

COIN STATION TEST LINE CIRCUIT

1. GENERAL

1.01 The Coin Station Test Line is usable on coin lines *not* equipped with dial long line units or subscriber loop carrier systems. Lines equipped with 8A range extenders can be tested. It allows the installation or repair forces to make the following operational tests without tying up local test desk facilities or requiring services of an operator:

- Coin Detection and Ground Removal
- Ground Circuit Foreign EMF (ZK Option)
- Loop Foreign EMF (ZK Option)
- Ground Circuit Check
- Loop Resistance
- Marginal Loop Resistance (ZX option)
- Loop Leakage
- Coin Collect
- Coin Return
- Coin Collect and Return Marginal Tests (ZO option)
- Coin Relay Operating Time
- Resistance Test Self Diagnostics (ZO option).

Note: All test lines are not equipped with ZO option at the time.

1.02 While performing the preceding tests, proper functioning of the following can be determined:

- Coin Chute
- Dial
- Totalizer

- Ringer
- Transmitter and Receiver
- Automatic Coin Local Overtime (DTF).

1.03 The referenced tables are found in the Public Services Maintenance Check Booklet or Section 506-900-503. Example: (B-4) indicates Step 4 in the Trouble Analysis, Table B.

1.04 Initial rate must be deposited to access the test line. After the test line has been seized CF stations require a single coin deposit equal to or greater than initial rate to dial additional tests; example: initial rate is 15 cents, a quarter must be deposited. For DTF stations nickel, dime, or quarter can be deposited for additional tests except when Automatic Coin Overtime Test is made.

1.05 Tests should be made in a sequential manner as shown in the Test Line Procedure. Tests may be repeated by dialing the assigned digit when the test line is in the "Test Selection Mode" (interrupted dial tone). Once the Relay Time test has been dialed (digit 5), the test can be recycled as often as necessary by tripping hopper trigger or redepositing a coin. The switchhook must be momentarily operated before disconnect can occur or new test can be dialed. The Coin Detection and Ground Removal tests require disconnect and reseizure of the test line if retest is desired.

1.06 If no action is taken for approximately 60 seconds after the reception of the "Test Selection Tone" (interrupted dial tone) during any phase of the sequence, the test line will automatically disconnect and restore the circuit to normal.

1.07 Tones are used to indicate a required action by the craftsperson as follows:

- Alternating high and low tone (Tone C)—requires deposit of coin or operation of hopper trigger.

- Steady high tone (hang-up tone)—request to restore handset to on-hook condition. Steady high tone is also used as a test answer in coin relay timing test.
- Interrupted dial tone (test selection tone)—proper digit should be dialed depending on test desired.

Note: In some ESS offices the high tone may be too low to hear clearly in noisy background locations. In this case the BT lead should be removed from the HT terminal on the ring and tone bay and connected to the MT2 terminal (busy verification tone), if available. For additional information, refer to SD-1C297-01, Issue 16B.

1.08 Test results are returned to the craftsperson in the form of coded beeps or rings which are repeated three times. When rings are called for the handset should be taken off-hook before the 3rd group of rings to prevent test line disconnect.

1.09 The Coin Station Test Line is capable of testing rotary or TOUCH-TONE® dial stations.

1.10 Recommended procedure is outlined in Part 3. However, individual tests can be made for each of the dialed tests.

2. PREPARATION

2.01 The following apparatus is required:

- P11C cord—Used to connect cover unit assembly or door and faceplate assembly to coin chassis

- KS-20950, L2 parking tool (Fig. 1)—Used to hang cover unit assembly of 1-type set on side of housing, eliminating the need for a P11C cord

- 146B bias margin gauge—Collect and Return Test

- 1013-type hand test set—Connect to receiver circuit when upper housing or cover unit assembly is on floor or to verify coin signals

- KS-14995, L3 tool—Placed between coin chute and hopper during Collect test to prevent collection of coins (Fig. 2)

- Two dimes, one nickel, one quarter.

2.02 Prepare coin station as follows.

- (1) Remove cover unit assembly of 1-type sets or open door and faceplate assembly of 2-type sets.
- (2) If P11C cord is used, invert handset on switchhook of 1-type sets to prevent armored cord pushing handset off-hook when cover unit assembly is set aside.
- (3) Where possible, install cover unit assembly on a KS-20950, L2 cover parking tool (Fig. 1).
- (4) When testing, ensure that totalizer CF-DTF mode switch (C-type sets only), is in the proper position.

3. COIN TEST LINE PROCEDURE

3.01 Perform test per following flow charts:

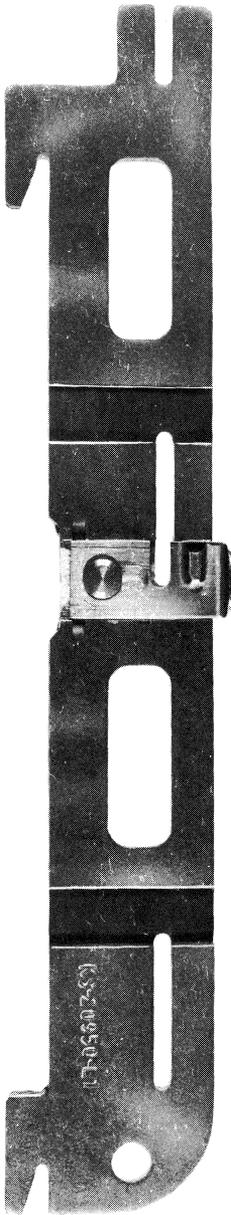


Fig. 1—KS-20950, List 2 Cover Parking Tool

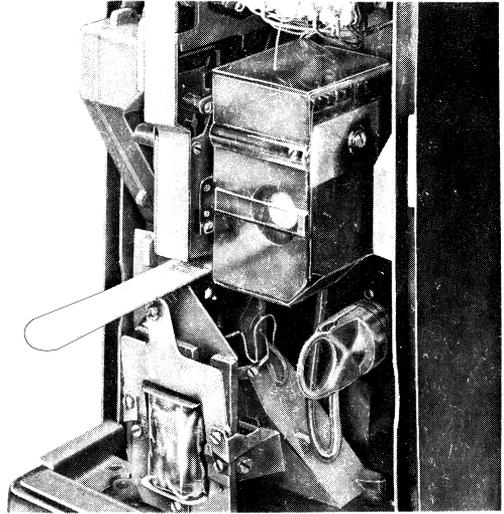
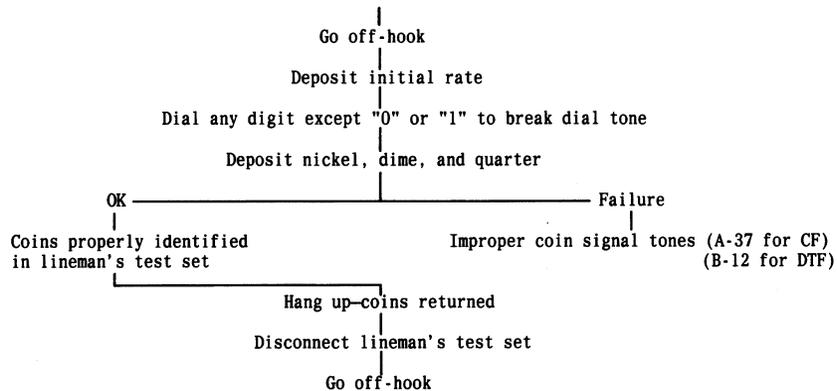
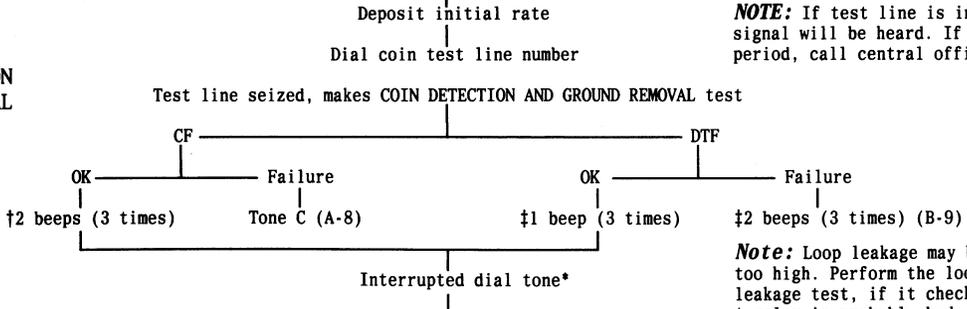


Fig. 2—KS-14993, List 3 Tool—In Position for Collect Test



NOTE: If test line is in use, busy signal will be heard. If busy for long period, call central office.

**COIN DETECTION
GROUND REMOVAL
TEST**



Note: Loop leakage may be too high. Perform the loop leakage test, if it checks OK, A relay is probably bad.

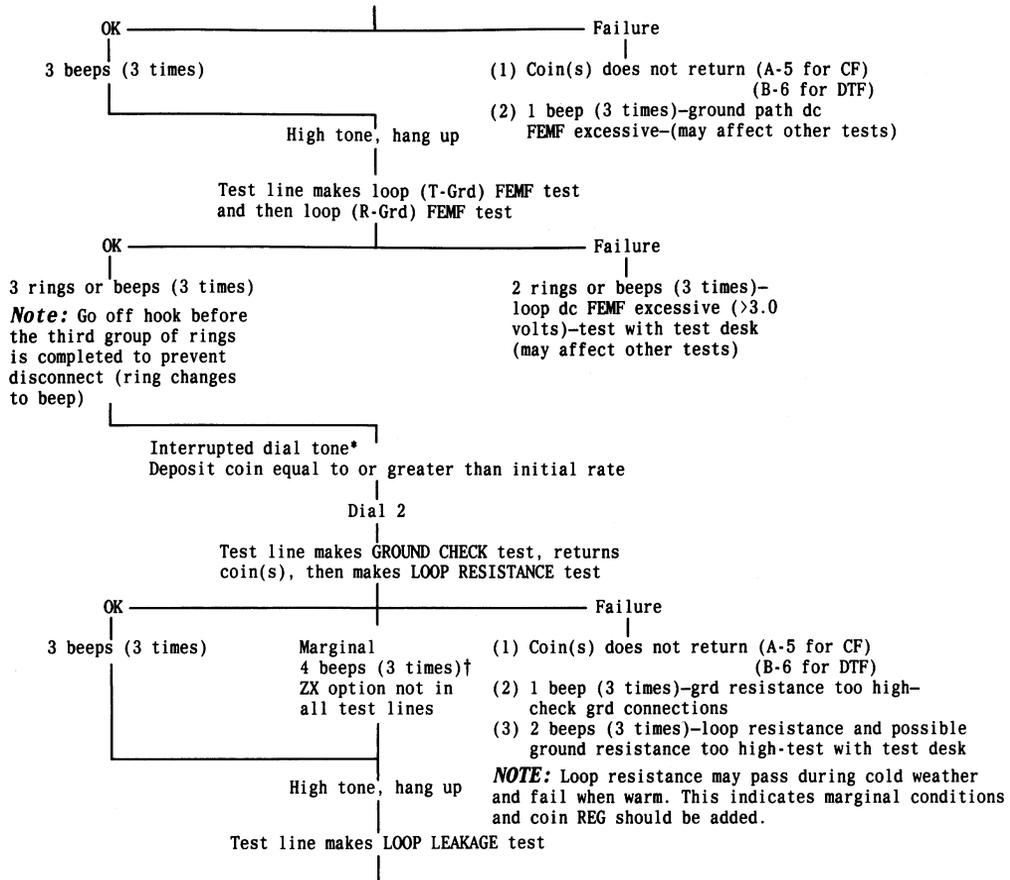
**GROUND CIRCUIT
AND LOOP
FOREIGN EMF**

- *Tones time out in 60 sec., test line disconnects
- †1 beep, OK when 8A range extender (REG) is used in CO.
- †2 beeps, OK when 8A range extender (REG) is used in CO.

Note: This is the ZK option and cannot be performed in all systems. If dial tone not broken with CF station deposit a single coin equal to or greater than initial rate and dial. If coin tone heard after dialing a DTF station, deposit initial rate or greater.

Test line makes Ground Path FEMF test and returns coin(s)

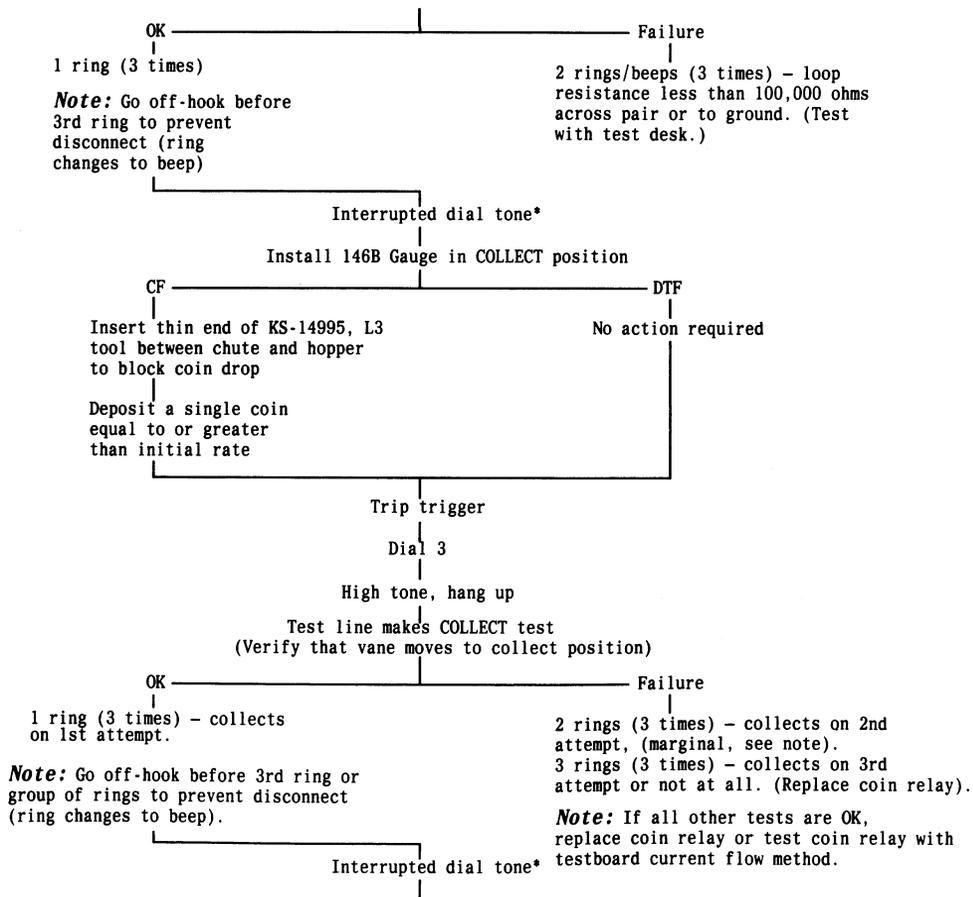
GROUND CHECK, LOOP RESISTANCE, AND LOOP LEAKAGE TESTS



*Tones time out in 60 sec., test line disconnects

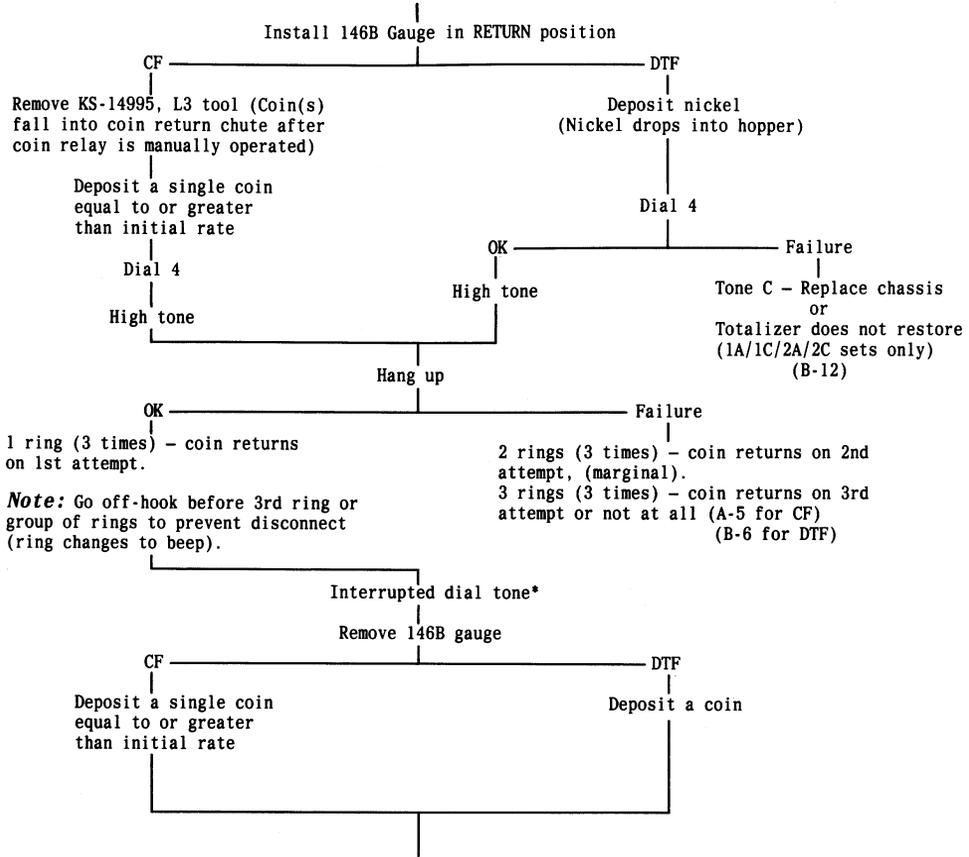
†Loop is within 8 percent of maximum requirement. If cable makeup is all underground, loop is OK. However if any aerial cable is used and outside temperature at time of test is less than 80°F, range extension may be required.

COLLECT TEST



*Tones time out in 60 sec., test line disconnects

RETURN TEST
(AND AUTOMATIC
NICKEL LOCAL
OVERTIME TEST
DTF only)



*Tones time out in 60 sec.,
test line disconnects

COIN RELAY
TIMING TEST

Dial 5

Test line makes COIN RELAY TIME test

Redeposit a single coin equal to or greater than initial rate to recycle test

SIGNAL (Coin relay operate time)	TEMPERATURE of Coin Relay			
	Below 20°	20-60°	60-100°	Above 100°
4 Beeps (Above 500 milliseconds)	Refer to Adjust Chart	TOO SLOW - Refer to Adjust Chart		
3 Beeps (475-500 milliseconds)	OK		OK	
STEADY TONE (425-475 milliseconds)				
2 Beeps (400-425 milliseconds)	TOO FAST - Refer to Adjust Chart			
1 Beep (Below 400 milliseconds)	TOO FAST - Refer to Adjust Chart			

Adjust Chart

Temperature	Adjusting Procedure
Above 100°	Adjust to steady tone and turn armature screw clockwise until first indication of 2 beeps is acquired
60 to 100°	Adjust to 3 beeps and turn armature screw clockwise until first indication of steady tone is acquired
20 to 60°	Adjust to 4 beeps and turn armature screw clockwise until first indication of 3 beeps is acquired
Below 20°	Adjust to 3 beeps and turn armature screw counterclockwise until first indication of 4 beeps is acquired - then turn screw counterclockwise an additional 1/4 turn

Go on hook momentarily (flash switchhook), see note.

Interrupted dial tone heard*

NOTE: If switchhook flash is not executed the test line will not disconnect for 60 seconds and no new test can be dialed.

Hang up. test line disconnects

Go off-hook to assure test line is disconnected

CF

No tone heard

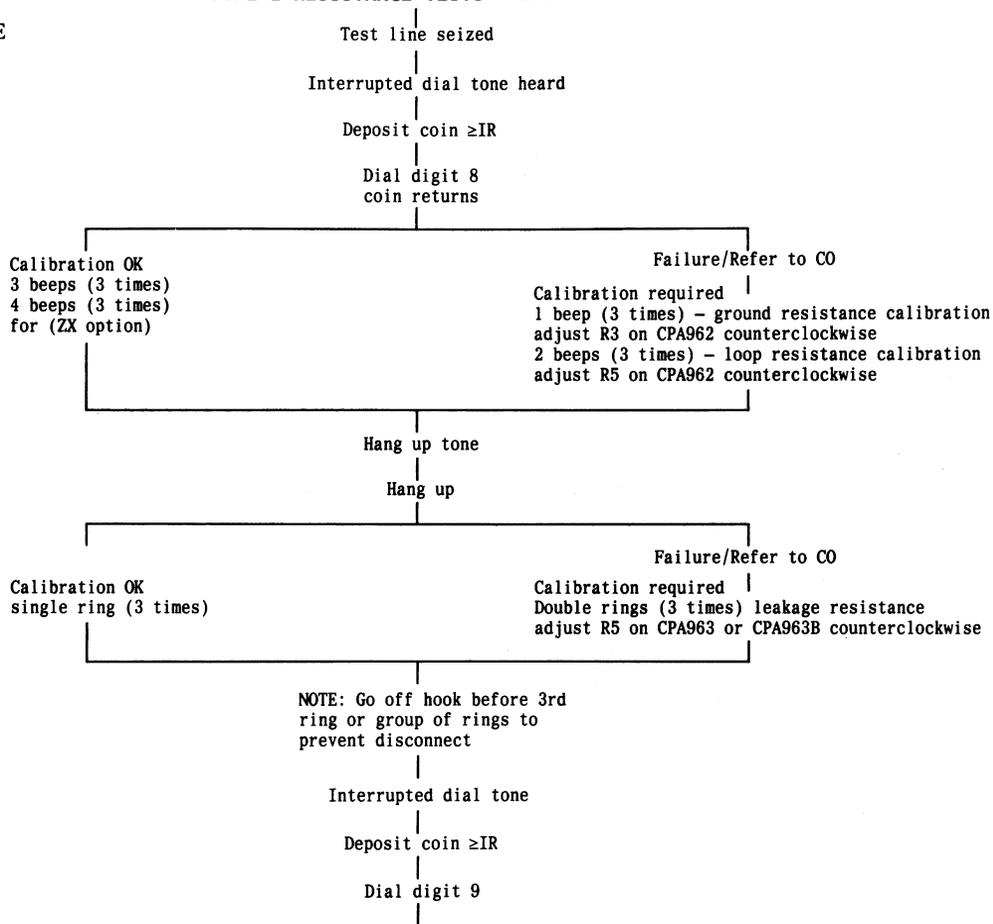
DTF

Steady dial tone heard

*Tones time out in 60 sec., test line disconnects

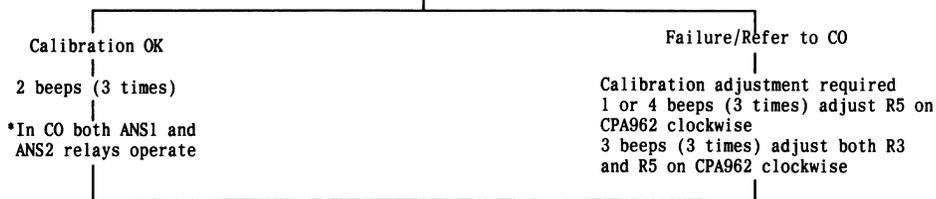
**TO CHECK THE TEST LINE CALIBRATION
FOR DIAL 2 RESISTANCE TESTS - PROCEED AS FOLLOWS**

IR - INITIAL RATE



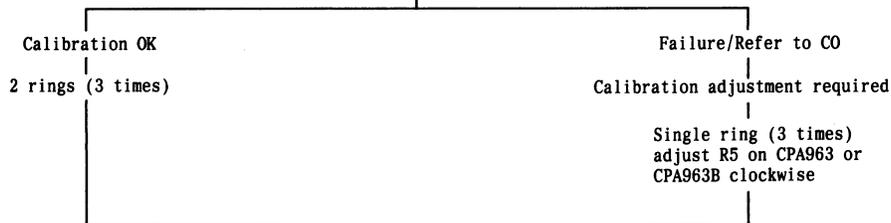
(Dial digit 9, cont)

Coin returns



Hang up tone

Hang up



NOTE: Go off-hook before 3rd ring or group of rings to prevent disconnect

Interrupted dial tone

Deposit coin \geq IR

Dial new test or hang up if no further tests are to be made

After several seconds check for disconnect

CF
No tones heard

DTF
Steady dial tone heard