

**BELL SYSTEM PRACTICES**  
Station Installation and Maintenance

**SECTION C64.221**  
Issue 3, 2-2-38  
AT&T Co. Prov. Std.

## **COIN COLLECTORS**

**D-96589, D-96719**

### **50, 150, 161, 162 AND 163 TYPES TESTS AND ADJUSTMENTS**

(Reference Section for C42.127 and C42.128)

#### **1. GENERAL**

- 1.01 Refer to Section C64.222 for data covering the tests and adjustments that are required on specific station visits.
- 1.02 Before making any tests or adjustments temporarily disconnect signaling ground wire.
- 1.03 Any loose dust or dirt in the coin collector or its mechanism shall be brushed out.

#### **2. UPPER HOUSING**

- 2.01 **Gauge Coin Chute.**
- 2.02 **Clean Coin Chute** if gauges stick. If chute is badly worn, distorted or cannot be cleaned without taking it apart, replace the chute.
- 2.03 **Chute Clip** shall be installed on all chutes except P-242923 and P-243570.
- 2.04 **Check Coin Signal Gongs** to see that gongs are not loose and that the indicating marks for solid gong line up.
- 2.05 **Cords** shall not interfere with operation of chute or gongs.
- 2.06 In the case of the D-96589 and D-96719 coin collectors the coin chute shall be one of those specified in 5.16 (a).

#### **3. COIN HOPPER—PREPAYMENT COIN COLLECTORS**

- 3.01 **Coin Vane and Trap** shall appear to be clean and the trap shall not catch on the coin vane or its roller.

3.02 **Coin Vane and Trap** shall be clean and the **Vane Pin and Slot in Relay Arm** shall be lubricated with a soft lead pencil.

3.03 **Vane and Hopper Clearance** shall be such that the vane does not scrape against sides of the hopper or bind on its bearings.

3.04 **Coin Trap Adjustment** shall be such that the trap just clears the roller on the coin vane when vane is operated back and forth under the trap.

#### 4. COIN HOPPER—150U, 150W, 163A AND 163B COIN COLLECTORS

4.01 **Clean Contacts** by burnishing if dirty.

4.02 **Contact Spring Assembly Mounting Bracket:** When the trap is fully operated manually, it shall remain in that position when pressure is applied to the operating spring at a point opposite its contact. The trap shall restore to normal when this pressure is removed.

4.03 **Contact Spring Requirements:**

(a) There shall be a separation minimum .009", maximum .015", between the stop lugs on the trap and the front of the hopper when the trap has been tipped and allowed to restore to its normal position.

(b) With the trap in its normal position, the force required to open the contacts shall be minimum 10 grams, maximum 20 grams, measured at the short contact spring.

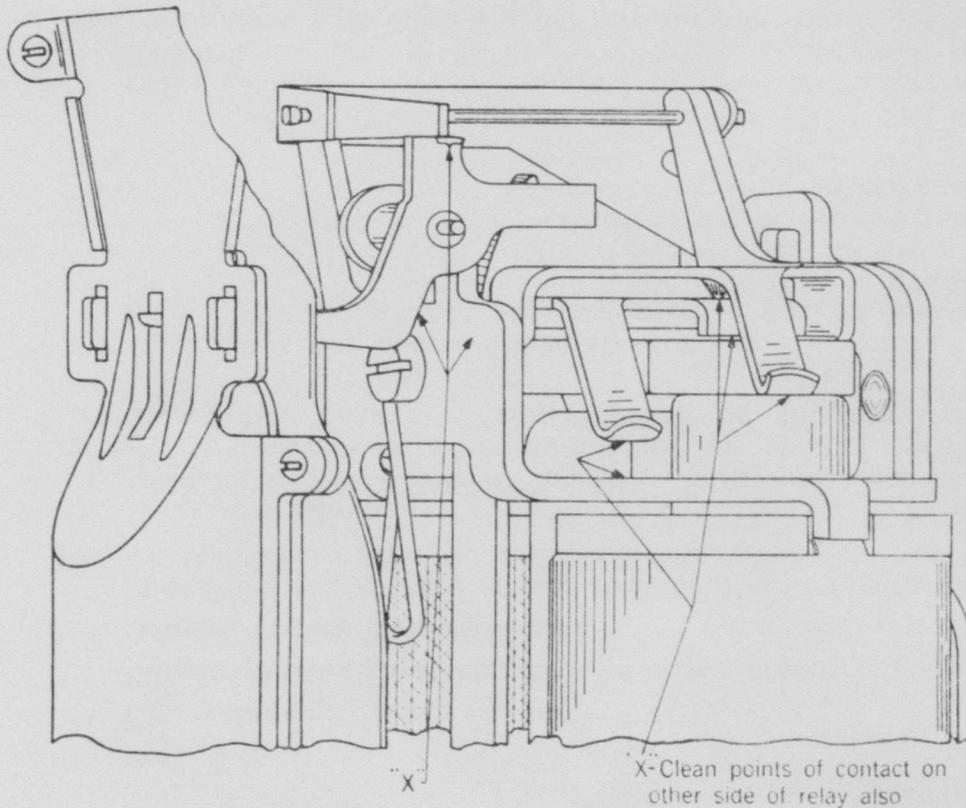
(c) There shall be a minimum .015", maximum .025" follow of the closed contacts from the normal position.

#### 5. COIN RELAY

**Caution:** The tension of the armature restoring springs, the position of the bracket arms, the adjustment of the armature restoring arms, the separation between the armature and pole pieces and the adjustment of the armature pivot pins should not be changed. Replace the relay if it cannot be made to operate properly without adjusting these parts.

5.01 **Armature restoring arms** shall rest on the tops of the pole pieces with no play between the operating arm and the armature restoring arms at their point of contact when the operating arm is in the normal position.

5.02 **Points to be cleaned with paper** are marked X in Fig. 1. Back of trigger and adjacent surface on pivot frame need not be cleaned when coiled wire trigger spring is used.



**Fig. 1—Points to Be Cleaned With Paper.**

- 5.03 **Clean Insulating Roller** if dirty.
- 5.04 **Clean Inner Ground Contact Spring** if dirty where it comes into contact with roller.
- 5.05 **Magnetic Particles** shall be removed from armature and pole pieces of the relay.
- 5.06 **Burrs on Operating Arm** slot shall be removed and the slot lubricated with a soft lead pencil. ←
- 5.07 **Coin Trigger Adjustment** shall be such that trigger turns freely on the trigger pin and rests in a horizontal position when the pressure of the coin trigger lever is removed. Also the coin engaging end of the trigger shall be located in the vertical center line of the coin hopper slots and shall not touch either the sides or top of the front or rear slot when play is taken up in either direction. Replace trigger if the spring riveted to trigger is broken or missing. See that this spring does not touch the restoring arm of the relay when relay is operated to collect position and the trigger operated over its entire travel. In case the trigger is equipped with a coiled wire trigger

spring one end of this spring shall stand out slightly from the pivot frame so as to act as a resilient stop for the trigger.

5.08 **Replacement of Coin Trigger:** Coin triggers shall be of the chromium plated type identified by a prick punch mark on the side of the trigger.

5.09 **Center Relay** so that the full thickness of coin vane can be seen through the center hole of the coin trap.

5.10 **Armature Side Play:** The armature shall move freely with perceptible but not excessive pivot play.

5.11 **Operating Arm Stop Lugs** shall clear the pivot frame of the relay minimum .123", maximum .129" when the relay is in the normal position.

5.12 **Coin Trigger Lever** shall rest on the coin trigger approximately on the vertical line of the pivot for the trigger.

5.13 The coin trigger when in the operated position shall restore to its normal position and there shall be a perceptible clearance (approximately 1/64") between the top of the trigger and the trigger lever when either of the operating arm stop lugs is given its full travel. The trigger shall not restore when either of the operating arm stop lugs is moved slowly by hand to within .030" of its full travel with pressure applied inside the rounding end of the lug with a screw-driver.

5.14 **Clean Ground Spring Contacts** if dirty.

5.15 **Ground Spring Contacts** shall be in alignment.

5.16 **Ground Spring Requirements:**

Whenever the ground spring contact pressure is measured check coin chute for type and condition.

(a) If chute is designated P-242923 or D-96591 (for U. S. A. coins) or P-243570 or D-96720 (for U. S. A. and Canadian coins) the force required to just open the ground spring contacts (after trigger is tripped) shall be not less than 5 grams.

(b) If chute is not one of those specified in (a) and is in good condition do not readjust ground contact spring pressure if it is 3 grams or more but less than 5 grams unless adjustment is required for other reasons. If ground springs are readjusted, the 5 grams pressure requirement covered in (a) shall be met and the chute shall be replaced with one of those listed in (a).

(c) When coin relay is replaced with a relay which has its ground contact springs adjusted to meet the 5 grams pressure requirement given in (a) the coin chute shall be replaced unless it is one of those specified in (a).

(d) With the trigger tripped the contact shall be made and shall be held without break while the armature is operated slowly in either direction.

(e) A dime dropped into the hopper three consecutive times shall trip the trigger and cause the ground springs to make contact each time. Omit this test if the relay has ground contact spring pressure of 5 grams or more.

(f) With the trigger and armature in normal position the separation between the ground spring contacts shall not be less than .015".

5.17 In the case of coin collectors D-96589 and D-96719 the following ground contact spring requirements shall be met:

(a) With the coin trigger and armature in normal position:

(1) There shall be a visible clearance between the inner ground contact spring and the hard rubber stud on the coin trigger lever.

(2) The contact pressure between the inner ground contact spring and the dial connecting spring shall not be less than 1 gram.

(3) The air-gap between the inner and outer ground spring contacts shall not be less than .009".

(b) With the coin trigger tripped:

(1) The contact pressure between the inner and outer ground spring contacts shall not be less than 3 grams.

(2) The air-gap between the inner ground spring contact and the dial connecting spring contact shall not be less than .009".

(c) Meet 5.16 (d) and check 5.13.

(d) A dime deposited in the coin entrance gauge shall trip the trigger.

## 6. HOUSING CONTACT SPRINGS AND EQUALIZING SPRING

6.01 These springs shall have a follow of about 1/4" when the housing is removed. Gauge by eye.

6.02 The housing contact springs shall be clean.

## 7. SWITCHHOOK

7.01 **Binding or Squeaking:** Switchhook shall move freely. Bent or rusted pins shall be replaced.

7.02 **Contacts** shall be clean.

7.03 **Contact Spring Requirements:**

(a) When receiver is slowly lifted the switchhook shall move upward and come to a positive stop against the coin collector base and when the receiver is slowly lowered the switchhook shall move downward and come to a positive stop against the coin collector base.

(b) All contact springs shall have a perceptible follow (about 1/64"). The break between all contacts when open shall not be less than .025". The contact sequence shall be as shown on the connections drawings.

**8. COIN RETURN**

8.01 **Clean Coin Return** if dirty. See that no foreign material is in the return to obstruct or retard the return of coins.

**9. FINAL TESTS**

9.01 Reconnect signaling ground wire and otherwise place coin collector in condition to operate satisfactorily. Call operator, advise her that you are about to test the signals, and that she should return the coins. Drop nickel, dime and quarter and see that she can distinguish the signals properly.

9.02 Test with hand test set or receiver to see that coin collector housings are not crossed with the telephone line. Make test with receiver off hook.

9.03 In the case of D-96589 and D-96719 coin collectors strap Y terminal on the coin collector terminal block to the screw terminal on the left coil of the relay. Make sure trigger is not tripped. Place upper housing on coin collector and dial operator. If operator answers improper connections or adjustments are present. If operator does not answer remove strap. Before making test called for in 9.02 block relay in refund position, temporarily disconnect yellow wire which connects left coil of the relay to outer ground contact spring then place upper housing on coin collector and push it to the right as far as it will go. If crossed dial connecting spring may be touching lock.

9.04 Call test desk and make a complete test of the station as called for in Section C61.711. In connection with the noise tests move upper housing up and down and from side to side to make sure there is no noise or cut-outs in the housing contact springs.

## **10. OUT-OF-SERVICE SIGNS**

10.01 Out-of-service signs shall be placed on coin collectors that are temporarily out of service. Such signs shall be removed and returned to the subscriber when coin collector is placed in service.

## **11. LEVELING OF COINS**

11.01 When relay will not operate due to the cash receptacle being full level the coins and report that a collection should be made.