

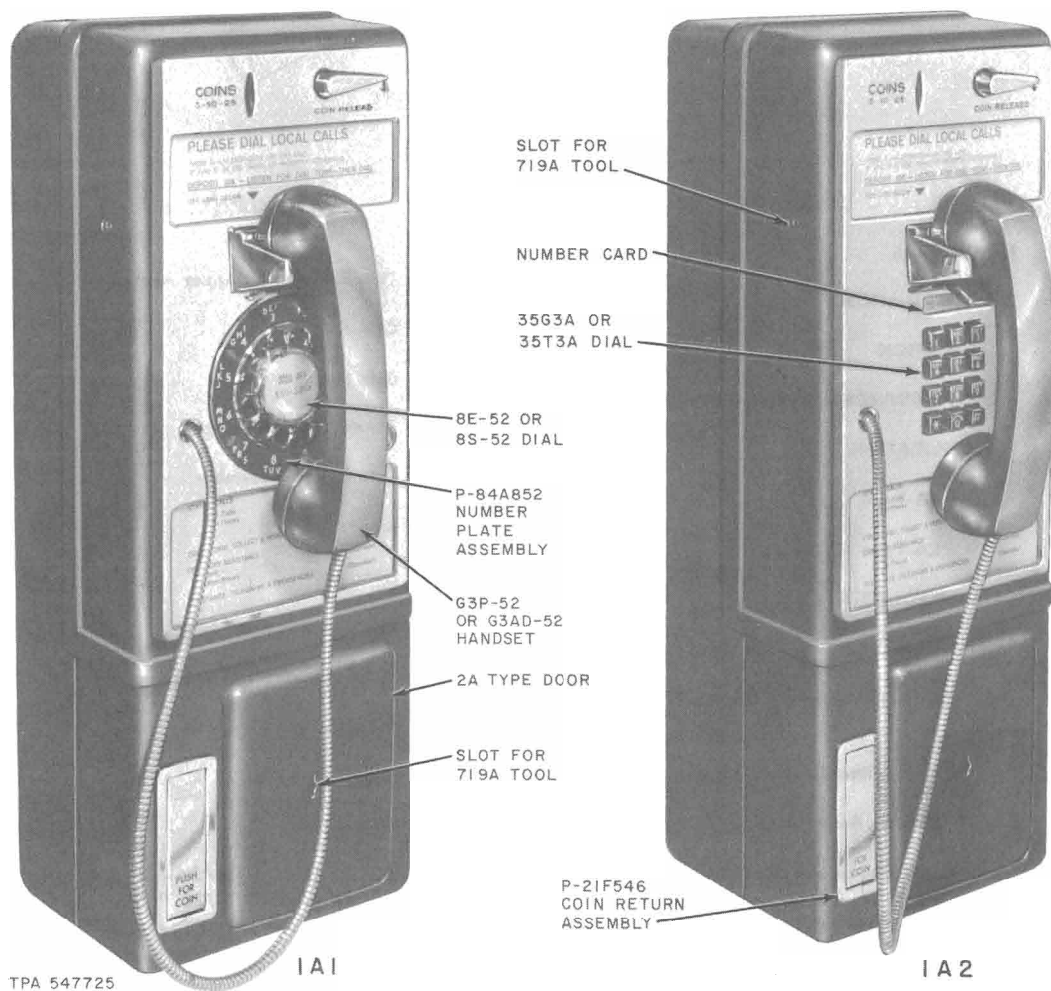


# SERVICE

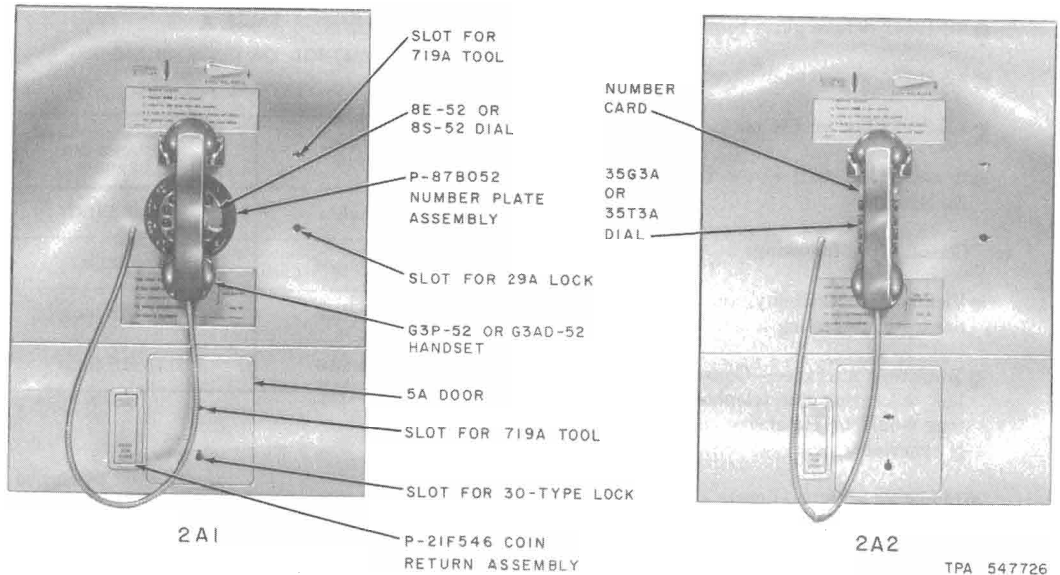
## COIN TELEPHONE SETS

### 1A- AND 2A-TYPE

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4. MAINTENANCE . . . . .	17	1.01 This section provides installation, operation tests and trouble analysis, maintenance, and connection information for the 1A- and 2A-type coin telephone sets. (Fig. 1 and 2)	
Cleaning Chute . . . . .	17	Information is also included to convert a 1A- or 2A-type coin telephone set to a 1C- or 2C-type.	
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**Fig. 1—1A-Type Coin Telephone Sets**



**Fig. 2—2A-Type Coin Telephone Sets**

**1.02** The 1A1 set can be modified to a 1A2 by replacing the rotary dial-equipped P-90C800 or P-90E400 cover unit assembly with a TOUCH-TONE dial-equipped P-90E500 cover unit assembly. No wiring changes are necessary. No provision is made for modifying a 2A1 set to a 2A2.

**1.03** Information in this section was formerly contained in Sections 506-326-200, 506-326-500, 506-328-200, and 506-110-116 which are hereby canceled.

## 2. INSTALLATION

### LOCATION

(a) The 1A-type coin telephone set can be installed in/on the following:

- 178A-3 backboard
- 10- and 11-type booths
- KS-14611 outdoor booth
- KS-16797 universal booth

- KS-19206 curved door booth
- KS-19267 coin telephone shelf
- KS-19340 wood booth
- KS-19425 indoor-outdoor booth
- KS-19426 walk-up, drive-up mounting
- KS-19580 outdoor booth
- KS-19945 shelf
- KS-20194 wedge shelf
- KS-20255 telephone kiosk.

(b) The 2A-type coin telephone set can be installed in the following:

- KS-19206 curved door booth
- KS-19340 wood booth
- KS-19426 walk-up, drive-up mounting

- KS-19442 deluxe glass booth
- KS-20194 wedge shelf
- KS-20227 low profile booth
- A wall that will allow the phone to be recessed.

(c) Consider the following:

- Visibility, accessibility, and possible accident hazards in selecting locations.
- Mounting surfaces—Consult a supervisor before locating coin telephone set on finishes that would be expensive to repair if the set is removed.
- Inductive effects—Locate set and associated wiring at least 6 inches from neon fixtures, transformers, or other interference-causing equipment.

#### BACKBOARDS AND SECURITY STUDS

(a) Refer to Division 506, section entitled: Coin Telephone Stations, Backboards, and observe the following:



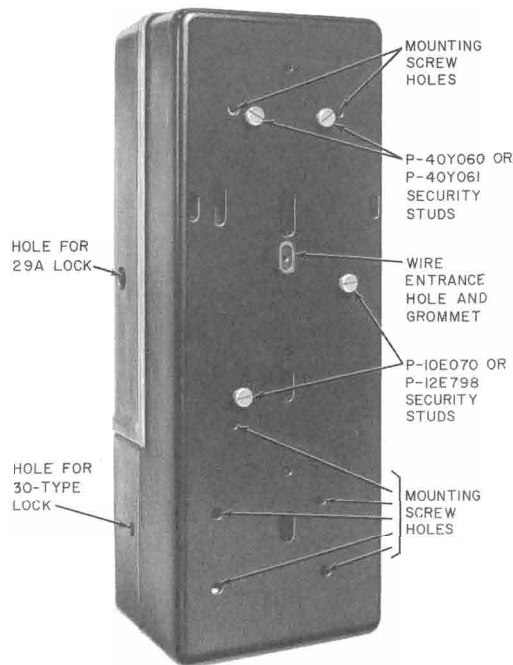
***When mounting the coin telephone set, a vertical surface must be provided. A tilt greater than 1-1/2 degrees in any direction can cause chute malfunction. A vertical surface may be determined by the following steps:***

- (1) Place a spirit level vertically against the mounting surface on which the set is to be installed.
- (2) When a vertical reading is obtained, the end of the level opposite the point of contact shall be no farther from the mounting surface than shown in Table A.
- (3) The left to right mounting axis shall also be within 1-1/2 degrees of true vertical.

(b) Refer to Fig. 3 and 4 and Tables B and C for security stud requirements.

**TABLE A**  
**METHOD OF DETERMINING**  
**A VERTICAL SURFACE**

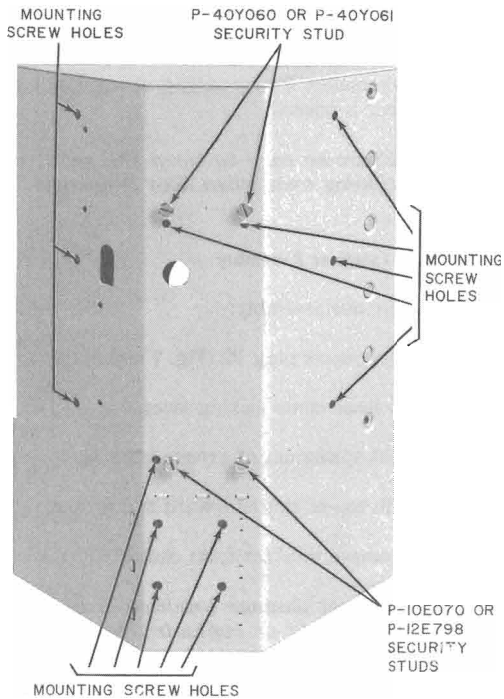
SPIRIT LEVEL LENGTH	MAXIMUM ALLOWABLE DISTANCE OUT OF PLUMB
18 inches	15/32 inch
24 inches	5/8 inch
30 inches	25/32 inch
36 inches	15/16 inch



**Fig. 3—Location of Mounting Screw Holes and Security Studs in 1A-Type**



***Use security studs with short thread length in the two top holes. Use long thread length studs in the two bottom holes. Top studs must be flush or***



**Fig. 4—Location of Mounting Screw Holes and Security Studs in 2A-Type**

*under flush with inside of backplate to avoid interference with chute. Security studs are not furnished and must be ordered separately.*

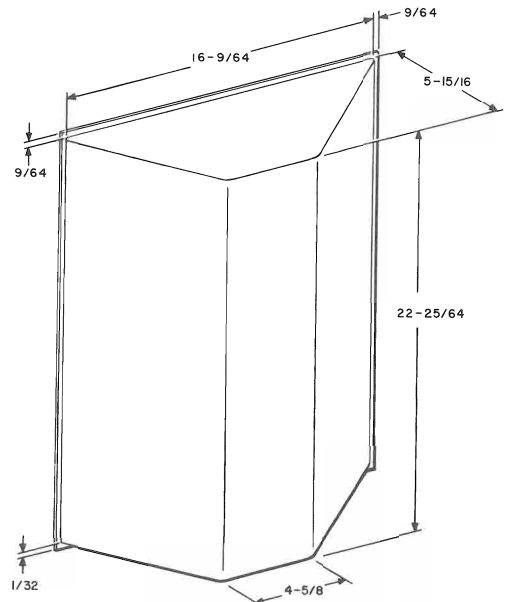
#### APPLICATION

##### 1A-Type

- (a) Refer to Table B.

##### 2A-Type

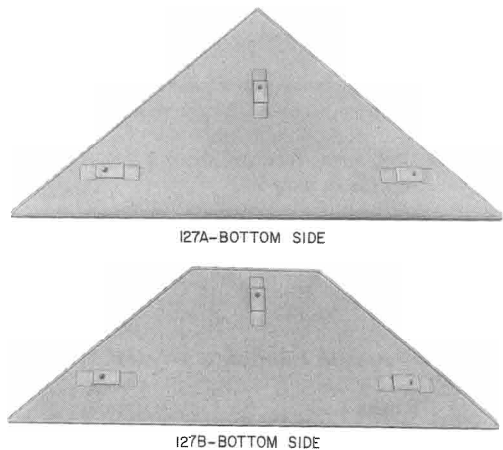
- (a) To fully recess a 2A set in a wall:
- (1) Ensure that the wall will accept the set.
  - (2) Refer to Fig. 5 for dimensions of the set.
  - (3) Cut a hole in the wall



#### NOTES:

1. ALL DIMENSIONS SHOWN ARE IN INCHES.
2. THE SWITCH HOOK AND HANDSET EXTEND 2-3/4 INCHES IN FRONT OF THE FACEPLATE.

**Fig. 5—Rear View of 2A-Type Showing Dimensions**



**Fig. 6—127A- and 127B-Type Covers**

- Height—22-25/64 inches
- Width—16-9/64 inches
- Depth—6 inches



*Ensure that the lip of the faceplate overlaps the wall around the hole. If security studs are used, top of hole must be enlarged approximately 1/2-inch and a false panel (procured locally) provided to close the extra opening.*

- (b) Refer to Table C for all other applications.

### COMPONENTS

- (a) To gain access to the coin telephone set mounting holes:
- Remove cover unit assembly (1A-type)
  - Open door and faceplate assembly (2A-type)
  - Remove coin chute-totalizer assembly
  - Remove chassis assembly

### Cover Unit Assembly (1A-Type)

- (a) To remove cover unit assembly:
- (1) Unlock 29A lock.
  - (2) Release locking mechanism with 719A tool by turning tool 1/8-turn counterclockwise.
  - (3) Pull cover forward about 3 inches to gain access to plug P1.
  - (4) Disconnect plug P1 (Fig. 7) by pulling straight out as cover is carefully lifted off.

### Door and Faceplate Assembly (2A-Type)

- (a) To open door and faceplate assembly:
- (1) Unlock 29A lock.
  - (2) Release locking mechanism with 719A tool by turning 1/8-turn counterclockwise.

- (3) Open door approximately 3 inches to gain access to plug P1 (Fig. 8).
- (4) Disconnect P1 by pulling straight out as door is opened.



*Exercise care to keep the set from tipping over when door is opened.*

### Coin Chute Totalizer Assembly

- (a) To remove assembly:
- (1) Disconnect plug P2 (Fig. 7 and 8).
  - (2) Release chute locking lever.
  - (3) Lift spring out of groove in chute.
  - (4) Tilt top of chute forward and lift out.
- (b) To remove totalizer from chute:



*Do not damage totalizer arms when removing or replacing totalizer on chute or when returning damaged totalizer to service center. Do not move screws that are sealed with glyptal. When returning totalizer or chutes to service center, reuse packing material from which the new item was removed.*

- (1) Unscrew three captive-type mounting screws (Fig. 9) from chute.
  - (2) Carefully remove totalizer from chute.
- (c) To reset totalizer rate:

**Note:** Totalizers are preset at the factory for an initial 10-cent rate. If initial rates other than 10 cents are required, they may be reset (see Fig. 10). Two KS-16750, List 3 releasers or two paper clips are used to set the totalizer.



*Use extreme care when resetting totalizer. Avoid damaging pawl and spring pile-ups. Do not attempt to turn totalizer cam shaft in direction opposite to that shown in Fig. 10.*

**TABLE B**  
**MOUNTING OF 1A-TYPE**

BACKBOARD, BOOTH, SHELF, MOUNTING, OR KIOSK	BACKBOARD REQUIRED	SECURITY STUDS			
		SHORT SHOULDER		LONG SHOULDER	
		P-40Y060 (SHORT THREADS)	P-10E070 (LONG THREADS)	P-40Y061 (SHORT THREADS)	P-12E793 (LONG THREADS)
178A-3 Backboard	Furnished	2	2		
10- and 11- Type Booths	D-179939 or D-179940 Kit of Parts	2	2		
KS-14611 Booth	Furnished	2	2		
KS-16797 Booth	B-190387			2	2
KS-16797 Booth	KS-19206 List 6 Installation Kit	2	2		
KS-19267 Shelf	Furnished	2	2		
KS-19340 Booth	KS-19340, List 53	2	2		
KS-19425 Booth	Furnished			2	2
KS-19426 Mounting	KS-19426, List 7 Installation Kit			2	2
KS-19580 Booth	Furnished	2	2		
KS-19945 Shelf	Existing or 178A-3 (Note 1)			2	2
KS-20194 Shelf	178A-3	2	2		
KS-20255 Kiosk	Furnished			2	2

**Notes:**

1. A 178A-3 backboard is furnished with each KS-19945 shelf unless otherwise specified.
2. Seven 1/4-20 by 5/8 hardened RHM screws (P-23F790) are furnished with each coin telephone set for mounting to backboard.

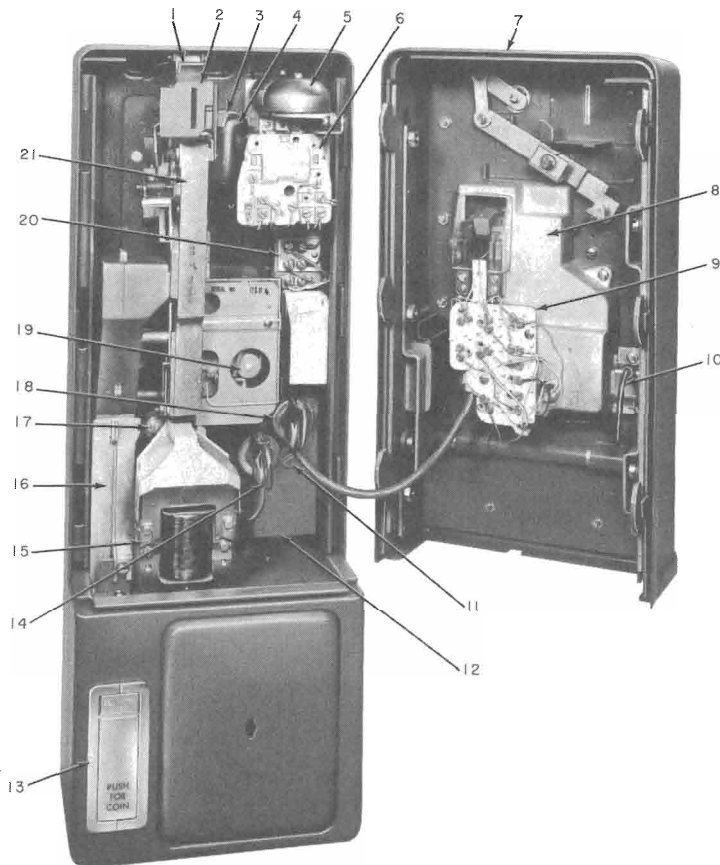
**TABLE C**  
**MOUNTING OF 2A-TYPE**

BOOTH, SHELF, OR MOUNTING	BACKBOARD REQUIRED	SECURITY STUDS				COVER (Note 1)
		SHORT SHOULDER		LONG SHOULDER		
		P-40Y060 (SHORT THREADS)	P-10E070 (LONG THREADS)	P-40Y061 (SHORT THREADS)	P-12E793 (LONG THREADS)	
KS-19206 Booth	KS-19206, List 7 Installation Kit	2	2			127B-Type Fig. 6
KS-19340 Booth	KS-19340, List 54 Backboard	2	2			127B-Type Fig. 6
KS-19426 Mounting	Furnished			2	2	
KS-19442 Booth	KS-19340, List 54 Backboard	2	2			127A-Type Fig. 6
KS-20194 Shelf	Furnished	2	2			
KS-20227 Booth	Furnished			2	2	

**Notes:**

1. Three No. 8-32 by 3/16 RHM screws are furnished with cover for installation.
2. Seven 1/4-20 by 5/8 hardened RHM screws (P-23F790) are furnished with each coin telephone set for mounting to backboard.



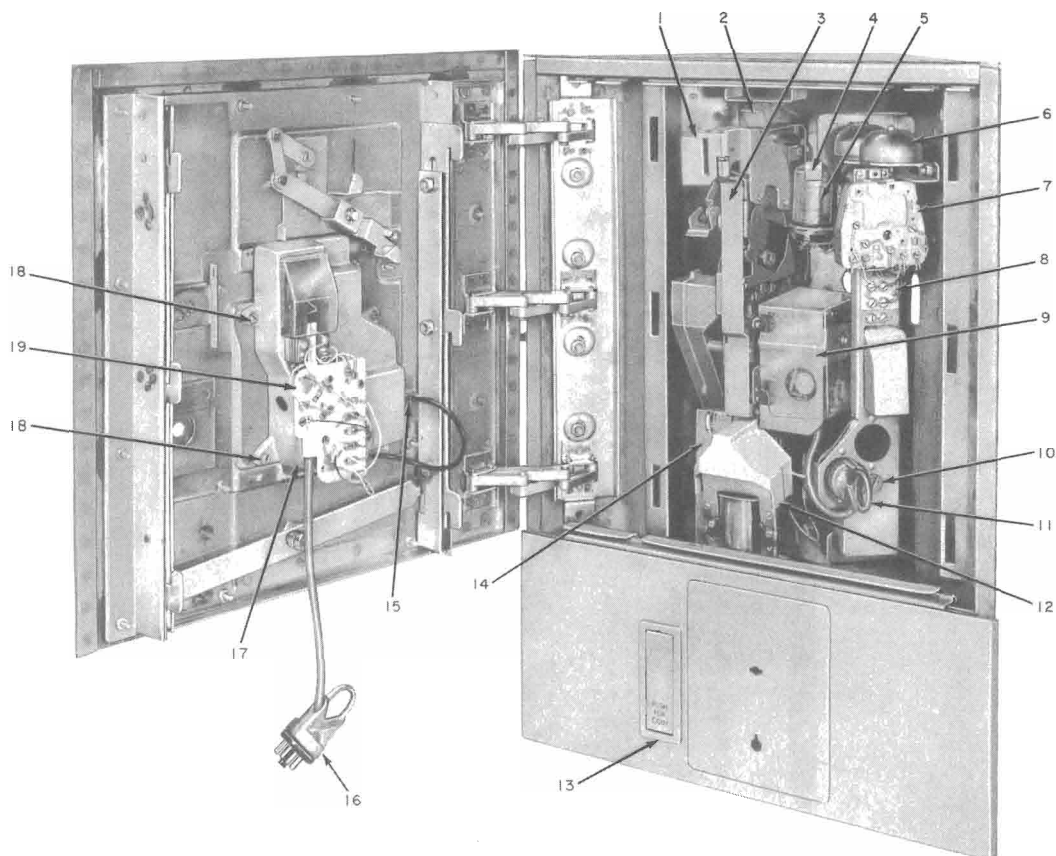


**Fig. 7—Assembly of Parts (1A-Type)**

**LEGEND**

1—P-27E542 CHUTE LOCKING LEVER & P-27E497 SPRING  
 2—P-23F361 ENTRANCE STOP  
 3—P-21F297 BRACKET  
 4—303K MERCURY (A) RELAY  
 5—C4A RINGER  
 6—4010B OR 4010C NETWORK  
 7—P-90C800 OR P-90E400 (1A1) OR P-91C600 OR P-90E500 (1A2) COVER UNIT ASSEMBLY  
 8—P-83B752 or P-90D274 (1A1) or P-26E153 or P-90D275 (1A2) DIAL AND HOUSING ASSEMBLY  
 9—TB2

10—P-15E444 COVER PLATE AND P-181678 BHM SCREW  
 11—CHASSIS MOUNTING SCREW  
 12—P-15E437 CHASSIS ASSEMBLY  
 13—P-21F546 COIN RETURN ASSEMBLY  
 14—P2  
 15—P-15E687 OR 1A\* COIN RELAY ASSEMBLY  
 16—P-15E730 RETURN CHUTE ASSEMBLY  
 17—P-15E717 COIN HOPPER ASSEMBLY  
 18—P1  
 19—P-15E579 TOTALIZER ASSEMBLY  
 20—TB1  
 21—P-24E342 COIN CHUTE ASSEMBLY



**Fig. 8—Assembly of Parts (2A-Type)**

**LEGEND**

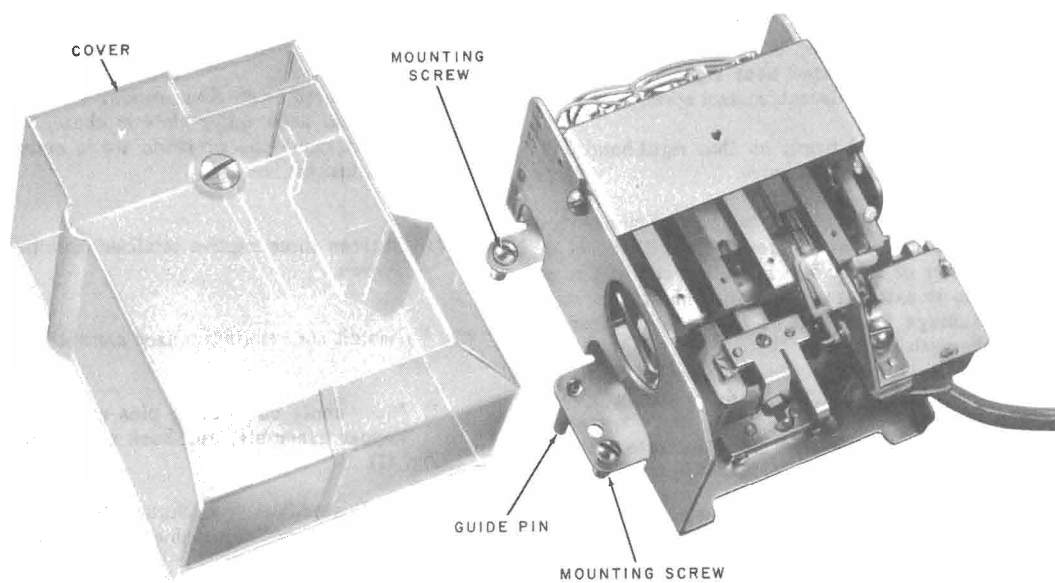
- 1—P-23F361 ENTRANCE STOP
- 2—P-27E542 CHUTE LOCKING LEVER AND P-27E497 SPRING
- 3—P-24E342 COIN CHUTE ASSEMBLY
- 4—P-21F297 BRACKET
- 5—303K MERCURY (A) RELAY
- 6—C4A RINGER
- 7—4010B OR 4010C NETWORK
- 8—TB1
- 9—P-15E579 TOTALIZER ASSEMBLY
- 10—CHASSIS MOUNTING SCREW

- 11—P2
- 12—P-15E687 OR 1A\* COIN RELAY ASSEMBLY
- 13—P-21F546 COIN RETURN ASSEMBLY
- 14—P-15E730 RETURN CHUTE ASSEMBLY
- 15—P-15E444 COVER PLATE AND P-181678 BHM SCREW
- 16—P1
- 17—P-83B752 OR P-90D274 (2A1) OR P-26E153 OR P-90D275 (2A2) DIAL AND HOUSING ASSEMBLY
- 18—DIAL HOUSING MOUNTING SCREW
- 19—TB2
- 20—COIN RELEASE MECHANISM

- (1) Remove transparent totalizer cover by loosening captive cover screw.
  - (2) Rotate totalizer shaft in proper direction (from bottom to top) until T2 springs (Fig. 10) rest in depression in shaft as indicated by movement of springs.
  - (3) Depress reset latch toward bottom of totalizer.
  - (4) Rotate shaft in proper direction until contacts T1 operate as indicated by an upward movement of the reset latch.
  - (5) Do not allow shaft to move. Insert KS-16750, List 3 releaser or paper clip into hole 1 located near right-hand end of shaft. Do not disturb contact springs.
  - (6) Hold tool firmly so that right-hand end of shaft cannot move.
  - (7) Insert the second releaser or paper clip into one of the four "Hole 2" holes in center of shaft. Do not allow end of pin or clip to extend too far beyond shaft; this may damage insulation of coil located directly beneath shaft.
  - (8) Rotate second releaser or clip in proper direction until T2 springs come to rest in depression in shaft. This is zero rate position. Do not remove releasers or clips from holes in shaft.
  - (9) Set charge rate by rotating shaft in proper direction from the zero rate position according to Table D.
  - (10) Remove releasers or paper clips.
- (d) To check for correct totalizer setting:
- (1) Rotate shaft in proper direction until T2 springs rest in depression in shaft.
  - (2) Depress reset latch toward bottom of totalizer.
  - (3) Rotate shaft in proper direction, one step for each 5 cents of the exact initial rate desired.
  - (4) T1 springs should operate (indicated by reset latch moving forward) when initial rate has been reached.
- Example:** For a 10-cent rate, shaft should be rotated two steps. On the second step, T1 springs should operate.
- (e) To install totalizer on chute:
- (1) Replace totalizer cover.
  - (2) Line up the long guide pins on the totalizer with holes in the chute.
  - (3) Place totalizer on chute making sure that totalizer arms enter slots in chute. Be sure short guide pins on chute are in mating totalizer bracket holes.
  - (4) Tighten three captive totalizer mounting screws.
- (f) To install coin chute-totalizer assembly in set:
- (1) Place chute on locating pins at rear of hopper assembly, and back of housing (Fig. 11).
- Note:** Ensure that reject chute, return chute, and coin return assemblies line up properly.
- (2) Place spring in groove on chute.
  - (3) Lock spring in place by pushing chute locking lever down.
  - (4) Reconnect totalizer plug P2 to J2.

#### Chassis Assembly

**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 a plastic bag to prevent accidental contamination in the*



**Fig. 9—Totalizer**

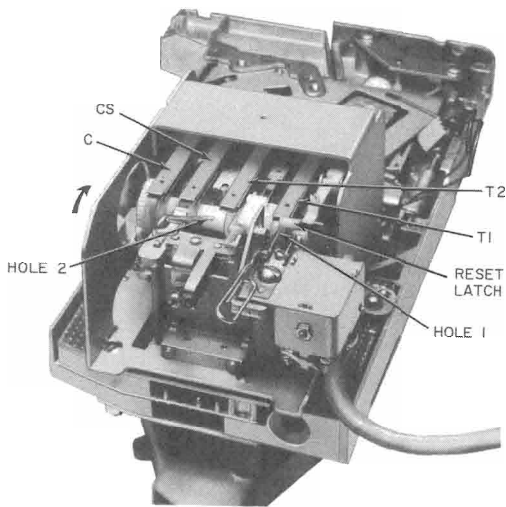


Fig. 10—Setting Totalizer Rate

**TABLE D**  
**SETTING INITIAL CHARGE RATE OF TOTALIZER**

INITIAL CHARGE RATE	ROTATE SHAFT IN PROPER DIRECTION (FROM BOTTOM TO TOP)
5 cents	One step
10 cents	Two steps
15 cents	Three steps
20 cents	Four steps
25 cents	Five steps
30 cents	Six steps

*event that the glass envelope is broken. All personnel should wear safety glasses when handling these relays. Follow local disposal procedures.*

(a) To remove chassis assembly

- (1) Remove coin chute totalizer assembly.
- (2) Disconnect (BK) and (Y) leads from coin relay and carefully pull leads through guide hole on coin hoppers.
- (3) Loosen chassis mounting captive screw.
- (4) Pull chassis assembly out at bottom and slide down to remove.

(b) To install chassis assembly:

**Note:** When installing chassis assembly, dress inside wire behind chassis and to the right of TB1. Allow for wires to be connected to TB1 from right side.

- (1) Slide chassis under tab (Fig. 11).
- (2) Seat chassis tabs in slots.
- (3) Tighten chassis mounting captive screw.
- (4) Replace (BK) and (Y) leads on coin relay after threading through hole in hopper. Connect (Y) lead to terminal G and (BK) lead to terminal 3 of coin relay.

#### Coin Receptacle (Cash Box)

(a) The coin telephone set is arranged for a 1B coin receptacle. If a greater capacity is desired, a 1C coin receptacle can be installed as follows:

- (1) Remove cash compartment door.
- (2) Remove 1B coin receptacle.
- (3) Remove false floor from bottom of cash compartment.
- Break spot weld at left from tab
- Pry with large screwdriver or equivalent
- (4) Install 1C coin receptacle.
- (5) Install cash compartment door.

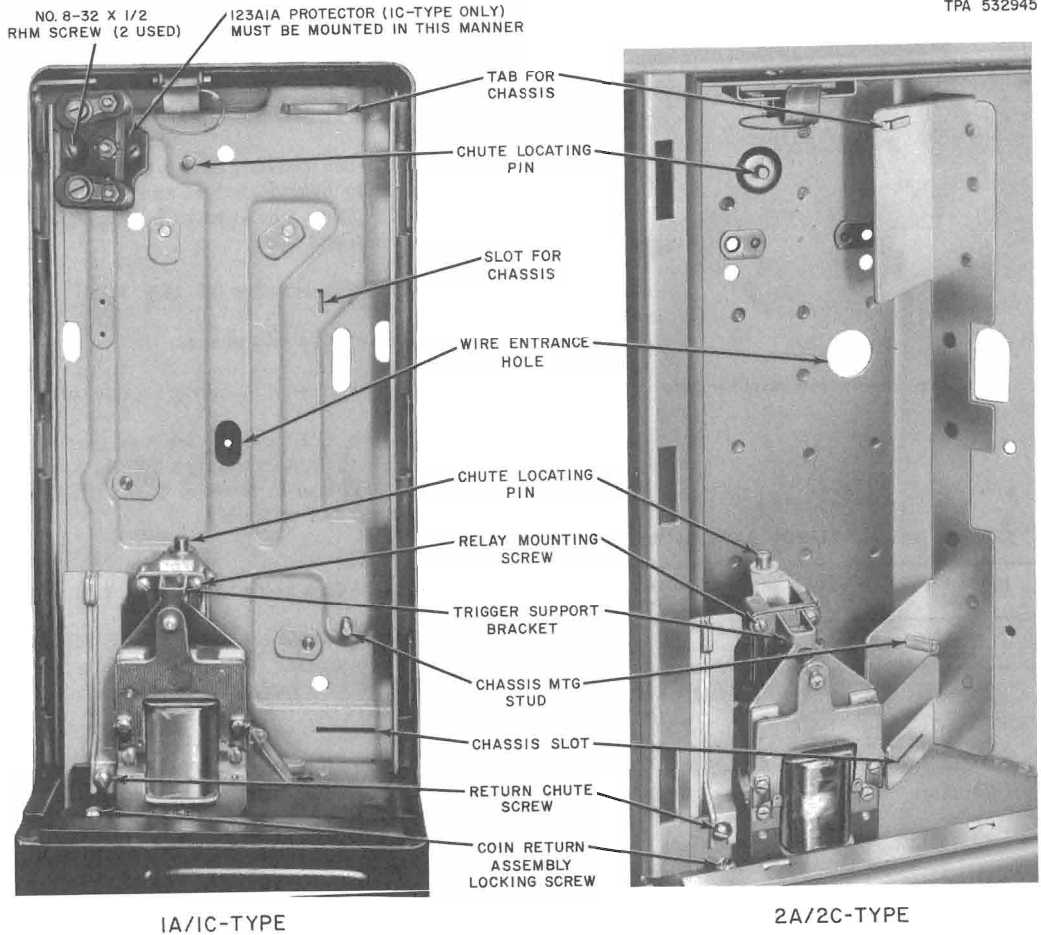


Fig. 11—Housing and Mounting Plate Assemblies

**Instruction Cards (1A-Type)**

- (a) Instruction cards are not furnished and must be procured locally.

- (b) Instruction cards should meet following size specifications which are in inches:

	UPPER CARD	LOWER CARD
Width	$6.130 \pm .005$	$6.130 \pm .005$
Height	$2.130 + .015$ $-.025$	$2.840 + .015$ $-.025$
Thickness	$.050 + .006$ $-.010$	$.050 + .006$ $-.010$
Corner Radius	.125	.125

(c) To install card:

- Push up with fingers (Fig. 12)
- Snap card in place
- Ensure that card is seated properly in slot

(d) To remove card:

- Push up with fingers
- Pry bottom out with small screwdriver or equivalent

(e) A gummed OUT-OF-SERVICE sticker (Form E-4914) is available in books of five. Place over coin slot when required.



**Fig. 12—Installing Instruction Cards (1A-Type)**

#### **Instruction Cards (2A-Type).**

(a) See (a) and (b) under 1A-type.

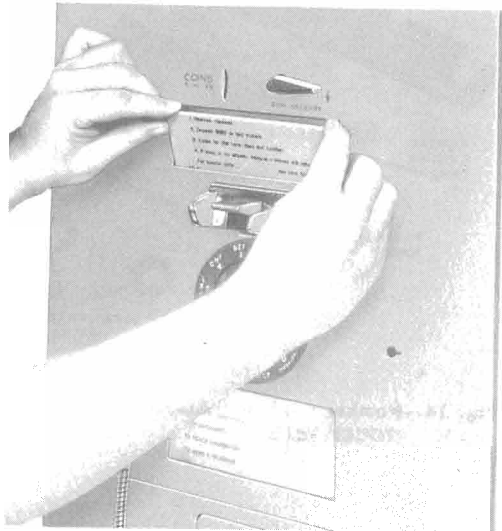
(b) To install card:

- Push down with fingers (Fig. 13)
- Snap card in place
- Ensure that card is seated properly in slot

(c) To remove card:

- Push down with fingers
- Pry top out with small screwdriver or equivalent

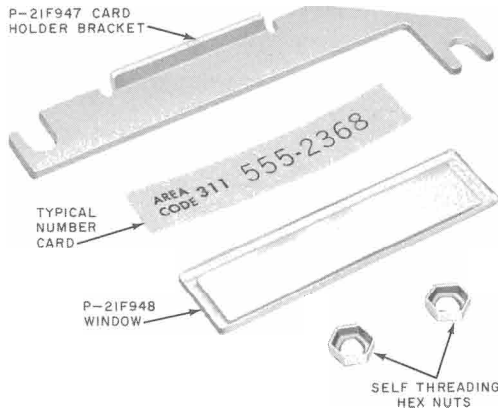
(d) See (e) under 1A-type.



**Fig. 13—Installing Instruction Cards (2A-Type)**

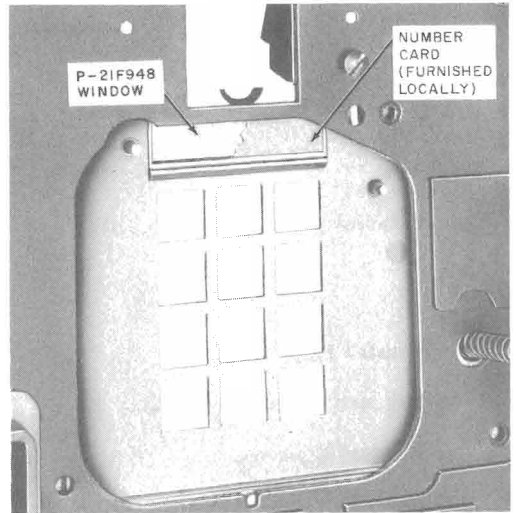
**Number Card (TOUCH-TONE Only)**

- (a) The number card shall be furnished locally.
- (b) A P-21F947 card holder bracket, P-21F948 window, and two hex nuts (Fig. 14) are packaged separately and shipped in the cash compartment.
- (c) Install number card as follows:
  - (1) Remove dial housing.
  - (2) Insert P-21F948 window in faceplate from rear (Fig. 15).
  - (3) Insert number card in window (Fig. 15).
  - (4) Secure window and number card using the P-21F947 card holder bracket and two hex nuts (Fig. 16).
  - (5) Install dial housing.

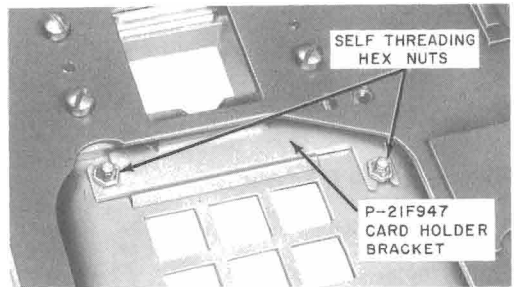


**Fig. 14—Number Card and Associated Hardware (TOUCH-TONE)**

**Note:** Ensure that the dial housing mounting screws are tight to prevent dial housing from becoming loose in wiring areas where excessive vibration occurs.



**Fig. 15—Window and Number Card Installed in Faceplate (TOUCH-TONE)**



**Fig. 16—Card Holder Bracket Installed (TOUCH-TONE)**

**WIRING**

- (a) Select and place wire in accordance with sections covering inside wiring. Wire all coin telephone sets with triple conductor station wire to provide individual ground for each station. The ground connection for this conductor must be the same one used for signaling ground.



- (b) Feed inside wire through wire entrance hole (Fig. 11) as set is mounted on backboard.
- (c) Dress wire behind chassis and run to right side of coin chassis.
- (d) Conceal wiring near telephone. If this is not possible, use approved molding or tubing.



*After installation has been completed, refer to Part 3 and verify if the coin telephone set is operating correctly.*

### 3. OPERATION TESTS AND TROUBLE ANALYSIS



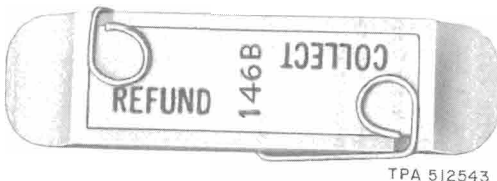
*On trouble reports of coins collected or returned in error, try to obtain area code and telephone number of called party to facilitate tracing trouble in central office.*

#### 3.01 Apparatus Required

- (a) P11C Cord (Fig. 17)
- (b) Coins: 1 penny, 2 nickles, 1 dime, 2 quarters
- (c) 146B Bias Margin Gauge (Fig. 18)



Fig. 17—P11C Test Cord



TPA 512543

Fig. 18—146B Bias Margin Gauge

#### 3.02 Table E includes following trouble analysis tests:

- Totalizer and Coin Relay Operation (On-Hook)
- Totalizer Operation (Off-Hook)
- Dial Shorting Test
- Coin Relay Bias Margin Test
- Returning Set to Normal Operation

#### 3.03 Refer to Table F for dial Long Line requirements.

#### 3.04 Refer to Table G for loop ranges.

#### 3.05 Refer to Table H for operate values of coin relays.

### 4. MAINTENANCE

#### Clearing Chute

- (a) When troubles indicate foreign objects or stuck coins in chute.

- (1) Operate coin release lever in attempt to clear coins in return chute.

- (2) If trouble does not clear:

- Remove cover unit assembly (1A-type) or open door and faceplate assembly (2A-type).

- Remove coin chute totalizer assembly.

- Swing upper plate assembly open (Fig. 23)



*Exercise extreme care when closing the upper plate assembly. It should not make contact with the quarter divider or the quarter divider will become damaged when the upper plate assembly is closed against it.*

- Remove any foreign objects or stuck coins with an orange stick. Do not use screwdriver.

- Clean off any foreign material adhering to chute magnets.

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

TROUBLE NUMBER	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
<b>Preparation for all tests</b>					
1	Invert handset on switchhook (1A-Type only) (Fig. 19) <i>Note:</i> Prevents armored cord from pushing handset off switchhook when cover is set down				
2	Remove cover unit assembly (1A-type) or open door and 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				
<b>Totalizer and Coin Relay Operation (on-hook)</b>					
4	Deposit penny and operate coin release lever	Coin is returned	Coin does not return	Blocked coin chute Defective coin release mechanism	Clear Replace defective linkage
5	Deposit quarter in chute	Coin relay refunds coin	Coin does not return	Blocked coin chute Tip and ring reversed or coin trunk trouble Plugs P1 and P2 reversed Traffic overload Coin jam in hopper Full coin receptacle Coin relay HT contact not making	Clear Reconnect or refer to test desk Reconnect properly Wait and repeat Clear jam Level coins and notify coin collection department Clean contacts or replace coin relay

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

TROUBLE NUMBER	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
5 (Cont)				Switchhook transfer contacts SH1 (NC) or SH3 (NC) not making	Clean contacts or replace dial and housing assembly
				Switchhook contacts SH2 and 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	
6	Deposit nickel	Nickel returned	Nickel does not return	Switchhook transfer contacts SH1 (NC) or SH3 (NC) not making	Clean contacts or replace dial and housing assembly
				Defective wiring in dial, housing, or chassis assembly	Replace defective apparatus
				Traffic overload	Wait and repeat
<b>Totalizer Operation (off-hook)</b>					
<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 T1 contacts remain latched after refund	Reset totalizer rate Replace totalizer
				Switchhook transfer contacts SH3 (NC) not breaking (rotary only)	Replace dial and housing assembly

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

TROUBLE NUMBER	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
7 (Cont)				Defective chassis or chassis wiring	Replace chassis
				Defective wiring in dial and housing assembly	Replace dial and housing assembly
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
				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	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 assembly	
		Coins not returned	Coins returned	Defective dial	Replace dial

**TABLE E (Cont)**  
**TROUBLE ANALYSIS—SINGLE SLOT (1A AND 2A-TYPE)**

**COIN FIRST**

TROUBLE NUMBER	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
10	Hang up handset	Coins returned	Coins not returned	Traffic overload Coin trunk trouble	Wait for refund pulse Refer to test desk
11	Lift handset and deposit dime	Dial tone is heard	No dial tone	Defective totalizer Traffic overload	Replace totalizer 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	Coins not returned	Traffic overload Coin trunk trouble	Wait for refund pulse Refer to test desk
<b>Dial Shorting Test</b>					
14	Remove dust cover from coin relay. 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 breaking Defective chassis	Replace totalizer 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 Defective coin trunk	Wait for coin return pulse Refer to test desk

**Coin Relay Bias Margin Test**

*Note:* Make this test when coin relay fails to operate or operates incorrectly

- |    |                              |
|----|------------------------------|
| 18 | Remove coin relay dust cover |
|----|------------------------------|

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

TROUBLE NUMBER	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
19	Lift handset, obtain dial tone, call test desk and request a bias margin test. (Use central office test circuit where available)				
20	Slip 146B bias margin gauge over left pole piece extension arm from left side of coin relay (Fig. 20)				
21	Request deskman to apply central office collect (or return) voltage as indicated in the lower left corner of gauge	Relay operates to collect (or return) coins as indicated in lower left corner of gauge	Relay does not operate properly	Defective coin relay	Replace coin relay
22	Reverse the 146B bias margin gauge by turning it around on the same pole piece extension arm				
23	Request deskman to apply central office collect (or return) voltage as indicated in the lower left corner of gauge	Relay operates to collect (or return) coins as indicated in lower left corner of gauge	Relay does not operate properly	Defective coin relay	Replace coin relay
24	Remove 146B gauge				
25	Hang up handset				
26	Install dust cover				
<b>Returning Set to Normal Operation</b>					
27	Call operator and deposit nickel, dime, and quarter	Coins identified by operator	Improper coin signal tones	Defective totalizer Defective chassis	Replace totalizer Replace chassis

**TABLE E (Cont)**  
**TROUBLE ANALYSIS—SINGLE SLOT (1A AND 2A-TYPE)**

**COIN FIRST**

<b>TROUBLE NUMBER</b>	<b>ACTION</b>	<b>VERIFICATION</b>	<b>FAILURE</b>	<b>POSSIBLE CAUSE</b>	<b>REMEDIAL ACTION</b>
28	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
29	Request operator to return coins	Coins returned	Coins not returned	Nonstation trouble	Repeat request, and if failure reoccurs refer to test desk
30	Request operator to ring back (hang up)	Ringer operates at maximum volume	No ring back or low volume	Defective ringer or leads Ringer out of adjustment Open ringer capacitor in network	Replace ringer Adjust Replace chassis
31	Call the dial test number and verify all TOUCH-TONE frequencies				
32	Hang up handset properly				



**Fig. 19—Cover Unit With Handset Inverted**

- (3) If trouble cannot be cleared, replace coin chute totalizer assembly.

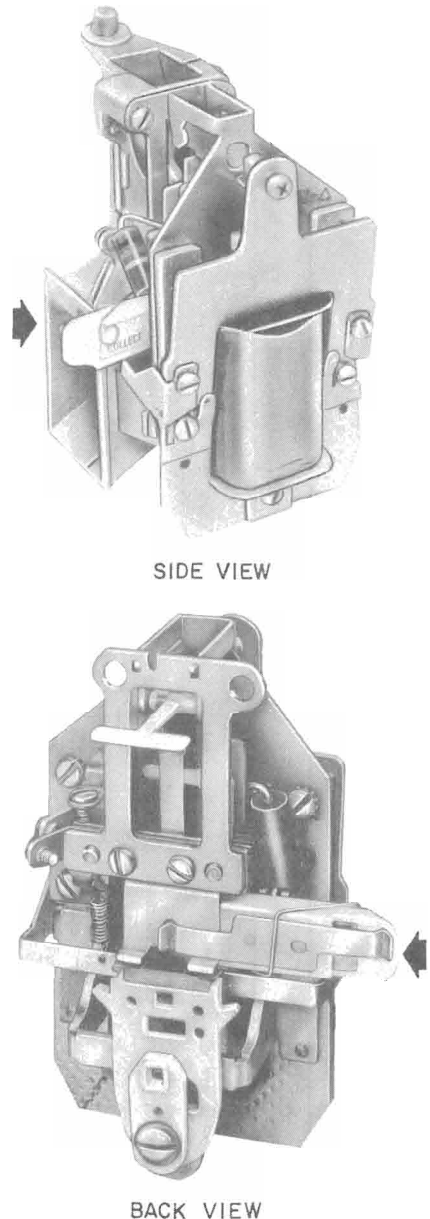


***When returning coin chute totalizer assemblies to service center, reuse packing material from which the new item was removed.***

- (4) Chute should be tested by depositing coins with cover unit assembly both off and on housing (1A-type) or with door and faceplate assembly both open and closed (2A-type).

#### Electrical Troubles

- (a) If electrical troubles are indicated, refer to Part 3 (operation Tests and Trouble Analysis) and Part 5 (Connections).



**Fig. 20—Bias Margin Gauge in Position for Collect Test**



TABLE F

**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	DLL CKT Required on Loops Over 1300 ohms

TABLE G

**MAXIMUM ALLOWABLE LOOP RANGES FOR CENTRAL OFFICE  
COIN SUPPLY VOLTAGES — COLLECT AND RETURN ONLY  
(MAXIMUM GROUND RESISTANCE 50 OHMS;  
MAXIMUM DC EARTH POTENTIAL  $\pm 3$  VOLTS)**

TYPE OF CENTRAL OFFICE	MINIMUM COIN VOLTAGE	LOOP RANGE
SXS, Panel, No. 1 XBar	100 volts (100-120V)	1400 ohms
SXS, Panel, No. 1 XBar	115 volts (115-120V)	2000 ohms
No. 5 XBar, No. 1 ESS, No. 2 ESS	125 volts (125-135V)	2400 ohms

**Note:** Loop Range = Conductor Loop Resistance (excluding coin telephone set resistance).

**4.01** Refer to Part 2 for the removal and replacement of the following components:

- Coin chute-totalizer assembly
- Totalizer
- Chassis assembly
- Instruction cards
- Number cards

- (2) Remove vault door and coin receptacle
- (3) Remove two P-10E809 special screw assemblies from inside vault.
- (4) Lift coin relay and hopper assembly out of set.
- (b) To install use reverse procedure and connect (Y) lead to terminal G and (BK) lead to terminal 3.

**4.02** Other components can be removed as follows:

**Coin Relay**

**Coin Relay and Hopper Assembly**

- (a) To remove coin relay and hopper assembly.

- (a) To remove coin relay without removing hopper assembly:

- (1) Disconnect (BK) and (Y) leads.

- (1) Disconnect (BK) and (Y) leads.

**TABLE H**  
**OPERATE VALUES OF COIN RELAYS**

MARKING ON RELAY	OPERATING TIME	OPERATE CURRENT	NON-OPERATE CURRENT	REMARKS
P-15E687	625 $\pm$ 75 milliseconds (Note 2)	48 milliamps	40 milliamps	Coil of restoral spring has a diameter of approximately 5/32-inch (Fig. 21)
1A*	450 $\pm$ 50 milliseconds (Note 3)	41 milliamps	30 milliamps	Coil of restoral spring has a diameter of approximately 9/32-inch (Fig. 22)
1A (Note 1)				

**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.

(2) Remove two relay mounting screws on top front of coin relay (Fig. 11).

(3) Remove two hex head screws on sides of coin relay.

(4) Check that hopper trigger (Fig. 24) is in horizontal (up) position and pull off coin relay. ***Do not damage hopper trigger.***

(b) To install coin relay:

(1) Move vane on hopper to left (or collect) position.

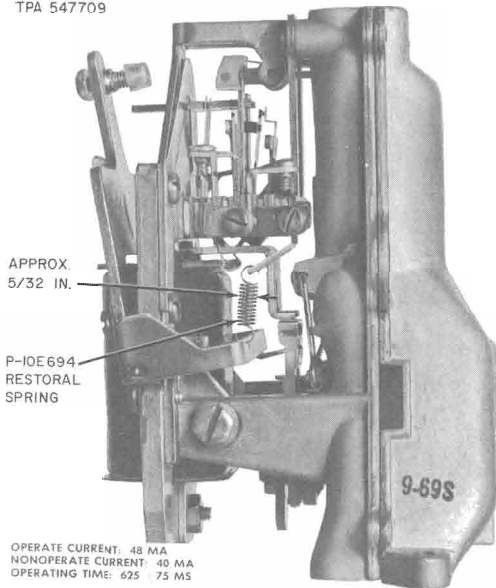
(2) With hopper trigger in nonoperated (or horizontal) position, move relay into position until trigger enters T-shaped slot in hopper and trap lever tab just enters opening in selector card.

(3) Press down slightly on ear on left side of selector card and manually move armature forward to its operated position. Hold armature in this position.



***When returning coin relays to service center, reuse packing material from which the new item was removed.***

TPA 547709

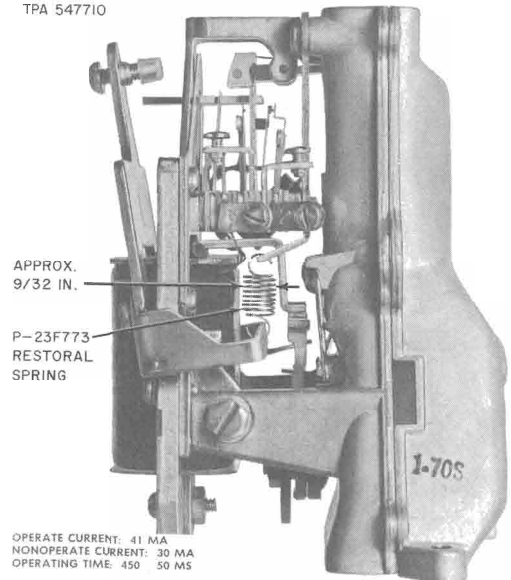
**Fig. 21—Coin Relay Showing Old Operating Values**

- (4) Move coin relay forward until square stem on vane enters hole in cam and mounting screw holes line up.

**Note:** Do not attempt to install relay if trigger support bracket (Fig. 24) is so distorted that mounting holes do not engage hopper bosses.

- (5) Place and tighten evenly two mounting screws in top of coin relay and two hex head mounting screws in each side of relay.
- (6) Make sure that trigger, armature, trap, and vane operate without binding.
- (7) Reconnect (Y) lead to terminal G and (BK) lead to terminal 3.

TPA 547710

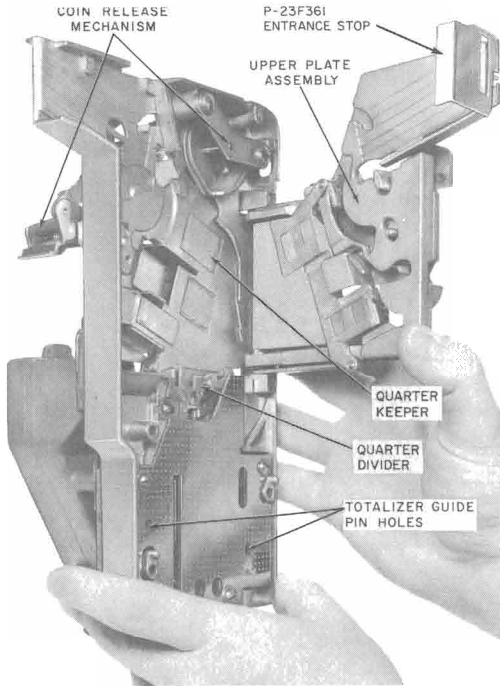
**Fig. 22—Coin Relay Showing New Operating Values**

### Coin Hopper

- (a) To remove coin hopper:

- (1) Remove coin relay.
- (2) Remove vault door and coin receptacle.
- (3) Remove two P-10E809 special screw assemblies from inside vault.
- (4) Lift hopper out of set.

- (b) To install coin hopper, use reverse procedure.



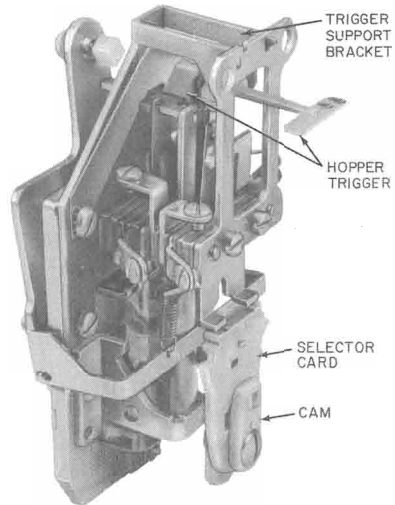
**Fig. 23—Coin Chute Totalizer Assembly**

#### Return Chute Assembly

- (a) To remove chute assembly:
  - (1) Remove coin chute totalizer assembly.
  - (2) Loosen return chute screw (Fig. 11).
  - (3) Lift assembly up and off.
- (b) To replace return chute assembly, reverse procedure.

#### Coin Return Assembly

- (a) To remove coin return assembly:
  - (1) Remove coin chute totalizer assembly.
  - (2) Remove return chute assembly.



**Fig. 24—Coin Relay**

- (3) Remove coin return assembly locking screw (Fig. 11).
  - (4) Insert finger in coin return and tilt top forward.
  - (5) Lift coin return. Pull coin return assembly out and up.
- (b) To install coin return assembly:
    - (1) Tilt top of coin return assembly toward set.
    - (2) Push coin return assembly into set.
    - (3) Push in and down on bottom of coin return assembly until flush with front of housing.
    - (4) Install coin return assembly locking screw. Tighten screw only enough to hold return assembly in place. Further tightening will bend screw.
    - (5) Replace return chute assembly.
    - (6) Replace coin chute totalizer assembly.

**Ringer**

(a) To remove C4A ringer:

- (1) Remove coin chute totalizer assembly.
- (2) Remove chassis assembly.
- (3) Disconnect four ringer leads; two from TB1 and two from network.
- (4) Remove two ringer mounting screws and lift off ringer.

(b) To install C4A ringer, reverse procedure making sure that locating pin on bottom of ringer is in grommet on chassis assembly. Make connections per Table I.

**TABLE I****RINGER CONNECTIONS**

WIRE COLOR	CONNECT TO
BK	TB1-T
R	TB1-R
S-R	Term. A (Network)
S	Term. K (Network)

**Handset**

(a) To remove handset:

- (1) Disconnect handset leads from terminal board (TB2) on rear of dial housing.
- (2) Remove P-181678 BHM screw, and P-15E444 cover plate which secure handset cord to dial housing.
- (3) Loosen stay-hook screw and remove handset cord.

(b) To install handset, reverse procedure. Make connections per Table J.

**TABLE J****HANDSET CONNECTIONS**

WIRE COLOR	CONNECT TO	
	ROTARY	TOUCH-TONE
W	TB2-2	TB2-7
R	TB2-3	TB2-3
BK	TB2-6	TB2-5
W	TB2-8	TB2-8

**Dial and Housing Assembly**

(a) To remove dial and housing assembly:

- (1) Remove handset.
- (2) Remove four mounting screws and remove dial and housing assembly from cover.

(b) To install dial and housing assembly, reverse procedure.

**Note:** Ensure that the four dial housing mounting screws are tight.

(c) To remove dial:

- (1) Remove dial and housing assembly.

**Note:** It will not be necessary to remove handset when removing dial.

- (2) Disconnect dial leads from TB2.
- (3) Loosen two mounting screws on sides of dial through access holes in housing.
- (4) Lift dial off.

**Note:** Before installing a new rotary dial, remove and discard the dust cover.

- (d) To install dial, reverse procedure making sure that dial is properly seated on four locating pins. Make connections per Table K.

**TABLE K**  
**DIAL CONNECTIONS**

TYPE DIAL	WIRE COLOR	CONNECT TO
Rotary	BL	TB2-9
	G	TB2-10
	W	TB2-2
	W	TB2-3
	Y	TB2-9
	Y	TB2-9
TOUCH-TONE	G	TB2-4
	W	TB2-2
	R	TB2-5
	R-G	TB2-6
	B-K	TB2-1
	O-BK	TB2-11
	O-R	TB2-12
	BL	TB2-3
	W-BL	TB2-7
	O-W	TB2-10
	V	TB2-10

### 303K Mercury (A) Relay

**Warning:** *Because 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 a plastic bag 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.*

- (a) *To remove 303K mercury (A) relay:*

- (1) Remove coin chute-totalizer assembly.

- (2) Remove chassis assembly.

- (3) Remove P-10E809 screw assembly and P-21F297 bracket from relay.

- (4) Remove relay from socket.

- (b) To replace 303K mercury (A) relay, reverse procedure.

### P-23F361 Entrance Stop

- (a) The P-23F361 entrance stop (Fig. 25) is installed on the chute to minimize coin chute stuffing. When the coin release lever is operated, the entrance stop moves sideways and closes the coin slot.

- (b) On later production entrance stops, a prefabricated locking tab arrangement (Fig. 25) can be bent with a screwdriver, by authorized personnel, to hold the upper plate assembly off normal. This will prevent customer coin deposits in newly installed coin telephone sets awaiting initial service connection, or those that are out of service which require further maintenance or repair.

- (c) To install the new entrance stop on a chute having an early version entrance stop (without locking tab feature):

- (1) Remove coin chute totalizer assembly.

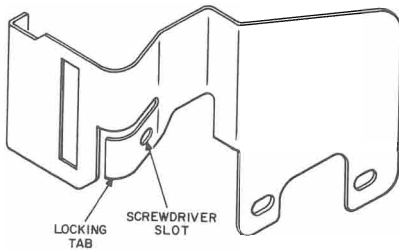
- (2) Remove and retain two No. 6-32 by 5/32 RHM screws (P-218068) which secure the old entrance stop. Discard old entrance stop.

- (3) Install the new entrance stop in the same location using the hardware retained.

- (d) There should be no binding or rubbing of parts when coin release lever is operated fully and allowed to return to normal without force.

### CLEANING

- 4.03** When necessary, the external surface of the coin telephone set may be cleaned with KS-7860 petroleum spirits or a suitable liquid wax such as Johnson's No. 7700 cleaning and polishing wax emulsion.



**Fig. 25—P-23F361 Entrance Stop**

**Warning:** Use safety precautions while using highly flammable KS-7860 petroleum spirits.

## 5. CONNECTIONS

**5.01** Refer to Fig. 26 and 27 for connecting diagrams of 1A- and 2A-type coin telephone sets.

**5.02** Refer to Division 506, section entitled: Service, Coin Telephone Sets, 1C- and 2C-type, for connections of converted sets.

## 6. CONVERSIONS—1A/2A TYPE COIN TELEPHONE SETS TO 1C/2C-TYPE



*After a 1A or 2A coin telephone set has been converted to a 1C or 2C respectively, perform operation tests and trouble analysis, per Division 506, Section entitled: Service, Coin Telephone Sets 1C-and 2C-Type.*

**6.01** The following components are required:

- 1AA chute (Fig. 28)
  - 1A chute
  - 1A totalizer
- 1A coin chassis (Fig. 29)
- P-90D274 (rotary or P-90D275 (TOUCH-TONE) dial and housing assembly (Fig. 30)

**6.02** A stamping kit is required for marking the cover unit assembly (1C-type), housing and

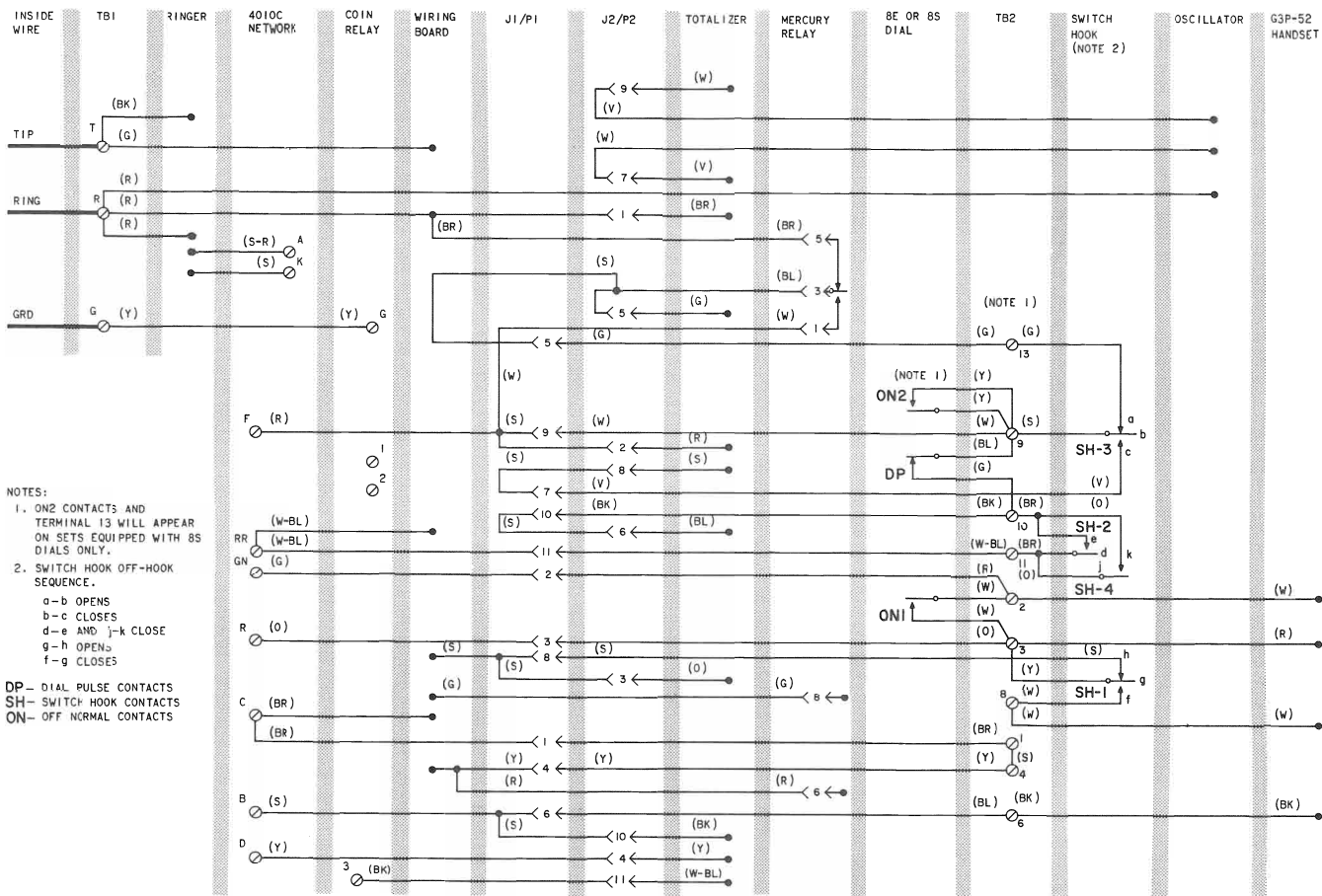
mounting plate assembly (1C-type), housing and door assembly (2C-type), coin chassis, and dial housing. The kit should be obtained locally and shall contain the following:

- Rotary or stick stamps with 1/4-inch characters for stamping P-90E403, P-90E444, P-90E451, P-90E503, P-90E544, P-90E551, 1C, 2C1, 2C2, and DTF.
- Black and yellow *paste* ink with stamp pad
- Solvent
- Wiping cloth.

## 1A-Type

### 6.03 To convert a 1A1 to a 1C1 in the coin first mode:

- (a) Remove cover unit assembly, disconnect P1 from J1 and modify as follows:
  - (1) Disconnect handset leads from terminal board (TB2) on rear of dial housing.
  - (2) Remove P-181678 BHM screw, and P-15E444 cover plate which secure handset cord to dial housing.
  - (3) Loosen stay-hook screw and remove handset cord.
  - (4) Remove four P-181658 Fil HM screws and remove P-83B752 dial and housing assembly from cover.
  - (5) Install a P-90D274 dial and housing assembly using reverse procedure.
  - (6) Install handset cord and secure stay-hook. Install P-15E444 cover plate removed in (2).
  - (7) Connect handset leads to TB2 per Table J.
  - (8) Remove 1A1 marking from cover and stamp P-90E403 (black), P-90E444 (chrome) or P-90E451 (moss green) in same relative position.



### Fig. 26—1A1 or 2A1 Coin Telephone Set Connections





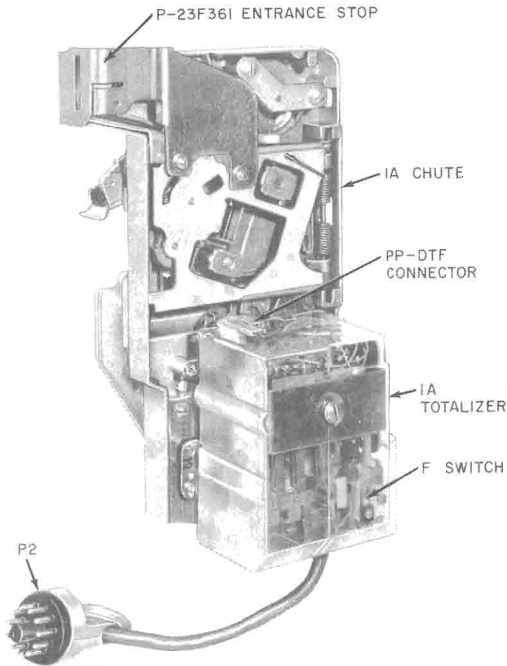


Fig. 28—1AA Chute

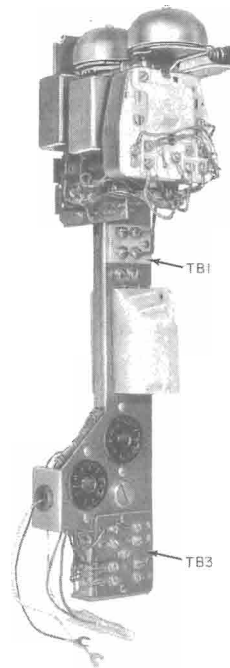


Fig. 29—1A Coin Chassis

(b) Modify housing and mounting plate assembly as follows:

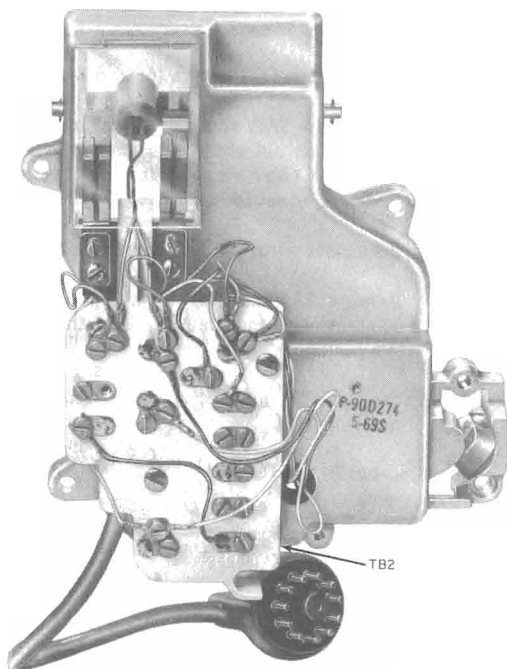
- (1) Disconnect P2 from J2 and remove coin chute totalizer assembly.
- (2) Disconnect (BK) and (Y) leads from coin relay and carefully pull leads through guide hole in hopper.
- (3) Loosen chassis mounting captive screw.
- (4) Pull chassis out at bottom, slide down, and remove.
- (5) Install a new 1A coin chassis using reverse procedure.

**Note:** When installing chassis, dress inside wire behind chassis, allowing for sufficient

wire to be connected to TB1 from right side as viewed from front of set.

- (6) Thread (BK) and (Y) leads of chassis through hole on coin hopper. Connect (BK) lead to terminal 3 and (Y) lead to terminal G of coin relay.
- (7) Install new 1AA chute or substitute a 1A totalizer on old chute and connect P2 to J2. **Ensure that connector on top of totalizer is connected in the PP position.**
- (8) Remove 1A marking from top of vault compartment and stamp 1C in same relative position.

(c) Connect P1 to J1 and install cover unit assembly.



**Fig. 30—P-90D274 Rotary or P-90D275 (TOUCH-TONE) Dial and Housing Assembly**

**6.04 To convert a 1A1 to a 1C1 in the Dial Tone First (DTF) mode:**

- (a) Remove cover unit assembly, disconnect P1 from J1 and modify as follows:

- (1) Repeat steps (1) through (7) in 6.03 (a).
- (2) Transfer wires on TB2 per Table L.
- (3) Remove 1A1 stamping from the cover and stamp P-90E403 (black), P-90E444, (chrome), or P-90E451 (moss green) in the same relative position.
- (4) Stamp DTF on dial housing above part number.

- (b) Modify housing and mounting plate assembly as follows:

- (1) Repeat steps (1) through (6) in 6.03 (b).
- (2) Install new 1AA chute or substitute a 1A totalizer on old chute and connect P2 to J2. **Ensure that connector on top of totalizer is connected in the DTF position.**
- (3) Reconnect wires on TB3 per Table M.
- (4) Remove 1A marking from top of vault compartment and stamp 1C in the same relative position.
- (5) Stamp DTF on coin chassis adjacent to marking 1A.

- (c) Connect P1 to J1 and install cover unit assembly.

**6.05 To convert a 1A2 to a 1C2 in the coin first mode**

- (a) Remove cover unit assembly, disconnect P1 from J1 and modify as follows:

- (1) Repeat steps (1) through (3) in 6.03 (a).
- (2) Remove four P-181658 Fil HM screws and remove P-26E153 dial and housing assembly from cover.
- (3) Install a P-90D275 dial and housing assembly using reverse procedure.
- (4) Repeat steps (6) and (7) in 6.03 (a).
- (5) Remove 1A2 marking from cover and stamp P-90E503 (black), P-90E544 (chrome), or P-90E551 (moss green) in same relative position.
- (6) To modify housing and mounting plate assembly repeat 6.03 (b).

- (b) Connect P1 to J1 and install cover unit assembly.

**6.06 To convert a 1A2 to a 1C2 in the DTF mode**

- (a) Remove cover unit assembly, disconnect P1 from J1 and modify as follows:
    - (1) Repeat steps (1) through (3) in 6.03 (a).
    - (2) Repeat steps (2) and (3) in 6.05 (a).
    - (3) Repeat steps (6) and (7) in 6.03 (a).
    - (4) Transfer wires on TB2 per Table N.
    - (5) Remove 1A2 marking from the cover and stamp P-90E503 (black), P-90E544 (chrome), or P-90E551 (moss green) in the same relative position.
    - (6) Stamp DTF on dial housing above part number.
  - (b) To modify housing and mounting plate assembly repeat 6.04 (b).
  - (c) Connect P1 to J1 and install cover unit assembly.
  - (3) Stamp DTF on dial housing above part number.
  - (4) Repeat steps (1) through (6) in 6.03 (b).
  - (5) Install new 1AA chute or substitute a 1A totalizer on old chute and connect P2 to J2. **Ensure that connector on top of totalizer is connected in the DTF position.**
  - (6) Reconnect wires on TB3 per Table M.
  - (7) Remove 2A1 marking from top of vault compartment and stamp 2C1 in the same relative position.
  - (8) Stamp DTF on coin chassis adjacent to marking 1A.
- (b) Connect P1 to J1 and close door and faceplate assembly.
- 6.09 To convert a 2A2 to a 2C2 in the coin first mode:**

## 2A-Type

### 6.07 To convert a 2A1 to a 2C1 in the coin first mode:

- (a) Open door and faceplate assembly, disconnect P1 from J1 and modify as follows:
  - (1) Repeat steps (1) through (7) in 6.03 (a).
  - (2) Repeat steps (1) through (7) in 6.03 (b).
  - (3) Remove 2A1 marking from top of vault compartment and stamp 2C1 in same relative position.
- (b) Connect P1 to J1 and close door and faceplate assembly.

### 6.08 To convert a 2A1 to a 2C1 in the DTF mode:

- (a) Open door and faceplate assembly, disconnect P1 from J1 and modify as follows:
  - (1) Repeat steps (1) through (7) in 6.03 (a).
  - (2) Transfer wires on TB2 per Table L.

- (a) Open door and faceplate assembly, disconnect P1 from J1 and modify as follows:
  - (1) Disconnect handset leads from terminal board (TB2) on rear of dial housing.
  - (2) Remove P-181678 BHM screw, and P-15E444 cover plate which secure handset cord to dial housing.
  - (3) Loosen stay-hook screw and remove handset cord.
  - (4) Remove four P-181658 Fil HM screws and remove P-26E153 dial and housing assembly from cover.
  - (5) Install P-90D275 dial and housing assembly using reverse procedure.
  - (6) Install handset cord and secure stay-hook. Install P-15E444 cover plate removed in (2).
  - (7) Connect handset leads to TB2 per Table J.
  - (8) Repeat steps (1) through (7) in 6.03 (b).

**TABLE L**  
**CHANGING DIAL HOUSING TO DTF (ROTARY)**

WIRE COLOR	DISCONNECT FROM	CONNECT TO	OTHER END CONNECTED TO
Y	TB2-9	TB2-13	DON 2 contact on 8S dial
G	TB2-13	TB2-9	SH3

**TABLE M**  
**COIN CHASSIS CONNECTIONS**  
**(ROTARY AND TOUCH-TONE)**

CONNECT TO	WIRE COLOR	
	COIN FIRST	DTF MODE
TB3-1	G	R
TB3-2	G-BK	G
TB3-3	R, S-R	G-BK
TB3-4	BL, S-W	BK
TB3-5	G-W	—
TB3-6	V	BL, V-O
TB3-7	BK	—
TB3-8	—	S-R, R-G
TB3-9	—	W-BR
Insulate and store	W-BR, V-O, R-G	S-W, G-W, V

**TABLE N**  
**CHANGING DIAL HOUSING TO DTF (TOUCH-TONE)**

WIRE COLOR	DISCONNECT FROM	CONNECT TO	OTHER END CONNECTED TO
V	TB2-10	TB2-13	t contact on 35T3A dial
O-W	TB2-10	TB2-9	s contact on 35T3A dial
G	TB2-13	TB2-9	SH3

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(9) Remove 2A2 marking from top of vault compartment and stamp 2C2 in the same relative position.

(b) Connect P1 to J1 and close door and faceplate assembly.

### **6.10 To convert a 2A2 to a 2C2 in the DTF mode:**

(a) Open door and faceplate assembly disconnect P1 from J1 and modify as follows:

(1) Repeat steps (1) through (7) in 6.09 (a).

(2) Transfer wires on TB2 per Table N.

(3) Stamp DTF on dial housing above part number.

(4) Repeat steps (1) through (6) in 6.03 (b).

(5) Install new 1AA chute or substitute a 1A totalizer on old chute and connect P2 to J2. ***Ensure that connector on top of totalizer is connected in the DTF position.***

(6) Reconnect wires on TB3 per Table M.

(7) Remove 2A2 marking from top of vault compartment and stamp 2C2 in the same relative position.

(8) Stamp DTF on coin chassis adjacent to marking 1A.

(b) Connect P1 to J1 and close door and faceplate assembly.