

## 49-TYPE JACKS REQUIREMENTS AND ADJUSTING PROCEDURES

### 1. GENERAL

- 1.01 This section covers the 49-type jacks.
- 1.02 This section is reissued to incorporate material from the addendum in its proper location. In this process marginal arrows have been omitted.
- 1.03 Reference shall be made to Section 020-010-711 for additional information necessary for the proper application of the requirements listed herein.

### 2. REQUIREMENTS

- 2.01 **Freedom from Bind:** (applies for maintenance purposes only)
- (a) The tip spring shall not bind on the stud.
  - (b) If the spring binds on the stud, the stud shall be lubricated with KS-8496 lubricating compound.
- 2.02 **Cutout:** With the No. 123B gauge inserted into the jack, and a No. 121A cord weight attached to the cord which is connected to the gauge, there shall be no indication of a tip or ring cutout when the gauge is slowly rotated a complete revolution.
- 2.03 **Sleeve Wear:** The No. 33 gauge shall not fully enter the sleeve in any position.
- 2.04 **Butt:** It shall be possible to fully insert the No. 124B gauge into the jack. It will be satisfactory to rotate this gauge in an effort to insert it into the jack but the pressure applied shall not exceed that which can be exerted with the gauge held between the thumb and index finger.
- 2.05 **Cross:** The No. 125B gauge shall not cause a cross between the tip and ring springs when fully inserted into the jack. The cord end of the gauge shall be lifted just sufficiently to take up the play in the sleeve.

- 2.06 **Cutout Test Plug Variation:** With the No. 123B gauge inserted in the No. 111A gauge and turned to the position where the needle of the gauge is farthest to the right, no portion of the needle shall be to the right of the green line.

### 3. ADJUSTING PROCEDURES

#### 3.001 *List of Tools, Gauges, Test Apparatus, and Materials*

CODE OR SPEC NO.	DESCRIPTION
<b>TOOLS</b>	
117	Jack Tip and Ring Spring Adjuster
480A (or equivalent)	Atomizer
KS-6320	Orange Stick
—	3" Cabinet Screwdriver
<b>GAUGES</b>	
33	Limiting Gauge
111A	Plug Gauge
123B (or the replaced 123A)	Cutout Test Plug
124B (or the replaced 124A)	Butt Test Plug
125B (or the replaced 125A)	Cross Test Plug
<b>TEST APPARATUS</b>	
121A (2 req.)	325 Gram Cord Weight
—	J94720A Test Set
<b>MATERIALS</b>	
KS-2423	Cloth
KS-7860	Petroleum Spirits
KS-8496	No. 3 Lubricating Compound
—	Bell Seal Bond Paper, Substance No. 20

#### 3.01 *Freedom from Bind* (Reqt 2.01)

- (1) Under certain conditions of humidity and temperature, trouble may be experienced with the operation of these jacks due to the

tip spring binding on the hard-rubber stud which passes through this spring and remaining in such a position as to cross the tip and ring springs after a plug has been withdrawn.

(2) Check for bind of the tip spring on the stud by inserting a KS-6320 orange stick into the jack as shown in Fig. 1. Insert the orange stick until it strikes against the jack mounting behind the tip spring and rests on the upper surface of the tip spring. Then draw it forward approximately 1/16 inch from this point so that the end of the orange stick will not rub against the jack mounting. Apply a slight upward pressure to the free end of the orange stick so as to depress the spring. It should be realized that this operation of the tip spring may bring it in contact with the ring spring and thereby cause interference with service if the jacks are connected to working circuits. Using the orange stick, retard the return of the spring to its normal position and "feel" for binding of the spring on the hard-rubber stud. Practice will enable the tester to determine readily when this binding occurs. If any bind is noted, proceed as follows.

(3) **Preparation of Atomizer:** Unscrew the container from the atomizer and flush the container with KS-7860 petroleum spirits. Then pour out this liquid making sure that the container is thoroughly clean. Unscrew the nozzle and draw the cleaning wire, furnished with the atomizer, through the nozzle four or five times. Pour KS-8496 lubricating compound into the container until the container is approximately one-half full. Take care not to exceed this amount to prevent the lubricating compound from being ejected in a stream rather than in a spray. Firmly remount the

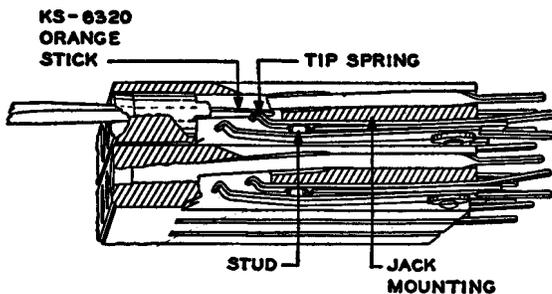


Fig. 1 - Checking Tip Spring for Bind

nozzle and reassemble the atomizer. Use a KS-2423 cloth to wipe off any lubricant that may be on the outside surface of the container.

(4) Place a sheet of the No. 20 paper in a vertical position and hold the atomizer so that the base of the container is in a horizontal plane and the end of the nozzle is approximately 1/8 inch away from the paper. Lightly squeeze the bulb and note the spray against the paper. Using a clean section of the paper, repeat the operation until the lubricant coming from the atomizer against the paper leaves a stain on the paper and yet does not flow. This is the amount of lubricant which should be deposited on the stud and governs the amount by which the bulb should be squeezed. Practice squeezing the bulb until the "feel" is obtained.

(5) **Lubrication of Jack:** Hold the container with the left hand and the bulb with the right hand as shown in Fig. 2. Insert the nozzle into the jack until the stop on the nozzle rests against the face of the jack strip. The nozzle in this position will rest over the tip and ring springs. Raise the container slightly and squeeze the bulb as outlined above. Raising the container depresses the springs and allows the lubricant to strike the stud squarely. The speed of lubrication may be increased by inserting the nozzle into the jack in a downward rotary motion and squeezing the bulb all in a single operation. Exercise care not to get any of the lubricant on the face of the jack strip. If, however, any of the lubricant does get on the face of the jack strip, remove it with a clean

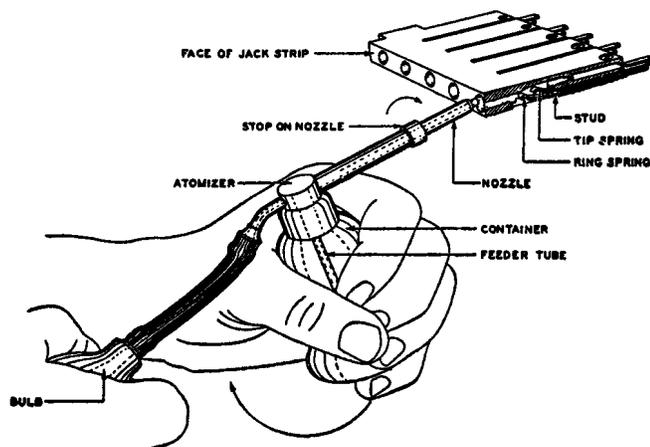


Fig. 2 - Method of Lubricating Stud

KS-2423 cloth. *Do not at any time allow the lubricant in the container to get below the bottom of the feeder tube.*

(6) **Check of Lubrication:** After each ten jack strips have been lubricated, check whether or not the lubricant is being emitted properly. To do this, hold the atomizer in its normal operating position and squeeze the bulb keeping a KS-2423 cloth in front of the nozzle to catch any spray that may be emitted. If the spray is not obtained, insert the wire into the opening in the nozzle and draw the wire back and forth four or five times. Repeat the check of the spray until a satisfactory spray is obtained.

- 3.02 **Cutout** (Reqt 2.02)
- 3.03 **Sleeve Wear** (Reqt 2.03)
- 3.04 **Butt** (Reqt 2.04)
- 3.05 **Cross** (Reqt 2.05)
- 3.06 **Cutout Test Plug Variation** (Reqt 2.06)

(1) To check the No. 123B gauge with the No. 111A gauge, insert the gauge into the gauging hole and revolve the gauge through at least one complete revolution, taking care not to exert either sidewise or lengthwise pressure on the gauge.

(2) Check for cutout, using the No. 123B gauge in accordance with Section 032-350-502. If the gauge does not contact with the jack springs as indicated by the jack test set, the trouble may be due to excessive sleeve wear. Check the jack for sleeve wear with the No. 33 gauge. If the gauge enters the jack, gauge the sleeves of the other jacks in the strip. If the sleeves of several jacks are found to be outside the limits, refer the matter to the supervisor to determine whether the defective sleeves should be replaced or the jack strip replaced. If any jack sleeves are to be replaced, proceed as covered in Section 032-350-801.

(3) If there is a tip cutout, lift the tip spring slightly with the No. 117 adjuster applied at the crimp of the spring as shown in Fig. 3. When the No. 117 adjuster is inserted the proper distance into the jack, the scoring on the side of the adjuster will be flush with the face of the jack strip. Exercise care not to lift the tip spring excessively at any time owing to the difficulty in adjusting the spring downward.

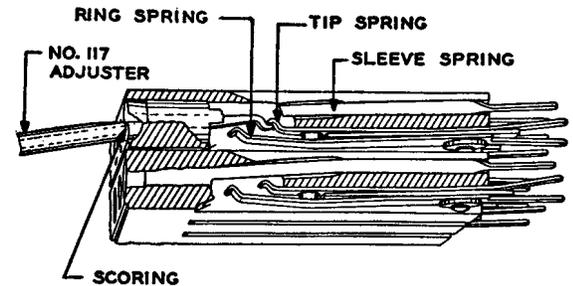


Fig. 3 – Method of Adjusting Tip Spring Up

(4) Insert the No. 124B gauge into the jack with a rotary motion and check that the tip spring has not been lifted sufficiently to cause a butting condition. If the gauge enters with too little resistance, make a further attempt to lift the tip spring as outlined in (3). Repeat until, from the resistance offered to the gauge in this test, it is felt that the tip spring cannot be raised much higher without causing a “butt” condition and, if a cutout is still experienced, do not attempt to adjust the tip spring any higher but replace the spring as covered in Section 032-350-801.

(5) If the check indicates a ring cutout, lift the ring spring slightly with the No. 117 adjuster applied to the crimp of the ring spring as shown in Fig. 3 for the tip spring. When the No. 117 adjuster is inserted the proper distance into the jack, the scoring on the side of the adjuster will be approximately 1/4 inch from the face of the jack strip. Exercise care not to lift the ring spring excessively at any time owing to the difficulty in adjusting the spring downward.

(6) Insert the No. 124B gauge into the jack with a rotary motion and check that the ring spring has not been lifted sufficiently to cause a butting condition. If the gauge enters with too little resistance, make a further attempt to lift the ring spring as covered in (5). Repeat until, from the resistance offered to the gauge in this test, it is felt that the ring spring cannot be raised much higher without causing a “butt” condition and, if a cutout is still experienced, do not attempt to adjust the ring spring any higher but replace the spring as covered in Section 032-350-801. Inspect the tip spring at this time and, if it shows excessive wear or if it does not have the oval hole, re-

**SECTION 032-350-701**

place the spring as covered in Section 032-350-801.

(7) Insert the No. 125B gauge into the jack with a rotary motion and lift it sufficiently to take up the play in the jack sleeve. If the tip and ring springs of the jack cross as indicated by the jack test circuit, remove the jack strip from the multiple and observe the shape of the ring spring. If the ring spring does not have a definite kink in it across the spring approximately two thirds the distance from the insulators to the crimped end of the springs

as shown in Fig. 1, replace the spring as covered in Section 032-350-801. If the ring spring does have the definite kink mentioned above and is not worn excessively, tighten the assembly screws securely with the 3-inch cabinet screwdriver. Inspect the tip spring at this time and make sure it has the oval hole and, if not, replace the spring as covered in Section 032-350-801.

(8) Recheck with the No. 123B gauge to insure against cutouts.