE RED BAR. THE BARS THEMSELVES MAY NOT ALWAYS ALIGN, BUT THEY MUST BE ON THE SAME END.

4.3.2.2.2 The cutter is pressed on the side of the Receptacle containing the unwanted wires using the R-4774 tool (see Figure 33). The cutter can be pried off with a screwdriver.

4.3.2.2.3 The wires can then be removed by hand or with the aid of pliers.

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CAUTION: SINCE THE WIRES ARE CUT AT THE WINDOWS, CONNECTIONS CAN NO LONGER BE MADE ON THE CUT SIDE OF THE RECEPTACLE.

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4.3.2.2.4 Diagonal cutters may be used if the R-4774 is not available or if you wish to maintain bridging capability on this side of the connector (see Figure 34).

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**CAUTION: PLACE PLASTIC BEHIND DIAGONALS  
TO PROTECT AGAINST SHORTS OR  
CROSSES WHILE CUTTING.**

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**4.3.3 Butt Splice:** The Butt Splice should be used where, due to equipment locations, both cables being connectorized run parallel to each other. The "X" and "Z" wiring ID plates shall be used, when connectorizing cables for a butt-type splice. The "X" ID plate is normally used for the cable(s) terminating at the equipment location. However, refer to the Cable Connecting Documents or cut sheets for the correct setup information. Refer to Figure 35 for typical Butt Splice.

**4.3.3.1** Cables being connectorized using the butt-type method will fan into the R-4773 Cutter-Presser in the same manner as those described in Paragraph 4.3.1 for the in-line (straight) splice. The cable sheath removal and tape band marks should be applied in accordance with Table G. The heat shrink tubing (KS-21766 or KS-21709) used to protect the connectors on the cable rack need only be long enough to reach at least 2" up on the cable sheathing (beyond butt mark) and about 3" beyond the last connector (end of cables). Heat shrink the tubing on the cables with the R-4444 Heat Gun and fold over the open end of the tubing and tape it closed with about two laps of PVC tape (refer to ED-2C531-10).

**4.3.4 Bridging:** This is nothing more than adding on an additional cable to a previously connectorized (711) cable (Figure 36). Therefore, a bridge can be placed on top of an in-line splice, a half-tap splice or a butt-type splice. The key to successfully bridging a cable is to be sure the wiring configuration (X, Y or Z) used on the added cable matches the connector positions of the existing cable splice you intend to bridge into. Refer to the Cable Connecting Documentation or cut sheets for this information, and then refer to Figure 13 to be sure it agrees.

**4.3.4.1** After selecting the proper wiring configuration, mount the correct "X, Y, or Z" ID plate on the tool head. If the previous connectorization of the existing 711 splice used Table G to remove cable sheath and apply tape marks, you too can use Table G. However, it would be expedient to lay out the new cable(s) alongside the existing cable(s), remove an adequate amount of sheathing, and mark off the approximate bridge locations.

**4.3.4.2** When bridging a cable onto an existing 711 Connector, either in-line, butt, or half-tapped, it must be remembered that an additional Connector Module and Receptacle must be added. Therefore, a slight modification to the R-4774 Closing Tool must be made. This tool change is covered in

Paragraph 5.2.

## 5. R-4774 USAGE

### 5.1 Operational Procedure

**5.1.1** The insulation displacement contacts of the Connector Module have a rather high engagement force. Therefore, this lever action closing tool was designed to manually press the slotted beam contacts into the cable leads and displace the insulation and make an electrical contact with the conductors (see Figure 37). Some wires and insulations only require a single insertion into the slotted beam contacts of the Connector Module. However, others will require at least 2 insertions of the wired Receptacle into the connector module (refer to Table H).

**5.1.2** The R-4774 Tool will accept a stack of two Receptacles and a Connector Module for pressing in-line, butt, and half-tap type splices (see Figures 31, 38, and 39).

**5.1.2.1** As indicated in these figures, the tool is positioned over the outside of the Receptacles. Therefore, be sure that the cable leads are dressed outward, away from the connector, to eliminate any possibility of "pinching" the leads during the compression operation.

**5.1.2.2** Prior to pressing the connector assembly together, be sure to align the colored bars (see Figure 40) to assure that the contacts and leads mate in the correct positions.

**5.1.2.3** Carefully place the tool over the connector assembly with the lever handle of the tool pointing outward (away from hand grip) so the compression jaws are in their maximum open position and squarely set over the assembly. Rotate the handle backward (180 degrees) toward the hand grip. This action presses the slotted beam contacts onto the cable leads retained in the Mandrels (see Figure 35).

**5.1.3** After the assembly has been pressed together, visually check the ends of the connector to be sure the component parts have been engaged properly. The 4 knob-like protrusions on each end should have mated in the assembly to assure proper closing (fastening). (See Figure 41.) This assembly may be separated and rejoined up to 10 times.

**5.1.4** To separate, simply insert a 3" Cabinet Screwdriver (R-2443) tip into the slots at the ends of the assembly and twist slightly (see Figure 42).

**5.1.5** The R-4774 Tool can be adjusted to accommodate either the 32, 25, or 12 pair connector by depressing the detent button on the side of the tool yoke and then adjusting the T-slide bar located in the bottom jaw (see Figure 43).

## 5.2 Modification For Bridging

5.2.1 A third set of wires can be bridged onto a 711 Connector Assembly by utilizing an additional Receptacle and Connector Module. To do this, the platform spacer must be removed from the R-4774 Tool, using a 3/32" allen wrench (see Figure 44).

5.2.1.1 Once the spacer has been removed, reinstall the platform on the support shaft. This will provide the additional space required for bridging the added components (see Figure 45). To avoid losing the removed platform spacer, remove the plug from the end of the hand grip, attach the spacer to the plug, and reattach the plug to the handle (see Figure 46).

5.2.1.2 The procedure for pressing a bridge is basically the same as pressing a half-tap or other type splice. The only difference is that additional components are being pressed onto a previously spliced assembly. Again, be careful that the leads get dressed outward to avoid "pinching" and that the bridged component positions are properly aligned with existing splice.

## 5.3 Special Cable Considerations

5.3.1 Certain conductor insulations were designed to be highly abrasion resistant; consequently, it is difficult to completely displace using the present slotted beam contact utilized in the Connector Module. Therefore, the following requirements and restrictions must be followed when using these types of wires in the 711 Connector Splicing System (see Table 1).

5.3.1.1 The Connector Module must be inserted at least twice into the wired Receptacle, i.e., after the assembly has been pressed together as described in Paragraph 5.1.2.2. Separate the assembly and then press the assembly back together again for a second time.

5.3.1.2 22 and 24 ga. conductors with these insulations cannot be mixed in a Mandrel.

5.3.1.3 It is permissible to interconnect 22 ga. wires in one Receptacle and 24 ga. wires in the mating unit.

5.3.1.4 The Connector Module may be reconnected up to 10 times providing the same wire is seated in the Mandrel of the Receptacle. However, if new wires are seated in the Mandrel of the Receptacle, a new Connector Module must be used.

5.3.1.5 After a Connector Module has been pressed into a Receptacle utilizing these types of wire insulation, it cannot be reused again on other new wires. Always use a new Connector Module when this condition occurs.

## 6. R-4775 USAGE

### 6.1 Operational Procedure

6.1.1 When reversed (tip-ring) cable leads are discovered, remove these leads from the Mandrel with a spudger or orange stick. Place them back into their correct positions and then press the wires down with the spudger (see Figure 47). However, when several new wires are being added, or where several wiring changes are required, it would be expedient to use the R-4775 Tool to make the changes.

6.1.2 When making changes or additions that involve several leads, seat the new or relocated leads loosely in the correct Mandrel positions. Insert the Mandrel between the jaws of the R-4775 Tool with the cutting blade positioned above the wire end to be cut off. Simply squeeze the handles together to cut off and press them into the wire slots (see Figure 48).

6.1.2.1 After the lead(s) has been pressed into the Mandrel, carefully place the Mandrel back into the housing. Be sure Position #1 of the Mandrel is aligned with Position #1 of the housing. The Mandrel can be pressed back into the housing by hand; the latches will audibly "snap" when the Mandrel is properly seated.

6.1.2.2 If the R-4775 is to be used, make a change in a half-tap. The blade must be removed prior to making that repair.

## 7. R-4773 ADJUSTMENTS AND MAINTENANCE

### 7.1 Adjustments

These paragraphs show and describe tool adjustments that can be made to cover various applications.

7.1.1 Mandrel Retainers: The four retainers on the mounting platform are spring loaded to hold the 2 Mandrels in place during the wiring and assembly operations. This mounting platform has 3 cavities for positioning the outside retainers to accept 3 Mandrel sizes; that is, 12, 25 and 32 pair (see Figure 49).

7.1.1.1 The retainers are spring loaded; therefore, the spring must be compressed before the retainer can be removed. This is accomplished by using the "Mandrel Latching" tools which are fastened to the neck of the Cutter-Presser.

7.1.1.2 To remove a retainer, compress the spring and insert one of the spacer tools as shown in Figure 50. Loosen the screw holding the retainer (see Figure 51) and move the assembly to the desired slot (Figure 52) and retighten the holding screw. Remove the spacer tool and secure it back on the neck of the Cutter-Presser.

7.1.2 Blade Replacement: When a cutting blade becomes worn, it should be replaced as soon as possible to eliminate ragged or incomplete cutting of the wire ends in the Mandrel.

7.1.2.1 To remove the blades, remove the 4 screws which secure the blades to the rear combs with an allen wrench. Note the position of the blades and slide them outside the combs to remove them (see Figures 53 and 54).

7.1.3 Wire Retaining Spring: When connectorizing wire ends which are extremely short, it may be desirable to move the spring wire retainer to the rear side (away from the operator) to hold the leads in place before they enter into the combs.

7.1.3.1 Using a common screwdriver, remove the 2 retaining screws, located at each end of the spring support (see Figure 55). Move the spring wire retainer around to the opposite side of the tool and into the threaded holes provided to support it (see Figure 56).

7.1.4 Comb Adjustment: Wires may become distorted, skinned, and not be properly seated in the slots of the Mandrel (see Figure 57). It may be possible to correct the problem by loosening and realigning the rear comb.

7.1.4.1 Loosen screws securing the rear comb.

7.1.4.2 Insert Mandrel In Cutter-Presser.

7.1.4.3 Use straight wires or straight edges to align the combs with the valleys between the Mandrel wire separation peaks (see Figure 58).

7.1.4.4 Tighten screws securing the rear comb.

## 7.2 R-4773 Tool Maintenance

7.2.1 The R-4773 Cutter-Presser requires very little maintenance when handled and used in the proper manner. However, if some binding occurs when moving the level selector handle, apply a few drops of lightweight oil in the slide area as shown in Figure 59.

7.2.1.1 Across the top of the T-bar head, there are 6 cap screws. Under these screw heads, there are spring plungers that control the ejection bar. If this ejection bar should begin to bind, remove the cap screws and apply a drop or two of lightweight oil to each spring loaded plunger (see Figure 60).

## 8. 710A TOOL MOUNT

8.1 Mounting of the R-4773 Cutter-Presser using the 710A Tool Mount (Figure 12) is provided by 2 methods. The base can be permanently attached to a surface such as a 3-position stool (Figure 61) using 1/4" bolts and nuts or No. 14 x 1" wood screws. Additionally, the vise clamp can grip solid objects in the work area such as a ladder (Figure 62) or work bench.

## 9. INSPECTION ITEMS

### 9.1 General

9.1.1 Slotted beam contacts are high insertion force elements and repeated insertion of the contacts will cause distortion of the wire cross-section. To assure reliable connections, the number of allowable reinsertions of a Receptacle onto a Connector Module is limited to 10. This limitation applies to the Receptacle only; a single Connector Module may be reinserted as many as 100 times on numerous Receptacles for testing (except as noted in Paragraph 5.3.1.4).

### 9.2 Wire

9.2.1 The 711 is approved for use on solid conductor, tinned or untinned, annealed copper wire.

9.2.2 Approved wire gauge sizes, insulation types, and applicable Mandrels are shown in this section.

### 9.2.3 Requirements-Wired Mandrel

9.2.3.1 The appropriate Mandrel shall be used with the approved wire type (see Table B).

9.2.3.2 There shall be no visible damage to the Mandrel separators, gripper teeth, guide rail protrusions, or rail slot.

9.2.3.3 Mandrels may be reused providing the requirements of 9.2.3.2 are met.

9.2.3.4 The wires shall be inserted in the Mandrel slots with the top surface of the insulated wire even with or below the top of the Mandrel.

### 9.2.4 Requirements-Receptacle

9.2.4.1 When assembled in the housing, the Mandrel shall be fully inserted as indicated by the latches in the four-end viewing ports and the position of the Mandrel rail.

9.2.4.2 The Mandrel rail slots must be positioned corresponding to number 1 position in the connector.

9.2.4.3 When examining through the contact entry windows on both sides of the housing, the wires should be centered in the window with no more than one wire in any Mandrel slot (see Figure 63).

9.2.4.4 There shall be no scrap wire or other debris trapped between the Mandrel and the housing.

9.2.4.5 No wire ends should extend more than 1/32" outside the Mandrel slot, nor be recessed more than 1/32" from the edge of the Mandrel (see Figure 64).

9.2.4.6 The Mandrel slot area must not be deformed or otherwise damaged.

9.2.4.7 Mandrels may be reused with the same size and type wire providing there is no damage apparent in the plastic parts, particularly in the area of the wire gripping teeth and protrusions on the guide rails. Undamaged housings may be reused without restriction as to Mandrel type (A, B, C, or D).

#### 9.2.5 Requirements-Half-Tap

9.2.5.1 All requirements of 9.2.4 apply except 9.2.4.5.

#### 9.2.6 Requirements-Connector Module

9.2.6.1 There shall be no apparent visible damage to the plastic contact towers or latches (see Figure 65).

9.2.6.2 Connector Modules with broken or damaged contacts must be replaced. The modules are not repairable.

9.2.6.3 Connector Modules may be reused on the same wire gauge or wires of the adjacent gauge, i.e., 22 to 24 and 24 to 26. When reuse is planned, the Connector Module must be marked "22-24 ga. only" if previously used for 22 ga. wire connections.

#### 9.2.7 Requirements-Joined Connector

9.2.7.1 The connector components shall be joined using the 851A (R-4774) tool or an approved equivalent.

9.2.7.2 An unwired Receptacle, including Mandrels, shall be used when making a "male" assembly.

9.2.7.3 The colored bars on the ends of the components must be aligned (see Figure 66).

9.2.7.4 Nicks in the Mandrel end slot and in the Connector Module, which have been caused by separating the unit, are permissible. Otherwise, no part of the plastic bodies shall be deformed.

9.2.7.5 Up to 10 insertions of a Receptacle on a Connector Module is allowed. If more insertions are required, either the wire dress must be rearranged so that the outer surfaces (not previously joined) may be connected, or the Receptacle must be rewired.

9.2.7.6 The edges of the abutting surface between the Connector Module and each Receptacle shall have gaps of no more than .002 inch. When in question, measurements may be made with a feeler gauge. Oversize gaps indicate the closing tool is out of adjustment and must be returned to the MDARC for replacement.

9.2.8 Where group, functional, or numerical stamping is required, black 1/8" characters shall be used and located approximately at the center of the Receptacle. It is not necessary to stamp both sides of each Receptacle; however, the side facing out shall be stamped, and the stamping shall be visible.

10. VERIFICATION ITEMS

10.1	Appropriate matchup of wire size to mandrel (Table B)	3.1.2.2
10.2	Selection of proper wiring configurations (Figure 13)	4.1.2.1
10.3	Proper removal of cable sheath, heat shrink tubing and spacing of half-tap connectors (Sketch A and Table E)	4.3.2.1 (Step 3)
10.4	Identification of half-tap connectors	4.3.2.1 (Step 14)
10.5	Proper removal of cable sheath and spacing of matching new cable connectors (Table F)	4.3.2.1 (Step 16)
10.6	711 Connector restrictions where using 4871 Cut-off Tool	4.3.2.2.3
10.7	Special wire restrictions (Table I)	5.3.1
10.8	Inspection items (entire section)	9

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Loop Transmission Apparatus

Attachments:  
Tables, figures, and sketches



- 22 Ga. - BU, BW,\* ABAM,  
DEPIC
- 22 Ga. - BU, DEPIC
- 24 Ga. - BU, BW,\* ABMM
- 24 Ga. - BU, D Inside Wire,  
BW\*, ABMM
- 26 Ga. - BY, D Inside Wire

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TABLE A

APPROVED WIRE TYPES AND GAUGES  
(PAR. 2.2.1)

<u>RECEPTACLE</u>	<u>MANDREL COLOR</u>	<u>ACCEPTABLE WIRES</u>
711 RAA1 ( ) <sup>+</sup>	Yellow	22 Ga. - BU, BW*, ABAM, DEPIC
711 RAB1 ( )	Gray	22 Ga. - BU, DEPIC, 24 Ga. - BU, BW*, ABMM
711 RAC1 ( ) <sup>+</sup>	Pink	24 Ga. - BU, D Inside Wire, BW*, ABMM
711 RAD1 ( )	White	26 Ga. - BY, D Inside Wire

+Not available in all sizes.

\*These wire types require two insertions of the Connector Module initially to assure complete penetration of the wire insulation.

RP-A-0003P

TABLE B

711 MANDREL COLOR CODING AND ACCEPTABLE WIRES  
(PAR. 3.1.2.2)

I.D. NO.	DESCRIPTION	NOTES
103043949	711 RAA1-50 Recp.	2
103043972	711 RAB1-24 Recp.	3
103043998	711 RAB1-50 Recp.	3
103044004	711 RAB1-64 Recp.	3
103044046	711 RAC1-50 Recp.	4
103044079	711 RAD1-24 Recp.	5
103044095	711 RAD1-50 Recp.	5
103044103	711 RAD1-64 Recp.	5
103046231	711 CA1-24 Conn. Mod.	1
103046204	711 CA1-50 Conn. Mod.	1
103046272	711 CA1-64 Conn. Mod.	1

**NOTES:**

1. Gray
2. This Receptacle consists of a housing and two yellow Mandrels.
3. This Receptacle consists of a housing and two gray Mandrels.
4. This Receptacle consists of a housing and two pink Mandrels.
5. This Receptacle consists of a housing and two white Mandrels.

TABLE C RP-A-0003Q

711 PART LISTING  
(PAR. 3.1.6)

711 CONN.	QTY	SHEATH REMOVAL		FINAL SHEATH OPENING	HEAT SHRINK	TAPE BAND
		H.T.	OTHER			
64 LEAD	1	16	23	13	19	3
	2	22	28	18	24	8
	3	27	33	23	29	13
	4	33	38	28	34	18
	5	38	43	33	39	23
50 LEAD	1	15	22	12	18	3
	2	19½	26½	16½	22½	7½
	3	24	31	21	27	12
	4	29	35½	25½	31½	16½
	5	34	40	30	36	21
	6	38½	44½	34½	40½	25½
24 LEAD	1	13	21	11	17	3
	2	16	24	14	20	6
	3	19	27	17	23	9
	4	22	30	20	26	12
	5	25	33	23	29	15

TABLE E

RP-A-0003S

HALF-TAP SHEATH REMOVAL  
DIMENSION IN INCHES  
(PAR. 4.3.2.1, Step 3)

711 CONN	QTY	SHEATH REMOVAL	TAPE BAND
64 LEAD	1	23	3
	2	28	8
	3	33	13
	4	38	18
	5	43	23
50 LEAD	1	22	3
	2	26½	7½
	3	31	12
	4	35½	16½
	5	40	21
	6	44½	25½
24 LEAD	1	21	3
	2	24	6
	3	27	9
	4	30	12
	5	33	15

TABLE D

RP-A-0003R

SHEATH REMOVAL AND TAPE BAND  
DIMENSIONS IN INCHES  
(PAR. 4.3.1 A and B)

711 CONN.	QTY	TAPE BAND	HEAT SHRINK
64 LEAD	1	3	19
	2	8	24
	3	13	29
	4	18	34
	5	23	39
50 LEAD	1	3	18
	2	7½	22½
	3	12	27
	4	16½	31½
	5	21	36
	6	25½	40½
24 LEAD	1	3	17
	2	6	20
	3	9	23
	4	12	26
	5	15	29

TABLE F RP-A-0003T

TAPE BAND DIMENSIONS  
(PAR. 4.3.2.1, Step 16)

711 CONN	QTY	SHEATH REMOVAL	TAPE BAND
64 LEAD	1	23	3
	2	28	8
	3	33	13
	4	38	18
	5	43	23
50 LEAD	1	22	3
	2	26½	7½
	3	31	12
	4	35½	16½
	5	40	21
	6	44½	25½
24 LEAD	1	21	3
	2	24	6
	3	27	9
	4	30	12
	5	33	15

TABLE G RP-A-0003U

SHEATH REMOVAL AND TAPE  
BAND DIMENSIONS IN INCHES  
(PAR. 4.3.3.1)

ACCEPTABLE WIRES

- 22 Ga. - BU, BW\*, ABAM, DEPIC
- 22 Ga. - BU, DEPIC
- 24 Ga. - BU, BW\*, ABMM
- 24 Ga. - BU, D Inside Wire, BW\*, ABMM
- 26 Ga. - BY, D Inside Wire

\*These wire types require two insertions of the Connector Module initially to assure complete penetration of the wire insulation.

RP-A-0003V

TABLE H

ACCEPTABLE WIRES AND INSULATIONS  
FOR CONNECTOR MODULE  
(PAR. 5.1.1)

ACCEPTABLE WIRES

- 22 Ga. - BW\*
- 24 Ga. - BW\*

\*These wire types require two insertions of the Connector Module initially to assure complete penetration of the wire insulation.

RP-A-0003W

TABLE I

CONDUCTOR INSULATIONS REQUIRING  
TWO INSERTIONS  
(PAR. 5.3.1)

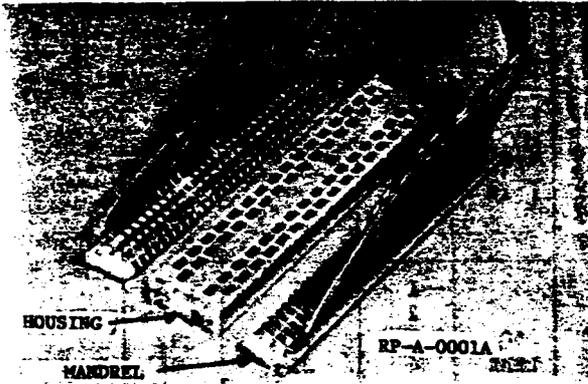


FIG. 1 RECEPTACLE - HOUSING AND MANDRELS (PAR. 3.1.2)

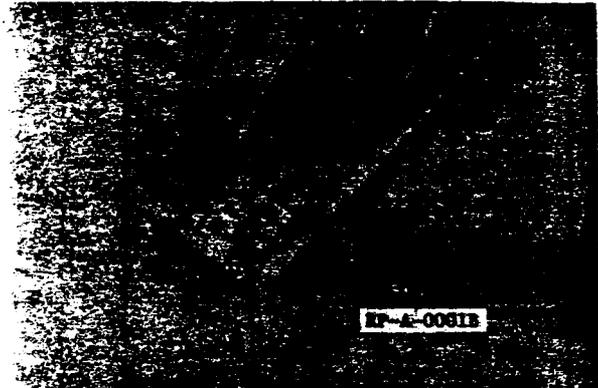


FIG. 2 MANDREL WIRE GRIPPING FEATURE (PAR. 3.1.2.1)

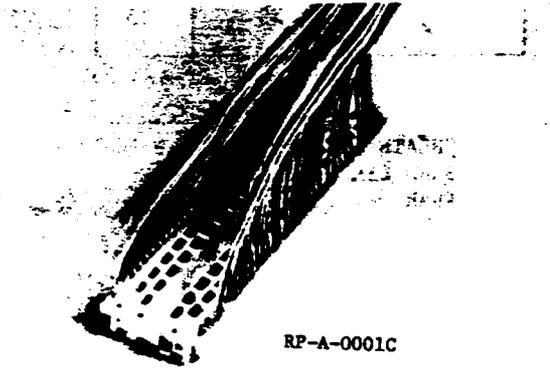


FIG. 3 ASSEMBLED RECEPTACLE AND WIRE DRESS (PAR. 3.1.2.1)

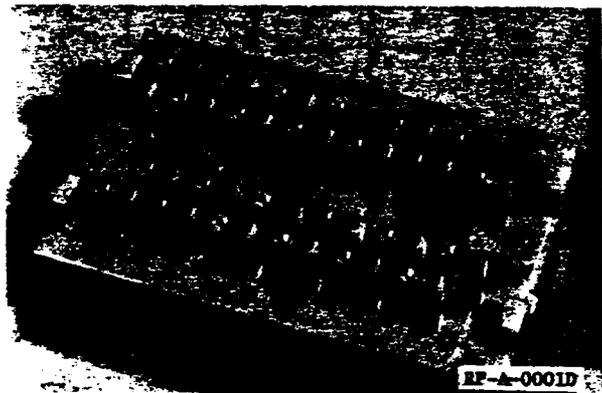


FIG. 4 CONNECTOR MODULE (PAR. 3.1.3)

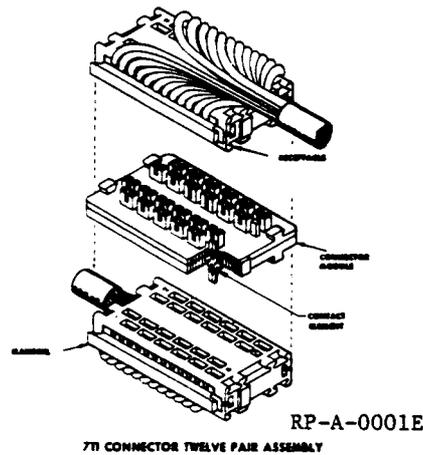
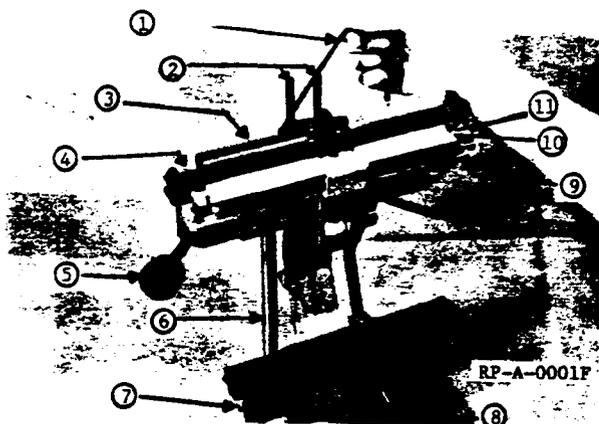


FIG. 5 ASSEMBLED 711 CONNECTOR (PAR. 3.1.4)



- |                        |                               |
|------------------------|-------------------------------|
| 1. Elastic Tie         | 7. T-Bar Head                 |
| 2. Wire Dressing Posts | 8. Lever                      |
| 3. Rear Comb           | 9. Wire Retaining Spring      |
| 4. Mandrel Retainer    | 10. Wire Identification Plate |
| 5. Slide Handle        | 11. Forward Comb              |
| 6. Support Mount       |                               |

FIG. 6 R-4773 T-BAR CUTTER-PRESSER TOOL (PAR. 3.2.1.1.1)

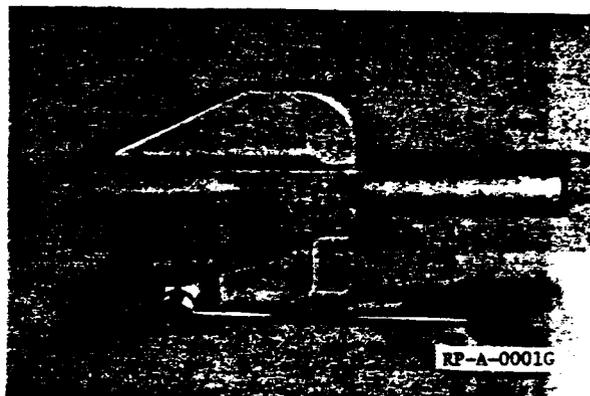


FIG. 7 R-4774 CLOSING TOOL (PAR. 3.2.1.1.2)

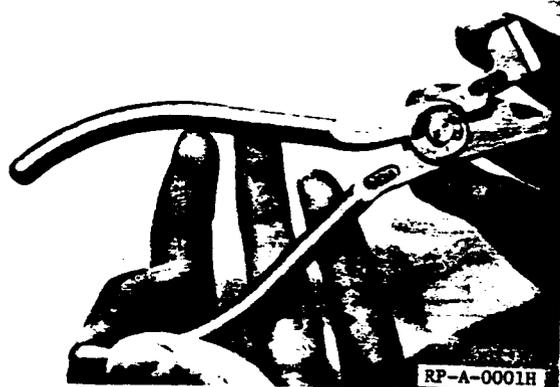


FIG. 8 R-4775 SINGLE WIRE SEATING TOOL (PAR. 3.2.1.1.3)

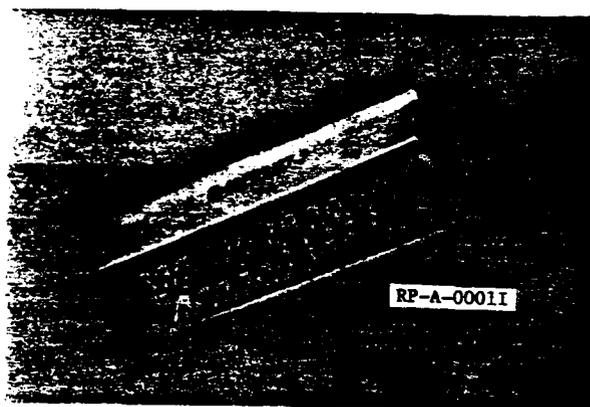


FIG. 9 R-4871 HALF-TAP CUT-OFF TOOL (PAR. 3.2.1.1.4)



FIG. 10 R-4773 I.D. PLATES (PAR. 3.2.1.1.5)

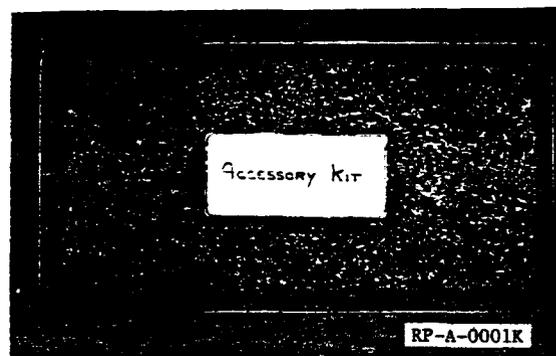


FIG. 11 R-4773 ACCESSORY KIT (PAR. 3.2.1.1.6)



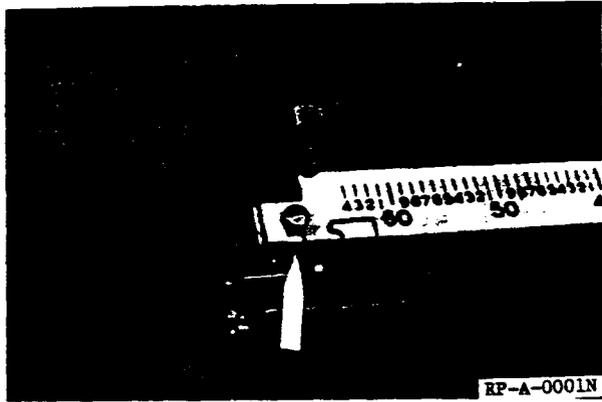


FIG. 14 MOUNTING I.D. PLATE (PAR. 4.1.2.3)

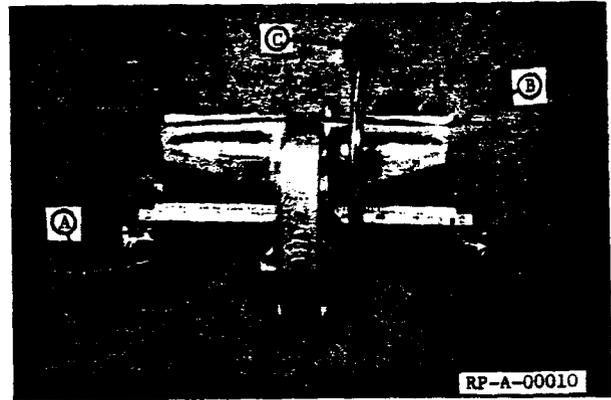


FIG. 15 LEVEL SELECTOR HANDLE (A), HEAD (B) AND LEVER (C) (PAR. 4.2.1 A AND B)

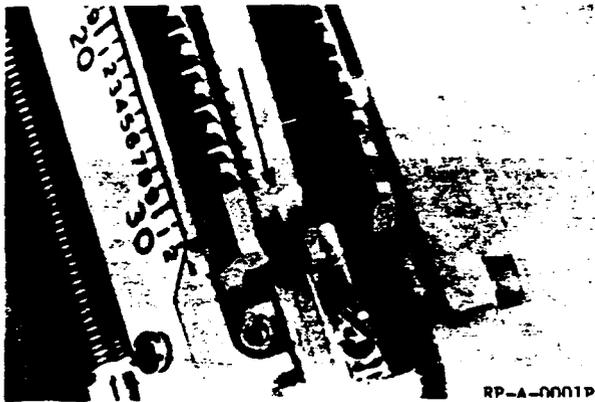


FIG. 16 MANDREL INCORRECTLY SEATED IN TOOL (PAR. 4.2.1C)

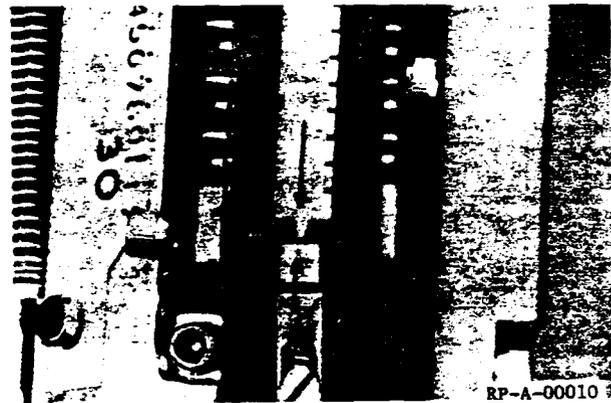


FIG. 17 MANDREL CORRECTLY SEATED IN TOOL (PAR. 4.2.1C)

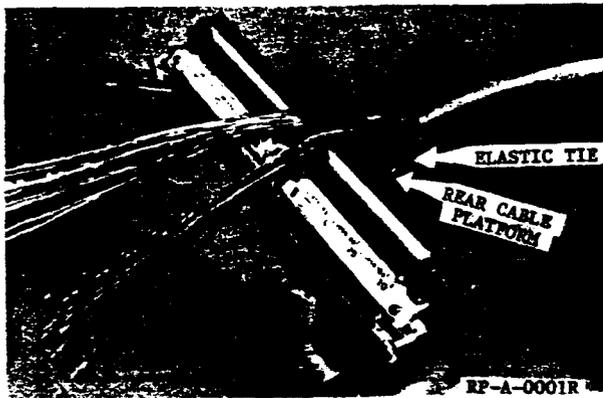


FIG. 18 CABLE SECURED TO PLATFORM WITH ELASTIC TIE (PAR. 4.2.1C)

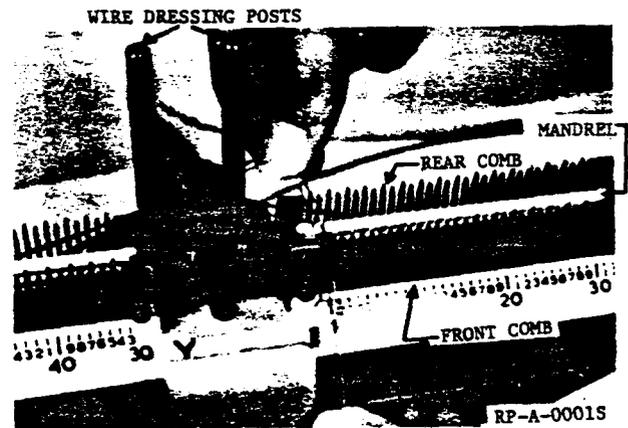


FIG. 19 WIRE DRESSING (PAR. 4.2.1C)



FIG. 20 WIRE SLACK (PAR. 4.2.1C)

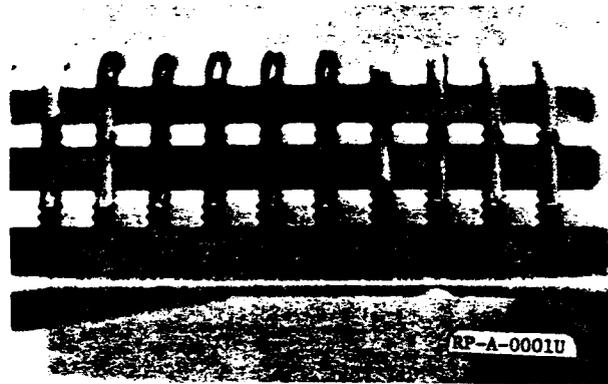


FIG. 21 WIRES NOT PROPERLY RETAINED IN MANDREL (PAR. 4.2.1C, CAUTION)

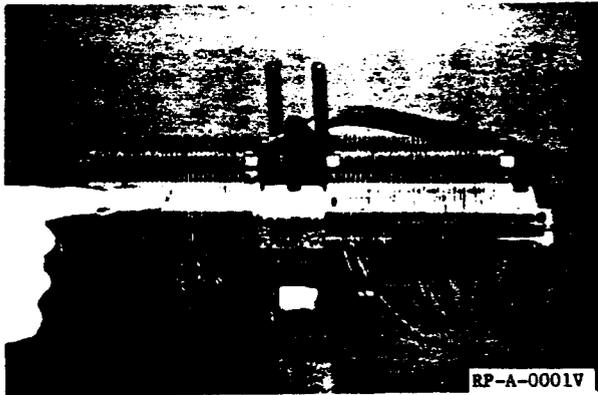


FIG. 22 BOTH MANDRELS WIRED AND CHECKED (PAR. 4.2.1D)



FIG. 23 CUTTING CYCLE (PAR. 4.2.1G)

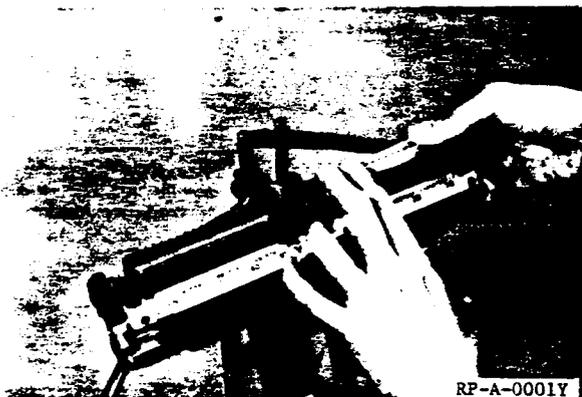


FIG. 24 RAISE T-BAR AND SLIDE LEVEL SELECTOR TO ORIGINAL POSITIONS (PAR. 4.2.1K)

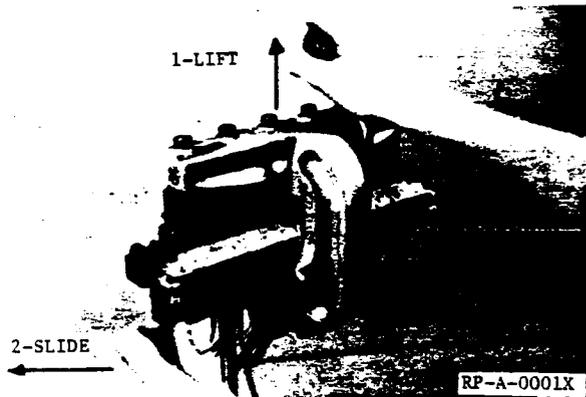


FIG. 25 MATING HOUSING TO MANDREL (PAR. 4.2.1M)

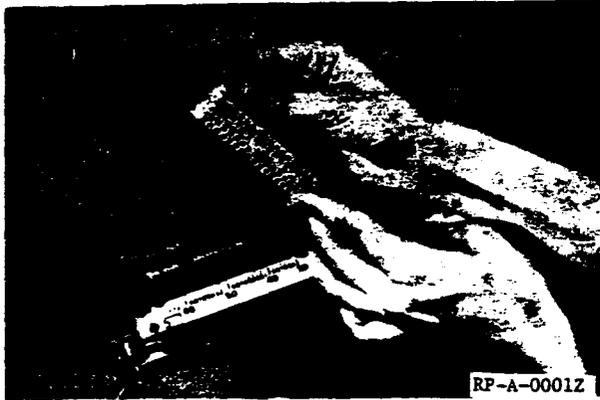


FIG. 26 SWING HOUSING OVER TO SECOND MANDREL (PAR. 4.2.1-0)

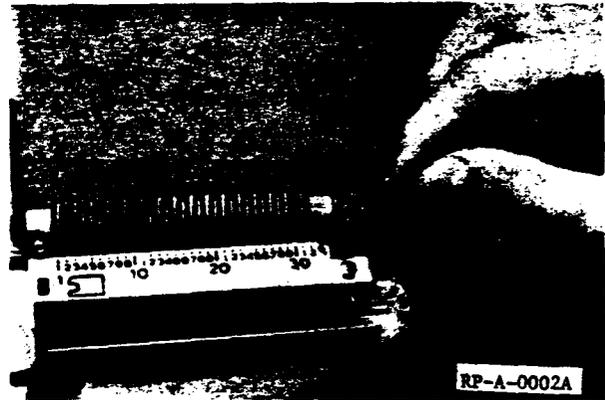


FIG. 27 REMOVING CUTTING BLADES SCREWS (PAR. 4.3.2.1, Step 1)

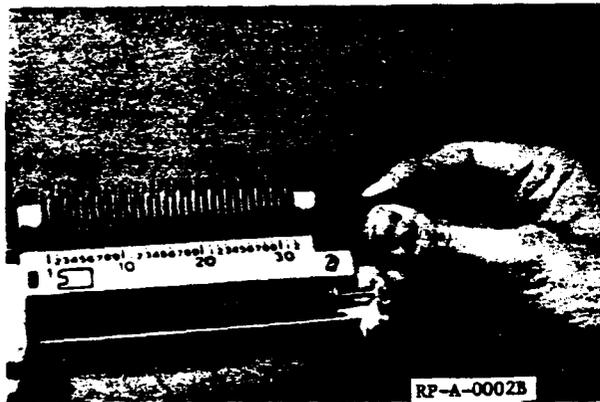


FIG. 28 REMOVING CUTTING BLADES (PAR. 4.3.2.1, Step 1)

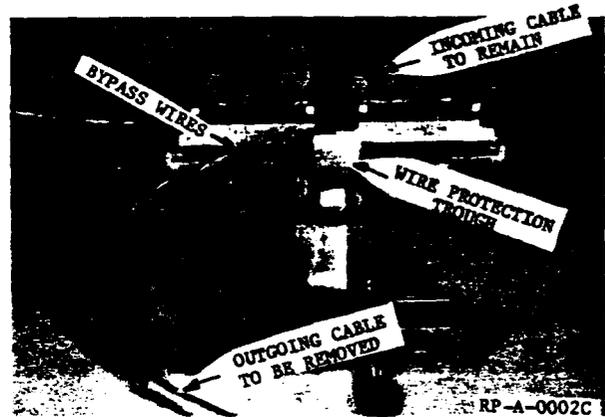


FIG. 29 DRESSING HALF-TAP CONDUCTORS THROUGH CUTTER-PRESSER (PAR. 4.3.2.1, Step 6)

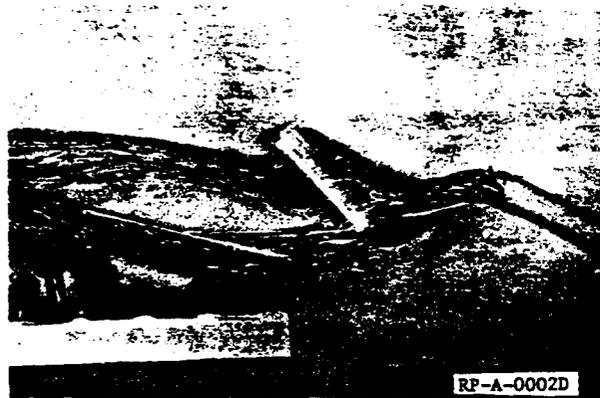


FIG. 30 COMPLETED HALF-TAP (PAR. 4.3.2.1, Step 12)

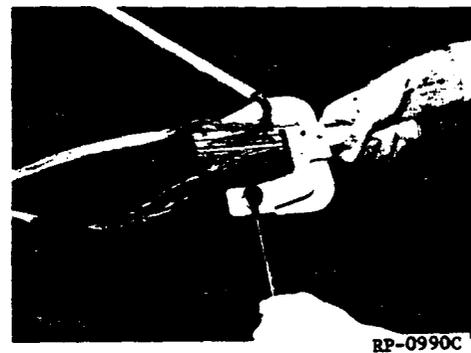


FIG. 31 CONNECTING NEW CABLE TO HALF-TAP (PAR. 4.3.2.1, Step 19)

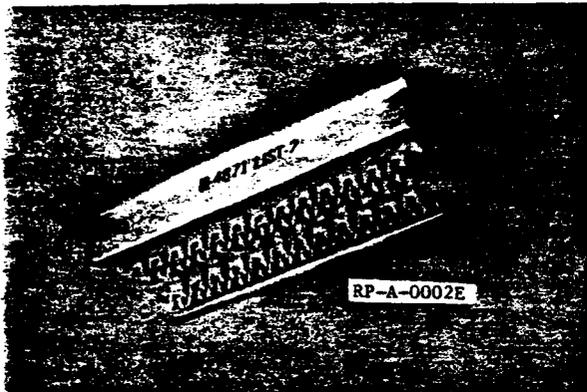


FIG. 32 R-4871 HALF-TAP CUT-OFF TOOL  
(PAR. 4.3.2.2.1)

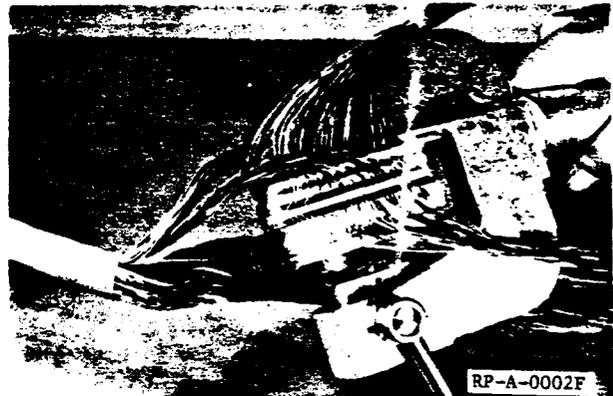


FIG. 33 R-4775 CLOSING TOOL PRESSING  
R-4871 MASS CUTTER  
(PAR. 4.3.2.2.2)

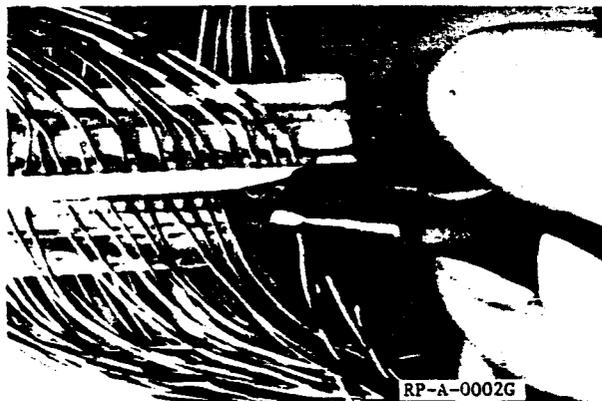


FIG. 34 CUTTING OUT UNWANTED LEG  
OF HALF-TAP USING DIAGONALS

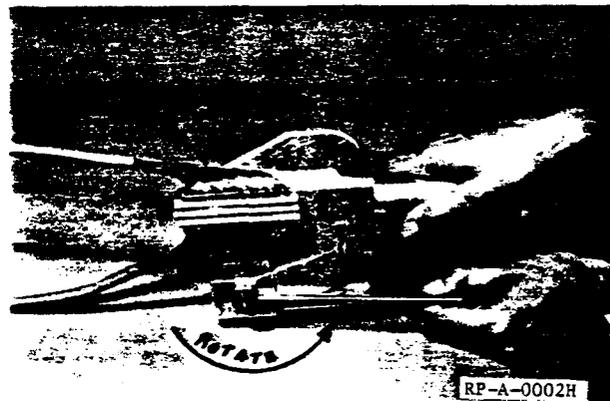


FIG. 35 BUTT SPLICE  
(PAR. 4.3.3)

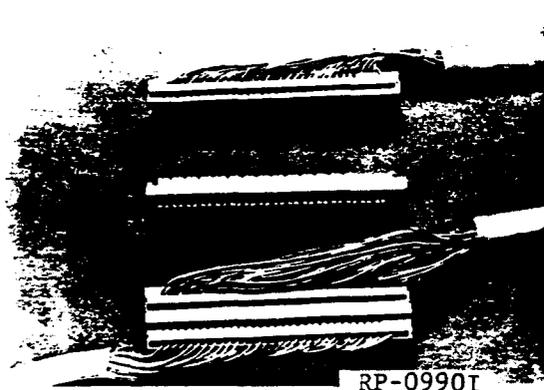


FIG. 36 BRIDGE SPLICE  
(PAR. 4.3.5)



FIG. 37 SLOTTED BEAM CONTACTS  
IN CONNECTOR MODULE  
(PAR. 5.1.1)

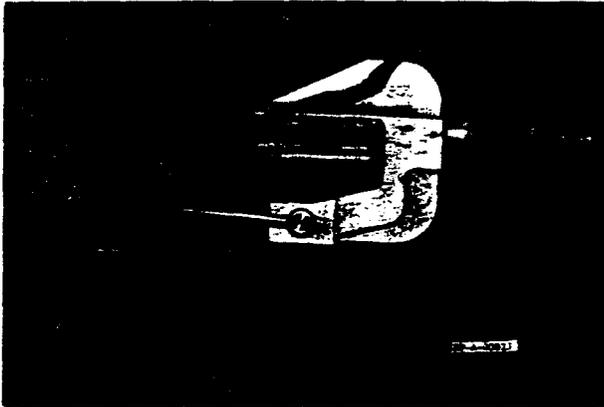


FIG. 38 IN-LINE SPLICE  
(PAR. 5.1.2)

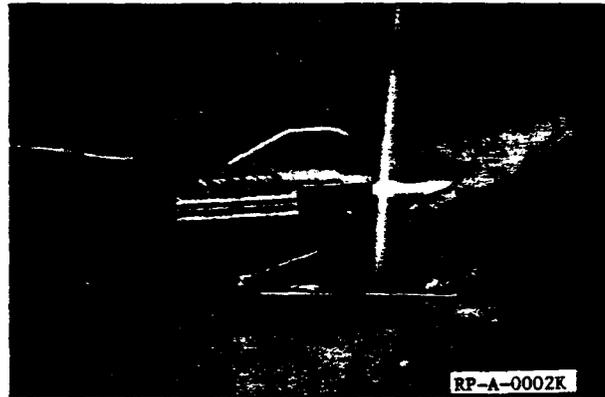


FIG. 39 BUTT SPLICE  
(PAR. 5.1.2)

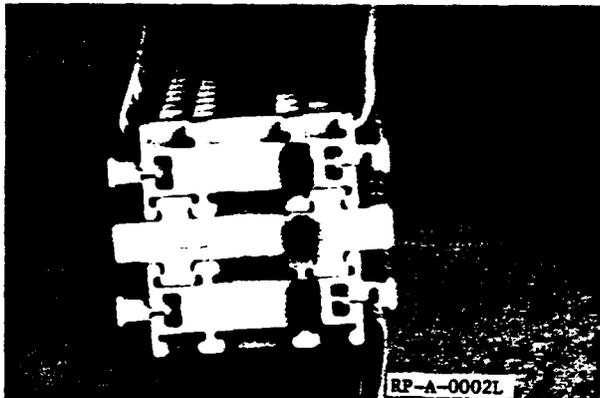


FIG. 40 ALIGNING COLOR BARS  
(PAR. 5.1.2.2)



FIG. 41 PROPER ENGAGEMENT  
(PAR. 5.1.3)



FIG. 42 SCREWDRIVER SEPARATES  
RECEPTACLE AND CONNECTOR  
MODULE (PAR. 5.1.3)

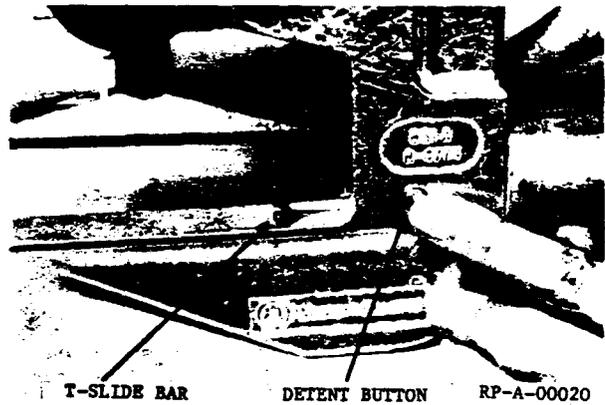


FIG. 43 LOCATION OF R-4774 ADJUSTMENTS  
(PAR. 5.1.4)

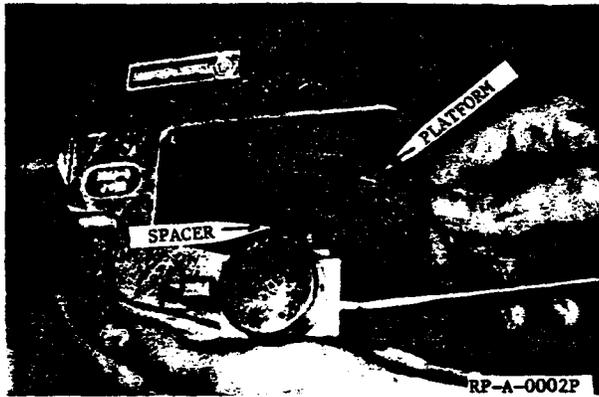


FIG. 44 REMOVING SPACER  
(PAR. 5.2.1)



FIG. 45 REINSTALLING PLATFORM  
(PAR. 5.2.1.1)

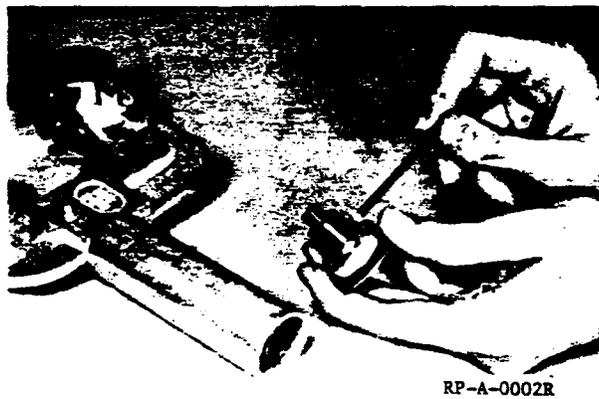


FIG. 46 STORING SPACER  
(PAR. 5.2.1.1)



FIG. 47 MAKING REPAIR WITH  
SPUDGER (PAR. 6.1.1)

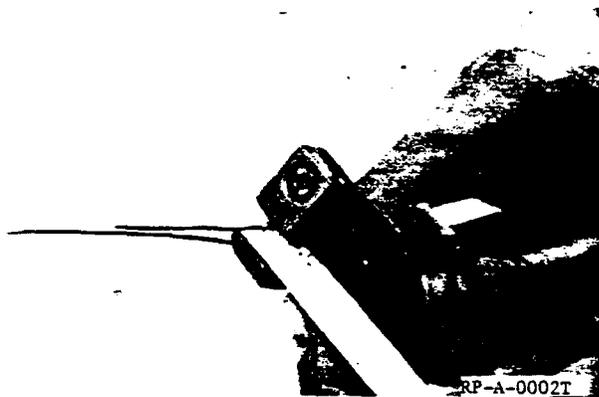


FIG. 48 MAKING REPAIR WITH R-4776  
(PAR. 6.1.2)



FIG. 49 RETAINER CAVITIES  
(PAR. 7.1.1)

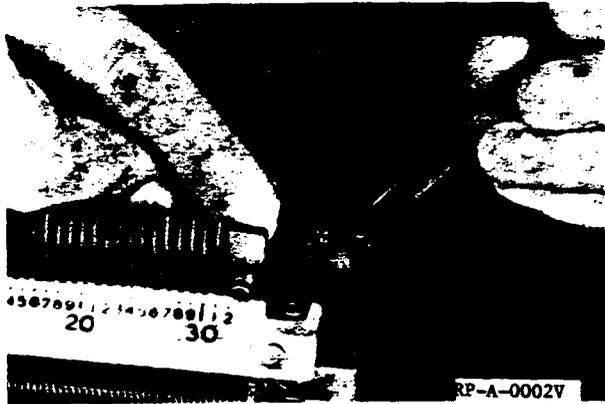


FIG. 50 SPACER TOOL INSERTED (PAR. 7.1.1.2)

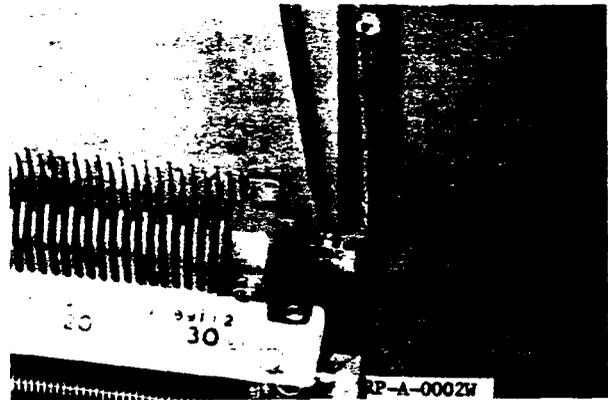


FIG. 51 LOOSENING RETAINER SCREW (PAR. 7.1.1.2)

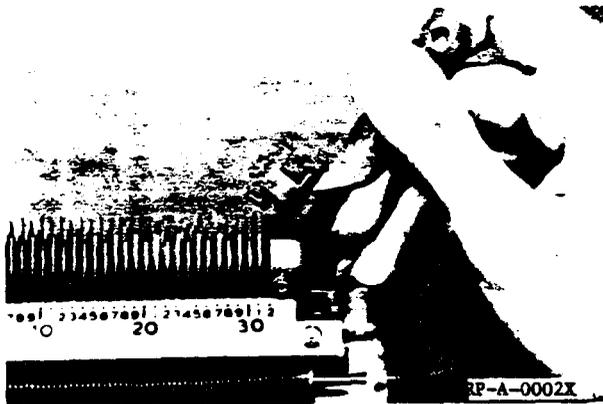


FIG. 52 MOVING RETAINER (PAR. 7.1.1.2)

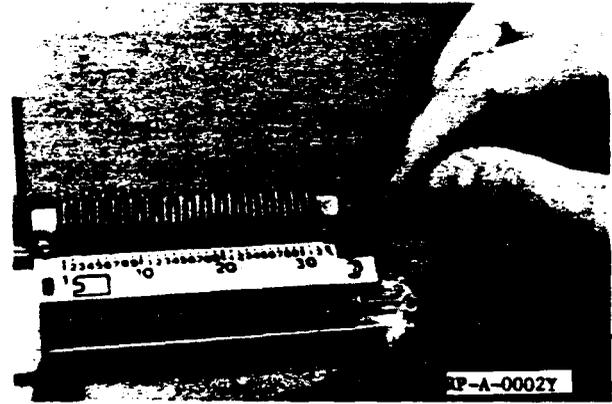


FIG. 53 REMOVING CUTTING BLADES RETAINING SCREWS (PAR. 7.1.2.1)

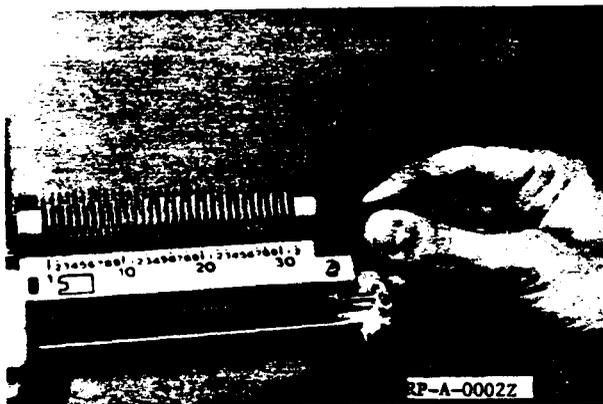


FIG. 54 REMOVING BLADES (PAR. 7.1.2.1)

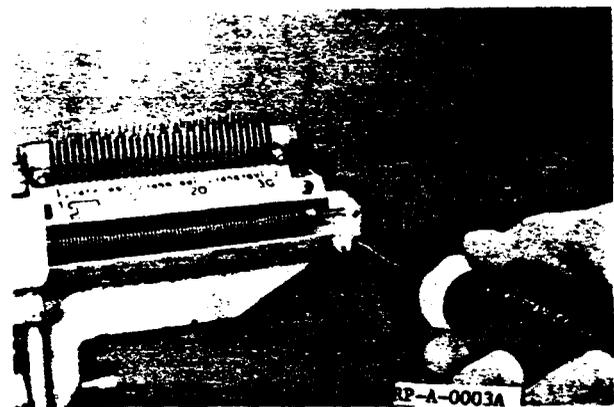


FIG. 55 LOOSENING WIRE RETAINING SPRING SCREWS (PAR. 7.1.3.1)

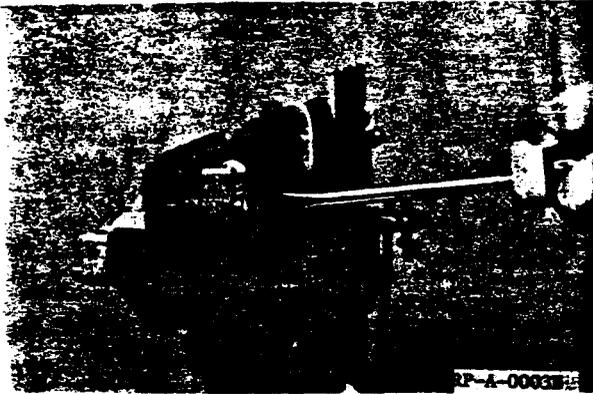


FIG. 56 RETAINING SPRING REATTACHED TO REAR OF CUTTER-PRESSER (PAR. 7.1.3.1)

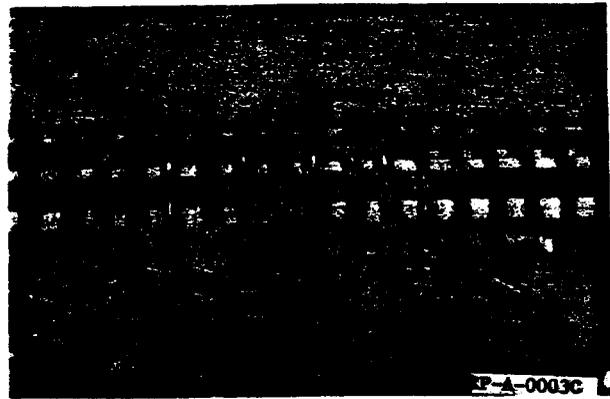


FIG. 57 DAMAGED CONDUCTORS (PAR. 7.1.4)



FIG. 58 REALIGNING REAR COMB (PAR. 7.1.4.3)



FIG. 59 LUBRICATING LEVEL SELECTOR SLIDE (PAR. 7.2.1)



FIG. 60 LUBRICATING SPRING LOADED PLUNGERS (PAR. 7.2.1.1)

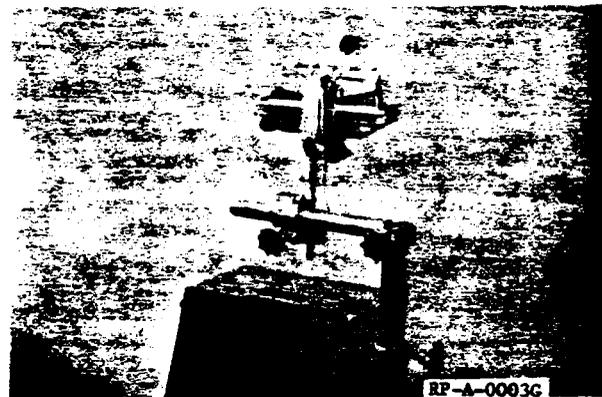


FIG. 61 R-4773 MOUNTED ON THREE POSITION TOOL USING 710A TOOL MOUNT (PAR. 8.1)

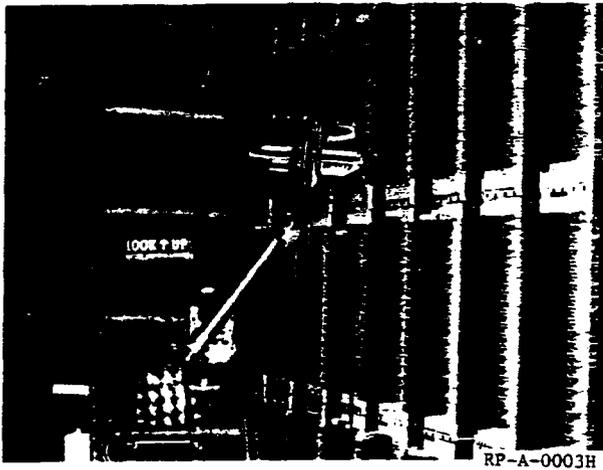


FIG. 62 R-4773 MOUNTED TO LADDER USING 710A TOOL MOUNT (PAR. 8.1)

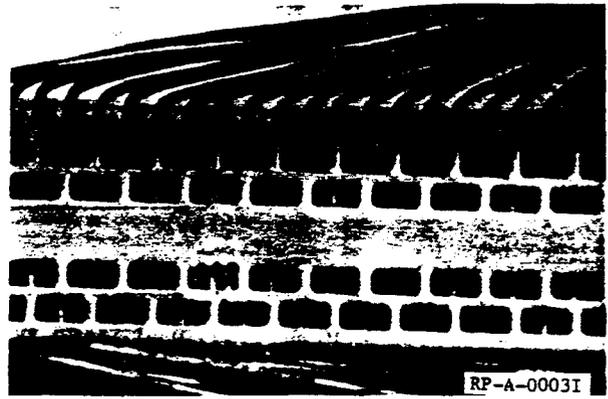


FIG. 63 WIRES CENTERED IN CONTACT ENTRY WINDOWS (PAR. 9.2.4.3)

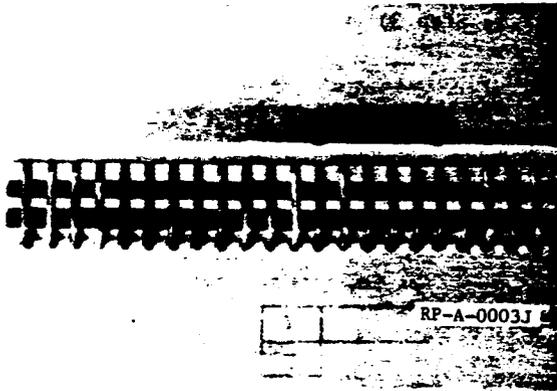


FIG. 64 WIRES PULLED BACK MORE THAN 1/32" IN MANDREL (PAR. 9.2.4.5)



FIG. 65 INSPECT CONTACT TOWERS (PAR. 9.2.6.1)

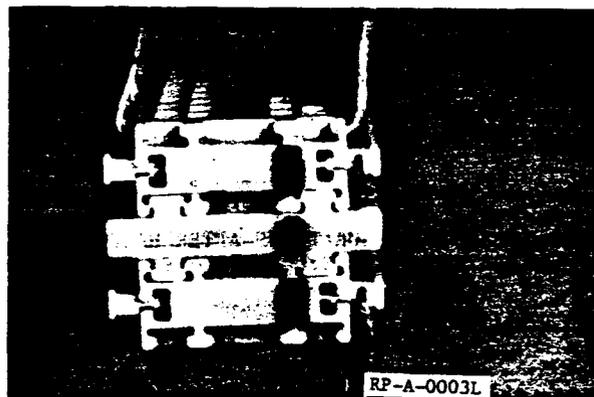
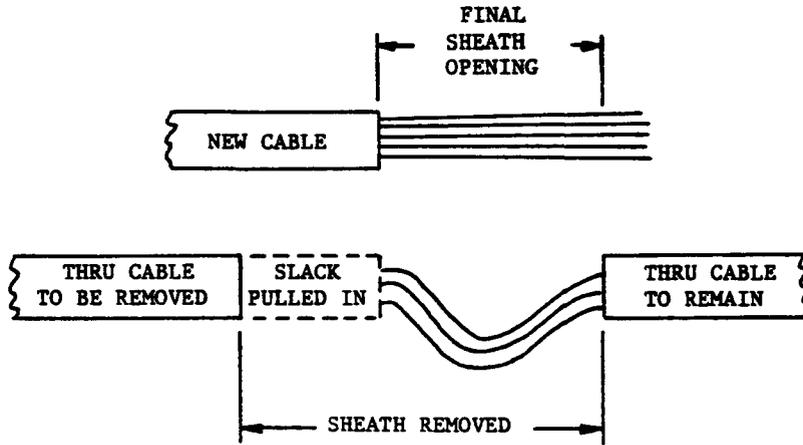


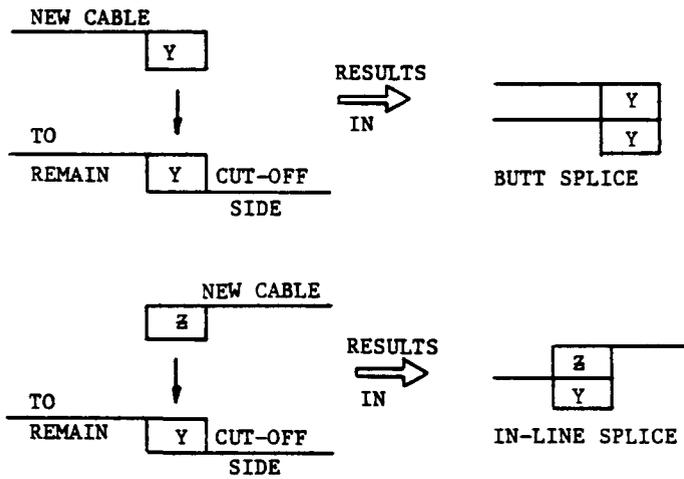
FIG. 66 COLORED BARS ALIGNED (PAR. 9.2.7.3)



SKETCH A

RP-A-0003M

HALF-TAP SET-UP  
(PAR. 4.3.2.1, Step 3)



SKETCH B

RP-A-0003N

SPLICE CONFIGURATIONS AFTER HALF-TAP REMOVED  
(PAR. 4.3.2.1, Step 15, NOTE)