

## JACKS

### 92, 229, AND 292 TYPES

### 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 92-, 229-, and 292-type jacks. It also covers the approved procedures for replacing these parts.

1.02 This section is reissued to include piece part data and replacement procedures for the 229-type jack. Arrows are used to indicate changes.

1.03 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 92-, 229-, and 292-type jacks. 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."

1.04 Part 3 of this section covers the approved procedures for the replacement of the parts listed 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 and the piece part numbers of the various parts, together with the names of the parts as listed by the Western Electric Merchandise Department.

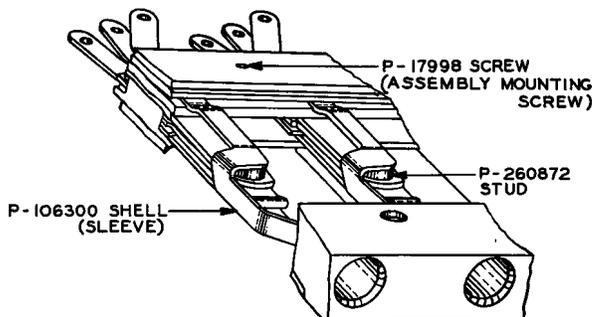


Fig. 1 - 92- and 292-type Jacks

2.02 When ordering piece parts for replacement purposes, give both the number and the name of the piece part: for example, "P-106300 Shell." Do not refer to the BSP number or to any information shown in parentheses following the piece part number.

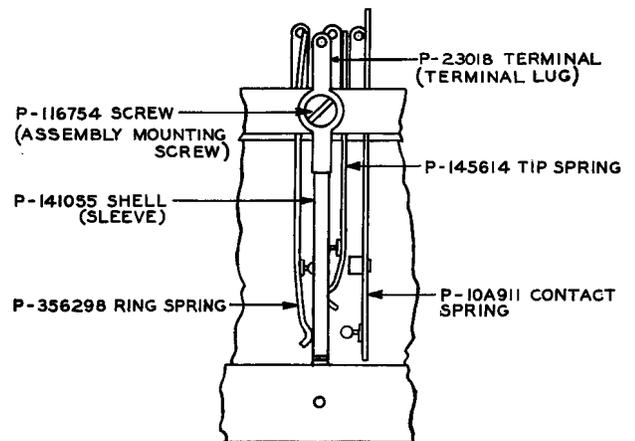


Fig. 2 - 229-type Jack

#### 3. REPLACEMENT PROCEDURES

##### 3.001 List of Tools and Materials

| <u>Code or Spec. No.</u> | <u>Description</u>                |
|--------------------------|-----------------------------------|
| <u>Tools</u>             |                                   |
| 117                      | Jack Tip and Ring Spring Adjuster |
| 303                      | Spring Adjuster                   |
| 345                      | Jack Sleeve Remover and Replacer  |
| 478A                     | Jack Sleeve Remover               |
| 585A                     | Clamp                             |
| KS-2993                  | Cleaning Brush                    |
| KS-6854                  | 3-1/2" Screwdriver                |
| -                        | 3" Cabinet Screwdriver            |
| -                        | 6-1/2" P-Long-nose Pliers         |
| -                        | 5" Diagonal Pliers                |

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### Material

KS-2423 Cloth

3.01 Before making any replacement of the parts of a jack, remove the associated circuit from service in accordance with the approved procedures.

3.02 Remove the jack strip, in which the jack sleeve is to be replaced, from the multiple in the approved manner, and after the replacement has been made, re-mount it in the multiple in accordance with the approved procedures.

3.03 After making any replacement of parts, check the jack, and where necessary readjust it to meet the requirements specified in Section 032-351-701.

3.04 Cover the apparatus below the jack strip with a cloth to catch dirt and jack parts. Clean the jack strip with the KS-2993 cleaning brush. The use of a vacuum cleaner is desirable in order to collect the dirt and prevent it from spreading to other apparatus.

3.05 To gain access to the parts of 234A or 235A jack mountings, first remove the four machine screws, which hold the two jack strips and jack spacer together, and then remove the jack spacer. Use the KS-6854 screwdriver.

### Sleeve

#### Removal of Sleeve

3.06 Hold the jack strip in a horizontal position with the sleeve terminal up-permost. On 92 and 292 jacks, cut the sleeve terminal just in back of the rubber mounting and also just in front of the assembly mounting with the diagonal pliers, as indicated in Fig. 3. Remove the free portion of the terminal and the stud with the longnose pliers. On 229-type jacks, the sleeve terminal should be cut just in back of the rubber mounting and the joint unsoldered between the sleeve terminal and the terminal lug as indicated in Fig. 4. When cutting, hold the pliers at right angles to the flat portion of the spring and hold the thumb or finger over the part being removed, to prevent its flying.

3.07 To remove the sleeve, on a jack equipped with a pin to hold the sleeve in position in the rubber mounting, first punch out the pin, using fixture A of the No. 345 jack sleeve remover and replacer, with fixture F applied under the rubber mounting, as shown on Fig. 5. Remove the pin with the long-nose pliers.

3.08 On 92- and 292-type Jacks: Hold the jack strip in a horizontal position and place it into the No. 585A clamp so that the bars at both ends of the clamp are

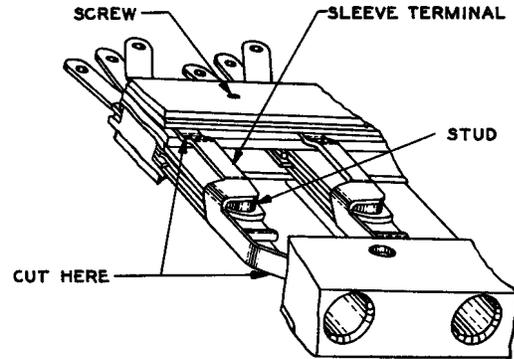


Fig. 3 - Points at Which To Cut Sleeve Terminals in 92- and 292-type Jacks

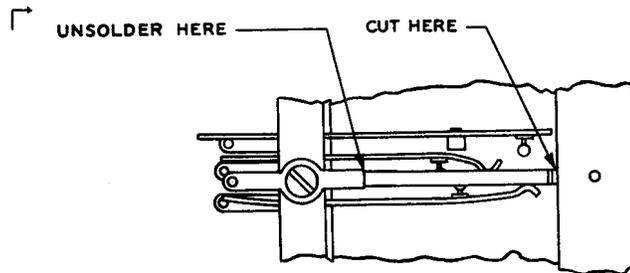


Fig. 4 - Points at Which to Cut and Unsolder Sleeve Terminals in 229-type Jacks

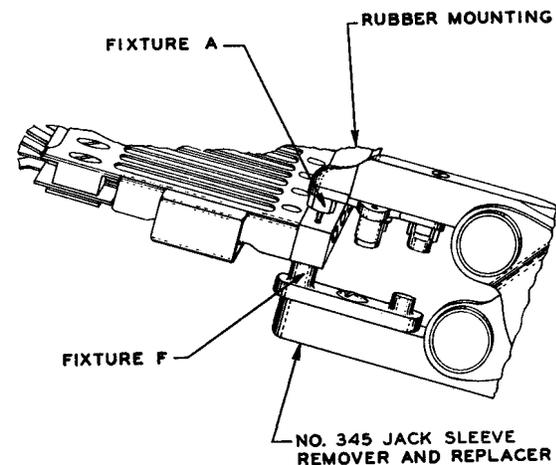


Fig. 5 - Method of Removing Sleeve Pin

flush with the face of the strip and the beveled surfaces of the clamp are toward the front of the strip as illustrated in Fig. 6. Where a holly strip is used, force the adjustable separators in and then turn them so that they will be in the grooves which are at right angles to the length of the clamp. Where holly strips are not provided, position the adjustable separators as outlined above in the deeper grooves which are in line with the length of the clamp. Then tighten the thumb screws at each end of the clamp.

3.09 On 229-type Jacks: The 585A clamp cannot be used on these jack mountings. Therefore, the sleeve must be removed without the use of the clamp.

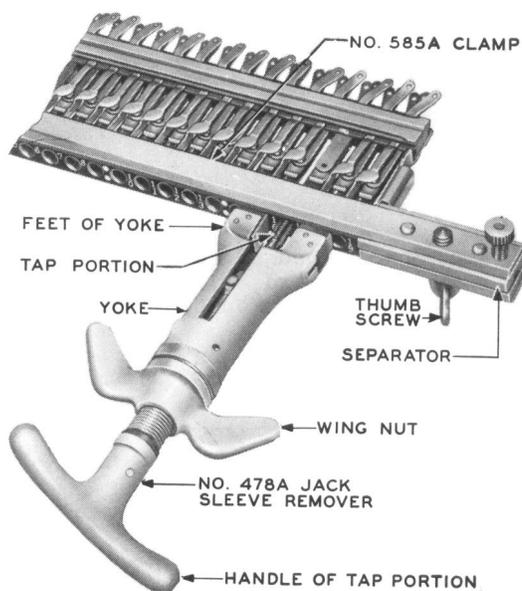


Fig. 6 - Method of Extracting Sleeve with No. 478A Jack Sleeve Remover

3.10 Turn the wing nut on the No. 478A jack sleeve remover until at least half the length of the tap portion extends beyond the feet of the yoke of the sleeve remover.

3.11 Slowly and steadily turn the tap portion of the No. 478A jack sleeve remover about two or three turns into the sleeve until there is considerable resistance to the turning. While holding with one hand the jack strip and the yoke portion of the No. 478A jack sleeve remover so that the feet of the yoke are in line with the jack strip, turn the wing nut of the sleeve remover in a clockwise direction until the feet of the yoke come in contact with the face of the jack strip. Continue to turn the wing nut until the sleeve is drawn

forward and can be pulled out of the mounting. Remove the No. 585A clamp from the mounting strip.

3.12 On 92- and 292-type Jacks: Unsolder the wires from the sleeve terminal, keeping the multiple wires soldered together. Loosen the assembly mounting screws adjacent to the sleeve terminal, using the KS-6854 screwdriver. Grasp the sleeve terminal at the soldering end with the long-nose pliers and pull the terminal through the assembly mounting.

3.13 On 229-type Jacks: Before attempting to replace a sleeve, remove all of the springs from the jack as follows: Remove the assembly mounting screw from the jack being worked on, as well as the screws from the two jacks on each side, with the 3" cabinet screwdriver. Insert the screwdriver under the clamping strip and raise the clamping strip just enough so the jack springs can be removed, one at a time. Lift each spring out of its slot and pull it straight out, using the fingers or the long-nose pliers.

#### Replacement of Sleeve

3.14 On 92- and 292-type Jacks: Force the sleeve terminal into the assembly mounting from the front with the long-nose pliers as shown in Fig. 7 until the front end of the sleeve just clears the back of the rubber mounting. Exercise care not to crack the insulators. If the sleeve terminal has been forced through the assembly mounting as far as possible, and if in this position the front end of the sleeve does not clear the back of the rubber mounting, increase the offset in the sleeve terminal

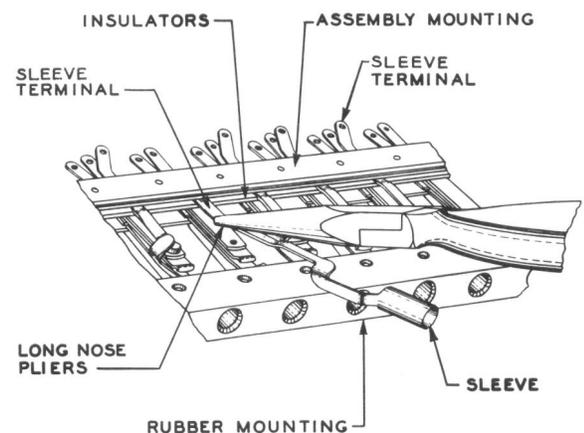


Fig. 7 - Method of Forcing Sleeve Terminal into Assembly Mounting in 92- and 292-type Jacks

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just in back of the sleeve, using the long-nose pliers. Force the sleeve forward in the rubber mounting by grasping the sleeve terminal with the long-nose pliers at the offset as shown in Fig. 8 until the portion of the sleeve terminal that holds the stud (high hat bushing) in place is just to the rear of the hole in the stop spring. Insert the stud in the hole in the stop spring, using the long-nose pliers; then, while depressing the stud with the thumb, continue to force the sleeve into the rubber mounting, making sure that the stud slips under the sleeve terminal.

3.15 On 229-type Jacks: Force the sleeve forward in the rubber mounting, as for the 92- and 292-type jacks, by grasping the sleeve terminal with the long-nose pliers just behind the sleeve, similar to Fig. 8. Continue forcing the sleeve forward until the sleeve is flush with the front of the rubber mounting.

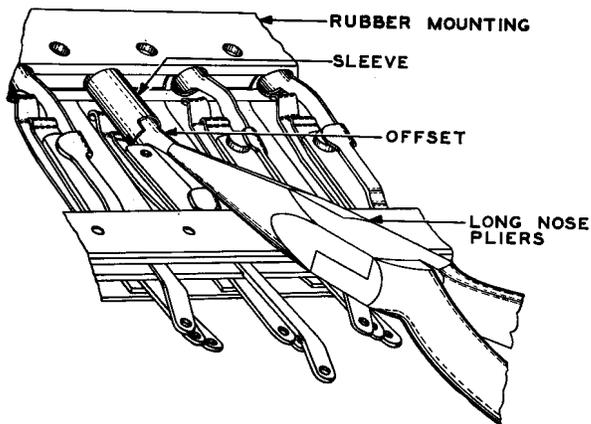


Fig. 8 - Method of Forcing Sleeve Forward into Rubber Mounting

3.16 On 229-type Jacks: In order to use the No. 345 jack sleeve remover and replacer, for forcing, locking, and flaring the sleeve, remove the washer on the E, F, G fixture side of the tool by removing the screw with the 3" cabinet screwdriver; then replace the screw. The sleeve terminal must also be bent up at the back of the rubber mounting at a right angle to its normal position, so this tool can be used.

3.17 With fixture E of the No. 345 jack sleeve remover and replacer inserted in the face of the jack, and fixture C inserted in back of the sleeve, as shown in Fig. 9, force the sleeve forward by bringing the jaws together until the front of the sleeve is flush with the face of the rubber mounting.

3.18 Lock the sleeve in place by inserting fixture E of the No. 345 jack sleeve remover and replacer in the face of the sleeve and fixture D in the rear of the mounting, and bring the jaws firmly together.

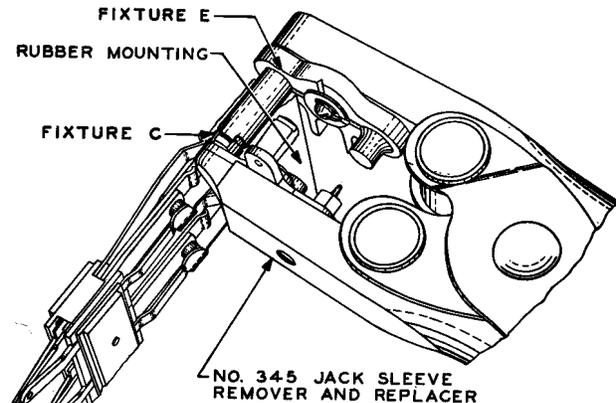


Fig. 9 - Method of Forcing Sleeve Forward, Flush with Face of Rubber Mounting

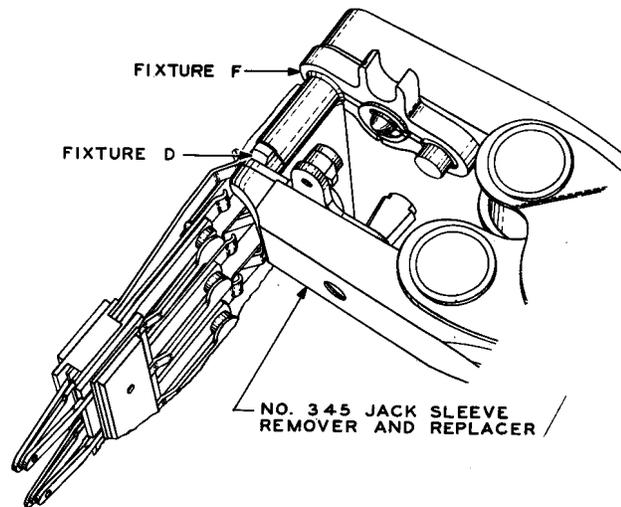


Fig. 10 - Method of Locking Sleeve in Place and Flaring Front of Sleeve

3.19 Flare the front of the sleeve by inserting fixture F of the No. 345 jack

sleeve remover and replacer in the face of the sleeve and fixture D in the rear of the mounting as shown in Fig. 10, and bring the jaws firmly together.

3.20 On 229-type Jacks: To replace the springs, raise the clamping strip with the 3" cabinet screwdriver and insert the springs in their slots, one at a time. Then remove the screwdriver and replace the assembly mounting screws in the two jacks on each side of the jack being worked on. Bend the sleeve terminal down into position with the long-nose pliers, at the same time making the bend resemble that in Fig. 11. When the sleeve terminal is in position, line up the terminal lug with the screw hole, making the inside tip rest on top of the sleeve terminal. Replace the screw and solder the terminal lug to the new sleeve terminal, making sure that there are no drops of solder left in the jack.

3.21 Before remounting the jack strip in the multiple, inspect the studs to determine whether they are broken or missing. If the stud does not require replacement, proceed as in 3.24 and 3.25.

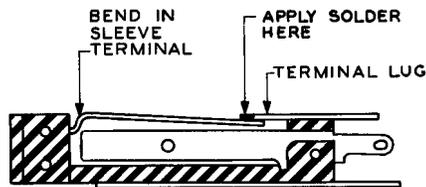


Fig. 11 - Side View of the 229-type Jack

#### Stud

3.22 On 92- and 292-type Jacks: To replace the stud, force the sleeve terminal up as far as possible with the No. 303 spring adjuster. Then while depressing the

stop spring with the No. 117 jack tip and ring spring adjuster, insert the stud in the hole in the stop spring, using the long-nose pliers as shown in Fig. 12. Force the sleeve terminal down to its original position with the No. 303 spring adjuster and the fingers.

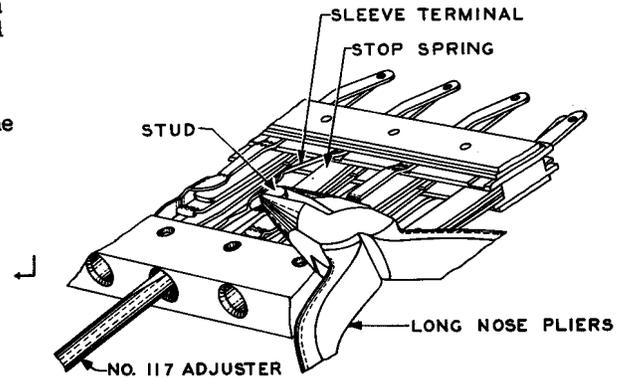


Fig. 12 - Method of Replacing Stud in 92- and 292-type Jacks

3.23 On 229-type Jacks: If necessary to replace the stud, remove the entire contact spring as covered in 3.13 and install a new contact spring as covered in 3.20.

3.24 For 92- and 292-type Jacks: On a 234A or a 235A jack mounting, place the jack spacer between the two jack strips. Place the screws in their proper holes and tighten them securely, using the KS-6854 screwdriver. The two longest machine screws fit in the holes at the front of the mounting.

3.25 Replace any wires that have been removed and retighten the assembly mounting screws, using the KS-6854 screwdriver for 92 and 292 jacks, and the 3" cabinet screwdriver for 229 jacks.