

BSP 506-900-503

BSP 506-900-503



COIN MAINTENANCE CHECK



Bell System

COIN MAINTENANCE CHECK

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SCHEMATIC INDEX

1. GENERAL

1.01 This booklet supplements:
Section 506-310-100 entitled: Reference, Coin Collectors, Subscriber Set Required

Section 506-310-101 entitled: Reference, Coin Collectors, 235-, 236-, and 1235-type

Section 506-410-400 entitled: Service, Coin Telephone Sets, 1A- and 2A-type

Section 506-411-401 entitled: Service, Coin Telephone Sets, 1C- and 2C-type.

1.02 This booklet includes information formerly contained in Sections 506-900-501 and 506-900-502 which are hereby canceled.

1.03 It is intended that this booklet be used as an on-the-job reference for performing routines and clearing trouble in coin-first and dial-tone first single slot and multislot coin stations. For detailed maintenance procedures see section referenced for the particular work operation.

1.04 All multislot stations are termed *Coin Collectors*, whereas all single slot stations are called *Coin Telephone Sets*.

1.05 *Coin First Service*: When a coin telephone set is in an idle state, the central office (CO) line circuit furnishes battery on the ring side of the line with the tip side open. When the handset is off-hook and the initial rate amount is deposited, a coin ground causes the CO line circuit to operate over the ring side of the line (ground start). Operation of the line circuit connects ground to the tip and prepares the line for dialing over tip and ring. When the call is terminated and the handset is on-hook, collect (+) or return (-) battery is applied to both sides of the line at the CO, which causes the current to flow through the coin relay. The coin relay operates to collect or refund the deposit.

1.06 Dial Tone First Service: In the standby condition, the CO line has a negative battery on ring with tip grounded. Dial Tone First (DTF) system operation is on loop start basis, ground test for initial rate, and polarity reversal for subsequent deposits. When the handset is lifted, the CO originating equipment is connected to provide dial tone before coins are deposited and to make the dial operative. After a sufficient number of digits are received by the CO to determine if the call should be charge or noncharge, the CO makes a ground test for initial rate deposit by detection of a coin ground at the station. Local calls are then connected in the normal manner if the initial rate deposit is satisfied. Three digit services codes do not require initial deposit.

1.07 Automatic Nickel Local Overtime Service:

The CO option for automatic detection of overtime deposits on local calls requires a coin ground test similar to that used for initial rate deposits test in DTF coin service. For DTF service, the overtime coin ground test will be made with a polarity opposite that used for the initial rate ground test. The ground test will be preceded by a 500-millisecond loop or polarity reversal to the coin station to permit proper registration of nickel deposit.

1.08 Telephone Circuit: The talking circuit in a multislot station is generally the same as used in conventional telephone sets, except for the addition of two coin signal transmitters and an electromagnet in series in the primary circuit. The circuit in a single slot coin telephone set is also similar to that used in a conventional telephone set, except for the addition of a mercury relay in the primary circuit.

1.09 When trouble cannot be cleared, report it to the testdesk and place an E-4914 sticker over the coin slot(s). Stickers shall be removed when service is restored.

2. TOOLS, GAUGES, CORDS, AND MATERIAL

2.01 The following tools, gauges, cords, and material may be required, in addition to those normally carried, to perform work operations outlined in this booklet:

Item	Use
139B Tool	Leveling coins.
265C Tool	Burnishing contacts.
376A Tool	Dental mirror for viewing CO contacts.
466A Tool	Adjusting housing contacts — multislot sets (if provided).
528A Tool	Removing foreign material from locks.
641A Tool (Two Required)	To facilitate mounting dials — multislot sets.
710A Tool	Removing switchhooks (corner mounts) — multislot sets.
719A Tool	Opening cash compartment door and removing cover unit assembly.
Spirit Level	Vertical alignment of coin telephone — single slot type.
KS-14995 Tool	Trap and vane release test.
KS-6320 Orange Stick	Removing objects from chute.
KS-14164 Brush	Cleaning washer reject mechanism — multislot sets.
KS-13786 Nylon Brush	Cleaning coin return — multislot sets.
No. 6 Sash Brush	General cleaning.
146B Gauge	Coin relay bias margin test.

Item	Use
178A Gauge	Gate operating arm adjustment (shaft type) — multislot sets.
P6U	Connecting contact springs (multislot sets — except 236- and 1234-type)
P-10B Cord	Connecting lower to upper housing (236-, 1234-type).
P-11C Cord	Connecting cover to housing (1A1, 1A2, 1C1, 1C2), connecting door to housing (235, 1235-type, 2A1, 2A2, 2C1, 2C2.)
E-4914 or KS-7991 Form	Out-of-service sticker or sign.
KS-2423 Cotton Twill Cloth	Cleaning
KS-6824 Sealing Compound	Sealing bias adjustment screw or coin relay.
KS-7860, Petroleum Spirits	Cleaning
KS-14774, L1 Grease	Lubricating
KS-16601, L1 Paper	Cleaning
KS-10750, L2 Releaser	Removing plastic dial finger wheels (except 8U dials). Setting totalizer (2 required) on single slot sets.
No. 4 Allen Wrench	Removing plastic finger wheel (8U dial).
KS-19094, L1 or L2 Antiseize Compound	Threads of KS-14277 lock stud or bolt.

Item	Use
No. 320 Aluminum Oxide Cloth	Cleaning housing contacts.
P-12A745 Spacer	Reduce upper housing vertical play — multislot sets.
Tinnerman Clips (C-29313-012-445) (C-3412-020-38)	Upper to lower housing ground clips — multislot sets.
Pipe Cleaners	Cleaning coin gauges — multislot sets.
Lead Pencil (2B or softer)	Lubricating switchhook and coin release mechanism.

3. COIN FIRST AND DIAL TONE FIRST MULTISLOT SETS (COIN COLLECTORS)

TEN-STEP COIN STATION ROUTINE

3.01 The ten-step routine is designed as a reference check list to insure high quality coin service by reducing repeated reports. The following recommended guide lines are in keeping with this objective:

When to Perform the Complete Ten-Step Routine

- Upon installation of a coin station
- On repeated reports for which trouble cannot be found by the usual maintenance procedures
- On repeated reports of **Coins Don't Return** and **No Dial Tone — Coins Don't Return**.

When to Perform Specific Steps of the Routine

- Steps 1, 2, 3, 4, 5, 9, and 10 are required as part of each repair visit for all trouble reports.

Note: Steps 2 and 9 will differ for Coin-First and Dial-Tone First. Use those parts which

apply. Step 2 includes a third set of tests which apply to Automatic Nickel Local Overtime service only.

- Step 7 is required to update the measurement records on the test center line card and on repeated Coins Don't Return reports.

3.02 When trouble reports continue after repeated routine visits have been made, additional assistance and/or CO investigation may be in order rather than continued routines of the station.

3.03 The ten-step coin station routine is as follows:

Step 1. Inspection Before Removing Upper Housing or Opening Door

Inspect

*BSP
Reference*

(a) Dial operation

- Operates smoothly without binding, slipping or skipping
- Fingerwheel not cracked.

(b) Coin deflector

506-310-100

- Securely in place

(c) Handset

506-310-100

- Locked caps
- Cracked caps or handle

(d) Armored Cord

- Secure at handset and instrument
- Armor intact



(e) Housing or Door

506-310-100

- Appearance

Inspect

*BSP
Reference*

(f) Number cards

- Correct telephone number

(g) Instruction cards and holders

506-310-100

- Securely in place
- Instruction card present

(h) Pull bucket

506-310-100

- Properly secured
- Operates freely

(i) Coin release button

- Operates freely



506-310-100

Step 2. Operation Tests Before Removing Upper Housing or Opening Door

A. Coin First

Note: Refer to Trouble Analysis (Table A) when any operation test fails. Steps should be performed in sequence. "Possible-Cause" assumes that preceding tests have been met.

- Coins required:
3 nickels, 1 dime,
1 quarter
- BSP Reference:
Section 506-310-100



*Table A
Trouble Nos.*

(a) With handset off-hook

- No dial tone

*Inspect**Table A
Trouble Nos.*

- | | |
|---|---|
| (1) Deposit nickel | |
| • Nickel should not be returned | 2 |
| • No dial tone | |
| (2) Depress switchhook | |
| • Nickel should be returned | 3 |
| (b) With handset off-hook: | |
| (1) Deposit nickel | |
| (2) Operate coin release | |
| • Nickel should be returned | 4 |
| (3) Deposit nickel | |
| • Check for no dial tone | 2 |
| (4) Deposit second nickel | |
| • Check for dial tone | 5 |
| (5) After dial tone, deposit third nickel | |
| • Nickel should strike coin signal bell | 6 |
| (6) Deposit dime | |
| • Dime should strike coin signal bell twice | 7 |
| (7) Deposit quarter | |
| • Quarter should strike coin signal gong | 8 |
| (8) Hang up handset | |
| • All coins should be returned | 9 |

*Inspect**Table A
Trouble Nos.*

- | | |
|-----------------------------------|----|
| (c) With handset off-hook: | |
| (1) Deposit dime | |
| • Dial tone received | 10 |
| (2) Dial any digit but "0" or "1" | |
| • Dial tone should break | 11 |
| (3) Hang up handset | |
| • Dime is returned | |

B. Dial Tone First

Note: Refer to Trouble Analysis (Table B) when any operation test fails.

- Coins required:
3 nickels, 1 dime,
1 quarter
- BSP reference:
Section 506-100-106

*Table B
Trouble Nos.*

- | | |
|---|---|
| (a) With handset off-hook: | |
| • Dial tone should be received | 1 |
| <i>Note:</i> A temporary traffic overload could exist, causing dial tone delay. | |
| (1) Deposit nickel | |
| • Nickel should not be returned | 2 |

TABLE A
TROUBLE ANALYSIS-MULTISLOT — COIN FIRST

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
1	Lift handset	No dial tone	Dial tone without deposit	Coin jam in hopper	Clear coin jam in hopper
				Full coin receptacle	Level coins and notify coin collection department
				False coin or foreign ground	Check coin relay contacts and wiring
				Dial tone first line	Refer to testdesk
2	With handset lifted deposit nickel	Nickel does not return	Nickel falls into return bucket	Loose star wheel shaft	Replace upper housing
				Loose or defective reject frame	

2 (Cont)				Blocked switchhook	Clear
				Sticking latches or bent gate lever	Replace coin chute
				Gate operating arm or support bracket out of adjustment	Adjust, using 178-type gauge
		No dial tone	Dial tone with nickel deposit	Latching or holding latches sticky or out of adjustment	Replace coin chute
3	Hang up handset	Nickel is returned	Nickel does not return	Gate operating arm out of adjustment	Adjust
				Coin return path blocked	Clear
				Stuffed coin gauge or twister	Clear coin gauge or twister (do not use metal tool)
				Coin gauge will not accept coins	Replace upper housing

TABLE A (Cont)

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
4	With handset lifted deposit nickel and operate coin release button	Nickel returns	Nickel does not return	Stop bracket loose or missing	Tighten or replace P-12A666 bracket or replace coin chute
5	With handset lifted deposit 2 nickels	Dial tone	No dial tone	Blocked or dirty coin chute	Replace coin chute
				Transmitter or receiver unit removed or defective	Replace handset
				Dial pulsing contacts open	Replace dial
				Switchhook contacts not making	Adjust or clean contacts
				Hopper trigger contacts not making	Clean and adjust contacts or replace coin relay

5 (Cont)				Dial off-normal (normally closed) contacts not making	Replace dial
				No local ground	Check for proper coin signal ground
				Defective internal wiring or loose connections	Check continuity of wiring and transfer contacts (if applicable)
				CO overload or other nonstation trouble	Refer to testdesk
6	Deposit third nickel	Nickel strikes coin signal bell	Third nickel does not strike coin signal bell	Coin signal bell not positioned correctly	Adjust
				Defective electro-magnet or sticky armature arm	Replace coin chute

TABLE A (Cont)

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
7	Deposit dime	Dime strikes coin signal bell twice	Dime does not strike coin signal bell	Blocked chute	Clear chute
8	Deposit quarter	Quarter strikes coin signal gong	Quarter does not strike coin signal gong	Blocked chute or damaged signal gong	Clear chute or replace gong
9	Hang up handset	Coins returned	Coins not returned	Coin relay not functioning properly	Check selector card for foreign particles and proper position, clean contacts, or replace coin relay
				Poor ground and/or connections	Correct
				CO or other non-station trouble	Refer to testdesk

10	With handset off-hook deposit dime	Dial tone	No dial tone	Hopper trigger not tripped	Replace coin relay
11	Dial any digit but "0" or "1"	Dial tone breaks	Dial tone does not break	Coin relay dial-shorting contacts not breaking	Adjust or replace coin relay
				Dial pulsing contacts not functioning	Replace dial
				Short caused by defective wiring	Check wiring in set
12	Call operator and deposit nickel, dime, and quarter	Coins identified by operator	Improper coin signal tones	Defective coin signal transmitter or chute capacitor	Replace
				Broken or shorted signal transmitter leads	Repair leads or replace signal transmitter
				Dial off-normal (normally open) contacts not restoring	Replace dial

TABLE A (Cont)

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
12 (Cont)	Call operator and deposit nickel, dime, and quarter	Coins identified by operator	Improper coin signal tones	Wiring improperly dressed against gongs	Dress wires properly
13	Request operator to return coins	Coins returned	Nickel does not strike coin signal bell	Defective chute electromagnet	Replace chute
14	Request operator to ring back (hang up)	Ringer operates at maximum volume	Coins not returned	Faulty coin trunk or nonstation trouble	Repeat request and if failure reoccurs refer to testdesk
			No ring back or low volume	Defective ringer or leads	Replace ringer
				Ringer out of adjustment	Adjust
				Open ringer capacitor in network	Replace network

Table B
Trouble Nos.*Inspect*

(2) Operate coin release

- Nickel should be returned 3

(3) Deposit nickel, depress switchhook

- Nickel should be returned 4

(b) With handset off-hook

(1) Dial any digit but "0" or "1"

- Dial tone should break 5

(2) Deposit 2 nickels, 1 dime, and 1 quarter

- Coins pass through chute and strike coin signal bell or gong, and hold at coin relay 6

(3) Dial test line code that requires coin deposit

- Audible ringing should be heard in handset 7

(4) Depress switchhook

- Coins should return 8

C. Automatic Nickel Local Overtime

Note: Refer to Trouble Analysis (Table B) when any operation test fails.

- Coin required:
1 nickel
- BSP Reference:
Section 506-100-106



Inspect

Table B
Trouble Nos.

(a) With handset off-hook, listen for dial tone

(1) Deposit nickel

- Nickel should not be returned

13

(2) Dial operator

- Nickel should pass through the chute, strike coin signal bell, and hold at the coin relay. Nickel returns when operator answers.

14

Step 3. Inspection With Upper Housing Removed

Note: Remove handset from switchhook before removing upper housing. Careful removal of upper housing may facilitate locating troubles.

Inspect

BSP
Reference

(a) All wiring for tight connections

(b) Dressing of wiring and cord leads

- Free of spring contacts
- Not touching coin signal bell or gong

(c) Bolt or stud fasteners (KS-14277)

- Insulator in place



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TABLE B
TROUBLE ANALYSIS-MULTISLOT - DIAL TONE FIRST

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
1	Lift handset	Dial tone received	No dial tone <i>Note:</i> A temporary traffic overload could exist causing dial tone delay	Defective handset	Replace handset
				Traffic overload	Wait and repeat
				Switchhook contacts not making	Adjust and clean switchhook contacts
				Defective wiring	Correct wiring
				Defective speech network	Replace subset or network
2	Deposit nickel	Nickel does not return	Nickel falls into return bucket	Nonstation trouble	Refer to testdesk
				Loose star wheel shaft	Replace upper housing
				Loose or defective reject frame	Replace upper housing

TABLE B (Cont)

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
2 (Cont)	Deposit nickel	Nickel does not return	Nickel falls into return bucket	Blocked switchhook	Clear
				Gate operating arm or support bracket out of adjustment	Adjust, using 178-type gauge
				446K diode is reversed or defective	Reverse or replace 446K diode
3	Slowly operate coin release	Nickel falls into return chute	Nickel does not return	Stop bracket loose or missing	Tighten or replace P-12A666 bracket or replace coin chute
				Stuffed coin chute	Clear or replace coin chute
				Holding latch out of adjustment	Replace chute

4	Deposit nickel and depress switchhook	Nickel is returned	Nickel does not return	Gate operating arm out of adjustment	Adjust
				Coin return path blocked	Clear coin return path
5	Dial any digit but "0" or "1"	Dial tone breaks	Dial tone does not break	Lead on terminal 1 on coin relay is not insulated and stored	Insulate and store lead
				Defective dial	Replace dial
6	Lift handset and deposit two nickels, 1 dime and 1 quarter	Coins pass through chute, strike bells and gong, and are held at coin relay	Coins do not strike bells or gong	Blocked or dirty coin chute	Replace coin chute
				Signal bell improperly positioned	Adjust
7	Dial test line code	Audible ringing heard in handset	Recorded announcement heard (insufficient deposit)	Hopper trigger contacts not making	Clean and adjust or replace coin relay

TABLE B (Cont)

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
8	Hang up handset	Coins return	Coins do not return	Defective coin relay	Check selector card for foreign particles, clean contacts, or replace coin relay
				Coin return path blocked	Clear coin return path
				Poor ground and/or connections	Correct
9	Call operator and deposit nickel, dime and quarter	Coins identified by operator	Improper coin signal tones	Signal gongs improperly positioned	Adjust
				Defective coin signal transmitter or chute capacitor	Replace
				Broken or shorted transmitter leads	Repair leads or replace signal transmitter

9 (Cont)				Dial off-normal (normally open) contacts not restoring	Replace dial
				Wiring improperly dressed against gongs	Dress wires properly
				Nickel does not strike signal bell	Replace chute electromagnet
				Defective 446K diode	Replace diode
10	Request operator to return coins	Coins returned	Coins not returned	Faulty coin trunk or nonstation trouble	Repeat request and if failure reoccurs refer to testdesk
11	Request operator to ring back (hang up)	Ringer operates at maximum volume	No ring back or low volume	Defective ringer or leads	Replace ringer
				Ringer out of adjustment	Adjust
				Open ringer capacitor in network	Replace network

TABLE B (Cont)

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
12	Lift handset, listen for dial tone and dial number that requires initial rate deposit. Do not deposit coin.	Recorded announcement is heard (insufficient deposit)	No recording heard	False coin or foreign ground Full coin receptacle Coin jam in hopper	Check coin relay contacts and wiring Level coins and notify coin collection department Clear coin jam
Automatic Nickel Local Overtime					
13	Lift handset and deposit nickel	Nickel should not be returned	Same as Trouble No. 2	Same as Trouble No. 2	Same as Trouble No. 2
14	Dial operator	Nickel should pass through the chute, strike coin signal bell, and hold at the chute. Nickel returns when operator answers	Nickel does not pass through the chute	Defective coin chute or electromagnet Defective 446K diode	Replace chute Replace

<i>Inspect</i>	<i>BSP Reference</i>
• Antiseize compound on threads	506-310-100
• Proper alignment	
(d) Ground clip on upper housing	506-310-100
(e) Ground wire from coin relay to lower housing (except panel-type coin collectors)	506-310-100
(f) Coin gauge	
• Dirty, sticky, or corroded	
• Blocked	
(g) Washer reject mechanism	506-310-100
• For worn or sticky star-wheels	
(h) Housing contacts	506-310-100
• Dirty	
• Out of adjustment	

Step 4. Coin Chute Assembly

<i>Inspect</i>	<i>BSP Reference</i>
(a) For dirt, grease, or other foreign matter	506-310-100
• Do Not Clean Chute	
• Replace chute	
<i>Note:</i> Use only a KS-6320 orange stick or non-metallic tool to remove stuck coins and foreign matter.	
(b) Alignment	506-310-101
• If coins are found beside relay or stuck between bottom of chute and hopper, suspect misalignment	

*Inspect**BSP
Reference*

- (c) For damaged or corroded holding and locking latches, electromagnet, and gate

506-310-100

- Replace chute

- (d) Coin twister (panel sets)

- Alignment

506-310-101

- For dirt, grease, or other foreign matter

Step 5. Switchhook Operation*Inspect**BSP
Reference*

Note: (a), (b), (c), and (e) do not apply to panel sets.

- (a) Loose sleeve

- Vertical and lateral movement

506-310-100

- (b) Spring pile-up

- Alignment

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- Tension

- Tightness

- (c) Contacts

506-310-100

- Dirty or pitted

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- Proper sequence and follow

- (d) Gate operating arm

- Check adjustment

- (e) D-180009 switchhook Conversion Kit (If provided)



506-101-400

- Binding bushing

- Bent shaft

Step 6. Coin Relay and Hopper Operation

Note: Dial shorting contacts must be disconnected for Dial Tone First Service.

*Inspection and Operation Procedures**BSP
Reference*

- (a) Shorting and ground contact springs

506-310-100

- Clean and burnish

- Check for proper adjustment

- Lubricate surface between hopper trigger and contact with 2B, or softer, lead pencil



- (b) Selector card magnets and polepiece extensions

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- Remove foreign magnetic particles and dirt



- (c) Operation of hopper trigger, trap, and vane

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- Perform trap and vane release test with KS-14995 tool

- (d) Coin relay bias margin test:

- (1) Call testdesk and request a bias margin test of the coin relay (use CO test circuit where available)



Note: Do not operate coin relay armature without first depressing selector card.

- (2) Slip 146B bias margin gauge (Fig. 1) over left pole piece extension arm from left side of coin relay per Fig. 2

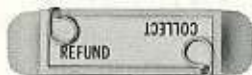


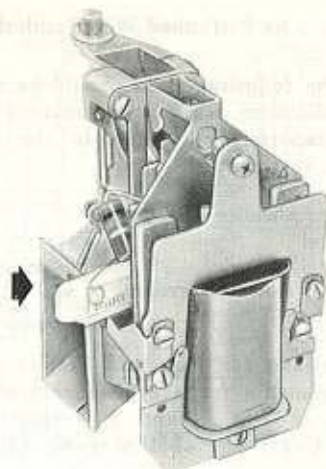
Fig. 1 - 146B Bias Margin Gauge

- (3) Request deskman to collect (or refund) according to the gauge marking
- Verify proper operation
- (4) Reverse the ends of the gauge *on the same pole piece extension arm* and request deskman to refund (or collect) according to gauge marking
- Verify proper operation
- (5) Replace relay if either test fails

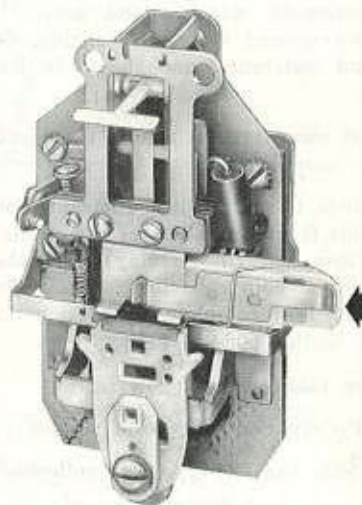


Note: Make certain coin relay cover is provided and in place before replacing upper housing.

Note: On multislot panel type sets make certain the phosphor bronze clip (P-28E453) is properly positioned over relay dust cover to avoid damage when door is closed.



SIDE VIEW



BACK VIEW

Fig. 2 - Bias Margin Gauge in Position for Collect Test

Step 7. Tests to be Performed With Testdesk

Note: The following tests should be performed on installations when investigating repeated trouble reports, or to update the line card record in test center.

- (a) Test for absence of foreign potential
- (b) Measure loop and ground resistance



- Connections for loop and ground resistance measurements for a typical coin station are shown in Fig. 3 and 4, respectively. See Table C for use of Dial Long Line Equipment.

Note: The difference between the ground measurement obtained and one-half the loop measurement noted is considered to be the ground resistance, and should be less than 50 ohms.

- Test measurement should be recorded on the line card.
 - Tables C and D list allowable loop ranges. Table D and Fig. 5 cover use of the 685B subscriber set (S-36 relay) and the 233- or 234-type coin collector for coin first service only. For complete connection information see Section 506-215-404.
- (c) Coin relay current flow test
 - (1) Preparation by type of station:
 - a. 233- and 234-type coin collectors:
 - Remove upper housing and connect 1013A or equivalent test set to (Y) and (L) terminals as shown in Fig. 6.
 - b. 235- and 1235-type coin collectors.

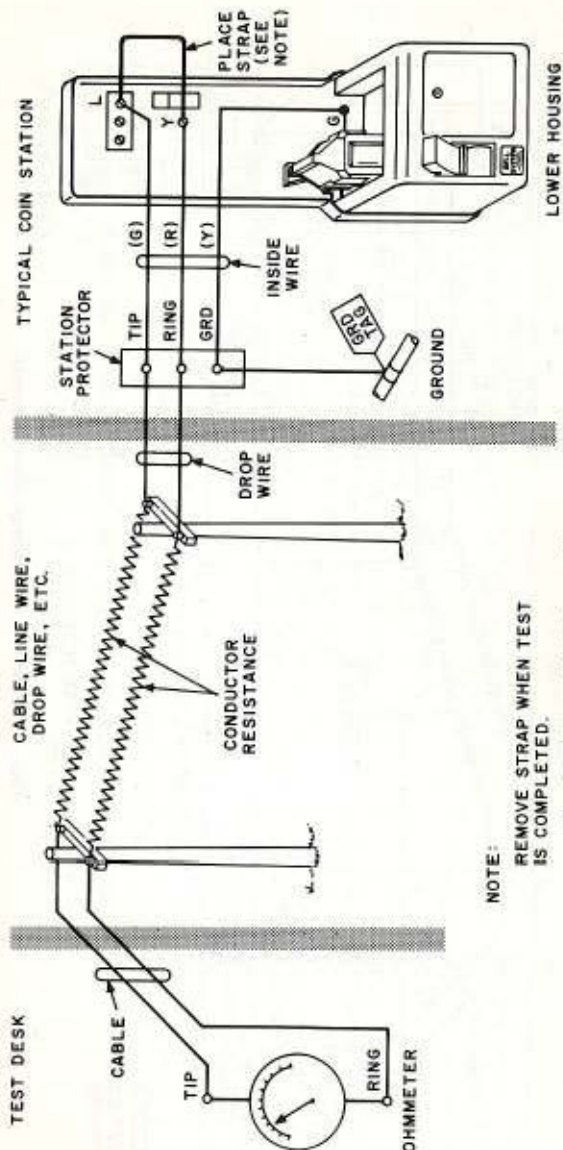


Fig. 3 — Loop Resistance Measurement

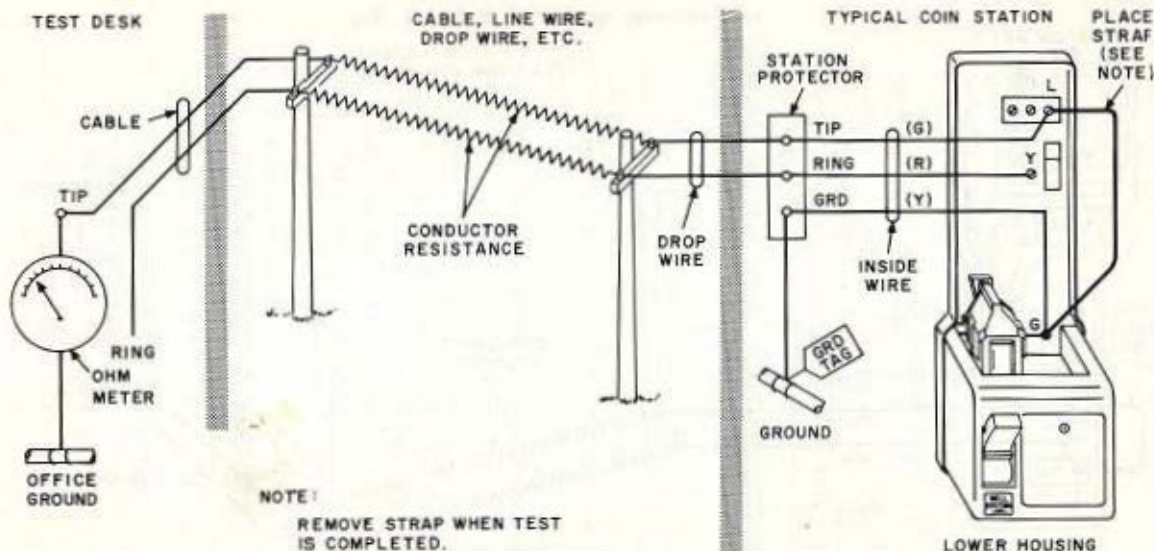


Fig. 4 — Ground Resistance Measurement

TABLE C
 REQUIREMENTS FOR DIAL LONG LINE CIRCUITS ON COIN LINES
 (FOR LIMITATIONS OTHER THAN COIN CONTROL)
 (ASSUMES 300-OHM STATION SET RESISTANCES)

TYPE OF CENTRAL OFFICE	REQUIREMENTS
Step-by-Step	DLL CKT required on loops over 1050 ohms
Panel	DLL CKT required on loops over 885 ohms
No. 1 Crossbar	DLL CKT required on loops over 1200 ohms
No. 5 Crossbar	DLL CKT required on loops over 1300 ohms
No. 1 ESS No. 2 ESS	DLL CKT required on loops over 1300 ohms

TABLE D

**MAXIMUM ALLOWABLE LOOP RANGES FOR CENTRAL OFFICE COIN SUPPLY VOLTAGE —
COLLECT AND RETURN ONLY**

(MAXIMUM GROUND RESISTANCE 50 OHMS) (MAXIMUM DC, EARTH POTENTIAL ± 3 VOLTS)

TYPE OF CENTRAL OFFICE	MINIMUM COIN VOLTAGE	LOOP RANGE WITH 48 ma-OP RELAY	LOOP RANGE WITH 41 ma-OP RELAY
Step-by-Step Panel, No. 1 Crossbar	100 Volts (100-120V)	1500 ohms	2200 ohms
Step-by-Step Panel, No. 1 Crossbar	115 Volts (115-120V)	2100 ohms	3000 ohms
No. 5 Crossbar, No. 1 ESS, No. 2 ESS	125 Volts (125-135V)	2500 ohms	3400 ohms

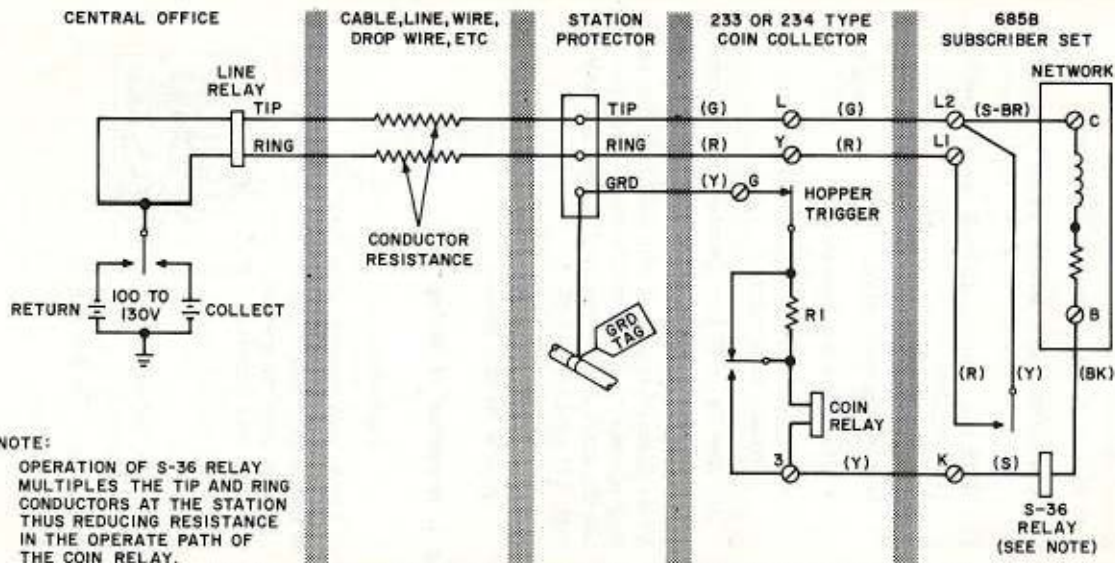


Fig. 5 — Connections and Operate Path of S-36 Relay (Coin First Only)

- Open and connect door to housing assembly with P11C cord.
- c. 236- and 1234-type coin collectors.
- Remove and connect upper housing to lower housing with P10B cord.
- (2) With the handset off-hook operate the hopper trigger.
 - (3) Call testdesk and request a current flow test of the coin relay.
- Observe relay operation
 - If either operate or nonoperate tests fail, replace coin relay.

Note: See Table E for operate and nonoperate values of the relays used in multislot sets.

Note: Circuits equipped with dial long line units may appear to work satisfactorily even though the tip and ring are reversed. Check for 48V on ring and ground on tip.

- (4) Coin relay current flow test data should be posted on line card.

Step 8. Inspection of Wiring

Inspect

- (a) Inside and ground wire for:

- Continuity and tight connections at ground clamp and terminal
- Proper routing and support
- Proper gauge (ground wire)



- (b) Station protector for:

- Proper type

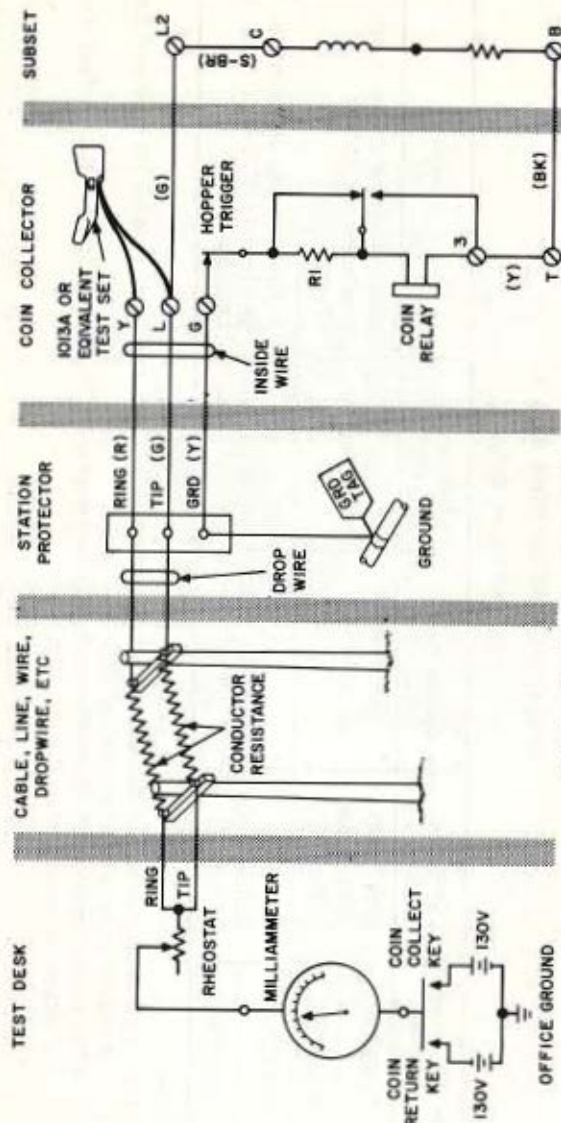


Fig. 6 — Coin Relay Current Flow Test

TABLE E
OPERATE VALUES OF COIN RELAYS
 (Single Coil Types Only)

Number Stamped on Relay	Operating Time	Operate Current	Nonoperate Current	Remarks
P-10E786	625 \pm 75 milliseconds (Note 1)	48 milliamps	40 milliamps	Restoral spring diameter approximately 5/32-inch (Fig. 7)
P-13E961				
P-10E786*	450 \pm 50 milliseconds (Note 2)	41 milliamps	30 milliamps	Restoral spring diameter approximately 9/32-inch (Fig. 8)
P-13E961*				

Notes:

- 1 — The timing interval of 625 milliseconds may be compared with the time it takes for a rotary dial to return to normal after dialing digit 6.
- 2 — The timing interval of 450 milliseconds may be compared with the time it takes for a rotary dial to return to normal after dialing digit 4.

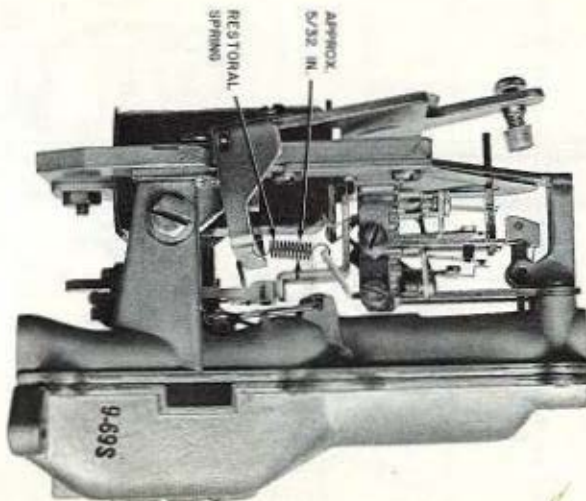
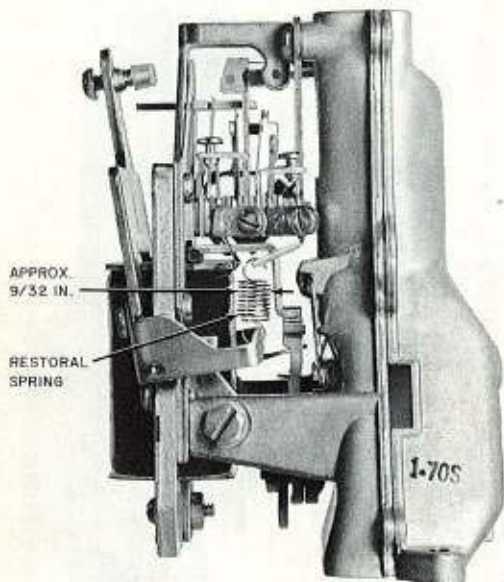


Fig. 7 — Coin Relay Showing Old Operating Values

- OPERATE CURRENT: 48 ma
- NONOPERATE CURRENT: 40 ma
- OPERATING TIME: 625 \pm 75 ms



- OPERATE CURRENT: 41 ma
- NONOPERATE CURRENT: 30 ma
- OPERATING TIME: 450 \pm 50 ms

Fig. 8 — Coin Relay Showing New Operating Values

- Operated blocks or fuses
- Ground wire caution tag (E-3013B)

Note: Tag the location of signaling ground inside set according to local regulations.

Step 9. Final Tests and Inspection After Replacing Upper Housing or Closing Door.

- (a) Perform any uncompleted operation tests shown in Step 2.

A. Coin First

Note: Refer to Trouble Analysis (Table A) when any test fails.

- Coins required:
1 nickel, 1 dime,
1 quarter
- BSP Reference:
Section 506-310-100



Table A
Trouble Nos.

- (b) Call operator

Note: If deposit not automatically refunded when operator answers, request coins be returned.

- (1) Request that nickel, dime, and quarter be identified as they are deposited.
- (2) Request and verify that coins are returned



13

12

13

*Table A
Trouble Nos.*

- (3) Request ring-back, and hang up
 - Verify ringer operates at maximum volume
- (4) Lift handset. Dismiss operator. Hang up
- (c) Lift handset. Deposit initial rate. Listen for dial tone. Dial any digit except "0" or "1".
- (1) Check for noise or cutout caused by upper housing vertical play (P-12A745 spacers)
 - Noise or cutout caused by handset cord.
- (2) Hang-up handset

B. Dial-Tone First

Note: Refer to Trouble Analysis (Table B) when any test fails.

- Coins required: 1 nickel, 1 dime, 1 quarter
- BSP Reference: Section 506-100-106

*Table B
Trouble Nos.*

- (a) Call operator
 - (1) Request nickel, dime, and quarter be identified as they are deposited



9

*Table B
Trouble Nos.*

- (2) Request and verify that coins are returned
- (3) Verify that ringer operates at maximum volume
- (4) Lift handset. Dismiss operator and hang up.
- (5) Lift handset. Listen for dial tone and dial number that requires initial rate deposit. Do not deposit coin.
 - Verify that recorded announcement is heard. Hang up.
- (b) Lift handset. Listen for dial tone. Dial any digit but "0" or "1".
- (1) Check for noise or cutout caused by upper housing vertical play (P-12A745 spacers)
 - Noise or cutout caused by handset cord.
- (2) Hang up handset

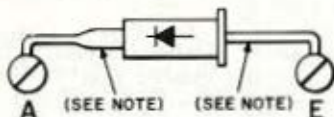
Step 10. Visual Inspection of Associated Items

- Booth, shelf, or mounting (properly) anchored and grounded)
- Glass
- Door operation
- Light fixtures
- Blower (If present)



- Directories (If provided)
- Signs
- General area for safety of public access and appearance

3.04 Dial Tone First multislot coin collectors must have the 446K diode installed between terminals A and E as shown in Fig. 9 and 10.



NOTE:
DO NOT BEND LEADS WITHIN
1/16 IN. OF CASE.

Fig. 9 — Polarity of 446K Diode

3.05 Coin collectors in Automatic Nickel Local Overtime Systems must have D-180352 Kit of Parts (Fig. 10) installed on the gong signal and chute assembly.

SCHEMATIC INDEX

3.06 Coin Collector Functional Schematic Index:

- Fig. 11 — 234G Coin Collector with 685A Subscriber Set
- Fig. 12 — 235G Coin Collector
- Fig. 13 — 236G Coin Collector
- Fig. 14 — 1234G Coin Collector with 685A Subscriber Set
- Fig. 15 — 1235G Coin Collector

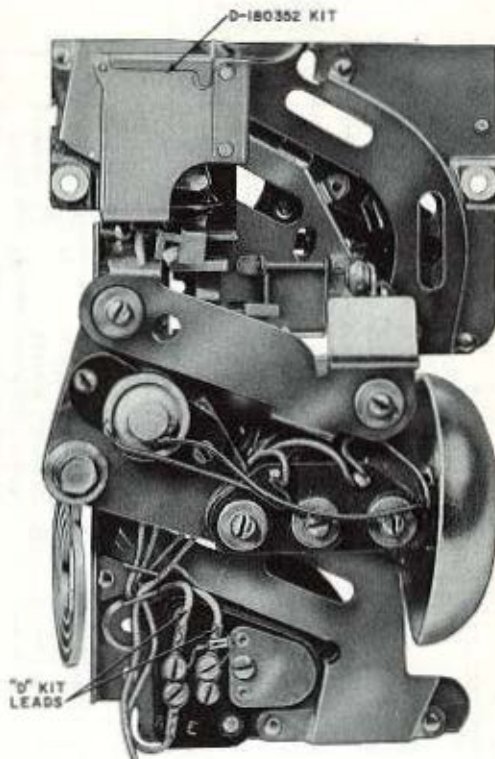


Fig. 10 — Gong Signal and Chute Assembly with D-180352 Kit Installed

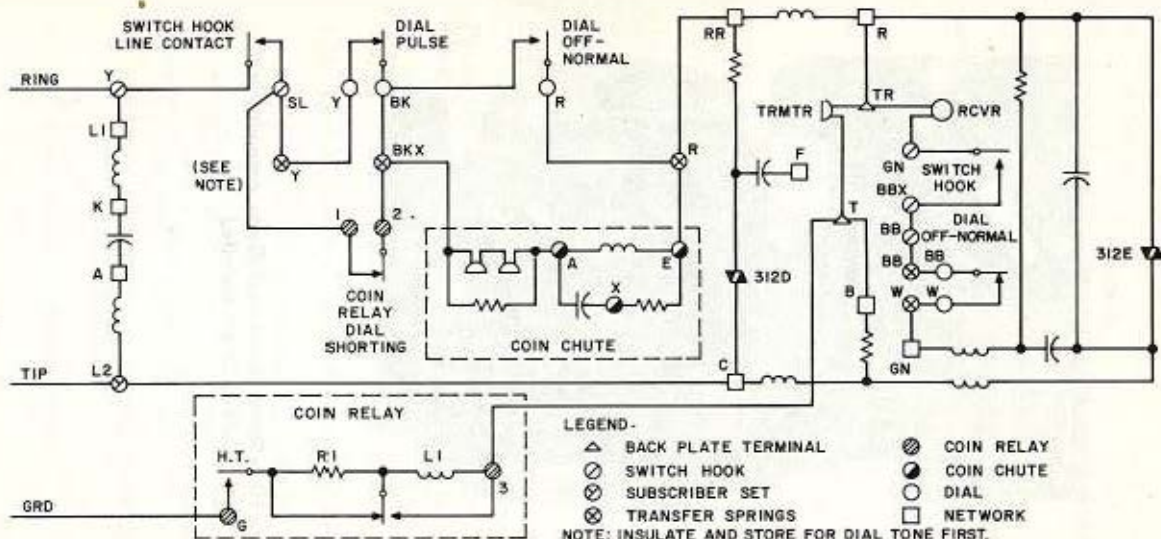


Fig. 11 - 234G Coin Collector with 685A Subscriber Set

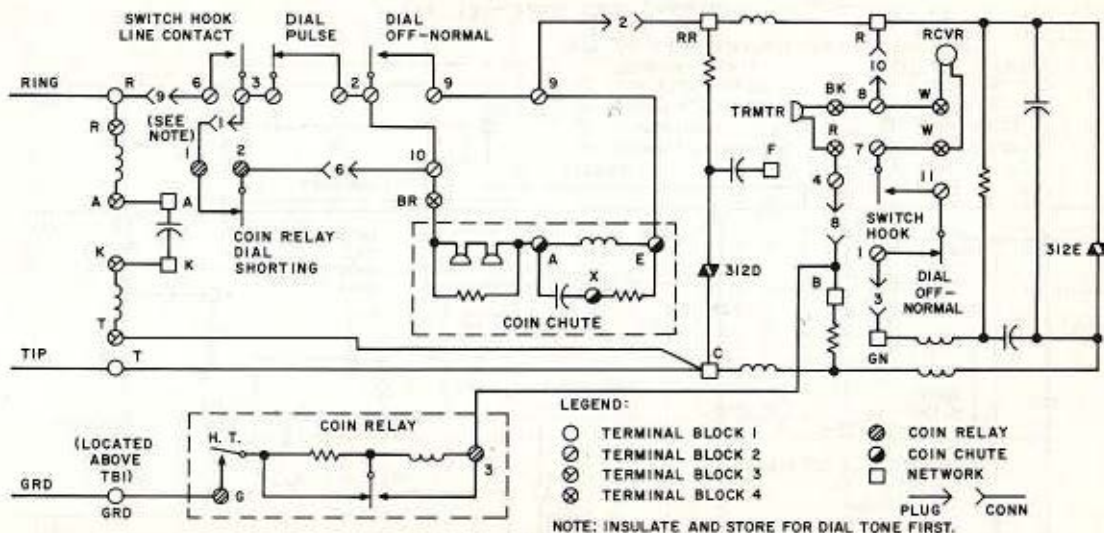


Fig. 12 - 235G Coin Collector

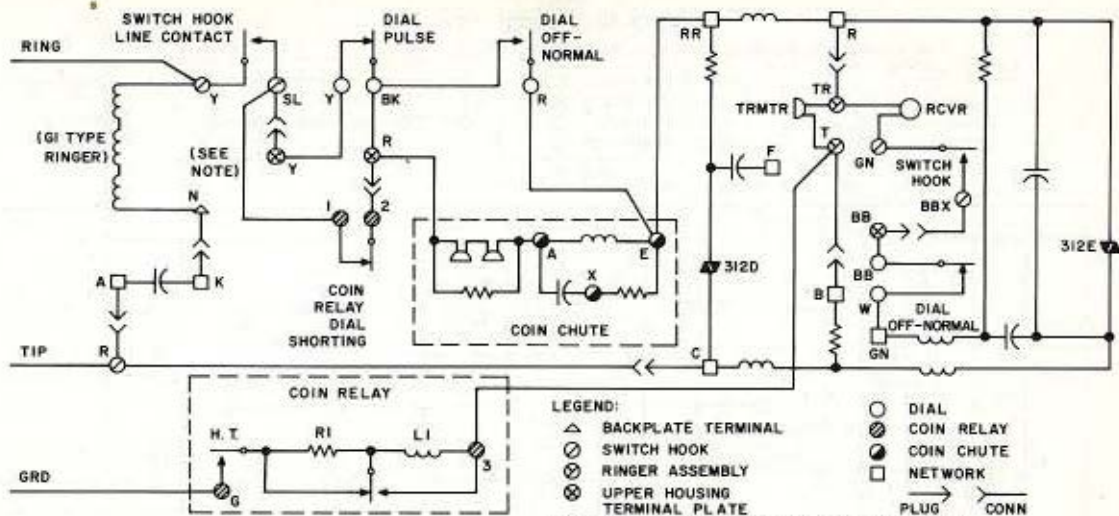


Fig. 13 - 236G Coin Collector

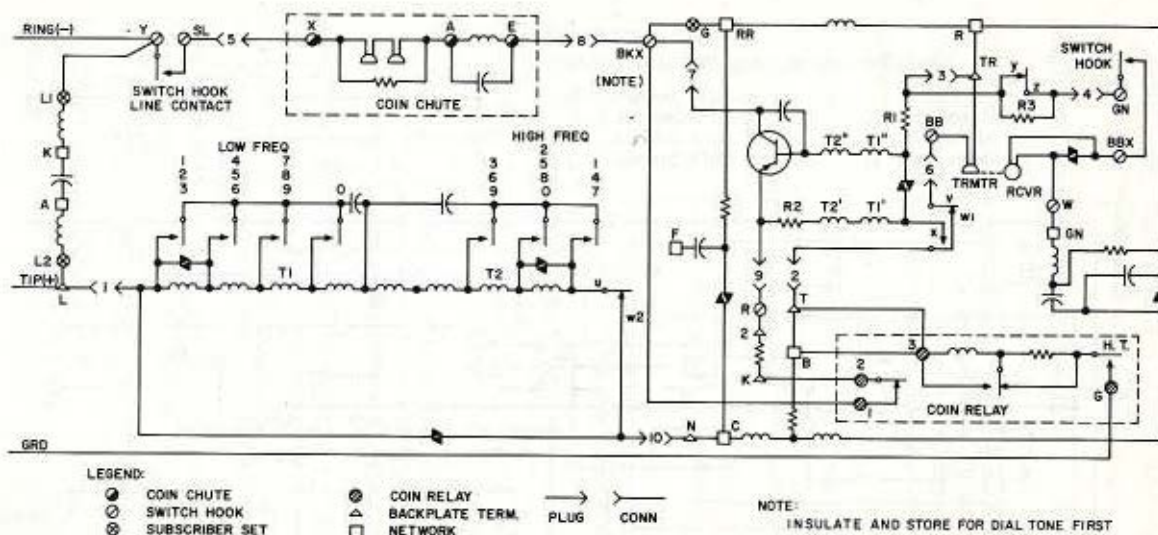


Fig. 14 - 1234G Coin Collector With 685A Subscriber Set

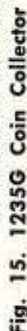
EIGHT-STEP COIN STATION ROUTINE

When to Perform the Complete Eight-Step Routine

- ### *When to Perform Specific Steps of the Routine*

- 4.02** When trouble reports continue after repeated routine visits have been made, additional assistance and/or CO investigation may be in order rather than continued routines of the station.

- 4.03** Single-slot coin telephone sets must be mounted on a vertical surface. A tilt greater than 1-1/2 degrees in any direction will cause a malfunction of the telephone. See Division 506, section entitled: Service, Coin Telephone Sets, 1A- and 2A-Type.



WARNING: Because of the hazards of mercury contamination and the danger of glass under pressure, mercury relays should never be disposed of through a common rubbish removal service. Defective mercury relays should be placed in plastic bags to prevent accidental contamination in the event that the glass envelope is broken. All personnel should wear safety glasses when handling these relays. Follow local disposal procedure.

4.04 The eight-step coin station routine is as follows:

Step 1. Inspection Before Removing Cover Assembly or Opening Door

Inspect

*BSP
Reference*

(a) Dial operation

- Operates smoothly without binding, slipping, or skipping
- Finger wheel not cracked.

(b) Handset

- Locked caps
- Cracked caps or handle

(c) Armored cord

506-101-400

- Secure at handset and instrument
- Armor intact



(d) Cover or door

- Appearance and alignment

506-410-400

(e) Number cards

- Correct telephone number

Inspect

*BSP
Reference*

(f) Instruction cards

- Securely in place
- Correct information

(g) Coin return chute

506-410-400

- Not blocked
- Door swings freely

(h) Coin release lever

- Not broken
- Operates freely



506-410-400

Step 2. Operation Tests Before Removing Cover or Opening Door

Note: Refer to Trouble Analysis (Table F) when any operation test fails. Test preparation numbers 1, 2, and 3 in Trouble No. Column of Table F shall precede any action listed in table. Steps should be performed in sequence. Possible-Cause assumes that preceding tests have been met.

*Table F
Trouble Nos.*

- Coins required:
1 quarter, 1 dime,
2 nickels, 1 penny
- BSP Reference:
Section 506-410-400



(a) With handset on-hook:

- (1) Deposit penny
 - (2) Operate coin release lever
- Penny should be returned

Table F
Trouble Nos.

(b) With handset on-hook:

(1) Deposit quarter

- Quarter should be refunded 5

Note: If coin is not refunded repeat test with second coin before assuming failure. This note applies for initial installation or totalizer change out.

(2) Repeat, using a nickel

- Coin should be returned 6

(c) With handset off-hook:

(1) Deposit nickel

- Check for no dial tone 7

(2) Deposit second nickel

- Check for steady dial tone at normal level 8

(3) Dial any digit but "0" or "1".

- Dial tone breaks. Coins do not return. 9

(4) Inspect for noisy or cut-out handset cord.

- Hang up handset
- Nickels should be returned 10

(d) Lift handset and deposit dime

- Dial tone is heard 11

(e) Dial any digit but "0" or "1"

- Dial tone breaks 12

(f) Hang up handset

- Coin is returned 13

Step 3. Inspection and Operational Tests After Removing Cover or Opening Door.

Note: Before removing cover on 1A1 and 1A2 coin telephone sets, invert handset on switchhook to prevent armored cord from pushing handset off switchhook when cover is set down.



BSP
Reference

(1) Inspection

- (a) Station and coin relay wiring for tight connections



- (b) Coin chute assembly for foreign matter and dirt.



- Make certain chute locking lever and spring are properly engaged
- Make certain station wiring is properly dressed and not binding against totalizer cover causing coin chute to be out of alignment.

506-410-400

*BSP
Reference*

- (c) Level of coins using 139B tool.
- (d) For evidence of tampering or fraudulent use.



*Table F
Trouble Nos.*

(2) Operational Tests (Dial Shorting)

- (a) Remove coin relay dust cover. Lift handset and operate hopper trigger by hand
 - Dial tone heard 14
- (b) Dial any digit but "0" or "1"
 - Dial tone remains after dialing 15
- (c) Deposit nickel
 - Dial tone remains after deposit 16
- (d) Hang up handset
 - Coin relay operates and returns nickel 17

Step 4. Coin Relay and Hopper Operation

Inspect

*BSP
Reference*

- (a) Ground contact springs
 - Clean and burnish
 - Check for proper adjustment

**TABLE F
TROUBLE ANALYSIS — SINGLE SLOT (1A- AND 2A-TYPE)
COIN FIRST**

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
Preparation for all tests					
1	Invert handset on switchhook (1A-type only). <i>Note:</i> Prevents armed cord from pushing handset off switchhook when cover is set down.				
2	Remove cover unit assembly (1A-type) or open door and				

TABLE F (Cont)

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
2 (Cont)	faceplate assembly (2A-type) and disconnect plug P1. Place cover unit assembly (1A-type) on firm level surface				
3	Connect P11C cord between plug P1 and jack J1 of coin chassis				
Totalizer and Coin Relay Operation (on-hook)					
4	Deposit penny and operate coin release lever	Coin is returned	Coin does not return	Blocked coin chute	Clear
				Defective coin release mechanism	Replace defective linkage

5	Deposit quarter in chute	Coin relay re-funds coin	Coin does not return	Blocked coin chute	Clear
				Tip and ring reversed or coin trunk trouble	Reconnect or refer to testdesk
				Plugs P1 and P2 reversed	Reconnect properly
				Traffic overload	Wait and repeat
				Coin jam in hopper	Clear jam
				Full coin receptacle	Level coins and notify coin collection department
				Coin relay HT contact not making	Clean contacts or replace coin relay
				Switchhook transfer contacts SH1 (NC) and SH3 (NC) not making	Clean contacts or replace dial and housing assembly

TABLE F (Cont)

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
5 (Cont)	Deposit quarter in chute	Coin relay re-funds coin	Coin does not return	Switchhook contacts SH2 or SH4 not breaking	Adjust contacts or replace dial and housing assembly
				Defective totalizer	Replace defective apparatus
				Defective A relay	
				Defective handset	
				Defective dial (TOUCH-TONE only)	
6	Deposit nickel	Nickel returned	Nickel does not return	Defective wiring in dial, housing, or chassis assembly	Clean contacts or replace dial and housing assembly
				Switchhook transfer contacts SH1 (NC) and SH3 (NC) not making	

				Defective wiring in dial, housing, or chassis assembly	Replace defective apparatus
				Traffic overload	Wait and repeat
Totalizer Operation (Off-Hook)					
Note: Totalizer set for an initial rate of 10 cents.					
7	Lift handset and deposit nickel in coin chute	No dial tone	Dial tone heard	Initial rate set for 5 cents	Reset totalizer rate
				T1 contacts remain latched after re-fund	Replace totalizer
				Switchhook transfer contacts SH3 (NC) not breaking (rotary only)	Replace dial and housing assembly
				Defective chassis or chassis wiring	Replace chassis
				Defective wiring in dial and housing assembly	Replace dial and housing assembly

TABLE F (Cont)

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
8	Deposit second nickel	Dial tone is heard	No dial tone. Reduced level or intermittent dial tone	Defective handset	Replace handset
				Switchhook contacts SH3 (NO) or SH2 and SH4 (NO) not making	Clean contacts or replace dial and housing assembly
				Switchhook transfer contacts SH1 (NO) not making	
				Totalizer set for more than initial rate	Reset totalizer rate
				T1 contacts (NO) not making	Replace totalizer
				Defective wiring in dial and housing assembly	Replace dial and housing assembly

8 (Cont)				Defective dial	Replace defective apparatus
				Defective chassis	
				Defective totalizer	
				Totalizer transfer contacts T2 (NC) not making (totalizer steps continuously)	Replace totalizer
9	Dial any digit but "0" or "1"	Dial tone breaks. Coins not returned	Cannot break dial tone	Totalizer contacts T1 not latching	Replace totalizer
				Defective dial	Replace defective apparatus
				Defective handset (TOUCH-TONE only)	
			Coins returned	Defective wiring in chassis or dial and housing assembly	Replace dial

TABLE F (Cont)

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
10	Hang up handset	Coins returned	No refund	Traffic overload	Wait for refund pulse
				Coin trunk trouble	Refer to testdesk
11	Lift handset and deposit dime	Dial tone is heard	No dial tone	Defective totalizer	Replace totalizer
				Traffic overload	Wait for dial tone
12	Dial any digit but "0" or "1"	Dial tone breaks	Cannot break dial tone	Defective totalizer	Replace totalizer
13	Hang up handset	Coins returned	No refund	Traffic overload	Wait for refund pulse
				Coin trunk trouble	Refer to testdesk
Dial Shorting Test					
14	Remove dust cover. Lift handset and operate hopper trigger by hand	Dial tone heard	No dial tone	Traffic overload	Wait for dial tone

15	Dial any digit but "0" or "1"	Dial tone remains after dialing	Dial tone breaks	Totalizer transfer contacts T1 (NC) not making	Replace totalizer
				Defective chassis	Replace chassis
16	Deposit nickel	Dial tone remains after deposit	Line drops off coin returned	Defective A relay or chassis	Replace A relay or chassis
17	Hang up handset	Nickel returns	Nickel does not return	Traffic overload	Wait for coin return pulse
				Defective coin trunk	Refer to testdesk
Returning Set to Normal Operation					
18	Call operator and deposit nickel, dime, and quarter	Coins identified by operator	Improper coin signal tones	Defective totalizer	Replace totalizer
				Defective chassis	Replace chassis
19	Listen for coin tones in handset as coins are deposited	No coin tones heard	Coin tones heard in handset	Defective chassis	Replace chassis

TCI Library: www.telephonecollectors.info

TABLE F (Cont)

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
20	Request operator to return coins	Coins returned	Coins not returned	Nonstation trouble	Repeat request, and if failure reoccurs refer to testdesk
21	Request operator to ringback (hang up)	Ringer operates at maximum volume	No ringback or low volume	Defective ringer or leads Ringer out of adjustment Open ringer capacitor in network	Replace ringer Adjust Replace chassis

Inspect

- Lubricate surface between hopper trigger and contact with 2B, or softer, lead pencil

BSP
Reference

- (b) Selector card magnets and polepiece extensions

- Remove foreign magnetic particles and dirt



- (c) Operation of hopper trigger, trap, and vane

- Perform trap and vane release test with KS-14995 tool



- (d) Coin relay bias margin test:

- (1) Refer to 3.03 (d) under Step 6 Coin Relay and Hopper Operation for bias margin test.

Step 5. Tests to be Performed With Testdesk

Note: The following tests should be performed on installations when investigating repeated trouble reports or to update the line card record in test center.

- (a) Test for absence of foreign potential

- (b) Measure loop and ground resistance



- Connections for loop and ground resistance measurements for a typical single slot coin station are shown in Fig. 16 and 17, respectively. See Table G for use of Dial Long Line equipment, and Table H for maximum allowable loop ranges.

Note: The difference between the ground measurement obtained and one-half the loop measurement noted is considered to be the ground resistance, and should be less than 50 ohms.

- Test measurements should be recorded on the line card.

(c) Coin relay current flow test (Fig. 18).

(1) Preparation by type of station:

(a) 1A1 and 1A2 coin telephone sets:

- Remove cover assembly and connect it to housing with P11C cord.

(b) 2A1 and 2A2 coin telephone sets:

- Open and connect door to housing assembly with P11C cord.

(2) With handset off-hook deposit initial rate

(3) Call testdesk and request a current flow test of the coin relay.

- Observe relay operation
- If either operate or nonoperate test fails, replace coin relay.

Note: See Table I for the operate and non-operate values of the various relays used in the 1A- and 2A-type Single Slot Coin Telephone Sets.

Note: Coin lines equipped with dial long line units may appear to work satisfactorily even though the tip and ring are reversed. Check for 48V on ring and ground on tip.

(4) Coin relay current flow test data should be posted on line card.

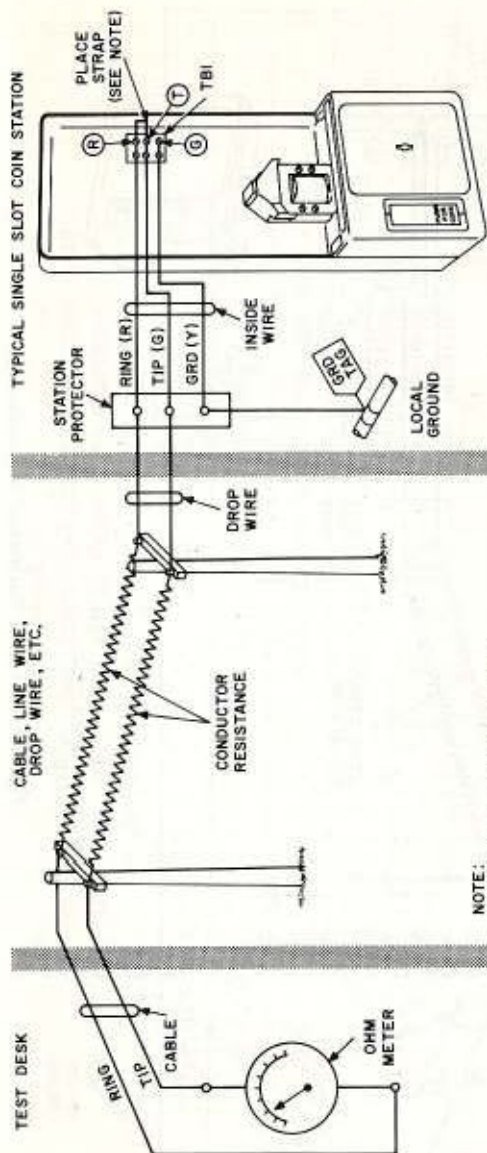


Fig. 16 — Loop Resistance Measurement

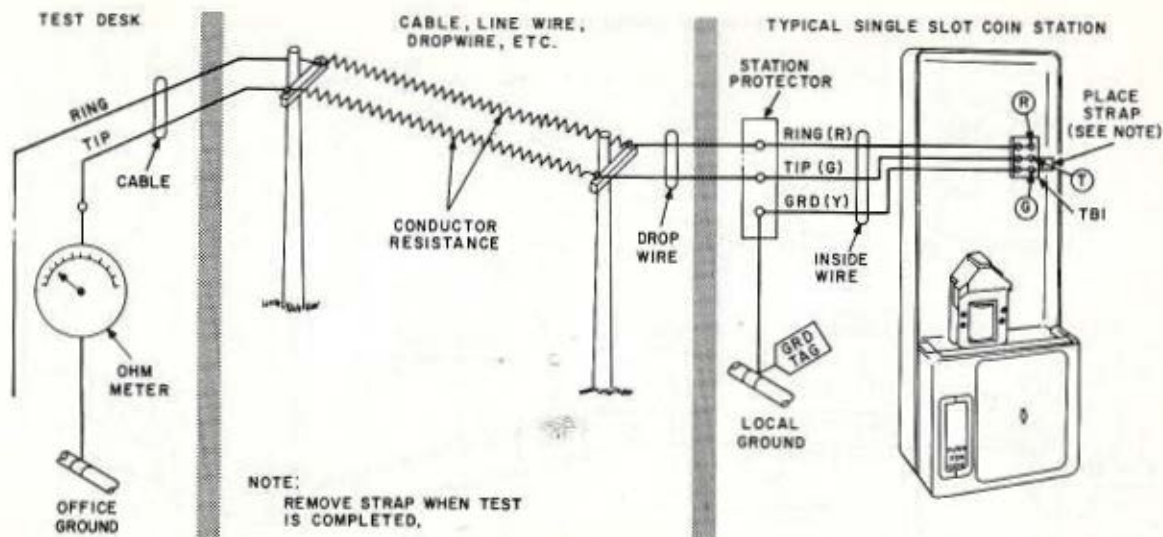
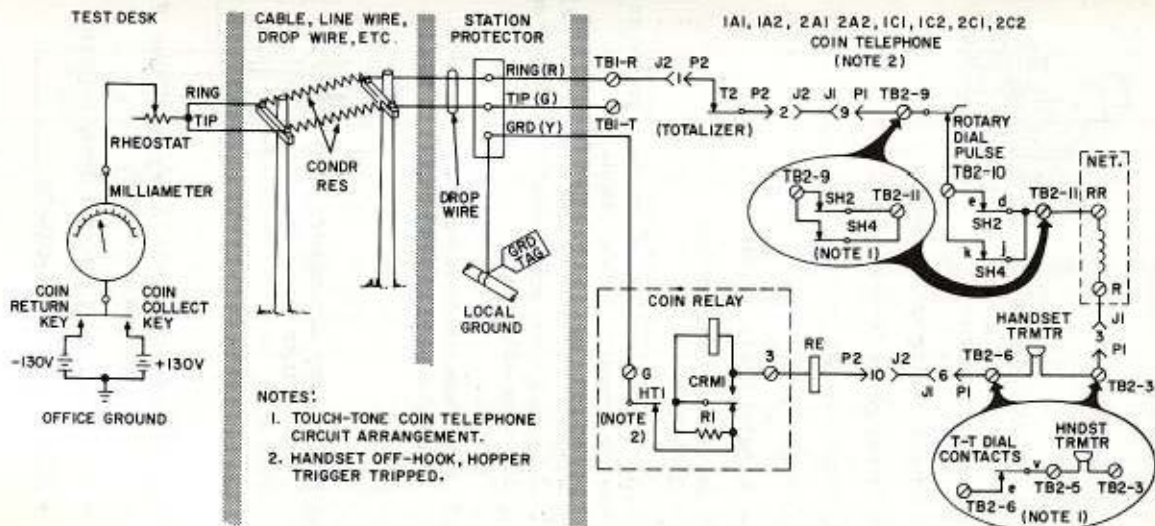


Fig. 17 — Ground Resistance Measurement

TABLE G
REQUIREMENTS FOR DIAL LONG LINE CIRCUITS ON COIN LINES
(FOR LIMITATIONS OTHER THAN COIN CONTROL)
(ASSUMES 300-OHM STATION SET RESISTANCE)

TYPE OF CENTRAL OFFICE	REQUIREMENTS
Step-by-Step	DLL CKT required on loops over 1050 ohms
Panel	DLL CKT required on loops over 885 ohms
No. 1 Crossbar	DLL CKT required on loops over 1200 ohms
No. 5 Crossbar	DLL CKT required on loops over 1300 ohms
No. 1 ESS	DLL CKT required on loops over 1300 ohms
No. 2 ESS	

TABLE H
MAXIMUM ALLOWABLE LOOP RANGES FOR CENTRAL OFFICE COIN SUPPLY VOLTAGE —
COLLECT AND RETURN ONLY
(MAXIMUM GROUND RESISTANCE 50 OHMS) (MAXIMUM DC EARTH POTENTIAL ± 3 VOLTS)



TCF Library: www.telephon collectors.info

Step 6. Inspection of Wiring

- (a) Inspect inside and ground wire for:

- Continuity and tight connections at ground clamp and terminal
- Proper routing and support
- Proper gauge (ground wire).



- (b) Inspect station protector for:

- Proper type
- Operated blocks or fuses
- Ground wire caution tag (E-3013B).

Note: Tag the location of signaling ground inside set according to local regulations.

- (c) Remove P11C test cord and connect P1 to J1 and install cover unit assembly (1A-type) or close door (2A-type).

Step 7. Final Tests and Inspection After Replacing Cover Assembly or Closing Door

- (a) Perform any uncompleted operation tests shown in Step 2.



Note: Refer to Trouble Analysis (Table F) when any test fails.

- Coins required: 1 nickel, 1 dime, 1 quarter
- BSP reference: 506-410-400

TABLE 1
OPERATE VALUES OF COIN RELAYS

Number Stamped On Relay	Operating Time	Operate Current	Nonoperate Current	Remarks
P-15E687	625 ± 75 milliseconds (Note 2)	48 milliamps	40 milliamps	Restoral spring diameter approximately 5/32-inch (Fig. 7)
1A* 1A (Note 1)	450 ± 50 milliseconds (Note 3)	41 milliamps	30 milliamps	Restoral spring diameter approximately 9/32-inch (Fig. 8)

Notes:

- 1 — Coin relays marked 1A without the asterisk symbol have bifurcated rather than solid contact springs.
- 2 — The timing interval of 625 milliseconds may be compared with the time it takes for a rotary dial to return to normal after dialing digit 6.
- 3 — The timing interval of 450 milliseconds may be compared with the time it takes for a rotary dial to return to normal after dialing digit 4.

Table F
Trouble Nos.

(b) Call operator

Note: If deposit not automatically refunded when operator answers, request coins to be returned.



- (1) Request that coins be identified as nickel, dime, and quarter as they are deposited

18

- Coin tones not heard in handset

19

Note: A slight tone may be heard on long loops. This does not necessarily indicate a failure.

- (2) Request coins be returned

- Verify returned coins

20

- (3) Request ring back

- Observe ringer volume

21

(c) Coin release lever operation

- Operates and restores freely
- Entrance stop does not rub or bind on front cover

Step 8. Visual Inspection of Associated Items

- Booth, shelf, or mounting (properly anchored and grounded)
- Glass
- Door Operation
- Light fixtures



- Blower (if present)
- Directories (if provided)
- Signs
- General area for safety of public access and appearance

SCHEMATIC INDEX

4.05 Coin Telephone Set Functional Schematic Index:

- Fig. 19 — Call Abandoned With Less Than Initial Rate Deposited (Deposit Refunded)
- Fig. 20 — Initial Rate Deposited — Origination State
- Fig. 21 — Dialing, Talking, and Listening Circuits
- Fig. 22 — Coin Signal Tone Circuit.

4.06 The following figures are provided as an aid in clearing electrical troubles.

- Fig. 23 — 1A1 and 2A1 Coin Telephone Sets, Schematic
- Fig. 24 — 1A2 and 2A2 Coin Telephone Sets, Schematic

5. COIN FIRST AND DIAL TONE FIRST SINGLE SLOT (1C- AND 2C-TYPE) COIN TELEPHONE SETS

EIGHT-STEP COIN STATION ROUTINE

5.01 The eight-step routine is designed as a reference check list to insure high quality coin service by reducing repeated reports. The following recommended guide lines are in keeping with this objective.

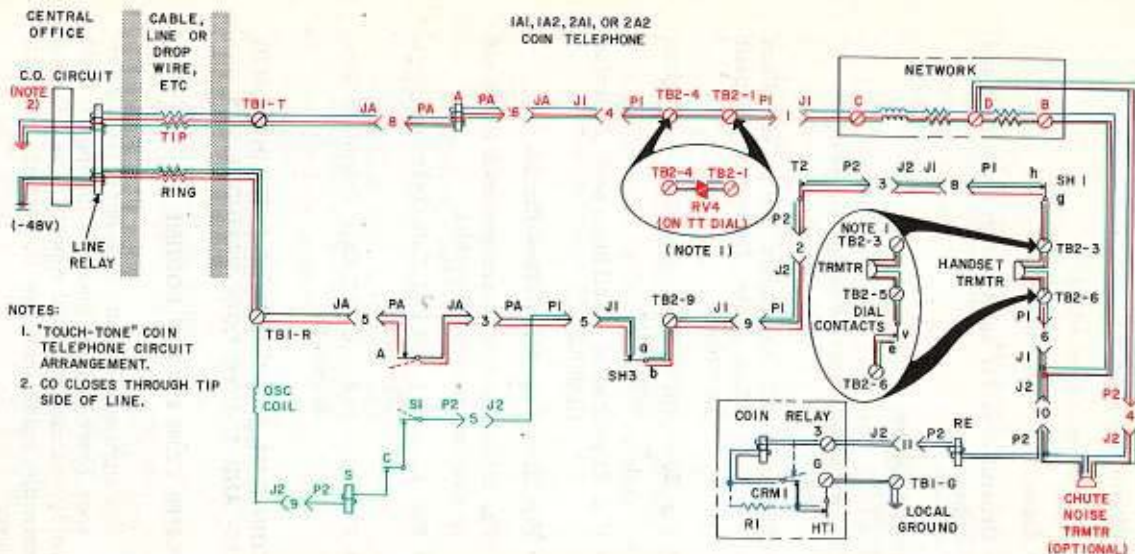


Fig. 19 — Call Abandoned With Less Than Initial Rate Deposited (Deposit Refunded)

LEGEND FOR FIG. 19

CIRCUIT CONDITION:

- Handset on switchhook
- T2 operated (coin deposited)
- HT1 (hopper trigger) operated

CIRCUIT ACTION:

1. **Black** — This circuit causes the tip side of line to be closed through to ground in the CO. Dial tone is placed on line but is ineffective. Current in this circuit (48V) is not sufficient to operate RE or coin relay.
2. **Red** — A relay operates, causing its normal contacts to open removing the short across the S (stepper) relay.
3. **Green** — (a) Operation of S relay causes its normally closed S1 contact to open. The S1 contact in opening causes the S relay to release, thus closing the S1 contact. This operating and releasing action of the S relay steps the totalizer 10 degrees back to normal each time it operates. (Each \$.05 amount deposited causes the totalizer to rotate 10 degrees off normal).
(b) When the totalizer has been stepped back to normal, T2 contact restores, (opens its make contact, which in turn, opens the telephone circuit).
4. **Blue** — (a) The CO, detecting the open telephone circuit, sends out negative 100 to 130 volts return battery to return the deposit.
(b) The RE relay in operating would normally restore the T1 contact. Since the initial rate was not deposited, the T1 was normal and the operated RE relay has no effect.
(c) The operated coin relay, closes its make contact causing the current to bypass the relay and flow through the resistor which was previously shorted. The short across the relay winding causes the relay to be slow release. The resistor, having approximately the same resistance as the coin relay winding, is placed in the circuit to protect contact HT1 when it restores, and to protect the resistance lamp in the central office circuit.
(d) As the coin relay releases, the HT1 contact opens, placing the coin telephone set in its idle state.

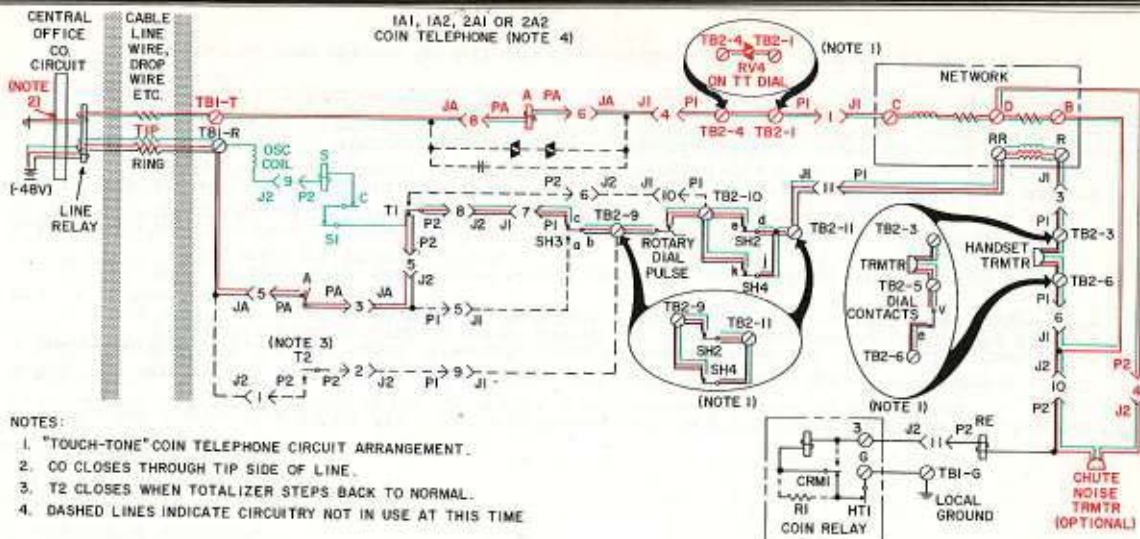


Fig. 20 — Initial Rate Deposited — Origination State

LEGEND FOR FIG. 20

CIRCUIT CONDITION:

- Outgoing call
- Handset off-hook (SH1, SH2, SH3, SH4 operated)
- T2 operated (coin deposited)
- T1 operated (initial rate deposited)
- HT1 (hopper trigger) operated

CIRCUIT ACTION:

- Black** — This circuit causes the tip side of line to be closed through to ground in the CO. Dial tone is placed on line. Current in this circuit (48V) is not sufficient to operate RE or coin relay.
- Red** — A relay operates causing its normal contact to open which removes the short across the S (stepper) relay.
- Green** — (a) Operation of S relay causes its normally closed S1 contact to open. The S1 contact in opening causes the S relay to release thus closing the S1 contact. This operating and releasing action of the S relay steps the totalizer 10 degrees back to normal each time it operates.
(b) When the totalizer has been stepped back to normal the T2 contact resets and places the telephone circuit in its dialing and talking state.

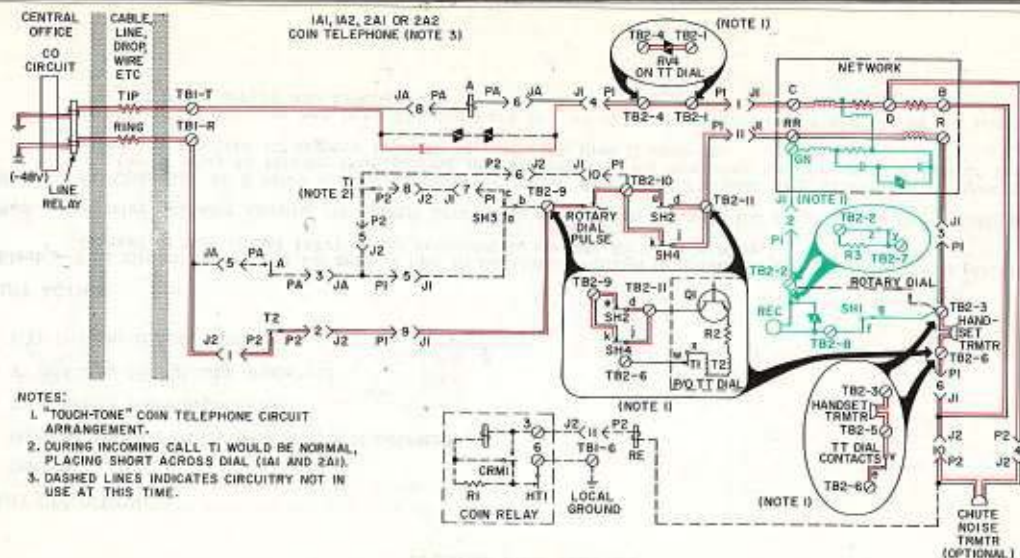


Fig. 21 — Dialing, Talking, and Listening Circuits

LEGEND FOR FIG. 21

CIRCUIT CONDITION:

- Outgoing call
- Handset off-hook
- Dial tone present
- T1 operated
- T2 returned to normal

CIRCUIT ACTION:

1. Black — Dialing —

Dialing path of rotary dial coin telephone set differs from TOUCH-TONE set (see Note 1 and insets). TOUCH-TONE dial contacts V, E open and disconnect transmitter from network during dialing; contacts W, X close and connect the dial oscillator to the network in place of the transmitter.

2. Red — Talking —

TOUCH-TONE dial contacts V, E close, and W, X open during the talking state (see insets). The coin signal transmitter detects the sound of coins dropping through the chute.

3. Green — Listening —

- The listening (secondary) circuit receives its energy through inductive coupling from the primary induction coil windings.
- Rotary dial off-normal contacts short out the receiver during dialing.
- TOUCH-TONE dial contacts Y, Z remove the shunt across level limiting resistor R3 to reduce oscillator sidetone during dialing.

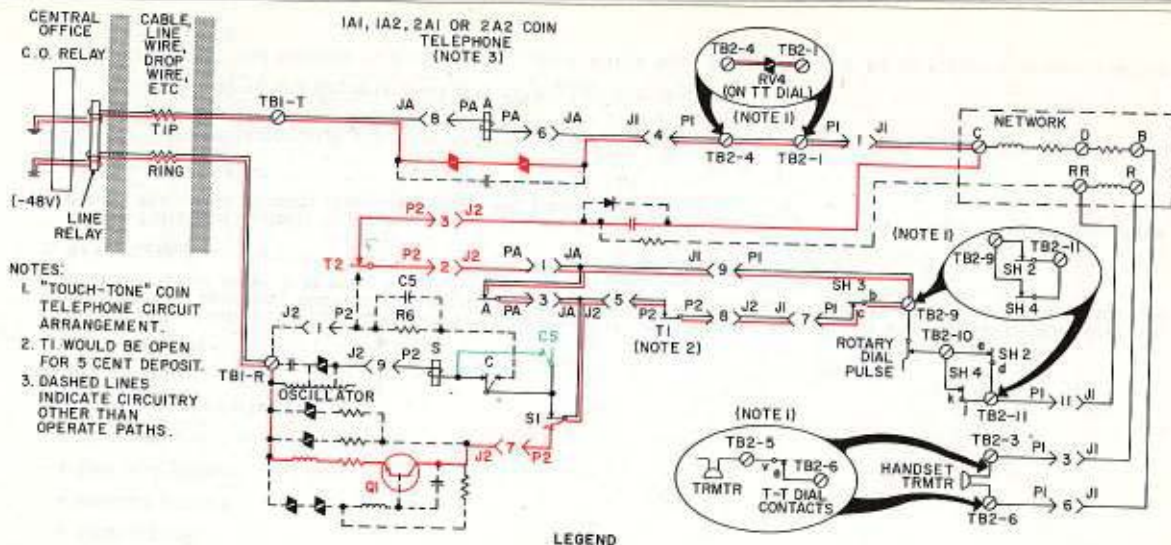


Fig. 22 — Coin Signal Tone Circuit

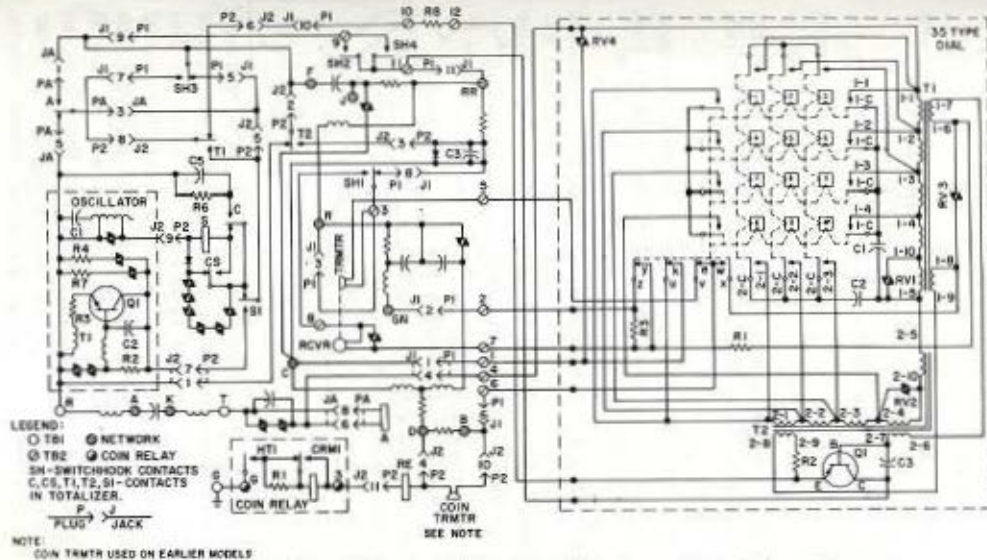
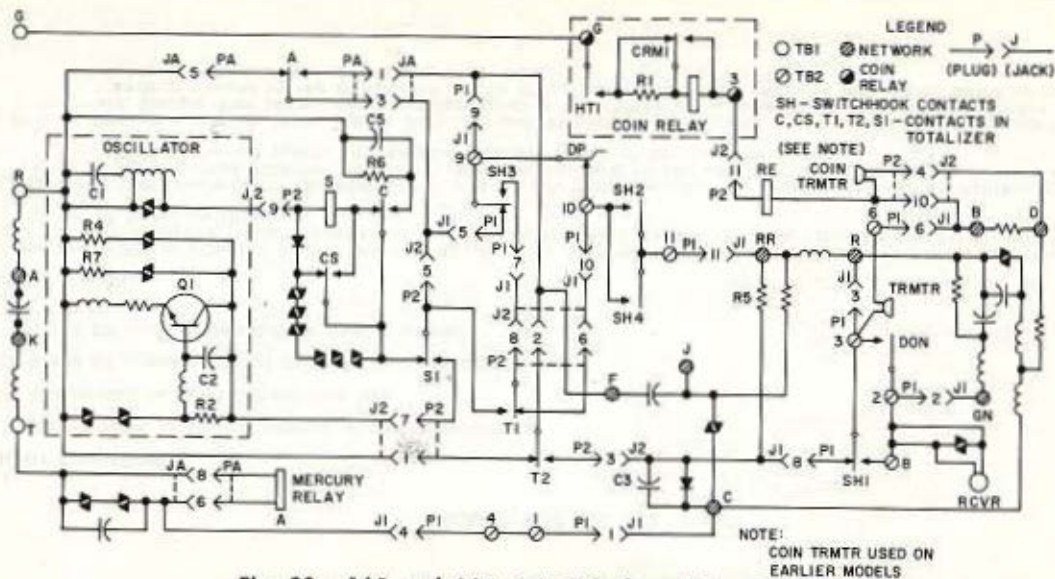
LEGEND FOR FIG. 22

CIRCUIT CONDITION:

- Nickel, Dime, or Quarter deposit requested by operator
- T2 operated as result of deposited coin
- C and CS contacts normal for nickel or dime deposit
- C and CS contacts operated for quarter deposit

CIRCUIT ACTION:

1. **Black** — Oscillator charging circuit and S relay operating path for nickel or dime deposit. The circuit is shown for dime deposit. Nickel deposit circuit would be the same, except T1 contact would be normal (open) instead of closed as shown.
2. **Black and Green** — Oscillator charging circuit and S relay operating path for quarter deposit. CS contact operates when totalizer rotates 45°, enabling charging of the oscillator and operation of S relay after C contact opens. This enables a faster readout of the oscillator circuit.
3. **Red** — Oscillator readout (tone signal) path. Contact S1 transfers the current flow from the totalizer to the transistor. Current flow is increased and decreased due to the changing polarity on the emitter and base of the transistor caused by the transformer action of the tank circuit. This produces tone signal heard by operator during operate and release stepping of S relay.



When to Perform the Complete Eight-Step Routine

- Upon installation of a coin telephone set
- On repeated reports for which trouble cannot be found by the usual maintenance procedures
- On repeated reports of Coins Don't Return and No Dial Tone — Coins Don't Return.

When to Perform Specific Steps of the Routine

- Steps 1, 2, 3, 7, and 8 are required as part of each repair visit for all trouble reports

Note: Steps 2 and 7 will differ for Coin-First and Dial-Tone First. Use only those parts which apply.

- Step 5 is required to update the measurement records on the test center line card and on repeated Coins Don't Return reports.

5.02 When trouble reports continue after repeated routine visits have been made, additional assistance and/or CO investigation may be in order rather than continued routines of the station.

5.03 Single slot coin telephone sets must be mounted on a vertical surface. A tilt greater than 1-1/2 degrees in any direction will cause a malfunction of the telephone. (See Division 506, section entitled: Service, Coin Telephone Sets, 1C- and 2C-Type.)



WARNING: Because of the hazards of mercury contamination and the danger of glass under pressure, mercury relays should never be disposed of through a common rubbish removal service. Defective mercury relays should be placed in plastic bags to prevent accidental contamination in the event that the glass envelope is broken. All personnel should wear safety glasses when handling these relays. Follow local disposal procedures.

5.04 The eight-step coin station routine is as follows:

Step 1. Inspection Before Removing Cover Assembly or Opening Door

Inspect

*BSP
Reference*

(a) Dial Operation

- Operates smoothly without binding, slipping, or skipping
- Fingerwheel not cracked.

(b) Handset

- Locked caps
- Cracked caps or handle.

(c) Armored Cord

- Secure at handset and instrument
- Armor intact



(d) Cover or door

- Appearance and alignment

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(e) Number cards

- Correct telephone number.

(f) Instruction cards

- Securely in place
- Correct information

(g) Coin return chute

- Not blocked
- Door swings freely

*Inspect**BSP
Reference*

- (h) Coin release lever

- Not broken
- Operates freely.



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Step 2. Operation Tests Before Removing Cover or Opening Door

A. Coin First

Note: Refer to Trouble Analysis (Table J) when any operation test fails. Test preparation numbers 1, 2, and 3 in Trouble Number Column of Table J shall precede any action in the table. Steps should be performed in sequence. Possible-Cause assumes that preceding tests have been met.

- Coins required:
1 quarter, 1 dime,
2 nickels, 1 penny
- BSP reference:
Section 506-411-401



*Table J
Trouble Nos.*

- (a) With handset on-hook;

- (1) Deposit penny
 - (2) Operate coin release lever
- Penny should be returned

4

- (b) With handset on-hook:

- (1) Deposit quarter
- Quarter should be refunded

5

*Table J
Trouble Nos.*

Note: If coin is not refunded repeat test with second coin before assuming failure. This note applies for initial installation or totalizer change out.

- (2) Repeat using a nickel

- Coin should be returned

6

- (c) With handset off-hook:

- (1) Deposit nickel

- Check for no dial tone

7

- (2) Deposit second nickel

- Check for steady dial tone at normal level

8

- (3) Dial any digit but "0" or "1"

- Dial tone breaks. Coins do not return.

9

- (4) Inspect for noisy or cutout handset cord

- (5) Hang up handset

- Nickels should be returned

10

- (d) Lift handset and deposit dime

- Dial tone is heard

11

- (e) Dial any digit but "0" or "1"

- Dial tone breaks

12

- (f) Hang up handset

- Coin is returned.

13

TABLE J
TROUBLE ANALYSIS — SINGLE SLOT (1C AND 2C TYPE)
COIN FIRST

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
Preparation For All Tests					
1	Invert handset on switchhook (1C-type only). <i>Note:</i> Prevents cord from pushing handset off switchhook when cover is set down				
2	Remove cover unit assembly (1C-type) or open door and faceplate assembly				

	(2C-type) and disconnect plug P1. Place cover unit assembly (1C-type) on firm level surface.				
3	Connect P11C cord between plug P1 and jack J1 of coin chassis.				
Totalizer and Coin Relay Operation (On-Hook)					
4	Deposit penny and operate coin release lever	Coin is returned	Coin does not return	Blocked coin chute	Clear
				Defective coin release mechanism	Replace defective linkage
5	Deposit quarter in chute	Coin relay refunds coin	Coin does not return	Blocked coin chute	Clear

TABLE J (Cont)

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
5 (Cont)	Deposit quarter in chute	Coin relay refunds coin	Coin does not return	Tip and ring reversed or coin trunk trouble	Reconnect or refer to testdesk
				Plugs P1 and P2 reversed	Reconnect properly
				Totalizer plug in DTF position	Reconnect properly
				TB3 not wired correctly	Wire properly
				Traffic overload	Wait
				Coin jam in hopper	Clear jam
				Full coin receptacle	Level coins and notify coin collection department

5 (Cont)				Coin relay HT contact not making	Clean contacts or replace coin relay
				Switchhook transfer contacts SH1 (NC) and SH3 (NC) not making	Clean contacts or replace dial and housing assembly
				Switchhook contacts SH2 or SH4 not breaking	Adjust contacts or replace dial and housing assembly
				Defective totalizer	Replace defective apparatus
				Defective A relay	
				Defective handset	
				Defective dial (TOUCH-TONE) only	
				Defective wiring in dial housing or chassis assembly	

TABLE J (Cont)

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
6	Deposit nickel	Nickel returned	Nickel does not return	Switchhook transfer contacts SH1 (NC) and SH3 (NC) not making	Clean contacts or replace dial and housing assembly
				TB2 not wired correctly	Wire correctly
				Defective wiring in dial housing or chassis assembly	Replace defective apparatus
				Traffic overload	Wait and repeat
Totalizer Operation (Off-Hook) <i>Note:</i> Totalizer set for an initial rate of 10 cents.					
7	Lift handset and deposit nickel in coin chute	No dial tone	Dial tone heard	Initial rate set for 5 cents	Reset totalizer rate

7 (Cont)				T1 contacts remain latched after refund	Replace totalizer
				Switchhook transfer contacts SH3 (NC) not breaking (rotary dial sets only)	Replace dial and housing assembly
				Defective chassis or chassis wiring	Replace chassis
				Defective wiring in dial and housing assembly	Replace dial and housing assembly
8	Deposit second nickel	Normal dial tone is heard	No dial tone. Reduced level or intermittent dial tone	Defective handset	Replace handset
				Switchhook contacts SH3 (NO) or SH2 and SH4 (NO) not making	Clean contacts or replace dial and housing assembly

TABLE J (Cont)

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
8 (Cont)	Deposit second nickel	Normal dial tone is heard	No dial tone. Reduced level or intermittent dial tone	Switchhook transfer contacts SH1 (NO) not making	Clean contacts or replace dial card housing assembly
				Totalizer set for more than initial rate	Reset totalizer rate
				T1 contacts (NO) not making	Replace totalizer
				F contacts (NC) not making	
				Defective wiring in dial and housing assembly	Replace dial and housing assembly
				Defective dial	Replace defective apparatus
				Defective chassis	
				Defective totalizer	

8 (Cont)				Totalizer transfer contacts T2 (NC) not making (totalizer steps continuously)	Replace totalizer
9	Dial any digit but "0" or "1"	Dial tone breaks	Cannot break dial tone	Totalizer contacts T1 not latching	Replace totalizer
				Defective dial	Replace defective apparatus
				Defective handset (TOUCH-TONE only)	
				Defective wiring in chassis, or dial and housing	
		Coins not returned	Coin returned	Defective dial	Replace dial
10	Hang up handset	Coins returned	No refund	Traffic overload	Wait for refund pulse
				Coin trunk trouble	Refer to testdesk

TABLE J (Cont)

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
11	Lift handset and deposit dime	Dial tone is heard	No dial tone	Defective totalizer	Replace totalizer
				Traffic overload	Wait for dial tone
12	Dial any digit but "0" or "1"	Dial tone breaks	Cannot break dial tone	Defective totalizer	Replace totalizer
13	Hang up handset	Coin is returned	Coin not returned	Traffic overload	Wait for refund pulse
				Coin trunk trouble	Refer to testdesk

Dial Shorting Test

14	Remove dust cover. Lift handset and operate hopper trigger by hand.	Dial tone heard	No dial tone	Traffic overload	Wait for dial tone
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15	Dial any digit, but "0" or "1"	Dial tone remains after dialing	Dial tone breaks	Totalizer transfer contacts T1 (NC) not making	Replace totalizer
				Defective chassis	Replace chassis
16	Deposit nickel	Dial tone remains after deposit	Line drops off	Defective chassis	Replace chassis
			Coin returned		
17	Hang up handset	Nickel returns	Nickel does not return	Traffic overload	Wait for coin return pulse
				Defective coin trunk	Refer to testdesk
Returning Set To Normal Operation					
18	Call operator and deposit nickel, dime, and quarter	Coins identified by operator	Improper coin signal tones	Defective totalizer	Replace totalizer
				Defective chassis	Replace chassis

TABLE J (Cont)

Trouble Number	Action	Verification	Failure	Remedial Action	Possible Cause
19	Listen for coin tones in handset as coins are deposited	No coin tones heard in handset	Coin tones heard in handset	Defective chassis	Replace chassis
20	Request operator to return coins	Coin returned	Coins not returned	Nonstation trouble	Repeat request, and if failure reoccurs refer to testdesk
21	Request operator to ring back (hang up)	Ringer operates at maximum volume	No ringback or low volume	Defective ringer or leads	Replace ringer
				Ringer out of adjustment	Adjust
				Open ringer capacitor in network	Replace chassis

B. Dial Tone First

Note: Refer to Trouble Analysis (Table K) when any operation test fails. Test preparation numbers 1, 2, and 3 in the Trouble column of Table K shall precede any action in the table. Steps should be performed in sequence. Possible Cause assumes that preceding tests have been met.

- Coins required:
1 quarter and 2 nickels
- BSP Reference:
Section 506-411-401

Table K
Trouble Nos.

(a) With handset off-hook

- Dial tone should be received 4

Note: A temporary traffic overload could exist causing dial tone delay.

(1) Deposit quarter

- Quarter should not be returned. 5

(2) Depress switchhook

- Quarter should be returned 6

(b) With handset off-hook

- (1) Deposit nickel and dial coin test line

Note: Coin test line should be a line that requires deposit for connection.

- Dial tone should break, and recording heard stating insufficient deposit. 7

TABLE K
TROUBLE ANALYSIS — SINGLE SLOT (1C- AND 2C-TYPE)
DIAL TONE FIRST

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
Preparation for All Tests					
1	Invert handset on switchhook. (1C-type only) <i>Note:</i> Prevents armored cable from pushing handset off switchhook when cover is set down				
2	Remove cover unit assembly (1C-type) or open door and				

	faceplate assembly (2C-type) and disconnect plug P1. Place cover unit assembly (1C-type) on firm level surface				
3	Connect P11C cord between plug P1 and jack J1 of coin chassis				
Dial Tone Test					
4	Lift handset	Dial tone received	No dial tone	Defective handset	Replace handset
				Traffic overload	Wait

TABLE K (Cont)

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
4 (Cont)	Lift handset	Dial tone received	No dial tone	Switchhook contacts SH1(NO), SH2(NO), or SH4(NO), not making	Clean contacts or replace dial and housing assembly
				Plugs P1 and P2 reversed	Reconnect properly
				Totalizer plug in PP position	Reconnect properly
				TB2 not wired correctly	Wire correctly
				TB3 not wired correctly	Wire correctly
				Defective totalizer	Replace totalizer

				Defective wiring in chassis, or dial and housing assembly	Replace defective apparatus
				Nonstation trouble	Refer to testdesk
Totalizer and Coin Relay Operation					
5	Deposit quarter	Quarter does not return	Quarter falls in return bucket	TB3 not wired correctly	Wire correctly
				Chute path blocked	Clear
				Defective totalizer	Replace defective apparatus
				Defective chassis	
6	Depress switch-hook	Quarter is returned	Quarter does not return	Switchhook contacts SH2(NO) and SH4(NO) not breaking	Replace dial and housing assembly
				Defective coin trunk	Refer to testdesk

TABLE K (Cont)

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
6 (Cont)	Depress switch-hook	Quarter is returned	Quarter does not return	Defective totalizer	Replace defective apparatus
				Defective chassis	
				Defective coin relay	Replace coin relay
7	Deposit nickel, dial coin test line	Dial tone breaks	Dial tone does not break	Faulty dial	Replace dial
				Tip, Ring or Grd reversed	Wire correctly
				Defective chassis	Replace chassis
				Initial rate set for 5 cents	Reset totalizer rate
		Recording states that insufficient deposit was made	Recording is not heard	TB3 not wired correctly	Wire correctly
				Totalizer contacts T1 making for nickel deposit	Reset totalizer rate or replace totalizer
				Defective chassis	Replace chassis

8	Depress switch-hook	Coin returned	Coin not returned	Switchhook contacts SH2(NO) and SH4(NO) not breaking	Replace dial and housing assembly
				Defective coin trunk	Refer to testdesk
				Defective totalizer	Replace defective apparatus
				Defective chassis	
9	Deposit 2 nickels, dial coin test line	Tone ringing heard in handset	Insufficient deposit recording heard	Defective coin relay	
				Initial rate set for more than 10 cents	Reset totalizer
				Defective T1 or F contacts in totalizer	Replace totalizer
				Defective chassis	Replace chassis

TABLE K (Cont)

Trouble Number	Action	Verification	Failure	Possible Cause	Remedial Action
9 (Cont)	Deposit 2 nickels, dial coin test line	Tone ringing heard in handset	Insufficient deposit recording heard	Switchhook SH3(NO) not making	Clean contacts or replace dial housing
				TB3 not wired correctly	Wire correctly
10	Hang up handset	Coins are returned	Coins not returned	Defective coin trunk	Refer to testdesk
11	Deposit penny and operate coin release lever	Penny is returned	Coin does not return	Blocked coin chute	Clear
				Defective coin release mechanism	Replace defective linkage
12	Lift handset and call operator	Operator on line	No transmission	Defective transmitter	Replace handset
				Defective coin trunk	Refer to testdesk

13	Deposit nickel, dime, and quarter	Coins identified by operator	Improper coin signal tones	Defective coin trunk	Refer to testdesk
				TB3 not wired correctly	Wire correctly
				Defective totalizer	Replace totalizer
				Defective chassis	Replace chassis
14	Listen for coin tones in handsets as coins are deposited	No coin tones heard in handset	Coin tones heard in handset	Defective chassis	Replace chassis
15	Request operator to ringback (hang up)	Ringing operator at maximum volume	No ringback or low volume	Defective ringer or leads	Replace ringer
				Ringer out of adjustment	Adjust
				Defective network	Replace chassis

*Table K
Trouble Nos.*

- | | |
|---|----|
| (3) Depress switchhook | |
| • Nickel should be returned. | 8 |
| (4) Deposit two nickels and dial coin test line | |
| • Tone ringing heard in handset. | 9 |
| (5) Hang up handset | |
| • Coins should be returned. | 10 |

Step 3. Inspection and Operational Tests After Removing Cover or Opening Door

Note: Before removing cover on 1C1 and 1C2 coin telephone sets invert handset on switchhook to prevent armored cord from pushing handset off switchhook when cover is set down.



*BSP
Reference*

(1) Inspection

- (a) Station and coin relay wiring for tight connections.
- (b) Coin chute assembly for foreign matter and dirt.
 - Make certain chute locking lever and spring are properly engaged



*BSP
Reference*



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- Make certain station wiring is properly dressed and not binding against totalizer cover causing coin chute to be out of alignment.

- (c) Level of coins using 139B tool.
- (d) For evidence of tampering or fraudulent use.



*Table J
Trouble Nos.*

(2) Coin First Operational Test (Dial Shorting)

- (a) Remove coin relay dust cover. Lift handset and operate hopper trigger by hand
 - Dial tone heard. 14
 - (b) Dial any digit but "0" or "1"
 - Dial tone remains after dialing. 15
 - (c) Deposit nickel
 - Dial tone remains after deposit 16
 - (d) Hang up handset
 - Coin relay operates and returns nickel 17

Step 4. Coin Relay and Hopper Operation

(1) Inspection

(a) Ground contact springs

- Clean and burnish
- Check for proper adjustment
- Lubricate surface between hopper trigger and contact with 2B, or softer, lead pencil.



(b) Selector card magnets and polepiece extensions

- Remove foreign magnetic particles and dirt.



(c) Operation of trigger trap and vane

- Perform trap and vane release test with KS-14995 tool.



(2) Operational Test

(d) Coin relay bias margin test:

- (1) Refer to 3.03(d) under Step 6. Coin Relay and Hopper Operation for bias margin test.

Step 5. Tests to be Performed With Testdesk

Note: The following tests should be performed on installations when investigating repeated trouble reports or to update the line card record in test center.

(a) Test for absence of foreign potential.

(b) Measure loop and ground resistance.



- Connections for loop and ground resistance measurements for a typical single slot station are shown in Fig. 16 and 17, respectively. See Table G for use of Dial Long Line equipment, and Table H for maximum allowable loop ranges.

Note: The difference between the ground measurement obtained and one-half the loop measurement noted is considered to be the ground resistance, and should be less than 50 ohms.

- Test measurements should be recorded on the line card.

(c) Coin relay current flow test.

Note: See Fig. 18 for Coin First and Fig. 25 for Dial Tone First current flow test.

(1) Preparation by type of station.

(a) 1C1 and 1C2 coin telephone sets.

- Remove cover assembly and connect it to housing with P11C cord.

(b) 2C1 and 2C2 coin telephone sets.

- Open and connect door to housing assembly with P11C cord.

(2) With handset off-hook deposit initial rate.

- (3) Call test desk and request a current flow test of the coin relay.

- Observe relay operation
- If either operate or nonoperate test fails, replace coin relay.

Note: See Table L for the operate and non-operate values of the relays used in the 1C- and 2C-type single slot coin telephone sets.

Note: Coin lines equipped with long line circuits may appear to work satisfactorily even though the tip and ring are reversed. Check for 48V on ring and ground on tip.

- (4) Coin relay current flow test data should be posted on line card.

Step 6. Inspection of Wiring

- (a) Inspect inside and ground wire for:



- Continuity and tight connections at ground clamp and terminal
- Proper routing and support
- Proper gauge (ground wire).

- (b) Inspect station protector for

- Proper type
- Operated blocks or fuses
- Ground wire caution tag (E-3013B).

Note: Tag the location of signaling ground inside set according to local regulations.

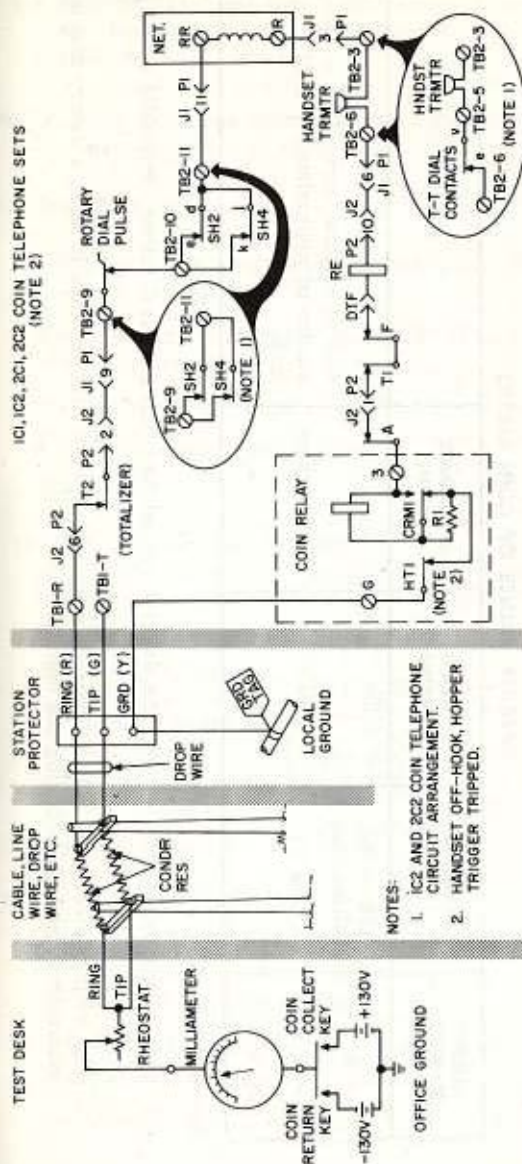


Fig. 25 — Coin Relay Current Flow Test For Dial-Tone First

TABLE I
OPERATE VALUES OF COIN RELAYS

NUMBER STAMPED ON RELAY	OPERATING TIME	OPERATE CURRENT	NONOPERATE CURRENT	REMARKS
1A*	450 \pm 50 milliseconds	41 milliamperes	30 milliamperes	Coil of restoral spring has a diameter of approximately 9/32 inch
1A (Note 1)	(Note 2)			

Notes:

1. Coin relays marked 1A without the asterisk symbol have bifurcated rather than solid contact springs.
2. The timing interval of 450 milliseconds may be compared with the time it takes a rotary dial to return to normal after dialing the digit 4.

- (c) Remove P11C test cord and connect P1 to J1 and install cover unit assembly (1C-type) or close door (2C-type).

Step 7. Final Tests and Inspection After Replacing Cover Assembly or Closing Door

A. Coin First

- (a) Perform any uncompleted operation tests shown in Step 2.

Note: Refer to Trouble Analysis (Table J) when any test fails.

- Coins required: 1 nickel, 1 dime, 1 quarter
- BSP Reference: 506-411-401.

Table J
Trouble Nos.

- (b) Lift handset call operator

Note: If deposit not automatically refunded when operator answers, request coins be returned.

- (1) Request that coins be identified as nickel, dime, and quarter as they are deposited.



18

- Coin tones not heard in handset

19

Note: A slight tone may be heard on long loops but this does not necessarily indicate a failure.

- (2) Request coins be returned.

- Verify returned coins.

20

- (3) Request ringback

- Observe ringer volume

21

- (c) Coin release lever operation
 - Operates and restores freely
 - Entrance stop does not rub or bind front cover.

B. Dial Tone First

Note: Refer to Trouble Analysis (Table K) when any test fails.

- Coins required: 1 penny, 1 nickel, 1 dime, and 1 quarter
- BSP Reference: 506-411-401.

Table K
Trouble Nos.

- | | |
|---|----|
| (a) Deposit penny and operate coin release lever. | |
| • Penny should be returned. | 11 |
| (b) Lift handset, call operator | |
| • Operator on line | 12 |
| (1) Request that coins be identified as nickel, dime, and quarter as they are deposited | 13 |
| <i>Note:</i> Nickel should be deposited first and nickel coin tone verified on first deposit. | |
| • Coin tones not heard in handset | 14 |
| <i>Note:</i> A slight tone may be heard on long loops but this does not necessarily indicate a failure. | |
| (2) Request ringback | |
| • Observe ringer volume | 15 |

Table K
Trouble Nos.

Inspect

- (c) Coin release lever operation
 - Operates and restores freely
 - Entrance stop does not rub or bind front cover.

Step 8. Visual Inspection of Associated Items

Inspect condition of:

- Booth, shelf, or mounting (properly anchored and grounded)
- Glass
- Door operation
- Light fixtures
- Blower (if present)
- Directories (if provided)
- Signs
- General area for safety of public access and appearance.



SCHEMATIC INDEX

5.06 Coin Telephone Set Functional Schematic Index:

- Fig. 26 — 1C1 and 2C1 Coin-First Coin Telephone Sets, Schematic
- Fig. 27 — 1C1 and 2C1 Dial-Tone First Coin Telephone Sets, Schematic
- Fig. 28 — 1C2 and 2C2 Coin-First Coin Telephone sets, Schematic
- Fig. 29 — 1C2 and 2C2 Dial-Tone First Coin Telephone Sets, Schematic

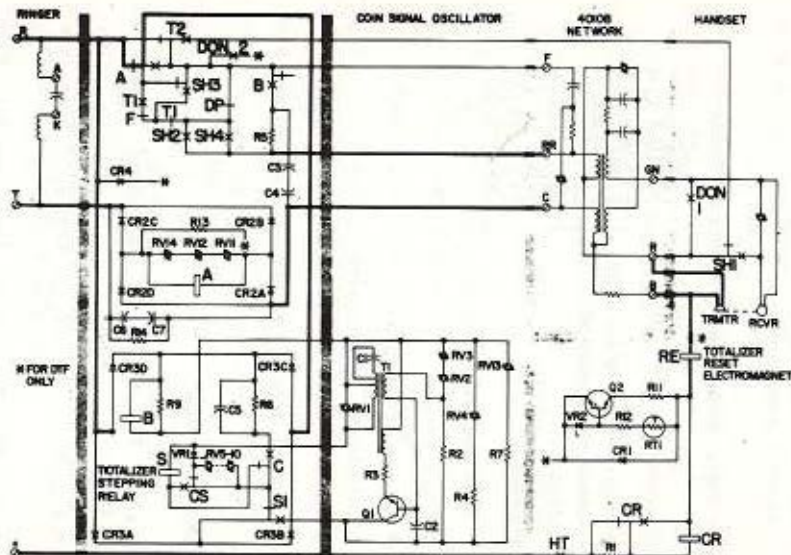


Fig. 26 - 1C1 and 2C1 Coin-First Coin Telephone Sets, Schematic

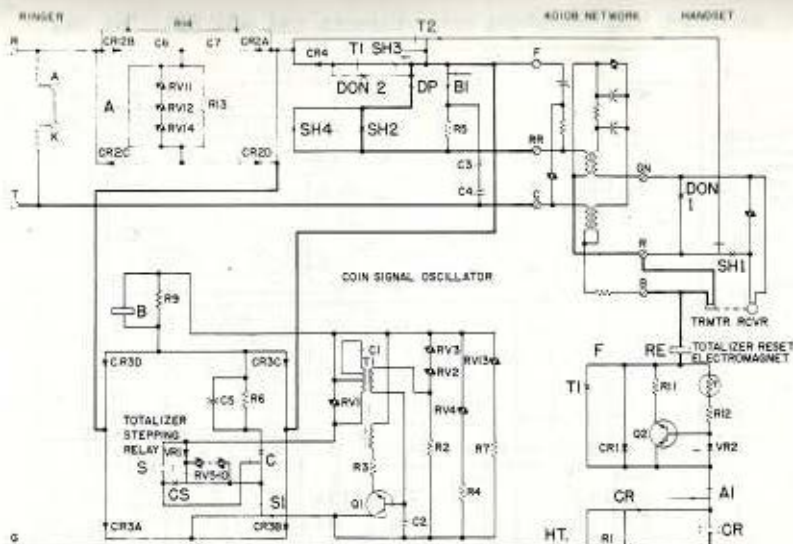


Fig. 27 - 1C1 and 2C1 Dial-Tone-First Coin Telephone Sets, Schematic

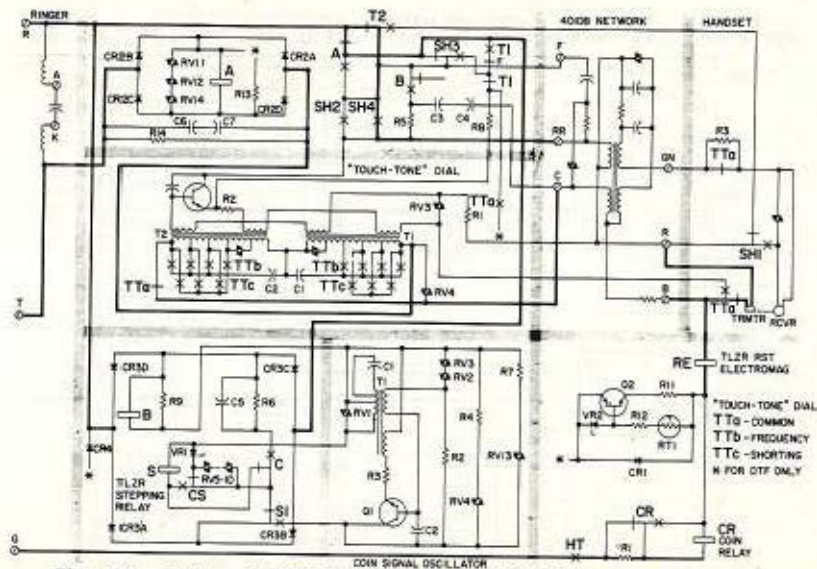


Fig. 28 - 1C2 and 2C2 Coin-First Coin Telephone Sets, Schematic

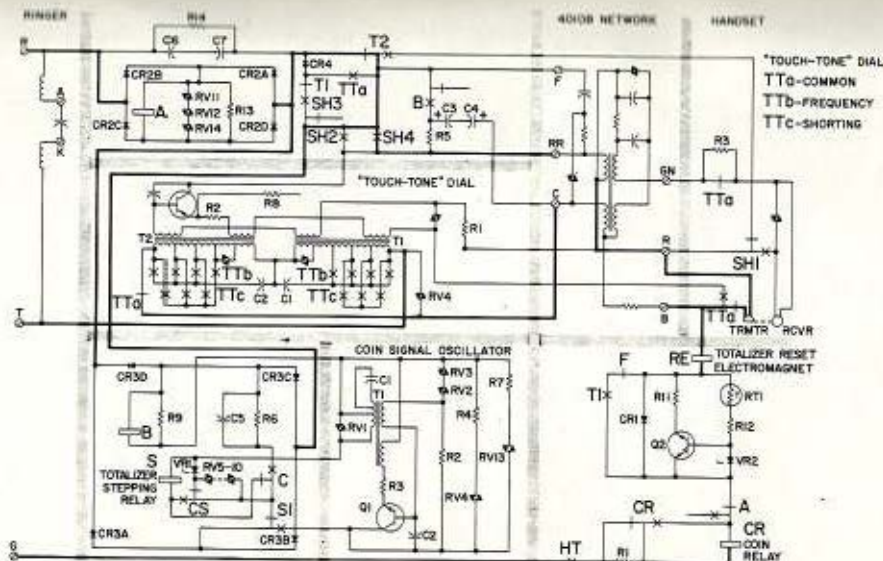


Fig. 29 - 1C2 and 2C2 Dial-Tone-First Coin Telephone Sets, Schematic