

DECEMBER 1972



# COIN SERVICE MANUAL

 Bell System





Comments concerning content, useability, and adequacy of this manual will be welcomed. This sheet may be removed and mailed directly to the Bell System Practices Organization.

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# COIN SERVICE MANUAL

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## Introduction

This manual is a selected compilation of sections concerning installation and maintenance of coin stations including booths and shelves.

Information not included in this manual may be found in standard BSP files.

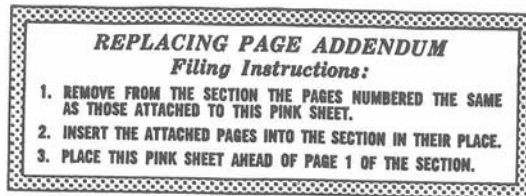


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506-215-403	4	685A	508-251-100	1	Coin Telephone Shelf — KS-19267
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<b>REFERENCE — COIN COLLECTORS</b>			508-300-100	1	Indoor-Outdoor Booth — KS-16797 Universal
Add 506-310-100	1		508-301-100	1	Indoor-Outdoor Booth — KS-19425 Universal II
506-310-100	1	Subscriber Set Required	508-401-100	1	Outdoor Booth — KS-14611 Airlight
506-310-101	1	235-, 236-, and 1235-Type	408-402-100	1	Outdoor Booth — KS-19580 Airlight II
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506-330-404	2	190 Series	508-451-100	1	Walk-Up, Drive-Up, Public Telephones, KS-19426 Mounting
506-330-405	2	200 and 210 Series	508-452-100	1	Telephone Mounting — KS-20842
506-330-406	2	220 Series	508-710-102	2	KS-20030 Directory Hangers
506-330-407	2	230 Series	508-811-100	1	KS-19928 Card Frame
506-331-400	2	1230 Series	508-820-100	3	KS-19207 Light and Blower Unit
<b>SERVICE — COIN COLLECTORS</b>			508-825-100	3	KS-19261 Light Controls
506-342-400	1	235- and 1235-Type			







## COIN TELEPHONE STATIONS BACKBOARDS

### 1. GENERAL

1.001 This addendum supplements Section 506-100-101, Issue 1. The attached pages must be inserted in this section in accordance with the filing instructions above.

1.002 This addendum is issued to change callout (Fig. 4) from 1A1 and 1C-type coin telephone

to 1-type and include installation dimension from top of backboard to floor level.

### 2. IDENTIFICATION

The following change applies to Part 2 of this section.

(a) Fig. 4—revised

Attached:

Page 1—Revised July 1972

Page 2—Revised July 1972



SEE ADDENDUM

## COIN TELEPHONE STATIONS BACKBOARDS

### 1. GENERAL

**1.01** This section provides identification and installation information for coin collector and coin telephone set backboards.

**1.02** Information in this section was previously contained in Section 506-110-105 which is hereby canceled.

### 2. IDENTIFICATION

#### (a) *Ordering Guide:*

##### (1) *Multiuse Backboards:*

CODE NO.	FIG. NO.
Backboard, 139A-3	1
Backboard, 144D	2
Backboard, 174A	3
Backboard, 178A-3	4

##### (2) *Special Purpose Backboards:*

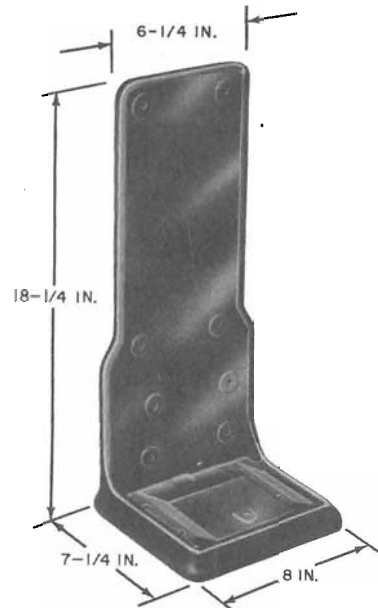
Backboard, 167A-3	5
Backboard Kit, KS-19206, List 6	6
Backboard Kit, KS-19206, List 7	7
Backboard, Auxiliary, KS-19267, List 10	8
Backboard, KS-19340, List 53	9
Backboard, KS-19340, List 54	10
Backboard Installation Kit KS-19426, List 7	11
Backboard Installation Kit KS-19426, List 8	12
Backboard, B-190387-2	13

#### (3) *Backboard Accessories:*

CODE NO	FIG. NO.
Kit of Parts, D-179939	14
Kit of Parts, D-179940	15

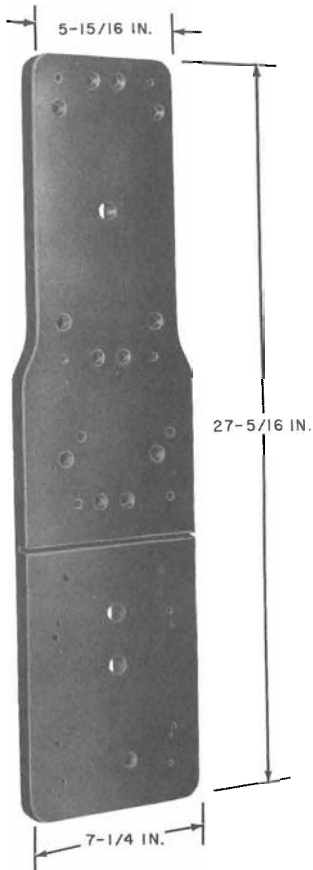
#### (b) *Design Features*

(1) Refer to Fig. 1 through 15.



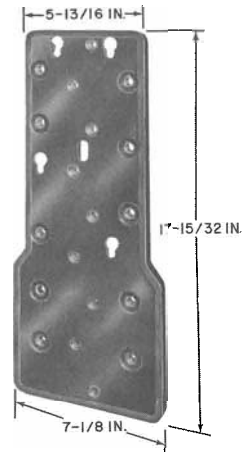
- METAL BLACK
- FOR MOUNTING ALL 200-TYPE COIN COLLECTORS (EXCEPT PANEL TYPE) ON HORIZONTAL SURFACES
- SCREWS PROVIDED FOR MOUNTING COIN COLLECTORS

**Fig. 1—139A-3 Backboard**



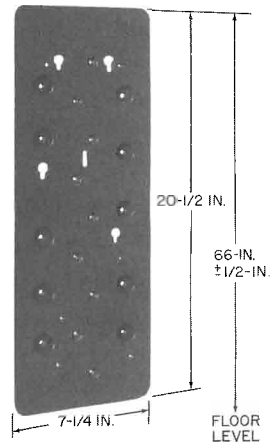
- WOOD, BLACK
- FOR MOUNTING ALL 200-TYPE COIN COLLECTORS (EXCEPT PANEL TYPE) AND A SUBSCRIBER SET ON A WALL AS ONE UNIT
- PROVIDED WITH A SAW SLOT SO BOTTOM PORTION CAN BE CUT OFF WHEN SUBSCRIBER SET IS NOT REQUIRED
- HOLES FOR MOUNTING COIN COLLECTORS ARE PROVIDED WITH 1/4-20 THREADED INSERTS
- REPLACES 144C BACKBOARD

**Fig. 2—144D Backboard**



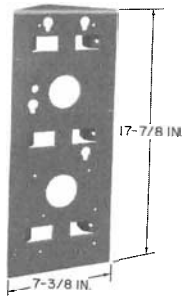
- ALUMINUM ALLOY, BLACK
- FOR MOUNTING ALL 200-TYPE COIN COLLECTORS (EXCEPT PANEL TYPE) ON A WALL

**Fig. 3—174A Backboard**



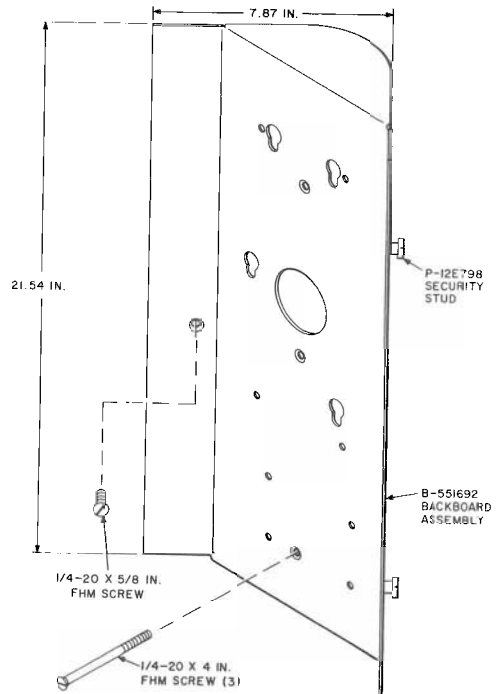
- ALUMINUM ALLOY, BLACK
- FOR MOUNTING 1-TYPE COIN TELEPHONES ON A WALL

**Fig. 4—178A-3 Backboard**



- 167A-3, METAL, BLACK, RATED A&M ONLY
- 167A-42, METAL, BIEGE, RATED MD
- FOR MOUNTING 200-TYPE COIN COLLECTORS (EXCEPT PANEL TYPE) IN 5-, 6-, 7-, 10-, OR 11-TYPE BOOTHS AND IN 20-TYPE SHELF
- PROVIDED WITH SCREWS FOR MOUNTING COIN COLLECTOR TO BACKBOARD
- REPLACES 153A-3 BACKBOARD

**Fig. 5—167A-3 Backboard**



- STEEL, OFF WHITE ENAMEL.
- FOR MOUNTING 200-, 1A-, AND 1C- TYPE COIN COLLECTORS (EXCEPT PANEL TYPE) IN KS-19206 BOOTH.
- PROVIDED WITH SCREWS AND SECURITY STUDS FOR MOUNTING BACKBOARD TO BOOTH.
- PROVIDED WITH SCREWS FOR MOUNTING COIN COLLECTOR TO BACKBOARD.

**Fig. 6—KS-19206, List 6 Backboard Kit**

SECTION 506-100-101

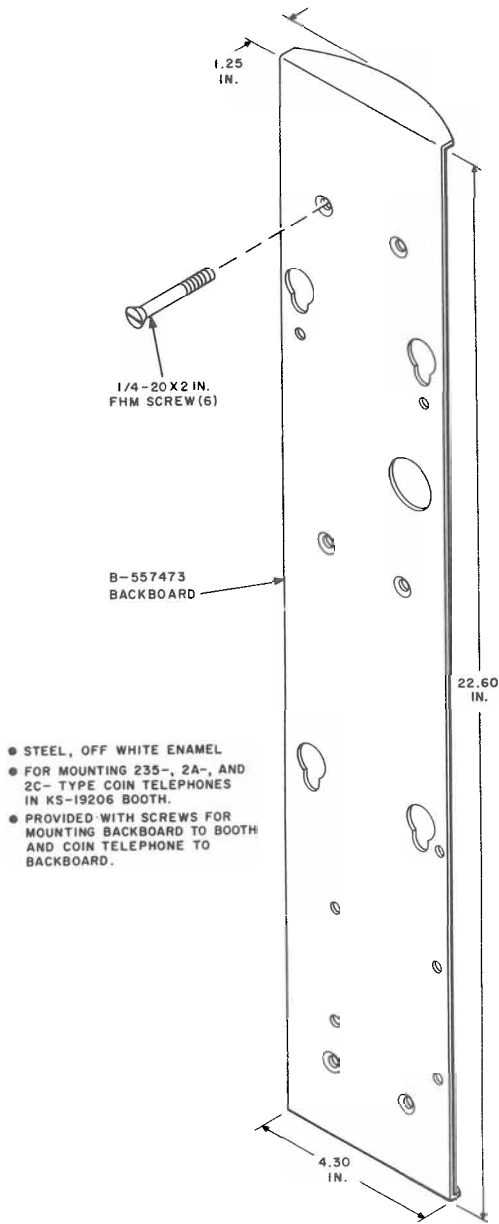


Fig. 7—KS-19206, List 7 Backboard Kit

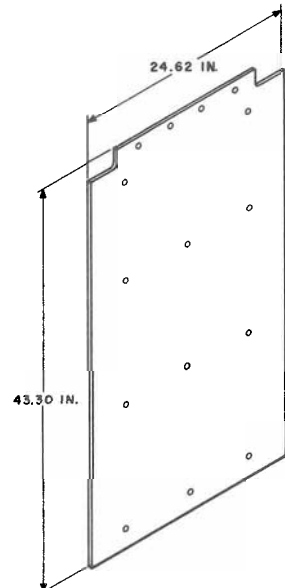


Fig. 8—KS-19267, List 10 Auxiliary Backboard

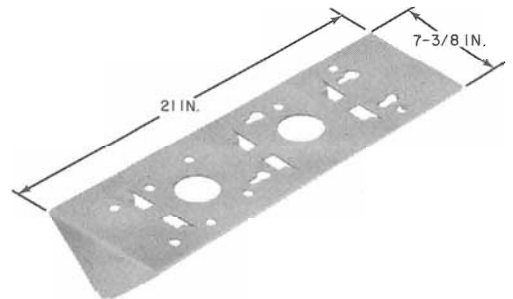
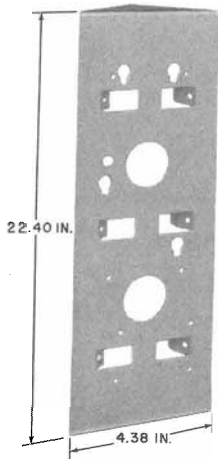


Fig. 9—KS-19340, List 53 Backboard



- STEEL, OFF-WHITE ENAMEL
- FOR MOUNTING 235-, 2A-, AND 2C-TYPE COIN TELEPHONE SETS IN KS-19340 AND KS-19442 BOOTHS

Fig. 10—KS-19340, List 54 Backboard

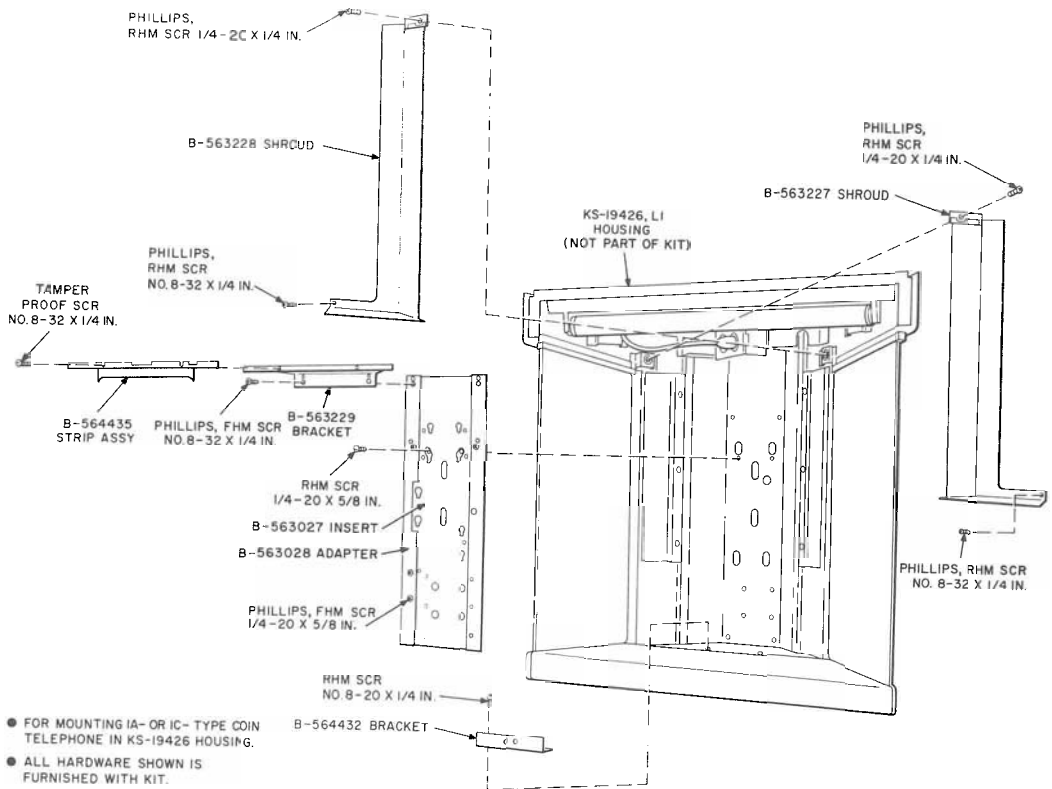


Fig. 11—KS-19426, List 7 Backboard Installation Kit

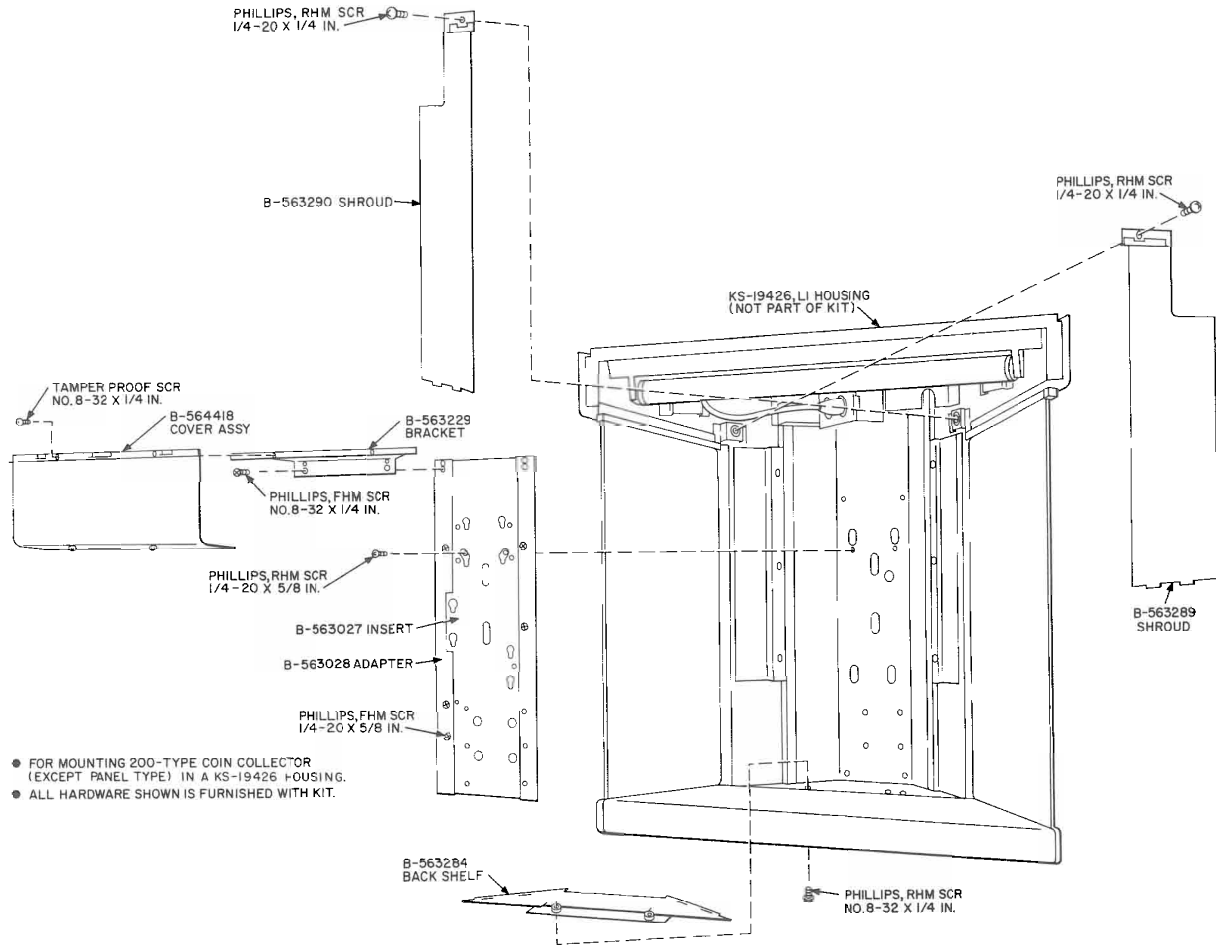
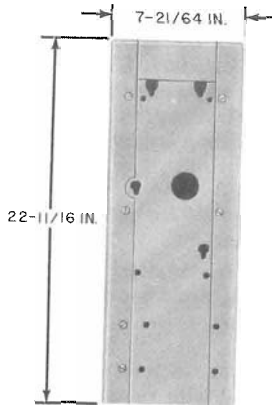


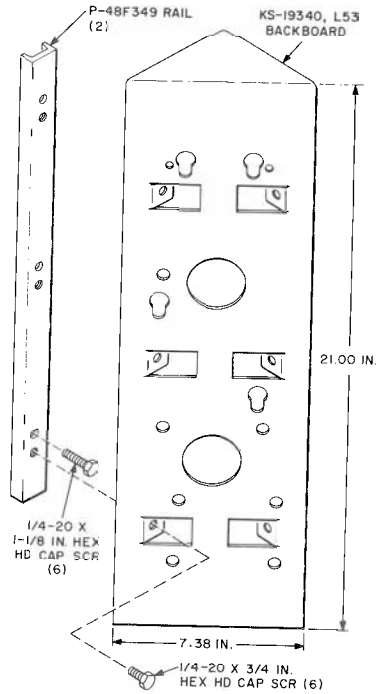
Fig. 12—KS-19426, List 8 Backboard Installation Kit





- ANODIZED ALUMINUM
- FOR MOUNTING 1A- AND 1C-TYPE COIN TELEPHONE SETS IN KS-16797 BOOTHS MANUFACTURED PRIOR TO JULY, 1963
- PROVIDED WITH SCREWS FOR MOUNTING COIN TELEPHONE TO BACKBOARD
- TWO B-650326 FILLER BLOCKS MUST BE ORDERED SEPARATELY TO PERMIT BOLTING THE BACKBOARD TO THE SIDE AND BACK CROSS RAILS

Fig. 13—B-190387-2 Backboard



- REPLACES 167A BACKBOARD FOR MOUNTING 1A- OR 1C-TYPE COIN TELEPHONE IN 10 AND 11-TYPE BOOTHS.
- ALL PARTS SHOWN ARE FURNISHED WITH KIT.

Fig. 14—D-179939 Kit of Parts

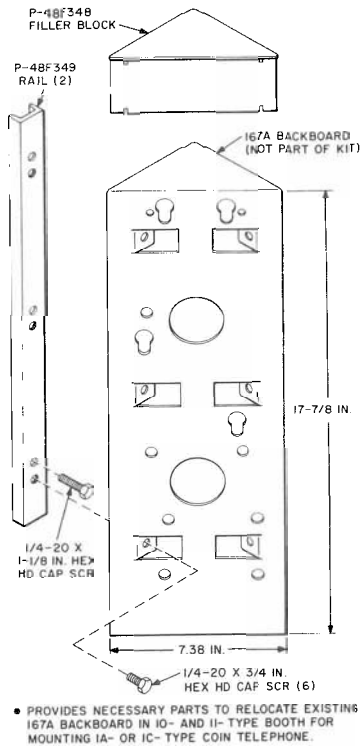


Fig. 15—D-179940 Kit of Parts

**3. INSTALLATION**

**3.01** Refer to Table A for proper fastening device and quantity to be used for each backboard dependent upon:

- Type of surface
- Strength and rigidity of base material



*Backboards must be mounted securely using the specified number and type of fasteners. If backboards are located on an uneven surface, shim to obtain a firm mounting and use fasteners 1/2-inch longer than specified in Table A.*

**3.03** Refer to 080 Division for method of installing fasteners.

*Note:* When fasteners extend into or through a surface, avoid damaging existing equipment and wiring.

**3.04** Backboards located outdoors should be secured with rustproof fasteners, such as galvanized screws or bolts.

**3.05** If backboard must be mounted on a finely finished surface, such as glazed tile or marble, that would be expensive to repair, consult supervisor and obtain instructions before proceeding.

**167A-3 Backboard (Fig. 5)**

**3.06** When installing the 167A backboard it should be located in the right-rear corner of the booth with the top of the backboard 63 inches from the floor in booth without seat and 52.5 inches from the floor in booth with seat. Six 1/4-20 by 1-5/8 inch hex-head cap screws and 1/4-20 tee nuts are needed to secure the backboard to the booth.

**KS-19267, List 10 Auxiliary Backboard (Fig. 8)**

**3.07** The KS-19267, List 10 auxiliary backboard must be installed with the bottom edge 35.25 inches from the floor and 24.75 inches center to center when multiplied. Fasteners should be omitted in area between top of shelf and bottom of lighted sign.

**TABLE A**  
**FASTENERS USED IN MOUNTING BACKBOARDS**

BACKBOARD  TYPE	MOUNTING SURFACES					HOLE SIZE REQUIRED	FASTENERS	
	SOFT- WOOD	HARD- WOOD	MASONRY* (CONCRETE, BRICK)	PLASTER BOARD AND PLASTER ON LATH†	PLASTER ON CINDER BLOCK, HOLLOW TILE, METAL LATH		SIZE AND TYPE	QUANTITY (NOTE 1)
139A	•					1/8 or No. 30	1-3/4 inch No. 14 FH tapping screw	4
		•					1-1/4 inch No. 14 FH tapping screw	
			•			1/2	1/4-20 by 1-1/2-inch FH machine screw in 1/4 by 1-1/4-inch expansion shield	
144D, 174A, and 178A	•					1/8 or No. 30	1-3/4 inch No. 14 FH tapping screw	7
		•					1-1/4 inch No. 14 FH tapping screw	
			•			1/2	1/4-20 by 1-1/2-inch FH machine screw in 1/4 by 1-1/4-inch expansion shield	
KS-19267, List 10 Auxiliary, B-196770 (Part of KS-19267 Shelf), and LP-480578 (Part of 19-type Shelf)				•		1/8 or No. 30	1-3/4 inch No. 14 FH tapping screw, secure in stud a minimum of 1 inch	6
					•	3/4	1/4- by 4-inch RH toggle bolt (Note 2)	
KS-19267, List 10 Auxiliary, B-196770 (Part of KS-19267 Shelf), and LP-480578 (Part of 19-type Shelf)	•					1/8 or No. 30	2-inch No. 14 RH wood screw	9
		•						
			•			5/8	5/16-18 by 2-3/4-inch RH machine screw P-182481 in 5/16 by 2-inch expansion shield	
				•		1/8 or No. 30	2-3/4 inch No. 14 RH wood screw (fas- tener must be imbedded in stud 1 inch)	
				•		1	5/16- by 4-inch RH toggle bolt (Note 2)	

\* When mounting on plastered masonry, install expansion shield below plastered surface by amount equal to thickness of plaster and use 1/2-inch longer machine screw than specified in Table.

† When mounting on plasterboard, plaster on lath, etc, fasteners must be embedded in stud at least 1 inch.

Note 1: Additional fasteners may be placed to ensure mounting.

Note 2: When using toggle bolts, cut off excess length.



COIN TELEPHONE STATIONS  
TOOLS, GAUGES, AND MATERIALS

1. GENERAL

1.01 This section covers the identification and use of those tools, gauges, and materials which may be required, in addition to those normally carried, to properly install, modify, or maintain coin collectors and coin telephone sets.

1.02 This section is reissued to add information on KS-20950, List 1 Cover Parking Tool and 146A Bias Margin Gauge.

1.03 The items listed in this section must be ordered separately as required.

2. TOOLS

<u>NAME</u>	<u>NO.</u>	<u>FIG.</u>	<u>USE</u>	<u>REMARKS</u>
Tool	139B	1	Leveling coins	Read calibrated scale at top of slider
Tool	265C	2	Burnishing contacts	Consists of a chuck having a rubber handle and a magazine. Chuck will hold any No. 266-type tool. Furnished with three No. 266C and six No. 266E tools
Tool	376A	3	Viewing contacts	A magnifying mirror
Tool	466A	4	Adjusting contact springs	
Tool	528A	5	Cleaning out key slots of locks	Consists of two implements in a leather holder. Each implement consists of a piece of music wire with handle
Tool (2 req'd)	641A	6	To facilitate mounting No. 5 dials	An aligning guide
Tool	710A	7	Removing damaged switch-hooks from corner-mounted coin collectors	A hardened steel bar
Tool	719A	8	Opening of door and face-plate assembly (panel phones); removing cover unit assembly (1A-, 1C-type)	
Orange Stick	KS-6320	—	Removing stuck coins; tripping hopper trigger	

## SECTION 506-100-103

<u>NAME</u>	<u>NO.</u>	<u>FIG.</u>	<u>USE</u>	<u>REMARKS</u>
Nylon Brush	KS-13786	—	Cleaning coin return	
Brush	KS-14164	—	Cleaning washer reject mechanism	
Tool	KS-14995, List 3	9	Trap and vane release test	
Releaser	KS-16750, L3	10	Removing dial finger wheel; resetting totalizer	
Spring Hook	TP-75503	11	Assembling spring on pull bucket	
Release Tool	P-248585	12	Releasing 27A "key snatcher" lock	
Sash Brush	No. 6	—	General cleaning	
Allen Wrenches	Assorted	—	Adjusting switchhook travel	
Center Punch	—	—	Removing and replacing pull bucket shaft	
Cold Chisel	1/2-in.	—	Removing plastic pull buckets	
Phillips Screw-driver	—	—	Adjusting coin relay	
Spirit Level	—	—	Vertical alignment of coin telephone set	
Spacer	P-12A745	13	Reducing upper housing vertical play	
Spacing Washer	P-297872	—	Reducing switchhook end play	Brass, .438 OD, .297 ID, .010 thk.
◆ Cover Parking Tool	KS-20950, L1	14	To mount cover unit assembly of 1A/1C/1E-type coin telephone set to corner of housing and mounting plate assembly	Permits trouble shooting without use of P11C cord
<b>3. GAUGES</b>				
Feeler Gauges	131A	15	Adjusting armature travel	

<u>NAME</u>	<u>NO.</u>	<u>FIG.</u>	<u>USE</u>	<u>REMARKS</u>
◆ Bias Margin Gauge	146A	16	Coin relay bias margin test	For use on 2-coil coin relay ◆
Bias Margin Gauge	146B	17	Coin relay bias margin test	For use on single-coil relay
Gauge	147A	18	Checking the restoring capability and contact pressure of the coin relay in prepay multislot coin collectors	When mounted on the horizontal portion of the operating arm in front of the stop lugs by the full depth of the slot in the long end, the gauge will exert a torque of $70 \pm 2$ gram-inches on the operating arm in a coin relay.
Gauge	178A	19	Setting the position of the operating arm on coin collectors	When mounted on the switch lever by the three slots in the side, the gauge will exert torques on the switch lever corresponding to pressures of min. 3, min. 5, and max. 7 grams, respectively, on the spring contacts
Gauge	178B	19	Same as 178A	Use with coin collectors having shaft-type switchhooks
Gauge	178B	19	Same as 178A	Use with coin collectors having pin-type switchhooks
<b>4. CORDS</b>				
Cord	P10B	20	Maintenance or testing of 236G and 1234G coin collectors with upper housing removed	
Cord	P11C	21	Maintenance or testing of single slot coin telephone sets with cover unit assembly removed or door and faceplate assembly opened (Also use with 235G and 1235G coin collectors)	
Cord	P5M	22	Maintenance or testing of 200-type coin collectors with upper housing removed	

## SECTION 506-100-103

<u>NAME</u>	<u>NO.</u>	<u>FIG.</u>	<u>USE</u>	<u>REMARKS</u>
<b>5. MATERIALS</b>				
Aluminum Oxide Cloth	No. 320	---	Smoothing rough spots on fork slot on 2-coil relay	
Antiseize Compound	KS-19094, L1 or L2	---	Lock and screw threads	L1 is pre-mixed; L2 must be mixed on site.
Cotton Twill Cloth	KS-2423	---	General cleaning	
Form	E-4914	23	Out-of-service label	Packaged in books of 5
Form	KS-7991	24	Out-of-service sign	
Grease	KS-14774, L1	---	General lubrication	
Lead Pencil	2B or Softer	---	Lubricating switchhook and coin release mechanism	
Paper	KS-16601, L1	---	Cleaning	
Paper Clip	---	---	Dial shorting	
Petroleum Spirits	KS-7860	---	Cleaning	<i>Warning: Highly flammable. Use safety precautions while using.</i>
Pipe Cleaners	---	---	Cleaning coin gauges	
Sealing Compound	6824	---	Sealing bias adjustment screw on coin relay	
Tinnerman Clips	C-29313-012-445 or C-3412-020-38	---	Upper and lower housing ground clips	





Fig. 1 - 139B Tool

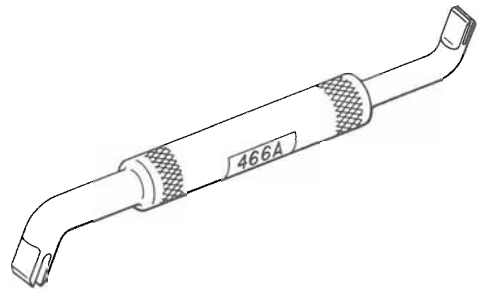


Fig. 4 - 466A Tool



Fig. 2 - 265C Tool



Fig. 5 - 528A Tool

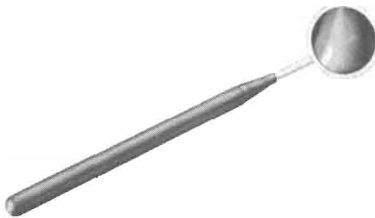


Fig. 3 - 367A Tool

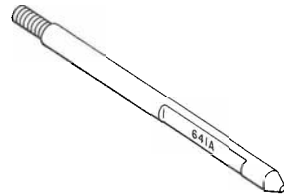


Fig. 6 - 641A Tool

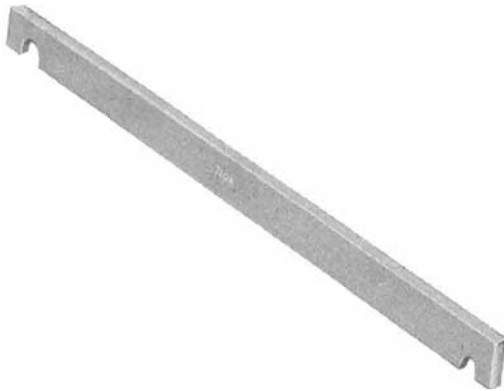


Fig. 7 – 710A Tool

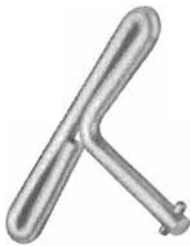


Fig. 8 – 719A Tool

MULTISLOT COIN COLLECTOR MAINTENANCE	SINGLE SLOT COIN TELEPHONE SET MAINTENANCE
INSPECT EXTERIOR Handset, Cords, Dial Cards: Instruction & No. Coin Release, Return Bucket	INSPECT EXTERIOR Handset, Cords, Dial Cards: Instruction & No. Coin Release, Return Bucket
COIN TESTS 5c, 10c, 25c Dial Tone, Coin Return Trouble Analysis	COIN TESTS 5c, 10c, 25c Dial Tone Coin Return On-Hook Coin Return Trouble Analysis
INSPECT INTERIOR Gauge, Connections Security Fasteners Housing, Contacts	INSPECT INTERIOR Chute Assembly Connections, Plugs Switchhook
COIN CHUTE Dirt, Corrosion	COIN RELAY Bias Margin, Trap, Vane
SWITCHHOOK Spring Pileups	RESISTANCE TESTS Loop, Ground
COIN RELAY Bias Margin, Trap, Vane	STATION WIRING Ground Connections Protector Booth Ground
RESISTANCE TESTS Loop, Ground	OPERATIONAL TESTS Coins Operator, Ring-Back
STATION WIRING Ground Connections Protector Booth Ground	INSPECT BOOTH Glass, Door, Lights Blower, Directories
OPERATIONAL TESTS Coins Operator, Ring-Back	KS-14995 L3 TOOL

Fig. 9 – KS-14995, List 3 Tool

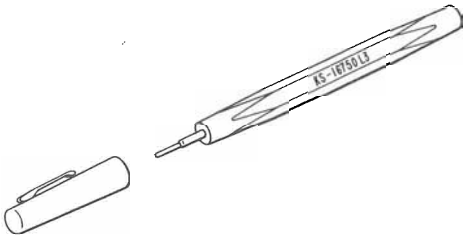


Fig. 10 – KS-16750, List 3 Releaser

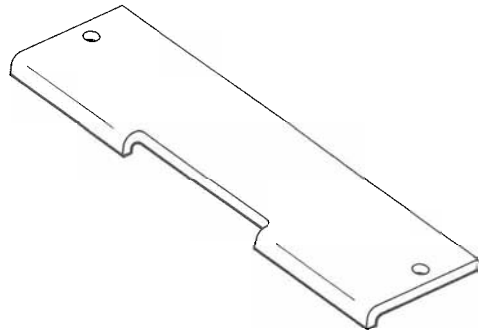


Fig. 13 – P-12A745 Spacer

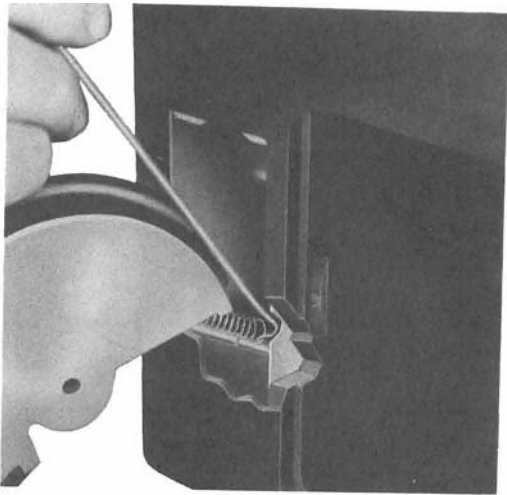


Fig. 11 – TP-75503 Spring Hook

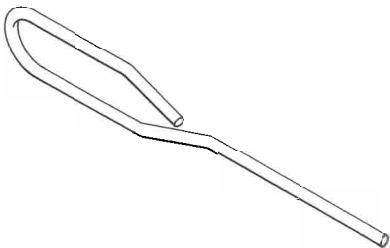


Fig. 12 – P-248585 Release Tool



◆ Fig. 14 – KS-20950, List 1 Cover Parking Tool ◆

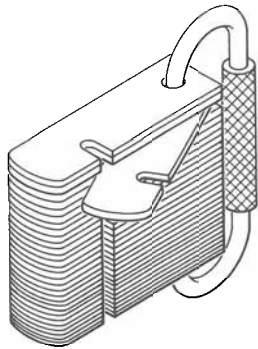


Fig. 15 – 131A Feeler Gauges

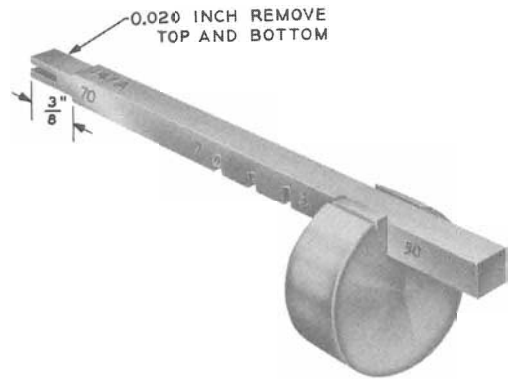


Fig. 18 – 147A Gauge



Fig. 16 – 146A Bias Margin Gauge



Fig. 17 – 146B Bias Margin Gauge

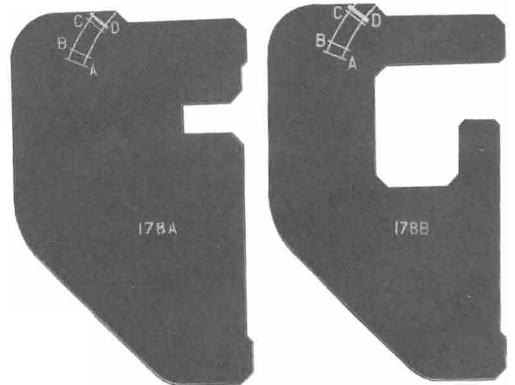


Fig. 19 – 178A and 178B Gauges



Fig. 20 – P10B Cord



Fig. 21 – P11C Cord

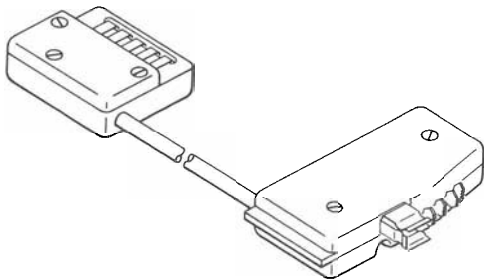


Fig. 22 – P5M Cord



Fig. 23 – E-4914 Form



Fig. 24 – KS-7991 Form, Rear View



## COIN TELEPHONE STATIONS

### COIN LEVEL DETECTOR

#### 1. GENERAL

**1.01** This section provides information on identification, installation, connections, operation, and maintenance of the coin level detector.

**1.02** Information in this section was formerly contained in Section 506-110-104 which is hereby canceled.

#### 2. IDENTIFICATION

**2.01** The coin level detector (CLD) is a device which provides a means for local or remote monitoring of the level of coins in the coin box of coin collectors and coin telephone sets with single coil relays.

**2.02** The components necessary to incorporate the CLD are furnished in three kits as follows:

(a) One D-180042 kit (Fig. 1) is required to modify each coin collector and each telephone set housing. The kit consists of a P-20F668 terminal board assembly, P-20F879 contact spring assembly with P-206518 hex nut (No. 8-32), a P-20F881 insulation strip, and a P-22F045 terminal board cover.

(b) One D-180110 kit (Fig. 2) is required to modify each coin box. The kit consists of a P-20F874 dual element sensor which clamps to the rear of the coin box.

(c) A 1E coin receptacle cover (Fig. 3) is also required for each coin box. The 1E cover is similar to the 1D (MD) cover except it is equipped with a contact stud.



*The 1E cover can be used with or without the CLD modification but the 1D cover cannot, consequently the 1D is rated MD.*

#### 3. INSTALLATION

**3.01** The following tools are necessary to perform the modification:

- 743A drilling template (Fig. 4)
- 1/4-inch drill\*
- Small C-clamp (2- to 3-inch)
- Flat file

\*Telephone housings equipped with KS-19277 locks pose an interference problem with the 1/4-inch drill. The shank of the drill can be no greater than 0.175-inch to permit drilling adjacent to the bolt fastener.

#### Modification of Coin Box

**3.02** Replace the 1D coin box cover with the 1E cover (Fig. 5).

**3.03** Clip the dual element sensor on the rear of the coin box (Fig. 5)

#### Modification of Coin Collectors and Coin Telephone Sets

**3.04** Install D-180042 kit in 200- and 1200-type coin collectors with single coil relays, and 1A/1C coin telephone sets as follows:

**Note:** Totalizer and coin chassis must be removed from 1A/1C coin telephone sets. Refer to 3.05(1) for removal.

- (1) Remove the RH screw which secures the right front of the 1B rail to the lower housing.
- (2) Install the 743A template against the right side of the base as shown in Fig. 6 and secure it with the screw removed in (1).

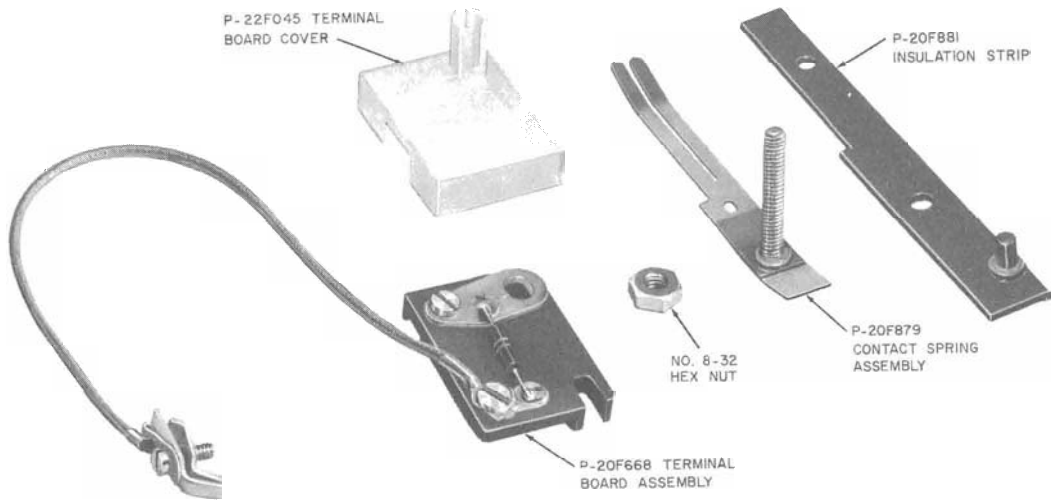


Fig. 1—D-180042 Kit

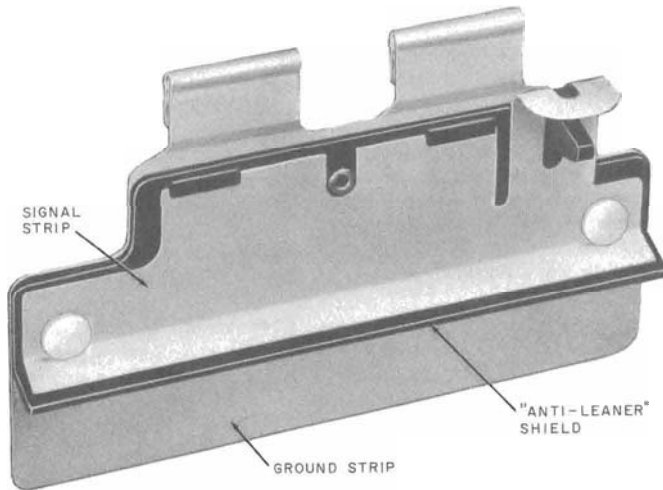


Fig. 2—D-180110 Kit



**Note:** The positioning tab of the template must be inserted in the coin leveling hole.

- (3) Clamp the 1B rail to the housing during the drilling operation using the C-clamp described in 3.01.



**Cover the coin relay, hopper, and return chute with a piece of plastic, cloth, or other suitable material to prevent metal drill shavings from falling into these mechanisms.**

- (4) Using the 1/4-inch drill described in 3.01, drill the hole through the housing.
- (5) Remove the screw and drilling template.
- (6) Using the 1/4-inch drill, enlarge the hole where the screw was removed.
- (7) Using a suitable file, remove all burrs from the 1B rail.
- (8) Remove the C-clamp.
- (9) Remove all drill chips from the telephone set.
- (10) Position the insulation strip against the 1B rail with the boss on the strip in the 1/4-inch mounting screw hole (Fig. 7). Hold the contact springs in place with the stud extending through the hole drilled in the base, and fasten the terminal board in place on the housing base with the nut provided (Fig. 8).
- (11) Reinstall totalizer and coin chassis in 1A/1C coin telephone sets [See 3.05(7)].

### 3.05 Install D-180042 kit in 2A/2C coin telephone sets as follows:

- (1) Remove totalizer assembly and coin chassis as follows:
- (a) Disconnect P2 from J2 and remove coin chute totalizer assembly.
- (b) Disconnect (BK) and (Y) leads from coin relay and carefully pull leads through guide hole in hopper.
- (c) Loosen chassis mounting captive screw.

- (d) Pull chassis out at bottom, slide down, and remove.
- (2) Using the contact spring mounting hole as a guide (Fig. 9) drill through coin rail with 1/4-inch drill.
- (3) Remove the RH screw which secures the right front of the 1B rail to the housing assembly.
- (4) Using the 1/4-inch drill, enlarge the hole where the screw was removed.
- (5) Using a suitable file, remove all burrs from the 1B rail.
- (6) Remove all drill chips from the telephone set.
- (7) Install totalizer assembly and coin chassis as follows:
- (a) Install coin chassis using reverse of procedure (1).

**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.

- (b) 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.
- (c) Install totalizer and connect P2 to J2. Ensure that green connector on top of totalizer is connected to the PP position.
- (8) Position the insulation strip against the 1B rail with the boss on the strip in the 1/4-inch mounting screw hole (Fig. 7). Hold the contact springs in place with the stud extending through the hole drilled in the base, and fasten the terminal board in place on the housing base with the nut provided (Fig. 8).

### Replacing Coin Box

- 3.06 Replace existing coin box with a modified coin box (Fig. 5).

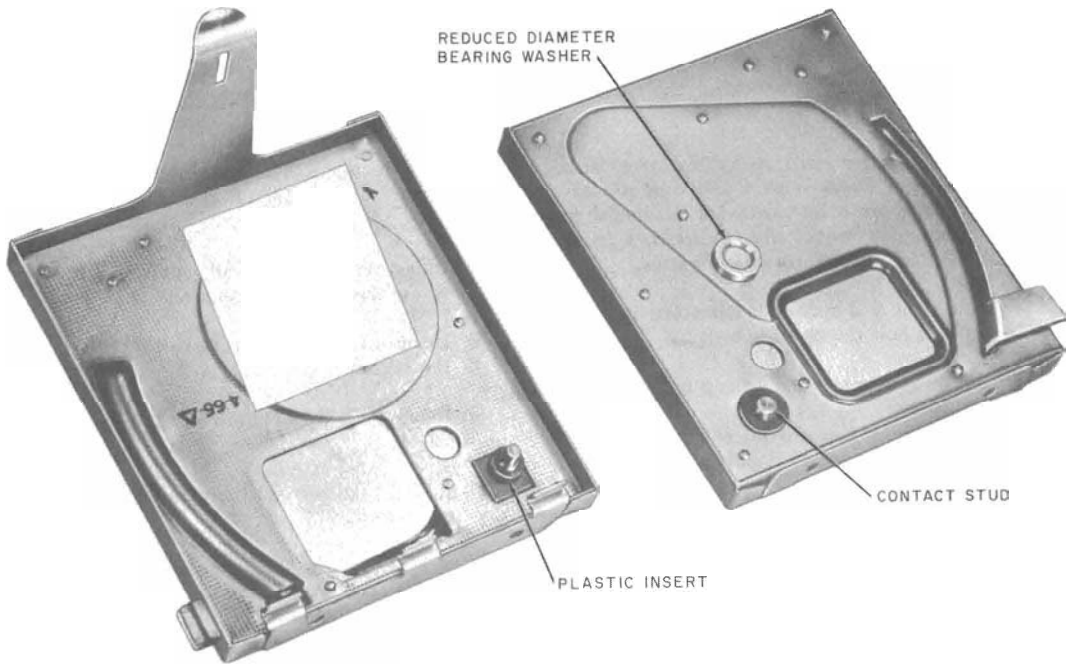


Fig. 3—IE Cover



Fig. 4—743A Drilling Template

#### 4. CONNECTIONS

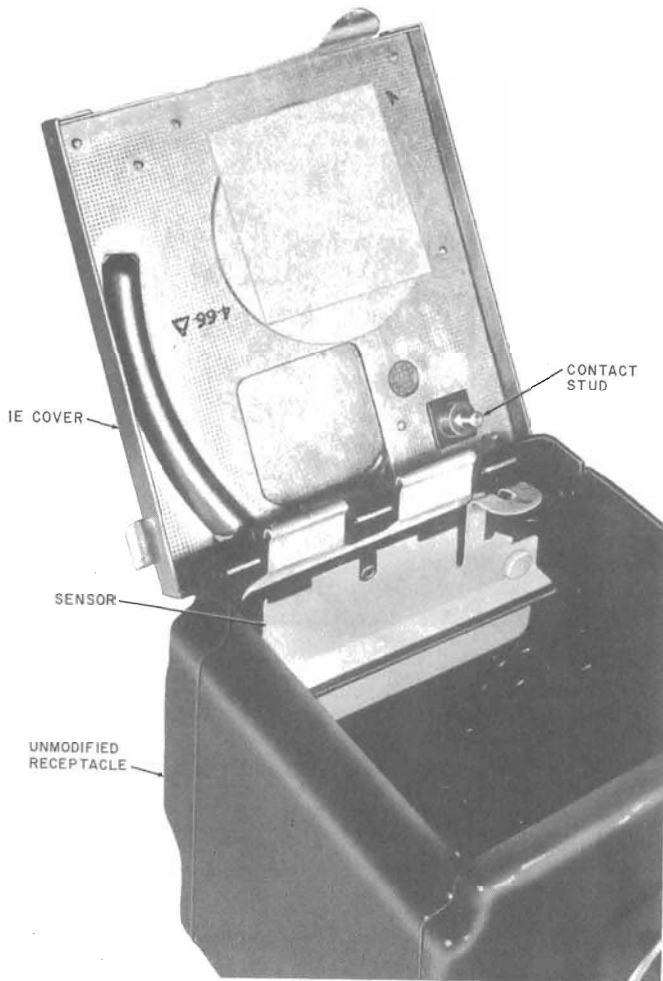
##### Remote Monitoring (Central Office Line Insulation Test)

4.01 Remove coin relay cover.

4.02 The lead provided with the D-180042 kit is equipped with a screw clamp to facilitate fastening to the ground tab (P-10E795) on the coin relay (Fig. 8). Care must be taken not to alter the adjustment of the coin relay by bending the spring member. Connect the spade tip of the lead to the front terminal on the terminal board.

##### Local Monitoring

4.03 Connect a lead from the rear terminal of the terminal board to the indicating device



**Fig. 5—Modified Coin Box**

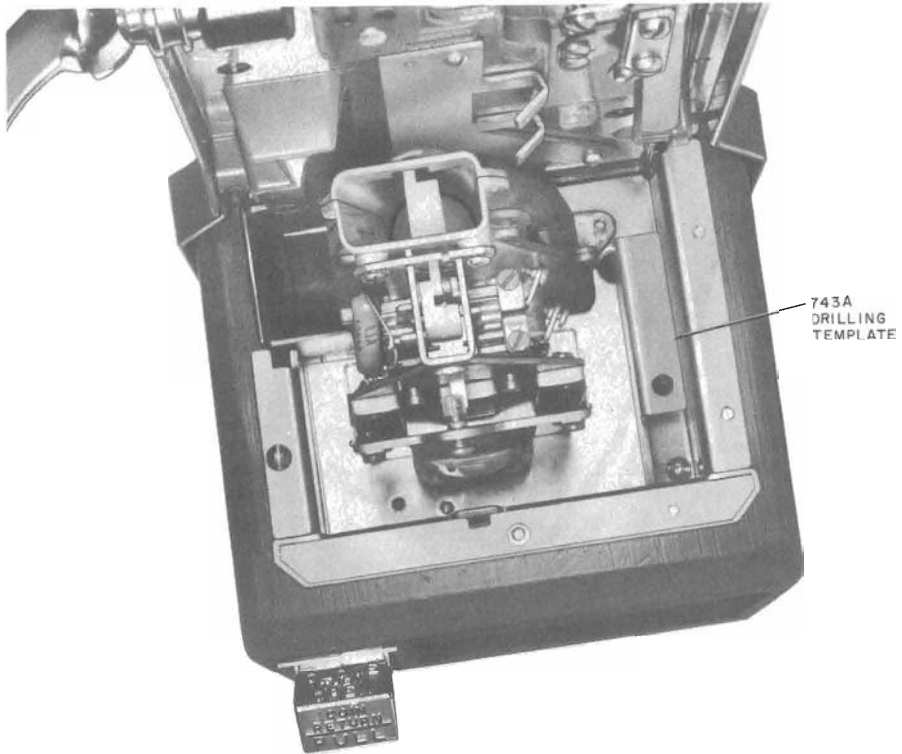
through existing cable entries in the rear of the telephone housing.

**4.04** Refer to Fig. 10 for connection diagram.

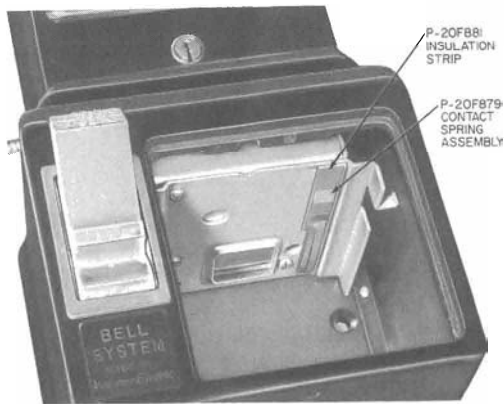
**4.05** Install coin relay cover and P-22F045 terminal board cover (Fig. 11).

## **5. OPERATION**

**5.01** The dual element sensor is constructed of an insulated mounting plate with two conducting surfaces. One surface is grounded through the coin receptacle cover by spring clip contacts. The other conducting surface presses against the insulated stud on the cover and carries



**Fig. 6—Installation of Drilling Template**

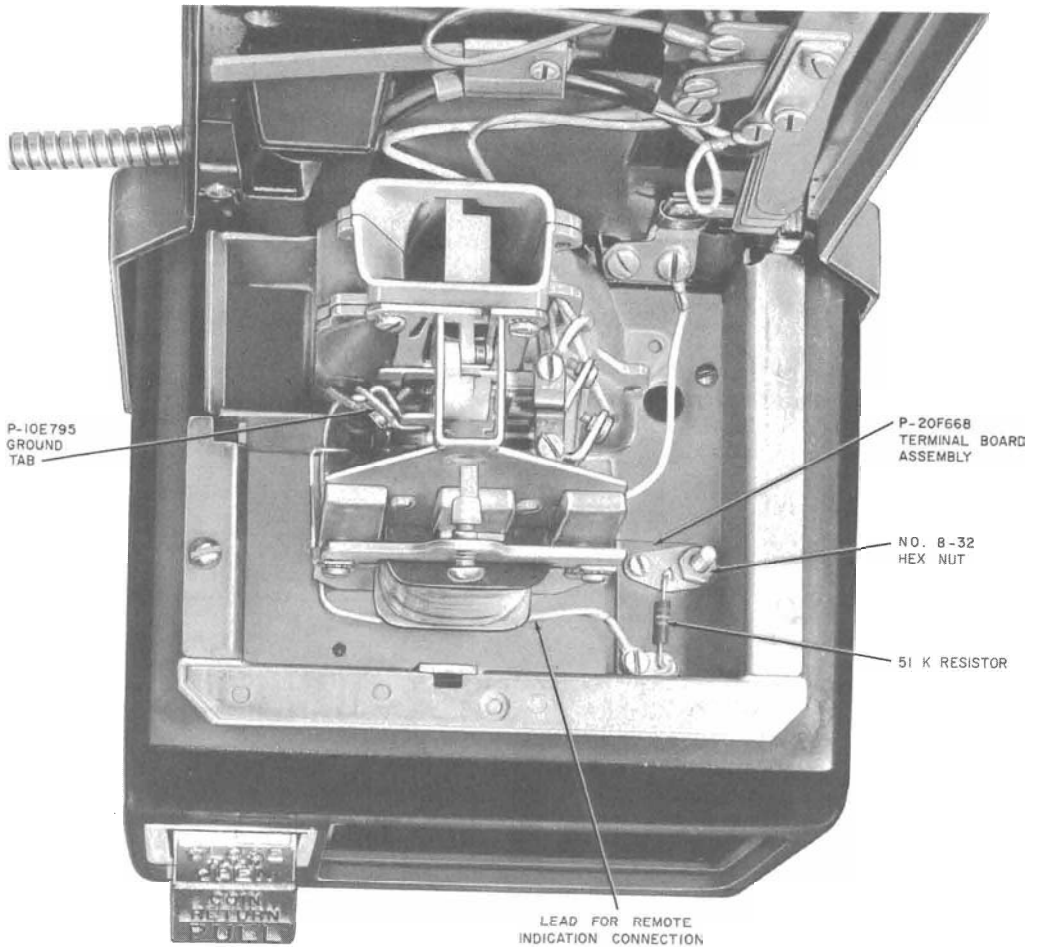


**Fig. 7—Installation of Insulation Strip and Contact Spring Assembly**

a coin level signal through the spring contacts (mounted on the receptacle rail) to the terminal board on the base of the set housing.

**5.02** Coins accumulating in the cash box will complete a circuit between the conducting surfaces of the sensor. A ledge between the conducting surfaces protrudes into the coin box and prevents coins from leaning against the sensor and prematurely indicating the coin level accumulation. The sensor is designed and physically mounted to provide an indication to local or remote monitors when the coin level reaches approximately 70 percent of the coin box capacity.

**5.03** For local monitoring, a locally supplied lead is connected to the terminal board to complete the circuit to a visual indicator. Alternately, a supplied lead and clamp assembly complete the circuit, through a 51K resistor to the coin relay,



**Fig. 8—Installation of Terminal Board Assembly**

to permit central office monitoring of the coin level circuit with line insulation test equipment. To prevent degradation of service, the 51K resistor is shorted by the hopper trigger contacts when the telephone is in use.

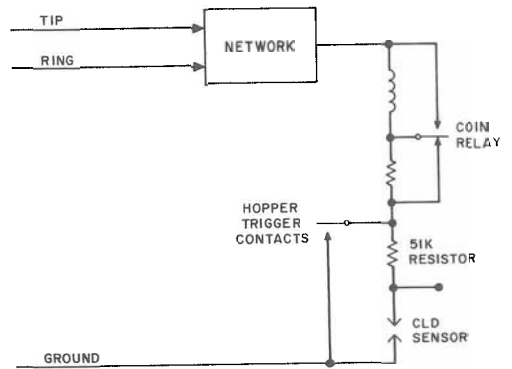
## **6. MAINTENANCE**

**6.01** Inspect for dirty spring contacts and positive ground contact between the sensor and the

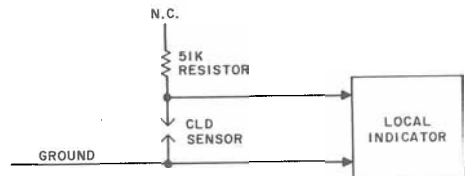
coin box cover. The insulated stud on the cover should be free of dirt and make a wiping contact with the upper plate of the sensor in the coin box. The top of the stud should make a wiping contact with the spring contact on the 1B rail when the coin box is installed in the vault.



Fig. 9—Location of Contact Spring Mounting Hole in 2A/2C Telephone Sets



REMOTE MONITORING—CONNECTIONS



LOCAL MONITORING—CONNECTIONS

Fig. 10—Coin Level Detector—Connections

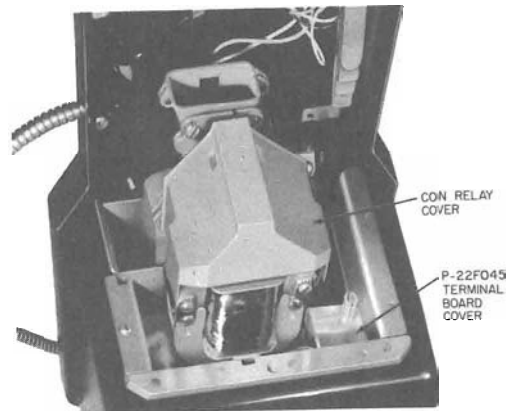


Fig. 11—Installation of Coin Relay Cover and Terminal Board Cover

## COIN TELEPHONE STATIONS

### DIAL TONE FIRST—MULTISLOT

#### 1. GENERAL

**1.01** This section covers the installation and testing of Dial Tone First and Automatic Nickel Local Overtime Features.

**1.02** Information in this section was previously contained in Section 506-110-110 which is hereby canceled.

**1.03** This section provides instructions for installing a D-180352 Kit (Fig. 1) which is an electromagnet replacement for the P-349747 electromagnet on P-20A125 through P-20A130 and P-340222 coin chute and gong assemblies. Modification information is also included for the 1200-type coin collectors.

**1.04** *Test A—Dial Tone First:* This test verifies proper operation of the coin collector after central office and station set conversion has been completed.

**1.05** *Test B—Automatic Nickel Local Overtime:* This test verifies proper operation of the automatic nickel local overtime feature (where provided) upon completion of the dial tone first modification.

**1.06** All Plant Series sections for the 190-, 200-, and 1200-type coin collectors apply unless otherwise specified in this section.

#### 2. APPARATUS

**2.01** The following apparatus is used in this modification procedure:

- (a) 446K diode
- (b) 131A gauge or equivalent
- (c) D-180352 Kit of Parts (required only with automatic nickel local overtime feature).

#### 3. MODIFICATION

##### DIAL TONE FIRST

**3.01** Open the set to obtain access to coin chute and gong assembly.

**3.02** Remove the dial shorting feature from the following sets as directed:

(a) 191, 195, 196, 197 GT/GNT and 200 series coin collectors (except 235-type) — Disconnect, tape, and store the slate lead from terminal 1 of coin relay.

(b) 191, 195, 196, 197 GT/GS coin collectors—Disconnect, tape, and store the slate lead from terminal X on the backplate assembly.

(c) 191, 195, 196, and 197 GNS coin collectors—Disconnect, tape, and store the lead from terminal BKK on backplate assembly.

(d) For 1234G coin collectors—Disconnect, tape, and store the yellow lead from terminal 1 of coin relay.

(e) 235G and 1235G coin collectors—Disconnect, tape, and store the red lead from terminal 1 of coin relay.

*Note:* 191, 195, 196, and 197 G/GN sets do not require the modification covered in 3.02.

**3.03** Install 446K diode between terminals A and E on coin chute terminal board (Fig. 2 and 3).

*Caution: The polarity of the diode must be as shown in Fig. 3. Diode can be damaged if leads are stressed near the case. Leads should be supported close to the case during lead forming and installation to prevent damage.*

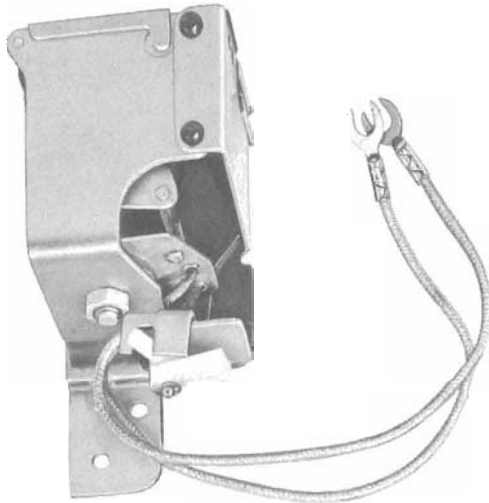
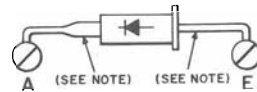


Fig. 1—D-180352 Kit



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

Fig. 3—Polarity of 446K Diode

**AUTOMATIC NICKEL LOCAL OVERTIME FEATURE**

**3.04** If automatic nickel local overtime feature is provided:

- (a) On P-20A125 through P-20A130 and P-340222 coin chute and gong assemblies, disconnect leads from terminals A and E and remove P-349747 electromagnet (Fig. 4).
- (b) On P-340222 assembly, it will be necessary to remove P-347212 shield (Fig. 4) as follows:

- (1) Bend the tab outward on the left side of the shield.
- (2) Break the right side of the shield away from rivet by bending the shield in a repeated upward and downward motion.

(c) Install D-180352 Kit (Fig. 1 and 5) on the coin chute and gong assembly in the same position in which the electromagnet was located. Secure with existing hardware.

(d) Connect the leads to terminals A and E.

(e) After installing the kit, the following requirements must be met:

- (1) With the armature in the normal position (unoperated), the clearance between the lever and locking latch tab shall be .020 minimum and .060 maximum (Fig. 6). The locking latch tab is adjusted by bending only the top portion of the latch to meet this gap requirement.

- (2) With the coin chute mounted in the normal position and the armature fully operated, the locking latch tab shall clear the holding latch tab by .060 minimum (Fig. 7).

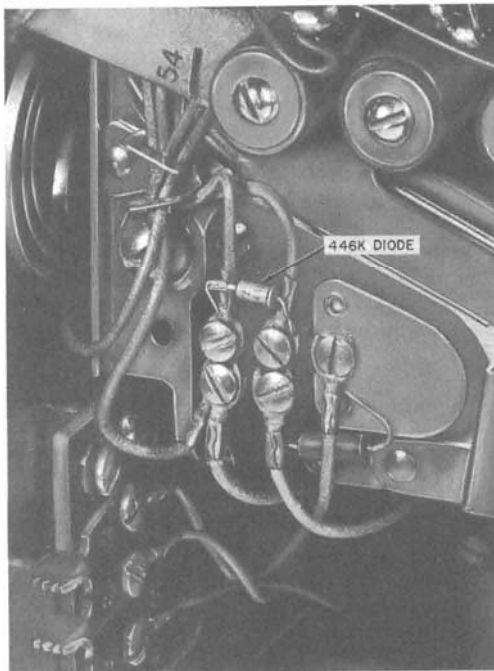


Fig. 2—Installation of 446K Diode



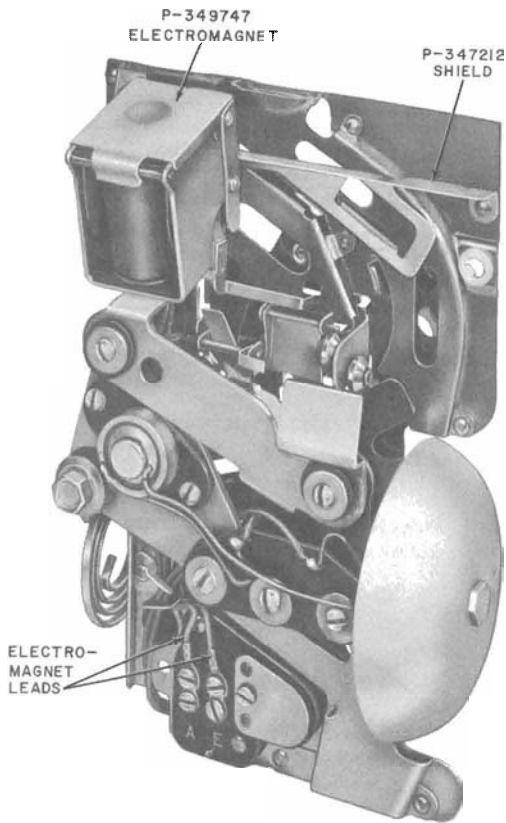


Fig. 4—Coin Chute and Gong Assembly Before Modification

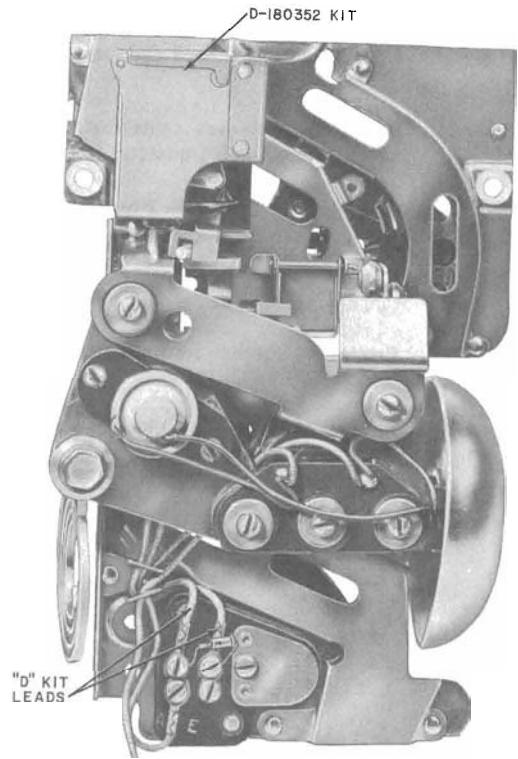


Fig. 5—Coin Chute and Gong Assembly-After Modification

4. TESTS

4.01 *Method*  
STEP

ACTION

VERIFICATION

A. Dial Tone First

- |   |                                     |                                      |
|---|-------------------------------------|--------------------------------------|
| 1 | Lift handset.                       | Dial tone is present.                |
| 2 | Deposit nickel.                     | Nickel does not return (See Note 1). |
| 3 | Slowly operate coin release.        | Nickel drops into return chute.      |
| 4 | Deposit nickel, depress switchhook. | Nickel returned.                     |

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STEP	ACTION	VERIFICATION
5	Release switchhook and dial any digit except "0" or "1".	Dial tone breaks (See Note 2).
6	Depress and release switchhook, deposit 2 nickels, 1 dime, and 1 quarter.	Coins pass through chute, strike bells and gong and are held at coin relay.
7	Dial test line code. (See Note 3.)	Audible ringing heard in handset.
8	Hang up handset.	Coins return.
9	Call operator, deposit nickel, dime and quarter.	Coins identified by operator.
10	Request operator to return coins.	Coins returned.
11	Request operator to call back. (Hang up handset)	Ringer operates at maximum volume.
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).

### B. Automatic Nickel Local Overtime

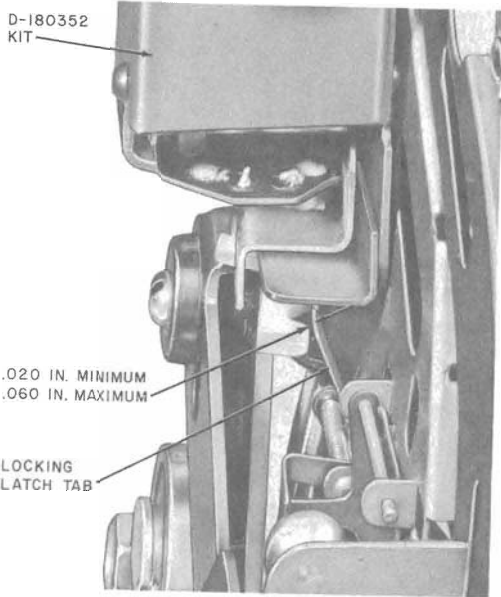
1	Lift handset and deposit nickel.	Nickel should not be returned (See Note 1).
2	Dial operator.	Nickel should pass through the chute, strike coin signal bell, and hold at coin relay. Nickel is returned when operator answers (See Note 3).
3	Replace handset.	

**Note 1:** Failure to verify Step 2 (Test A) and Step 1 (Test B)—446K diode is reversed or defective.

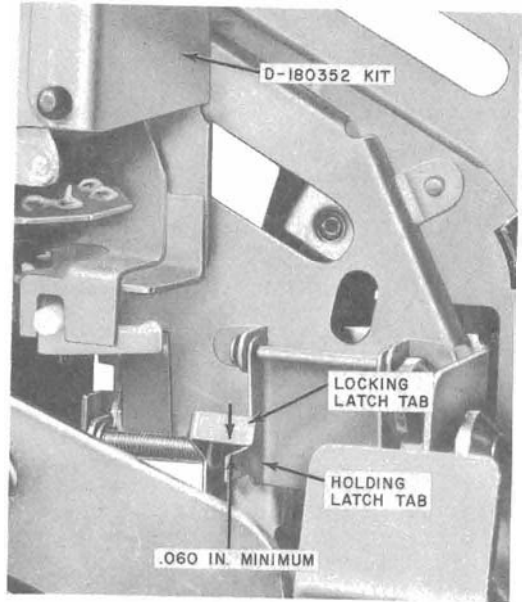
**Note 2:** Failure to verify Step 4 (Test A)—lead on terminal 1 on coin relay is not insulated and stored or defective dial.

**Note 3:** The test line code should be a number that requires deposit for connection and a number that will *not* be answered, otherwise the coins will be collected.

**Note 4:** Failure to verify Step 2 (Test B)—defective chute or electromagnet.



**Fig. 6—Clearance Between "D" Kit Lever and Locking Latch Tab**



**Fig. 7—Clearance Between Locking Latch Tab and Holding Latch Tab**



## COIN TELEPHONE STATIONS

### COIN HOPPER VANE REPLACEMENT

#### 1. GENERAL

1.01 This section provides identification and installation information for field replacement of the coin vane.

#### 2. IDENTIFICATION

2.01 The 840360572 replaceable coin vane (Fig. 1) is a part of D-180410 Kit of Parts.

2.02 This replaceable vane can be installed in all coin collectors and coin telephone sets having single-coil coin relays.

#### 3. INSTALLATION

3.01 Remove upper housing, cover unit assembly, or open door and faceplate assembly to obtain access to coin relay.

3.02 With single slot coin telephone sets, remove coin chute-totalizer assembly, or IAA chute, and return chute assembly.

3.03 To remove coin relay:

- (1) Remove dust cover.
- (2) Tag for later reference; then, disconnect leads from terminals G and 3 of coin relay.
- (3) Remove four mounting screws (one on each side and two at top-front).
- (4) Slide relay forward to clear trap and vane and lift upward.

3.04 To remove coin trap:

- (1) Move vane to right (Fig. 2).
- (2) Remove trap pin by sliding vertical portion over boss on front of hopper and sliding to the right.

- (3) Turn coin trap sideways and remove through opening. Handle trap lever spring carefully.

3.05 To remove old coin vane:



*Do not drop particles into coin box or coin return. Stuff a cloth or equivalent in the return chute during modification.*

- (1) With long nose pliers and screwdriver, break out old damaged vane *using caution to avoid injury.*

3.06 To install new vane in hopper:

- (1) Refer to Fig. 1 and carefully break handle off new 840360572 vane. This handle serves as the new hinge pin.
- (2) Position vane in hopper (Fig. 3) through left side opening and grasp with long nose pliers (Fig. 4).
- (3) Insert pin (Fig. 4) through hopper housing and vane until indentations on pin snap in place in vane (Fig. 5). Ensure that vane moves freely.

3.07 To install coin trap and associated parts:

*Note:* If trap-lever spring becomes damaged, use a new P-10E702 spring (Fig. 2).

- (1) Place trap lever and spring on a flat surface (Fig. 6).
- (2) Use a KS-6320 orange stick to bend trap lever spring around center bar of trap lever (Fig. 6 and 7)

*Caution: Avoid distorting trap lever spring during bending and inserting operations.*

- (3) Partially insert trap pin into hole in hopper

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- (4) Place trap lever on trap pin (Fig. 8)
- (5) Insert coin trap in hopper and engage pin in trap (Fig. 9)

**Caution:** *Be sure that trap lever spring is between trap pin and hopper (Fig. 10).*

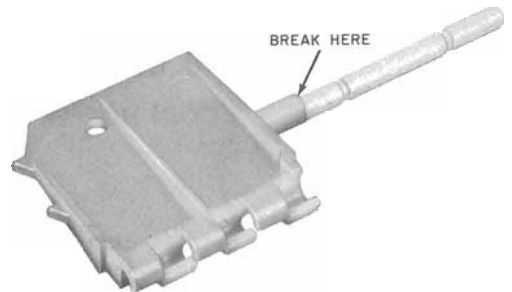
- (6) Push trap pin into position.

### 3.08 To install coin relay:

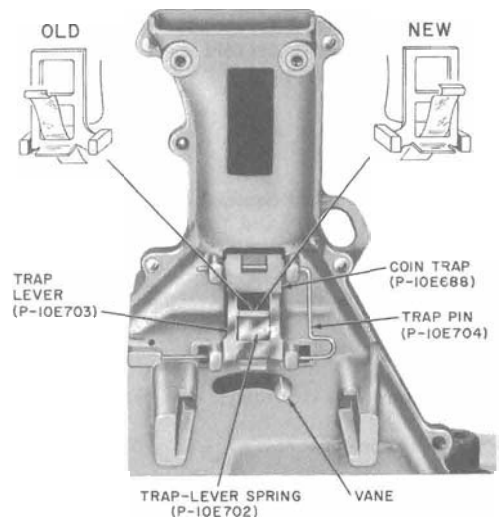
- (1) Move vane to right.
- (2) With trigger tripped, place relay on hopper.
- (3) Slide relay back until trigger enters opening in hopper and trap-lever tab enters slot in selector card (Fig. 11).
- (4) Close armature manually by pressing downward on ear on left side of selector card.
- (5) Slide relay back, vane stem should enter hole in cam and mounting screw holes should line up.
- (6) Replace mounting screws.
- (7) Trigger should have some end play and armature, trap, and vane should operate and release without binding.
- (8) If trigger binds, loosen upper mounting screws.
- (9) If trigger is free with upper mounting screws loose, retighten screws evenly.
- (10) Replace relay if trigger still binds.
- (11) Connect the two leads to terminals G and 3 on coin relay.

**3.09** With single slot coin telephone sets, install return chute assembly and coin chute-totalizer assembly or 1AA chute.

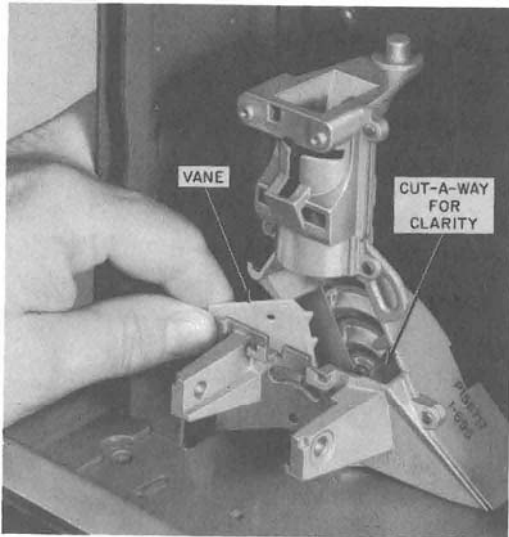
**3.10** Close door and faceplate assembly, install cover unit assembly, or install upper housing.



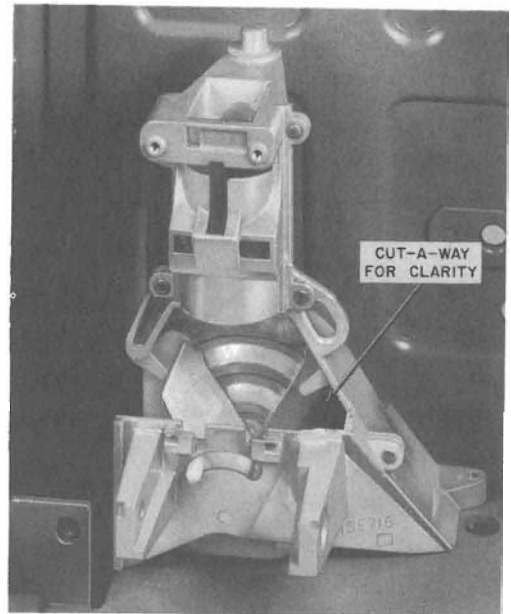
**Fig. 1—840360572 Replaceable Coin Vane**



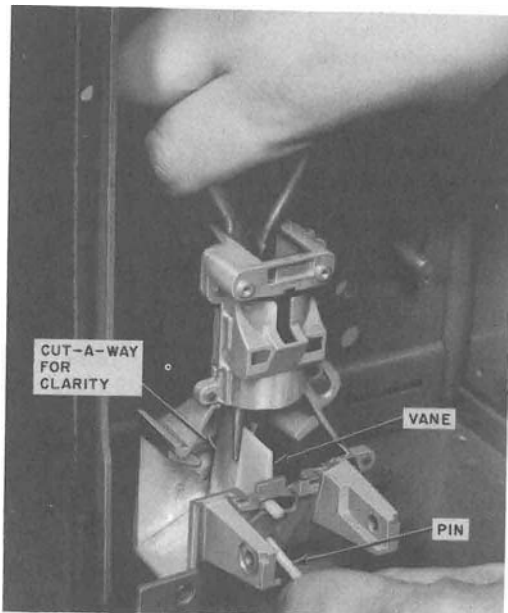
**Fig. 2—Trap Lever Spring and Trap Lever Assembled**



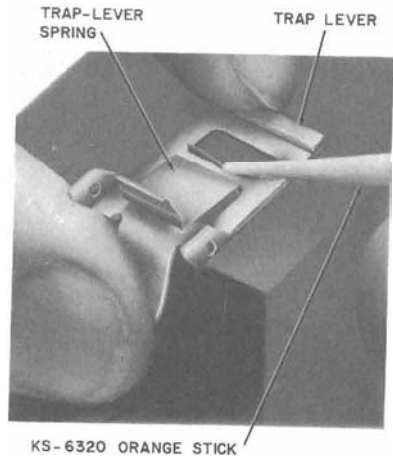
**Fig. 3—Inserting Vane**



**Fig. 5—Vane Installed**



**Fig. 4—Installing Pin in Vane**



**Fig. 6—Bending Trap Lever Spring**

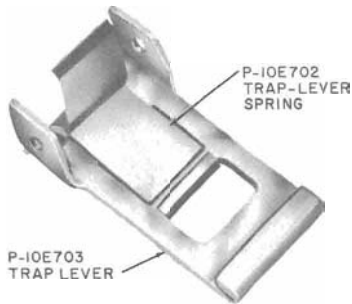


Fig. 7—Trap Lever Spring Assembled on Trap Lever

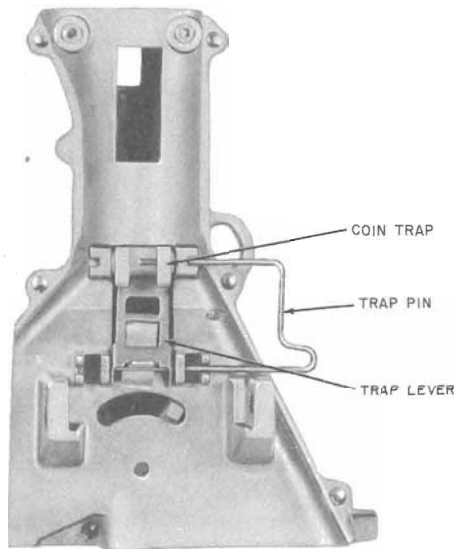


Fig. 9—Placing Coin Trap on Hopper (Typical)

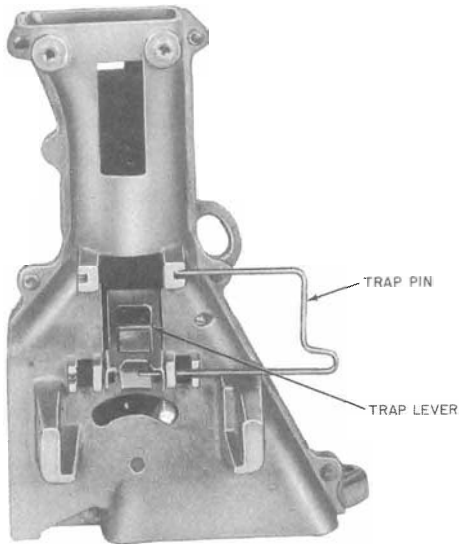


Fig. 8—Placing Trap Lever Pin on Hopper (Typical)

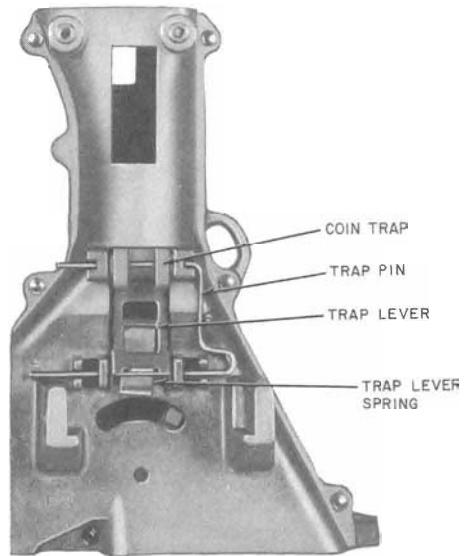


Fig. 10—Trap Lever Spring Under Trap Pin (Typical)



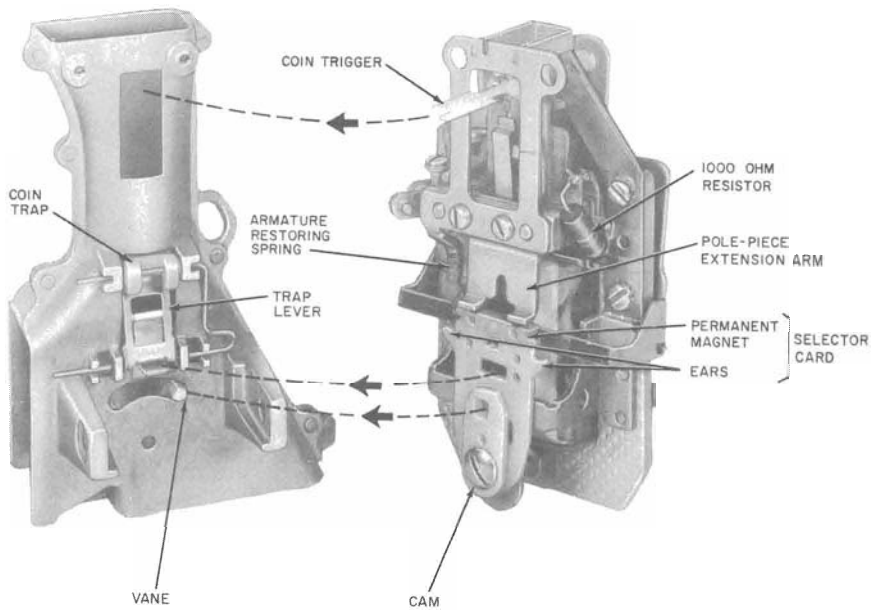


Fig. 11—Coin Hopper and Rear View of Coin Relay (Typical)



## COIN TEST LINE CIRCUIT

### 1. GENERAL

**1.01** The Coin Station Test line is usable on coin lines *not* equipped with dial long line units. It allows the installation or repair forces to make the following operational tests without tying up local test desk facilities or requiring services for an operator:

- Coin Detection and Ground Removal (single slot sets)
- Ground and Loop Resistance
- Loop Leakage
- Coin Collect
- Coin Return
- Coin Relay Operating Time

**1.02** The test line should be used in conjunction with the 8 or 10 step coin station routine outlined in Issue 2 of the Coin Maintenance Check booklet or Section 506-900-503, Issue 2. Troubles listed under *failures* in the coin test line procedure refer to the Trouble Analysis Tables in Issue 2 of the Booklet or Section 506-900-503, Issue 2, i.e. (B-1) indicates Table B, trouble 1.

**1.03** All tests provided by the test line may be made at coin stations having a single-coil coin relay.

**1.04** Tests are based on an initial rate of ten cents, when called for. A nickel deposit is required when making the Coin Return test except with single slot sets in coin first (CF) mode.

**1.05** Tests should be made in a sequential manner as shown in the Test Line Procedure. Tests may be repeated by dialing the assigned digit when the test line is in the "Test Selection Mode" (interrupted dial tone). Once the Relay Time test has been dialed (digit 5), the test can be recycled as often as necessary by tripping hopper trigger or redepositing the initial rate. The Coin Detection

and Ground Removal tests require disconnect and reseizure of the test line if retest is desired.

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

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

- Alternating high and low tone (Tone C)—requires deposit of coin or operation of hopper trigger.
- Steady high tone (hang-up tone)—request to restore handset to on-hook condition. In some tests high tone replaces tone C upon deposit of coin or operation of trigger.
- Interrupted dial tone (test selection tone)—proper digit should be dialed (2 through 5) depending on test desired.

**1.08** Test results are returned to the craftsman in the form of coded beeps or rings which are repeated three times i.e., 1 beep repeated 3 times. When called for in the sequence, the handset should be taken off-hook before the 3rd signal or the test line will disconnect.

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

### 2. PREPARATION

**2.01** The following apparatus is required:

- P5M cord (Fig. 1)—Used to connect upper housing to lower housing in 200-type sets with transfer contacts
- P10B cord—Used to connect upper housing to lower housing in 236 and 1234 sets
- P11C cord—Used to connect cover unit assembly or door and faceplate assembly to

## SECTION 506-100-130

coin chassis in 235-, 1235-, 1A/1C-, or 2A/2C-type sets

- KS-20950, L1 parking tool (Fig. 2)—Used to hang cover unit assembly of 1A/1C-type set on side of housing, eliminating the need for a P11C cord
- 146B bias margin gauge—Collect and Return Test
- 1011B or 1013A hand test set—Connect to receiver circuit when upper housing or cover unit assembly is on floor or to verify coin signals on 1A/1C- and 2A/2C-type sets
- KS-14995, L3 tool—Placed between coin chute and hopper in single slot sets during Collect test to prevent collection of coins (Fig. 3)
- Two dimes, one nickel, one quarter

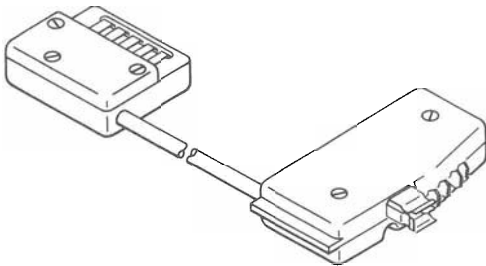


Fig. 1—P5M Cord

### 2.02 Prepare coin station as follows:

- (1) Remove upper housing of 200-type sets, cover unit assembly of 1A/1C-type sets, or open door and faceplate assembly of 2A/2C- and 235/1235-type sets.
- (2) If P11C cord is used, invert handset on switchhook of 1A/1C-type sets to prevent armored cord pushing handset off-hook when cover unit assembly is set down.

- (3) Where possible, place upper housing or cover unit assembly on level surface in a



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

position that will permit deposit, dialing, and handset removal. If upper housing or cover unit assembly must be placed on floor it may be necessary to connect hand test set leads to receiver circuit on dial and housing assembly and use in lieu of handset when making tests.

- (4) Connect upper housing, cover unit assembly, or door to lower housing or chassis using proper cord (2.01).
- (5) When testing 1C- or 2C-type sets, ensure that totalizer connector (PP-DTF) or CF-DTF mode switch, is in the proper position.

## 3. COIN TEST LINE PROCEDURE

- 3.01 Perform test per following flow charts:

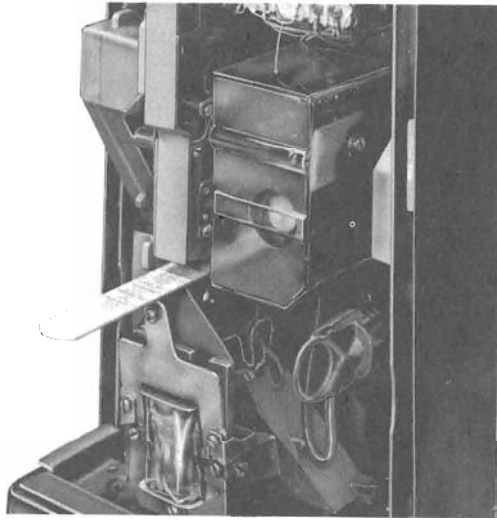


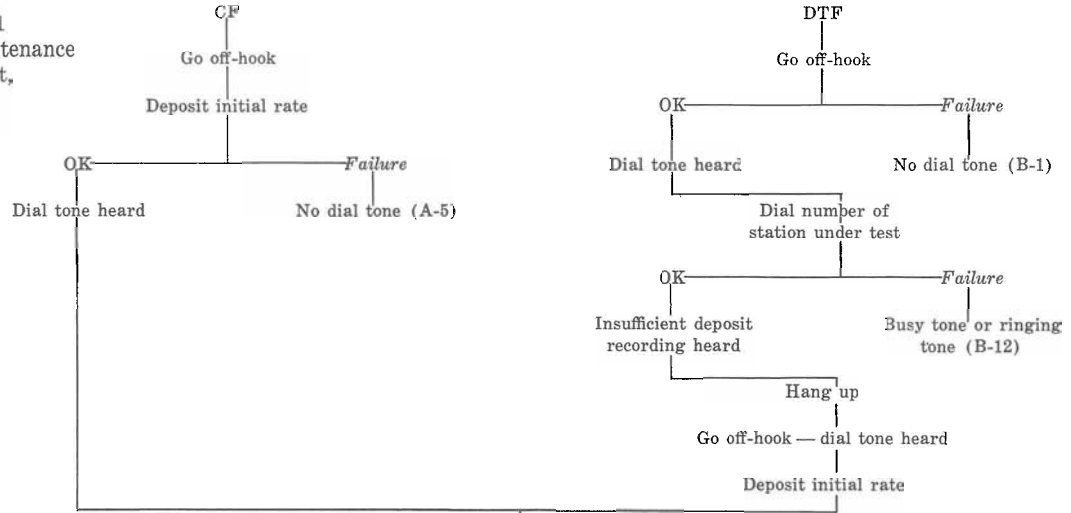
Fig. 3—KS-14993, List 3 Tool—In Position for Collect Test

**LEGEND**

CF — Coin First  
 DTF — Dial Tone First  
 (B-1) — Table B,  
 Trouble No. 1  
 In Coin Maintenance  
 Check Booklet,  
 Issue 2  
 (Typical)

**MULTISLOT COIN COLLECTORS**

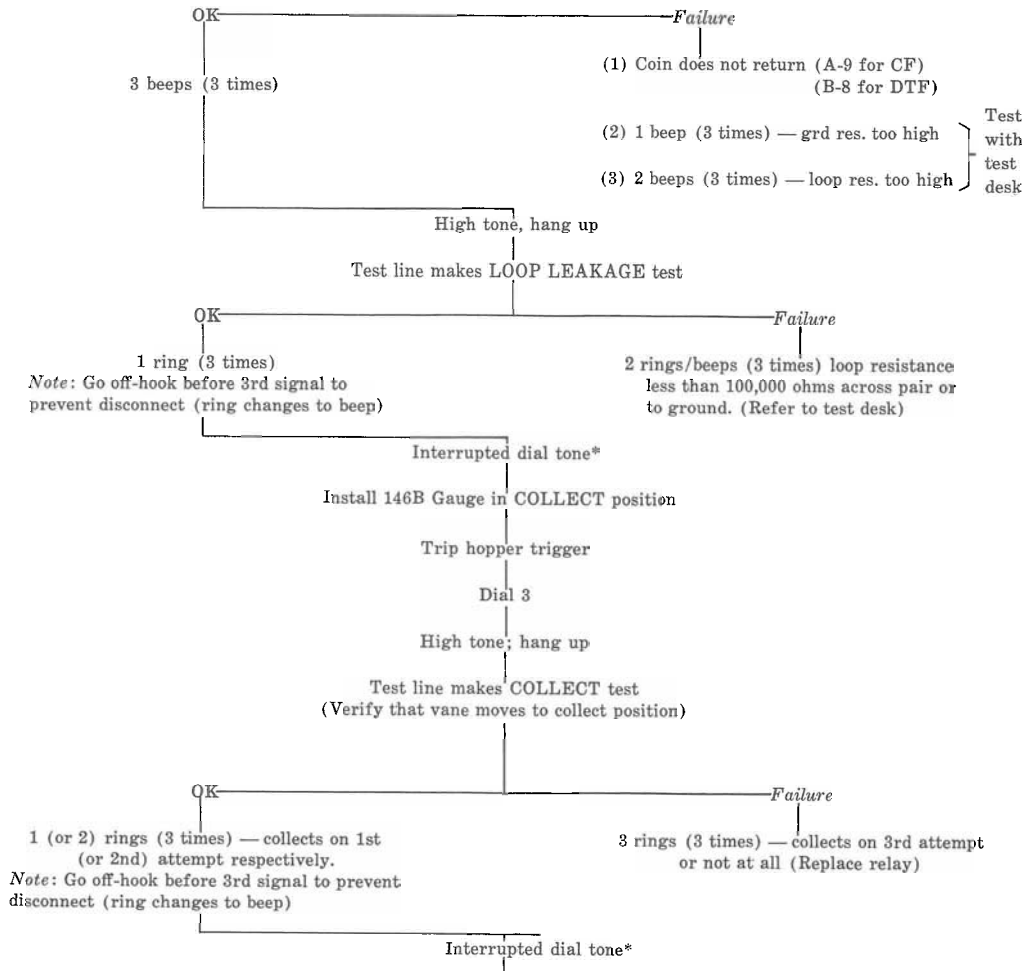
**COIN  
 DETECTION**



**GROUND & LOOP  
 RESISTANCE AND  
 LOOP LEAKAGE TESTS**

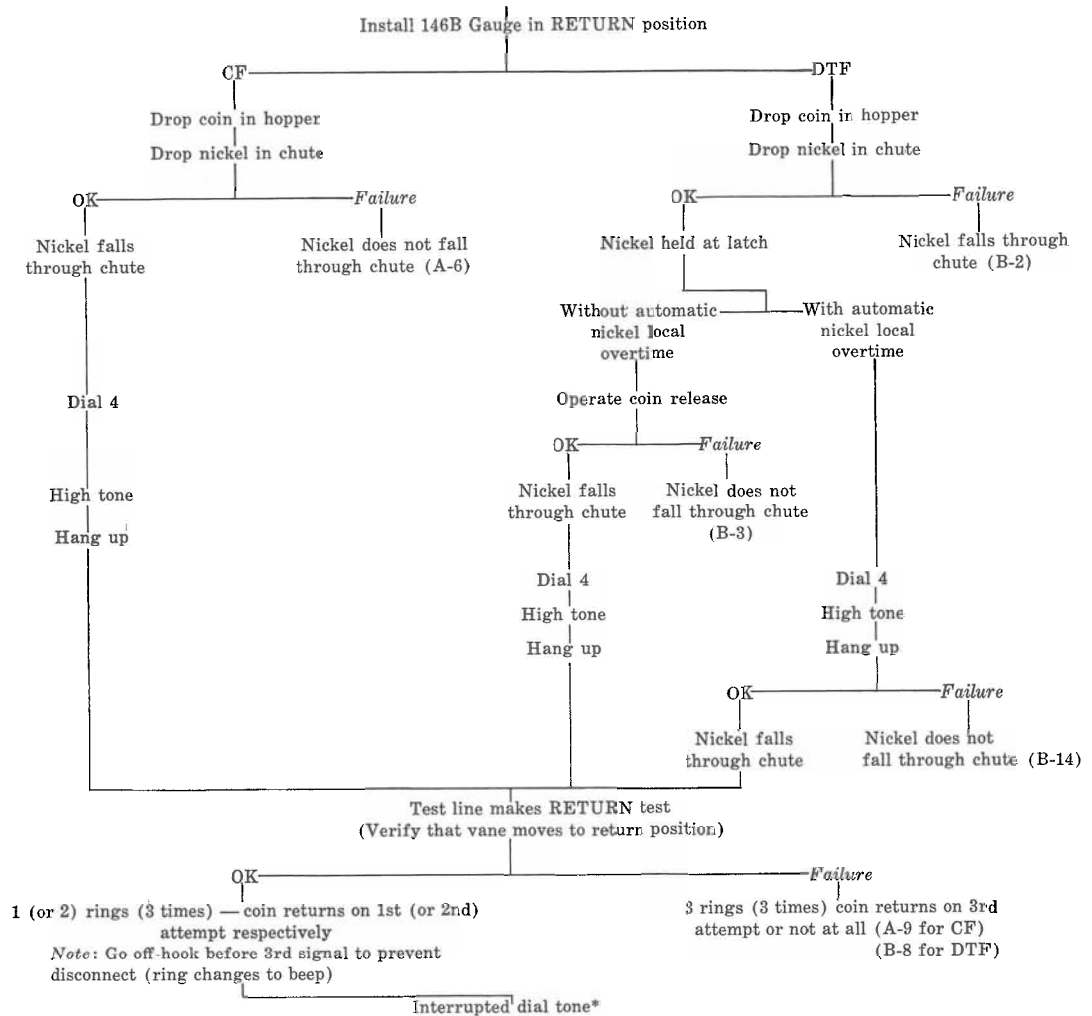
\*Tones time out in 60 sec.

COLLECT TEST



\*Tones time out in 60 sec.

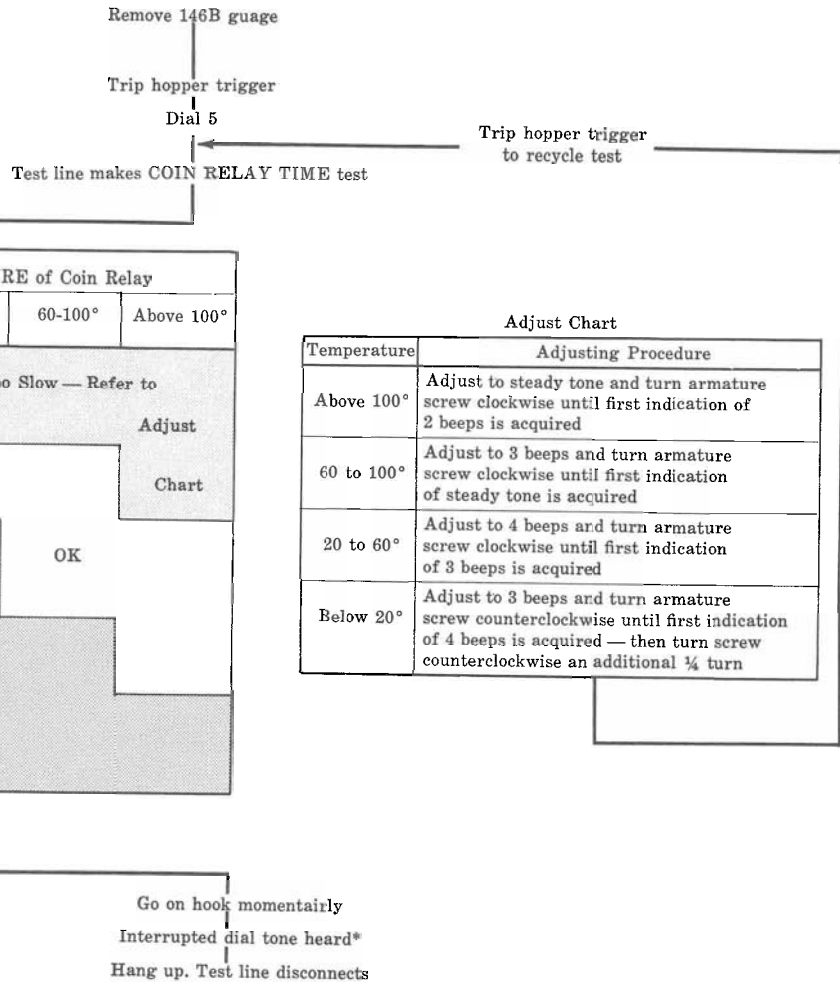
RETURN TEST



\*Tones time out in 60 sec.



COIN RELAY  
TIMING TEST

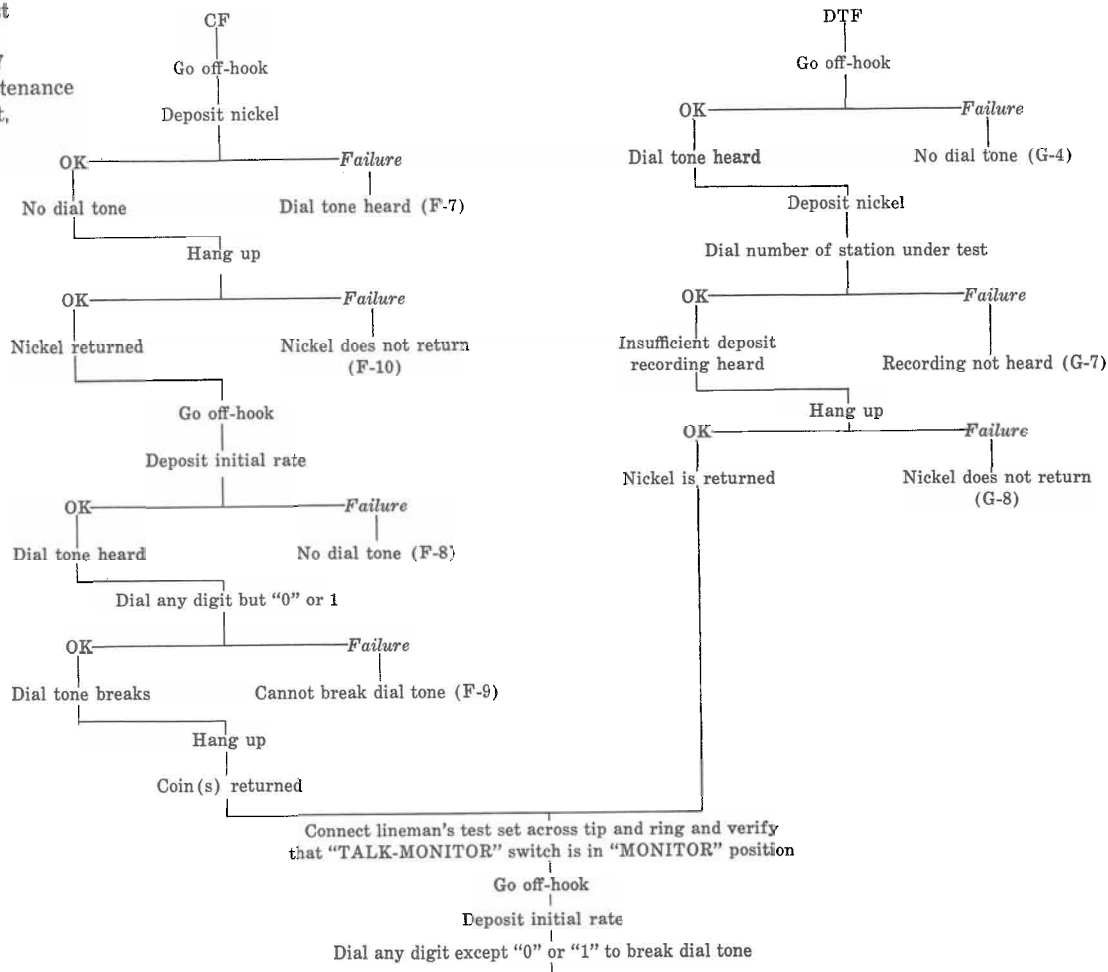


\*Tones time out in 60 sec.

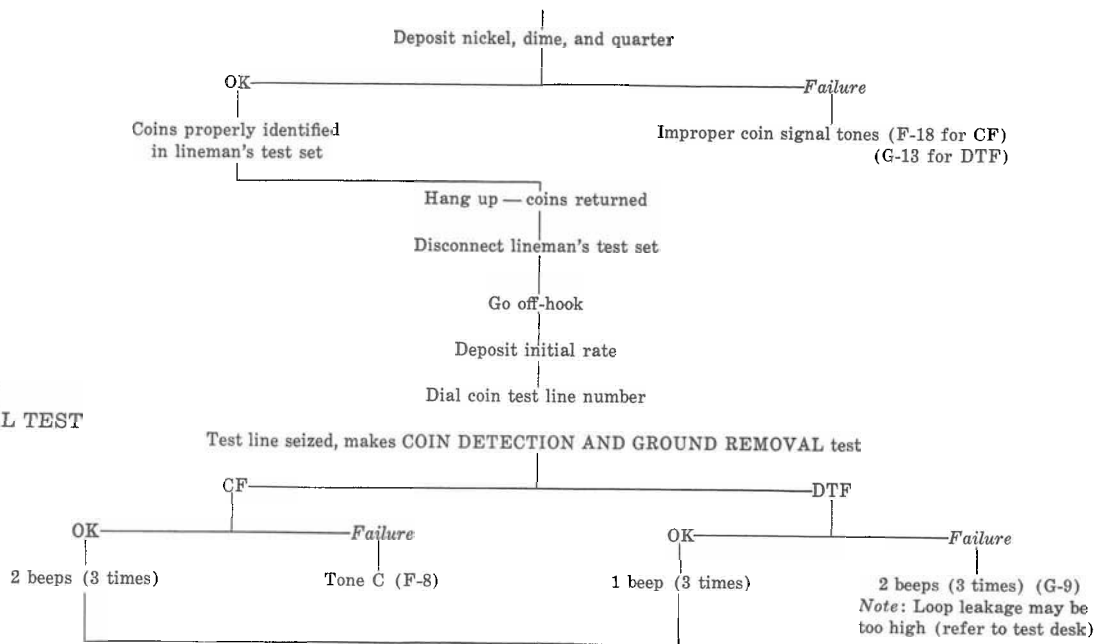
LEGEND

CF — Coin First  
 DTF — Dial Tone First  
 (F-7) — Table F, Trouble No. 7 In Coin Maintenance Check Booklet, Issue 2 (Typical)

SINGLE SLOT COIN TELEPHONE SETS



COIN DETECTION  
GROUND REMOVAL TEST



GROUND & LOOP  
RESISTANCE AND  
LOOP LEAKAGE TESTS

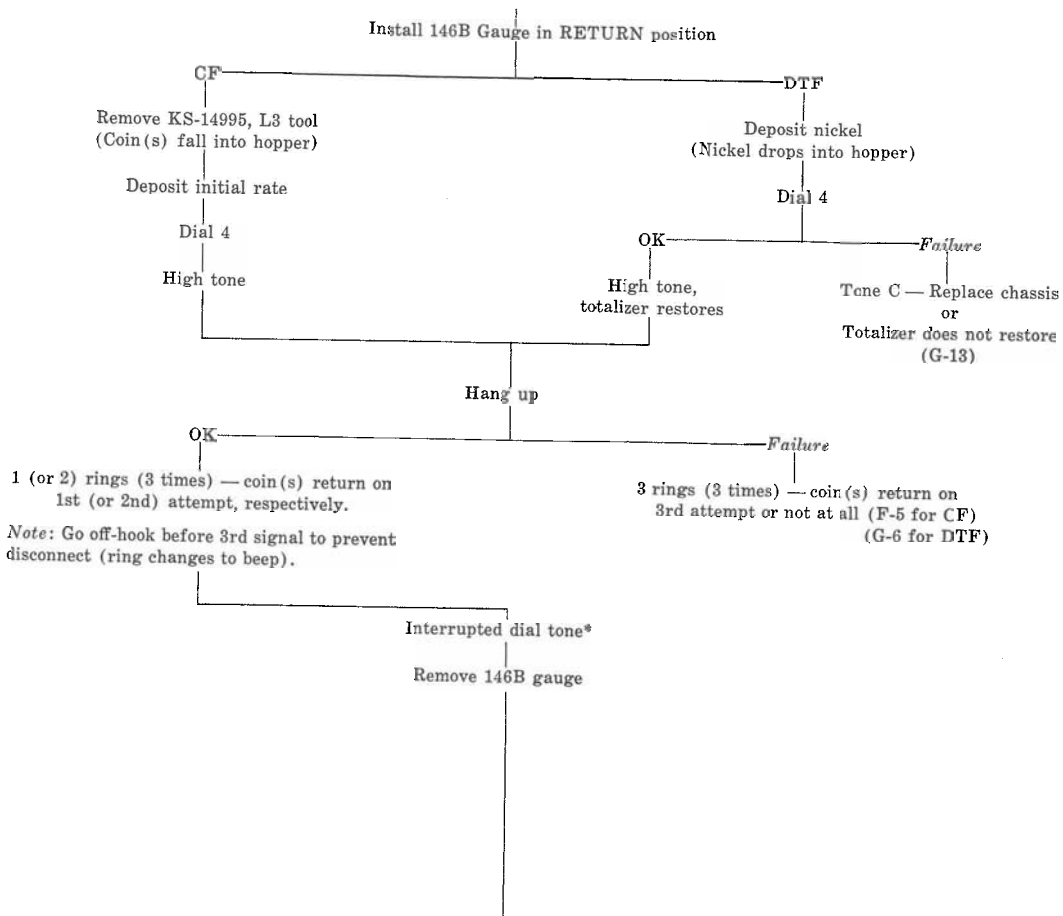
\*Tones time out in 60 sec.

COLLECT TEST



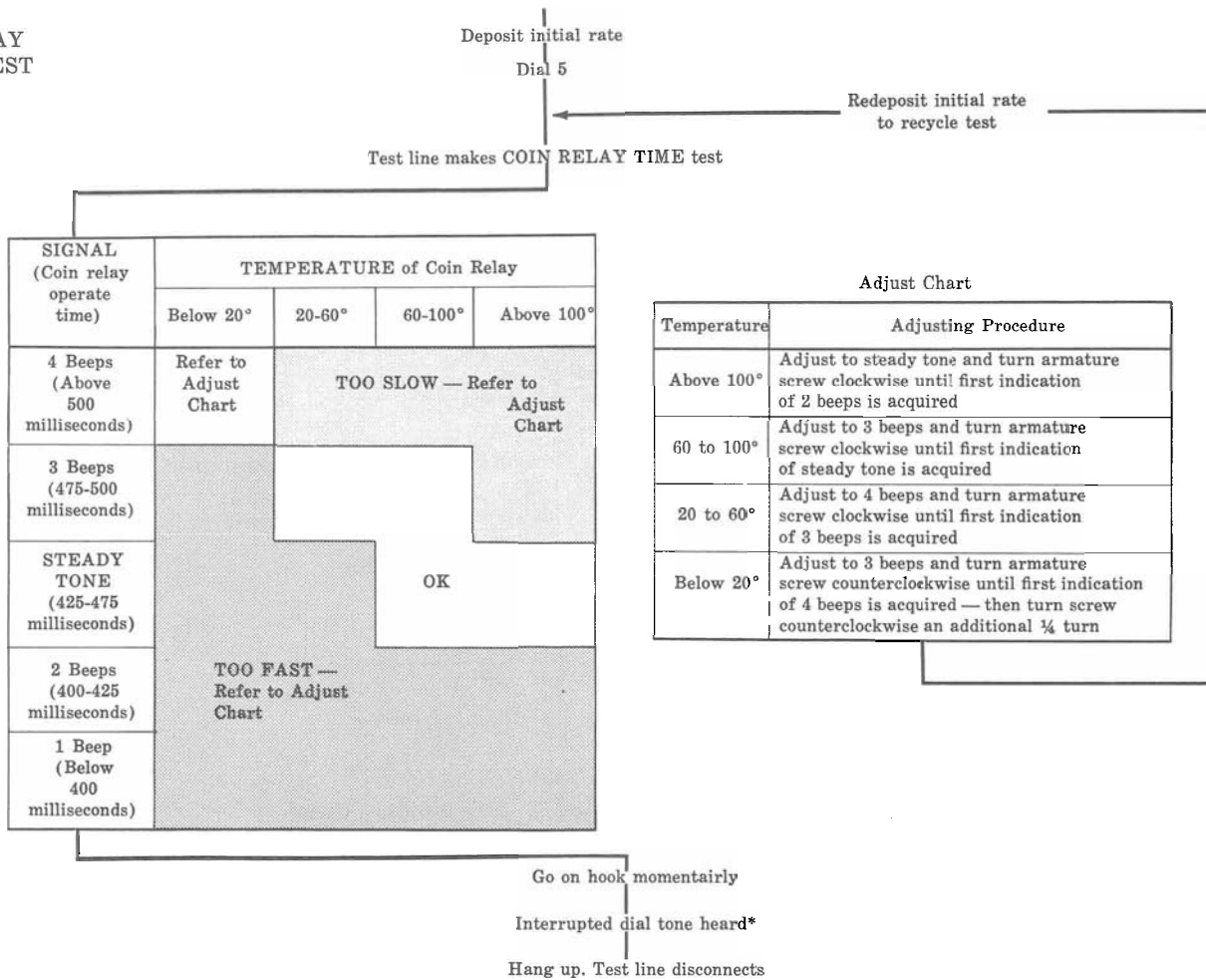
\*Tones time out in 60 sec.

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



\*Tones time out in 60 sec.

COIN RELAY  
TIMING TEST



\*Tones time out in 60 sec.

## SERVICE SECURITY DEVICES

### 1. GENERAL

**1.01** This section contains identification and installation information on security devices for coin collectors and coin telephone sets.

**1.02** This section is reissued to:

- Revise information on coin relay antidrill guard assembly and dust cover
- Add information on 840360184 knob and shaft assembly

**1.03** Security devices are added to standard equipment to discourage thievery, vandalism, and strong arm attack.

### 2. SECURITY DEVICES

**2.01** Security devices include locks, studs, special backplates, covers, ring seals, armored cords, a switchhook kit, and special tools needed to handle them.



*Locks and keys will be shipped only on orders that specify authorized recipients.*

#### Upper Housing and Cover Assembly Locks

**2.02** Two models of locks may be used for upper housings and cover assemblies: the 10-type and 29-type (Fig. 1). Both are lever tumbler-type locks requiring a corrugated key.

**2.03** The 10-type lock has been used in upper housing assemblies of 190 and 200 series coin collectors.

**2.04** The 29-type lock is used in cover assemblies of 1- and 2-type coin telephone sets and in 235- and 1235-type coin collectors.

#### KS-19277 Lock and Associated Parts

**2.05** The KS-19277 lock and associated parts (Fig. 2) give additional security to the upper housing. They consist of a screw type lock and appropriate fasteners which secure an upper housing to either backplate or mounting surface.

**2.06** The lock mounts in a specially provided hole in the lower right side of the upper housing (Fig. 3) and is held in place by a spring steel washer and heavy steel nut (Fig. 4). Use of a tubular key permits the back of the lock to rotate and screw onto the end of a security bolt or stud fastener.

**2.07** The lock cannot be used on coin collectors equipped with 2-coil relays, those not having a lower right security stud hole, or panel coin phones.

**2.08** The P-13A091 (BXX) terminal assembly (Fig. 5) must be replaced with a P-25E300 terminal assembly to provide clearance of fasteners (Fig. 6 and 7).

**2.09** One of three different fasteners may be used with the KS-19277 lock (Fig. 2).

(a) P-25E301 bolt fastener—short shoulder; for use with 3/16-inch thick backboards.

(b) P-25E302 bolt fastener—long shoulder; for use with 5/16-inch thick backboards.

(c) P-25E303 stud fastener—for use where security studs are not required.

**2.10** Two methods can be used to determine if existing coin collector backboards are equipped with keyhole slots without removing the coin collector from its mounting:

- If a security stud is present in the lower right security stud hole of the backplate (Fig. 5), the appropriate bolt fastener (2.09)

may be installed in place of the security stud.

- If there is no security stud in the lower right security stud hole of the backplate, place a small-bladed screwdriver in the hole (Fig. 8). If blade enters to a depth of at least 3/4-inch, a keyhole slot is present in the backboard (Fig. 9) and the appropriate bolt fastener can be used.

**2.11** Use of bolt fasteners is limited by the surface (backboards, shelf, or booth) upon which the coin collector is mounted.



*In vulnerable locations where prying of upper housing is likely, always use bolt fastener where possible.*

**2.12** The P-25E301 and P-25E302 bolt fasteners screw from the rear into the lower right security stud hole of the coin collector backplate (Fig. 7). The coin collector is installed in the same manner as any other coin collector equipped with security studs.

**2.13** To install a bolt fastener at existing installations, disconnect and remove the coin collector from its mounting.

**2.14** Use the P-25E303 stud fastener (Fig. 6) where a bolt fastener is not required, but where protection is desired against unauthorized use of the 10-type upper housing key.

**2.15** The stud fastener can be installed without removing the backplate assembly from its mounting surface.

**2.16** Use a P-25E351 insulator on either the bolt or stud fastener (Fig. 6 and 7) to prevent it from grounding against the lower lug of the housing contacts. To install, start at the BKX terminal and wind in "barber pole fashion" around the stud or bolt. Do not cover the threads on the exposed end of the stud or bolt. Redress wiring to upper housing contacts (Fig. 10).

**2.17** After the bolt or stud fastener is properly installed, fasten upper housing as follows:

- (a) Insert the tubular key into the KS-19277 lock.

- (b) Apply and maintain a slight forward pressure on the key while rotating it in a clockwise direction **until the key is hand tight**. Do not force the key beyond this point. To remove the key, maintain a forward pressure, turn counterclockwise to the first release position and pull the key away from the lock.



*Do not use pliers or other unauthorized tools on the handle of the key. Do not file tab off end of key. Once the upper cover assembly has been drawn to the backplate assembly so that the upper cover assembly lock can be engaged, there is no need to further tighten the KS-19277 lock.*

**2.18** When an upper housing is equipped with a KS-19277 lock and is removed for maintenance, apply a coating of KS-19094 antiseize compound to the threaded area of the bolt or stud fastener which engages the security lock to prevent binding or "freezing" of parts.

#### Security Studs

**2.19** Security studs provide added strength to the mounting of a coin collector or coin telephone set on a backboard. Four versions are available as shown in Fig. 11.



*Security studs can be used only if the backboard has key-hole slots which align with the coin collector security stud mounting holes.*

**2.20** The P-10E070 and P-12E798 studs are used with the 190, 200, and 1200 series coin collectors and panel coin phones. The P-40Y060 and P-40Y061 studs are used with the 1A- and 1C-type coin telephone sets.

**2.21** Security studs with long shoulders are used with 5/16-inch thick backboards. Those with short shoulders are used with 3/16-inch thick backboards.

#### 719A Tool

**2.22** A 719A tool (Fig. 12) is required to release or engage the locking mechanism on both of the 1- and 2-type coin telephone sets and 235/1235-type coin collectors.



**1A Backplate**

**2.23** The 1A backplate made of sheet steel (Fig. 13), is intended for use on coin collectors equipped with aluminum backplates to reduce the possibility of breaking away the lower housing by means of a pry bar.

**2.24** The 1A backplate is provided with clearance holes for security studs and mounting screws. It is fastened to the coin collector backplate by replacing the four lower housing assembly screws with one P-12E799 and three P-13E656 high-strength flathead steel screws (Fig. 14). Replacement screws must be ordered separately.

**Note:** The 1A backplate cannot be used with 139A backboards or 19-type shelves.

**Armored Cords**

**2.25** All current coin collectors and coin telephone sets are equipped with armored handset cords (Fig. 15). Transmitter and receiver caps are cemented to the handset handle. Refer to Section 501-210-102 for complete information on handsets.

**2.26** Use the following procedures to equip existing coin collectors in the field with G3-type, G13-type, or FIL handset.

- (1) Remove the upper housing from the coin collector.
- (2) Disconnect the handset cord conductors and cord fasteners. Before removing old cord from the cord entrance hole, attach a pull wire to the old cord. This will aid in pulling in the new cord.



**Cover the coin relay, hopper, and return chute with a piece of plastic, cloth, or other suitable material to prevent metal drill shavings from falling into them.**

- (3) Using a small center punch and hammer, mark hole to be drilled and tapped in the coin collector backplate. This hole is to be located in the cord entrance tube halfway between the outer beveled edge of the coin collector and the left edge of the cord chamber (Fig. 16).

- (4) Drill hole with a No. 7 drill (.201 inch).



**When drilling aluminum backplates do not exert too much pressure on drill. This may cause drill to cut too fast, thus making hole oversized.**

- (5) Tap the hole using a 1/4-20 tap with a Greenfield T-Handle tap wrench or equivalent.

**Caution: The tap wrench should be long enough to permit the wrench handle to be turned without injury to the installer or possible damage to the coin relay.**

- (6) Clean metal shavings from the cord entrance hole.
- (7) Using the pull-in wire placed in step 2, pull in the new cord.
- (8) Remove the pull wire from new cord and fasten a P-12A096 clamp over the cord (Fig. 17).
- (9) A P-26E084 1/4-20 by 5/16-inch self-locking setscrew is used to secure the cord to the coin collector backplate (Fig. 17). A flat surface is located approximately 1/4-inch from the set end of the stainless steel flexible hose. Using a 1/8-inch Allen wrench, screw the socket setscrew into the hole drilled in step 4 until it just makes contact with the flat surface of the metal hose. Give the setscrew a minimum of 1/4 turn and a maximum of 1/2 turn. This should hold the cord firmly in the coin collector.

**Caution: Screwing the socket setscrew down more than one turn against the steel flexible hose may damage the cord conductors.**

- (10) Remove the protective covering placed during drilling and replace the upper housing.

**Caution: Carefully brush out all metal shavings from the coin collector, and dispose of them so that they will not cause injury or damage equipment.**

- 2.27** Refer to Fig. 18 for routing and securing handset cord in 1-type coin telephone sets.

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**2.28** Refer to Fig. 19 for routing and securing handset cord in 2-type coin telephone sets.

**2.29** Refer to Fig. 20 for routing and securing handset cord to 235/1235-type coin collectors.

### D-180009 Switchhook Conversion Kit

**2.30** The D-180009 switchhook conversion kit (Fig. 21) is designed to reduce switchhook blocking and permit a simple adjustment of switchhook travel. The conversion kit can be used for field conversion of 200-type and 1234-type coin collectors.

**2.31** Two types of switchhooks *may be found* in the field: A one-piece switchhook with a long shaft and a two-piece switchhook with a short shaft and an adapter.

**2.32** To remove a one-piece switchhook:

- (1) Remove and retain hex head machine screw, lockwashers, tension spring, switchhook arm assembly, and any spacing washer that may be present, from right end of shaft (Fig. 22).
- (2) Slide switchhook to the left and out of bearings.

**2.33** If coin collector is mounted in a corner, a one-piece switchhook may be removed without removing the coin collector from backboard as follows:

- (1) Perform operations outlined in 2.32 (1).
- (2) Place the larger notch of a 710A bending tool on the switchhook hub as shown in Fig. 23, View A. Apply force on the tool as shown and move the switchhook out, bending it slightly.
- (3) Having partially bent the shaft, move the switchhook to the left. Place the smaller notch of the bending tool over the shaft as shown in Fig. 23, View B. Apply force on the tool as shown.
- (4) Continue moving the switchhook to the left and applying additional bends as needed to remove the switchhook.

**2.34** To remove a two-piece switchhook:

- (1) Perform operations outlined in 2.32 (1).

(2) Loosen the flathead screw which secures P-12E828 adapter (Fig. 24) to the switchhook shaft.

(3) Slide switchhooks to left and out of bearing.

(4) Slide adapter to left and out of bearing.

**2.35** Remove wire guide clamp (Fig. 22).

**2.36** To install new switchhook kit:

(1) Install P-20F161 wire guide clamp (Fig. 25) on backplate. Ensure that wiring is routed as shown.

(2) Select correct bushing (Fig. 21) and slide over shaft of switchhook.

(3) Secure bushing on shaft with a cotter pin (Fig. 26).

(4) Slide the P-20F155 adapter assembly into right bearing (Fig. 26).

(5) Slide switchhook assembly with bushing installed through left bearing to mate with adapter assembly.

(6) Secure adapter to shaft with hex socket head cap screw (Fig. 27) which is furnished with kit.

(7) Install P-297872 spring washers as required to reduce excessive end play. End play of switchhook shaft shall not exceed 1/32-inch.

(8) Place switchhook arm assembly (Fig. 28) retained in 2.32 over switchhook shaft and secure to end of adapter shaft with lockwasher and hex head machine screw. Install tension spring.

**2.37** Adjust switchhook travel with the two adjusting screws (Fig. 28) to meet contact spring pile up requirements and check switchhook operation per Section 506-310-100.

**2.38** Ensure that all wires are clear of adapter travel and adjusting screws.

### Coin Relay Guard Assembly

**2.39** A special case-hardened steel antidrill guard assembly (KS-20892) is available to prevent fraudulent operation of coin relay in single slot coin telephone sets (Fig. 29). The guard assembly must be ordered separately.

**2.40** When the antidrill guard assembly is used, the existing coin relay plastic dust cover must be trimmed to fit around the guard assembly. Trim the dust cover per Fig. 30 using electrician scissors or side cutters.

**Note:** Currently manufactured dust covers are provided with guide lines to follow when cutting. When these lines are provided, disregard Fig. 30.

**2.41** Secure the antidrill guard assembly to the set using the existing return chute assembly mounting screw (Fig. 29).

### 840360184 Knob and Shaft Assembly

**2.42** The 840360184 knob and shaft assembly (Fig. 31) is designed as a replacement for the lever-type coin release handle and shaft assembly on single slot coin telephone sets in areas where a high rate of vandalism has resulted in serious damage to internal linkage and other chute actuating components.

**2.43** A built-in clutch arrangement ensures that the chute actuating components are neither damaged nor destroyed if the knob is forcibly turned beyond its normal rotational limit.

**2.44** Notches and indentations on the sloped turning surface minimize slippage of the fingers.

**2.45** To replace the lever-type coin release with the knob-type (Fig. 32):

- (1) Remove cover unit assembly (1-type set) or open door and faceplate assembly (2-type set).
- (2) Remove and retain RM-651418 screw which secures link and lever assembly to coin release lever shaft. Remove lever and shaft assembly.

- (3) Insert knob and shaft assembly and ensure that arrow on knob is oriented as shown.

- (4) On a panel coin telephone set, the steel spacer must be used.

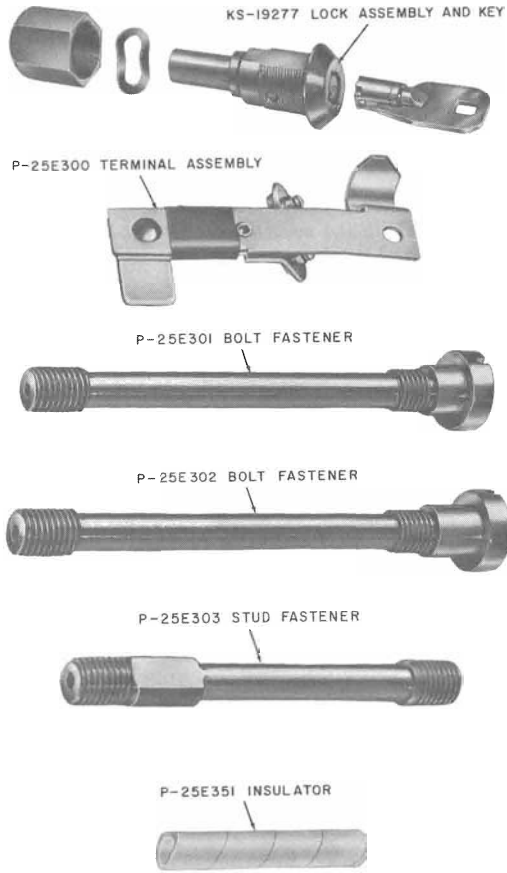
**Note:** Do not use spacer on a 1-type set.

- (5) Place link and lever assembly over rear of shaft and secure with the RM-651418 screw retained in (2).



Fig. 1—Upper Housing and Cover Assembly Locks

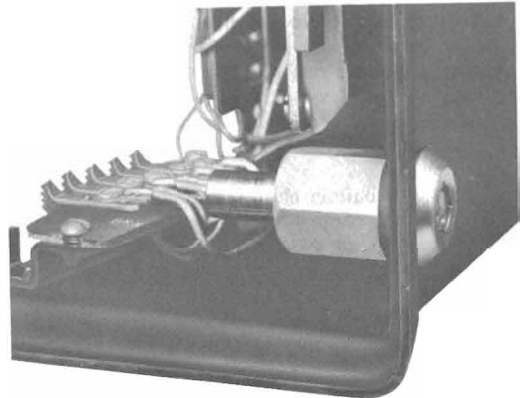
**SECTION 506-101-400**



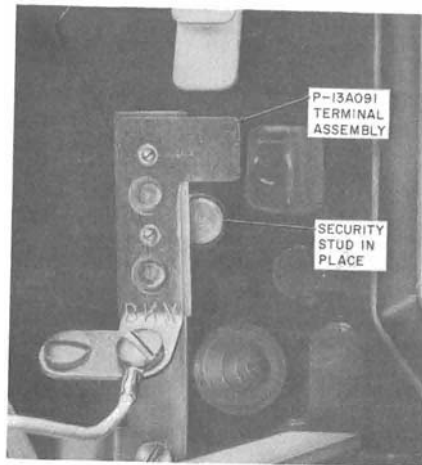
**Fig. 2—KS-19277 Lock and Associated Parts**



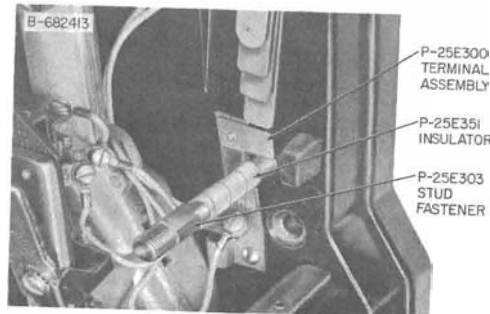
**Fig. 3—Coin Collector Equipped With KS-19277 Lock**



**Fig. 4—KS-19277 Lock Installed in Upper Housing**



**Fig. 5—P-13A091 Terminal Assembly with Security Stud Installed**



**Fig. 6—Terminal Assembly, Insulator, and Stud Fastener**

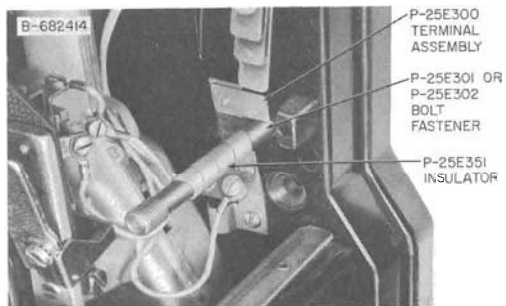


Fig. 7—Terminal Assembly, Insulator, and Bolt Fastener

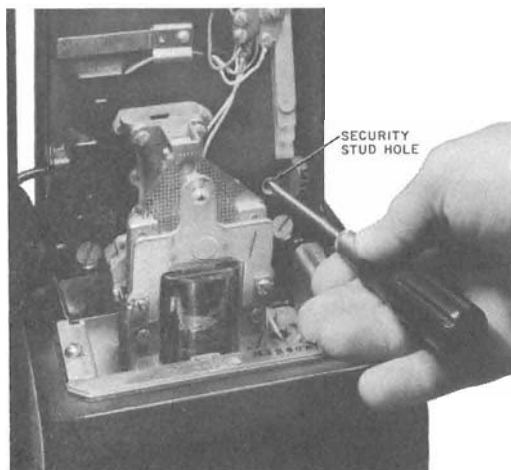


Fig. 8—Determining Presence of Keyhole Slots

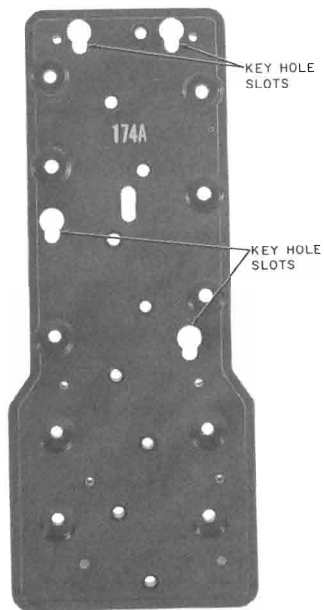
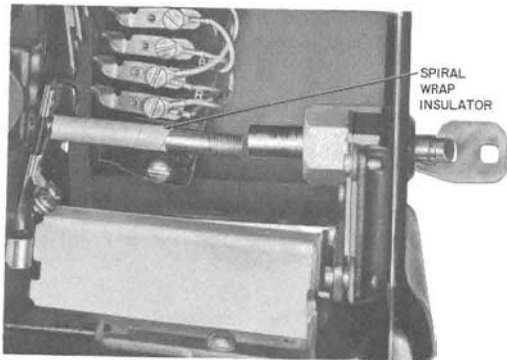


Fig. 9—174A Backboard with Keyhole Slots for Security Studs and Bolt Fastener

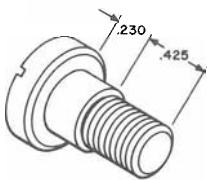


**Fig. 10—Cutaway Section of Upper Housing Showing Mating of Bolt Fastener and KS-19277 Lock**

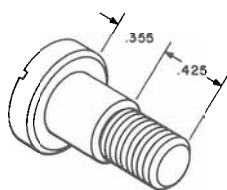


**Fig. 12—719A Tool**

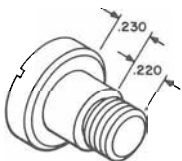
NOTE:  
ALL DIMENSIONS SHOWN ARE IN INCHES.



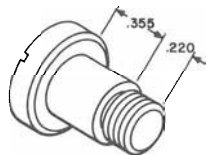
**P-10E070**



**P-12E798**

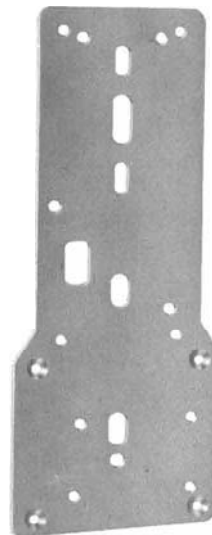


**P-40Y060**

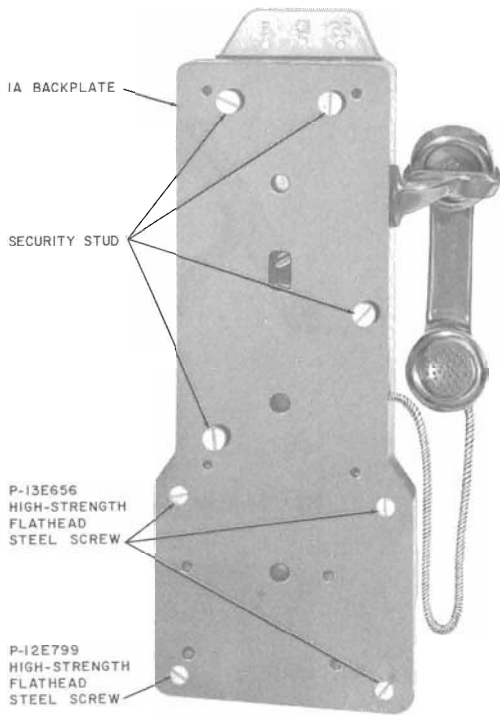


**P-40Y061**

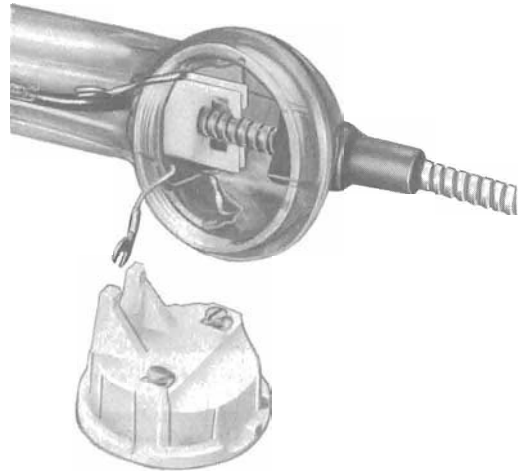
**Fig. 11—Security Studs**



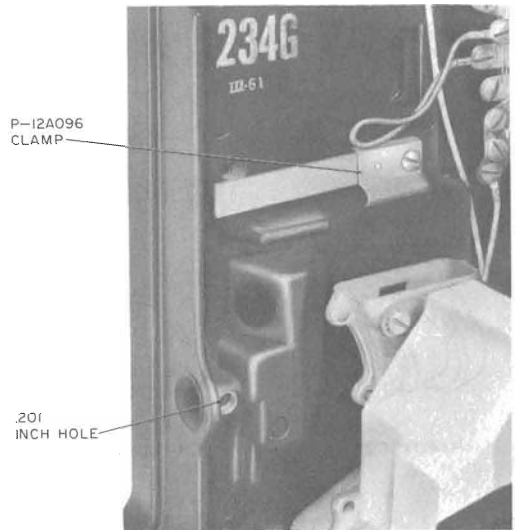
**Fig. 13—1A Backplate**



**Fig. 14—Rear View of Coin Collector with 1A Backplate Attached**



**Fig. 15—Handset with Armored Cable**



**Fig. 16—Location of .201 Inch Hole**



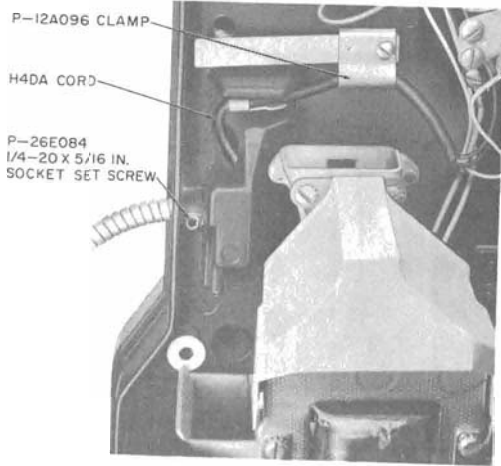


Fig. 17—Installation of Armored Cord

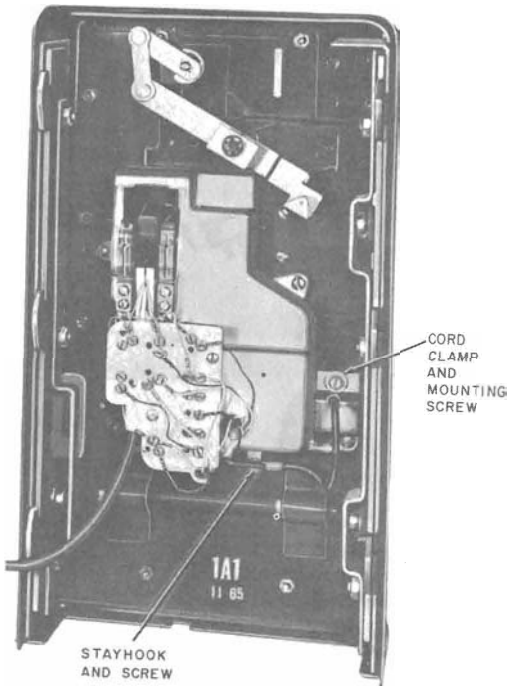


Fig. 18—Location of Armored Cord Mounting Hardware in 1A/1C-Type Coin Telephone Set

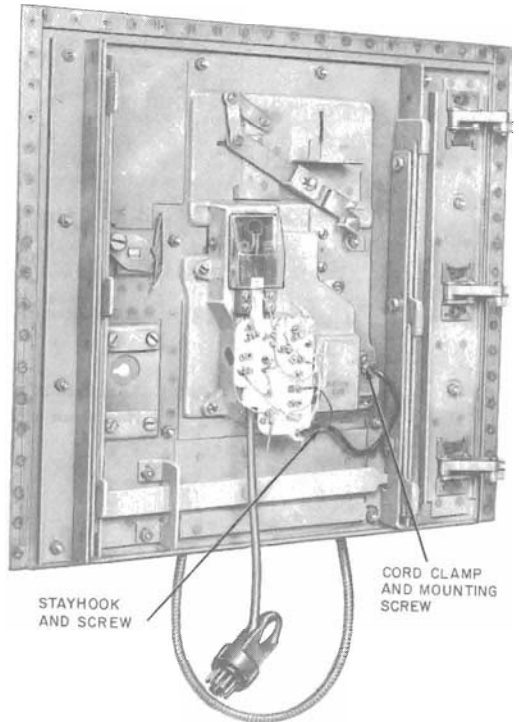
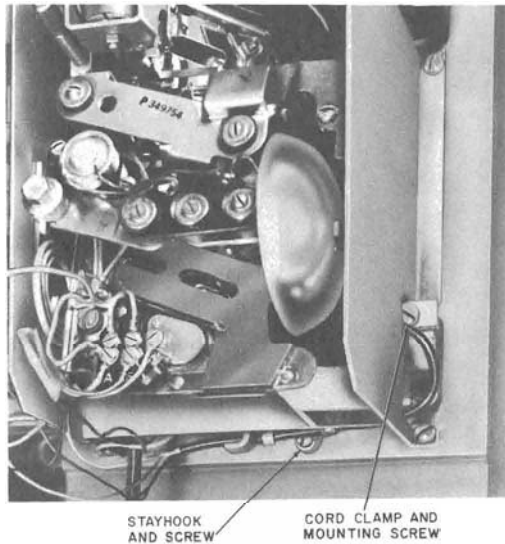
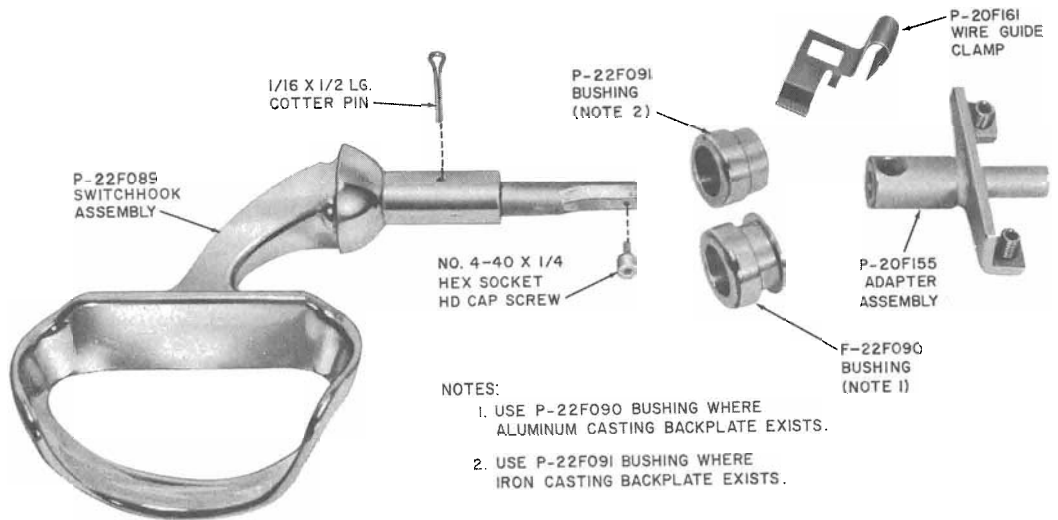


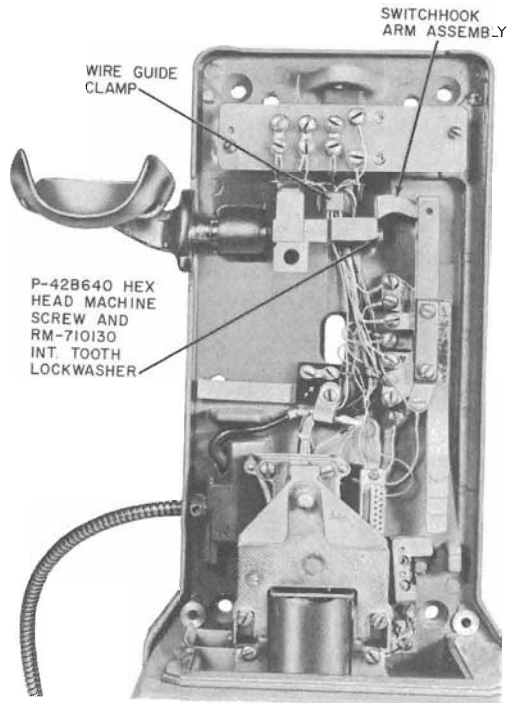
Fig. 19—Location of Armored Cord and Mounting Hardware in 2A/2C-Type Coin Telephone Set



**Fig. 20—Location of Armored Cord and Mounting Hardware in 235/1235-Type Coin Collector**



**Fig. 21—D-180009 Switchhook Kit**



**Fig. 22—Switchhook Installed**

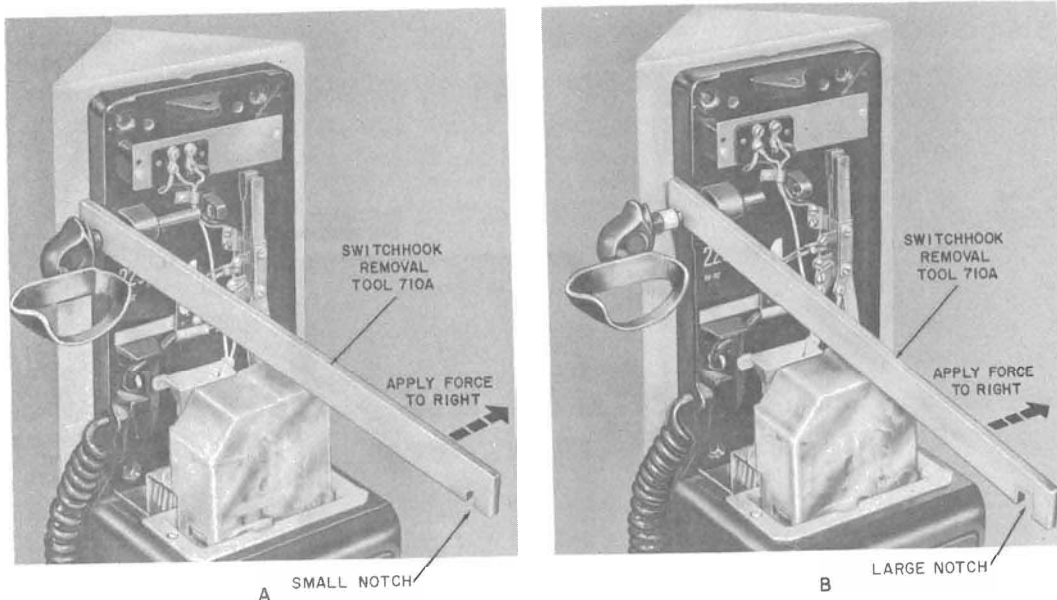


Fig. 23—Removal of One-Piece Switchhook Located in Corner

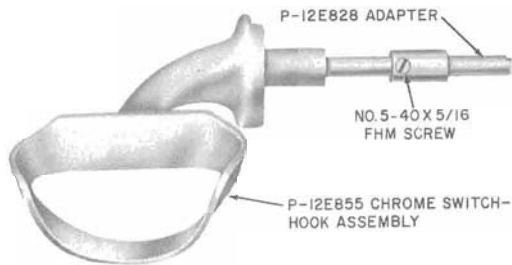


Fig. 24—Two-Piece Switchhook

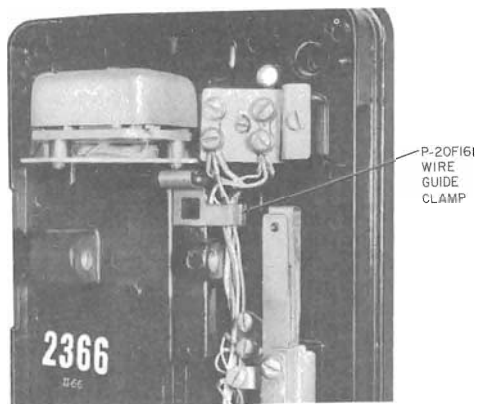


Fig. 25—Installation of Wire Guide Clamp

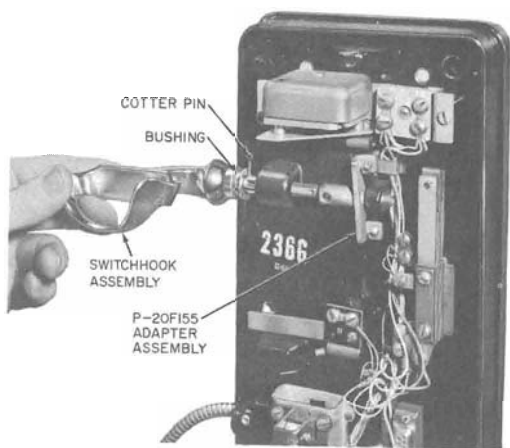


Fig. 26—Installation of Adapter Assembly and Switchhook Assembly

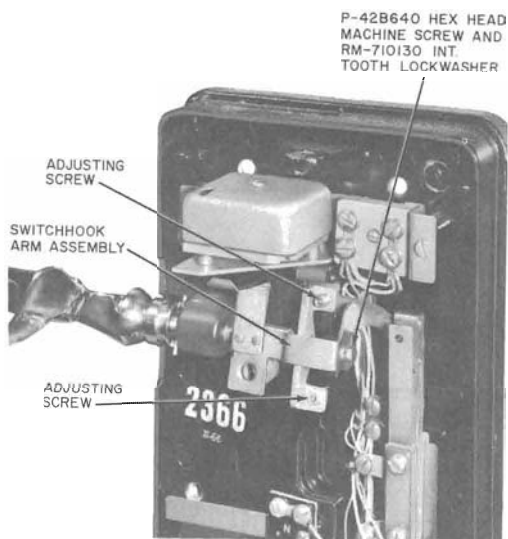


Fig. 28—Installation of Switchhook Arm Assembly

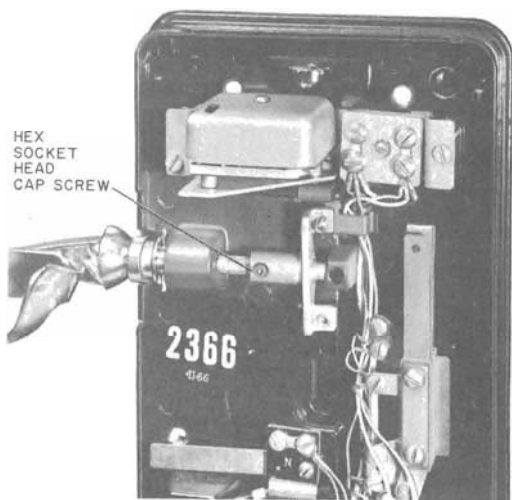


Fig. 27—Method of Securing Adapter to Switchhook Assembly

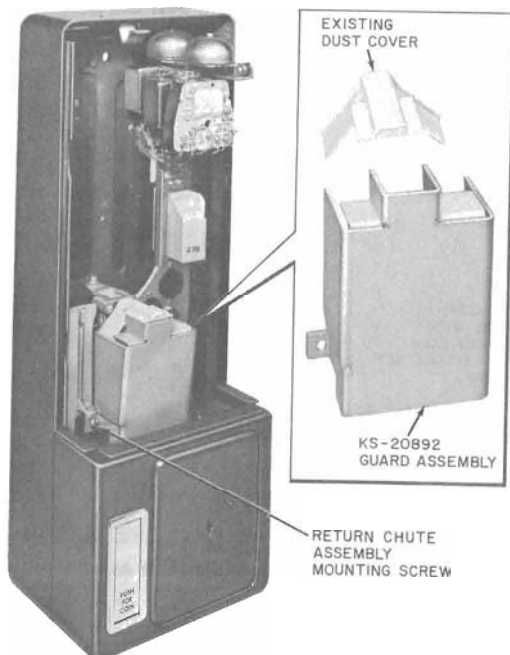


Fig. 29—Relay Antidrill Guard Arrangement

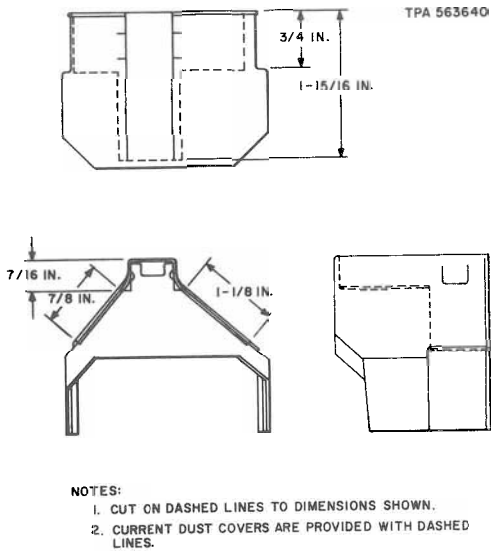


Fig. 30—Outline for Cutting Dust Cover

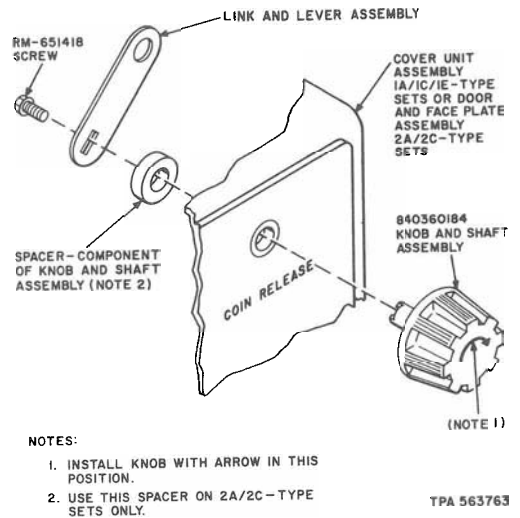


Fig. 32—Installation of 840360184 Knob and Shaft Assembly

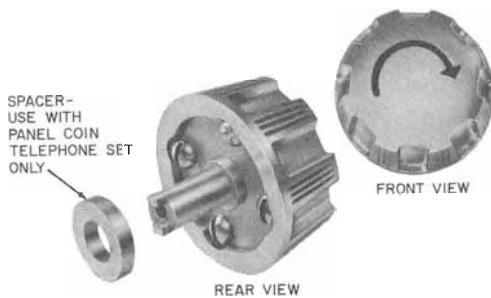


Fig. 31—840360184 Knob and Shaft Assembly

SUBSCRIBER SETS 634A,BA; 684A,BA  
COMMON BATTERY—INDUCTION COIL TYPE  
USED WITH COIN COLLECTORS  
CONNECTIONS

TABLE A  
CONNECTIONS

Type of Service	Subscriber Set Connections (Wire or Lead)												
Prepay Manual and Dial Type Coin Collectors	Ringer Lead			Local Wire From Coin Collector									
	R	BK	GN	R	BK	Y	R	GN	Y				
RCVR-XMTR Types 155C, D, G, H 166C, D, G, H Hand Set Types 174C, D, G, H, CS, GS, CT, GT 176C, D, G, H, CS, GS, CT, GT	L1	K	GN	R	BK	L2Y	L1	—	—				
Type of Service	Subscriber Set Connections (Wire or Lead) (See Note 1)												
Postpay Manual and Dial (CDO) Type Coin Collectors	Inside Wire from Protector or Line (See Note 2)			Ringer Lead		Local Wiring to Coin Collector							
	R	GN	Y	R	BK	GN	R	BK	Y	R	GN	Y	
RCVR-XMTR Types Manual 150K, L 162A, B, C, D Hand Set Types Manual 152C, D 164C, D	Dial 158G, H 168G, H	L1	L2Y	—	L1	K	GN	R	BK	L2Y	—	—	—
Dial 177G, H 178G, H													
Type of Service	Subscriber Set Connections (Wire or Lead)												
Prepay Dial Type Coin Collectors with Dial Shorting Relay	Ringer Lead			Local Wire From Coin Collector									
	R	BK	GN	R	BK	Y	R	GN	Y				
RCVR-XMTR Types D-178457 D-178875 Hand Set Types D-178940 D-178942	E*	K	GN	R	BK	L2Y	E*	L1	—				

Note 1: Use only 634BA or 684BA (high-impedance ringer) in community dial office.

Note 2: The line wires are shown terminated in the subscriber set in the table and circuit diagram. When desired by the telephone company, they may be terminated in the coin collector set.

Note 3: All connections are shown for individual line, bridged ringing installations. If other ringing arrangements are required, refer to Fig. 1 and Table A of the section entitled Subscriber Sets 634A,BA,C; 684A,BA,C Common Battery, Induction Coil Type Used with Hand Telephone Sets, Connections, for appropriate ringer connections.

° For subscriber sets not equipped with E terminal, use the D-161488 connector.

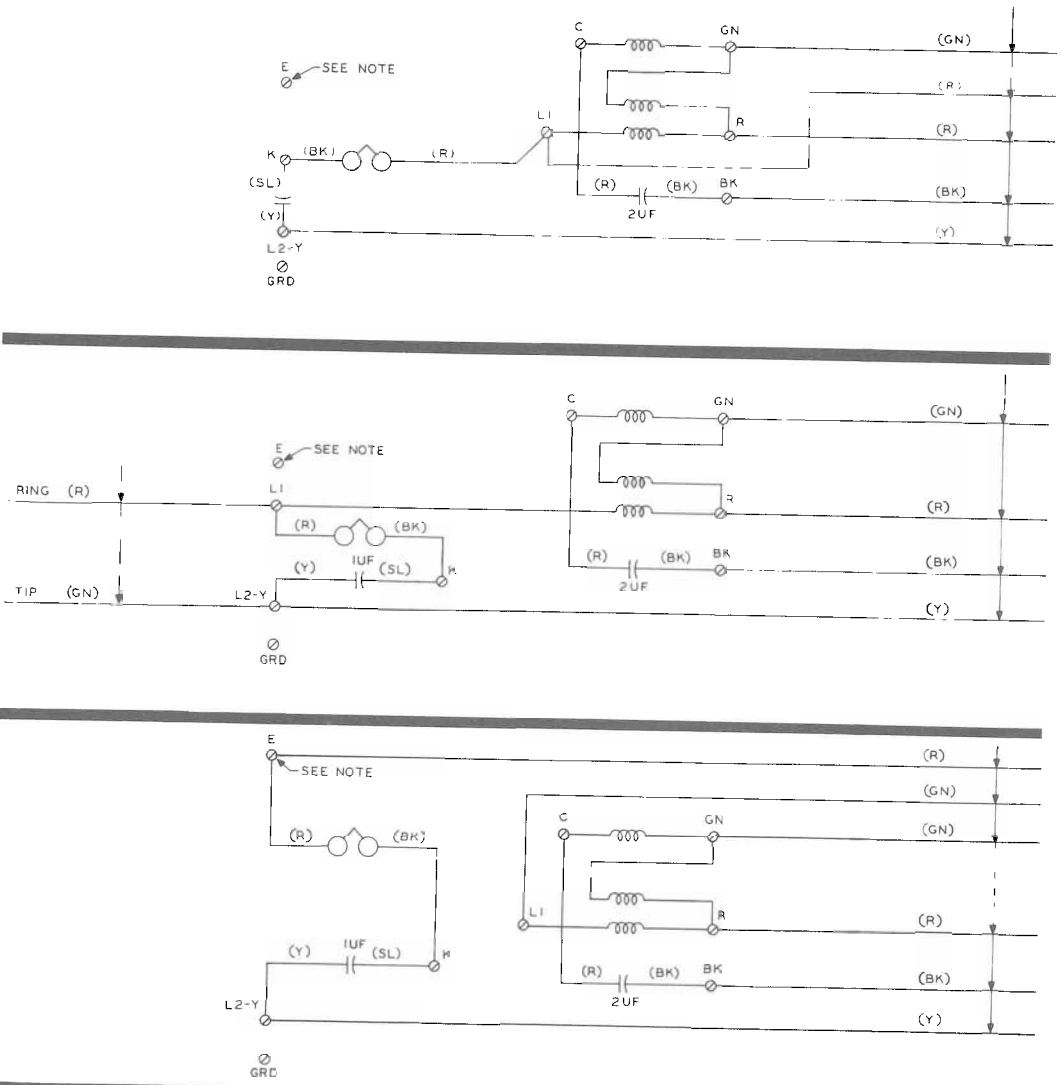


INSIDE WIRE FROM  
LINE OR  
PROTECTOR

RINGING CIRCUIT

TALKING CIRCUIT

LOCAL WIRING



Note: When an E terminal is not normally provided in subscriber sets, use D-161488 connector to connect local wiring to R ringer lead.

Fig. 1 - Circuit Diagram of 634A and BA; 684A and BA Subscriber Sets for Connection with Coin Collectors



SUBSCRIBER SETS—634BC AND 684BC  
COMMON BATTERY—INDUCTION COIL TYPE  
USED WITH COIN COLLECTORS  
CONNECTIONS

**TABLE A**  
**CONNECTIONS**

Type of Service	Subscriber Set Connections (Wire or Lead)											
Prepay Manual and Dial Type Coin Collectors	Ringer Lead		Local Wiring to Coin Collector									
	R	BK	GN	R	BK	Y	R	GN	Y			
RCVR-XMTR Types 155C, D, G, H 166C, D, G, H  Hand Set Types 174C, D, G, H, CS, GS, CT, GT 176C, D, G, H, CS, GS, CT, GT	L1	RR	GN	R	BK	L2Y	L1	—	—			
Type of Service	Subscriber Set Connections (Wire or Lead)											
Postpay Manual Type Coin Collectors	Inside Wire from Protector or Line*			Ringer Lead Local Wiring to Coin Collector								
	R	GN	Y	R	BK	GN	R	BK	Y	R	GN	Y
RCVR-XMTR Types Manual 150K, L 162A, B, C, D Hand Set Types Manual 152C, D 164C, D	L1	L2Y	—	L1	RR	GN	R	BK	L2Y	—	—	—
Type of Service	Subscriber Set Connections (Wire or Lead)											
Prepay Dial Type Coin Collectors with Dial Shorting Relay	Ringer Lead		Local Wiring to Coin Collector									
	R	BK	GN	R	BK	Y	R	GN	Y			
RCVR-XMTR Types D-178457 D-178875  Hand Set Types D-178940 D-178942	YY	RR	GN	R	BK	L2Y	YY	L1	—			

*Note:* All connections are shown for individual line, bridged ringing installations. If other ringing arrangements are required, refer to Fig. 1 and Table A of section entitled Subscriber Sets, 634BC and 684BC, Common Battery, Induction Coil Type Used with Hand Telephone Sets, Connections.

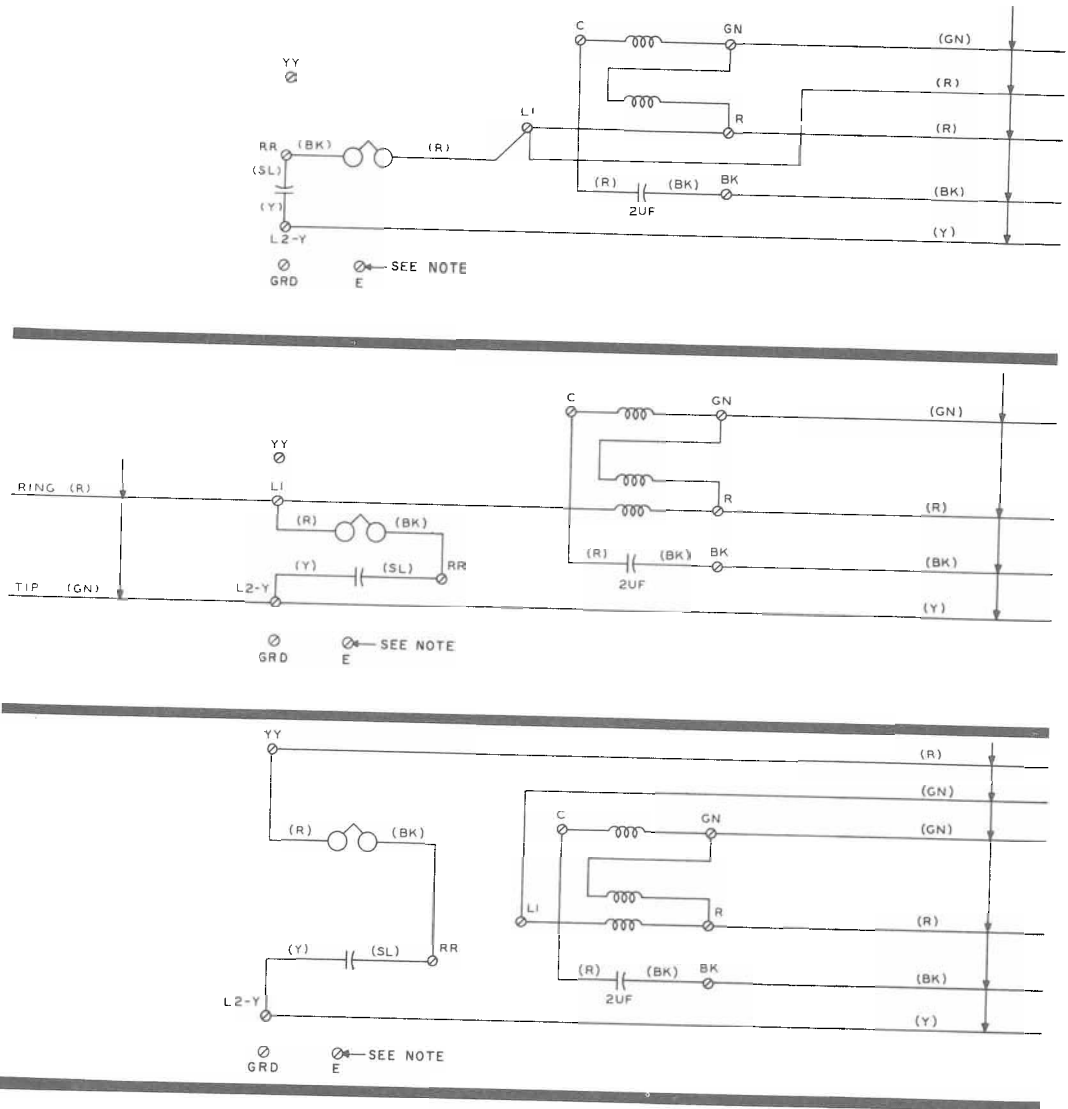
\* The line wires are shown terminated in the subscriber set in the table and circuit diagram. When desired by the telephone company, they may be terminated in the coin collector set.

INSIDE WIRE TO  
LINE OR  
PROTECTOR

RINGING CIRCUIT

TALKING CIRCUIT

LOCAL WIRING



Note: When E terminal is not provided, use D-161488 connector.

Fig. 1 — Circuit Diagram for Connection with Coin Collectors



## SUBSCRIBER SETS—634CG, CH, CK, CL; 684CK, CL

### COMMON BATTERY—INDUCTION COIL TYPE—CONNECTIONS

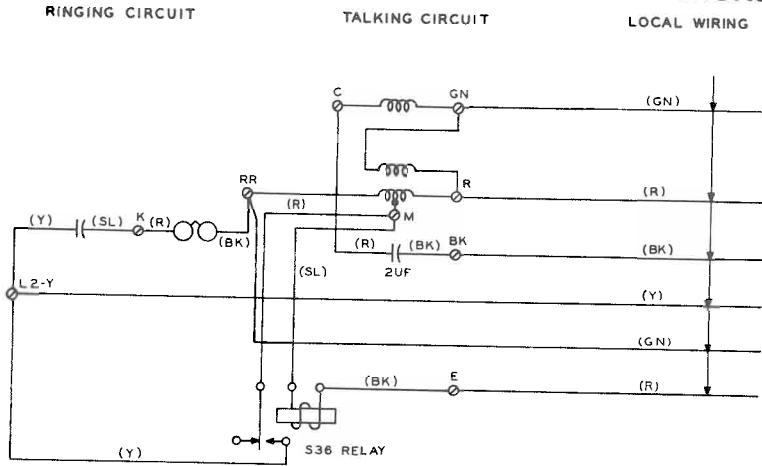


TABLE A—CONNECTIONS FOR LONG LOOPS

Type of Service	Subscriber Set 634CG, CH (Wire or Lead)												
	Ringer Lead		S-36 Relay Lead				Local Wiring from Coin Collector						
	R	BK	R	Y	BK	SL	GN	R	BK	Y	R	GN	
Revr. Xmtr Types 155C, D, G, H 166C, D, G, H													
Hand Set Types 174C, D, G, H 174CS, GS, CT, GT 176C, D, G, H 176CS, GS, CT, GT	K	RR	M	L2Y	E	M	GN	R	BK	L2Y	E	RR	

RINGING CIRCUIT

TALKING CIRCUIT

LOCAL WIRING

TABLE B  
CONNECTIONS  
FOR REDUCTION  
OF INDUCTIVE  
NOISE

Type of Service	Subscriber Set 634CK, CL; 684CK, CL (Wire or Lead)									
	Ringer Lead		Local Wiring from Coin Collector							
	R	BK	GN	R	BK	Y	R	GN		
Revr. Xmtr Types 155C, D, G, H 166C, D, G, H										
Hand Set Types 174C, D, G, H 174CS, GS, CT, GT 176C, D, G, H 176CS, GS, CT, CT	K	RR	GN	R	BK	L2Y	E	RR		

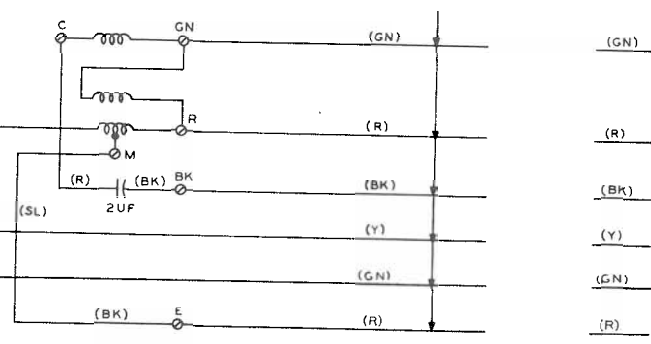


Fig. 1 — Circuit Diagram for Connection with Coin Collectors





## 685A SUBSCRIBER SETS-USED WITH COIN COLLECTORS CONNECTIONS

### 1. GENERAL

1.01 This section is reissued to:

- Show MD and current wire color codes
- Show MD and current coin collector codes
- Add information on 234G and 1234G coin collectors
- Revise illustrations and tables to reflect above changes

### 2. CONNECTIONS

- 2.01 See Fig. 1 and Table A for circuit diagram and connections for prepay manual and rotary-dial coin collectors.
- 2.02 See Fig. 2 and Table B for circuit diagram and connections for prepay TOUCH-TONE® dial coin collectors.
- 2.03 See Fig. 3 and Table C for circuit diagram and connections for postpay manual and rotary-dial coin collectors.

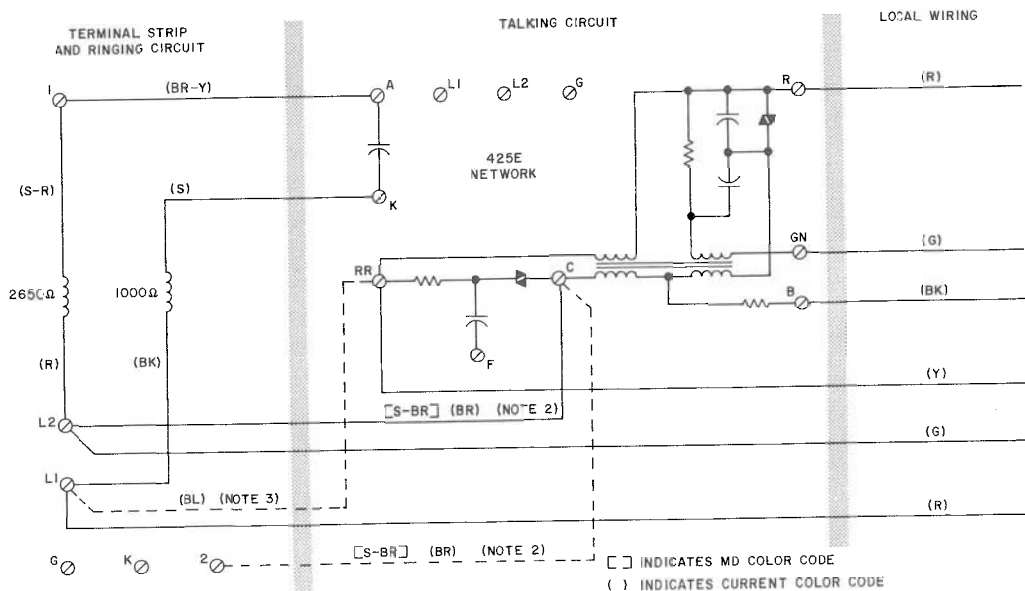


Fig. 1 — Circuit Diagram for Connections with Prepay Manual and Rotary Dial Coin Collectors

TABLE A

CONNECTIONS FOR PREPAY MANUAL AND ROTARY-DIAL COIN COLLECTORS

TYPE OF SERVICE PREPAY MANUAL AND ROTARY — DIAL TYPE COIN COLLECTORS		TERM. LOC.	SUBSCRIBER SET CONNECTIONS (WIRE OR LEAD)												
			RINGER LEAD (Note 1)				STRAPS — NETWORK TO TERMINAL STRIP			LOCAL WIRE FROM COIN COLLECTOR					
			S	BK	R	S-R	(S-BR) (BR)	BL	BR-Y	R	G	BK	Y	G	R
191, 195, 196, 197 (CNT, DNT, GNT, HNT)	191, 195, 196, 197 (CN, DN, GN, HN, CNS, DNS, GNS, HNS)	Ntwk.	K	—	—	—	See Note 2	See Note 3	A	R	GN	B	RR	—	—
220, 223 (CT, DT, GT, HT)	220, 223 (C, D, G, H)	Term. Strip	—	L1	L2	1	2	3	1	—	—	—	—	L2	L1
230G	230, 233 (C, D, H)														
233G															
234G															

Notes: 1. All connections are shown for bridged ringing, individual line installations. If other ringing arrangements are required, refer to section on connections for 685 subscriber sets used with hand telephone sets.

2. Disconnect the [S-BR] (BR) wire from 2 on terminal strip and connect it to L2. The other end of this wire is connected to C of the network.

3. Disconnect and remove the BL strap wire between RR of network and L1 of terminal strip.

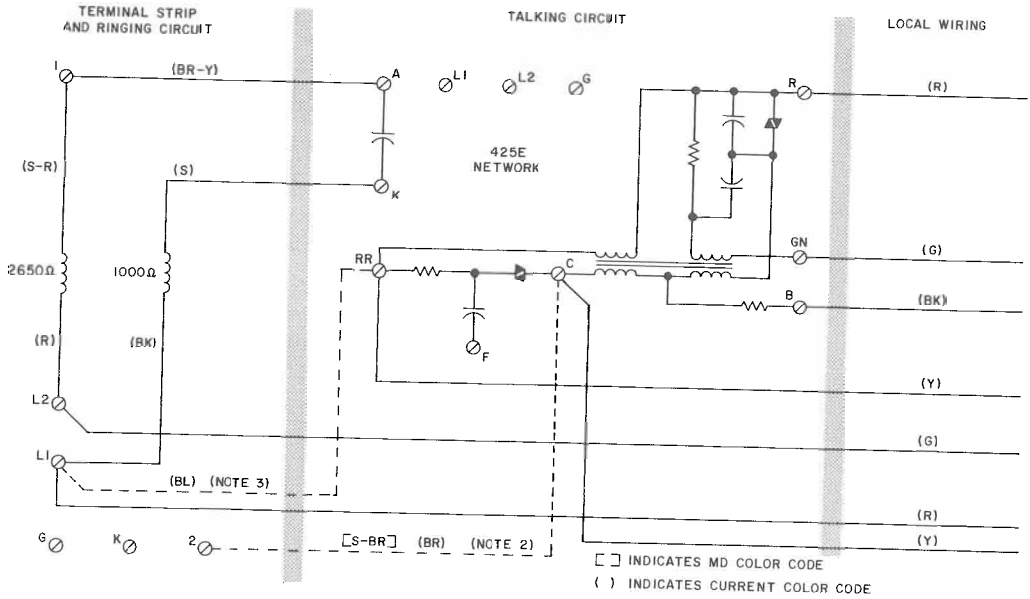


Fig. 2 — Circuit Diagram for Connections with Prepay TOUCH-TONE Dial Coin Collectors

TABLE B  
CONNECTIONS FOR PREPAY  
TOUCH-TONE DIAL COIN COLLECTORS

TYPE OF SERVICE	TERM. LOC.	SUBSCRIBER SET CONNECTIONS (WIRE OR LEAD)													
		RINGER LEAD (Note 1)				STRAPS — NETWORK TO TERMINAL STRIP			LOCAL WIRE FROM COIN COLLECTOR						
		S	BK	R	S-R	[S-BR] (BR)	BL	BR-Y	R	G	BK	Y	G	R	Y
1234G	Ntwk.	K	—	—	—	See Note 2	See Note 3	A	R	GN	B	RR	—	—	C
	Term. Strip	—	L1	L2	1				i	—	—	—	—	L2	L1

- Notes: 1. All connections are shown for bridged ringing, individual line installations. If other ringing arrangements are required, refer to section on connections for 685 subscriber sets used with hand telephone sets.  
 2. Disconnect and remove the [S-BR] (BR) strap wire between C of network and 2 of terminal strip.  
 3. Disconnect and remove the BL strap wire between RR of network and L1 of terminal strip.  
 4. Early models of the 1234G coin collector used a 685D subscriber set which is rated MD.

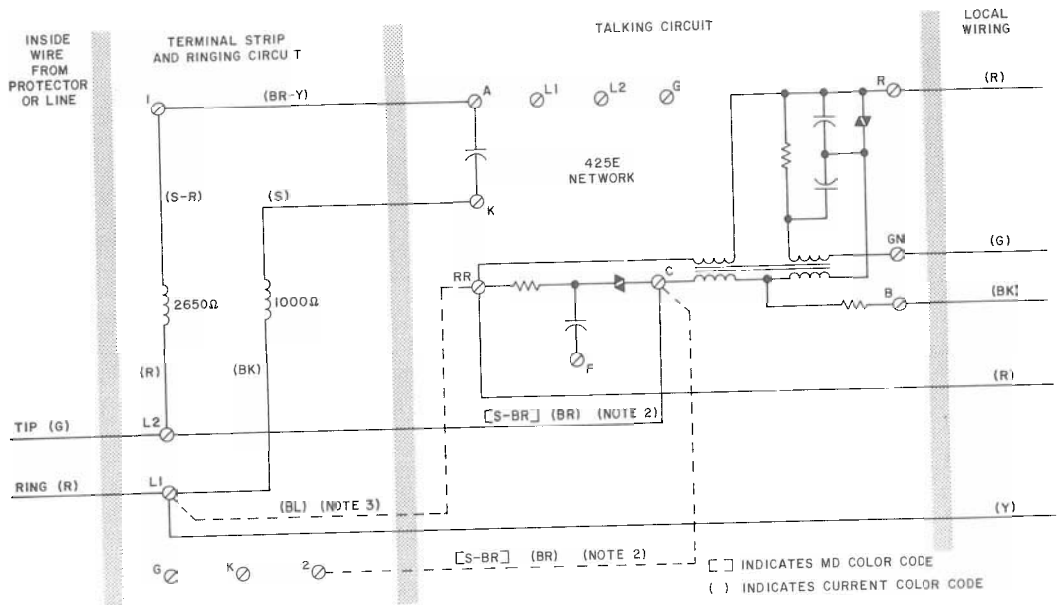


Fig. 3 — Circuit Diagram for Connections with Postpay Manual and Rotary Dial Coin Collectors

TABLE C  
CONNECTIONS FOR POSTPAY MANUAL  
AND ROTARY-DIAL COIN COLLECTORS

TYPE OF SERVICE		TERM. LOC.	SUBSCRIBER SET CONNECTIONS (WIRE OR LEAD)															
POSTPAY MANUAL AND ROTARY-DIAL TYPE COIN COLLECTORS			INSIDE WIRE FROM LINE OR PROTECTOR				RINGER LEAD (Note 1)				STRAPS — NETWORK TO TERM. STRIP		LOCAL WIRE FROM COIN COLLECTOR					
CURRENT CODES	MD CODES		R	G	Y	S	BK	R	S-R	[S-BR] (BR)	BL	BR-Y	R	G	BK	Y	G	R
200C	182CN, DN 193GN, HN 198GN, HN	Ntwk.	—	—	—	K	—	—	—	See Note 2	See Note 3	A	R	GN	B	—	—	RR
210G 212G	200D 210H 212H	Term. Strip	L1	L2	—	—	L1	L2	1	—	—	1	—	—	—	L1	—	—

Notes: 1. All connections are shown for bridged ringing, individual line installations. If other ringing arrangements are required, refer to section on connections for 685 subscriber sets used with hand telephone sets.

2. Disconnect the [S-BR] (BR) wire from 2 on terminal strip and connect it to L2. The other end of this wire is connected to C of the network.

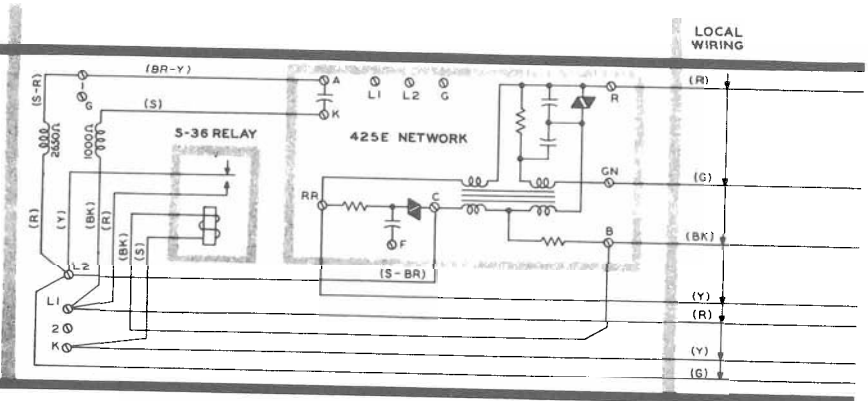
3. Disconnect and remove the BL strap wire between RR of network and L1 of terminal strip.

## SUBSCRIBER SETS—685B USED WITH COIN COLLECTORS CONNECTIONS

TABLE A  
CONNECTIONS

Type of Service	Terminal Location	Subscriber Set Connections (Wire or Lead)																
		Ringer Lead				Straps Network to Terminal Block		S-36 Relay Lead				Local Wiring from Coin Collector						
		S	BK	R	S-R	S-BR	BR-Y	R	Y	BK*	S	G	R	BK	Y	G	R	Y
Prepay Manual and Dial Type Coin Collectors  Handset Types: 191, 195, 196, 197 (CN, DN, GN, HN) (CNS, DNS, GNS, HNS) (CNT, DNT, GNT, HNT) 220, 223 (C, D, G, H) (CT, DT, GT, HT) 230, 233 (C, D, G, H)	Network	K	—	—	—	C	A	—	—	B	—	GN	R	B	RR	—	—	—
	Terminal Block	—	L1	L2	1	L2	1	L1	L2	—	K	—	—	—	—	L2	L1	K

\* Sets may have BK lead from the S36 relay connected to terminal 2 of terminal block. Move strap to terminal B of 425E network.



**Fig. 1 - Circuit Diagram for Connection With Coin Collectors**



**REPLACING PAGE ADDENDUM**  
**Filing Instructions:**  
1. REMOVE FROM THE SECTION THE PAGES NUMBERED THE SAME AS THOSE ATTACHED TO THIS PINK SHEET.  
2. INSERT THE ATTACHED PAGES INTO THE SECTION IN THEIR PLACE.  
3. PLACE THIS PINK SHEET AHEAD OF PAGE 1 OF THE SECTION.

**REFERENCE**  
**COIN COLLECTORS**  
**SUBSCRIBER SET REQUIRED**

**1. GENERAL**

**1.001** This addendum supplements Section 506-310-100, Issue 1. The attached pages must be inserted in the section in accordance with the filing instructions above.

**1.002** This addendum is issued to add information on the 840248175 fraud-resistant gong signal and chute assembly and to revise nomenclature of the previous coin chute and gong assembly.

**1.003** This section does not include information on the 146B bias margin gauge test. Refer to Section 506-411-401 or 506-900-503 (Booklet) for this information.

**CONTENTS**

The following change applies to the contents of this section.

- (a) Nomenclature changed from *Coin Chute and Gong Assembly* to *Gong Signal and Chute Assembly*.

**2. IDENTIFICATION**

The following changes apply to Part 2 of this section:

- (a) 2.19.1—added  
(b) Fig. 10.1—added

**3. SELECTION**

The following changes apply to Part 3 of this section:

- (a) Tables D and H—revised

**5. METHOD OF OPERATION**

The following changes apply to Part 5 of this section:

- (a) 5.09—revised  
(b) 5.10—revised  
(c) Fig. 24—Title revised  
(d) Fig. 26—Title revised

**Attached:**

- Page 3 dated April 1971—Revised  
Page 4 dated April 1971—Reissued  
Page 7 dated April 1971—Revised  
Page 8 dated April 1971—Reissued  
Page 8.1 dated April 1971—Added  
Page 15 dated April 1971—Revised  
Page 16 dated April 1971—Revised  
Page 19 dated April 1971—Revised  
Page 20 dated April 1971—Revised  
Page 25 dated April 1971—Revised  
Page 26 dated April 1971—Revised





REFERENCE  
COIN COLLECTORS  
SUBSCRIBER SET REQUIRED



Fig. 1—Handset Type Coin Collector for Manual Service



Fig. 2—Handset Type Coin Collector for Rotary Dial Service

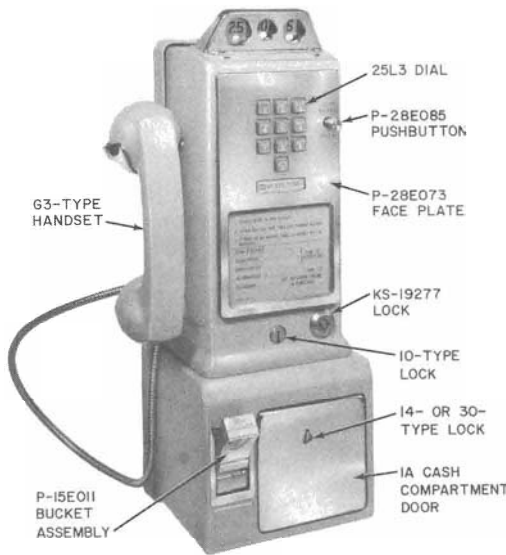


Fig. 3—1234G Coin Collector

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Gate Operating Arm Adjustment . . . . .	38	H. Coin Relay Shield . . . . .	54
Coin Relay and Hopper Tests . . . . .	39	I. Final Tests . . . . .	54
Trap and Vane Release Test . . . . .	40	Coin Chute Operation and Refund Test . . . . .	54
Replacing Coin Relay . . . . .	42	Coin Signal Test . . . . .	55
Replacing Coin Trap and Associated Parts . . . . .	42	Extended Range . . . . .	55
Grounding Coin Collector Housing . . . . .	43	POSTPAY . . . . .	55
Pull Buckets . . . . .	44	J. Dial Postpay Coin Collectors (CDO) . . . . .	55
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E. Final Tests . . . . .	46	Varistor Effectiveness . . . . .	56
Vertical Play . . . . .	46	Coin Chute Operation and Refund Tests . . . . .	56
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COIN FIRST TWO-COIL COIN RELAY . . . . .	48	Coin Hopper . . . . .	57
G. Coin Relay and Hopper Tests . . . . .	48	Coin Signal Test . . . . .	57
Ground Contact Springs, P-145749 and D-96590 Relays . . . . .	49	7. MODIFICATION—TO ADD D-180120 KIT OF PARTS (RINGER ASSEMBLY) TO BACKPLATE ASSEMBLY . . . . .	57
Ground Contact Springs, P-10C117 Relay . . . . .	50	1. GENERAL	
Dial Shorting Contact Springs . . . . .	50	1.01 This section includes information formerly contained in the following sections which are hereby canceled:	
Trap and Vane Release Test . . . . .	51	●506-110-100	
Bias Margin Test . . . . .	52	●506-110-101	
Cleaning Coin Relay . . . . .	53		

- 506-110-200
- 506-110-301
- 506-110-303
- 506-110-304
- 506-110-802
- 506-320-100

**1.02** Coin collectors (Fig. 1, 2, and 3) except 235G, 236G, and 1235G, require a subscriber set to provide talking and ringing circuits.

**1.03** The coin collector consists of a cast iron or aluminum backplate assembly (Fig. 4), a steel upper housing Fig. 5, and a steel lower housing (Fig. 6).

**1.04** Component parts are assembled on the backplate assembly and lower housing and either in or on the upper housing. Circuit connections between removable upper housing and backplate assembly are made with spur-type contacts on upper housing and contact springs on backplate assembly.

**1.05** All multislot coin collectors have been MD.

**1.06** This section does not include information on Dial Tone First service.

## 2. IDENTIFICATION

### Handsets and Cords

**2.01** The G1G and F1K handsets (MD) equipped with neoprene-jacketed armored cords, are replaced by G3R and F1L handsets, respectively.

**2.02** The G3R and F1L handsets are equipped with a PVC jacketed cord with an outer covering of stainless steel flexible armored cable.

**2.03** The transmitter and receiver caps are cemented to the handset handle. Since the handset components are sealed, field maintenance is limited to replacement of handset.

**2.04** The G3R and F1L handsets are for use on all coin collectors to give additional handset protection against vandalism.

**2.05** The G3R handset is available in color. The F1L handset is available in black only.

**2.06** All new coin collectors and all 200-type reissued coin collectors are equipped with the G3R handset.

### Coin Gauge and Washer Reject Mechanism

**2.07** The coin gauge is riveted to the upper housing and is not replaceable in the field. When provided, the washer rejector and associated coin-release pushbutton mechanism are also riveted or permanently attached to the upper housing and are an integral part of the assembly.

### Dial and Adapter

**2.08** All reconditioned dial coin collectors are equipped with a 6-type rotary dial. The assembly of a 6-type dial is shown in Fig. 7. The apparatus and parts associated with a 5-type dial are not interchangeable with those used with a 6-type dial.

**2.09** The 63A adapter incorporates a coin deflector feature to prevent dropped coins from lodging behind the dial.

**2.10** Replacement of dials and associated equipment is covered in Part 6 of this section.

### Apparatus Blank, Card Holder, and Coin Gauge Guard

**2.11** The 50-type apparatus blank covers the dial cup on manual coin collectors (Fig. 8).

**2.12** The chrome-plated 50K-44 apparatus blank replaces the 50L and 50K-3, -51, and -60 apparatus blanks.

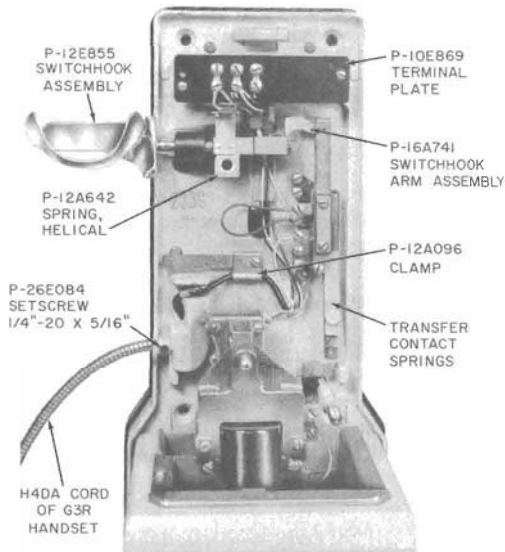


Fig. 4—Typical Backplate Assembly

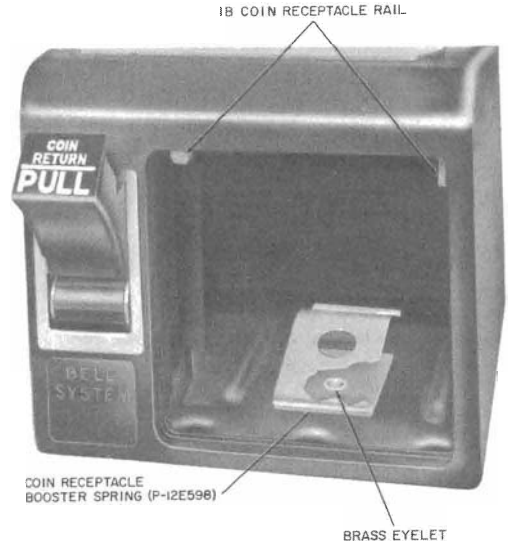


Fig. 6—Typical Lower Housing, Less Coin Receptacle Door

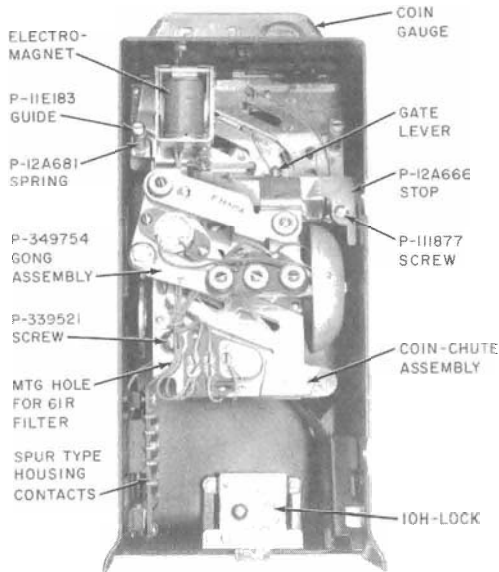


Fig. 5—Typical Upper Housing, Rear View

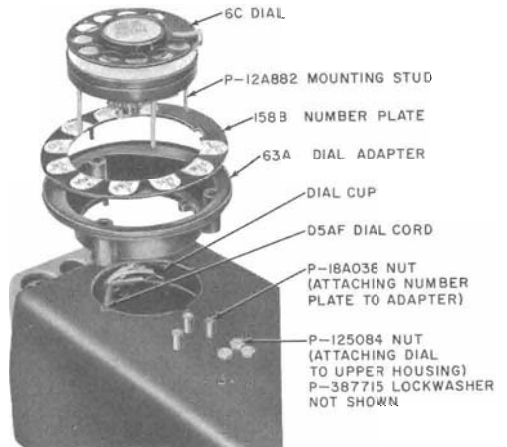
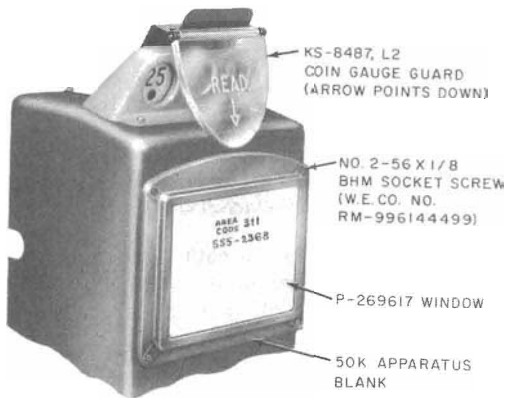


Fig. 7—Assembly of 6-Type Dial



**Fig. 8—Manual Type Coin Collector Equipped With Coin Gauge Guard**

**2.13** The 8-type card holders mount on top of the housing behind the coin gauge (Fig. 9). Three P81J700 slotless machine screws, three P-92383 hex nuts, and three P-423631 lockwashers hold the card holder in place.

**2.14** The 8B-44 card holder is chrome plated and replaces the 8C, 8B-3, -51, and -60 card holders and may be used on all coin collectors described in this section.

**2.15** Postpay coin collectors without coin-release pushbutton mechanisms may be equipped with a KS-8487, List 1 coin gauge guard (Fig. 9) or a KS-8487, List 2 coin gauge guard (Fig. 8). Coin gauge guards are designed to alert the customer to read the instructions before depositing coins. The device consists of a mounting bracket and a transparent hinged guard with the word READ and a vertical red arrow. The guard must be raised before depositing coins.

#### **Coin Chute Assembly**

**2.16** Coin chutes or coin assemblies are mounted inside the upper housing. Assemblies associated with the washer reject feature use two P-11E183 guides, two P-12A681 restoring springs,

and one P-339521 screw (Fig. 5). Older coin collectors use two P-12A680 screws instead of guides. Coin chutes not associated with washer reject mechanisms are mounted with three P-339521 screws.

**2.17** Coin collectors using coin chute assemblies equipped with a P-349754 gong assembly have the 452-type capacitor associated with an electromagnet. It mounts on the upper housing underneath the coin chute with a P-347181 clip (Fig. 10).

**2.18** Coin chute assemblies without a P-349754 gong assembly are used on coin collectors with gongs mounted on sides or on a swing type bracket. Coin chute assemblies equipped with a 452B capacitor are used only in upper housings.

**2.19** A 61R radio-frequency suppression filter is not considered a part of the chute assembly. The filter, when used, mounts on the rear of the coin chute at the lower left corner. A mounting hole (Fig. 5) is provided. Dial postpay coin collectors are normally equipped with 61R filters and are identified by a red dot located on the back of the coin gauge.

**2.19.1** An 840148175 gong signal and chute assembly is available to provide increased fraud resistance. It is compatible with all 196-, 197-, and 200-type multislot coin collectors except the 1234G TOUCH-TONE® coin collector.

#### **Cash Compartment**

**2.20** The self-locking coin receptacle and 1A cash compartment door, equipped with lock for the cash compartment, are controlled according to arrangements with the Commercial Department.

**2.21** The self-locking receptacle consists of a 1B coin receptacle equipped with a 1C, 1D, or 1E coin receptacle cover. Use of the coin receptacle requires a 1A or 1B coin receptacle rail on the mechanism base in the cash compartment (Fig. 6).

**2.22** The P-12E598 coin receptacle booster spring (Fig. 6) reduces the clearance between the coin receptacle cover and the rail. This prevents collected coins from falling out of their normal path on to the coin receptacle cover.

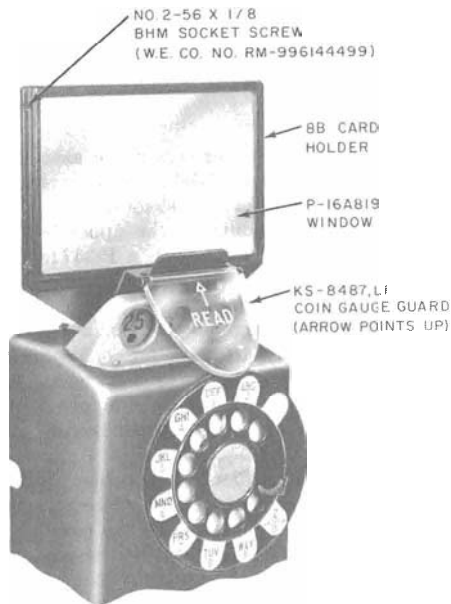


Fig. 9—Dial Type Coin Collector Equipped with Coin Gauge Guard

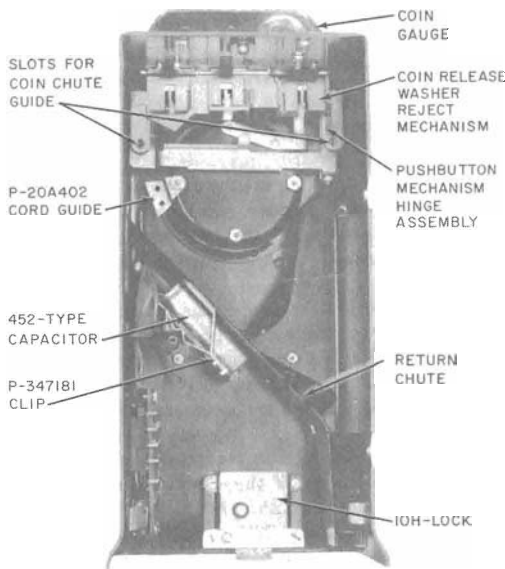


Fig. 10—Upper Housing, Coin Chute Assembly Removed

### Return Chute

- 2.23 The lower part of the coin return chute is located in the lower housing to the left of the cash compartment (Fig. 6).
- 2.24 When a pull bucket is provided, it acts as a receptacle for returned coins.
- 2.25 The pull bucket, in both closed and open positions, prevents access to the return chute.
- 2.26 Later models of coin collectors have P-15E011 chrome-plated pull bucket assemblies.
- 2.27 For additional information on pull bucket assemblies, refer to Part 6 of this section.

### Backplate Assembly

- 2.28 Parts mounted on the backplate are illustrated in Fig. 4.
- 2.29 All 200 series coin collectors have cast aluminum backplates. Lower numbered codes have cast iron backplates.
- 2.30 The 1A backplate is used on coin collectors arranged for security studs, bolt fasteners, and stud fasteners at locations where additional mounting security is needed.

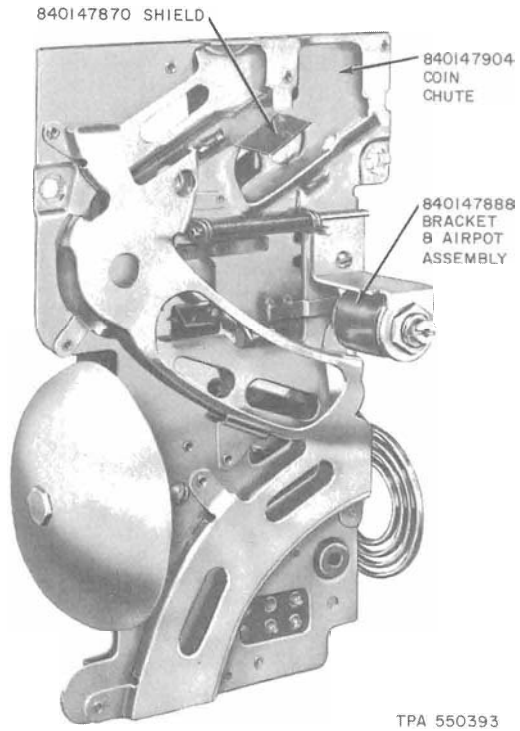
*Note:* Coin collectors equipped with a 1A backplate cannot be used on 139A backboards and 19-type shelves.

- 2.31 The 234G and 1234G coin collectors are furnished with a 1A backplate and are *always* installed with security studs, bolts, or stud fasteners, and a KS-19277 lock assembly. See Part 6 of this section for additional information on the KS-19277 lock assembly.

### Switchhook Assembly

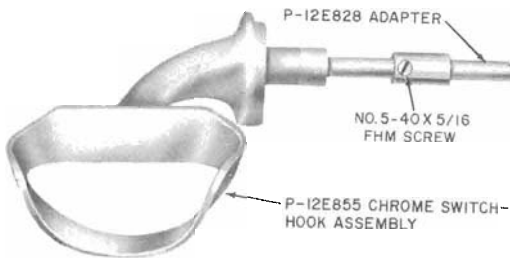
- 2.32 Later models of coin collectors have 2-piece, chrome-plated P-12E855 switchhook assemblies (Fig. 11).
- 2.33 Coin collectors converted from transmitter-receiver type to handset type use P-10C139 switchhook assemblies which require a P-10C136 auxiliary spring.



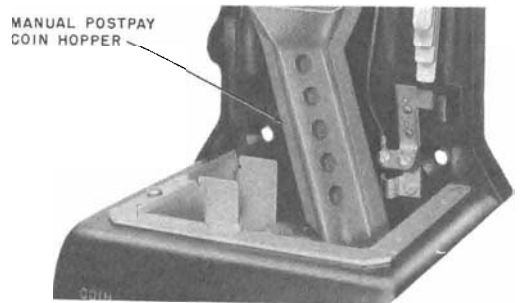


**Fig. 10.1—840148175 Fraud-Resistant Gong Signal and Chute Assembly**





**Fig. 11—Two-Piece Switchhook Assembly**



**Fig. 12—200C Manual Postpay Mechanism Unit**

### Mechanism Unit Assembly

**2.34** The mechanism unit assembly mounts on top of the lower housing assembly. Four types shown are:

- Manual postpay, no coin relay (Fig. 12)
- Dial postpay, no coin relay (Fig. 13)
- Manual or dial prepay 2-coil relay (Fig. 14)
- Manual or dial prepay single-coil coin relay (Fig. 15).

### Coin Relays

**2.35** Most 230-, 233-, and 234-type coin collectors are equipped with a P-13E961 coin relay (Fig. 15) which replaces the P-10E786 coin relay now rated MD. The relays are interchangeable, but most of the components are not.

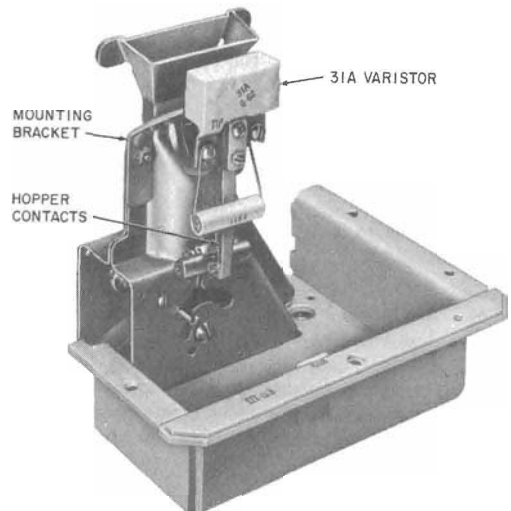
**2.36** The single coil relay has a P-10E783 cover.

### Hopper Assemblies

**2.37** The hopper is assembled to the coin relay in prepay coin collectors. Refer to Part 6 of this section for additional information on coin hoppers in both postpay and prepay service.

### Backboards

**2.38** All coin collectors described in this section, except as noted in 2.30, may be mounted on a shelf or table by means of a 139-type backboard, on a wall by means of a 144- or 174-type backboard,



**Fig. 13—212G Dial Postpay (CDO) Mechanism Unit**

or in a telephone booth or corner by means of a 167-type backboard.

## 3. SELECTION

### CATEGORIES

#### Manual Postpay

**3.01** The 200C-3 is the only current model of manual postpay coin collector available.

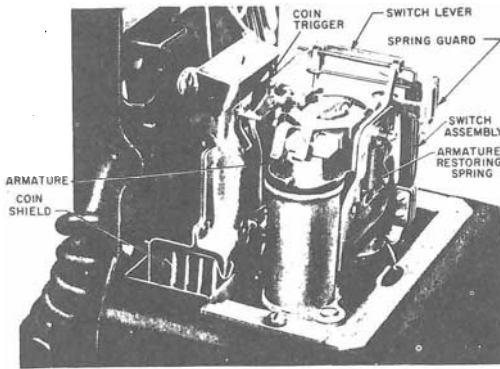


Fig. 14—Prepay Mechanism Unit, 2-Coil Coin Relay

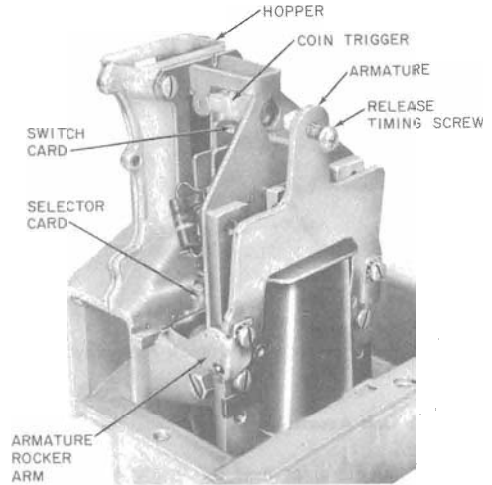


Fig. 15—P-10E683 Mechanism Unit With P-13E961 Coin Relay

- 3.02 Refer to Table A for apparatus furnished with coin collector.
- 3.03 Refer to Table B for apparatus available but not furnished.
- 3.04 Refer to Table C for features of the coin collector.
- 3.05 In a manual postpay coin collector, coins are deposited at the request of the operator and fall directly into the cash box. Coins deposited give distinctive gong signals audible to the operator. No provision is made for the return of coins except that those deposited in the wrong slot are returned automatically.

**Manual Prepay**

- 3.06 Refer to Table D for coin collectors available and apparatus furnished with coin collectors.
- 3.07 Refer to Table B for apparatus available but not furnished.

- 3.08 Refer to Table E for features of the coin collector.
- 3.09 Manual prepay coin collectors are designed for 10-cent operation but may be converted to 5-cent operation by means of a P-339098 cutover clip.

**Dial Postpay**

- 3.10 The 212G-3 is the only dial postpay coin collector available.
- 3.11 Refer to Table F for apparatus furnished with this coin collector.
- 3.12 Refer to Table B for apparatus available but not furnished.
- 3.13 Refer to Table G for features of the coin collector.

**3.14** The station or operator can be dialed without depositing a coin. Coin deposits give distinctive gong signals audible to the operator.

**3.15** Coins deposited cannot be refunded; coins deposited in wrong slots are returned automatically. When a call is abandoned after an initial deposit of a single nickel, coin will be returned when handset is restored. A nickel deposited while handset is on-hook will also be returned.

**3.16** Dial postpay coin collectors are designed for 10-cent operation but may be converted to 5-cent operation by means of a P-339098 cutover clip.

#### **Dial Prepay**

**3.17** Refer to Table H for coin collectors available and apparatus furnished with coin collectors.

**3.18** Refer to Table B for apparatus available but not furnished.

**3.19** Refer to Table I for features of the coin collector.

**3.20** Dial prepay coin collectors are designed for 10-cent operation but may be converted to 5-cent operation by means of a P-339098 cutover clip.

#### **CODES**

**3.21** Code numbers signify types of coin collectors as follows:

*Note:* No definite plan or arrangement can be applied to lower numbered codes or the relationship between old and converted code numbers; however, third digit characters in the 190 series coin collector code numbers have the following significance:

#### **Third Digit—Service and Special Features**

1—Prepay

2—Manual postpay

3—Dial postpay (CDO)

5—Prepay equipped with pull bucket

6—Prepay equipped with washer reject

7—Prepay equipped with pull bucket and washer reject

8—Dial postpay equipped with washer reject (CDO)

**3.22** The characters in the 200 series coin collector code numbers have the following significance:

#### **First Digit—Telephone Circuit**

2—425B network type telephone circuit

#### **Second Digit—Features**

0—Manual postpay, 5-cent coin chute

1—10-cent dial postpay (CDO)

2—10-cent prepay, 4-spring dial shorting coin relay

3—10-cent prepay, slow-release single-coil dial shorting coin relay. Coin collector has corrosion-resistant finish.

#### **Third Digit—Features**

0—Basic collector

2—Washer reject

3—Pull bucket and washer reject

4—Pull bucket, washer reject, and added security features.

**3.23** The characters of the 1234G (TOUCH-TONE<sup>®</sup>) coin collector have the following significance:

1—10-button TOUCH-TONE dial

2—425B network type telephone circuit

3—10-cent prepay, slow-release single-coil dial shorting coin relay. Coin collector has corrosion-resistant finish.

4—Pull bucket, washer reject, and added security features

- 3.24 Code letters signify types of service, coins, and features as follows:

**First Letter—Service and Coin Features**

C—Manual, U.S. coins

D—Manual, U.S. and Canadian coins

\*E—Dial, U.S. coins (A-type number plate)

\*F—Dial, U.S. and Canadian coins (A-type number plate)

G—Dial, U.S. Coins (B-type number plate)

H—Dial, U.S. and Canadian coins (B-type number plate)

\*L—Local battery talking, common battery signaling (obsolete)

\*These coin collectors are obsolete.

**Second, or Second and Third Letters—Features Added by Conversion**

N—Uses a network

R—Spring cord (stamped on carton only)

S—4-spring dial shorting coin relay

T—Slow-release, single-coil dial shorting coin relay.

**COLOR**

- 3.25 Multislot coin collectors are available in black (-3), moss green (-51), and light beige (-60).

- 3.26 The last two digits in a part number signify the color of the apparatus.

**4. INSTALLATION**

**LOCATION**

**Note:** The location of a coin collector should be specified by the service order or an accompanying work sheet. If a location is not specified, obtain instructions from the customer before proceeding.

- 4.01 Consider the following:

- Visibility, accessibility, and possible accident hazards in selecting locations.

- 4.02 Avoid locations over or adjacent to counters, showcases, or other property which could be accidentally damaged by falling handsets.

**Mounting Surfaces**

- 4.03 Consult a supervisor before locating coin stations on finishes that would be expensive to repair if the set is removed.

- 4.04 Have customer or building owner drill mounting and wire entrance holes through glazed tile, marble, or similar surfaces.

**Inductive Effects**

- 4.05 Locate set and associated wiring at least 6 inches from neon fixtures, transformers, or other interference-causing equipment. Refer to Division 500, section entitled: Inductive Noise, for complete information on inductive noise effects of coin collectors.

**Security of Coin Station**

- 4.06 Avoid locations where:

- Coin station can be dislodged by hard use.
- Fasteners cannot be placed in solid backing.
- Coin station can be pried loose (on round columns, door or window facings, uneven surfaces, etc.).

**Booths, Shelves, and Mountings**

- 4.07 Location requirements for booths, shelves and mountings are shown in the appropriate installation section.

**WIRING**

- 4.08 Select and place wire in accordance with section covering wiring.

- 4.09 Wire coin station with triple station wire to provide an individual ground conductor for each station.

- The ground connection must be the same as for signaling grounds.

- 4.10 Conceal wiring near coin station. If this is not practical, use approved molding or woven conduit to conceal wiring.
- 4.11 Locate connecting block, protector or other terminating apparatus where they will be inaccessible to the public. If necessary, locate protector outside building.
- 4.12 Location requirements for associated subscriber sets are specified in the appropriate booth sections.

## BACKBOARDS

- 4.13 Refer to Division 506, section entitled; Coin Telephone Stations, Backboards, for complete installation procedures.



**Mount all coin stations on an approved backboard.**

- 4.14 Backboard and coin station must be securely mounted with the required fasteners, mounting screws, security studs, and associated fasteners.

**Note:** If the coin station is wall mounted (not in a booth) the mounting surface must be plane to avoid warping the backplate and causing misalignment between upper and lower housing.

## MOUNTING



**Remove handset from switchhook before removing or replacing upper housing to avoid damage to the gate operating arm. Do not reassemble upper housing on prepaid coin collectors without placing a P-10E783 cover over the coin relay.**

- 4.15 Fig. 16 shows the suggested mounting height and clearance for all coin stations. Stations

may be mounted at other heights to meet local conditions providing this does not create service or maintenance problems.

- 4.16 To mount coin station:

- (1) Place required number of screw fasteners in upper and lower mounting holes.

**Note:** If coin compartment is not open, the lower fasteners will be added later by the public telephone representative.

- (2) Bring wires through opening in backplate.

- (3) Avoid bowing backplate by partially tightening each screw fastener alternately.

- 4.17 Ground housing assembly, as follows:

- (a) **Prepay open type installation**

- Connect JKT lead or GS insulated wire as shown in Fig. 17.

- Dress wire so that it will not interfere with moving parts of coin mechanism or coin relay shield.

- (b) **Indoor wooden booths**

- A 14-gauge insulated ground wire (P-12C414 ground wire assembly) is provided. (Fig. 18)

- Connect ground wire from outside grounded BX armored power cable to ventilator or blower and to housing ground screw on coin station.

- (c) **Metal booths**

- Grounding is provided through mounting screws.

- (d) **19- and 20-type shelves**

- See (a)

- 4.18 To ground upper housing to backplate: Place U-shaped spring clip on left edge of upper housing so it will make contact with housing contact spring (Fig. 19).

**TABLE A**  
**MANUAL POSTPAY COIN COLLECTOR**  
**APPARATUS FURNISHED**

COIN COLLECTOR	HANDSET		UPPER HOUSING ASSEMBLY	LOWER HOUSING ASSEMBLY	BACKPLATE ASSEMBLY	COIN CHUTE ASSEMBLY	COIN CHUTE ONLY
	TRANS ZONE 2	TRANS ZONE 5					
200C-3	G3R-3	G3R-3	P-81B803	P-81A603	P-81A103	P-338889	P-338883

**TABLE A (Cont)**

COIN COLLECTOR	SUBSCRIBER SET	APPARATUS BLANK	SWITCH HOOK ASSEMBLY	COIN HOPPER AND BASE ASSEMBLY	COIN RECEPTACLE RAIL	UPPER HOUSING LOCK
200C-3	685A	50K-44	P-12E855	P-10E219	1B	10-Type

**TABLE B**  
**ALL COIN COLLECTORS**  
**APPARATUS AVAILABLE BUT NOT FURNISHED**

COIN COLLECTOR	COIN COLLECTOR DOOR	COIN RECEPTACLE	COIN RECEPTACLE COVER	CASH COMPARTMENT ALARM SWITCH	CASH COMPARTMENT LOCK	UPPER HOUSING ALARM SWITCH
All Manual Postpay	1A-44	1B	1D or 1E	P-372083 or 257A	14-Type or 30-Type	227A
All Dial Postpay						
All Manual Prepay						
All Dial Prepay						

**TABLE B (Cont)**

COIN COLLECTOR	CARD-HOLDER	APPARATUS BLANK	SUPPRESSION FILTER
All Manual Postpay	8B-44	Furnished (See Table A)	Not Required
All Dial Postpay		50K-44	61R (Usually Furnished)
All Manual Prepay			Not Required
All Dial Prepay			61R

**TABLE C**  
**MANUAL POSTPAY COIN COLLECTOR**  
**FEATURES**

COIN COLLECTOR	COMB SWHK AND TRFR ASSEMBLY	TWO 654 TRANSMITTERS
200C-3	•	•

\* 1234G does not require on apparatus blank. It is equipped with a P-28E073 faceplate.



**TABLE D**  
**MANUAL PREPAY COIN COLLECTORS**  
**APPARATUS FURNISHED**

COIN COLLECTOR	HANDSET		UPPER HOUSING ASSEMBLY	LOWER HOUSING ASSEMBLY	BACKPLATE ASSEMBLY	GONG SIGNAL AND CHUTE ASSEMBLY
	TRANS ZONE 2	TRANS ZONE 5				
174CT	F2		BA-220497C	Information Not Available	Information Not Available	P-339528
176CT			BA-220499C			P-340222
191CT	F1L		BA-220499C			P-340222
191DT			BA-20499D			P-340223
191CNT	G3R	G3R	P-81C003			P-340222
191DNT			P-81C103			P-340223
195CT	F1L		BA-220449C			P-340222
195DT			BA-220449D			P-340223
195CNT	G3R	G3R	P-81C003			P-340222
195DNT			P-81C103			P-340223
196CT	F1L		BA-220501C			P-20A125*
196DT			BA-220501D			P-20A126*
196CNT	G3R	G3R	P-81B203			P-20A125*
196DNT			P-81B303			P-20A126*
197CT	F1L		BA-220501C	P-20A125*		
197DT			BA-220501D	P-20A126*		
197CNT	G3R	G3R	P-81B203	P-20A125*		
197DNT			P-81B303	P-20A126*		
220CT			P-81C003	P-81A703	P-340222	
220DT			P-81C103		P-340223	
223CT	G3R	G3R	P-81B203	P-81A303	P-20A125*	
223DT			P-81B303		P-20A126*	

\*An 840148175 gong signal and chute assembly is available to provide increased fraud resistance.

TABLE D (Cont)

COIN COLLECTOR	COIN CHUTE ONLY	SUBSCRIBER SET	SWITCH HOOK ASSEMBLY	COIN RELAY AND HOPPER ASSEMBLY	COIN RECEPTACLE RAIL	UPPER HOUSING LOCK
174CT	P-339526	634 or 684 Type	Information Not Available	P-11E964	1B	10H-44
176CT						
191CT						
191DT	P-339527	687A				
191CNT	P-339526	685A or 685B				
191DNT	P-339527					
195CT	P-339526	687A				
195DT	P-339527					
195CNT	P-339526	685A or 685B				
195DNT	P-339527					
196CT	P-20A119 †	687A				
196DT	P-20A120 †					
196CNT	P-20A119 †	685A or 685B				
196DNT	P-20A120 †					
197CT	P-20A119 †	687A				
197DT	P-20A120 †					
197CNT	P-20A119 †	685A or 685B				
197DNT	P-20A120 †					
220CT	P-339526					
220DT	P-339527					
223CT	P-20A119 †					
223DT	P-20A120 †		P-12E855			10H-44 Plus KS-19277

†An 840147904 fraud-resistant coin chute is used with an 840148175 gong signal and chute assembly.

**TABLE E**  
**MANUAL PREPAY COIN COLLECTORS**  
**FEATURES**

COIN COLLECTOR	COMB SWHK AND TRFR ASSEMBLY	WOOD TERM STRIP	452A OR 452 B CAPACITOR	452B CAPACITOR	IND COIL AND CAPACITOR	TWO 654 TRANSMITTERS	PULL BUCKET	WASHER REJECT
174CT								
176CT		•	•					
191CT								
191DT					•			
191CNT								
191DNT								
195CT								
195DT					•			
195CNT							•	
195DNT								
196CT	•			•		•		
196DT					•			
196CNT								
196DNT								
197CT								•
197DT					•			
197CNT							•	
197DNT								
220CT								
220DT								
223CT								
223DT							•	•

**TABLE F  
DIAL POSTPAY COIN COLLECTOR  
APPARATUS FURNISHED**

COIN COLLECTOR	HANDSET		DIAL		DIAL ADAPTER	NUMBER PLATE	UPPER HOUSING ASSEMBLY
	TRANS ZONE 2	TRANS ZONE 5	TRANS ZONE 2	TRANS ZONE 5			
212G-3	G3R-3	G3R-3	6C	6C	63A	158B	P-81B603

**TABLE F (Cont)**

COIN COLLECTOR	LOWER HOUSING ASSEMBLY	BACKPLATE ASSEMBLY	SUBSCRIBER SET	COIN RECEPTACLE	UPPER HOUSING LOCK
212G-3	P-81A803	P-81A203	685A	1B	10 Type, 27 Type, or 29 Type

**TABLE G  
DIAL POSTPAY COIN COLLECTOR FEATURES**

COIN COLLECTOR	COMB SWHK AND TRFR ASSEMBLY	WASHER REJECT
210G-3	•	•
212G-3	•	•

TABLE H  
DIAL PREPAY COIN COLLECTORS APPARATUS FURNISHED

COIN COLLECTOR	HANDSET		DIAL		DIAL ADAPTER	NUMBER PLATE	UPPER HOUSING ASSEMBLY									
	TRANS ZONE 2	TRANS ZONE 5	TRANS ZONE 2	TRANS ZONE 5												
174GT	F2		5 Type or 6 Type		Information Not Available	147B-3	BA-220497G									
176GT																
191GT	F1L							BA-220499G								
191HT								BA-220499H								
191GNT	G3R	G3R	6 Type	6 Type					P-81C203							
191HNT									P-81C303							
195GT	F1L		5 Type or 6 Type							BA-220499C						
195HT										BA-220499H						
195GNT	G3R	G3R	6 Type	6 Type							P-81C203					
195HNT											P-81C303					
196GT	F1L										158B-3	BA-220501G				
196HT												BA-220501H				
196GNT	G3R	G3R	6 Type	6 Type									P-81B403			
196HNT													P-81B503			
197GT	F1L		5 Type or 6 Type											BA-220501G		
197HT														BA-220501H		
197GNT	G3R	G3R	6 Type												P-81B403	
197HNT															BA-220501H	
220GT	G1BR-3	G1BR-3	5 Type or 6 Type	6 Type											63A-3	P-81C203
220HT																P-81C303
223GT	G1BR*	G1BR*	6 Type													P-81B400*
223HT																P-81B500*
230G-3	G3R-3	G3R-3	5 Type or 6 Type												63A-3	158B-3
233G-3																P-81C203
234G-3			6 Type	P-81B403												
1234G*	G3R*	G3R*	25L3	25L3			—								—	P-840200*

\* Color designated by last two digits; 03-black, 51-moss green, 60-light beige.

TABLE H (Cont)

COIN COLLECTOR	GONG SIGNAL AND CHUTE ASSEMBLY	COIN CHUTE ONLY	SUBSCRIBER SET	COIN RELAY AND HOPPER ASSEMBLY	COIN RECEPTACLE RAIL	UPPER HOUSING LOCK
174GT 176GT	P-339528	P-339526	634 Type or 684 Type	P-11E964	1B	10H-44
191GT	P-230222		687A			
191HT	P-340223	P-339527	685A or 685B			
191GNT	P-220222	P-339526				
191HNT	P-220223	P-339527	687A			
195GT	P-340222	P-339526				
195HT	P-340223	P-339527	685A or 685B			
195GNT	P-340222	P-339526				
195HNT	P-340223	P-339527	687A			
196GT	P-20A125 †	P-20A119 †				
196HT	P-20A126 †	P-20A120 †	685A or 685B			
196GNT	P-20A125 †	P-20A119 †				
196HNT	P-20A126 †	P-20A120 †	687A			
197GT	P-20A125 †	P-20A119 †				
197HT	P-20A126 †	P-20A120 †				
197GNT	P-20A125 †	P-20A119 †				
197HNT	P-20A126 †	P-20A120 †	685A or 685B			
220GT	P-340222	P-339526				
220HT	P-340223	P-339527	685A or 685B			
223GT	P-20A125 †	P-20A119 †				
223HT	P-20A126 †	P-20A120 †	10H-44 Plus KS-19277			
230G-3	P-340222	P-339526				
233G-3 234G-3	P-20A125 †	P-20A119 †	10H-44 Plus KS-19277			
1234G*	P-20A125	P-20A119		685A		

\*Color designated by last two digits; 03-black, 51-moss green, 60-light beige.

†An 840148175 fraud-resistant gong signal and chute assembly is available for use in lieu of the P-20A125 and P-20A126 except in the 1234G TOUCH-TONE coin collector. If this assembly is used, the coin chute part number is 340147904.

**TABLE I**  
**DIAL PREPAY COIN COLLECTORS**  
**FEATURES**

COIN COLLECTOR	COMB SWHK AND TRFR ASSEMBLY	WOOD TERM STRIP	452 A OR 452 B CAPACITOR	452 B CAPACITOR	IND COIL AND CAPACITOR	TWO 654 TRANSMITTERS	PULL BUCKET	WASHER REJECT
174GT								
176GT		•	•					
191GT								
191HT					•			
191GNT								
191HNT								
195GT								
195HT					•			
195GNT							•	
195HNT								
196GT	•							
196HT				•	•	•		
196GNT								
196HNT								
197GT								
197HT					•			
197GNT							•	
197HNT								
220GT								
220HT								
223GT								
223HT							•	•
230G-3								
233G								
1234G							•	•

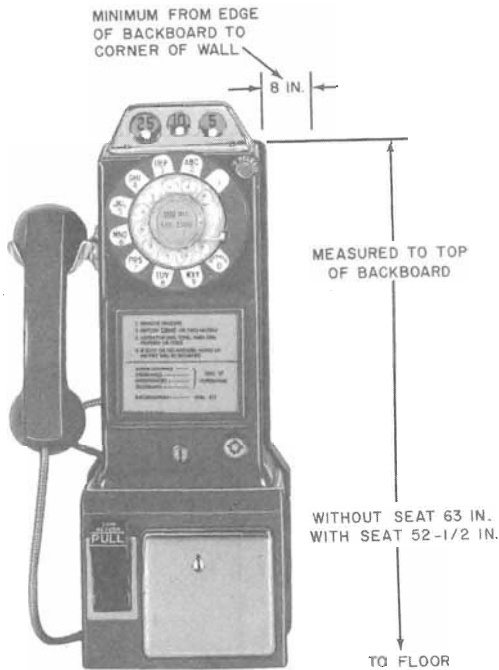


Fig. 16—Suggested Mounting Height and Clearance

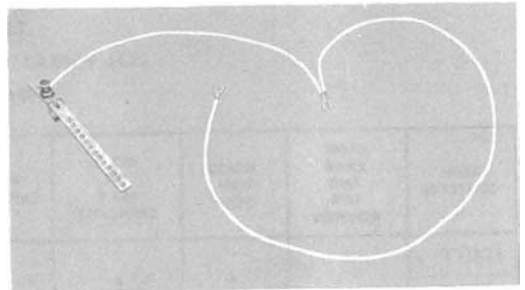


Fig. 18—P-12C414 Ground Wire Assembly

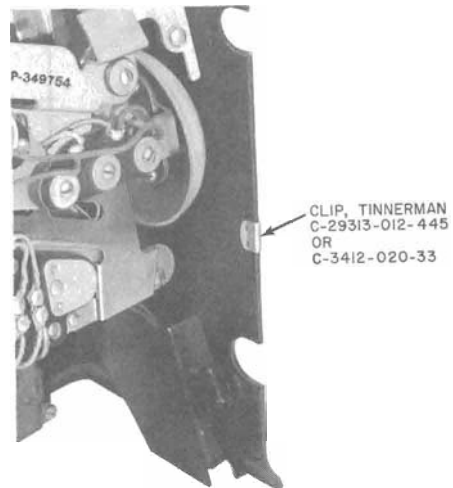


Fig. 19—Method of Grounding Upper Housing to Backplate

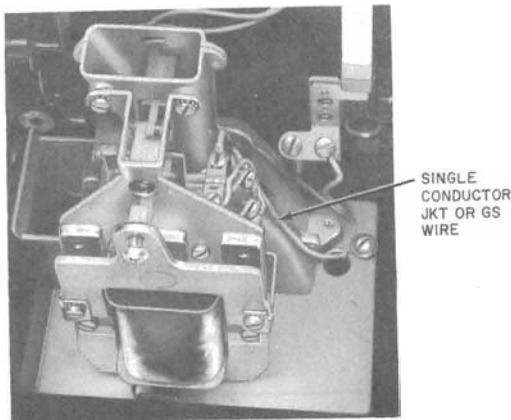


Fig. 17—Method of Grounding Coin Collector Housing Assembly, Open Type Installation

**COMPONENTS**

**Alarm Switches and Security Devices**

4.19 The local telephone company shall regulate the installation of these devices. Refer to Division 506, section entitled: Service, Security Devices for additional information.

**Apparatus Blank, Card Holder, and Coin Gauge Guard**

4.20 Refer to 2.11 through 2.15.



### Out-of-Service Notices

4.21 If a coin station is not ready for service when installation work is completed, place KS-7991 sign (Fig. 20 and 21) or E-4914 Form (Fig. 22) on coin gauge so that customers will not deposit coins.

4.22 A book of E-4914 Forms is included in the packing container of each new coin collector.



*When coin station is placed in service, leave book of E-4914 Forms with agent and give instructions for use when coin station is out of service.*

4.23 The KS-7991 sign must be ordered separately and is mounted by means of a No. 8-32 by 3/4 inch RH machine screw and a self retained speed nut, Tinnerman C-6724-832-373 (Fig. 20 and 21).



Fig. 20—KS-7991 Sign in Place Over Coin Gauge

### Relay Cover



*On 230-, 233-, 234-, and 1234-type coin collectors place P-10E783 plastic dust cover over coin relay before assembling upper housing on backplate.*



Fig. 21—Rear View of KS-7991 Sign



Fig. 22—Form E-4914

## 5. METHOD OF OPERATION

### TELEPHONE CIRCUIT

5.01 The talking circuit is the same as the one used in conventional telephones, except for the addition of two signal transmitters and an electromagnet in series in the primary circuit, as shown in Fig. 23.

5.02 Coin signal tones are picked up by the two signal transmitters and carried over the voice path to the local or toll operator, indicating the denomination and number of coins deposited. The two transmitters are in parallel with a 22-ohm

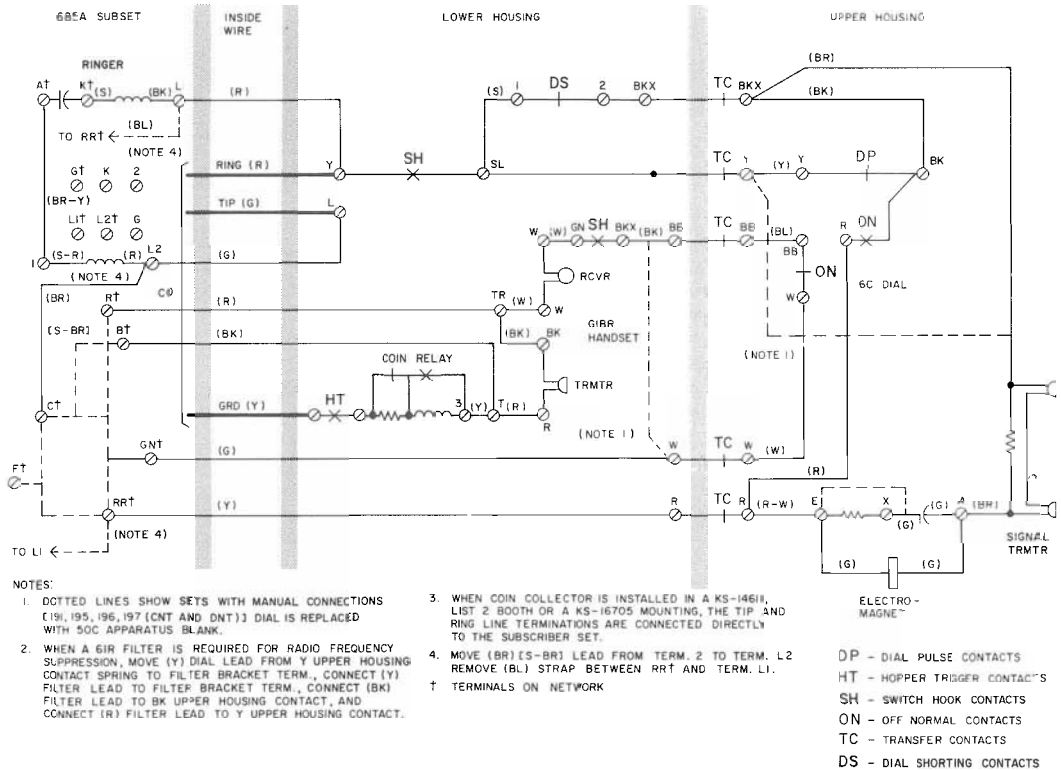


Fig. 23—Prepay Network-Type Coin Collector Circuit

resistor. This arrangement controls the volume level and protects the transmitters against excessive current.

**5.03** The electromagnet is a part of the coin chute and is used in conjunction with 10-cent operation. A capacitor is connected in parallel with the electromagnet winding to minimize its effect on transmission. Network-type circuits equipped with dial have a resistor in series with the capacitor to protect the off-normal dial contacts from excessive arcing. In areas of low-frequency inductive interference, it may be necessary to substitute a unit of higher capacity in order to keep the noise pickup within acceptable limits.

**5.04** The G-type handset is equipped with a 44A varistor bridged across the receiver to reduce acoustic disturbances. A set equipped with an F-type handset has a 37A varistor bridged across the receiver terminals on the backplate.

## COIN HANDLING FEATURES, UPPER HOUSING

**5.05** Coin-handling features of the upper housing consist of a coin gauge, washer-reject and coin-release pushbutton mechanism (when provided), and coin-chute assembly (see Fig. 5 and 10). These units control the coins and, if accepted, direct them to the coin hopper of the mechanism unit on the lower housing. From the coin hopper, they reach the coin receptacle or return chute. Rejected coins fall directly into the return chute.

### Coin Gauge

**5.06** The coin gauge is positioned on top of the upper housing and provides nickel, dime, and quarter openings for the deposit of coins. The respective openings are dimensioned to receive United States and Canadian coins and guide them to their proper channel in the coin chute.

### Washer Reject and Coin Release Pushbutton Mechanism

**5.07** The washer reject mechanism (Fig. 10) functions to prevent washers from entering the coin chute. Washers are detected and ejected by star wheels associated with each channel. The bottom spoke of the star wheel is moved downward by the deposited coin. The second spoke moves against the side of the coin near its center, deflecting it into the coin chute. Washers having open centers will not be deflected and will drop into the return chute.

**5.08** The operation of the coin release pushbutton moves the upper part of the coin chute away from the washer reject mechanism. This will release washers or coins wedged at this location and allow them to drop into the return chute. This movement of the coin chute also opens the gate associated with the nickel channel, releasing coins held at that location (see 5.14).

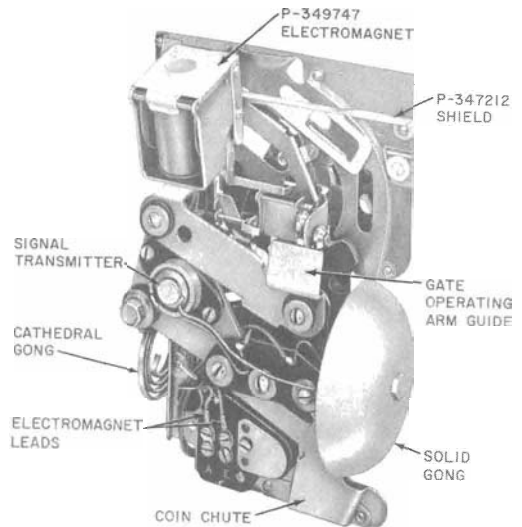
### Gong Signal and Chute Assembly

**5.09** Several different types of gong signal and chute assemblies are provided. They differ according to service and associated equipment. Four services are provided: manual postpay, manual prepay, dial postpay (CDO), and dial prepay. Each service may be arranged for the use of United States coins only or for United States and Canadian coins. The difference here is in the size of the reject openings in the quarter channel. Coin chutes used with washer reject and pushbutton mechanisms are not interchangeable with those used without such equipment.

**5.10** Generally, the gong signal and chute assembly (Fig. 24) consists of a coin chute, including electromagnet, and a gong assembly with signal transmitters.

#### Coin Chute

**5.11** The coin chute (Fig. 25) is made of stainless steel and provides nickel, dime, and quarter channels leading to the coin hopper of the mechanism unit. Nickels are routed to strike a solid gong

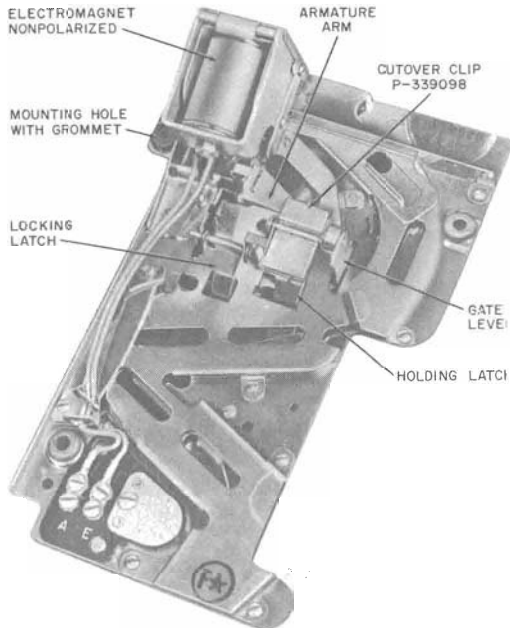


**Fig. 24—Gong Signal and Chute Assembly**

once. Dimes are routed to strike the same solid gong twice. Quarters are routed to strike a cathedral gong once.

**5.12** Control and reject features are provided in the channels. Each channel rejects coins or discs which are below the minimum dimensions allowed for worn coinage. Such coins or discs leave the coin chute before reaching the gongs and fall into the return chute.

**5.13** Ten-cent operation requires a minimum deposit of two nickels or one dime to initiate a prepay call, or to complete a dial postpay nonfree call. To provide for this service, the nickel channel is equipped with a holding latch which is controlled by a locking latch. The first nickel deposited is stopped and held by the holding latch. The second nickel deposited is deflected by the first nickel into the locking latch. The locking latch is operated by this coin, releasing the first nickel at the holding latch. The two coins pass on down the channel in

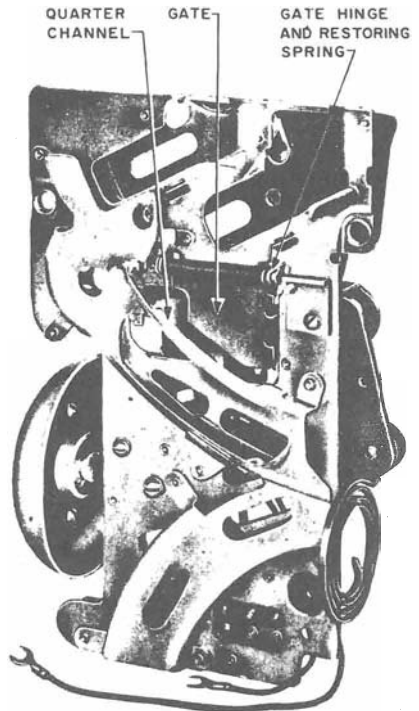


**Fig. 25—Prepay Coin Chute Equipped With P-339098 Cutover Clip For 5-Cent Service**

succession, each striking the solid gong and dropping into the coin hopper.

**5.14** A hinged gate is provided in the rear wall of the nickel channel opposite the holding and locking latches (Fig. 26). Pennies which may reach the holding latch will be ejected through an opening in the gate. A single nickel deposited and held by the holding latch will be released by the gate and fall into the return chute when the handset or receiver is hung up. The gate is controlled by an operating arm on the switchhook. The gate is open when switchhook is down and closed with switchhook is up. Nickels deposited when switchhook is down will pass through the open gate and into return chute. The gate is also opened by the coin-release pushbutton mechanism.

**5.15** When the gate is open, it protrudes into the quarter channel. A quarter deposited when the switchhook is down will be stopped and held by the open gate until switchhook is raised. When released by the gate closing, the quarter



**Fig. 26—Gong Signal and Chute Assembly, Rear View**

will continue down its channel, strike the gong, and reach the coin hopper.

**5.16** The position of the switchhook has no effect on the dime channel. Dimes will follow their channel into the coin hopper at all times.

#### **Electromagnet**

**5.17** The purpose of the electromagnet is to arrange for single nickel deposits to meet requirements of toll and overtime charges. This is accomplished by routing nickels around the holding latch after the central office loop is established.

**5.18** Nonpolarized electromagnets are used for prepay service and polarized for postpay service. Both types are energized by the central

office battery in series with the loop and telephone set primary circuit. An arm on the electromagnet armature is moved into the nickel channel by the operation of the armature. With this armature arm in the channel, nickels bypass the holding latch. This allows single nickel deposits to continue on down the channel, strike the gong, and drop into the coin hopper.

**5.19** The nonpolarized electromagnet used in prepay service moves the arm into the nickel channel regardless of which direction current is flowing. The electromagnet operates on out calls when dial tone is received or the local operator answers. The electromagnet also operates on in calls, as from an operator completing *delayed* calls.

**5.20** The polarized electromagnet used in dial postpay service moves its arm into the nickel channel only when the current flow is in a certain direction. The electromagnet is connected in the circuit so that the current received for dialing moves the arm into the channel. At the time a nonfree call from the coin telephone is answered by the called party, the current flow is reversed to the coin station. This reversed flow of current moves the arm out of the nickel channel, which then requires that two nickels or a dime be deposited to complete the call. On calls to or from an operator, the current flow is not reversed, and the arm is positioned in the nickel channel. This allows single nickel deposits.

#### Gong Assembly

**5.21** The gong assembly is mounted on the coin chute, as shown in Fig. 24. It consists of a supporting bracket on which are mounted the two gongs and their associated signal transmitters. The solid gong for nickel and dime signals and one signal transmitter are mounted on a metal plate. The cathedral gong for quarter signals and the second signal transmitter are mounted on a bracket. The two units are insulated against vibration from each other and from the coin chute by use of rubber grommets at all mounting points. The support bracket also provides a guide to protect the switchhook gate-operating arm from damage when the upper housing is assembled on the backplate.

**5.22** The signal transmitters are associated with handset-type coin collectors. In the construction originally employed, the gong assembly was supported

on hinge lugs in the top of the upper housing to allow the assembly to be swung out for maintenance purposes. The first of this type employed only one signal transmitter. A second signal transmitter was added later to improve the coin signals. Transmitter- and receiver-type coin collectors have the gongs mounted on the sides of the upper housing, and the coin signal is picked up by the talking transmitter. When converted to handset types, these collectors are equipped with a signal transmitter inside the solid gong.

#### MECHANISM UNIT

**5.23** The mechanism unit consists of a steel base and coin hopper on which are mounted coin-operated and coin-control equipment as required for the particular service involved. The mechanism base is mounted on top of the lower housing, where the base also serves as a cover for the coin receptacle compartment.

#### MANUAL POSTPAY SERVICE

**5.24** In manual postpay service, coins are deposited only after the operator has completed the connection to the called party. Refund of deposits is not required. The coin hopper serves simply as a guide to direct coins from the coin chute into the coin receptacle. The later-type coin hopper has clean-out holes to aid in removing stuck coins (see Fig. 12).

**5.25** The central office line circuit for manual postpay service furnishes battery on the ring side and ground on the tip side of the line, the same as for flat-rate individual lines. This requires only a completion of the loop through the telephone primary circuit to operate the line circuit and signal the local operator (loop start).

#### MANUAL OR DIAL PREPAY SERVICE

**5.26** In prepay service a deposit is required before dial tone is received or the local operator answers. Deposits are refunded if the call is not completed. The coin-relay assembly has a coin trigger which extends into the coin hopper above the coin trap (see Fig. 14 and 15). The first coin entering the hopper forces the trigger down to a tripped position. Tripping of the coin trigger operates contacts on the coin-relay switch assembly, preparing the telephone circuit for out calls.

**5.27** The central office line circuit used with dial prepay service supplies battery on the ring side of the line and has the tip side of the line open. A coin or coins must be deposited to place a ground at the station to operate the line-circuit equipment (ground start). The ground is placed on the tip side and is connected to the battery on the ring side through the primary circuit when the switchhook is up. The line circuit operates and prepares the line for dialing over the tip and ring conductors as indicated by dial tone.

**5.28** Manual offices supply battery on the tip side of the line with the ring side open. With the trigger tripped, the ground on the tip side will signal the operator even though the handset or receiver is not off-hook. The central office cord circuit supplies talking battery over the tip and ring conductors.

### Coin-Relay Switch Assembly

**5.29** The coin-relay switch assembly consists of two pairs of spring contacts (see Fig. 23). One pair, which is normally open, closes when the trigger is tripped by a deposited coin and connects ground through the coin-relay winding to the tip side of the line. The connection to the tip side of the line is made through the center tap connection of the network or induction coil. This balances the talking circuit to ground and prevents excessive inductive noise interference.

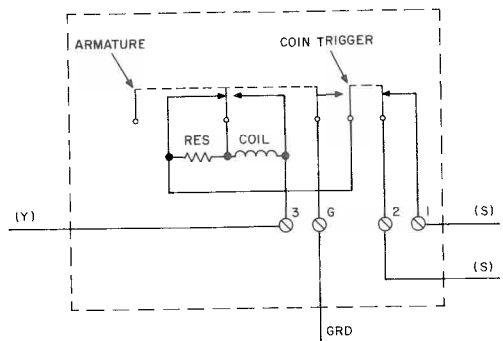
**5.30** The second pair of spring contacts is normally closed and is opened when the trigger is tripped. The contacts are wired in parallel with the pulsing contacts of the dial. With the coin-relay contacts closed, the dial-pulsing contacts are shorted. The coin trigger must be tripped and the shorting contacts opened before dialing can be accomplished.

**5.31** Earlier-type coin relays were equipped with ground contact springs only (2-spring relay). Dial shorting was first accomplished by adding one normally made contact to the assembly (3-spring relay).

**5.32** The single-coil, slow-release, coin-relay switch assembly, in addition to ground and dial-shortening contacts, has a 3-spring break-make combination which functions to short-circuit either a resistor or the relay coil as shown in Fig. 27 and as covered in 5.41.

### Coin Hopper

**5.33** For prepay service, the hopper is equipped with a coin trap which stops and holds all



**Fig. 27—Single-Coil, Slow-Release Coin Relay**

coins that enter the coin hopper. The coin trap is held in its horizontal position or released in relation to the position of a coin vane. The coin vane is under the control of the coin relay which is mounted on the mechanism base, Fig. 14, or on the coin hopper, (Fig. 15).

### Coin Relay

**5.34** The coin relay is operated to its collect or refund position through the tip ground. Positive coin-collect battery or negative coin-return battery (nominally 116 or 125 volts) is applied to the line, as required, under the control of central office equipment or the operator. To clear coins from the hopper, the relay must remain operated for approximately 1/2 second, otherwise the coins may become wedged in the hopper. The tip ground also provides a signal to other central office equipment, showing that coins have been deposited. Coins may be disposed of while the customer is on the line.

**5.35** The operation and subsequent release of the coin relay restores the coin trigger and switch-assembly contacts to their normal position.

### Two-Coil Coin Relay



*Two-coil coin relays are obsolete and cannot be used with Dial Tone First service; consequently, it is recommended that all 2-coil coin relay coin collectors be replaced with single-coil coin collectors or coin telephone sets.*

**5.36** The 2-coil coin relay (Fig. 14) is a polarized relay. Its direction of operation depends on the direction of the current flow through its windings. Positive current pulls the armature down on the right side and operates the coin vane to the left or collect position. Negative current pulls the armature down on the left side and operates the coin vane to the right or refund position. Moving the coin vane from under the coin trap allows the weight of the held coin or coins to swing the coin trap downward. The coins drop into the coin receptacle or the return chute according to the position of the coin vane.

#### Single-Coil, Slow-Release Coin Relay

**5.37** The single-coil coin relay (Fig. 15) consists of a nonpolarized armature and relay coil designed for fast operation and slow release. Collect and refund operation of the coin vane is controlled by a polarized selector card located at the back of the relay assembly as shown in Fig. 28. The selector card is made of nylon and has a small permanent magnet embedded along its upper edge.

**5.38** The selector card is tilted slightly to one side or the other according to the polarity of the current applied to the relay. This is accomplished by two pole-piece extensions, one extension being positioned above each end of the permanent magnet. While in the tilted position, the selector card is moved downward by the operation of the relay armature. This movement guides a cam coupled to the coin vane to the right or to the left according to the direction in which the selector card is tilted.

**5.39** With the selector card tilted down on the right side, the coin vane is moved to the right or refund position. With the left side of the selector card tilted down, the coin vane is moved to the left or collect position.

**5.40** The coin trap is also mechanically opened by the downward stroke of the selector card and restored on the release stroke. This expedites coin disposal and avoids coins, lodging in the trap. With the coin vane and the coin trap both under the control of the selector card, their movements are synchronized and friction and scoring between

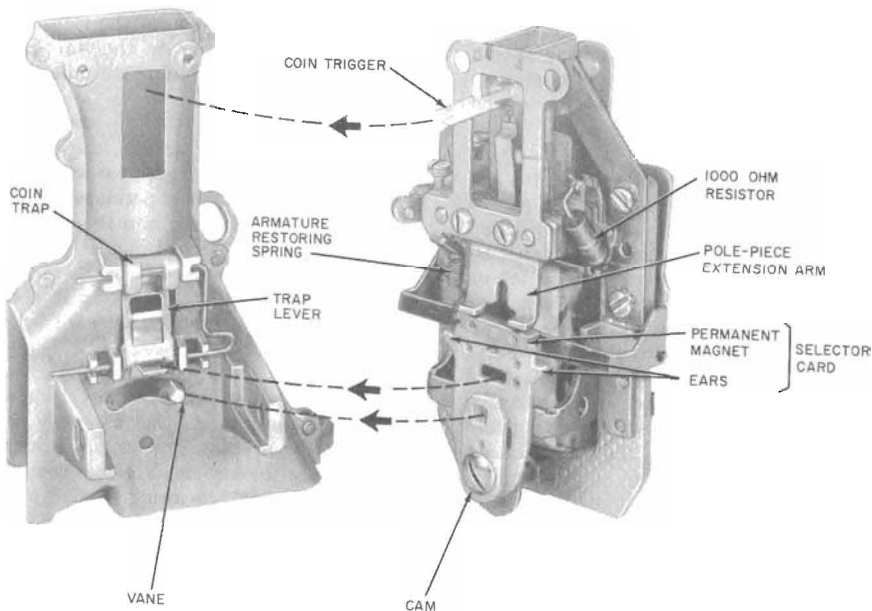


Fig. 28—Coin Hopper and Rear View of Coin Relay



these two moving parts are eliminated. The slow-release feature of the relay ensures time for complete disposal of coin deposits even on short coin-battery pulses.

**5.41** The slow-release feature is obtained by short-circuiting the coin-relay winding near the end of the operate stroke (Fig. 27). During the holding period the 1000-ohm resistor is substituted for the short-circuited relay coil. This protects the coin battery resistance lamps in the central office from a current surge and protects the coin-relay ground contacts from excessive arcing when they open while coin battery is still applied to the line. To prevent reoperation of the relay, the ground contacts are opened on the release stroke before the short circuit is removed from the relay coil.

**5.42** With either-type relay, the ground circuit remains closed at the station until the release stroke to ensure proper operation of coin pilot lamps at manual or toll switchboards. On the 2-coil relay the station ground circuit remains closed, and the coin pilot lamp is lighted as long as the collect or refund key is held operated. Due to the self-restoring feature of the single-coil relay; however, the station ground remains closed only during the operate and slow-release holding period. This limits the maximum time the coin pilot lamp will remain lighted but ensures at least 1/4-second appearance, which is considered adequate.

**5.43** The selector card and vane cam are designed so that they center mutually at the end of the release stroke. When the relay is operated manually, the selector card must first be tilted by pressing downward on one of the ears located on either side of the selector card before the armature is closed. This avoids jamming the engaging surfaces of the selector card and the cam. Force applied downward to the ear on the right side of the selector card will operate the relay mechanism in the return direction. Force applied downward on the left side will operate it in the collect direction.

#### Coin Shield

**5.44** The coin shield shown in Fig. 14 functions to prevent unauthorized access to the coin hopper. The coin shield is required on all prepay coin collectors which do not have pull-bucket return chutes.

#### DIAL POSTPAY SERVICE (CDO)

**5.45** In dial postpay service, dial tone is received, the called number is dialed, and the called party answers before a deposit is required. Refund of deposits is not necessary. Dial postpay service has central office equipment which, when the called party answers on nonfree calls, automatically splits the connection and sends a deposit-coin tone to the calling party. Deposit-coin tone is a low tone to inform the calling party that the called party has answered and that the required coins should be deposited. During the time the connection is split, the battery supply to the coin station is reversed in direction. This current reversal switches the coin collector for the 10-cent initial coin deposit. The first coin, passing through the coin hopper, opens a pair of contacts on the spring assembly, which places a 4450-ohm resistor momentarily in the circuit. The increased loop resistance will cause the central office equipment to remove the split connection and to switch the circuit for conversation.

**5.46** The central office line circuit for dial postpay service furnishes battery on the ring side and ground on the tip side of the line. This requires only a completion of the loop through the primary circuit to operate the line circuit and prepare the line for dialing as indicated by dial tone (loop start).

**5.47** For dial postpay service, the coin hopper is equipped with a coin trap and a coin vane. The coin vane is positioned permanently to the left, allowing all coins to drop into the coin receptacle. With the coin vane locked in the collect position, a coin shield is not required. A coin-trap counterweight holds the coin trap in a horizontal position unless it is forced downward by a passing coin. (See Fig. 13.)

**5.48** A contact-spring assembly is mounted on the coin hopper. The assembly consists of a pair of normally closed contacts which are opened by linkage to the movement of the coin trap. This results in the contacts being opened momentarily as each coin drops through the coin hopper and forces the coin trap downward. The contacts are wired in series with the primary circuit of the telephone.

**5.49** A 63CH (4450-ohm) resistor mounted on the mechanism base is wired in multiple with



the contact springs in the primary circuit. The resistor is shunted out of the circuit when the contacts are closed and is effective in the circuit when the contacts are opened.

**5.50** A 31A varistor which is mounted on the contact-spring assembly bracket is also bridged across the resistor and the contacts. The varistor is poled so as to be in opposition (open) to the reverse current flow on the line. Under this reverse current condition, the varistor will not shunt out the resistor when the contacts are opened. Normal direction current will flow through the varistor, shunting the resistor, as when coins are deposited with an operator on the line. This reduces objectionable clicks.

## 6. MAINTENANCE

### COIN FIRST (SINGLE-COIL COIN RELAY)

**6.01** When trouble cannot be cleared:

- (a) Notify testdesk.
- (b) Place out-of-service tag over coin gauge.

**6.02** When service is restored, remove tag.

#### A. Tools, Gauges, Cords, and Materials

**6.03** Tools, gauges, cords, and materials which may be required in addition to those normally carried are described in Division 506, section entitled: Coin Telephone Stations Tools, Gauges, Materials.

#### B. Cleaning



*Remove handset from switchhook before removing or replacing upper housing to avoid damage to the gate operating arm. Do not reassemble upper housing without replacing coin relay dust cover.*

#### General Cleaning



*Check operation of coin station following cleaning operations which may affect the mechanism.*

**6.04** To remove loose dirt or dust:

- (a) Use cleaning paper, KS-2423 cleaning cloth or a No. 6 sash brush

**6.05** To remove sticky deposits:

- (a) Use cloth or brush moistened with water.
- (b) Wipe dry.

**6.06** To remove gummy deposits:

- (a) Use cloth or brush moistened with KS-7860 petroleum spirits.



*KS-7860 petroleum spirits is flammable. Use safety precautions when handling.*

- (b) Wipe dry.

#### Coin Gauge

**6.07** To clean dirty or sticky coin gauge openings use moistened pipe cleaner.

#### Coin Chute

### 6.08 DO NOT CLEAN COIN CHUTE.

- (a) Replace if dirty or corroded.
- (b) Check for dirt at bottom of coin chute just back of the vertical step.
- (c) Upper mounting screws or bayonet guides and springs may be cleaned with a KS-2423 cloth and KS-7860 petroleum spirits.



*Do not lubricate nylon bushings, lower mounting screw, and rubber grommets.*

- (d) Replace if electromagnet armature, latch spring, or gate spring show signs of rust.

- (e) Coin chute should be changed rather than replacing upper housing unless other conditions warrant replacing the housing.

**Coin Return**

- 6.09 If coin return is badly corroded, replace instrument.
- 6.10 To clean coin return see 6.04 through 6.06.

**Housing Contacts**

- 6.11 Clean contacts with No. 320 or *finer* aluminum oxide cloth.
- 6.12 Wipe off with KS-16601, List 1 paper or KS-2423 cleaning cloth.

**Locks**

- 6.13 Use a 528A tool to remove foreign material from upper housing and security locks.

**Washer Reject and Coin Release Mechanism**

- 6.14 Remove upper housing and coin chute (see 6.30).
- 6.15 If mechanism is damaged, replace upper housing.
- 6.16 To clean:
- Remove dust from reject mechanism with a dry KS-14164 brush.
  - Clean star wheels and pushbutton with KS-7860 petroleum spirits applied with a KS-14164 brush.
  - Wipe dry.
- 6.17 If star wheels still do not move freely, replace upper housing. ***Do not lubricate.***



***Do not attempt to reposition or bend star wheels or castings.***

- 6.18 Lubricate shaft of coin release pushbutton with No. 2B or softer lead pencil.
- 6.19 Reassemble mechanism, see 6.32.

**Coin Relay**

- 6.20 Remove foreign magnetic particles which have accumulated on selector card magnet and pole piece extensions as follows:
- (1) Fold a piece of rubber tape over the end of an orange stick.
  - (2) Depress selector card; then, hold armature operated.
  - (3) Press rubber tape against pole piece extension arms and magnets in selector card so that foreign particles adhere to tape.

**C. Upper Housing****Dial Replacement**

- 6.21 Replace 4- or 5-type dial with 5-type dial.

**Note:** Replacement of a 4- or 5-type dial with a 6-type dial involves added replacement of dial adapter, number plate, dial cord, and possible modification of upper housing; therefore, upper housing should be replaced rather than replacing a 4- or 5-type dial with a 6-type dial.

- To mount 5-type dial on upper housing, insert two 641A tools in dial mounting holes as guide pins.
- 6.22 Replace 6-type dial with 6-type dial.
- Assemble mounting studs to dial before mounting dial.

**Coin Deflectors**

- 6.23 The 63A dial adapter used with the 6-type dial incorporates a coin deflector to prevent dropped coins from lodging behind the dial.
- 6.24 A P-14A544 coin deflector is used with the 5-type dial and the 56A dial adapter. P-14A544 coin deflector replaces earlier P-16A805 coin deflector. See Fig. 29 and 30 for installation.



Fig. 29—Method For Installing P-14A544 Coin Deflector



Fig. 30—P-14A544 Coin Deflector in Place

#### Stuck Coins

**6.25** To remove coins or slugs stuck in coin gauge:

- (a) Use fingers or an orange stick, do not use a screwdriver or other metal object.

- (b) Loosen or remove coin chute if necessary (6.30).

**6.26** Replace upper housing if coin gauge is mutilated or distorted.

**6.27** To remove coins or slugs stuck in coin chute use orange stick or other nonmetallic tool. Remove coin chute, if necessary. See 6.30.

**6.28** Replace coin chute if coin channels are bent or damaged.

**6.29** Remove slugs, foreign coins, or washers stuck in coin reject opening. Check reject opening with a standard coin before chute is reassembled in upper housing.

#### Coin Chute Replacement

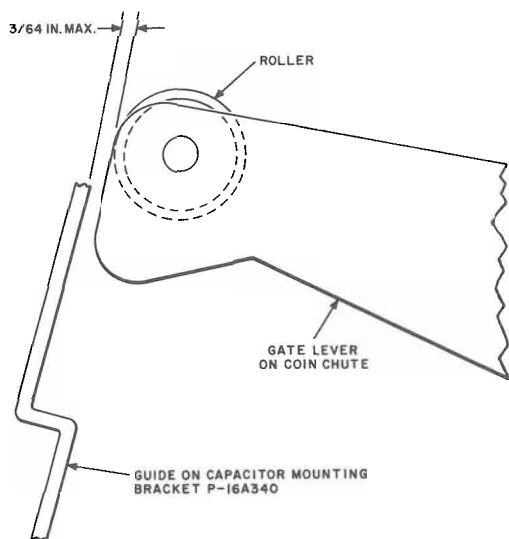
**6.30** To remove coin chute from upper housing:

- (1) Disconnect attached leads.
- (2) Loosen filter, if present and leave filter hanging loose.
- (3) If gong signal assembly is mounted on swing type bracket:
  - Remove mounting screws and swing out of way.
- (4) Remove mounting screw.
- (5) Remove bayonet guides by pushing them toward coin chute and rotating one-fourth turn in either direction.
- (6) Lift coin chute from upper housing.

**6.31** If existing coin chute is equipped with gong signal assembly, capacitor, or resistor, and the replacement chute is not so equipped, remove items and place on new chute.

**Note:** End of gate operating arm guide on capacitor mounting bracket should clear gate lever (Fig. 31).

**6.32** To reassemble coin chute in upper housing, reverse removal procedure.



**Fig. 31—Clearance Between Guide and Gate Operating Arm**

**Caution:** Bayonet guides not securely fastened may fly out when coin release pushbutton is depressed.

#### Coin Chute Alignment

**6.33** Check chute alignment with upper housing removed from lower housing and in a vertical position.

- (a) Deposit nickel in 5-cent slot of coin gauge. Coin shall pass freely from gauge into chute. Coin should stop at fist latch.
- (b) Deposit second nickel. Locking latch should release, allowing coins to continue through channel.
- (c) Deposit dime and quarter in 10- and 25-cent slots of coin gauge, respectively. Coins shall pass freely through chute.
- (d) Deposit nickel in 25-cent slot of coin gauge. Coin shall pass freely from gauge into chute and pass through coin return channel.

**6.34** If coins do not enter chute freely, check that chute is properly positioned on mounting flanges, and that mounting screw and bayonet guides are secure.

- Do not use washers to align chute.
- Do not attempt to straighten distorted chutes.

**6.35** If checks described fail, try another chute. If coin still fails to enter chute freely, replace upper housing.

#### Coin Signals

**6.36** Make certain coins strike signal gongs at time coin chute alignment tests are made.



*Final judgment of coin signal tones shall be determined by the operator.*

**6.37** Coin signals shall be as follows:

- (a) When a nickel or quarter passes through the coin chute, the associated gong should emit one clear signal.
- (b) When a dime passes through the chute, the gong should emit two clear signals.
- (c) If signal is poor:

- Check for interference caused by improperly dressed wires.
- Check that gongs are the proper type and fastened securely.
- Check for broken coin signal transmitter wires.

**6.38** Signal gongs

- Oval gongs should be mounted so that punch mark is within 1/8-inch of the center plane of the gong and at right angles to face of gong mounting bracket.
- Round gongs may be rotated to any position.
- Make sure quarter does not override quarter gong.

- 6.39 Replace coin chute, if satisfactory signals cannot be obtained.

#### Coin Release Mechanism

- 6.40 Coin chute shall rest against both flanges of frame assembly, not against pushbutton mechanism.
- 6.41 When pushbutton is fully depressed top of the coin chute should move approximately 1/4-inch. Gradual release of pushbutton should allow coin chute to return freely to its normal position.



*If cardholder mounting screw interferes with electromagnet cover, clip off end of screw.*

- 6.42 Pushbutton should not bind at any point over its entire length of travel.
- 6.43 Replace upper housing if pushbutton does not meet requirements in 6.42.

#### Cord Interference

- 6.44 Cords or wiring should not interfere with passage of coins through coin chute or with any moving parts.

#### Security Lock

- 6.45 Upper housing may be equipped with KS-19277 lock assembly. When upper housing is removed, apply KS-19094 antiseize compound to threads of bolt or stud fastener. Refer to Division 506, section entitled: Service, Security Devices for additional information on KS-19277 lock assembly.

#### 50K Apparatus Blank

- 6.46 All 50K apparatus blanks that do not meet company standards shall be replaced with 50K-44 (chrome) apparatus blank (Fig. 8).
- 6.47 To replace 50K apparatus blank
- (1) Remove upper housing.
  - (2) Remove three No. 4-36 by 9/32 RHM screws.

- (3) Install new apparatus blank using reverse procedure.

- 6.48 Replace damaged or missing screws and plastic windows per Fig. 32.

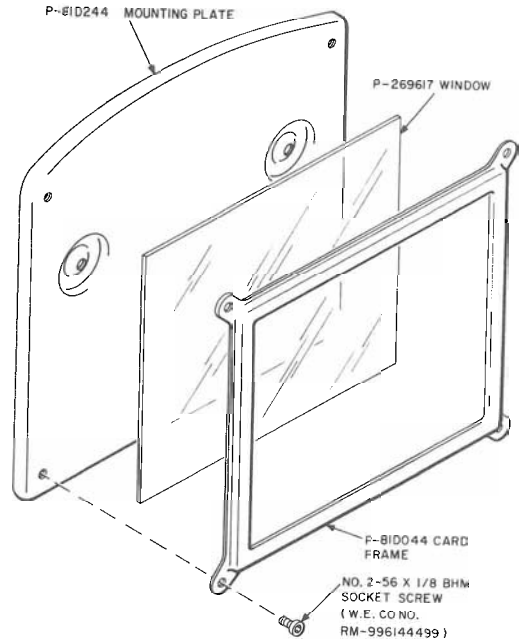


Fig. 32—50K-44 Apparatus Blank

#### 8B Card Holder

- 6.49 All 8B card holders that do not meet company standards shall be replaced with 8B-44 (chrome) card holders (Fig. 9).
- 6.50 To replace 8B card holder:
- (1) Remove upper housing.
  - (2) Remove three No. 4 hex nuts.
  - (3) Install new 8B card holder using reverse procedure.

6.51 Replace damaged or missing screws and plastic windows. Slot head frame screws shall be replaced with No. 2-56 by 1/8 BHM socket screws (Fig. 33).

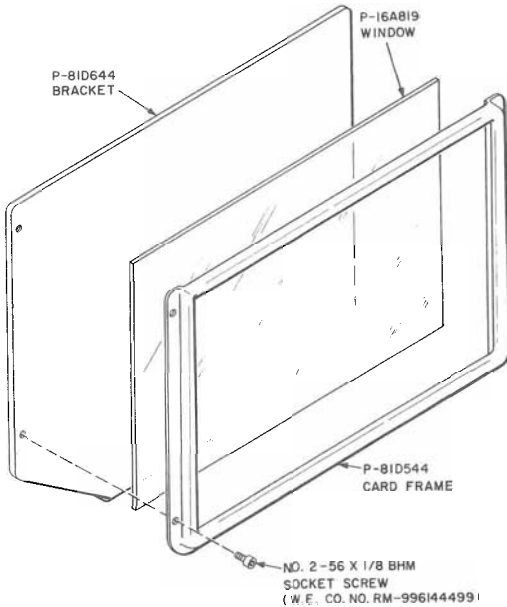


Fig. 33—8B-44 Card Holder

**D. Lower Housing and Backplate Assembly**

**Handsets**

6.52 Refer to Fig. 34 for routing and securing handset cord in 235- and 1235-type coin collectors.

6.53 Refer to Division 506, section entitled: Service, Security Devices, for routing and securing handset cord in all other type coin collectors.

**Antifraud Transmitter Unit**

6.54 The T2 and T3 transmitter units (Fig. 35) have a protective grid to prevent fraudulent operation of the coin collector. The T3 (Fig. 36)

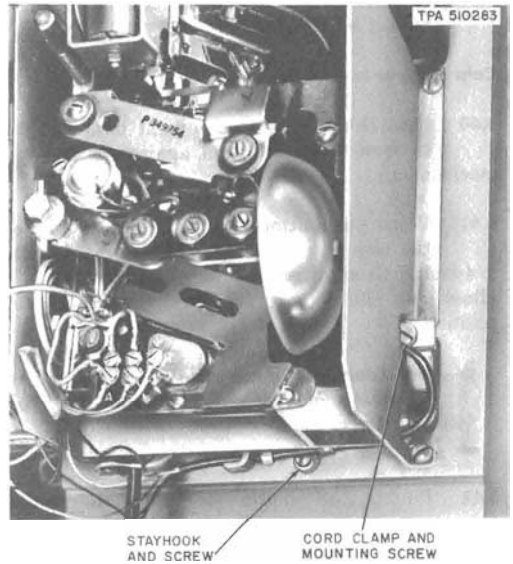


Fig. 34—Location of Armored Cord Mounting Hardware in 235, and 1235-Type Coin Collector

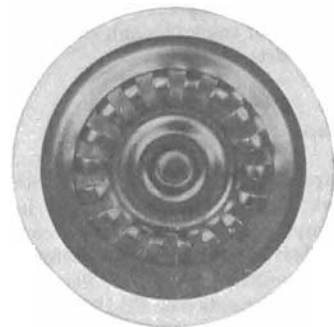


Fig. 35—T2 and T3 Transmitter Units, Front View

unit has screw terminals for use with spade tip conductors.

**Defective Capacitor**

6.55 Replace 195C capacitor if filling compound is leaking or container is collapsed.

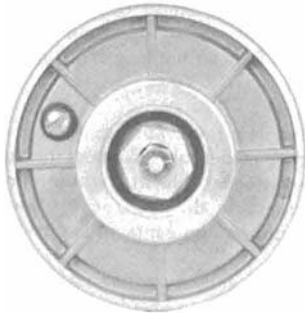


Fig. 36—T3 Transmitter Unit, Rear View

### 37A Varistor

- 6.56 If varistor is used, ensure that it is properly connected.
- 6.57 Replace varistor if insulating finish on lead-out terminal is cracked or chipped.

### Full Coin Receptacle

- 6.58 To clear coin paths blocked by full coin receptacle:
- Insert 139B tool through leveling hole in base of mechanism to level coins.
- 6.59 To determine coin level:
- (1) With tool touching coins, move sliding indicator as far downward as possible.
  - (2) Read scale at top of sliding indicator.
  - (3) Remove tool
- 6.60 Report findings to test desk to prevent a repeated full coin box condition before collection.
- 6.61 If service cannot be cleared, place out-of-service sign or tag (Fig. 20, 21, and 22).

### Switchhook Operation

- 6.62 Switchhook shall not be cracked, broken, or bent, and shall move freely. Test as follows:
- (1) *Slowly* lift handset from switchhook:
    - Switchhook shall move upward and come to a positive stop against backplate.
  - (2) *Slowly* lower handset onto switchhook:
    - Switchhook shall move downward and come to a positive stop against backplate.
    - If failure occurs, check operation of gate on coin chute.
    - See 6.69 through 6.72 for gate operating arm adjustments.
- 6.63 Replace switchhook if failure is due to over travel caused by worn switchhook stops.
- 6.64 Check for binding between switchhook and upper housing:
- Make certain that vertical and lateral movement of upper housing does not interfere with switchhook operation.
  - Replace upper housing if switchhook binds.
- 6.65 On earlier type coin collectors (those with terminals on a wooden block), if switchhook binds, proceed as follows:
- (1) Loosen set screw and remove pivot pin.
  - (2) Take care not to burr bearing surface of pin.
  - (3) Replace pin if bent or corroded.
  - (4) Clean pin, bearing surfaces of switchhooks, lugs on backplate, hard rubber stud on switchhook, and adjacent spring. See 6.04 through 6.06.
  - (5) Lubricate with 2B or softer lead pencil.
  - (6) Reassemble switchhook. Pivot pin shall be within 1/64- to 1/32-inch from end of hole in switchhook. Tighten switchhook.

- (7) Replace coin collector, if above operations do not clear trouble.

**Switchhook Replacement**

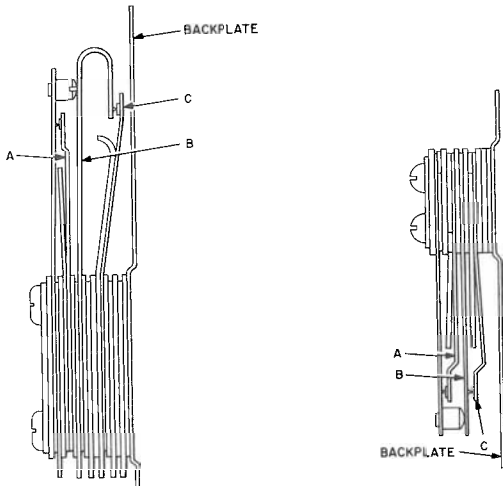
6.66 Refer to Division 506, section entitled: Service, Security Devices, for switchhook replacement.

**Switchhook Contact Springs**

6.67 Adjust contact follow and separation as follows:

- All contacts shall have perceptible follow (approximately 1/64-inch).
- Contact pairs of twin contacts shall make at approximately the same time.
- Minimum separation between mating point-disc type and bar type contacts shall be 0.025 and 0.016 inch, respectively.
- Clearance between noncontacting springs and between spring and backplate is shown in Fig. 37.

Use 265C tool to burnish contacts.



NOTE:  
MIN. 1/32 IN CLEARANCE BETWEEN SPRINGS A AND B, AND BETWEEN SPRING C AND BACKPLATE. JUDGE VISUALLY.

Fig. 37—Spring Clearance

6.68 Spring pile-up shall be tight and contacts shall be aligned so that contact point falls within circumference of opposing contact disc, or a contact bar falls within length of opposing contact bar.

- If switch hook spring pile-up is loose on earlier model coin collectors (having terminals on a wooden block), tighten spring pile-up; if contacts do not line up, loosen spring pile-up, realign contacts and retighten.
- On coin collectors having terminals in the spring pile-up, replace coin collectors if spring pile-up is loose or contacts do not line up.

**Gate Operating Arm Adjustment**

6.69 With upper housing in place and handset off-hook check as follows:

- (1) Deposit a single nickel which should be stopped by holding latch.
  - (2) Lower switch hook slowly to release nickel.
- There should be perceptible switch hook travel before and after nickel is released by holding latch.

6.70 If requirement in 6.69 is not met, check operating arm using 178A or 178B gauge (Fig. 38).

- With switchhook in down position, bottom surface of curved end of arm shall be between the two arcs and lines A and B.
- With switchhook in up position, bottom surface of curved end of arm shall be between the two arcs and lines C and D.

6.71 To adjust position of gate operating arm:

- Bend lugs on each side of support bracket with 466A tool.
- On early type, adjust spring arm only.

6.72 Replace switchhook if requirements cannot be met by adjustment.



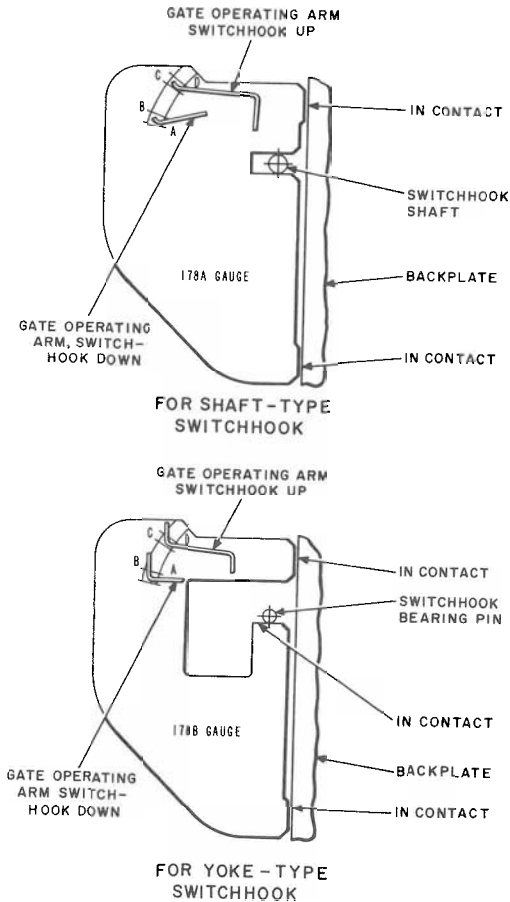


Fig. 38—Use of 178-Type Gauge

### Coin Relay and Hopper Tests

**Note:** No modification or adjustment of coin relay or hopper other than those specified herein shall be made.

### Ground Contact Springs

6.73 Remove P-10E783 dust cover from coin relay.

6.74 In coin first switching systems, connect hand test set across line terminals and trip coin trigger. Dial tone should be heard. If not:

- (1) Verify presence of central office battery and station ground.
- (2) If contacts make firmly, but test open, burnish with 265C tool.
- (3) If dial tone is still not heard, replace relay.

6.75 Lubricate surface between trigger and contact spring with 2B or softer lead pencil (Fig. 39).

6.76 An open resistor will result in no coin pilot light at testboard. Verify as follows:

- (1) Connect hand test set across line terminals with coin trigger not tripped.
- (2) Close relay armature to its full extent of travel. Dial tone should be heard.
- (3) If dial tone is not heard, replace relay.

**Caution:** Tilt selector card by pressing downward on one of the ears before manually operating the coin relay. This avoids jamming selector card and cam engaging surfaces.

### Dial Shorting Springs

6.77 With coin trigger unoperated, contacts shall be made and have perceptible follow.

6.78 With coin trigger tripped, contacts should be open.

6.79 Contacts shall shunt dial pulsing contacts when coin trigger is unoperated. Check as follows:

- (1) Provide ground on line by inserting paper clip or equivalent between ground terminal and spring pile-up of No. 4 spring (Fig. 40).

**Note:** Make sure paper clip does not touch the spring contact portion of No. 4 spring. Avoid making contact with No. 3 terminal.

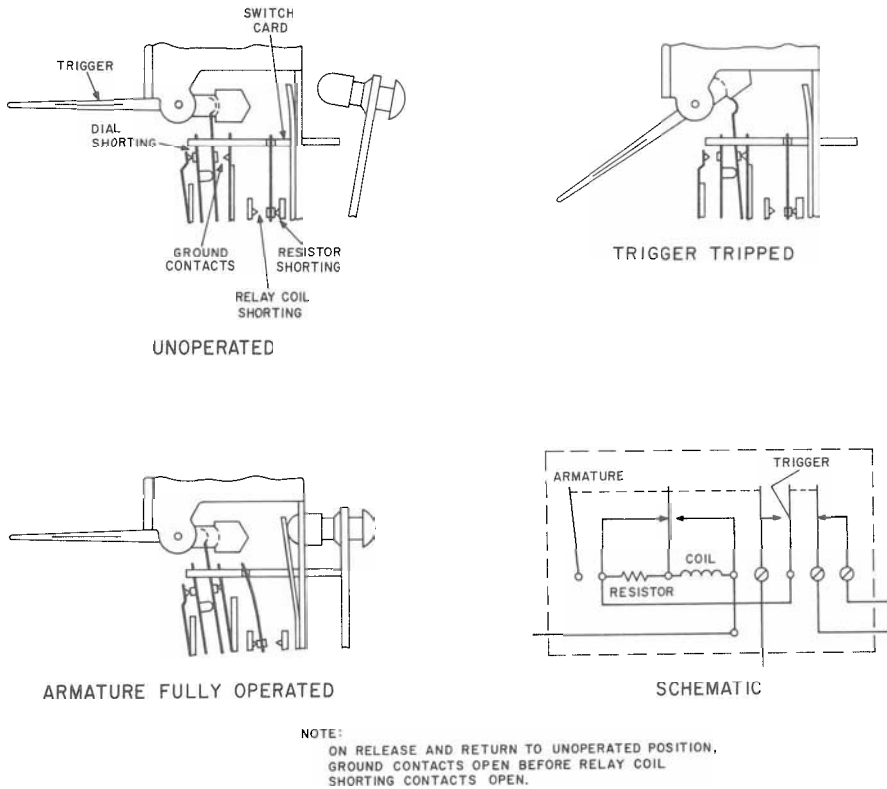


Fig. 39—Contact Spring Assembly

- (2) Place upper housing on coin collector and listen for dial tone.
- (3) When dial tone is heard, dial any digit except "0" or "1". Dial tone should not be broken.
- (4) Remove upper housing.
- (5) Remove paper clip.
- (6) If dial tone is broken, burnish contacts with 265C tool, check housing transfer spring contacts, and wiring for continuity, and repeat test.

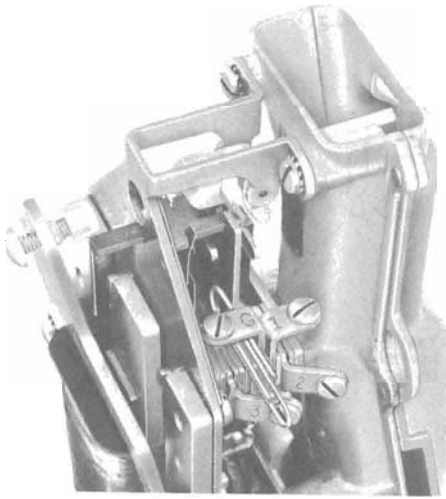
6.80 Replace dust cover.

#### Trap and Vane Release Test

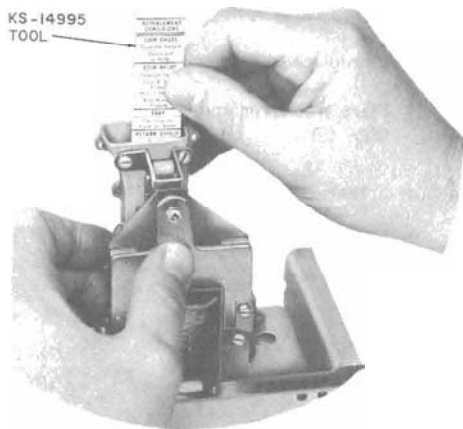
**Note:** Disconnect ground from coin relay while making this test at manual stations.

#### 6.81 Test as follows:

- (1) Manually close coin relay armature to its full extent of travel.
- (2) Insert KS-14995, L3 tool into hopper to operate trap to the limit of its travel (Fig. 41).
- (3) Slowly withdraw tool.



**Fig. 40—Method of Strapping Ground Around Ground Contacts on Coin Relay**



**Fig. 41—Trap and Vane Release Test**

(4) Armature, trap, and vane should return to nonoperated position and trap should be locked.

(5) Make test three times in both collect and refund positions, pressing left side of selector card ear for collect and right side for refund.

(6) If mechanism fails to restore properly, check mounting for binding.

**6.82** If mechanism still fails, remove coin relay from hopper as covered in 6.84 and proceed as follows:

(a) Check vane for binding:

(1) Hold vane tilted slightly to the right.

(2) Vane shall drop to right when released.

(3) Hold vane tilted slightly to the left.

(4) Vane shall drop to left when released.

(5) If vane binds, replace coin collector or replace vane as outlined in Division 506 section entitled: Coin Telephone Stations, Coin Hopper Vane Replacement.

(b) Check operating, restoring, and locking of coin trap.

(1) Depress trap-lever tab slowly with finger.

(2) Coin trap shall fall freely and come to a positive stop.

(3) Release trap lever slowly.

(4) Coin trap shall restore and lock.

(5) If trap-lever spring is missing or lacks sufficient tension, replace or retension spring. See 6.88.

(6) Replace defective coin trap, trap lever, or pin as required. See 6.89.

**6.83** Remount relay and repeat test.

(a) If mechanism fails, replace relay.

(b) If mechanism still fails, replace coin collector.

## SECTION 506-310-100

### Replacing Coin Relay

6.84 To remove coin relay from hopper:

- (1) Remove wiring and four mounting screws.
- (2) Slide relay forward to clear trap and vane and lift upward.

6.85 To replace relay on hopper:

- (1) Move vane to left.
- (2) With trigger tripped, place relay on hopper.
- (3) Slide relay back until trigger enters opening hopper and trap-lever tab enters slot in selector card (Fig. 28).
- (4) Close armature manually by pressing downward on ear on left side of selector card.
- (5) Slide relay back, vane stem should enter hole in cam and mounting screw holes should line up.
- (6) Replace mounting screws.
- (7) Trigger should have some end play and armature, trap, and vane should operate and release without binding.
- (8) If trigger binds, loosen upper mounting screws.
- (9) If trigger is free with upper mounting screws loose, retighten screws evenly.
- (10) Replace relay if trigger still binds.

### Replacing Coin Trap and Associated Parts

6.86 Make certain new P-10E702 trap-lever spring is used.

6.87 To remove trap-lever and coin trap:

- (1) Remove coin relay from hopper. See 6.84.
- (2) Move vane to right.
- (3) Remove trap pin (Fig. 42) by sliding vertical portion over boss on front of hopper.

- (4) Turn coin trap sideways and remove through opening.

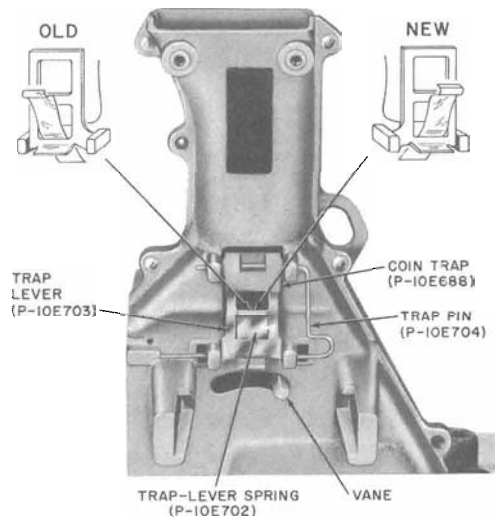


Fig. 42—Trap-Lever Spring and Trap-Lever Assembly

6.88 To replace trap-lever spring.

- (1) Place trap-lever and spring on a flat surface (Fig. 43).

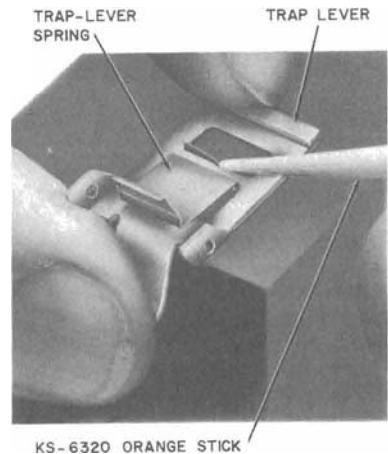
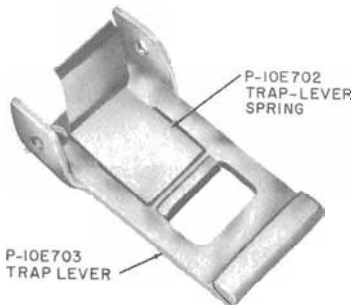


Fig. 43—Bending Trap-Lever Spring

- (2) Use a KS-6320 orange stick to bend trap-lever spring around center bar of trap-lever (Fig. 43 and 44).



**Fig. 44—Trap-Lever Spring Assembled on Trap Lever**

**Caution:** *Avoid distorting trap-lever spring during bending and insertion operations.*

**6.89** To replace coin trap and trap-lever:

- (1) Partially insert trap pin into hole in hopper.
- (2) Place trap-lever on trap pin (Fig. 45).
- (3) Insert coin trap in hopper and engage pin in trap (Fig. 46).

**Caution:** *Be sure that trap-lever spring is between trap pin and hopper (Fig. 47).*

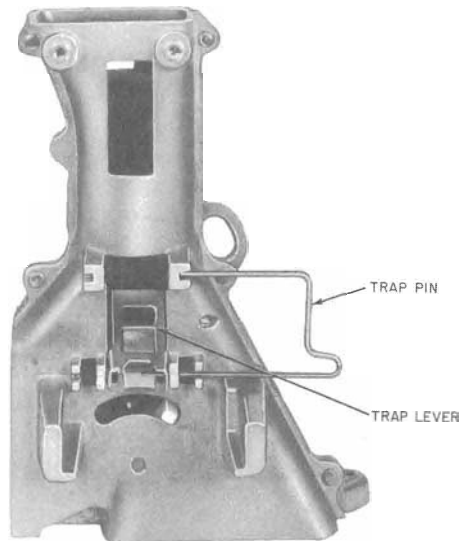
- (4) Push trap pin into position.
- (5) Check operation. See 6.81 and 6.82.

**6.90** Replace relay on hopper. See 6.85.

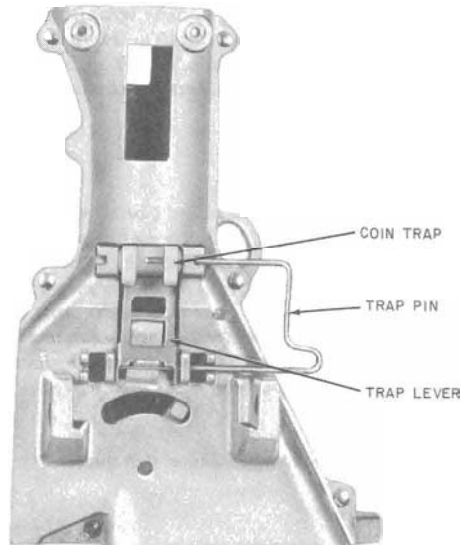
#### **Grounding Coin Collector Housing**

**6.91** Check that grounding clip, (Tinnerman C-29313-012-445 or C-3412-020-38) is in place on upper housing.

**6.92** Backplate assembly should be grounded as covered in Part 4.



**Fig. 45—Placing Trap-Lever Pin on Hopper**



**Fig. 46—Placing Coin Trap on Hopper**

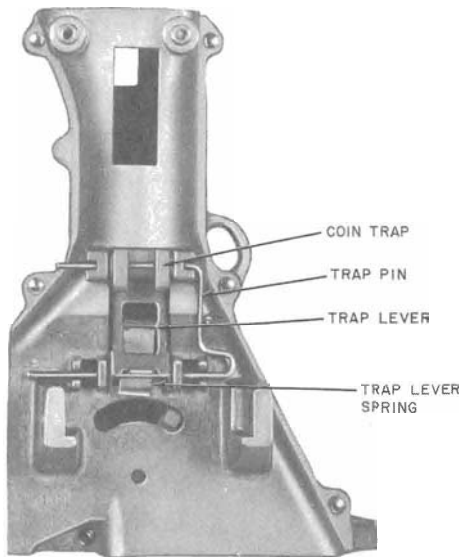


Fig. 47—Trap-Lever Spring Under Trap Pin



*Existing indoor booths which are not equipped with the No. 14 insulated ground wire assembly shall be grounded the same way as open-type installations.*

**Pull Buckets**



*Damaged pull buckets, broken or weak springs and defective shafts may be replaced in the field. Cash compartment must be unlocked and coin receptacle removed to allow access to split end of pull bucket shaft. Cash compartment need not be opened when replacing a plastic pull bucket. See 6.97.*

**Removal and Installation of Metal Pull bucket**

**6.93** To remove:

- (1) Use diagonal pliers to pry up tabs on split end of pull bucket retaining shaft (Fig. 48).
- (2) Compress tabs with pliers to line up with shaft.

- (3) Drive shaft from housing using hammer and drive punch.
- (4) Swing pull bucket to open position and pull forward until ends of springs are exposed.
- (5) Use TP-75503 spring hook to disconnect springs from coin chute crossbar.
- (6) Disconnect springs from pull bucket crossbar.

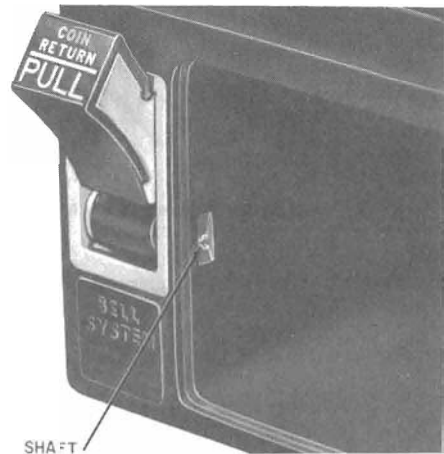


Fig. 48—Pull Bucket Retaining Shaft

**6.94** To install:

- (1) Use TP-75503 spring hook to assemble two new springs on pull bucket crossbar (Fig. 49).
- (2) Hold pull bucket with coin recess upward, supporting springs with fingers so springs extend slightly into chute opening (Fig. 50).
- (3) Use TP-75503 spring hook to engage springs on crossbar in coin chute (Fig. 51).
- (4) Insert and hold pull bucket in normal position.
- (5) Use orange stick or equivalent to line up holes in pull bucket and housing.

(6) Insert P-27E462 stainless steel shaft in housing and force fit using hammer and drive punch (Fig. 52).

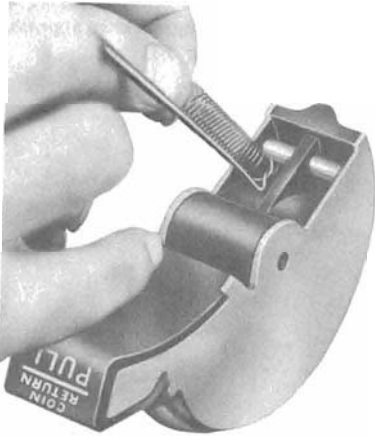


Fig. 49—Attaching Spring to Pull Bucket

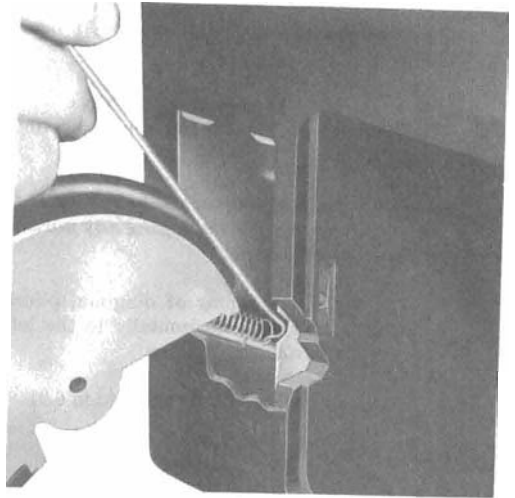


Fig. 51—Attaching Springs in Return Chute

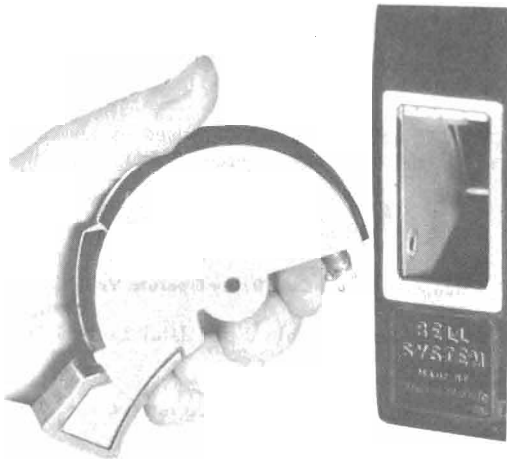


Fig. 50—Inserting Pull Bucket in Return Chute

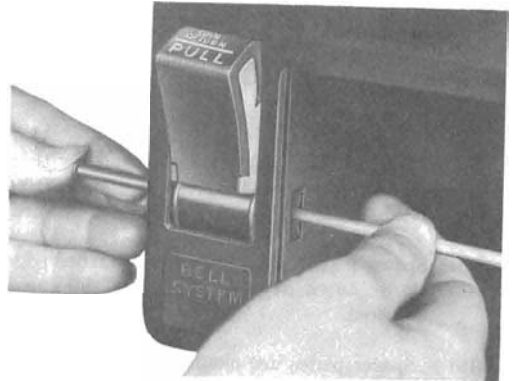


Fig. 52—Inserting Shaft in Housing

6.95 If pull bucket fails to operate properly, replace coin collector.

#### Removal of Plastic Pull Bucket

6.96 Replace damaged or inoperative plastic pull buckets with metal pull buckets.

**6.97** To facilitate replacement of pull bucket without removing coin receptacle, proceed as follows:

- (1) Use hammer and cold chisel to break away lower part of plastic pull bucket which encloses the shaft.

**Caution:** *Exercise care when breaking the plastic to prevent damaging any portion of the lower housing.*

- (2) Grip shaft with a pair of diagonal pliers and apply pressure horizontally to the left to remove shaft from the housing.

**6.98** Install new pull bucket as outlined in 6.94.

#### E. Final Tests

##### Vertical Play

**6.99** Vertical play of upper housing should not exceed 1/32-inch.

**6.100** If vertical play is in excess of 1/32-inch, one or two P-12A745 spacer plates may be added as required.

- Spacer plate is 0.032 inch thick, with a turned edge, which gives it an effective thickness of 0.055 inch if positioned upward.
- Spacer plates may be used with turned edge up or down depending on the thickness required.

**6.101** Spacer plates are mounted on top of upper housing and secured by the two rear card holder mounting screws.

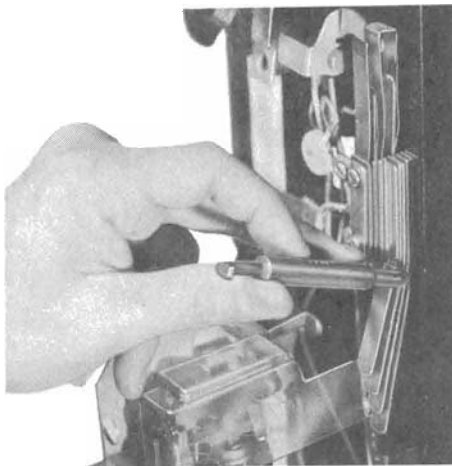
- Card holder, if present, is positioned on top of spacer plates.

##### Noise or Cutout

**6.102** With upper housing locked in place and talking battery on line, there shall be no noise or cutouts in the talking circuit resulting from moving the upper housing up and down, from side to side, and forward and backward.

**6.103** If talking circuit is noisy or cutouts occur, proceed as follows:

- Clean housing contact springs.
- Use a 466A tool to adjust housing contact and equalizing springs to have approximately 1/4-inch follow (Fig. 53).



**Fig. 53—Adjustment of Housing Contact Springs**

**6.104** If noise or cutout is caused by shaking cord or handset, replace handset.

#### F. Range Data and Coin Relay Operate Values

**6.105** Refer to Table J for Dial Long Line requirements.

**6.106** Refer to Table K for loop ranges.

**6.107** Refer to Table L for old and new operate values.



*Newly repaired coin relays will differ in operate values from earlier relays (Fig. 54 and 55). These relays will be marked with an asterisk (\*) adjacent to the part No.*



TABLE J

**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 K

**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 WITH 48 MA. OP. RELAY	LOOP RANGE WITH 41 MA. OP. RELAY
SXS, Panel, No. 1 XBar	100 volts (100-120V)	1500 ohms	2200 ohms
SXS, Panel, No. 1 XBar	115 volts (115-120V)	2100 ohms	3000 ohms
No. 5 XBar, No. 1 ESS, No. 2 ESS	125 volts (125-135V)	2500 ohms	3400 ohms

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

TABLE L

**MULTISLOT COIN COLLECTORS OPERATE VALUES OF COIN RELAYS**

MARKING ON RELAY	OPERATING TIME	OPERATE CURRENT	NON-OPERATE CURRENT	REMARKS
P-10E786	625 $\pm$ 75	48 milliamps	40 milliamps	Coil of restoral spring has a diameter of approximately 5/32-inch (Fig. 54)
P-13E961	millisec (Note 1)			
P-10E786*	450 $\pm$ 50	41 milliamps	30 milliamps	Coil of restoral spring has a diameter of approximately 9/32-inch (Fig. 55)
P-13E961*	millisec (Note 2)			

**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.

TPA 547709

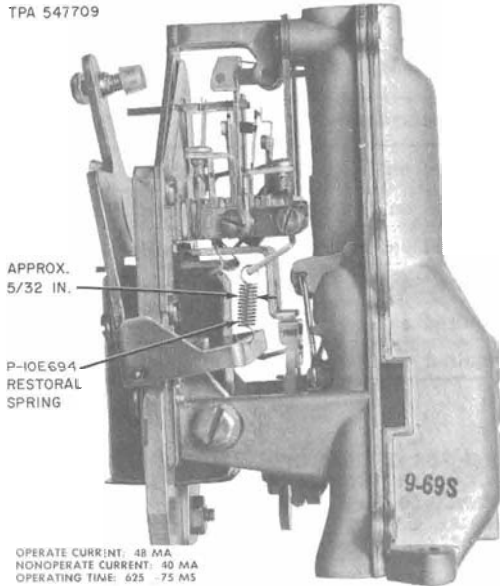


Fig. 54—Coin Relay Showing Old Operating Values

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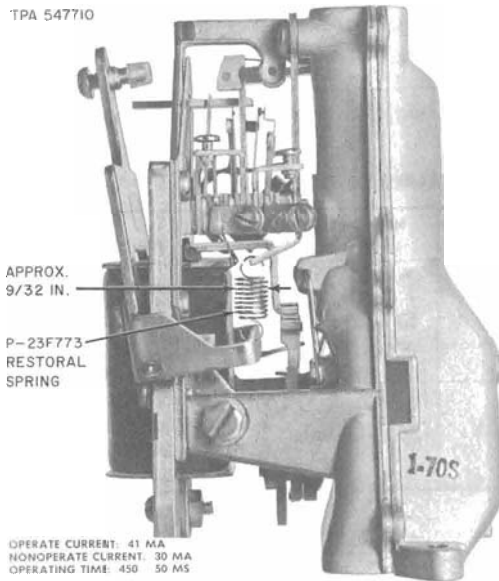


Fig. 55—Coin Relay Showing New Operating Values

COIN FIRST (TWO-COIL COIN RELAY)

*Caution: Remove receiver or handset from switchhook before removing or reassembling upper housing from or to backplate of coin collector equipped for 10-cent operation. This reduces possibility of damage to gate operating arm.*

G. Coin Relay and Hopper Tests

6.108 Refer to Fig. 56 and 57 for component parts.

6.109 Refer to Fig. 58 and 59 for spring arrangements.

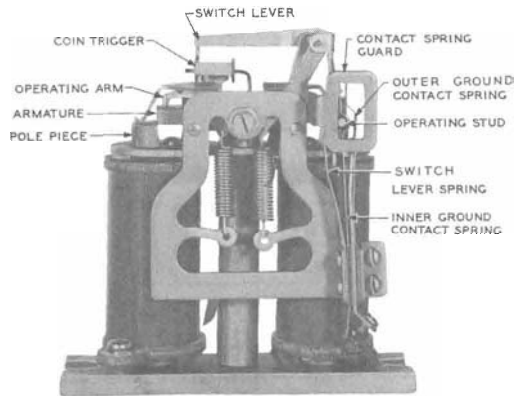


Fig. 56—P-145749, Two-Coil Coin Relay

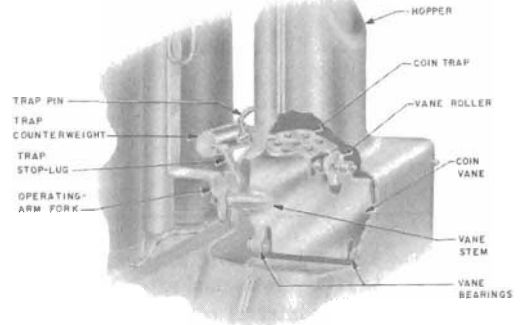


Fig. 57—Hopper and Rear of Two-Coil Coin Relay

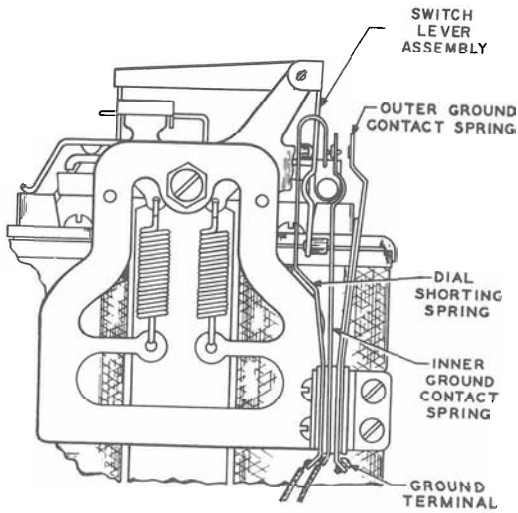


Fig. 58—D-96590 Dial Shorting Relay, 3-Spring (Guard Cut Away)

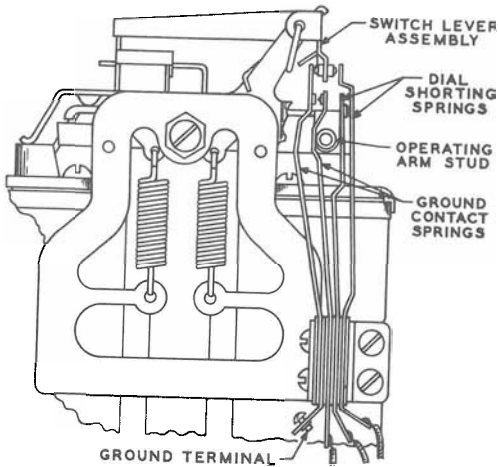


Fig. 59—P-10C117 Dial Shorting Relay, 4-Spring (Guard Cut Away)

**Ground Contact Springs, P-145749 and D-96590 Relays**

6.110 Check ground contact spring force for the P-145749 (2-spring) relay and D-96590 (3-spring) relay as follows:

- (1) With ground lead connected to coin collector, place required gram slot of 147A gauge (Fig. 60) on horizontal portion of switch lever (Fig. 61).

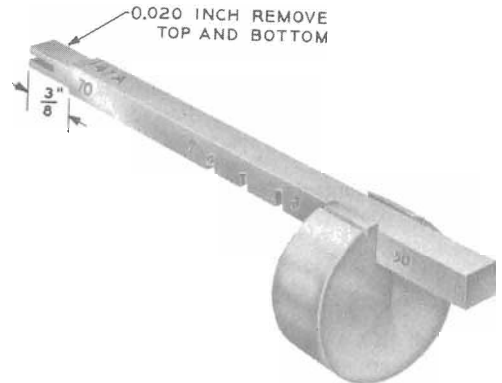


Fig. 60—147A Gauge

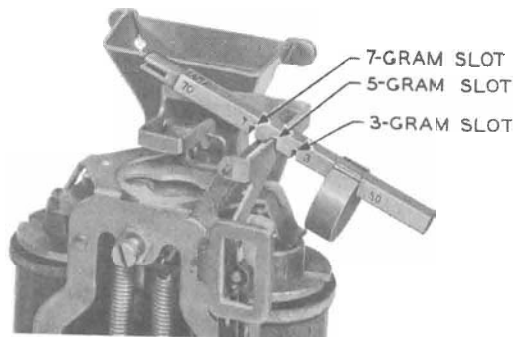


Fig. 61—Gauge for Ground Contact Spring Force

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(2) Connect hand test set across line terminals of coin collector, and trip coin trigger. Dial tone will be heard in dial areas, or operator will answer in manual areas. If not, proceed as follows:

(3) Ground contact-spring force for P-145749 (2-spring) relays should be a minimum of 5 grams measured with the 147A gauge as shown in Fig. 61.

(4) Ground contact-spring force for D-96590 (3-spring) relays should be a minimum of 3 grams measured with 147A gauge 3-gram slot. Contact requirements are as follows:

- (a) If contacts are open, force is less than minimum required. Replace relay or coin collector having a single coil relay.
- (b) If contacts touch but test open, burnish contacts with 265C tool.
- (c) If dial tone is not heard after burnishing contacts, short-circuit ground contact springs.
- (d) If dial tone is heard when contact springs are shorted, replace relay or coin collector having a single coil relay.
- (e) If dial tone is not heard when contact springs are shorted, test for open relay coil or trouble in station ground or line circuit.

### Ground Contact Springs, P-10C117 Relay

**6.111** Check ground contact-spring force for the P-10C117 (4-spring) relay as follows:

- (1) Ground contacts shall have perceptible follow. Observe while raising switch lever slowly by hand from its tripped position.

**Note:** Do not use 147A gauge for checking ground contact-spring force on this relay.

- (2) Connect hand test set across line terminals of coin collector, and trip coin trigger. Dial tone will be heard in dial areas, or operator will

answer in manual areas. If not, proceed as follows:

- (a) If contacts have perceptible follow but test open, burnish contacts with 265C tool.
- (b) After burnishing contacts, if dial tone is not heard, short-circuit ground contact springs.
- (c) If dial tone is heard when contact springs are shorted, replace relay.
- (d) If dial tone is not heard when contact springs are shorted, test for open relay coil or trouble in station ground or line circuit.

### Dial Shorting Contact Springs

**6.112** With coin trigger and operating arm in normal unoperated positions, dial shorting contact springs (Fig. 58 and 59) should have perceptible follow. With coin trigger tripped, they should be open; judge visually.

**6.113** Dial shorting contacts should shunt dial pulsing contacts when coin trigger is in normal position. With ground lead connected, check as follows:

- (1) Provide ground on line by strapping around ground contact springs.
  - On D-96590 (3-spring) relays, strap ground terminal to **tip** side of line.
  - On P-10C117 (4-spring) relays, strap ground terminal to **right** coil terminal.
- (2) Make sure that coin trigger is **not** tripped.
- (3) Place upper housing on coin collector and wait for dial tone.
- (4) When dial tone is heard, dial any digit except "0" or "1". Dial tone should not be broken.
- (5) If dial tone is not broken, **remove strap** and proceed with remaining tests.
- (6) If dial tone is broken, dial shorting contacts are not shunting dial. Clean contacts and

recheck follow of dial shorting springs. Check wiring and transfer spring contacts for continuity.

### Trap and Vane Release Test

**Note:** At manual stations, disconnect ground from coin relay while making this test.

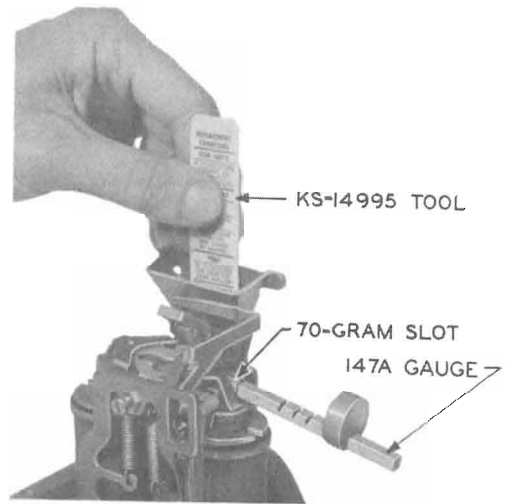
**6.114** Trap, vane, and relay should restore fully to their unoperated positions against a torque of 70 gram-inches applied to relay operating arm with a 147A gauge (Fig. 62). Test as follows:

- (1) Remove shield from relay.
- (2) Apply slot 70 of 147A gauge to right rear horizontal portion of relay operating arm. Make sure that enclosed end of slot is against edge of operating arm and that weight on gauge is positioned up, as shown in Fig. 62.
- (3) Press down on 147A gauge to operate relay and vane to limits of their travel.
- (4) Insert KS-14995, List 3 trap and vane test tool into throat of hopper to operate trap to the limit of its travel. Hold in place as shown in Fig. 62.
- (5) Release pressure on 147A gauge.
- (6) Slowly withdraw KS-14995 tool. Take at least 5 seconds.
- (7) Be sure that vane and relay return to their unoperated positions.
- (8) Make test three times with gauge on right (collect) side and three times on left (refund) side.

**6.115** If mechanism fails, remove relay and proceed as follows:

(1) If hopper is equipped with a brass coin vane, replace coin collector; otherwise, check vane for binding on its bearing as follows:

- (a) Hold vane almost vertical but slightly to the right.
- (b) Vane should drop to fully operated refund position (right) when released.



**Fig. 62—Trap and Vane Release Test**

- (c) Hold vane almost vertical but slightly to left.
  - (d) Vane should drop to fully operated collect position (left) when released.
  - (e) If vane binds on its bearings, replace coin collector.
- (2) Check vane for binding on hopper as follows:
- (a) Holding vane stem as far forward as possible, move vane over its full travel in each direction three times. Make sure that it does not scrape on front of hopper.
  - (b) Push vane to rear of hopper and move vane over its full travel in each direction. Make sure that it does not scrape on back of hopper. Do not push hard enough to distort hopper.
  - (c) If vane binds on hopper, replace coin collector.

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- (3) Check trap for catching on vane or on vane roller as follows:
  - (a) Hold vane in fully operated collect position (to the left) using left hand.
  - (b) With the right hand, lift trap counterweight to its fully operated position.
  - (c) Move vane slowly until it engages trap.
  - (d) Continue moving vane toward vertical position while gently restraining trap. Vane should move smoothly to vertical position.
  - (e) Repeat test on refund side (to the right), reversing use of hands. If trap catches on vane or vane roller, replace trap as covered in 6.124 and repeat test. If replacement trap still catches, replace coin collector.
- (4) Check clearance between trap and vane roller as follows:
  - (a) With trap in unoperated position, place a finger lightly on counterweight.
  - (b) Move vane to vertical position. If vane rubs on trap, adjust trap stop lug so that trap will just clear vane (Fig. 57).
  - (c) With vane in vertical position, lift trap counterweight. Trap should not move more than a few degrees before touching vane roller. Adjust by bending stop lug (Fig. 57).
- (5) Check operating arm fork and vane stem for roughness. Clean and lubricate as covered in 6.118. Also check operating stud. If stud is rough or roller type, replace relay.
- (6) Remount coin relay as covered in 6.119 and repeat trap and vane release test. If mechanism fails, replace relay.

### Bias Margin Test

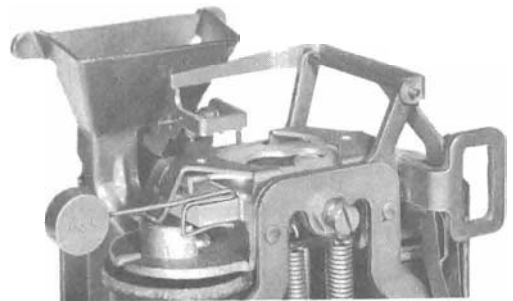
**Note:** Make bias margin test only if relay fails to operate or operates in wrong direction.

**6.116** Relay should operate against torque of a 146A gauge attached to armature in both collect and refund directions when appropriate

central office coin battery is applied. Test as follows:

- (1) To test in collect direction, place a 146A gauge on left side of armature (see Fig. 63).
- (2) Connect hand test set across line terminals.
- (3) Trip coin trigger (see 6.117).
- (4) Obtain collect current by any available local arrangement. Relay should operate to collect (lifting gauge) and trigger should restore. Make test three times (see 6.117).
- (5) To test in refund direction, place 146A gauge on right side of armature.
- (6) Trip coin trigger.
- (7) Obtain refund current. Relay should operate to refund (lifting gauge) and trigger should restore. Make test three times.
- (8) If relay fails to operate in the correct direction or if trigger fails to restore, check for and remove magnetic particles or replace relay.

**Note:** Make sure that line and ground are satisfactory and that coin battery is being applied.



**Fig. 63—Bias Margin Test**

**6.117** When coin trigger is tripped, ground contact springs should close and remain closed without break while armature is moved from its

normal to its fully operated position. It is immaterial at what point on return stroke contacts open.

### Cleaning Coin Relay

**6.118** If relay has been removed for any reason, proceed as follows:

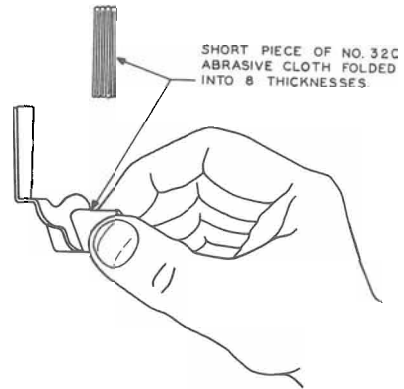
- (1) Clean and lubricate fork and vane stem as follows:
  - (a) Surfaces of fork slot should be smooth. If bearing surfaces of fork are so rough that they cannot readily be made smooth, replace relay; otherwise, smooth rough spots using No. 320 or finer abrasive cloth folded as shown in Fig. 64.
  - (b) Clean with KS-2423 cleaning cloth moistened with KS-7860 petroleum spirits.

**THINK** *KS-7860 petroleum spirits is flammable. Use safety precautions when handling.*

- (c) Apply graphite from grade 2B or softer lead pencil to bearing surfaces of fork slot. Rub lead on these surfaces to deposit as continuous a coating as possible.
- (2) Remove magnetic particles from adjacent surfaces of armature, pole pieces, and top of magnet with rubber tape or equivalent. To remove particles:
    - (a) Place a piece of rubber tape about 1 inch long on top of pole piece on left side of relay with at least 1/4-inch extending into airgap under armature. Press down on armature until it squeezes rubber tape. Discard tape with embedded magnetic particles.
    - (b) Repeat operation on right side with a new piece of rubber tape.
    - (c) Use tape folded over orange stick to remove particles from top of magnet.

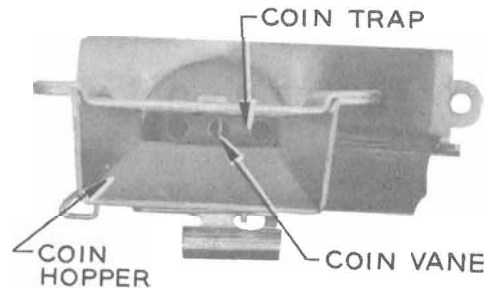
### Replacing Coin Relay

**6.119** When mounting relay, center it so that with operating arm in its normal vertical position, fork slot engages vane stem and holds coin vane in a vertical position. Full thickness of coin vane is visible in the center hole of coin trap



**Fig. 64—Polishing of Fork Slot**

(Fig. 65). If relay cannot be centered, replace relay. If replacing relay cannot be centered, replace coin collector.



**Fig. 65—Position of Vane When Relay is Centered**

**6.120** Coin trigger should not touch upper end of slot in hopper or bind on sides of slot at any point of travel.

**6.121** Place relay as close as possible to hopper. There should be at least 1-1/16 inch clearance between fork and hopper, between vane stem and relay, and between trap counterweight and relay.

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### Replacing Coin Trap

- 6.122** Relay must be removed to replace coin trap.
- 6.123** Coin traps in later style hoppers may be replaced through front of hopper without removing coin shield.
- 6.124** To replace coin trap in *earlier* style hoppers:
- (1) Remove coin return shield, if present, by inserting blade of a cabinet screwdriver in loop of pin. Twist screwdriver sufficiently to release end of pin from hole in hopper. Slowly pull shield and pin out together.
  - (2) Move vane to the right.
  - (3) Fasten a piece of string or wire to trap counterweight.
  - (4) Remove trap pin by lifting right end of loop and sliding pin to the left.
  - (5) Push trap into hopper and allow it to drop into coin return.
  - (6) Fasten string or wire to new trap and pull trap up to slot in front of hopper.
  - (7) Position new trap with bearing lugs uppermost and assemble trap pin.
  - (8) Recheck clearance between trap and vane roller.

### Replacing Coin Shield

**Note:** Coin shield is not required on coin collector equipped with pull bucket return chute.

- 6.125** If coins stick due to damaged or distorted coin shield, or if a bent shield pin causes shield to stick, remove shield pin and shield. Replace as follows:
- (1) Place P-247411 pin through tubular bearing at top of P-296792 shield. Curved-in portion on bottom of shield is toward hopper when loop of pin is to the front (see Fig. 66).

- (2) Hold loop of pin with long nose pliers or fingers and place coin shield pin in hole in rear of hopper.
- (3) Hold shield in place with fingers and secure end of loop in front hole of hopper with long nose pliers.
- (4) Adjust loop so that pin does not come out when play is taken up in either direction.
- (5) Check operation of shield.



Fig. 66—P-296792 Coin Shield

### H. Coin Relay Shield

- 6.126** The coin relay must be protected by a shield. The P-16A336 shield replaces the P-349486 (MD) and KS-7994 (MD) shields and should be used for all replacements.
- 6.127** On coin collectors equipped with a D-95365 contact device, use P-16A336 shield. This differs from the P-349486 shield in that the lower left corner is cut away so as not to interfere with contact device.

### I. Final Tests

#### Coin Chute Operation and Refund Test

- 6.128** To ensure that coin chute and coin return paths are clear and that station and coin



relay are operating satisfactorily, make final test as follows:

- (1) Place coin relay shield on coin relay.
- (2) With upper housing locked in place and handset off-hook, deposit nickel. Nickel shall be held at holding latch. Lower switch-hook slowly. Coin shall drop into coin return. Make test five times.
- (3) If coin collector is equipped with washer reject and coin release mechanism, test with handset off-hook. Deposit nickel. Nickel shall be held at holding latch. Operate pushbutton slowly. Nickel shall be released by gate and drop into coin return. Make test five times.
- (4) With handset off-hook, deposit nickel. Nickel shall be held at holding latch. Deposit second nickel. Second nickel shall release first nickel and permit both coins to pass through coin chute, strike gong, and trip trigger as they drop into hopper. Dial tone shall be heard at dial stations, or operator shall answer at manual stations. Deposit third nickel. Third nickel shall pass through coin chute, strike gong, and reach trap in coin hopper.
- (5) At dial stations, when dial tone is heard, dial any digit except "0" or "1" to break dial tone; then hang up handset. Coins shall drop into coin return on hang-up. At manual stations, when operator answers, request that coins be returned.
- (6) With handset on-hook, deposit dime. Dime shall pass through coin chute, strike gong twice, and trip trigger. Dial tone or manual operator shall be heard after handset is removed from switchhook.
- (7) With handset off-hook, deposit dime. Dime shall pass through coin chute, strike gong twice, and trip trigger bringing in dial tone or manual operator.
- (8) With handset on-hook, deposit quarter. Quarter shall be stopped by the open gate. Remove handset from switchhook. Gate will close and quarter will release and strike gong. Dial tone or manual operator should be heard.

(9) With handset off-hook, deposit quarter. Quarter shall pass through coin chute, strike gong, and trip trigger bringing in dial tone or manual operator.

- (10) If cutover clip is used for 5-cent operation, initial nickel deposited shall not be held at holding latch. All other tests are the same as those described. (See Fig. 25).

#### Coin Signal Test

**6.129** Notify operator that tests for coin signals are about to be made and that coins are to be returned after deposit. Deposit nickel, dime, and quarter. If operator does not identify signals correctly, inspect for trouble at station. Correct as specified under coin chute alignment in the section on general maintenance of coin collectors.

#### Extended Range

**6.130** Coin collectors used with a subscriber set which extends the coin relay range should meet all maintenance requirements listed. Check operator and adjustment of the *S36* relay housed in the subscriber set as covered in the section on subscriber set maintenance. If relay is defective, replace subscriber set with new subscriber set or replace coin collector with a single slot coin telephone set.

#### POSTPAY

**Caution:** *Remove receiver or handset from switchhook before removing or reassembling upper housing from or to backplate of coin collector equipped for 10-cent operation. This reduces possibility of damage to gate operating arm.*

#### J. Dial Postpay Coin Collectors (CDO)

**6.131** If a coin is found stuck between trap and hopper, release coin and proceed with tests and adjustments. If repeated trouble due to stuck coins are experienced, coin collector shall be replaced.

#### Mechanism Unit Assembly

**6.132** Trap shall restore freely to normal position when released slowly from fully open

position. If it does not, coin collector shall be replaced.

- 6.133 With trap in normal position, hopper contacts shall be made.
- 6.134 With trap in fully operated position, hopper contacts shall be open.
- 6.135 The 31A varistor and 146A resistor are mounted as shown in Fig. 13.
- 6.136 The contact spring terminal, to which the 31A varistor terminal marked TIP (+) is connected, is always wired so as to be on tip side of line.

#### Hopper Contact Operation

6.137 With upper housing removed and with handset or receiver off-hook, connect hand test set across line in series with hopper contacts as follows:

- At common battery stations connect hand test set between hopper contact spring terminal which is connected to Y housing contact spring and terminal R on transfer spring pile-up or on wood terminal strip.
- At local battery stations connect hand test set between hopper contact spring terminal which is connected to Y housing contact spring, and terminal BK (or BKX when used) on transfer spring pile-up or on wood terminal strip.

6.138 Dial a local number (not a free call line). If steady deposit coin tone is heard, proceed as in 6.139. If deposit coin tone is heard only momentarily, followed by a short delay and then regular dial tone, check that hopper contacts are properly closed.

- If contacts touch but do not make, burnish with 265C tool.
- If contacts do not touch, replace coin collector.

If no fault is found in hopper contact circuit, trouble may be in central office equipment.

**Note:** If hopper contacts are open with trap in its normal position, central office equipment

will disconnect on calls to nonfree call lines, after which dial tone will be received.

6.139 When steady deposit coin tone is heard, operate trap manually to complete connection. If connection is not completed, check for the following:

- Reversed or defective 31A varistor.
- Line reversed.
- Open resistor (63CH or 146A).

If no fault is found at station, trouble may be in line or central office equipment.

**Note:** Completion of circuit by manual operation of trap may require several attempts because of critical adjustment of central office equipment. Trap must be fully operated and quickly released. If trap is not fully operated, circuit may not cut through. If trap is not released quickly, central office equipment may disconnect, necessitating redialing.

#### Varistor Effectiveness

6.140 In operating trap manually on a local call (6.139), a click will be heard in receiver. If click is as loud on a call to operator as it is on a local call, 31A varistor is defective and should be replaced.

#### Coin Chute Operation and Refund Tests

6.141 Position electromagnet arm so that end is out of 5-cent channel (see Fig. 67). Insert 529A tool in top of coin hopper to retain test coins.

6.142 With upper housing locked in place and with receiver or handset on-hook deposit a nickel. Coin shall drop into coin return. Test shall be made five times and nickel shall return each time.

6.143 With receiver or handset off-hook dial operator. When operator answers, deposit a nickel. Coin shall pass through chute, striking gong, and shall reach 529A tool in hopper.

- If test is met, electromagnet and line wires are connected correctly.

- If nickel falls into coin return, check switch hook operation and gate operating arm adjustment.
- If nickel does not pass through chute as indicated by not striking gong, deposit another nickel. If both coins pass through chute and strike gong, it indicates that first nickel stopped in chute at first latch. Check operation and wiring of electromagnet in accordance with connection diagram in appropriate section. If nickel still fails to reach 529A tool, replace coin chute and repeat tests.

**Note:** When dial tone is received, electromagnet arm is positioned in 5-cent channel. On calls to or through an operator, electromagnet arm remains in 5-cent channel. This allows a single nickel to pass through coin chute.

- 6.144** If test in 6.143 is met, request operator to call back as in a delayed call. Answer call and repeat test with a nickel. Have operator make this test over local and toll connectors if both are available. If test in 6.143 is met but test over local and toll connectors is not met, trouble may be in line or central office equipment.

#### Coin Signal Test

- 6.145** Use a 529A tool. Call and inform the operator that you are about to test coin signals. Deposit a nickel, dime, and quarter. If operator does not identify signals correctly, inspect for trouble at station and correct as specified in 6.33 through 6.35.

### K. Manual Postpay Coin Collectors

#### Coin Hopper

- 6.146** The coin hopper in these coin collectors is a simple channel to guide coins from coin chute to coin receptacle. The only coins returned in this service are improper deposits. If sticking

of coins occurs in coin hoppers not provided with clear-out holes, coin collector shall be replaced.

#### Coin Signal Test

- 6.147** Make test as in 6.145.

### 7. MODIFICATION—TO ADD D-180120 KIT OF PARTS (RINGER ASSEMBLY) TO BACKPLATE ASSEMBLY

- 7.01** This modification can be performed on the following coin collectors:

191GNT

191 HNT

195 GNT

195 HNT

196 GNT

196 HNT

197 GNT

197 HNT

233G

233H

234G



*Only the backplate assembly is to be modified in the field. The upper housings will be modified in the distributing houses with D-180121 kit to add network to upper housing. The modified upper housings will be identified by a red star after the code number.*

- 7.02** The D-180120 kit to be installed in the field consists of P-29E307 ringer assembly, P-29E309 bracket assembly, and P-29E304 terminal board (Fig. 68).

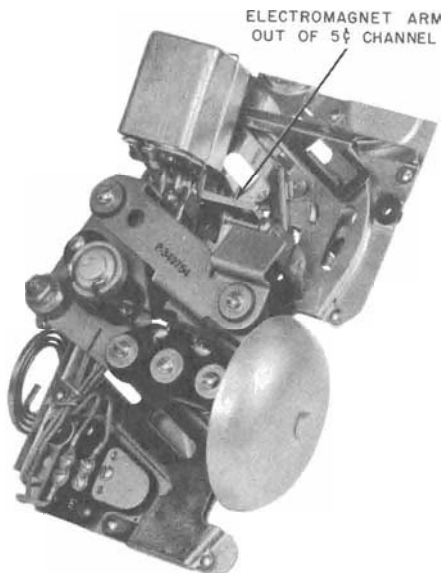
**SECTION 506-310-100**

**7.03** Install kit as follows:

- (1) Disconnect wires per Table M.
- (2) Remove subscriber set.
- (3) Disconnect (BK) wire from between BBX of switchhook and BE of transfer contacts.
- (4) Remove and discard terminal plate assembly at top of backplate assembly. Retain hardware.
- (5) Install P-29E307 ringer assembly (Fig. 68) in same position as terminal plate assembly was located using the retained hardware (Fig. 69).
- (6) Remove and discard BKX transfer spring at right of coin relay. Retain mounting screw.
- (7) Remove and retain equalizing spring, cord clamp, and associated fastener.
- (8) Install P-29E309 bracket assembly (Fig. 68) to backplate per Fig. 69. Use mounting screw retained in (5) to secure bracket assembly at bottom.
- (9) At top of bracket assembly, assemble in order from backplate out, equalizing spring, cord clamp, and P-29E304 terminal board (Fig. 68). Secure with hardware retained in (6) (see Fig. 69).
- (10) Route wires through cord guides where applicable and connect per Table N.
- (11) Insert plug of upper housing, which was modified in the Distributing House, in connector on backplate and install upper housing.
- (12) Check continuity, coin handling, and ringing operation of the coin collector.

**TABLE M**  
**DISCONNECTED WIRES**  
**(D-180120 KIT)**

WIRE COLOR	DISCONNECT FROM	OTHER END CONNECTED TO
G	L on term. block	Tip
G		Subset
R	Y on switchhook	Ring
R		Subset
Y	G on coin relay	Ground
R	TR on term. block	Subset
BK		Handset
W	W on transfer contacts	Subset
G	R on transfer contacts	
Y	T on term. block	Handset
R		Subset
BK		3 of Coin relay
Y (685A, Subset only)	3 on coin relay	Subset
Y (685B, Subset only)		



**Fig. 67—Dial Postpay Coin Chute**

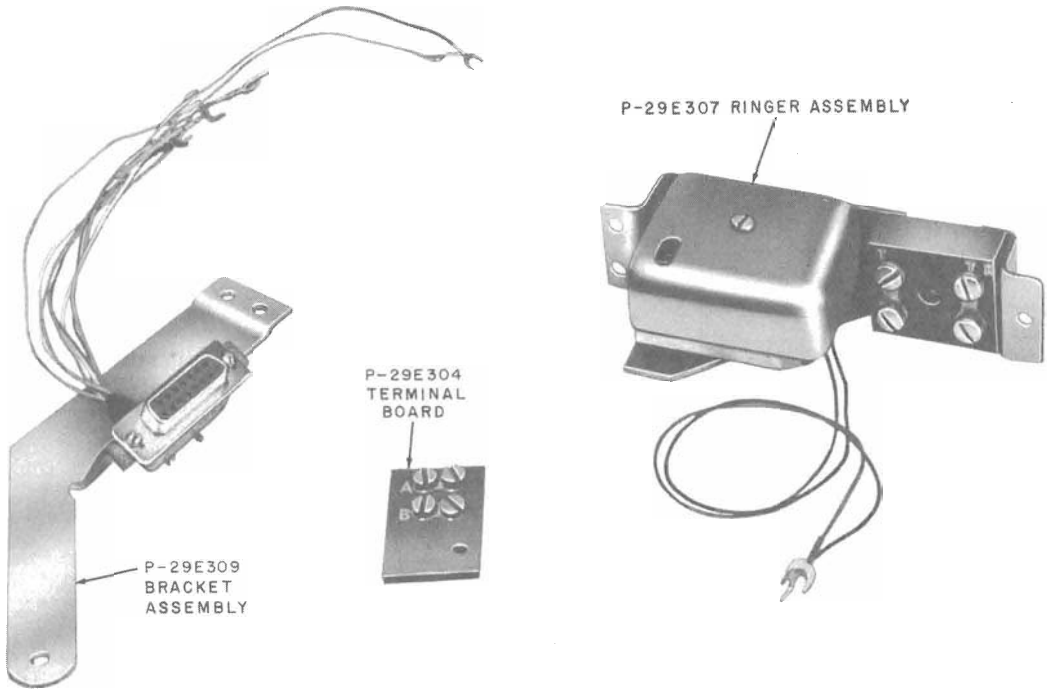


Fig. 68—D-180120 Kit For Modification of Backplate Assembly

**TABLE N**  
**CONNECTED WIRES**  
**(D-180120 KIT)**

WIRE COLOR	CONNECT TO	OTHER END CONNECTED TO
W	TR on term. block	Handset
BK		Connector
W	T on term. block	Handset
R		3 of Coin relay
Y*		Connector
R		
Y	SL on switchhook	Connector
G	BXX on switchhook	
V-S (MD) or BK	2 on coin relay	
V-BR (MD) or BL	R on switchhook	
O		
R		
V	B on term. board	Ringer
BK	A on term. board	Connector
G	R on switchhook	Ringer
R	Y on switchhook	Tip
Y	G on coin relay	Ring
BK	A on term. board†	Ground
		Y on Switchhook†

\* If a 685B subset was disconnected per Table J, Y wire will not exist. Use a (Y) strap.

† Use BK strap disconnected in 9.03 (3).

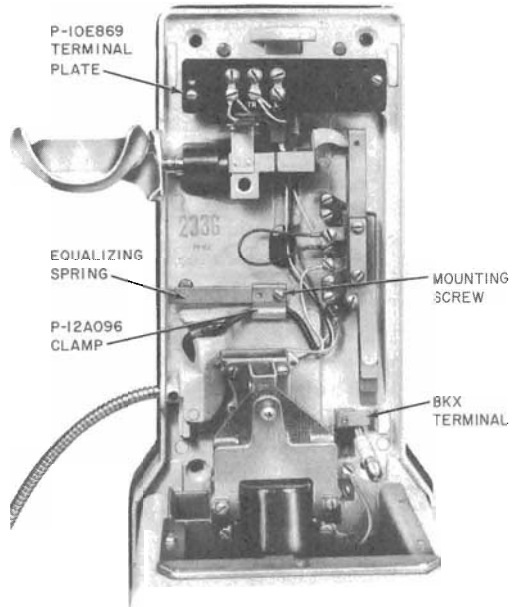


Fig. 69—Backplate Assembly With D-180120 Kit



REFERENCE  
COIN COLLECTORS  
235-, 236-, AND 1235-TYPE

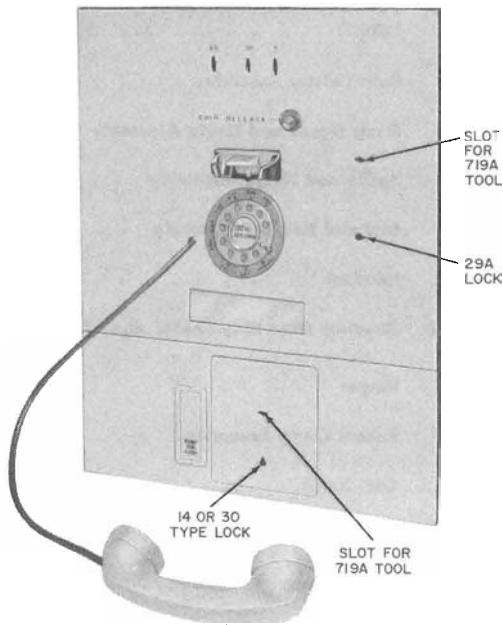


Fig. 1—235G Coin Collector

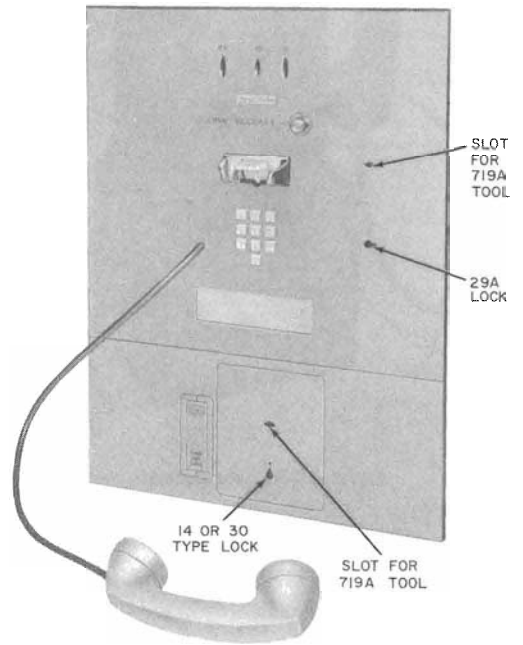


Fig. 2—1235G Coin Collector

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Fig. 3—236G Coin Collector

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1. GENERAL

1.01 Information in this section was formerly contained in the following sections which are hereby canceled:

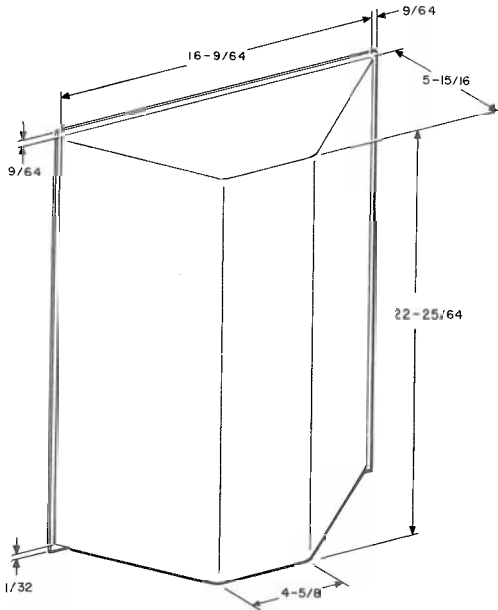
- 506-321-100
- 506-322-100

1.02 The 235G(MD) and 1235G(MD) coin collectors (Fig. 1 and 2) are stainless steel, multislot, panel phones. They are similar except the 235G has a rotary dial; the 1235G has a 10-button TOUCH-TONE® dial.

1.03 The 236G (MD) coin collector (Fig. 3) is a modified 200-type coin collector, having the

transmission network and ringer included in the upper housing and backplate which eliminates the need for a subscriber set.

**1.04** Overall dimensions of the panel phones are shown in Fig. 4.



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

TPA 519423

**Fig. 4—Rear View of 235G or 1235G Showing Dimensions**

**1.05** Overall dimensions of the 236G are:

- Width—9-13/64 inches
- Height—18-21/64 inches
- Depth—6-23/32 inches

**1.06** This section does not include information on Dial Tone First service.

## 2. IDENTIFICATION

### A. 235G and 1235G

#### Ordering Guide

- Collector, Coin, 235G-67A
- Collector, Coin, 1235G-67A

#### 2.01 *Replaceable Components for 235G (Fig. 5)*

- P-44E392 door and housing assembly, consisting of:

P-27E804 door and liner assembly

P-27E855 housing assembly

4A-67 cash compartment door

- P-84D152 rotary dial and housing assembly, consisting of:

8M-52 dial

P-87B052 number plate assembly

- P-44E390 coin twister frame assembly

- P-27E847 coin twister (top section)

- G3-52 handset

- C4A ringer

- 4010B network

- P-20A125 gong signal and chute assembly

- P-11E964 coin relay and hopper assembly

- P-27E835 return chute assembly

- P-15E491 coin return assembly

- 1D coin receptacle rail

#### 2.02 *Replaceable Components for 1235G (Fig. 5)*

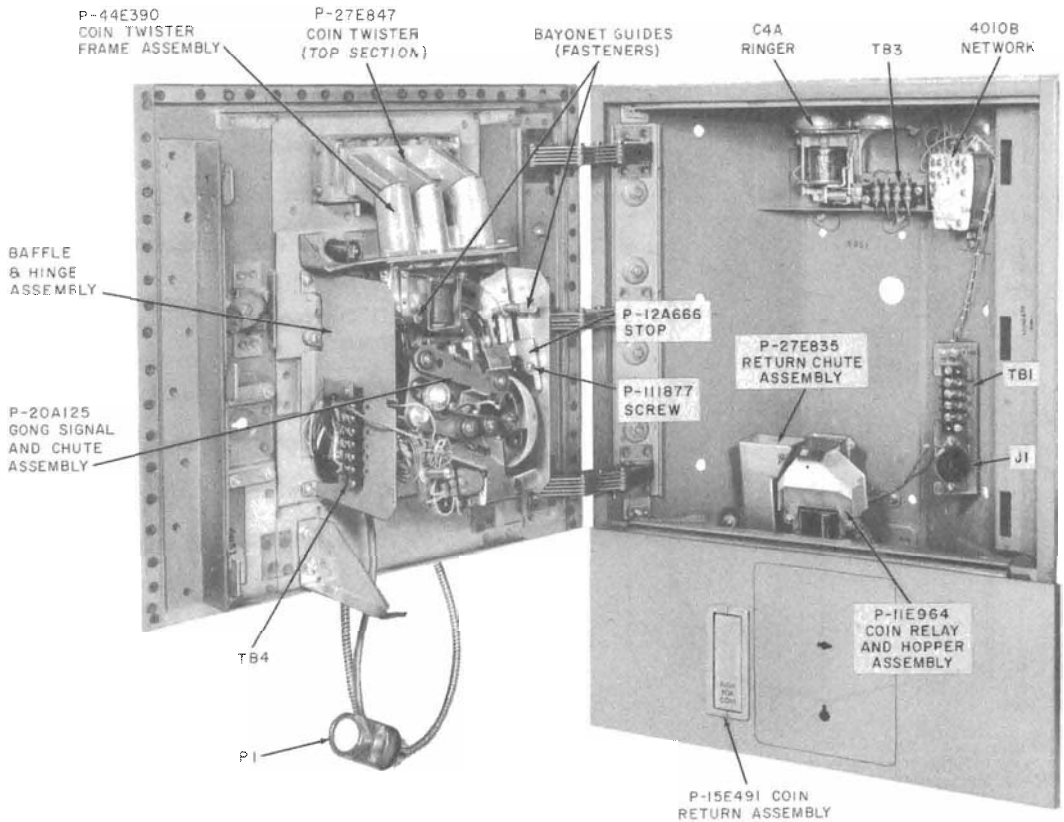


Fig. 5—235G or 1235G Coin Collectors—Interior View

- P-44E391 door and housing assembly, consisting of:

P-27E803 door and liner assembly

P-27E855 housing assembly

4A-67 cash compartment door

- P-27E820 TOUCH-TONE dial and housing assembly consisting of:

25E3 dial

All other components same as for 235G

**2.03 Associated Apparatus for 235G or 1235G (order separately)**

- 1B coin receptacle
- 1D or 1E coin receptacle cover
- 29A lock (door and liner assembly)\*
- 14- or 30-type lock (cash compartment)\*

- 719A tool (Fig. 6)
- P11C test cord (Fig. 7) (used for testing with door and liner assembly open)
- 127A-67 or 127B-67 cover (Fig. 8) (for use over the coin telephone set in installations not flush mounted)

\* Order must specify authorized recipient to whom keys are to be sent.

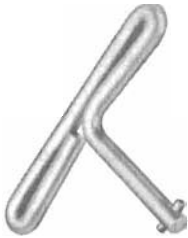
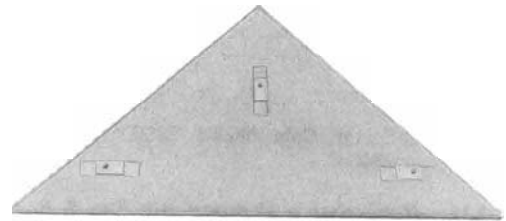


Fig. 6—719A Tool



Fig. 7—P11C Test Cord



127A-BOTTOM SIDE



127B-BOTTOM SIDE

Fig. 8—127A and 127B Covers

#### Design Features

- 2.04** All parts are contained in a high-security steel housing which has the following features:
- Door and liner assembly has three locking points actuated by a 719A tool.
  - Door and liner assembly is secured by 29A lock and 719A tool.
  - Cash compartment door has five locking points; three are actuated by a 719A tool and two are stationary.
  - Cash compartment door is secured by 14- or 30-type lock and 719A tool.
- 2.05** Provisions are made for use of four security studs.
- 2.06** Coin return is designed to defer stuffing.
- 2.07** Has transmission characteristics equivalent to 500-type telephone set.
- 2.08** Arranged to accept 1B coin receptacle.
- 2.09** 1D or 1E coin receptacle cover may be used.

## SECTION 506-310-101

### B. 236G

#### Ordering Guide

- Collector, Coin 236G-3, 236G-44, 236G-51, or 236G-60

#### 2.10 Replaceable Components Fig. 3, 9, 10, and 11)

- P-89E500\* lower housing unit assembly, consisting of:

P-11E964 coin relay-hopper assembly

P-14E438 return chute assembly

P-15E011 bucket assembly

P-89E400\* lower housing and base assembly

- P-89E000\* upper housing assembly, consisting of:

P-20A125 gong signal and chute assembly

6C-3 or 6M-3 dial\*\*

P-29E299 terminal plate assembly

P-28E806 network and bracket assembly

P-29E302 connector assembly

P-12A674 plunger and P-16A760 hinge assembly

10H-44 lock (key not furnished)

452B capacitor

- P-89E100\* backplate assembly, consisting of:

P-81R700\* backplate

P-29E307 ringer assembly

P-16A741 switchhook arm assembly

P-29E182 switchhook spring assembly

P-12E855 switchhook assembly

P-44E616 bracket and connector assembly  
G3R handset

1A backplate

\* The last two digits specify color suffix code used (—03 black, —51 green, or —60 light beige).

\*\* The 6C-3 dial is used with a black coin collector. The 6M-3 dial is used with a green or light beige coin collector.

#### 2.11 Associated Apparatus (order separately)

- 61R filter
- 1A type coin collector door
- 1B coin receptacle
- 1D coin receptacle cover
- P-372083 alarm switch assembly
- 257A alarm switch assembly
- 14D or 30A lock and keys\*
- 8B-44 card holder
- 227A alarm switch assembly
- KS-19277 lock\*

\* Order must specify authorized recipient to whom keys are to be sent.

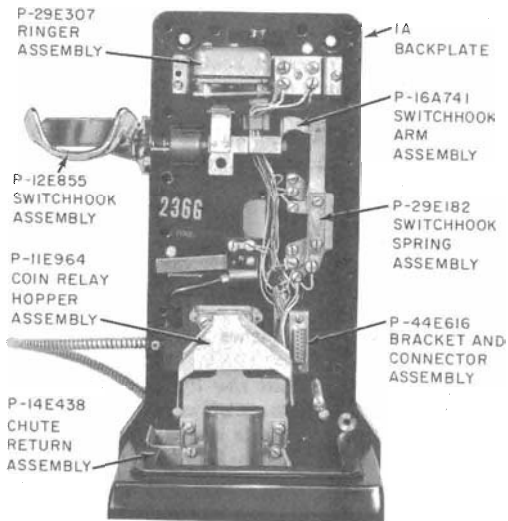
#### Design Features

**2.12** The 236G coin collector is equipped with a jack and plug for electrically connecting the upper and lower housings.

**2.13** The upper housing is secured by a 10H-44 lock plus a KS-19277 lock. The 1A coin collector door is secured by a 14D or 30A lock.

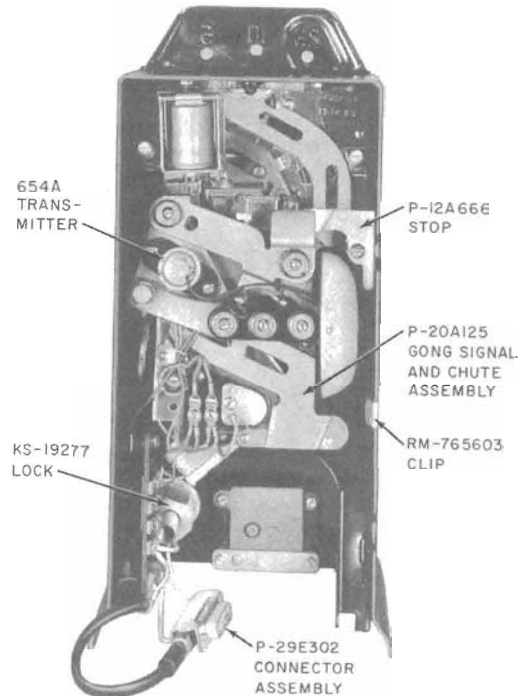
**2.14** The 1A backplate, has provisions for four security studs.

**2.15** The coin collector is equipped with a pull bucket type coin return chute and a coin release pushbutton and is designed to accept U.S. nickels, dimes, and quarters.



**Fig. 9—P-89E100 Backplate Assembly**

- 2.16** The coin collector is arranged for 10-cent operation with an initial deposit of at least one dime (or two nickels) required for operation.
- 2.17** A P-339098 cutover clip may be ordered separately and installed on the coin chute assembly to convert the coin collector to 5-cent operation. The clip holds the electromagnet arm in its operated position.
- 2.18** Coins deposited give distinctive gong signals audible to the operator. Coins may be collected or refunded while patron is on line or at the completion of the call. Coins are returned when deposited in the wrong slot.
- 2.19** If a call is abandoned after an initial deposit of a single nickel, the coin will be returned when handset is restored or when the coin release pushbutton is depressed. A nickel deposited before the handset is removed will be returned.
- 2.20** If a call is abandoned after an initial deposit has been made the coin(s) will be returned after the handset is restored. A dime or quarter deposited before the handset is removed will be returned only by removing the handset from the switchhook and restoring it again.

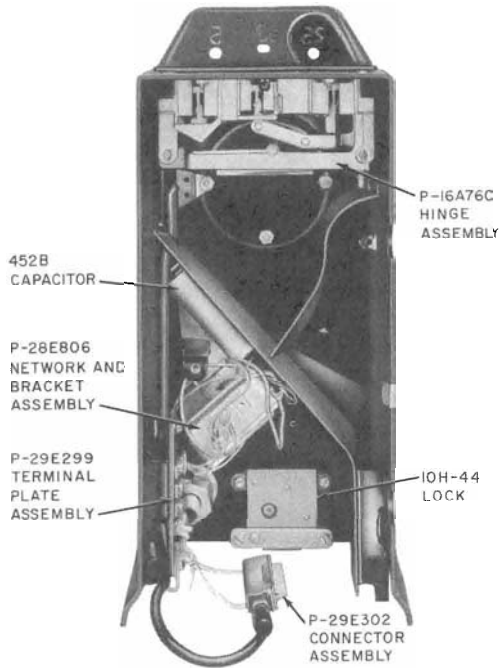


**Fig. 10—P-89E000 Upper Housing Assembly**

- 2.21** The coin collector is designed for mounting in telephone booths or walk-up, drive-up mountings. It may be also be mounted on a wall by means of a 144D or 174A backboard.
- 2.22** The 236G coin collector is arranged to accept the 1B coin receptacle (cash box).

#### Optional Ringer

- 2.23** The G1C ringer mounted in the 236G coin collector may not be loud enough in semipublic locations where the ambient noise is at a high level. A 687A subscriber set equipped with a C4 ringer may be used to rectify this condition.
- 2.24** Refer to Division 506, section entitled; Service, Coin Collectors, 236G for connections of the 687A subscriber set.



**Fig. 11—Upper Housing With Gong Signal and Chute Assembly Removed**

### 3. INSTALLATION

#### A. 235G and 1235G

##### Location

**3.01** Consider the following:

- Visibility, accessibility, and possible accident hazards in selecting location

**3.02** Avoid locations over or adjacent to counters, showcases, or other property which could be accidentally damaged by falling handsets.

##### Application

**3.03** To fully recess a 235G and/or 1235G coin collector in a wall:

(1) Ensure that the wall is deep enough (at least 6 inches) and strong enough to provide a secure flush mounted installation. (See Fig. 4.)

(2) Cut a hole in the wall

- Height—22-1/2 inches
- Width—16-1/4 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.*

**3.04** Refer to Table A for all other applications.

##### Security Studs

**3.05** Refer to Fig. 12 for mounting screw and security stud locations in the coin collector.

*Note:* Security studs are not furnished and must be ordered separately.

##### Wiring

**3.06** Select and place wire in accordance with sections covering inside wiring. Wire all coin collectors with triple conductor station wire or equivalent and provide individual ground for each station. The ground connection for this conductor must be the same one used for signaling ground.

**3.07** Feed inside wire through wire entrance hole (Fig. 12) and connect to terminals T, R, and GRD on TB1. Dress wire away from coin collector door.

**3.08** Wiring should not interfere with passage of coins through coin chute or with any moving parts.



**TABLE A**  
**APPLICATION OF 235G AND 1235G COIN COLLECTORS**

BOOTH, SHELF, OR MOUNTING	BACKBOARD REQUIRED	SECURITY STUDS		COVER (NOTE 1)
		P-10E070 (SHORT SHOULDER- LONG THREAD)	P-12E798 (LONG SHOULDER- LONG THREAD)	
KS-19206 Booth	KS-19206, List 7 Installation Kit	4		127B-67
KS-19340 Booth	KS-19340, List 54 Backboard	4		127B-67
KS-19426 Mounting	Furnished		4	
KS-19442 Booth	KS-19340, List 54 Backboard	4		127A-67
KS-20194 Shelf	Furnished	4		

**Notes:**

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

**3.09** Conceal wiring near coin station. If this is not practical, use approved moulding or conduit to conceal wiring.

**3.10** Locate connecting block, protector or other terminating apparatus, where they will be inaccessible to the public.

**Instruction Card**

**Note:** Instruction cards are not furnished and must be procured locally.

**3.11** To install card:

- Insert in faceplate.

(2) Push up with fingers.

(3) Snap card in place.

(4) Ensure that card is seated properly in slot.

**3.12** To remove card:

(1) Push up with fingers.

(2) Pry top out with small screwdriver or equivalent.

**Number Card (1235G)**

**Note:** The number card is furnished locally.

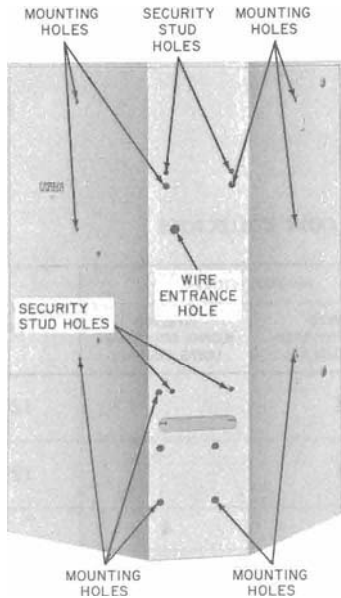


Fig. 12—Location of Mounting, Security Stud, and Wire Entrance Holes

3.13 Pinch card with fingers and insert in slot provided on front of faceplate.



*After installation has been completed, verify that the coin collector is operating correctly.*

**B. 236G**

**Location**

*Note:* The location of a coin collector should be specified by the service order or an accompanying work sheet. If a location is not specified, obtain instructions from the customer before proceeding.

3.14 Repeat 3.01

**Security of Coin Station**

3.15 Avoid locations where:

- Coin station can be dislodged by hard use.
- Fasteners cannot be placed in solid backing.
- Coin station can be pried loose (on round columns, door or window facings, uneven surfaces, etc.).

**Application**

3.16 To install the 236G coin collector on a horizontal surface such as a table or counter top, use a 139A backboard.

3.17 To install on a wall without a shelf, use a 174A backboard. See Fig. 13 for requirements.

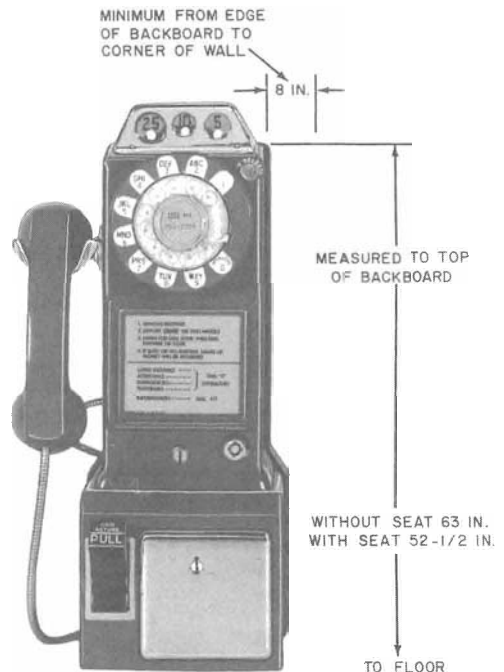


Fig. 13—Suggested Mounting Height and Clearance

3.18 Refer to Table B for all other applications.

#### Installing



**Remove handset from switchhook before removing or replacing upper housing to avoid damage to the gate operating arm. Do not reassemble upper housing on coin first coin collectors without placing a P-10F783 cover over the coin relay.**

#### Alarm Switches and Security Devices

3.19 Alarm switches and security devices are described in Division 506, section entitled: Service, Security Devices. The local telephone company shall regulate the installation of these devices.

3.20 Fig. 13 shows the suggested mounting height and clearance for all coin stations. Stations may be mounted at other heights to meet local conditions providing this does not create service or maintenance problems.

3.21 To mount coin station:

- (1) Place required number of screw fasteners in upper and lower mounting holes.

**Note:** If coin compartment is not open, the lower fasteners will be added later by the public telephone representative.

- (2) Bring wires through opening in backplate.
- (3) Avoid bowing backplate by partially tightening each screw fastener alternately.

3.22 Ground housing assembly, as follows:

#### (a) Prepay open type installation

- Connect JKT lead or GS insulated wire as shown in Fig. 14.
- Dress wire so that it will not interfere with moving parts of coin relay.

#### (b) Indoor wooden booths

TABLE B

APPLICATION OF 236G COIN COLLECTOR

BOOTH, SHELF, OR MOUNTING	BACKBOARD REQUIRED	SECURITY STUDS	
		P-10E070 (SHORT SHOULDER- LONG THREAD)	P-12E798 (LONG-SHOULDER- LONG THREAD)
KS-14611 Booth	Furnished	4	
KS-16797 Booth	Furnished		4
KS-19206 Booth	KS-19206, List 6 Installation Kit	4	
KS-19267 Shelf	Furnished	4	
KS-19340 Booth	Furnished	4	
KS-19425 Booth	Furnished		4
KS-19426 Mounting	KS-19426, List 8 Installation Kit		4
KS-19580 Booth	Furnished	4	
KS-19945 Shelf	Note 1		4

#### 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.

## SECTION 506-310-101

- A 14-gauge insulated ground wire (P-12C414 ground wire assembly) is provided. (Fig. 15)
- Connect ground wire from outside grounded BX armored power cable to ventilator or blower and to housing ground screw on coin station.

### (c) *Metal booths*

- Grounding is provided through mounting screws.

### 3.23 To ground upper housing to backplate:

- Place U-shaped spring clip on left edge of upper housing so as to contact housing contact spring (Fig. 16).

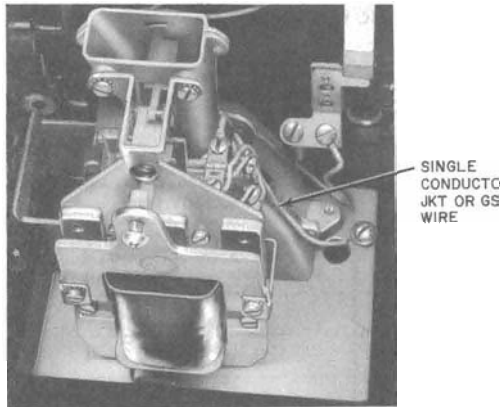


Fig. 14—Method of Grounding Coin Collector Housing Assembly, Open Type Installation

### Wiring

#### 3.24 Repeat 3.06.

3.25 Feed inside wire through wire entrance hole and connect ring lead to Y terminal on switch hook, tip lead to R terminal on switch hook, and GRD to G terminal on coin relay.

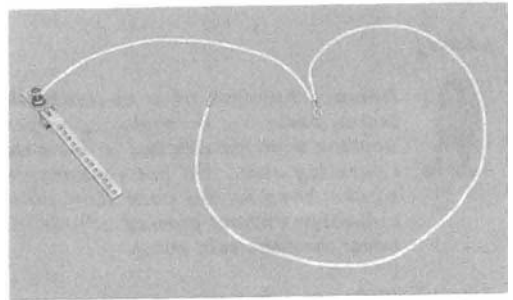


Fig. 15—P-12C414 Ground Wire Assembly

#### 3.26 Repeat 3.08 through 3.10.

## 4. MAINTENANCE

### A. Range Data

4.01 Refer to Table C for dial Long Line requirements.

4.02 Refer to Table D for loop ranges.

### B. Operate Values of Coin Relays

4.03 Refer to Table E for old and new values.



*Currently manufactured and repaired coin relays differ in operate and nonoperate values from earlier relays found in the field. These readjusted relays are marked with an asterisk(\*) adjacent to the part number.*

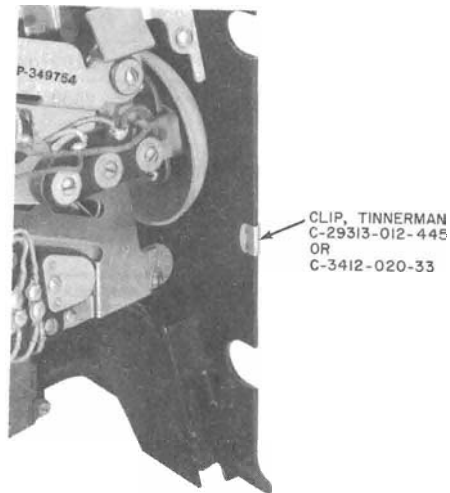
### C. Door and Liner Assembly (235G and 1235G)

4.04 To open door:

- (1) Unlock 29A lock (Fig. 1 or 2).
- (2) Insert 719A tool into slot, turn 1/4-turn clockwise, and release locking mechanism.

**Note:** Do not open door fully until plug (P1) is disconnected (Fig. 5).

- (3) Open door approximately 3 inches and disconnect P1 from J1.



**Fig. 16—Method of Grounding Upper Housing to Backplate**

**TABLE C**

**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 D

**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 WITH 48 MA. OP. RELAY	LOOP RANGE WITH 41 MA. OP. RELAY
SXS, Panel, No. 1 XBar	100 volts (100-120V)	1500 ohms	2200 ohms
SXS, Panel, No. 1 XBar	115 volts (115-120V)	2100 ohms	3000 ohms
No. 5 XBar, No. 1 ESS, No. 2 ESS	125 volts (125-135V)	2500 ohms	3400 ohms

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

**TABLE E  
OPERATE VALUES OF COIN RELAYS**

MARKING ON RELAY	OPERATING TIME	OPERATE CURRENT	NON-OPERATE CURRENT	REMARKS
P-10E786	625 $\pm$ 75 millisec	48 milliamps	40 milliamps	Coil of restoral spring has a diameter of approximately 5/32-inch
P-13E961	(Note 1)			
P-10E786*	450 $\pm$ 50 millisec	41 milliamps	30 milliamps	Coil of restoral spring has a diameter of approximately 9/32-inch
P-13E961*	(Note 2)			

*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.

(4) Door can now be fully opened.

**Note 2:** A P11C test cord (Fig. 7) is used to connect plug (P1) to jack (J1) which allows the set to be operative while door and liner assembly is opened.

**Coin Twister Assembly**

**4.05** To remove coin twister assembly:

- (1) Loosen screws in middle of twister assembly (Fig. 5).

(2) Lift P-27E847 coin twister (top section) up and out.

(3) Remove screws and nuts holding P-44E390 coin twister frame assembly.

(4) Lift frame assembly up and off.

(5) Install, using reverse procedure.

**Gong Signal and Chute Assembly**

**4.06** To remove gong signal and chute assembly:

- (1) Disconnect wires per Table F.

- (2) Remove P-111877 screw and P-12A666 stop (Fig. 5).
- (3) Loosen P-25E445 screw in lower left corner of chute assembly (Fig. 17). Exercise care not to lose P-12A681 spring located under screw head.
- (4) Loosen two P-11E183 bayonet guides on chute assembly (Fig. 5).
- (5) Lift off gong signal and chute assembly.
- (6) Install, using reverse procedure.

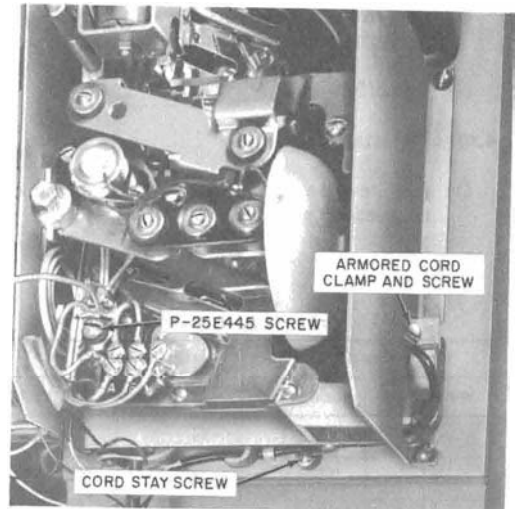
**TABLE F**  
**GONG SIGNAL AND CHUTE ASSEMBLY**  
**CONNECTIONS**

235G		1235G	
WIRE COLOR	DISCONNECT FROM TERM.	WIRE COLOR	DISCONNECT FROM TERM.
G	A of chute assem.	G	A of chute assem.
G	X of chute assem.	G	E of chute assem.
Y	E of chute assem.	Y	E of chute assem.
BR	BR of TB4	BR	BR of TB4

#### Baffle and Hinge Assembly

**4.07** To remove baffle and hinge assembly (Fig. 5):

- (1) Disconnect all wires from TB4
- (2) Remove retainer ring from rear of the coin release shaft.
- (3) Remove four P-181641 screws, four P-285080 lockwashers and lift off baffle and hinge assembly.
- (4) Install, using reverse procedure.



**Fig. 17—Location of Cord Stay Screw and Cord Clamp**

#### Dial and Housing Assembly

**4.08** To remove dial housing:

- (1) Remove coin twister assembly (4.05).
- (2) Remove gong signal and chute assembly (4.06).
- (3) Remove baffle and hinge assembly (4.07).
- (4) Remove four mounting screws in dialing housing.
- (5) Lift off dial housing.

**Note:** Handset cord will pull through cover to enable access to dial without disconnecting cord.

- (6) Install, using reverse procedure.

**4.09** To remove dial:

- (1) Remove dial housing (4.08).
- (2) Disconnect dial leads from TB2 (dial terminal board).

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

**4.10 To install dial:**

- (1) Use reverse procedure in 4.09 and make connections per Table G.

**TABLE G  
DIAL CONNECTIONS**

235G		1235G	
WIRE COLOR	CONNECT TO	WIRE COLOR	CONNECT TO
Y	TB2-1	G	TB2-1
W	TB2-2	W	TB2-2
G	TB2-2	BL	TB2-3
BL	TB2-3	O-BK	TB2-4
W	TB2-9	R	TB2-5
Y	TB2-11	R-G	TB2-6
		O-R	TB2-8
		BK	TB2-11

**Handset**

**4.11 To remove handset:**

- (1) Remove gong signal and chute assembly (4.06).
- (2) Disconnect handset leads from TB4.
- (3) Loosen cord stay screw (Fig. 17).
- (4) Remove screw and cord clamp from armored cord.
- (5) Pull cord out front of cover.
- (6) Install, using reverse procedure.

**D. Housing Assembly (235G and 1235G)**

**Ringer**

**4.12 To remove ringer:**

- (1) Disconnect ringer leads from TB3.
- (2) Remove two screws.
- (3) Lift ringer up and off.

**4.13 To install ringer:**

- (1) Mount ringer in place and secure with two screws.
- (2) Connect ringer leads as follows:

WIRE COLOR	CONNECT TO
BK	TB3-R
R	TB3-T
S-R	TB3-A
S	TB3-K

**Return Chute Assembly**

**4.14 To remove return chute assembly (Fig. 18):**

- (1) Loosen mounting screw.
- (2) Lift assembly up and out.

**Note:** It may be necessary to remove P-28E453 clip.

**4.15 To install return chute assembly:**

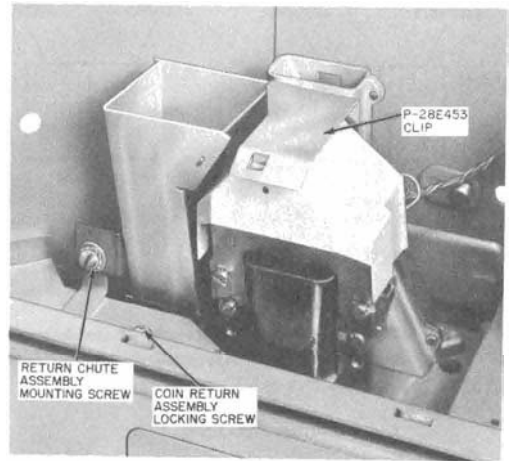
- (1) Slide the assembly in and down until it is properly seated.
- (2) Tighten the mounting screw.



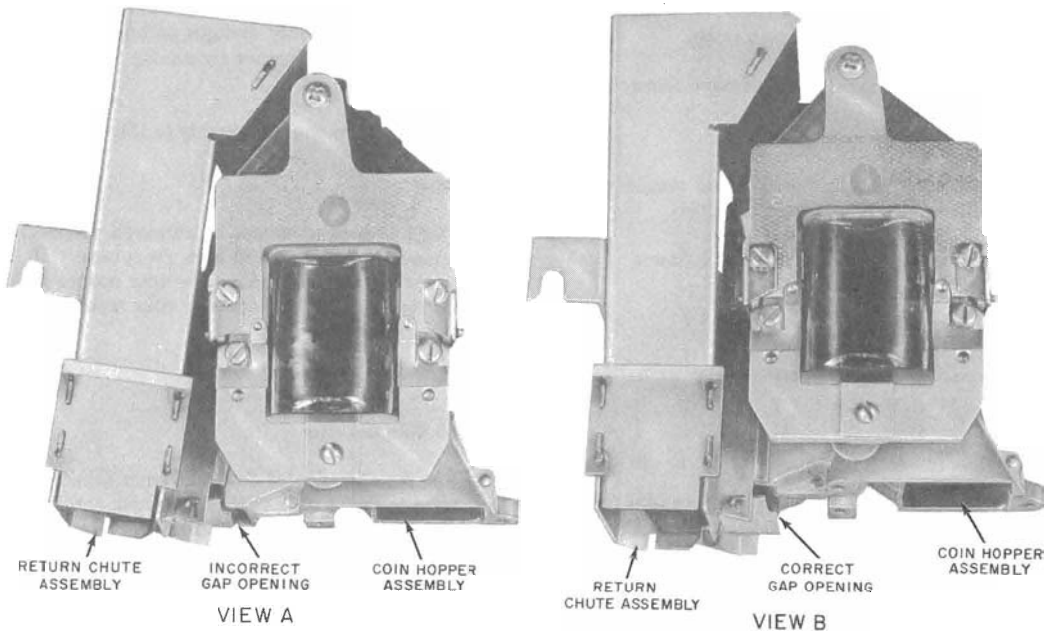
*If the return chute is not installed properly, there may be a gap between the return chute and the hopper assembly large enough to allow coins to drop into the housing. Refer to Fig. 19. This gap may be checked by directing a light down the opening of the return chute, tripping the relay and hopper assembly to the reject position, and looking down the opening of the hopper assembly. (See Fig. 20.) If a gap exists, loosen the mounting screw and reposition the return chute.*



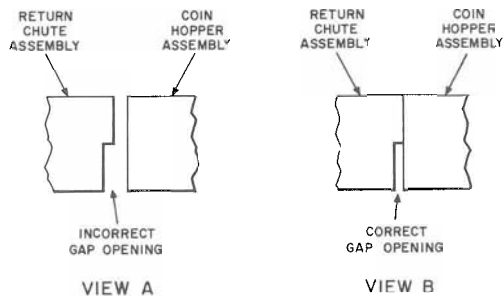
*Check again with a light (Fig. 20) and tighten screw when proper alignment is obtained.*



**Fig. 18—Coin Relay and Return Chute Assembly**



**Fig. 19—Alignment of Return Chute Assembly**



**Fig. 20—Relative Position of Return Chute Assembly and Coin Hopper Assembly As Viewed Down Hopper Throat**

### Coin Relay

#### 4.16 To remove coin relay (Fig. 18):

- (1) Remove return chute assembly (4.14).
- (2) Remove P-28E453 clip and dust cover.
- (3) Disconnect leads from coin relay.
- (4) Remove four screws and remove coin relay.

#### 4.17 To install coin relay:

- (1) Place coin relay in position and secure with the four screws removed in 4.16(4).
- (2) Connect leads to coin relay as follows:

WIRE COLOR	CONNECT TO
R	1
R	2
G-Y	3
O	G

- (3) Install dust cover and P-28E453 clip (Fig. 18).

- (4) Install return chute assembly (4.15).

### Coin Return Assembly

#### 4.18 To remove coin return assembly:

- (1) Remove return chute assembly (4.14).
- (2) Remove coin return assembly locking screw (Fig. 18).
- (3) Insert finger in coin return and tilt top forward.
- (4) Lift coin return. Pull coin return assembly out and up.

#### 4.19 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) Install return chute assembly (4.15).

### Coin Hopper

**4.20** The coin hopper cannot be removed without removing 4A door and coin receptacle. If it becomes necessary to remove the coin hopper in the field, remove the 4A door and coin receptacle per local regulations.

### E. 236G Coin Collector

**4.21** For maintenance of the 236G coin collector, refer to Part 6 of Division 506 section entitled: Reference—Coin Collectors—Subscriber Set Required.

**SERVICE**  
**COIN COLLECTORS, SUBSCRIBER SET REQUIRED**  
**190 SERIES**

**1. GENERAL**

**1.01** This section provides connection information for the 190-type coin collectors and associated subscriber sets.

**1.02** This section is reissued to:

- Add note required when 685B subscriber set is used with coin collector
- Incorporate several minor changes in drawings
- Delete connection information on 685A and B subscriber sets
- Rearrange drawings to be consistent with associated practices

**1.03** Refer to Sections 506-215-403 and 506-215-404 for connection information pertaining to the 685A and B subscriber sets.

**2. CONNECTION INDEX**

Fig. 1—191, 195, 196, 197 (C, D, G, and H) Coin Collectors with 531A; 534DE, DF; 584DE, DF; or 687A Subscriber Sets—Coin First, Connections

Fig. 2—191, 195, 196, 197 (CS, DS, GS, and HS) Coin Collectors with 531A; 534DE, DF; 584DE, DF; or 687A Subscriber Sets—Coin First, Connections

Fig. 3—191, 195, 196, 197 (CT, DT, GT, and HT) Coin Collectors with 531A; 534DE, DF; 584DE, DF; or 687A Subscriber Sets—Coin First, Connections

Fig. 4—191, 195, 196, 197 (CN, DN, GN, and HN) Coin Collectors—Coin First, Connections

Fig. 5—191, 195, 196, 197 (CN, DN, GN, and HN) Coin Collector—Coin First, Connections

Fig. 6—191, 195, 196, 197 (CNS, DNS, GNS, and HNS) Coin Collector—Coin First, Connections

Fig. 7—191, 195, 196, 197 (CNS, DNS, GNS, and HNS) Coin Collectors—Coin First, Connections

Fig. 8—191, 195, 196, 197 (CNT, DNT, GNT, and HNT) Coin Collectors—Coin First, Connections

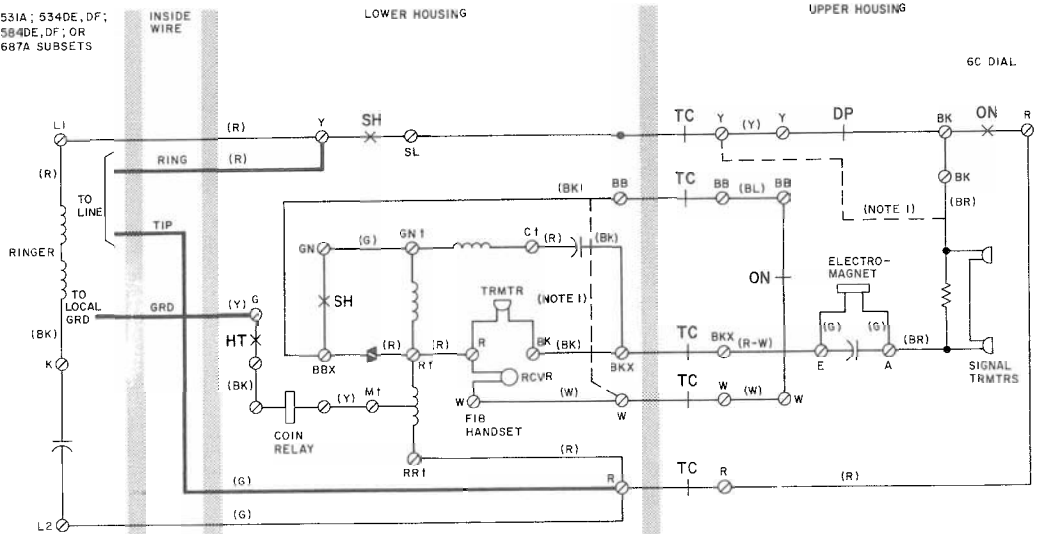
Fig. 9—191, 195, 196, 197, (CNT, DNT, GNT, and HNT) Coin Collector—Coin First, Connections

Fig. 10—193G, H and 198G, H Coin Collectors with 531A; 534DE, DF; 584DE, DF; or 687A Subscriber Sets—Postpay, Connections

Fig. 11—193GN, HN and 198GN, HN Coin Collectors—Postpay, Connections

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531A; 534DE, DF;  
584DE, DF; OR  
687A SUBSETS

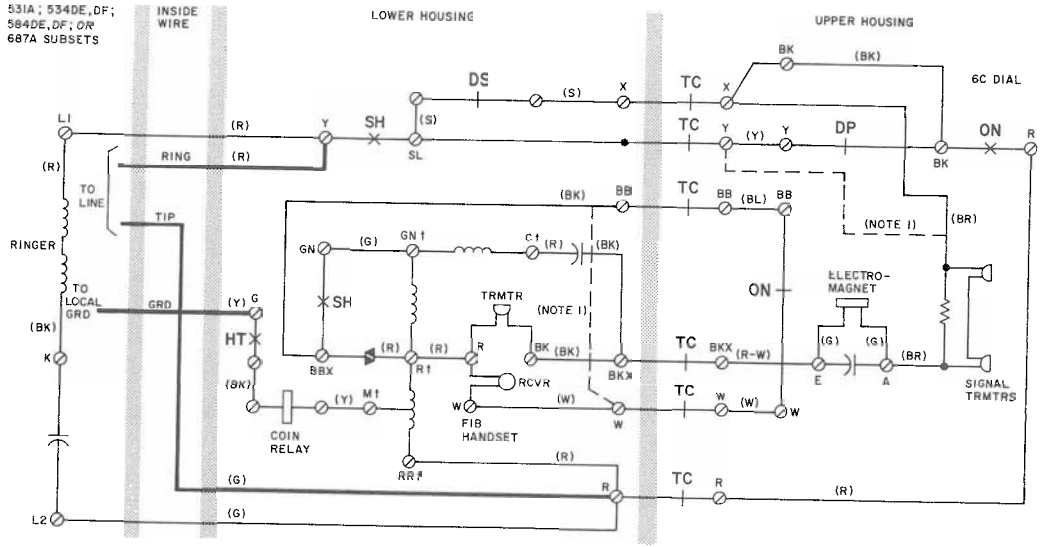


NOTES:

1. DOTTED LINES SHOW SETS WITH MANUAL CONNECTIONS [191, 195, 196, 197 (C AND D)] DIAL IS REPLACED WITH 50C APPARATUS BLANK.
  2. WHEN A 6IR FILTER IS REQUIRED FOR RADIO FREQUENCY SUPPRESSION, MOVE (Y) DIAL LEAD FROM Y UPPER-HOUSING CONTACT SPRING TO FILTER BRACKET TERM., CONNECT (Y) FILTER LEAD TO FILTER BRACKET TERM., CONNECT (BK) FILTER LEAD TO BK UPPER HOUSING CONTACT, AND CONNECT (R) FILTER LEAD TO Y UPPER HOUSING CONTACT.
- 1 101B INDUCTION COIL TERMINALS

- DP-DIAL PULSE CONTACTS  
HT-HOPPER TRIGGER CONTACTS  
SH-SWITCH HOOK CONTACTS  
ON-OFF NORMAL CONTACTS  
TC-TRANSFER CONTACTS  
DS-DIAL SHORTING CONTACTS

Fig. 1—191, 195, 196, 197 (C, D, G, and H) Coin Collectors with 531A; 534DE, DF; 584DE, DF; or 687A Subscriber Sets—Coin First, Connections



NOTES:

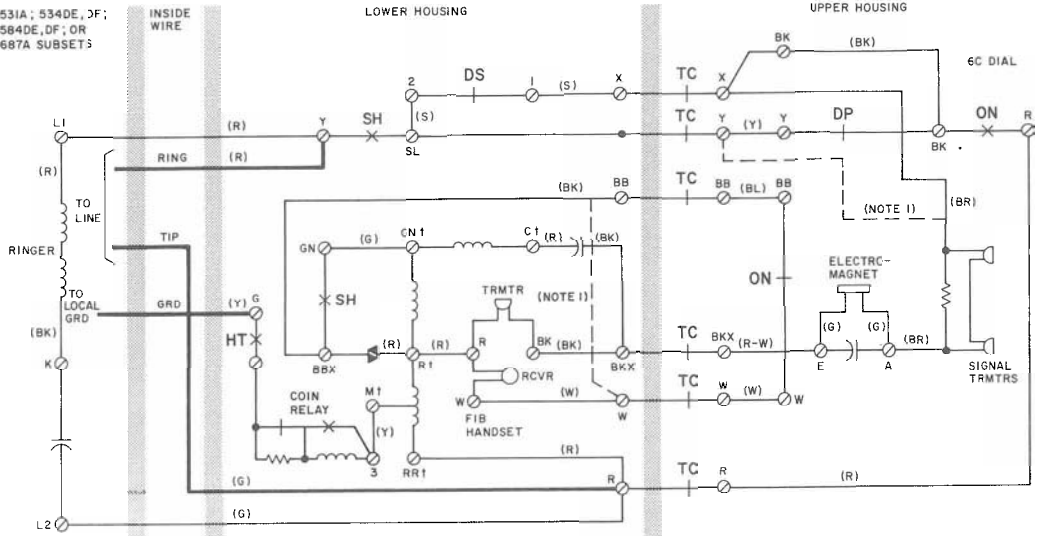
1. DOTTED LINES SHOW SETS WITH MANUAL CONNECTIONS [191, 195, 196, 197 (CS AND DS)] DIAL IS REPLACED WITH SOC APPARATUS BLANK.
  2. WHEN A GIR FILTER IS REQUIRED FOR RADIO FREQUENCY SUPPRESSION, MOVE (Y) DIAL LEAD FROM Y UPPER-HOUSING CONTACT SPRING TO FILTER BRACKET TERM., CONNECT (Y) FILTER LEAD TO FILTER BRACKET TERM., CONNECT (BK) FILTER LEAD TO BK UPPER HOUSING CONTACT, AND CONNECT (R) FILTER LEAD TO Y UPPER HOUSING CONTACT.
- † 101B INDUCTION COIL TERMINALS

- DP - DIAL PULSE CONTACTS
- HT - HOPPER TRIGGER CONTACTS
- SH - SWITCH HOOK CONTACTS
- ON - OFF NORMAL CONTACTS
- TC - TRANSFER CONTACTS
- DS - DIAL SHORTING CONTACTS

Fig. 2—191, 195, 196, 197 (CS, DS, GS, and HS) Coin Collectors with 531A; 534DE, DF; 584DE, DF; or 687A Subscriber Sets—Coin First, Connections

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531A; 534DE, DF;  
584DE, DF; OR  
687A SUBSETS

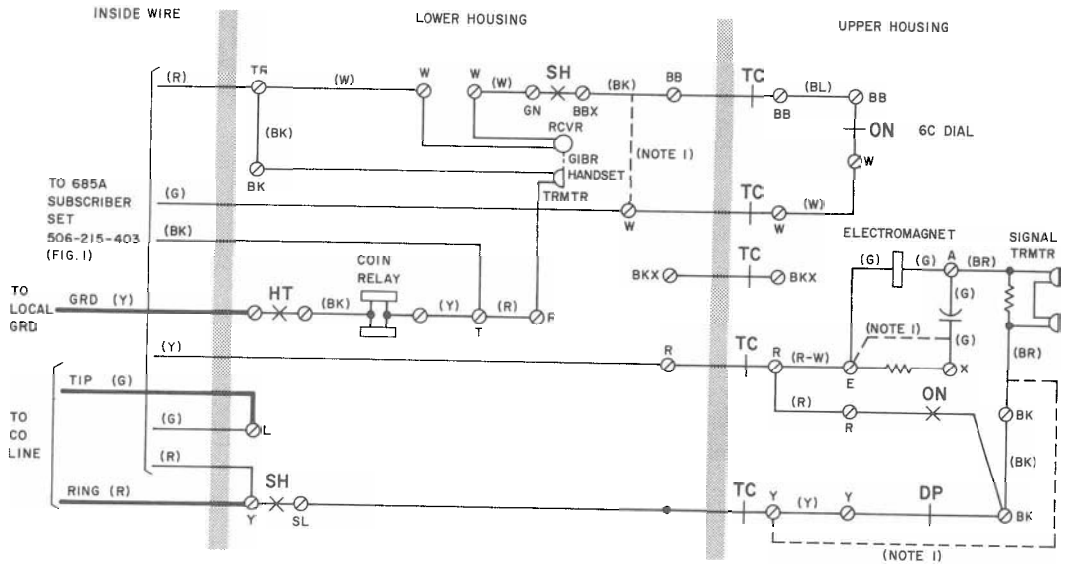


NOTES:

1. DOTTED LINES SHOW SETS WITH MANUAL CONNECTIONS [191,195,196,197 (CT AND DT)] DIAL IS REPLACED WITH 50C APPARATUS BLANK.
  2. WHEN A 6IR FILTER IS REQUIRED FOR RADIO FREQUENCY SUPPRESSION, MOVE (Y) DIAL LEAD FROM Y UPPER-HOUSING CONTACT SPRING TO FILTER BRACKET TERM., CONNECT (Y) FILTER LEAD TO FILTER BRACKET TERM., CONNECT (BK) FILTER LEAD TO BK UPPER HOUSING CONTACT, AND CONNECT (R) FILTER LEAD TO Y UPPER HOUSING CONTACT.
- † 101B INDUCTION COIL TERMINALS

- DP—DIAL PULSE CONTACTS  
HT—HOPPER TRIGGER CONTACTS  
SH—SWITCH HOOK CONTACTS  
ON—OFF NORMAL CONTACTS  
TC—TRANSFER CONTACTS  
DS—DIAL SHORTING CONTACTS

Fig. 3—191, 195, 196, 197 (CT, DT, GT, and HT) Coin Collectors with 531A; 534DE, DF; 584DE, DF; or 687A Subscriber Sets—Coin First, Connections



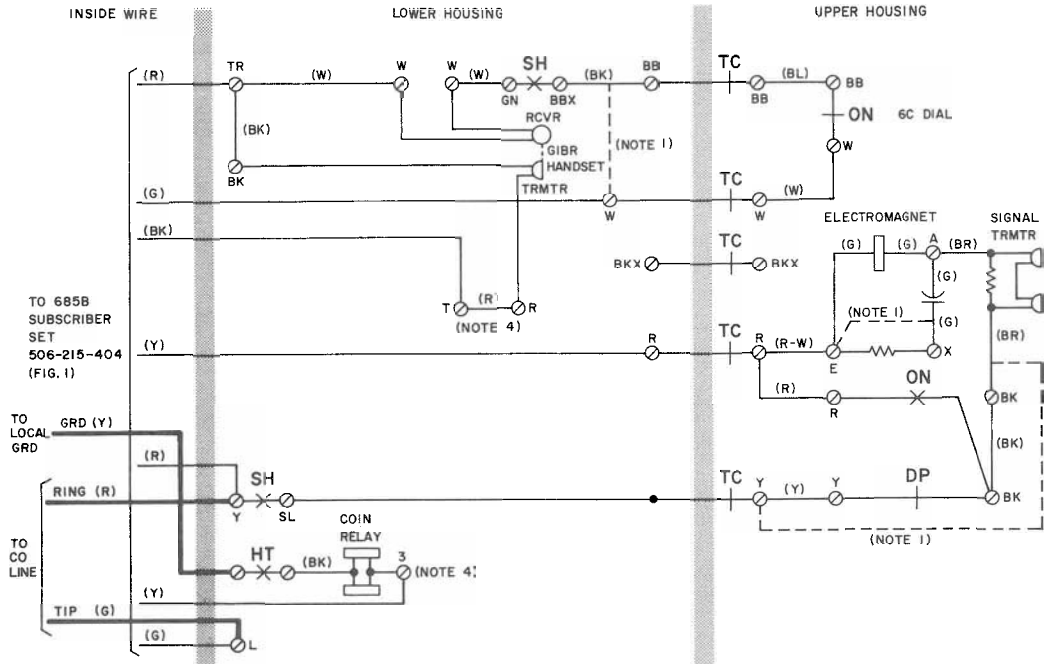
NOTES:

1. DOTTED LINES SHOW SETS WITH MANUAL CONNECTIONS [191, 195, 196, 197 (CN AND DN)] DIAL IS REPLACED WITH 50C APPARATUS BLANK.
2. WHEN A 6IR FILTER IS REQUIRED FOR RADIO FREQUENCY SUPPRESSION, MOVE (Y) DIAL LEAD FROM Y UPPER HOUSING CONTACT SPRING TO FILTER BRACKET TERM., CONNECT (Y) FILTER LEAD TO FILTER BRACKET TERM., CONNECT (BK) FILTER LEAD TO BK UPPER HOUSING CONTACT, AND CONNECT (R) FILTER LEAD TO Y UPPER HOUSING CONTACT.
3. WHEN COIN COLLECTOR IS INSTALLED IN A KS-14611, LIST 2 BOOTH OR A KS-16705 MOUNTING, THE TIP AND RING LINE TERMINATIONS ARE CONNECTED DIRECTLY TO THE SUBSCRIBER SET.

- DP - DIAL PUSE CONTACTS
- HT - HOPPER TRIGGER CONTACTS
- SH - SWITCHHOOK CONTACTS
- ON - OFF NORMAL CONTACTS
- TC - TRANSFER CONTACTS

Fig. 4—191, 195, 196, 197 (CN, DN, GN, and HN) Coin Collectors—Coin First, Connections

SECTION 506-330-404

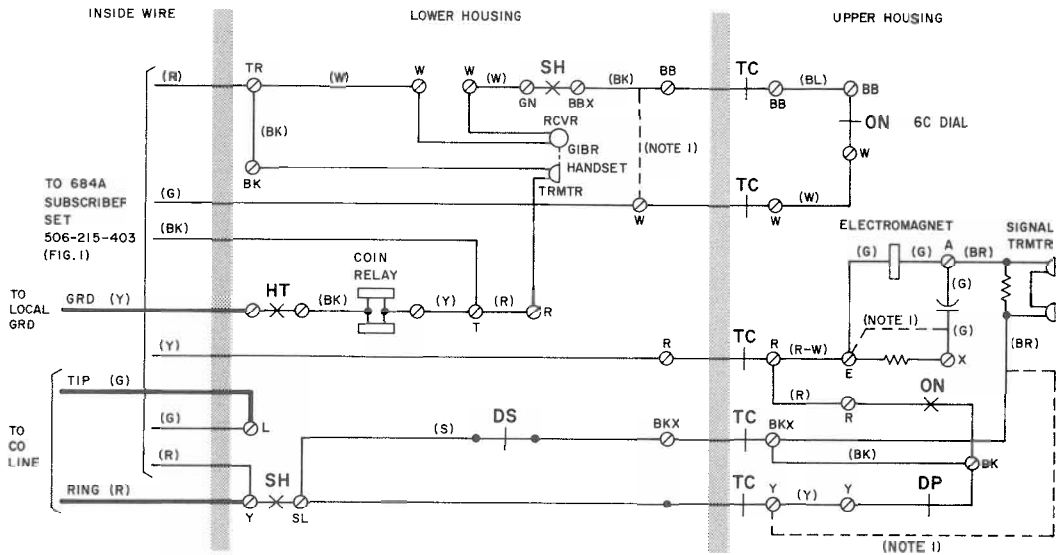


- NOTES:
1. DOTTED LINES SHOW SETS WITH MANUAL CONNECTIONS [191, 195, 196, 197 (CN AND DN)] DIAL IS REPLACED WITH 50C APPARATUS BLANK.
  2. WHEN A GIR FILTER IS REQUIRED FOR RADIO FREQUENCY SUPPRESSION, MOVE (Y) DIAL LEAD FROM Y UPPER HOUSING CONTACT SPRING TO FILTER BRACKET TERM., CONNECT (Y) FILTER LEAD TO FILTER BRACKET TERM., CONNECT (BK) FILTER LEAD TO BK UPPER HOUSING CONTACT, AND CONNECT (R) FILTER LEAD TO Y UPPER HOUSING CONTACT.
  3. WHEN COIN COLLECTOR IS INSTALLED IN A KS-14611, LIST 2 BOOTH OR A KS-16705 MOUNTING, THE TIP AND RING LINE TERMINATIONS ARE CONNECTED DIRECTLY TO THE SUBSCRIBER SET.
  4. REMOVE THE (Y) STRAP BETWEEN TERMINALS 3 AND T WHEN USED WITH 685B SUBSCRIBER SET.

DP - DIAL PULSE CONTACTS  
 HT - HOPPER TRIGGER CONTACTS  
 SH - SWITCHHOOK CONTACTS  
 ON - OFF NORMAL CONTACTS  
 TC - TRANSFER CONTACTS

Fig. 5—191, 195, 196, 197, (CN, DN, GN, and HN) Coin Collector—Coin First, Connections





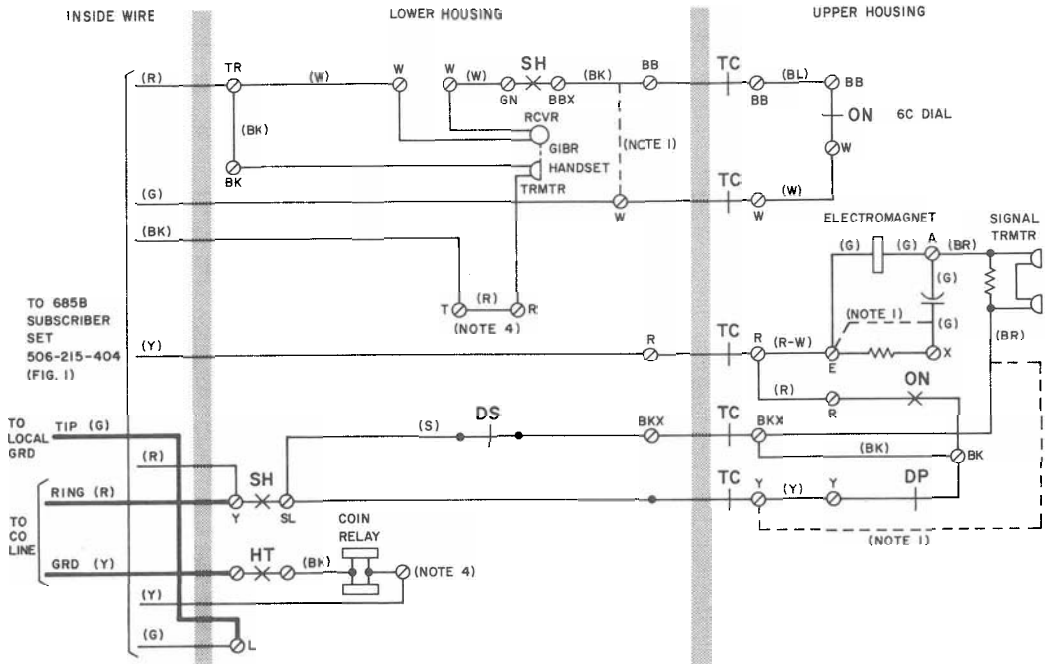
NOTES:

1. DOTTED LINES SHOW SETS WITH MANUAL CONNECTIONS  
[191, 195, 196, 197, (CNS AND DNS)] DIAL IS REPLACED WITH 50C APPARATUS BLANK.
2. WHEN A 6R FILTER IS REQUIRED FOR RADIO FREQUENCY SUPPRESSION, MOVE (Y) DIAL LEAD FROM Y UPPER HOUSING CONTACT SPRING TO FILTER BRACKET TERM., CONNECT (Y) FILTER LEAD TO FILTER BRACKET TERM., CONNECT (BK) FILTER LEAD TO BK UPPER HOUSING CONTACT, AND CONNECT (R) FILTER LEAD TO Y UPPER HOUSING CONTACT.
3. WHEN COIN COLLECTOR IS INSTALLED IN A KS-14611, LIST 2 BOOTH OR A KS-16705 MOUNTING, THE TIP AND RING LINE TERMINATIONS ARE CONNECTED DIRECTLY TO THE SUBSCRIBER SET.

- DP - DIAL PULSE CONTACTS
- HT - HOPPER TRIGGER CONTACTS
- SH - SWITCHHOOK CONTACTS
- ON - OFF NORMAL CONTACTS
- TC - TRANSFER CONTACTS
- DS - DIAL SHORTING CONTACTS

Fig. 6—191, 195, 196, 197 (CNS, DNS, GNS, and HNS) Coin Collector—Coin First, Connections

SECTION 506-330-404

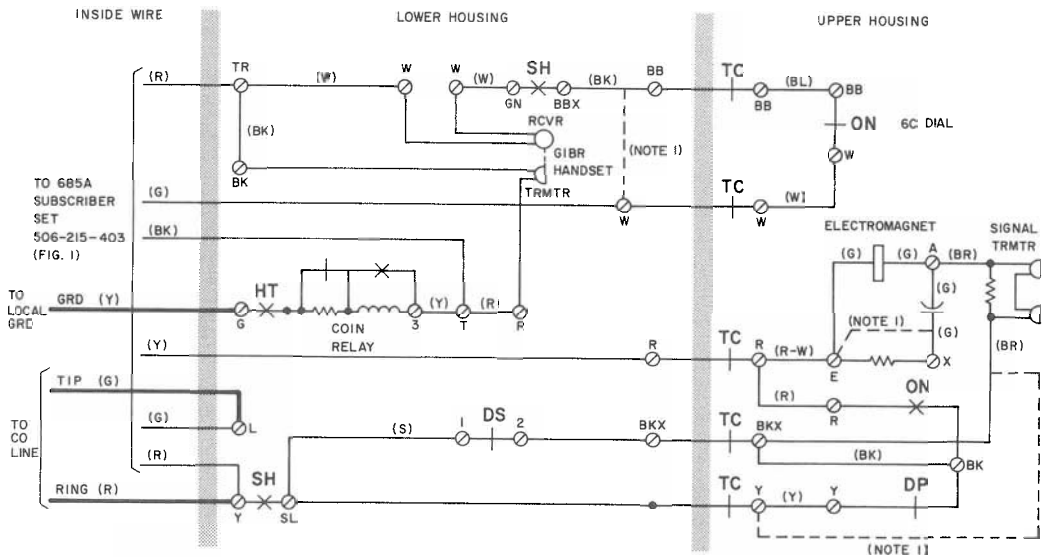


NOTES:

1. DOTTED LINES SHOW SETS WITH MANUAL CONNECTIONS  
[191, 195, 196, 197 (CNS AND DNS)] DIAL IS REPLACED WITH 50C APPARATUS BLANK.
2. WHEN A 6IR FILTER IS REQUIRED FOR RADIO FREQUENCY SUPPRESSION, MOVE (Y) DIAL LEAD FROM Y UPPER HOUSING CONTACT SPRING TO FILTER BRACKET TERM., CONNECT (Y) FILTER LEAD TO FILTER BRACKET TERM., CONNECT (BK) FILTER LEAD TO BK UPPER HOUSING CONTACT, AND CONNECT (R) FILTER LEAD TO Y UPPER HOUSING CONTACT.
3. WHEN COIN COLLECTOR IS INSTALLED IN A KS-14611, LIST 2 BOOTH OR A KS-16705 MOUNTING, THE TIP AND RING LINE TERMINATIONS ARE CONNECTED DIRECTLY TO THE SUBSCRIBER SET.
4. REMOVE THE (Y) STRAP FROM TERMINAL T - TAPE AND STORE WHEN USED WITH 685B SUBSCRIBER SET

- DP - DIAL PULSE CONTACTS
- HT - HOPPER TRIGGER CONTACTS
- SH - SWITCHHOOK CONTACTS
- ON - OFF NORMAL CONTACTS
- TC - TRANSFER CONTACTS
- DS - DIAL SHORTING CONTACTS

Fig. 7—191, 195, 196, 197 (CNS, DNS, GNS, and HNS) Coin Collectors—Coin First, Connections



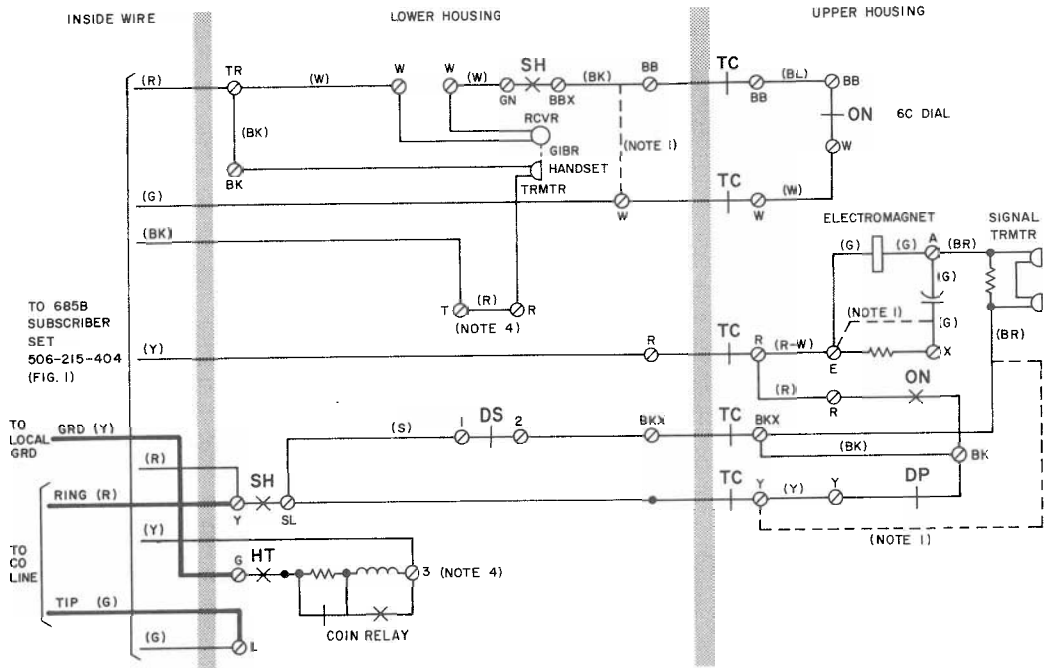
## NOTES:

1. DOTTED LINES SHOW SETS WITH MANUAL CONNECTIONS  
[191, 195, 196, 197 (CNT AND DNT)] DIAL IS REPLACED WITH 50C APPARATUS BLANK.
2. WHEN A 6IR FILTER IS REQUIRED FOR RADIO FREQUENCY SUPPRESSION, MOVE (Y) DIAL LEAD FROM Y UPPER HOUSING CONTACT SPRING TO FILTER BRACKET TERM., CONNECT (Y) FILTER LEAD TO FILTER BRACKET TERM., CONNECT (BK) FILTER LEAD TO BK UPPER HOUSING CONTACT, AND CONNECT (R) FILTER LEAD TO Y UPPER HOUSING CONTACT.
3. WHEN COIN COLLECTOR IS INSTALLED IN A KS-14611, LIST 2 BOOTH OR A KS-16705 MOUNTING, THE TIP AND RING LINE TERMINATIONS ARE CONNECTED DIRECTLY TO THE SUBSCRIBER SET.

DP - DIAL PULSE CONTACTS  
 HT - HOPPER TRIGGER CONTACTS  
 SH - SWITCHHOOK CONTACTS  
 ON - OFF NORMAL CONTACTS  
 TC - TRANSFER CONTACTS  
 DS - DIAL SHORTING CONTACTS

Fig. 8—191, 195, 196, 197 (CNT, DNT, GNT, and HNT) Coin Collectors—Coin First, Connections

SECTION 506-330-404



NOTES:

1. DOTTED LINES SHOW SETS WITH MANUAL CONNECTIONS [191, 195, 196, 197 (CNT AND DNT)] DIAL IS REPLACED WITH 50C APPARATUS BLANK.
2. WHEN A 61R FILTER IS REQUIRED FOR RADIO FREQUENCY SUPPRESSION, MOVE (Y) DIAL LEAD FROM Y UPPER HOUSING CONTACT SPRING TO FILTER BRACKET TERM., CONNECT (Y) FILTER LEAD TO FILTER BRACKET TERM., CONNECT (BK) FILTER LEAD TO BK UPPER HOUSING CONTACT, AND CONNECT (R) FILTER LEAD TO Y UPPER HOUSING CONTACT.
3. WHEN COIN COLLECTOR IS INSTALLED IN A KS-14611, LIST 2 BOOTH OR A KS-16705 MOUNTING, THE TIP AND RING LINE TERMINATIONS ARE CONNECTED DIRECTLY TO THE SUBSCRIBER SET.
4. REMOVE THE (Y) STRAP BETWEEN TERMINALS 3 AND T WHEN USED WITH 685B SUBSCRIBER SET.

- DP - DIAL PULSE CONTACTS
- HT - HOPPER TRIGGER CONTACTS
- SH - SWITCHHOOK CONTACTS
- ON - OFF NORMAL CONTACTS
- TC - TRANSFER CONTACTS
- DS - DIAL SHORTING CONTACTS

Fig. 9—191, 195, 196, 197, (CNT, DNT, GNT, and HNT) Coin Collector—Coin First, Connections

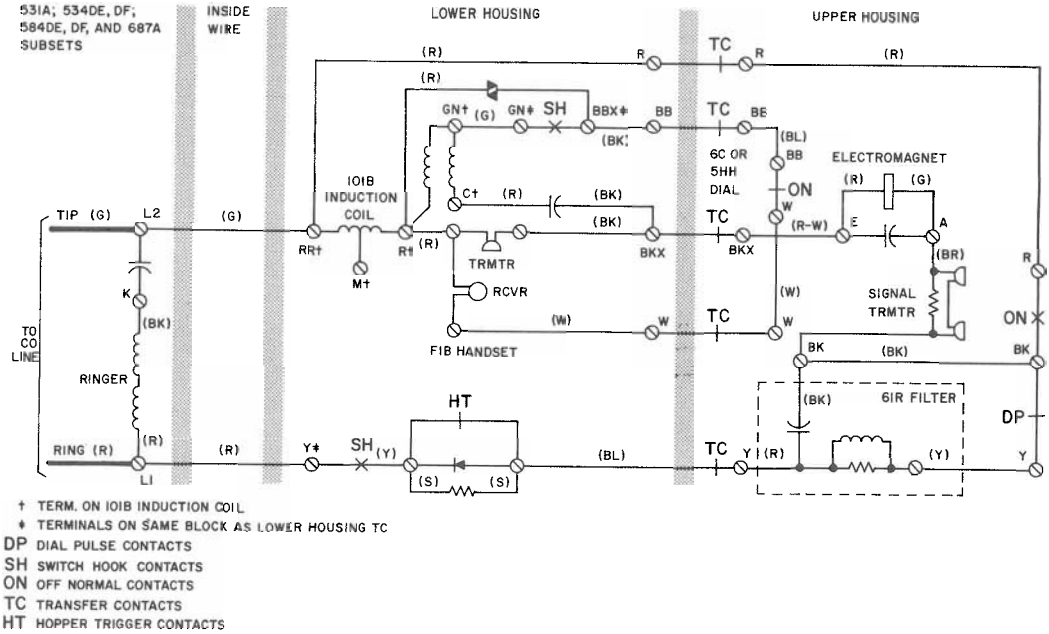
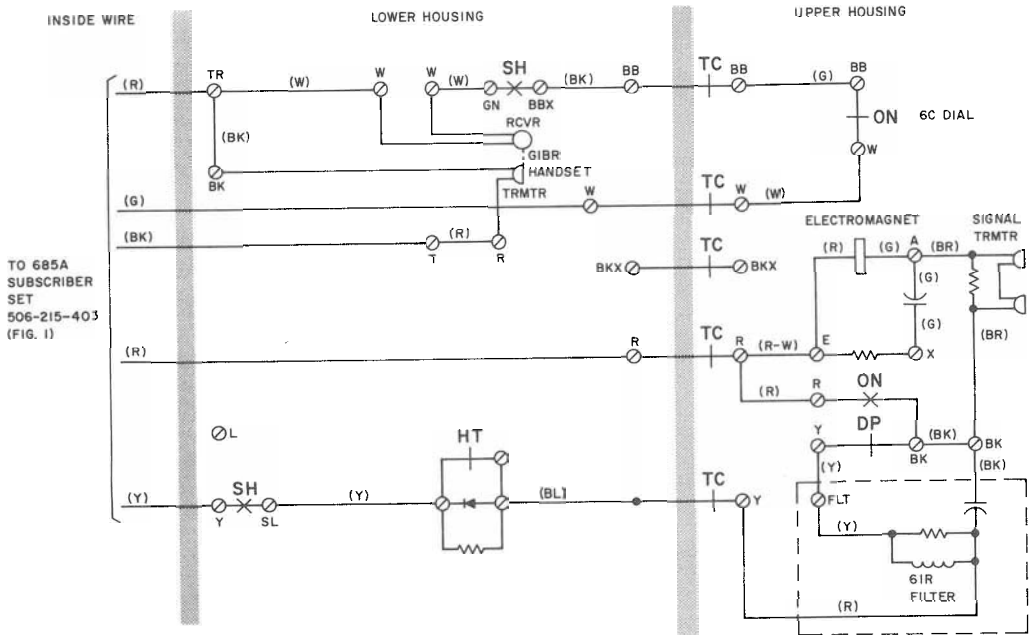


Fig. 10—193G, H and 198G, H Coin Collectors with 531A; 534DE, DF; 584DE, DF; or 687A Subscriber Sets—Postpay, Connections



- DP - DIAL PULSE CONTACTS
- HT - HOPPER TRIGGER CONTACTS
- SH - SWITCHHOOK CONTACTS
- ON - OFF NORMAL CONTACTS
- TC - TRANSFER CONTACTS

Fig. 11—193GN, HN and 198GN, HN Coin Collectors—Postpay, Connections

## SERVICE

### COIN COLLECTORS, SUBSCRIBER SET REQUIRED

### 200 AND 210 SERIES

**1. GENERAL**

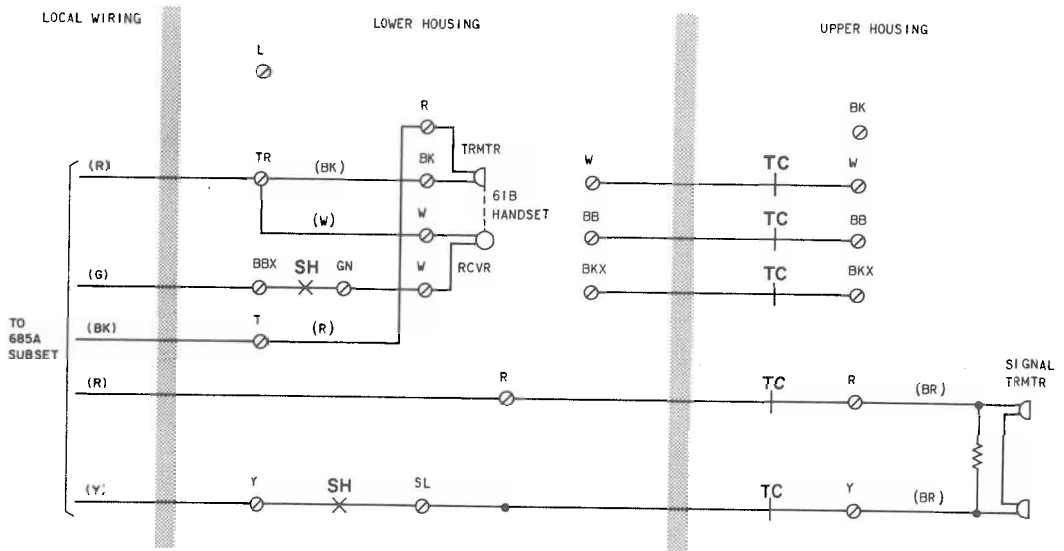
**1.01** This section provides connection information for the 200- and 210-type coin collectors and associated subscriber sets.

**1.02** This section is reissued to:

- Rearrange drawings to be consistent with other practices

- Delete information on the 685A subscriber set

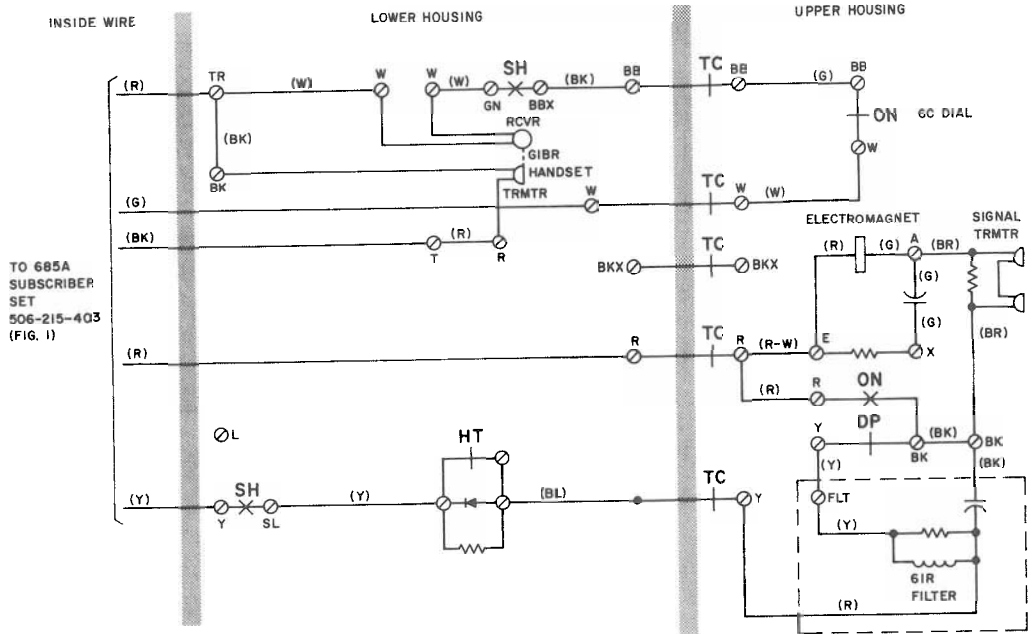
**1.03** Refer to Section 506-215-403 for connection information on the 685A subscriber set.



SH - SWITCHHOOK CONTACTS  
TC - TRANSFER CONTACTS

**Fig. 1—200C and D Coin Collectors with 685A Subscriber Set—Postpay, Connections**

SECTION 506-330-405



- DP - DIAL PULSE CONTACTS
- HT - HOPPER TRIGGER CONTACTS
- SH - SWITCHHOOK CONTACTS
- ON - OFF NORMAL CONTACTS
- TC - TRANSFER CONTACTS

Fig. 2—210G, H, and 212G, H Coin Collectors with 685A Subscriber Set—Postpay, Connections



**SERVICE**  
**COIN COLLECTORS, SUBSCRIBER SET REQUIRED**  
**220 SERIES**

**1. GENERAL**

**1.01** This section provides connection information for the 220-type coin collectors.

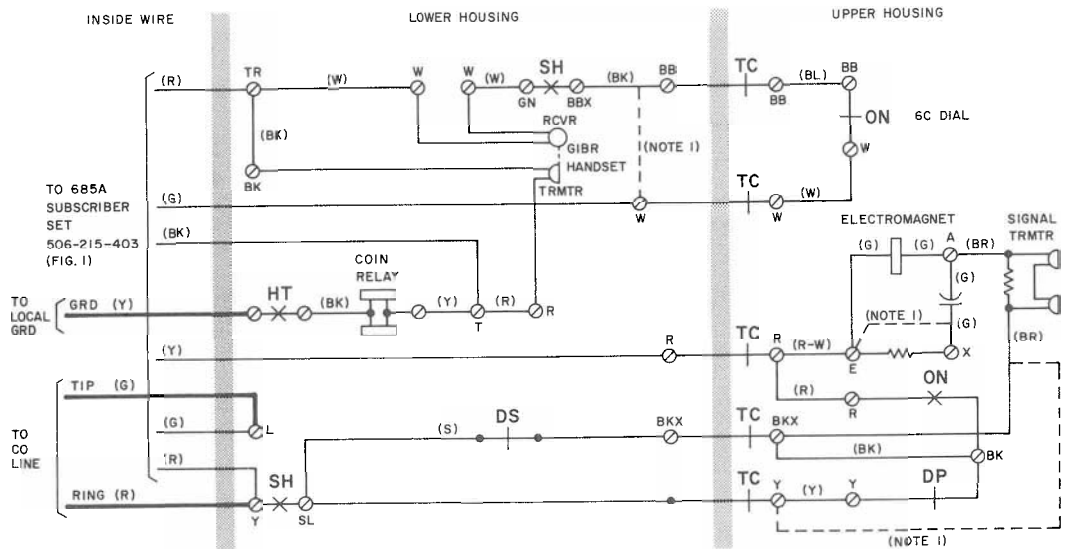
**1.02** This section is reissued to:

- Add a note, required when a 685B subscriber set is used with coin\*collector

- Rearrange drawings to be consistent with other practices

- Delete connection information for the 685A and B subscriber sets

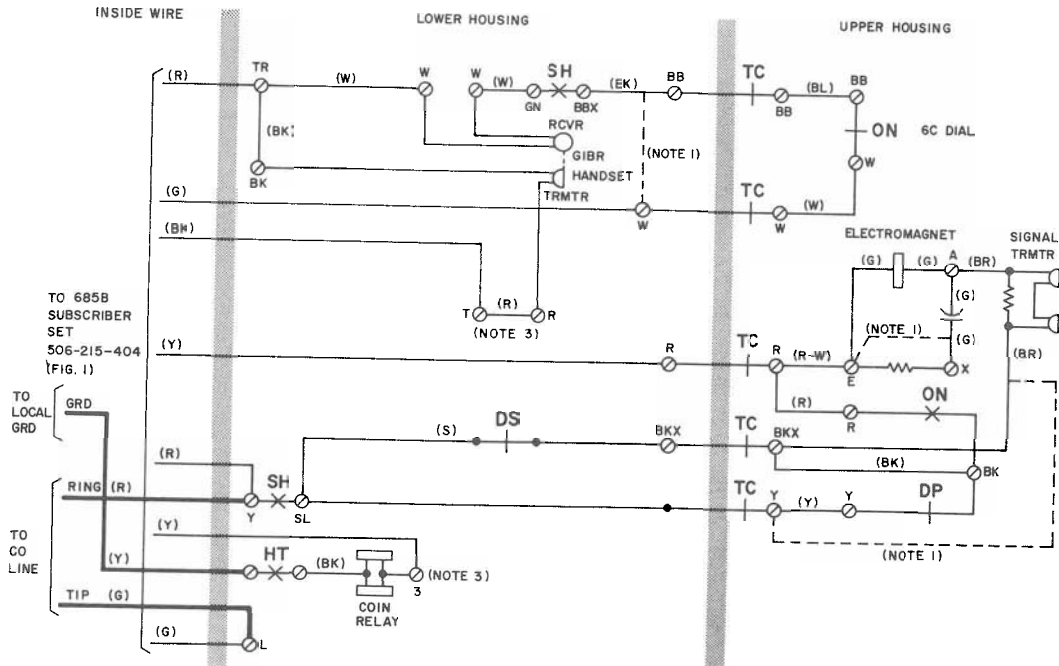
**1.03** Refer to Section 506-215-404 for connection information for the 685A and B subscriber sets.



- NOTES:
1. DOTTED LINES SHOW SETS WITH MANUAL CONNECTIONS [220, 223 (C AND D)] DIAL IS REPLACED WITH 50C APPARATUS BLANK.
  2. WHEN A 6R FILTER IS REQUIRED FOR RADIO FREQUENCY SUPPRESSION, MOVE (Y) DIAL LEAD FROM Y UPPER HOUSING CONTACT SPRING TO FILTER BRACKET TERM., CONNECT (Y) FILTER LEAD TO FILTER BRACKET TERM., CONNECT (BK) FILTER LEAD TO BK UPPER HOUSING CONTACT, AND CONNECT (R) FILTER LEAD TO Y UPPER HOUSING CONTACT.

- DP - DIAL PULSE CONTACTS
- HT - HOPPER TRIGGER CONTACTS
- SH - SWITCHHOOK CONTACTS
- ON - OFF NORMAL CONTACTS
- TC - TRANSFER CONTACTS
- DS - DIAL SHORTING CONTACTS

Fig. 1—220, 223 (C, D, G, H) Coin Collectors with 685A Subscriber Set—Coin First, Connections

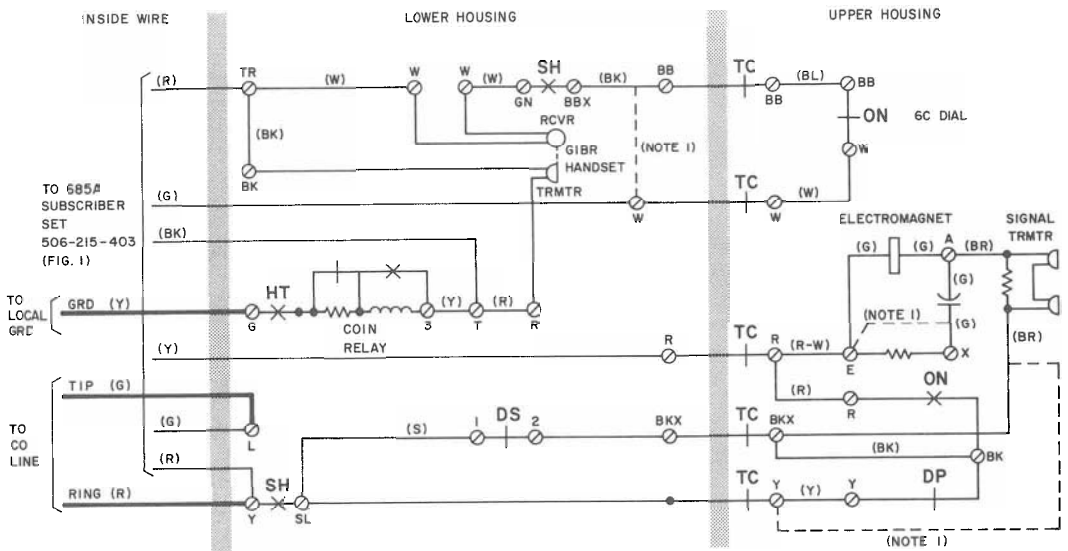


NOTES:

1. DOTTED LINES SHOW SETS WITH MANUAL CONNECTIONS [220, 223 (C AND D)] DIAL IS REPLACED WITH 50C APPARATUS BLANK.
2. WHEN A 6IR FILTER IS REQUIRED FOR RADIO FREQUENCY SUPPRESSION, MOVE (Y) DIAL LEAD FROM Y UPPER HOUSING CONTACT SPRING TO FILTER BRACKET TERM., CONNECT (Y) FILTER LEAD TO FILTER BRACKET TERM., CONNECT (BK) FILTER LEAD TO BK UPPER HOUSING CONTACT, AND CONNECT (R) FILTER LEAD TO Y UPPER HOUSING CONTACT.
3. REMOVE THE (Y) STRAP BETWEEN TERMINALS 3 AND T WHEN USED WITH THE 685B SUBSCRIBER SET.

- DP - DIAL PULSE CONTACTS
- HT - HOPPER TRIGGER CONTACTS
- SH - SWITCHHOOK CONTACTS
- ON - OFF NORMAL CONTACTS
- TC - TRANSFER CONTACTS
- DS - DIAL SHORTING CONTACTS

Fig. 2—220, 223 (C, D, G, H) Coin Collectors with 685B Subscriber Set—Coin First, Connections

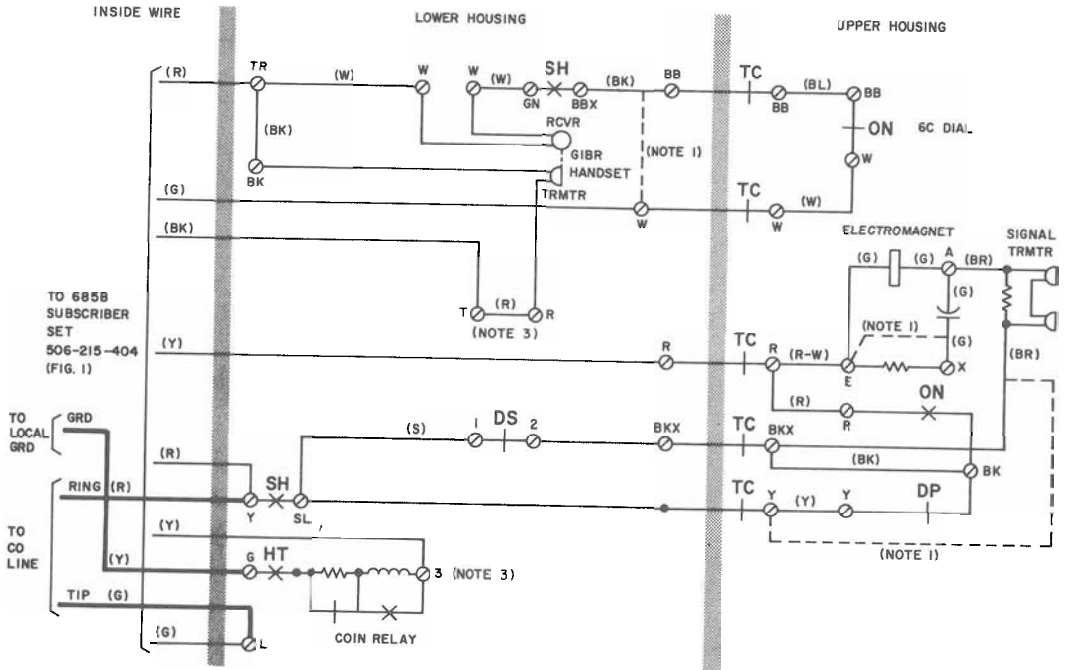


NOTES:

1. DOTTED LINES SHOW SETS WITH MANUAL CONNECTIONS [220, 223 (CT AND DT)] DIAL IS REPLACED WITH 50C APPARATUS BLANK.
2. WHEN A 6IR FILTER IS REQUIRED FOR RADIO FREQUENCY SUPPRESSION, MOVE (Y) DIAL LEAD FROM Y UPPER HOUSING CONTACT SPRING TO FILTER BRACKET TERM., CONNECT (r) FILTER LEAD TO FILTER BRACKET TERM., CONNECT (BK) FILTER LEAD TO BK UPPER HOUSING CONTACT, AND CONNECT (R) FILTER LEAD TO Y UPPER HOUSING CONTACT.
3. WHEN COIN COLLECTOR IS INSTALLED IN A KS-14611, LIST 2 BOOTH OF A KS-16705 MOUNTING, THE TIP AND RING LINE TERMINATIONS ARE CONNECTED DIRECTLY TO THE SUBSCRIBER SET.

- DP - DIAL PULSE CONTACTS
- HT - HOPPER TRIGGER CONTACTS
- SH - SWITCHHOOK CONTACTS
- ON - OFF NORMAL CONTACTS
- TC - TRANSFER CONTACTS
- DS - DIAL SHORTING CONTACTS

Fig. 3—220, 223, (CT, DT, GT, HT) Coin Collectors with 685A Subscriber Set—Coin First, Connections



## NOTES:

1. DOTTED LINES SHOW SETS WITH MANUAL CONNECTIONS [220, 223 (CT AND DT)] DIAL IS REPLACED WITH SOC APPARATUS BLANK.
2. WHEN A GIR FILTER IS REQUIRED FOR RADIO FREQUENCY SUPPRESSION, MOVE (Y) DIAL LEAD FROM Y UPPER HOUSING CONTACT SPRING TO FILTER BRACKET TERM., CONNECT (Y) FILTER LEAD TO FILTER BRACKET TERM., CONNECT (BK) FILTER LEAD TO BK UPPER HOUSING CONTACT, AND CONNECT (R) FILTER LEAD TO Y UPPER HOUSING CONTACT.
3. REMOVE THE (Y) STRAP BETWEEN TERMINALS 3 AND T WHEN USED WITH THE 685B SUBSCRIBERS SET.

DP - DIAL PULSE CONTACTS  
 HT - HOPPER TRIGGER CONTACTS  
 SH - SWITCHHOOK CONTACTS  
 ON - OFF NORMAL CONTACTS  
 TC - TRANSFER CONTACTS  
 DS - DIAL SHORTING CONTACTS

Fig. 4—220, 223 (CT, DT, GT, HT) Coin Collectors with 685B Subscriber Set—Coin First, Connections



**SERVICE**  
**COIN COLLECTORS, SUBSCRIBER SET REQUIRED**  
**230 SERIES**

**1. GENERAL**

**1.01** This section provides connection information for the 230-type coin collectors.

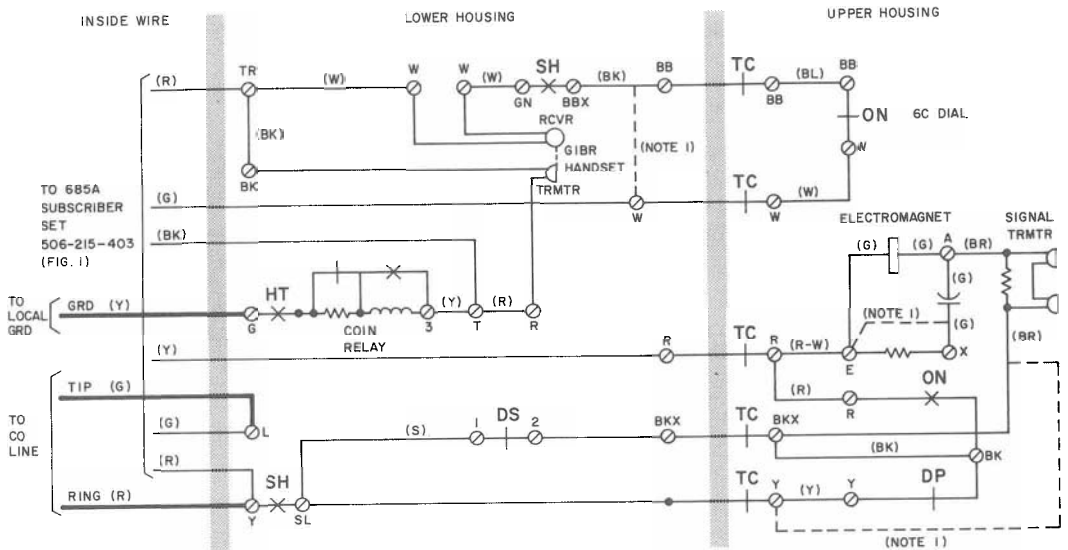
**1.02** This section is reissued:

- Add a note, required when a 685B subscriber set is used with a coin collector

- Rearrange drawings to be consistent with other practices

- Delete connection information for the 685A and B subscriber sets

**1.03** Refer to Sections 506-215-403 and 506-215-404 for connection information for the 685A and B subscriber sets.

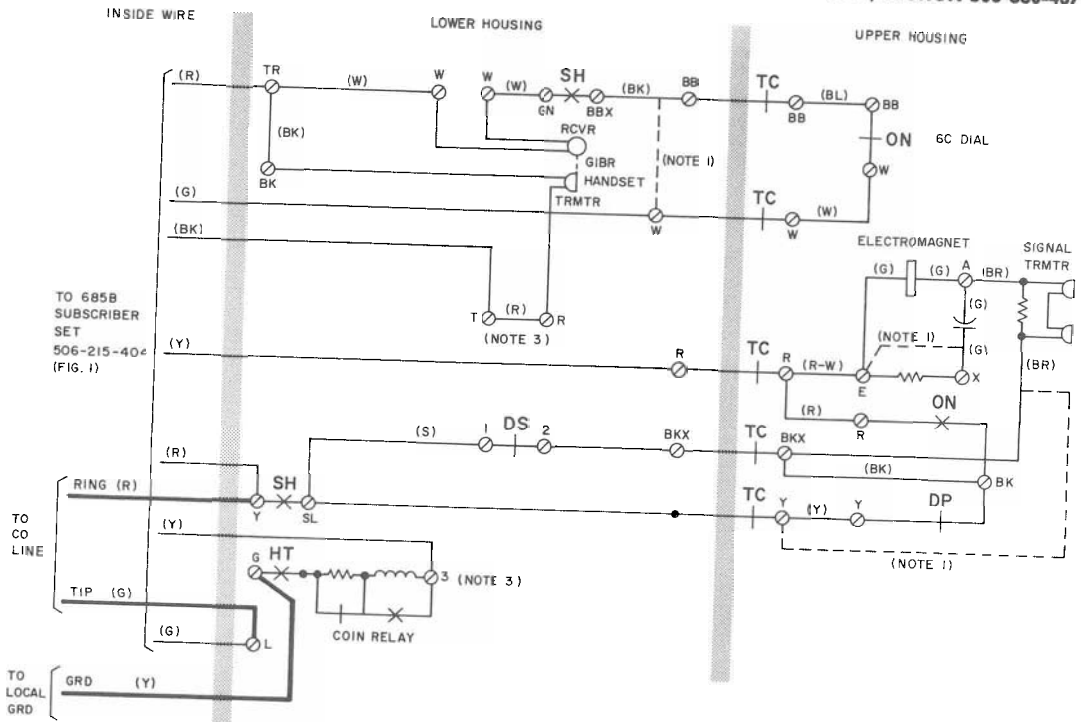


- NOTES:
1. DOTTED LINES SHOW SETS WITH MANUAL CONNECTIONS [230, 233 (C AND D)] DIAL IS REPLACED WITH 50C APPARATUS BLANK.
  2. WHEN A 6R FILTER IS REQUIRED FOR RADIO FREQUENCY SUPPRESSION, MOVE (Y) DIAL LEAD FROM Y UPPER HOUSING CONTACT SPRING TO FILTER BRACKET TERM., CONNECT (Y) FILTER LEAD TO BK UPPER HOUSING CONTACT, AND CONNECT (R) FILTER LEAD TO Y UPPER HOUSING CONTACT.

- DP - DIAL PULSE CONTACTS
- HT - HOPPER TRIGGER CONTACTS
- SH - SWITCHHOOK CONTACTS
- ON - OFF NORMAL CONTACTS
- TC - TRANSFER CONTACTS
- DS - DIAL SHORTING CONTACTS

Fig. 1—230, 233 (C, D, G, H) and 234G Coin Collectors with 685A Subscriber Set—Coin First, Connections





NOTES:

1. DOTTED LINES SHOW SETS WITH MANUAL CONNECTIONS [230, 233 (C AND D)] DIAL IS REPLACED WITH 50C APPARATUS BLANK.
2. WHEN A GIR FILTER IS REQUIRED FOR RADIO FREQUENCY SUPPRESSION, MOVE (Y) DIAL LEAD FROM Y UPPER HOUSING CONTACT SPRING TO FILTER BRACKET TERM., CONNECT (Y) FILTER LEAD TO FILTER BRACKET TERM., CONNECT (BK) FILTER LEAD TO BK UPPER HOUSING CONTACT, AND CONNECT (R) FILTER LEAD TO Y UPPER HOUSING CONTACT.
3. REMOVE THE (Y) STRAP BETWEEN TERMINALS 3 AND T WHEN USED WITH THE 685B SUBSCRIBER SET.

- DP - DIAL PULSE CONTACTS
- HT - HOPPER TRIGGER CONTACTS
- SH - SWITCHHOOK CONTACTS
- ON - OFF NORMAL CONTACTS
- TC - TRANSFER CONTACTS
- DS - DIAL SHORTING CONTACTS

Fig. 2—230, 233 (C, D, G, H) and 234G Coin Collectors with 685B Subscriber Set—Coin First, Connections



**SERVICE**  
**COIN COLLECTORS, SUBSCRIBER SET REQUIRED**  
**1230 SERIES**

**1. GENERAL**

**1.01** This section provides connection information for the 1234 coin collector.

**1.02** This section is reissued:

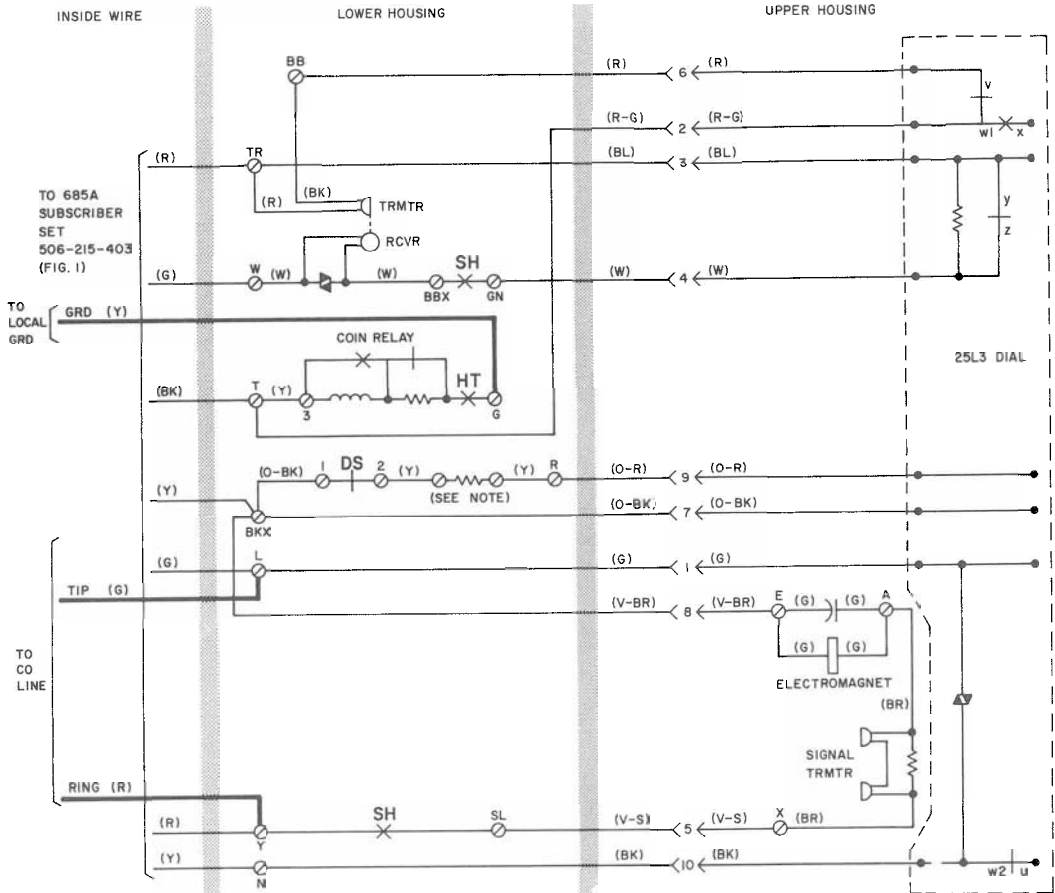
- Rearrange drawing to be consistent with other practices

- Incorporate minor changes in drawing

- Delete connection information for the 685A subscriber set

**1.03** Refer to Section 506-215-403 for connection information on the 685A subscriber set.

SECTION 506-331-400



NOTE:  
 IN EARLY PRODUCTION SETS THIS RESISTOR WAS  
 A PART OF THE 685D (MD) SUBSET.

HT - HOPPER TRIGGER CONTACTS  
 SH - SWITCHHOOK CONTACTS  
 DS - DIAL SHORTING CONTACTS

Fig. 1—1234G Coin Collector with 685A Subscriber Set—Coin First, Connections

## SERVICE COIN COLLECTORS 235- AND 1235-TYPE

### 1. GENERAL

1.01 This section provides maintenance and connection information for the 235G and 1235G coin collectors. (Fig. 1 and 2).

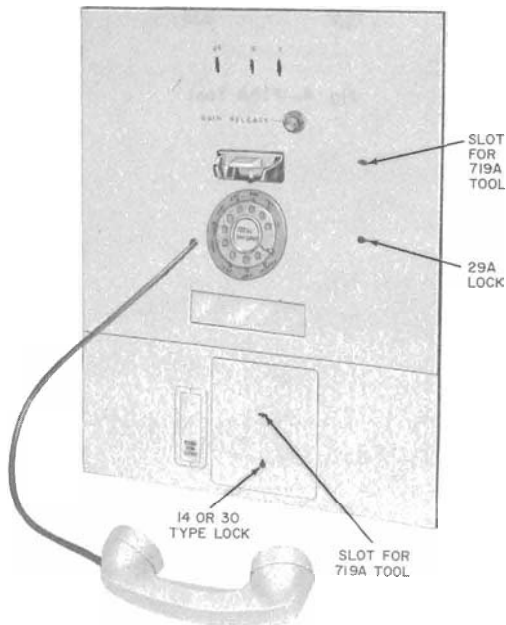


Fig. 1—235G Coin Collector

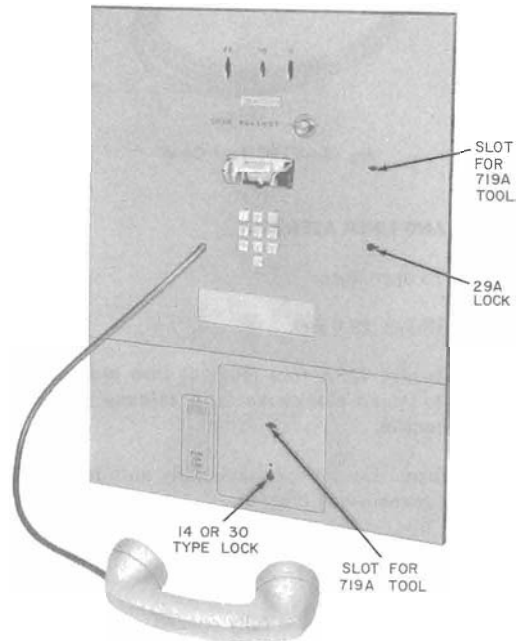


Fig. 2—1235G Coin Collector

1.03 For additional information refer to Division 506, section entitled: Reference Coin Collectors, 235-, 236-, and 1235-Type.

### 2. MAINTENANCE

1.02 Information in this section was formerly contained in Sections 506-321-100, 506-321-400 and 506-321-420 which are hereby canceled.

2.01 A P11C test cord (Fig. 3) is used to connect plug (P1) to jack (J1) which allows the set to be operative while door and liner assembly is opened.



Fig. 3—P11C Test Cord

### DOOR AND LINER ASSEMBLY

2.02 To open door:

- (1) Unlock 29A lock.
- (2) Insert 719A tool (Fig. 4) into slot, turn 1/4-turn clockwise, and release locking mechanism.

**Note:** Do not open door fully until plug (P1) is disconnected (Fig. 5).

- (3) Open door approximately 3 inches and disconnect P1 from J1.
- (4) Door can now be fully opened.

#### *Coin Twister Assembly*

2.03 To remove coin twister assembly:

- (1) Loosen screws in middle of twister assembly (Fig. 5).
- (2) Lift P-27E847 coin twister (top section) up and out.
- (3) Remove screws and nuts holding P-44E390 coin twister frame assembly (Fig. 5).
- (4) Lift frame assembly up and off.
- (5) Install, using reverse procedure.

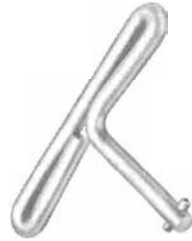


Fig. 4—719A Tool

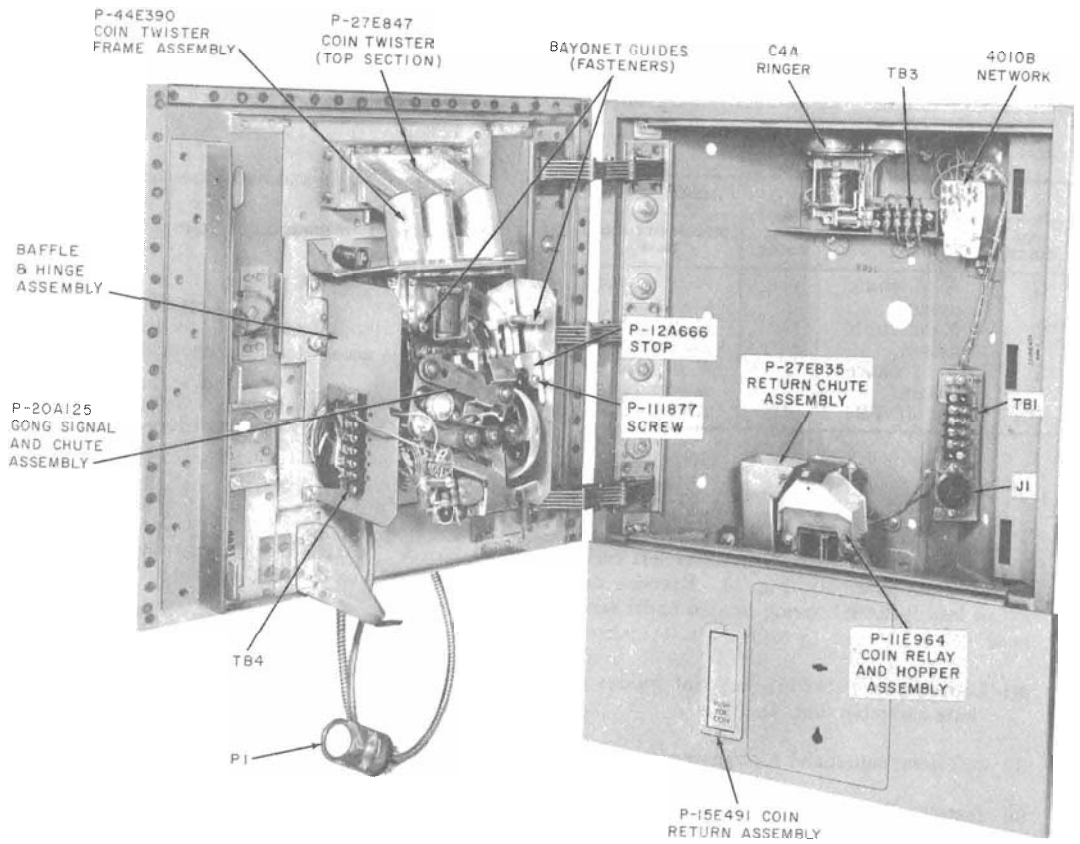


Fig. 5—235G or 1235G Coin Collector—Interior

## SECTION 506-342-400

### Gong Signal and Chute Assembly

**2.04** To remove gong signal and chute assembly:

(1) Disconnect wires as follows:

235G		1235G	
WIRE COLOR	DISCONNECT FROM TERM.	WIRE COLOR	DISCONNECT FROM TERM.
G	A of chute assem.	G	A of chute assem.
G	X of chute assem.	G	E of chute assem.
Y	E of chute assem.	Y	E of chute assem.
BR	BR of TB4	BR	BR of TB4

(2) Remove P-111877 screw and P-12A666 stop (Fig. 5)

(3) Loosen P-25E445 screw in lower left corner of chute assembly (Fig. 6). Exercise care not to lose P-12A681 spring located under screw head.

(4) Loosen two P-11E183 bayonet guides on chute assembly (Fig. 5).

(5) Lift gong signal and chute assembly off.

(6) Install, using reverse procedure.

### Baffle and Hinge Assembly

**2.05** To remove baffle and hinge assembly (Fig. 5):

(1) Disconnect all wires from TB4

(2) Remove retainer ring from rear of the coin release shaft.

(3) Remove four P-181641 screws, four P-285080 lockwashers and lift baffle and hinge assembly off.

(4) Install, using reverse procedure.

### Dial and Housing Assembly

**2.06** To remove dial housing:

(1) Remove coin twister assembly (2.03).

(2) Remove gong signal and chute assembly (2.04).

(3) Remove baffle and hinge assembly (2.05).

(4) Remove four mounting screws in dial housing.

(5) Lift dial housing off.

**Note:** Handset cord will pull through cover to enable access to dial without disconnecting cord.

(6) Install, using reverse procedure.

**2.07** To remove dial:

**Note:** No field maintenance should be performed on the dial, replace if defective.

(1) Remove dial housing (2.06).

(2) Disconnect dial leads from TB2 (dial terminal board).

(3) Loosen two mounting screws on sides of dial through access holes in dial housing.

(4) Lift dial off.

**2.08** To install dial:

(1) Use reverse procedure in 2.07 and make connections as follows:

235G		1235G	
WIRE COLOR	CONNECT TO	WIRE COLOR	CONNECT TO
Y	TB2-1	G	TB2-1
W	TB2-2	W	TB2-2
G	TB2-2	BL	TB2-3
BL	TB2-3	O-BK	TB2-4
W	TB2-9	R	TB2-5
Y	TB2-11	R-G	TB2-6
		O-R	TB2-8
		BK	TB2-11



## Handset

### 2.09 To remove handset:

- (1) Remove gong signal and chute assembly (2.04).
- (2) Disconnect handset leads from TB4.
- (3) Loosen cord stay screw (Fig. 6).
- (4) Remove screw and cord clamp from armored cord.
- (5) Pull cord out front of cover.
- (6) Install, using reverse procedure.

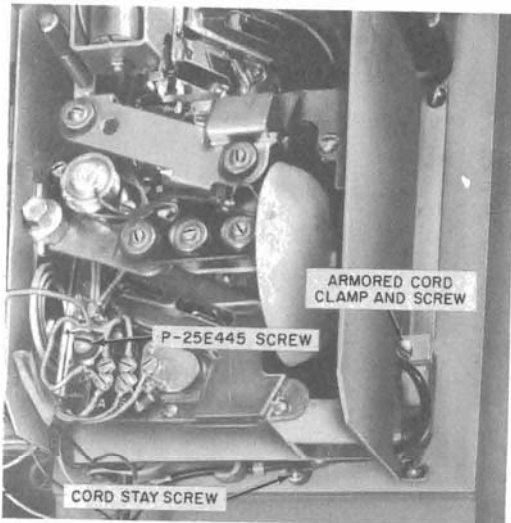


Fig. 6—Location of Cord Stay Screw and Cord Clamp

## HOUSING ASSEMBLY

### Ringer

### 2.10 To remove ringer:

- (1) Disconnect ringer leads from TB3.
- (2) Remove two screws.

- (3) Lift ringer up and off.

### 2.11 To install ringer:

- (1) Mount ringer in place and secure with two screws.
- (2) Connect ringer leads as follows:

WIRE COLOR	CONNECT TO
BK	TB3-R
R	TB3-T
S-R	TB3-A
S	TB3-K

## Return Chute Assembly

### 2.12 To remove return chute assembly (Fig. 7):

- (1) Loosen mounting screw.
- (2) Lift assembly up and out.

**Note:** It may be necessary to remove P-28F453 clip.

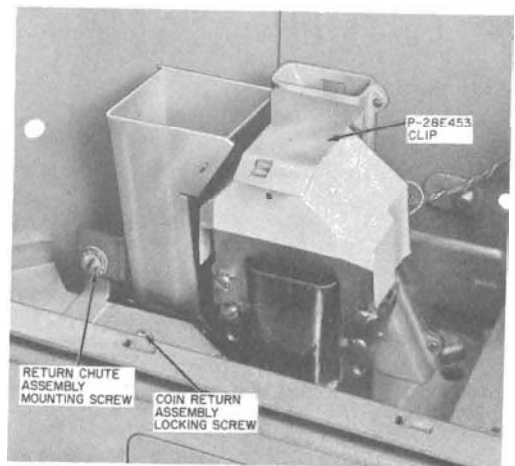


Fig. 7—Coin Relay and Return Chute Assembly

**2.13** To install return chute assembly:

- (1) Slide the assembly in and down until it is properly seated.
- (2) Tighten the mounting screw.



*If the return chute is not installed properly, there can be a gap between the return chute and the hopper assembly large enough to allow coins to drop into the housing. Refer to Fig. 8 for this gap. This gap may be observed by placing a light down the opening in the return chute, tripping the relay and hopper assembly to the reject position, and looking down the opening of the hopper assembly. Fig. 9 is a bird's eye view of what can be observed. If this gap exists, loosen the mounting screw and reposition*

*the return chute. Check again with a light (Fig. 9) and tighten screw when proper alignment is obtained.*

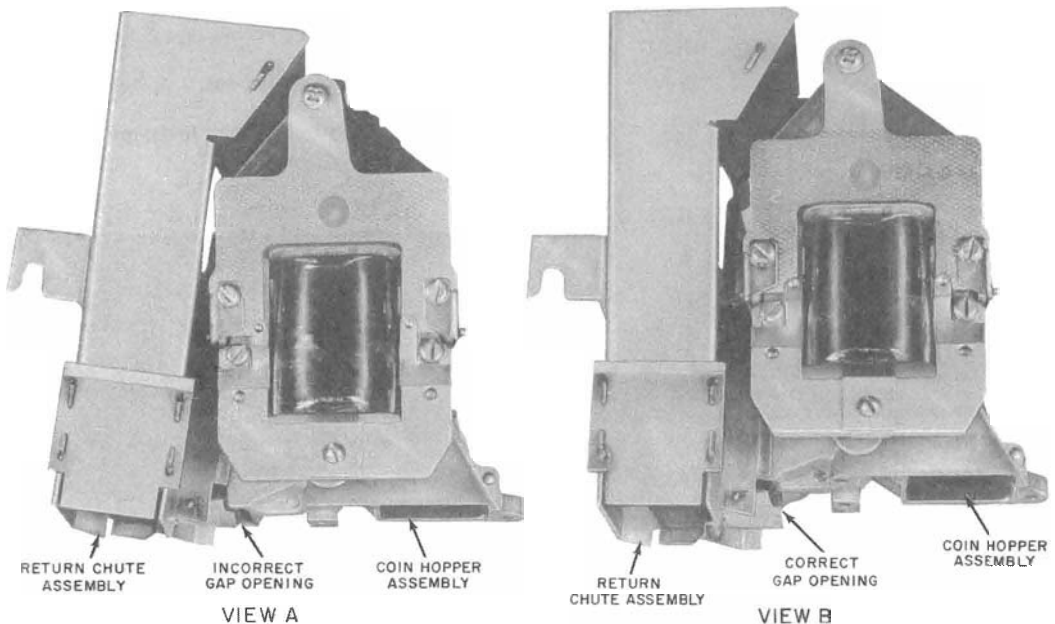
### Coin Relay

**2.14** To remove coin relay (Fig. 7):

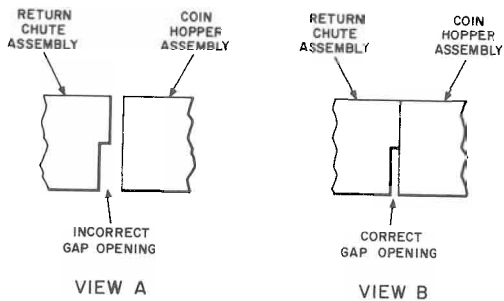
- (1) Remove return chute assembly (2.12).
- (2) Remove P-28E453 clip and dust cover.
- (3) Disconnect leads from coin relay.
- (4) Remove four screws and remove coin relay.

**2.15** To install coin relay:

- (1) Place coin relay in position and secure with the four screws removed in 2.14(4).



**Fig. 8—Alignment of Return Chute Assembly**



**Fig. 9—Relative Position of Return Chute Assembly and Coin Hopper Assembly As Viewed Down Hopper Throat**

- (2) Connect leads to coin relay as follows:

WIRE COLOR	CONNECT TO
R	1
R	2
G-Y	3
O	G

- (3) Install dust cover and P-28E453 clip (Fig. 7).  
 (4) Install return chute assembly (2.12).

### *Coin Return Assembly*

- 2.16** To remove coin return assembly:

- (1) Remove return chute assembly (2.11).

- (2) Remove coin return assembly locking screw (Fig. 7).  
 (3) Insert finger in coin return and tilt top forward.  
 (4) Lift coin return. Pull coin return assembly out and up.

- 2.17** 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) Install return chute assembly (2.12).

### *Coin Hopper*

- 2.18** The coin hopper cannot be removed without removing 4A door and coin receptacle. If it becomes necessary to remove the coin hopper in the field, remove the 4A door and coin receptacle per local regulations.

## **3. CONNECTIONS**

- 3.01** For connection information refer to Fig. 10 and 11.

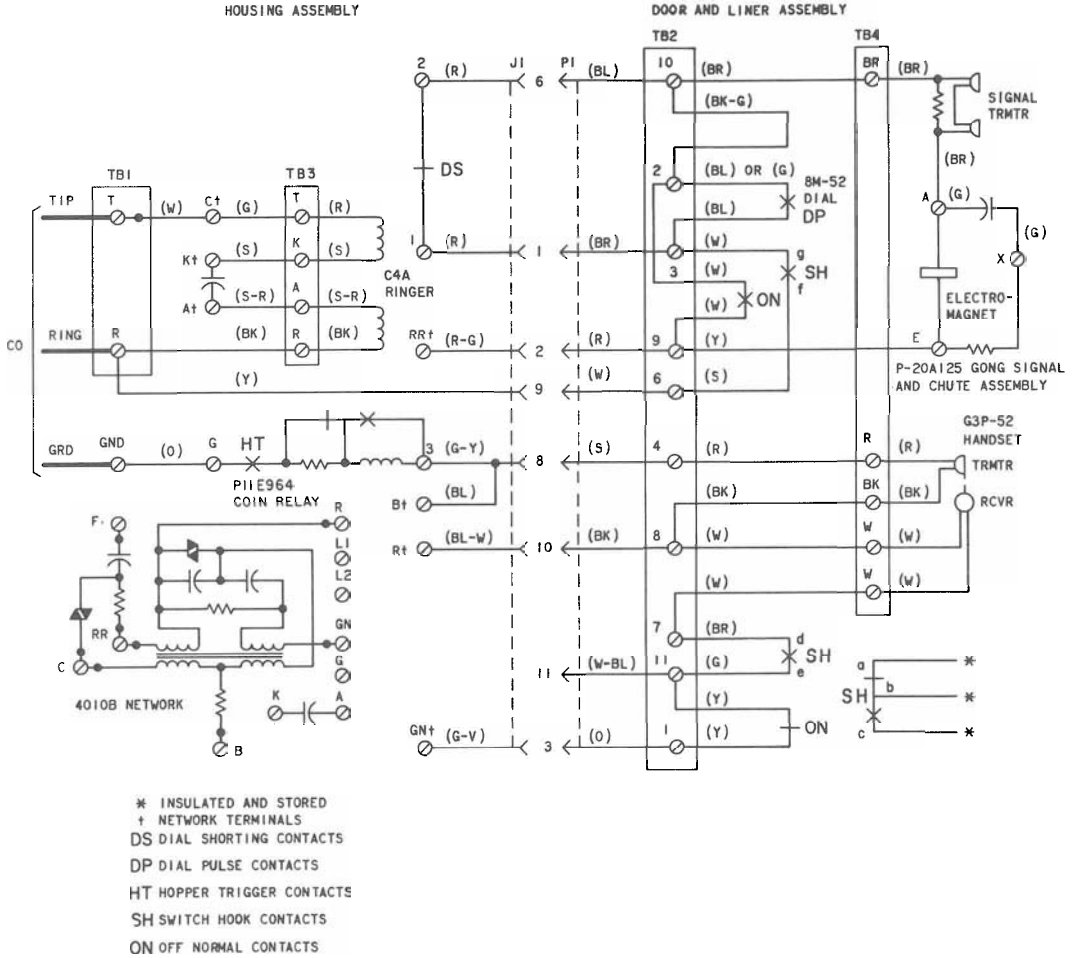


Fig. 10—235G Coin Collector, Connections

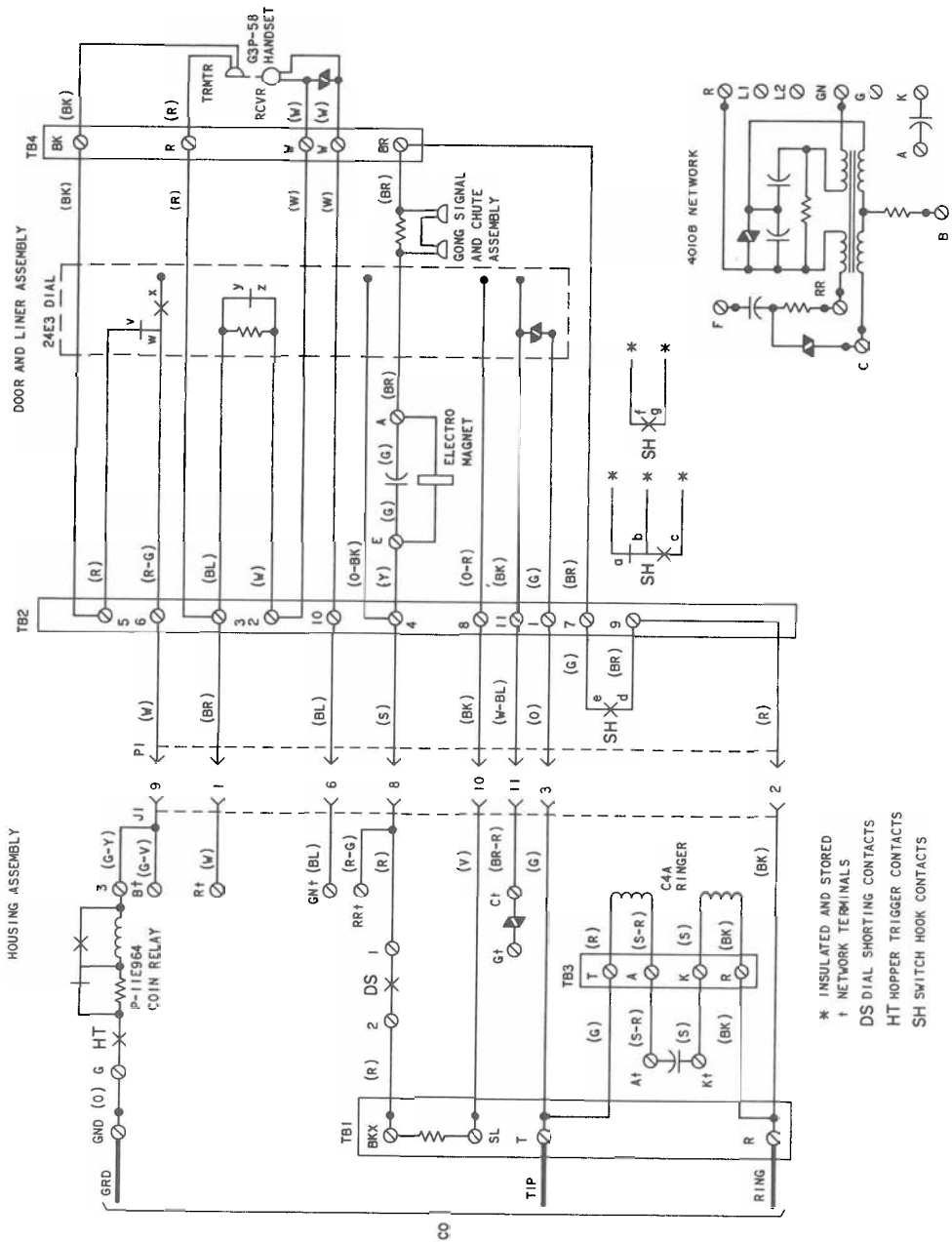


Fig. 11—1235G Coin Collector, Connections



**SERVICE**  
**COIN COLLECTORS**  
**236-TYPE**

**1. GENERAL**

**1.01** This section provides connection information for the 236G coin collector.

**1.02** Information in this section was formerly contained in Section 506-322-400 which is hereby canceled.

**1.03** Refer to Division 506, section entitled: Reference, Coin Collectors—235, 236-, and 1235- type for additional information on these sets.

**2. CONNECTION INDEX**

Fig. 1—236G Coin Collector, Connections

SECTION 506-342-401

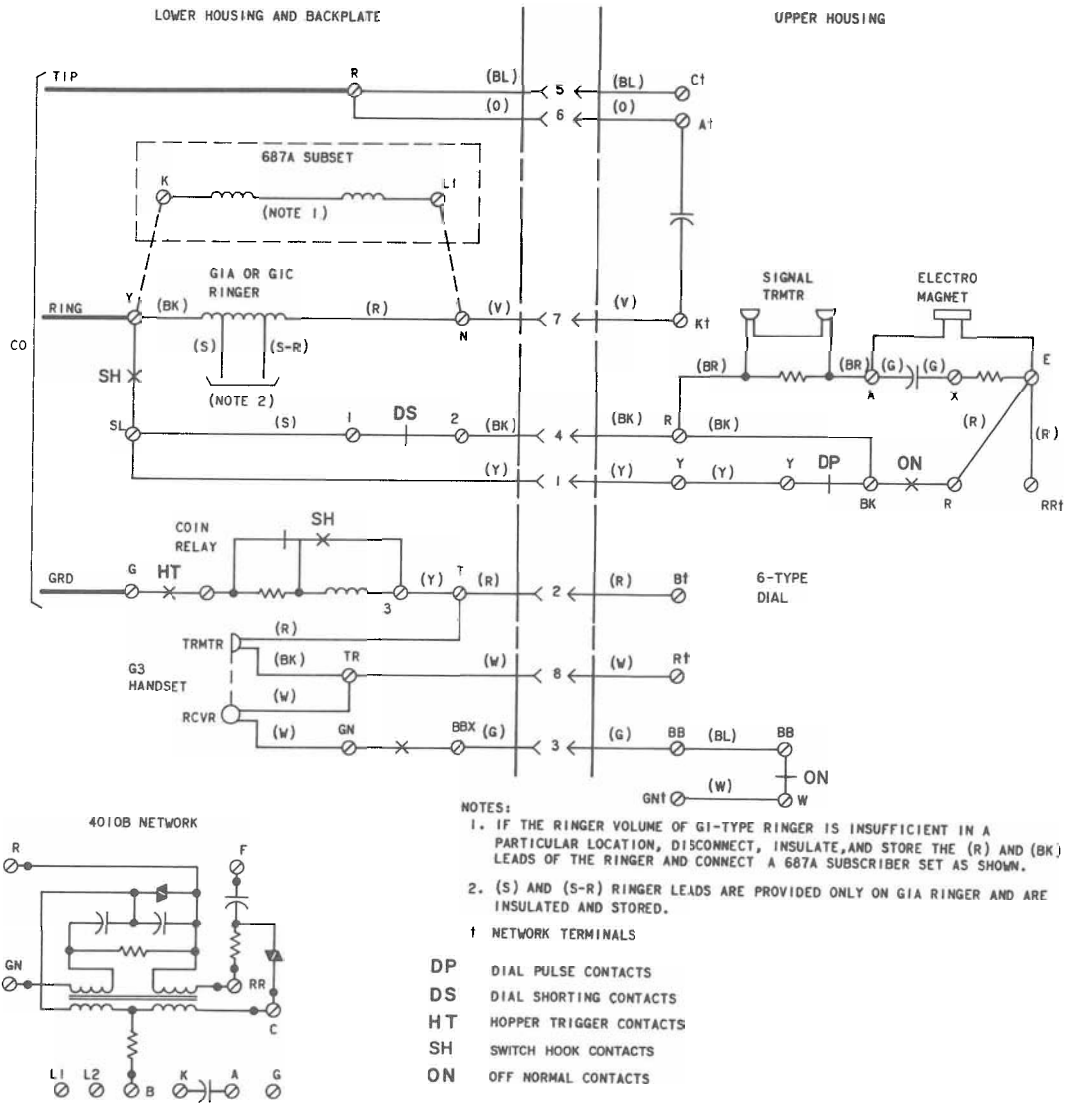
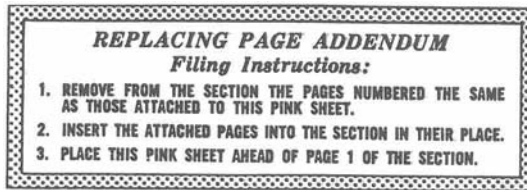


Fig. 1—236G Coin Collector, Connections





**SERVICE**  
**COIN TELEPHONE SETS**  
**1A-AND 2A-TYPE**

**1. GENERAL**

**1.001** This addendum supplements Section 506-410-400, Issue 1. The attached pages must be inserted in the section in accordance with the filing instructions above.

**1.002** This addendum is issued to change totalizer connector position when converting a 1A1 set to a 1C1 set in the coin first mode.

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

The following change applies to Part 6 of the section.

(a) 6.03 (b) (7)—revised

**Attached:**

**Page 33 dated June 1971, reissued**

**Page 34 dated June 1971, revised**



SEE ADDENDUM

**SERVICE**  
**COIN TELEPHONE SETS**  
**1A- AND 2A-TYPE**

CONTENTS	PAGE	CONTENTS	PAGE
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2. INSTALLATION . . . . .	3	Coin Relay . . . . .	25
LOCATION . . . . .	3	Coin Hopper . . . . .	27
BACKBOARDS AND SECURITY STUDS . . . . .	4	Return Chute Assembly . . . . .	28
APPLICATION . . . . .	5	Coin Return Assembly . . . . .	28
1A-Type . . . . .	5	Ringer . . . . .	29
2A-Type . . . . .	5	Handset . . . . .	29
COMPONENTS . . . . .	6	Dial and Housing Assembly . . . . .	29
Cover Unit Assembly (1A-Type) . . . . .	6	303 K Mercury (A) Relay . . . . .	30
Door and Faceplate Assembly (2A-Type) . . . . .	6	P-23F361 Entrance Stop . . . . .	30
Coin Chute Totalizer Assembly . . . . .	6	CLEANING . . . . .	30
Chassis Assembly . . . . .	11	5. CONNECTIONS . . . . .	31
Coin Receptacle (Cash Box) . . . . .	13	6. CONVERSIONS—1A/2A-TYPE COIN TELEPHONE SETS TO 1C/2C-TYPE . . . . .	31
Instruction Cards (1A-Type) . . . . .	14	1A-Type . . . . .	31
Instruction Cards (2A-Type) . . . . .	15	2A-Type . . . . .	36
Number Card (TOUCH-TONE® Only) . . . . .	15	1. GENERAL	
WIRING . . . . .	15	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)	
3. OPERATION TESTS AND TROUBLE ANALYSIS . . . . .	17	Information is also included to convert a 1A- or 2A-type coin telephone set to a 1C- or 2C-type.	
4. MAINTENANCE . . . . .	17		
Cleaning Chute . . . . .	17		
Electrical Troubles . . . . .	24		

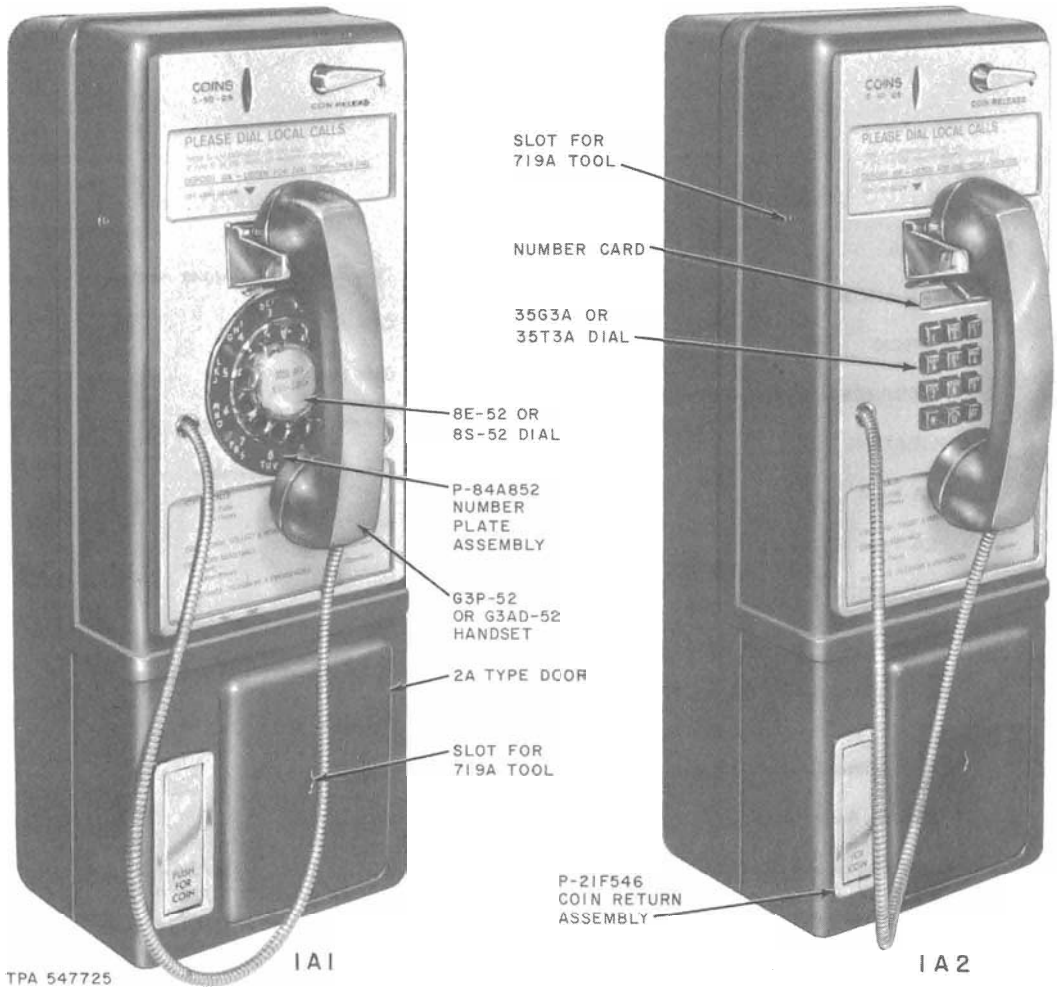
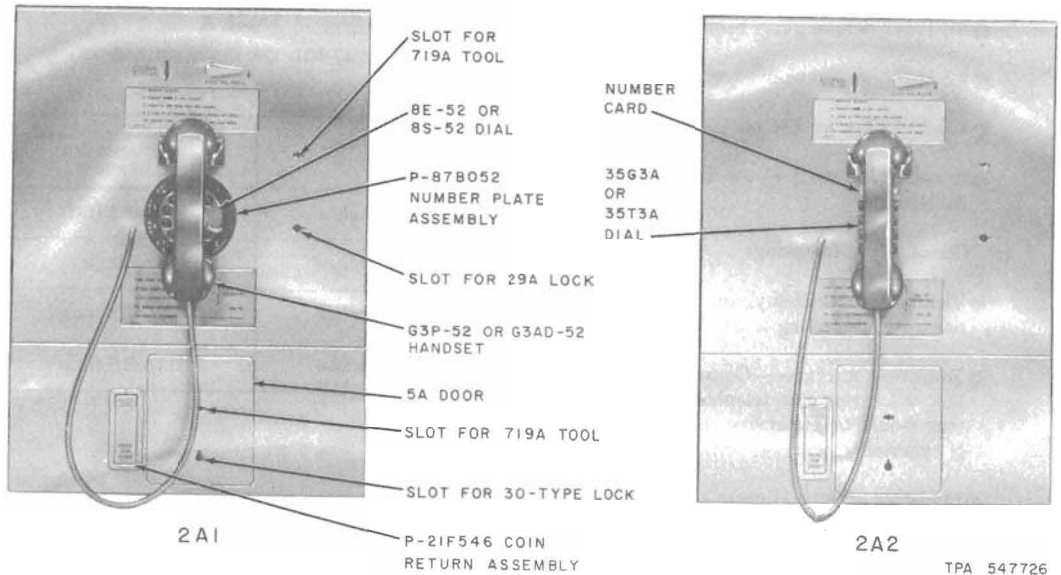


Fig. 1—1A-Type Coin Telephone Sets



**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:

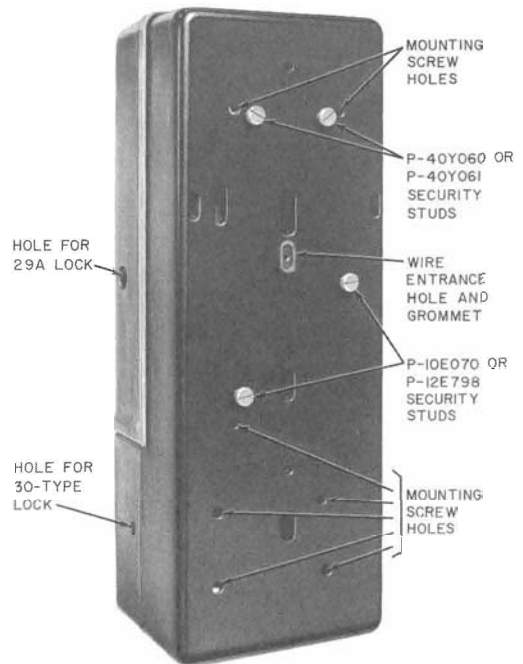


*When mounting the coin telephone set, a vertical surface must be provided. A tilt greater than 1-1/2 degrees in any direction can cause chute malfunction. A vertical surface may be determined by the following steps:*

- (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**

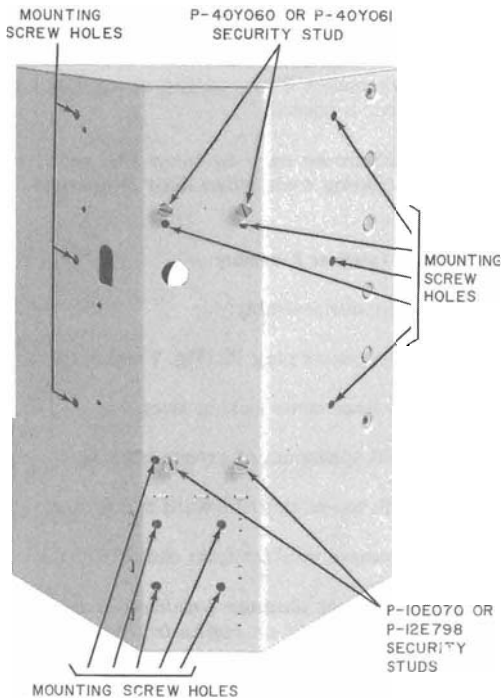
SPIRIT LEVEL LENGTH	MAXIMUM ALLOWABLE DISTANCE OUT OF PLUMB
18 inches	15/32 inch
24 inches	5/8 inch
30 inches	25/32 inch
36 inches	15/16 inch



**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.*

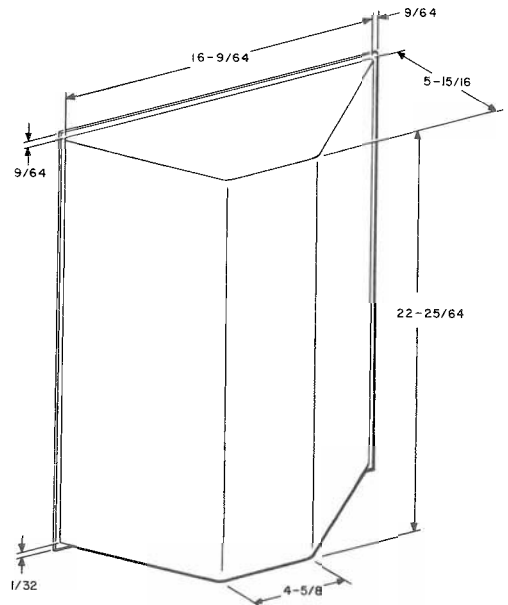
#### APPLICATION

##### 1A-Type

- (a) Refer to Table B.

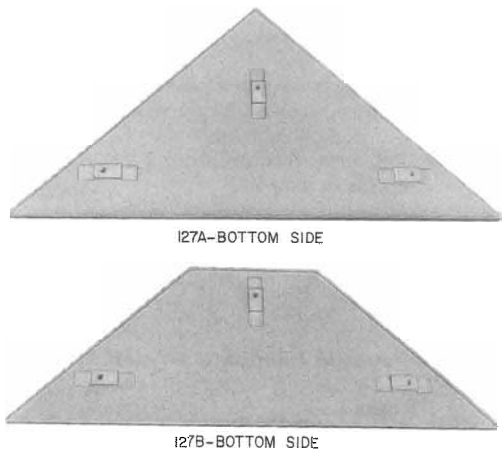
##### 2A-Type

- (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:**

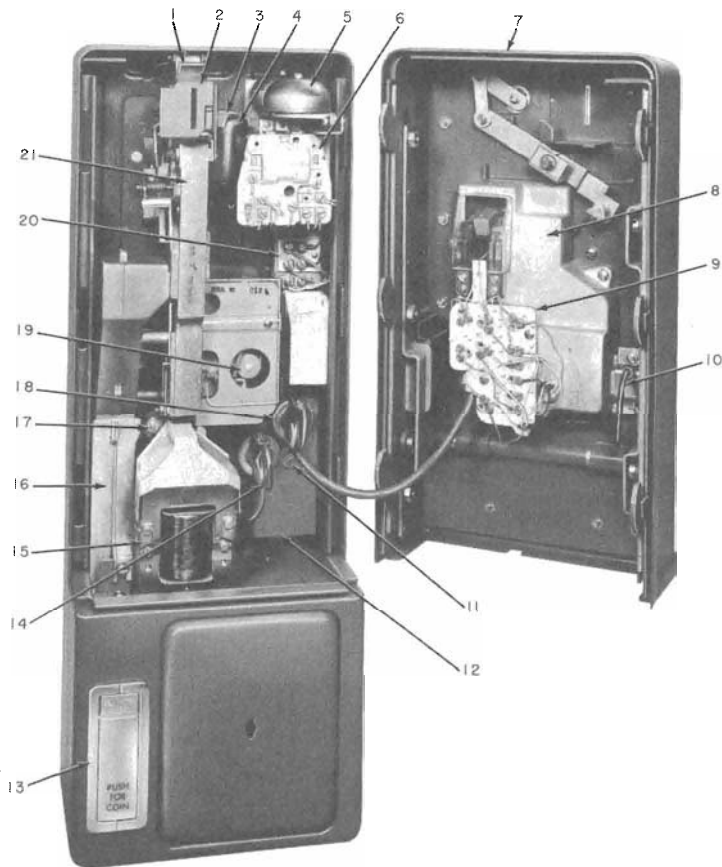
1. A 178A-3 backboard is furnished with each KS-19945 shelf unless otherwise specified.
2. Seven 1/4-20 by 5/8 hardened RHM screws (P-23F790) are furnished with each coin telephone set for mounting to backboard.

**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

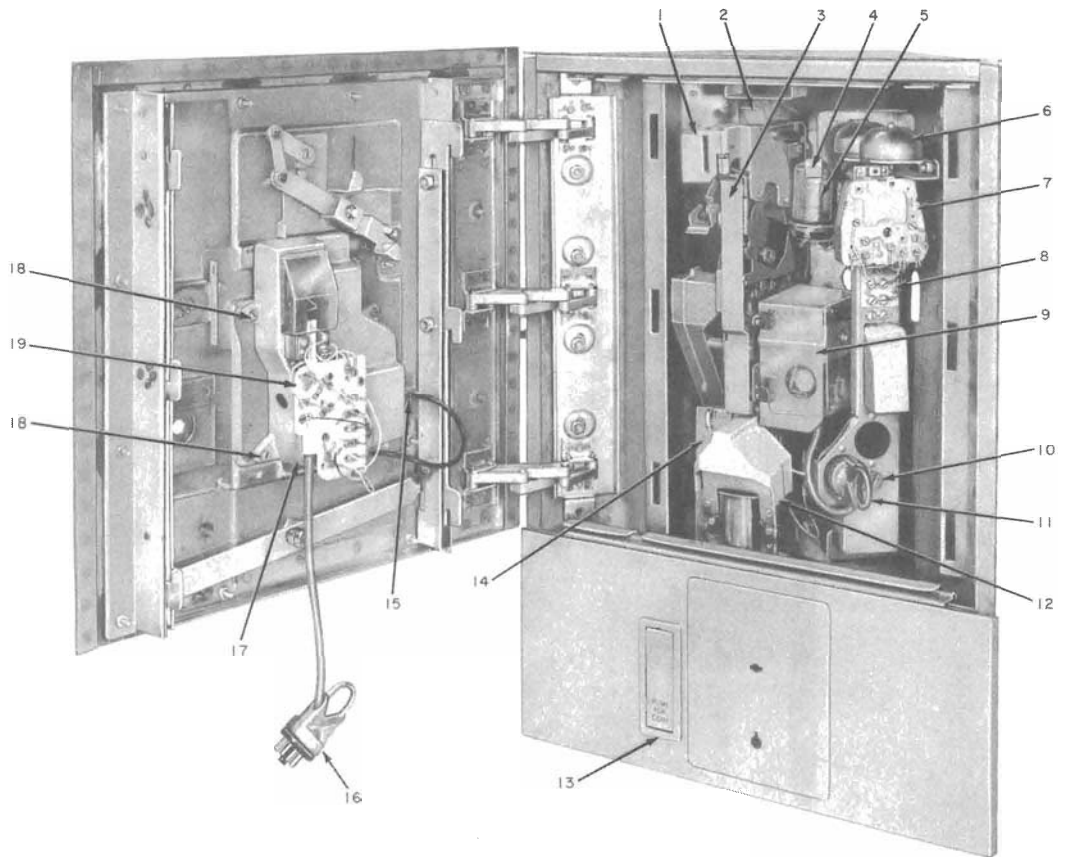


Fig. 8—Assembly of Parts (2A-Type)

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*

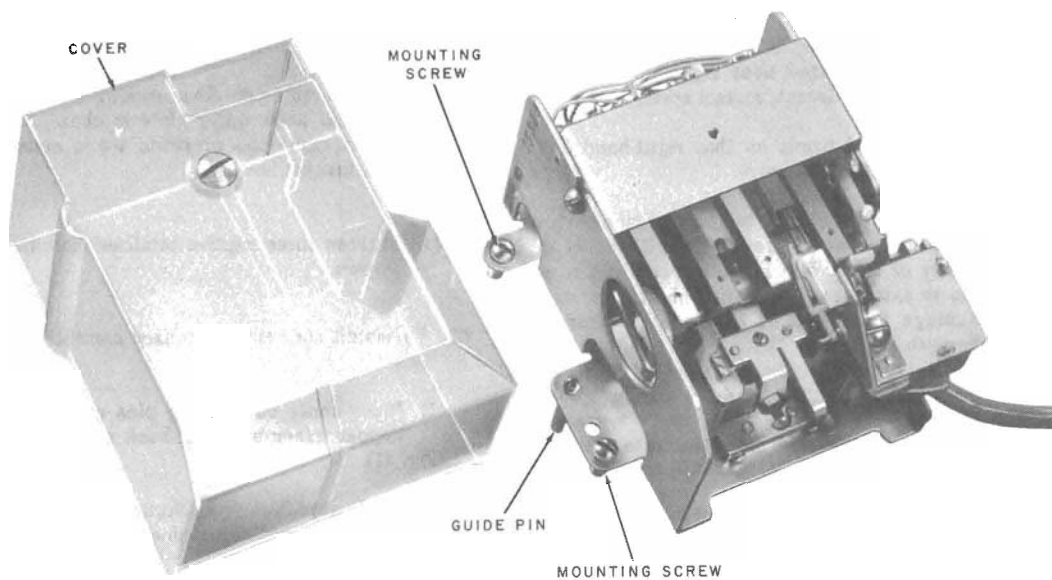


Fig. 9—Totalizer

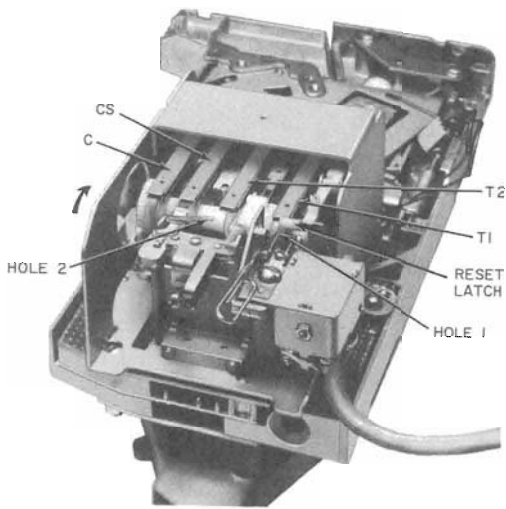


Fig. 10—Setting Totalizer Rate

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:

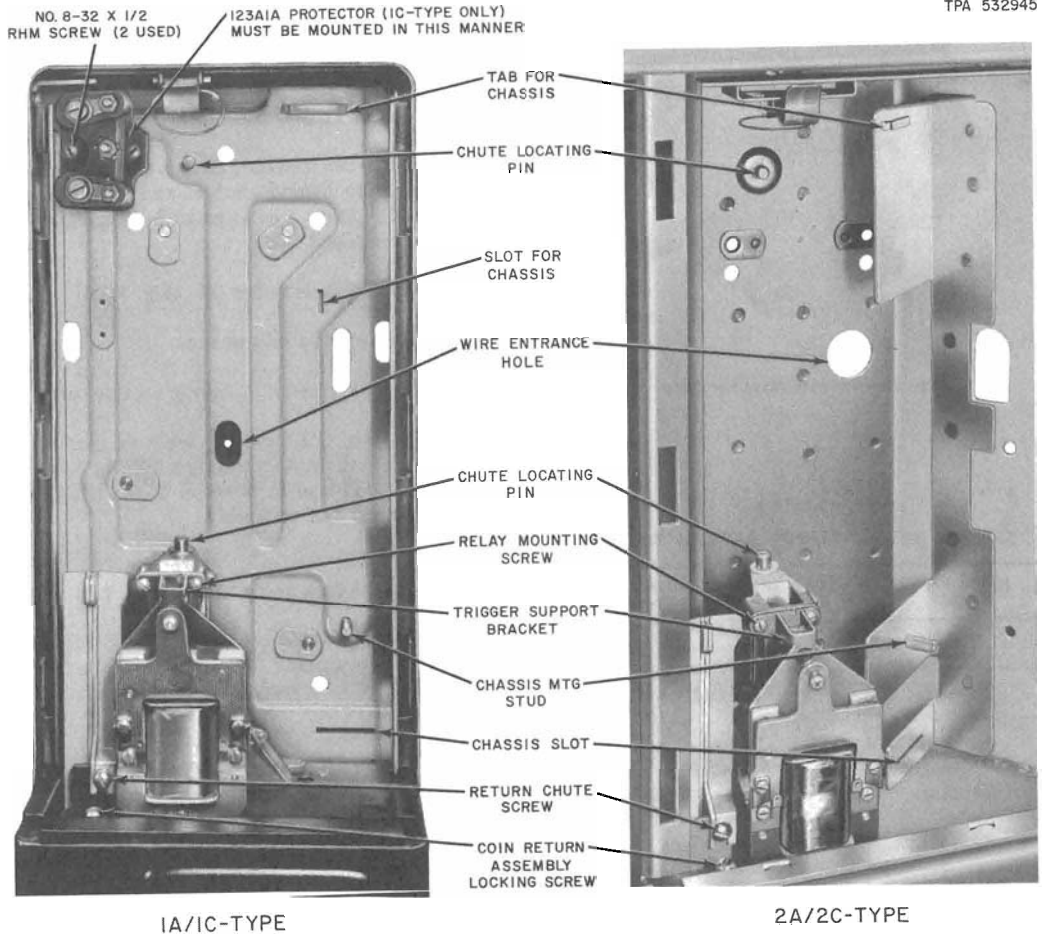
**Note:** When installing chassis assembly, dress inside wire behind chassis and to the right of TE1. Allow for wires to be connected to TB1 from right side.

- (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	$2.130 \begin{matrix} +.015 \\ -.025 \end{matrix}$	$2.840 \begin{matrix} +.015 \\ -.025 \end{matrix}$
Thickness	$.050 \begin{matrix} +.006 \\ -.010 \end{matrix}$	$.050 \begin{matrix} +.006 \\ -.010 \end{matrix}$
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.

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

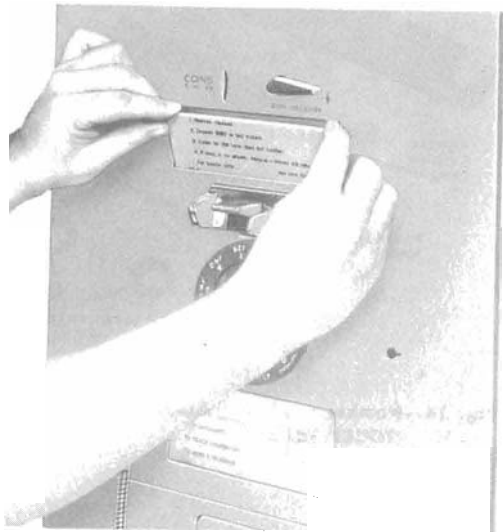
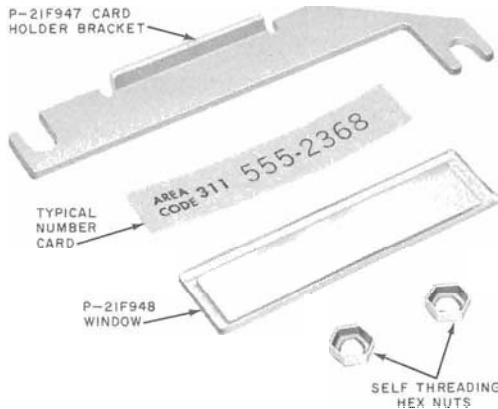


Fig. 13—Installing Instruction Cards (2A-Type)

## SECTION 506-410-400

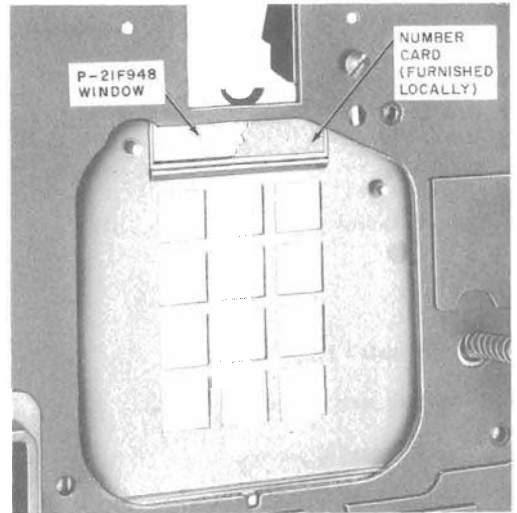
### Number Card (TOUCH-TONE Only)

- (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.

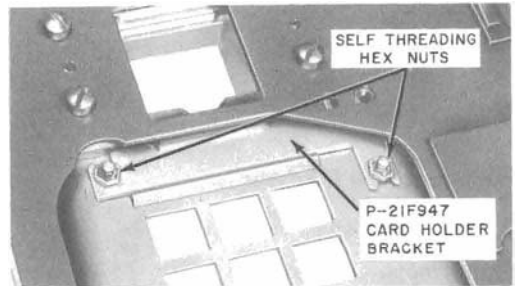


**Fig. 14—Number Card and Associated Hardware (TOUCH-TONE)**

**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



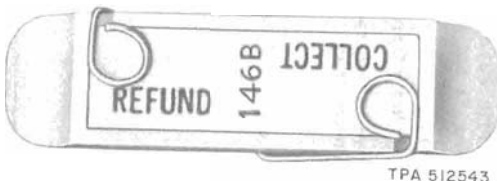
*On trouble reports of coins collected or returned in error, try to obtain area code and telephone number of called party to facilitate tracing trouble in central office.*

#### 3.01 Apparatus Required

- (a) P11C Cord (Fig. 17)
- (b) Coins: 1 penny, 2 nickies, 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	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
				Tip and ring reversed or coin trunk trouble	Reconnect or refer to test desk
				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

**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 Defective A relay Defective handset Defective dial (TOUCH-TONE only) Defective wiring in dial, housing, or chassis assembly	Replace defective apparatus
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: Totalizer set for an initial rate of 10 cents.</i>					
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**

TROUBLE NUMBER	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
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).

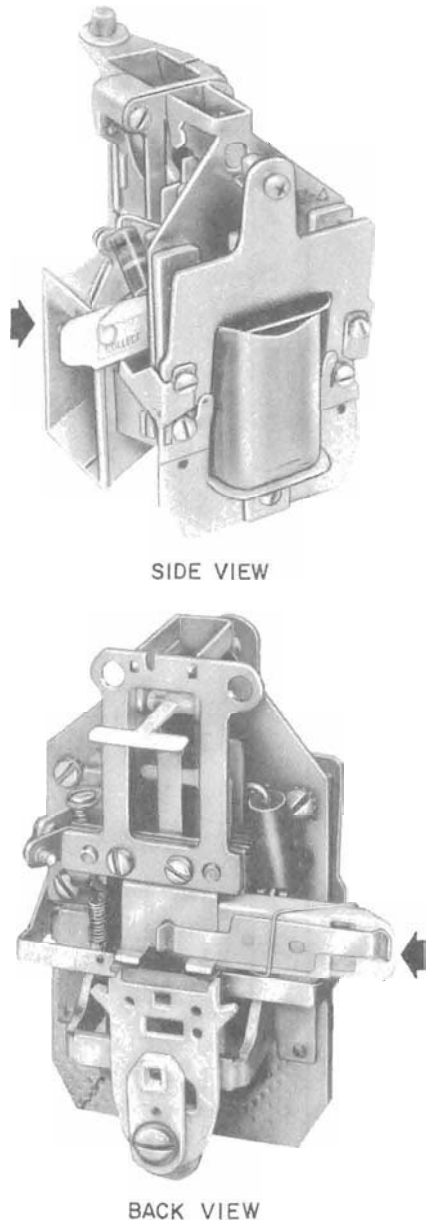


Fig. 20—Bias Margin Gauge in Position for Collect Test

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 and Hopper Assembly**

(a) To remove coin relay and hopper assembly.

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

**Coin Relay**

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

- (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:**

- Coin relays marked 1A without the asterisk symbol have bifurcated rather than solid contact springs.
- 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.
- 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.

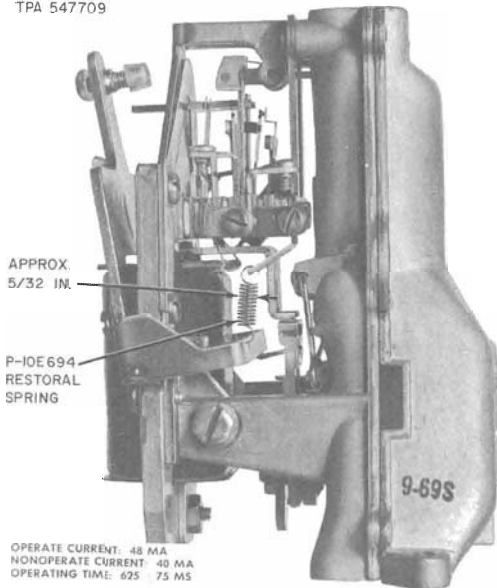
(2) With hopper trigger in nonoperated (or horizontal) position, move relay into position until trigger enters T-shaped slot in hopper and trap lever tab just enters opening in selector card.

(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.**

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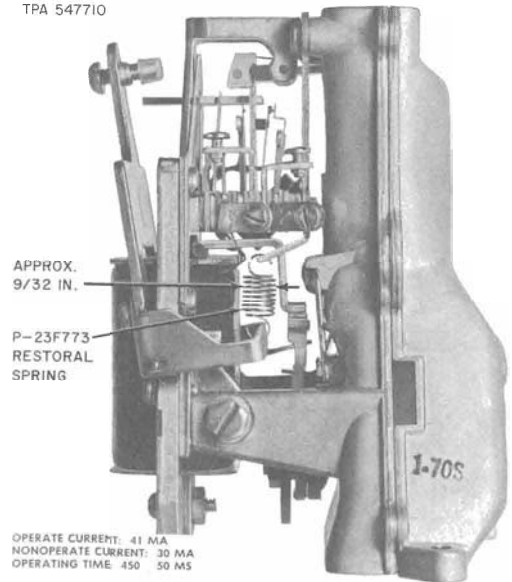
**Fig. 21—Coin Relay Showing Old Operating Values**

- (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.

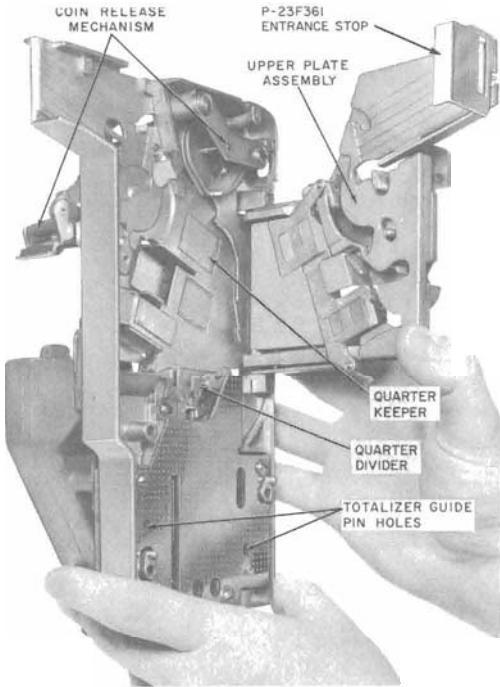


Fig. 23—Coin Chute Totalizer Assembly

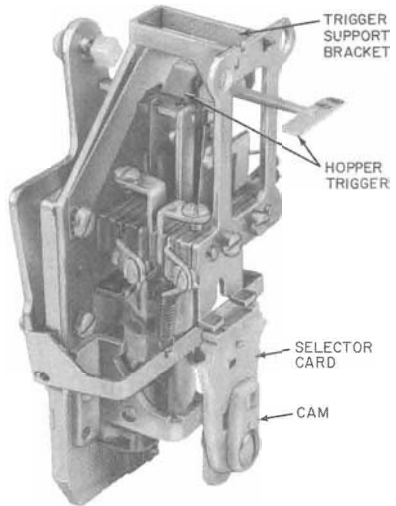


Fig. 24—Coin Relay

**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.

- (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.



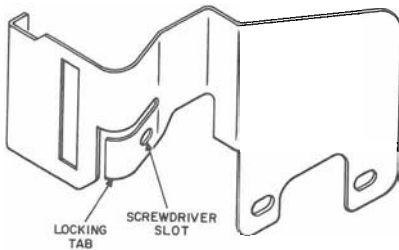


Fig. 25—P-23F361 Entrance Stop

**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

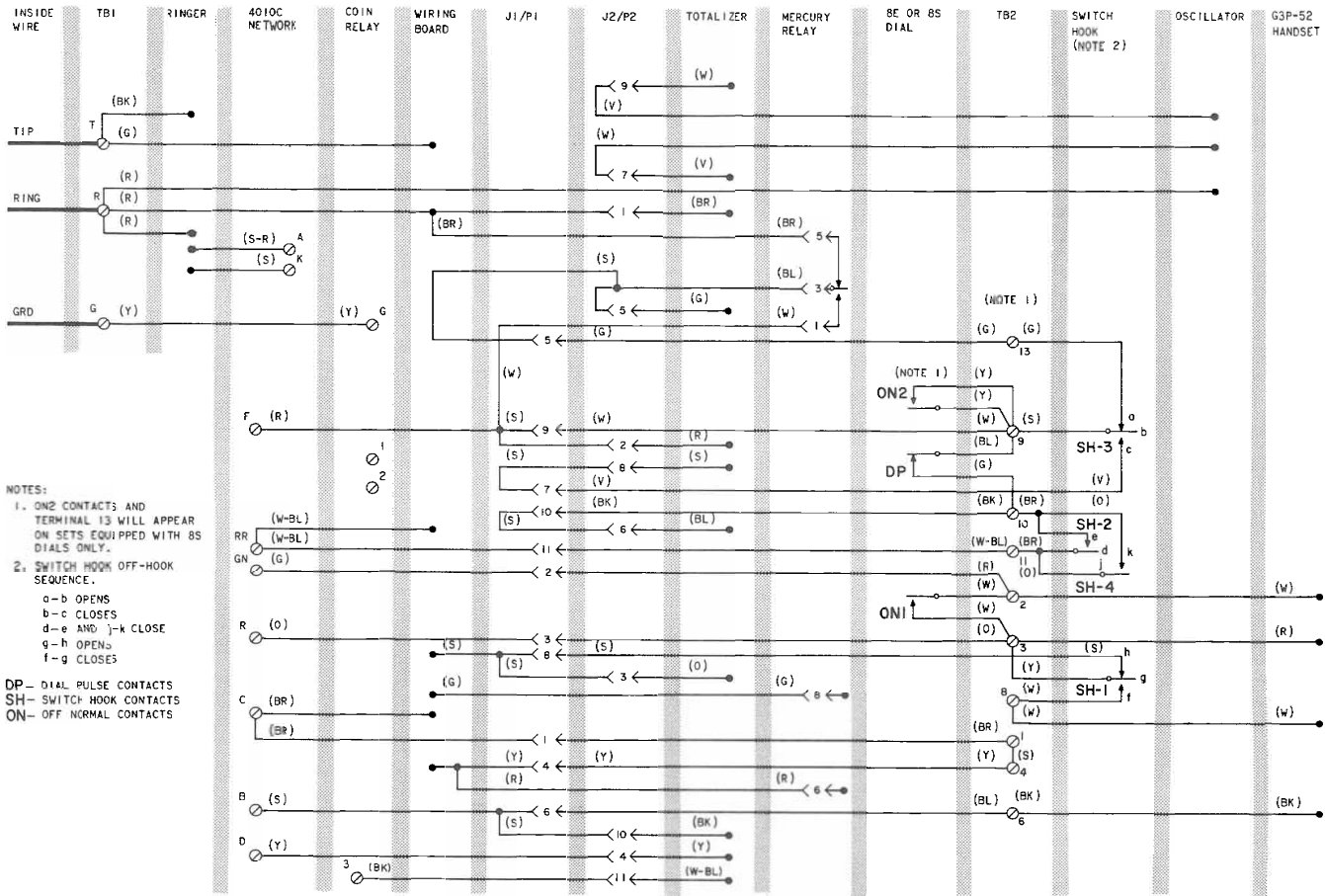
mounting plate assembly (1C-type), housing and door assembly (2C-type), coin chassis, and dial housing. The kit should be obtained locally and shall contain the following:

- 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.



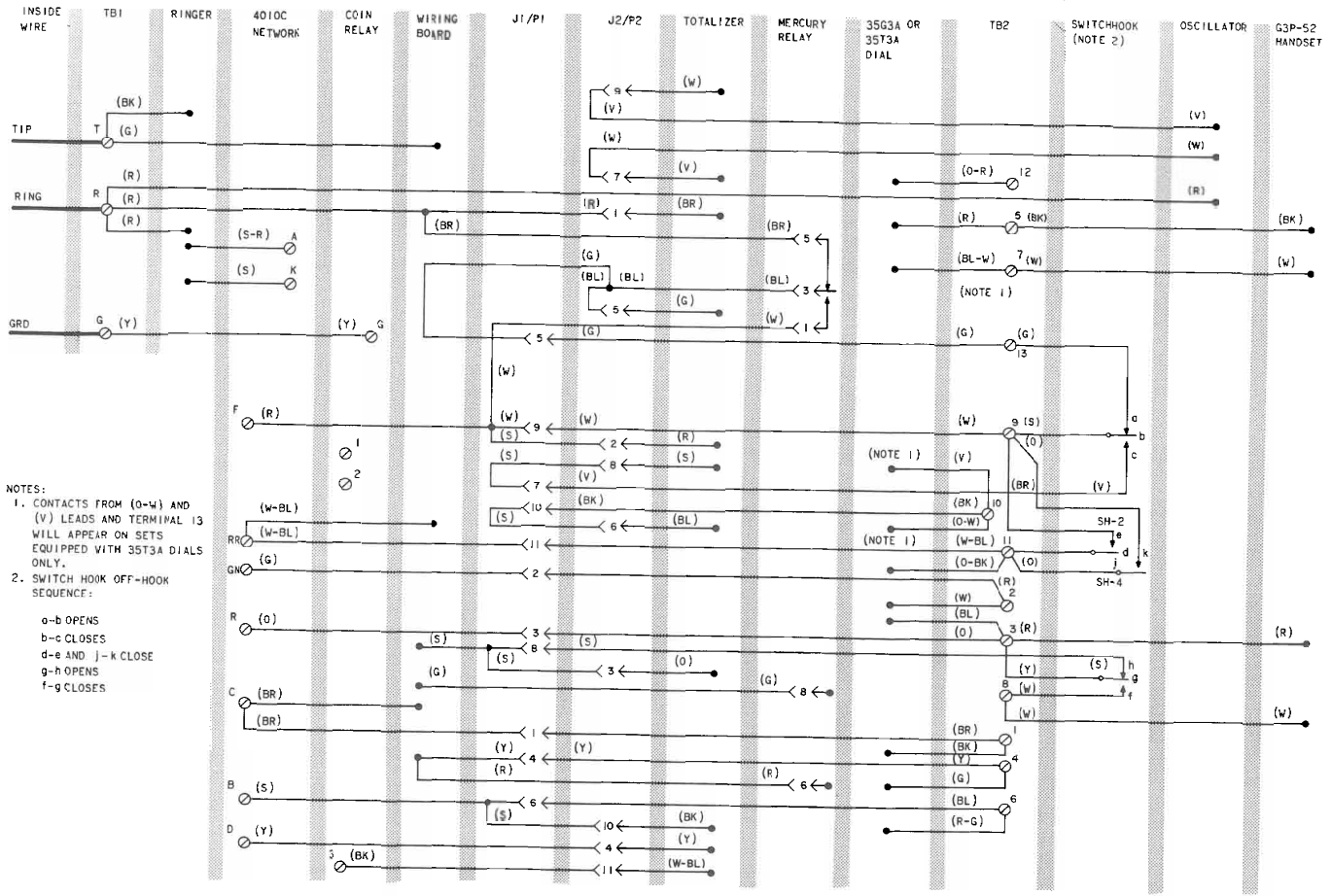
NOTES:

1. ON2 CONTACTS AND TERMINAL 13 WILL APPEAR ON SETS EQUIPPED WITH 8S DIALS ONLY.
2. SWITCH HOOK OFF-HOOK SEQUENCE.

- a - b OPENS
- b - c CLOSES
- d - e AND j - k CLOSE
- g - h OPENS
- f - g CLOSES

DP - DIAL PULSE CONTACTS  
 SH - SWITCH HOOK CONTACTS  
 ON - OFF NORMAL CONTACTS

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



- NOTES:
- CONTACTS FROM (O-W) AND (V) LEADS AND TERMINAL 13 WILL APPEAR ON SETS EQUIPPED WITH 35T3A DIALS ONLY.
  - SWITCH HOOK OFF-HOOK SEQUENCE:
    - o-b OPENS
    - b-c CLOSES
    - d-e AND j-k CLOSE
    - g-h OPENS
    - f-g CLOSES

Fig. 27—1A2 or 2A2 Coin Telephone Set Connections

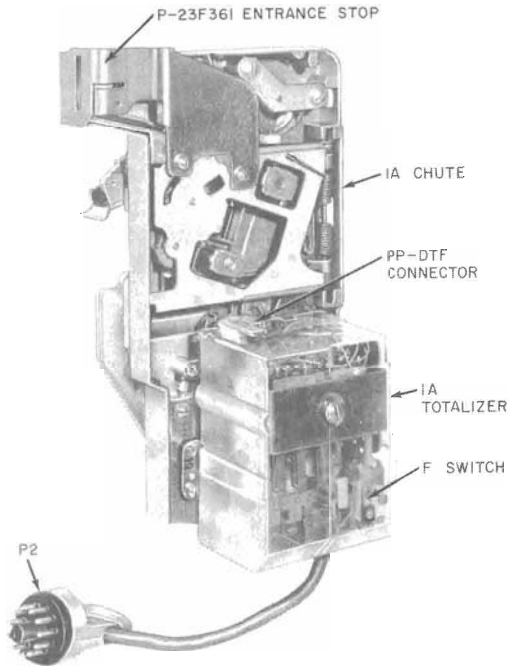


Fig. 28—1AA Chute

(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

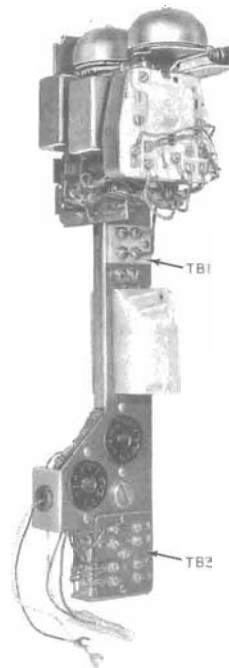
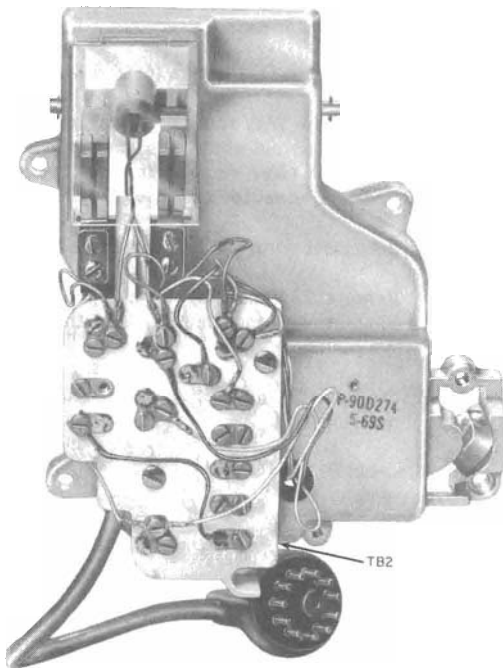


Fig. 29—1A Coin Chassis

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.

**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.

- (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:**

- (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

**SECTION 506-410-400**

(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.***

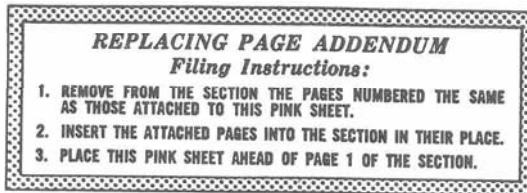
(6) Reconnect wires on TB3 per Table M.

(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.





**SERVICE**  
**COIN TELEPHONE SETS**  
**1C- AND 2C-TYPE**

**1. GENERAL**

**1.001** This addendum supplements Section 506-411-401, Issue 2. The attached pages must be inserted in the section in accordance with the filing instructions above.

**1.002** This addendum is issued to add information pertaining to new information plate (840156319) for Coin-First Service and information plate assembly (840156327) for Dial-Tone-First service.

**2. INSTALATION**

The following changes apply to Part 2 of this section:

- (a) Fig. 1—revised

- (b) Read note following 2.44—revised

**4. MAINTENANCE**

The following changes apply to Part 4 of this section:

- (a) Transferred information in 4.35 to 4.39  
(b) 4.35—4.38 added

**6. CONVERSIONS**

The following changes applies to Part 6 of this section:

- (a) 6.01—added

**Attached:**

Page 1, data October 1972—Revised  
Page 2, dated October 1972—Reissued  
Page 3, dated October 1972—Revised  
Page 4, dated October 1972—Reissued  
Page 17, dated October 1972—Revised  
Page 18, dated October 1972—Reissued  
Page 37, dated October 1972—Revised  
Page 38, dated October 1972—Revised  
Page 38.1, dated October 1972—Added



**SERVICE**  
**COIN TELEPHONE SETS**  
**1C- AND 2C-TYPE**

	PAGE		PAGE
<b>1. GENERAL</b> . . . . .	2	<b>3. OPERATION TESTS AND TROUBLE ANALYSIS</b>	18
<b>2. INSTALLATION</b> . . . . .	2	<b>4. MAINTENANCE</b> . . . . .	29
<b>LOCATION</b> . . . . .	2	<b>Clearing Chute</b> . . . . .	29
<b>BACKBOARDS AND SECURITY STUDS</b> . . . . .	3	<b>Electrical Troubles</b> . . . . .	29
<b>MOUNTING ARRANGEMENTS</b> . . . . .	4	<b>1AA Coin Relay</b> . . . . .	29
<b>1C-Type</b> . . . . .	5	<b>1A Coin Relay</b> . . . . .	29
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<b>COMPONENTS</b> . . . . .	5	<b>Replacing Coin Trap and Associated Parts</b> . . . . .	33
<b>Cover Unit Assembly (1C-Type)</b> . . . . .	5	<b>Return Chute Assembly</b> . . . . .	35
<b>Door and Faceplate Assembly (2C-Type)</b> . . . . .	7	<b>Coin Return Assembly</b> . . . . .	35
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<b>Coin Receptacle (Cash Box)</b> . . . . .	14	<b>Fingerwheel (8S Dial [MD])</b> . . . . .	37
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<b>Instruction Cards (2C-Type)</b> . . . . .	15	<b>P-23F361 Entrance Stop</b> . . . . .	37
<b>Number Card (8S Dial [MD])</b> . . . . .	15	<b>Information Plate and Plate Assembly</b> . . . . .	38
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<b>WIRING</b> . . . . .	17	<b>6. CONVERSIONS (Coin First to Dial Tone First or Dial Tone First to Coin First)</b> . . . . .	38

**1. GENERAL**

**1.01** This section is reissued to:

- Revise method of resetting totalizer
- Add information on reference mark provided on new totalizer
- Add information on new CF-DTF mode switch on totalizer
- Delete KS-20227 booth reference from Table C
- Add reference to Section 506-402-100 for color selection and replaceable components.
- Add installation and maintenance information on fingerwheels
- Add trap and vane release test to Table E
- Add information for replacing coin trap and associated parts
- Revise instruction plates on Fig. 1
- Show method for operating entrance stop (Fig. 34)

**1.02** The 1C1 set can be modified to a 1C2 by replacing the rotary dial-equipped 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 2C1 set to a 2C2.

**1.03** Refer to Section 506-402-100 for replaceable components, color selection, and associated apparatus.

**2. INSTALLATION**

**LOCATION**

**2.01** The 1C-type coin telephone set (Fig. 1) can be installed in/on the following:

- 178A-3 backboard
- 10- and 11-type booths

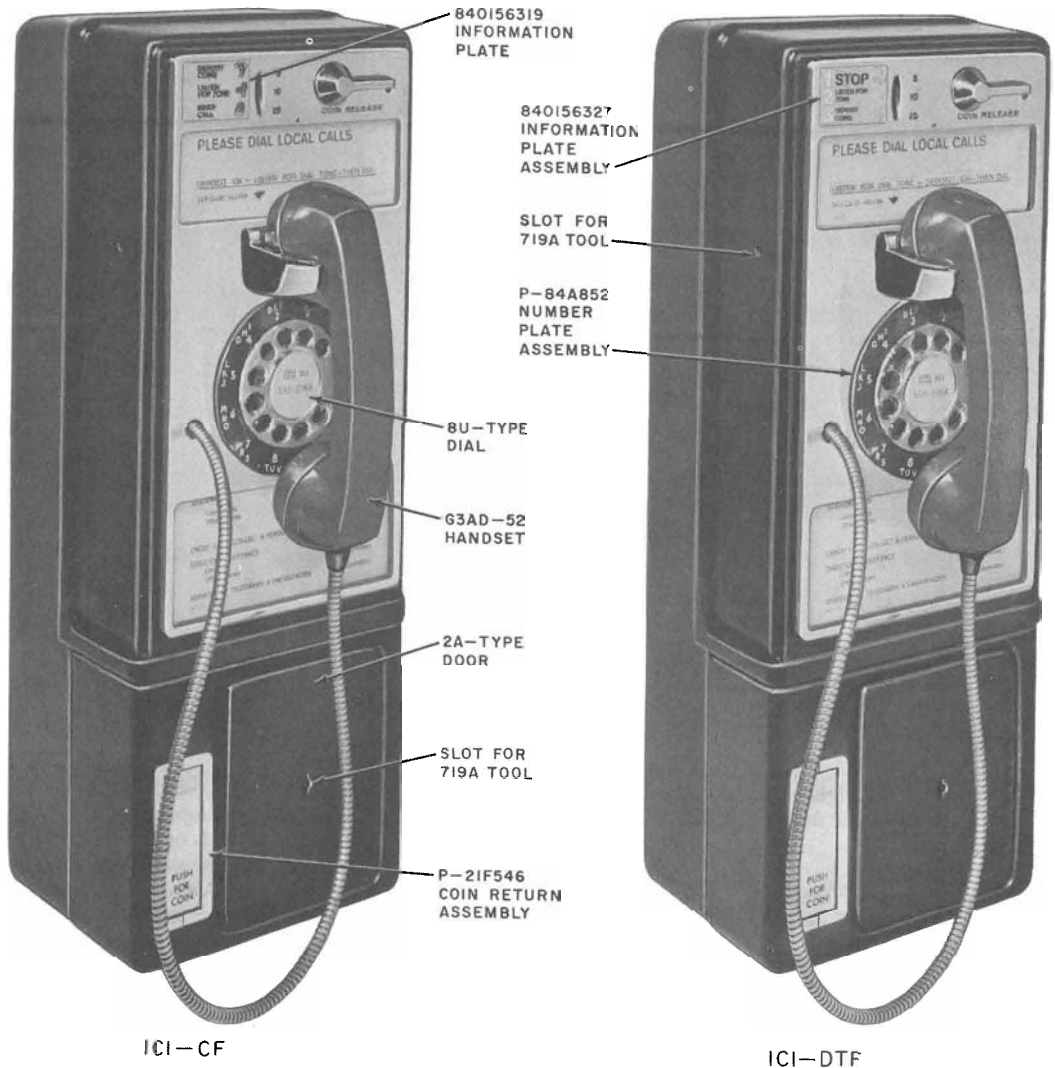
- KS-14611 outdoor booth
- KS-16797 universal booth
- KS-19206 curved door booth
- KS-19267 coin telephone shelf
- KS-19340 wood booth
- KS-19425 indoor-outdoor booth
- KS-19426 walk-up, drive-up mounting
- KS-19580 outdoor booth
- KS-19945 shelf
- KS-20194 wedge shelf
- KS-20255 telephone kiosk.
- KS-20842 mounting

**2.02** The 2C-type coin telephone set (Fig. 2) 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
- A wall that will allow the phone to be recessed.
- KS-20630 booth

**2.03** 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 telephone and associated wiring at least 6 inches from neon fixtures, transformers, or other interference-causing equipment.



◆ Fig. 1—IC-Type Coin Telephone Sets ◆

#### BACKBOARDS AND SECURITY STUDS

2.04 Refer to Section 506-100-101 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:*

- Place a spirit level vertically against the mounting surface on which the set is to be installed.
- When a vertical reading is obtained, the end of the level opposite the point of contact

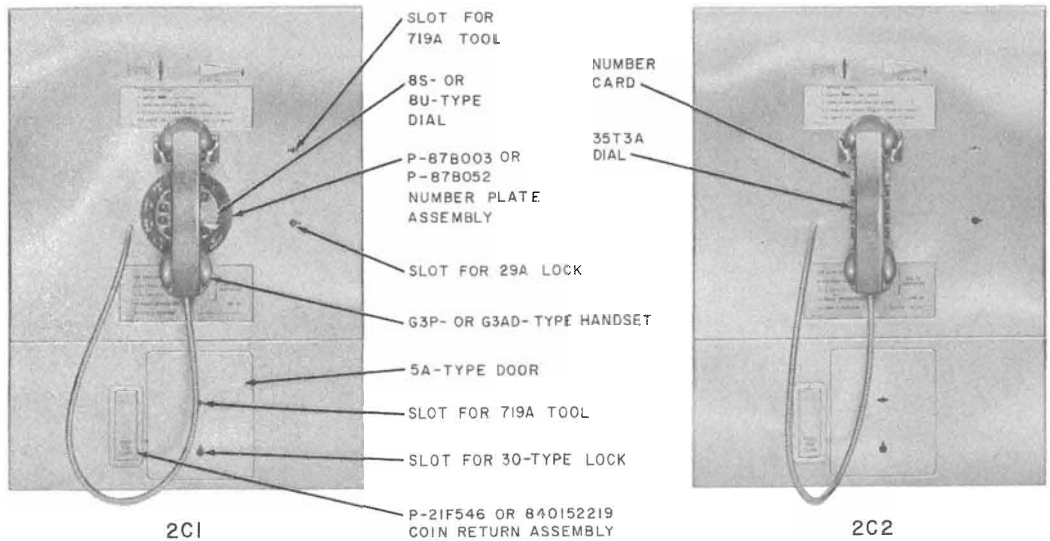


Fig. 2—2C-Type Coin Telephone Sets

shall be no farther from the mounting surface than shown in Table A.

(c) The left to right mounting axis shall also be within 1-1/2 degrees of true vertical.

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

2.05 Refer to Fig. 3 and 4 and Tables B and C for security stud requirements.

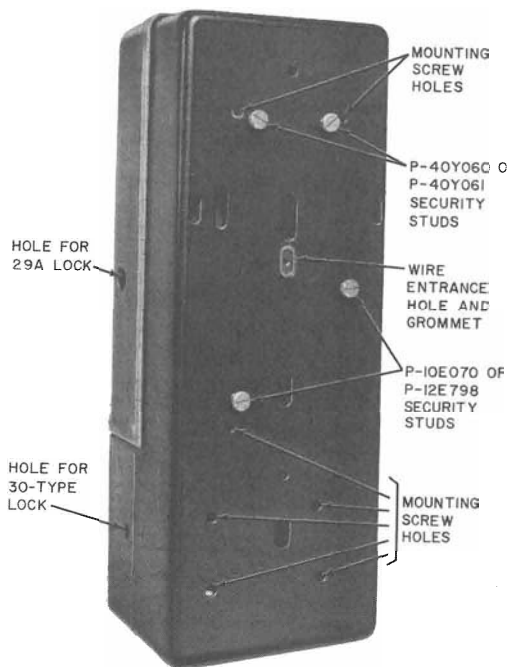


*Use security studs with short thread length in the two top holes. Use long thread length studs in the two bottom holes. Top studs must be flush or under flush with inside of backplate to avoid interference with chute. Security studs are not furnished and must be ordered separately.*

**MOUNTING ARRANGEMENTS**

2.06 To gain access to the coin telephone set mounting holes:

- (1) Remove cover unit assembly (1C-type) per 2.10 or open door and faceplate assembly (2C-type) per 2.11.
- (2) Remove 1AA chute per 2.12.
- (3) Remove 1A coin chassis per 2.18.



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

### 1C-Type

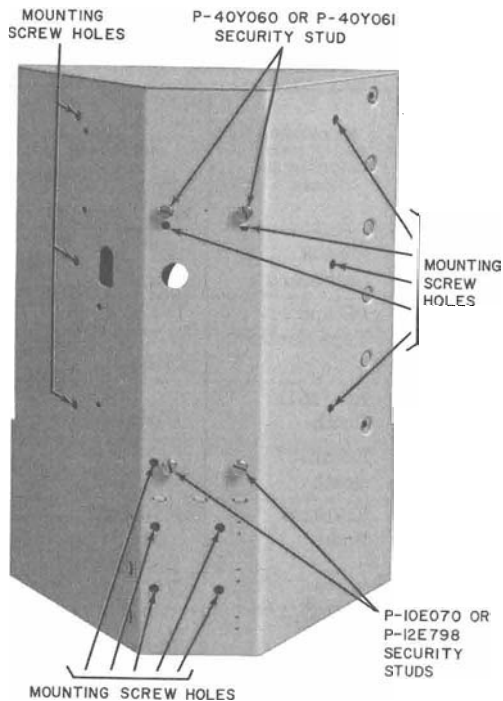
**2.07** Refer to Table B.

### 2C-Type

**2.08** To fully recess a 2C-type set in a wall:

- (a) Ensure that the wall will accept the set.
- (b) Refer to Fig. 5 for dimensions of the set.
- (c) Cut a hole in the wall.

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



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



*Ensure that the lip of the faceplate overlaps the wall around the hole.*

**2.09** Refer to Table C for all other applications.

### COMPONENTS

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

**2.10** 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.

♦ TABLE B ♦

## MOUNTING OF 1C-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-19206 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, L5 Shelf	178A-3 (Note 1)	2	2		
KS-20255 Kiosk	Furnished			2	2
KS-20842 Mounting	Furnished	None Used			

*Notes:*

1. A 178A-3 backboard is furnished with each KS-19945 and KS-20194, L5 shelf unless otherwise specified.
2. Seven 1/4-20 by 5/8-inch hardened RHM screws (P-23F790) are furnished with each coin telephone set for mounting to backboard.



♦ TABLE C ♦

## MOUNTING OF 2C-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			

**Notes:**

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

- (4) Disconnect plug P1 (Fig. 7) by pulling straight out as cover is carefully lifted off.



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

**Door and Faceplate Assembly (2C-Type)**

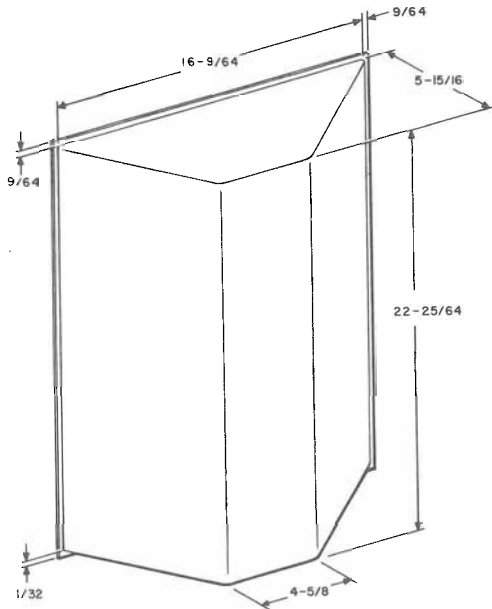
**2.11** To open door and faceplate assembly:

- (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.

**1AA Chute**

**2.12** To remove chute:

- (1) Disconnect plug P2 (Fig. 7 or 8).
- (2) Release chute locking lever.
- (3) Lift spring out of groove in chute.
- (4) Tilt top of chute forward and lift out.



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

TPA 519423

Fig. 5—Rear View of 2C-Type, Showing Dimensions

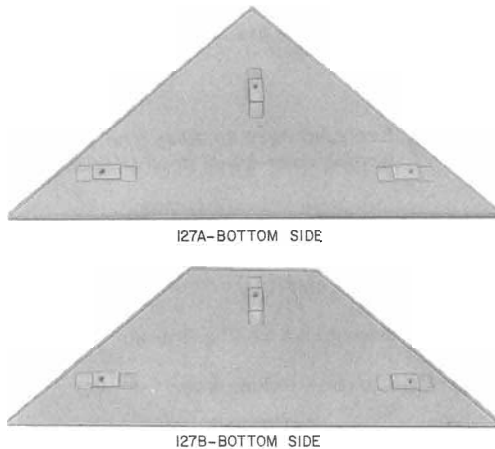


Fig. 6—127A- and 127B-Type Covers

### 2.13 To install chute in set:

- (1) Place chute on locating pins at rear of hopper assembly, and back of housing (Fig. 9).

**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.

### 1A Totalizer

**Note 1:** On current model totalizers, the **PP-DTF** connector assembly is replaced by a **CF-DTF** slide switch (Fig. 10). The switch can be moved from one position to another by using a small screwdriver or KS-16750, List 2 releaser.

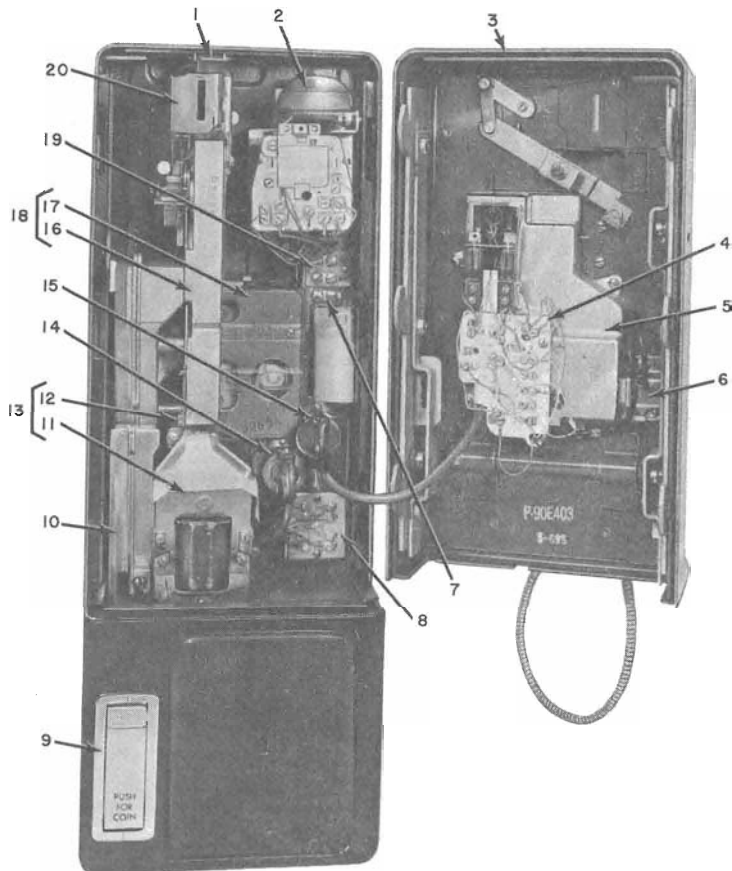
**Note 2:** A black reference mark is on the outside ratchet wheel of current model totalizers to help determine whether the totalizer shaft is off-normal or in its **home** position. As viewed from the front of the coin telephone set, a totalizer is in its **home** position when the mark is at a point 1 tooth to the left of 6 o'clock position.

### 2.14 To determine totalizer initial rate setting:



**Use extreme care when checking initial rate or 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. 11.**

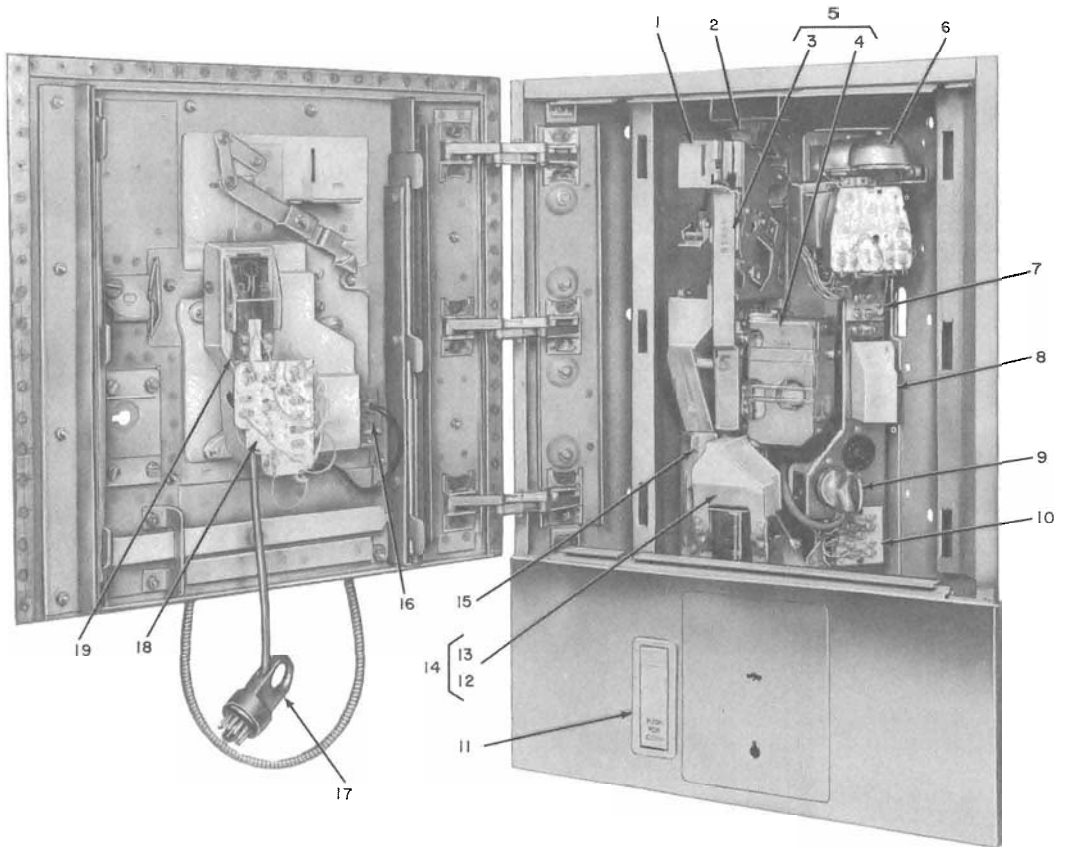
- (1) Remove 1AA chute per 2.12.
- (2) Loosen retaining screw and remove transparent dust cover.
- (3) Rotate shaft in the proper direction (Fig. 11) until detent roller on detent wheel is positioned between the two black marks. This occurs at the same time T2 rests in depression in shaft. This position is called **home** position.



### LEGEND

- |  |                                   |
|--|-----------------------------------|
| 1—P-27E542 CHUTE LOCKING LEVER AND P-27E497 SPRING           | 9—P-21F546 COIN RETURN ASSEMBLY   |
| 2—C4-TYPE RINGER   | 10—P-15E730 RETURN CHUTE ASSEMBLY |
| 3—P-90E400 (1C1) OR P-90E500 (1C2) COVER UNIT ASSEMBLY       | 11—1A COIN RELAY                  |
| 4—TB2  | 12—P-15E717 COIN HOPPER ASSEMBLY  |
| 5—P-90D274 (1C1) OR P-90D275 (1C2) DIAL AND HOUSING ASSEMBLY | 13—1AA COIN RELAY                 |
| 6—P-15E444 COVER PLATE AND P-181678 BHM SCREW                | 14—P2                             |
| 7—1A COIN CHASSIS  | 15—P1                             |
| 8—TB3  | 16—1A CHUTE                       |
|  | 17—1A TOTALIZER                   |
|  | 18—1AA CHUTE                      |
|  | 19—TB1                            |
|  | 20—P-23F361 ENTRANCE STOP         |

Fig. 7—Assembly of Parts (1C-Type)



LEGEND

- 1—P-23F361 ENTRANCE STOP
- 2—P-27E542 CHUTE LOCKING LEVER AND P-27E497 SPRING
- 3—1A CHUTE
- 4—1A TOTALIZER
- 5—1AA CHUTE
- 6—C4-TYPE RINGER
- 7—TB1
- 8—1A COIN CHASSIS
- 9—P2
- 10—TB3

- 11—P-21F546 (STAINLESS) OR 840152219 (BRONZE) COIN RETURN ASSEMBLY
- 12—1A COIN RELAY
- 13—P-15E717 COIN HOPPER ASSEMBLY
- 14—1AA COIN RELAY
- 15—P-15E730 RETURN CHUTE ASSEMBLY
- 16—P-15E444 COVER PLATE AND P-181678 BHM SCREW
- 17—P1
- 18—TB2
- 19—P-90D274 (2C1) OR P-90D275 (2C2) DIAL AND HOUSING ASSEMBLY

Fig. 8—Assembly of Parts (2C-Type)

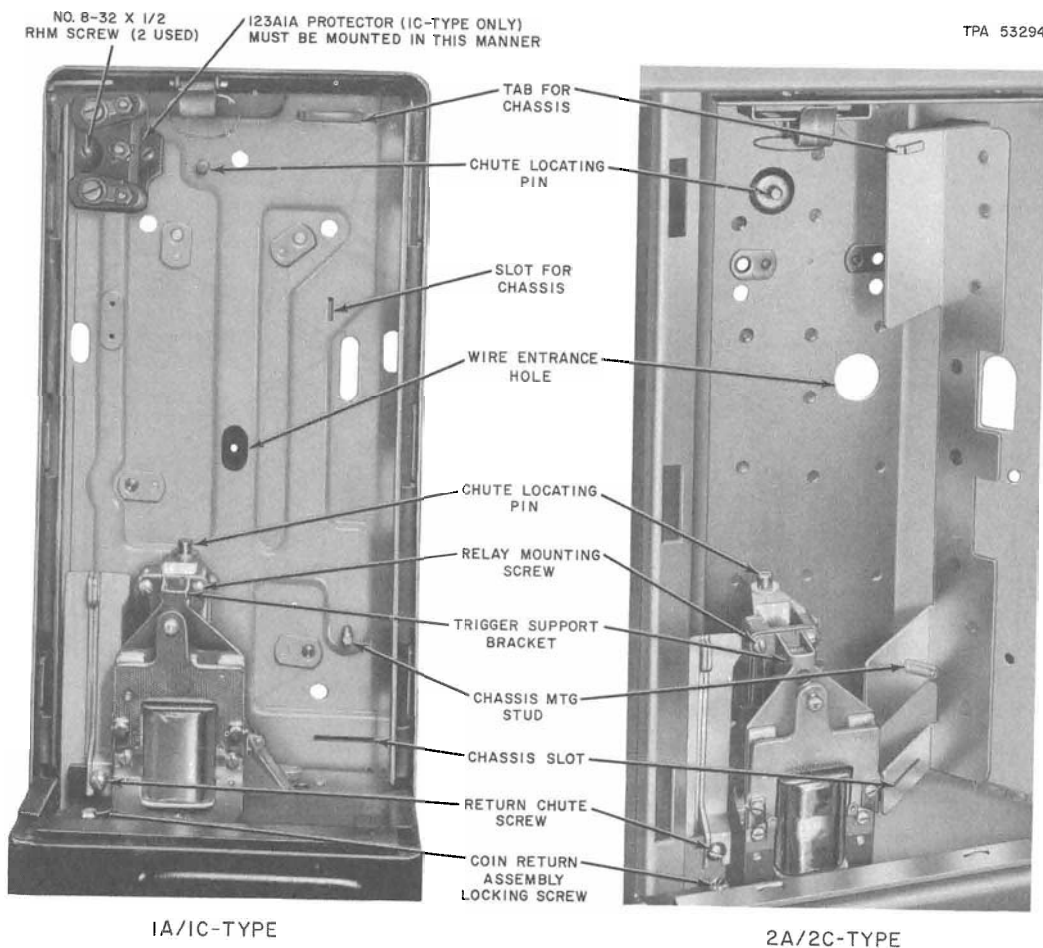


Fig. 9—Housing and Mounting Plate Assembly

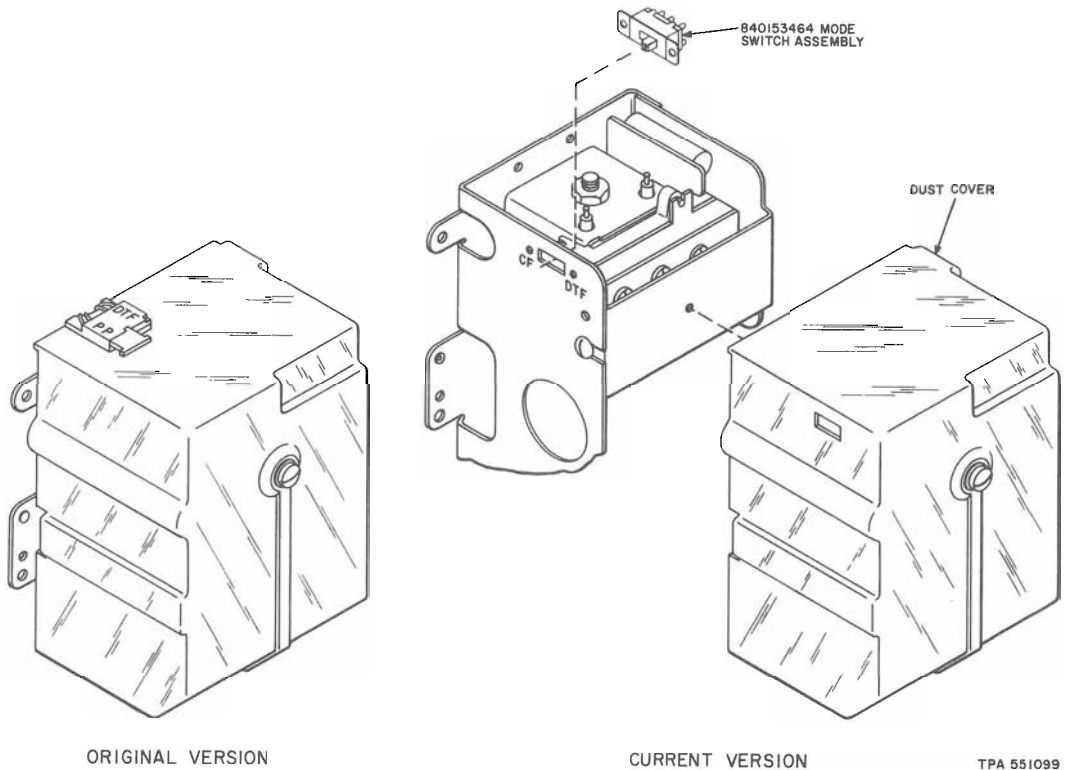
- (4) Release the reset latch by momentarily depressing it away from T1.
- (5) Slowly rotate shaft in proper direction, and count the steps until T1 springs operate (indicated by forward movement of reset latch).
- (6) Each step rotated from *home position* represents a 5-cent rate as shown in Table D.

#### 2.15 To reset totalizer rate:

**Note:** Use two KS-16750, List 3 releasers or two paper clips to reset the rate.

#### Method I—Increasing Rate (Fig. 12)

- (1) Rotate shaft in proper direction (Fig. 11) until it is in home position as described in 2.14 (3).



ORIGINAL VERSION

CURRENT VERSION

TPA 551099

Fig. 10—Original and Current Versions of 1A Totalizer

TABLE D  
METHOD FOR DETERMINING  
INITIAL RATE

NO. OF STEPS SHAFT IS ROTATED FROM HOME POSITION UNTIL T1 OPERATES	INDICATES FOLLOWING INITIAL RATE SETTING
1	5 cents
2	10 cents
3	15 cents
4	20 cents
5	25 cents
6	30 cents

(2) Further rotate shaft approximately 10 steps until a tab on the T1 cam is accessible as shown in Fig. 12 and 13.

(3) Insert a KS-16750, List 3 releaser or a paper clip into one of the four holes indicated as hole 2 in center of shaft. Hold paper clip firmly so that shaft cannot move.

**Caution:** Do not allow end of releaser or paper clip to extend too far beyond shaft; this may damage insulation of coil located directly beneath shaft.

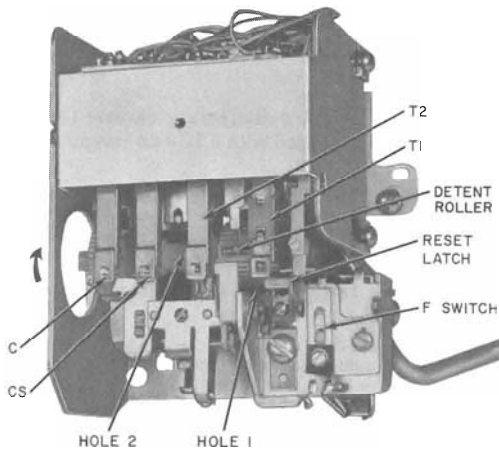
(4) Position a second releaser or paper clip into the hole on T1 cam indicated as hole 1 and rotate cam in direction of the curved arrow as shown.



*If hole 1 in T1 cam has been mutilated or clogged beyond use, place releaser or paper clip against tab as shown in Fig. 11 and push tab in direction of the straight arrow.*

- (5) One step of rotation of the T1 cam in this direction increases the rate by 5 cents.
- (6) Check new initial rate setting per paragraph 2.14.

TPA 532771



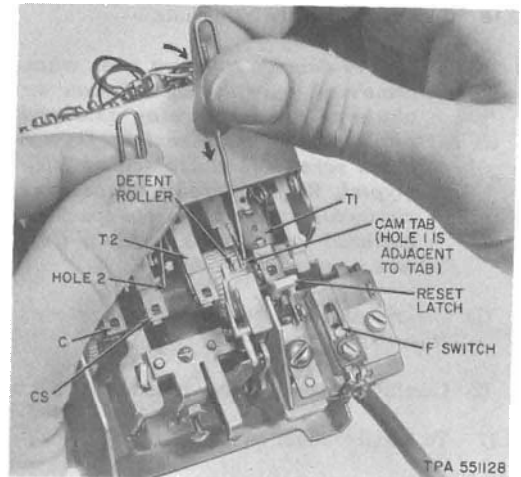
**Fig. 11—Checking Totalizer Rate**

**Method II—Decreasing Rate** (Fig. 13)

- (7) Repeat steps (1) through (3).
- (8) Position a second releaser or paper clip into the hole on T1 cam indicated as hole 1 (Fig. 13) and rotate cam in direction of the curved arrow as shown.

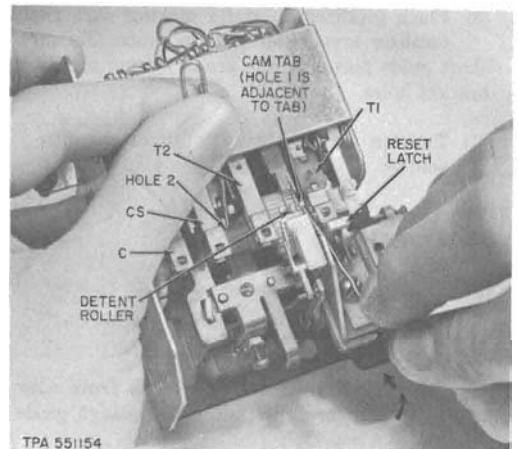


*If hole 1 in T1 cam has been mutilated or clogged beyond use, place releaser or paper clip against tab as shown in Fig. 13 and push tab in direction of the straight arrow.*



TPA 551128

**Fig. 12—Increasing Totalizer Rate**



TPA 551154

**Fig. 13—Decreasing Totalizer Rate**

- (9) One step of rotation of the T1 cam in this direction decreases the rate by 5 cents.
- (10) Check new initial rate setting per paragraph 2.14.

- 2.16 To remove totalizer from chute:



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

- (1) Unscrew three captive-type mounting screws from chute.
- (2) Carefully remove totalizer from chute.

- 2.17 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.

### 1A Coin Chassis

- 2.18 To remove coin chassis:

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

- 2.19 To install coin chassis:

**Note:** When installing coin 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. 9).
- (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)

- 2.20 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:

**Note:** ♦Current manufacture chrome (-44) sets will be equipped with a 1C coin receptacle.♦

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

### Instruction Cards (1C-Type)

- 2.21 Instruction cards are not furnished and must be procured locally.

- 2.22 To install card:

- (1) Push up with fingers (Fig. 14).
- (2) Snap card in place.
- (3) Ensure that card is seated properly in slot.
- (4) Tighten the No. 4-40 by 3/16 inch hex socket setscrew (84015381), if applicable, in faceplate using No. 4 (.050) Allen wrench.



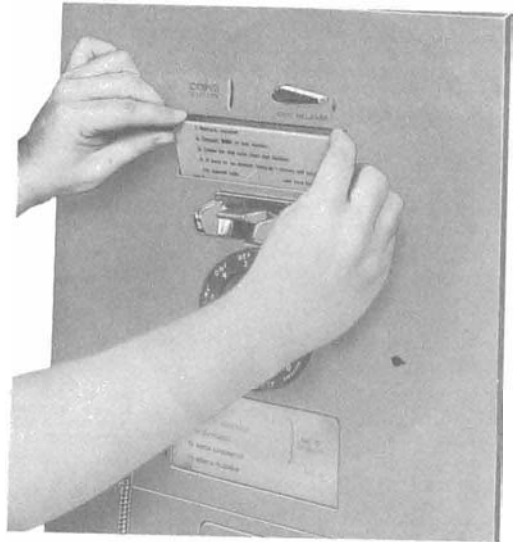
**2.23** To remove card:

- (1) Loosen setscrew in faceplate.
- (2) Push up with fingers.
- (3) Pry bottom out with small screwdriver or equivalent.

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



**Fig. 14—Installing Instruction Cards (1C-Type)**



**Fig. 15—Installing Instruction Cards (2C-Type)**

#### Instruction Cards (2C-Type)

**2.25** Refer to 2.21.

**2.26** To install card:

- (1) Push down with fingers (Fig. 15).
- (2) Snap card in place.
- (3) Ensure that card is seated properly in slot.

**2.27** To remove card:

- (1) Push down with fingers.
- (2) Pry top out with small screwdriver or equivalent.

**2.28** Repeat 2.24.

#### Number Card (8S Dial [MD])

**Note:** The fingerwheel for an 8S dial is packaged separately.

**2.29** Place number card in fingerwheel.

**2.30** Place fingerwheel on dial with operator hole over the 9 position.

**2.31** Rotate fingerwheel counterclockwise until spring clamp snaps in place.

#### Number Card (8U Dial)

**Note:** The fingerwheel (840151872) is shipped assembled to the 8U dial and must be removed

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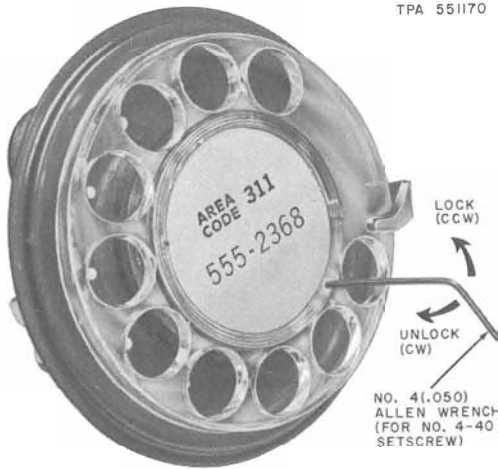


Fig. 16—Installing Fingerwheel on 8U Dial

to install number card. It is secured with a No. 4-40 setscrew (840360598).

**2.32** To remove 840151872 fingerwheel:

- (1) Refer to Fig. 16, use a No. 4 (.050) Allen wrench and turn the setscrew in a clockwise direction until it clears fingerwheel.

**Caution:** Do not continue turning setscrew beyond stopping point as this may result in damage to screw or wrench.

- (2) Turn fingerwheel in a clockwise direction until operator hole is in the 9 position and lift off.

**2.33** Install number card.

**2.34** To install fingerwheel:

- (1) Ensure that setscrew is all the way in (clockwise).
- (2) Place fingerwheel on dial with operator hole over the 9 position.
- (3) Rotate fingerwheel counterclockwise until it is in its normal position.

- (4) Using a No. 4 (.050) Allen wrench, turn the setscrew in a counterclockwise direction until the stop is reached (Fig. 16).

**Caution:** Observe caution following 2.32(1).

**Number Card (TOUCH-TONE® Set)**

**2.35** The number card shall be furnished locally.

**2.36** A P-21F947 card holder bracket, P-21F948 window, and two hex nuts (Fig. 17) are packaged separately and shipped in the cash compartment.

**2.37** Install number card as follows:

- (1) Remove dial housing.
- (2) Insert P-21F948 window in faceplate from rear (Fig. 18).
- (3) Insert number card in window (Fig. 18).
- (4) Secure window and number card using the P-21F947 card holder bracket and two hex nuts (Fig. 19).
- (5) Install dial housing.

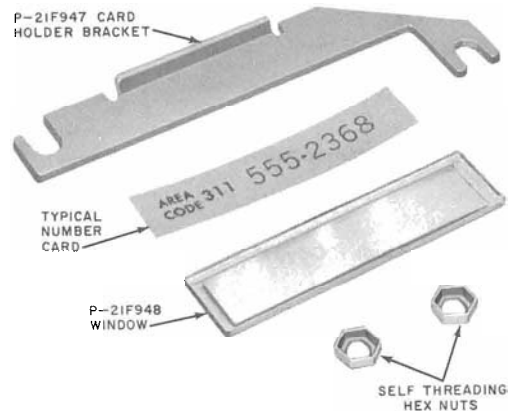
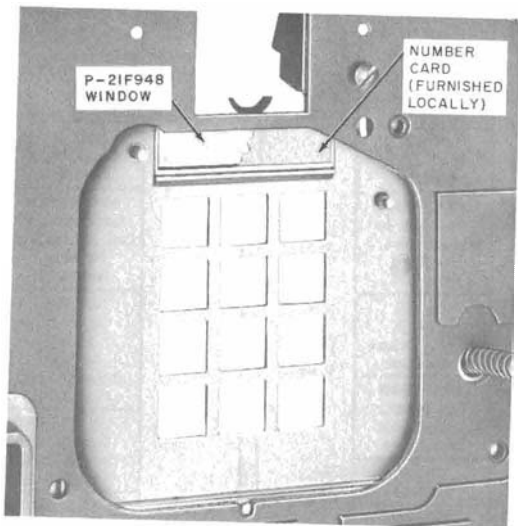
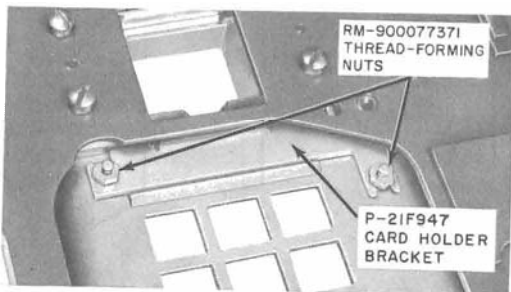


Fig. 17—Number Card and Associated Hardware (TOUCH-TONE Set)

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



**Fig. 18—Window and Number Card Installed in Faceplate (TOUCH-TONE Set)**



**Fig. 19—Card Holder Bracket Installed (TOUCH-TONE Set)**



**Fig. 20—P11C Test Cord**

## WIRING

**2.38** 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.

**Note:** Refer to Section 460-100-201 for additional information on signaling ground.

**2.39** Feed inside wire through wire entrance hole (Fig. 9) as set is mounted on backboard.

**2.40** Dress wire behind and run to right side of coin chassis.

**2.41** Conceal wiring near telephone. If this is not possible, use approved molding or tubing.

**2.42** Locate any protectors, connecting blocks, etc, where they will be inaccessible to person using coin telephone set.

**2.43** A 123A1A protector can be installed inside a 1C-type set as shown in Fig. 9, using two P-205607 screws (8-32 by 1/2-inch Phillips round head brass or equivalent) provided separately. Dress leads to avoid interference with chute operation if a protector is installed inside the set. No provisions are provided for mounting a protector inside a 2C-type set.

**2.44** Ensure that the protector ground terminal is properly grounded with no less than No. 14 AWG wire.



*After installation has been completed, refer to Part 3; verify that the coin telephone set is operating correctly and that information plate agrees with mode of service.*

## 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. Refer to Section 506-900-503 (Coin Maintenance Check Booklet) for additional checks and adjustments.*

## 3.01 Apparatus Required:

- P11C Cord (Fig. 20)
- Coins: 1 penny, 2 nickels, 1 dime, 2 quarters
- 146B Bias Margin Gauge (Fig. 21)
- ♦KS-14995, List 3 Coin Trap and Vane Release Tool (Fig. 22)♦

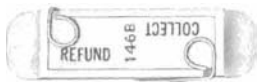


Fig. 21—146B Bias Margin Gauge

3.02 Table E includes following trouble analysis tests for Coin First Service:

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

3.03 Table F includes following trouble analysis tests for Dial Tone First Service.

MULTISLOT COIN COLLECTOR MAINTENANCE	SINGLE SLOT COIN TELEPHONE SET MAINTENANCE
INSPECT EXTERIOR Handset, Cords, Dial Cards: Instruction & No Coin Release, Return Bucket	INSPECT EXTERIOR Handset, Cords, Dial Cards: Instruction & No Coin Release, Return Bucket
COIN TESTS 5c, 10c, 25c Dial Tone, Coin Return Trouble Analysis	COIN TESTS 5c, 10c, 25c Dial Tone Coin Return On Hook Coin Return Trouble Analysis
INSPECT INTERIOR Gauge, Connections Security Fasteners Housing, Contacts	INSPECT INTERIOR Chute Assembly Connections, Plugs Switchbook
COIN CHUTE Dirt, Corrosion	COIN RELAY Bias Margin, Trap, Vane
SWITCHHOOK Spring, Pleuvs	RESISTANCE TESTS Loop, Ground
COIN RELAY Bias Margin, Trap, Vane	STATION WIRING Ground, Connections Protector Booth Ground
RESISTANCE TESTS Loop, Ground	OPERATIONAL TESTS Coins Operator, Ring Back
STATION WIRING Ground, Connections Protector Booth Ground	INSPECT BOOTH Glass, Door, Lights Blower, Directories
OPERATIONAL TESTS Coins Operator, Ring Back	KS 14995, L3 TOOL
INSPECT BOOTH Glass, Door, Lights Blower, Directories	

Fig. 22—♦KS-14995, List 3 Tool♦

- Dial Tone Test
- Totalizer and Coin Relay Operation
- ♦Trap and Vane Release Test♦
- Coin Relay Bias Margin Test
- Returning Set to Normal Operation

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

TROUBLE NUMBER	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
<b>Preparation For All Tests Except Trap and Vane Release</b>					
1	Invert handset on switchhook (Fig. 23) (1C-type only). Note: Prevents cord from pushing handset off switchhook when cover is set down				
2	Remove cover unit assembly (1C-type) or open door and face plate 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				
<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	Clear
5	Deposit quarter in chute	Coin relay refunds coin	Coin does not return	Defective coin release mechanism Blocked coin chute Tip and ring reversed or coin trunk trouble Plugs P1 and P2 reversed Totalizer plug or mode switch in DTF position. TB3 not wired correctly Traffic overload Coin jam in hopper Full coin receptacle	Replace defective linkage Clear Reconnect or refer to test-desk Reconnect properly Reconnect plug or reposition switch. Wire correctly Wait Clear jam Level coins and notify coin collection department Clean contacts or replace coin relay Clean contacts or replace dial and housing assembly
				Coin relay HT contacts not making Switchhook transfer contacts SH1(NC) or SH3(NC) not making	Clean contacts or replace coin relay Clean contacts or replace dial and housing assembly

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

TROUBLE NUMBER	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
5 (Cont)				Switchhook contacts SH2 and SH4 not breaking Defective totalizer Defective A relay Defective handset Defective dial (TOUCH-TONE only) Defective wiring in dial housing or chassis assembly	Adjust contacts or replace dial and housing assembly  Replace defective apparatus
6	Deposit nickel	Nickel returned	Nickel does not return	Switchhook transfer contacts SH1(NC) or SH3(NC) not making TB2 not wired correctly Defective wiring in dial housing or chassis assembly Traffic overload	Clean contacts or replace dial and housing assembly  Wire correctly Replace defective apparatus  Wait
<b>Totalizer Operation (Off-Hook)</b>					
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	T1 contacts remain latched after refund Switchhook transfer contacts SH3(NC) not breaking (rotary dial sets only) Defective chassis or chassis wiring Defective wiring in dial and housing assembly	Replace totalizer  Replace dial and housing assembly  Replace chassis  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 Switchhook contacts SH3(NO) or SH2 and SH4(NO) not making Switchhook transfer contacts SH1(NO) not making	Replace handset  Clean contacts or replace dial and housing assembly

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

TROUBLE NUMBER	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
8 (Cont)				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	
				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	Coins returned	Defective dial	Replace dial
10	Hang up handset	Coins returned	Coins not returned	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	Coin is returned	Coin not returned	Traffic overload	Wait for refund pulse
				Coin trunk trouble	Refer to testdesk
	<b>Dial Shorting Test</b>				
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

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

TROUBLE NUMBER	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
15 (Cont)				Defective chassis	Replace chassis
16	Deposit nickel	Dial tone remains after deposit	Line drops off Coin returned	Defective chassis	Replace chassis
17	Hang up handset	Nickel returns	Nickel does not return	Traffic overload Defective coin trunk	Wait for coin return pulse Refer to testdesk
<b>Trap And Vane Release Test</b>					
18	Remove chute — totalizer from set				
19	Remove coin relay dust cover				
<i>Caution: Tilt selector card by pressing downward on one of the ears before manually operating the coin relay. This avoids jamming selector card and cam engaging surfaces.</i>					
20	Press downward on left ear of selector card and manually operate coin relay armature to its full extent of travel	Coin vane moves to collect (left) position; coin trap moves downward			
21	With armature fully operated, insert KS-14995, L3 tool into hopper to operate trap to the limit of its travel (Fig. 24)				
22	Release armature and slowly withdraw tool	Armature, trap, and vane should return to nonoperated position and trap should be locked	Armature, trap, or vane does not return to its normal position  Vane does not restore properly	Relay could be mounted in a binding position  Vane binds  Vane broken	Loosen mounting screws and re-align relay; tighten screws  Replace relay Remove coin relay from hopper and free vane Replace vane per Section 506-100-110



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

TROUBLE NUMBER	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
22 (Cont)			Trap does not operate, restore, or lock properly	Trap broken Trap spring bent or broken Trap lever broken Trap pin bent or broken	Replace defective apparatus per Paragraph 4.11 through 4.13
23	Press downward on right ear of selector card and manually operate coin relay armature to its full extent of travel	Coin vane moves to refund (right) position; coin trap moves downward			
24	With armature fully operated, insert KS-14995, L3 tool into hopper to operate trap to the limit of its travel (Fig. 24)				
25	Release armature and slowly withdraw tool	Same as 22	Same as 22	Same as 22	Same as 22
26	Install dust cover				
27	Install chute — totalizer				
<b>Coin Relay Bias Margin Test</b>					
<i>Note:</i> Make this test when coin relay fails to operate or operates incorrectly					
28	Remove coin relay dust cover				
29	Lift handset, obtain dial tone, call testdesk and request a bias margin test. (Use central office test circuit where available)				

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

TROUBLE NUMBER	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
30	Slip 146B bias margin gauge over left pole-piece extension arm from left side of coin relay (Fig. 25)				
31	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
32	Reverse the 146B bias margin gauge by turning it around on the same polepiece extension arm				
33	Request deskman to apply central office collect (or return) voltage as indicated on the 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
34	Remove 146B gauge				
35	Hang up handset				
36	Install dust cover				
<b>Returning Set To Normal Operation</b>					
37	Call operator and deposit nickel, dime, and quarter	Coins identified by operator	Improper coin signal tones	Defective totalizer Defective chassis	Replace totalizer Replace chassis
38	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

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

TROUBLE NUMBER	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
39	Request operator to return coins	Coins returned	Coins not returned	Nonstation trouble	Repeat request, and if failure reoccurs refer to testdesk
40	Request operator to ring back (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

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

TROUBLE NUMBER	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
<b>Preparation For All Tests Except Trap and Vane Release</b>					
1	Invert handset on switchhook (Fig. 23) . (1C-type only) Note: Prevents armored 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				
<b>Dial Tone Test</b>					
4	Lift handset	Dial tone received	No dial tone	Defective handset Traffic overload Switchhook contacts SH1(NO), or SH2(NO), and SH4(NO), not making Plugs P1 and P2 reversed Totalizer plug in PP position or mode switch in CF position. TB2 not wired correctly TB3 not wired correctly Defective totalizer Defective wiring in chassis, or dial and housing assembly Nonstation trouble	Replace handset Wait Clean contacts or replace dial and housing assembly Reconnect properly Reconnect plug or reposition switch. Wire correctly Wire correctly Replace totalizer Replace defective apparatus  Refer to testdesk
<b>Totalizer and Coin Relay Operation</b>					
5	Deposit quarter	Quarter does not return	Quarter falls in return bucket	TB3 not wired correctly Chute path blocked	Wire correctly Clear

♦ TABLE F (Cont) ♦  
**TROUBLE ANALYSIS — SINGLE SLOT (1C- AND 2C-TYPE)**  
**DIAL TONE FIRST**

TROUBLE NUMBER	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
5 (Cont.)				Defective totalizer Defective chassis	} Replace defective apparatus
6	Depress switchhook	Quarter is returned	Quarter does not return	Switchhook contacts SH2(NO) and SH4(NO) not breaking Defective coin trunk Defective totalizer Defective chassis Defective coin relay	
7	Deposit nickel, dial coin test line	Dial tone breaks	Dial tone does not break	Defective dial Tip, ring, or grd reversed Defective chassis Initial rate set for 5 cents	} Replace dial Wire correctly Replace chassis Reset totalizer rate Wire correctly Reset totalizer rate or replace totalizer Replace chassis
		Recording states that insufficient deposit was made	Recording is not heard	TB3 not wired correctly Totalizer contacts T1 making for nickel deposit Defective chassis	
8	Depress switchhook	Coin returned	Coin not returned	Switchhook contacts SH2(NO) or SH4(NO) not breaking Defective coin trunk Defective totalizer Defective chassis Defective coin relay	} Replace dial and housing assembly Refer to testdesk Replace defective apparatus
9	Deposit 2 nickels, dial coin test line	Tone ringing heard in handset	Insufficient deposit recording heard	Initial rate set for more than 10 cents Defective T1 or F contacts in totalizer Defective chassis Switchhook SH3(NO) not making TB3 not wired 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	Defective coin chute Defective coin release mechanisms	Clear Replace defective linkage

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

TROUBLE NUMBER	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
<b>Trap and Vane Release Test</b>					
<i>Note:</i> Refer to Table E.					
<b>Coin Relay Bias Margin Test</b>					
<i>Note:</i> Refer to Table E.					
<b>Returning Set To Normal Operation</b>					
12	Call operator and deposit nickel, dime, and quarter	Coins identified by operator	Improper coin signal tones	Defective totalizer Defective chassis	Replace totalizer Replace chassis
13	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
14	Request operator to return coins	Coin returned	Coins not returned	Nonstation trouble	Repeat request, and if failure reoccurs refer to testdesk
15	Request operator to ring back (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

- 3.04** Refer to Table G for dial Long Line requirements.
- 3.05** Refer to Table H for loop ranges.
- 3.06** Refer to Table I for operate values of coin relays.

#### 4. MAINTENANCE

##### Clearing Chute

- 4.01** When troubles indicate foreign objects or stuck coins in chute:
- Operate coin release lever in attempt to clear coins in return chute.
  - If trouble does not clear:
    - Remove cover unit assembly (1C-type) or open door and faceplate assembly (2C-type)
    - Remove 1AA chute
    - Swing upper plate assembly open (Fig. 26)



*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.
- If trouble cannot be cleared, replace 1AA chute.



*When returning 1AA chutes to service center, reuse packing material from which the new item was removed.*

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

##### Electrical Troubles

- 4.02** If electrical troubles are indicated, refer to Part 3 (Operation Tests and Trouble Analysis) and Part 5 (Connections).
- 4.03** Refer to Part 2 for the removal and replacement of the following components:
- 1AA chute
  - 1A chute
  - 1A totalizer
  - 1A coin chassis
  - Instruction cards
  - Number cards
- 4.04** Components other than those listed in 4.03 can be removed as outlined below.

##### 1AA Coin Relay

- 4.05** To remove coin relay:
- Disconnect (BK) lead from terminal 3 and (Y) from terminal G.
  - Remove vault door and coin receptacle.
  - Remove two P-10E809 special screw assemblies from inside vault.
  - Lift 1AA coin relay out of set.
- 4.06** To install 1AA coin relay use reverse procedure.

##### 1A Coin Relay

- 4.07** To remove 1A coin relay without removing hopper assembly:
- Disconnect (BK) and (Y) leads.
  - Remove two relay mounting screws on top front of coin relay (Fig. 9).
  - Remove two slotted hex head screws on sides of coin relay.

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	DLL CKT Required on Loops Over 1300 ohms

TABLE H

**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)	1900 ohms
SXS, Panel, No. 1 XBar	115 volts (115-120V)	2700 ohms
No. 5 XBar, No. 1 ESS, No. 2 ESS	125 volts (125-135V)	3100 ohms

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

TABLE I

**OPERATE VALUES OF COIN RELAYS**

MARKING ON RELAY	OPERATING TIME	OPERATE CURRENT	NON-OPERATE CURRENT
1A*	450 $\pm$ 50 milliseconds (Note 2)	41 milliamps	30 milliamps
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 450 milliseconds may be compared with the time it takes for a rotary dial to return to normal after dialing digit 4.





Fig. 23—Cover Unit with Handset Inverted

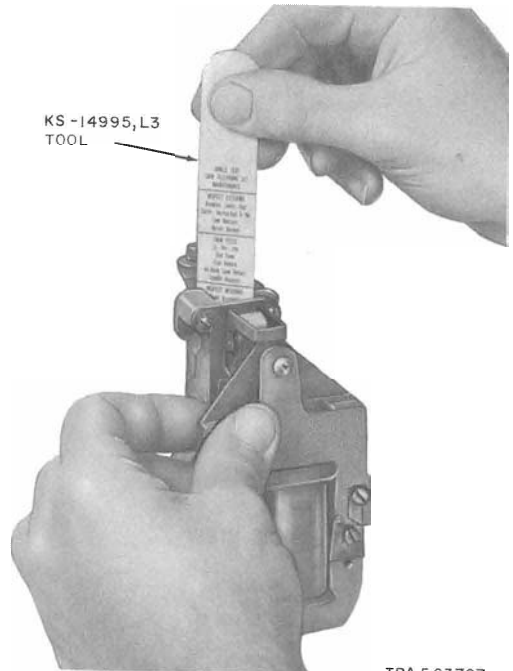
- (4) Check that hopper trigger (Fig. 27) is in horizontal (up) position and pull off coin relay. **Do not damage hopper trigger.**



**When returning 1A coin relays to service center, reuse packing material from which the new item was removed.**

4.08 To install 1A coin relay (Fig. 27):

- (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 of left side of selector card and manually move armature



TPA 563707

Fig. 24—Trap and Vane Release Test

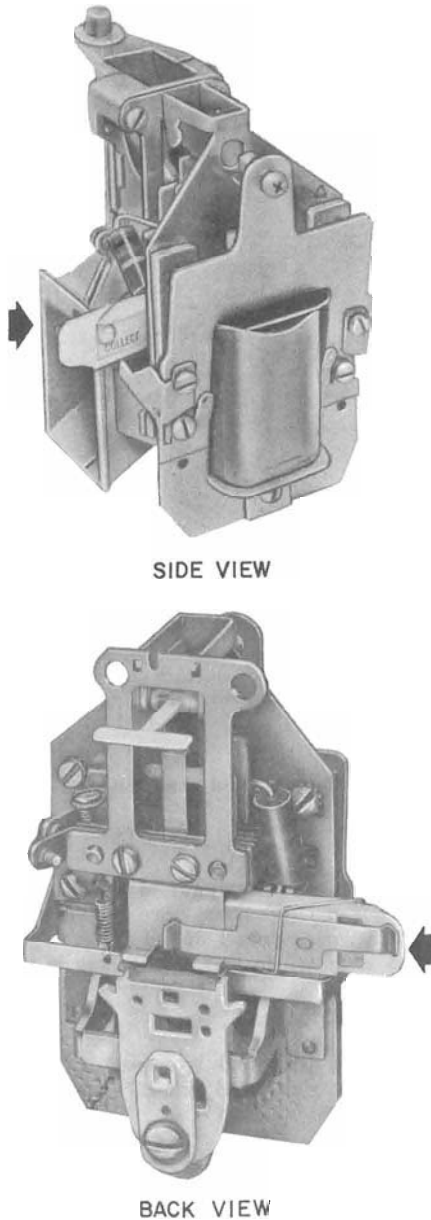


Fig. 25—Bias Margin Gauge in Position for Collect Test

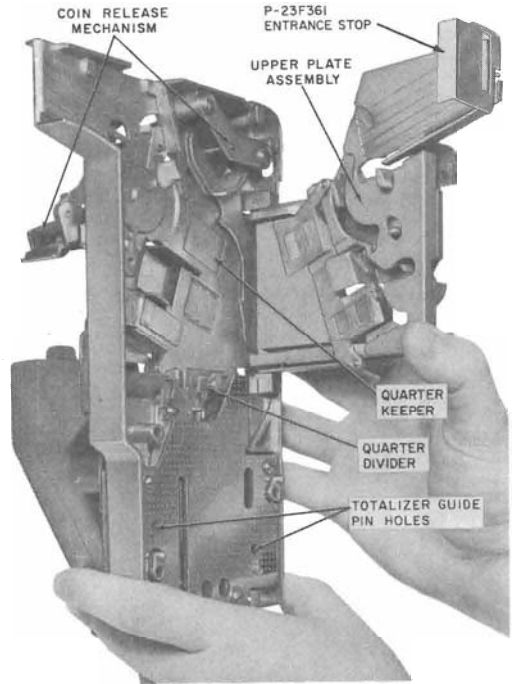


Fig. 26—Chute

forward to its operated position. Hold armature in this position.

- (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 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 slotted hex head mounting screws in each side of relay.
- (6) Make sure that trigger, armature, trap, and vane operate without binding. Refer to trap and vane release test in Table E.
- (7) Reconnect (Y) lead to terminal G and (BK) lead to terminal 3.

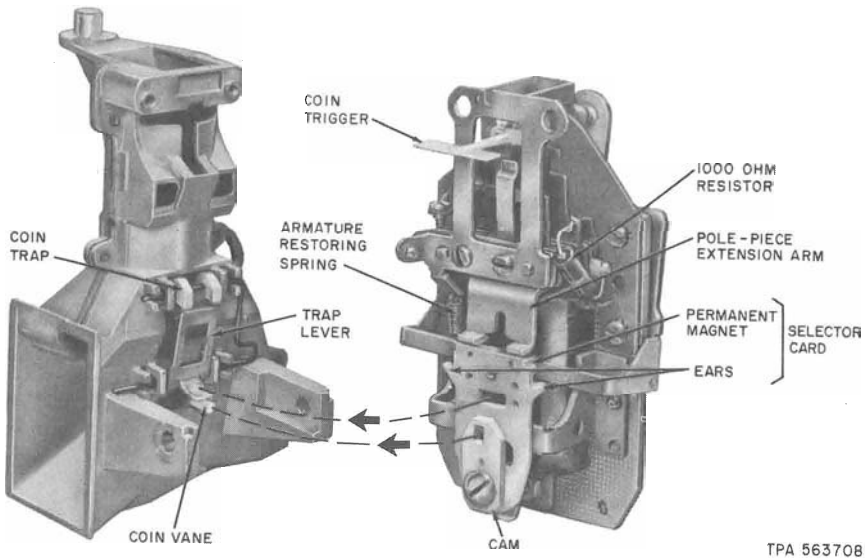


Fig. 27—Coin Hopper and Rear View of Coin Relay

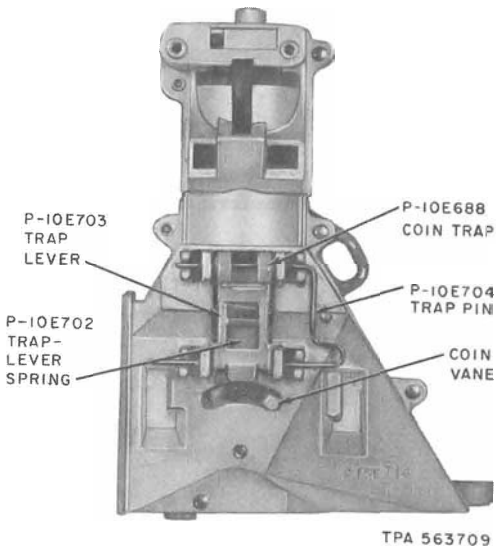


Fig. 28—Trap-Lever Spring and Trap-Lever Assembly

#### Coin Hopper

4.09 To remove coin hopper:

- (1) Remove 1A 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.

4.10 To install coin hopper, use reverse procedure.

#### Replacing Coin Trap and Associated Parts

4.11 To remove trap-lever and coin trap:

- (1) Remove coin relay from hopper (4.07).
- (2) Move vane to right.
- (3) Remove trap pin (Fig. 28) by sliding vertical portion over boss on front of hopper.

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- (4) Turn coin trap sideways and remove through opening.

### 4.12 To replace trap-lever spring:

- (1) Remove old spring.
- (2) Place trap-lever and new P-10E702 spring on a flat surface (Fig. 29).
- (3) Use a KS-6320 orange stick to bend trap-lever spring around center bar of trap-lever (Fig. 29 and 30).

**Caution:** Avoid distorting trap-lever spring during bending and insertion operations.

### 4.13 To replace coin trap and trap-lever:

- (1) Partially insert trap pin into hole in hopper (Fig. 31) and place trap-lever on trap pin.
- (2) Insert coin trap in hopper and engage pin in trap (Fig. 32).

**Caution:** Be sure that trap-lever spring is between trap pin and hopper (Fig. 33).

- (3) Push trap pin into position.
- (4) Check operation per Table E.

### 4.14 Replace relay on hopper per 4.08.

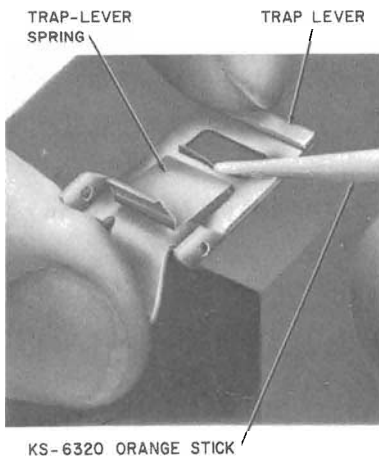


Fig. 29—Bending Trap-Lever Spring

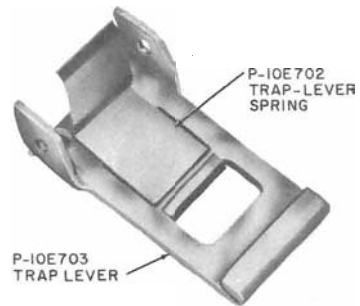


Fig. 30—Trap-Lever Spring Assembled on Trap Lever

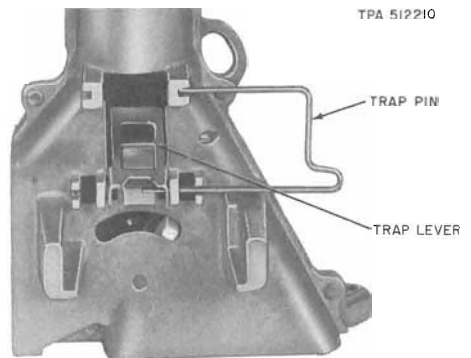


Fig. 31—Placing Trap-Lever Pin on Hopper

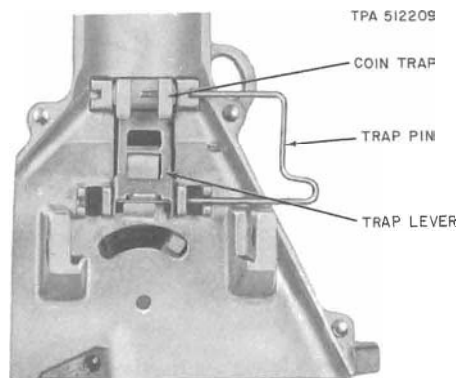
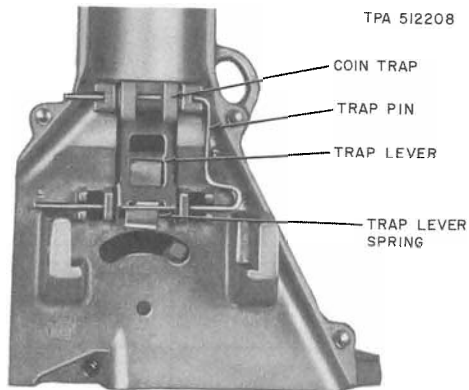
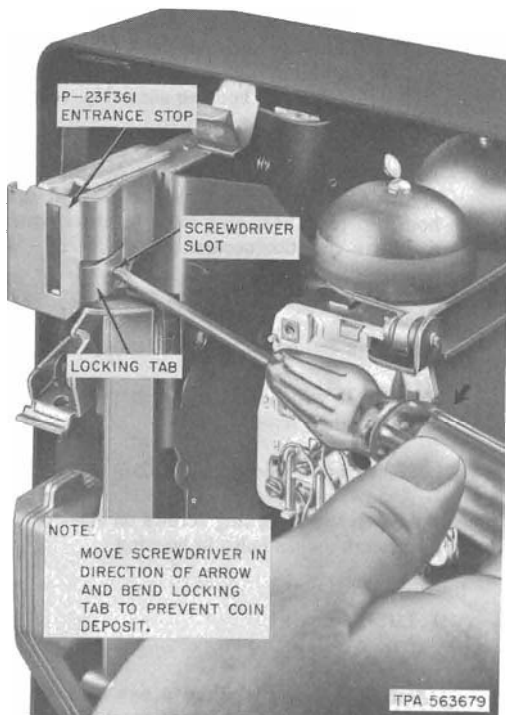


Fig. 32—Placing Coin Trap in Hopper



**Fig. 33**—Trap-Lever Spring Under Trap Pin



**Fig. 34**—Operation of Entrance Stop

### Return Chute Assembly

**4.15** To remove return chute assembly:

- (1) Remove 1AA chute.
- (2) Loosen return chute screw (Fig. 9).
- (3) Lift assembly up and off.

**4.16** To replace return chute assembly, reverse procedure.

### Coin Return Assembly

**4.17** To remove coin return assembly:

- (1) Remove 1AA chute.
- (2) Remove return chute assembly.
- (3) Remove coin return assembly locking screw (Fig. 9).
- (4) Insert finger in coin return and tilt top forward.
- (5) Lift coin return. Pull coin return assembly out and up.

**4.18** 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 1AA chute.

### Ringer

**4.19** To remove C4A ringer:

- (1) Remove 1AA chute.

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

**4.20** 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 J.

**TABLE J**

**RINGER CONNECTIONS**

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

**Handset**

**4.21** 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.

**4.22** To install handset, reverse procedure. Make connections per Table K.

**Dial and Housing Assembly**

**4.23** To remove dial and housing assembly:

- (1) Remove handset.

**TABLE K**

**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

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

**4.24** To install dial and housing assembly, reverse procedure.

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

**4.25** 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 off dial.

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

**4.26** To install dial, reverse procedure making sure that dial is properly seated on four locating pins. Make connections per Table L.

**Fingerwheel (8S Dial [MD])**

**Note:** The releasing hole has been partially plugged to deter tampering.

**4.27** To remove P-21F299 fingerwheel:

- (1) Use a KS-16750 releser **and** rap sharply to break out the remaining plastic below the blind releasing hole.
- (2) Rotate the fingerwheel in a clockwise direction as far as possible.
- (3) Insert KS-16750 releser or paperclip in hole and push down to disengage fingerwheel clamp. Continue to rotate the fingerwheel in a clockwise direction.
- (4) When clamp spring releases, remove fingerwheel and dial will return to normal.

**4.28** To install P-21F299 fingerwheel, refer to 2.30 and 2.31.

**Fingerwheel (8U Dial)**

**4.29** To remove 840151872 fingerwheel refer to 2.32.

**4.30** To install 840151872 fingerwheel refer to 2.34.

**P-23F361 Entrance Stop**

**4.31** The P-23F361 entrance stop (Fig. 34) 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.

**4.32** On later production entrance stops, a prefabricated locking tab arrangement (Fig. 34) 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.

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

- (1) Remove 1A chute.
- (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.

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

**TABLE I**  
**DIAL CONNECTIONS**

TYPE DIAL	WIRE COLOR	CONNECT TO	
		COIN FIRST	DTF
Rotary	BL	TB2-9	TB2-9
	G	TB2-10	TB2-10
	W	TB2-2	TB2-2
	W	TB2-3	TB2-3
	Y	TB2-9	TB2-9
	Y	TB2-9	TB2-13
TOUCH-TONE	G	TB2-4	TB2-4
	W	TB2-2	TB2-2
	R	TB2-5	TB2-5
	R-G	TB2-6	TB2-6
	BK	TB2-1	TB2-1
	O-BK	TB2-11	TB2-11
	O-R	TB2-12	TB2-12
	BL	TB2-3	TB2-3
	W-BL	TB2-7	TB2-7
	O-W	TB2-10	TB2-9
V	TB2-10	TB2-13	

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### Information Plate and Plate Assembly

**4.35** Unless otherwise specified by the telephone company, all 1C-type sets will be shipped from the factory or service center with an 840156319 information plate, indicating Coin-First service. When specified, 1C-type sets may be obtained wired for Dial-Tone-First service and equipped with an 840156327 information plate assembly. These plates are equipped with studs and secured with thread-forming hex nuts.

**4.36** Studded plates for field replacement can be ordered as follows:

- **For Coin First Service**—840156319 Information Plate e/w two RM-900077371 thread-forming nuts\*
- **For Dial-Tone-First Service**—840156327, Assembly, information plate e/w two RM-900077371 thread-forming nuts\*

\*Use a 216B tool (3/8-inch socket wrench) to install or remove these nuts from studs.

**4.37** Some 1A/1C-type sets and all 2A/2C-type sets will not have drilled holes to accept the studded information plates; however, provision can be made locally to procure studless plates and affix them to the flat surface of a non-drilled face plate or panel phone cover.

**4.38** To install studless plates on coin telephone set:

- (1) Clean faceplate or panel of dirt and grime using KS-19578, List 1 cleaning fluid.
- (2) Wipe dry with a different, lint-free cloth.

(3) Apply 3M Company double sided industrial tape No. 9122 (or an approved equivalent) to the back surface of the information plate and trim neatly to size.

(4) Peel off the back protective tape covering, carefully orient the plate on the faceplate or front cover (Fig. 1) and press in place applying firm pressure to ensure complete adhesion.

### CLEANING

**4.39** 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.

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

### 5. CONNECTIONS

**5.01** Refer to Fig. 35 through 38 for connecting diagrams.

### 6. CONVERSIONS (Coin First to Dial Tone First or Dial Tone First to Coin First)

**6.01** To convert a coin first set to dial tone first or a dial tone first set to coin first:

- (a) Connect leads per Tables M and N.
- (b) Connect plug on totalizer to the appropriate position (PP or DTF) or move slide switch to correct position (CF or DTF).
- (c) Check information plate and ensure that it corresponds to the type service being offered.



**TABLE M**  
**COIN CHASSIS CONNECTIONS**

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**  
**DIAL HOUSING CONNECTIONS**

TYPE DIAL	WIRE COLOR	CONNECT TO		OTHER END CONNECTED TO
		COIN FIRST MODE	DTF MODE	
Rotary	Y	TB2-9	TB2-13	DON-2 contact on 8S Dial
	Y	TB2-9	TB2-9	DON-2 contact on 8S Dial
	G	TB2-13	TB2-9	SH3
TOUCH-TONE	V	TB2-10	TB2-13	t contact on dial
	O-W	TB2-10	TB2-9	s contact on dial
	G	TB2-13	TB2-9	SH3



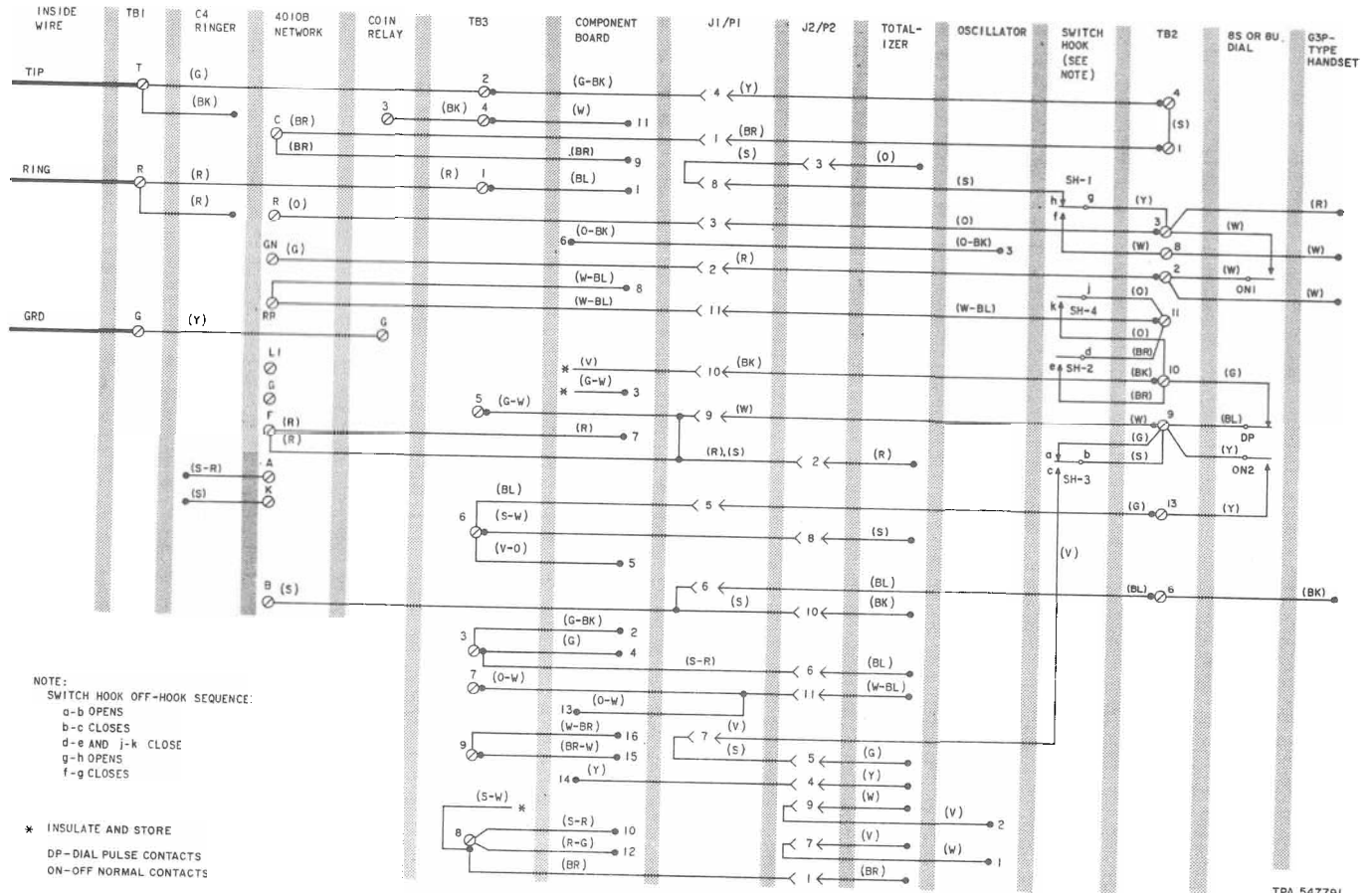
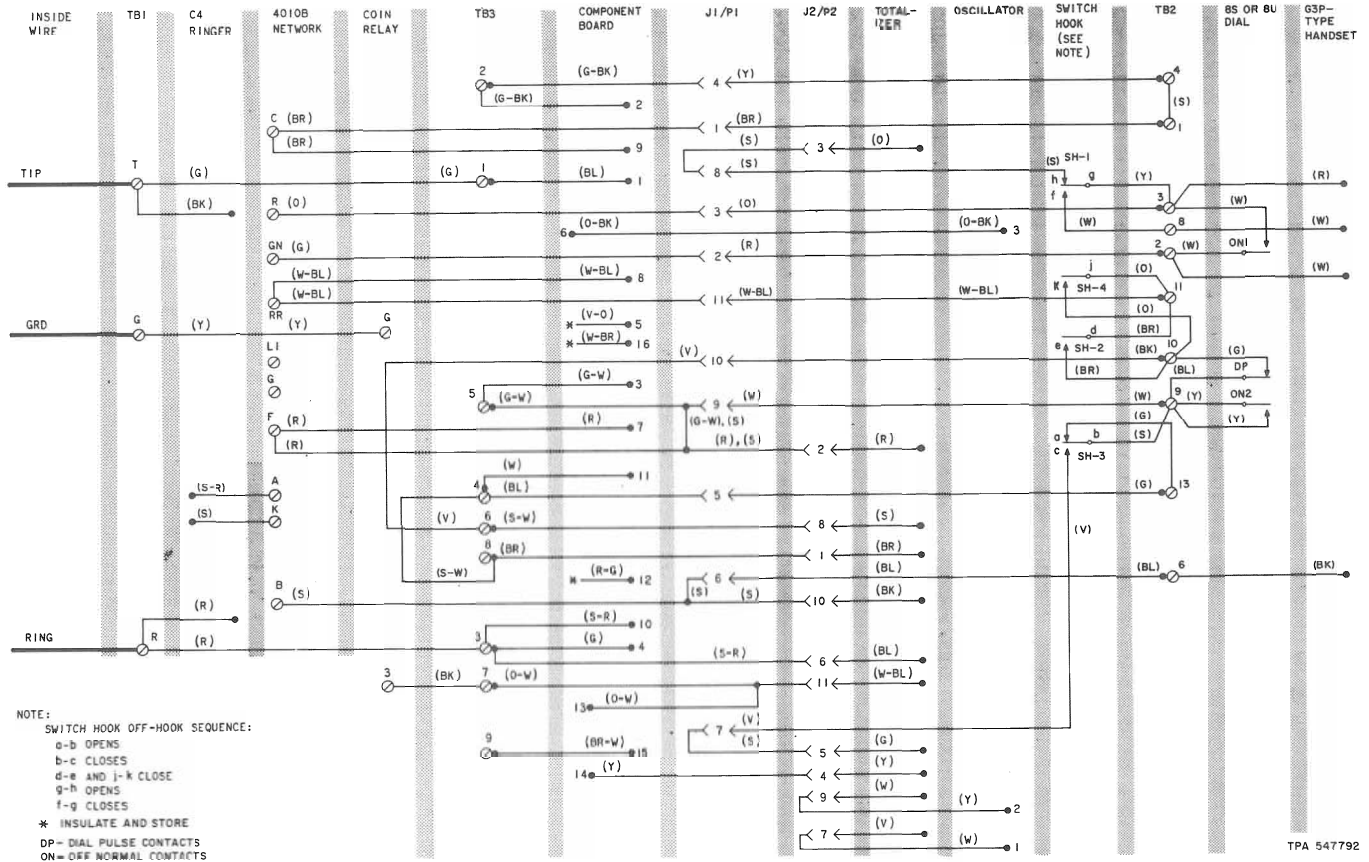


Fig. 35—1C1 or 2C1 Coin Telephone Set—DTF Connections



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Fig. 36—1C1 or 2C1 Coin Telephone Set—Coin First Connections

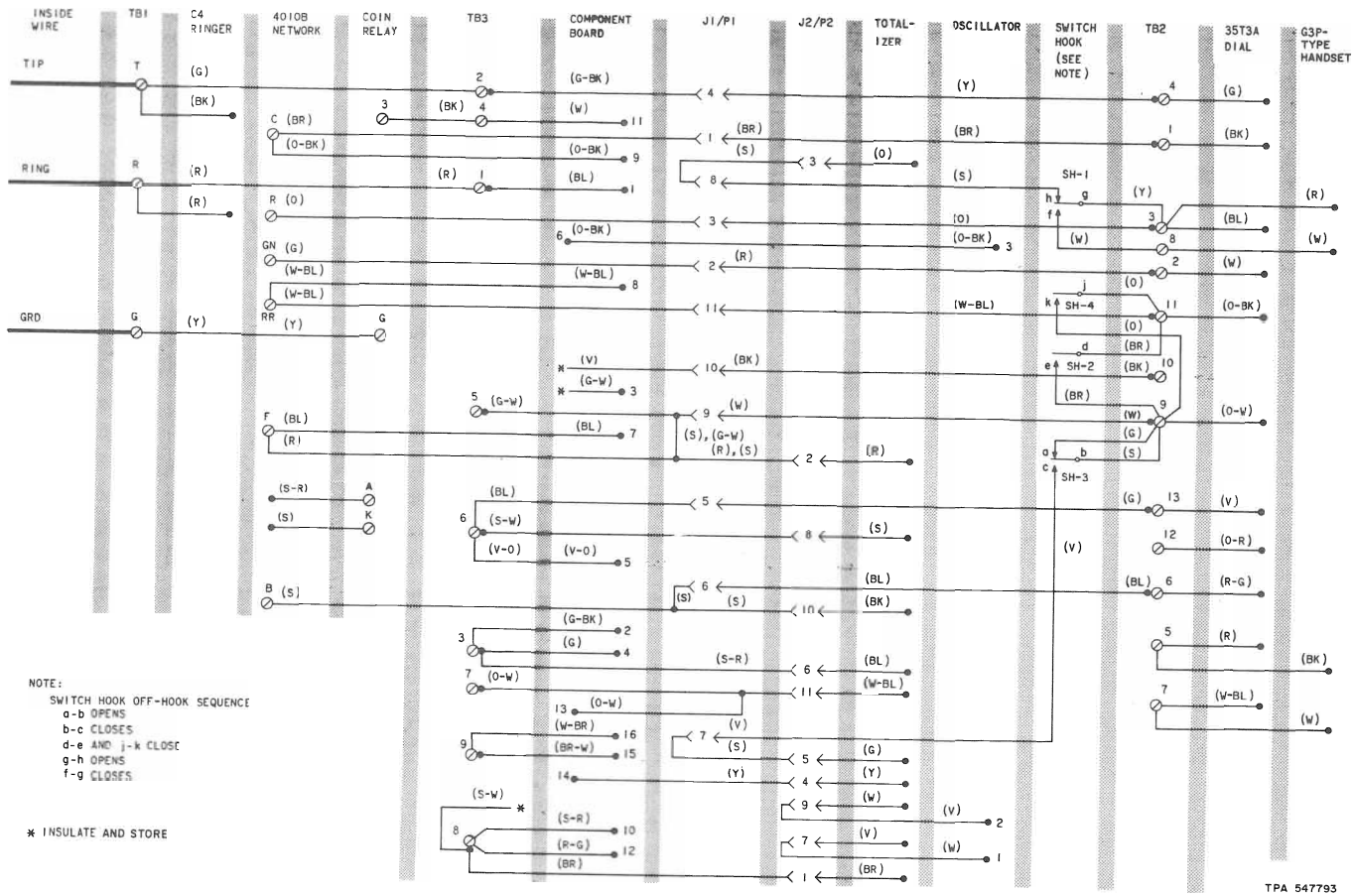
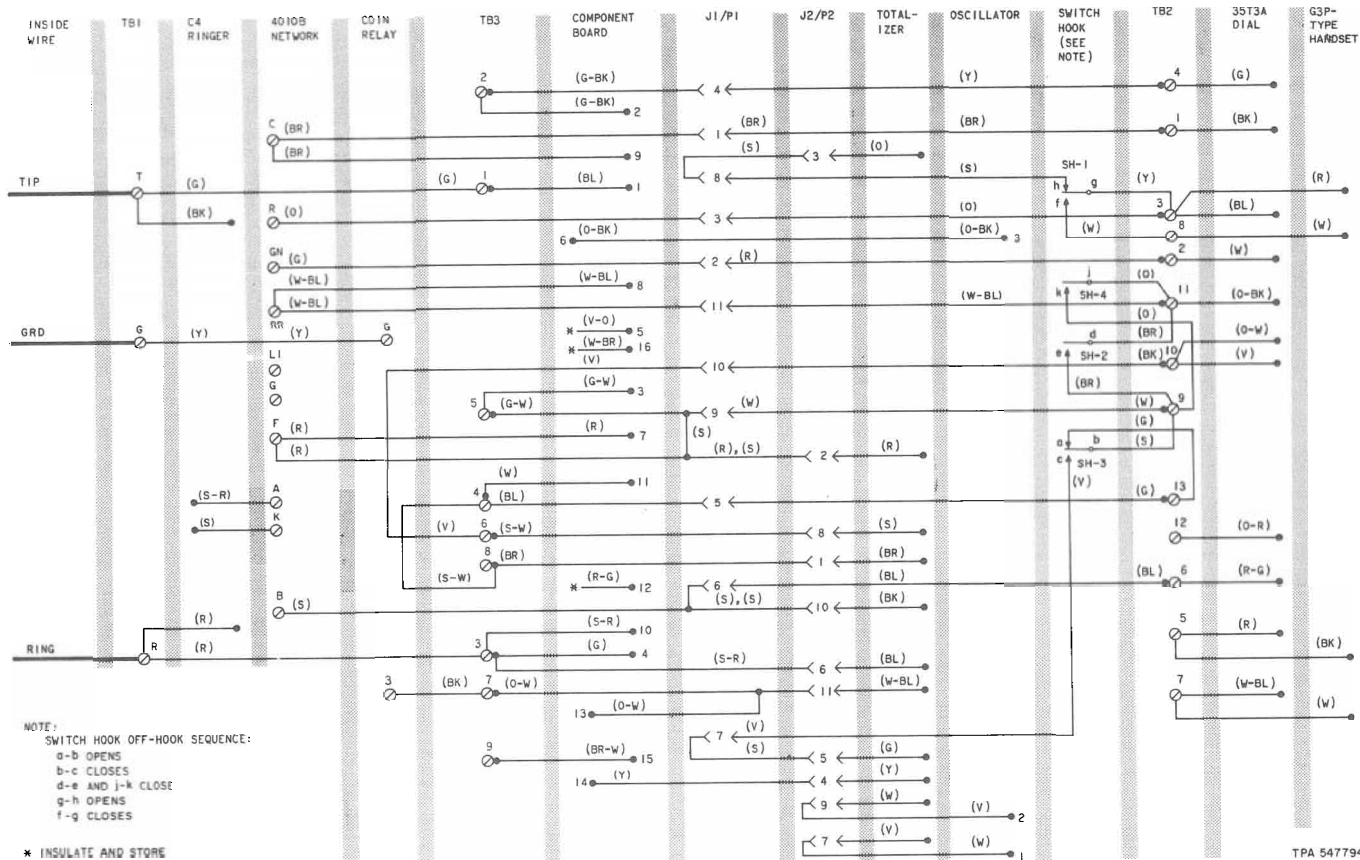


Fig. 37—1C2 or 2C2 Coin Telephone Set—DTF Connections



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Fig. 38—1C2 or 2C2 Coin Telephone Set—Coin First Connections

## SERVICE COIN TELEPHONE SETS

### 1E-TYPE

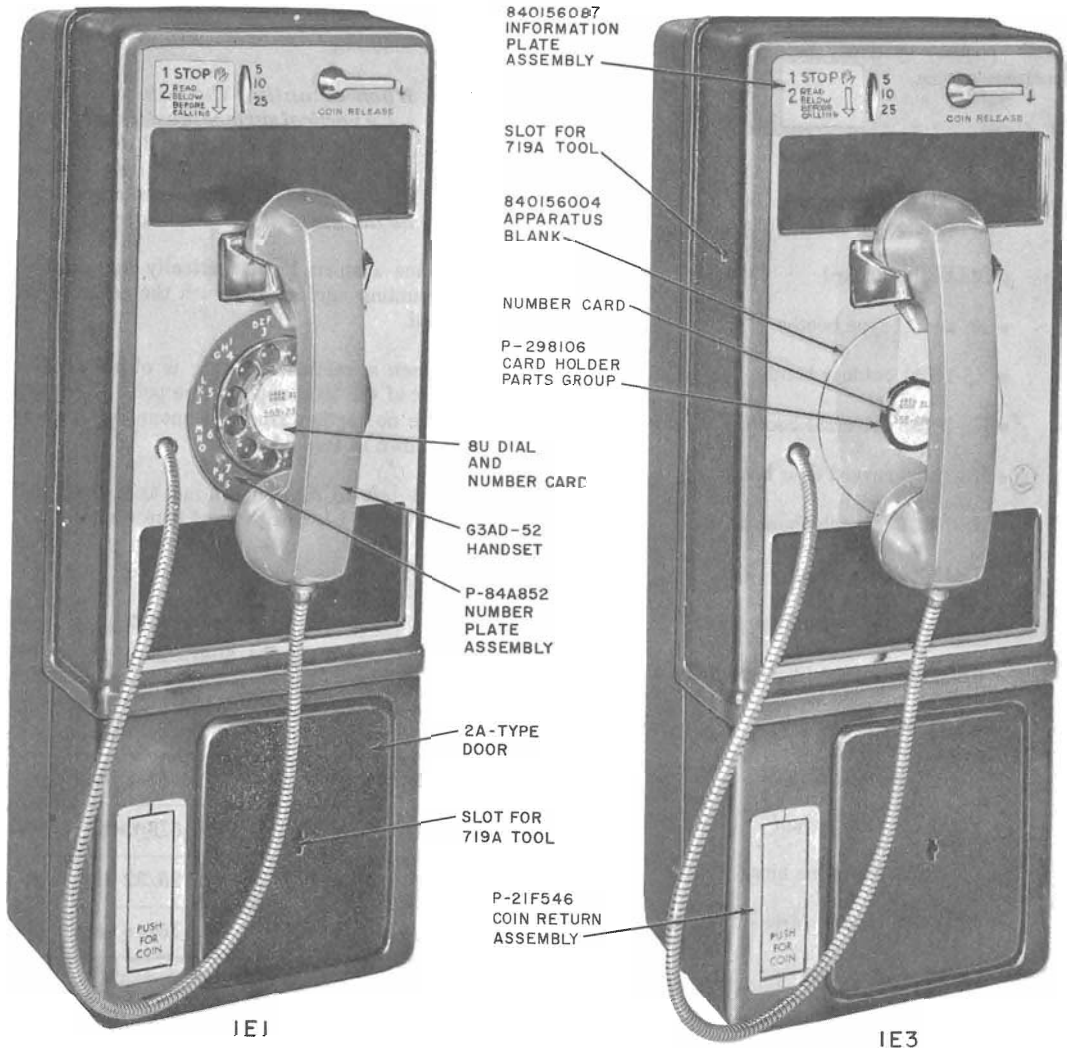


Fig. 1—1E-Type Coin Telephone Sets

**1. GENERAL**

**1.01** This section provides installation, operation test and trouble analysis, maintenance, and connection information for the 1E-type coin telephone sets.

**1.02** The 1E1 coin telephone set is for use in dial postpay systems; the 1E3 set is for manual postpay service.

**2. INSTALLATION**

**2.01** The 1E-type coin telephone set (Fig. 1) 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
- KS-20842 walk-up/drive-up mounting

**2.02** 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 telephone and associated wiring at least 6 inches from neon fixtures, transformers, or other interference-causing equipment.

**BACKBOARDS AND SECURITY STUDS**

**2.03** Refer to Section 506-100-101 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:*

- (a) Place a spirit level vertically against the mounting surface on which the set is to be installed.
- (b) 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.
- (c) The left to right mounting axis shall also be within 1-1/2 degrees of true vertical.

**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

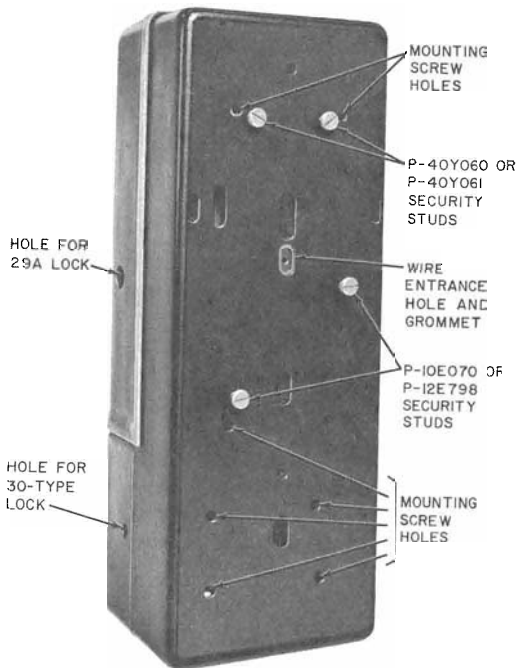
**2.04** Refer to Fig. 2 and Table B for security stud requirements.



*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*



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



**Fig. 2—Location of Mounting Screw Holes and Security Studs**

### MOUNTING ARRANGEMENTS

**2.05** To gain access to the coin telephone set mounting holes:

- (1) Remove cover unit assembly per 2.07.
- (2) Remove 1A10A chute-totalizer per 2.08.
- (3) Remove 30A coin chassis per 2.14.

**2.06** Refer to Table B for mounting applications.

### COMPONENTS

#### Cover Unit Assembly

**2.07** 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. 3) by pulling straight out as cover is carefully lifted off.

#### 1A10A Chute—Totalizer

**2.08** To remove chute-totalizer (Fig. 3):

- (1) Disconnect plug P2.
- (2) Release chute locking lever.
- (3) Lift spring out of groove in chute.
- (4) Tilt top of chute forward and lift out.

**2.09** To install chute-totalizer in set:

- (1) Place chute on locating pins at rear of hopper assembly, and back of housing.

*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.

#### 10A Totalizer

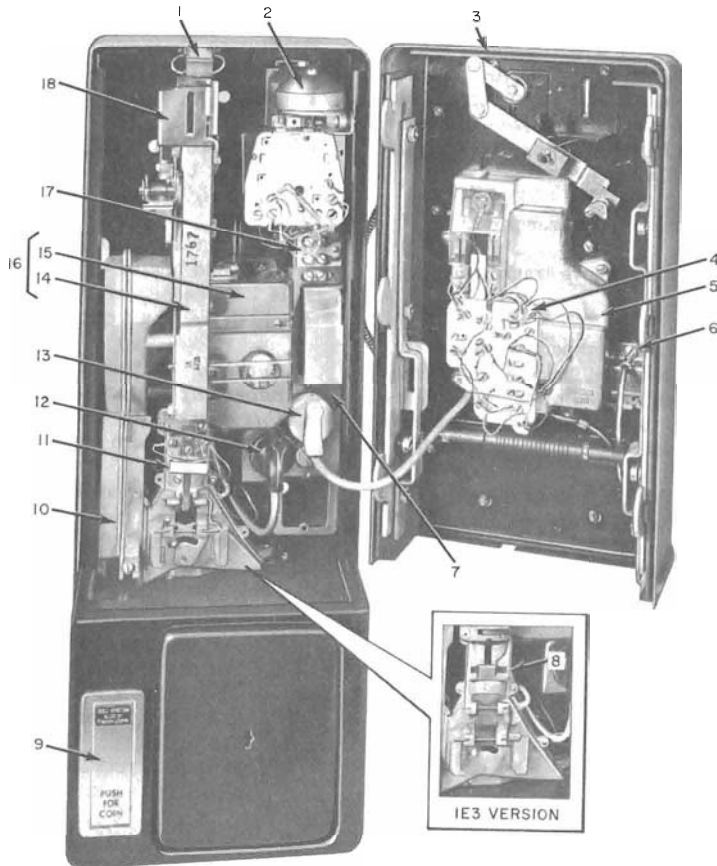
*Note:* A black reference mark is on the outside ratchet wheel to help determine whether the totalizer shaft is off-normal or in its **home** position. As viewed from the front of the coin telephone set, a totalizer is in its **home** position when the mark is at a point 1 tooth to the left of 6 o'clock position.

**TABLE B**  
**MOUNTING APPLICATIONS**

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-12E798 (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-19206 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, L5 Shelf	178A-3 (Note 1)	2	2		
KS-20255 Kiosk	Furnished			2	2
KS-20842 Mounting	Furnished	None Used			

**Notes:**

1. A 178A-3 backboard is furnished with each KS-19945 and KS-20194, L5 shelf unless otherwise specified.
2. Seven 1/4-20 by 5/8-inch hardened RHM screws (P-23F790) are furnished with each coin telephone set for mounting to backboard.



## LEGEND

- |   |                                     |
|---|-------------------------------------|
| 1 – P-27E542 Chute Locking Lever and P-27E497 Spring                            | 7 – 30A Coin Chassis                |
| 2 – C4A Ringer  | 8 – 50B Hopper (1E3 only)           |
| 3 – Cover Unit Assembly   | 9 – P-21F546 Coin Return Assembly   |
| ● 840658033 (1E1-3)   ● 840659031 (1E3-3)                                       | 10 – P-15E730 Return Chute Assembly |
| ● 840658447 (1E1-44) ● 840659445 (1E3-44)                                       | 11 – 50A Hopper (1E1 only)          |
| ● 840658512 (1E1-51) ● 840659510 (1E3-51)                                       | 12 – P2                             |
| 4 – TB2   | 13 – P1                             |
| 5 – P-90D274 Dial and Housing Assembly (1E1) or P-23F651 Housing Assembly (1E3) | 14 – 1A Chute                       |
| 6 – P-15E444 Coverplate and P-181678 BHM Screw                                  | 15 – 10A Totalizer                  |
|   | 16 – 1A10A Chute-Totalizer          |
|   | 17 – TB1                            |
|   | 18 – P-23F361 Entrance Stop         |

Fig. 3—Assembly of Parts (1E1 and 1E3)

## 2.10 To determine totalizer initial rate setting:



**Use extreme care when checking initial rate or 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. 4.**

- (1) Remove 1A10A chute-totalizer per 2.08.
- (2) Loosen screw and remove transparent dust cover.
- (3) Rotate shaft in the proper direction (Fig. 4) until detent roller on inside ratchet wheel is positioned between the two black marks. This occurs at the same time T2 rests in depression in shaft. This position is called **home** position.
- (4) Slowly rotate shaft in proper direction, and count the steps until T1 springs operate.
- (5) Each step rotated from **home position** represents a 5-cent rate as shown in Table C.

TABLE C  
METHOD FOR DETERMINING  
INITIAL RATE

NO. OF STEPS SHAFT IS ROTATED FROM HOME POSITION UNTIL T1 OPERATES	INDICATES FOLLOWING INITIAL RATE SETTING
1	5 cents
2	10 cents
3	15 cents
4	20 cents
5	25 cents
6	30 cents

## 2.11 To reset totalizer rate:

**Note:** Use two KS-16750, List 3 releasers or two paper clips to reset the rate.

**Increasing Rate (Fig. 5)**

- (1) Rotate shaft in proper direction (Fig. 4) until it is in home position as described in 2.10(3).
- (2) Further rotate shaft approximately 10 steps until a tab on the T1 cam is accessible as shown in Fig. 5 and 6.
- (3) Insert a KS-16750, List 3 releaser or a paper clip into one of the four holes indicated as hole 2 in center of shaft. Hold paper clip firmly so that shaft cannot move.

**Caution: Do not allow end of releaser or paper clip to extend too far beyond shaft; this may damage insulation of coil located directly beneath shaft.**

- (4) Position a second releaser or paper clip into the hole on T1 cam indicated as hole 1 and rotate cam in direction of the curved arrow as shown.



**If hole 1 in T1 cam has been mutilated or clogged beyond use, place releaser or paper clip against tab as shown in Fig. 5 and push tab in direction of the straight arrow.**

- (5) One step of rotation of the T1 cam in this direction increases the rate by 5 cents.
- (6) Check new initial rate setting per 2.10.

**Decreasing Rate (Fig. 6)**

- (7) Repeat steps (1) through (3).
- (8) Position a second releaser or paper clip into the hole on T1 cam indicated as hole 1 and rotate cam in direction of the curved arrow as shown.



**If hole 1 in T1 cam has been mutilated or clogged beyond use, place releaser or paper clip against tab as shown in Fig. 6 and push tab in direction of the straight arrow.**

- (9) One step of rotation of the T1 cam in this direction decreases the rate by 5 cents.

- (10) Check new initial rate setting per 2.10.

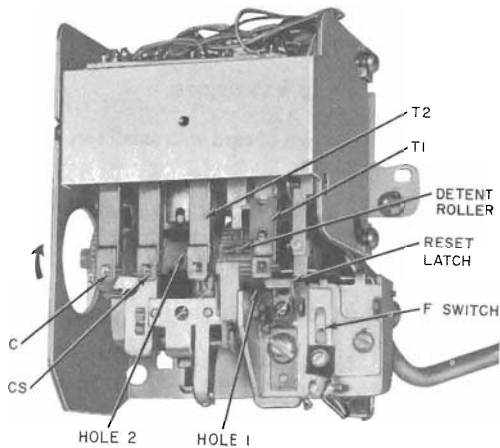


Fig. 4—Checking Totalizer Rate

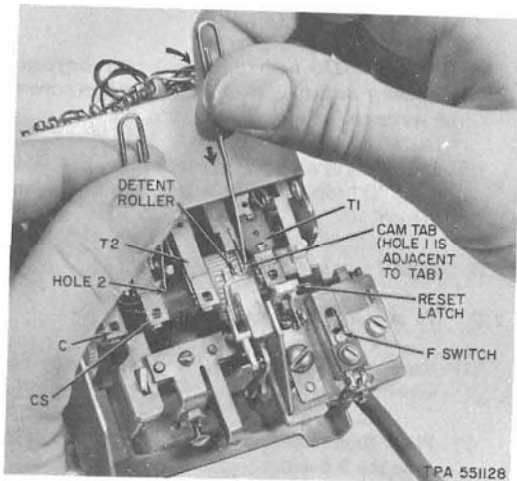


Fig. 5—Increasing Totalizer Rate

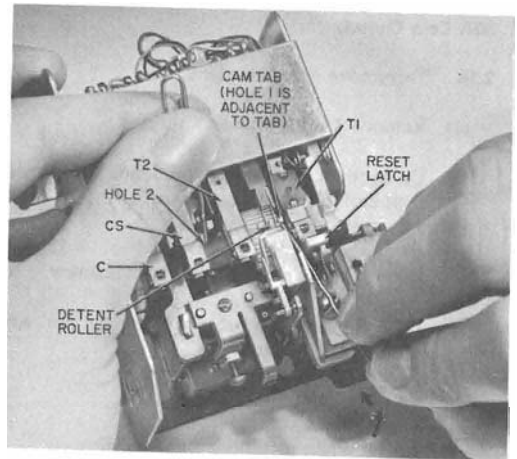


Fig. 6—Decreasing Totalizer Rate

- 2.12 To remove totalizer from chute:



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

- (1) Unscrew three captive-type mounting screws from chute.
- (2) Carefully remove totalizer from chute.

- 2.13 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.

**30A Coin Chassis****2.14** To remove coin chassis:

- (1) Remove 1A10A chute-totalizer.
- (2) Disconnect (S-R) and (G) leads from coin hopper (1E1 only) and carefully pull leads through guide hole on hopper.
- (3) Loosen chassis mounting captive screw.
- (4) Pull chassis assembly out at bottom and slide down to remove.

**2.15** To install coin chassis:

**Note:** When installing coin 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.
- (2) Seat chassis tabs in slots.
- (3) Tighten chassis mounting captive screw.
- (4) On the 1E1 set, reconnect (S-R) and (G) leads to coin hopper after threading them through eyelet on side of hopper.
  - Connect (S-R) to left side of resistor
  - Connect (G) to right side

**Instruction Cards**

**2.16** Instruction cards are not furnished with set and must be procured locally.

**2.17** To install card:

- (1) Push up with fingers.
- (2) Snap card in place.
- (3) Ensure that card is seated properly in slot.
- (4) Tighten the No. 4-40 by 3/16 inch hex socket setscrew (840153381), in faceplate using No. 4 (.050) Allen wrench.

**Caution:** Do not turn screw beyond stopping point as this may damage screw or wrench.

**2.18** To remove card:

- (1) Loosen setscrew in faceplate.
- (2) Push card up with fingers.
- (3) Pry out bottom of card with small screwdriver or equivalent.

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

**Number Card (8U Dial)**

**Note:** The fingerwheel (840151872) is shipped assembled to the 8U dial and must be removed to install number card. It is secured with a No. 4-40 setscrew (840360598).

**2.20** To remove 840151872 fingerwheel:

- (1) Using a No. 4 (.050) Allen wrench, turn the setscrew in a clockwise direction until it clears fingerwheel (Fig. 7).

**Caution:** Do not turn setscrew beyond stopping point as this may damage screw or wrench.

- (2) Turn fingerwheel in a clockwise direction until "O" (operator) hole is in the 9 position and lift off.

**2.21** Install number card.**2.22** To install fingerwheel:

- (1) Ensure that setscrew is all the way in (clockwise).
- (2) Place fingerwheel on dial with operator hole over the 9 position.
- (3) Rotate fingerwheel counterclockwise until it is in its normal position.
- (4) Using a No. 4 (.050) Allen wrench, turn the setscrew in a counterclockwise direction until the stop is reached (Fig. 7).

**Caution:** Observe caution following 2.20(1).



Fig. 7—Installing Fingerwheel on 8U Dial

## WIRING

**2.23** 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.

**Note:** Refer to Section 460-100-201 for additional information on signaling ground.

- 2.24** Feed inside wire through wire entrance hole as set is mounted on backboard.
- 2.25** Dress wire behind and run to right side of coin chassis
- 2.26** Conceal wiring near telephone using approved molding or tubing.
- 2.27** Locate any protector, connecting blocks, etc, where they will be inaccessible to person using coin telephone set.
- 2.28** A 123A1A protector can be installed inside a 1E-type set as shown in Fig. 8 using two

P-205607 screws (8-32 by 1/2-inch brass RHM or equivalent) provided separately. Dress leads to avoid interference with chute operation.

**Warning:** Ensure that the protector ground terminal is directly connected to the signal and protector ground with no less than No. 14 AWG wire. Refer to Sections 460-100-200 and 460-100-201.



After installation has been completed, refer to Part 3 and verify if the coin telephone set is operating correctly. Also verify that entrance stop is adjusted properly.

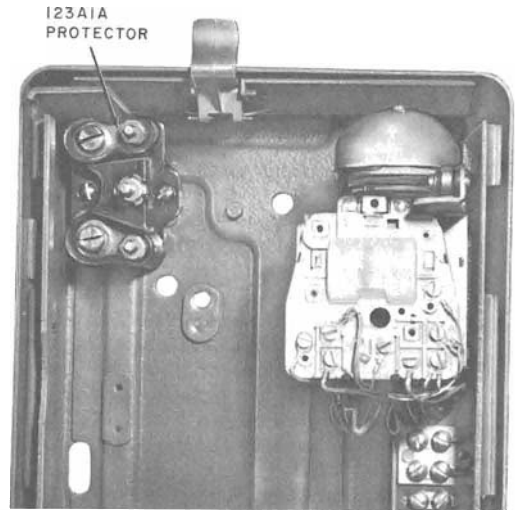


Fig. 8—Housing and Mounting Plate Assembly

## 3. OPERATION TESTS AND TROUBLE ANALYSIS

### 3.01 Apparatus Required:

- P11C cord (Fig. 9) or KS-20950, List 1 cover parking tool (Fig. 10)
- Coins: 1 dime, 4 nickels, and 1 quarter
- KS-14995, List 3 trap and vane release tool (Fig. 11)

- 3.02 Refer to Table D for trouble analysis test for 1E1 set.



*A minimum of 2 nickels and 1 dime or 4 nickels will be retained in the cash box when the procedures in Table D, Trouble No's. 12 through 16 are performed. Arrangements to have money redeemed should be made with supervisor prior to making these tests.*

- 3.03 Refer to Table E for trouble analysis test for 1E3 set.

#### 4. MAINTENANCE

##### Clearing Chute

- 4.01 When troubles indicate foreign objects or stuck coins in chute:

- (a) Remove cover unit assembly.
- (b) Remove 1A10A chute-totalizer.
- (c) Swing upper plate assembly open (Fig. 12).



*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.*

- (d) Remove any foreign objects or stuck coins with an orange stick. **Do not use screwdriver.**
- (e) Clean off any foreign material adhering to chute magnets.
- (f) If trouble cannot be cleared, replace chute.

**Note:** Ensure that all magnets are free of foreign material before installing chute in set.



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

- (g) Check entrance stop operation (4.21).

##### Electrical Troubles

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

- 4.03 Refer to Part 2 for the removal and replacement of the following components:

- 1A10A chute-totalizer
- 10A totalizer
- 30A coin chassis
- Instruction cards
- Number card (1E1)

- 4.04 Components other than those listed in 4.03 can be removed as outlined below.

##### Coin Hopper (50A for 1E1 set; 50B for 1E3)

- 4.05 To remove coin hopper:

- (1) Remove chute-totalizer and on 1E1 only disconnect (S-R) and (G) leads from hopper.
- (2) Remove vault door and coin receptable.
- (3) Remove two P-10E809 special screw assemblies from inside vault.
- (4) Lift hopper out of set.

- 4.06 To install coin hopper, use reverse procedure.

- (1) On 1E1 sets, thread wires from chassis through hopper eyelet and connect (S-R) lead to left terminal and (G) lead to right terminal of resistor.

##### Return Chute Assembly

- 4.07 To remove return chute assembly:

- (1) Remove 1A10A chute-totalizer.
- (2) Loosen return chute screw.
- (3) Lift assembly up and off.



TABLE D  
TROUBLE ANALYSIS — IE1

TROUBLE NO.	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
1	Invert handset on switchhook. <i>Note:</i> Prevents armored cord from pushing handset off switchhook when cover is set down.				
2	Remove cover unit assembly and disconnect plug P1. Place cover unit assembly on a firm level surface.				
3	Connect P11C cord between plug P1 and jack J1 of coin chassis or use a KS-20950 cover parking tool.				
4	Install KS-14995, L3 tool between coin chute and hopper to catch deposited coins.				
5	Lift handset.	Dial tone received.	No dial tone.	Defective handset.	Replace handset.
				Traffic overload.	Wait and repeat test.
				Switchhook contacts SH1 (NO), or SH2 & SH4 (NO), not making.	Clean contacts or replace dial and housing assembly.
				Plugs P1 and P2 reversed.	Reconnect properly.
				Totalizer mode switch in CF position.	Reposition switch to DTF.
				TB2 not wired correctly.	Wire correctly.
				Defective totalizer.	Replace totalizer.
				Defective wiring in chassis, or dial and housing assembly.	Replace defective apparatus.
6	Dial operator.	Dial tone breaks.	Dial tone does not break.	Nonstation trouble.	Refer to testdesk.
				Defective dial.	Replace defective apparatus.
				Defective chassis.	
				TB2 not wired correctly.	Verify wiring.
		Operator answers.	Transmission path not established.	Defective handset.	Replace handset.
7	With operator on line, deposit nickel, dime, and quarter.	Operator identifies proper signal tones.	Operator cannot identify proper signal tones.	Nonstation troubles.	Refer to testdesk and correct trouble.
				Defective handset.	Replace handset.
				Defective totalizer.	Replace defective apparatus.
				Defective chassis.	
				446F diode damaged.	
				Ring and tip reversed.	Correct.

TABLE D (Cont'd.)

TROUBLE NO.	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
8	Listen for coin tones in handset as coins are deposited.	Tones should not be heard.	Tones are heard.	Defective chassis.	Replace chassis.
9	Disengage chute locking spring; slowly pull top of chute forward while holding KS-14995, L3 tool. Lift chute and tool out of set and retrieve coins.				
10	Check for noise or cut-out in handset cord.	Noise should not be heard.	Noise is heard.	Defective handset.	Replace handset.
11	Request operator to call back.	Ringer operates at maximum volume.	No ringing or rings at low volume.	Improper line assignment. Defective ringer. Ringer out of adjustment. Open capacitor in network.	Verify and correct. Replace ringer or chassis. Adjust. Replace chassis.
12	Deposit initial rate and request operator to identify coin signal.	Identification properly made.	Identification cannot be made.	Nonstation troubles.	Refer to testdesk.
13	Thank operator and hang up.				
14	Lift handset, obtain dial tone, and dial a local charge number (this should be pre-arranged).	Ring tone heard — When called party answers, deposit coin tone should be heard.	Ring tone not heard. Deposit coin tone not heard.	Traffic overload. Nonstation troubles.	Wait and repeat test. Refer to testdesk.
15	Deposit nickel.	Deposit coin tone remains.	Deposit coin tone stops. Totalizer reads out.	Initial rate set for less than 10 cents. Wrong code totalizer or defective totalizer. Defective chassis.	Reset totalizer. Replace totalizer. Replace chassis.
16	Deposit 2nd nickel.	Deposit coin tone stops and talk path is established. (Initial rate set for 10¢).	Deposit coin tone does not stop.	Initial rate set for more than 10 cents. Defective hopper. Defective totalizer. Nonstation troubles.	Reset totalizer. Replace defective apparatus. Refer to testdesk.
17	Hang up.	Totalizer restores.	Totalizer does not restore.	Defective dial and housing assembly. Defective chassis.	Replace defective apparatus.
18	Return set to normal operation.				

**TABLE E**  
**TROUBLE ANALYSIS — IE3**

TROUBLE NO.	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
1	Invert handset on switchhook. <i>Note:</i> Prevents armored cord from pushing handset off switchhook when cover is set down.				
2	Remove cover unit assembly and disconnect plug P1 — place cover unit assembly on a firm level surface.				
3	Connect P11C cord between plus P1 and jack J1 of coin chassis or use a KS-20950 cover parking tool.				
4	Install KS-14995, L3 tool between coin chute and hopper to catch deposited coins.				
5	Lift handset.	Operator should answer.	Operator does not answers.	Defective handset. Defective chassis. Defective switchhook. TB2 not wired correctly. Nonstation troubles.	Replace defective apparatus.  Verify and correct. Refer to testdesk.
6	With operator on line, deposit nickel, dime, and quarter.	Operator identifies proper signal tones.	Operator cannot identify proper signal tones.	Defective totalizer. Defective chassis. Ring and tip reversed. Totalizer mode switch in CF position.	Replace defective apparatus.  Correct. Reposition switch to DTF.
7	Listen for coin tones in handset as coins are deposited.	Tones should not be heard.	Tones are heard.	Defective chassis.	Replace chassis.
8	Disengage chute locking spring; slowly pull top of chute forward while holding KS-14995, L3 tool. Lift chute and tool out of set and retrieve coins.				
9	Check for noise or cut-out in handset cord.	Noise should not be heard.	Noise is heard.	Defective handset.	Replace handset.

TABLE E (Cont'd.)

TROUBLE NO.	ACTION	VERIFICATION	FAILURE	POSSIBLE CAUSE	REMEDIAL ACTION
10	Request operator to call back.	Ringer operates at maximum volume.	No ringing or rings at low volume.	Improper line assignment	Verify and correct.
				Defective ringer.	Replace ringer or chassis.
				Ringer out of adjustment.	Adjust.
				Open capacitor in network.	Replace chassis.
11	Repeat 4.				
12	Deposit a coin and request operator to identify coin signal.	Identification properly made.	Identification cannot be made.	Nonstation troubles.	Refer to testdesk.
13	Thank operator and hang up.				
14	Repeat 8.				
15	Return set to normal operation.				



Fig. 9—P11C Test Cord



Fig. 10—KS-20950, L1 Cover Parking Tool

- 4.08 To replace return chute assembly, reverse procedure.

#### Coin Return Assembly

- 4.09 To remove coin return assembly:

- (1) Remove 1A10A chute-totalizer.
- (2) Remove return chute assembly.
- (3) Remove coin return assembly locking screw.

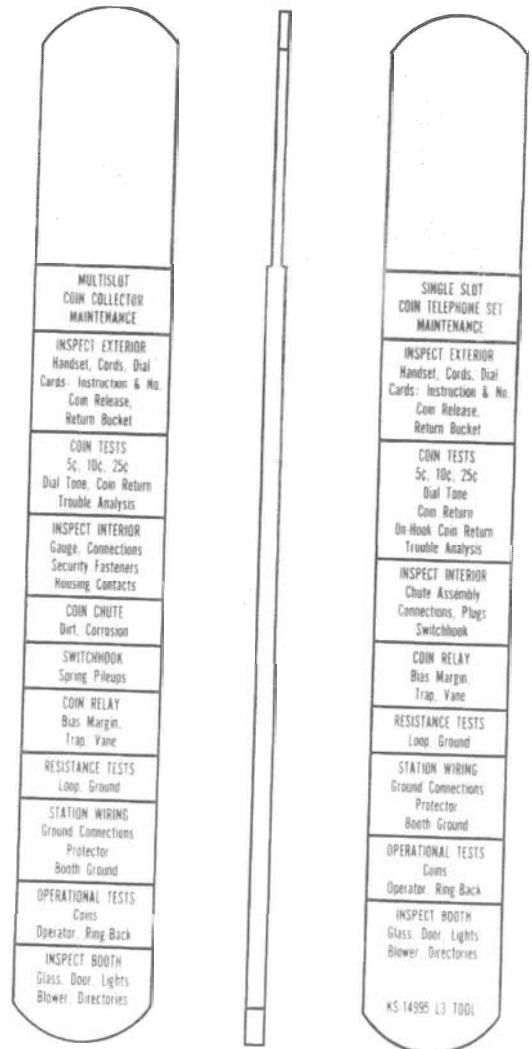


Fig. 11—KS-14995, L3 Tool

- (4) Insert finger in coin return and tilt top forward.
- (5) Lift coin return. Pull coin return assembly out and up.

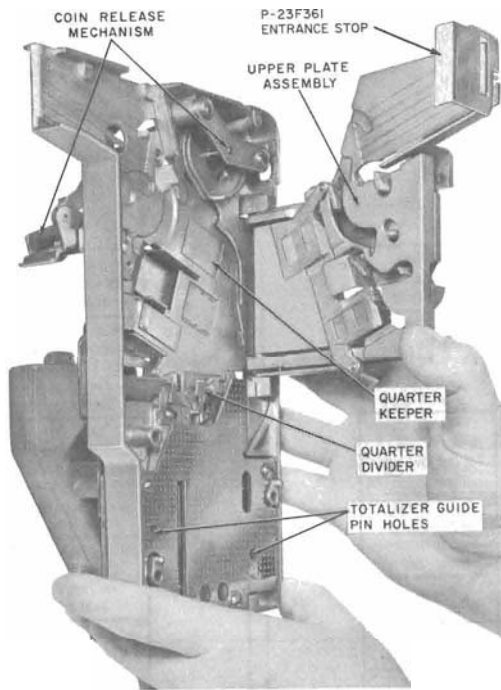


Fig. 12—1A Chute

**4.10** 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 1A10A chute-totalizer.

**Ringer****4.11** To remove C4A ringer:

- (1) Remove 1A10A chute-totalizer.
- (2) Disconnect (S-R) and (G) leads from hopper and remove 30A coin chassis.
- (3) Disconnect four ringer leads; two from TB1 and two from network.
- (4) Remove two ringer mounting screws and lift off ringer.

**4.12** 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 F.

TABLE F

C4A RINGER CONNECTIONS

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

**Handset****4.13** 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 coverplate which secure handset cord to dial housing.
- (3) Loosen stay-hook screw and remove handset cord.

**4.14** To install handset, reverse procedure. Make connections per Table G.

TABLE G

HANDSET CONNECTIONS

WIRE COLOR	CONNECT TO
W	TB2-2
R	TB2-3
BK	TB2-6
W	TB2-8

**Dial and Housing Assembly**

**4.15** To remove dial and housing assembly:

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

**4.16** To install dial and housing assembly, reverse procedure.

*Note:* Ensure that the four dial housing mounting screws are tight to prevent dial housings from becoming loose.

**4.17** To remove dial (1E1 only):

- (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 off dial.

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

**4.18** To install dial, reverse procedure making sure that dial is properly seated on four locating pins. Make connections per Table H.

TABLE H

DIAL CONNECTIONS

WIRE COLOR	CONNECT TO
BL	TB2-9
G	TB2-10
W	TB2-2
W	TB2-3
Y	TB2-9
Y	TB2-13

**Fingerwheel**

**4.19** To remove 840151872 fingerwheel, refer to 2.20.

**4.20** To install fingerwheel, refer to 2.22.

**P-23F361 Entrance Stop**

**4.21** The P-23F361 entrance stop (Fig. 13) 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.

**4.22** A prefabricated locking tab arrangement 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 connections, or those that are out-of-service which require further maintenance or repair.

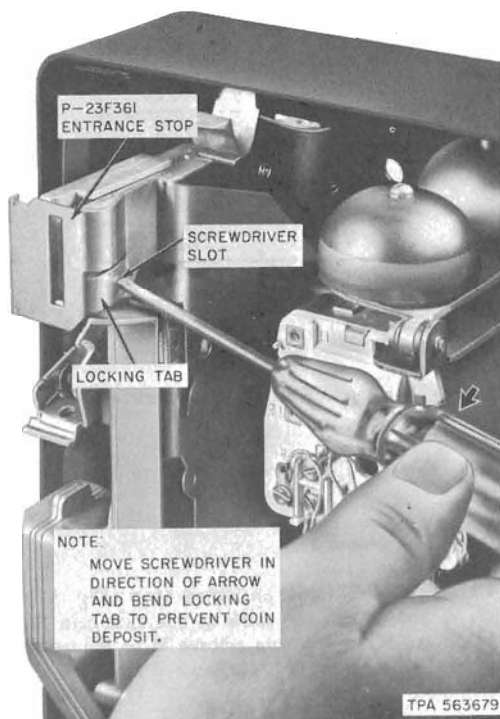
**4.23** To replace entrance stop:

- (1) Remove 1A10A chute-totalizer.
- (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.

**4.24** There should be no binding or rubbing of parts when coin release lever or knob is

## SECTION 506-412-402

operated fully and allowed to return to normal without force.



**Fig. 13—Adjustment of Entrance Stop to Prevent Coin Deposit**

### 840360184 Knob and Shaft Assembly

4.25 The 840360184 knob and shaft, assembly can be substituted for the lever-type coin

release handle and shaft assembly to counteract vandalism and prevent serious damage to internal linkage and other chute actuating components.

4.26 For installation information refer to Section 506-101-400.

### 840156087 Information Plate

4.27 Orders for replacement information plates shall specify "equipped with two RM900077371 thread-forming nuts."

4.28 The 216B tool (3/8-inch socket wrench) can be used to install or remove these special nuts on or off the mounting studs.

## CLEANING

4.29 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.

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



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

## 5. CONNECTIONS

5.01 Refer to Fig. 14 for connecting diagram.



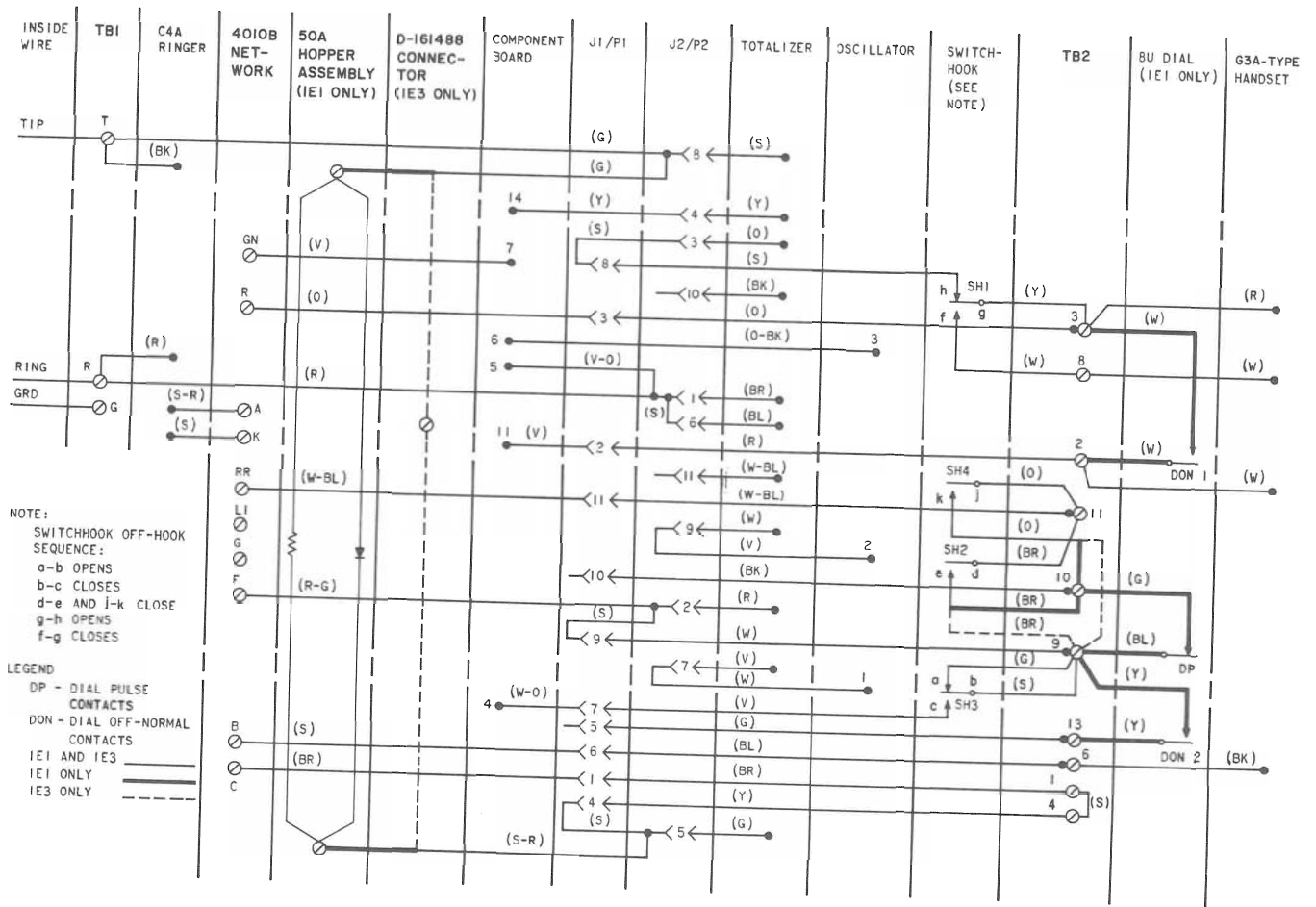


Fig. 14—1E1 and 1E3 Coin Telephone Sets—Connections



## ELECTRIC GROUNDING AND WIRING REQUIREMENTS

### BOOTHS—METAL

#### 1. GENERAL

1.01 This section is reissued to:

- Revise text
- Revise illustrations

1.02 Commercial power of 110- to 125-volt, 15-ampere ac is necessary for operation of blower and illumination of lamps.

1.03 Wiring shall be installed to meet requirements of the National Electrical Code, local governmental regulations, and approved practices and standards of the local Telephone Company.

#### 2. ELECTRIC WIRING

2.01 Electric wiring to metal booths and mountings is terminated on a standard 3-wire grounded receptacle mounted within the booth and designed to accept a standard plug with U-shaped grounding pin. All lamp and blower cords plug into this receptacle.

2.02 The green or grounding terminal of the power receptacle is connected internally to the mounting lugs. When the receptacle is installed in the booth, the grounding circuit is completed between metal booth and grounding terminal of receptacle.

2.03 No. 14 AWG conductors are used for electrical wiring of metal booths. A 15-ampere fuse or circuit breaker must be located in the power circuit to the booth except:

- (a) A cord and plug-connected booth may be connected to a 20-ampere branch circuit protected with a fuse or circuit breaker.
- (b) The booth power receptacle may be permanently wired to a 20-ampere branch circuit protected with a fuse or circuit breaker, using No. 12 AWG conductors, provided the booth is not the

sole device on the branch circuit and no external devices are permanently wired to the booth power receptacle with less than No. 12 AWG wire.



*Rigid grounding requirements are necessary to ensure deenergizing of electrical circuit if a defect or fault occurs. This is accomplished by connecting all metal parts of the booth/mounting electrically to the power system ground.*

2.04 Booths may be directly wired by conduit, armored cable, or connected to a receptacle with one of the following three power cable assemblies, which supersede all cable assemblies previously used:

- KS-19425, List 22 cable assembly (Fig. 1) —Used to bring power into the top of an indoor booth.
- KS-19580, List 30 power cord assembly (Fig. 2)—Used to bring power into the top of an outdoor booth.
- KS-19580, List 31 power cord group (Fig. 3)—Used to bring power into the bottom of an indoor or outdoor booth.

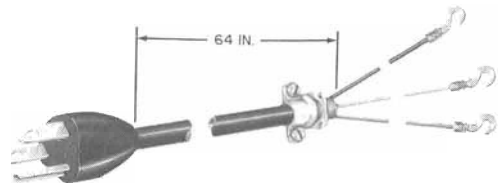


Fig. 1—KS-19425, List 22 Cable Assembly

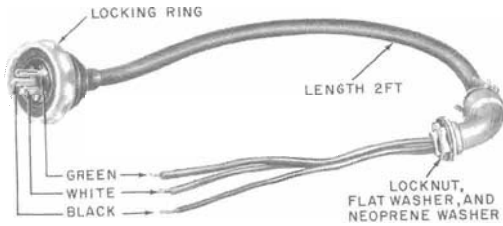


Fig. 2—KS-19580, List 30 Power Cord Assembly

2.05 A weatherproof power receptacle supplied by local electrician, should be used on all outdoor installations using the KS-19580, List 30 or List 31 power cords.

2.06 Fig. 4 and 5 are typical outdoor power connections.

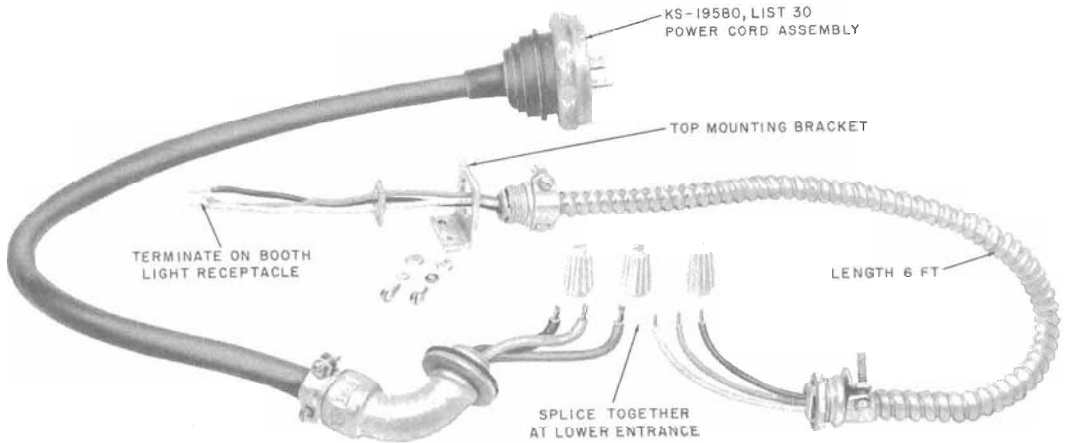


Fig. 3—KS-19580, List 31 Power Cord Group

### 3. POWER GROUNDING

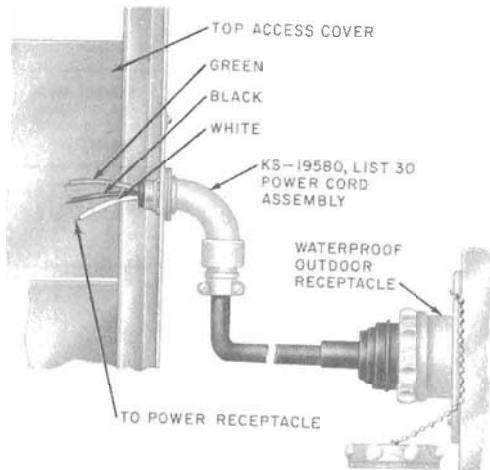
3.01 The metal booth power-grounding requirements are as follows:

(a) If power is supplied to the booth by means of a metallic conduit, electric metallic tubing, or armored cable, the metal enclosure of the wiring usually provides a protective grounding path for the return of accidental fault currents to the power equipment. Wherever possible, this path should be paralleled by a third No. 14-gauge conductor within the enclosure to ensure continuity. This third wire may be bare copper or have a green colored insulation.

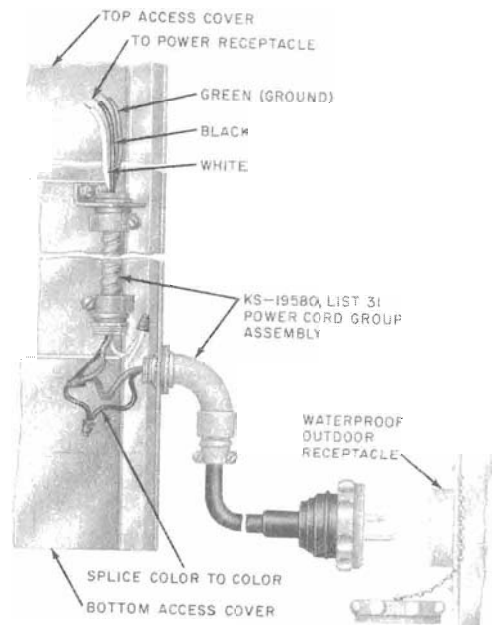
(b) If the third conductor has not been provided, and if the booth is located indoors, or outdoors against the building serving the power, the circuit must be rewired by an electrician to provide the grounding conductor.

(c) If the third conductor has not been provided, and if the booth is located outdoors as a separate structure apart from the building serving the power, ground the booth in the following manner.

(1) Have a local electrician interconnect the power neutral and protective ground terminal at the electrical receptacle.



**Fig. 4—Power Entrance at Top of Booth**



**Fig. 5—Ground-Level Power Entrance**

- (2) Provide a power grounding electrode at the booth.

**Note 1:** A metallic conduit connected to the booth may serve as this electrode if a length of at least 10 feet of it is buried in permanently moist soil.

**Note 2:** If the booth is installed against a building with an accessible cold-water pipe, this water pipe may be connected to the booth with No. 6 AWG wire.

**Note 3:** If neither of the conditions in Notes 1 and 2 are met, a ground rod must be provided and connected to the booth with No. 6 AWG wire.

#### 4. BOOTH GROUNDING

- 4.01** See Table A for hardware used to terminate station ground wire.
- 4.02** Always use No. 6 AWG wire when connecting a booth to an electrode.

**TABLE A**  
**GROUND CLAMPS AND WIRE CONNECTORS**

TYPE	BRACKET, CLAMP OR CONNECTOR	CONDUCTOR SIZE	SERVICE PIPE INTERIOR OR ABOVE GROUND SIZE (IN)	SERVICE PIPE OR GROUND ROD (BURIED) SIZE (IN)
Ground Clamps	72A Bracket with B Station Ground Clamp Size 6-3/4		3/8 through 1-3/4	
	72A Bracket with B Station Ground Clamp Size 12-1/2		1-7/8 through 3	
	90A Bracket with B Station Ground Clamp Size 6-3/4		3/8 through 1-3/4	
	90A Bracket with B Station Ground Clamp Size 12-1/2		1-7/8 through 3	
	B Station Ground Clamp Size 6-3/4	No. 14, 12, or 10	3/8 through 1-3/4	3/8 through 1-3/4
	B Station Ground Clamp Size 12-1/2	No. 14, 12, or 10	1-7/8 through 3	1-7/8 through 3
	B Ground Clamp	No. 8, 6, or 4	1/2 through 1	1/2 through 1
	L Ground Clamp	Small Opening No. 6; Large Opening No. 4 through 1/0	3/8 through 3	
Wire Connectors	E Connector Size 1	No. 14 through 4		
	E Connector Size 2	No. 4 through 1/10 and 8 through 4 Armored Bare Wire		
	AT-7796X Connector Size 6	No. 14 through 6		
	AT-7796X Connector Size 4	No. 8 through 4		
	AT-7796X Connector Size 2	No. 6 through 2		

**4.03** Electrode ground connections may be made as follows:

(a) **KS-19580 Outdoor Booth:** This booth is equipped with a ground lug near the bottom of the booth, behind the corner panel in the right rear corner (Fig. 6).

(b) **KS-19425 Indoor-Outdoor Booth:** This booth is equipped with a ground lug near the bottom of the booth in the right rear corner column. It is the same type as the one in the KS-19580 booth.

(c) **KS-14611 Outdoor Booth:** This booth is equipped with a 5/16—18 by 1-1/4 FHM screw with two 3/8-inch steel washers and one 5/16—18 hex nut (Fig. 7), located in the right rear corner on the mounting bracket. Wrap the ground wire around the screw, between the two washers as shown.

**Note:** Future reconditioned KS-14611 booths will have a ground lug similar to the KS-19580 booth.

(d) **KS-16797 Universal Booth:** This booth will require the use of the mounting bolt in the right rear corner for connecting the ground wire (Fig. 8) unless a KS-16797, List 21 junction box is used. When the junction box is used, the ground terminal in the junction box may be used for connecting ground wire.

**Note:** Future reconditioned KS-16797 booths will have a ground lug similar to the KS-19425 booth.

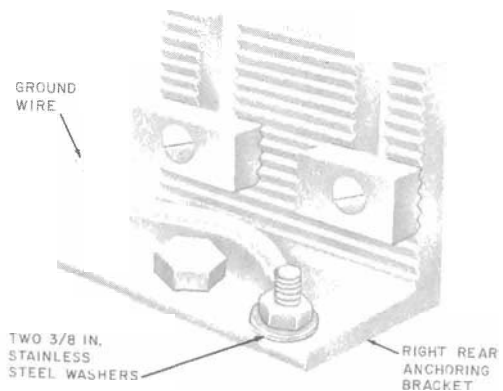
(e) **KS-19426 Walk-Up, Drive-Up Mounting:** For post mountings, use ground terminal in junction box behind post cover. For wall mountings, use grounding screw in electrical receptacle.

(f) **KS-16705 Walk-Up, Drive-Up Mounting:** Use threaded hole in post for ground screw or use mounting bolt which secures subscriber set housing to backboard.

(g) **KS-19206 Curved Door Booth and KS-19442 Glass Deluxe Booth:** These booths are for indoor installation only. Each is equipped with a 3-conductor cord for plugging into a grounded, 3-terminal electrical receptacle.



**Fig. 6—Grounding Screw in KS-19580 Booth**



**Fig. 7—Grounding Screw in KS-14611 Booth**

## 5. MULTIPLE BOOTH INSTALLATIONS

**5.01** When booths are installed in multiples, they should be bonded together for grounding purposes.

**5.02** Electrical power should be connected to the end booth and extended to remaining booths

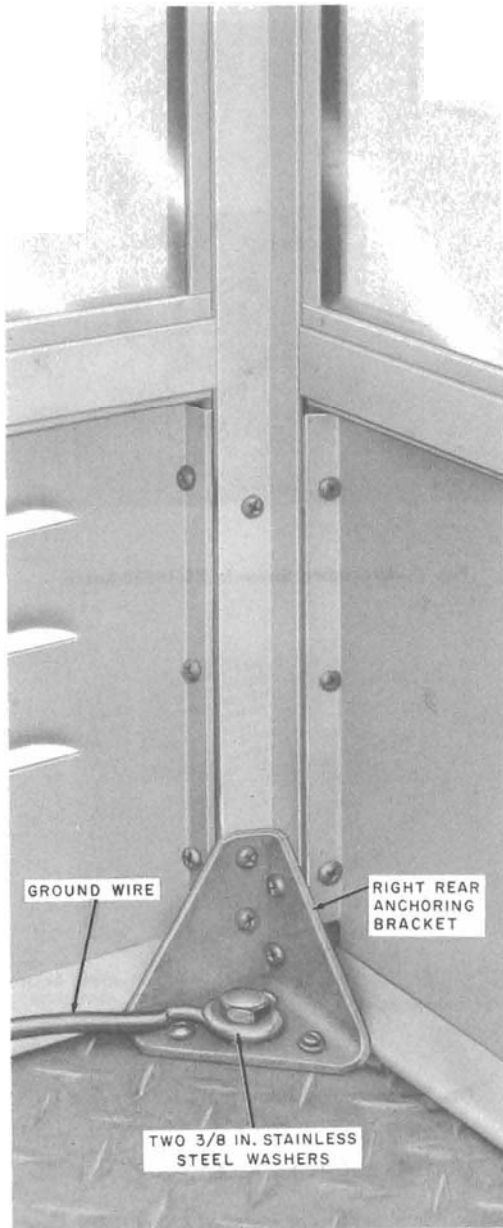


Fig. 8—Grounding Screw in KS-16797 Booth

by running 3-conductor cables through knockouts provided in the roof and side assemblies.

## 6. STATION PROTECTOR GROUNDING

**6.01** The station protector for the telephone instrument is provided with its ground terminal already connected to the booth. If this ground lead becomes broken or damaged, bond the protector ground terminal to the booth with wire no less than No. 14.

**6.02** When a protector is located within the building where the booth is installed, the protector in the booth can be used as a connecting block and the connection between the ground terminal and the booth *should not* be removed.

**6.03** When a booth is located outdoors, a ground rod for protector grounding must be installed, unless:

(1) At least 10 feet of metallic conduit buried in permanently moist soil is connected to the booth,

or

(2) The power ground rod of Multigrounded Neutral system is located adjacent to the booth—Bond the booth to the power ground rod with No. 6 wire,

or

(3) A cold water pipe is available or a power ground rod has been installed as described in 3.01(b).

*Note:* The grounding conductor (third wire of an electrical wiring system) should never be used as the protector ground.

**6.04** Refer to the sections pertaining to station protection for detailed information.

## 7. INDIVIDUAL POWER SOURCE FOR BOOTH OR MOUNTING

**7.01** Refer to Fig. 9 and 10 for this type service. Similar installations may have the fuse and cutout switch mounted on an adjoining post or wall, on the booth/mounting, or on a service mast.



**7.02** The connection is made directly to the power company secondary. The branch circuit conductors from the booth are connected in the service equipment cabinet.

**7.03** In these installations the power-grounding electrode will also be used as a booth-grounding electrode.

**8.04** Choice of ground for power service is given in the National Electrical Code. Refer to latest revision.

## 8. EXTENDING BRANCH CIRCUIT TO BOOTH OR MOUNTING

**8.01** This part describes those installations where a branch circuit from a building is extended to the booth by power cords, metal conduit, or open conductors.

**8.02** Where the branch circuit wiring in the building is metallically enclosed (conduit, EMT, ac cable, or raceway) the continuity of the metallic enclosure is depended upon to provide a grounding path back to the service equipment. This path is extended to the booth through the

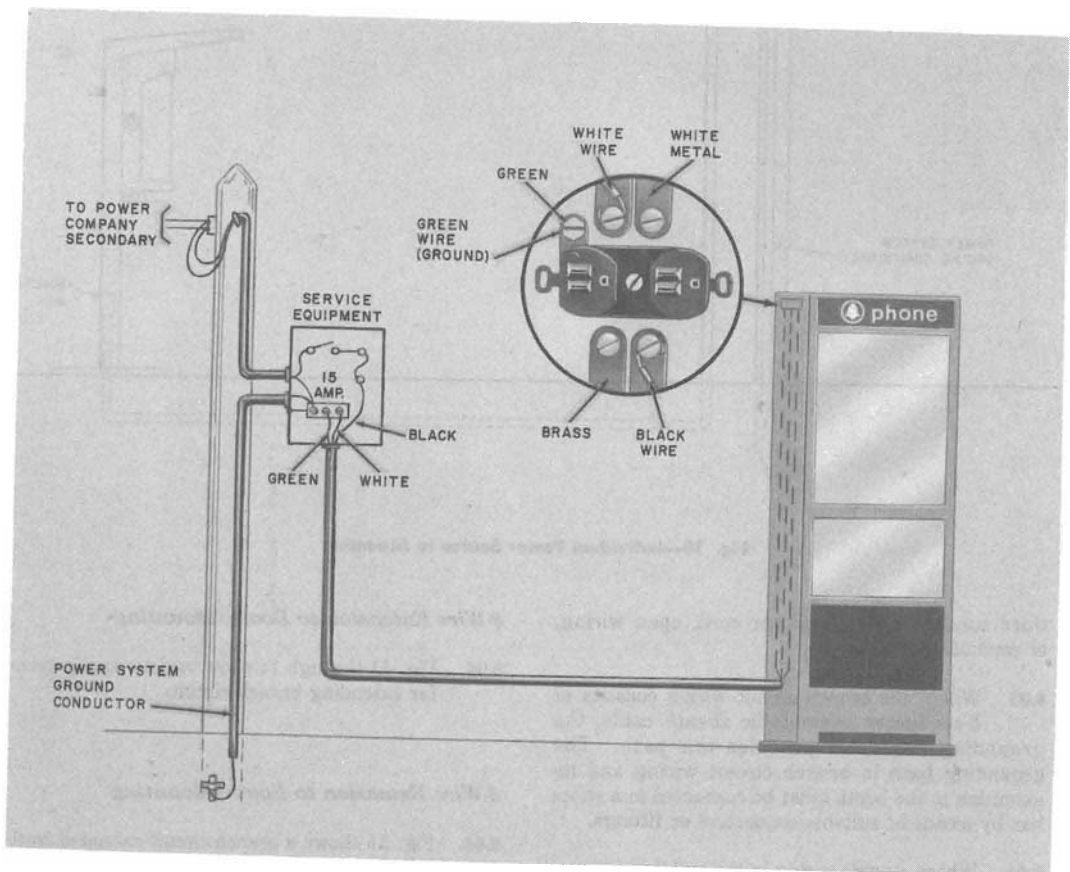


Fig. 9—Individual Power Source to Booth

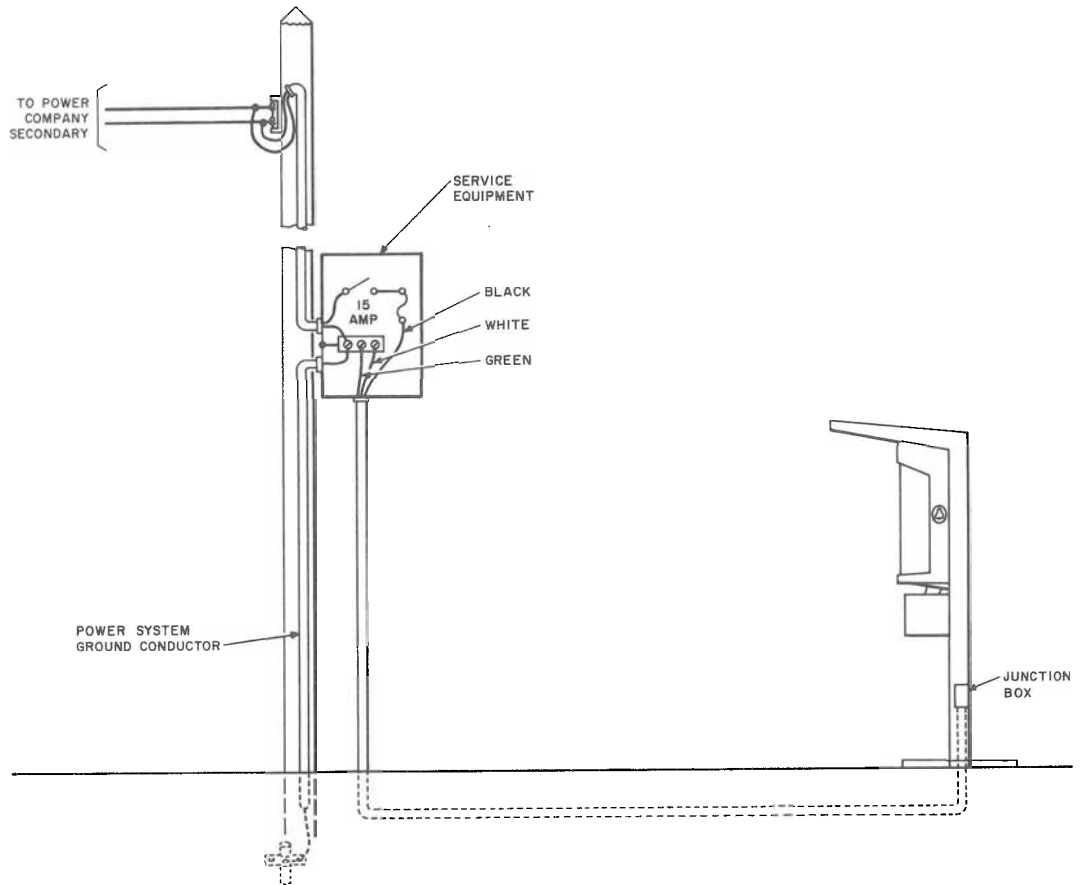


Fig. 10—Individual Power Source to Mounting

third conductor in the power cord, open wiring, or conduit. See 3.01.

**8.03** Where the branch circuit wiring consists of 3-conductor nonmetallic sheath cable, the grounding conductor provides this path. The grounding path in branch circuit wiring and its extension to the booth must be connected in a splice box by means of suitable connectors or fittings.

**8.04** Where electric wiring in the building consists of nonmetallic sheath cable **without** a separate grounding conductor, the branch circuit **must** be rewired to provide a grounding conductor.

### **3-Wire Extension to Booth/Mounting**

**8.05** Fig. 11 through 14 show various applications for extending branch circuit.

### **2-Wire Extension to Booth/Mounting**

**8.06** Fig. 15 shows a branch circuit extended from a building without a third wire for power grounding at the booth. Where continuous metallic conduit is used, the conduit serves as ground conductor.

8.07 The continuity to ground is assured by connecting the neutral to the booth through a strap placed on receptacle. When this is done, a power-grounding electrode must be provided at the booth.

## 9. BRANCH CIRCUIT WITHIN A BUILDING

9.01 Fig. 16 and 17 show various applications of extending branch circuit within a building.

9.02 When the power cable and cord assemblies are not used, and the conduit or cable is fastened directly to booth, grounding is provided as outlined in Part 8.

## 10. REFERENCES

10.01 For further information refer to Division 460 section entitled: Customer Products Protection and Grounds.

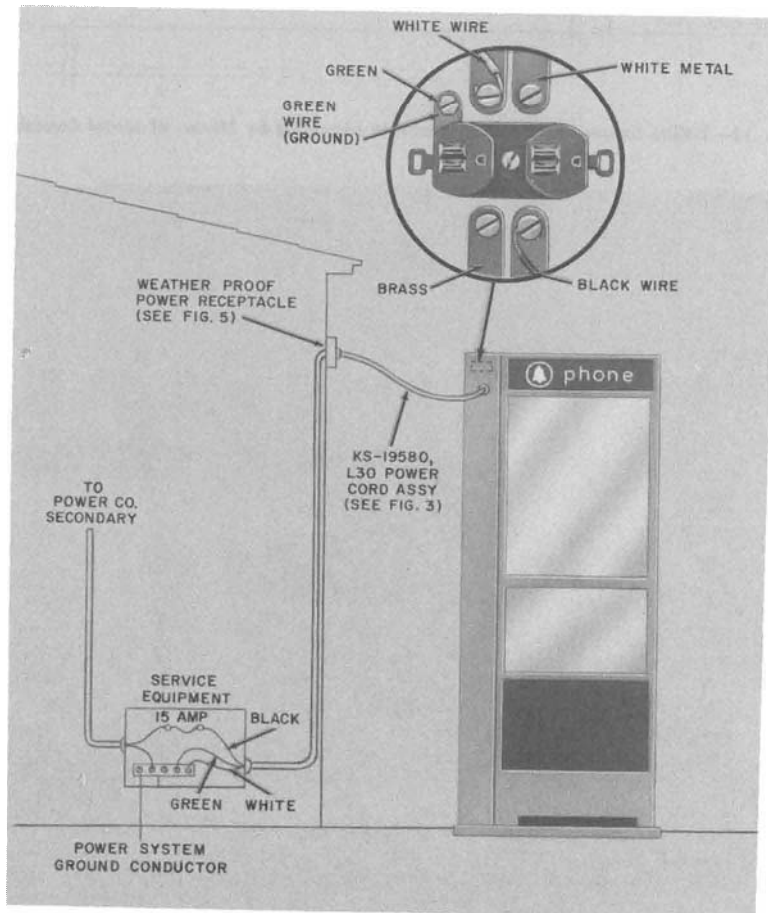


Fig. 11—3-Wire Extension of Branch Circuit to Booth By Means of Power Cord

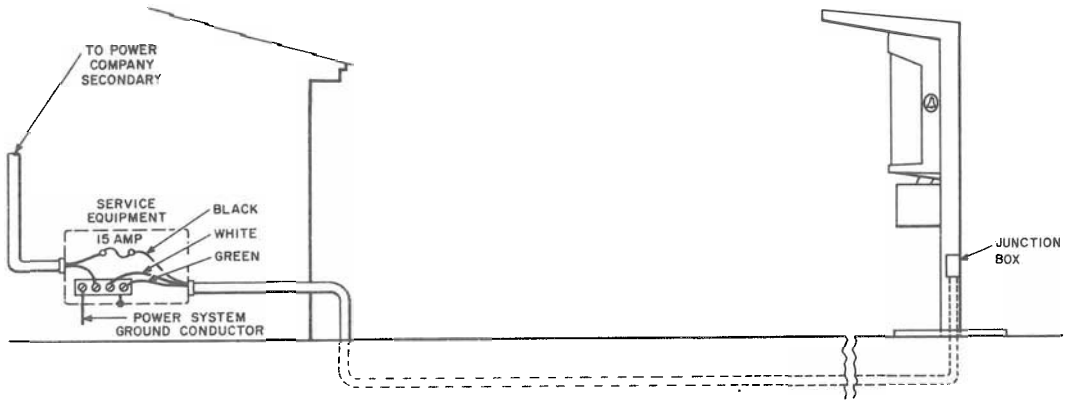


Fig. 12—3-Wire Extension of Branch Circuit to Mounting By Means of Metal Conduit

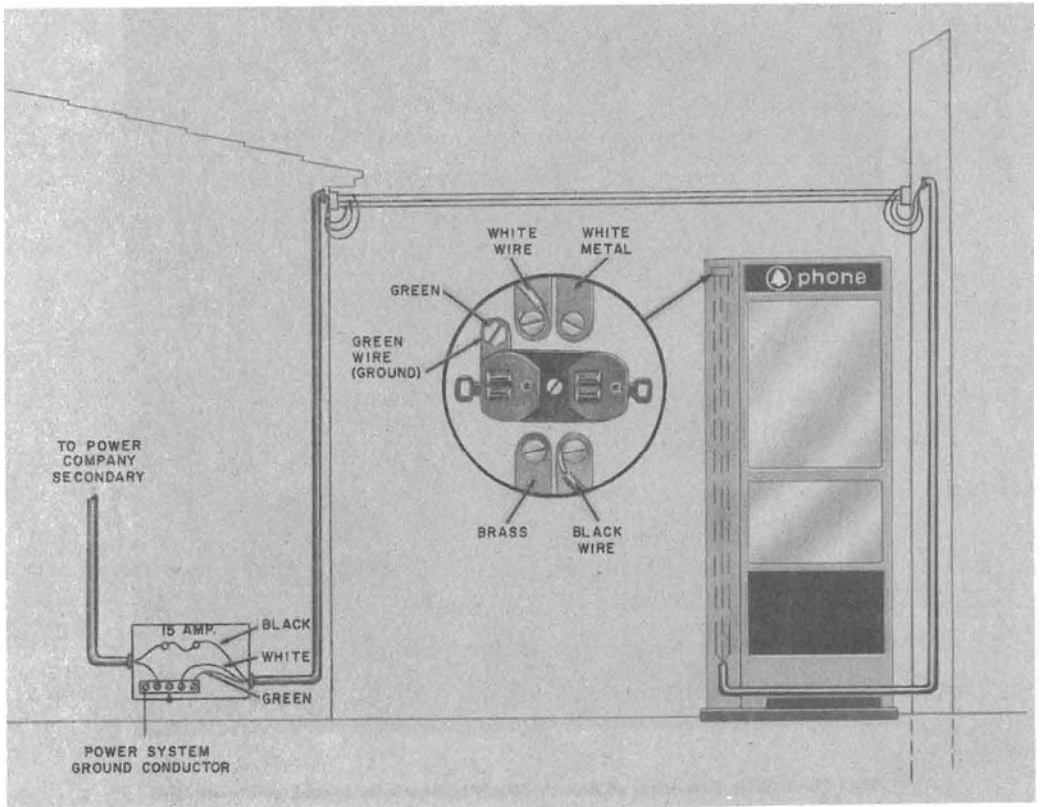
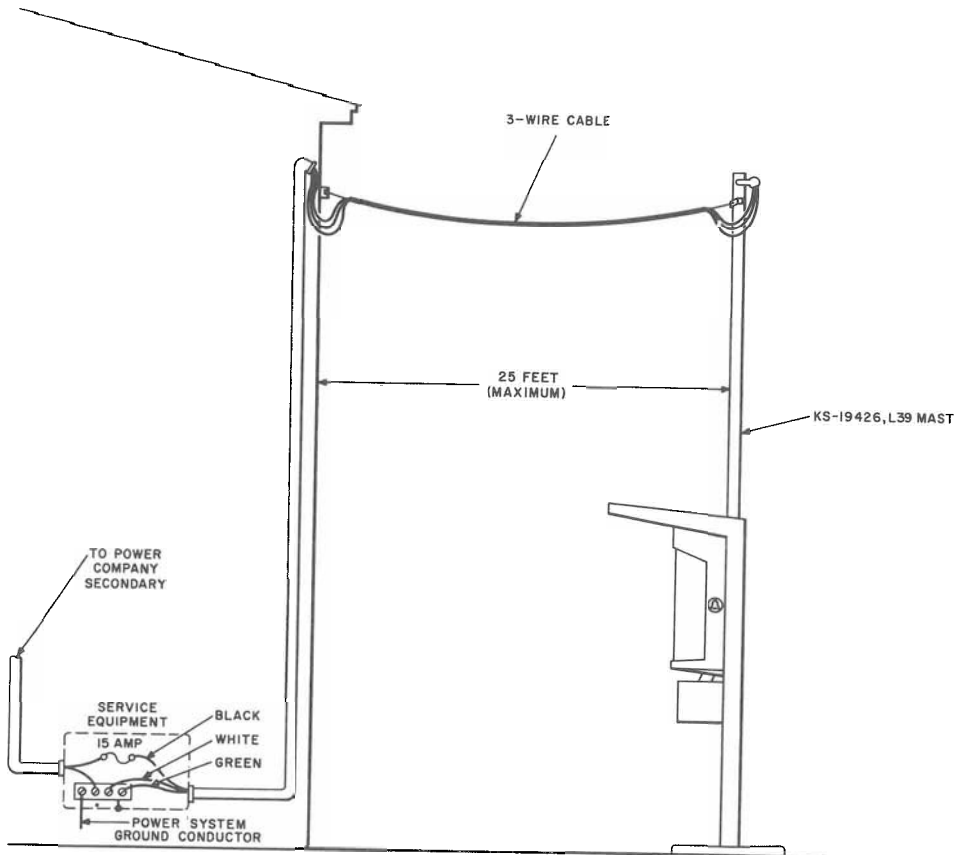


Fig. 13—3-Wire Extension of Branch Circuit to Booth By Means of Open Conductors



**CAUTION:**  
OBSERVE MINIMUM CLEARANCES, SEE SECTION 461-200-201

**Fig. 14—3-Wire Extension of Branch Circuit to Mounting By Means of 3-Wire Cable**

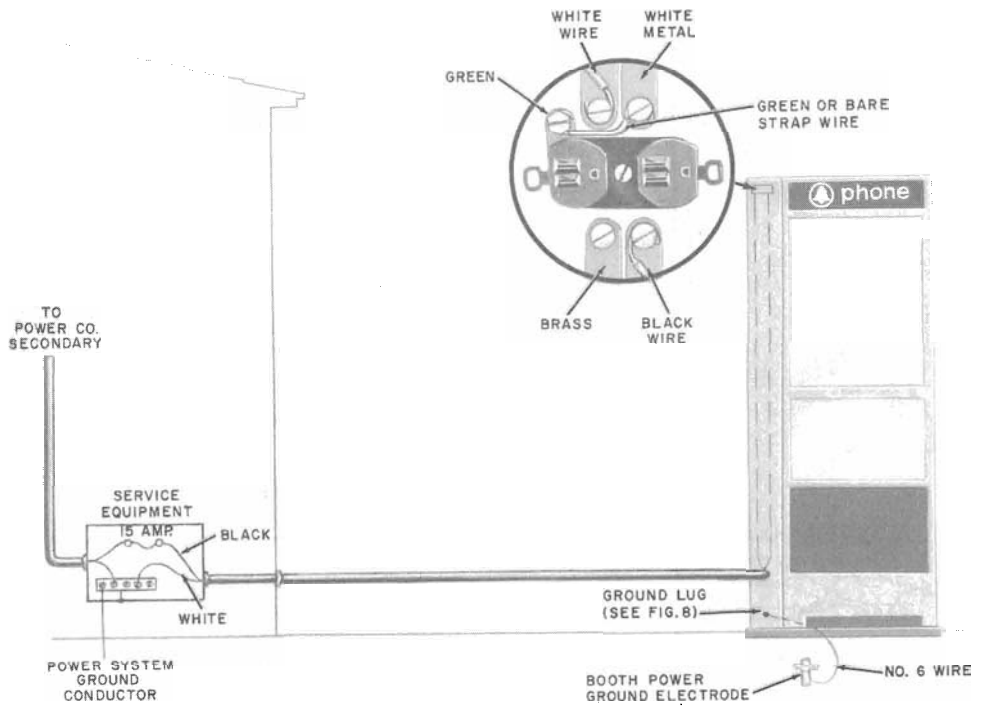


Fig. 15—2-Wire Extension of Branch Circuit to Booth By Means of Metal Circuit

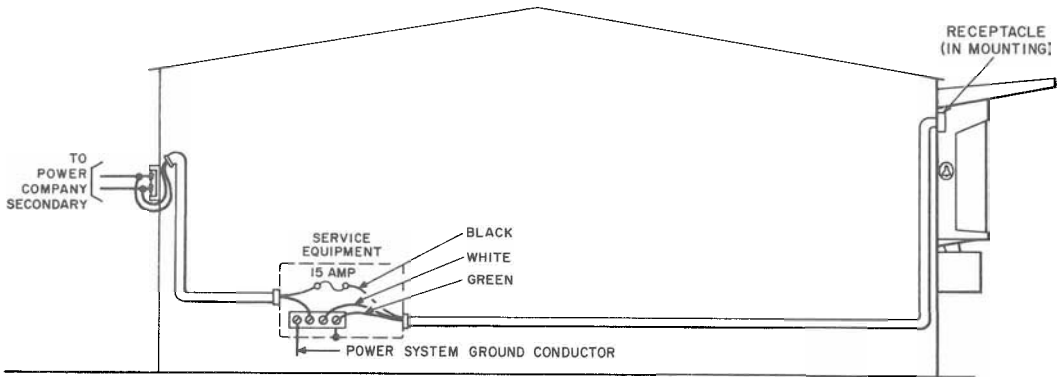


Fig. 16—Booth Located Within Same Building as Branch Circuit

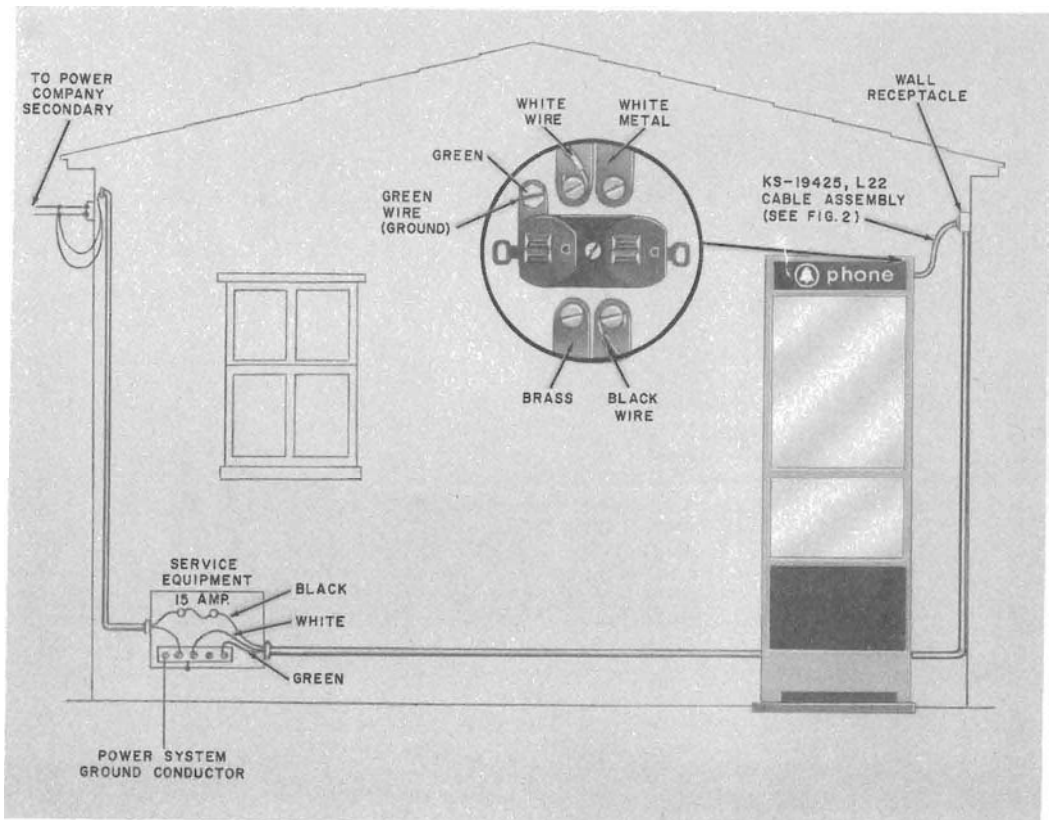


Fig. 17—Mounting Located on Same Building as Branch Circuit





## BOOTH AND SHELF CLEANING

### 1. GENERAL

**1.01** This section describes the procedures for cleaning booths and shelves of aluminum, stainless steel, enameled metal, plastic glass, fiberglass, and wood.

**1.02** The booth should be cleaned from top down. If the operator cannot reach the top of booth, a stepladder should be used. Remove all foreign stickers by soaking with a sponge soaked with warm water. The use of a razor blade for scraping purposes is permitted on glass surfaces only. Sharp instruments will score metal surfaces and their use should be avoided. Clean the telephone housing and handset, using a cloth DAMPENED, NOT SATURATED, with an approved mild detergent solution.

**1.04** Care should be used to avoid any spray or excessive solution from getting into coin slots and perforations in the receiver and transmitter caps.

### 2. TOOLS AND MATERIAL

**2.01** The following tools and materials are suggested for booth and shelf cleaning:

- Hand Sprayer\*
- Nylon Brush\*
- Utility Wiping Cloths
- Short Stepladder
- Sponge, Synthetic
- Whisk Broom (or equivalent—purchased locally)
- Rubber Gloves
- Safety Glasses
- Putty Knife

● C7-, or KS-19432, List 1 Multipurpose Cleaners (or equivalent)

● KS-8446 Solvent

● KS-7860 Petroleum Spirits

● Automobile Paste Wax

● Bell System Metal Polish (or equivalent)

● Emery Cloth (fine grit)

\* May be purchased locally or through GNR Corp. Palmer, Mass.

### 3. PREPARATION OF TELEPHONE BOOTH PRIOR TO CLEANING

**3.01** Sweep out and dispose of all rubbish found in the booth and in the immediate vicinity.

**3.02** Use rubber gloves in all cleaning operations to avoid any possible skin complications due to cuts or allergies.



*Use safety glasses when spraying cleaning solutions overhead or when removing dome assembly.*

### 4. CLEANING BOOTH AND SHELF MATERIAL

#### Wood and Headboard

**4.01** Clean the external surfaces which are *not* badly scratched or marred with a 10 to 1 solution of C7 multipurpose cleaner or an approved mild detergent and warm water. After drying, file or sand sharp edges or splinters on exposed surfaces and polish with an approved polish.

**4.02** When condition of external surface is such that cleaning would not be sufficient, the surface should be replaced or refinished.

**Plastic, Fiberglass, Porcelain and Enamel**

**4.03** Clean exposed surfaces with a 10 to 1 solution of C7 multipurpose cleaner or an approved mild detergent. Rinse with water and dry with clean cloth. Heavy deposits of greasy or wax base substances may be removed with KS-7860 petroleum spirits.

**Warning:** *KS-7860 petroleum spirits is highly flammable. Use safety precautions while it is being used.*

**Note:** Do not use abrasive cleaners or materials on transparent plastic as dulling and scratching may result.

**4.04** Polish with good quality automobile paste wax and soft cloth.

**Unpainted Aluminum And Stainless Steel**

**4.05** Remove all burrs and scratches from aluminum and stainless steel surfaces using fine grit emery cloth.

**4.06** KS-8446 solvent may be used to remove paint spots. KS-7860 petroleum spirits may be used to remove wax base substances.

**4.07** Remove stubborn stains and deposits from unpainted aluminum and stainless steel surfaces by applying Bell System liquid metal polish (or equivalent) with a wiping cloth.

**4.08** Cover surfaces from which anodized finish has been removed with a coat of hard paste wax.

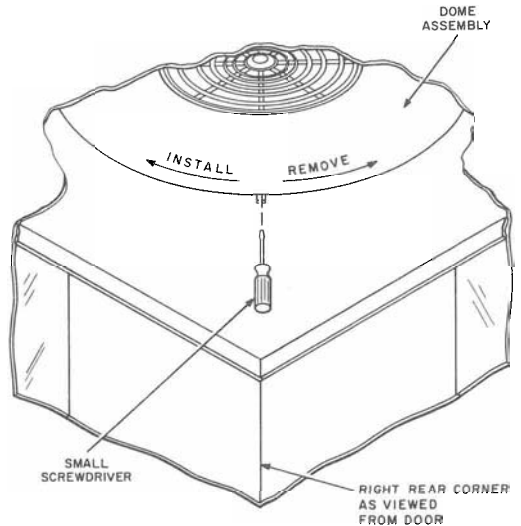
**5. CLEANING OPTIONAL EQUIPMENT**

**THINK** Turn power off before working on lighting equipment or electrical wiring.

**5.01** Clean exterior of dome lamps and shields with a mild solution of C7 multipurpose cleaner or equivalent.

**5.02** See Fig. 1 for removal of dome assembly. Clean fluorescent lamp and interior of light

shield with mild soap and warm water. Dry thoroughly.



- NOTES:**
1. FOR REMOVAL, INSERT SMALL SCREWDRIVER THROUGH SLOT IN CEILING, DEPRESS DETENT SPRING, AND TURN DOME ASSEMBLY COUNTERCLOCKWISE.
  2. FOR INSTALLATION, PLACE DOME ASSEMBLY IN CEILING AND TURN IT CLOCKWISE UNTIL DETENT SPRING ENGAGES AND LOCKS DOME.

**Fig. 1—Method For Removing Dome Assembly**



**Do not use petroleum spirits or paint solvents.**

**5.03** Ensure that the insect screen, if provided, in the front sign enclosure, is free of foreign material.

**6. INSPECTION OF BOOTH**

**6.01** Report any and all obvious damage, such as missing or badly worn directories, broken glass, inoperative lights, doors, etc. to supervisor. Remove all stickers, gum, markers, and posters not placed by the Telephone Company. If decals

placed by the Telephone Company are damaged, remove decals. Replace all burned out lamps and starters.

**6.02** Place a cleaning date seal, furnished by the Telephone Company, in the upper right hand

interior of the booth (not on glass) and write in the cleaning date. If the seal is already placed, remove previous date and write in latest cleaning date. Replace the seal as required.



## COIN TELEPHONE SHELF

### KS-20194

### IDENTIFICATION, INSTALLATION, AND MAINTENANCE

#### 1. GENERAL

1.01 This section is reissued to

- Revise references
- Revise Tables A, B, and C

1.02 The KS-20194 coin telephone shelf (Fig. 1) is a wedge-shaped wall mount intended for indoor use only.

1.03 It may be installed singly or in various multiple arrangements (Fig. 2).

1.04 The wedge shelf is designed for mounting a 235/1235-type coin collector or a 2A/2C type coin telephone set in the left or right corner (Fig. 1) or a 1A-type coin telephone set in the left corner (Fig. 3).

1.05 The wedge shelf can be surface mounted or recessed in a wall.

#### 2. IDENTIFICATION

2.01 The overall dimensions of the shelf are:

- Height—29-1/2 inches
- Width—28 inches when surface mounted or 29-1/2 inches when recessed
- Depth—15 inches at wide end, 7-1/2 inches at narrow end.

2.02 The basic shelf assembly includes:

- Wooden backboard (surface mountings only)
- Metal housing
- Coin telephone mounting plate
- 178A Backboard (List 5 shelf only)
- Plastic diffuser with Bell System emblem and word phone which surrounds a fluorescent lamp

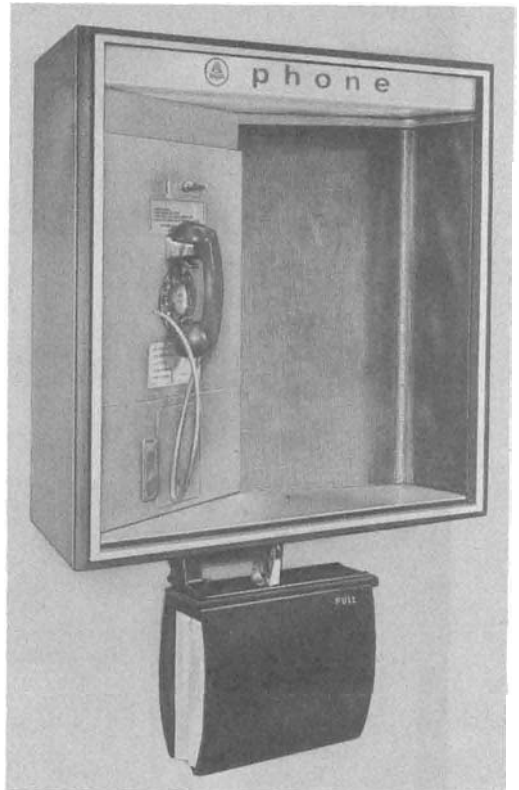


Fig. 1—KS-20194, List 1 Coin Telephone Shelf with KS-20030 Directory Hanger

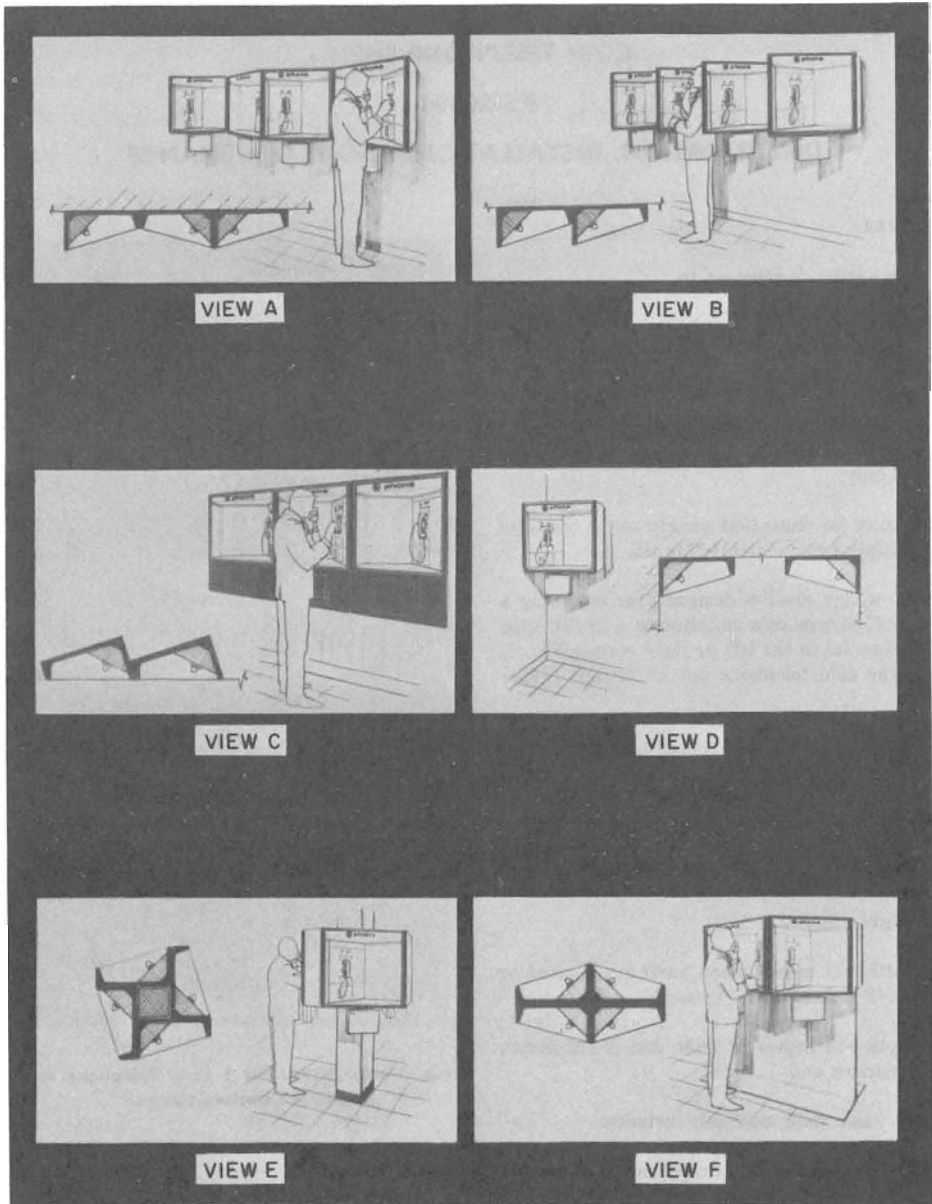


Fig. 2—Various Multiple Arrangements for KS-20194 Shelf



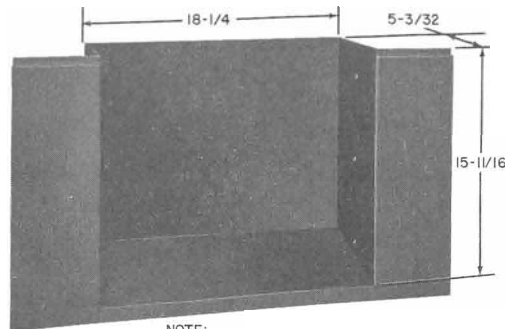
**Fig. 3—KS-20194, List 5 Coin Telephone Shelf with 1A1 Coin Telephone Set and KS-20030 Directory Hanger**

- Stainless steel writing shelf
- Perforated stainless steel interior panel(s) backed with acoustic material
- Oyster gray finished outer housing (surface mountings only)
- Oxford gray aluminum trim bezel.

**2.03** Optional equipment includes:

- (a) KS-20030, List 5 directory hanger (Fig. 1)
  - Single binder with clockwise rotation
  - For use with KS-20194, List 1, 3, and 5 shelves.
- (b) KS-20030, List 6 directory hanger
  - Single binder with counterclockwise rotation

- For use with KS-20194, List 2 and 4 shelves.
- (c) KS-20194, List 10 directory dress panel (Fig. 4)
- For use with List 3 and 4 shelves (recessed) when a KS-20030 directory is required.



**NOTE:**  
ALL DIMENSIONS SHOWN ARE IN INCHES.

**Fig. 4—KS-20194, List 10 Directory Dress Panel**

- 2.04** Table A describes the basic list numbers.
- 2.05** Power and telephone service entrance is made through the shelf backboard when surface mounted. When recessed, this service may enter through wireways along the top of the shelf.
- 2.06** The shelf and surrounding area are lighted with a 2-foot long, 20-watt fluorescent lamp (GE Co. No. F20T12 or equivalent).

**ORDERING INFORMATION**

- 2.07** List numbers must be specified as required (Table A) plus accessories as shown in the following examples of typical orders:

**Example I:** Left-hand surface mount for 2A-type coin telephone set

1—Coin telephone shelf—KS-20194, List 1

1—Directory hanger—KS-20030, List 5

**TABLE A**  
**KS-20194 COIN TELEPHONE SHELF**  
**ORDERING GUIDE**

LIST NO.	DESCRIPTION	REMARKS
1	Shelf, surface mounted (Fig. 1)	For left-hand mounting of 235-/1235-type coin collector or 2A-/2C-type coin telephone set
2	Shelf, surface mounted	For right-hand mounting of 235-/1235-type coin collector or 2A-/2C-type coin telephone set
3	Shelf, recess mounted	For left-hand mounting of 235-/1235-type coin collector or 2A-/2C-type coin telephone set
4	Shelf, recess mounted	For right-hand mounting of 235-/1235-type coin collector or 2A-/2C-type coin telephone set
5	Shelf, surface mounted (Fig. 3)	For left-hand mounting of 1A-/1C-type coin telephone set
10	Panel, directory dress (Fig. 4)	For use with List 3 or List 4 shelves in conjunction with directory hanger
11*	Diffuser, white letters on blue background	For use with List 1, 3, and 5 shelves
12*	Diffuser, white letters on blue background	For use with List 2 and 4 shelves
13	Diffuser, blue letters on white background	For use with List 1, 3, and 5 shelves
14	Diffuser, blue letters on white background	For use with List 2 and 4 shelves
15	Diffuser, white with no letters	For use with List 1, 3, and 5 shelves
16	Diffuser, white with no letters	For use with List 2 and 4 shelves

\* List 11 and List 12 diffusers are furnished unless otherwise specified.



**Example II:** Right-hand recessed mount for 2A-type coin telephone set

- 1—Coin telephone shelf—KS-20194, List 4
- 1—Directory dress panel—KS-20194, List 10
- 1—Directory hanger—KS-20030, List 6

**Example III:** Left-hand surface mount for 1A-type coin telephone set

- 1—Coin telephone shelf—KS-20194, List 5
- 1—Directory hanger—KS-20030, List 5
- 1—Diffuser—KS-20194, List 13

### 3. INSTALLATION

**3.01** Shelf location should be:

- Within full view of public
- Readily accessible to customer
- Free of such hazards as broken or uneven flooring.

**3.02** Ensure that wall will provide a secure mounting for the shelf.



***The shelf is packaged completely assembled and must be partially disassembled before it can be installed.***

**3.03** Remove the following items from the housing in the sequence listed below:

- Trim assembly (located between the diffuser and perforated panels). Loosen No 10-32 by 1/2 hex socket head cap screw through hole provided in end of trim.
- Diffuser
- Lamp
- Light barrier (except with List 5)
- Perforated panels (recessed mounting only).

**3.04** Install housing for a List 1, 2, or 5 shelf (surface mounted) as follows:

- (a) Use B-991631 measure strip and locate B-991082 backboard assembly (Fig. 5) on wall in the exact position it will be installed. Backboard shall be 46-53/64 inches from floor.

**Note:** Holes are not provided in the backboard for mounting to the wall. At least nine fasteners are recommended and the wall will determine the location the holes are to be drilled.

- (b) Lay out and mark locations on the backboard for drilling mounting holes. Ensure that backboard is positioned correctly for the list number housing being installed.

- (c) Refer to Table B and drill holes in the backboard and wall to accept the fasteners specified.

- (d) Countersink the drilled holes in backboard for flat head screws.

- (e) Install backboard on wall using appropriate fasteners.

- (f) Hang shelf housing on backboard utilizing the two backboard studs. Studs may be moved to opposite corners if necessary.

- (g) Secure housing to backboard using thirteen 1/4-20 by 11/16 RHM screw. Screws are furnished.

**3.05** Install housing for a List 3 or 4 shelf (recess mounted) as follows:

- (a) Use B-991631 measure strip and locate place on wall where shelf will be installed. Shelf housing shall be 46-13/32 inches from floor

- (b) Refer to Fig. 6 and 7 for dimensions and cut hole in wall to accept housing. Minimum depth shall be 15 inches.

- (c) If a KS-20194, List 10 directory dress panel is required, cut a hole in wall below the shelf cutout to accommodate this panel. Refer to Fig. 7 for dimensions. Minimum depth shall be 5-1/4 inches.

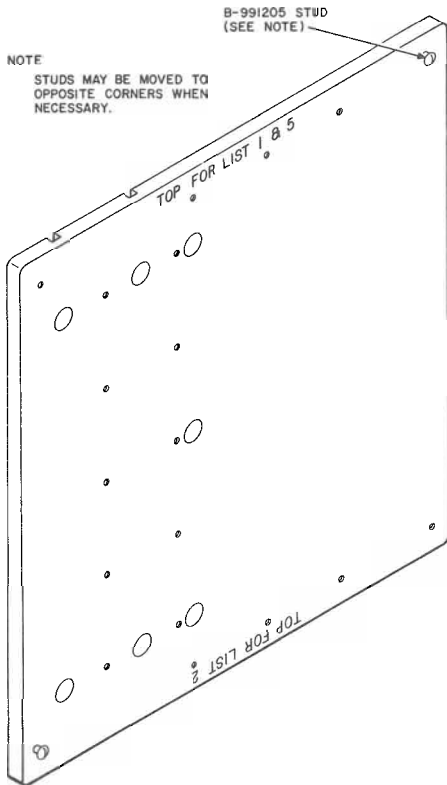


Fig. 5—B-991082 Backboard Assembly

**Note:** Three mounting holes are provided in each side of the panel for securing it to the mounting surface. Provide mounting blocks or a suitable framework for this purpose.

- (d) Install housing in cutout and secure it to wall. Use fasteners specified in Table B.
- (e) If applicable, install List 10 directory dress panel in wall under the housing (Fig. 8) using six No. 10 FH wood screws or equivalent.

**3.06** Install acoustic and perforated panels, telephone wiring, coin telephone, electric wiring, lamp, and diffuser.

**3.07** Install trim assembly between diffuser and coin telephone set.

**Note:** Start trim on side opposite telephone and work across to other side.

**3.08** Secure trim assembly using B-699159 (for Lists 1, 2, 3, and 4 shelves) or L-760625 (for List 5 shelf) retainer and one No. 10-32 by 1/2 hex socket head cap screw.

**DIRECTORY HANGER**

**3.09** Mounting holes have been provided under the shelf for a KS-20030 directory hanger. Refer to Division 508, section entitled: KS-20030 Directory Hangers for installation procedures.

**4. MAINTENANCE**

**4.01** The local telephone company shall establish the appearance standards of all exposed surfaces.

**4.02** The local telephone company shall establish the safety standards for all coin telephone shelves.

**4.03** Replace any part of the shelf which does not meet local telephone company standards.

**4.04** Inspect the approach to the shelf and ensure that it is free of all hazards.

**4.05** Ensure that all visible screws are secure.

**4.06** Clean shelf in accordance with Division 508, section entitled: Booth and Shelf Cleaning.

**4.07** Refer to Table C for replacement parts.

**TABLE B**  
**FASTENERS USED FOR MOUNTING BACKBOARDS**

MOUNTING SURFACE	HOLE SIZE REQUIRED IN BACKBOARD	HOLE SIZE REQUIRED IN WALL	SIZE AND TYPE FASTENER
Soft wood or Hard wood	7/32	1/8 or No. 30	1-3/4-inch No. 14 FH tapping screw
Masonry* (Concrete, Brick)	5/16	5/8	5/16 by 2-inch expansion shield with 5/16 by 2-3/4-inch machine screw
Lath and plaster†	7/32	1/8 or No. 30	2-3/4-inch No. 14 FH wood screw (fastener must be embedded in stud 1 inch)
Plaster, cinder block, hollow tile, metal lath, plaster-board	5/16	1 inch	5/16 by 4-inch FH toggle bolt‡

\* When mounting on plastered masonry, use fasteners 1/2-inch longer than specified.

† When mounting on plasterboard, plaster on lath, etc, fasteners must be embedded in stud at least 1 inch.

‡ When using toggle bolts, cut off excess length.

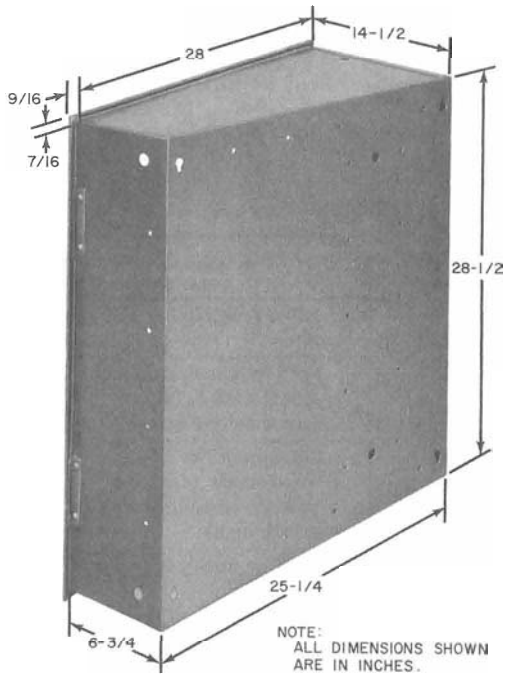


Fig. 6—Rear View of Housing

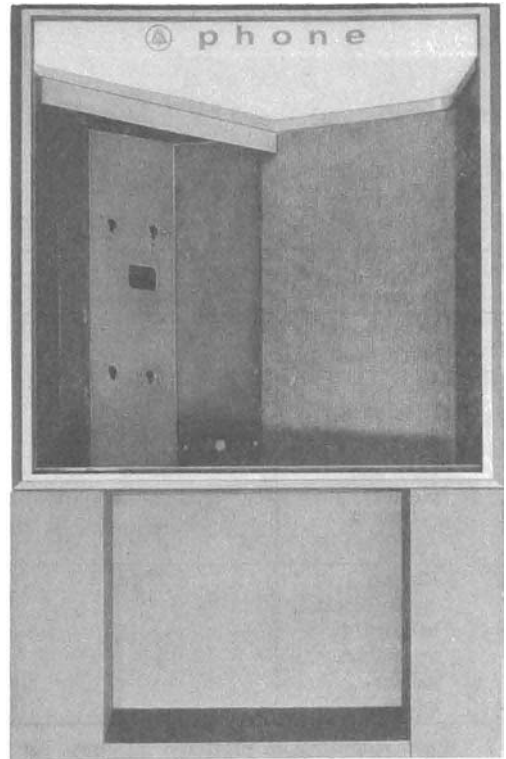


Fig. 8—List 1 Housing with List 10 Panel

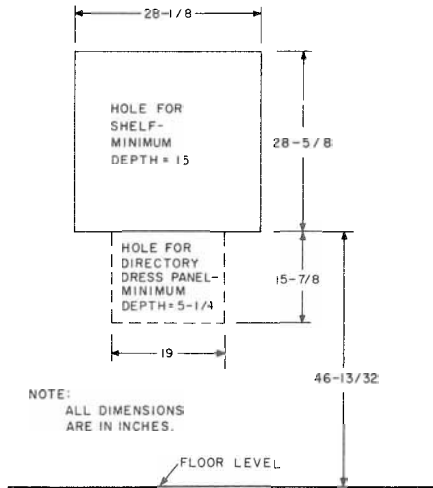


Fig. 7—Layout for Cutting Hole in Wall

**TABLE C**  
**REPLACEMENT PARTS**

NAME	PART NO.		REMARKS
Acoustic Material	B-699168	Small	For List 1, 2, 3, or 4 housing
	B-699169	Large	
	L-760800	Small	For List 5 housing
	L-760801	Large	
Diffuser		See Table A	
Lamp	GE Co. No. F20T12 or equivalent	2-foot long, 20 watt	
Light Barrier	B-699153	For List 1, 2, 3, or 4 housings	
Panel, Inner	B-699160	Small	For List 1, 2, 3, or 4 housing
	B-699161	Large	
	L-760776	For List 5 housing	
Retainer	B-699159	Use with B-699158 trim assembly	
	L-760625	Use with B-760799 trim assembly	
Trim Assembly	B-699158-1	Use with List 1 and List 3 housings	
	B-699158-2	Use with List 2 and List 4 housings	
	L-760799	Use with List 5 housing	



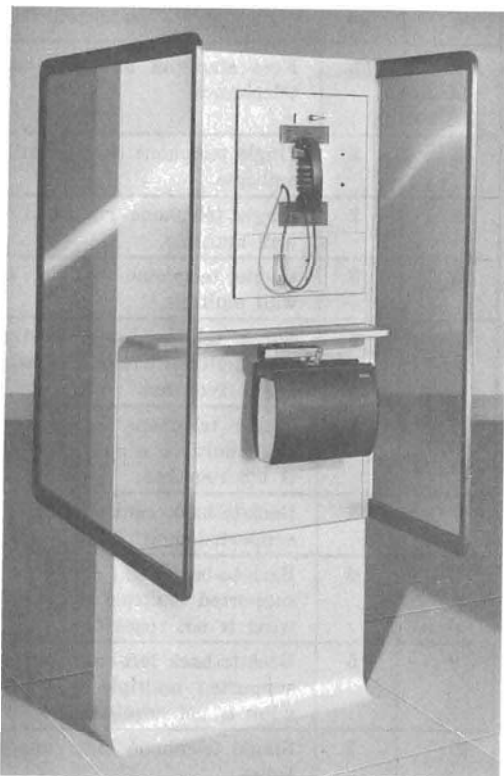
## KS-20630 BOOTH—INDOOR

### 1. GENERAL

- 1.01** This section includes identification, installation, and maintenance information on the KS-20630 telephone booth.
- 1.02** The KS-20630 telephone booth (Fig. 1) is a doorless coin station intended for indoor walk-up service.
- 1.03** This booth may be installed singly or in multiples. It may be supported on a pedestal, wall ledge, or between two columns on a beam.
- 1.04** There are no design provisions made for signing or for illuminated signing as part of the unit.

### 2. IDENTIFICATION

- 2.01** Various list numbers and components have been assigned the KS-20630 telephone booth as described in Table A.
- 2.02** The booth consists of a welded steel center frame covered with a stainless steel faceplate. Bronze colored glass wings, enclosed in bronze-finished aluminum frames, extend outward on each side.
- 2.03** The overall dimensions of each booth are shown in Fig. 2 through 5.
- 2.04** This booth is designed to accept the 2A/2C-type coin telephone set. The set is mounted directly to the steel frame with no additional backboard required.
- 2.05** A 6-inch stainless steel writing shelf extends forward as part of the faceplate.
- 2.06** The writing shelf is designed to accept a KS-20030, List 3 directory hanger which is optional.
- 2.07** A stainless steel removable door panel assembly is located under the writing shelf for telephone wiring accessibility.



**Fig. 1—KS-20630 List 1 Coin Telephone Booth With List 16 Base Assembly Concealed Beneath Dress Finish**

- 2.08** When the booth is pedestal mounted, a KS-20630, List 16 steel base assembly (Fig. 6) must be used and is ordered separately. The customer will provide an exterior to the base assembly.

### TELEPHONE WIRING

- 2.09** When the booth is pedestal mounted, telephone wiring will be installed through this pedestal:

TABLE A  
KS-20630 BASIC LIST NO'S.

LIST NO.	FIG. NO.	DESCRIPTION	REMARKS
1	2	Free standing unit for back-to-back telephones.	For use in open areas. Includes two List 12 wing assemblies. List 16 base assembly must be ordered separately.
2	2	Single telephone center unit of a wall multiple.	Includes one List 13 wing assembly.
3	2	Single telephone right-end unit of a wall multiple.	Includes one List 11 wing assembly.
4	3	Single telephone left-end unit of a wall multiple.	Includes one List 11 and one List 13 wing assembly.
5	3	Single telephone right-end unit of a wall multiple where a right side wing is not required.	Does not include a wing assembly. For mounting to a wall or column.
6	4	Single telephone left-end unit of a wall multiple where a left side wing is not required.	Includes one List 13 wing assembly on right side. Left side is designed to mount to a column.
7	4	Back-to-back center unit of a beam-supported multiple.	Includes one List 14 wing assembly. Will accept two coin telephone sets.
8	4	Back-to-back right end unit of a beam-supported multiple where a right-end wing is not required.	Does not include a wing assembly. Right side mounts to a wall or column. Will accept two coin telephone sets.
9	5	Back-to-back left-end unit of a beam-supported multiple where a left-end wing is not required.	Includes one List 14 wing assembly. Left side mounts to a wall or column. Will accept two coin telephone sets.
10	5	Single telephone unit supported on a ledge.	Includes two List 11 wing assemblies.
11	11	Single right or left end wing assembly.	For a wall-mounted single station; component of Lists 3, 4, and 10.
12	6	Double right or left end wing assembly.	For free standing back-to-back unit; component of List 1.
13	8	Single center wing assembly.	For use between wall multiple units; component of Lists 2, 4, and 6.
14	10	Double center wing assembly.	For use between back-to-back multiple units; component of Lists 7 and 9.
15	11	Bronze colored tempered glass.	Used in all wing assemblies.
16	6	Steel base assembly — 26 inches high, 26 inches long, and 5 inches wide.	Used in conjunction with a List 1 booth. Must be ordered separately. Must be surface finished by customer.



when beam support mounted, through bottom or sides; when wall ledge mounted, through bottom, sides, or rear.

### ORDERING GUIDE

**2.10** Orders for this product shall specify the quantity, KS number, and list number. The following are examples of typical orders:

#### *Example 1*

One single back-to-back pedestal mount:

1—Booth, Telephone, KS-20630, List 1

1—Base Assembly, KS-20630, List 16

#### *Example 2*

Three wall mounts with directory hangers:

1—Booth, Telephone, KS-20630, List 2

1—Booth, Telephone, KS-20630, List 3

1—Booth, Telephone, KS-20630, List 4

3—Hangers, Directory, KS-20030, List 3

#### *Example 3*

Three back-to-back beam support mounts between two columns with no end wings required:

1—Booth, Telephone, KS-20630, List 7

1—Booth, Telephone, KS-20630, List 8

1—Booth, Telephone, KS-20630, List 9

## 3. INSTALLATION

### PEDESTAL MOUNT (LIST 1)

**3.01** Install KS-20630, List 16 base assembly (Fig. 6) using customer furnished hardware.

**3.02** Mount L-762678 frame assembly over base.

**3.03** Plumb the frame assembly and tighten the 12 adjusting set screws.

**3.04** Secure the frame assembly to base assembly using twelve 3/8-16 by 3/4 hex head machine bolts and twelve 3/8-inch lockwashers.

**3.05** Install two KS-20630, List 12 wing assemblies and secure each assembly with four 3/8-16 by 3/4 hex head machine bolts, four 3/8-inch lockwashers, eight 1/4-20 hex nuts, and eight 1/4-inch plain washers.

**3.06** Install coin telephone. Wires shall enter through base assembly.

**3.07** Install the two L-762657-1 door panel assemblies using six No. 8-32 by 3/8 Phillips PHM screws for each.

*Note:* Customer will provide finish for base assembly.

### SINGLE WALL MOUNT (LIST 10)

**3.08** Install L-762677-1 frame assembly (Fig. 7) on wall ledge using customer-provided hardware.

**3.09** Install two KS-20630, List 11 wing assemblies and secure each assembly with four 3/8-16 by 3/4 hex head machine bolts, four 3/8-inch lockwashers, eight 1/4-20 hex nuts, and eight 1/4-inch plain washers.

**3.10** Install coin telephone. Wires may enter through bottom, side, or rear of frame.

**3.11** Install L-762657-1 door panel assembly using six No. 8-32 by 3/8 Phillips PHM screws.

### MULTIPLE WALL MOUNT WITH END WING ASSEMBLIES (LISTS 2, 3, AND 4)

**3.12** Install L-762677-1 frame assembly (Fig. 8) on wall ledge in left-hand position using customer-provided hardware.

**3.13** Install a KS-20630, List 13 wing assembly on right side of frame assembly using four 3/8-16 by 3/4 hex hd machine bolts and four 3/8-inch lockwashers.

**3.14** Install a KS-20630, List 11 wing assembly on left side of frame assembly using four 3/8-16 by 3/4 hex head machine bolts, four 3/8-inch

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lockwashers, eight 1/4-20 hex nuts, and eight 1/4-inch plain washers.

**3.15** Install the next L-762677-1 frame assembly against the right side of the previously installed List 13 wing assembly using customer-provided hardware.

**3.16** Tie the two frames together using eight 3/8-16 by 1-1/2 hex head machine bolts, eight 3/8-inch lockwashers, and eight 3/8-16 hex nuts.

**3.17** Repeat 3.13.

**3.18** Continue the procedures outlined in 3.15, 3.16, and 3.13, respectively until all booths are installed except the last wing assembly which will be a List 11 and is installed per 3.14.

**3.19** Repeat 3.10 and 3.11 for each booth.

### **MULTIPLE WALL MOUNT WITHOUT END WING ASSEMBLIES (LISTS 2, 5, AND 6)**

**3.20** Install L-762677-3 frame assembly (Fig. 9) on wall in left-hand position using customer-provided hardware.

**3.21** Repeat 3.13, 3.15, and 3.16.

**3.22** Continue the procedures outlined in 3.15, 3.16, and 3.13, respectively until all booths are installed except the right end List 5 booth which will have an L-762677-2 frame assembly and will not have a right wing assembly.

**3.23** Repeat 3.10.

**3.24** Install a L-762657-3 door panel assembly on left-end booth, L-762657-2 door panel assembly on right-end booth, and L-762657-1 door panel

assembly on each center booth using six No. 8-32 by 3/8 Phillips PHM screws for each booth.

### **MULTIPLE UNITS SUPPORTED BETWEEN TWO COLUMNS ON BEAM (LISTS 7, 8, AND 9)**

**3.25** Install L-762673-2 frame assembly (Fig. 10) on a support against left-hand column using customer-provided hardware.

**3.26** Install a KS-20630, List 14 wing assembly on right side of frame assembly using four 3/8-16 by 3/4 hex head machine bolts, and four 3/8-inch lockwashers.

**3.27** Install L-762673-1 frame assembly against the right side of the previously installed frame using customer-provided hardware.

**3.28** Repeat 3.16 and 3.26.

**3.29** Continue the procedures outlined in 3.27, 3.16, and 3.26, respectively until all booths are installed except the right end booth which will have an L-762673-2 frame assembly and will not have a right wing assembly.

**3.30** Repeat 3.10 and 3.24.

## **4. MAINTENANCE**

**4.01** Maintenance on this booth is restricted to cleaning and replacing broken or damaged parts, listed in Table B.

**4.02** Refer to Fig. 11 for assembly or disassembly of a wing assembly.

**4.03** Refer to Division 508, section entitled, Booth and Shelf Cleaning, for detailed information on cleaning.

**TABLE B**  
**REPLACEMENT PARTS**

NAME	PART NO., LIST NO., OR DESCRIPTION	REMARKS	
Channel Assembly, Horizontal	L-762662-1	Top and bottom channels on List 11 wing assembly (See Note on Fig. 11)	
	L-762662-2		
	L-762669	Top or bottom channel on Lists 12 and 14 wing assemblies	
Channel Assembly, Vertical	L-762668	Vertical channel in front of each glass panel	
Directory Hanger	KS-20030, List 3	Will accommodate single binder up to 4 inches thick (Section 508-710-102)	
Fastener, Push On	Tinnerman Products, Inc. No. C-183-012	Secures L-762666 end plate to each wing assembly (eight required for each plate)	
Panel, Glass	KS-20630, List 15	Used in all wings	
Panel, Door Assembly	L-762657-1	For mounting and wiring accessibility	Used on Lists 1, 2, 3, 4, 7, and 10.
	L-762657-2		Used on Lists 5 and 8.
	L-762657-3		Used on Lists 6 and 9.
Plate Assembly, End	L-762666	Stainless steel cover plate which fits over wing channels at center support	
Screw, Cone Point Set	1/4-20 by 1/2 Hex Socket	Secures L-762668 wing assembly vertical channel to the two horizontal channels.	
Screw, Cap	5/16-18 by 2-1/2 Hex Socket Hd	Secures horizontal channels of wing assemblies to center vertical channels (four used on each wing assembly)	
Screw, Machine	No. 8-32 by 3/8 Phillips Hd	Secures door panel assembly to center frame assembly	
Strip, Glazing	L-762664-1	Vertical strips, front and rear	
	L-762664-2	Horizontal strips, top and bottom	
Wing Assembly	KS-20630, List 11	Single end unit	
	KS-20630, List 12	Double end unit	
	KS-20630, List 13	Single center unit	
	KS-20630, List 14	Double center unit	

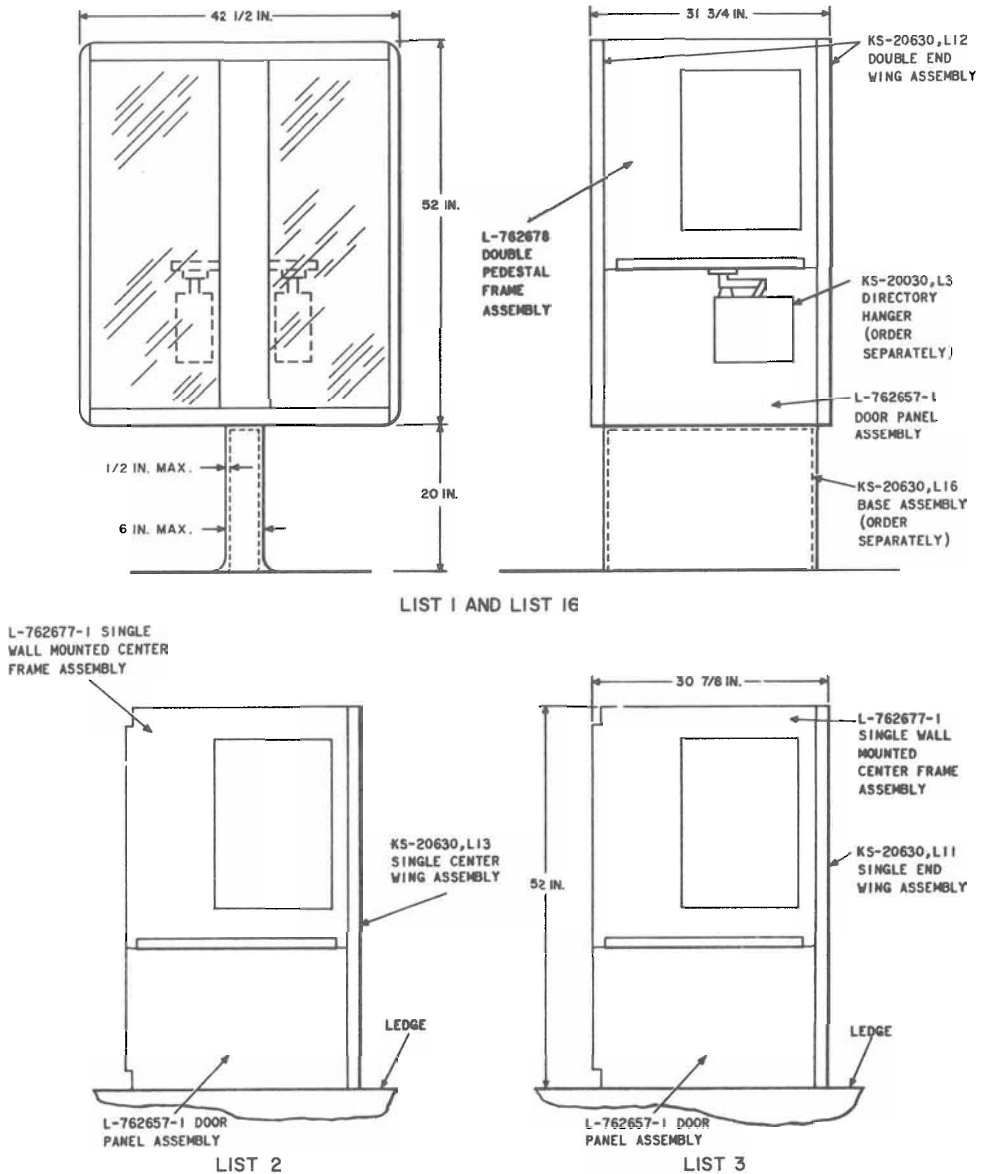
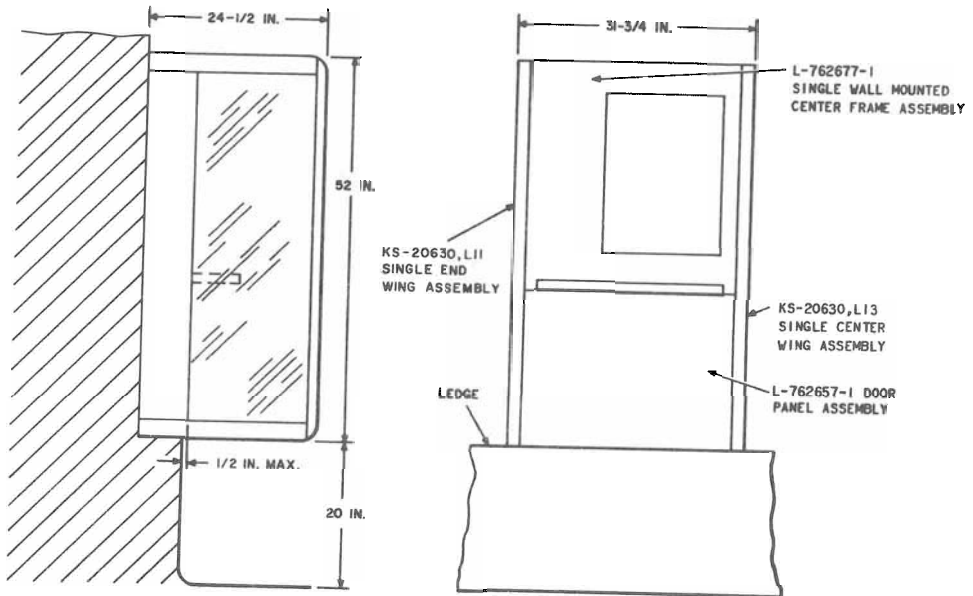
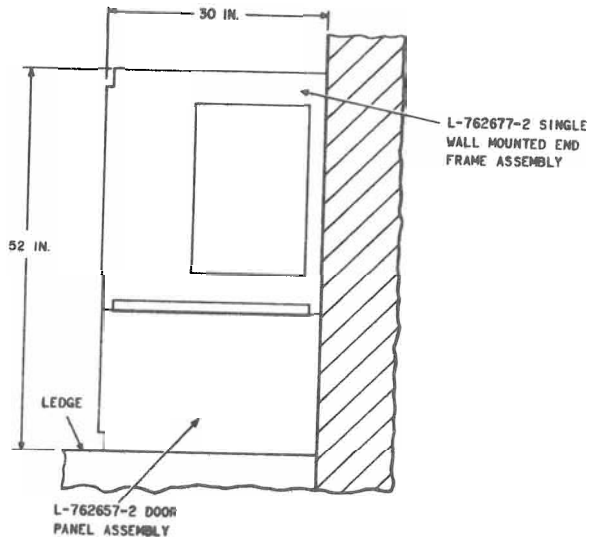


Fig. 2—Layout for KS-20630, List 1, 2, and 3 Units



LIST 4



LIST 5

Fig. 3—Layout for KS-20630, List 4 and 5 Units

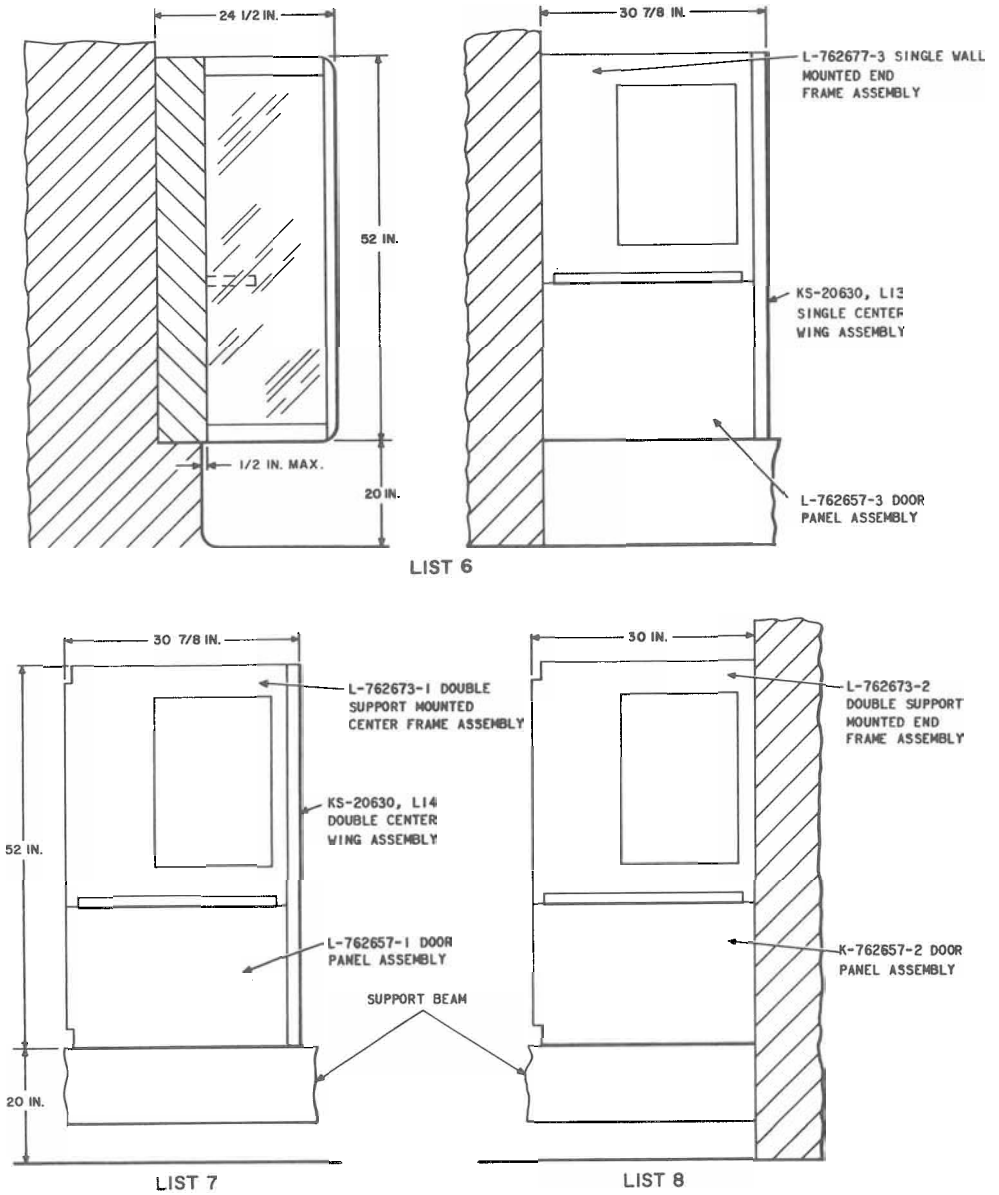
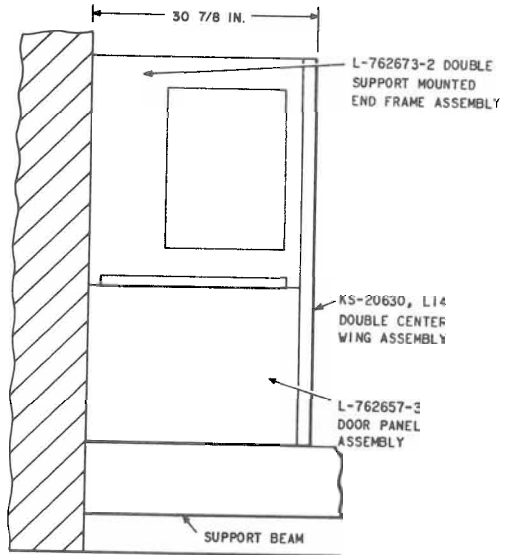
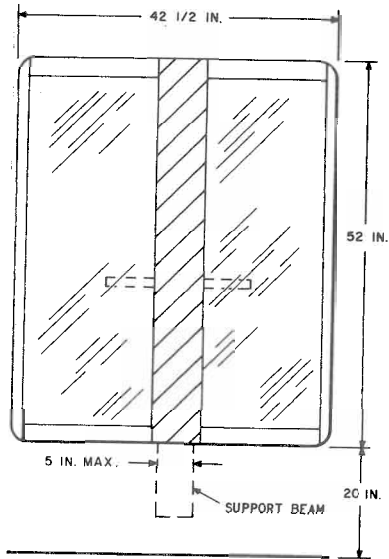
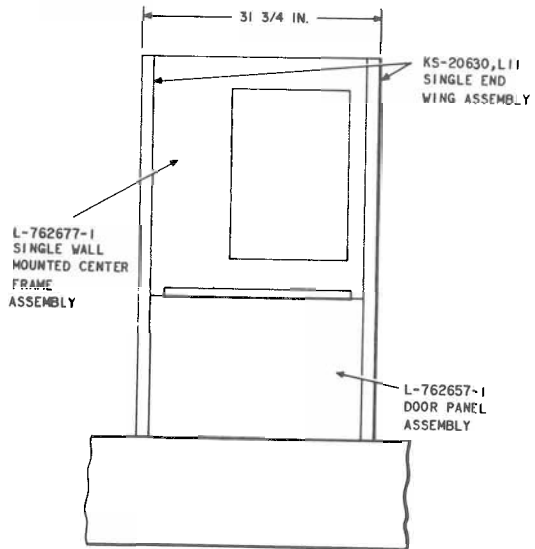
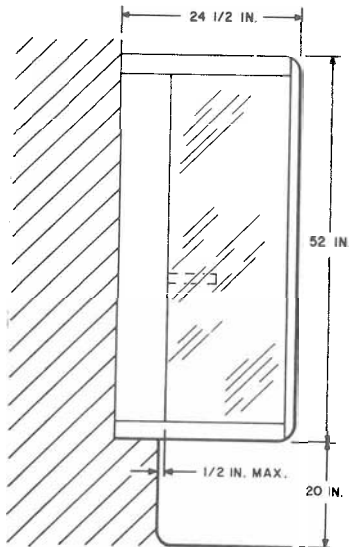


Fig. 4—Layout for KS-20630, List 6, 7, and 8 Units



LIST 9



LIST 10

Fig. 5—Layout for KS-20630, List 9 and 10 Units

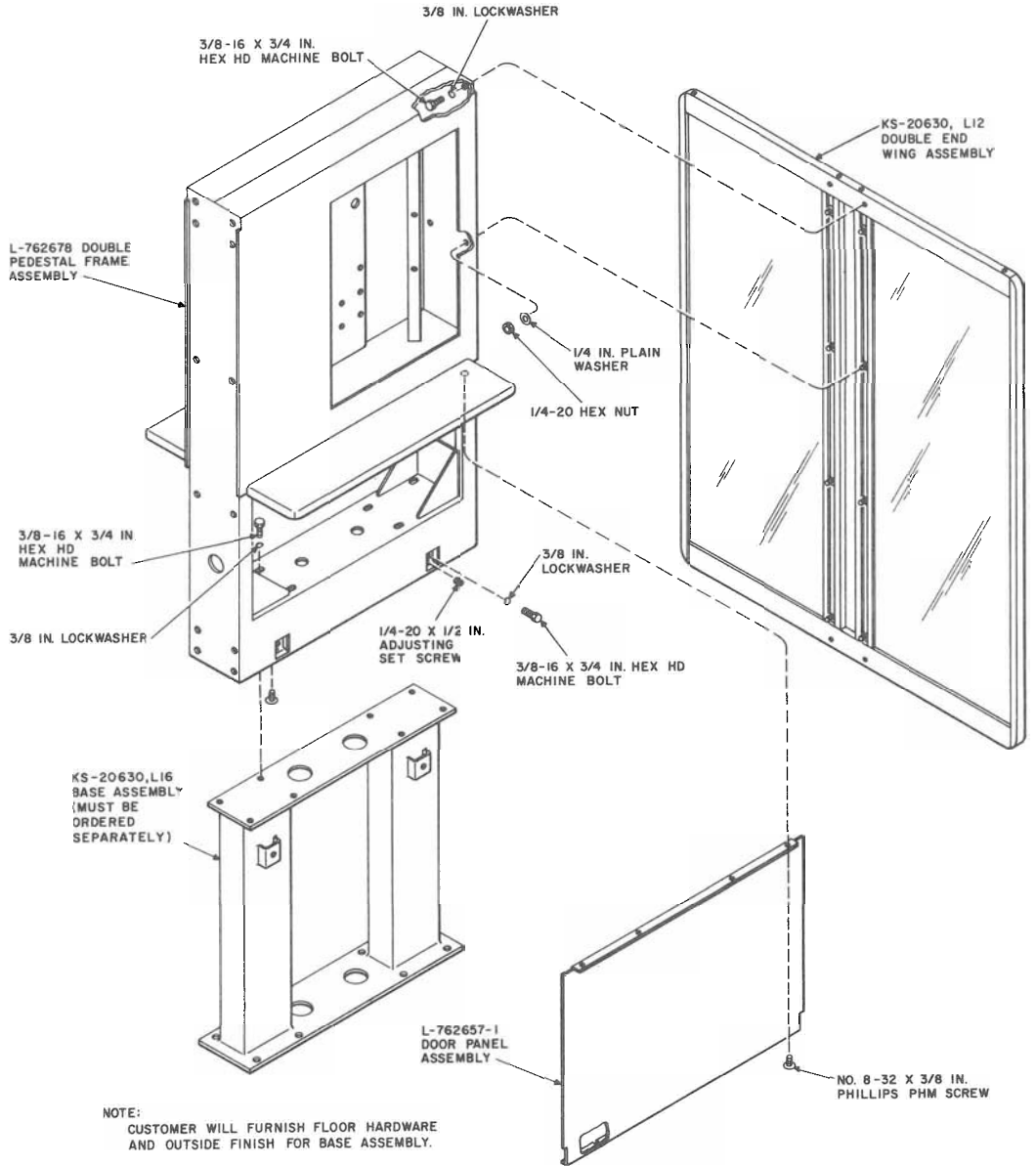


Fig. 6—Partial View of KS-20630 Pedestal Mounted Booth



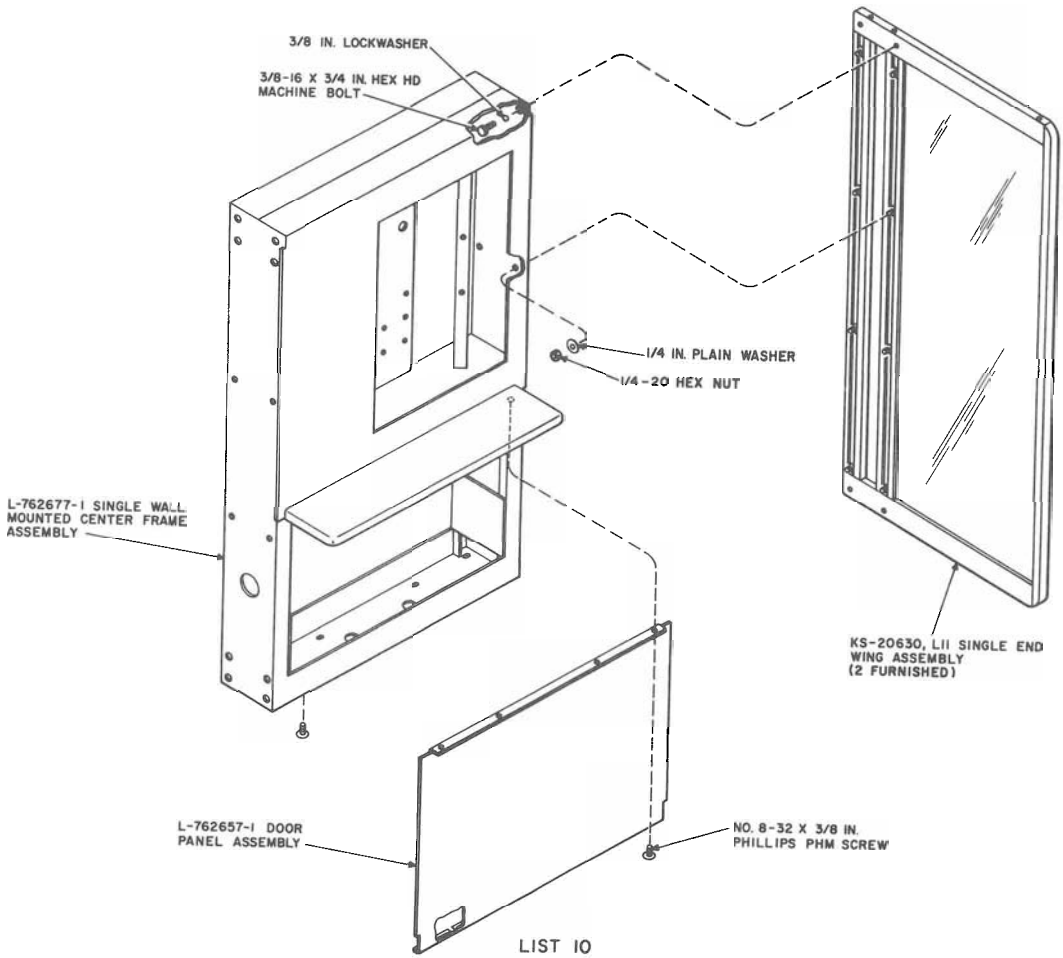


Fig. 7—Partial View of KS-20630 Wall Mounted Booth

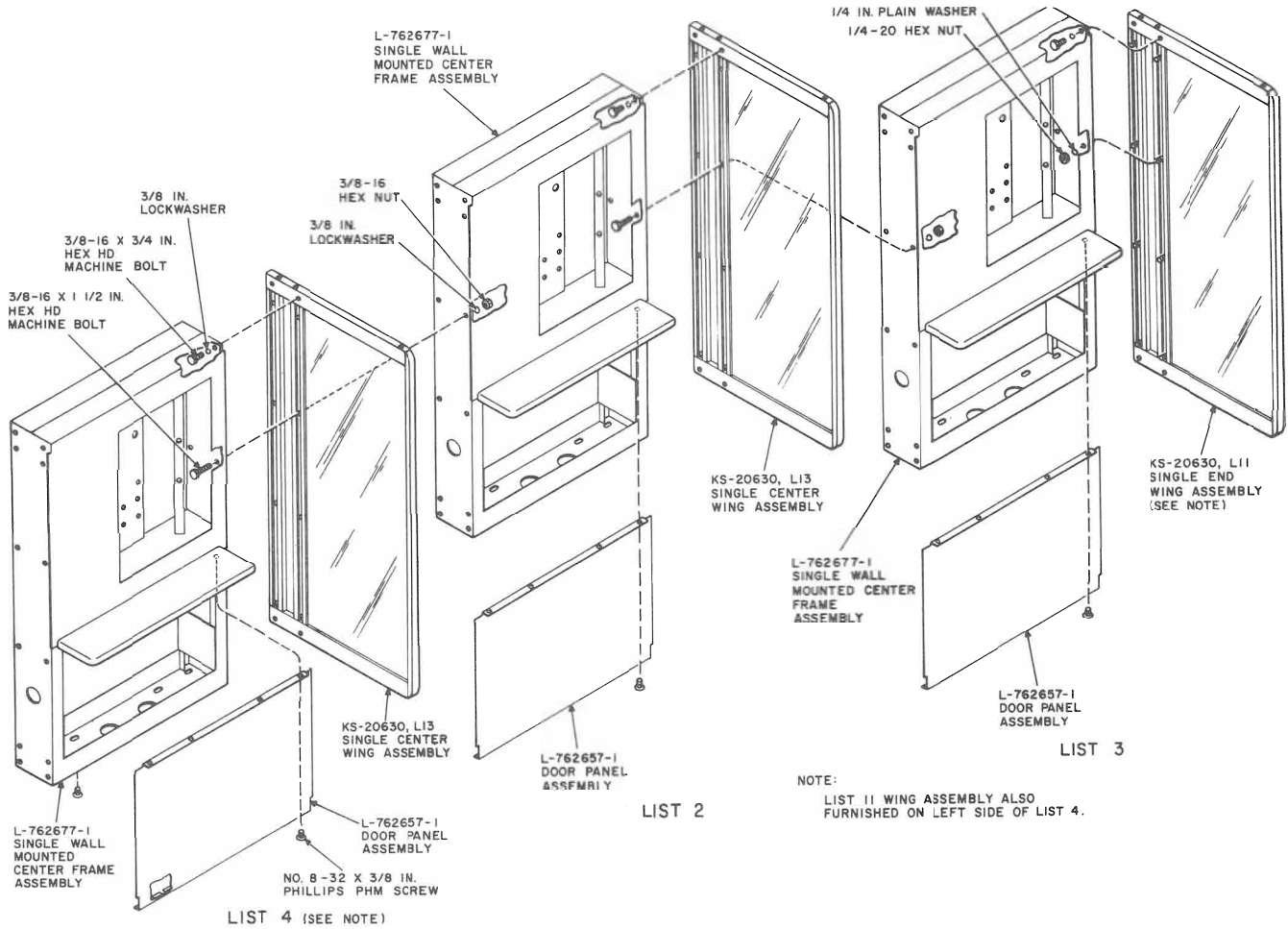


Fig. 8—Multiple Wall Mount With End Wing Assemblies

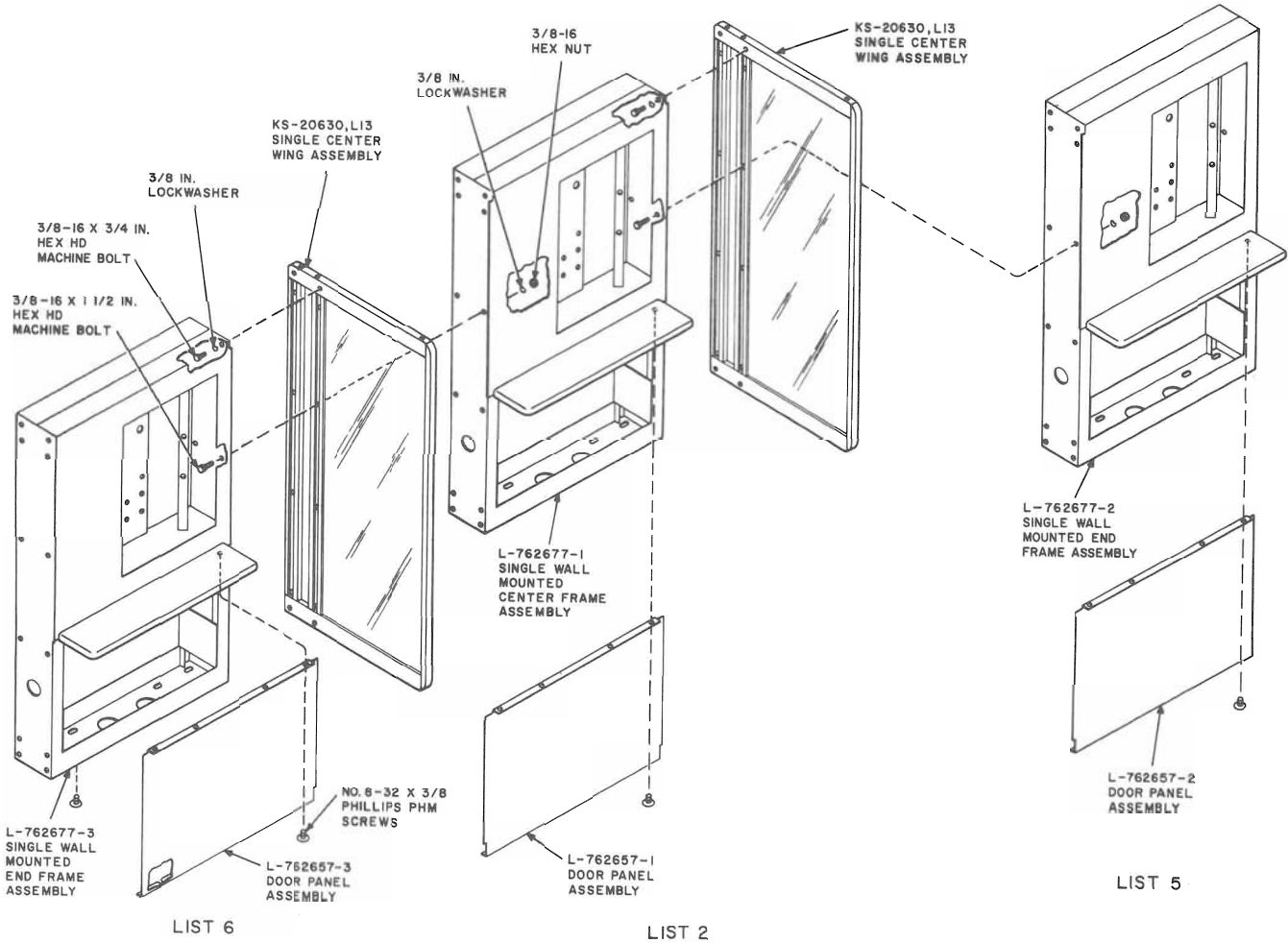


Fig. 9—Multiple Wall Mount Without End Wing Assemblies

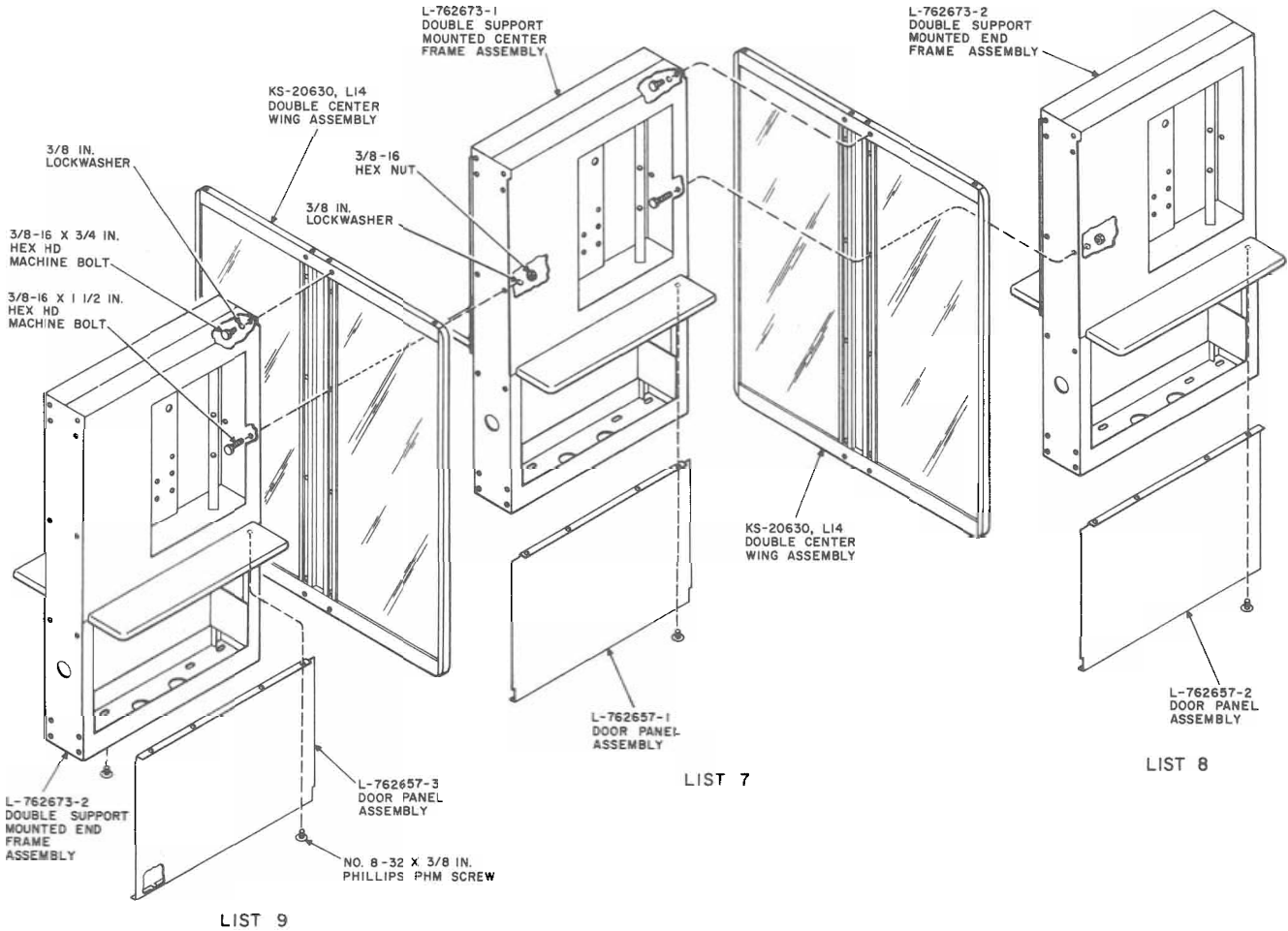


Fig. 10—Partial View of Three KS-20630 Booths Supported Between Two Columns

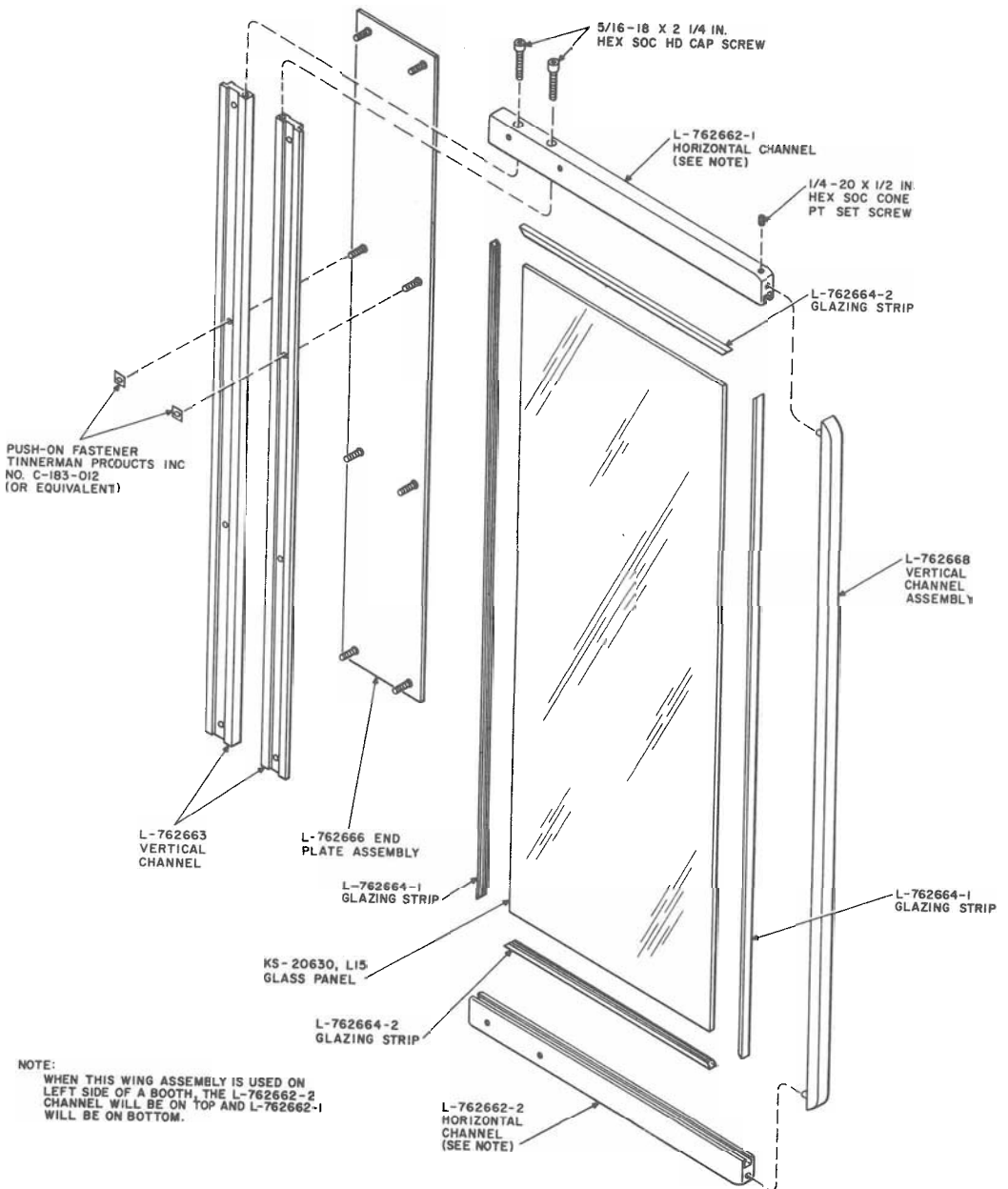


Fig. 11—Exploded View of KS-20630, List 11 Wing Assembly



## INDOOR BOOTH KS-19340 WOOD

### 1. GENERAL

1.01 Information in this section was formerly contained in Section 508-111-100 which is hereby canceled.

1.02 The KS-19340 wood booth (Fig. 1) is designed for sit-down or stand-up service, and for single or multiple installation.

### 2. IDENTIFICATION

2.01 The overall dimensions of the booth are:

- Height—83-1/8 inches
- Width—30-3/8 inches (with end panels)
- Depth—30-1/2 inches (without back panels)

2.02 The overall width of multiple installations (up to five) is shown in Table A.

2.03 This wooden booth is available in a variety of materials and finishes. List Nos. have been assigned the basic booth and panels as described in Table B.



*All list numbers in Table B which are required must be specified on the order.*

2.04 The interior of the booth consists of:

- Mottled gray porcelain enameled steel linings
- Wood ceiling
- Charcoal gray fiberglass shelf
- Charcoal gray fiberglass seat (optional)
- Dark gray rubber covered floor
- Translucent white plastic lighted dome

2.05 The door consists of two vertical sections, each containing a full length glass panel. It folds inside the booth along the right wall when opened.



Fig. 1—KS-19340 Wood Booth

**TABLE A**  
**WIDTH OF BOOTHS**

NO. OF BOOTHS	OVERALL WIDTH
2	5 ft
3	7 ft 5-1/8 in.
4	9 ft 11-1/4 in.
5	12 ft 4-7/8 in.

**2.06** A translucent sign, with the Bell System Emblem and the word phone, is mounted over the door in a dull black steel frame which projects 1-1/2 inches beyond the front of the booth. Table C lists the signs available.

**2.07** An air intake opening is provided through the top side of the front sign assembly.

**2.08** The booth is illuminated and ventilated by a KS-19207, List 1 light and blower unit. Refer to Section 508-820-100. This light unit also illuminates the front sign.

**2.09** A customer controlled blower switch assembly (S.P. Rockette No. 8911K234, Cutler-Hammer Inc.) is located in the right-rear corner above the

coin collector/telephone set. This switch is operated in conjunction with the door operated switch assembly (B-560059).

**2.10** The lamp is wired for continuous illumination unless otherwise specified; however, it may be wired for operation with the door switch assembly.

**2.11** Power for light and blower is supplied by means of a KS-19425, List 22 cable assembly. This cable is furnished as part of the booth for plugging into a 118-volt ac power-service outlet. Where local regulations permit, a power-cord plug retainer and cord clamp may be used to prevent accidental removal of cable assembly from power service outlet.

**2.12** The booth is designed to mount a variety of coin telephone sets by using the appropriate backboard and mounting kit. See Table D.

**2.13** A 3-wire convenience outlet and 42A connecting block are located in the ceiling area.

**2.14** A KS-19928, List 1 card frame may be used with this booth. Refer to Section 508-811-100.

**TABLE B**  
**BASIC ITEMS**

KS-19340 LIST NO. OF BOOTH		FINISH	MATERIAL	KS-19340 LIST NO. OF MATCHING PARTS		
SIT-DOWN	STAND-UP			SIDE PANEL	BACK PANEL	SEPARATOR*
1	11	None	Birch	21	31	41
2	12	Birch	Birch	22	32	42
3	13	None	Oak	23	33	43
4	14	Oak	Birch	24	34	44
5	15	Walnut	Birch	25	35	45
6	16	Mahogany	Birch	26	36	46

\* The separators are for use when booths are installed in multiples; one separator is required for two booths. A separator may be substituted for a finished end panel when the end of the booth is not exposed.



**TABLE C**  
**SIGNS AND SIGN ASSEMBLIES**

KS-19340 LIST NO.	DESCRIPTION	CONSIST OF KS-19340, LIST NO.		REMARKS
58	Sign Assembly	63	66	†
59		64		
60		62		
61		65		
62	Sign Panel			White Background, Blue Letters
63				White Blank
64*				Blue Background, White Letters
65				Blue Blank
66	Frame Assembly			Dull Black Finish

\* List 64 sign panel will be furnished with each booth unless otherwise specified.

† When the old type front signs (Lists 51 and 52) are replaced on an existing booth, it will be necessary to order a List 58, 59, 60, or 61 sign assembly which includes the List 66 frame, B-650753 clip, and mounting screws. A List 62, 63, 64, or 65 sign shall be ordered where a List 66 frame already exists.

**TABLE D**  
**BACKBOARDS AND MOUNTINGS**

KS-19340 LIST NO.	DESCRIPTION	REMARKS
53*	Backboard	For all coin telephone sets except panel type.
54	Backboard	For panel type coin telephone sets. Must be specified on order if required. 127B type cover must be used over panel phone
55	Mounting Kit	For mounting a subscriber set (see Fig. 2). Must be specified on order if required.

\* List 53 backboard will be furnished with each booth unless otherwise specified.

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The card frame is not furnished and must be ordered separately.

**2.15** A KS-20029 or an 11-type directory shelf may be mounted on outside of booth. Refer to Section 508-710-100.

**2.16** When a directory shelf is used on outside of booth, a 2B-type directory light may be used over the shelf as shown in Section 508-710-100.

### ORDERING INFORMATION

**2.17** Orders for the booth shall specify the quantity, KS numbers, and list numbers, including those items that must be ordered separately. The desired locations of the panels and separators must be specified on the order.

**2.18** The following are examples of typical orders.

#### *Example 1*

1 Booth, Telephone, KS-19340, List 11, Equipped With:

2 Panels, End, KS-19340, List 21

1 Panel, Back, KS-19340, List 31

1 Kit, Mounting, KS-19340, List 55

#### *Example 2*

2 Booths, Telephone, KS-19340, List 2, Equipped With:

2 Panels, End, KS-19340, List 22

2 Panels, Back, KS-19340, List 32

1 Separator, KS-19340, List 42

2 Backboards, KS-19340, List 54

2 Covers, 127B-Type

2 Telephone Signs, KS-19340, List 62

2 Card Frames, KS-19928, List 1

### 3. INSTALLATION

**3.01** Booth location should be:

- Readily accessible to customer
- Free of hazards
- Clear of wall switches, outlets, or fuse boxes
- In sufficient space to permit access to top of booth for maintenance purposes.

**3.02** Booths are shipped assembled unless order states otherwise. When shipped unassembled, all necessary screws and material are included in the shipment.



*Screw holes are aligned to simplify assembly in the field. When assembled, the sides of the booth unit shall make contact with the panels or separators along entire length of the booth unit.*

### PANELS AND SEPARATORS

**3.03** End panels and separators are attached with eight No. 10 by 1-3/4 BH wood screws. The back panel is attached with ten No. 9 by 1-3/4 FH wood screws.

**3.04** A booth separator may be substituted for a finished end panel when the end of the booth is not exposed.

### LEVELING

**3.05** Set booth level on floor so that it does not rock. Where floor is uneven or not level, place wooden shims under the proper side of booth to level it. Shims also should be placed under the middle of floor to prevent sagging. To prevent binding, the top of door must be aligned parallel with booth door frame when door is closed.

**3.06** The booth must be level to ensure proper operation of the coin telephone set. Level as follows:

- (1) Place a dime (or mark a 3/4 in. circle) as shown in Fig. 3

(2) Suspend a plumb line (obtain locally), as shown in Fig. 3 from a tack placed temporarily in center of top edge of booth.

(3) Shim the booth, as described in 3.05 until the plumb line is centered within area of dime or marked circle.

**3.07** Avoid setting booths on floor with considerable slope such as ramps or inclined passageways. When this location cannot be avoided, be sure each booth is placed level with a minimum amount of step-up. In multiple installations of this type:

- Attach separator to highest booth first.
- Line up booths so that the fronts present a straight line before attempting to fasten them together.
- Exposed gap of 1/4-inch or more between the floor and the booth requires sealing with strips of wood. Stain strips to match the finish of the booth.

#### TELEPHONE WIRING

**3.08** Signaling ground requirements are shown in Table E.

**TABLE E**  
**SIGNALING GROUND REQUIREMENTS**

NUMBER OF BOOTHS	OPTIONS		
	CABLE PAIRS	CONDUCTORS OF STATION WIRE	NO. 14 GROUND WIRE
1 to 6	1	1	1
6 to 12	2	2	1
12 or more	1 pr per 6 booths	1 pr per 6 booths	1

**3.09** When using triple conductor wire, run wire to the 42A connecting block of each booth. This connecting block is located in the ceiling on the rear of the booth.

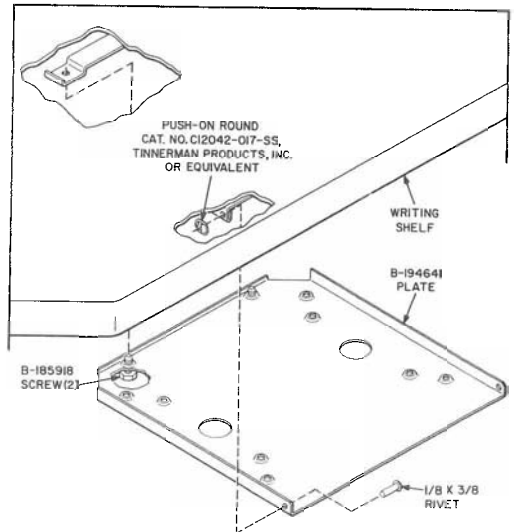
**3.10** To gain access to the connecting block, remove dome assembly (Fig. 4) or roof assembly which is secured by four 9 by 1 FH wood screws.

**3.11** When a subscriber set is required, drill a 5/8-inch hole for access to the wiring channel in accordance with Fig. 5.

**THINK** Exercise care when drilling to prevent bit from marring end panel.

#### SUBSCRIBER SET INSTALLATION

**3.12** The writing shelf is provided with brackets for accepting the KS-19340, List 55 mounting kit. When required, order kit separately and install in accordance with Fig. 2. All hardware is furnished as part of the kit.



**Fig. 2—KS-19340, List 55 Subscriber Set Mounting Kit**

#### BACKBOARDS

**Note:** Unless otherwise specified, all KS-19340 booths are equipped with List 53 backboards. All backboards must be minimum of 2 inches above the shelf (Fig. 5).

**3.13** If a panel type coin telephone set is installed, a KS-19340, List 54 backboard must be used.

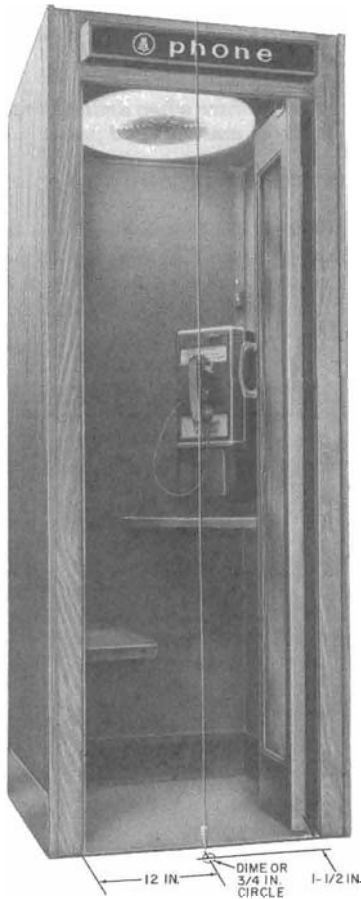


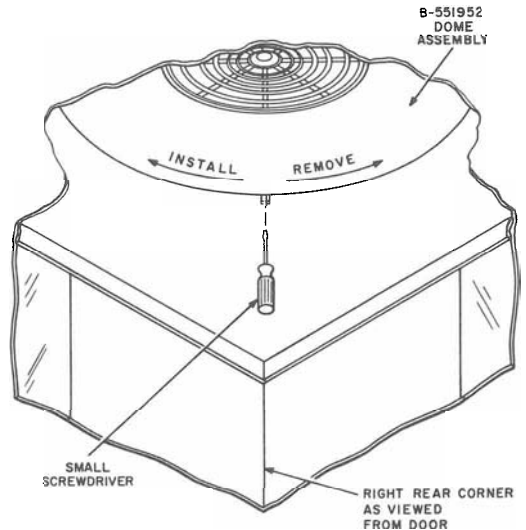
Fig. 3—KS-19340 Booth With Plumb Line

3.14 Refer to Section 506-100-101 for complete information on backboards.

**ELECTRICAL WIRING**

3.15 A 3-wire, grounded electrical outlet should be provided at booth location. Ensure that the third wire is grounded.

3.16 The booth is equipped with a KS-19425, List 22 cable assembly. This assembly is a rubber-covered 3-wire cord 64 inches long equipped



**NOTES:**

1. FOR REMOVAL, INSERT SMALL SCREWDRIVER THROUGH SLOT IN CEILING, DEPRESS DETENT SPRING, AND TURN DOME ASSEMBLY COUNTERCLOCKWISE.
2. FOR INSTALLATION, PLACE DOME ASSEMBLY IN CEILING AND TURN IT CLOCKWISE UNTIL DETENT SPRING ENGAGES AND LOCKS DOME.

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Fig. 4—Method of Removing Dome Assembly

with a 3-wire plug. It terminates in the electrical receptacle located in the ceiling of the booth.



*A No. 14 gauge ground wire is connected between the ground terminal of the electrical receptacle and the backboard. The purpose of this ground wire is to prevent exposing customers to electric shock from defective current-carrying coin telephone mounted in the booth. Verify that there is continuity between the ground terminal in the electrical plug and the coin telephone.*

3.17 Connect the power cord to the spare receptacle of adjacent booth in multiple installations.

**KS-19928, LIST 1 CARD FRAME**

3.18 Locate card frame per Fig. 5 and install as directed in Section 508-811-100.

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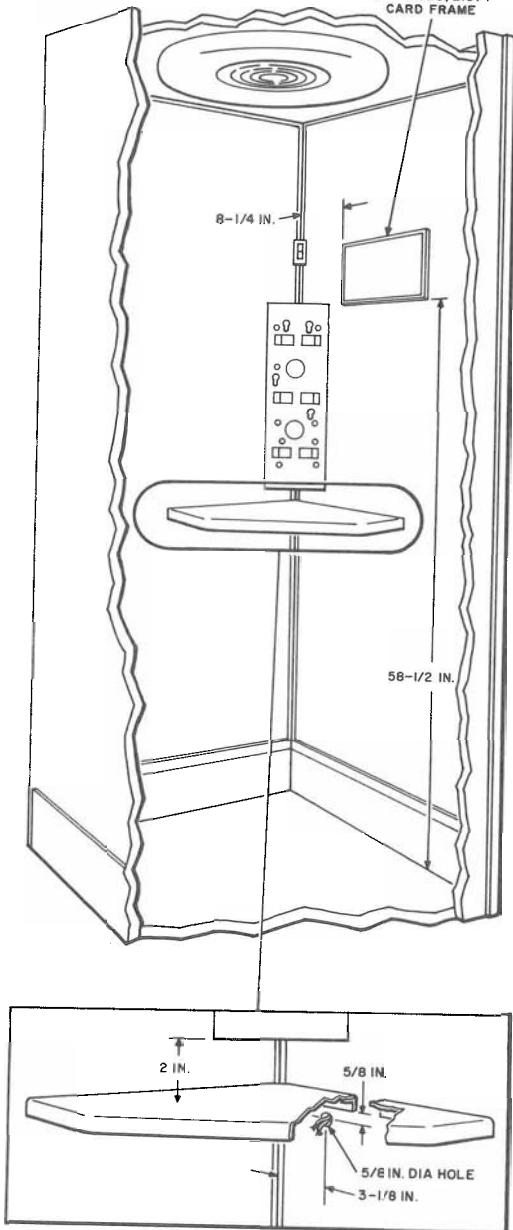
KS-19928, LIST I  
CARD FRAME

Fig. 5—Requirements for Subscriber Set Wire Access Hole and Card Frame

### INSTALLATION OF 2-TYPE LIGHT FIXTURE

3.19 When called for on an order, the booth will be delivered wired for a directory light, but the light and shelf are added in the field to avoid damage in transportation. Do not install a directory light without installing a directory shelf under it.

**THINK** Before starting to connect any electrical wiring, be sure the power cable is pulled out of the power receptacle or the power shut off by throwing the toggle switch if the booth is so equipped.

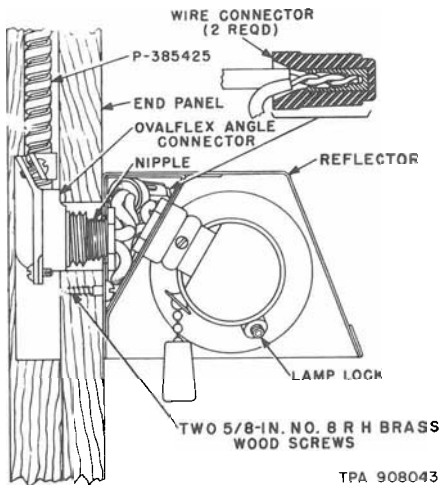
3.20 To install a 2-type light fixture at existing installations:

- (1) For 2B fixture, drill a 1-inch hole to accommodate ovalflex angle connector as shown in Fig. 6.
- (2) For 2D fixture, follow instructions in Fig. 7.
  - (a) Remove end panel for drilling and cutting.
  - (b) Cut a hole large enough to permit passage of the plug and 90-degree connector attached to the cable.
- (3) Make connections to the booth terminal strip above the ceiling.

3.21 The end panel has an inconspicuous center punch mark approximately 1/16 inch in diameter located on the center line of the panel 60-5/16 inches above the bottom edge to indicate the proper spot for drilling the mounting hole for the directory light fixture.

### 4. MAINTENANCE

- 4.01 The approach to the booth shall be free of all hazards.
- 4.02 The local telephone company shall establish the appearance standards of all exposed surfaces.
- 4.03 The local telephone company shall establish the safety standards for all booths.



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Fig. 6—Installation of 2-Type Light Fixture

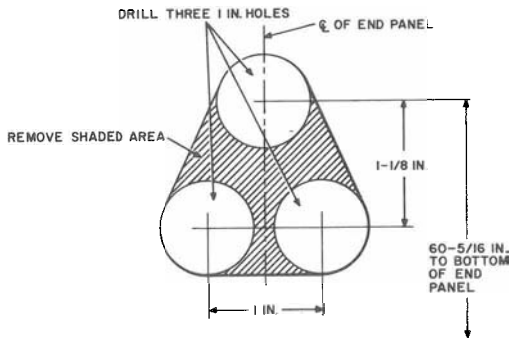


Fig. 7—Hole for 2D Fixture

4.04 When the condition of the external surface is such that cleaning will not be sufficient, the surface should be sanded and refinished.

#### DOOR

4.05 The door shall operate freely throughout its entire travel without binding or squeaking. When the door binds or squeaks:

- (a) Verify that booth is level. Refer to 3.05 and 3.06.

- (b) Thoroughly clean inside of door tracks with KS-7860 petroleum spirits.

**THINK** *KS-7860 petroleum spirits is flammable. Use safety precautions while using.*

- (c) Check that the guide pin assembly is straight and the roller is free of nicks. For replacement, use B-558859 guide pin assembly and B-561730 roller.
- (d) Replace broken or defective wooden door stops using No. 8 by 1-1/2 inch zinc plated wood screws.

4.06 When hinges are noisy or bind, lubricate each joint with KS-14774, List 2G lubricant and wipe off all excessive lubricant. When hinges show wear of 1/8-inch separation between the hinge barrels, replace the hinge with a B-558815 piano hinge assembly.

4.07 If the door-operated light switch becomes damaged, use a B-560059 switch assembly.

4.08 Replace damaged door glass panels with the following:

- Small panel—B-558805-3
- Large panel—B-558805-4

#### FLOOR

4.09 Use a B-558821 rubber floor and a B-558822 floor liner to repair defective or worn floors.

4.10 *To replace floor in booth:*

- (a) Remove binding strips, old floor, and liner.
- (b) Using putty knife, remove adhesive residue from the base and between edge of tread and floor.
- (c) Apply a thin, even coat of adhesive EC-194 to the screen impression side of liner. Locate liner centrally with chamfered edge under the tread. Press it down smoothly by treading on it.
- (d) Apply adhesive EC-847 in a thin, even coat, spread in a strip 12 inches wide across the front width of liner.

(e) Place edge of new floor under opened door and force tapered edge under the tread. (Exercise care in centering floor.) Let floor fall downward into position. The back and side flaps fold upward. Press floor against liner with foot.

(f) Replace binding strips.

4.11 Replace booth if tread is badly worn.

#### SEAT AND SHELF

4.12 Ensure that all mounting screws are secure.

4.13 For replacement, use B-557129 seat and B-557327 shelf assembly.

#### DOME ASSEMBLY


 *Use eye protection when removing the dome assembly.*

4.14 Clean the inside of the dome assembly with mild soap and warm water.

4.15 Replace B-551952 dome assemblies which do not meet local telephone company standards.

4.16 Clean the space between the ceiling and roof of all loose dirt and other loose foreign material.

#### LIGHT AND BLOWER UNIT

 *Use eye protection when handling fluorescent lamps. Before making any repairs or replacements in electrical equipment, disconnect plug or turn the service switch off and verify that circuit is dead by checking with an approved voltage tester.*

4.17 Determine that the manually operated ventilator switch turns the blower on and off.

4.18 If ballast shows signs of leaking compound, replace the complete KS-19207, List 1 light and blower unit. Refer to Section 508-820-100.

4.19 Ensure that all electrical leads are securely clamped away from the air intake hole and from the rotary impeller.

4.20 The unit is equipped with a fluorescent Circline 40-watt cool white lamp.

#### SIGNS

4.21 Refer to Table C for replacement panels and assemblies.

4.22 To replace a sign panel or sign assembly, refer to Fig. 8 and perform the following:

#### Late Models

- (1) Remove four No. 6 by 1/2 RH wood screws which secure frame to header.
- (2) Slide assembly down and off
- (3) To replace panel, loosen four No. 8-32 by 3/16 PHM screws on top of frame.
- (4) Install, using reverse procedure.

#### Early Models



*When early model signs are replaced, use sign assemblies per Table C.*

- (1) Slide sign panel up and out of frame.
- (2) Remove old frame from booth.

**Note:** Mounting screws and B-650673 clip are furnished with List 58 through 61 sign assemblies.

- (3) Using four No. 6 by 1/2 RH wood screw, install B-650673 clip in opening of door header.
- (4) Hook bottom edge of sign frame under clip and secure to top of door header with four No. 6 by 1/2 RH wood screws.
- (5) Adjust the four pan head screws on top of frame and ensure that sign panel is tight.

#### LININGS

4.23 Booth linings which do not meet local telephone company standards can only be replaced at the service center.

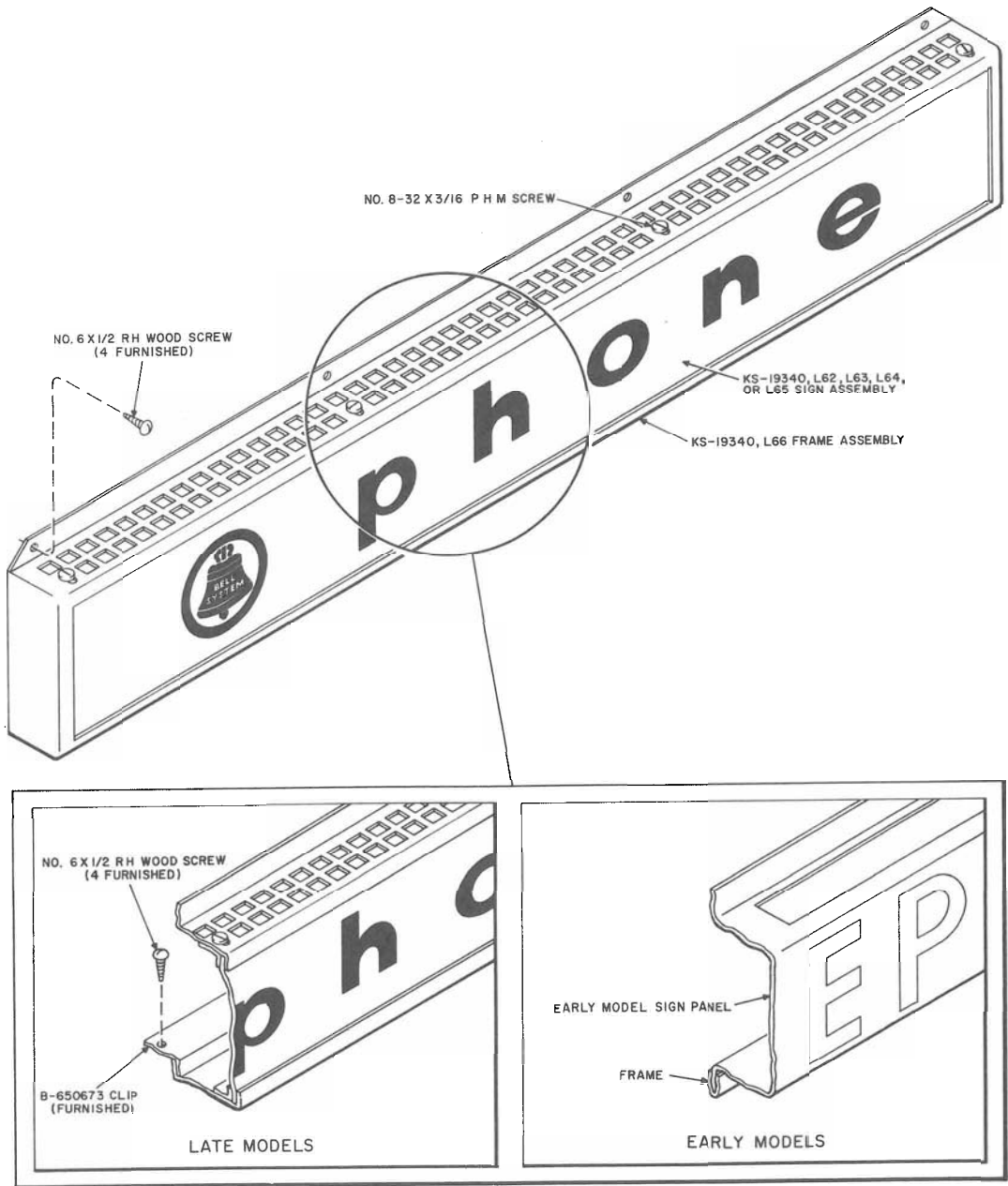


Fig. 8—KS-19340 Sign Assembly



**ELECTRICAL EQUIPMENT**

**4.24** The B-560059 door switch assembly should be adjusted to operate when distance between the edge of the large door and the edge of the door frame is 13 inches  $\pm$ 1 inch.

**4.25** Adjust door switch assembly by loosening switch mounting screws, positioning switch, and retightening screws.

**4.26** If the blower switch, located above the coin collector/telephone set, becomes damaged, replace as follows:

(1) Remove two B-564390-6 oval head screws which secure corner moulding to booth.

- B-558860-1 moulding is used in a booth for stand-up service.

- B-558860-2 moulding is used in a booth for sit-down service.

(2) Pull moulding out from corner and remove one No. 6-20 by 3/8 RH tapping screw which secures switch to moulding.

(3) Disconnect the two cable leads from switch and remove switch.

(4) If it becomes necessary to replace a cable, use B-560058-1 in a booth for stand-up service and B-560058-2 in a booth for sit-down service.

(5) Install switch using reverse procedure.

**4.27** Ensure that continuity exists between the ground terminal of the KS-19425, List 22 power cable and the backboard. If it becomes necessary to replace the ground wire between the receptacle and backboard, use no less than No. 14 gauge wire.

**CARD FRAME**

**4.28** When booths are equipped with card frames, ensure that frame is securely mounted.

**4.29** Replace all damaged card frames with KS-19928, List 1 card frame per Section 508-811-100.

**FINAL CLEANING**

**4.30** After all maintenance has been completed, sweep and dust the interior of the booth.



## INDOOR BOOTHS

### KS-19206 CURVED DOOR

#### 1. GENERAL

1.01 Information in this section was formerly contained in the following sections which are hereby canceled.

- 508-115-100
- 508-115-200
- 508-115-300

1.02 The KS-19206 curved door booth (Fig. 1), is made of steel. A mastic sound deadening material is placed between the outside steel walls and inside steel liners.

1.03 The outside is light olive gray textured vinyl and the interior is off-white porcelain enamel. A vertical color panel in orange, blue, or white is located adjacent to left door facing.

1.04 The booth may be installed in single or multiple units.

#### 2. IDENTIFICATION

2.01 Various list numbers have been assigned booth components as described in Tables A and B.

2.02 The overall dimensions of the booth are:

- Height—83-1/8 inches
- Width—33 inches
- Depth—31-1/2 inches

2.03 A contour seat (B-554538) is provided in the left rear corner for sitdown service. A writing shelf (B-555896) is also featured which extends along the right side and part of the rear wall. Both are furnished as part of the booth.

2.04 A B-554527 rubber mat covers the floor.

2.05 The booth has a single curved door that rolls into a recess on the left side behind

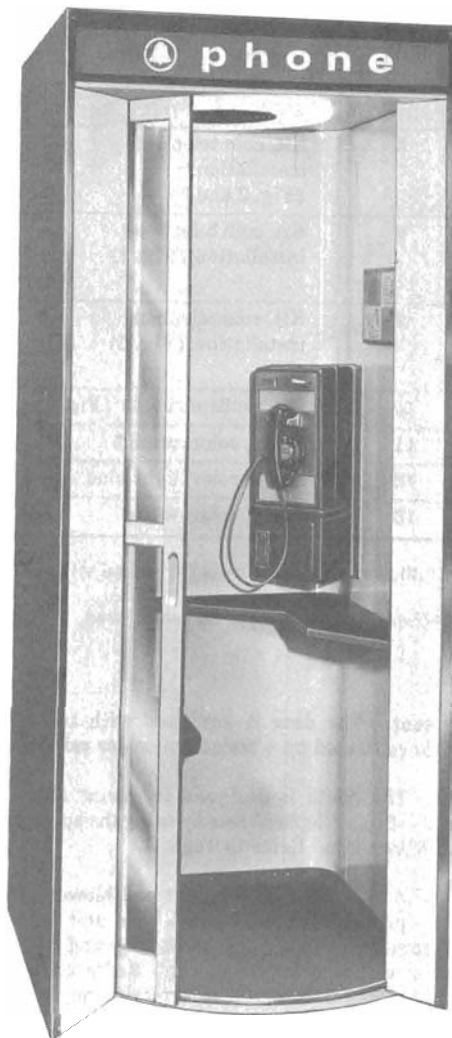


Fig. 1—KS-19206 Curved Door Booth

**TABLE A**  
**BASIC BOOTH COMPONENTS**

KS-19206 LIST NO.	DESCRIPTION	REMARKS
1	Booth, telephone KS-19206 (Fig. 1)	Includes KS-19207, List 1 light and blower unit, 42A connecting block, KS-19425, List 22 power cord, and KS-19928, List 1 card frame. Other items listed in this table and in Table B must be specified by list number.
5	Kit, coin telephone installation* (Fig. 2 and 3)	For 200-type coin collector requiring subscriber set. Includes backboard, subscriber set mounting plate, subscriber set wire, and necessary hardware.
6	Kit, coin telephone installation (Fig. 2)	For 1A/1C-type coin telephone set or 236G coin collector. Includes backboard and necessary hardware.
7	Kit, coin telephone installation (Fig. 4)	For 2A/2C-type coin telephone set or 235/1235-type coin collector. Includes backboard and necessary hardware.†
10	Kit, multiple booth (Fig. 5)	To facilitate multiple installations.
11	Panel, color, orange	Vertical panel located adjacent to left door facing. List No. of panel desired must be specified on order.
12	Panel, color, light blue	
13	Panel, color, white	

\*Sufficient station wire is furnished with each kit.

†When a panel telephone set is used, a 127B-type cover should also be used; order separately.

the seat. The door is equipped with two glass panels separated by a horizontal center rail.

**2.06** The booth is designed to mount a variety of coin telephone sets by using the appropriate installation kits. Refer to Table A.

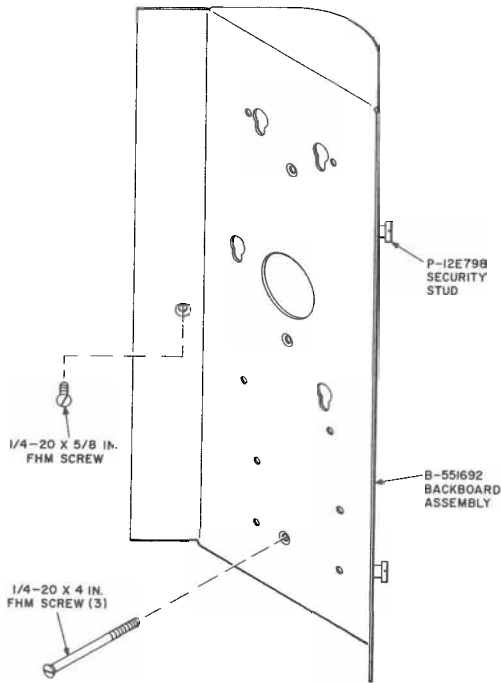
**2.07** A KS-19207, List 1 light and blower unit is provided in the booth. This unit contains one circular 40-watt fluorescent lamp and a blower that is mounted in the center. Refer to Section 508-820-100 for complete information on the light and blower unit.

**2.08** The lamp is wired for continuous illumination but if desired, it can be controlled by the door-operated switch assembly (B-650626).

**2.09** The blower is controlled by the door-operated switch assembly (B-650626) and the wall-mounted switch assembly (B-555994).

**2.10** A sign, illuminated by a 30-inch, 20-watt fluorescent lamp (4.16), is mounted above the door. Available signs are listed in Table B.

**2.11** Power for lights and blower is supplied by means of a KS-19425, List 22 cable assembly (Fig. 6). The cable is furnished as part of the booth assembly for plugging into the power-service outlet. Where local regulations permit, a clamp may be used to prevent accidental removal of cable assembly from power-service outlet.



**Fig. 2—KS-19206, List 6 Coin Telephone Set Installation Kit or Backboard Portion of List 5 Kit**

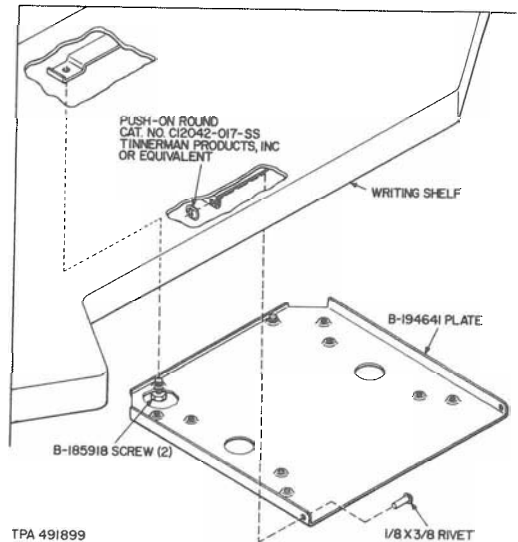
**2.12** In multiple installations, electrical wiring may be run from booth to booth through knockouts provided in the sides of booth at ceiling level.

**2.13** A 42A connecting block (Fig. 6) is included as part of the booth; however, a 123A1A protector may be used if required but must be ordered separately.

**2.14** The left and right outside walls are reinforced to permit exterior mounting of a KS-20029 directory shelf. Refer to Section 508-710-100.

#### ORDERING INFORMATION

**2.15** Orders for this booth shall specify the quantity, by KS- and list Nos. of all items required. Refer to Tables A and B.



**Fig. 3—Installation of Subscriber Set Mounting Plate**

**2.16** The following are examples of typical orders.

#### *Example 1:*

1—Booth, telephone, KS-19206, List 1 equipped with:

1—Kit, coin telephone installation, KS-19206, List 5

1—Panel, color, orange, KS-19206, List 11

#### *Example 2:*

2—Booths, telephone, KS-19206, List 1 equipped with:

2—Kits, coin telephone installation, KS-19206, List 6

2—Panels, color, white, KS-19206, List 13

2—Sign panels, KS-19206, List 19

1—Kit, multiple booth installation, KS-19206, List 10

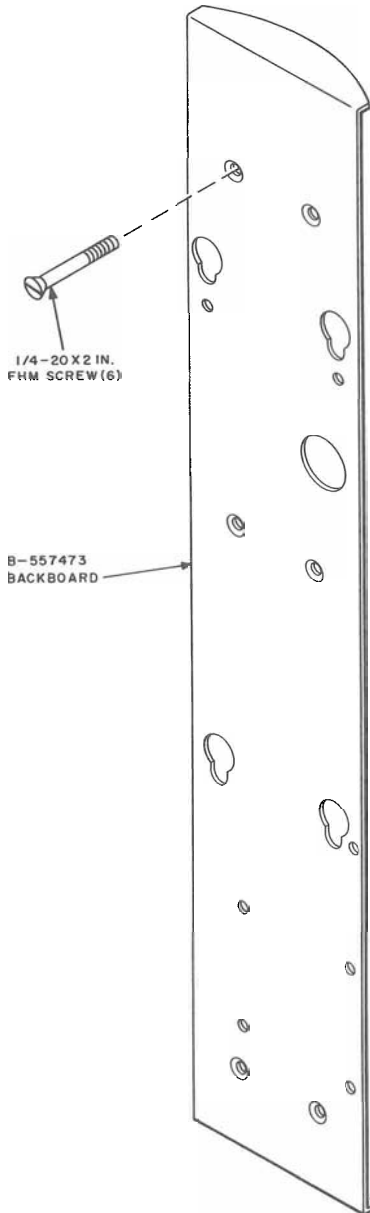


Fig. 4—KS-19206, List 7 Coin Telephone Set Installation Kit

### 3. INSTALLATION

#### LOCATION

**3.01** Before beginning the installation, be sure location specified on the service order corresponds with customer's wishes.

**3.02** Booth location should be:

- Within full view of public
- Readily accessible to customer
- In a well lighted area
- Free of such hazards as stairways, narrow passageways, uneven or unsafe floors
- Free of heating vents, radiators, sinks, fuse boxes, or switches
- Free from areas subject to water

**3.03** For proper coin collector operation, the booth should be level and stable. Where floor is uneven or not level, place wooden shims under the proper side of booth for leveling.



*Ensure that shims do not protrude so as to create a safety hazard.*

**3.04** Leveling can be determined by use of a carpenter's level or a plumb line. Either may be obtained locally.

**3.05** Place shims under the middle of booth floor where there is a possibility of sagging.

**3.06** Avoid setting booths on floors with considerable slope such as ramps or inclined passageways. When this condition cannot be avoided, place booth with a minimum amount of step-up.

#### DOOR OPERATION

**3.07** The door should be adjusted to operate properly when the booth leaves the Service Center because there is only one adjustment that can be made in the field. This can be accomplished as follows: Loosen the two clamping screws at the bottom of door which secure door roller. The

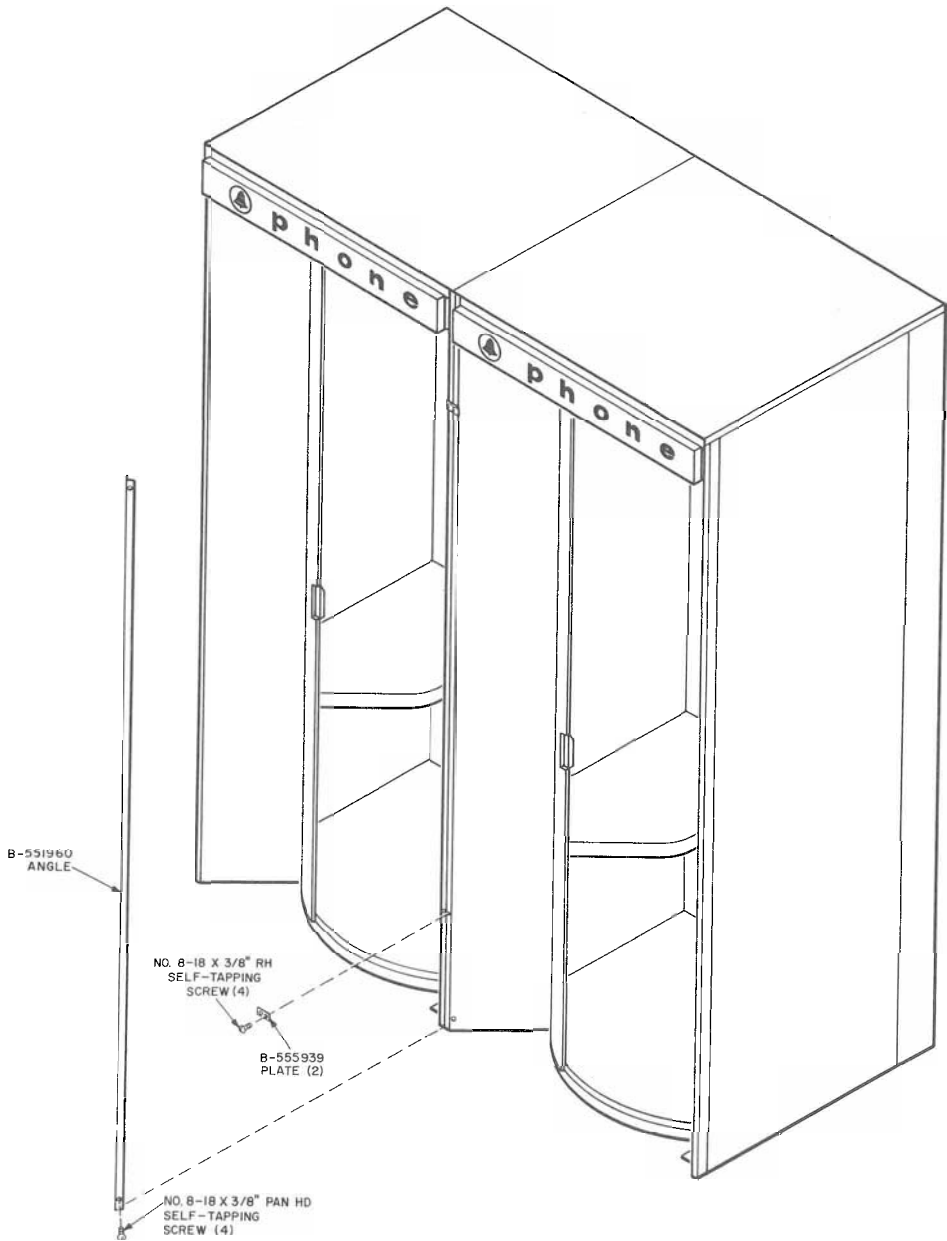
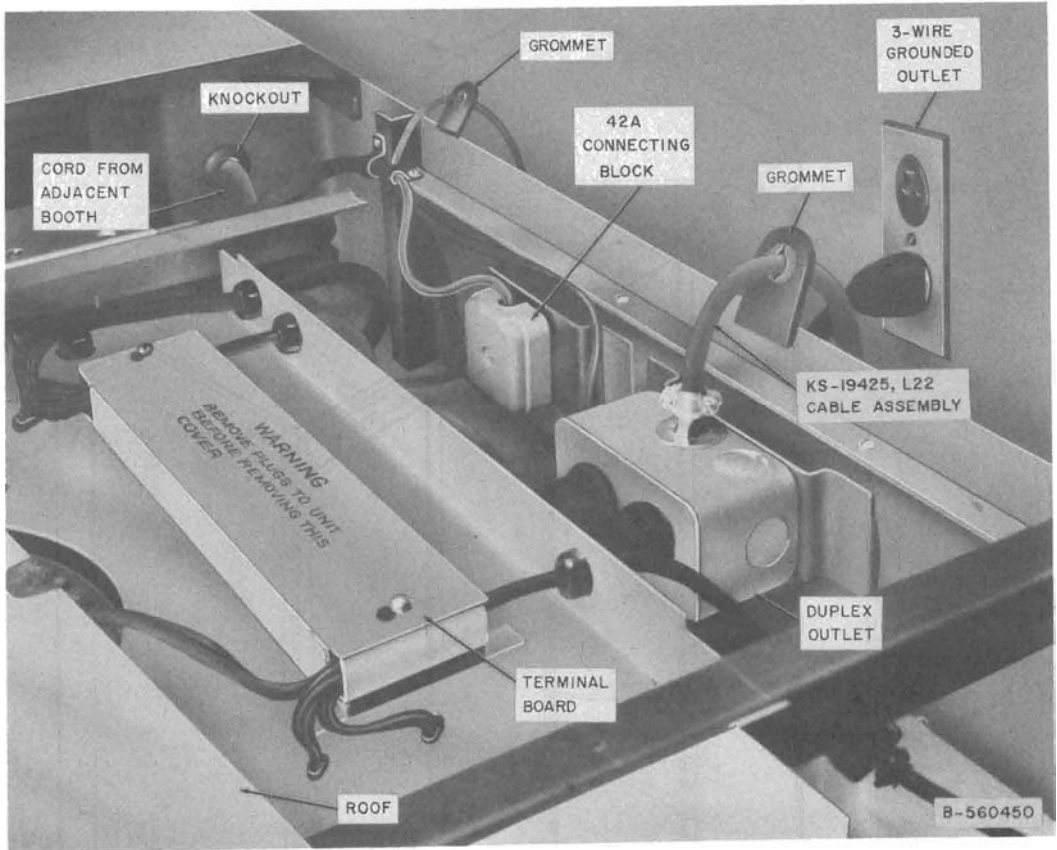


Fig. 5—KS-19206, List 10 Multiple Installation Kit (Items Identified)



**Fig. 6—Partial View of Ceiling Area**

roller can be adjusted approximately 1/8-inch vertically.

**3.08** For proper operation, ensure that the booth floor and header assembly do not sag and that door rollers roll smoothly in tracks.

**3.09** Ensure that door slides easily over its full travel and closes snugly.

#### **DOOR OPERATED SWITCH**

**3.10** The blower motor and, in some cases, the light fixture are controlled by a door operated micro switch assembly (B-650626, Fig. 7). If the

switch is not making or breaking properly, it should be adjusted as follows:

- (1) Remove roof from booth.
- (2) Loosen the adjusting screw (Fig. 7).
- (3) Slide the switch mounting plate in or out as necessary.
- (4) Open and close the door to determine the proper switch position.
- (5) Tighten the adjusting screw.
- (6) Install the roof.

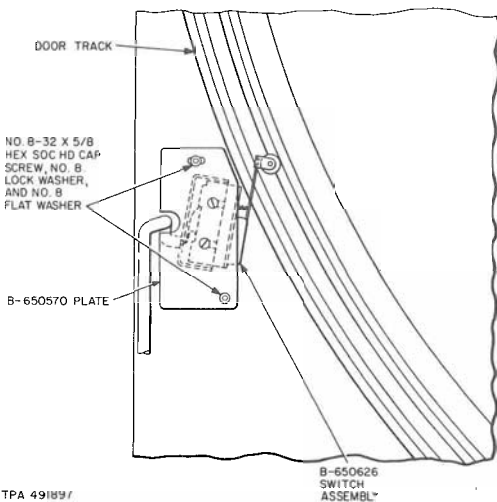


TABLE B

## SIGNS AND ASSOCIATED ITEMS

KS-19206 LIST NO.	DESCRIPTION	CONSIST OF KS-19206, LIST NO.		REMARKS
9	Sign Assembly	17	Plus 21	KS-19206, List 8 sign assembly has been rated MD
14		18		
15		19		
16		20		
17	Sign Panel			White blank
18*				Blue background — white letters
19				White background — blue letters
20				Blue blank
21	Frame Assembly			Dull black finish

\*List 18 sign panel will be furnished with each booth unless otherwise specified.



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Fig. 7—B-650626 Door Operated Micro Switch Assembly

## TELEPHONE WIRING

**THINK** When working overhead, wear eye protection

3.11 Signaling ground requirements are shown in Table C.

TABLE C  
SIGNALING GROUND ARRANGEMENTS

NUMBER OF BOOTHS	OPTIONS		
	CABLE PAIRS	CONDUCTORS OF STATION WIRE	NO. 14 GROUND WIRE
1 to 6	1	1	1
6 to 12	2	2	1
12 or more	1 pair per 6 booths	1 pair per 6 booths	1

3.12 To make wiring accessible, remove dome assembly and work from inside of booth or remove the roof retaining screws and slide roof forward as shown in Fig. 6.

3.13 Insert station wire through roof grommet, through the cable clamp, and terminate on the 42A connecting block (Fig. 6) or 123A1A protector.

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**3.14** Ensure that station wire leading to coin telephone is properly terminated on the connecting block or protector.

### INSTALLATION OF KITS

#### **3.15** *List 5 Kit:*

- (1) Install the backboard portion of the List 5 kit in accordance with Fig. 2.
- (2) The subscriber set is mounted under the shelf with brackets, mounting plate, and hardware furnished with the List 5 kit. Install the mounting plate in accordance with Fig. 3.
- (3) Sufficient wire is furnished with the List 5 kit for connecting the subscriber set to the coin collector.

**3.16** *List 6 Kit:* Install KS-19206, List 6 kit in accordance with Fig. 2.

**3.17** *List 7 Kit:* Install KS-19206, List 7 kit in accordance with Fig. 4.

**3.18** Install the coin collector or coin telephone set in accordance with standard telephone procedures.

**Note:** Knockouts are available at top of booth on both sides and back for interconnecting telephone and electric wires in multiple installations.

### ELECTRIC WIRING

**3.19** A 3-wire, grounded electrical outlet should be provided at booth location. Ensure that the third wire is grounded.

**3.20** Connect the power cord to the spare receptacle of adjacent booth in multiple installations. Refer to Note following 3.18.

**3.21** Internal electrical wiring can be checked on the terminal board located on ceiling above the light fixture (Fig. 6).



**Be sure light fixture power cord is removed from power receptacle before removing coverplate from terminal board.**

**3.22** For wiring information on the KS-19207, List 1 light and blower unit, refer to Section 508-820-100.

### MULTIPLE INSTALLATIONS

**3.23** When installing the KS-19206 booth in multiples, use a KS-19206, List 10 kit and install it as follows (Fig. 5).

- (a) Remove adjacent trim strips from each booth and retain the screws.



**When removing the trim strips, use care when removing the first screw because the strip may spring out.**

- (b) Fasten the booths together at top and bottom using two B-555939 plates and four No. 8-18 by 3/8 RH self-tapping screws.

- (c) Install the B-551960 angle over the adjacent corners of the two booths and secure it using the four No. 8-18 by 3/8 pan head self-tapping screws retained in (a).

## 4. MAINTENANCE

**4.01** The local telephone company shall establish the appearance standards of all exposed surfaces.

**4.02** The local telephone company shall establish the safety standards for all booths.

### INSPECTION

**4.03** Inspect the approach to the booth and ensure that it is free of all hazards.

**4.04** Ensure that all visible assembly screws are present and secure.

- (a) If screws are broken in holes and cannot be removed easily with pliers, remove them carefully using a 3/32-inch punch.

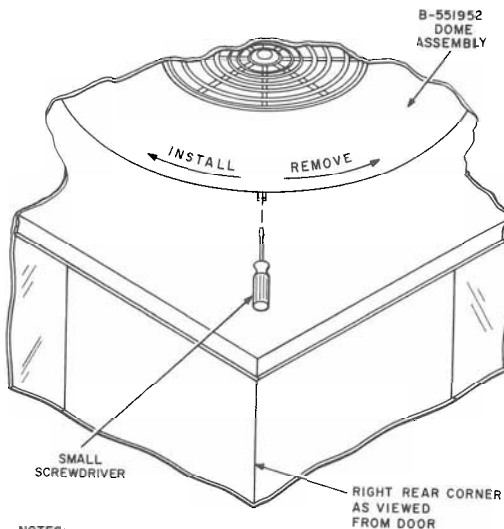
**Note:** When threaded holes are stripped, replacement screws shall be the next larger size of the same material and type.

- (b) All screws threaded into aluminum parts shall be coated with KS-19094 antiseize compound.

#### DOME ASSEMBLY

**THINK** Use eye protection when removing the dome assembly.

- 4.05 The B-551952 dome assembly must be removed to make the light and blower assembly accessible. Do this in accordance with Fig. 8.



#### NOTES:

1. FOR REMOVAL, INSERT SMALL SCREWDRIVER THROUGH SLOT IN CEILING, DEPRESS DETENT SPRING, AND TURN DOME ASSEMBLY COUNTERCLOCKWISE.
2. FOR INSTALLATION, PLACE DOME ASSEMBLY IN CEILING AND TURN IT CLOCKWISE UNTIL DETENT SPRING ENGAGES AND LOCKS DOME.

B-567878

Fig. 8—Method for Removing Dome Assembly

- 4.06 Clean the space between the ceiling and roof of all loose dirt and other loose foreign material.
- 4.07 Clean the inside of the dome assembly in accordance with Section 508-100-101.
- 4.08 Replace dome assemblies which do not meet local telephone company standards.

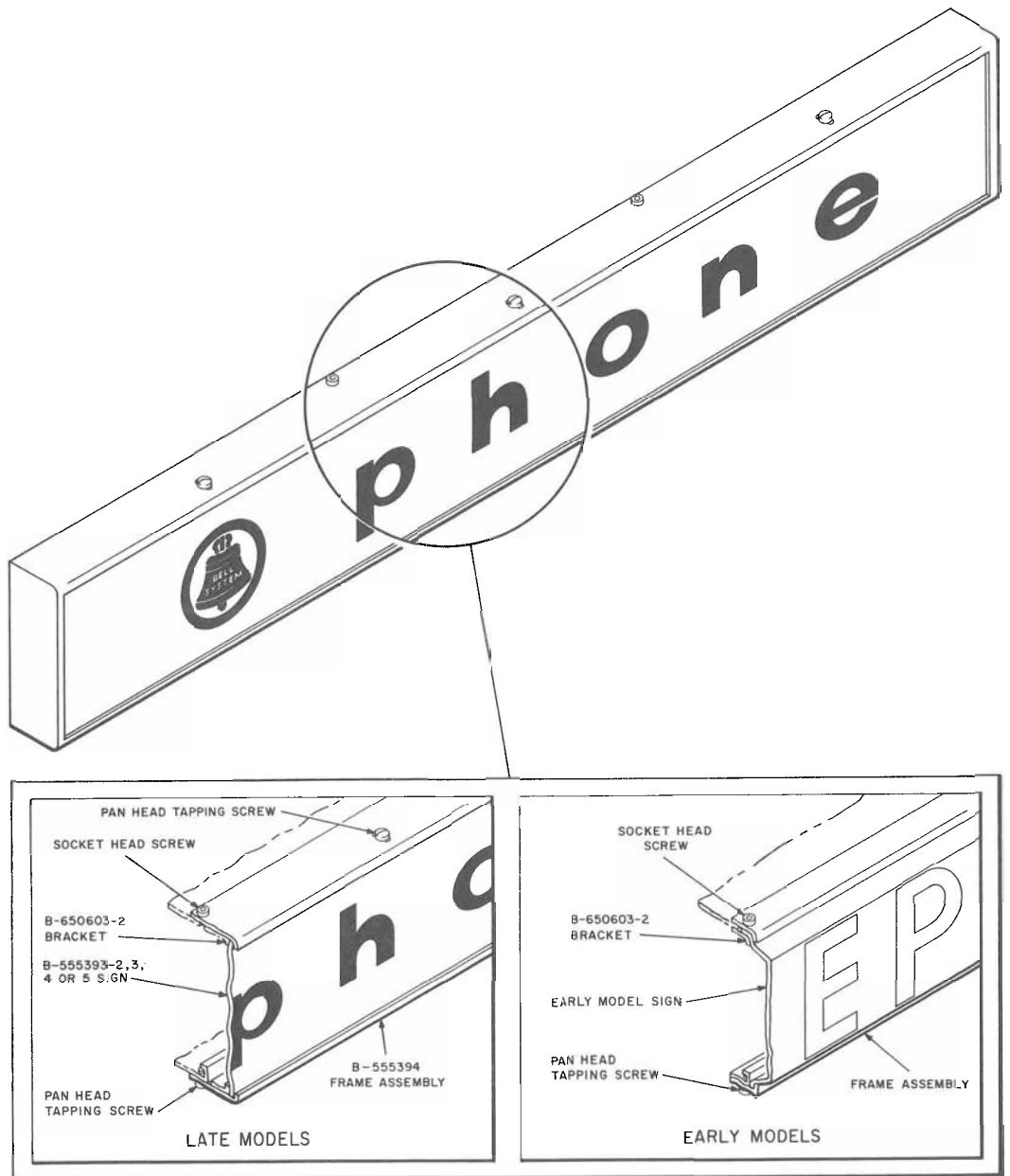
#### LIGHT AND BLOWER UNIT

**THINK** Use eye protection when handling fluorescent lamps. Before making any repairs or replacements in electrical equipment, disconnect plug or turn the service switch off and verify that circuit is dead by checking with an approved voltage tester.

- 4.09 Remove the dome assembly per Fig. 8 to gain access to the light and blower unit.
- 4.10 Determine that the manually operated ventilator switch turns the blower on and off.
- 4.11 If ballast shows signs of leaking compound, replace the complete KS-19207, List 1 light and blower unit.
- 4.12 Ensure that all electrical leads are securely clamped away from the air intake hole and from the rotary impeller.
- 4.13 The unit is equipped with a fluorescent Circline 40-watt cool white lamp.

#### TELEPHONE SIGN ASSEMBLY AND SIGN LAMP

- 4.14 Remove the sign assembly or sign blank (Fig. 9) as follows:
- (a) Remove two socket head screws from the top and two pan head screws from the bottom which secure frame assembly B-555394 to the booth.
  - (b) Loosen three pan head tapping screws and move bracket B-650603-2 to permit the removal of the sign.
- 4.15 Early models of the sign assembly have a convex sign but later models have a flat sign. Signs which do not meet local telephone company standards shall be replaced as follows:
- (a) If the early (convex) model sign assembly requires replacing, it will be necessary to replace the complete assembly.
  - (b) If the later (flat) model sign assembly requires replacing, it will only be necessary to replace the sign.



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Fig. 9—KS-19206, List 9, 14, 15, or 16 Sign Assembly

(c) Refer to Table B for list numbers.

**4.16** If the sign lamp has to be replaced, use one of the following 30-inch, 20-watt fluorescent lamps.

- GE—F30-inch-T8-CW-4
- Westinghouse—F18-T8-CW-30
- Sylvania—F18-T8-CW-K-30

**4.17** If the lamp starter has to be replaced, use an FS-2 or FS-25 starter.

**4.18** If ballast shows signs of leaking compound, replace the complete fixture (B-554513).

#### SEAT AND SHELF

**4.19** Examine the seat and shelf. Replace if broken or if local telephone company standards cannot be met.

- Use B-554538 seat
- Use B-555896 shelf

#### RUBBER FLOOR MAT

**4.20** Rubber floor mats (B-552527) which will not meet local telephone company standards shall be replaced as follows:

- (a) Remove 17 self-tapping screws, 17 lockwashers, and remove the rubber mouldings around the bottom of the booth.
- (b) Remove six flathead screws and remove the curved angle strip along the door track.
- (c) Remove the mat and remove all loose dry cement and foreign matter from the floor surface using a suitable scraper.
- (d) Apply a thin event coat of adhesive (such as Armstrong D-220) over the floor surface.
- (e) Place the new mat in position and remove all air pockets by treading on the surface.
- (f) Install the curved angle strip using the six flathead screws removed in (b).

(g) Install the rubber moldings around the bottom of the booth using the 17 self-tapping screws and 17 lockwashers removed in (a).

#### DOOR ASSEMBLY

**4.21** Refer to 3.07 through 3.09.

**4.22** Clean the nylon rollers and door tracks with a suitable brush.

**THINK** *Use gloves and eye protection when handling glass panels.*

**4.23** Inspect roller bracket mounting screws and ensure that they are tight.

**4.24** Glass panels which do not meet local telephone company standards shall be replaced as follows:

- (a) Remove the B-992407 rubber bumper strip, located in the right door stile, by starting at the bottom and pulling out and up.
- (b) Loosen the six hex socket head cap screws which secure the right door stile to the door assembly.



*The glass panels must be removed and installed from inside the booth.*

- (c) Refer to Fig. 10 and remove the retaining strips in the order shown.
- (d) Remove the panel or broken glass from the door assembly.
- (e) Transfer the B-992408 glazing strips from the old panel, or portions of old panel, to the new B-554570 panel making sure the lipped edge of each glazing strip is positioned on the side of the glass which will be toward the outside of the booth.
- (f) Working from the inside of the booth, close the door and place a wedge shaped block under the bottom edge of the door frame, approximately at the center.
- (g) Place the glass panel in the door.

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- (h) Install the retaining strips in accordance with Fig. 10.
- (i) Secure the right door stile by tightening the six hex socket head cap screws (Fig. 10).
- (j) Install the rubber bumper strip in the right door stile using an RS-14770 nylon hammer or equivalent.

### Door Stop Kit (Fig. 11)

#### 4.25 To install door stop kit:

- (1) Remove color panel. Refer to 4.30.
- (2) Remove four No. 8-32 by 1/4 Pan Hd screws, four No. 8 lockwashers and the support assembly which supported the color panel.
- (3) Remove the existing door stop located at the back end of the upper door track.
  - (a) Remove roof for access to stop.
  - (b) If roof cannot be removed, reach through ceiling dome area and bend stop out of the way.
- (4) With curved door closed, mount the two new stop brackets approximately as shown in Fig. 12.
- (5) Using stops as marking templates, mark locations for four mounting screw holes
- (6) Remove brackets and drill the four holes using a No. 25 drill
- (7) Secure brackets to door using four No. 8-32 by 3/8 Phillips Hd self-tapping screws (furnished).

#### 4.26 Check rollers as follows:

- (1) Ensure that bottom roller brackets are not bent downward away from the required 90 degree angle.
- (2) Adjust bottom roller assemblies so that there is no binding against the track.

(3) Ensure that roller assembly mounting screws are tight.

(4) Replace any loose or missing screws with nylon locking screws.

#### 4.27 Install support assembly and color panel.

4.28 Open and close door several times to ensure that there is no binding and that rollers are rolling free.

### COLORED PANEL

4.29 The panels are available in three colors (Table A):

4.30 The panels may be removed as follows:

**THINK** → *When removing the corner trim strip, use care while removing the screw because the strip will spring out.*

- (a) Remove two self-tapping screws and remove the corner trim strip.
- (b) Remove eight self-tapping screws which secure the panel to the booth.
- (c) Install the new panel using the eight self-tapping screws removed in (b).

### INSIDE LINERS

4.31 Liners which do not meet local telephone company standards can only be replaced at the Distributing House.

4.32 For minor defects and chipping, an air dry matching paint may be used to fill in the damaged area.

### CARD FRAME

4.33 Replace all broken or damaged card frames with a KS-19928 card frame. Refer to Section 508-811-100.

### FINAL CLEANING

4.34 After all maintenance has been completed, sweep and dust the interior of the booth.

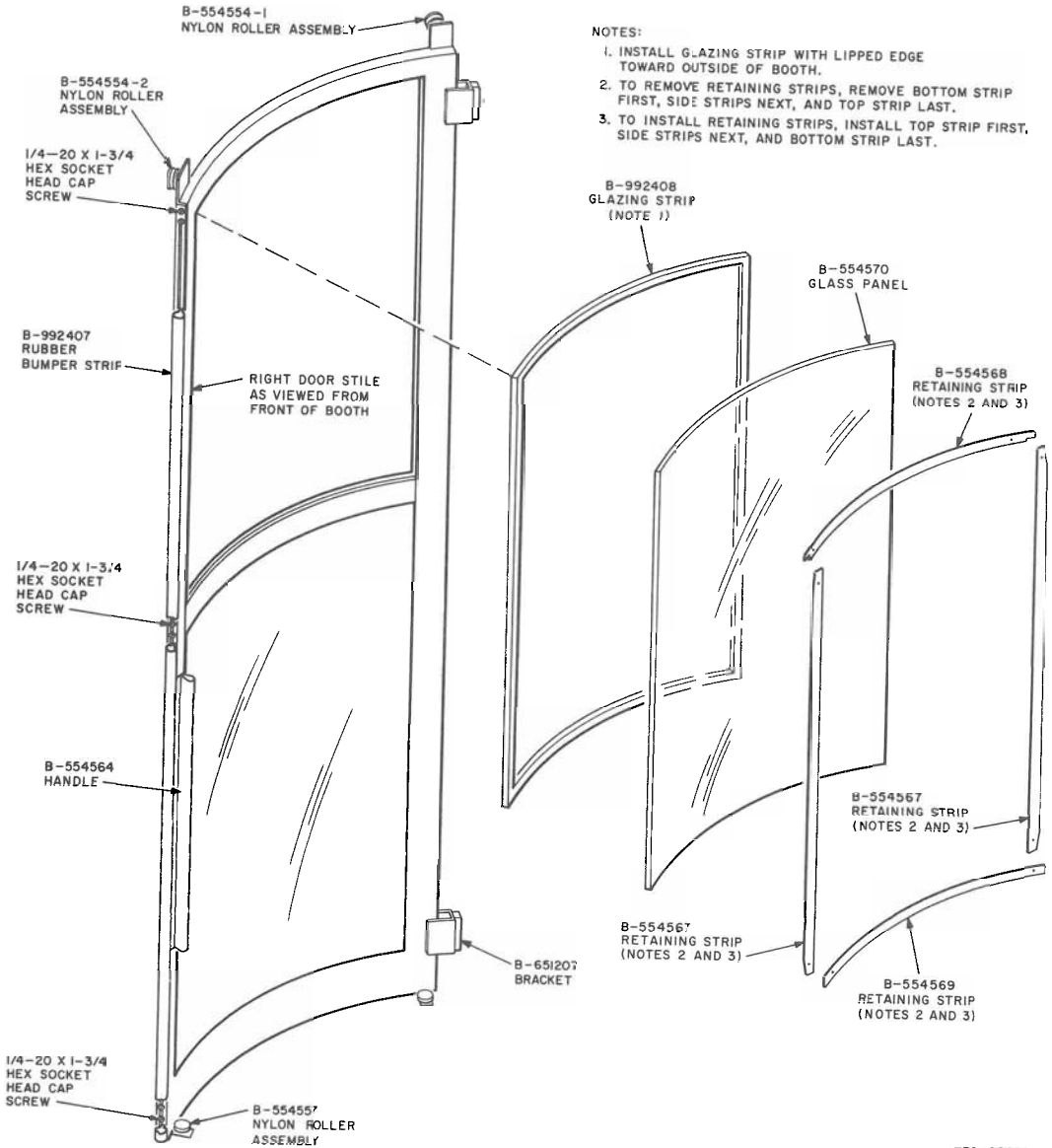


Fig. 10—B-554510 Door Assembly

TPA 469882

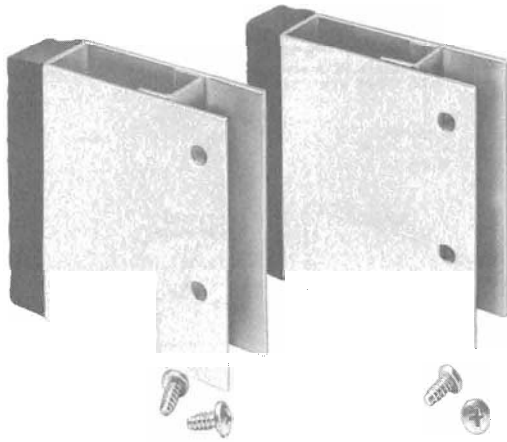


Fig. 11—Door Stop Kit

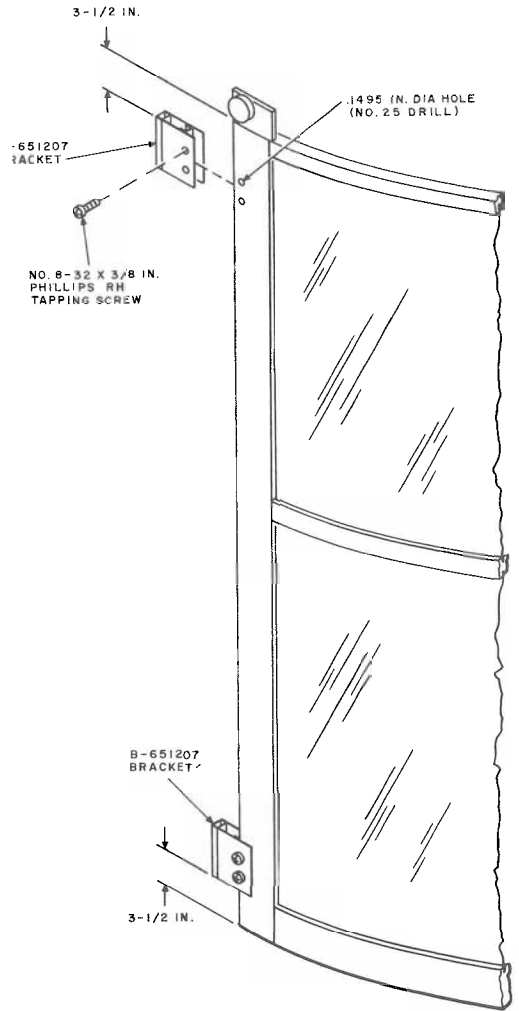


Fig. 12—Installation of Door Stop Kit



## INDOOR BOOTH

### KS-19442 DELUXE GLASS

#### 1. GENERAL

**1.01** Information in this section was formerly contained in Sections 508-231-100 and 508-231-300 which are hereby canceled.

**1.02** The KS-19442 deluxe glass telephone booth is designed for indoor, sitdown service (Fig. 1). It may be used singly or in various multiple arrangements (side-by-side and/or back-to-back).

**1.03** This booth is not designed to include an interior directory; all glass booths are intended for locations that have directory shelves or tables.

**1.04** The overall dimensions of the booth are:

- Height—83-1/8 inches
- Width—34-1/8 inches
- Depth—34-1/8 inches

#### 2. IDENTIFICATION

**2.01** The KS-19442 booth consists of an extruded aluminum framework, covered with metal strips or appliques to provide a variety of finishes. These strips are either snapped or crimped in place and are available in stainless steel, satin-finished anodized aluminum, or medium bronze-colored anodized aluminum.

**2.02** Single glass panels extend from the ceiling to the base of each wall. Acoustic panels for rear and right sides are available if required.

**2.03** Booth levelers are provided in the base of each wall and are concealed by black kickplates located around the base of the booth.

**2.04** The booth interior is finished in black, including the formed plastic seat, retaining strips, kickplates, and flat ceiling.



Fig. 1—KS-19442 Deluxe Glass Telephone Booth

## SECTION 508-204-100

**2.05** A thick tempered glass writing shelf spans the right wall and extends beneath the coin telephone.

**2.06** Stainless steel panels are mounted in the right rear corner to provide a mounting for the backboard. The booth was designed for the 1A/1C-type coin telephone sets and coin panel phones.

**2.07** No floor is provided with this booth; however, a KS-19442, List 90 floor (Fig. 1) is available and can be used in single or multiple installations. The walls of the booth must be secured to the surface upon which they are placed if a List 90 floor is not used. Holes are provided in the lower wall extrusions for this purpose.

**2.08** A KS-19207, List 1 light and blower unit is supplied with each booth for illumination and ventilation. The unit is wired for continuous illumination; however, it can be wired to be actuated by the door-operated snap-action switch. This switch, in conjunction with a customer controlled manual switch, actuates the blower motor. Refer to Section 508-820-100 for details of the KS-19207 light and blower unit.

**2.09** All electrical and telephone connections are made in the ceiling assembly. An electrical outlet box, telephone connecting block, and telephone wiring are all furnished and are located in the ceiling area.

**2.10** Channels are provided in the right side wall for bringing electric and telephone service in through the floor.

**2.11** A roof structure covers the booth, encloses the equipment mounted above the ceiling, and provides a frame for the sign above the door.

**2.12** Various list numbers assigned to the KS-19442 booth, booth components, and accessories are described in Table A.

### ORDERING INFORMATION



*The differences between List 1 and List 21 booths are shown in Table B.*

**2.13** For single installation, order List 1 booth (Fig. 8A).

**2.14** For a side-by-side multiple installation, order one List 1 booth and the remainder as List 21 booth(s) (Fig. 8B).

**2.15** For a back-to-back installation where only two booths are used, order two List 1 booths (Fig. 8C).

**2.16** For a back-to-back installation where more than two booths are used, order two List 1 booths and the remainder as List 21 booths (Fig. 8D).



*When ordering booths for back-to-back installations, order one 1/4-20 by 3/4 hex socket head cap screw and one 1/4-20 by 1-1/2 hex socket head cap screw for each booth ordered. These screws are required for fastening the backs of the booths together.*

**2.17** The KS-19732, List 2 template, KS-19783, List 1 dolly, KS-19783, List 2 brace, KS-19442, List 90 floor, KS-19425, List 22 cable assembly, and 127A cover must be ordered separately as required.

**2.18** Orders for the booth shall specify quantity, KS-number, and list number of each booth, and finish, plus each accessory required.

*Note:* Unless otherwise specified, a KS-19442, List 65 sign panel and a KS-19340, List 54 backboard will be furnished with each booth.

**2.19** The following are examples of typical orders:

#### *Example 1—Single Booth (Fig. 8A)*

1—Booth, Telephone, KS-19442, L1 with L81 finish

1—127A Cover

1—KS-19425, List 22 cable assembly

#### *Example 2—Three Booths Side-by-Side (Fig. 8B)*

1—Booth, Telephone, KS-19442, L1 with L82 finish

**TABLE A**  
**BASIC LIST NUMBERS AND ACCESSORIES**

PART NO.	DESCRIPTION	REMARKS	
KS-19442	List 1	Booth (Fig. 1)	Complete booth for single installation
	List 21		For multiple installations
	List 30	Roof and ceiling assembly	
	List 52	Shelf	Tempered glass
	List 51	Tempered glass panel	Door
	List 53		Rear or right side
	List 57		Left side
	List 59		Front
	List 54	Acoustic panel*	Rear or right side
	List 62	Sign panel	White blank
	List 65		White letters — blue background
	List 68		Blue blank
	List 69		Blue letters — white background
	List 81	Trim and accessory finish	Satin — finish anodized aluminum
	List 82		Stainless steel
	List 83		Medium bronze-colored anodized aluminum
List 90	Floor†	Dark gray synthetic rubber bonded to a metal base	
KS-19340	List 53	Backboard (Fig. 2)	For 1A/1C-type coin telephone set
	List 54		For 235G/2A/2C-type coin telephone set
KS-19425	List 22	Cable assembly† (Fig. 3)	For incoming power and interconnecting multiple booths
KS-19783	List 1	Dolly† (Fig. 4)	For transporting booth without floor
	List 2	Brace† (Fig. 5)	For supporting a booth without floor where dolly is not required
KS-19732	List 2	Template† (Fig. 6)	For locating anchoring holes
127A-Type		Cover† (Fig. 7)	For 235G/2A/2C-type coin telephone set

\* Acoustic panels must be used in the rear of each back-to-back booth. They are optional in the right side of all arrangements and in the rear of single booths.

† Dolly, brace, floor, template, cable assembly, and cover must be ordered separately.

**TABLE B**  
**COMPONENT DIFFERENCES BETWEEN**  
**LIST 1 AND LIST 21 BOOTHS**

COMPONENT		LOCATION	LIST 1	LIST 21	REMARKS
G4 Glazing Strip		In left wall	•		
L57 Glass Panel			•		
B-651879-1 Rail (2 used)				•	Horizontal
B-651879-2 Rail (2 used)				•	Vertical
K6	Kickplate	Bottom left—outside wall	•		
K7		Bottom right—outside wall	•		
K9		Bottom front—outside wall		•	Packaged separately
T5	Trim Strip	Top left—outside wall	•		
T6		Top right—outside wall	•		
T7		Bottom left—outside wall	•		
T8		Bottom right—outside wall	•		
1/4-20 x 3/4 Hex Soc Hd Cap Screw (2 used)		Left wall—bottom		•	Used to tie two booths together in a side-by-side installation
1/4-20 x 1-1/2 Hex Soc Hd Cap Screw (2 used)		Left wall—top		•	

2—Booths, Telephone, KS-19442, L21 with L82 finish

2—Panels, Blank, KS-19442, L68\*

3—127A Covers

**Example 3—Six Booths Back-to-Back (Fig. 8D)**

2—Booths, Telephone, KS-19442, L1 with L83 finish

4—Booths, Telephone, KS-19442, L21 with L83 finish

4—Panels, Blank, KS-19442, L68\*

6—Panels, Acoustic, KS-19442, L54†

6—Screws, Hex Socket Hd Cap, 1/4-20 by 3/4

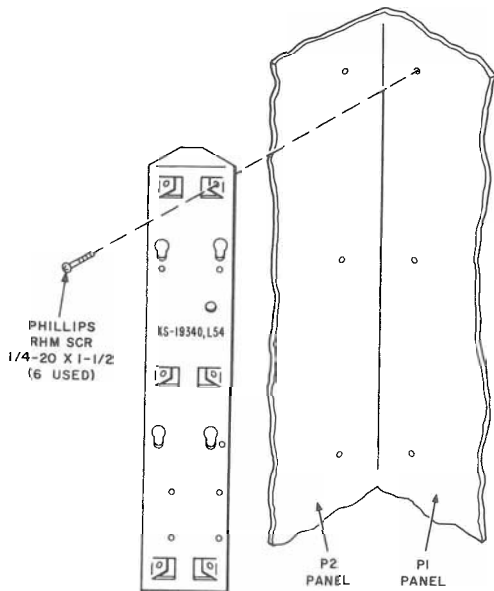
6—Screws, Hex Socket Hd Cap, 1/4-20 by 1-1/2

\*List 68 blank panels shall be on end booths of each line-up.

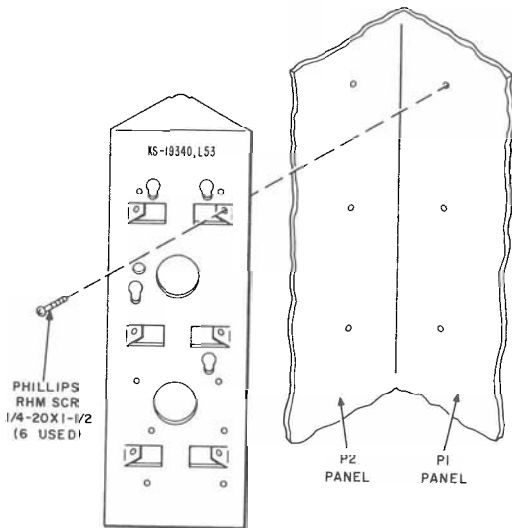
†Acoustic panels are installed in the rear of each back-to-back booth.



**Optional signs, sign blanks, backboards, cable assemblies, acoustic panels, and floors must be specified as required.**



A



B

TPA 567874

Fig. 2—Installation of Backboards

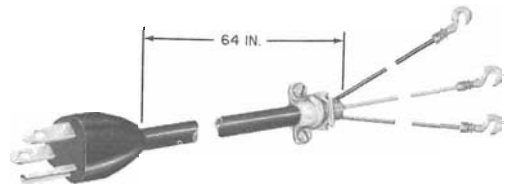


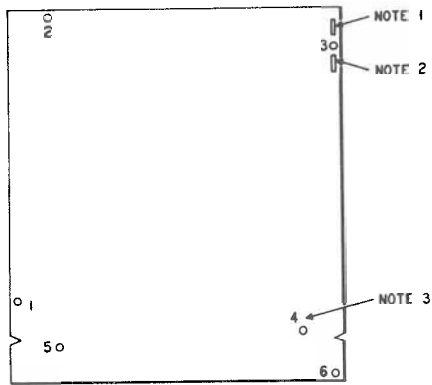
Fig. 3—KS-19425, List 22 Cable Assembly



Fig. 4—KS-19783, List 1 Dolly



Fig. 5—KS-19783, List 2 Brace



- NOTES:
1. OPENING FOR TELEPHONE ENTRANCE.
  2. OPENING FOR POWER ENTRANCE.
  3. THE NUMBERS ARE FOR REFERENCE ONLY.
  4. TWO 1/4 IN. X 1-1/2 IN. STEEL RODS WILL BE FURNISHED WITH EACH TEMPLATE TO BE USED FOR ALIGNMENT PURPOSES.

Fig. 6—KS-19732, List 2 Template

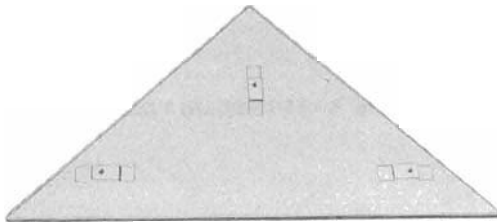


Fig. 7—127A-Type Cover, Bottom Side

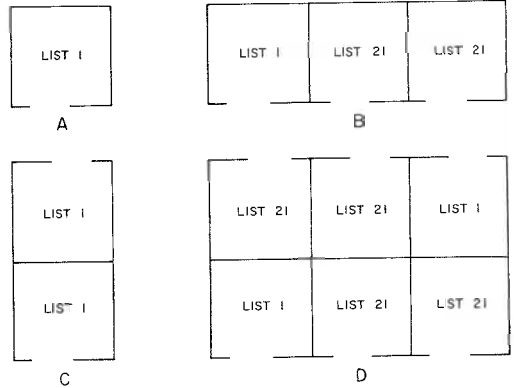


Fig. 8—Layout of Booth Arrangements

### 3. INSTALLATION

#### SPECIAL TOOLS

3.01 The following special tools are required for the installation of the KS-19442 booth.

TOOL	USED TO	SOURCE OF SUPPLY
Awl (2 required)	Line up holes between connecting parts	Obtain locally
Center punch*	Crimp trim strips	Obtain locally
Chalk line*	Mark booth positions	Obtain locally

TOOL	USED TO	SOURCE OF SUPPLY	SINGLE BOOTH
Compound, antiseize, KS-19094	Coat screw threads which are threaded into aluminum	Western Electric Co.	<i>Note 1:</i> Each KS-19442, booth is shipped assembled, mounted on a skid. If the booth is not equipped with a List 90 floor, do not attempt to move it from the skid without using a KS-19783, List 1 dolly (Fig. 4).
Glass Lifter* Vacuum Cup (capable of lifting 50 pounds) 2 required	Install glass panels (mtce)	Obtain locally	<i>Note 2:</i> If the booth is to be installed against a wall, post, or column, determine if the vertical surface is plumb, using a 4-ft. level, and if any misalignment exists, allow sufficient distance at the base when locating the template (see 3.02).
Gloves, safety, RS-13515	Handle glass panels (mtce)	Western Electric Co.	<i>Note 3:</i> If the booth is to be installed on a carpeted floor, use extreme care not to damage the carpet. Do not cut the carpet even if it will become the booth floor.
Goggles or face shield, RS-13406A	Protect against glass in case of breakage	Western Electric Co.	<i>Note 4:</i> If the booth is equipped with a List 90 floor, disregard 3.02 through 3.10 except 3.09 (a), (b), and (c).
Hammer,* soft faced, RC-14770	Crimp trim strips	Western Electric Co.	
Knife, safety	Remove packing from booths	Lewis Safety Knife or equivalent	
Level (4 ft min)	Ensure that booths are level	Obtain locally	<b>3.02</b> Place KS-19732, List 2 template (Fig. 6) in the exact position that the booth will be mounted with holes 1, 2, and 5 on the left side and "V" notches on line with front edge of booth.
Screwdrivers, Xcelite X-102, SX-102, X-103 and X-1021	Install various components using Phillips screws	Eastern Tool Warehouse 601 West 50th St. New York, New York	<b>3.03</b> Using the template as a guide, drill 1/4-inch holes at positions 1, 2, 3, and 4 to a depth of approximately 1-1/4 inches.
Square,† carpenter	Ensure that booths are square	Obtain locally	<i>Note:</i> After the first two holes are drilled, insert two 1/4 by 1-1/2 steel rods (furnished with template) in the holes to prevent the template from slipping while drilling the remaining holes. If underground power and telephone wiring is to be used, mark locations at this time.
Template,† locating KS-19732, List 2	Drill holes in floor for mounting booths	Western Electric Co.	<b>3.04</b> Remove the two steel rods and template from the drilling area.
Wrench Set, M-51 Williams Super Ratchet Wrench Set (E/W complete set of Allen Head Sockets)	Assemble frames	Local Automotive Parts Distributor	<b>3.05</b> The booth is secured to a masonry floor with 3/8-16 by 2 hex socket head cap screws. Select the proper machine bolt anchor to accommodate this size screw and enlarge the drilled holes sufficiently to accept anchors. See the appropriate section on masonry fasteners.

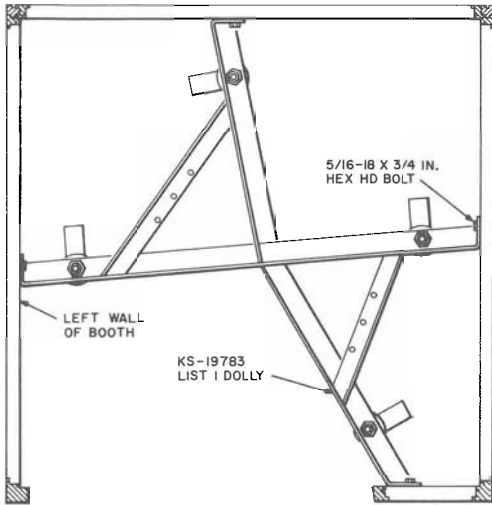
\* Required for multiple installations only.

† Not required for booth equipped with List 90 floor.

*Note:* Lag or wood screws of equivalent holding power should be used in wood floors.

**SECTION 508-204-100**

- 3.06 Position the booth adjacent to the mounting location and remove all packing details.
- 3.07 Remove inside kickplates.
- 3.08 Install KS-19783, List 1 dolly per Fig. 9 using hardware furnished.

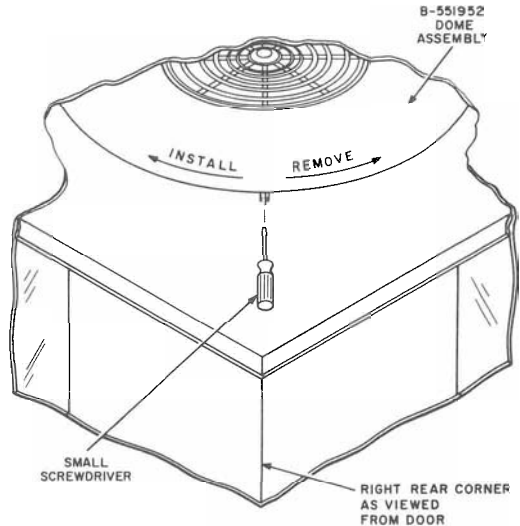


**Fig. 9—KS-19783, List 1 Dolly Installed in Booth**

- 3.09 If inside wiring is to be run from floor:
  - (a) Position booth so that it is in its approximate mounting location.
  - (b) Remove the dome assembly (Fig. 10) and fluorescent lamp.

**Warning:** Use goggles or face shield when removing the dome and lamp.

  - (c) Drop a weighted fish line from the ceiling area to pull telephone and electric wires separately up through their proper channels (in the right wall frame) to the ceiling area (Fig. 11).
  - (d) Align mounting holes of booth with mounting holes in floor and remove dolly.



**NOTES:**

1. FOR REMOVAL, INSERT SMALL SCREWDRIVER THROUGH SLOT IN CEILING, DEPRESS DETENT SPRING, AND TURN DOME ASSEMBLY COUNTERCLOCKWISE.
2. FOR INSTALLATION, PLACE DOME ASSEMBLY IN CEILING AND TURN IT CLOCKWISE UNTIL DETENT SPRING ENGAGES AND LOCKS DOME.

B-56787E

**Fig. 10—Method of Removing Dome Assembly**

- 3.10 Insert 3/8-16 by 2 hex socket head cap screws in the mounting holes. Determine that the booth is perfectly square. Adjust leveling devices until the booth is perfectly level and secure the four screws.
- 3.11 Install coin telephone set in accordance with appropriate coin telephone set practices.
- 3.12 When a coin panel phone is used, install a 127A-type cover (Fig. 7) over the coin telephone set using three No. 8-32 by 3/16 round head machine screws.
 

**Note:** The cover must be ordered separately; screws are furnished with cover.
- 3.13 Install telephone wiring as outlined in 3.34 and 3.35.
- 3.14 Install electric wiring as outlined in 3.36 and 3.37.
- 3.15 Install fluorescent lamp and dome assembly (Fig. 10).



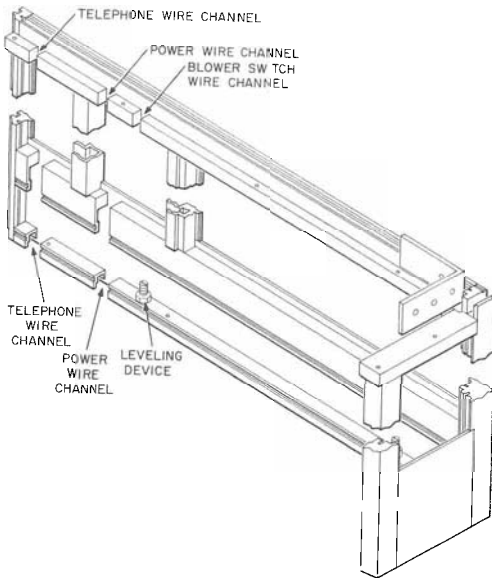


Fig. 11—View of Right Wall Frame Showing Wire Channels

- 3.16 Install the inside kickplates which were removed in 3.07.

### SIDE-BY-SIDE MULTIPLE ARRANGEMENT

**Note 1:** Arrangements should be made to bring telephone and electrical service wires into an end booth.

**Note 2:** KS-19732, List 2 template (Fig. 6) can be used for laying out an arrangement from left to right or from right to left. If the left-hand booth of the lineup is to be against a wall, post, or column, lay out the positions from left to right. If the right-hand booth of the lineup is to be against a wall, post, or column, lay out the positions from right to left.

**Note 3:** All screws threaded into aluminum parts should be coated with KS-19094 antiseize compound.

**Note 4:** Refer to Notes 1, 2, and 3 under *single booth installation*

- 3.17 Use a chalk line and mark the floor where the front edge of the lineup will be (Fig. 12).

**Note:** If the booths being installed are equipped with List 90 floors, disregard 3.18 through 3.20.

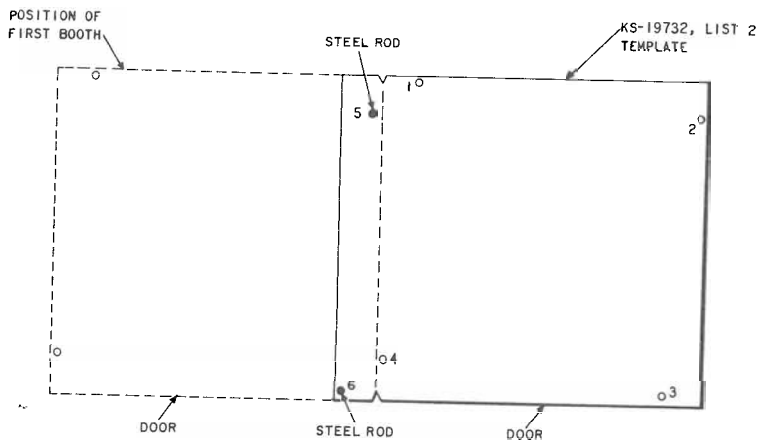


Fig. 12—Left to Right Layout for Drilling Mounting Holes

## SECTION 508-204-100

**3.18** When laying out positions from the left to right, drill holes in the floor as follows:

- (1) Place KS-19732, List 2 template in the position where the left-hand booth will be mounted with the "V" notches on chalk line. Holes 1, 2, and 5 should be to the left.
- (2) Using the template as a guide, drill 1/4-inch holes at positions 1, 2, 3, and 4 to a depth of approximately 1-1/4 inches.

**Note:** After the first two holes are drilled, insert two 1/4 by 1-1/2 steel rods (furnished with template) in these holes to prevent the template from slipping while drilling the remaining holes.

- (3) Move template to the right and align template holes 5 and 6 with previously drilled holes 3 and 4, respectively (Fig. 12). Insert the two steel rods in these holes.
- (4) Drill 1/4-inch holes at positions 1, 2, 3, and 4 to a depth of approximately 1-1/4 inches.
- (5) If a third booth is to be installed, move template to the right and align template holes 5 and 6 with previously drilled holes 2 and 3, respectively (Fig. 12). Insert the two steel rods in these holes.
- (6) Repeat step (4).
- (7) If additional booth positions are required, repeat steps (5) and (4) respectively.

**3.19** When laying out positions from right to left, drill holes in the floor as follows:

- (1) Place KS-19732, List 2 template in the position where the right-hand booth will be mounted with the "V" notches on chalk line. Holes 3, 4, and 6 should be to the right.
- (2) Repeat 3.18 (2).
- (3) Move template to the left and align template holes 5 and 6 with previously drilled holes 1 and 2, respectively (Fig. 13). Insert the two steel rods in these holes.
- (4) Repeat 3.18 (4).

- (5) If a third booth is to be installed, move template to the left and align template holes 5 and 6 with previously drilled holes 2 and 3, respectively (Fig. 13). Insert the two steel rods in these holes.

- (6) Repeat 3.18 (4).

- (7) If additional booth positions are required, repeat 3.19 (5) and 3.18 (4) respectively.

**3.20** Repeat 3.05.

**3.21** Install List 1 booth in accordance with 3.06 through 3.16.

**Note:** List 1 booth is always the left end booth of a line-up.

**3.22** To install a List 21 booth:

- (1) Remove and retain the following items from the right wall of previous booth (Fig. 14):
  - K7 kickplate—Located on bottom right-outside wall
  - T8 trim strip—Located on bottom right-outside wall
  - T6 trim strip—Located on top right-outside wall



**If this is an initial multiple installation, the items listed in (1) will be on the first booth installed (List 1) only.**

- (2) Place List 21 booth to the right of the previous booth and perform operations outlined in 3.06 through 3.10.

- (3) Remove R3 retaining strip from top left-inside wall of the booth being installed (Fig. 15).

- (4) Fasten booth walls together at top using two 1/4-20 by 1-1/2 hex socket head cap screws and at the bottom using two 1/4-20 by 3/4 hex socket head cap screws. Screws are furnished with List 21 booth.

- (5) Install R3 in its original position.

- (6) Install T6, T8, and K7 (Fig. 16) on the last right-hand booth of a line-up.
- (7) Crimp the top edge of the T6 trim strip approximately every 6 inches using RS-14770 soft face hammer and a center punch (Fig. 17).

**Note:** K7 will secure T8 sufficiently without crimping T8.

- (8) Install K9 kickplate (packaged separately) on the bottom-front-outside wall between booths (Fig. 16).

**3.23** Repeat 3.11 through 3.16.

### BACK-TO-BACK MULTIPLE ARRANGEMENT

**Note:** Refer to Notes 1 through 4 under *side-by-side multiple arrangement* and refer to Fig. 8 for layout.

- 3.24** If more than two booths are to be installed, use a chalk line and mark the floor where the front edge of the line-up will be.

**Note:** If the booths being installed are equipped with List 90 floors, disregard 3.25.

**3.25** When laying out positions for back-to-back multiple arrangements, drill holes as follows:

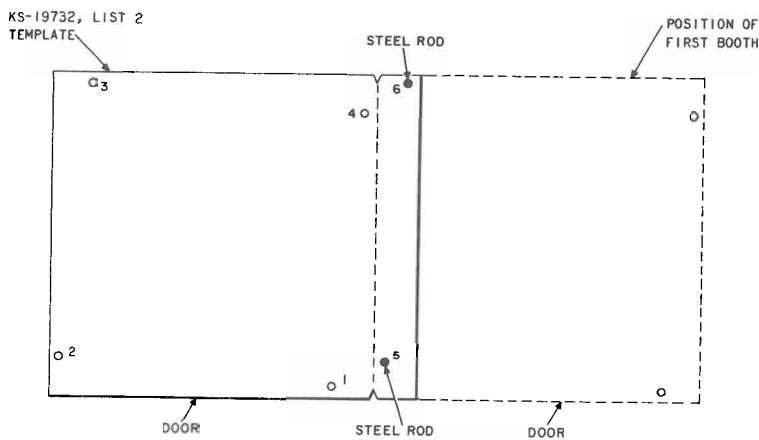
- (1) Perform steps outlined in 3.18 or 3.19 for the front line-up.
- (2) Move the template behind the first position as shown in Fig. 18 and align template holes 5 and 6 with previously drilled holes 2 and 3, respectively. Insert the two steel rods in these holes.
- (3) Drill 1/4-inch holes at positions 1, 2, 3, and 4 to a depth of approximately 1-1/4 inches.
- (4) If additional booth positions are required, move the template to the next position and perform operations in (2) and (3).

**3.26** Repeat 3.05.

**3.27** Install the first List 1 booth in accordance with 3.06 through 3.15.

**3.28** For a back-to-back installation of only two booths:

- (1) Remove and discard K8 kickplate, T6 trim strip, and T8 trim strip from outside-rear wall of both booths (Fig. 14).



**Fig. 13—Right to Left Layout for Drilling Mounting Holes**

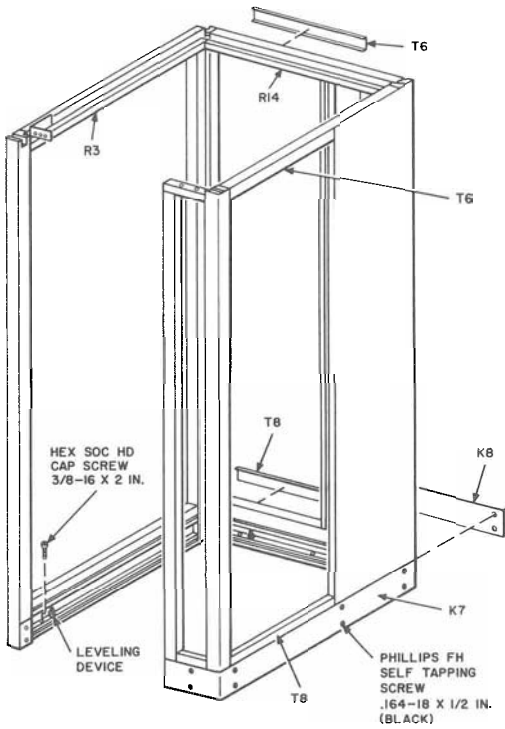


Fig. 14—Partial View of Booth

- (2) Place the second List 1 booth behind the first booth and perform operations outlined in 3.06 through 3.10.
- (3) Remove R14 retaining strip from top rear-inside wall of each booth (Fig. 14).
- (4) Tie booth walls together at the top using two 1/4-20 by 1-1/2 hex socket head cap screws and at the bottom using two 1/4-20 by 3/4 hex socket head cap screws. Screws are not furnished; they must be ordered separately.
- (5) Install R14 retaining strips removed in (3) in their original positions.
- (6) Repeat 3.16.

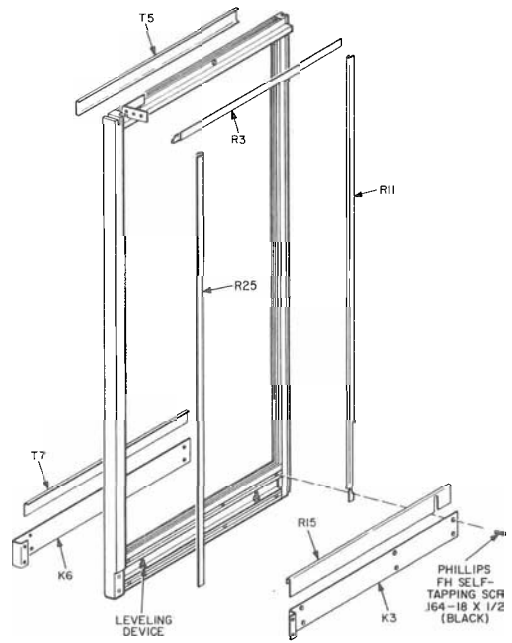


Fig. 15—Partial View of Left Wall

**3.29** For a back-to-back installation of more than two booths:

- (1) Install booths side-by-side as directed in 3.22.
- (2) Install booths back-to-back as directed in 3.28.

**3.30** Repeat 3.11 through 3.16.

**ADDING TO AN EXISTING INSTALLATION (SINGLE OR MULTIPLE)**

**3.31** To extend an existing line-up to the right:

- (1) Perform operations outlined in 3.22 (1).
- (2) Place the new List 21 booth to the right of the existing line-up.

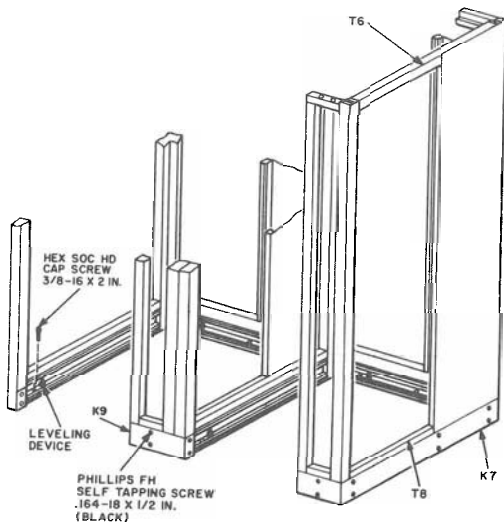


Fig. 16—Partial View of Two Booths



*If added booth is equipped with a List 90 floor, omit (3) through (7) and (10).*

- (3) Remove and retain the inside kickplates.
- (4) Mark the location for four mounting holes and move the booth aside.
- (5) Drill the four holes to a depth of 1-1/4 inches using a 1/4-inch drill.
- (6) Repeat 3.05.
- (7) Place booth in the mounting position and repeat 3.10.
- (8) Repeat 3.22 (3) through (8).
- (9) Perform operations listed in 3.11, 3.12, 3.35, and 3.37.
- (10) Install inside kickplates retained in (3).
- (11) Install fluorescent lamp and dome assembly (Fig. 10).

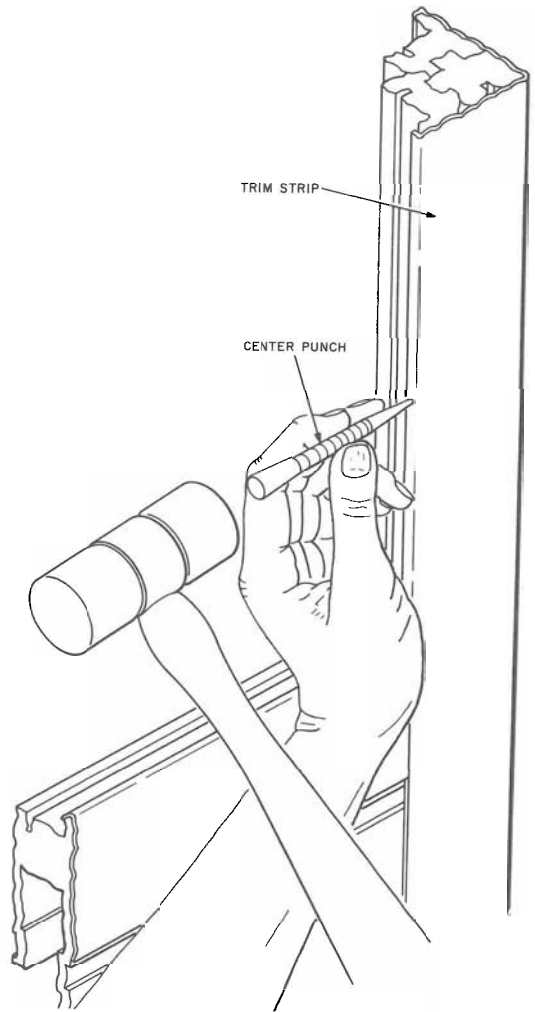
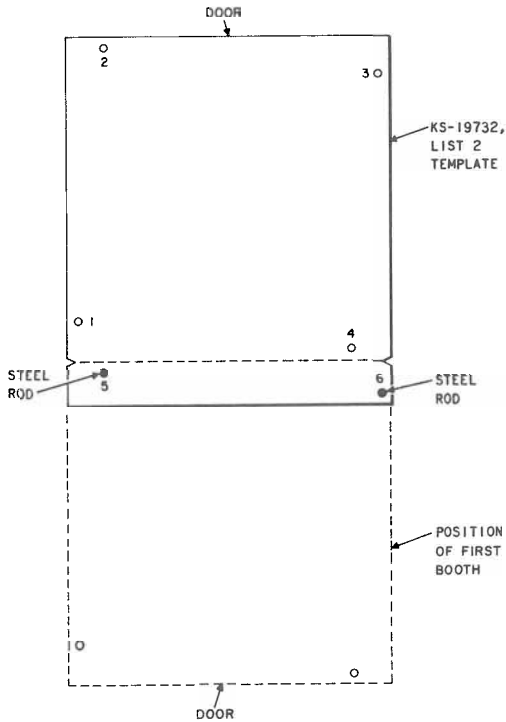


Fig. 17—Method of Crimping Trim Strips

**3.32** To extend an existing line-up to the left:

**Note:** The left-hand booth is always a List 1; however, to extend an existing line-up to the left, a List 21 booth must be added. The following procedures provide a means of adding a List 21 booth to the left of an existing line up. It may be desirable to move the List 1



**Fig. 18—Back-to-Back Layout for Drilling Mounting Holes**

booth to the left and add the List 21 on the right in accordance with 3.31.

(1) Remove and retain the following items from the previous existing or left end booth (Fig. 15):

- Seat assembly (See Fig. 19).
- K6 kickplate
- T7 trim strip
- T5 trim strip
- K3 kickplate
- R15 retaining strip

- R3 retaining strip
- R11 retaining strip
- R25 retaining strip
- L57 glass panel
- G4 glazing strip

(2) Place new booth to the left of the existing line-up.



*If new booth is equipped with a List 90 floor, omit (3).*

(3) Repeat 3.31 (3) through (7).

(4) Repeat 3.22 (4).

(5) Remove and retain the following items from the new booth.

- Seat assembly
- K3 kickplate
- R15 retaining strip
- R3 retaining strip
- R11 retaining strip
- R25 retaining strip

(6) Transfer B-651879 rails from the left wall of the new booth to the wall where the glass panel was removed.

(7) Install all items retained in (1) and (5) on the left walls of the booths (Fig. 15).

(8) Crimp the top edge of the T5 trim strip approximately every 6 inches using RS-14770 soft face hammer and a center punch (Fig. 17).

**Note:** K6 will secure T7 sufficiently without crimping T7.

(9) Repeat 3.22 (8).

(10) Repeat 3.11, 3.12, 3.35, and 3.37.

(11) Repeat 3.31 (10) and (11).

**3.33** to extend an existing back-to-back installation:

(1) Refer to 3.29, 3.31, and 3.32.

#### TELEPHONE WIRING

**3.34** Run the entrance cable or inside wires into the booth from the base or top as follows:

(a) If the entrance is made from the floor, extend cable to the ceiling area using the channel in the right wall (Fig. 11). Terminate cable at the 42A-type connecting block located in the left rear corner of the ceiling.

*Note:* In case of multiple arrangements, the 42A-type connecting block supplied may be replaced by a 30A-type to provide necessary terminations.

(b) If the entrance is made from the top, run the cable through one of the knockouts provided in the roof, either side, rear, or top. Terminate cable at the connecting block located in the left-rear corner of the ceiling.

**3.35** In multiple arrangements, run telephone wiring from booth to booth through knockouts in the sides of the roof. Terminate all telephone wiring at the 42A-type connecting block (or 30A-type connecting block if one is present).

#### ELECTRIC WIRING

**3.36** Run the power cable into a booth from the base or top as follows:

(a) If the entrance is made from the floor, extend cable to the ceiling area using the channel in the right wall (Fig. 11). Terminate cable at the electrical receptacle located in the left rear corner of the ceiling.

(b) If the entrance is made from the top, use KS-19425, List 22 cable assembly (Fig. 3) or an approved permanent wire and run cable through one of the knockouts provided in the roof, either side, rear, or top. Terminate cable at the electrical receptacle located in the left rear corner of the ceiling.

**3.37** In multiple arrangements, run KS-19425, List 22 cable or approved permanent wire from booth to booth through knockouts in the side of the roofs. Terminate all electrical wiring at the electrical receptacle located in the left-rear corner of each booth.

#### 4. MAINTENANCE

##### INSPECTION

**4.01** Ensure that all visible screws are secure. and replace missing screws. Use the following listing as a guide for ordering screws other than standard hardware.

**SECTION 508-204-100**

DESCRIPTION	SIZE	WHERE USED
Hex Socket Head Cap Nylok Screw	1/4-20 x 3/4	Secures set block to frame (Fig. 19)
Hex Head Screw	1/4-20 x 1-1/2	Secures seat block to seat assembly (Fig. 19)
Hex Socket Head Cap Nylok Screw	1/4-20 x 1-7/8	Secures support to booth frame (Fig. 19)
Hex Socket Head Cap Nylok Screw	1/4-20 x 2-1/2	Secures seat to corner support (Fig. 19)
Phillips Flathead Machine Screw	.190-32 x 1	Secures door stop block to header
Phillips Round Head Machine Screw	.138-32 x 3/16	Secures inside retaining strip to header
Phillips Round Head Machine Screw	.164-32 x 1/2	Secures actuator to door and secures door hinge to post
Phillips Round Head Self-tapping Screw, Type B	.164-18 x 5/16	Secures angle (holding telephone sign in place) to roof, secures air intake to header and secures corner retaining strip to frame
Phillips Flathead Self-tapping Screw, Type E	.164-18 x 1/2	Secures kick-plates

**Note 1:** All listed screws are black except the 1/4-20 by 1-7/8 hex socket head cap nylok screw which is unpainted.

**Note 2:** These screws may be obtained from O.M. Edwards Company, Inc., Syracuse, N.Y.

**Note 3:** If threaded screw holes are stripped, use the next larger size of the same type screw.

**Note 4:** All screws threaded into aluminum parts should be coated with KS-19094 antiseize compound.

**4.02** Check electrical grounding as covered in Section 508-100-100.

**SEAT ASSEMBLY**

**Note:** A damaged B-562302 seat cover (Fig. 20) may be replaced without replacing the entire seat.

**4.03** To remove seat assembly from booth (Fig. 19):

- (1) Remove one 1/4-20 by 1-1/2 hex head screw and one 1/4-inch lockwasher which secures seat assembly to B-562301 block.
- (2) Remove two 1/4-20 by 2-1/2 hex socket head cap nylok screws which secure seat assembly to B-562389 support.
- (3) Lift seat assembly up and off.

**4.04** To install seat assembly, use reverse procedure.

**4.05** To remove B-562302 seat cover (Fig. 20):

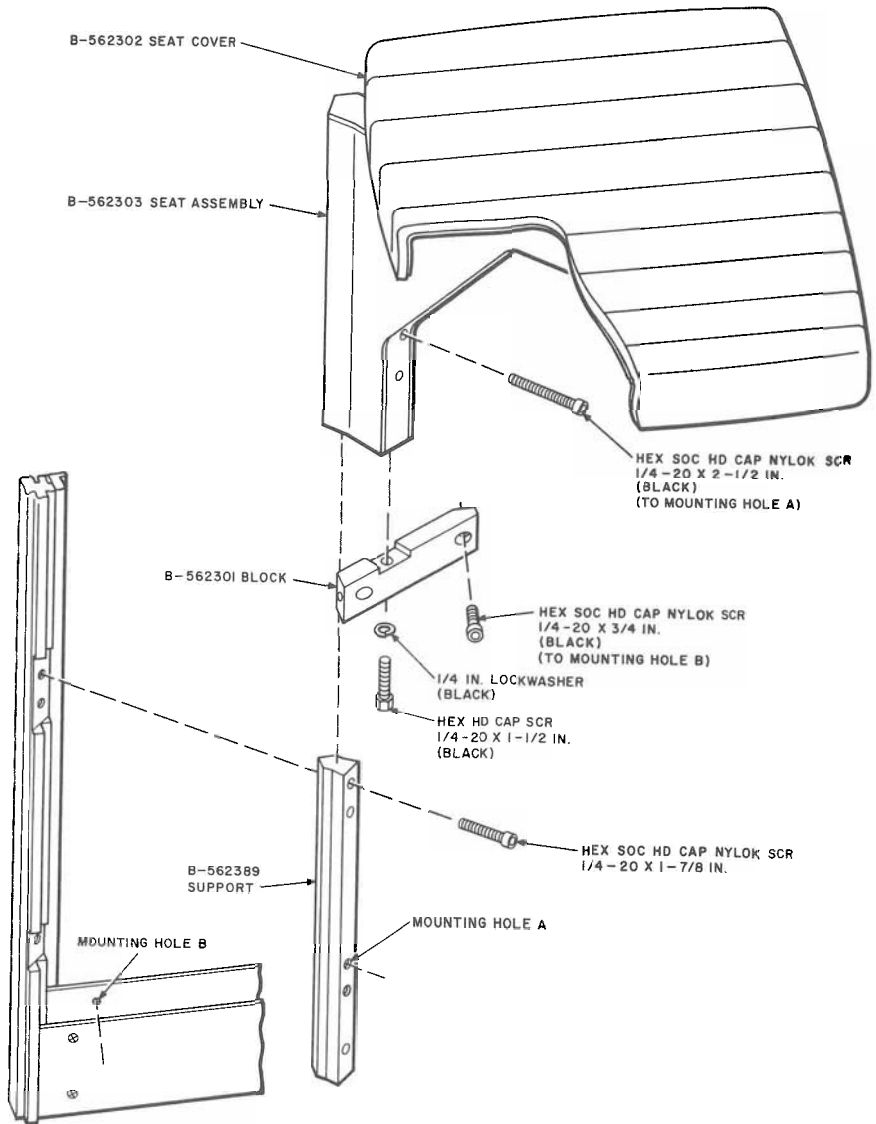
- (1) Remove twelve .138-32 by 3/16 Phillips round head machine screws, two B-564279 clamps, and two B-564336 clamps.
- (2) Lift cover off.

**4.06** Install new B-562302 cover using reverse procedure.

**4.07** To replace seat block and/or support, refer to Fig. 19.

**Note:** Ensure that all interlocking parts are properly engaged and all screws are tight.





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Fig. 19—Installation of Seat Assembly

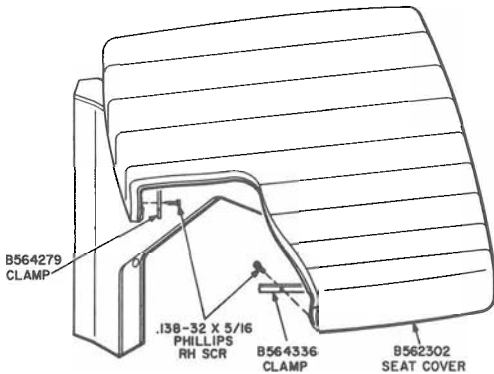


Fig. 20—Seat Assembly

**DOMES ASSEMBLY**

**THINK** Use eye protection when removing the dome assembly.

- 4.08** Remove dome assembly in accordance with Fig. 10.
- 4.09** Clean the dome assembly if required (see Section 508-100-101).
- 4.10** Clean the space between the ceiling and roof of all loose dirt and other foreign materials.
- 4.11** Replace dome assemblies which do not meet local telephone company standards.

**LIGHT AND BLOWER ASSEMBLY**

**THINK** Use eye protection when handling fluorescent lamps. Before making any repairs or replacements in electrical equipment, disconnect ac power plug or turn the service switch off and verify that circuit is dead by checking with an approved voltmeter.

- 4.12** Determine that the door operated switch (B-563122, Fig. 21) located in the left-front of the ceiling, properly actuates the blower unit. Access to the switch can be gained by removing the dome assembly.

**Note:** Booths are wired for continuous illumination. If desired, the light may be controlled by the door operated switch. Refer to Section 508-820-100.

- 4.13** Determine that the manually operated FAN switch turns the blower on and off when the door is closed. Replace defective switch assemblies (B-563123) as follows:

- (a) Remove the fan switch coverplate using an orange stick.
- (b) Remove the two .138-32 by 3/16 Phillips round head machine screws which secure the switch bracket to the frame.
- (c) Disconnect the two wire leads and replace the switch assembly.
- (d) Install the fan switch coverplate.

- 4.14** Ensure that all electrical leads are securely clamped away from the air inlet hole and from the rotating impeller.

- 4.15** To remove KS-19207 light and blower assembly:

- (1) Remove dome assembly.
- (2) Remove circline lamp.
- (3) Loosen four screws.
- (4) Slide unit back and down allowing left side to slide out first.

**PHONE SIGN**

- 4.16** Remove four .164-18 by 5/16 painted Phillips round head self-tapping screws which secure B-562379 angle to the roof (Fig. 21).

- 4.17** Remove the phone sign.

- 4.18** Replace signs which are broken or which will not meet local telephone company standards. See Table A for available signs.

NOTE:  
REMOVE PAPER BACKING FROM  
PLEXIGLASS BAFFLE.

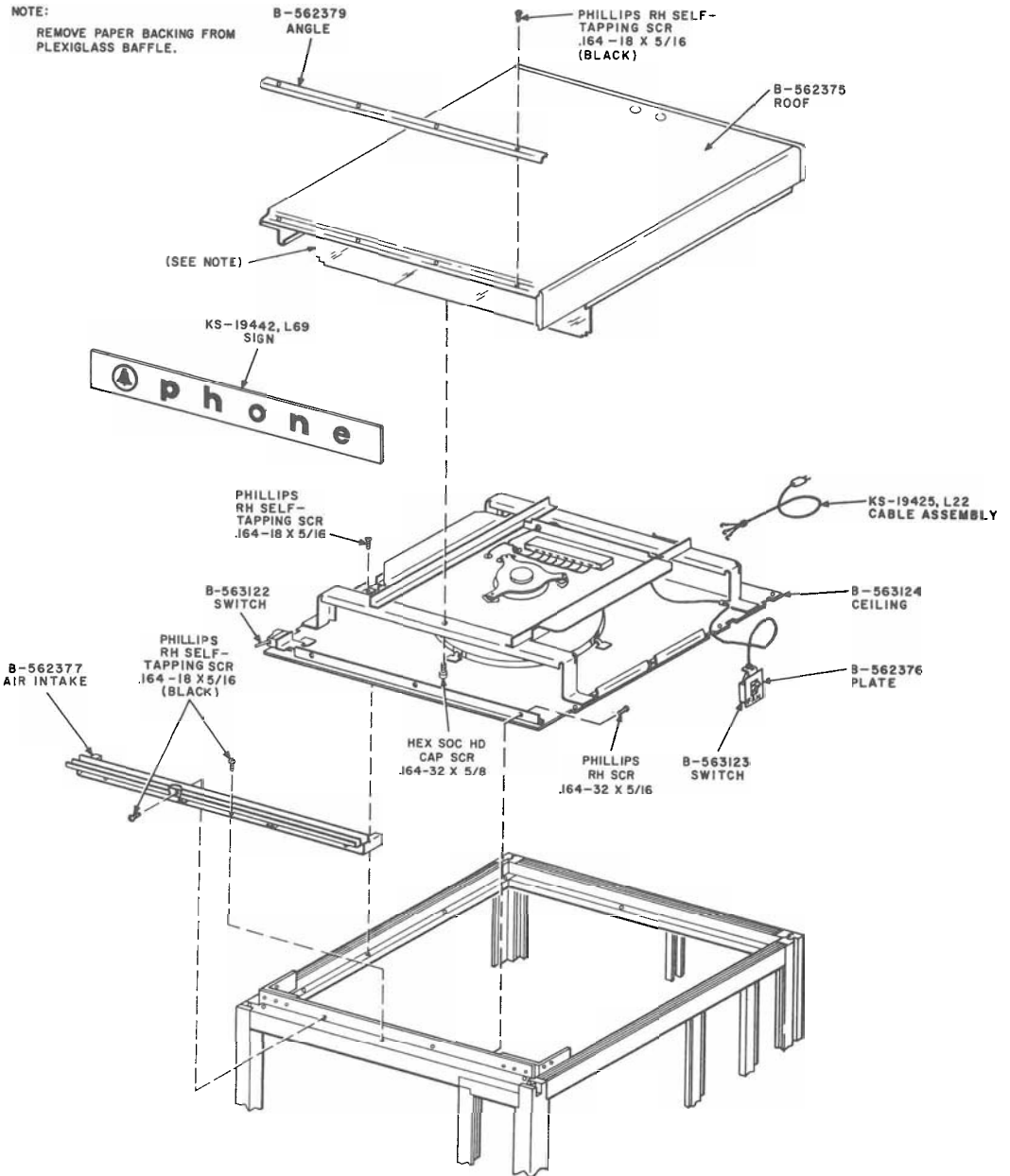


Fig. 21—Installation of Ceiling and Roof Assembly

**ROOF**

**4.19** If it becomes necessary to remove the roof (Fig. 21):

- Remove the phone sign
- Remove two .164-18 by 1/2 RH self-tapping screws which secure front of roof to frame
- Remove the dome assembly
- Remove three No. 8-32 by 5/8 hex socket head cap screws
- Lift roof off

**SHELF ASSEMBLY**

**4.20** Replace broken or damaged shelves as follows (Fig. 22):

- (1) Loosen three B-189998-3 tamperproof screws (.190-32 by 1/2) using KS-19192, List 1 wrench.
- (2) Pull B-562352 and B-562354 supports forward and up and remove the glass shelf.
- (3) Mount B-562356 shelf on the two support assemblies as shown.
- (4) Position B-562352 support down over front of shelf and engage rear slot over the pin of B-650595 support assembly. Slide B-562352 support down and back into position. Tighten the screw.
- (5) Slide B-562354 support down and back into position over rear end of shelf. Tighten the two screws.

**DOOR ASSEMBLY**

**4.21** When pushed closed from inside, the door should remain completely closed.

**4.22** A slight pull on the handle should open the door and restore it to normal position.

**4.23** Ensure that the nylon roller and door track are clean.

**4.24** The door should operate freely throughout its entire travel without binding, squeaking, or chattering. When the door binds, squeaks, or chatters, check the following items:

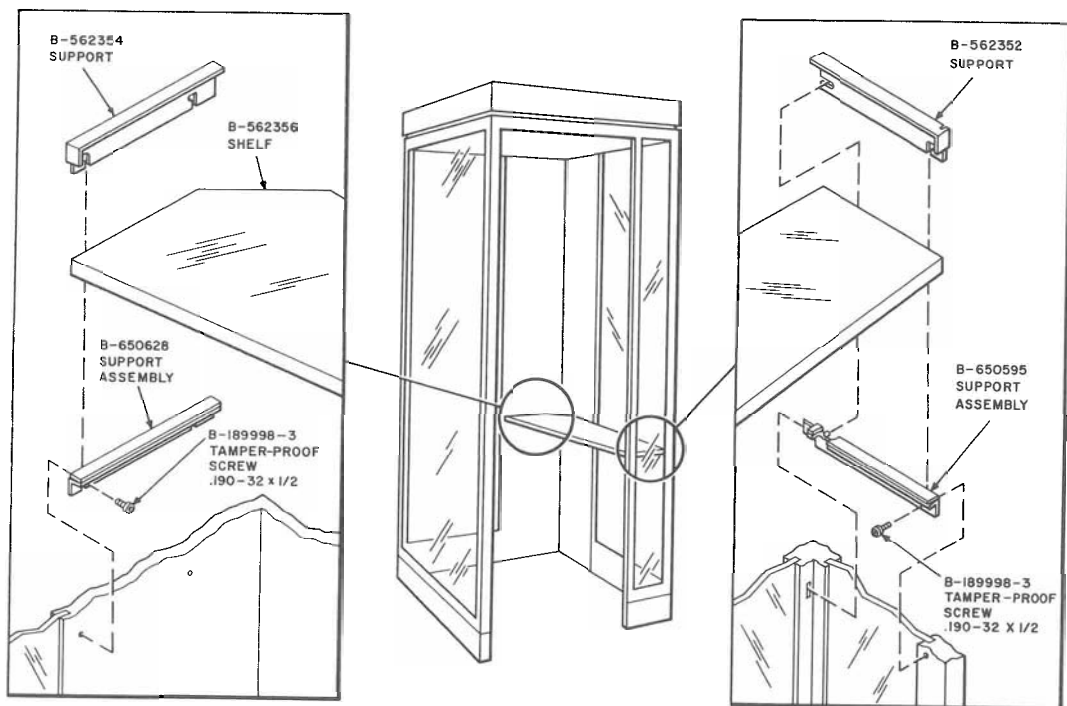
- (1) Ensure that booth is level.
- (2) Check hinge wear. Clearance between hinge barrels should not exceed 1/16-inch. Replace worn hinges.
- (3) Lubricate hinges, roller, and door track with KS-14774, List 2G lubricant. KS-14796 oiler can be used for application.

**4.25** If it becomes necessary to install a new door, perform following procedures (Fig. 23):

- (1) Place a strip of 5/8-inch thick wood or equivalent material at the door opening to raise the level of the door so that the screw holes will line up with the corresponding holes in the left front column.
- (2) Rest the bottom of the folded door on the wood strip with the handle toward the inside of the booth and the top tilting at a slight angle toward the right door column.
- (3) Line up the guide pin with the door track. Install B-562381 roller on the guide pin and straighten up the door.
- (4) Secure the door hinge to the left column using eleven .164-32 by 1/2 painted Phillips round head machine screws and eleven No. 8 black lockwashers.

**Note:** It may be necessary to use two awls for aligning the holes.

- (5) Install the actuator-assembly using two .164-32 by 1/2 painted Phillips round head machine screws and two No. 8 black lockwashers and slide it up into the access hole in the left front corner of the ceiling.
- (6) Determine that the actuator properly engages the switch spring and secure the actuator to the door.
- (7) Install B-650429 spring stop assembly on the header using one .190-32 by 1 painted Phillips flathead machine screw.



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Fig. 22—Installation of Shelf Assembly

**GLASS PANELS**

**THINK** *Wear gloves and eye protection when handling glass panels to prevent personal injury.*

**THINK** *Use care when handling tempered glass, Nicks or scratches will damage the glass and may cause it to shatter.*

**THINK** *Do not allow metal tools to come in contact with edge of tempered glass.*

**4.26** Glass panels which do not meet local telephone company standards shall be replaced as follows:

**Note 1:** Glass lifters capable of lifting 50 pounds or more shall be used when handling glass panels.

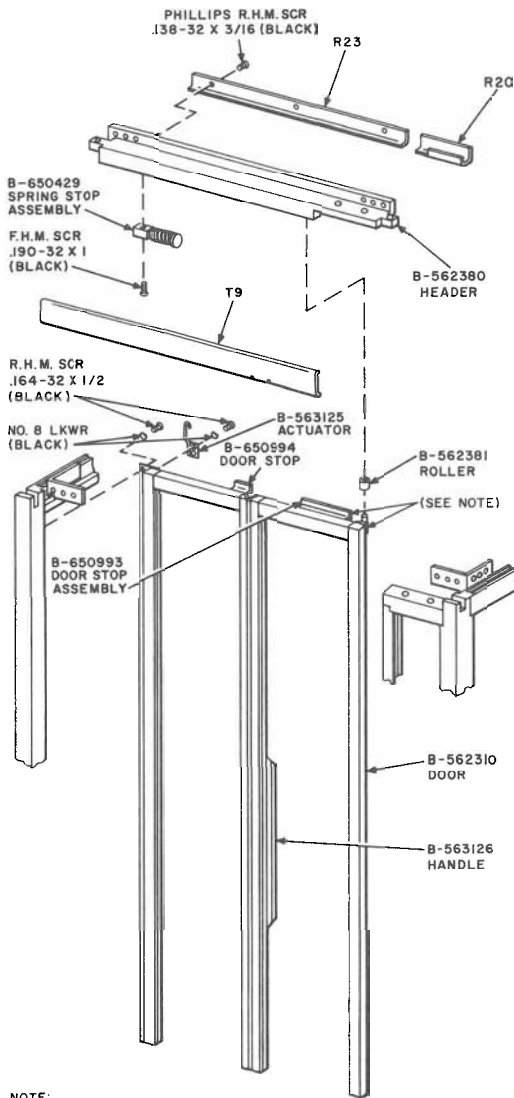
**Note 2:** Install panels with the manufacturer's trade name toward the bottom and the lip of the glazing strips toward the outside of the booth. The outside trim strips fit under the lip of the glazing strips.

**Note 3:** Install top strips first, side strips next, and bottom strips last.

- (a) Refer to Fig. 24 for installing door panels. Side and rear panels are similarly installed.
- (b) Refer to Table C for a complete list of glass panels, glazing strips, and retaining strips.

**TRIM STRIPS**

**4.27** Replace trim strips that are damaged.



**Fig. 23—Door Header, Trim, and Door Assembly**

(a) Refer to Table D for complete list of trim strips.

(b) Crimp the edges of all trim strips (except T7, T8, and T11) after they have been installed, approximately every 6 inches, using RS-14770 soft face hammer and a center punch (Fig. 17). These indentations should be kept small enough to be hidden by the glazing strips.

**Note:** T7, T8, and T11 are secured with kickplates.

#### 4.28 Replace kickplates that are damaged.

(a) Refer to Table E for complete list of kickplates.

#### CORNER PANELS

**Note:** All inside corner panels are stainless steel.

#### 4.29 Replace panels that are damaged.

(a) Refer to Table F for complete list of panels.

(b) Replace inside panels (P1 and P2) as follows:

- (1) Remove coin telephone set.
- (2) Remove shelf assembly as directed in 4.20.
- (3) Remove blower switch (from P1 only).
- (4) Remove two .164-18 by 5/16 Phillips round head self-tapping screws.
- (5) Slide panel (P1 to right or P2 to left) until it is free of the retaining clips and slide the panel down (Fig. 28).
- (6) Install using reverse procedure.

(c) Replace outside panels (P3 and P4) as follows:

- (1) Perform operations outlined in (b) (1) through (5).
- (2) Remove twelve .164-18 by 5/16 Phillips round head self-tapping screws and four B-565766 clamps from each panel (Fig. 25 and 26).

**TABLE C**  
**GLASS PANELS, GLAZING STRIPS, AND RETAINING STRIPS**

GLASS PANEL	POSITION INSTALLED	GLAZING STRIP		RETAINING STRIP			
		DESIGNATION	PART NO.	DESIGNATION	PART NO.	POSITION* ON PANEL	FIG. REF.
KS-19442, List 51	Door	G1	B-562320-1		B-562317-1	Bottom	24
					B-562317-2	Top	
					B-562317-3	Right edge as viewed from rear	
					B-562317-4	Left edge as viewed from rear	
KS-19442, List 53	Right Wall	G2	B-562320-2	R13	B-563116	Top	25
				R7	B-563113-1	Rear	
				R10	B-563114-1	Front	
				R17	B-562398-3	Bottom	
	Rear Wall			R14	B-563117	Top	26
				R8	B-563113-2	Left	
				R22	B-563114-3	Right	
				R16	B-562398-2	Bottom	
KS-19442, List 57	Left Wall	G4	B-562320-4	R3	B-562397	Top	27
				R11	B-563114-2	Rear	
				R25	B-563113-4	Front	
				R15	B-562398-1	Bottom	
KS-19442, List 59	Front Wall	G5	B-562320-5	R20	B-562399	Top	23
				R9	B-563113-3	Corner	25
				R12	B-563115	Adjacent to door	
				R18	B-562398-4	Bottom	
				R23	B-566302	Door header	23

\* Panel positions as viewed from inside of booth

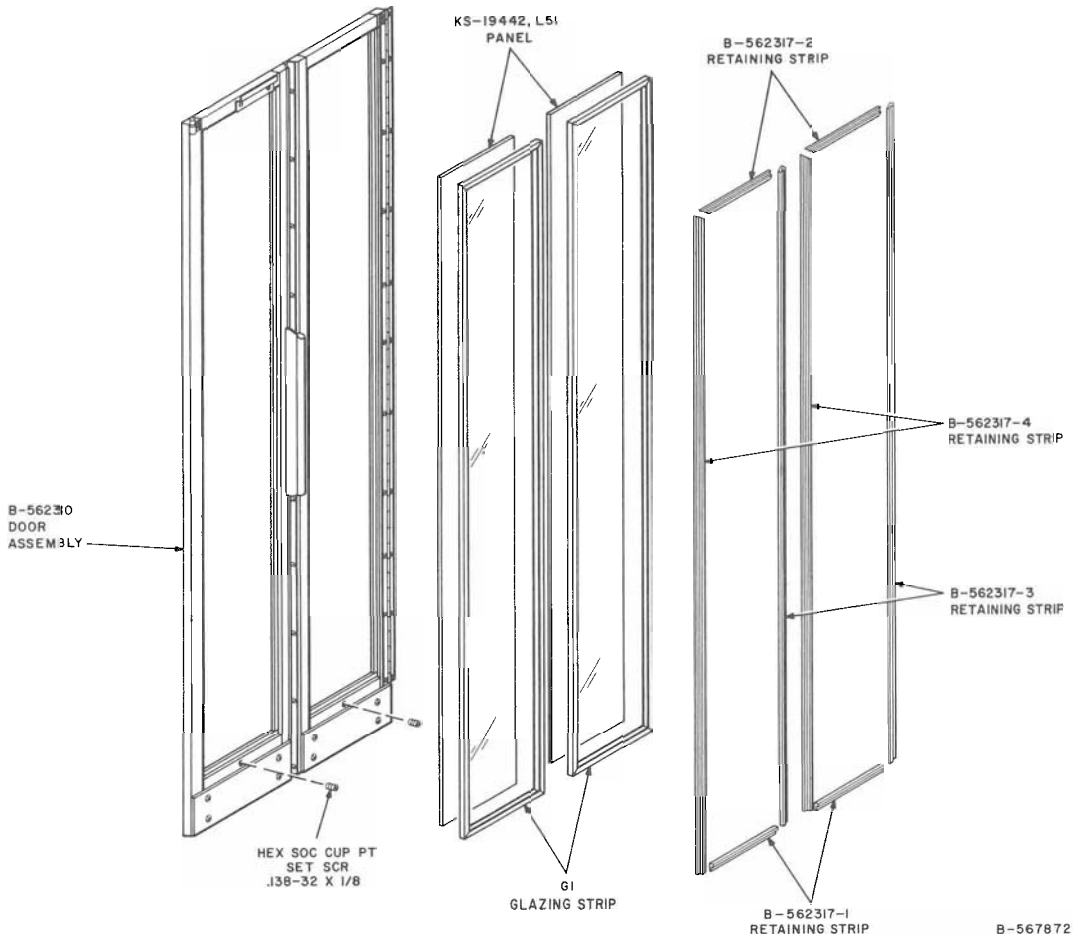


Fig. 24—Installation of Glass Panels in Door

(3) Install using reverse procedure.

4.31 Refer to Section 508-100-101 for cleaning of booth and booth accessories.

**CLEANING**

**REPLACEMENT PARTS**

4.30 Only surfaces exposed to view when the booth is in service need be cleaned.

4.32 Table G lists miscellaneous replacement parts which may be ordered as necessary.



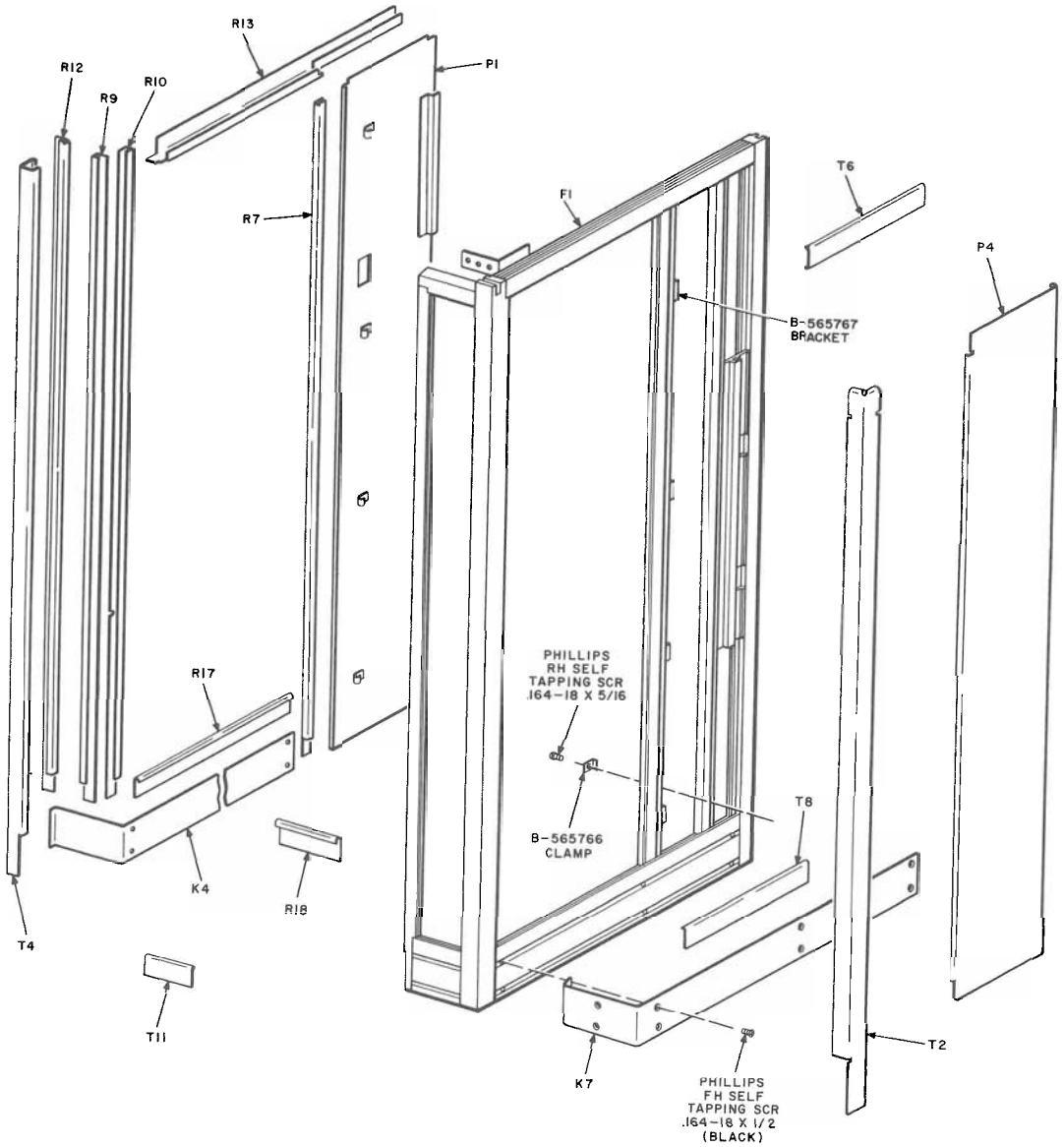


Fig. 25—Exploded View of Right Wall

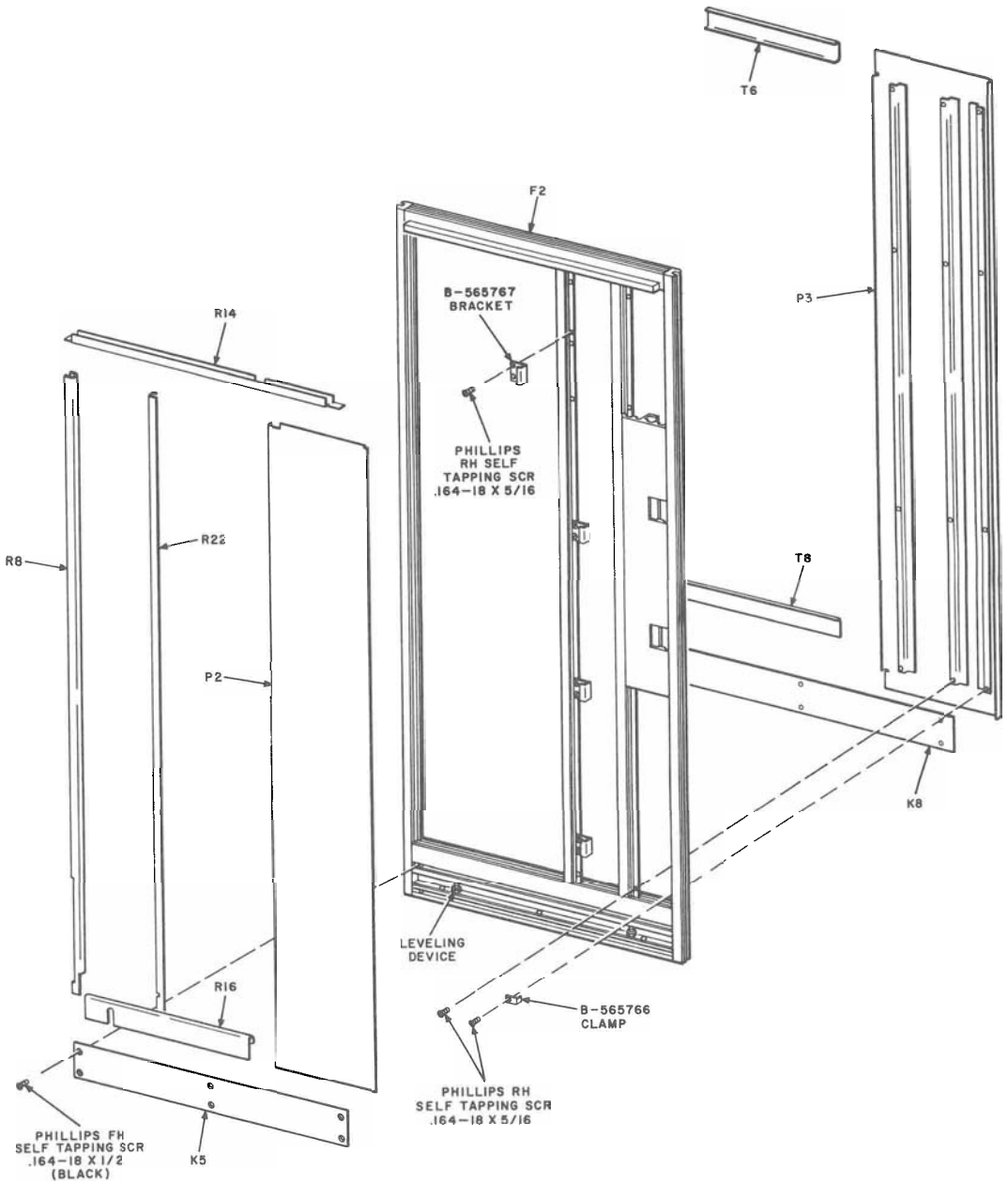


Fig. 26—Exploded View of Rear Wall

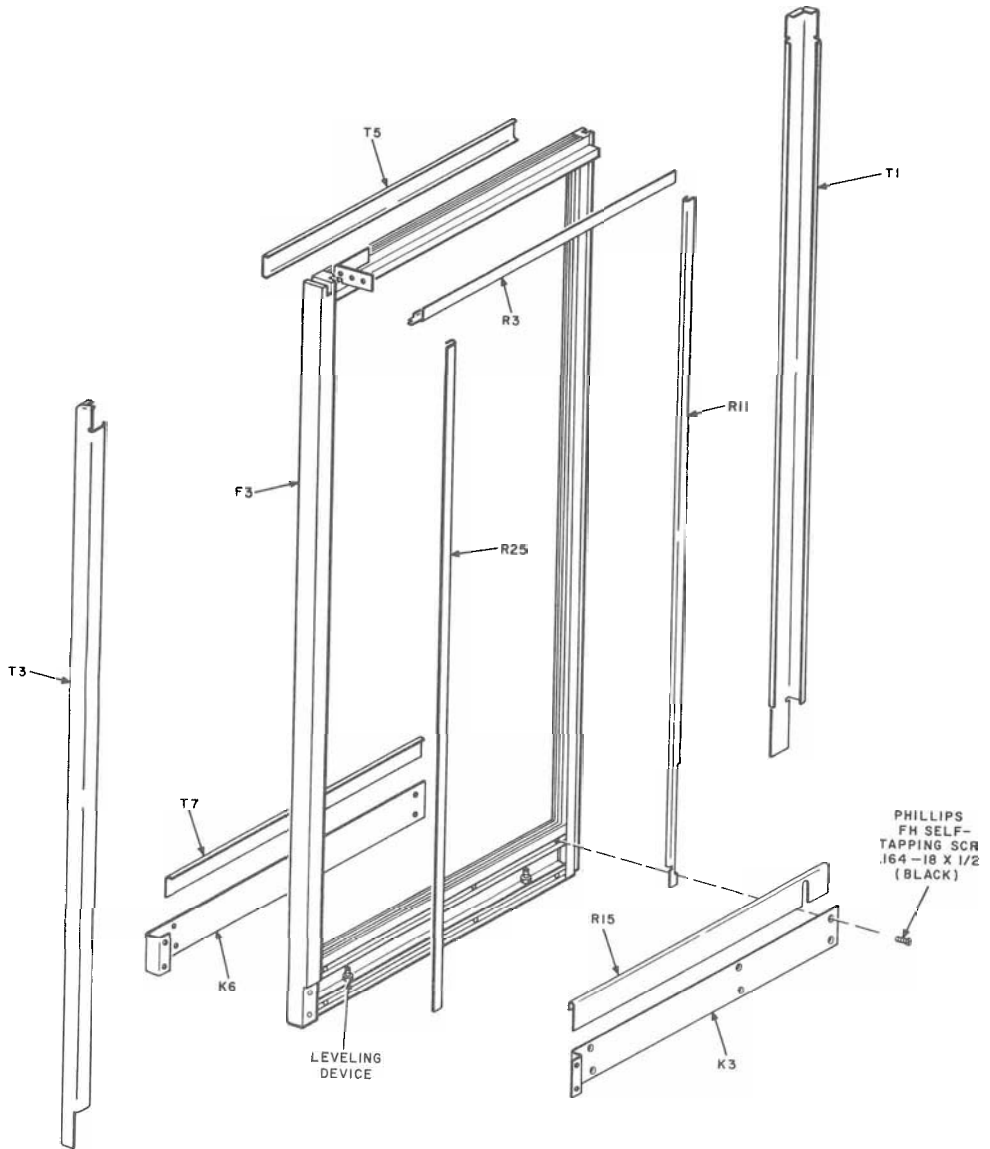
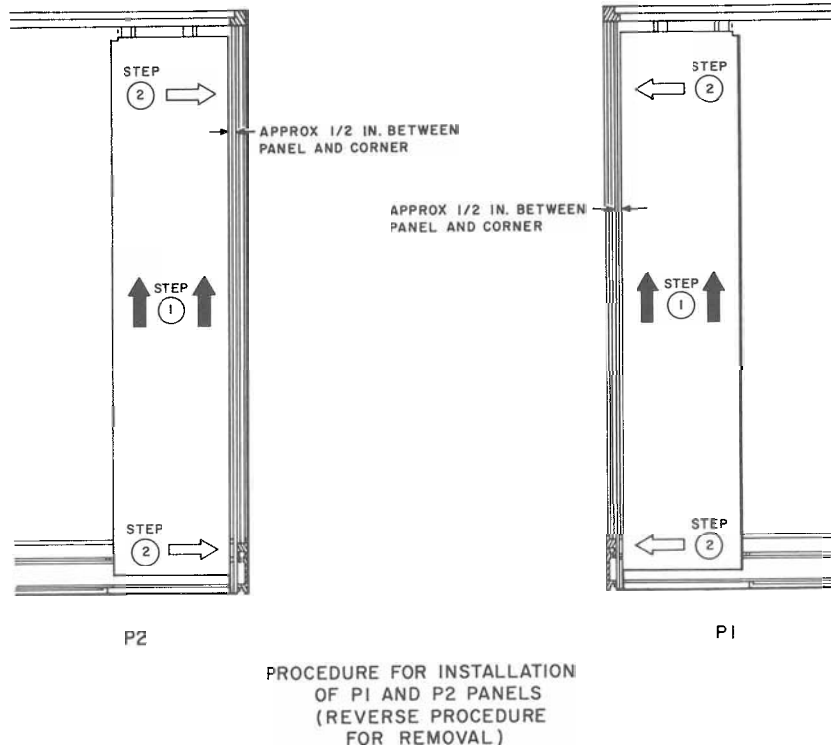


Fig. 27—Exploded View of Left Wall



**Fig. 28—Installation and Removal of P1 and P2 Panels**

**TABLE D**  
**TRIM STRIPS**

DESIGNATION	FIG. REF	PART NO.	FINISH			LOCATION
			ANODIZED ALUMINUM	STAINLESS STEEL	ANODIZED BRONZE	
T1	27	B-562390-	1	•		Left rear corner
			2		•	
			3		•	
T2	25	B-562390-	4	•		Right front corner
			5		•	
			6		•	
T3	27	B-562391-	1	•		Left front corner
			2		•	
			3		•	
T4	25	B-562392-	1	•		Front — adjacent to door
			2		•	
			3		•	
T5	27	B-562393-	1	•		Left wall — top
			2		•	
			3		•	
T6	25 & 26	B-562393-	4	•		Right and rear walls — top
			5		•	
			6		•	
T7	27	B-562394-	1	•		Left wall — bottom
			2		•	
			3		•	
T8	25 & 26	B-562394-	4	•		Right and rear walls — bottom
			5		•	
			6		•	
T9	23	B-562395-	1	•		Door header
			2		•	
			3		•	
T11	25	B-563129-	1	•		Front wall — bottom
			2		•	
			3		•	

**TABLE E**  
**KICKPLATES**

DESIGNATION	FIG. REF	PART NO.	LOCATION
K3	27	B-562357	Left wall — inside
K4	25	B-562358	Right wall — inside
K5	26	B-562359	Rear wall — inside
K6	27	B-562360	Left wall — outside
K7	25	B-562361	Right wall — outside
K8	26	B-562362	Rear wall — outside
K9*	16	B-562363	Front wall — outside

\* K9 used only in multiple arrangements.

**TABLE F**  
**CORNER PANELS**

DESIGNATION	FIG. REF	PART NO.	FINISH			LOCATION
			ANODIZED ALUMINUM	STAINLESS STEEL	ANODIZED BRONZE	
P1	25	B-562304		•		Right wall — inside
P2	26	B-562305		•		Rear wall — inside
P3	26	B-562306-	1	•		Rear wall — outside
			2		•	
			3			
P4	25	B-562307-	1	•		Right wall — outside
			2		•	
			3			

**TABLE G**  
**MISCELLANEOUS REPLACEMENT PARTS**

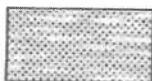
NAME	PART NO. LIST NO. OR DESCRIPTION	REMARKS
Actuator	B-563125	Located on door for actuating snap action switch
Cable Assembly	KS-19425, List 22	For incoming power or interconnecting power between multiple booths
Cover, seat	B-562302	See Fig. 20
Cover, telephone	127A	For use over panel telephone
Dome Assembly	B-551952	
Door Stop	B-650994	Located on top center of door
Door Stop Assembly	B-650993	Contains door roller rod
Lamp, fluorescent	40 Watt Circline, CW	
Plate, fan switch	B-562376	Mounts over blower switch
Roller	B-562381	Rolls in door track
Seat Assembly	B-562303	Does not include seat cover.
Shelf	B-562356	Tempered glass
Spring Stop Assembly	B-650429	Located on door header
Switch, fan	B-563123	Controls blower motor
Switch, snap action	B-563122	Operates when door is closed



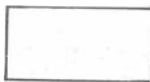


## COIN TELEPHONE SHELF KS-19267

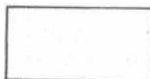
### ACOUSTIC ALUMINUM



### PLASTIC



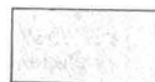
TRANSPARENT



TRANSLUCENT



### PORCELAIN ENAMEL



MEDIUM GRAY



DARK GRAY



LIGHT BLUE

### WOODGRAIN



BIRCH



WALNUT



MAHOGANY



FRUITWOOD

Fig. 1—KS-19267 Coin Telephone Shelf and Available Finishes

## SECTION 508-251-100

### 1. GENERAL

**1.01** Information in this section was formerly contained in Section 508-121-100 which is hereby canceled.

### 2. IDENTIFICATION

**2.01** The KS-19267 coin telephone shelf (Fig. 1) is a wall mounted unit for indoor use only. It may be installed singly or in multiple and mounts either the 200-type coin collector or 1A/1C-type coin telephone set.

**2.02** The basic shelf assembly includes:

- B-196775 mounting plate for coin collector/telephone set
- Metal frame assembly
- B-196771 writing shelf
- B-196770 backboard assembly for mounting the metal framework.

**2.03** Overall dimensions of a single shelf are:

- Height—32 inches
- Width—25-1/2 inches
- Depth—12 inches.

**2.04** The desired panels, directory rack, directory hanger, and other optional items are added to the basic shelf assembly as required. These are listed in Table A.

**2.05** This shelf features replaceable back and side panels, which are available in a variety of colors and finishes (Fig. 1).

**2.06** Illumination, if required, is furnished by a KS-19322 sign which must be ordered separately. It may be mounted directly to the wall surface above the coin telephone shelf or on the top edge of a KS-19267, List 10 auxiliary backboard if the sign and shelf are to be installed as one unit.

**2.07** Telephone directories may be placed under the writing shelf in a rack (Fig. 2) or in a KS-20030 directory hanger (Fig. 1).

### Ordering Information

**2.08** When ordering specify the quantity, KS number, and list number of each item required including those that must be ordered separately.

**2.09** The following are examples of typical orders:

#### *Example 1*

Single installation for 1A/1C-type coin telephone set with fruitwood grain panels and directory hanger.

- 1—Shelf, KS-19267, List 1
- 2—Panels, KS-19267, List 23
- 2—Panels, KS-19267, List 33
- 1—Directory Hanger, KS-20030, List 1
- 1—Mounting Bracket, KS-19267, List 14

#### *Example 2*

Single installation for 200-type coin collector with acoustic panels, directory rack, illuminated sign, and auxiliary backboard.

- 1—Shelf, KS-19267, List 1
- 1—Panel, KS-19267, List 45
- 1—Panel, KS-19267, List 46
- 2—Panels, KS-19267, List 47
- 1—Rack, KS-19267, List 11
- 1—Mounting, Subscriber Set, KS-19267, List 12
- 1—Backboard, KS-19267, List 10
- 1—Sign, KS-19322, List 1

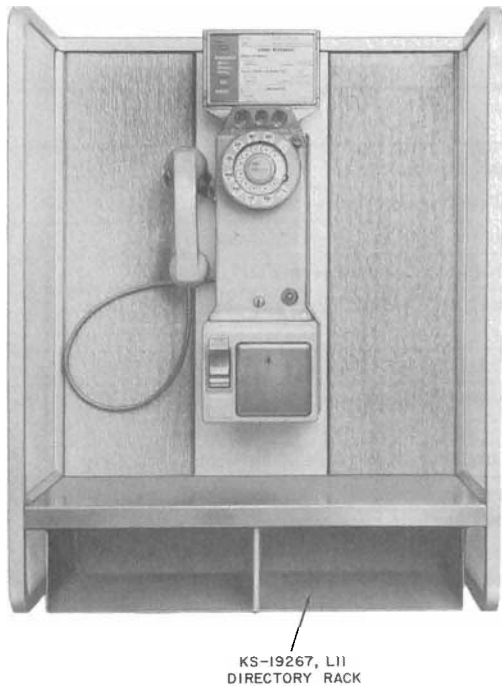
#### *Example 3*

Three shelves in a multiple installation, for 1A/1C-type coin telephone set, with blue panels, two directory hangers each, and one illuminated sign mounted directly to wall above shelves.

- 1—Shelf, KS-19267, List 2

**TABLE A**  
**KS-19267 COIN TELEPHONE SHELF**  
**ORDERING GUIDE**

LIST NUMBER	DESCRIPTION	REMARKS	
1	Basic Shelf Assembly	For single installation	
2		For multiple installation — left end	
3		For multiple installation — right end	
4		For multiple installation — center	
10	Auxiliary Backboard	For mounting KS-19322 sign and shelf as one unit	
11	Directory Rack	Mounts under shelf (Fig. 2)	
12	Mounting, Subscriber Set	For 200-type coin collector (Fig. 3)	
13	Cover Assembly	Mounts under shelf in place of directory rack (Fig. 4)	
14	Mounting Bracket	For mounting KS-20030, List 1 or List 2 directory hanger under shelf (Fig. 5)	
15		For mounting subset under shelf when KS-20030 directory hanger is used (Fig. 6)	
20	Panel, Side	Laminated	Birch grain
21			Walnut grain
22			Mahogany grain
23			Fruitwood grain
26		Porcelainized	Light blue
27			Medium gray
28			Dark gray
30			Panel, Back
31	Walnut grain		
32	Mahogany grain		
33	Fruitwood grain		
36	Porcelainized	Light blue	
37		Medium gray	
38		Dark gray	
40		Panel, Side	
41	Translucent		
45	Panel, Acoustic	Right side	
46		Left side	
47		Back	
48		Center	



**Fig. 2—KS-19267 Coin Telephone Shelf With KS-19267, List 11 Directory Rack**

- 1—Shelf, KS-19267, List 3
- 1—Shelf, KS-19267, List 4
- 4—Panels, KS-19267, List 26
- 6—Panels, KS-19267, List 36
- 3—Directory Hangers, KS-20030, List 2
- 3—Mounting, Bracket, KS-19267, List 14
- 1—Sign, KS-19322, List 1

### 3. INSTALLATION

**3.01** Ensure that location specified on service order corresponds to customer's wishes. Also verify that the following conditions are met:

- Location is free of hazards

- Shelf will be easily accessible to the public
- Location will provide a secure mounting for shelf
- If lighted sign is to be installed, be sure 3-wire grounded outlet is provided
- Ground is present at receptacle.



*The B-196770 backboard assembly can be installed directly on a wall if the surface permits. If a lighted sign is to be used, it is desirable to mount the shelf and light on a KS-19267, List 10 auxiliary backboard as one unit.*

**3.02** To install either the List 10 auxiliary backboard or the B-196770 backboard assembly on a wall, refer to Section 506-100-101 and observe the following:

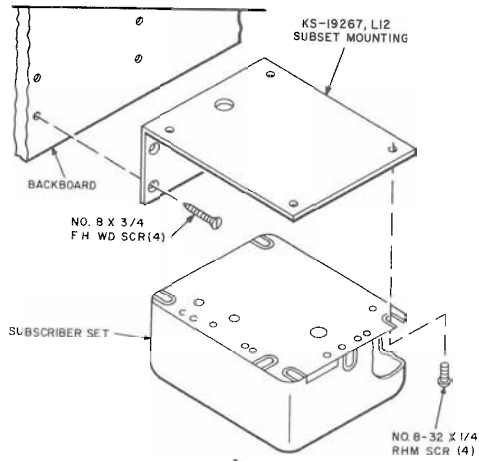
**Note 1:** Holes are not provided in the List 10 backboard for surface mounting. The nine mounting holes in the B-196770 backboard are for securing it to the auxiliary backboard; however they may be used for surface mounting if wall permits.

**Note 2:** At least nine fasteners must be provided for securing the backboard to a wall. The wall studs, construction, and surface determines where additional holes are drilled; however, when installing the auxiliary backboard, fasteners should be omitted from the area between top of shelf and bottom of lighted sign.

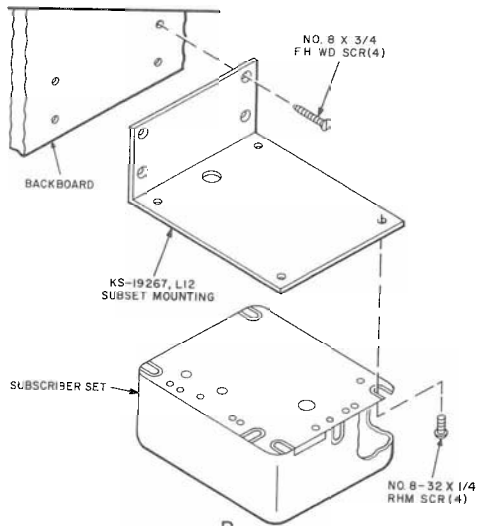
**Note 3:** When providing mounting holes in the B-196770 backboard, countersink the nine holes to ensure that screw heads will be underflush when installed, otherwise there may not be sufficient clearance to slide the rear shelf panel in place.

**Note 4:** Locate backboard(s) with bottom edge 35-1/4 inches from floor. In multiple installations, backboards shall be 24-3/4 inches from center to center.

**3.03** Secure B-196770 backboard assembly to List 10 auxiliary backboard, if applicable, using nine 1/4-20 by 1-1/2 FHM screws (Fig. 7).

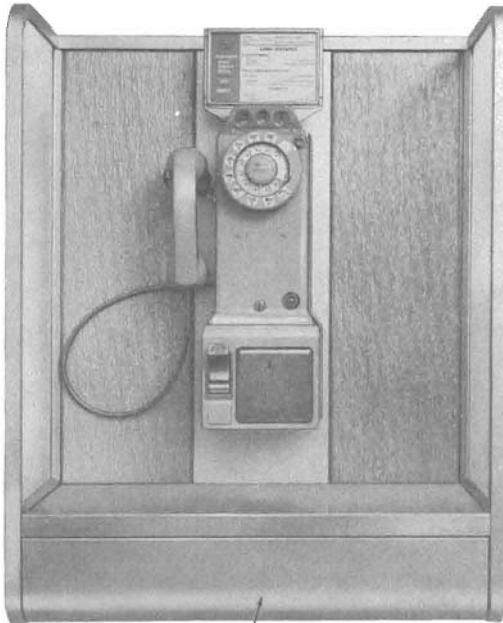


**A**  
METHOD FOR MOUNTING  
WITHOUT DIRECTORY RACK



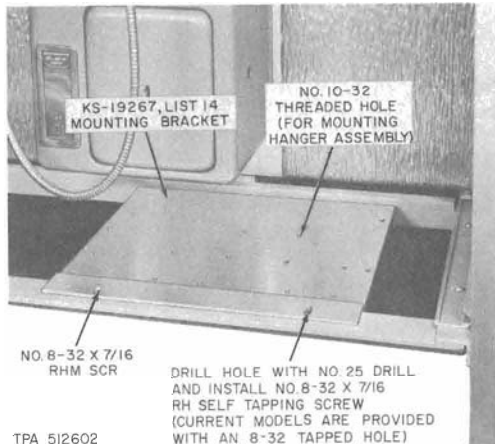
**B**  
METHOD FOR MOUNTING  
WITH DIRECTORY RACK

**Fig. 3—KS-19267, List 12 Subscriber Set Mounting**



KS-19267, LI3  
COVER ASSEMBLY

**Fig. 4—KS-19267 Coin Telephone Shelf With KS-19267, List 13 Cover Assembly**



KS-19267, LIST 14  
MOUNTING BRACKET

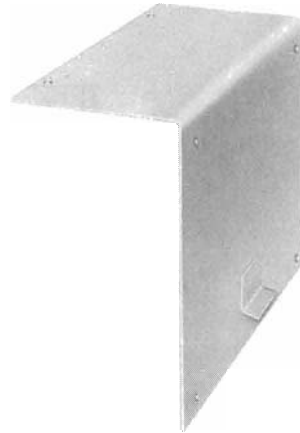
NO. 10-32  
THREADED HOLE  
(FOR MOUNTING  
HANGER ASSEMBLY)

NO. 8-32 X 7/16  
RHM SCR

DRILL HOLE WITH NO. 25 DRILL  
AND INSTALL NO. 8-32 X 7/16  
RH SELF TAPPING SCREW  
(CURRENT MODELS ARE PROVIDED  
WITH AN 8-32 TAPPED HOLE)

TPA 512602

**Fig. 5—KS-19267, List 14 Mounting Bracket Installed**



**Fig. 6—KS-19267, List 15 Subset Mounting Bracket**

**3.04** Install KS-19322 sign if applicable and cover exposed electric power cord between sign and shelf with KS-19322, List 16 wire shield (Fig. 7).

**3.05** Install telephone wiring.

**3.06** Install B-196762-1 and -2 side columns on backboard using two No. 10-32 by 9/16 FHM screws in each column.



*Where multiple units are installed, a B-196772 T-strip will be used to join two shelves together. This T-strip will replace the side column. T-strips are furnished as part of KS-19267, List 2 and List 4 shelf assemblies (Fig. 7).*

**3.07** Place frame assembly against backboard so that side rails fit into side columns or T-strips, and top cross rail rests partially on top edge of backboard.

**3.08** Secure frame assembly to backboard using two 1/4-20 by 7/8 FHM screws and six 1/4-20 by 3/4 FHM screws.

**3.09** Secure coin collector/telephone set mounting plate to backboard assembly using six 1/4-20 by 1-1/4 FHM screws.

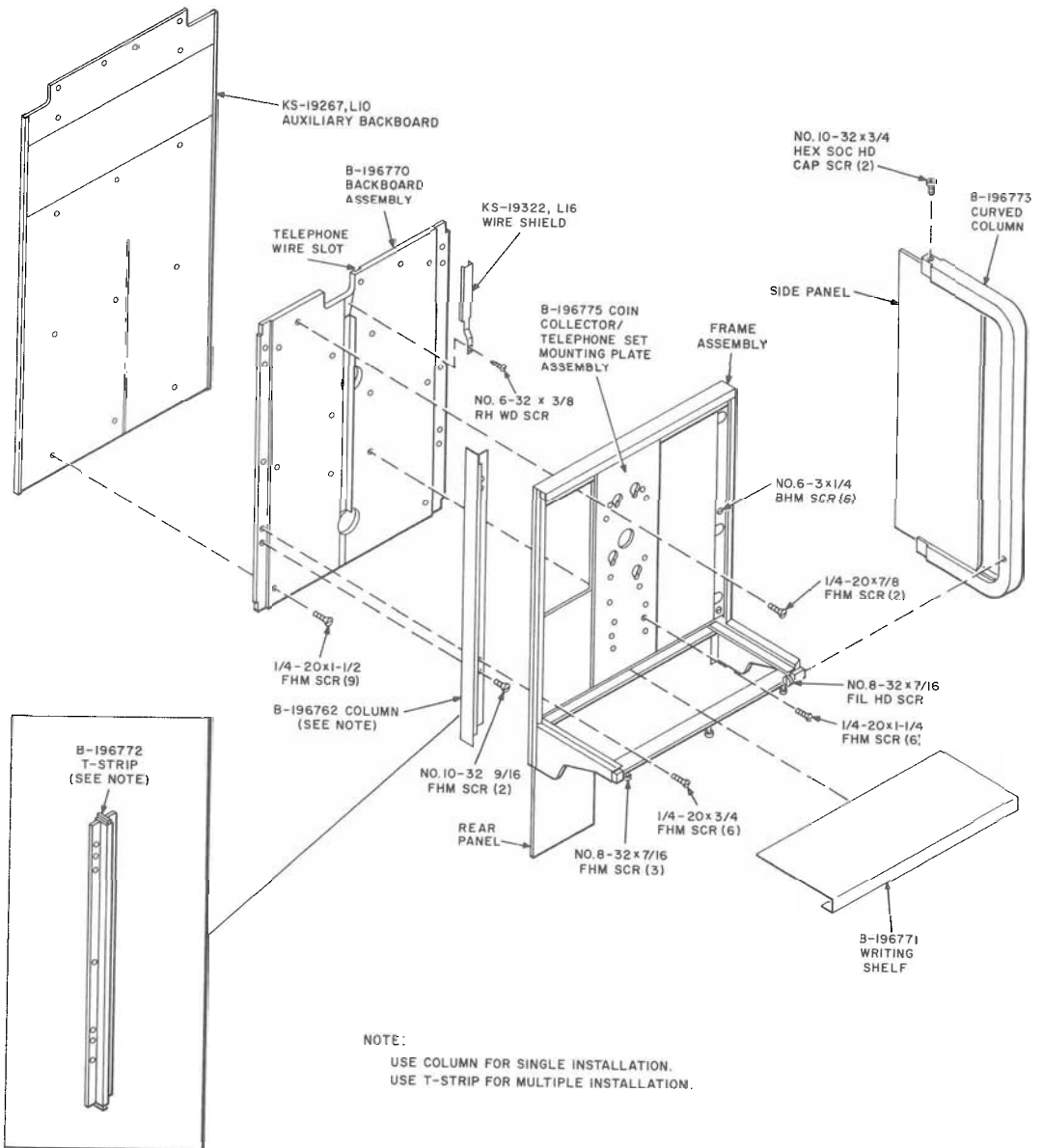


Fig. 7—Assembly of KS-19267 Shelf

**SECTION 508-251-100**

**3.10** Insert side panels into curved columns. Place curved columns into slots on top and bottom edge of shelf assembly and secure with No. 10-32 by 3/4 hex socket head cap screws.

**3.11** Further secure curved columns at front of shelf using No. 8-32 by 7/16 fillister head screws.

**3.12** Loosen the No. 6-32 by 1/4 binding head screws in rails adjacent to side panels. Force rails tight against panels and tighten screws. This will prevent panels from rattling.

**3.13** If a KS-20030, List 1 or List 2 directory hanger is used, install mounting bracket at this time. Refer to Section 508-710-102 and Fig. 5.

**3.14** Insert B-196771 writing shelf in slots provided and slide toward backboard until almost seated.

**3.15** Refer to Note 3 in 3.02. Insert back panels as shown, and slide them all the way to the top. Slide writing shelf all the way in and release back panels so that they rest on top of back edge of writing shelf.

**3.16** If no KS-19267, List 11 directory rack nor KS-19267, List 13 cover assembly is used, secure writing shelf to frame assembly using three No. 8-32 by 7/16 fillister head screws.

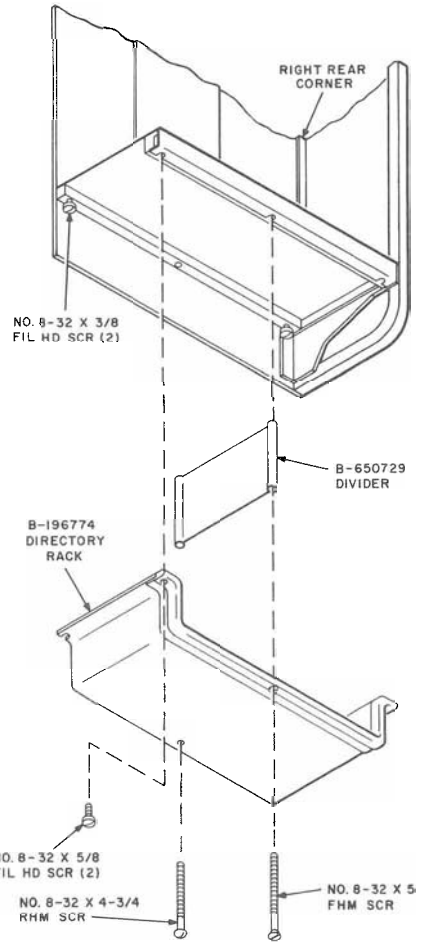
**3.17** If a subscriber set is required, mount under the writing shelf as shown in Fig. 3 using a KS-19267, List 12 subscriber set mounting, or using a KS-19267, List 15 mounting bracket if a KS-20030 directory hanger is used.

**3.18** Install KS-19267, List 11 directory rack per Fig. 8.

**3.19** Install KS-19267, List 13 cover assembly per Fig. 9.

**3.20** To add additional shelves to existing installations:

- (a) Remove List 11 directory rack or List 13 cover assembly if applicable.

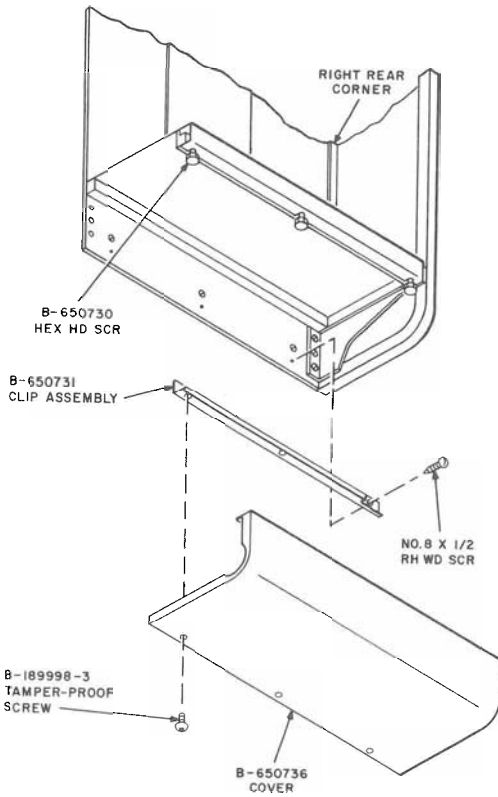


**Fig. 8—Installation of KS-19267, List 11 Directory Rack**

(b) Remove the following per Fig. 7:

- Writing Shelf
- Curved Column
- Side Panel
- Rear Panel.





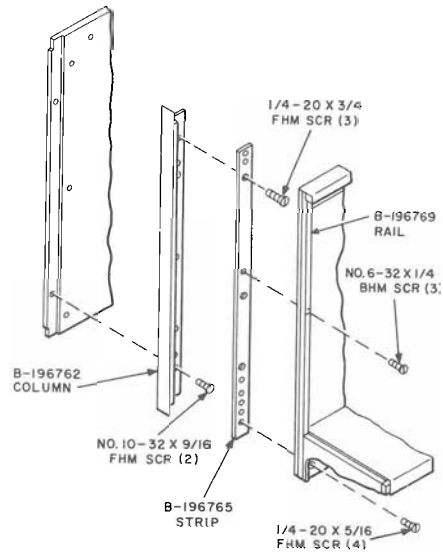
**Fig. 9—Installation of KS-19267, List 13 Cover Assembly**

- (c) Remove the following per Fig. 10:
- B-196769 Rail
  - B-196765 Strip
  - B-196762 Column.
- (d) Install B-196772 T-strip where B-196762 column was removed.
- (e) Install B-196765 strip in its original position.

- (f) Reassemble all parts in reverse order as outlined in (a) through (c) except omit the B-196762 column.
- (g) Perform operations outlined in 3.02 through 3.19 for each additional shelf installed.



*Ensure that the curved column, which is common between two shelves, has a hole on each side at writing shelf level.*



**Fig. 10—Partial View of Shelf Assembly**

#### 4. MAINTENANCE

- 4.01** The local telephone company shall establish the appearance standards of all exposed surfaces.
- 4.02** The local telephone company shall establish the safety standards for all coin telephone shelves.
- 4.03** Inspect the approach to the shelf and ensure that it is free of all hazards.

**SECTION 508-251-100**

**4.04** Ensure that all visible assembly screws are secure.

**4.06** Refer to Fig. 7, 8, and 9 and Tables A and B for replacement parts.

**4.05** Refer to Section 508-100-101 for information on cleaning of shelf.

**TABLE B**  
**MISCELLANEOUS REPLACEMENT PARTS**

NAME	PART NUMBER	DESCRIPTION
T-Strip	B-196772	Used in place of columns to convert single installations to multiple
Curved Column	B-196763-1	Center (multiple installations)
Curved Column	B-196763-2	Right side
Curved Column	B-196763-3	Left side
Column	B-196762-1	Right side
Column	B-196762-2	Left side

## COIN TELEPHONE SHELF KS-19945

### 1. GENERAL

1.01 Information in this section was formerly contained in Section 508-125-100 which is hereby canceled.

### 2. IDENTIFICATION

2.01 The KS-19945 coin telephone shelf (Fig. 1) is a wall mounted Fiberglas reinforced polyester molded unit intended for indoor use only.

2.02 The shelf is available in gray or blue with a stainless steel writing shelf.

2.03 The overall dimensions of the shelf are:

- Height—36 inches
- Width—17-1/2 inches
- Depth—11 inches

2.04 A 178A backboard is furnished with each shelf unless otherwise specified.

2.05 The KS-19945 shelf, less the backboard, can be installed over an existing 174- or 178A-type backboard.

2.06 The shelf is designed for a KS-19681, List 9 or List 10 illuminated sign (Fig. 1) or a porcelain enamel nonilluminated sign (Fig. 2).

2.07 The shelf will accept a 1A/1C-type coin telephone set (Fig. 1) or a 236G coin collector (Fig. 3). No provisions are made for using a subscriber set.

2.08 The directory compartment, which is a part of the shelf, will accept directories up to 4 inches thick.

2.09 Table A describes the basic list numbers.

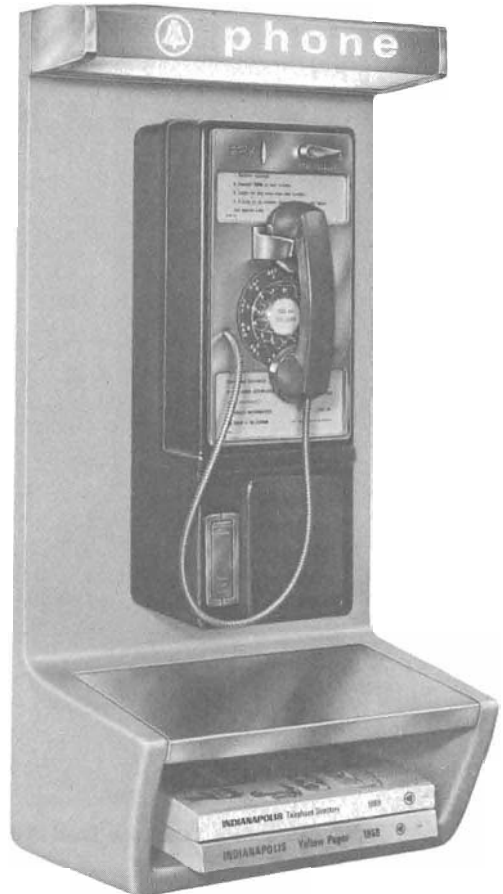


Fig. 1—KS-19945, List 1 Coin Telephone Shelf With 1C1 Coin Telephone Set

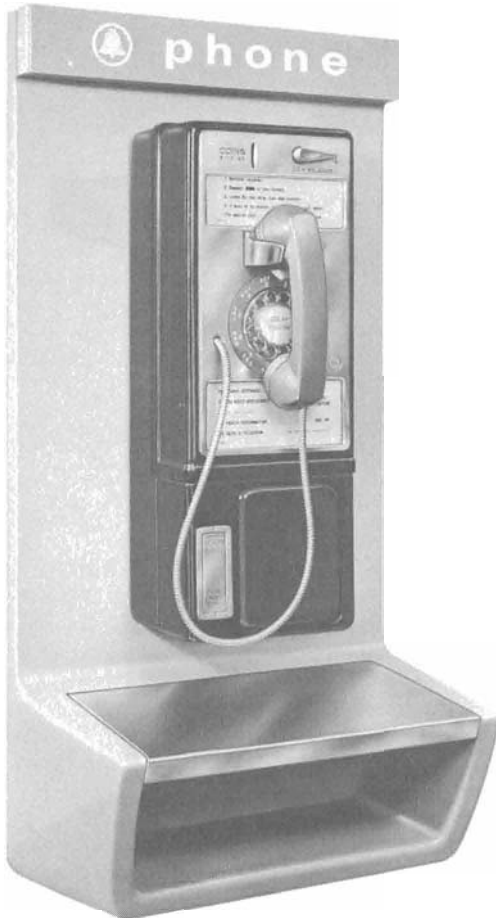


Fig. 2—KS-19945, List 3 Coin Telephone Shelf With 1C1 Coin Telephone Set



Fig. 3—KS-19945, List 4 Coin Telephone Shelf With 236G Coin Collector

### 3. INSTALLATION



*When mounting the 1A/1C-type 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

**TABLE A**  
**KS-19945 LIST NUMBERS AND DESCRIPTION**

LIST NO.	DESCRIPTION	SHELF COLOR	SIGN FURNISHED	COLOR OF SIGN LETTERS	COLOR OF SIGN BACKGROUND
1	Shelf	Gray	KS-19681, L9*	White	Blue
2	Shelf	Gray	KS-19681, L10*	Blue	White
3	Shelf	Gray	KS-19945, L9	White	Blue
4	Shelf	Gray	KS-19945, L10	Blue	White
9	Sign, porcelain enamel			White	Blue
10	Sign, porcelain enamel			Blue	White
11	Shelf	Blue	KS-19681, L9*	White	Blue
12	Shelf	Blue	KS-19681, L10*	Blue	White
13	Shelf	Blue	KS-19945, L9	White	Blue
14	Shelf	Blue	KS-19945, L10	Blue	White

\* KS-19681 illuminated signs may be ordered separately. See Fig. 6 for component parts identification.

shall be no farther from the mounting surface than described in Table B.

(3) The left to right mounting axis shall also be within 1-1/2 degrees of true vertical.

**TABLE B**

**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

***New Installation***

**3.01** Install the 178A backboard (furnished with KS-19945 shelf) using the fasteners described in Table C. Bottom edge of backboard shall be 45-1/2 inches from floor.

**Note:** If an illuminated sign is used, ensure that a 3-wire grounded outlet is accessible. If the outlet is below shelf, place light cord behind shelf before securing shelf to wall. If concealed wiring is desired, an electrical box may be installed centered 24 inches above bottom edge of backboard.

**3.02** The rear of the directory compartment has two mounting holes (Fig. 4). Hold shelf in place over backboard and mark the wall through these two holes.

**TABLE C**  
**FASTENERS USED IN MOUNTING BACKBOARDS**

MOUNTING SURFACES					HOLE SIZE REQUIRED	FASTENERS	
SOFT-WOOD	HARD-WOOD	MASONRY* (CONCRETE, BRICK)	LATH AND PLASTER	PLASTER, CINDER BLOCK, HOLLOW TILE, METAL LATH, PLASTER-BOARD†		SIZE AND TYPE (NOTES 2 AND 3)	QUANTITY (NOTE 1)
•					1/8 or No. 30	1-3/4 inch No. 14 FH tapping screw	7
	•					1-1/4 inch No. 14 FH tapping screw	
		•			1/2	1/4-20 by 1-1/2 inch FH machine screw in 1/4 by 1-1/4 inch expansion shield	
			•		1/8 or No. 30	1-3/4 inch No. 14 FH tapping screw, secure in stud	6
				•	3/4	1/4- by 4-inch RH toggle bolt	

\* When mounting on plastered masonry, use fasteners 1/2-inch longer than specified.

† When mounting on plasterboard, plaster on lath, etc, fasteners must be embedded in stud at least 1 inch.

*Note 1:* Additional fasteners may be placed to ensure mounting.

*Note 2:* When using toggle bolts, cut off excess length.

*Note 3:* Size shown for wall screw anchors is diameter only. Length will be determined by wall thickness.

**3.03** Remove the shelf and drill the two marked holes using Table C as a guide for drilling.

**3.04** Install appropriate anchors, if required, in the two holes.

**3.05** Place shelf over backboard and secure it to wall with two screws. These screws will keep shelf in place until coin telephone set is installed.

**3.06** Install security studs in coin telephone set as follows: (See Section 506-101-400 for complete information on security studs.)

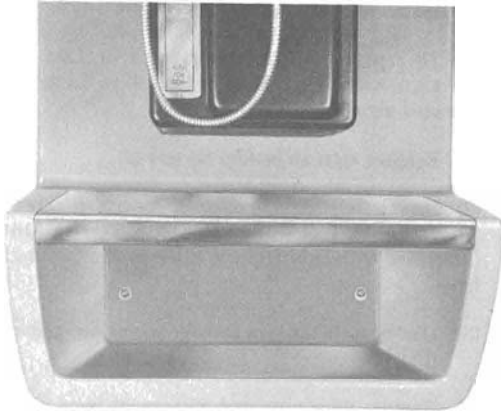
(a) Install two P-40Y061 security studs (long shoulder, short thread) in the two upper holes.



*Security studs used in the two upper holes must be flush or underflush with inside of backplate in coin telephone set. Longer threads will interfere with coin chute.*

(b) Install two P-12E798 security studs (long shoulder, long thread) in the two lower holes.

**3.07** Install 1A/1C-type coin telephone set in accordance with Sections 506-410-400 or 506-411-401. Security studs will go through shelf and backboard (Fig. 5).



**Fig. 4—Directory Compartment of KS-19945 Coin Telephone Shelf**

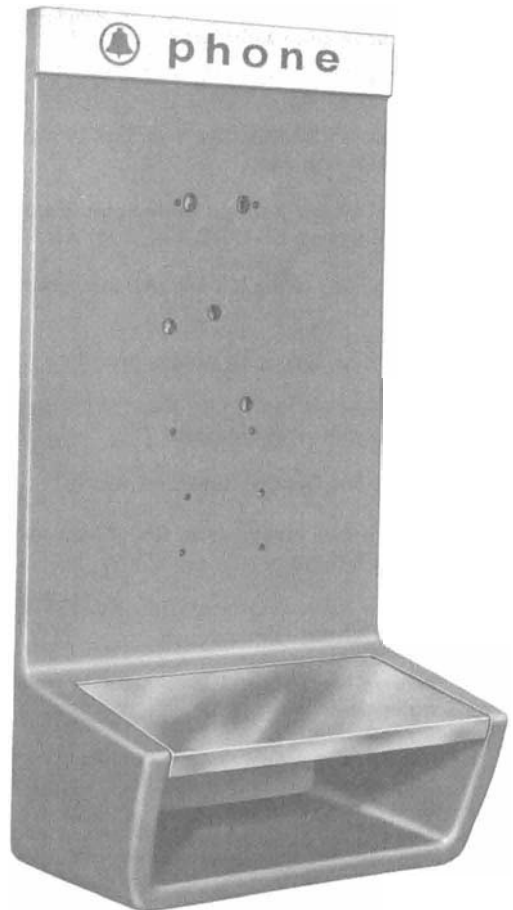
- 3.08** Further secure the set to shelf and backboard with seven 1/4-20 by 5/8 hardened RHM screws (P-23F790) which are furnished with set.

#### Existing Installation



*No provisions are made for using a subscriber set with this shelf.*

- 3.09** Remove coin telephone set from backboard.
- 3.10** Perform operations outlined in 3.02 through 3.05.
- 3.11** If a 1A/1C-type coin telephone set is used, perform operations outlined in 3.06 through 3.08.
- 3.12** If a 236G coin collector is used, install four P-12E798 security studs (long shoulder, long thread).
- 3.13** Further secure the set to the shelf and backboard with 1/4-20 by 1 inch FHM screws (P-49C296). Order separately.



**Fig. 5—KS-19945, List 14 Coin Telephone Shelf**

#### 4. MAINTENANCE

- 4.01** Maintenance of the KS-19945 coin telephone shelf consists of cleaning, replacing complete shelf, or replacing sign or sign parts.

##### *Cleaning*

- 4.02** Refer to Section 508-100-101.

##### *Replacing Complete Shelf*

- 4.03** Remove coin telephone set and shelf.

## SECTION 508-253-100

- 4.04** Install new shelf and replace coin telephone set in accordance with Part 2.

### *Signs*

- 4.05** To replace KS-19945, List 9 or List 10 sign with same type sign:

- (1) Remove tamper resistant screw at top center of shelf using a KS-19192, List 1 wrench.
- (2) Remove sign to the left and pull away from shelf.
- (3) Install new sign, using reverse procedure.

- 4.06** To replace KS-19681, List 9 or List 10 sign (Fig. 6) with same type sign:

- (1) Unplug lamp cord or disconnect wiring.
- (2) Remove four screws from top of sign and remove diffuser.
- (3) Remove fluorescent lamp (G.E. No. F14T12 or equivalent).
- (4) Remove two nuts and lamp cover to make wiring accessible.
- (5) Remove wire nuts and disconnect lamp cord from ballast and lamp holder.

**Note:** If lamp cord is not damaged, it may be reused. If it is not reusable, remove it from behind shelf.

- (6) Remove four mounting screws and remove base assembly.
- (7) If new lamp cord is used, run a fish tape through entrance hole in rear of shelf and down wire channel until it is accessible at bottom of shelf.
- (8) Tie new cord to fish tape and pull it up into position.

- (9) Install new sign using reverse procedure.

- 4.07** To replace a KS-19945, List 9 or List 10 sign with a KS-19681, List 9 or List 10 illuminated sign:

- (1) Remove sign as in 4.05 (1) and (2).
- (2) Insert four plasti-grommet inserts (Fastex Div. of Ill. Tool Works No. 242-180602-90-0101-) (furnished with light fixture) in the four mounting holes.
- (3) Disassemble the sign to make wiring accessible (Fig. 6).
- (4) Remove wire nuts and disconnect lamp cord from ballast and lamp holder.
- (5) Run a fish tape through entrance hole in rear of shelf and down wire channel until it is accessible at bottom of shelf.
- (6) Tie lamp cord to fish tape and pull it up into position.
- (7) Install base assembly on shelf using the four No. 8 by 3/4 Phillips head self-tapping screws furnished with light fixture.
- (8) Reconnect lamp cord to ballast and lamp holder.
- (9) Install cover on base assembly.
- (10) Install fluorescent lamp (G.E. No. F14T12 or equivalent).
- (11) Install frame and diffuser and secure them with the four No. 8-32 by 1/2 stainless steel screws.
- (12) Plug lamp cord into wall socket.



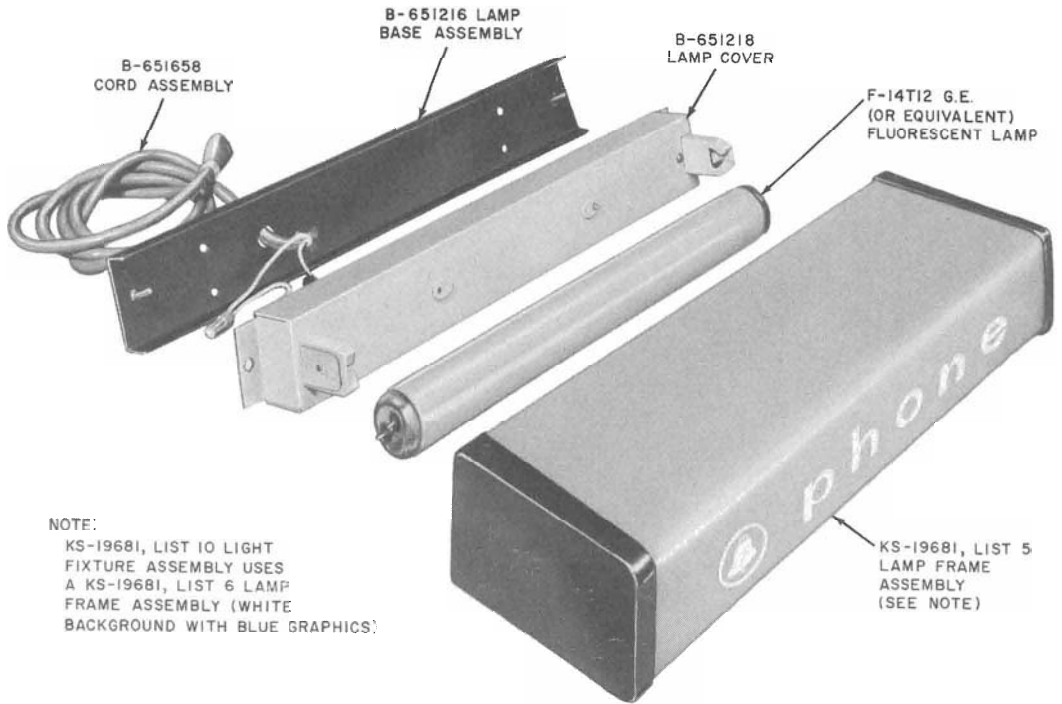


Fig. 6—KS-19681, List 9 Light Fixture Assembly



## INDOOR-OUTDOOR BOOTH KS-16797 UNIVERSAL

### 1. GENERAL

**1.01** Information in this section was formerly contained in Sections 508-230-100 and 508-230-300 which are hereby canceled.

**1.02** The KS-16797 booth (Fig. 1) is a compact aluminum and glass telephone booth suitable for indoor or outdoor use in single or multiple installations. It is equipped with an aluminum alloy floor.

**1.03** This booth is designed primarily for standup service; however, a KS-19425, List 11 seat assembly can be used if desired.

**1.04** The KS-16797 booth is rated MD; however, shelves, directory racks, side, rear, and bottom panels, signs, light and blower units, and domes are available as replacement parts.

### 2. IDENTIFICATION

#### BASIC BOOTH

**2.01** The overall dimensions of the booth are:

- Height—87-1/2 inches
- Width—28-3/4 inches
- Depth—28-3/4 inches

**2.02** The KS-16797, List 1 booth is made of satin anodized aluminum and may be unfinished or finished with one of the following:

- KS-16797, List 60—Red
- KS-16797, List 61—Blue
- KS-16797, List 62—Green
- KS-16797, List 63—Clear

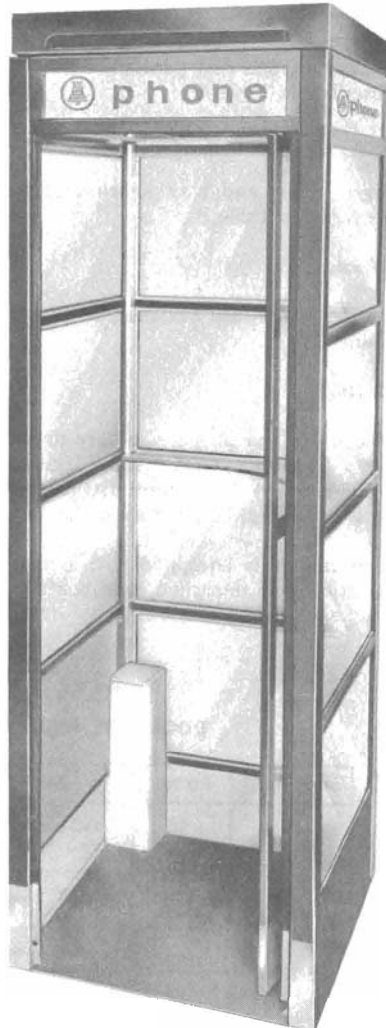


Fig. 1—KS-16797, List 1 Booth

**SECTION 508-300-100**

**PANELS**

**Door, Side, and Rear Panels**

- 2.03** The door consists of two vertical sections, each containing two clear safety glass panels. The door is self-closing and folds along the right wall when opened.
- 2.04** Door, side, and rear panels are available as described in Table A.

**Sign Panels**

- 2.05** Sign panels and blanks are available as described in Table B.

**Bottom Panels**

- 2.06** Bottom panels are available as described in Table C.

**LIGHT FIXTURE**

- 2.07** The booth and phone signs are illuminated by a KS-19207, List 6 light fixture (see Section 508-820-100). This light fixture replaces the older B-185379 light fixture assembly.
- 2.08** The ceiling is equipped with a B-185369 plastic dome designed to cover the light fixture and exclude dirt and insects.

**DOMESTOP**

- 2.09** A KS-20224 dome stop (Fig. 2), a spring loaded device, is available to mount along the door track (Fig. 3) to prevent the dome from falling when the fasteners are released.
- 2.10** To lower the dome, push up on dome stop as shown in Fig. 4. After dome is lowered, release the stop.

**LIGHT CONTROL UNIT**

- 2.11** A KS-19261, List 1 or List 2 light control unit may be used to switch the lamps on at darkness and off at daylight (see Section 508-825-100).
  - KS-19261, List 1 provides automatic light control for booths equipped with KS-19207, List 6 light fixture.
  - KS-19261, List 2 provides automatic light control for booths equipped with B-185379 light fixture assembly.



*One KS-19261 light control unit may be used to control the lights in multiple installations of five or less booths.*

**TABLE A  
DOOR, SIDE AND REAR PANELS, AND GLAZING STRIPS**

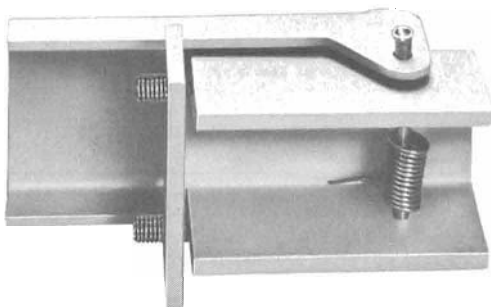
SPEC NO.	LIST NO.	PANEL DESCRIPTION		LOCATION	GLAZING STRIP
KS-14611	16	Satin Finished Aluminum		Side or Rear	B-685410-3
	18	Tempered Glass	7/32-in. thk	Door	B-179367-4
KS-19580	10		7/32-in. thk	Side or Rear	B-685410-3
	32	Polished Aluminum			
	93	Porcelain Enamel	Blue		B-685411-3
	94		Gray		
	95		Red		

**TABLE B**  
**SIGN PANELS AND GLAZING STRIPS**

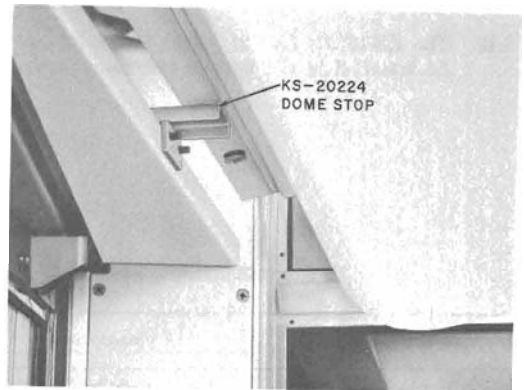
SPEC NO.	LIST NO.	DESCRIPTION		LOCATION	GLAZING STRIP
		LETTERS	BACKGROUND		
KS-14611	101	White	Blue	Front	B-179367-1
	102	Blue	White		
	105	None	White		
	106	None	Blue		
	103	White	Blue	Rear and Sides	B-179367-2
	104	Blue	White		
	107	None	White		
	108	None	Blue		
	35	Solid Aluminum Blank			

**TABLE C**  
**BOTTOM PANELS**

SPEC NO.	LIST NO.	DESCRIPTION	REMARKS
KS-1958C	38	Side or Rear	Short
	40		Solid



**Fig. 2—KS-20224 Dome Stop**



**Fig. 3—KS-20224 Dome Stop, Installed**

**SHELF AND DIRECTORY ARRANGEMENTS**

**2.12** Shelf assemblies, directory racks, and associated apparatus are listed in Table D and shown in Fig. 5 through 7.

**SEAT**

**2.13** A KS-19425, List 11 seat assembly (Fig. 5) may be used if desired.

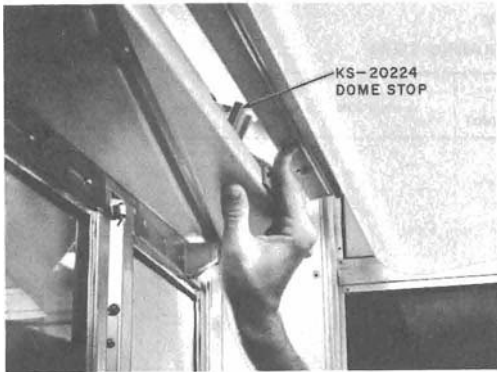


Fig. 4—Releasing Dome Stop

2.14 A KS-19425, List 12 mounting plate (Fig. 5) must be used for mounting the seat.

**JUNCTION BOX (MD)**

2.15 The KS-16797, List 21 junction box kit can be installed in the bottom left rear corner

of the booth (Fig. 8). It is used for underground or ground level power and telephone wire entrances. The kit includes two power leads and a divided rectangular conduit for enclosing wire from junction box to ceiling.

2.16 A double-pole single throw circuit breaker may be installed in the junction box if required. The circuit breaker must be ordered separately from Heinemann Electric Co., No. 2912, 10 amp, 120 volts ac, time delay curve -3 or equivalent.

2.17 Facilities are provided for mounting a 123A1A telephone protector in the junction box.

**BLOWER**

2.18 Booth ventilation is provided by use of a KS-16797, List 9 (MD) blower assembly (Fig. 9). The assembly includes an interlock switch mounted in the door track to control the operation

TABLE D

**SHELF ASSEMBLIES, DIRECTORY RACKS, AND ASSOCIATED APPARATUS**

SPEC NO.	LIST NO.	DESCRIPTION	REMARKS
KS-19425	11	Seat Assembly (Fig. 5)	
	12	Mounting Plate (Fig. 5)	For mounting seat assembly
	13	Directory Shelf (Fig. 5)	Externally mounted for indoor use Makes provisions for mounting the KS-6472 and KS-6538 directory fasteners
	14	Mounting Plate (Fig. 5)	For mounting KS-19425, L13 directory shelf
	16	Directory Rack (Fig. 6)	For mounting directory in left-rear corner Large enough to accommodate one 3-inch binder
	26	Shelf Assembly (Fig. 6)	For use with List 16 directory rack
	27	Shelf Assembly (Fig. 7)	Writing Shelf
KS-20030	3	Directory Hanger (Fig. 7)	For single binder

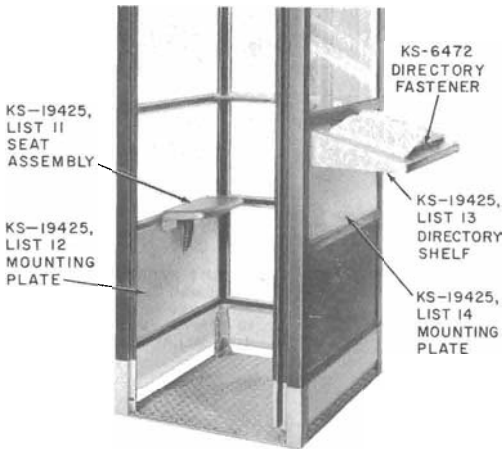


Fig. 5—KS-19425, List 11 Seat Assembly, KS-19425, List 13 Directory Shelf, and Associated Mounting

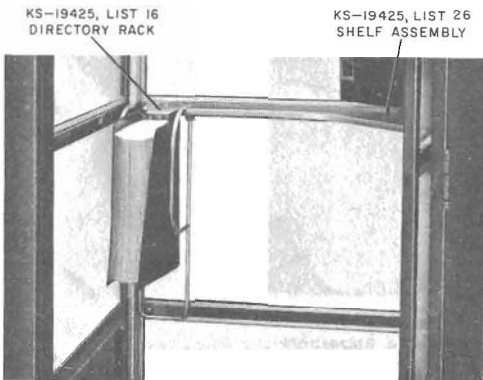


Fig. 6—KS-19425, List 16 Directory Rack and KS-19425, List 26 Shelf Assembly

of the blower when opening and closing the booth door. A customer-controlled switch is also part of the List 9 blower assembly; this switch is mounted on the right column behind the booth door.

## POWER CORD ASSEMBLIES

2.19 Three power cords are available.

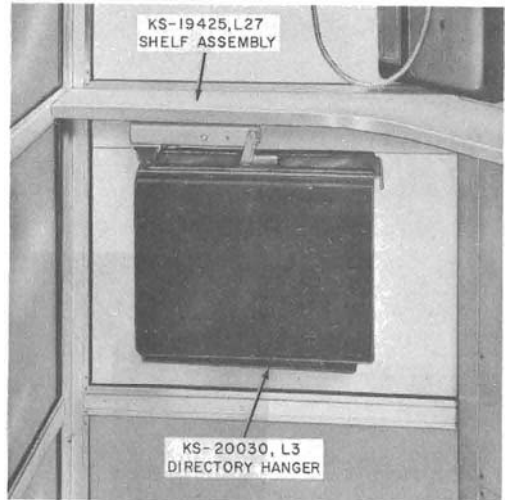


Fig. 7—KS-19425, List 27 Shelf Assembly with KS-20030, List 3 Directory Hanger

(a) *KS-19425, List 22 (Fig. 10)*

- Used to bring overhead power into an *indoor* booth.
- Used to interconnect power to adjacent booths in multiple installations *which do not have blowers*.

(b) *KS-19580, List 30 power cord assembly (Fig. 11)*

- Used to bring overhead power into an *outdoor* booth.

(c) *KS-16797, List 14 cable assembly (Fig. 12)*

- Used to interconnect power to adjacent booths in multiple installations which are equipped with blowers.

## FOUNDATION TEMPLATE

2.20 A KS-19425, List 10 foundation template (Fig. 13) is used to facilitate mounting of booth on a concrete foundation.

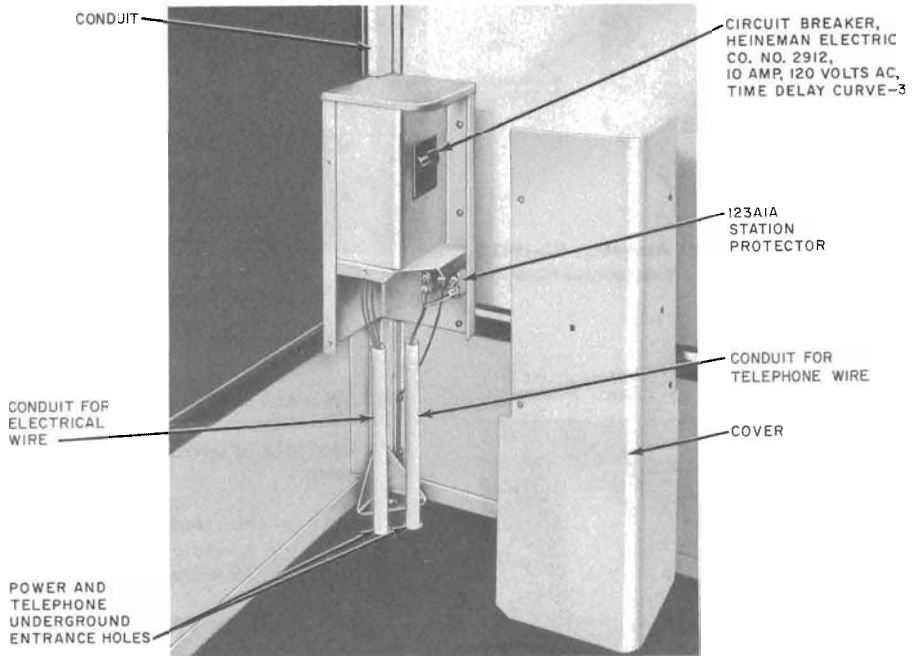


Fig. 8—Circuit Breaker and Associated Apparatus

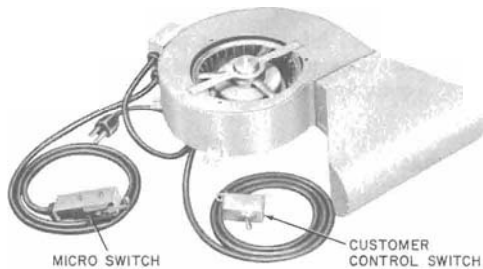


Fig. 9—KS-16797, List 9 (MD) Blower Assembly

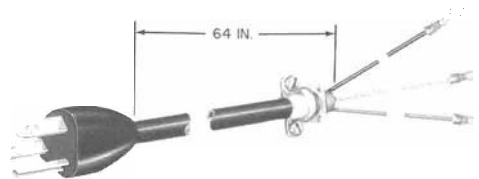


Fig. 10—KS-19425, List 22 Cable Assembly



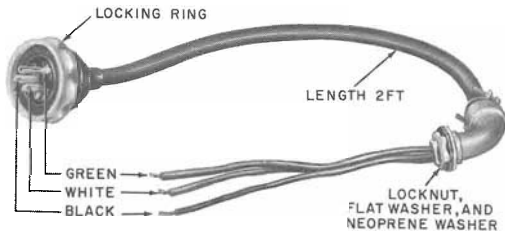


Fig. 11—KS-19580, List 30 Power Cord Assembly

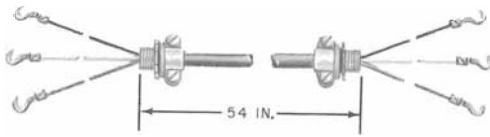
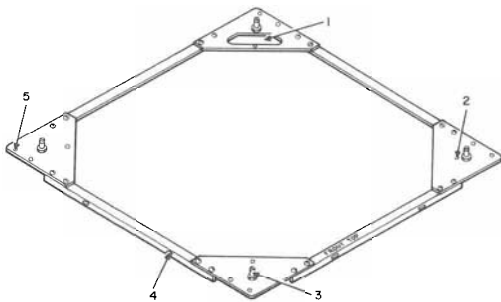


Fig. 12—KS-16797, List 14 Cable Assembly



LEGEND:

1. HOLE FOR UNDERGROUND TELEPHONE AND POWER WIRE ENTRANCE.
2. NAIL HOLES FOR ATTACHING TEMPLATE TO LEVELING BLOCKS.
3. BOOTH LEVELING INSERT.
4. HOLES FOR FASTENING TWO TEMPLATES TOGETHER WHERE SEPARATION IS NOT REQUIRED.
5. HOLES FOR FASTENING STEEL STRAPS WHERE SEPARATION OF TEMPLATES IS REQUIRED.

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Fig. 13—KS-19425, List 10 Template

## WIRING

2.21 Power and telephone wire entrance holes are located in two different locations:

- (a) Through entrance holes located at right rear or right side of the roof assembly (for overhead entrance).
- (b) Through metallic conduit (Fig. 8) to holes provided in the left rear corner of the booth: floor (for underground entrance).

2.22 A 115-volt duplex receptacle for electrical wiring is provided under the roof on the ceiling assembly.

2.23 Electrical protection (for telephone line) is provided by a 123A1A protector. The protector is installed either under the roof on the ceiling for overhead telephone wire entrances, or in the junction box for underground entrances. Booths requiring no protection can be equipped with a 42A connecting block.

2.24 This booth is furnished wired for subscriber set and for coin collector/telephone set connections.

## BACKBOARDS

2.25 Two different backboards have been used in this booth.

(a) *B-190387-1 backboard (Fig. 14)*

- Furnished in booths manufactured prior to July 1963.
- Will accept 200-type coin collector but will not accept 1A/1C type coin telephone set.

(b) *B-190387-2 backboard (Fig. 15)*

- Furnished in booths manufactured after July 1963.
- Will accept either the 200-type coin collector or 1A/1C-type coin telephone set.

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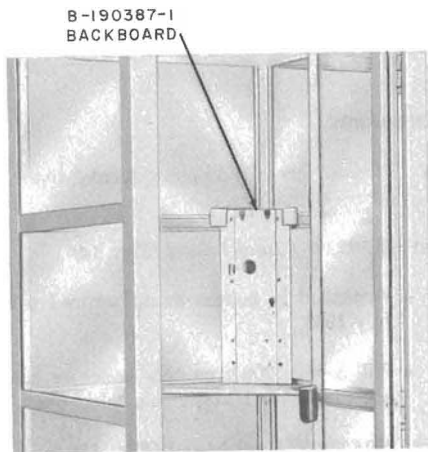
- Requires two B-650326 filler blocks for securing backboard to cross rails.

**Note:** If the B-190387-1 backboard is replaced by a B-190387-2 backboard, filler blocks must be ordered separately.

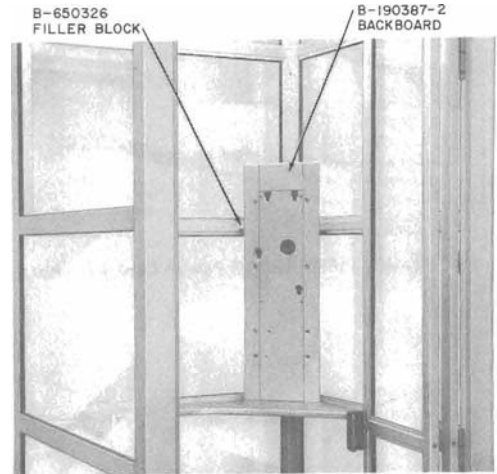
### MULTIPLE INSTALLATION KIT

**2.26** A KS-16797, List 11 multiple kit (Fig. 16) is available for side-by-side or back-to-back assemblies. It consists of the following:

- Two KS-16797, List 12 sign blanks
- Four KS-19580, List 18 frames
- Two KS-19580, List 40 bottom panels (for List 6 booth)



**Fig. 14—KS-16797 Booth With B-190387-1 Backboard Installed**



**Fig. 15—KS-16797 Booth With B-190387-2 Backboard Installed**

### 3. INSTALLATION

**3.01** Booth location should be:

- Within full view of public
- Readily accessible to customer
- Free of such hazards as broken or uneven pavements
- Spaced with a minimum clearance of 6 inches from property lines and buildings
- Placed with as little step-up as possible but still maintaining proper drainage
- Protected by bumper guards (outdoor only).

**3.02** KS-16797 booth requires anchoring at all outdoor installations. Anchoring at indoor locations is desired; however, this may not be possible in some instances.

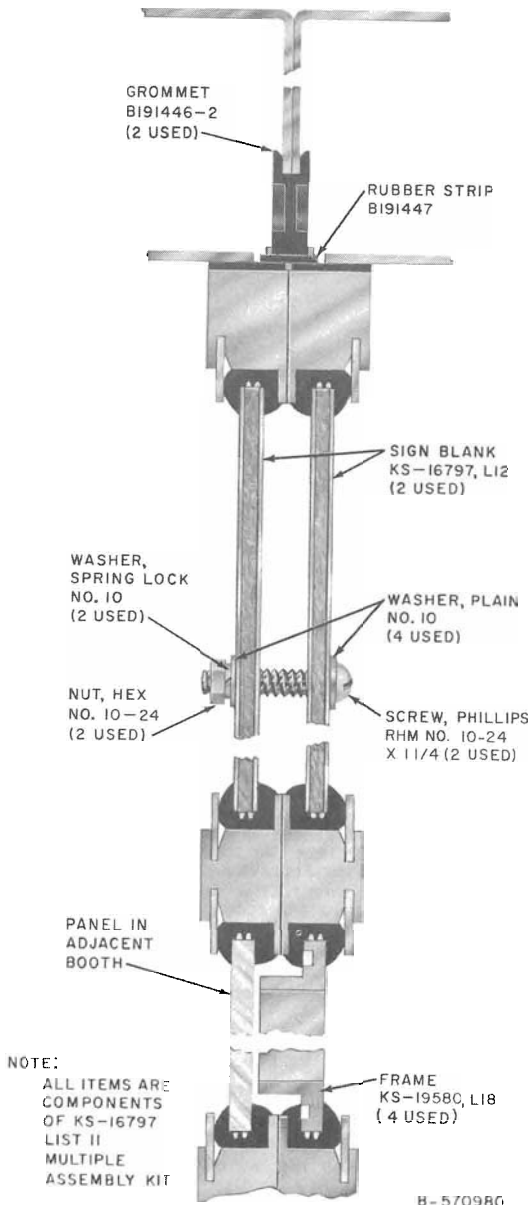


Fig. 16—KS-16797, List 11 Multiple Kit

**3.03** For proper operation of the coin collector/telephone set the surface upon which the booth is installed must be smooth and level. At indoor locations, shims may be placed under the floor to correct minor differences. A concrete base can be provided at outdoor locations. Use a level to check that booth is plumb.

#### FOUNDATION TEMPLATE

**3.04** When necessary to provide a concrete base, a KS-19425, List 10 foundation template (Fig. 13) is used. Install the template as follows:

- Prepare a form 40 inches square with an inside depth of 10 inches (Fig. 17).
- Tamp six inches of cinders or gravel in the bottom of form.
- Position the template in the form on wooden blocks so that the top of four mounting inserts will be flush with concrete base as shown in Fig. 17.



*Nail holes are provided in the four corners of the template for fastening to the wooden blocks. Use the blocks to level and support the template at the proper height.*

- If underground power and telephone wires are to be used, provide for holes in the concrete base at the positions of corresponding holes in the template.

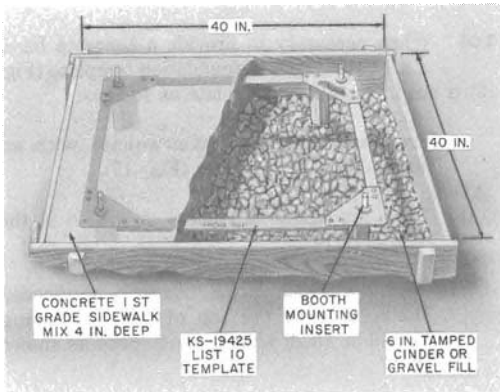


*Do not remove screw plugs from booth mounting inserts until booth is installed. Their purpose is to prevent dirt from filling mounting holes.*

- Pour concrete around the template to fill the form.
- For multiple booth installations, where no separation between booths is required, fasten adjacent templates together with two No. 10-32 by 1/2 RHM screws and two No. 10-32 hex nuts.
- For multiple booth installations, where separation of booths is required, fasten adjacent templates together with steel straps and No. 8 sheet metal screws.

## SECURING BOOTH TO MOUNTING SURFACE

**3.05** If a KS-19425, List 10 foundation template is used, remove insert plugs from template and secure anchoring brackets (Fig. 18) to template using four 3/8-16 by 1-1/4 hex head bolts, four 3/8-inch lockwashers, and four 3/8-inch flatwashers.



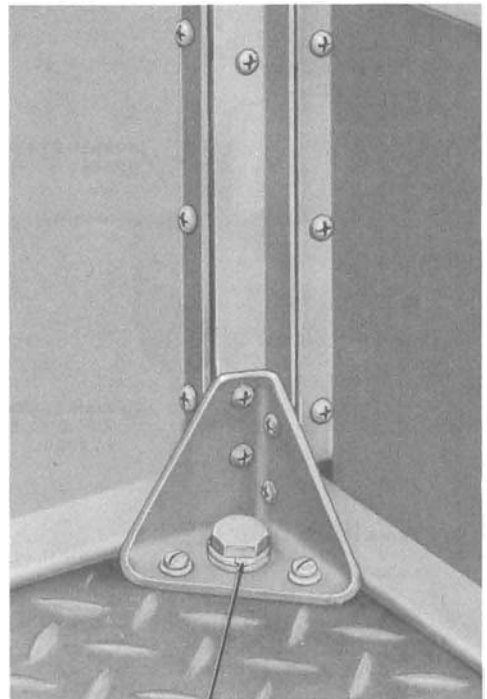
**Fig. 17—Concrete Base Preparation With KS-19425, List 10 Template**

**3.06** If a foundation template is not used, and the booth is to be mounted on concrete, perform the following operations:

- (1) Mark the locations for four mounting holes.
- (2) Drill the four holes to accept machine bolt anchors for 3/8-16 by 1-1/4 bolts. See section on machine bolt anchors in Division 080.
- (3) Install the fasteners.
- (4) Secure anchoring brackets of booth to masonry fasteners using four 3/8-16 by 1-1/4 hex head bolts, four 3/8-inch lockwashers and four 3/8-inch flatwashers.

**3.07** If booth is to be mounted on a wooden floor, perform the following operations:

- (1) Mark the location for four mounting holes.



3/8-16 X 1-1/4 HEX-HD BOLT, 3/8-INCH LOCKWASHER, 3/8-INCH FLAT WASHER (FOR MASONRY FASTENERS) 2-1/2 INCH LAG SCREW, 5/16 INCH LOCKWASHER, 5/16 INCH FLAT WASHER (FOR WOODEN FLOORS)

**Fig. 18—Anchoring Bracket**

- (2) Drill four lead holes to accommodate 5/16 by 2-1/2 inch lag screws.
- (3) Secure booth to floor using four 5/16 by 2-1/2 inch lag screws, four 5/16-inch lockwashers, and four 5/16-inch flatwashers.

## DOOR REQUIREMENTS

**3.08** After anchoring and leveling booth, check door operation per Part 4.

**TELEPHONE WIRING**

*Aerial wire spans fastened to booth should not exceed 25 feet.*

**First Attachment**

**3.09** At outdoor locations, attach drop wire hook or corner bracket on the right rear or right side column directly below the wire entrance hole as follows:

**Drop Wire Hook (Fig. 19)**

- (1) Drill 11/32-inch hole 2 inches below top of column and 1 inch from outside corner.
- (2) Attach drop wire hook with 5/16 by 2-inch corrosion resistant stove bolt, 3/8-inch corrosion resistant washers, and 5/16 hex nut.

**Corner Bracket (Fig. 20)**

- (1) Drill 11/32-inch hole 2 inches below top of column and 1 inch from outside corner. Use corner bracket to determine exact location and drill second hole.
- (2) Attach corner bracket with two 5/16 by 2-inch corrosion resistant stove bolts, two 3/8-inch corrosion resistant washers, and two 5/16 hex nuts.

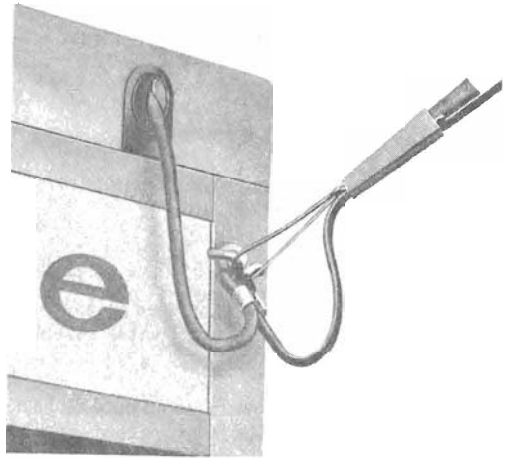
**Drop Wire Connection**

**3.10** Insert drop wire through entrance hole and terminate on 123A1A station protector or 42A connecting block (whichever is required).

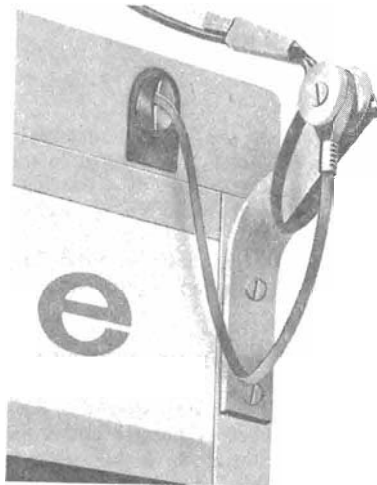
**3.11** The 123A1A station protector or 42A connecting block is located under the roof on the ceiling assembly for overhead wire entrances. For underground entrance, mounting holes have been provided in the List 21 junction box for mounting the 123A1A station protector.

**Station Connections**

**3.12** Station connection wires are furnished as shown in Fig. 21. Complete connections



**Fig. 19—Drop Wire Hook for First Attachment**



**Fig. 20—Corner Bracket for First Attachment**

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for the specific coin collector and subscriber set used are covered in sections entitled Coin Collectors, Connections; and sections entitled Service, Coin Collectors, Subscriber Set Required.

### ELECTRICAL WIRING AND GROUNDING

**3.13** Electrical grounding of the booth is covered in Section 508-100-100.

#### Wiring

**3.14** Bring overhead power into an indoor booth with a KS-19425, List 22 cable assembly (Fig. 10).

**3.15** Bring overhead power into an outdoor booth with a KS-19580, List 30 power cord assembly (Fig. 22).

**3.16** Interconnect power between adjacent booths in multiple installations with a KS-16797, List 14 cable assembly (Fig. 12).

**3.17** Refer to Fig. 8 and 23 for optional methods of electrical wiring.

#### Grounding

**3.18** Ensure that the ground terminal of the station protector is connected to the booth with bonding wire provided. If a bonding wire is not present, use an approved No. 14 gauge wire.

**3.19** In multiple installations, bond the booths together for grounding purposes.

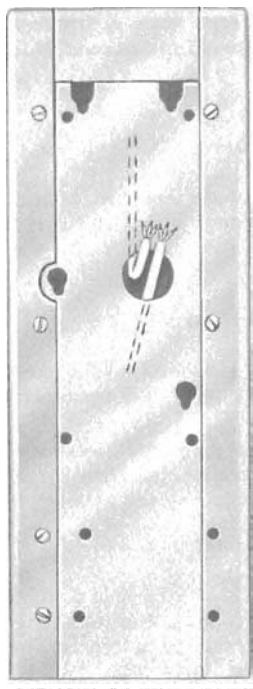
### DIRECTORY RACK AND SHELF ARRANGEMENTS

**3.20** There are two shelf assemblies, a directory rack, a directory hanger and a directory shelf available for the booth. Install, when required, as follows (See Table D and Fig. 5 through 7):



*Use KS-19094 antiseize compound on all screws threaded into aluminum.*

- (a) **KS-19425, List 16 directory rack and KS-19425, List 26 shelf assembly (Fig. 6).**



**Fig. 21—Station Connections**

**Note:** The List 16 directory rack accommodates one 3-inch binder in the left-rear corner of the booth. The List 26 shelf assembly fastens to the directory rack and extends across the back of the booth and under the coin telephone.

- (1) Secure the directory rack to the cross rails in the left-rear corner using two No. 10-32 by 1/2 Phillips FHM screws and two No. 10 CSK lockwashers.
- (2) Secure the shelf assembly to the bottom of the backboard and to the cross rails using five No. 10-32 by 1/2 RHM screws.
- (3) Secure the shelf assembly to the directory rack using the screw furnished with the directory rack.

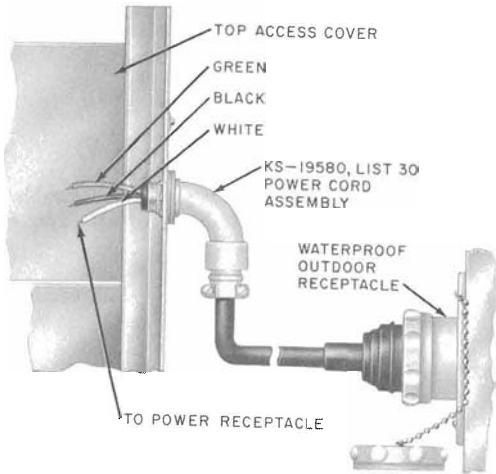


Fig. 22—KS-19580, List 30 Power Cord

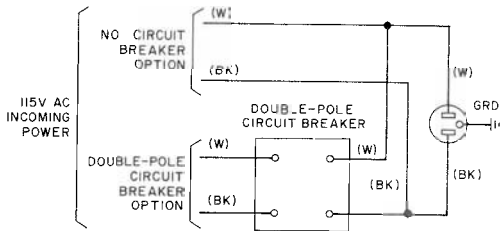


Fig. 23—Power Connections

(b) **KS-19425, List 27 Shelf Assembly and KS-20030, List 3 Directory Hanger (Fig. 7)**

**Note:** The List 27 shelf assembly spans the rear wall and can be used separately, or with a KS-20030, List 3 directory hanger.

- (1) Secure the shelf assembly to the backboard using two No. 10-32 by 1/2 RHM screws.
- (2) Secure the shelf assembly to the cross rails using five No. 10-32 by 1/2 RHM screws.

- (3) Refer to Section 508-710-102 for additional information on the KS-20030, List 3 directory hanger.

(c) **KS-19425, List 13 Directory Shelf (Fig. 5)**

**Note:** The List 13 directory shelf is available for indoor use to be externally mounted on the booth for use with the KS-6472 directory fastener.



**A KS-19425, List 14 mounting plate must be used in conjunction with the directory shelf.**

- (1) Install KS-19425, List 14 mounting plate in the same manner as a standard glass panel in the bottom position on the right side of the booth. Install the plate with shelf mounting holes toward top.
- (2) Secure the directory shelf to the mounting plate using seven No. 10-24 by 9/16 carriage bolts and seven No. 10-24 stop nuts.



**Install the bolts with the heads on inside of booth.**

**SEAT ASSEMBLY**

**3.21** A KS-19425, List 12 mounting plate (Fig. 5) must be used for mounting the seat.

**3.22** Install KS-19425, List 12 mounting plate as follows:

- (1) Install the mounting plate in the same manner as a standard glass panel in the bottom position on the left side of the booth.
- (2) Install a B-650894 clip (furnished with seat assembly) on each corner of the List 12 mounting plate using four No. 8-32 by 3/8 SEMS RHM screws.



**Install the clips on the inside of the booth. Their purpose is to prevent the removal of retaining strips.**

**3.23** Install the seat assembly on the upper portion of the mounting plate using the following

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items (furnished with seat assembly). Install items in the sequence listed.

- Four 1/4-20 by 1-1/8 carriage bolts (install with heads on outside of booth)
- Four B-650893 spacers
- Seat assembly
- Two 1/4-inch flatwashers (front and rear bolts)
- Four 1/4-inch lockwashers
- Four 1/4-20 cap nuts

**3.24** Tighten all nuts securely.

### MULTIPLE INSTALLATIONS

**3.25** Perform the following operations for installing multiple booths:

- (1) Install the first booth in the same manner outlined in 3.01 through 3.24.
- (2) Install the second booth adjacent to the first booth.



*The second booth will not have glass panels and telephone sign in the side which joins the first booth.*

- (3) Join the two booths together using a KS-16797, List 11 multiple kit (Fig. 16). The frames are installed in the same manner as the glass panels.
- (4) Push wires through the grommets, and complete the wiring of all booths.
- (5) Remove backing from the rubber sealing strip. Place the sealing strip along the joint between the two joining booths.
- (6) Remove the knockouts from the joining sides of the booth roofs.
- (7) Put one roof back in place. Insert the grommets in the knockout spaces. Install next roof. Be sure that each grommet seals the knock-out spaces. Tighten the roofs.

- (8) On outdoor installations only, seal the top joint between adjoining roofs with caulking compound.

### 4. MAINTENANCE

**4.01** The local telephone company shall establish the appearance standards of all exposed surfaces.

**4.02** The local telephone company shall establish the safety standards for all booths.

**4.03** All screws threaded into aluminum parts during the course of repair shall be coated with KS-19094 antiseize compound.

### BOOTH CHECK POINTS

- Safe approach to booth (have dangerous conditions corrected)
- Appearance of booth
- Electrical grounding
- Door operation
- Panels and signs
- Booth lighting
- Directories and binders
- Dome and lights
- Security of booth anchorage
- Loose screws and bolts
- Seat assembly (if applicable)
- Shelf assemblies
- Power cords

### CLEANING

**4.04** Detailed information on cleaning and restoring booth is covered in Section 508-100-101.



**DOOR MAINTENANCE**

**4.05** Check door for requirements listed below:

- (a) At outside locations, the door remains open 2 to 3 inches while in normal position (center hinge spring engaged). If desired, this can be adjusted in cold weather areas so that the door closes without slamming.
- (b) At indoor locations, the hinge spring is not engaged and the normal door position is fully open.
- (c) When pushed closed from inside, the door should remain completely closed.
- (d) A slight pull on the handle should open the door and restore it to normal position.
- (e) Open-door clearance from the shelf and side wall is about 2 to 3 inches.

**Door Adjustments**

**4.06** Door adjustments (Fig. 24) should be made in sequence as follows:

- (1) Loosen setscrews on collar.
- (2) Place door in normal position (2 to 3 inches from corner column).
- (3) Position rod of spring stop assembly against nylon roller.
- (4) Secure rod in this position by placing collar against the bracket of the spring stop assembly, tighten setscrews.
- (5) Loosen mounting screws on adjustable stop assembly.
- (6) Move assembly left or right to obtain the spring tension required to return door to normal position. Tighten screws and recheck tension.
- (7) Check that door stop assembly (with guide roller) is not loose or damaged. Top roller should clear track throughout entire travel. Reposition assembly as required.

**Door Operation**

**4.07** The door should operate freely throughout its entire travel without binding, squeaking, or chattering. When the door binds, squeaks, or chatters, check the following items:

- (1) Check if booth is level.
- (2) Check hinge wear. Clearance between hinge barrels should not exceed 1/16 inch; gauge by eye. Replace worn hinges.
- (3) Check spring of top hinge assembly. Replace if defective (Fig. 25). Replace all earlier type assemblies with the new top hinge assembly per Fig. 25.
- (4) Check rubber door-frame bumpers. Replace if worn or missing.
- (5) Check door track. If worn track is interfering with operation of door, replace track as shown in Fig. 26.



*Lubricate hinges, roller, springs, and door track with lubricant KS-14774, List 2. KS-14796 oiler can be used for application.*

**Damaged Door Sections**

**4.08** Replace door sections that have broken mitered joints. Repair solid-type (one piece) sections. (See Fig. 27). Fracture usually occurs because of misuse, improper adjustment, or because booth is not level. Check the cause and repair as follows:

- (1) Close the door against a thin wooden block to close fracture.
- (2) Place B-931522 door repair bracket on the top outside of the door. Align edge of bracket with edge of door that is closest to fracture.
- (3) Drill seven mounting holes 1/2-inch deep (drill size No. 26). Secure bracket with seven No. 8-32 by 1/2 Phillips FH self-tapping screws.

**Note:** When brackets are installed on both door sections, check that brackets do not

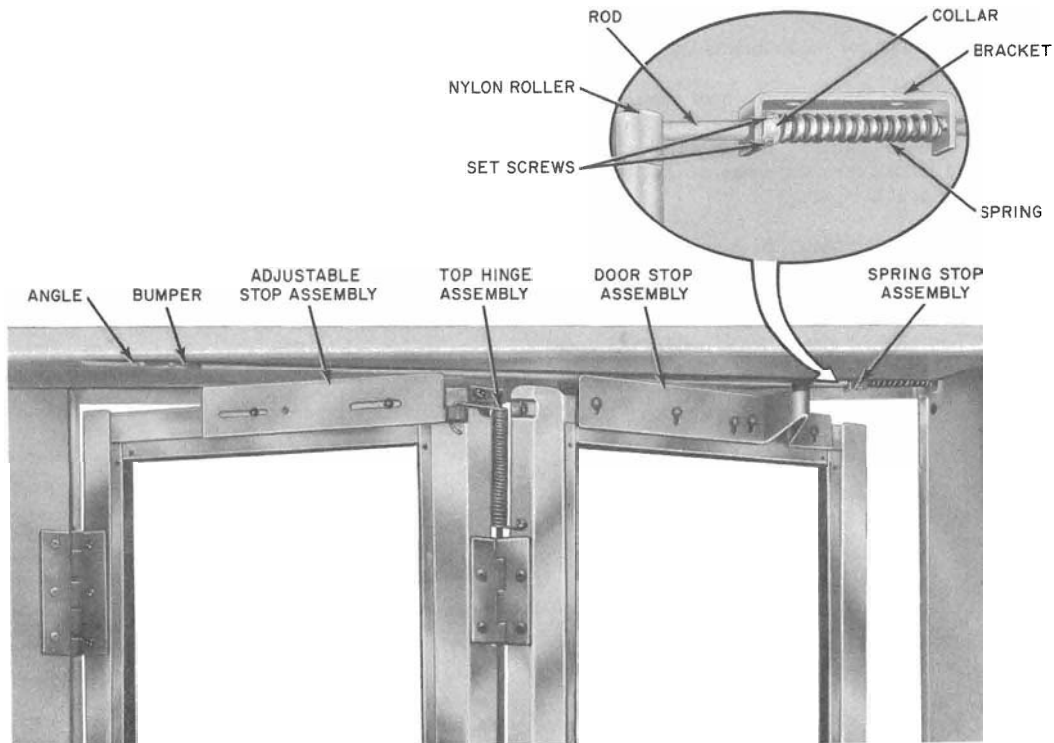


Fig. 24—KS-16797 Booth Door Adjustment

interfere with open position of door. Relocate felt bumper if necessary.

## PANEL REPLACEMENT

### Sign Panels, Door, Side, and Rear Panels

**Warning:** *Wear gloves and eye protection when handling glass panels to prevent personal injury. Use care when handling tempered glass. Nicks or scratches will damage the glass and may cause it to shatter. Do not allow metal tools to come in contact with edge of tempered glass. Before installation, examine glass for nicks or chips along edges. If such defects are apparent, do not use this glass.*

**4.09** Replace those signs which are broken or which will not meet local telephone company standards. Refer to Table A for available door, side and rear panels, and glazing strips. Refer to Table B for available sign panels and glazing strips.

**4.10** Booth panels and signs are held in place by four interlocking retaining strips. They are inserted in sequence as shown in Fig. 28. The No. 4 strip is rippled and is held in place by interface friction. In older booths the No. 4 strip is secured by Allen screws; these strips should be replaced with the rippled strip when replacing signs or panels. Refer to Table E for retaining strips.

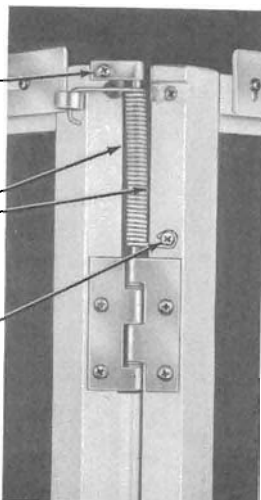
**4.11** Replace panels as follows:

- (1) Remove No. 4 locking strip.

REMOVABLE SUPPORT  
DRILL HOLE 1/2 IN. DEEP.  
FASTEN WITH  
SELF TAPPING SCREW  
TYPE F, 8-32 X 1/2 IN.

INCREASE  
SPRING CLEARANCE  
ON BOTH DOORS.  
FILE OR SAND  
1/32 IN. DEEP  
X 3-7/8 IN. LONG.

DRILL 5/32 IN. HOLE  
1/2 IN. DEEP.  
FASTEN WITH  
SELF TAPPING SCREW  
TYPE F, 8-32 X 5/8 IN.

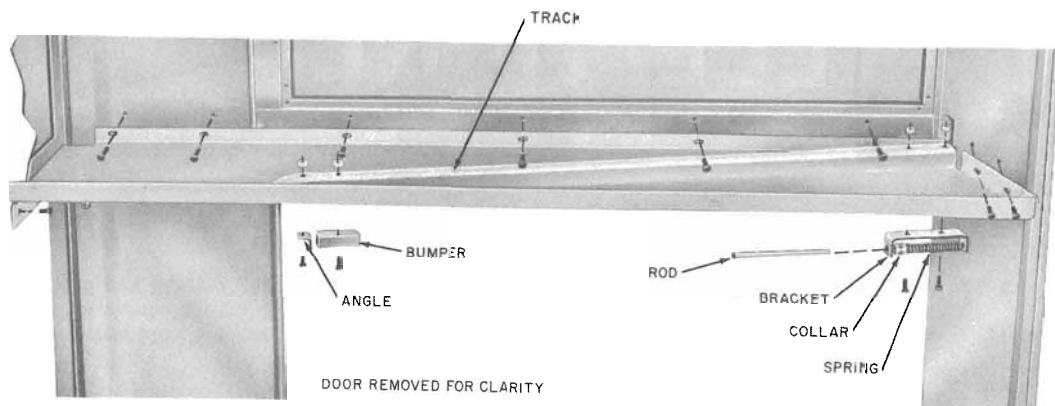


**Fig. 25—Installation of Top Hinge Assembly**

- (2) Remove retaining strips No. 2 and No. 3.
- (3) Remove retaining strip No. 1.
- (4) Remove panel and rubber glazing strip.
- (5) Apply rubber glazing strip to replacement panel.
- (6) Insert panel into frame with the beaded edge of glazing strip on the outside and the open joint in lower right corner as viewed from inside.
- (7) Replace retaining strips in sequence as shown in Fig. 28.

#### Bottom Panels

**4.12** Replace those panels which are broken or which will not meet local telephone company standards. Refer to Table C for available panels.



**Fig. 26—Installation of Door Track**

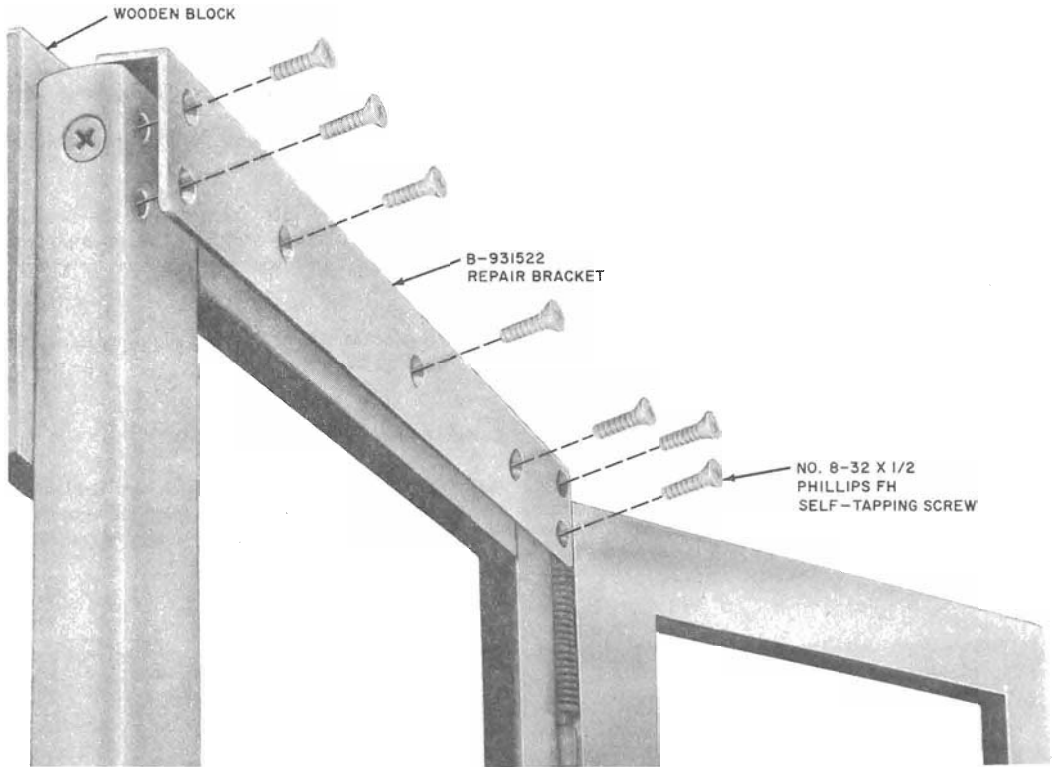


Fig. 27—Installation of Door Repair Bracket

4.13 To remove panels, remove Phillips RH screws (eight for short panels and ten for solid panel).

#### FLOOR

4.14 Replace worn or damaged floors:

(1) Position floor against the bottom of the booth with the telephone and power entrance holes in the left rear corner.

(2) Secure each corner gusset on the floor to its associated corner post with four No. 8 by 5/8 inch RH self-tapping screws.

4.15 If a booth is equipped with an abrasive-clad floor, the finish can be restored with the

use of Goodyear Griptred flooring and protective coating, dark gray 592-7005 or equivalent. This can be applied with an ordinary paint brush.

#### BOOTH ACCESSORIES

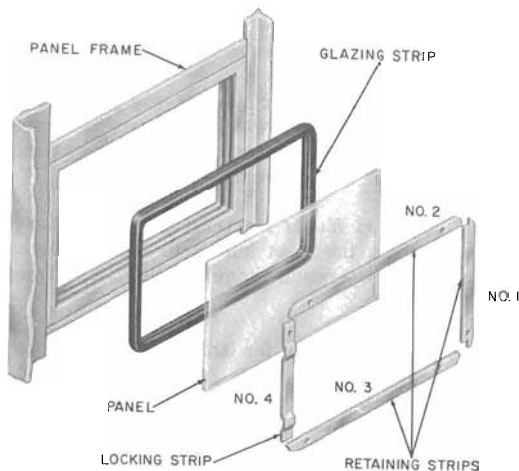
4.16 Telephone directories should be in good condition. Replace binders showing signs of wear.

4.17 Ensure that a rubber bumper is in place on the directory rack/hanger to cushion the binder as it drops.

- B-685401 bumper for KS-19425, List 16 directory rack

**TABLE E**  
**RETAINING STRIPS**

PART NO.	LOCATION	REMARKS
B-185371—	1	Door Panel, top
	2	Door Panel, either side
	3	Door Panel, bottom
	4	Side or Rear Panel, either side
	5	Side or Rear Panel; Side or Rear Sign, top or bottom
	6	Side or Rear Panel, locking strip
	7	Side or Rear Sign, either side
	9	Side or Rear Sign, locking strip
	10	Front Sign, either side
	11	Front Sign, top
	12	Front Sign, locking strip
	13	Front Sign, bottom



**Fig. 28—Assembly of Side or Rear Panels**

- B-697467 bumper for KS-20030, List 3 directory hanger

**4.18** Install a new bumper, if required as follows:

- (1) Remove old adhesive after softening with trichloroethane.
- (2) Install new bumper using 3M Company EC-880 adhesive or equivalent.

**4.19** Check directory rack, shelf, and seat arrangements for loose nuts and washers. If these booth accessories are excessively worn or do not meet standard appearance requirements, replace them.

**4.20** Refer to Section 508-710-102 for maintenance information on KS-20030 directory hangers.

#### **BOOTH LIGHTING**

**THINK** *For your safety, observe the following:  
Work operations on booth lighting*

*equipment and electrical wiring should be limited to locations where power can be turned off at a switch or a plug can be removed. Wear eye protection when lowering ceiling and handling fluorescent lamps.*

**4.21** When ballast shows signs of leaking compound, replace the complete KS-19207 unit per Section 508-820-100.

**4.22** Early model KS-16797 booths were equipped with a B-185379 light fixture. If major repairs are required for maintenance, replace the B-185379 light fixture with a KS-19207, List 6 light fixture per Section 508-820-100.

**4.23** Maintenance instructions for the B-185379 light fixture are covered as follows:



*Booth ceiling lamps should be lighted when power is on unless booth is equipped with a light control unit. For booth using a KS-19261 light control unit, refer to Section 508-825-100 for maintenance instructions. For light failure in booths not equipped with a light control unit proceed as follows:*

- (1) Check that manual starter reset buttons are pushed in when this type starter is used. Allow 1 minute for lamps to light.
- (2) If lamps fail to light remove lamp plug from ceiling receptacle, and test for power.
  - (a) If power is off, check for intermediate switch.
  - (b) If power is present, replace lamp plug.
- (3) If lamps fail to function, replace starters and allow 1 minute for lighting. Replace lamps that do not light. (Before discarding a starter, test in a good lamp fixture.)
- (4) If lamps still fail to function, trouble may be due to low voltage (below 95 volts) or a defective fixture.

**4.24** Automatic cutoff thermal-type starters are also used with the KS-16797 booth lamps. Bimetallic contacts control starter operation. If

starter fails to light the lamp, a cutoff contact will open the lamp circuit. Starter remains in this cutoff condition until power is turned off, allowing bimetallic cutoff contact to cool.

- Purpose of cutoff is to prevent ballast transformer from overheating.

**4.25** Starter cutoff usually occurs from the following:

- (a) Low ac voltage or downward power surge (service interruptions, fluctuations, thunderstorms, etc) below operating range of lamp.
- (b) Defective lamp (flickers when starting to light).
- (c) Extremely low temperature at start. Gas in lamp does not ionize.
- (d) High temperature, either at start, or while lamp is lighted. External heat combined with current flow operates bimetallic cutoff contact.

**Note:** Remember, the lamp starting time is determined by the temperature present in conjunction with lamp condition and line voltage.

**4.26** There are two types of starters as follows:

- (a) **Automatic Reset** starters will reset after going into cutoff when the power is turned off to allow the contacts to cool. Operating range at 118 volts is from 0 to 135 F.
- (b) **Manual Reset** starters can be reset by pushing the reset button to render starter operative. Operating range at 118 volts is from 0 to 185 F.

**4.27** Refer to Table F for lamp and starter codes.

#### **KS-16797, LIST 9 (MD) BLOWER (Fig. 9 and 29)**

**4.28** All KS-16797 booths are not equipped with blowers. Perform maintenance on defective blowers which are present as follows:

- (1) Remove roof from booth.

- (2) Check if power is present at duplex receptacle located on top of ceiling assembly.

**THINK** *If power is not present, check for intermediate switch or call a local electrician. If power is present, disconnect power from source and continue with (3).*

- (3) Remove cover of terminal box assembly.  
 (4) Check cord assembly as follows:

(a) Remove plug of blower assembly cord from duplex receptacle and short the blades of the plug. Ensure that BLOWER switch is in OFF position.

- (b) Connect ohmmeter to terminal 1 and 2 of terminal board (Fig. 30).

0 reading indicates cord assembly is good; continue with (5).

$\infty$  reading indicates cord assembly is faulty; replace cord assembly (B-190785).

- (5) Operate BLOWER switch to ON position.

- (6) Check blower switch assembly as follows:

- (a) Connect ohmmeter to terminals 1 and 3 of terminal board (Fig. 30).

0 reading indicates switch assembly is good; continue to (7).

$\infty$  reading indicates switch assembly is faulty; replace switch assembly (B-190784) as directed in 4.30.

- (7) Operate interlock switch by closing booth door. Ensure that BLOWER switch is in OFF position.

- (8) Check interlock switch assembly as follows:

- (a) Connect ohmmeter to terminals 3 and 4.

0 reading indicates interlock switch is good; continue with (9).

$\infty$  reading indicates switch assembly is faulty; replace switch assembly (B-190788) as directed in 4.31.

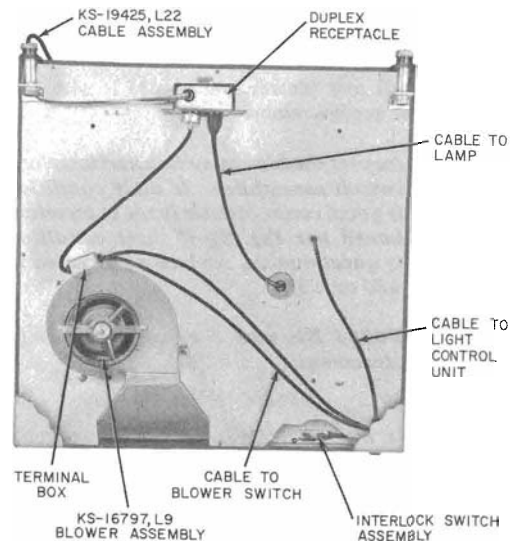
- (9) If cord assembly, blower switch assembly, and interlock switch assembly prove to be good, replace the List 9 (MD) blower as directed in 4.29.

**TABLE F**  
**LAMP AND STARTER CODES**

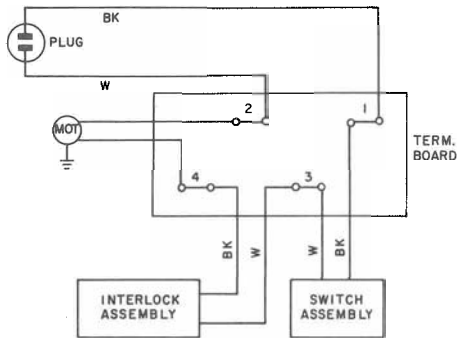
WATTS	LAMP CODE*	STARTER CODE	
		RESET	
		AUTOMATIC	MANUAL
32	FC12T10	TC-12	TC-120
40	FC16T10	TC-4	TC-40

\* Lamp, fluorescent, 4-pin, standard, cool white.

**Note:** Permanent damage to ballast transformer may result if the starter used is not correct for lamp wattage. TC-4 or TC-40 starters should not be used as a replacement for TC-12 or TC-120 starter.



**Fig. 29—KS-16797, List 9 (MD) Blower Assembly Installed**



**Fig. 30—KS-16797, List 9 (MD) Blower Assembly, Connections**

#### 4.29 *KS-16797, List 9 (MD) Blower Replacement:*

- (1) Disconnect leads of the blower and interlock switch assemblies from terminal board located in terminal box on *old* blower.
- (2) Disconnect leads of the blower and interlock switch assemblies from terminal board located in terminal box on *new* blower.
- (3) Remove and retain three No. 8 by 3/8 RH self-tapping screws and remove old blower.
- (4) Install new blower and secure it with the three screws retained in (3).



*Inspect the blower switch and interlock switch assemblies. If their condition is good, connect their leads to terminal board per Fig. 30; if their condition is questionable, replace as directed in 4.30 or 4.31.*

#### 4.30 *B-190784 Blower Switch Assembly Replacement:*

- (1) Tie a wire or string to the switch assembly leads at the end disconnected from the terminal board.
- (2) Remove and retain two No. 8-32 by 5/8 RH self-tapping screws which secure switch assembly to corner post.

- (3) Pull switch assembly until leads are removed from wire channel and wire or string is exposed.
- (4) Untie wire or string from leads of old switch and tie to leads of new switch.
- (5) Pull wire or string and feed switch leads through wire channel to terminal board. Untie wire or string.
- (6) Mount switch in position on post and secure it with the two screws retained in (2).
- (7) Connect leads to terminal board per Fig. 30.

#### 4.31 *B-190788 Interlock Switch Assembly Replacement:*

- (1) Tie a wire or string to the switch assembly leads at the end disconnected from terminal board.
- (2) Remove and retain two No. 6-32 by 1-1/16 BHM screws, two No. 6 lockwashers, and two No. 6-32 hex nuts which secure switch assembly to track assembly.
- (3) Repeat 4.30 (4) and (5).
- (4) Mount switch in position on the upper surface of the track assembly with its operating bracket extending through the track.
- (5) Secure switch to track assembly using hardware retained in (2); lockwashers and hex nuts shall be on top side of track.
- (6) Connect leads to terminal board per Fig. 30.

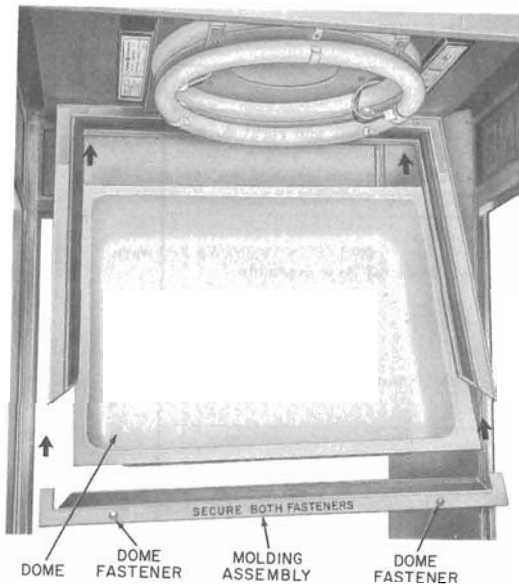
#### DOME REPLACEMENT

##### 4.32 Replace defective domes as follows:

- (1) Unlock dome fasteners and lower dome.
- (2) Remove machine screws and molding assembly.
- (3) Remove defective dome and insert replacement as shown in Fig. 31.
- (4) Replace and secure molding assembly.



- (5) Raise dome and secure in position by locking dome fasteners.



**Fig. 31—Installation of Dome**

### DOME STOP

- 4.33** Replace damaged or broken dome stops in accordance with Fig. 3.

### PROTECTOR GROUND

- 4.34** Ensure that the ground terminal of the station protector is connected to the booth with bonding wire provided. If a bonding wire becomes damaged or broken, use an approved No. 14 gauge wire.
- 4.35** In multiple installations, ensure that booths are bonded together for grounding purposes.

### JUNCTION BOX

- 4.36** Maintenance on the junction box will be restricted to replacement of the cover, station protector, circuit breaker, or conduit.

### REPLACEMENT PARTS

- 4.37** Refer to Table G for replacement parts which are most commonly required.

**TABLE G**  
**REPAIR OR REPLACEMENT PARTS**

NAME	PART NUMBER	REMARKS
Door Assembly	B-190382	Door includes left and right door frame assemblies, hinges, handle, door stop assembly, and adjustable stop assembly
Door Frame Assembly, Left Side	B-181729	Left frame of door assembly
Door Frame Assembly, Right Side	B-181728	Right frame of door assembly
Door Stop Assembly	B-190381	Component of door assembly
Roller Nylon	B-561730	Mounts on pin of door stop assembly
Adjustable Stop Assembly	B-684748	Component of door assembly
Top Hinge Assembly	B-684745	Top center door hinge
Spring	B-684746	Component of top hinge assembly
Butt Hinge Assembly	B-650842	Door post hinge
	B-684744	Center door hinge (middle and bottom positions)
Handle	B-684738	Door handle
Bumper	B-684714	Located on column of left side assembly
Track Assembly	B-190333	Consists of track, spring stop assembly, angle, and bumper
Track	B-190791	Component of track assembly

**TABLE G (Cont)**  
**REPAIR OR REPLACEMENT PARTS**

NAME	PART NUMBER	REMARKS
Bumper	B-179473	Component of track assembly
Spring Stop Assembly	B-192543	Component of track assembly
Rod Assembly	B-192404	Component of spring stop assembly
Bracket	B-176686	Component of spring stop assembly
Spring	B-176687	Component of spring stop assembly
Collar	B-192403	Component of spring stop assembly
Bumper	B-555370	Located on directory rack
Dome	B-185369	Light dome
Floor	B-190347-2	Floor with tread plate
Roof	B-190792	Satin finish
Grommet	B-191446-1	For use at wire entrance holes at rear of single booths
	B-191446-2	For use at wire entrance holes at rear of single booths installed back to back in multiple installations
	B-183554	For use at wire entrance hole on ceiling assembly
	B-191089-1	For use at wire entrance holes at side of single booths
	B-191089-2	For use at wire entrance holes of booths installed side by side in multiple installations



## INDOOR-OUTDOOR BOOTH KS-19425 UNIVERSAL II



Fig. 1—KS-19425, List 2 Indoor—Outdoor Booth

## SECTION 508-301-100

### 1. GENERAL

**1.01** Information in this section was formerly contained in Sections 508-232-100 and 508-232-300 which are hereby canceled.

**1.02** The KS-19425 Universal II booth is a direct replacement for the KS-16797 Universal booth.

### 2. IDENTIFICATION

**2.01** The KS-19425, List 2 booth (Fig. 1) is an indoor-outdoor aluminum and glass telephone booth designed for single, side-by-side, or back-to-back installations. It is available in polished aluminum (List 60), gold (List 61), and bronze (List 62).

**2.02** This booth is designed primarily for stand-up service; however, a high-position seat, located approximately 27 inches from the floor, is available for sit-down service if desired.

**2.03** The overall dimensions of the booth are:

- Height—83-1/8 inches
- Width—28-3/4 inches
- Depth—28-3/4 inches (front sign projects 1-1/2 inches beyond this dimension)

**2.04** The self-closing door, consisting of two vertical sections, each supporting a clear safety glass panel, folds inside the booth along the right wall. When the door is released from the open position, the spring assembly will stop and position the door at partially open position. For indoor use, the door may remain in the normally opened position if so desired. A rubber molding is attached to the bottom edge of the door to reduce hazards.

#### PANELS

##### Door, Side, Rear, and Bottom Panels

**2.05** Door, side, rear, and bottom panels are available as described in Table A.

##### Sign Panels

**2.06** Sign panels are available as described in Table B.

### ILLUMINATION AND VENTILATION

**2.07** Unless otherwise specified, the booth is illuminated by a KS-19207, List 7 light fixture which also illuminates the signs. See Section 508-820-100.

**2.08** Ventilation is provided through an opening in the front sign and also through screened louvered panels which may be installed at the sides and rear in place of a sign.

**2.09** For locations where additional ventilation is required, a KS-19207, List 3 light and blower unit can be used; this unit must be ordered separately plus the following associated items:

- B-650927 switch assembly
- B-650929 actuator assembly
- B-684799-2 switch assembly
- B-558806-2 switch housing
- Two No. 8-32 by 1/4 Phillips RH self-tapping screws
- Two No. 8-32 by 1/2 Phillips RH self-tapping screws

**Note:** The B-684779-2 backboard mounted switch permits the customer to turn the blower on and off as desired. This switch is used in conjunction with the B-650927 door operated switch.

**2.10** When used outdoors, this booth may be equipped with a KS-19261, List 1 light control unit. In multiple installations, a maximum of five booths may be interconnected and controlled by one light control mounted in the end booth of the row.

**2.11** Refer to Section 508-825-100 for complete information on the KS-19261 light control unit.

**2.12** In multiple installations, a KS-19580, List 51 receptacle assembly (Fig. 2) must be used

TABLE A  
DOOR, SIDE, REAR AND BOTTOM PANELS

KS-19580 LIST NO.	DESCRIPTION	REMARKS	
10*	Tempered Glass Panel	7/32-inch thick small side or rear panel	
12*		7/32-inch thick large side or rear panel	
14*		7/32-inch thick door panel	
32	Aluminum Panel	Small side or rear panel	
33		Large side or rear panel	
38*		Short bottom panel	
40		Full size bottom panel	
90	Porcelain Enamel Panel	Large side or rear panel	Blue
91			Gray
92			Red
93		Small side or rear panel	Blue
94			Gray
95			Red

\*Furnished unless otherwise specified.

in conjunction with a KS-19261, List 1 light control unit as follows:

- (a) One receptacle for *each multiple installation* where KS-19207, List 7 light fixtures are used.
- (b) One receptacle for *each booth* where KS-19207, List 3 light and blower units are used.

**2.13** When the KS-19580, List 51 receptacle assembly is required, it must be ordered separately plus the following associated items:

- B-650837 bracket
- Four No. 8-32 by 3/8 Phillips RH self-tapping screws.

#### WIRING

KS-19425, List 25 Lower Backboard

**2.14** When underground or ground level wire entrance is desired, use KS-19425, List 25 lower backboard plate and cover assembly (Fig. 3). Order separately.

#### Electrical Wiring

**2.15** Use one of the following:

- (a) **KS-19425, List 22 cable assembly (Fig. 4):** Used to bring overhead power into an indoor booth or to connect adjacent booths in multiple installations
- (b) **KS-19425, List 24 power cable assembly (Fig. 5):** Used to bring power from the KS-19426, List 17 circuit breaker box to the electrical receptacle located above the ceiling.
- (c) **KS-19580, List 30 power cord assembly (Fig. 6):** Used to bring overhead power into an outdoor booth

TABLE B  
TELEPHONE SIGN PANELS

KS-19580 LIST NO.	COLOR		REMARKS
	LETTERS	BACKGROUND	
16		Aluminum Solid Panel	Used on sides and rear in place of telephone sign
35		Aluminum Louvered Panel	Used on sides and rear to increase ventilation of booth
72*	White	Blue	Front sign
75	Blue	White	
80*	White	Blue	Rear and side signs
84	Blue	White	
86	None	Blue	Front sign
87		White	
88		Blue	Rear and side signs
89		White	

\*Furnished unless otherwise specified.



Fig. 2—KS-19580, List 51 Receptacle Assembly



*If a circuit breaker is required, order following items separately:*

- Hineman Electric Co. No.0912 circuit breaker
- KS-19426, List 17 circuit breaker box (Fig. 7)
- Two No. 8-32 by 3/8 Phillips RHM self-tapping screws

#### Telephone Wiring

**2.16** The telephone wire will terminate above the ceiling on a 123A1A protector which is furnished with booth.

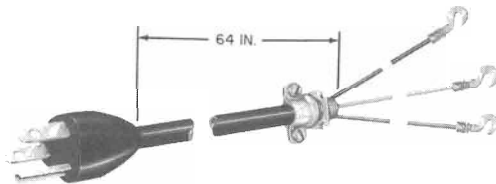
- Older models will have the protector mounted on a stationary plate (Fig. 8)
- Current models will have the protector mounted on a detachable plate (Fig. 9) for convenient access. Refer to Part 4 for conversion.

**2.17** The booth is wired for coin telephone set connections.





**Fig. 3—KS-19425, List 25 Lower Backboard Plate and Cover Assembly**



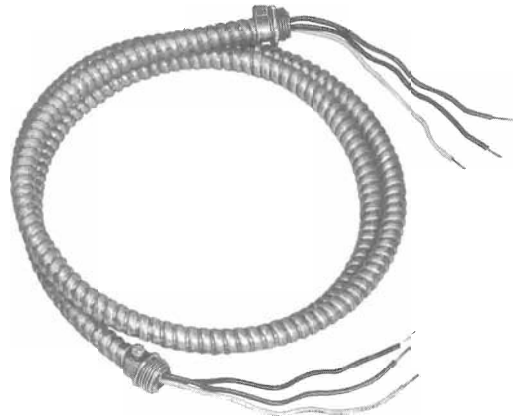
**Fig. 4—KS-19425, List 22 Cable Assembly**

**CARD FRAME**

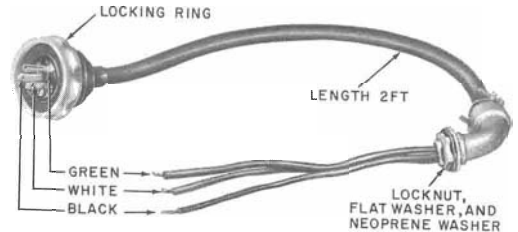
**2.18** Booth will accept a KS-19928, List 2 card frame. Refer to Section 508-811-100.

**DIRECTORY HANGER, RACK, AND SHELF ARRANGEMENTS**

**2.19** Refer to Fig. 10 through 12.



**Fig. 5—KS-19425, List 24 Power Cable Assembly**



**Fig. 6—KS-19580, List 30 Power Cord Assembly**

**2.20** Unless otherwise specified a KS-19425, List 27 shelf assembly is furnished with each booth which will accept a separately ordered KS-20030, List 3 directory hanger.

**SEAT ASSEMBLY**

**2.21** Refer to Fig. 12.

**2.22** Order KS-19425, List 11 seat assembly and KS-19425, List 12 mounting plate separately when required.

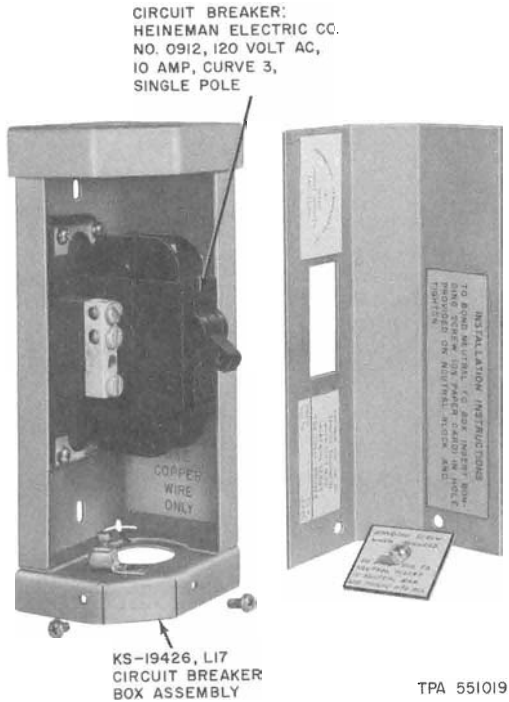


Fig. 7—Circuit Breaker and Box Assembly

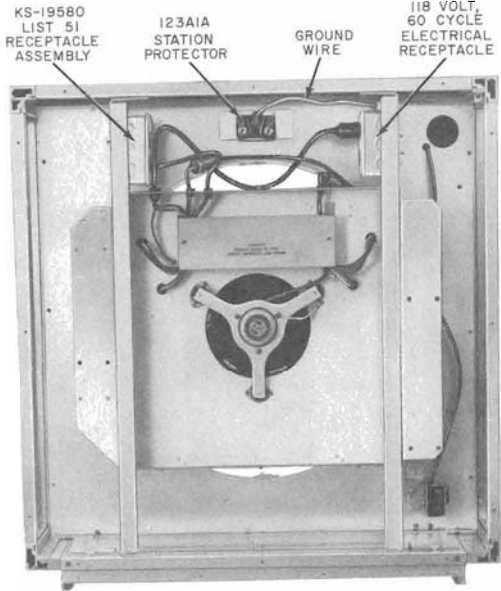


Fig. 8—KS-19425 Booth Ceiling Area (Older Model)

**FLOOR**

2.23 An aluminum tread floor (Fig. 13) is furnished.

**LEVELING INSERTS**

2.24 Adjustable leveling inserts (Fig. 13) are provided to facilitate booth leveling up to 2-inches. They are also used for bolting the booth to its mounting surface.

**MULTIPLE KIT**

2.25 Refer to Fig. 14.

**ORDERING GUIDE**

*Note:* Use KS-19580, List 40 bottom panels between booths in multiple installations to reduce conversation interference.

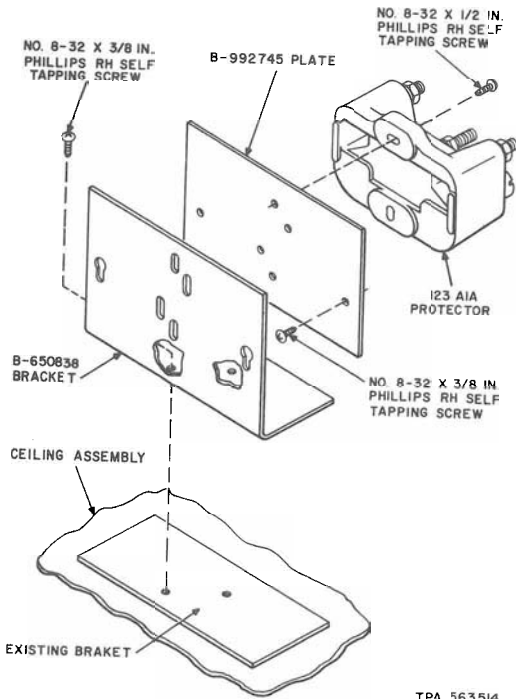
2.26 The following are examples of typical orders:

**Example 1 Single Booth:**

- 1—KS-19425, List 2 Telephone Booth w/List 60 finish

*Note:* The above order will include the following items:

- 1—KS-19580, List 72 Telephone Sign Panel
- 2—KS-19580, List 80 Telephone Sign Panels
- 3—KS-19580, List 12 Large Glass Panels
- 2—KS-19580, List 14 Door Panels
- 1—KS-19207, List 7 Light Fixture
- 1—KS-19425, List 27 Shelf Assembly
- 1—KS-19425, List 21 Sign Blank Assembly
- 6—KS-19580, List 10 Small Glass Panels



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**Fig. 9—Conversion of Protector Mounting Bracket**

3—KS-19580, List 38 Bottom Panels w/List 60 finish

**Example 2 Side by Side Multiple:**

2—KS-19425, List 2 Telephone Booths w/List 60 finish, equipped with:

1—KS-19580, List 20 Multiple Kit w/List 60 finish

2—KS-20030, List 3 Directory Hangers

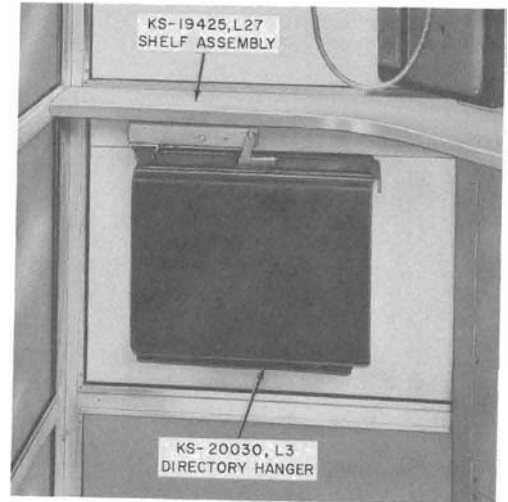
2—KS-19580, List 40 Bottom Panels

2—KS-19425, List 22 Cable Assemblies

### 3. INSTALLATION

**3.01** Booth location should be:

- Within full view of public



**Fig. 10—KS-19425, List 27 Shelf Assembly with KS-20030, List 3 Directory Hanger**

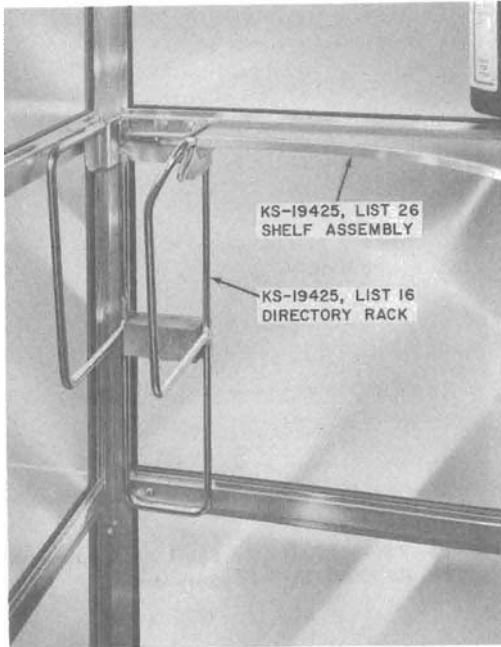
- Readily accessible to customer
- Free of such hazards as broken or uneven pavements and flooring
- Spaced with a minimum clearance of 6 inches from property lines and building
- Placed with as little step up as possible (maximum of 3 inches) but still maintaining proper drainage.
- Protected by bumper guards (outdoor only).

**3.02** The KS-19425 booth requires anchoring at all outdoor locations. Anchoring at indoor locations is desirable; however, this may not be possible in some instances.

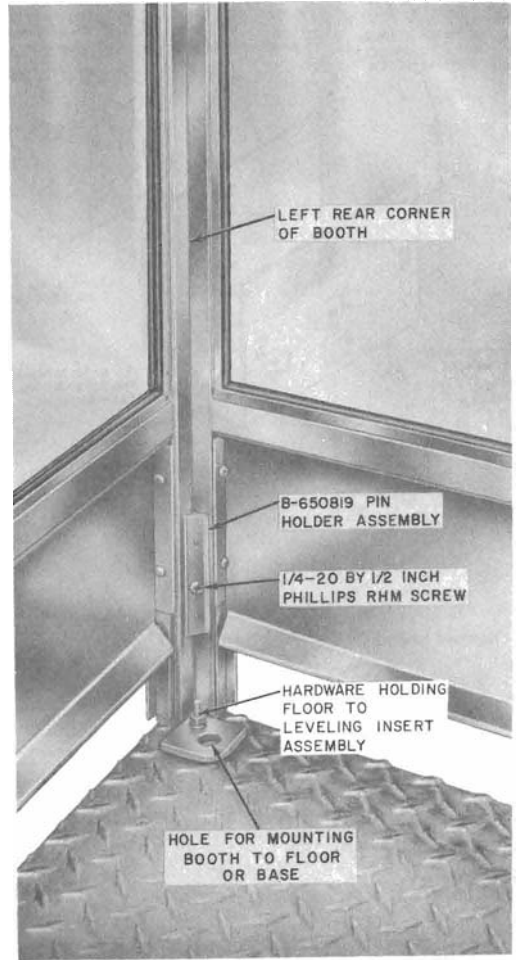
### INSTALLING THE FOUNDATION TEMPLATE

**3.03** When necessary to provide a concrete base, a KS-19425, List 10 foundation template (Fig. 15) is used. Install the template as follows:

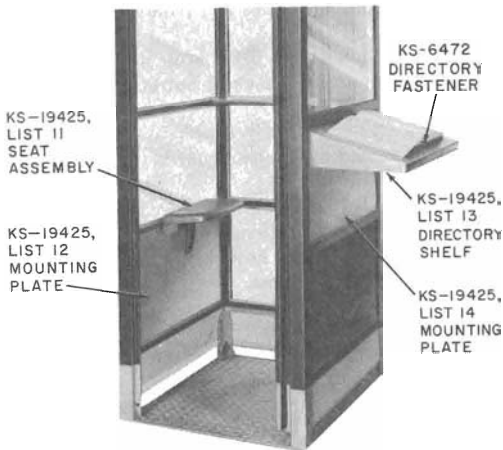
- (a) Prepare a form 40 inches square with an inside depth of 10 inches (Fig. 16).



**Fig. 11—KS-19425, List 16 Directory Rack and KS-19425, List 26 Shelf Assembly**



**Fig. 13—Leveling Insert Assembly**



**Fig. 12—KS-19425, List 11 Seat Assembly, KS-19425, List 13 Directory Shelf and Associated Mounting Plates**

- (b) Tamp 6 inches of cinders or gravel in the bottom of form.
- (c) Position the template in the form on wooden blocks so that the top of four mounting inserts will be flush with top of concrete base as shown in Fig. 16.
- (d) If underground power and telephone wires are to be used, provide for holes in the

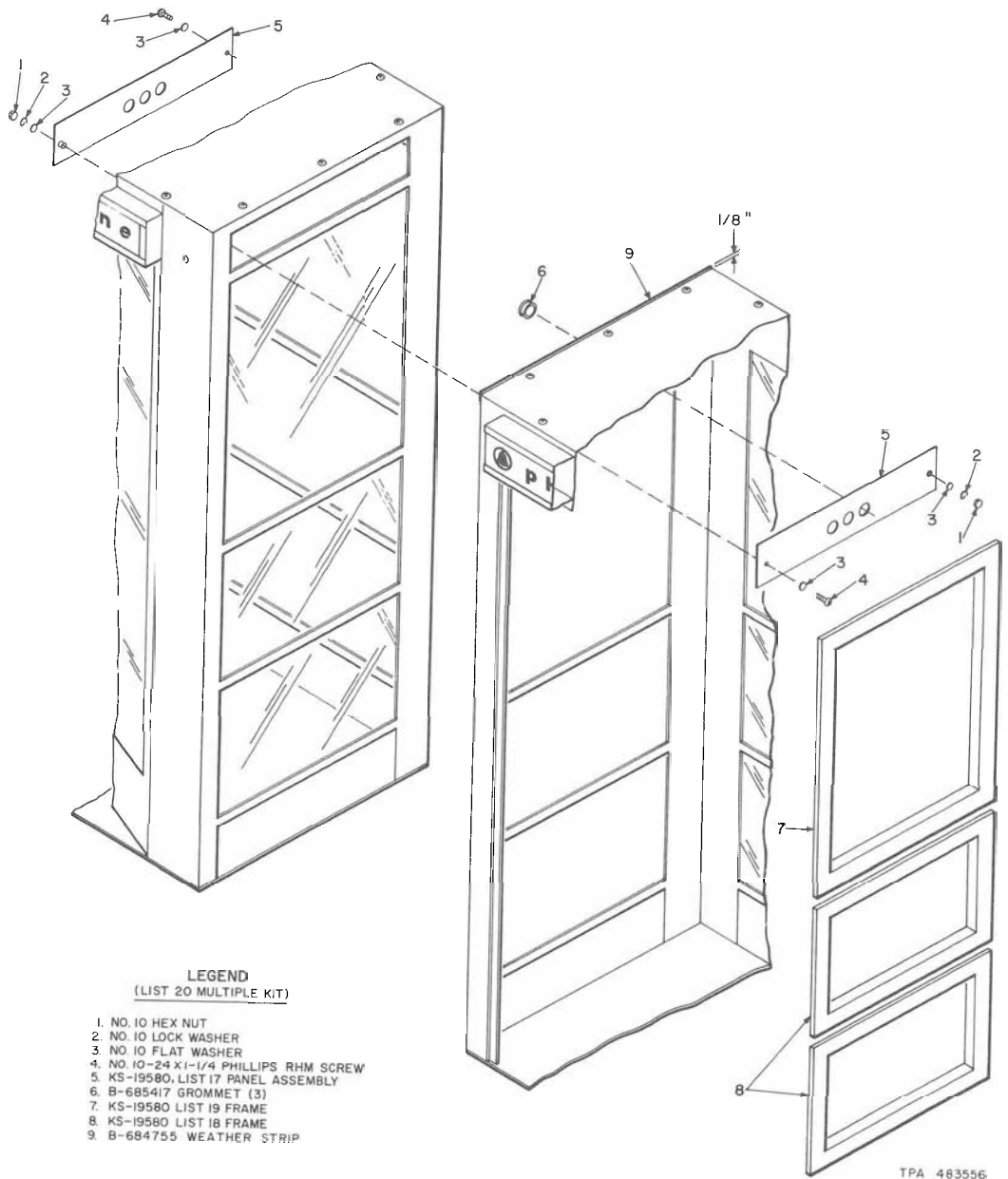


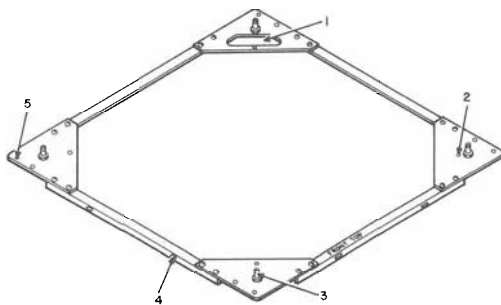
Fig. 14—KS-19580, List 20 Multiple Kit

concrete base at corresponding hole positions in the template.



**Do not remove screw plugs from booth mounting inserts until booth is installed. Their purpose is to prevent dirt from filling mounting holes.**

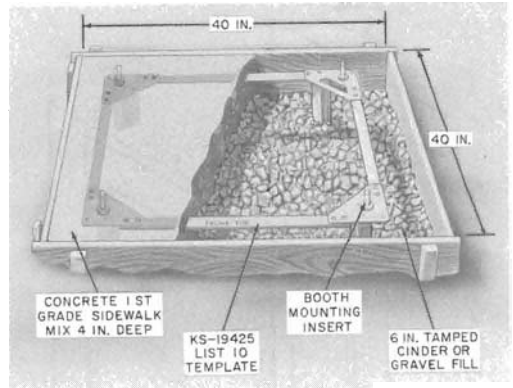
- (e) For multiple booth installations where separation between booths is **not** required, lengthen the form approximately 29 inches for each additional booth. Fasten adjacent templates together with two No. 10-32 by 1/2-inch RHM screws and two No. 10-32 hex nuts.
- (f) For multiple booth installations where separation of booths **is** required, lengthen the form sufficiently and fasten adjacent templates together with steel straps (fabricated locally) and No. 8 sheet metal screws.
- (g) Pour concrete around the template(s) to fill the form.



- LEGEND:
1. HOLE FOR UNDERGROUND TELEPHONE AND POWER WIRE ENTRANCE.
  2. NAIL HOLES FOR ATTACHING TEMPLATE TO LEVELING BLOCKS.
  3. BOOTH LEVELING INSERT.
  4. HOLES FOR FASTENING TWO TEMPLATES TOGETHER WHERE SEPARATION IS NOT REQUIRED.
  5. HOLES FOR FASTENING STEEL STRAPS WHERE SEPARATION OF TEMPLATES IS REQUIRED.

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**Fig. 15—KS-19425, List 10 Foundation Template**



**Fig. 16—Concrete Base Preparation with KS-19425, List 10 Template**

## INSTALLING THE BOOTH

### 3.04 Secure booth as follows:

- (a) If a KS-19425, List 10 foundation template is used, remove insert plugs from template and secure leveling insert assemblies (Fig. 16) of booth to template using four 3/8-16 by 1-1/4 inch steel zinc plate hex head bolts, four 3/8-inch lockwashers, and four 3/8-inch flatwashers.
- (b) If a KS-19425, List 10 foundation template is not used, and the booth is to be mounted on concrete:
  - (1) Mark the locations for four mounting holes.
  - (2) Drill four 5/8-inch diameter holes to accept machine bolt anchors for 3/8-inch bolts.
  - (3) Install the fasteners.
  - (4) Secure leveling insert assemblies of booth to bolt anchors using four 3/8-16 (length required) steel zinc plate hex head bolts, four 3/8-inch lockwashers, and four 3/8-inch flatwashers.
- (c) If booth is to be mounted on a wooden floor.

- (1) Mark the location for four mounting holes.
- (2) Drill four lead holes to accommodate 5/16 by 2-1/2 inch lag screws.
- (3) Secure booth to floor using four 5/16 by 2-1/2 inch lag screws, four 5/16-inch lockwashers, and four 5/16-inch flatwashers.
- (d) Adjust the leveling insert assemblies (Fig. 13) if necessary, and ensure that the booth is level.

**Note:** Insert assemblies are adjusted by moving the B-650819 pin holder assembly up or down.

### DOOR REQUIREMENTS

- 3.05 After anchoring and leveling booth, check door operation per Part 4.

### TELEPHONE WIRING



*Aerial wire span fastened to booth should not exceed 25 feet.*

#### First Attachment

- 3.06 At outdoor locations, attach drop wire hook (Fig. 17) or corner bracket (Fig. 18) (whichever is required) to right rear column adjacent to the entrance hole as follows:

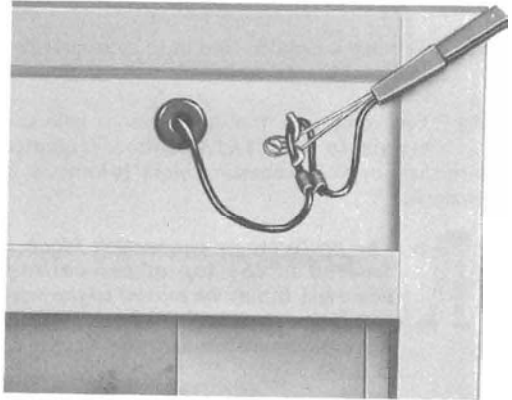
#### A. Drop Wire Hook

- (1) Secure drop wire hook (Fig. 17) to clinch nut (provided with booth) using one 1/4-20 by 3/4 FHM screw, one 1/4-inch flatwasher, and one 1/4-inch lockwasher.

#### B. Corner Bracket

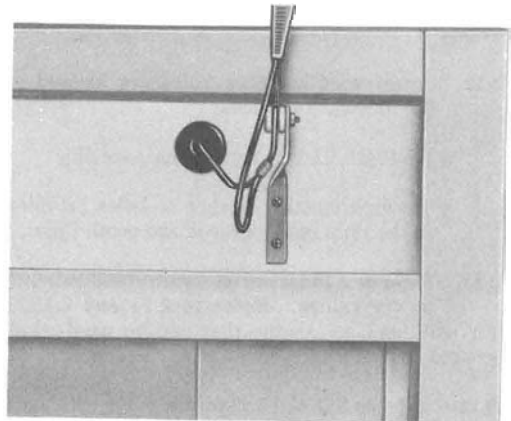
- (1) Secure the corner bracket (Fig. 18) to the threaded clinch nut using one 1/4-20 by 3/4 Phillips RHM screw.
- (2) Using the bracket as a template drill a clearance hole for another 1/4-inch screw.

- (3) Further secure the bracket to the booth using one 1/4-20 by 3/4 Phillips RHM screw, one 1/4-inch flatwasher, one 1/4-inch lockwasher, and one 1/4-inch hex nut.



TPA 467567

Fig. 17—Drop Wire Hook for First Attachment



TPA 485698

Fig. 18—Corner Bracket for First Attachment

## SECTION 508-301-100

### Drop Wire Connection

**3.07** Telephone wire entrance holes are located in the following locations:

- KS-19425, List 21 Sign Blank Assembly (Fig. 17 and 18)
- Through a metallic conduit to holes provided in the right-rear corner of the booth floor.

**3.08** Feed drop wire through entrance hole and terminate on 123A1A station protector (furnished) or 42A connecting block (whichever is required).



*The protector or connection block is located in the top of the ceiling; however, it may be moved to the wire way below shelf in the right-rear corner if ground level or underground entrance is used.*

### Coin Station Connections

**3.09** Station connection wires are furnished.

## ELECTRICAL WIRING AND GROUNDING

### Wiring

**3.10** Power wire entrance holes are located in the following locations:

- KS-19425, List 21 Sign Blank Assembly
- Through metallic conduit to holes provided in the right-rear corner of the booth floor.

**3.11** Refer to 2.15 (a) and (c) for overhead entrance power cables. Refer to 2.14 and 2.15(b) for additional apparatus that can be used when ground level or underground power is desired.

**3.12** Refer to 3.25 and 3.26 for the lower backboard and circuit breaker box.

**3.13** Have local electrician connect wiring if circuit breaker is used or if 14 gauge wire is used instead of power cables.

**3.14** A duplex receptacle for electrical wiring is located in the ceiling area.

**3.15** Interconnect power between adjacent booths in multiple installations with KS-19425, List 22 cable assembly or approved No. 14 gauge wire.

**3.16** Refer to Fig. 19 and 20 for wiring arrangements of multiple installations.

### Grounding

**3.17** Ensure that the ground terminal of the station protector is connected to the booth ground lug with bonding wire provided. If a bonding wire is not present, use an approved No. 14 gauge wire.

**3.18** In multiple installations, bond the booths together for grounding purposes.

**3.19** Refer to Section 508-100-100 for complete information on grounding.

## DIRECTORY HANGER, RACK, AND SHELF ARRANGEMENTS

**3.20** There are two shelf assemblies, a directory rack, a directory hanger and a directory shelf available for the booth. Install, when required, as follows (see Fig. 10 through 12):



*Use KS-19094 antiseize compound on all screws threaded into aluminum.*

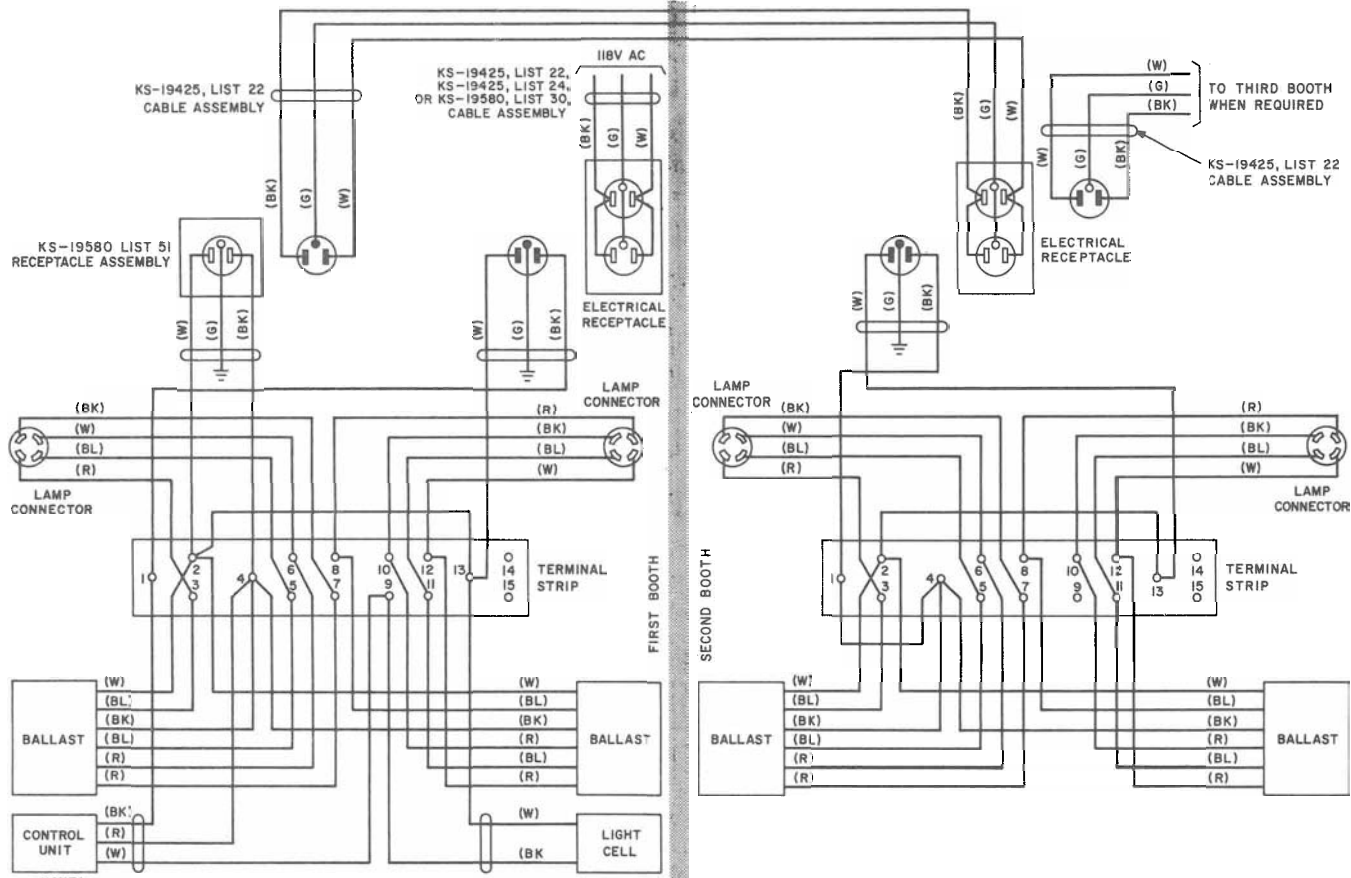
- (a) **KS-19425, List 27 Shelf Assembly and KS-20030, List 3 Directory Hanger (Fig. 10).**

**Note:** The List 27 shelf assembly spans the rear wall and can be used separately, or with a KS-20030, List 3 directory hanger.

- (1) Secure the shelf assembly to the backboard using two No. 10-32 by 1/2 RHM screws.
- (2) Secure the shelf assembly to the cross rails using five No. 10-32 by 1/2 RHM screws.
- (3) Refer to Section 508-710-102 for additional information on the KS-20030, List 3 directory hanger.

- (b) **KS-19425, List 16 directory rack and KS-19425, List 26 shelf assembly. (Fig. 11).**



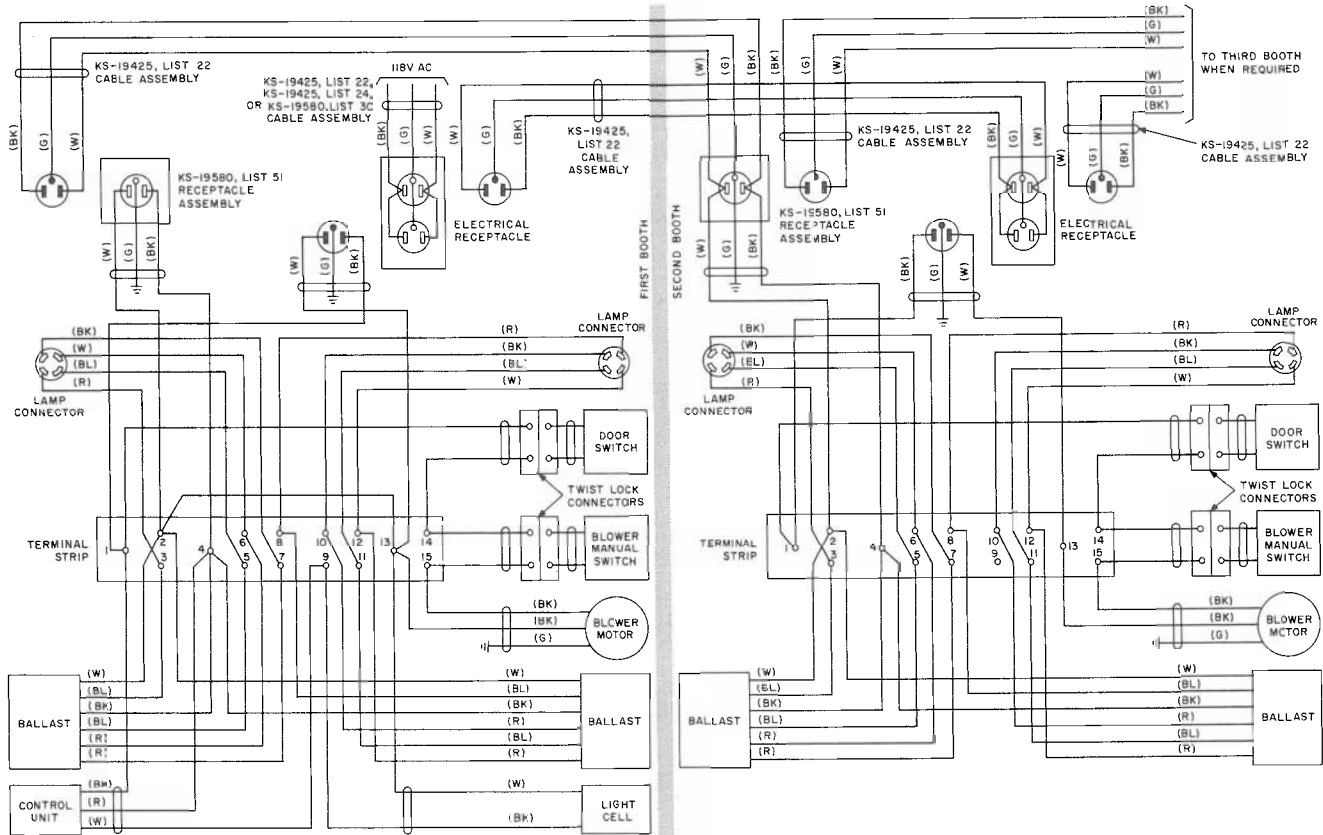


**NOTE:**

FOR MULTIPLE INSTALLATIONS USING KS-19207, LIST 7 UNITS, AND USING A KS-19261 LIGHT CONTROL UNIT (MAXIMUM OF FIVE BOOTHS FOR EACH CONTROL UNIT), REMOVE THE STRAP WIRE FROM TERMINAL STRIP TERMINALS 1 AND 4 IN FIRST BOOTH. INSTALL A KS-19580, LIST 51 RECEPTACLE ASSEMBLY IN THE FIRST BOOTH. CONNECT ELECTRICAL RECEPTACLE OF SECOND BOOTH TO LIST 51 RECEPTACLE OF FIRST BOOTH USING KS-19425, LIST 22 CABLE ASSEMBLY. CONNECT ELECTRICAL RECEPTACLE OF THIRD, FOURTH, AND FIFTH BOOTHS TO ELECTRICAL RECEPTACLE OF PREVIOUS BOOTH USING KS-19425, LIST 22 CABLE ASSEMBLY.

TPA 483550

**Fig. 19—Wiring Diagram of Multiple Installation Using KS-19207, List 7 Light Unit**



**NOTE:**

FOR MULTIPLE INSTALLATIONS USING KS-19207, LIST 3 LIGHT AND BLOWER UNITS, AND USING A KS-19261 LIGHT CONTROL UNIT (MAXIMUM OF FIVE BOOTHS FOR EACH CONTROL UNIT), REMOVE THE STRAP WIRE FROM TERMINAL STRIP TERMINALS 1 AND 4 IN ALL BOOTHS. REMOVE THE STRAP WIRE FROM TERMINALS 2 AND 13 IN ALL BOOTHS EXCEPT FIRST BOOTH. INSTALL A KS-19580, LIST 51 RECEPTACLE ASSEMBLY IN EACH BOOTH. CONNECT LIST 51 RECEPTACLE OF SECOND, THIRD, FOURTH AND FIFTH BOOTHS TO LIST 51 RECEPTACLE OF PREVIOUS BOOTH USING KS-19425, LIST 22 CABLE ASSEMBLY. CONNECT ELECTRICAL RECEPTACLES IN SAME MANNER.

TPA 483551

**Fig. 20—Wiring Diagram of Multiple Installation Using KS-19207, List 3 Light and Blower Unit**

**Note:** The List 16 directory rack accommodates one 3-inch binder in the left-rear corner of the booth. The List 26 shelf assembly fastens to the directory rack and extends across the back of the booth and under the coin telephone.

- (1) Secure the directory rack to the cross rails in the left-rear corner using two No. 10-32 by 1/2 Phillips FHM screws and two No. 10 CSK lockwashers.
- (2) Secure the shelf assembly to the bottom of the backboard and to the cross rails using five No. 10-32 by 1/2 RHM screws.
- (3) Secure the shelf assembly to the directory rack using the screw furnished with the directory rack.

(c) **KS-19425, List 13 Directory Shelf (Fig. 12).**

**Note:** The List 13 directory shelf is available for indoor use to be externally mounted on the booth.



**A KS-19425, List 14 mounting plate must be used in conjunction with the directory shelf.**

- (1) Install KS-19425, List 14 mounting plate in the same manner as a standard glass panel in the bottom position on the right side of the booth. Install the plate with shelf mounting holes toward top.
- (2) Secure the directory shelf to the mounting plate using seven No. 10-24 by 9/16 carriage bolts and seven No. 10-24 stop nuts.



**Install the bolts with the heads on inside of booth.**

#### SEAT ASSEMBLY

- 3.21** A KS-19425, List 12 mounting plate (Fig. 12) must be used for mounting the seat.
- 3.22** Install KS-19425, List 12 mounting plate as follows:
- (1) Install the mounting plate in the same manner as a standard glass panel in the bottom position on the left side of the booth.

- (2) Install a B-650894 clip (furnished with seat assembly) on each corner of the List 12 mounting plate using four No. 8-32 by 3/8 SEMS RHM screws.



**Install the clips on the inside of the booth. Their purpose is to prevent the removal of retaining strips.**

**3.23** Install the seat assembly on the upper portion of the mounting plate using the following items (furnished with seat assembly). Install items in the sequence listed.

- Four 1/4-20 by 1-1/8 carriage bolts (install with heads on outside of booth)
- Four B-650893 spacers
- Seat assembly
- Two 1/4-inch flatwashers (front and rear bolts)
- Four 1/4-inch lockwashers
- Four 1/4-20 cap nuts

**3.24** Tighten all nuts securely.

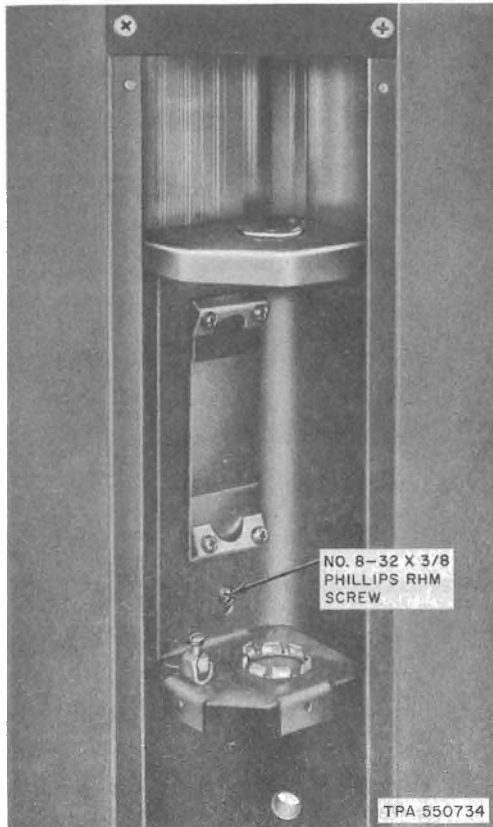
#### LOWER BACKBOARD PLATE AND COVER ASSEMBLY

**3.25** To install KS-19425, List 25 lower backboard plate and cover assembly (Fig. 3):

- (1) Remove four plastic plugs located in lower part of right-rear column.
- (2) Insert four J-bolts (furnished with assembly) in the holes with the J-part of the bolt in an upward position.
- (3) Remove upper and lower plate assembly from backboard.
- (4) Place backboard in position on column.
- (5) Secure backboard using flat washers, lock washers, and nuts furnished with the assembly.
- (6) Replace the upper and lower plate assembly on backboard.

**CIRCUIT BREAKER BOX**

**3.26** Install the KS-19426, List 17 circuit breaker box (if applicable) per Fig. 21. Have local electrician install circuit breakers.



**Fig. 21—Installation of Circuit Breaker Box in Lower Backboard**

**MULTIPLE INSTALLATION (NO SEPARATION)**

- 3.27** Install first booth as outlined in 3.03 and 3.04
- 3.28** Install adhesive backing weather strip on second booth per Fig. 14.

**Note:** The length of the strip is same as a KS-19580 booth, consequently it will have to be cut to fit the KS-19425 booth.

**3.29** Install second booth against first booth and join the two booths together using the remaining items in the KS-19580, List 20 multiple kit (Fig. 14). The frames are installed in the same manner as the side panels.

**3.30** Refer to 2.12 and 2.13 for requirements on use of the KS-19580, List 51 receptacle assembly.

**3.31** Install the B-650837 bracket on the B-650839 channel using two No. 8-32 by 3/8 Phillips RH self-tapping screws (Fig. 8).

**3.32** Install the receptacle assembly on the bracket (Fig. 8) using the four remaining No. 8-32 by 3/8 Phillips RH self-tapping screws.

**4. MAINTENANCE**

**4.01** The local telephone company shall establish the appearance standards of all exposed surfaces.

**4.02** The local telephone company shall establish the safety standards for all booths.

**4.03** All screws threaded into aluminum parts during the course of repair shall be coated with KS-19094 antiseize compound.

**BOOTH CHECK POINTS**

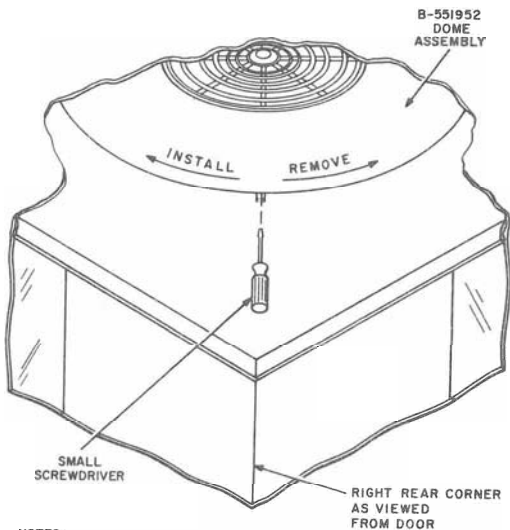
- Safe approach to booth (have dangerous conditions corrected)
- Appearance of booth
- Electrical grounding
- Door operation
- Panels and signs
- Booth lighting
- Directories and binders
- Dome and lights

- Security of booth anchorage
- Loose screws and bolts
- Seat assembly (if applicable)
- Shelf assemblies
- Power cords
- Bumper guards (outdoor booths)

#### DOME ASSEMBLY

**THINK** Use eye protection when removing the dome assembly.

- 4.04** The B-551952 dome assembly must be removed to make the light assembly accessible. Do this in accordance with Fig. 22.
- 4.05** Replace dome assemblies which do not meet local telephone company standards.



#### NOTES:

1. FOR REMOVAL, INSERT SMALL SCREWDRIVER THROUGH SLOT IN CEILING, DEPRESS DETENT SPRING, AND TURN DOME ASSEMBLY COUNTERCLOCKWISE.
2. FOR INSTALLATION, PLACE DOME ASSEMBLY IN CEILING AND TURN IT CLOCKWISE UNTIL DETENT SPRING ENGAGES AND LOCKS DOME.

B-56787B

**Fig. 22—Method of Removing Dome Assembly**

#### LIGHT AND BLOWER UNIT

**THINK** Use eye protection when handling fluorescent lamps. Before making any repairs or replacements in electrical equipment, disconnect plug or turn the service switch OFF and verify that circuit is dead by checking with an approved voltmeter.

- 4.06** Ensure that the door operated switch assembly (B-650927) actuates properly when the door is closed. Also ensure that the manually operated blower switch assembly (B-684779-2), if present, located in the right rear corner of the booth, turns the blower on and off.
- 4.07** Ensure that all electrical leads are securely clamped away from the air inlet hole and from the rotating impeller if a blower is present.
- 4.08** When the ballast shows signs of leaking compound, replace the complete KS-19207 unit. Refer to Section 508-820-100.

#### PANEL REPLACEMENT

##### Side and Rear Panels

**Warning:** Wear gloves and eye protection when handling glass panels to prevent personal injury. Use care when handling tempered glass. Nicks or scratches will damage the glass and may cause it to shatter. Do not allow metal tools to come in contact with edge of tempered glass. Before installation, examine glass for nicks or chips along edges. If such defects are apparent, do not use this glass.

- 4.09** Replace those panels which are broken or which will not meet local telephone company standards. Refer to Table A for available panels.
- 4.10** Booth panels and signs are held in place by four interlocking retaining strips. They are inserted in sequence as shown in Fig. 23. The No. 4 strip is rippled and is held in place by interface friction.

- 4.11** Replace panels as follows:

- (1) Remove No. 4 locking strip.

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- (2) Remove retaining strips No. 2 and No. 3.
- (3) Remove retaining strip No. 1.
- (4) Remove panel and rubber glazing strip.
- (5) Apply rubber glazing strip to replacement panel.
- (6) Insert panel into frame with the beaded edge of retaining strip on the outside.
- (7) Replace retaining strips in sequence as shown in Fig. 23.

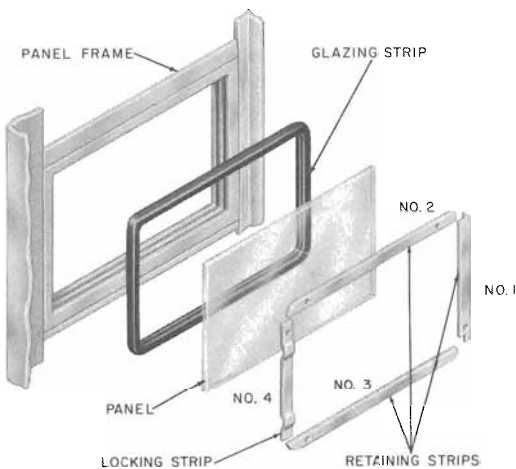


Fig. 23—Assembly of Side or Rear Panels

### Bottom Panels

- 4.12 Replace those panels which are broken or which will not meet local telephone company standards. Refer to Table A for available panels.
- 4.13 To remove bottom panels, remove Phillips RH screws (eight for short panel and ten for solid panel).

### PHONE SIGNS

4.14 The front sign may be removed as follows:

- (a) Remove four self-tapping screws from top edge of frame and the metal retainer which secures the sign.
- (b) Slide the sign up and out of the enclosure assembly.
- (c) Use reverse procedure for installing.



*Roof must be removed before side and rear sign panels can be removed.*

4.15 The side and rear signs are removed in the same manner as the side panels (Fig. 23).

4.16 Replace signs which are broken or which will not meet local telephone company standards. Refer to Table B for available signs.

### SEAT AND SHELF ASSEMBLIES

4.17 Refer to Part 3 for installation procedures.

### DIRECTORIES AND BINDERS

4.18 Directory binder rods or hinge fasteners shall not be broken or distorted to the extent that directories are not capable of being held securely in the binder. Hinges shall not be so bent, burred, or distorted as to obstruct the free passage of hinge fasteners or prevent smooth operation of covers.

4.19 Binder locking devices shall operate freely and lock securely. Adjustable backplates shall be in good condition.

4.20 Ensure that a rubber bumper is in place on the directory rack/hanger to cushion the binder as it drops into the rack.

- B-685401 bumper is used on KS-19425, List 16 directory rack

- B-697467 bumper is used on KS-20030, List 3 directory hanger

**4.21** Install a new bumper, if required, as follows:

- Soften old adhesive with trichloroethane and remove.
- Install new bumper using 3M Company EC-1711 adhesive or equivalent.

#### **PROTECTOR GROUND**

**4.22** The protector is located in the rear of the ceiling area (Fig. 8) or if a lower backboard (Fig. 3) is used it may be located there.

**4.23** When located in the ceiling area, the protector can be reached by removing the dome assembly (Fig. 22).

**4.24** The booth is equipped with a bonding wire at the protector. Ensure that this wire is secured to the booth and protector.

**4.25** If the bonding wire becomes broken, replace with copper or aluminum wire no smaller than No. 14 gauge.

#### ***Converting Protector Mounting Bracket For Better Accessibility***

**4.26** Following items are required (Fig. 9) and must be ordered separately:

- B-650838 bracket
- B-992745 plate
- Four No. 8-32 by 3/8 Phillips RH self-tapping screw

**4.27** Disconnect telephone wires and ground from protector.

**4.28** Remove two No. 8-32 by 1/2 Phillips RH self-tapping screws and remove protector from existing mounting bracket.

**4.29** Install B-650838 bracket on existing bracket and secure it with two No. 8-32 by 3/8 Phillips RH self-tapping screws.

**4.30** Install protector on B-992745 plate using the two screws removed in 4.28.

**4.31** Insert two No. 8-32 by 3/8 Phillips RH self-tapping screws in the B-992745 plate to align with the keyhole slots in the B-650838 bracket.

**4.32** Install plate (with protector) on the angle bracket utilizing the keyhole slots. Tighten the two screws.

**4.33** Reconnect telephone wires and ground.

#### **FLOOR**

**4.34** If a booth is equipped with an abrasive-clad floor, the finish can be restored with the use of Goodyear Griptred flooring and protective coating, dark gray 592-7005 equivalent. This can be applied with an ordinary paint brush.

#### **ROOF**

**4.35** If it becomes necessary to remove the roof, remove twelve No. 8-32 by 5/8 Phillips RH screws and lift off.

**4.36** There are four B-650854 adhesive backed rubber strips which are riveted along the booth edge under the roof. Check strips for damage each time roof is removed. Replace strips as necessary.

#### **DOOR REQUIREMENTS AND MAINTENANCE (See Fig. 24 for Replacement Parts)**

**4.37** The door shall operate freely and smoothly without squeaking or chattering. The nylon rollers and door track shall be clean of foreign materials and the track shall not be gouged, burred, or scored causing rough operation of the door.

**4.38** With the booth level, when the door is fully closed manually it shall remain closed until opened manually, and when in the fully closed position the top of the door shall be in alignment with the door frame.

**4.39** In outdoor locations, the door shall be held open 2 to 3 inches when in the normal position. Ensure that maximum tension is obtained on spring in center of door (Fig. 24).

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**4.40** The door actuated switch shall operate as follows when the manual blower switch is on:

- (a) With the door fully closed, the blower motor shall run.
- (b) With the door in the open position specified in 4.39 the blower motor shall be off.



*The door switch shall have no effect on the operation of the booth lamps if the lamps are wired for continuous illumination or automatic light control.*

**4.41** The open clearance shall be a minimum of 21 inches.

**4.42** Rubber bumpers at the bottom of the doors shall not be frayed or torn to expose underlying metal. Screws and retainer strips shall hold bumpers securely.

**4.43** Ensure that angle bracket associated with felt bumper in the door track is tight.

**4.44** If door hinges squeak, lubricate them at each joint between the barrels with KS-14774, List 2G lubricating grease or equivalent; KS-14796 oiler may be used.

**4.45** Replace glass panels in same manner as side panels (Fig. 23).

**4.46** Replace damaged bumpers along bottom of door (Fig. 24).

**4.47** To change door closing spring tensions, adjust B-684748 stop assembly as follows:

- (a) Loosen the two stop assembly mounting screws.
- (b) Move the assembly left or right to obtain the spring tension required.
- (c) Tighten screws and recheck tension.

**4.48** When door rollers do not have proper vertical engagement in the track, adjust door guide assembly as follows:

- (a) Remove two screws and B-651720 cover (Fig. 25 and 26).

(b) Loosen three door guide assembly mounting screws.

(c) Move the door guide assembly up or down to obtain proper roller position.

**Note:** In most cases, the maximum upward position will be required.

(d) Tighten screws and recheck rollers.

(e) Install B-651720 cover.

### Door Guide Assembly

**4.49** The KS-19425 booth will have either a B-651721-1 short-roller door guide assembly (Fig. 25) or a B-993172-1 long-roller door guide assembly (Fig. 26).

**4.50** The B-993172-2 door guide assembly requires a different ceiling, baffle, and a deeper track to accommodate the longer roller. If a problem exists with door guide rollers jumping out of the track, and this cannot be corrected by adjustment as directed in paragraphs 3.04(d) and 4.48, booths can be modified to accept the long-roller door guide. Parts and instructions are included in SI-376 Track and Door Guide Modification Kit.



*This modification is extensive and should be investigated before field application.*

### REPLACEMENT PARTS

**4.51** The parts listed in Table C are not shown on Fig. 24, 25, and 26 but may be ordered as necessary.

**4.52** Panels and signs are listed in Tables A and B, respectively.

### CLEANING

**4.53** Refer to Section 508-100-101 for complete cleaning procedures.



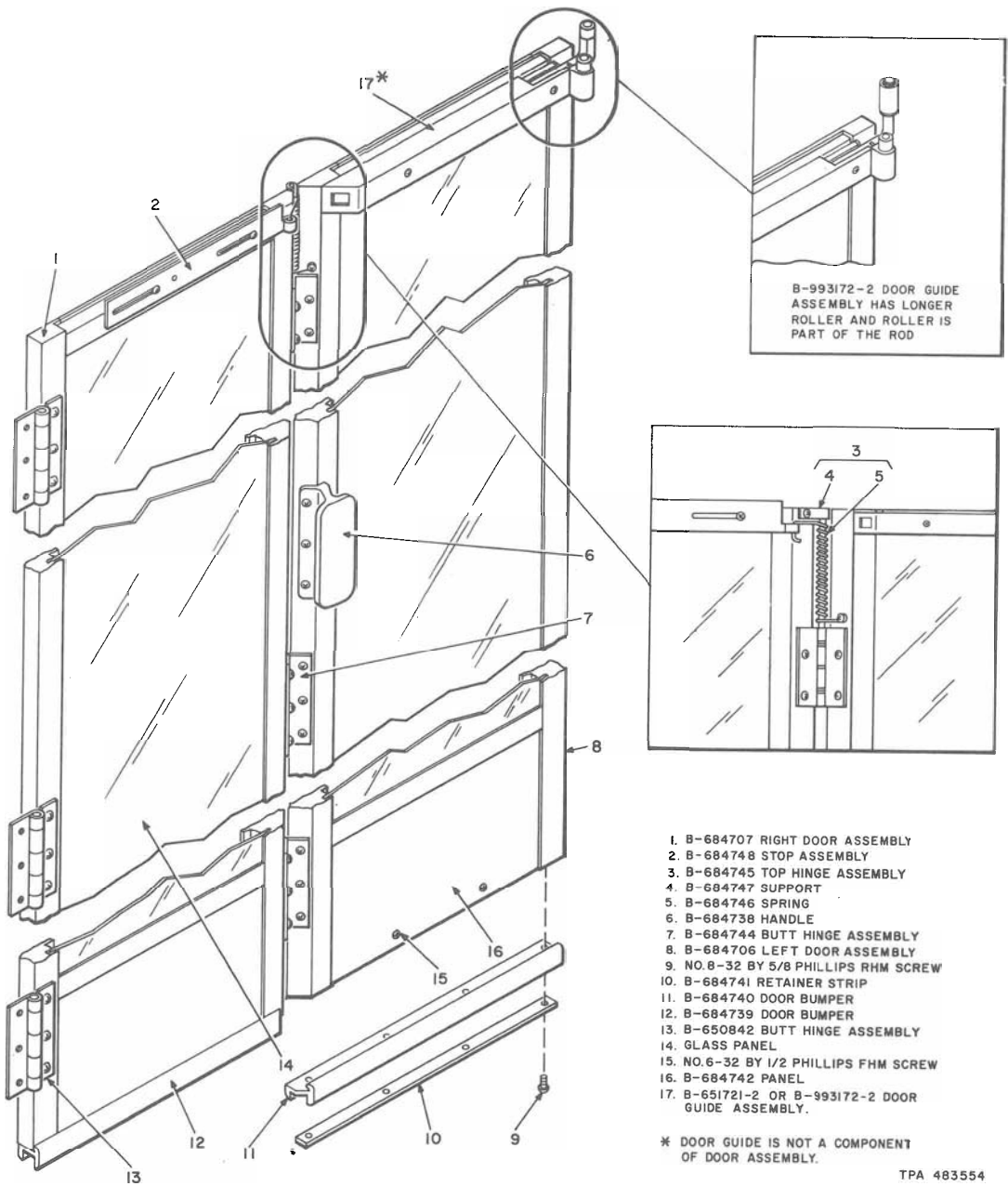


Fig. 24—B-684705 Door Assembly

1. B-650848 ROLLER
2. B-651755-1 DOOR ROD
3. NO. B-32 BY 1/4 PHILLIPS RHM SCREW (2)
4. B-651720 COVER
5. B-650846 BUSHING
6. NO. 7/64 X 9/16 PIN
7. B-651756 COLLAR
8. B-650849 SPRING
9. B-651719 BASE ASSEMBLY

\* ROLLERS ARE NOT A PART OF THIS ASSEMBLY.

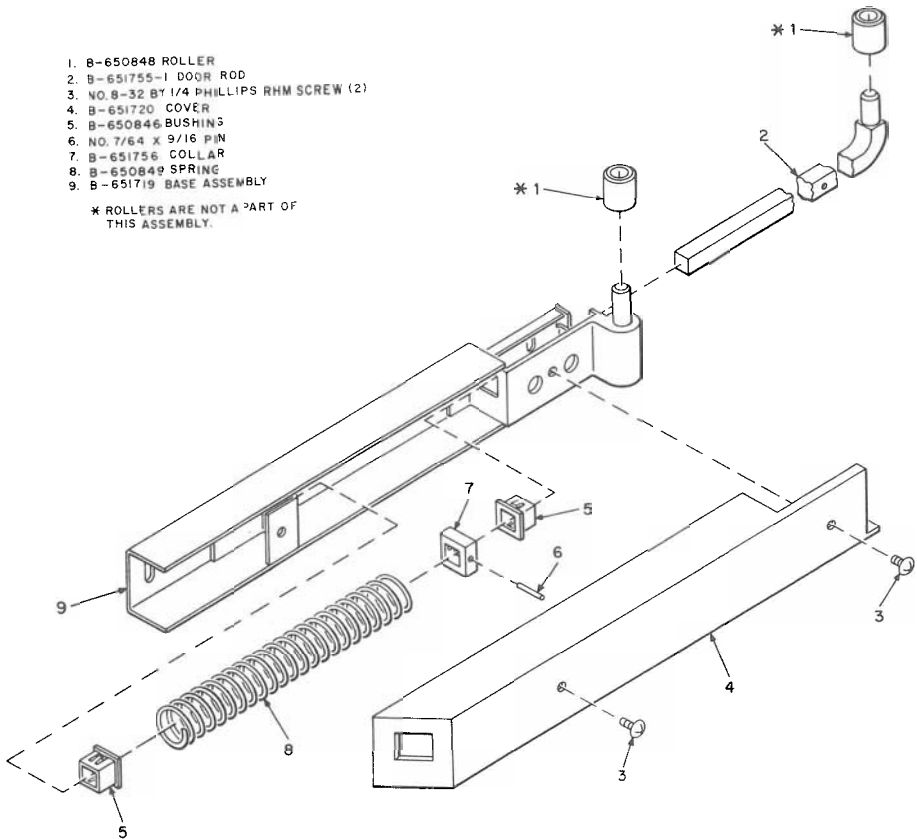
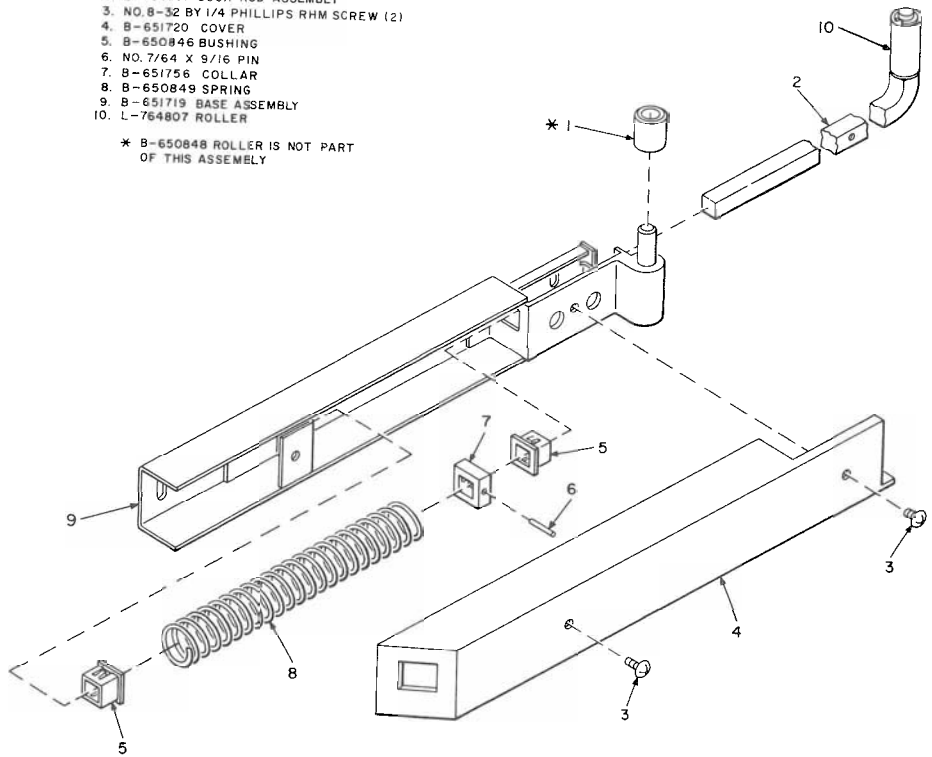


Fig. 25—B-651721-1 Door Guide Assembly

1. B-650848-1 ROLLER
2. L-764767 DOOR ROD ASSEMBLY
3. NO. 8-32 BY 1/4 PHILLIPS RHM SCREW (2)
4. B-651720 COVER
5. B-650846 BUSHING
6. NO. 7/64 X 9/16 PIN
7. B-651756 COLLAR
8. B-650849 SPRING
9. B-651719 BASE ASSEMBLY
10. L-764807 ROLLER

\* B-650848 ROLLER IS NOT PART OF THIS ASSEMBLY



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Fig. 26—B-993172-1 Door Guide Assembly

TABLE C  
REPLACEMENT PARTS

NAME	PART NO. LIST NO., OR DESCRIPTION	REMARKS
Actuator Assembly	B-650929	Actuates B-650927 switch assembly
Angle	B-650824	Support for B-650825 bumper
	L-764805	Support for L-764806 bumper
Backboard Assembly	B-650829	For coin telephone
Bracket	B-562368	Holds dome in ceiling assembly
Bumper, Felt	B-650825	Located in right end of a shallow door track as viewed from outside front of booth
	L-764806	Located in right end of a deep door track as viewed from outside front of booth
Bumper, Aluminum	B-650826	Located in left end of a shallow door track as viewed from outside front of booth
Bumper, Rubber	B-684714	Used on left door frame
Dome Assembly	B-551952	Circular lens and ventilator under light fixture
Enclosure Assembly	B-685376	Encloses front sign
Floor	B-650815-1	Tread plate
Header Assembly	B-650822	
Lamp	40 Watt-Circline, cool white	Used in KS-19207 light unit
Leveling Insert Assembly	B-650816-1	Adjustable mounting bracket in rear corners and left front corner
	B-650816-2	Adjustable mounting bracket in right front corner
Plug	Shake Proof Corp. No. 207-440401- 00-0667	Plug button for plugging light control entrance hole
Pin Holder Assembly	B-650819	Used with leveling insert assemblies for adjustments
Retainer	B-562371	Use with B-562370 locking spring
Roof	B-650855	
Spring	B-562370	Locks dome in place

**TABLE C (Cont)**  
**REPLACEMENT PARTS**

NAME	PART NO. LIST NO., OR DESCRIPTION	REMARKS
Strip, glazing	B-685410-1	Side or rear sign
	B-685410-2	Side and rear glass panels (large)
	B-685410-3	Side and rear glass panels (small)
	B-685410-4	Door panels
	B-685411-1	Multiple installation panel assembly and power entrance panel
	B-685411-2	Aluminum or porcelain type panels (large)
	B-685411-3	Aluminum or porcelain type panels (small)
	B-685410-5	Front sign
Strip, retaining	B-685372-1	Top of door panels
	B-685372-2	Either side of door panels
	B-685372-3	Bottom of door panels
	B-685372-4	Either side of large side panels
	B-685372-5	Locking strip for large side panels
	B-685372-6	Either side of small side panels
	B-685372-7	Top of small side panels, large side panels, or side and rear phone signs
	B-685372-8	Locking strip for small side panels
	B-685372-9	Bottom of small side panels, large side panels, or side and rear phone signs
	B-685372-10	Either side of phone signs (front and rear)
	B-685372-11	Locking strip for phone signs
Strip, rubber	B-650854	Adhesive backed roof gaskets*
Switch Assembly	B-650927	Energizes light when door is closed
	B-684779-2	Turns blower motor on and off

\*Roof gaskets should be checked for damage each time roof is removed.



## OUTDOOR BOOTH KS-14611 AIRLIGHT

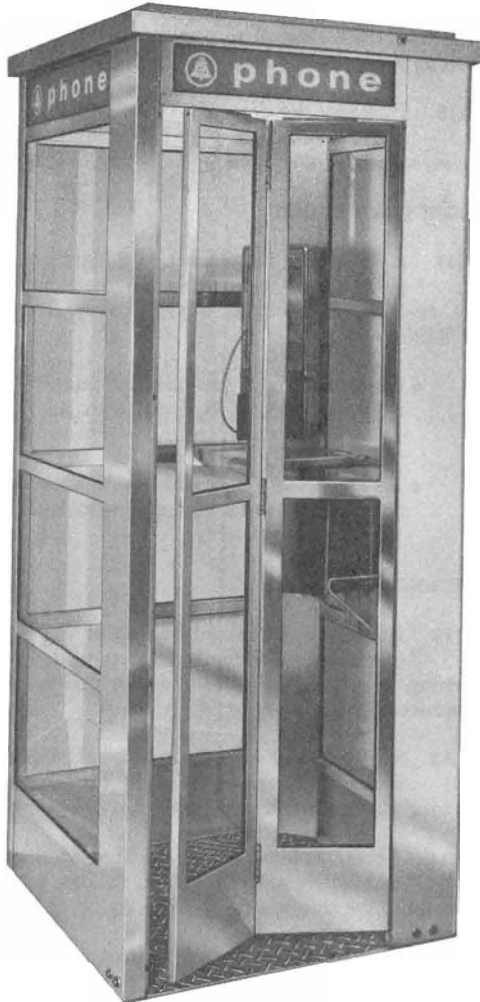


Fig. 1—KS-14611 Airlight Booth

### 1. GENERAL

- 1.01** Information in this section was formerly contained in Sections 508-352-100, 508-352-300, and 508-352-800 which are hereby canceled.
- 1.02** The KS-14611 booth (Fig. 1) is an outdoor aluminum and glass phone booth designed for single installation only.
- 1.03** This booth is designed primarily for standup service; however, a KS-19425, List 11 seat assembly can be used if desired.
- 1.04** The KS-19580 Airlight II Booth is a direct replacement for the KS-14611 (MD) booth.

### 2. IDENTIFICATION

#### BASIC BOOTH (Fig. 2)

- 2.01** KS-14611, List 3 booth is constructed of satin anodized aluminum, finished with one of the following:
- KS-14611, List 60—Red
  - KS-14611, List 61—Blue
  - KS-14611, List 62—Green
  - KS-14611, List 63—Clear
- 2.02** The overall dimensions of the booth are:
- Height—86-1/8 inches
  - Width—35-7/16 inches at roof, 33-1/2 inches at base
  - Depth—35-7/16 inches at roof, 33-1/2 inches at base
- 2.03** The door consists of two vertical sections, each containing two clear safety glass panels. The door is self-closing and folds along the right wall when opened.

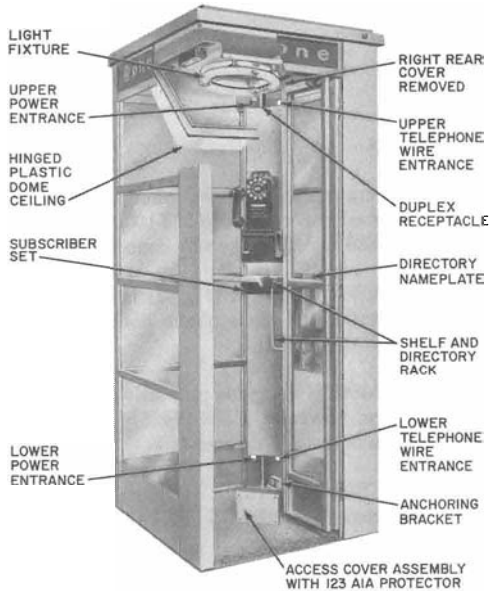


Fig. 2—KS-14611 Booth Showing Individual Features

**PANELS**

**Door, Side, and Rear Panels**

2.04 Door, side, and rear panels are available as described in Table A.

**Sign Panels**

2.05 Sign panels and blanks are available as described in Table B.

**Bottom Panels**

2.06 Bottom panels are available as described in Table C.

**LIGHT FIXTURE**

2.07 The booth and phone signs are illuminated by a KS-19207, List 4 light fixture (see Section 508-820-100). This light fixture replaces the older B-185379 light fixture assembly.

2.08 The ceiling is equipped with a B-185369 plastic dome designed to cover the light fixture and exclude dirt and insects.

**DOME STOP**

2.09 The KS-20224 dome stop (Fig. 3), a spring loaded device, is designed to mount along the door track (Fig. 4) to prevent the dome from falling when the fasteners are released.

2.10 To lower the dome, push up on the dome stop as shown in Fig. 5. After dome is lowered, release and stop.

**LIGHT CONTROL UNIT**

2.11 A KS-19261, List 1 or List 2 light control unit may be used to switch the lamps on at darkness and off at daylight (see Section 508-825-100).

- KS-19261, List 1 provides automatic light control for booths equipped with KS-19207, List 4 light fixture.
- KS-19261, List 2 provides automatic light control for booths equipped with B-185379 light fixture assembly.

**WIRING**

2.12 Holes at the top and bottom of the booth provide access for telephone and power wiring, permitting either overhead or underground entrances.

2.13 The right-rear column of the booth is divided into two channels; the right for telephone wiring and the left for power wiring.

2.14 Access covers (Fig. 2), located at the top and bottom of the right-rear column, provide access to the channels from inside the booth.

2.15 A 123A1A protector is mounted on one of the access covers. The cover with the protector may be mounted at either the top or the bottom. In areas subjected to snow or heavy rainfall, the upper location is recommended.

2.16 This booth is furnished wired for subscriber set and for coin collector/telephone set connections.



**TABLE A**  
**DOOR, SIDE, AND REAR PANELS**  
**AND GLAZING STRIPS**

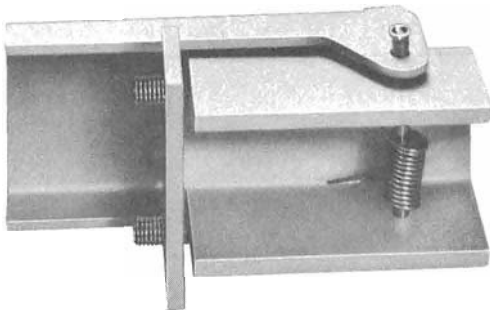
SPEC NO.	LIST NO.	DESCRIPTION		LOCATION	GLAZING STRIP
KS-14611	18	Tempered Glass	7/32-in. thk	Door	B-179367-4
KS-19580	10		7/32-in. thk	Side or Rear	B-685410-3
	32	Aluminum Blank			
	93	Porcelain Enamel	Blue		B-685411-3
	94		Gray		
	95		Red		

**TABLE B**  
**SIGN PANELS AND GLAZING STRIPS**

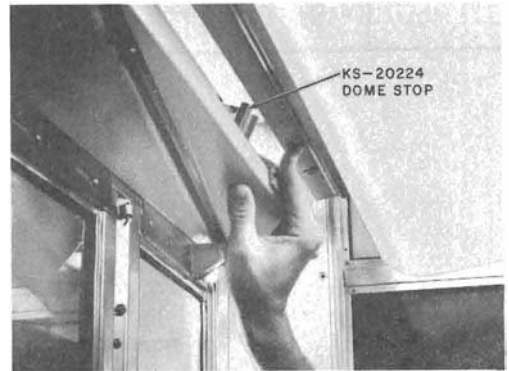
SPEC NO.	LIST NO.	DESCRIPTION		LOCATION	GLAZING STRIP
		LETTERS	BACKGROUND		
KS-14611	101	White	Blue	Front	B-179367-1
	102	Blue	White		
	105	None	White		
	106	None	Blue		
	103	White	Blue	Rear and Sides	B-179367-2
	104	Blue	White		
	107	None	White		
	108	None	Blue		
	35	Solid Aluminum Blank			

**TABLE C**  
**BOTTOM PANELS**

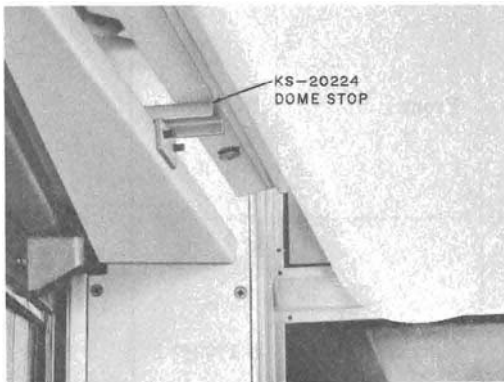
SPEC NO.	LIST NO.	DESCRIPTION	
KS-19580	38	Side	Short
	39	Rear	
	40	Side	Solid
	41	Rear	



**Fig. 3—KS-20224 Dome Stop**



**Fig. 5—Releasing Dome Stop**



**Fig. 4—KS-20224 Dome Stop Installed**

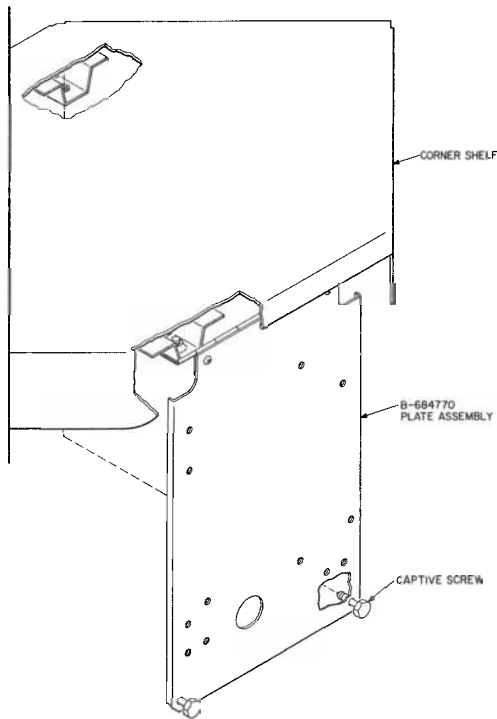
**COIN COLLECTOR/TELEPHONE SET AND SUBSCRIBER SET**

**2.17** The right-rear corner panel is designed to mount either a 200-type coin collector or a 1A/1C type coin telephone set. No additional backboard is necessary.

**2.18** A hinged mounting bracket is located under the corner shelf for mounting a subscriber set (Fig. 6).

**FLOOR**

**2.19** The KS-14611 booth is equipped with a B-684719-1 aluminum treadplate floor.



**Fig. 6—Subscriber Set Mounting Bracket**

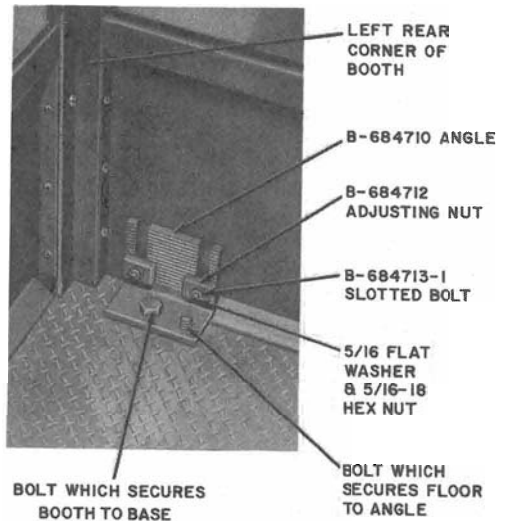
- 2.20** Four adjustable brackets (Fig. 7) are provided to permit leveling and anchoring.

#### **SHELF AND DIRECTORY ARRANGEMENTS**

- 2.21** Shelf assemblies, directory racks, and associated apparatus are listed in Table D and shown in Fig. 8 through 10.

#### **SEAT**

- 2.22** A KS-19425, List 11 seat assembly (Fig. 11) may be used if desired.
- 2.23** A KS-19425, List 12 mounting plate (Fig. 11) must be used for mounting the seat.



**Fig. 7—Booth Anchoring Bracket**

#### **CARD FRAME**

- 2.24** A KS-19928, List 2 card frame is used in this booth. Refer to Section 508-811-100 for complete information on the card frame.

#### **POWER CORD ASSEMBLIES**

- 2.25** KS-19580, List 30 power cord assembly (Fig. 12) is available for overhead power.
- 2.26** KS-19580, List 31 power cord group (Fig. 13) is available for ground level power.

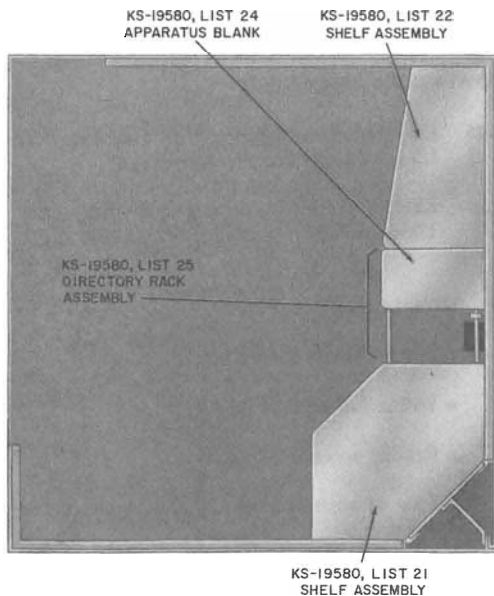
### **3. INSTALLATION**

- 3.01** Booth location should be:

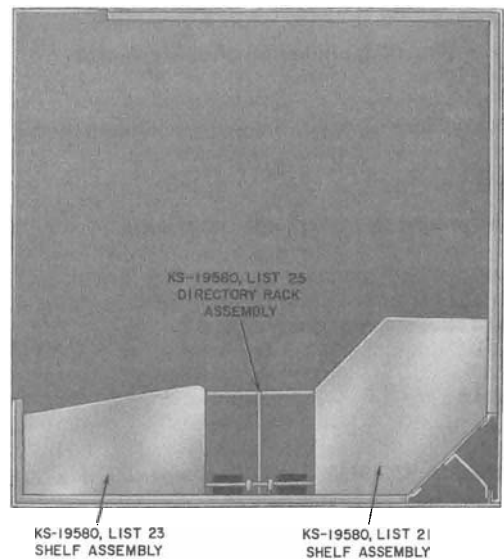
- Within full view of public
- Readily accessible to customer
- Free of such hazards as broken or uneven pavements
- Spaced with a minimum clearance of 6 inches from property lines and buildings

**TABLE D**  
**SHELF ASSEMBLIES, DIRECTORY RACKS, AND ASSOCIATED APPARATUS**

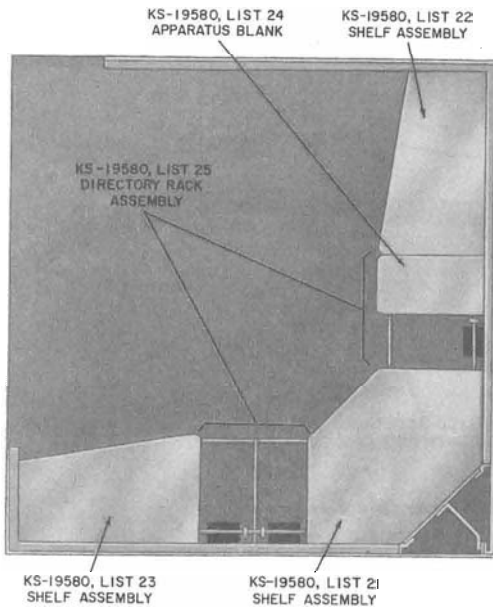
SPEC NO.	LIST NO.	FIG. NO.	DESCRIPTION	REMARKS
KS-19580	21	8, 9, and 10	Shelf	Corner shelf. Furnished with all KS-14611 booths. Contains sub set mounting bracket (Fig. 6).
	22	8 and 10	Shelf Assembly	For use on rear wall
	23	9 and 10	Shelf Assembly	For use on right wall
	24	8 and 10	Apparatus Blank	For extending writing shelf surface over unused compartment of directory rack.
	25	8, 9, and 10	Directory Rack Assembly	Two-compartment rack for holding OD-type directory binders. Each compartment capable of holding one 3-inch binder.
	26		Nameplate Blank Assembly	3/4 by 2-3/4 hard brass. Used to mount on rear of directory compartment rack for placing directory information.
	27		Nameplate Blank Assembly	3/4 by 1-3/8 hard brass. Used to mount on rear of directory compartment rack for placing directory information.



**Fig. 8—Rear Wall Shelf Arrangement**



**Fig. 9—Right Wall Shelf Arrangement**



**Fig. 10—Combination Shelf Arrangement**

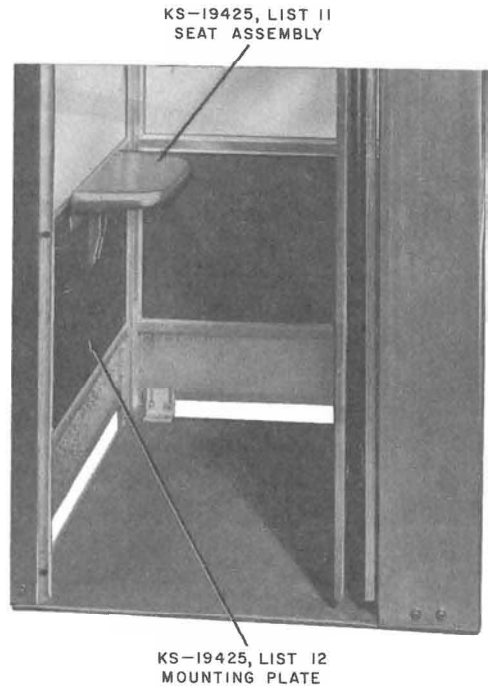
- Placed with as little step-up as possible and still maintaining proper drainage

**3.02** The KS-14611 booth requires anchoring at all installations.

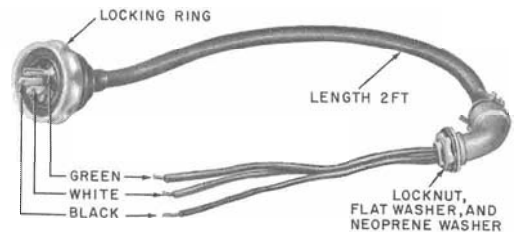
**FOUNDATION TEMPLATE**

**3.03** When necessary to provide a concrete base, a KS-19580, List 28 foundation template (Fig. 14) is used. Install the template as follows:


- Prepare a form 40 inches square with an inside depth of 10 inches (Fig. 14).
- Tamp 6 inches of cinders or gravel in the bottom of form.
- Position the template in the form on wooden blocks so that the top of four mounting inserts will be flush with concrete base as shown in Fig. 14.



**Fig. 11—KS-19425, List 11 Seat Assembly With KS-19425, List 12 Mounting Plate**



**Fig. 12—KS-19580, List 30 Power Cord Assembly**

 *Nail holes are provided in the four corners of the template for fastening the wooden blocks. Use the blocks to level and support the template at the proper height.*

- If underground power and telephone wires are to be used, provide for holes in the

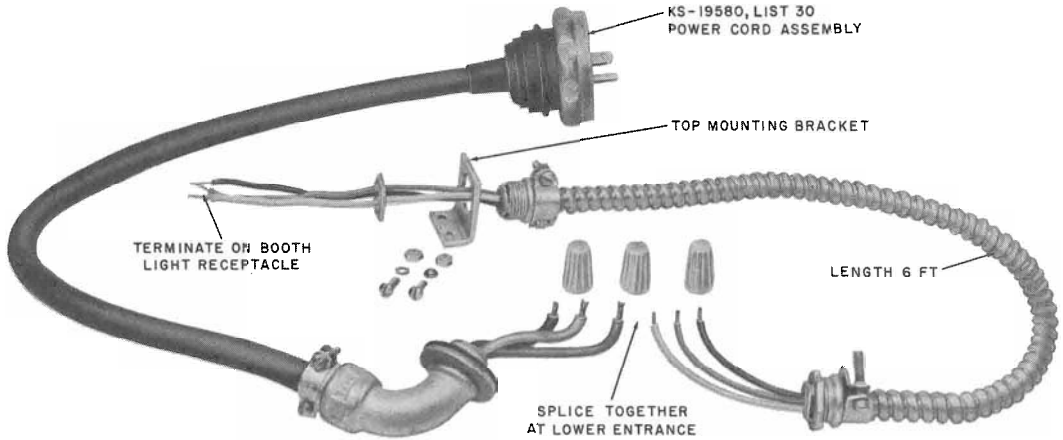


Fig. 13—KS-19580, List 31 Power Cord Group

concrete base at the positions of corresponding holes in the template.



**Do not remove screw plugs from booth mounting inserts until booth is installed. Their sole purpose is to prevent dirt from filling mounting holes.**

- (e) Pour concrete around the template to fill the form.

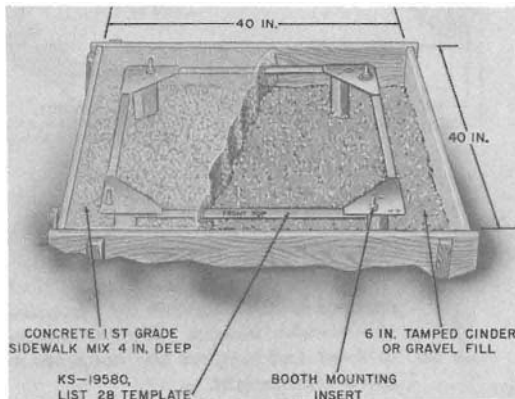


Fig. 14—Concrete Base Preparation with KS-19580, List 28 Template

### SECURING BOOTH TO MOUNTING SURFACE

#### 3.04 Secure booth as follows:

- (a) If a KS-19580, List 28 foundation template is used, remove insert plugs from template and secure anchor brackets (Fig. 7) of booth to template using four 3/8-16 by 1-1/4 hex head bolts, four 3/8-inch lockwashers, and four 3/8-inch flatwashers.
- (b) If a KS-19580, List 28 foundation template is not used, and the booth is to be mounted on concrete, perform the following operations:
  - (1) Mark the locations for four mounting holes.
  - (2) Drill the four holes to accept machine bolt anchors for 3/8-16 by 1-1/4 bolts. See Section on Machine Bolt Anchors.
  - (3) Install the fasteners.
  - (4) Secure anchor brackets of booth to fasteners using four 3/8-16 by 1-1/4 hex head bolts, four 3/8-inch lockwashers, and four 3/8-inch flatwashers.
- (c) If booth is to be mounted on a wooden floor, perform the following operations:
  - (1) Mark the location for four mounting holes.

- (2) Drill four lead holes to accommodate 5/16 by 2-1/2 inch lag screws.
- (3) Secure booth to floor using the four 5/16 by 2-1/2 inch lag screws, four 5/16-inch lockwashers, and four 5/16-inch flatwashers.
- (d) Adjust the anchor brackets (Fig. 7) if necessary, and ensure that the booth is level.

#### DOOR REQUIREMENTS

- 3.05** After anchoring and leveling booth, check door operation per Part 4.

#### TELEPHONE WIRING



*Aerial wire spans fastened to booth should not exceed 25 feet.*

#### First Attachment

- 3.06** Attach drop wire hook (Fig. 15) or corner bracket (Fig. 16) (whichever is required) on right-rear column adjacent to the entrance hole as follows:

##### A. Drop Wire Hook

- (1) Secure drop wire hook to clinch nut (provided with booth) using one 1/4-20 by 3/4 FHM screw, one 1/4-inch flatwasher, and one 1/4-inch lockwasher.

##### B. Corner Bracket

- (1) Secure the corner bracket to the threaded clinch nut using one 1/4-20 by 3/4 Phillips RHM screw.
- (2) Using the bracket as a template, drill a clearance hole for another 1/4-inch screw.
- (3) Further secure the bracket to the booth using one 1/4-20 by 3/4 Phillips RHM screw, one 1/4-inch flatwasher, one 1/4-inch lockwasher, and one 1/4-inch hex nut.

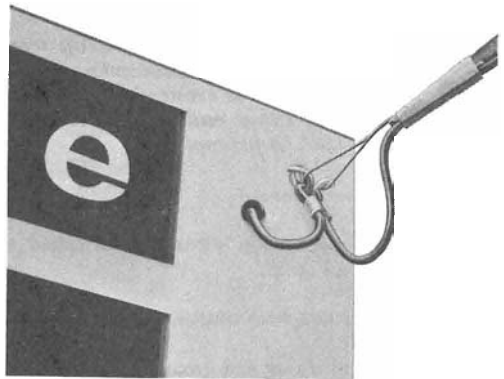


Fig. 15—Drop Wire Hook For First Attachment

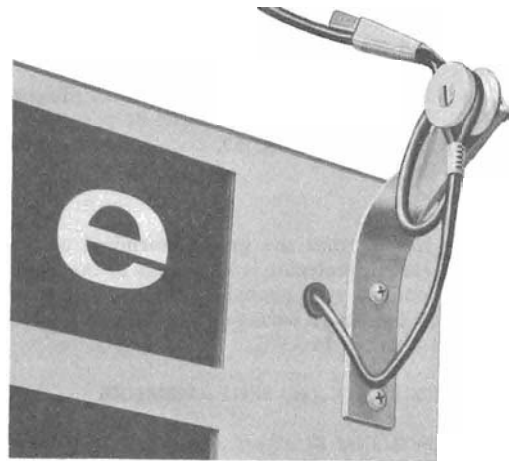


Fig. 16—Corner Bracket For First Attachment

#### Drop Wire

- 3.07** Feed drop wire through entrance hole and terminate on 123A1A station protector.



*The protector is located in the top of the right-rear corner behind an access cover; however, it may be moved to the bottom of the right-rear corner if ground level or underground entrance is used.*



*The KS-14611 booth is equipped with bonding wires at both drop wire entrances. Before proceeding, check that one end is secured to the booth and the other end is terminated on the 123A1A protector.*

**Coin Station Connections**

**3.08** Station connection wires are furnished as shown in Fig. 17.

**ELECTRICAL WIRING AND GROUNDING**

**3.09** Electrical wiring and grounding of the booth is covered in Section 508-100-100.

**Wiring**

**3.10** For overhead entrance with plug-in features, use KS-19580, List 30 power cord assembly and install per Fig. 18.

**3.11** For ground level entrance with plug-in features, use KS-19580, List 31 power cord group and install per Fig. 19.

**Grounding**

**3.12** Ensure that the ground terminal of the station protector is connected to the booth with bonding wire provided. If bonding wire becomes broken or damaged, use a suitable wire no less than No. 14 AWG.

**DIRECTORY RACK AND SHELF ASSEMBLIES**

*KS-19580, List 21 Shelf Assembly (Fig. 8, 9, and 10)*

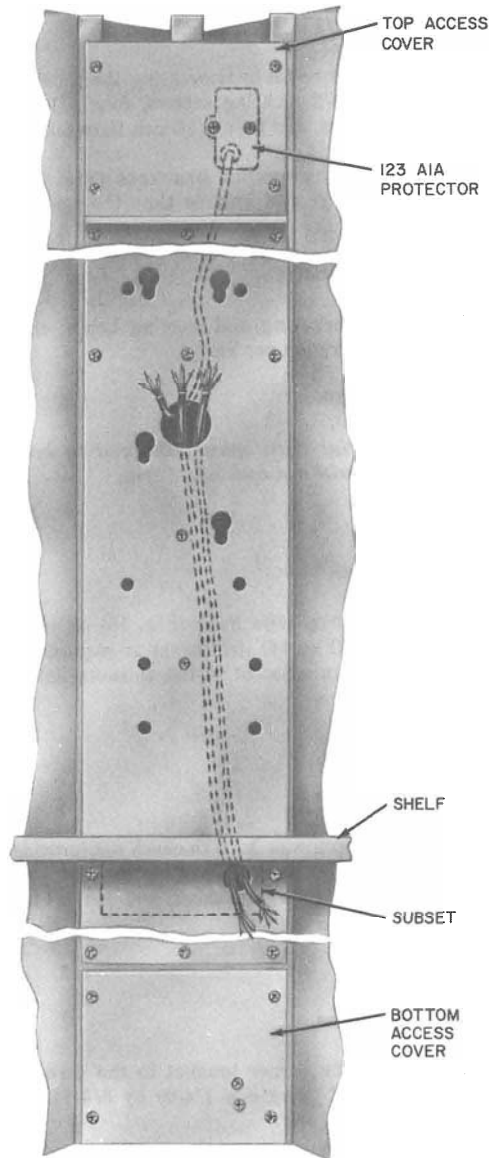
**3.13** Secure with four 10-32 by 1/2 Phillips FHM screws and four No. 10 CSK washers.

*KS-19580, List 22 Shelf Assembly (Fig. 8 and 10)*

**3.14** Install with four 10-32 by 1/2 Phillips FHM screws and four No. 10 CSK washers.

*KS-19580, List 23 Shelf Assembly (Fig. 9 and 10)*

**3.15** Install with four 10-32 by 1/2 Phillips FHM screws and four No. 10 CSK washers.



**Fig. 17—Station Wiring**



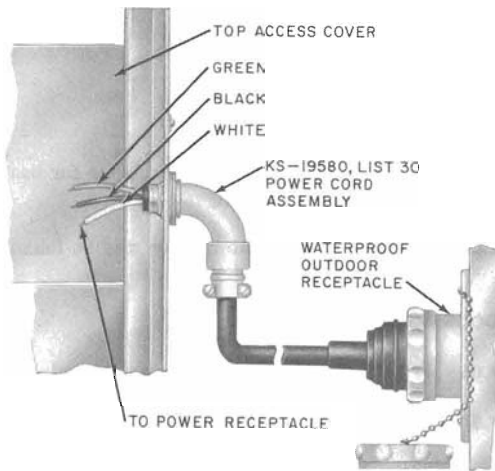


Fig. 18—KS-19580, List 30 Power Cord Assembly Overhead Entrance

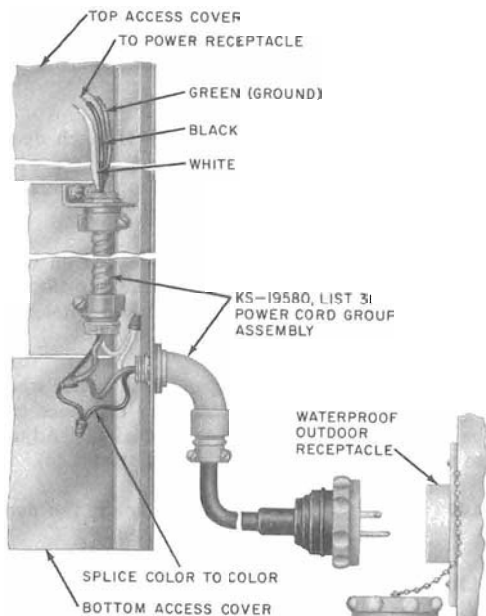


Fig. 19—KS-19580, List 31 Cable and Cord Group for Ground Level Entrance

**KS-19580, List 25 Directory Rack (Fig. 8, 9, and 10)**

**3.16** Install with four 10-32 by 1/2 Phillips RHM screws, two 10-32 by 1/2 Phillips FHM screws, two No. 10 flatwashers, and two No. 10 lockwashers.

**KS-19580, List 24 Apparatus Blank (Fig. 8 and 10)**

**3.17** Install with two 10-32 by 5/8 Phillips RHM screws, four No. 10 fiber washers, and two No. 10 elastic stop nuts.

● Hardware furnished with apparatus blank

**KS-19580, List 26 Nameplate Blank Assembly (3/4 by 2-3/4 inches)**

**3.18** Insert pins through two outer holes at top of directory rack.

**3.19** Bend pins on back side of directory rack.

**KS-19580, List 27 Nameplate Blank Assembly (3/4 by 1-3/8 inches)**

**3.20** Insert one pin through one of the outer holes and the other pin through center slot at top of directory rack.

**3.21** Bend pins on back side of directory rack.

#### SEAT ASSEMBLY

**3.22** Install KS-19425, List 12 mounting plate as follows:

(a) Install the mounting plate in the same manner as a standard glass panel in the bottom position on the left side of the booth.

(b) Install a B-650894 clip (furnished with seat assembly) on each corner of the List 12 mounting plate, using four 8-32 by 3/8 SEMS RHM screws.



**Install the clips on the inside of the booth. Their purpose is to prevent the removal of retaining strips.**

**3.23** Install the seat assembly on the upper portion of the mounting plate using the following

## SECTION 508-401-100

items (furnished with seat assembly) and install in the sequence listed.

- Four 1/4-20 by 1-1/8 carriage bolts (install with heads on outside of booth)
- Four B-650893 spacers
- Seat assembly
- Two 1/4-inch flatwashers (front and rear bolts)
- Four 1/4-inch lockwashers
- Four 1/4-20 cap nuts

### 4. MAINTENANCE

- 4.01** The local telephone company shall establish the appearance standards of all exposed surfaces.
- 4.02** The local telephone company shall establish the safety standards for all booths.
- 4.03** All screws threaded into aluminum parts during the course of repair shall be coated with KS-19094 antiseize compound.

### BOOTH CHECK POINTS

- Safe approach to booth (have dangerous conditions corrected)
- Appearance of booth
- Electrical grounding
- Door operation
- Panels and signs
- Booth lighting
- Directories and binders
- Dome and lights
- Security of booth anchorage
- Loose screws and bolts
- Seat assembly (if applicable)

- Shelf assemblies
- Power cords

### CLEANING

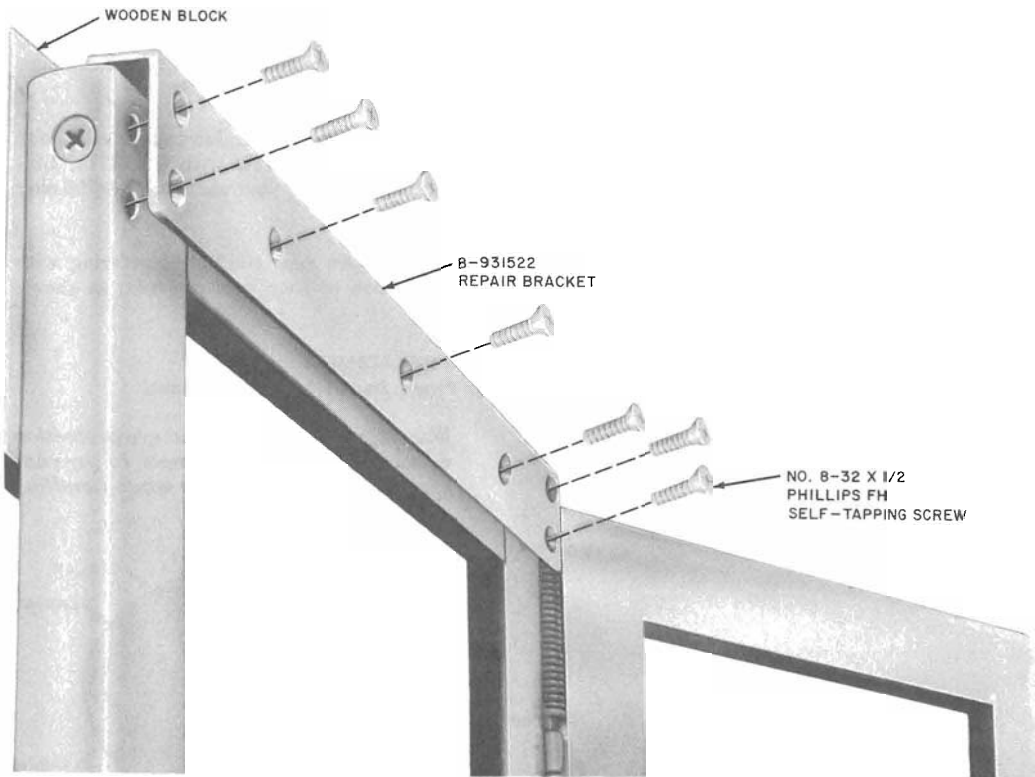
- 4.04** KS-19432, List 1 cleaner is available for use as a general cleaning agent.
- 4.05** Complete cleaning information may be found in Section 508-100-101.

### DOOR MAINTENANCE

- 4.06** Frames should not be broken or cracked.
- 4.07** Replace door sections that have broken mitered joints. Repair solid-type (one piece) sections (Fig. 20). Fracture usually occurs because of misuse, improper adjustment, or because booth is not level. Check the cause and repair as follows:
- (1) Close the door against a thin wooden block to close fracture.
  - (2) Place B-931522 door repair bracket on the top outside of the door. Align edge of bracket with edge of door that is closest to fracture.
  - (3) Drill seven mounting holes 1/2-inch deep (drill size No. 26). Secure bracket with seven 8-32 by 1/2 Phillips FH self-tapping screws, type F of corrosion resistant steel.

**Note:** When brackets are installed on both door sections, check that brackets do not interfere with open position of door. Relocate felt bumper if necessary.

- 4.08** Door should remain open 2 to 3 inches when it is at normal position. This clearance can be eliminated in cold weather, if desired. Adjust so that door closes without slamming (see 4.14).
- 4.09** When pushed closed from inside, the door should remain completely closed.
- 4.10** Door should open fully with slight pull on the handle and return to the normal position when released.
- 4.11** Open-door clearance from the writing shelf is about 1 to 2 inches.



**Fig. 20—Installation of Door Repair Bracket**

4.12 Door operation should be free without binding, squeaking, or chattering (see 4.16).

4.13 Rubber frame bumpers shall be in place.

**Door Adjustments (Fig. 21)**

4.14 **Normal Position.** These adjustments should be made in sequence:

- (1) Loosen setscrews on spring stop assembly.
- (2) Place door in normal position (2 to 3 inches) from corner column.

(3) Position rod of spring stop assembly against door roller.

(4) Secure rod in this position by placing collar of the spring stop assembly against the bracket of the spring stop assembly, and tighten setscrews.

(5) Loosen mounting screws on the adjustable stop assembly. Move assembly left or right to obtain the spring tension required to return door to normal position. Tighten screws and recheck tension.

- (6) Check that door stop assembly is not loose or damaged. If top of roller is not inside track throughout door travel, reposition assembly.

**Open Door Clearance**

**4.15 Check Points:**

- (1) Angle associated with bumper should be tight.
- (2) Replace bumper if worn or damaged.

**Door Operation**

**4.16 Eliminate binding, squeaking, or chattering:**

- (1) Check hinge wear. Clearance between hinge barrels should not exceed 1/16-inch; gauge by eye. Replace worn hinges.

- (2) Replace defective spring of the top hinge assembly only if the assembly is the latest type (Fig. 22). Replace all earlier type assemblies with the new top hinge assembly.

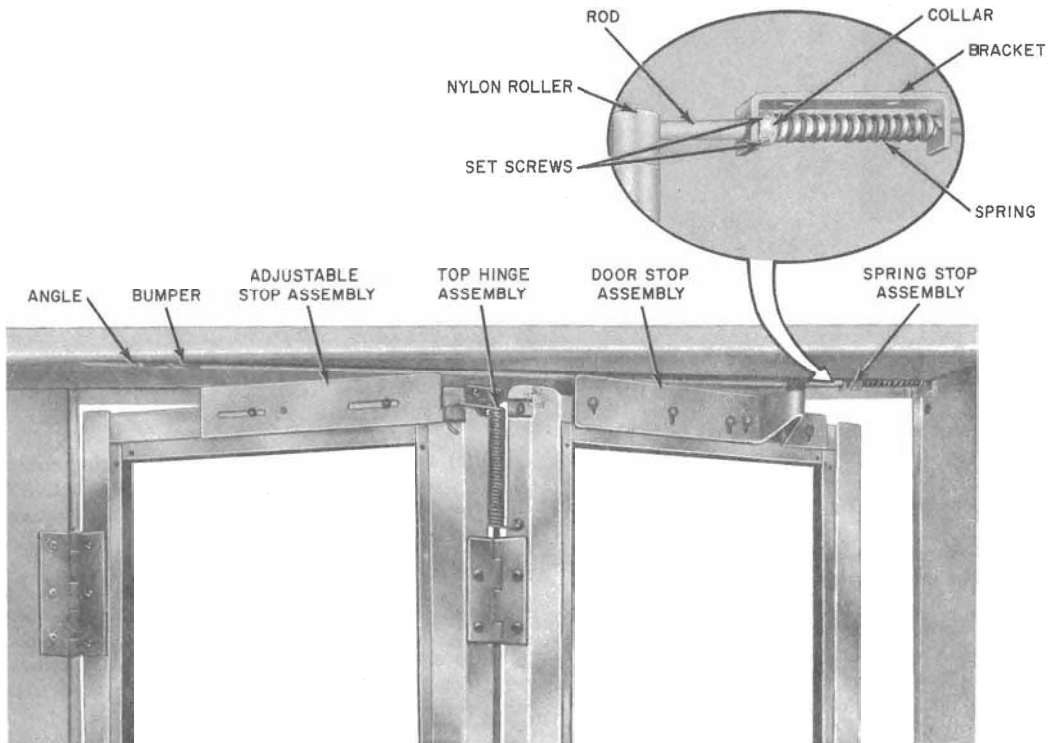
- (3) If door hinges squeak, lubricate at each joint between the barrels with KS-14774, L2G lubricating grease or equivalent; a KS-14796 oiler may be used.

- 4.17** When worn door track is interfering with operation of door, replace track, as shown in Fig. 23.

**PANEL REPLACEMENT**

**Sign Panels, Door, Side, and Rear Panels**

**Warning:** *Wear gloves and eye protection when handling glass panels to prevent personal injury. Use care when handling*



**Fig. 21—KS-14611 Booth Door Adjustment**

*tempered glass. Nicks or scratches will damage the glass and may cause it to shatter. Do not allow metal tools to come in contact with edge of tempered glass. Before installation, examine glass for nicks or chips along edges. If such defects are apparent, do not use this glass.*

**4.18** Replace those panels which are broken or which will not meet local telephone company standards. Refer to Table A for available door, side, and rear panels and glazing strips. Refer to Table B for available sign panels and glazing strips.

**4.19** Booth panels and signs are held in place by four interlocking retaining strips inserted in sequence as shown in Fig. 24. The No. 4 strip is rippled and is held in place by interface friction. Refer to Table E for retaining strips.

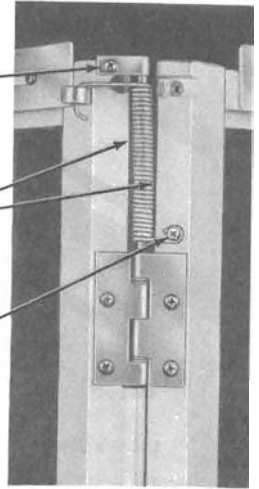
**4.20** Replace panels as follows:

- (1) Remove No. 4 locking strip.

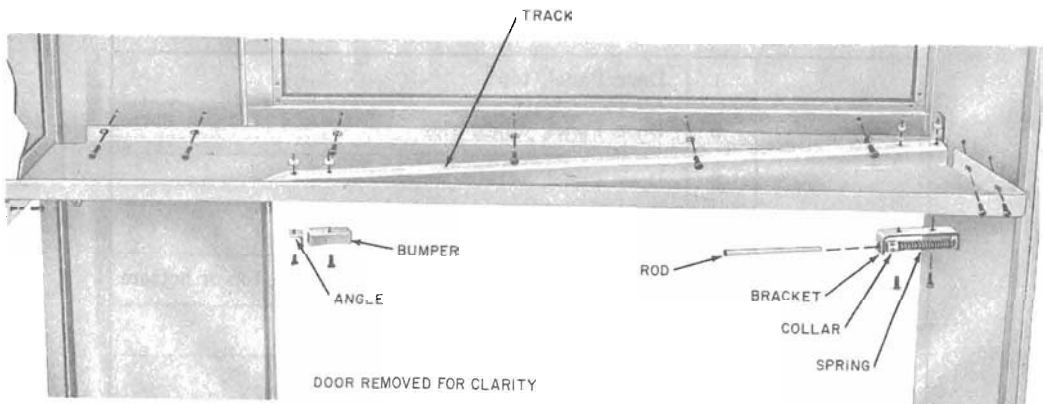
REMOVABLE SUPPORT  
DRILL HOLE 1/2 IN. DEEP.  
FASTEN WITH  
SELF TAPPING SCREW  
TYPE F, 8-32 X 1/2 IN.

INCREASE  
SPRING CLEARANCE  
ON BOTH DOORS.  
FILE OR SAND  
1/32 IN. DEEP  
X 3-7/8 IN. LONG.

DRILL 5/32 IN. HOLE  
1/2 IN. DEEP.  
FASTEN WITH  
SELF TAPPING SCREW  
TYPE F, 8-32 X 5/8 IN.



**Fig. 22—Installation of Top Hinge Assembly**



**Fig. 23—Installation of Door Track**

- (2) Remove retaining strips No. 2 and 3.
- (3) Remove retaining strip No. 1.
- (4) Remove panel and rubber glazing strip.
- (5) Apply rubber glazing strip to replacement panel.
- (6) Insert panel into frame with the beaded edge of glazing strip on the outside.

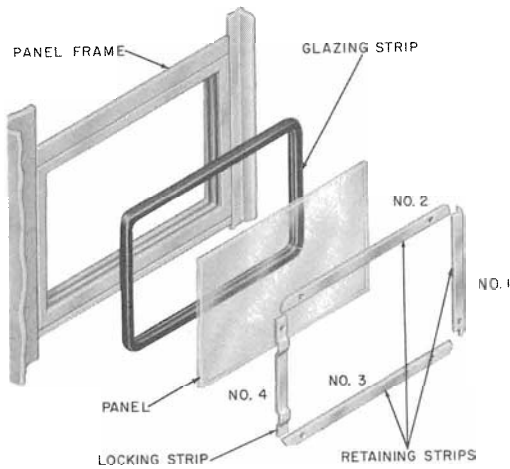


Fig. 24—Assembly of Side or Rear Panels

(7) Replace retaining strips in sequence as shown in Fig. 24.

**Bottom Panels**

4.21 Replace those panels which are broken or which will not meet company standards. Refer to Table C for available bottom panels.

4.22 To remove panels, remove Phillips RH screws (eight for short panel and ten for solid or louvered panel).



*The rear bottom panels are equipped with a mounting bracket and leveling device.*

**TABLE E**  
**RETAINING STRIPS**

PART NO.	LOCATION
B-185371 —	1 Door Panel, top
	2 Door Panel, either side
	3 Door Panel, bottom
	4 Side or Rear Panel, either side
	5 Side or Rear Panel; Side or Rear Sign, top or bottom
	6 Side or Rear Panel, locking strip
	7 Side or Rear Sign, either side
	9 Side or Rear Sign, locking strip
	10 Front Sign, either side
	11 Front Sign, top
	12 Front Sign, locking strip
	13 Front Sign, bottom

**BOOTH LIGHTING**

*For your safety, observe the following: Work operations on booth lighting equipment and electrical wiring should be limited to locations where power can be turned off at a switch or a plug can be removed. Wear eye protection when lowering ceiling and handling fluorescent lamps.*

- 4.23** When ballast shows signs of leaking compound, replace the complete KS-19207 unit per Section 508-820-100.
- 4.24** Earlier model KS-14611 booths were equipped with a B-185379 light fixture. If major repairs are required for maintenance, replace the B-185379 light fixture with a KS-19207, List 4 light fixture per Section 508-820-100.
- 4.25** Maintenance instructions for the B-185379 light fixture are covered below:



*Both ceiling lamps should be lighted when power is on, unless booth is equipped with a light control unit. For booths with a light control, refer to Section 508-825-100.*

- (1) Check that manual starter reset buttons are pushed in when this type starter is used. Allow 1 minute for lamps to light.
  - (2) If lamps fail to light remove lamp plug from ceiling receptacle, and test for power.
    - (a) If power is off, check for intermediate switch.
    - (b) If power is present, replace lamp plug.
  - (3) If lamps fail to function, replace starters and allow 1 minute for lighting. Replace lamps that do not light. (Before discarding a starter, test in a good lamp fixture.)
  - (4) If lamps still fail to function, trouble may be due to low voltage (below 95 volts) or a defective fixture.
- 4.26** Automatic cutoff thermal-type starters are also used with the KS-14611 booth lamps. Bimetallic contacts control starter operation. If

starter fails to light the lamp, a cutoff contact will open the lamp circuit. Starter remains in this cutoff condition until power is turned off, allowing bimetallic cutoff to cool. Purpose of cutoff is to prevent ballast transformer from overheating.

- 4.27** Starter cutoff usually occurs from the following:
- (a) Low ac voltage or downward power surge (service interruptions, fluctuations, thunderstorms, etc) below operating range of lamp.
  - (b) Defective lamp (flickers when starting to light).
  - (c) Extremely low temperature at start. Gas in lamp does not ionize.
  - (d) High temperature, either at start, or while lamp is lighted. External heat combined with current flow operates bimetallic cutoff contact.

**Note:** Remember, the lamp starting time is determined by the temperature present in conjunction with lamp condition and line voltage.

- 4.28** Starter Selection (see Table F.)
- (a) **Automatic Reset** starters will reset after going into cutoff when the power is turned off to allow the contacts to cool. Operating range at 118 volts is from 0 to 135°F.
  - (b) **Manual Reset** starters can be reset by pushing the reset button to render starter operative. Operating range at 118 volts is from 0 to 185°F.

**Note:** Permanent damage to ballast transformer may result if the starter used is not correct for lamp wattage.

**DOME REPLACEMENT**

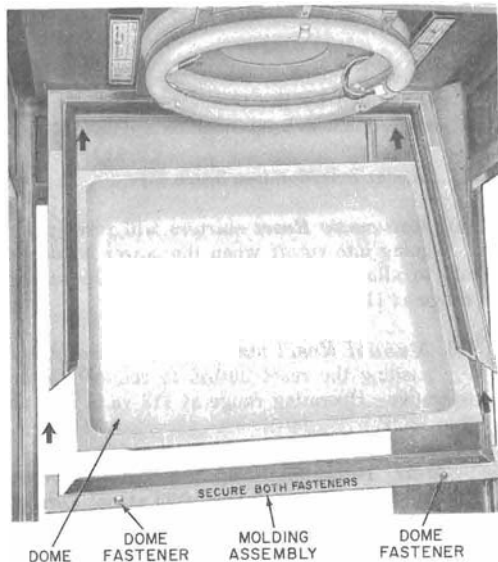
- 4.29** Replace defective dome as follows:
- (1) Unlock dome fasteners and lower dome.
  - (2) Remove machine screws and molding assembly.

**TABLE F**  
**LAMP AND STARTER CODES**

WATTS	LAMP CODE*	STARTER CODE	
		RESET	
		AUTOMATIC	MANUAL
32	FC12T10	TC-12	TC-120
40	FC16T10	TC-4	TC-40

\* Lamp, fluorescent, 4-pin, standard, cool white.

- (3) Remove defective dome and insert replacement as shown in Fig. 25.
- (4) Replace and secure molding assembly.
- (5) *Raise dome and secure in position by locking dome fasteners.*



**Fig. 25—Installation of Dome**

#### **DOMESTOP**

- 4.30 Dome stops which are damaged or broken should be replaced in accordance with Fig. 4.

#### **SEAT ASSEMBLY**

- 4.31 Replace those seats (if present) which are broken or which will not meet company standards per 3.22 and 3.23.

#### **SHELF ASSEMBLIES AND APPARATUS BLANKS**

- 4.32 Replace those shelves and apparatus blanks which are broken or which will not meet company standards per 3.13 through 3.21.

#### **DIRECTORIES AND BINDERS**

- 4.33 Directory binder rods or hinge fasteners shall not be broken or distorted to the extent that directories are not held securely in the binder. Hinges shall not be so bent, burred, or distorted as to obstruct the free passage of hinge fasteners or prevent smooth operation of covers.

- 4.34 Binder locking devices shall operate freely and lock securely. Adjustable backplates shall be in good condition.

- 4.35 Ensure that a rubber bumper (B-685401) is in place on the directory rack to cushion the binder as it drops into the rack. Install a new bumper, if required as follows:
  - (a) Soften old adhesive with the trichloroethane and remove.
  - (b) Install new bumper using 3M Company EC-880 adhesive or equivalent.

#### **FLOOR**

- 4.36 If a booth is equipped with an abrasive-clad floor, the finish can be restored with the use of Goodyear Griptred flooring and protective coating, dark gray 592-7005 or equivalent. This can be applied with an ordinary paint brush.

#### **PROTECTOR GROUND**

- 4.37 When coverplate is removed, the station protector ground is removed. Under certain conditions this could present a hazard while working on protector, wiring, etc.



*When coverplate is removed and bonding strap is not present, place strap before proceeding with work. Use No. 14 wire from ground terminal of protector to*



*screwhead of partition fastener separating the two wiring channels.*

#### REPAIR OR REPLACEMENT PARTS

- 4.38** Refer to Table G for repair or replacement parts which are most commonly required.

#### 5. CONVERSION OF CEILING ASSEMBLY OF A LIST 2 (MD) BOOTH TO CEILING ASSEMBLY OF A LIST 3 BOOTH

- 5.01** The following material is required for conversion:

1—Top Access Coverplate Assembly per drawing B-189009

1—Ceiling Assembly, B-185463

2—Screws, RHM, Phillips, No. 8-32 by 3/8-inch with lockwasher, B-185955,

2—Cap Nuts, 1/4-20 inches, B-185955,

2—Hex Nuts, 1/4-20 inches, B-185955,

1—Duplex Power Receptacle Assembly, B-189783

2—Lamps, fluorescent, 4-pin, standard, cool white, FC16T10

1—Antiseize Compound, KS-19094

4—Screws, RH, Phillips, type F, 8-32 by 1/2 inch

- 5.02** In addition to regular tools the following are used:

Drill, electric

Drill, No. 15

Drill, No. 25

Drill, 3/8 or 1/2 inch

Punch, center

Wrench, adjustable

Screwdrivers, Phillips

Taps, set, small (to repair any stripped threads)

Step ladder

- 5.03** Penetrating oil may be necessary for removal of tight screws.

- 5.04** Use center punch to start drilling of new holes.

- 5.05** KS-19094 antiseize compound is used on screws threaded into aluminum.

#### WORK OPERATIONS

**THINK** *Eye protection when lowering ceiling sections and performing drilling operations.*

**THINK** *Use a step ladder of sufficient height to work in top of booth safely. Place warning signs to safeguard public when necessary.*

- 5.06** Disconnect both the power and telephone service to booth.

(1) Open ceiling with KS-19192, List 1 wrench and remove lamps.

(2) Disconnect telephone wiring at subscriber set, if applicable, and station protector.

(3) Remove four wing nuts holding roof to ceiling assembly.

- 5.07** Place step ladder at side of booth and proceed as follows:

(1) Lift roof off.

(2) Unplug light-fixture cord.

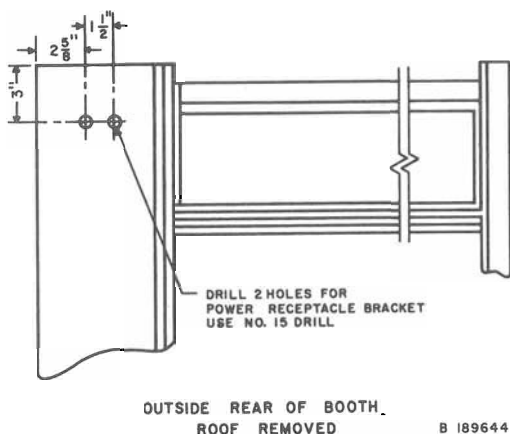
(3) Support ceiling assembly and remove four retaining screws from cross brace with wrench or screwdriver, as required.

(4) Lift ceiling assembly out through top of booth. Remove subscriber set, if applicable, and protector.

- 5.08** Inside of booth, remove top access plate assembly.

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- (1) Disconnect power cord conductors from back of receptacle. Remove receptacle and bracket.
- (2) Drill holes for new receptacle bracket B-189783 as shown in Fig. 26.
  - When a power source for electric drill is not close by, use hand drill. **Do not attempt to drill these holes with power connected to the booth.**
  - When rear of booth is located against a wall, mark position of holes on inside with receptacle bracket as template. Then drill from inside the booth.
- (3) Connect wiring to new receptacle and fasten in place as shown in Fig. 27.



**Fig. 26—Holes for Mounting Receptacle Bracket**

**5.09** Reconnect power to booth. If applicable, drill holes for subscriber set mounting under shelf as follows:

- (1) Locate subscriber set 1-inch down from underside of corner shelf on right-rear cover assembly (aluminum panel) of booth. Position subscriber set over right (telephone) wiring channel, and mark locations of four mounting holes and wire entrance holes.

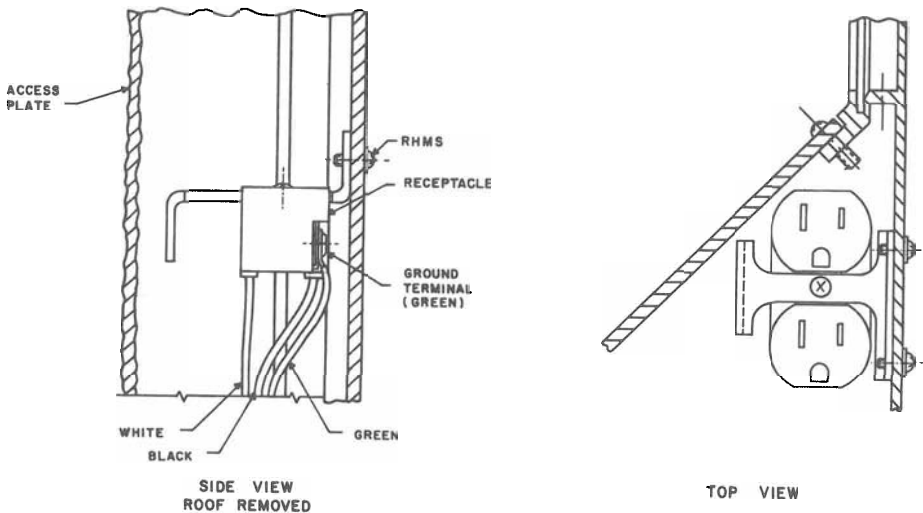
- (2) Use No. 25 drill for subscriber set mounting holes.
  - (3) Use 3/8- or 1/2-inch drill for wire entrance.
    - Smooth edges with file to prevent damage to wires.
- 5.10** Relocate telephone wiring to new subscriber set location.

- (1) Fish right wiring channel with string or chain from top access opening to subscriber set wire entrance.
- (2) Fasten new piece of triple station wire and wire formerly connected to subscriber set on string at tip access opening. Pull through to new subscriber set location.
- (3) Connect new triple and drop wire to 123A1A protector on B-189009 top access plate assembly. Allow slack to facilitate future maintenance work.
- (4) Install access plate in position.

**5.11** Install new ceiling assembly B-185463 as follows:

- (1) Lower ceiling assembly into position from outside top of booth. Fasten with screws previously removed from old cross brace.
- (2) Place lamps in fixture.
- (3) Plug light fixture cord into receptacle.
- (4) Replace roof.
- (5) Anchor roof from inside of booth. Use two cap nuts in rear and two hex nuts (drop dome) in front.
- (6) Close dome and lock with KS-19192, List 1 wrench. Check that both fasteners are tightened securely.

**5.12** Install subscriber set using four 1/2-inch Phillips screws. Connect telephone wiring at subscriber set.



**Fig. 27—Location and Wiring of Receptacle**

**5.13** Check coin collector and ringer operation.  
Check that lamps are functioning properly.

**6. CONVERSION OF CEILING ASSEMBLY TO ADD  
KS-19207, LIST 3 LIGHT AND BLOWER UNIT**

**6.01** For detailed conversion procedures, refer to  
BSRS 457.106. This modification is not  
recommended for field forces to attempt.

**TABLE G**  
**REPAIR OR REPLACEMENT PARTS**

NAME	PART NUMBER	REMARKS
Angle	B-179424	Component of track assembly
	B-684710	Component of booth anchoring bracket
Bracket	B-176686	Component of spring stop assembly
	B-931522	Door repair bracket
Bolt	B-684713-1	Component of booth anchoring bracket
Bumper	B-179473	Component of track assembly
	B-684714	Located on column of left side assembly
	B-685401	Located on directory rack
Collar	B-192403	Component of spring stop assembly
Cover Assembly, Right Rear	B-185432	Mounts coin collector
Cover Assembly, Right Rear Access	B-185443	Includes a 123A1A protector
Cover, Right Rear Access	B-185375-1	Does not mount protector
Cover, Left Front Access	B-179378	Covers booth anchoring bracket on left front column
Dome	B-185369	Light dome
Door Assembly	B-179333	Door includes left and right door frame assemblies, hinges, handle, door stop assembly, and adjustable stop assembly
Frame Assembly, Left Side	B-181729	Left frame of door assembly
Frame Assembly, Right Side	B-181728	Right frame of door assembly
Grommet	B-684716	Located at telephone wire entrance
Handle	B-684738	Door handle

TABLE G (Cont)

NAME	PART NUMBER	REMARKS
Hinge Assembly	B-650842	Door post hinge
	B-684744	Center door hinge (middle and bottom positions)
	B-684745	Top center door hinge
Nut	B-684712	Component of booth anchoring bracket
Plug	Plastic Plug for Rear Assembly B-179324	Located at unused power entrance
Rod Assembly	B-192404	Component of spring stop assembly
Roller, Nylon	B-561730	Mounts on pin of door stop assembly
Spring	B-176687	Component of spring stop assembly
	B-684746	Component of top hinge assembly
Stop Assembly, Adjustable	B-684748	Component of door assembly
Stop Assembly, Door	B-176782	Component of door assembly
Stop Assembly, Spring	B-192543	Component of track assembly
Track Assembly	B-178483	Consists of track, spring stop assembly, angle, and bumper
Track	B-185579	Component of track assembly
Washer, Plain Cres, 5/16 std	Obtain locally	Component of booth anchoring bracket



## OUTDOOR BOOTH KS-19580 AIRLIGHT II

### 1. GENERAL

1.01 Information in this section was formerly contained in Sections 508-354-100, 508-354-200, and 508-354-300 which are hereby canceled.

1.02 The KS-19580 Airlight II booth is a direct replacement for the KS-14611 Airlight booth.

### 2. IDENTIFICATION

2.01 The KS-19580 booth (Fig. 1) is an outdoor aluminum and glass telephone booth designed for single or multiple side-by-side installations. It is available in polished aluminum (List 60), gold (List 61), and bronze (List 62).

2.02 The overall dimensions of the booth are:

- Height—83-1/8 inches (less rain bead)
- Width—33-1/2 inches
- Depth—33-1/2 inches (front sign projects 1-1/2 inches beyond this dimension)

2.03 The door consists of two vertical sections, each mounting a full length safety glass panel. It is self-closing and folds along the right wall when opened.

### PANELS

#### Door, Side, Rear, and Bottom Panels

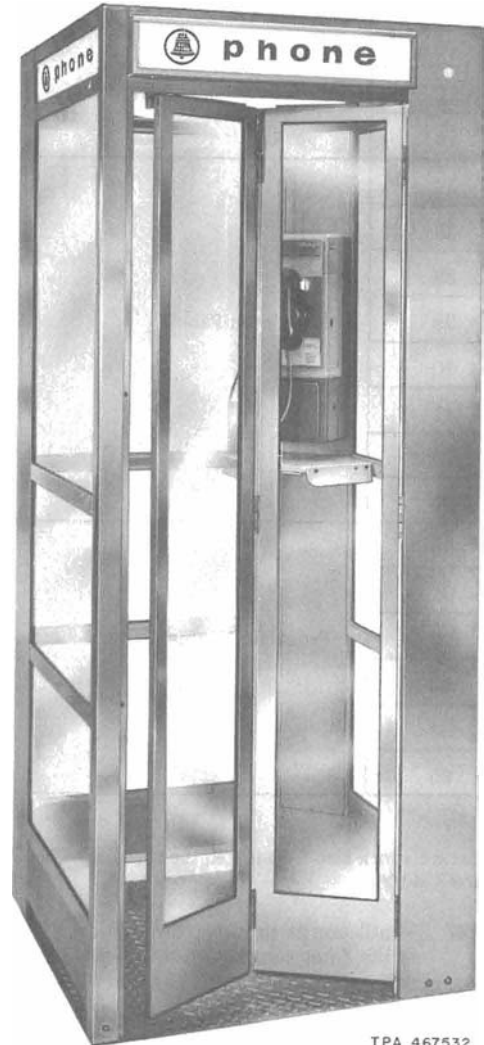
2.04 Door, side, rear, and bottom panels are available as described in Table A.

#### Sign Panels

2.05 Signal panels are available as described in Table B.

### ILLUMINATION AND VENTILATION

2.06 Unless otherwise specified, the booth is illuminated by a KS-19207, List 7 light



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Fig. 1—KS-19580 Airlight II Booth

TABLE A  
DOOR, SIDE, REAR, AND BOTTOM PANELS

KS-19580 LIST NO.	DESCRIPTION	REMARKS
10	Tempered Glass Panel	7/32-inch thick small side or rear panel
12		7/32-inch thick large side or rear panel
14		7/32-inch thick door panel
32	Aluminum Panel	Small side or rear panel
33		Large side or rear panel
38		Short right side bottom panel
39		Short rear bottom panel with tie down angle
40		Solid right side bottom panel
41		Solid rear bottom panel with tie down angle
49		Solid left side bottom panel
50		Short left side bottom panel
90		Procelain Enamel Panel
91	Blue	
92	Gray	
93	Small side or rear panel	Red
94		Blue
95		Gray
		Red

fixture which also illuminates the signs. See Section 508-820-100.

**2.07** Ventilation is provided through an opening in the front sign and also through screened louvered panels which may be installed at the sides and rear in place of a sign.

**2.08** For locations where additional ventilation is required, a KS-19207, List 3 light and blower unit can be used; this unit must be ordered separately plus the following associated items:

- B-650927 switch assembly

- B-650929 actuator switch
- B-684779-2 switch assembly
- B-558806-2 switch assembly
- Two 8-32 by 1/4 Phillips RH self-tapping screws
- Two 8-32 by 1/2 Phillips RH self-tapping screws

**Note:** The B-684779-2 wall mounted switch permits the customer to turn the blower on



TABLE B  
SIGN PANELS

KS-19580 LIST NO.	COLOR		REMARKS
	LETTERS	BACKGROUND	
16	None	Aluminum Solid Panel	Used on sides and rear in place of telephone sign
35		Aluminum Louvered Panel	Used on sides and rear to increase ventilation of booth
72*	White	Blue	Front sign
75	Blue	White	
80*	White	Blue	Rear and side signs
84	Blue	White	
86	None	Blue	Front sign
87		White	
88		Blue	Rear and side signs
89		White	

\* KS-19580, List 72 and List 80 signs are furnished unless otherwise specified.

and off as desired. This switch is used in conjunction with the B-650927 door operated switch.

**2.09** The booth may be equipped with a KS-19261, List 1 light control unit. In multiple installations, a maximum of five booths may be interconnected and controlled by one light control unit mounted in the end booth of the row.

**2.10** Refer to Section 508-825-100 for complete information on the KS-19261 light control unit.

**2.11** In multiple installations, a KS-19580, List 51 receptacle assembly (Fig. 2) must be used in conjunction with a KS-19261 light control unit as follows:

(a) One receptacle is required for *each multiple installation* where KS-19207, List 7 light fixtures are used.

(b) One receptacle is required for *each booth* in a multiple installation where KS-19207, List 3 light and blower units are used.

**2.12** A mounting bracket (Fig. 3) is provided in ceiling area for mounting a List 51 receptacle.

#### WIRING

##### Electric Wiring

**2.13** Use one of the following:

(a) *KS-19580, List 30 power cord assembly (Fig. 4)*: Used for overhead power.

(b) *KS-19580, List 31 power cord group (Fig. 5)*: Used for ground level entrance where a circuit breaker is not required.

(c) *KS-19425, List 24 power cable assembly (Fig. 6)*: Used to bring power from the KS-19426, List 17 circuit breaker box to the



Fig. 2—KS-19580, List 51 Receptacle Assembly

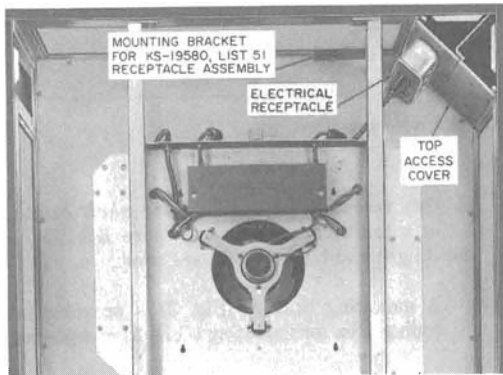


Fig. 3—KS-19580 Booth Ceiling Area

electrical receptacle (Fig. 3) located above the ceiling.



***If a circuit breaker is required, order following items separately:***

- Hineman Electric Co. No. 0912 circuit breaker
- KS-19426, List 17 circuit breaker box (Fig. 7)

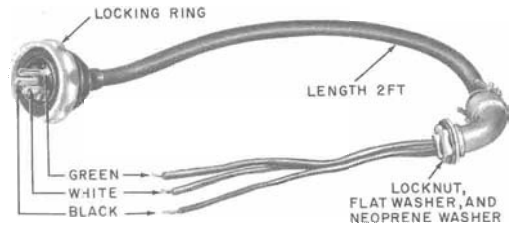


Fig. 4—KS-19580, List 30 Power Cord Assembly

- Two 8-32 by 3/8 Phillips RHM screws

### Telephone Wiring

**2.14** The telephone wire will terminate above the ceiling on a 123A1A protector which is furnished with booth and located behind the top access cover (Fig. 3).

- On older model booths, the top access cover is secured with screws.
- On current models, the top access cover is equipped with key hole slots for convenient access.
- On all models the protector can be moved down behind the bottom access cover.

**2.15** The booth is wired for coin telephone set connections.

### CARD FRAME

**2.16** Booth will accept a KS-19928, List 2 card frame. Refer to Section 508-811-100.

### DIRECTORY HANGER, RACK, AND SHELF ARRANGEMENTS

**2.17** Unless otherwise specified, a KS-19580, List 29 shelf assembly is furnished with each booth (Fig. 8). The List 29 shelf will accept a KS-20030, List 1 or List 2 directory hanger; order separately.

**2.18** Refer to Fig. 9 for optional shelf arrangements.

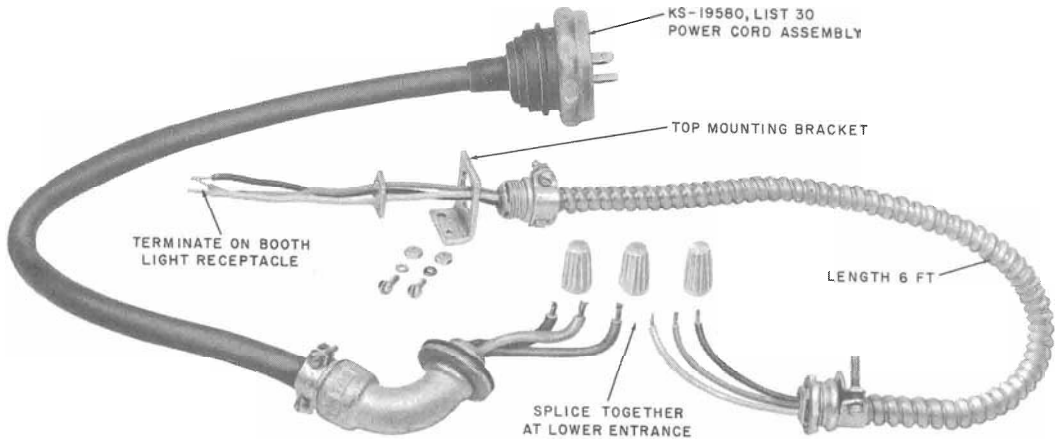


Fig. 5—KS-19580, List 31 Power Cord Group



Fig. 6—KS-19425, List 24 Power Cable Assembly

**SEAT ASSEMBLY**

2.19 This booth is designed primarily for standup service; however, a KS-19425, List 11 seat assembly can be used if desired (Fig. 10). Order

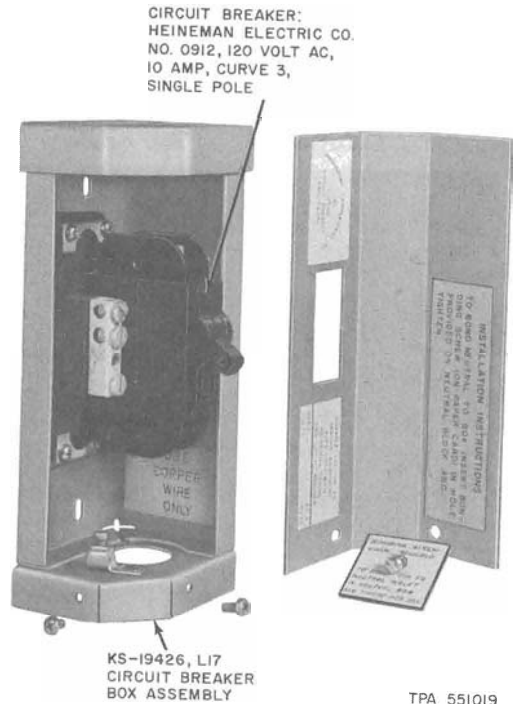


Fig. 7—Circuit Breaker and Box Assembly



Fig. 8—KS-19580, List 29 Shelf Assembly with KS-20030, List 2 Directory Hanger

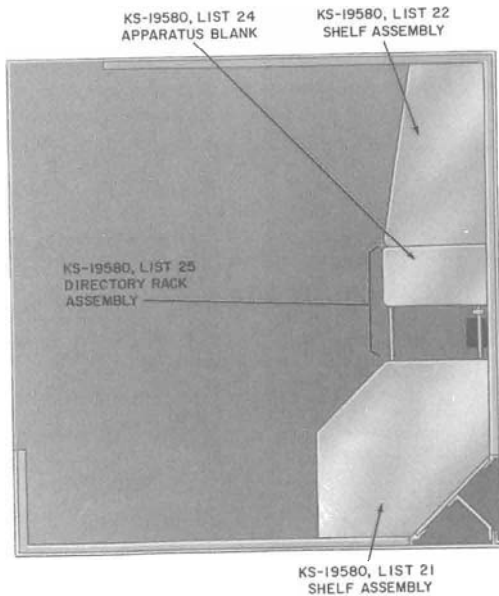


Fig. 9—Rear Wall Shelf Arrangement

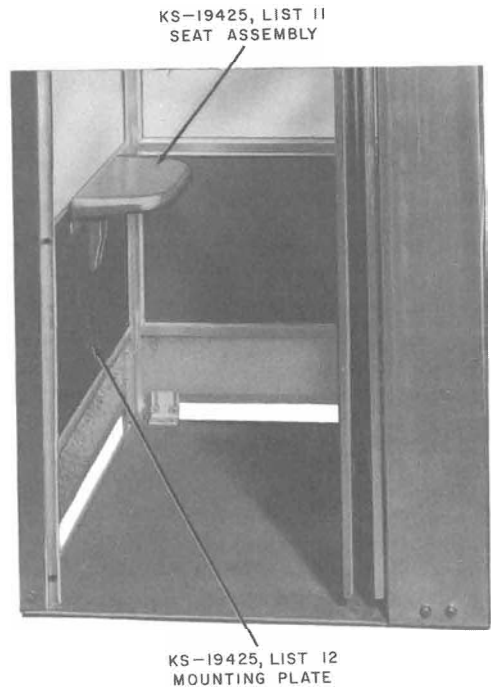


Fig. 10—KS-19425, List 11 Seat Assembly with KS-19425, List 12 Mounting Plate

seat assembly and KS-19425, List 12 mounting plate separately when required.

#### FLOOR

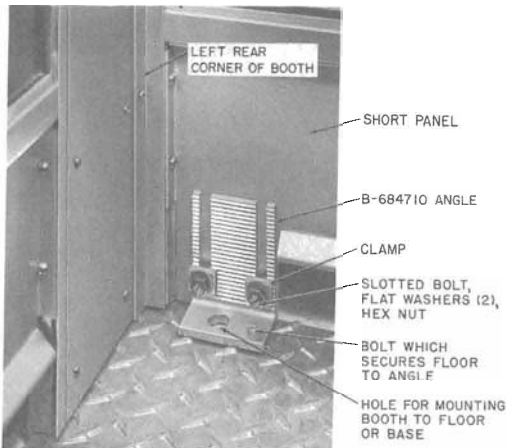
2.20 Unless otherwise specified, an aluminum tread floor is furnished.

#### LEVELING DEVICES

2.21 Adjustable mounting angles are provided to facilitate booth leveling up to 3 inches (Fig. 11). They are also used for bolting the booth to its mounting surface.

#### MULTIPLE KIT

2.22 Refer to Fig. 12.



**Fig. 11—Anchor Bracket and Leveling Device**

### ORDERING GUIDE

**2.23** A standard booth is available which can be ordered as a KS-19580, List 1 booth without specifying additional list numbers. It has a List 60 finish and is equipped as follows:

- 1—KS-19580, List 72 Sign Panel
- 3—KS-19580, List 80 Sign Panels
- 3—KS-19580, List 12 Large Side Panels
- 2—KS-19580, List 14 Glass Door Panels
- 6—KS-19580, List 10 Small Side Panels
- 1—KS-19580, List 38 Bottom Panel
- 1—KS-19580, List 39 Bottom Panel
- 1—KS-19580, List 50 Bottom Panel
- 1—KS-19580, List 29 Shelf Assembly
- 1—KS-19207, List 7 Light Fixture

**2.24** The following are examples of typical orders.

#### *Example 1 (Single booth):*

- 1—KS-19580, List 1 Telephone Booth

#### *Example 2 (Two booths):*

2—KS-19580, List 1 Telephone Booths with List 61 finish consisting of:

- 1—KS-19580, List 20 Multiple Kit with KS-19580, List 61 Finish
- 2—KS-19580, List 75 Sign Panels
- 4—KS-19580, List 84 Sign Panels
- 5—KS-19580, List 12 Large Side Panels
- 5—KS-19580, List 10 Small Side Panels
- 5—KS-19580, List 93 Small Porcelain Enamel Panels
- 4—KS-19580, List 14 Glass Door Panels
- 2—KS-19580, List 40 Bottom Panels with List 61 Finish
- 2—KS-19580, List 41 Bottom Panels with List 61 Finish
- 2—KS-19580, List 49 Bottom Panels with List 61 Finish
- 1—KS-19261, List 1 Light Control
- 2—KS-19580, List 51 Receptacle Assemblies
- 2—KS-19425, List 22 Cable Assemblies
- 1—KS-19580, List 30 Power Cord Assembly
- 2—KS-19580, List 28 Foundation Templates

### 3. INSTALLATION

**3.01** Booth location should be:

- Within full view of public
- Readily accessible to customer
- Free of such hazards as broken or uneven pavements
- Spaced with a minimum clearance of 6 inches from property lines and buildings

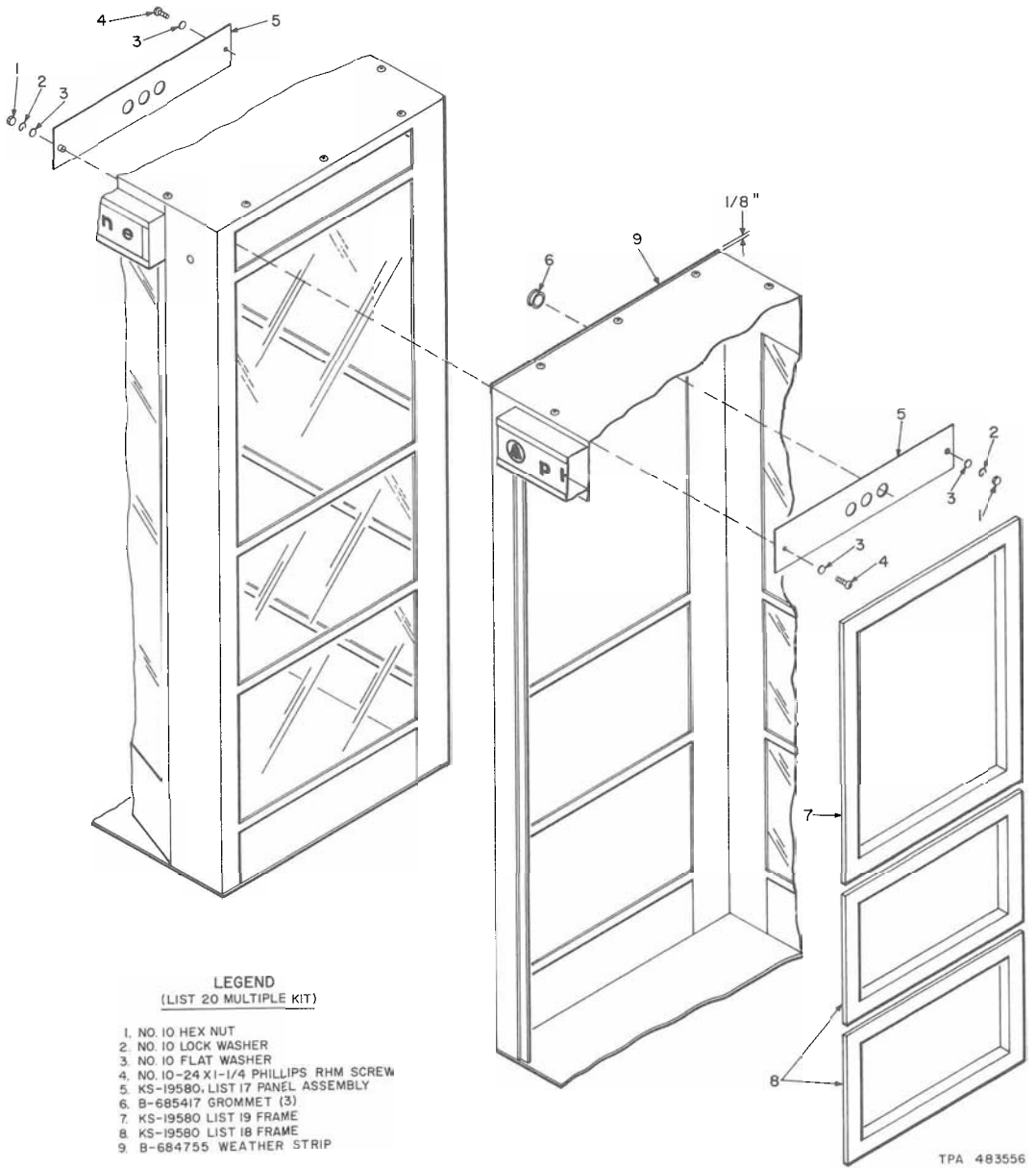


Fig. 12—KS-19580, List 20 Multiple Kit

- Placed with as little step-up as possible and still maintaining proper drainage.

3.02 The KS-19580 booth requires anchoring at all installations.

### INSTALLATION OF FOUNDATION TEMPLATE

3.03 When necessary to provide a concrete base, a KS-19580, List 28 foundation template (Fig. 13) is used. Install the template as follows:

- Prepare a form 40 inches square with an inside depth of 10 inches (Fig. 14).
- Tamp 6 inches of cinders or gravel in the bottom of form.
- Position the template in the form on wooden blocks so that the top of four mounting inserts will be flush with concrete base as shown in Fig. 14.



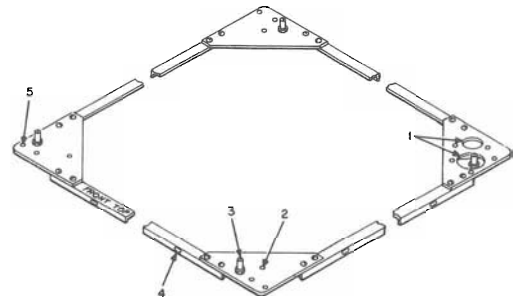
*Nail holes are provided in the four corners of the template for fastening the wooden blocks. Use the blocks to level and support the template at the proper height.*

- If underground power and telephone wires are to be used, provide for holes in the concrete base at the positions of corresponding holes in the template.



*Do not remove screw plugs from booth mounting inserts until booth is installed. Their sole purpose is to prevent dirt from filling mounting holes.*

- Pour concrete around the template to fill the form.
- For multiple booth installations, where no separation between booths is required, fasten adjacent templates together with two 10-32 by 1/2 RHM screws and two No. 10 hex nuts.
- For multiple booth installations, where separation of booths is required, fasten adjacent templates together with steel straps fabricated locally and No. 8 sheet metal screws.
- For each additional booth, lengthen the form by approximately 33-1/2 inches.



#### LEGEND:

- HOLES FOR UNDERGROUND TELEPHONE AND POWER WIRE ENTRANCE.
- NAIL HOLES FOR ATTACHING TEMPLATE TO LEVELING BLOCKS.
- BOOTH LEVELING INSERT.
- HOLES FOR FASTENING TWO TEMPLATES TOGETHER WHERE SEPARATION IS NOT REQUIRED.
- HOLES FOR FASTENING STEEL STRAPS WHERE SEPARATION OF TEMPLATES IS REQUIRED.

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Fig. 13—KS-19580, List 28 Foundation Template

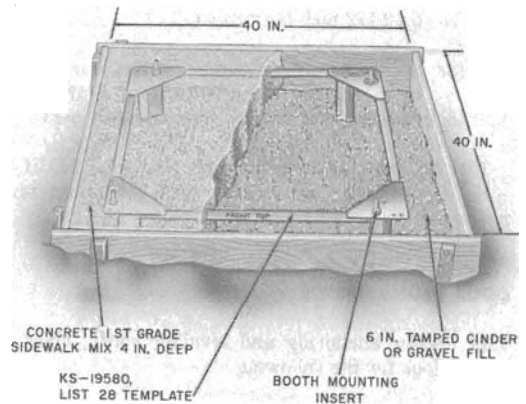


Fig. 14—Concrete Base Preparation with KS-19580, List 28 Template

### INSTALLATION OF BOOTH

3.04 Secure booth as follows:

- If a KS-19580, List 28 foundation template is used, remove insert plugs from template and secure anchor brackets (Fig. 11) to template using four 3/8-16 by 1-1/4 hex head

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bolts, four 3/8-inch lockwashers and four 3/8-inch flatwashers.

(b) If a KS-19580, List 28 foundation template is not used, and the booth is to be mounted on concrete, perform the following operations:

- (1) Mark the locations for four mounting holes.
- (2) Drill four 5/8-inch diameter holes to accept 3/8-inch machine bolt anchors for bolts.
- (3) Install the fasteners.
- (4) Secure anchor brackets of booth to bolt anchors using four 3/8-16 (length required) hex head bolts, four 3/8-inch lockwashers, and four 3/8-inch flatwashers.

(c) If booth is to be mounted on a wooden floor, perform the following operations:

- (1) Mark the location for four mounting holes.
- (2) Drill four lead holes to accommodate 5/16 by 2-1/2 inch lag screws.
- (3) Secure booth to floor using the four 5/16 by 2-1/2 inch lag screws, four 5/16-inch lockwashers, and four 5/16-inch flatwashers.

(d) Adjust the anchor brackets (Fig. 11) if necessary, and ensure that the booth is level.

## DOOR REQUIREMENTS

**3.05** After anchoring and leveling booth, check door for the following:

- (a) Door remains open 2 to 3 inches when it is at normal position.
- (b) When pushed closed from inside, the door should remain completely closed.
- (c) A pull on the handle should open and restore the door to normal position.
- (d) See Part 4 for door adjustment.

## TELEPHONE WIRING



*Aerial wire spans fastened to booth should not exceed 25 feet.*

### First Attachment

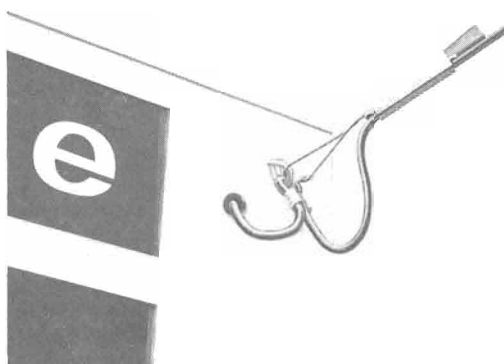
**3.06** Attach drop wire hook (Fig. 15) or corner bracket (Fig. 16) (whichever is required) on right rear column adjacent to the entrance hole as follows:

#### A. Drop Wire Hook

- (1) Secure drop wire hook (Fig. 15) to clinch nut (provided with booth) using one 1/4-20 by 3/4 FHM screw, one 1/4-inch flatwasher and one 1/4-inch lockwasher.

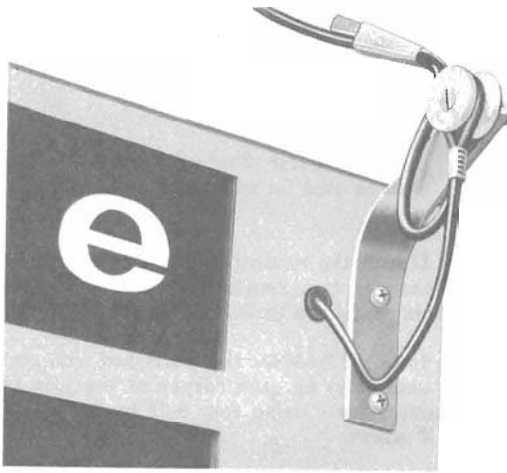
#### B. Corner Bracket

- (1) Secure the corner bracket (Fig. 16) to the threaded clinch nut using one 1/4-20 by 3/4 Phillips RHM screw.
- (2) Using the bracket as a template, drill a clearance hole for another 1/4-inch screw.
- (3) Further secure the bracket to the booth using one 1/4-20 by 3/4 Phillips RHM screw, one 1/4-inch flatwasher, one 1/4-inch lockwasher, and 1/4-inch hex nut.



**Fig. 15—Drop Wire Hook for First Attachment**





**Fig. 16—Corner Bracket for First Attachment**

#### Drop Wire

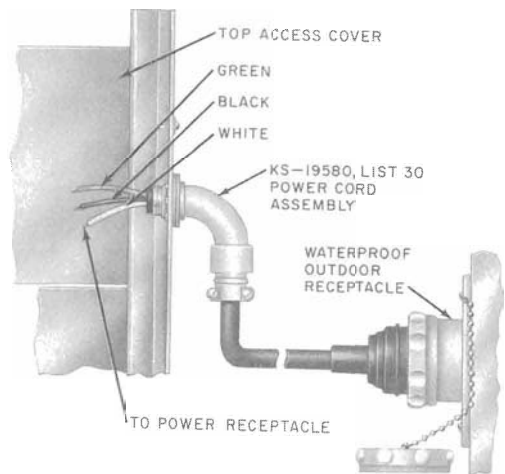
- 3.07** Telephone wire entrance holes are located in the following locations.
- Top-rear of right-side column
  - Bottom of right-rear column
  - Through metallic conduit to holes provided in the right-rear corner of the booth floor.
- 3.08** Feed drop wire through entrance hole and terminate on 123A1A station protector (see 3.12).

### ELECTRICAL WIRING AND GROUNDING

#### Wiring

- 3.09** Power wire entrance holes are located in the following locations:
- Top of right-rear column
  - Bottom of right-rear column
  - Through metallic conduit to holes provided in the right-rear corner of the booth floor.

- 3.10** Refer to 2.13 for available cords and Fig. 17 and 18 for their usage.
- 3.11** If a circuit breaker is required, order parts per 2.13 and install circuit breaker box on bracket behind lower access cover using the two 8-32 by 3/8 Phillips RHM screws.



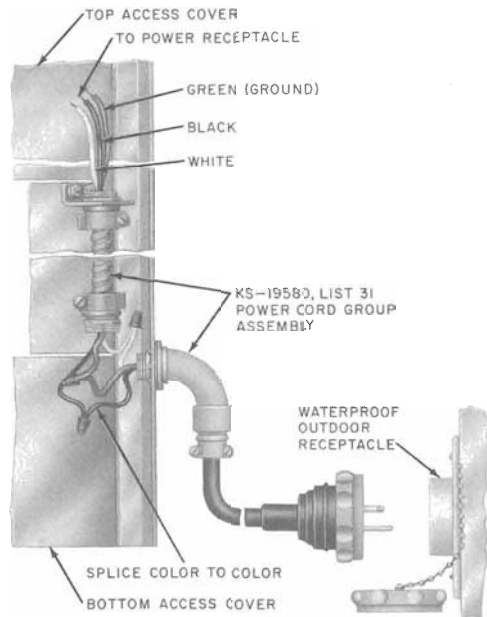
**Fig. 17—KS-19580, List 30 Power Cord Assembly for Overhead Entrance**

#### Grounding

- 3.12** Ensure that the ground terminal of the station protector is connected to the booth with bonding wire provided.
- 3.13** In multiple installations, bond the booths together for grounding purposes.
- 3.14** For additional grounding information, refer to Section 508-100-100.

### OPTIONAL SHELF ARRANGEMENTS AND DIRECTORY RACK

- 3.15** Install the List 21 shelf assembly (Fig. 9) using four 10-32 by 1/2 Phillips FHM screw and four No. 10 CSK washers.



**Fig. 18—KS-19580, List 31 Power Cord Group Assembly for Ground Level Entrance**

**3.16** The KS-19580, List 22 shelf assembly is used along the rear wall in conjunction with a KS-19580, List 25 directory rack assembly.

**3.17** Install the List 22 shelf assembly using four 10-32 by 1/2 Phillips FHM screws and four No. 10 CSK washers.

**3.18** Install the List 25 directory rack assembly between the two shelves using four 10-32 by 1/2 Phillips FHM screws, two No. 10 flatwashers and two No. 10 lockwashers.

**3.19** If a KS-19580, List 26 or List 27 nameplate blank is desired, install it along the top edge of List 25 directory rack assembly using the two pins furnished with nameplate.

**3.20** Install a KS-19580, List 24 apparatus blank, if required, using two 10-32 by 5/8 Phillips RHM screws, four No. 10 fiber washers, and two

No. 10 elastic stop nuts furnished with apparatus blank.

### SEAT ASSEMBLY

**3.21** A KS-19425, List 12 mounting plate (Fig. 10) must be used for mounting the seat. Install as follows:

(a) Install the mounting plate in the same manner as a standard glass panel in the bottom position on the left side of the booth.

(b) Install a B-650894 clip (furnished with seat assembly) on each corner of the List 12 mounting plate using four 8-32 by 3/8 SEMS RHM screws.



*Install the clips on the inside of the booth. Their purpose is to prevent the removal of retaining strips.*

**3.22** Install the seat assembly on the upper portion of the mounting plate using the following items (furnished with seat assembly) and install in the sequence listed.

- Four 1/4-20 by 1-1/8 carriage bolts (install with heads on outside of booth)
- Four B-650893 spacers
- Seat assembly
- Two 1/4-inch flatwashers (front and rear bolts)
- Four 1/4-inch lockwashers
- Four 1/4-20 cap nuts

### MULTIPLE INSTALLATIONS

**3.23** This booth is designed so that two or more booths can be installed side-by-side with only one thickness of panels between booths.

**3.24** Perform the following operations for installing multiple booths.

- (a) Install the first booth in the same manner outlined in 3.04.

- (b) Install adhesive backing weather strip on second booth per Fig. 12.
- (c) Install the second booth adjacent to the first booth.



*The second booth will not have glass panels and phone sign in the side which joins the first booth.*

- (d) Join the two booths together using a KS-19580, List 20 multiple kit (Fig. 12). The frames are installed in the same manner as the glass panels.
- (e) Refer to Fig. 19 and 20 for wiring arrangements of multiple installations.

#### 4. MAINTENANCE

##### BOOTH CHECK POINTS

- Safe approach to booth (have dangerous conditions corrected)
- Appearance of booth
- Electrical grounding
- Door operation
- Panels and signs
- Booth lighting
- Directories and binders
- Dome and lights
- Security of booth anchorage
- Loose screws and bolts
- Seat assembly (if applicable)
- Shelf assemblies
- Power cords

##### DOMES ASSEMBLY



*Use eye protection when removing the dome assembly.*

- 4.01 The B-551952 dome assembly must be removed to make the light assembly accessible. Do this in accordance with Fig. 21.
- 4.02 Replace dome assemblies which do not meet company standards.

##### LIGHT AND BLOWER UNIT



*Use eye protection when handling fluorescent lamps. Before making any repairs or replacements in electrical equipment, disconnect plug or turn the service switch off and verify that circuit is dead by checking with an approved voltmeter.*

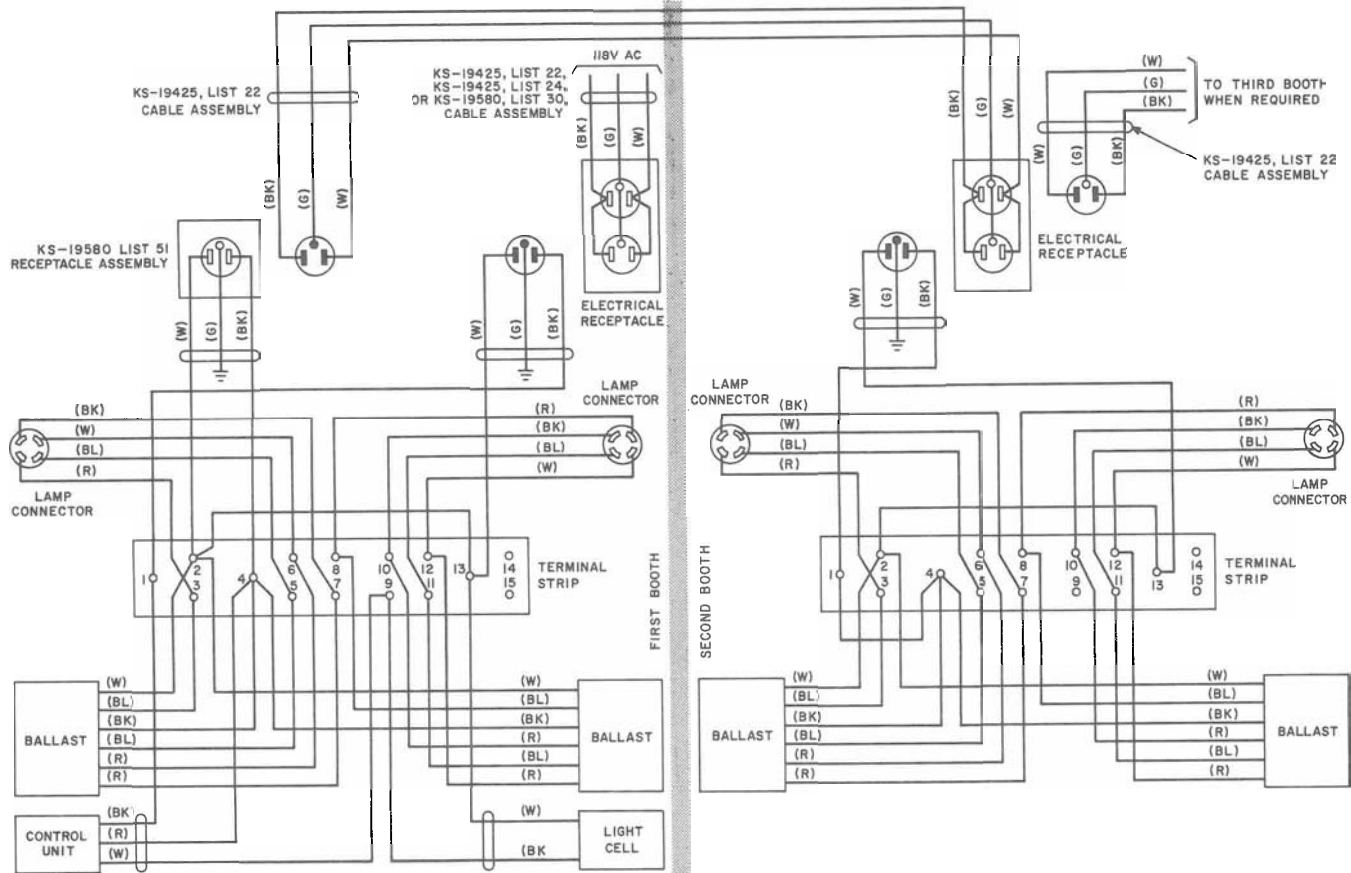
- 4.03 Each unit is equipped with two fluorescent Circline 40-watt cool white lamps.
- 4.04 If the KS-19207, List 3 light and blower unit is present, ensure that the door operated B-650927 switch assembly actuates properly when the door is closed. Also ensure that the manually operated blower switch assembly (B-684779), located in the right front corner of the booth turns the blower on and off.
- 4.05 Ensure that all electrical leads are securely clamped away from the air inlet hole and from the rotating impeller if a blower is present.
- 4.06 When ballast shows signs of leaking compound, replace the complete KS-19207 unit per Section 508-820-100.

##### PANEL REPLACEMENT

###### Side and Rear Panels

*Warning: Wear gloves and eye protection when handling glass panels to prevent personal injury. Use care when handling tempered glass. Nicks or scratches will damage the glass and may cause it to shatter. Do not allow metal tools to come in contact with edge of tempered glass. Before installation, examine glass for nicks or chips along edges. If such defects are apparent, do not use this glass.*

- 4.07 Replace those panels which are broken or which will not meet local telephone company standards. Refer to Table A for available panels.

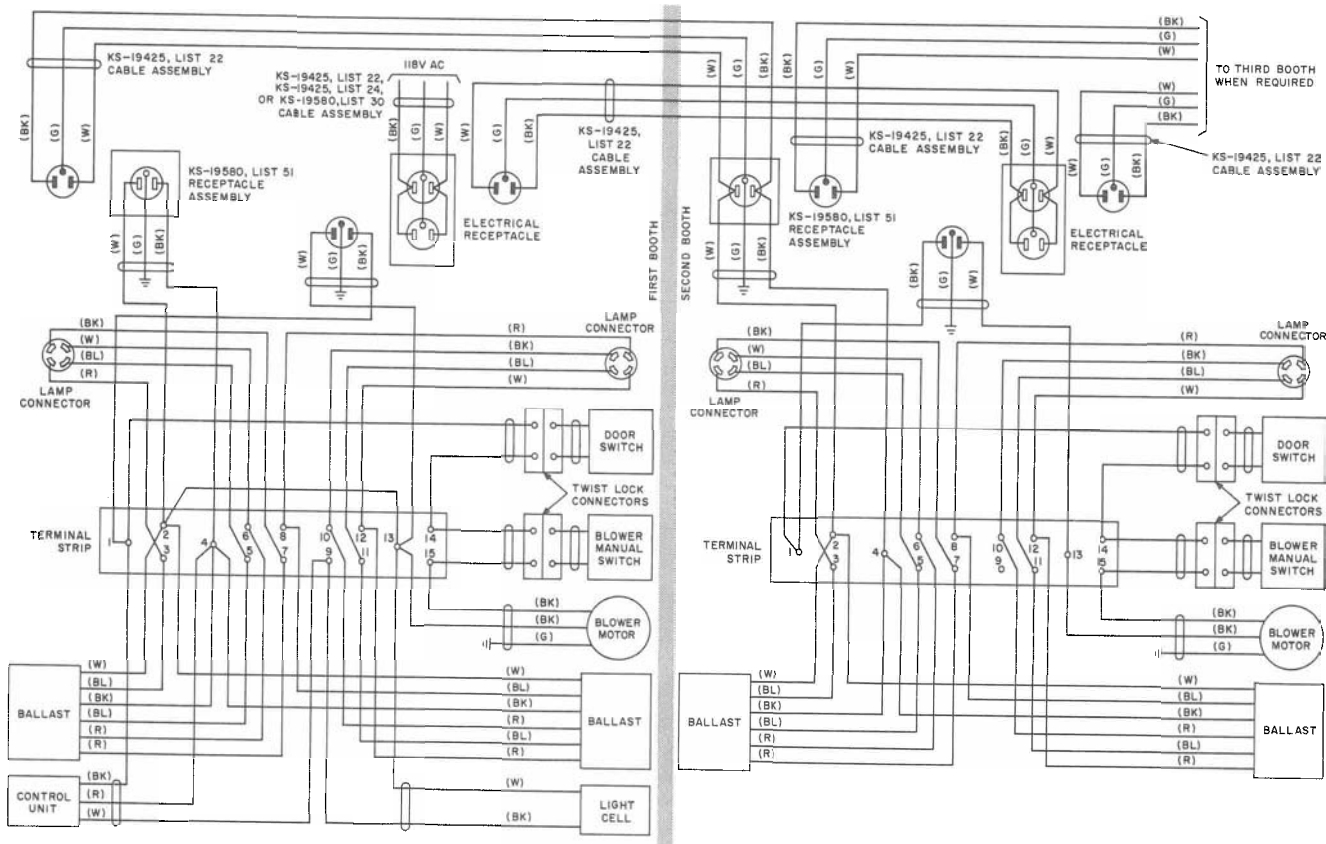


## NOTE:

FOR MULTIPLE INSTALLATIONS USING KS-19207, LIST 7 UNITS, AND USING A KS-19261 LIGHT CONTROL UNIT (MAXIMUM OF FIVE BOOTHS FOR EACH CONTROL UNIT), REMOVE THE STRAP WIRE FROM TERMINAL STRIP TERMINALS 1 AND 4 IN FIRST BOOTH. INSTALL A KS-19580, LIST 51 RECEPTACLE ASSEMBLY IN THE FIRST BOOTH. CONNECT ELECTRICAL RECEPTACLE OF SECOND BOOTH TO LIST 51 RECEPTACLE OF FIRST BOOTH USING KS-19425, LIST 22 CABLE ASSEMBLY. CONNECT ELECTRICAL RECEPTACLE OF THIRD, FOURTH, AND FIFTH BOOTHS TO ELECTRICAL RECEPTACLE OF PREVIOUS BOOTH USING KS-19425, LIST 22 CABLE ASSEMBLY.

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Fig. 19—Wiring Diagram of Multiple Installation Using KS-19207, List 7 Light Fixture

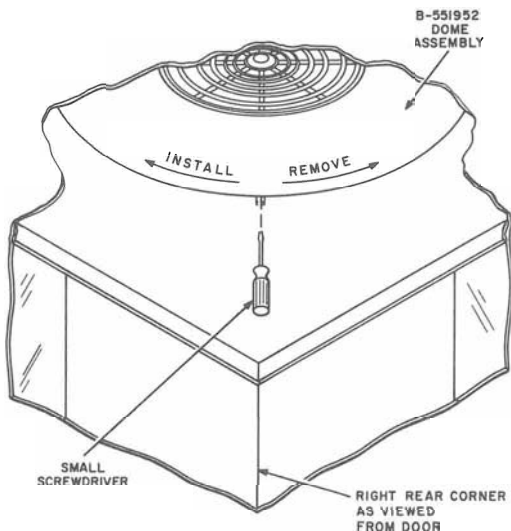


## NOTE:

FOR MULTIPLE INSTALLATIONS USING KS-19207, LIST 3 LIGHT AND BLOWER UNITS, AND USING A KS-19261 LIGHT CONTROL UNIT (MAXIMUM OF FIVE BOOTHS FOR EACH CONTROL UNIT), REMOVE THE STRAP WIRE FROM TERMINAL STRIP TERMINALS 1 AND 4 IN ALL BOOTHS. REMOVE THE STRAP WIRE FROM TERMINALS 2 AND 13 IN ALL BOOTHS EXCEPT FIRST BOOTH. INSTALL A KS-19580, LIST 51 RECEPTACLE ASSEMBLY IN EACH BOOTH. CONNECT LIST 51 RECEPTACLE OF SECOND, THIRD, FOURTH AND FIFTH BOOTHS TO LIST 51 RECEPTACLE OF PREVIOUS BOOTH USING KS-19425, LIST 22 CABLE ASSEMBLY. CONNECT ELECTRICAL RECEPTACLES IN SAME MANNER.

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Fig. 20—Wiring Diagram of Multiple Installation Using KS-19207, List 3 Light and Blower Unit



## NOTES:

1. FOR REMOVAL, INSERT SMALL SCREWDRIVER THROUGH SLOT IN CEILING, DEPRESS DETENT SPRING, AND TURN DOME ASSEMBLY COUNTERCLOCKWISE.
2. FOR INSTALLATION, PLACE DOME ASSEMBLY IN CEILING AND TURN IT CLOCKWISE UNTIL DETENT SPRING ENGAGES AND LOCKS DOME.

B-567878

Fig. 21—Method of Removing Dome Assembly

4.08 Booth panels and signs are held in place by four interlocking retaining strips. They are inserted in sequence as shown in Fig. 22. The No. 4 strip is rippled and is held in place by interface friction.

4.09 Replace panels as follows:

- (1) Remove No. 4 locking strip.
- (2) Remove retaining strips No. 2 and 3.
- (3) Remove retaining strip No. 1.
- (4) Remove panel and rubber glazing strip.
- (5) Apply rubber glazing strip to replacement panel.
- (6) Insert panel into frame with the beaded edge of glazing strip on the outside.
- (7) Replace retaining strips in sequence as shown in Fig. 22.

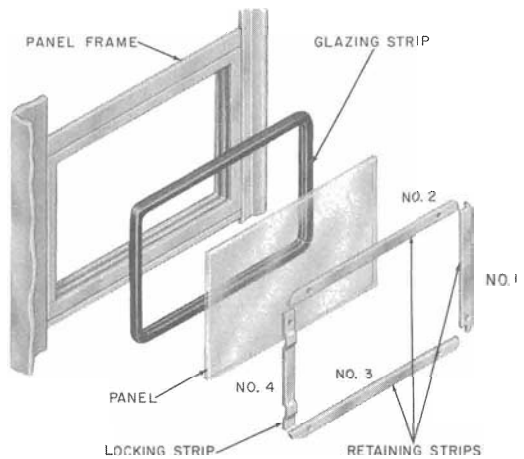


Fig. 22—Assembly of Side or Rear Panels

## Bottom Panels

4.10 Replace those panels which are broken or which will not meet local telephone company standards. Refer to Table A for available panels.

4.11 To remove panels, remove Phillips RH screws (eight for short panel and ten for solid panel).

**THINK** *The rear bottom panels are equipped with a mounting bracket and leveling device. When ordering replacement panels for the rear, and a mounting bracket angle (B-684710) is not needed, the following numbers may be used.*

- KS-19580, List 49—Solid Panel
- KS-19580, List 50—Short Panel

## PHONE SIGNS

4.12 The front sign may be removed as follows:

- (a) Remove four self-tapping screws and the top metal retainer which secures the sign.
- (b) Slide the sign up and out of the enclosure assembly.

- (c) Use reverse procedure for installing.



**Roof must be removed before side and rear sign panels can be removed. See 4.23 and 4.24.**

- 4.13** After roof is removed, the side and rear signs are removed in the same manner as the side panels (see 4.09 and Fig. 22).
- 4.14** Replace signs which are broken or which will not meet local company standards. Refer to Table B for available signs.

### DIRECTORIES AND BINDERS

- 4.15** Directory binder rods or hinge fasteners shall not be broken or distorted to the extent that directories are not capable of being held securely in the binder. Hinges shall not be so bent, burred, or distorted as to obstruct the free passage of hinge fasteners or prevent smooth operation of covers.
- 4.16** Binder locking devices shall operate freely and lock securely. Adjustable backplates shall be in good condition.
- 4.17** Ensure that a rubber bumper is in place on the directory rack hanger to cushion the binder as it drops into the rack.
- B-685401 for KS-19425, List 16 directory rack
  - B-697467 for KS-20030, List 3 directory hanger

- 4.18** Install a new bumper, if required as follows:
- (a) Soften old adhesive with trichloroethane and remove.
  - (b) Install new bumper using 3M Company EC-1711 adhesive or equivalent.

### PROTECTOR

- 4.19** The booth is equipped with a bonding wire at each of the access covers. Ensure that this wire is secured to the booth and protector.

- 4.20** If the bonding wire becomes broken, replace with copper or aluminum wire no smaller than No. 14 gauge.

- 4.21** To replace old stationary access cover with new detachable access cover (Fig. 23), perform following operations.

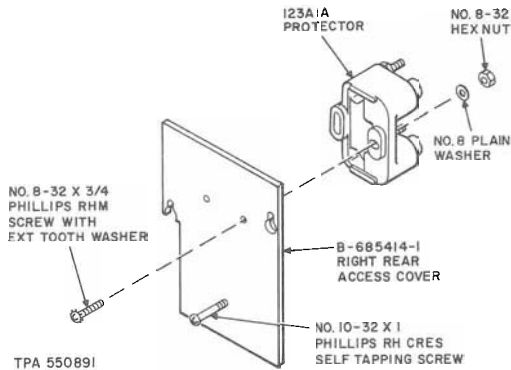
- (a) Remove dome assembly.
- (b) Remove three 8-32 by 5/8 Phillips RH self tapping screws which secure access cover to booth frame.
- (c) Pull access cover forward and disconnect telephone wiring from protector.
- (d) Remove two 8-32 by 3/4 Phillips RHM screws, two No. 8 plain washers, and two No. 8-32 hex nuts which secure protector to access cover.
- (e) Install protector on new access cover per Fig. 23 using hardware retained in (d).
- (f) Install a 10-32 by 1 Phillips RH CRES self tapping screw per Fig. 23. This screw serves as a handle.
- (g) Install two of the three 8-32 by 5/8 Phillips RH self tapping screws in booth framework to accept key holes in new access cover.
- (h) Connect telephone wiring to protector.
- (i) Mount access cover on screws installed in (g).

### FLOOR

- 4.22** If a booth is equipped with an abrasive-clad floor, the finish can be restored with the use of Goodyear Griptred flooring and protective coating, dark gray 592-7005 or equivalent. This can be applied with an ordinary paint brush.

### ROOF

- 4.23** If it becomes necessary to remove the roof, remove twelve 8-32 by 5/8 Phillips RH screws and lift off.
- 4.24** There are four B-650854 adhesive backed rubber strips which are riveted along the



**Fig. 23—Assembly of 123A1A Protector on Right Rear Access Cover**

booth edge under the roof. Check strips for damage each time roof is removed. Replace strips as necessary.

**DOOR REQUIREMENTS (See Fig. 24 For Replacement Parts)**

**4.25** The door shall operate freely and smoothly without squeaking or chattering. The nylon rollers and door track shall be clean of foreign material and the track shall not be gouged, burred, or scored causing rough operation of the door.

**4.26** With the booth level, when the door is fully closed, it shall remain closed until opened manually, and when in the fully closed position the top of the door shall be in alignment with the door frame.

**4.27** The door shall be held open 2 to 3 inches when in the normal position. Ensure that maximum tension is obtained on spring in center of door (Fig. 24).

**4.28** The KS-19580 booth will have either a B-651721-2 short-roller door guide assembly (Fig. 25) or a B-993172-2 long-roller door guide assembly (Fig. 26). The B-993172-2 door guide assembly requires a different ceiling, baffle, and a deeper track to accommodate the longer roller. If a problem exists with door guide rollers jumping out of the track, booths can be modified in the service center to accept the long-roller door guide.

**4.29** The door actuated switch shall operate as follows when the manual blower switch is on:

- (a) With the door fully closed, the blower motor shall run.
- (b) With the door held by the door guide spring in the open position specified in 4.27, the blower motor shall be off.



*The door switch shall have no effect on the operation of the booth lamps if the lamps are wired for continuous illumination or automatic light control.*

**4.30** The clear door opening shall be a minimum of 21 inches.

**4.31** Rubber bumpers at the bottom of the doors shall not be frayed or torn to expose underlying metal. Screws and retainer strips shall hold bumpers securely.

**4.32** Ensure that angle bracket associated with felt bumper in door track is tight.

**DOOR MAINTENANCE**

**4.33** If door hinges squeak, lubricate them at each joint between the barrels with KS-14774, L2G lubricating grease or equivalent; a KS-14796 oiler may be used.

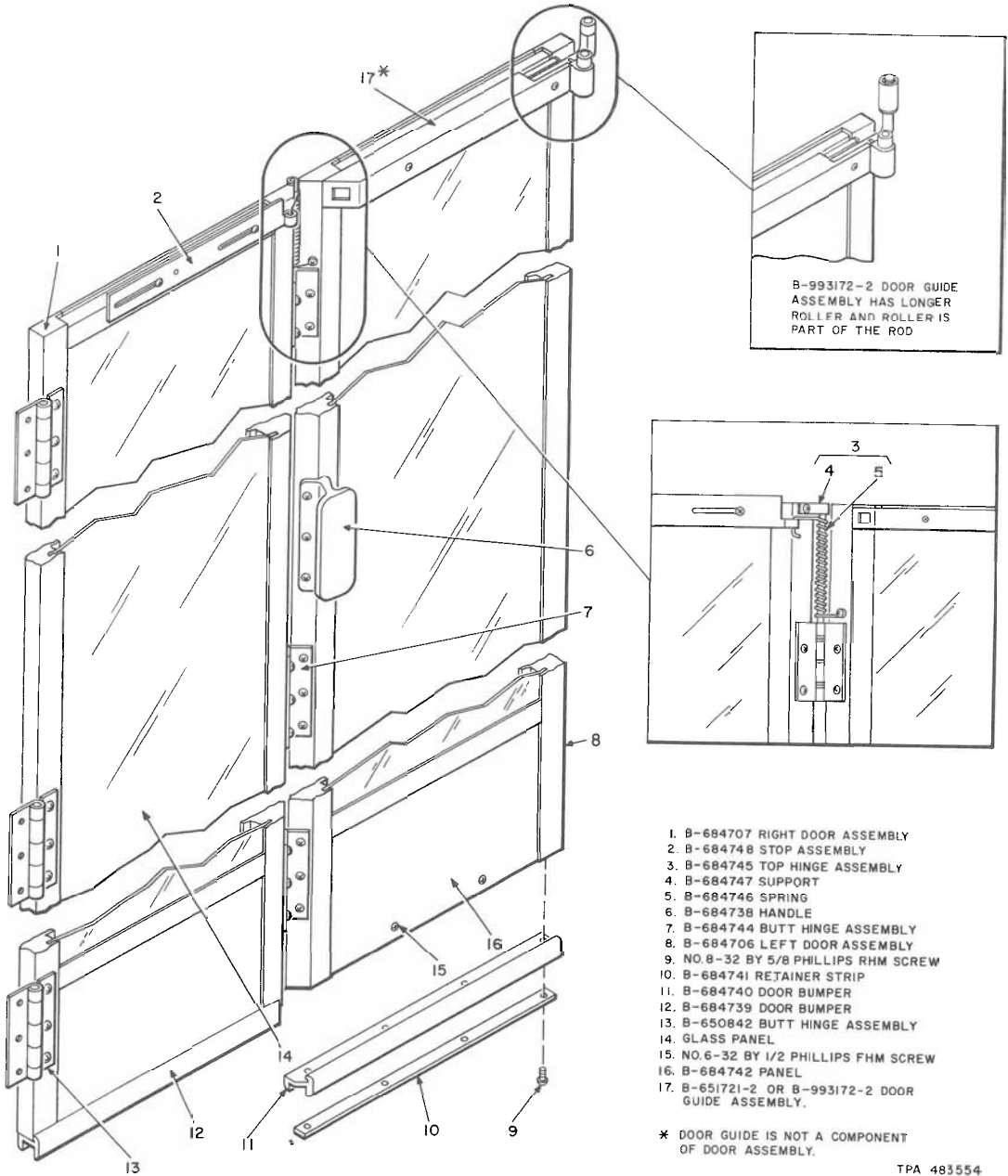
**4.34** Replace glass panels in similar manner as side panels (Fig. 22).

**4.35** Replace damaged bumpers along bottom of door (Fig. 24).

**4.36** To change door closing spring tension, adjust B-684748 stop assembly as follows:

- (a) Loosen the two stop assembly mounting screws.
- (b) Move the assembly left or right to obtain the spring tension required.
- (c) Tighten screws and recheck tension.





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Fig. 24—B-684705 Door Assembly

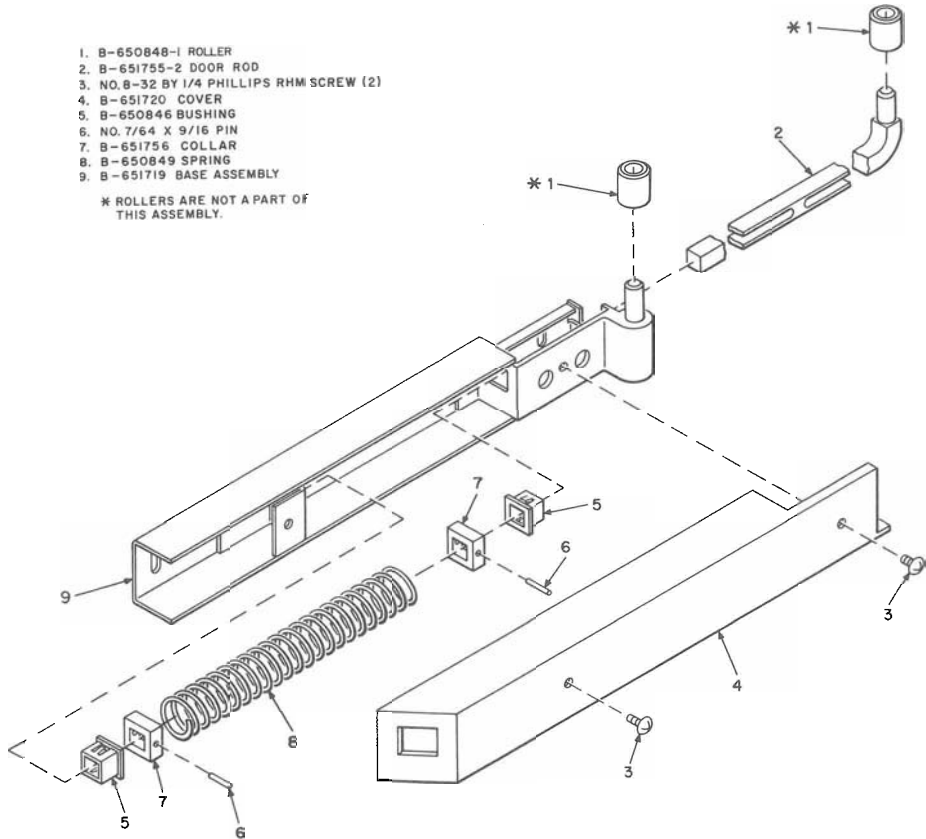


Fig. 25—B-651721-2 Door Guide Assembly

**4.37** When door rollers do not have proper vertical engagement in the track, adjust B-651721-2 or B-993172-2 door guide assembly as follows:

- Remove two screws and B-651720 cover (Fig. 25 and 26.)
- Loosen the three door guide assembly mounting screws (No. 8 by 1/2 Phillips RH self-tapping).
- Move the door guide assembly up or down to obtain proper roller position.

**Note:** In most cases, the maximum upward position will be required.

- Tighten screws and recheck rollers.
- Install B-651720 cover.

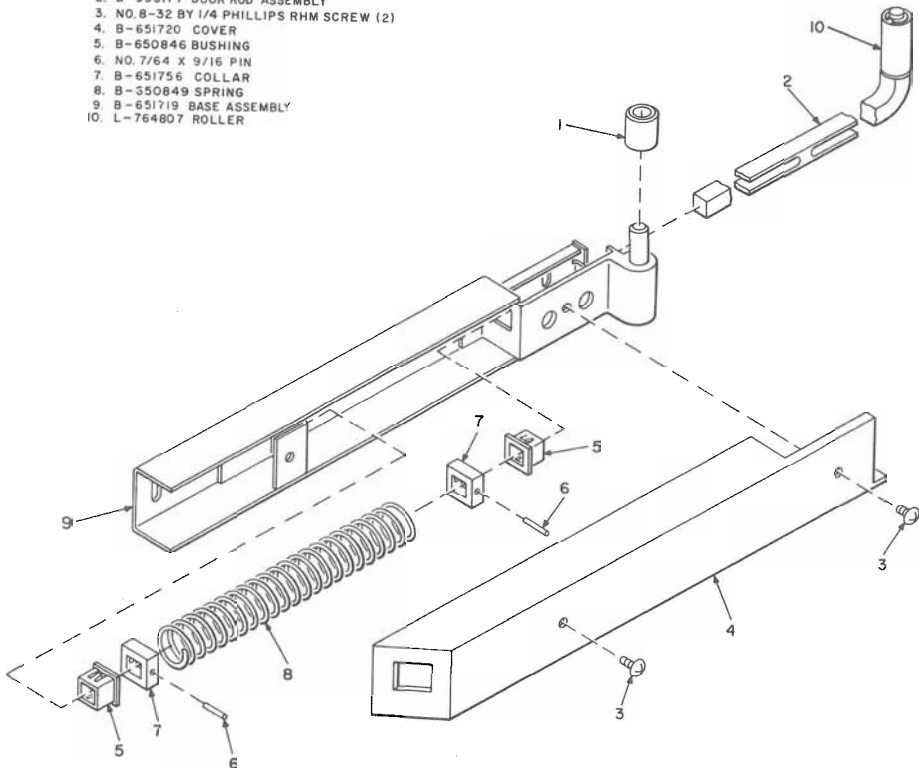
#### REPLACEMENT PARTS

**4.38** The parts listed in Table C are not shown in Fig. 24, 25, or 26 but may be ordered as necessary. Refer to Tables A and B for panels and signs.



*The B-651921 bumper (Fig. 27), listed in Table C, is a replacement part; however, all booths have not been equipped with these bumpers. A No.*

1. B-650848-1 ROLLER
2. B-993177 DOOR ROD ASSEMBLY
3. NO. 8-32 BY 1/4 PHILLIPS RHM SCREW (2)
4. B-651720 COVER
5. B-650846 BUSHING
6. NO. 7/64 X 9/16 PIN
7. B-651756 COLLAR
8. B-350849 SPRING
9. B-651719 BASE ASSEMBLY
10. L-764807 ROLLER



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Fig. 26—B-993172-2 Door Guide Assembly

*10-32 tapped hole is provided on the right side rail for installation. Ensure that this bumper is either present or installed on each maintenance check. Use screw described in Fig. 27.*

**CLEANING**

- 4.39 Clean booth as directed in Section 508-100-101.

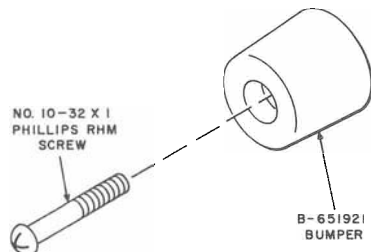


Fig. 27—B-651921 Bumper with Mounting Screw

TABLE C  
REPLACEMENT PARTS

NAME	PART NO. LIST NO., OR DESCRIPTION	REMARKS
Actuator Assembly	B-650929	Actuates B-650927 switch assembly
Angle	B-684710	Adjustable mounting bracket in rear and right front corner
	B-684711	Adjustable mounting bracket in left front corner
	B-650824	Support for B-650825 bumper
	L-764805	Support for L-764806 bumper
Bracket	B-562368	Holds dome in ceiling assembly
Bumper, Felt	B-650825	Located in right end of a shallow door track as viewed from outside front of booth
	L-764806	Located in right end of a deep door track as viewed from outside front of booth
Bumper, Aluminum	B-650826	Located in left end of a shallow door track as viewed from outside front of booth
Bumper, Rubber	B-684714	Used in left door frame
	B-651921	Used on right rail as door stop
Cover Assembly	B-685414-1	123A1A protector access cover
Dome Assembly	B-551952	Circular lens and ventilator under light fixture
Enclosure Assembly	B-685376	Encloses front sign
Floor	B-684719-1	Tread plate
Grommet	B-684716	Used at telephone wire entrance holes
Header Assembly	B-650822	
Lamp	40 Watt-Circline cool white	Used in KS-19207 light unit
Nut, Adjusting	B-684712	Used in conjunction with mounting bracket angles
Plug	Shake Proof Corp. No. 207-560401- 00-3102	Plug button for plugging power wire entrance holes
	Shake Proof Corp. No. 207-440401- 00-0667	Plug button for plugging light control entrance hole

TABLE C (Cont)  
REPLACEMENT PARTS

NAME	PART NO. LIST NO., OR DESCRIPTION	REMARKS
Retainer	B-562371	Use with B-562370 locking spring
Roof Assembly	B-651303	
Spring	B-562370	Locks dome in place
Strip, Glazing	B-685410-1	Side or rear sign
	B-685410-2	Side and rear glass panels (large)
	B-685410-3	Side and rear glass panels (small)
	B-685410-4	Door panels
	B-685411-1	Multiple installation sign panel assembly
	B-685411-2	Aluminum or porcelain type panels (large)
	B-685411-3	Aluminum or porcelain type panels (small)
	B-658410-5	Front sign
Strip, Retaining	B-685372-1	Top of door panels
	B-685372-2	Either side of door panels
	B-685372-3	Bottom of door panels
	B-685372-4	Either side of large side panels
	B-685372-5	Locking strip for large side panels
	B-685372-6	Either side of small side panels
	B-685372-7	Top of small side panels, large side panels, or side and rear phone signs
	B-685372-8	Locking strip for small side panels
	B-685372-9	Bottom of small side panels, large side panels, or side and rear phone signs
	B-685372-10	Either side of phone signs (front and rear)
	B-685372-11	Locking strip for phone signs
Strip, Rubber	B-685412	Adhesive backed roof gaskets*

\* Roof gaskets should be checked for damage each time roof is removed.

TABLE C (Cont)  
REPLACEMENT PARTS

NAME	PART NO., LIST NO., OR DESCRIPTION	REMARKS
Switch Assembly	B-650927	Energizes light and blower when door is closed
	B-684779	Turns blower motor on and off

## KS-20255 TELEPHONE KIOSK (DIAMOND KIOSK)

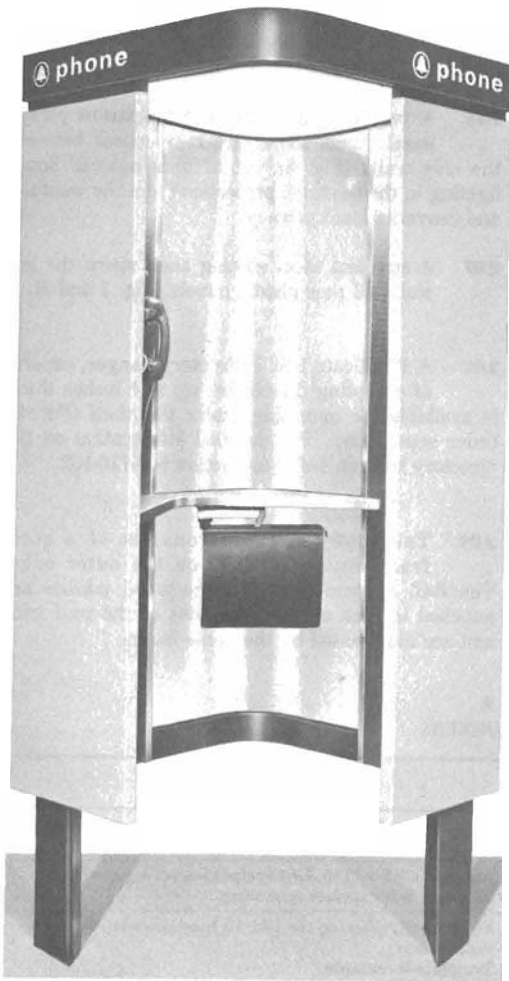


Fig. 1—KS-20255, List 1 Telephone Kiosk

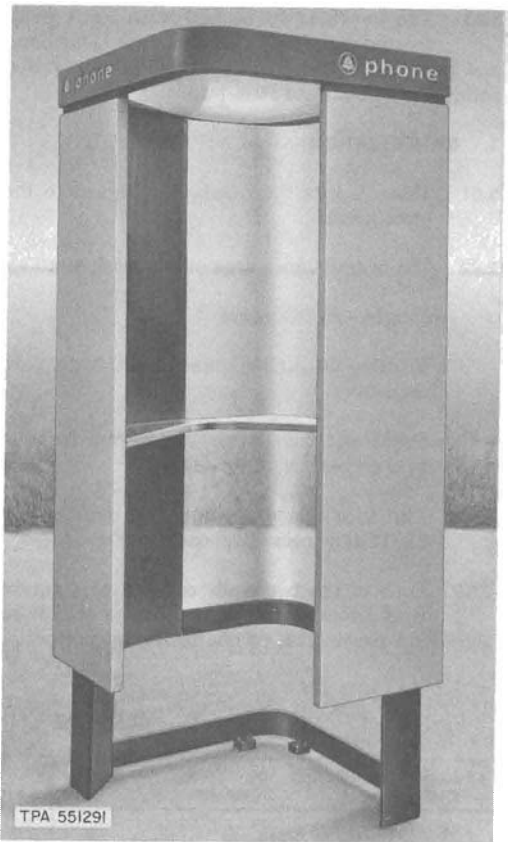


Fig. 2—KS-20255, List 2 Telephone Kiosk

### 1. GENERAL

1.01 Information in this section was formerly contained in Section 508-355-100 which is hereby canceled.

**SECTION 508-430-100**

**1.02** The telephone kiosk (Fig. 1 and 2) is an outdoor diamond shaped steel and plastic, doorless phone booth designed for single installation stand-up service. The mounting surface serves as the floor.

**1.03** The booth is furnished with light gray colored outside walls and dark gray legs and roof trim. Inside walls consist of perforated satin-finished stainless steel panels.

**2. IDENTIFICATION**

**2.01** Table A lists the numbers assigned to the basic items.

**2.02** The overall dimensions of the kiosk are:

- Height—88-1/3 inches
- Width—46 inches (measured from side corners)
- Depth—41 inches (measured from front to rear corner)

**2.03** The kiosk is designed for use with a 1A/1C-type coin telephone set (Fig. 7).

**2.04** Each of the two walls consists of a curved steel framework, enclosed on the outside by solid steel panels and, on the inside, by perforated

panels. Acoustically treated material lies between the panels.

**2.05** These frameworks are mounted on two triangular steel legs (Fig. 4 or 5) which extend up from the mounting surface. Approximately 15 inches of open space exists around the bottom of the booth. Leveling studs are located in the top of these legs.

**2.06** A two sectioned curved transparent plastic panel forms the entire rear corner between the side walls (Fig. 8). It affords natural booth lighting in the daytime, protection from the weather, and conversational privacy.

**2.07** A stainless steel writing shelf spans the left wall and rear plastic panels (Fig. 1 and 2).

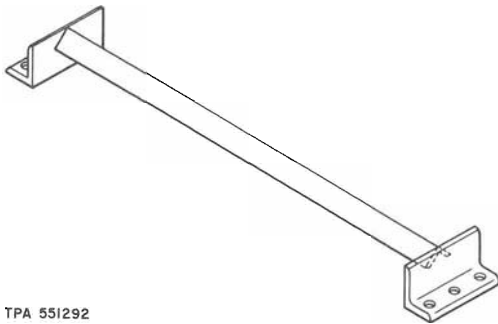
**2.08** A KS-20030, List 3 directory hanger, capable of accepting directories up to 4 inches thick, is available for mounting under the shelf (Fig. 9), order separately. For detailed information on the directory hanger, refer to Section 508-710-102.

**2.09** The roof assembly consists of a steel framework with trim on the outer edge. The Bell System Seal and the word **phone** are punched in each of the four sides of the roof trim, and are illuminated by the dome lamps.

**TABLE A  
BASIC LIST NUMBERS**

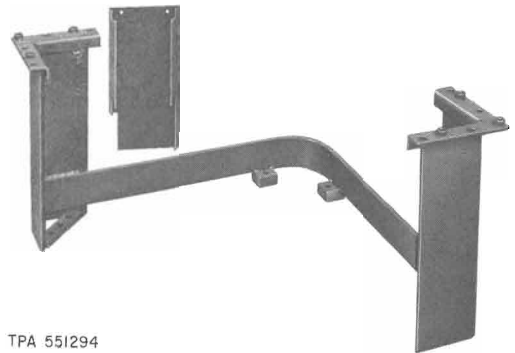
KS-20255 LIST NO.	NAME	FIG.	REMARKS
1	Telephone Kiosk	1	Includes two KS-20255, L13 leg and cover assemblies. Must be mounted on KS-20255, L15 base assembly
2	Telephone Kiosk	2	Includes a KS-20255, L14 surface mount leg assembly. This unit is for surface mounting.
12	Mounting Template	3	For properly aligning the List 15 base assembly during installations. Template is reusable. Order separately
13	Leg and Cover Assembly	4	Component of List 1
14	Surface Mount Leg and Cover Assembly	5	Component of List 2
15	Base Assembly	6	To be embedded in concrete for mounting the List 1 Kiosk. Order separately.
21	Transparent Plastic Panel	8	Upper panel — includes glazing strip
22		8	Lower panel — includes glazing strip





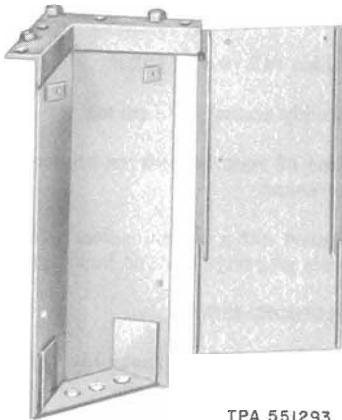
TPA 551292

Fig. 3—KS-20255, List 12 Mounting Template



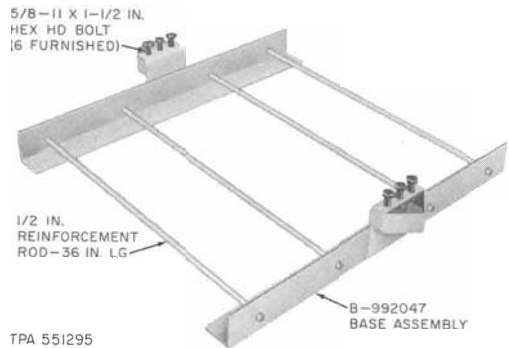
TPA 551294

Fig. 5—KS-20255, List 14 Surface Mount Leg and Cover Assembly



TPA 551293

Fig. 4—KS-20255, List 13 Leg and Cover Assembly



TPA 551295

Fig. 6—KS-20255, List 15 Base Assembly

**2.10** The top dome (roof) is a B-699033 plastic light diffuser which is bonded to the roof assembly with an adhesive sealant and secured with 12 B-699032 retaining clips and 12 No. 8-32 by 3/8 truss head screws (Fig. 10).



*Do not remove this diffuser unless it becomes damaged enough to replace.*

**2.11** The ceiling consists of a B-699034 plastic light diffuser which is held in place by a

B-699087 retainer assembly and four flathead captive screws (Fig. 11).

**2.12** The booth is illuminated by one F36T12/CW/HO and two F24T12/CW/HO fluorescent lamps (Fig. 12).

**2.13** A 2-pole, 15-amp pushbutton circuit breaker (Fig. 13) is located under the shelf in the left wall, protected by a rubber rain shield. Access for operating the circuit breaker switch (which is operated by pushing on the rain shield) is through a small sliding door (Fig. 14) in the perforated panel. The circuit breaker and lamps are prewired



**Fig. 7—Telephone Kiosk with 1A/1C Type Coin Telephone Set Installed**

for continuous lighting. The KS-19261, List 3 light control must be ordered separately if desired.

**2.14** A KS-19261, List 3 light control assembly can be used in conjunction with the circuit breaker. It must be ordered separately. Refer to Section 508-825-100 for complete information on the control unit.

### ORDERING INFORMATION

**2.15** Following are examples of typical orders:

#### *Example 1*

- 1—Kiosk, Telephone, KS-20255, List 1
- 1—Base Assembly, KS-20255, List 15

1—Mounting Template, KS-20255, List 12\*

1—Directory Hanger, KS-20030, List 3

#### *Example 2*

1—Kiosk, Telephone, KS-20255, List 2

1—Light Control, KS-19261, List 3

1—Directory Hanger, KS-20030, List 3

\* It is not necessary to order a mounting template for each booth. One template can be used for many installations.

### 3. INSTALLATION

**3.01** Booth location should be:

- Within full view of public
- Readily accessible to customer
- Free of such hazards as broken or uneven pavement
- Spaced with a minimum clearance of 6 inches from property lines and buildings

#### LIST 1 TELEPHONE KIOSK

**3.02** The List 15 base assembly (Fig. 6), used for mounting the List 1 kiosk, must be ordered separately.

**3.03** The two List 13 leg and cover assemblies (furnished with kiosk) are packaged separately and must be assembled in the field.

**3.04** The base assembly must be embedded in 6 inches of concrete to provide a permanent foundation for the booth. Position assembly as shown in Fig. 15(A) if concrete serves as kiosk floor or as shown in Fig. 15(B) if some additional material (brick, tile, etc) serves as the floor.

#### *Base Preparation*

**3.05** Install List 15 base assembly as follows:

- (1) Prepare a form 48 inches square with an inside depth of 12 inches.

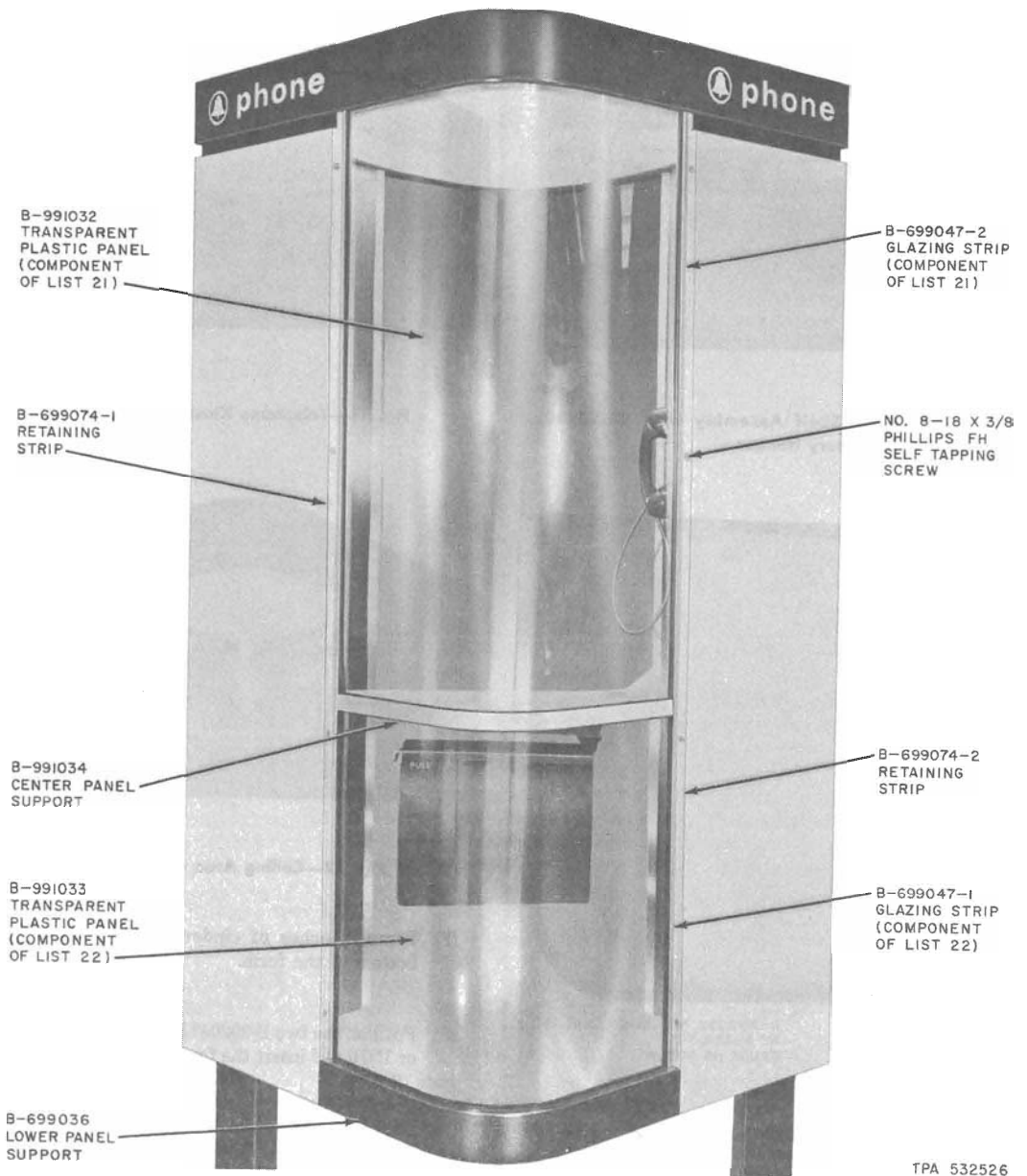
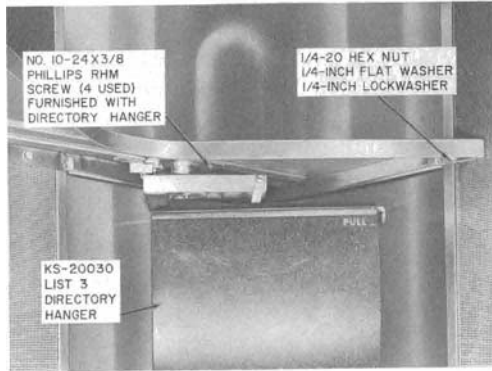
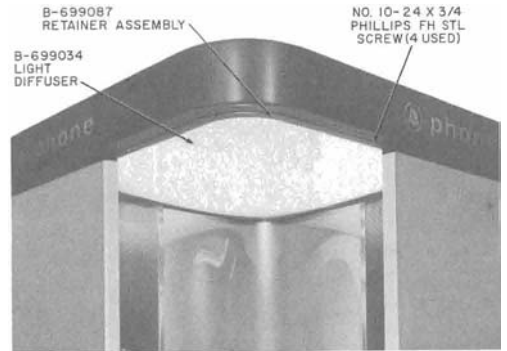


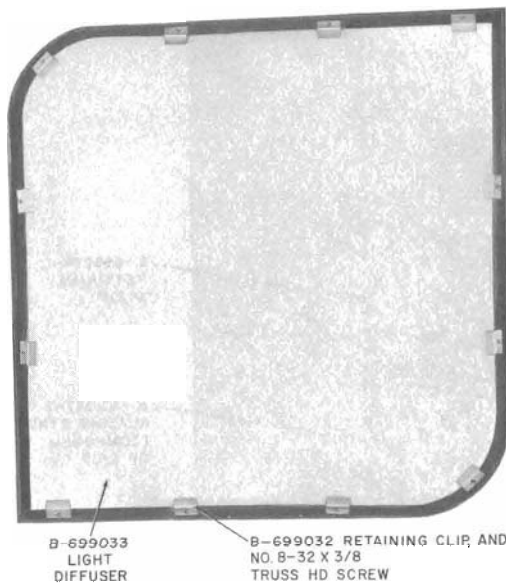
Fig. 8—Telephone Kiosk—Rear View



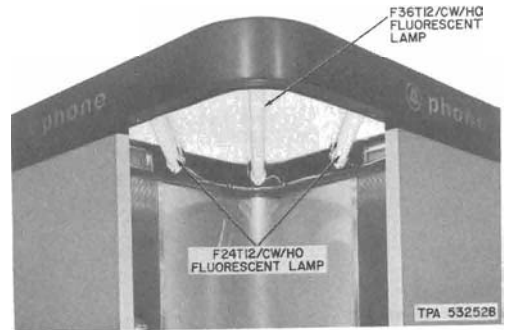
**Fig. 9—B-699052 Shelf Assembly with KS-20030, List 3 Directory Hanger**



**Fig. 11—Telephone Kiosk—Ceiling**



**Fig. 10—Telephone Kiosk—Top**



**Fig. 12—Ceiling Area of Kiosk**

- (2) Tamp 6 inches of cinders or gravel in the bottom of the form.
- (3) Position the two B-992047 bases per Fig. 15(A) or 15(B) and insert the four steel reinforcement rods (Fig. 6).
- (4) Using the six 5/8-11 by 1-1/2 inch bolts furnished with base assembly, install the KS-20255, List 12 mounting template on the two bases to ensure proper alignment.

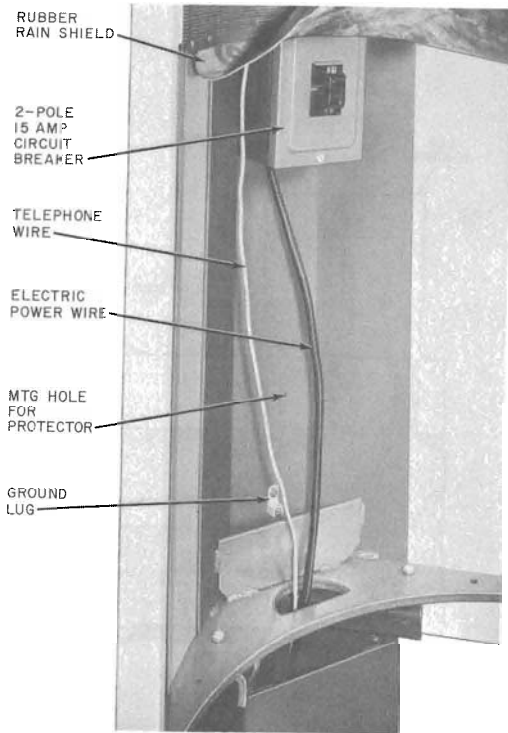


Fig. 13—Left Bottom of Booth With Panel Removed



*The template must be ordered separately; however, a template can be used many times.*



*It is very important that the base assembly is level before pouring concrete. This will reduce leveling problems when the kiosk is mounted on the base.*

- (5) All incoming power and telephone wiring enters the kiosk from underground, up through the left leg. Provide conduit for this purpose before pouring concrete.

**Note:** The ground rod may be located inside the right leg with ground wire secured under one of the mounting bolts.

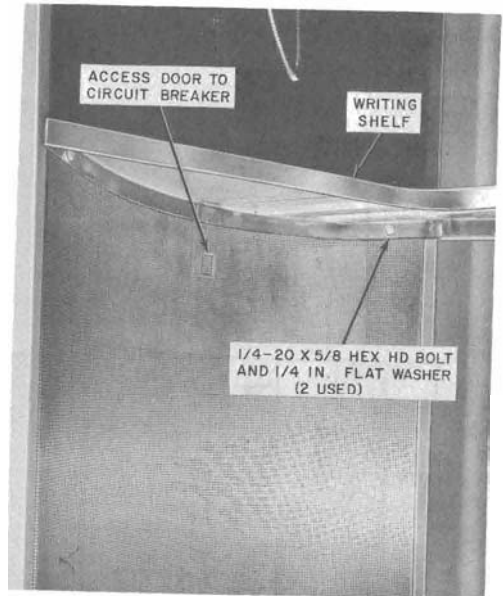


Fig. 14—Lower Left Inside Panel

- (6) Pour concrete around the base to fill the form.
- (7) When concrete has set up, remove and retain the template.

### Unpacking and Securing

- 3.06** Prepare kiosk for installing on base assembly as follows:

- (1) The kiosk comes packaged as shown in Fig. 16.
- (2) Before removing any packing material, lay kiosk down with marking "FRONT OF KIOSK" facing up (Fig. 17).
- (3) The bottom skid is in two parts. Remove hardware (Fig.17) and detach bottom part of skid (Fig. 18).
- (4) Using eight 1/2-13 by 1-1/2 inch hex head bolts, secure the two List 13 leg assemblies to the kiosk (Fig. 19).

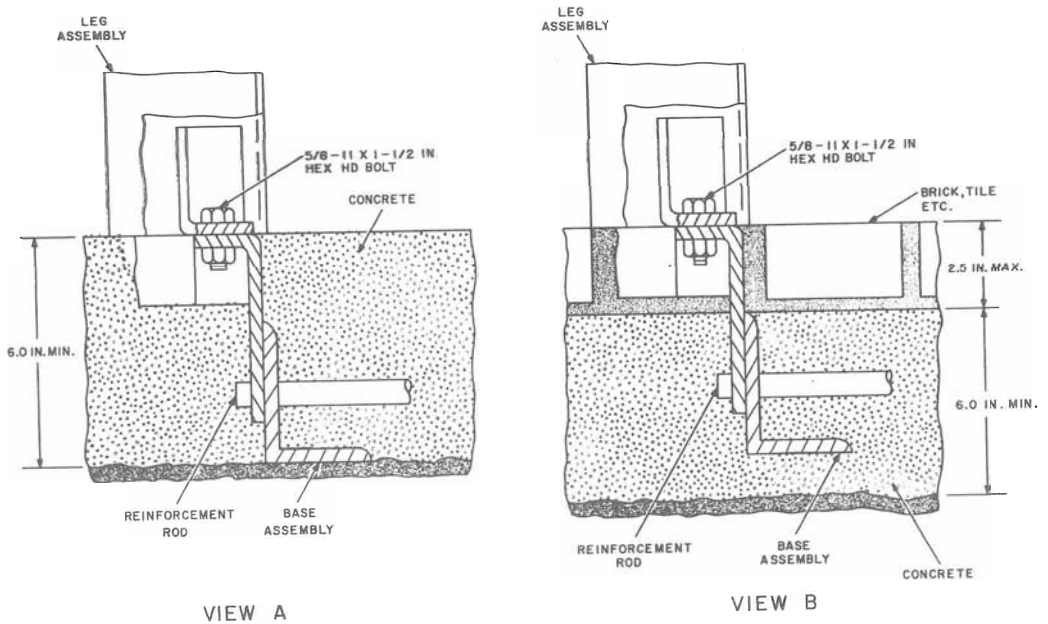


Fig. 15—Positioning Base Assembly in Concrete

**THINK** *It is important that only high strength, SAE grade 5 bolts, furnished with kiosk, be used.*

- (5) Insert three additional 1/2-13 by 1-1/2 inch hex head bolts in each leg to serve as leveling studs (Fig. 20).
- (6) Raise kiosk into position over base assembly and secure legs to base using six 5/8-11 by 1-1/2 inch hex head bolts (Fig. 21) which are furnished. See **THINK** under (4).
- (7) Do not install leg covers at this time.
- (8) Remove all packing material from kiosk including remaining part of bottom skid.

- (9) Loosen the eight bolts installed in (4) and level the kiosk with the six leveling studs installed in (5). When the kiosk is perfectly level, tighten the eight bolts.

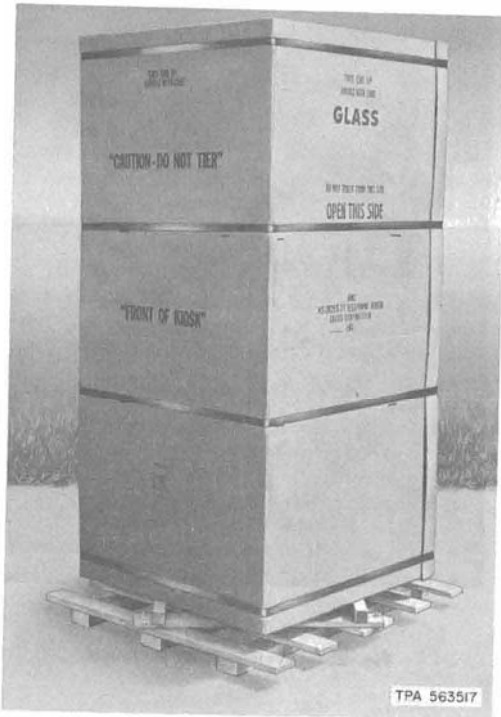
#### LIST 2 TELEPHONE KIOSK

**3.07** The List 14 surface mount leg assembly (furnished with List 2 Kiosk) (Fig. 5) is packaged separately and must be assembled to the kiosk in the field.

#### Mounting Surface Preparation

**3.08** Prepare mounting surface as follows:

- (1) Use the leg assembly as a template and mark the location for six mounting holes

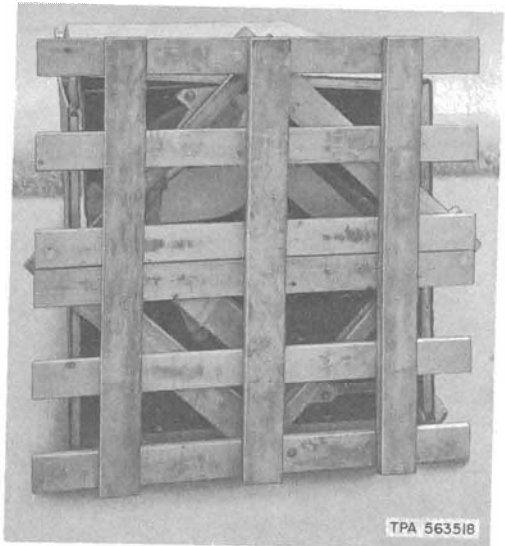


**Fig. 16—Kiosk in Packing Case**

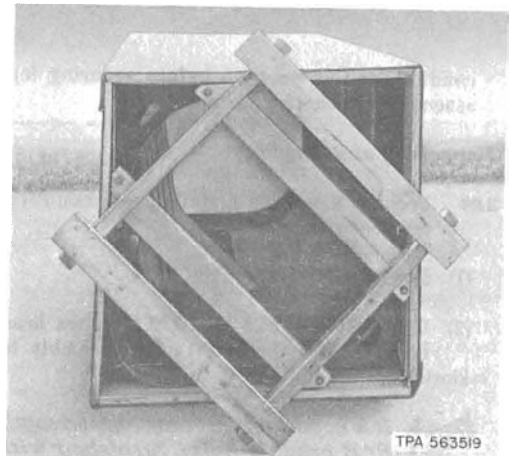
(two in each leg and two in the cross brace). Also mark location for power and telephone conduit entrance.

**Note:** Although three holes are in each triangular leg, the center hold in each leg is not to be used because it can weaken the concrete around the holes.

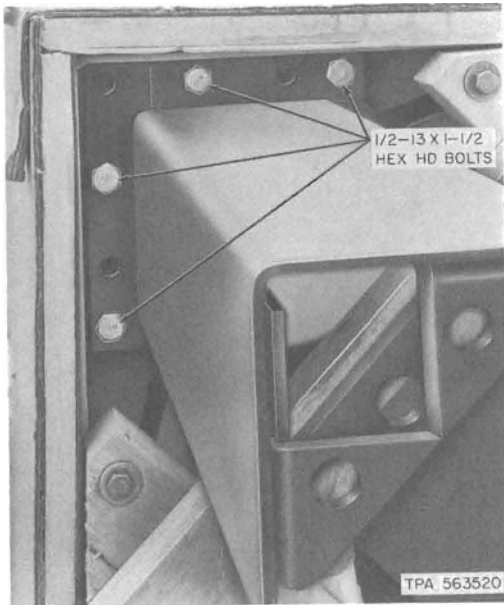
- (2) Move the leg assembly aside and drill the six holes to accept the expansion shield, furnished.
- (3) Install the expansion shields in these holes.
- (4) All incoming power and telephone wiring enters the kiosk up through the left leg; overhead entrance is not provided. Provide



**Fig. 17—Kiosk in Horizontal Position**



**Fig. 18—Bottom Portion of Skid Removed**



**Fig. 19—Securing Leg to Kiosk Frame**

conduit for this purpose before securing leg assembly to mounting surface.

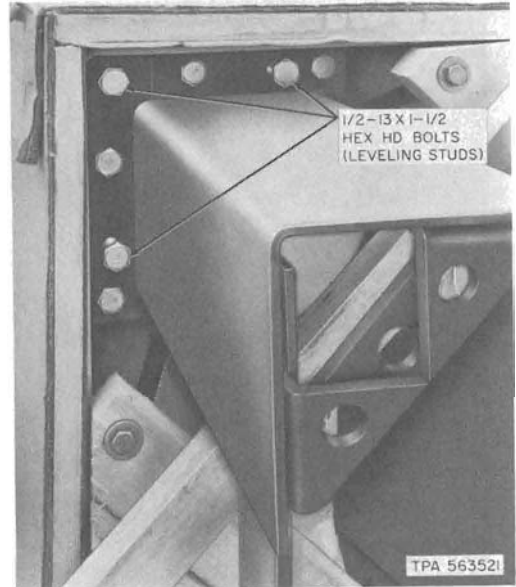
### **Unpacking and Securing**

**3.09** Prepare kiosk for installing on mounting surface as follows:

- (1) Repeat 3.06 (1) through (3).
- (2) Using eight 1/2-13 by 1-1/2 inch hex head bolts, secure the List 14 leg assembly to kiosk (Fig. 19).

**THINK** *It is important that only high strength, SAE grade 5 bolts, furnished with kiosk be used.*

- (3) Insert these additional 1/2-13 by 1-1/2 inch hex head bolts in each leg to serve as leveling studs (Fig. 20).
- (4) Raise kiosk into position over mounting surface and secure legs to expansion shields



**Fig. 20—Leveling Studs Installed**

using four 1/2-13 by 2-3/4 inch hex socket-head bolts (Fig. 22). Secure cross brace to expansion shields using two 1/2-inch flat washer and two 1/2-13 by 3-1/2 inch hex socket-head bolts. See **THINK** preceeding (3).

- (5) Repeat 3.06 (7) through (9).

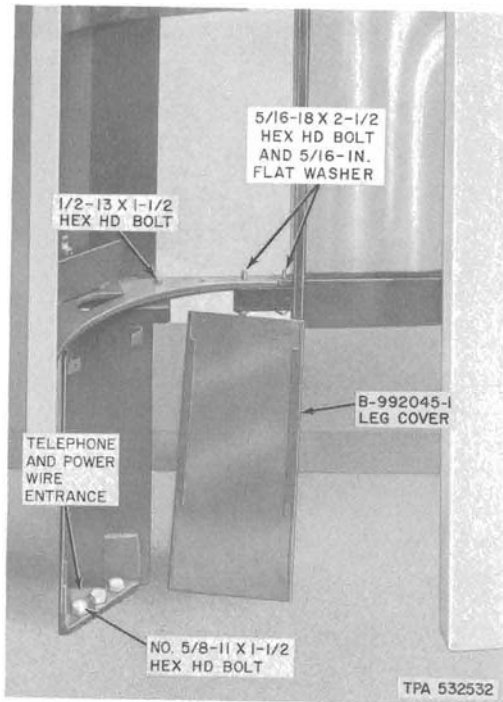
### **WIRING**

**Note:** The kiosk is provided with underground power and telephone wire entrance only.

**3.10** Access to the circuit breaker, ground lug, and mounting holes for the 123A1A protector is obtained by removing the lower left inside wall panel as follows (Fig. 23):

- (1) Remove shelf assembly (refer to 4.09).
- (2) Loosen two No. 8-32 by 1/2 Phillips truss head screws.
- (3) Push latch to right.





**Fig. 21—Assembly of Kiosk, Leg, and Bottom Panel Support**

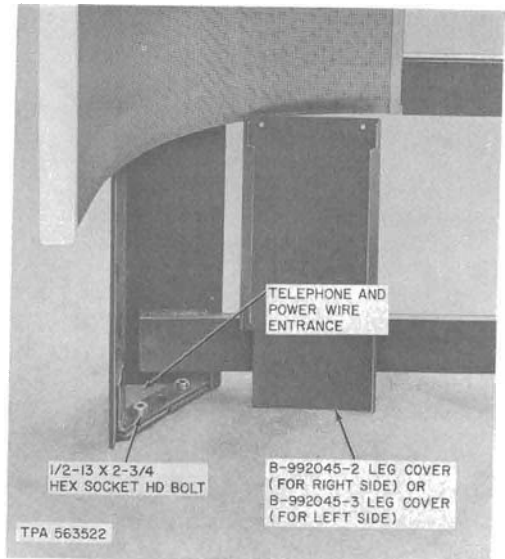
(4) Pull slide angle down and remove panel.

**3.11** Install the 123A1A protector (furnished locally) using the mounting holes provided near the circuit breaker (Fig. 13).

**3.12** Install the coin telephone set (1A- or 1C-type). A B-699048 security backboard (Fig. 24) is furnished with the kiosk. Use two P-40Y061 security studs in the upper holes of the set and two P-12E798 security studs in the lower holes of the set. Studs must be furnished locally.



*The backboard slides upward to lock the security studs. Access for sliding the backboard is through back of telephone housing behind chassis position.*



**Fig. 22—List 14 Leg Assembly Bolted to Mounting Surface**

**3.13** Further secure the set using seven P-23F790 1/4-20 by 5/8 RHM screws. Screws are furnished with set.

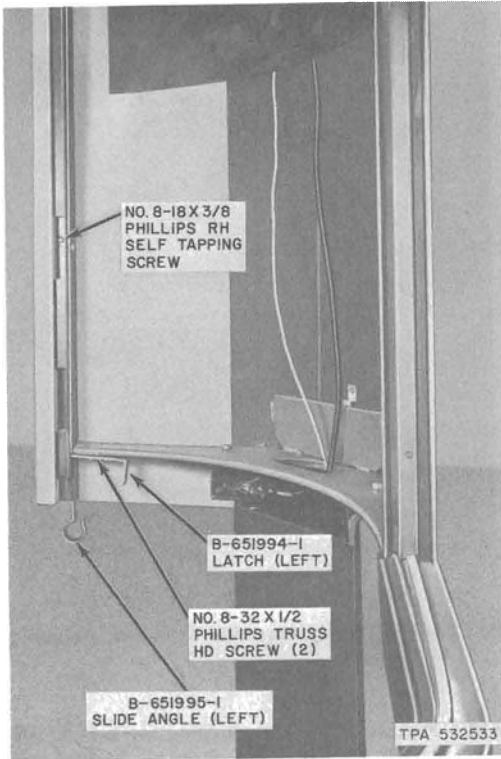
**3.14** Connect the power wires to circuit breaker in accordance with Fig. 25.

**3.15** The kiosk is prewired for continuous illumination. If a light control is used, determine that it is working properly by placing hand over light cell. The lamps should illuminate when this is done.

**Note:** One faulty lamp will prevent all lamps from illuminating.

**3.16** Install the leg covers as follows (Fig. 21 and 22):

- (1) Place cover on leg and slide it down until slots on cover and tabs on legs are interlocked.
- (2) Secure cover using two No. 8-32 by 1/2 Phillips RHM screws.



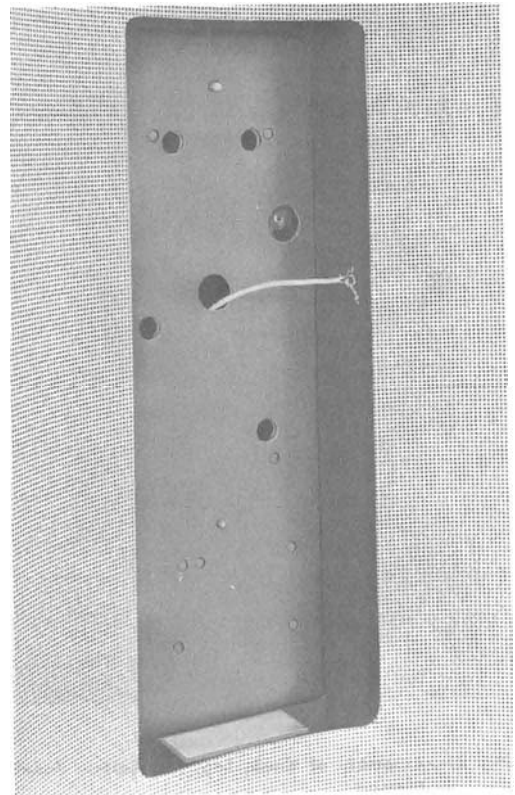
**Fig. 23—Apparatus For Securing Panels**

(3) Remove, using reverse procedure.

**3.17** Install the lower left inside wall panel in reverse order from which it was removed (see 3.10) being careful to place the circuit breaker access door at top (Fig. 14).

**4. MAINTENANCE**

- 4.01** The local telephone company shall establish appearance standards of all exposed surfaces.
- 4.02** The local telephone company shall establish safety standards for all kiosks.
- 4.03** Inspect the approach to the kiosk and ensure that it is free of all hazards.



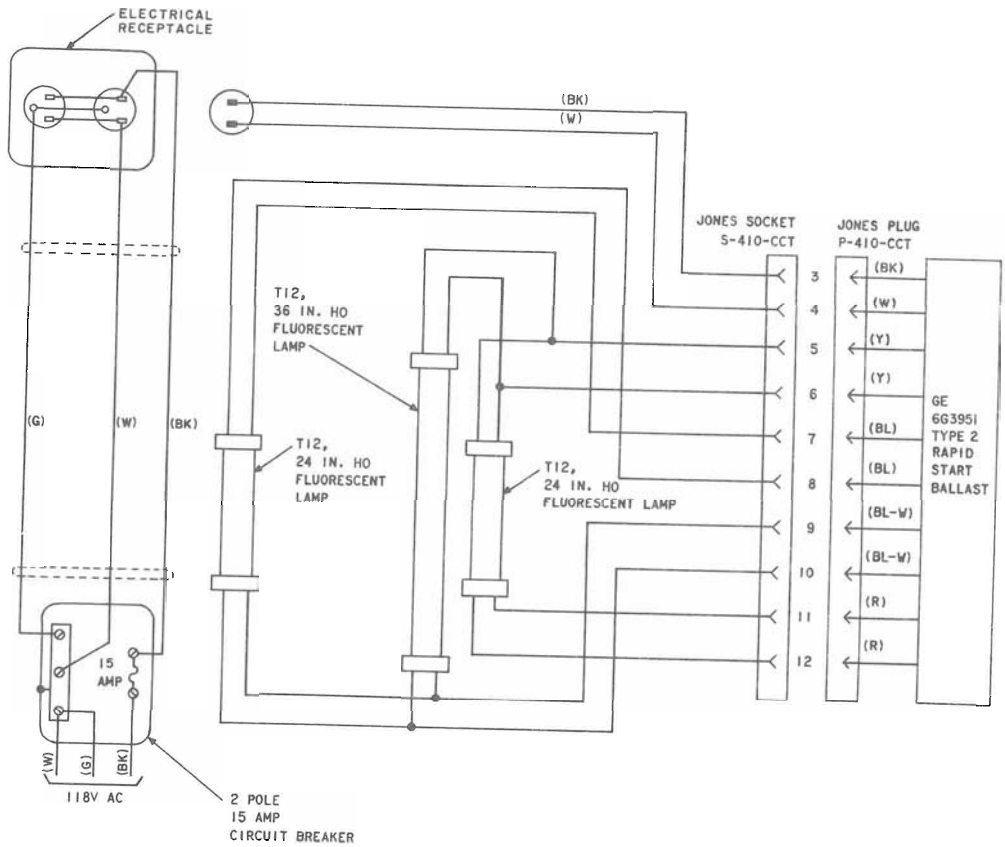
**Fig. 24—B-699048 Security Backboard**

**4.04** Ensure that all visible assembly screws are secure.

**4.05** Clean the kiosk in accordance with Section 508-100-101. Transparent plastic panels can be cleaned with mild detergent and soft cloths.

**4.06** Replace those parts which are damaged to the point that they do not meet local telephone company standards.

**Note:** Refer to Part 3 for installation procedures. For access to light control assembly, remove inside upper panel (4.12).



TPA 532534

Fig. 25—Wiring Diagram of Telephone Kiosk

## SECTION 508-430-100

### CEILING

**4.07** Remove bottom light diffuser by loosening four screws and carefully lowering retainer assembly and diffuser together.

### TOP DOME

**4.08** Remove top light diffuser by removing 12 No. 8-32 by 3/8 truss head machine screws and 12 B-699032 retaining clips (Fig. 10).



*The top diffuser is bonded to the roof assembly by an adhesive. When replacing this diffuser and the adhesive becomes damaged, use G.E. 108 RTV Clear Silicone Rubber Sealant or an approved equivalent.*

### SHELF

**4.09** To remove shelf assembly, remove two 1/4-20 by 5/8 hex head bolts, one 1/4-20 hex nut, three 1/4-inch flat washers, and one 1/4-inch lockwasher (Fig. 9 and 14).

### DIRECTORY HANGER

**4.10** Remove KS-20030, List 3 directory hanger by removing four No. 10-24 by 3/8 Phillips RHM screws and four flat washers (Fig. 9). For complete maintenance information on directory hanger, refer to Section 508-710-102.

### INSIDE PANELS

**4.11** Remove lower left inside panel per 3.10 and 3.17.

**4.12** Replace upper left inside panel in the same manner as lower left inside panel (3.10 and 3.17).

**4.13** Replace right inside panel in same manner as left inside panels.

### OUTSIDE PANELS

**4.14** Replace each of the outside panels as follows:

- (a) Remove appropriate inside panel(s).

- (b) Remove the No. 8-18 by 3/8 Phillips RH self-tapping screws (Fig. 23) located along door facing.

- (c) Remove four No. 8-18 by 3/8 Phillips FH self-tapping screws and remove retaining strip (Fig. 8).

- (d) Pull panel out at door facing, swing around toward back of booth, and lift off.

- (e) Install, using reverse procedure.

### TRANSPARENT PANELS

**4.15** Replace B-991033 panel (lower) as follows:

- (a) Loosen four 5/16-18 by 2-1/2 hex head bolts (Fig. 21) which secure lower support to frame.

- (b) Remove retaining strips as directed in 4.14(c).

- (c) Remove panel and B-699047-1 glazing strip (Fig. 8).

- (d) Install, using reverse procedure.

**4.16** Replace B-991032 panel (upper) as follows:

- (a) Remove B-991033 panel as directed in 4.15.

- (b) Loosen two No. 8-18 by 3/8 self-tapping screws which secure center support.

- (c) Remove panel and B-699047-2 glazing strip (Fig. 8).

- (d) Install, using reverse procedure.

### REPLACEMENT PARTS

**4.17** Table B lists replacement parts that may be ordered as necessary.

**TABLE B  
REPLACEMENT PARTS**

NAME	PART NO. OR DESCRIPTION	REMARKS	
Ballast, rapid start	G. E. Co. No. 6G-3951, type 2 (or equivalent)	Located behind right-inside panel	
Circuit breaker	ITE Circuit Breaker Co. No. P-215, 2-po'e, 15 amp (or equivalent)	Located behind lower-left inside panel	
Cover, leg	B-992045-1	Component of List 13 leg and cover assembly (used with List 1 Kiosk)	
	B-992045-2	Component of List 14 surface mount leg assembly used with List 2 Kiosk	For right leg
	B-992045-3		For left leg
Diffuser	B-699033	Top	
	B-699034	Interior	
Diffuser and Retainer Assembly	B-699748	Consist of the B-699034 interior diffuser and B-699087 retainer assembly	
Directory hanger	KS-20030, List 3		
Frame, sign	B-699982	For holding sign in place	
Gasket	B-699980	Used with B-699981 sign	
Lamp, fluorescent	F24T12/CW/HO	High output (2 used)	
	F36T12/CW/HO	High output	
Light control	KS-19261, List 3	See Section 508-825-100	
Panel	B-699058	Outside, left side	
	B-699059	Outside, right side	
	B-699075	Inside, right	
	B-699076	Inside, upper left	
	B-699077	Inside, lower left	
	B-991032	Upper, transparent* (component of List 21)	
	B-991033	Lower, transparent* (component of List 22)	
Retainer (12)	B-699032	Secures top light diffuser	
Retainer assembly	B-699087	Secures interior diffuser	
Retaining strip	B-699074-1	Secures transparent panel in right wall	
	B-699074-2	Secures transparent panel in left wall	
Shelf assembly	B-699052	Does not include directory hanger	
Sign assembly	B-699981	Includes Bell System emblem plus "P" and "O" islands	
Strip, glazing	B-699047-1	For lower transparent panel (component of List 22)	
	B-699047-2	For upper transparent panel (component of List 21)	
Support, transparent panel	B-699036	Bottom	
	B-991034	Center	

\* Transparent panels were formerly glass. Currently they are plastic.



## WALK-UP, DRIVE-UP PUBLIC TELEPHONES KS-19426 MOUNTING

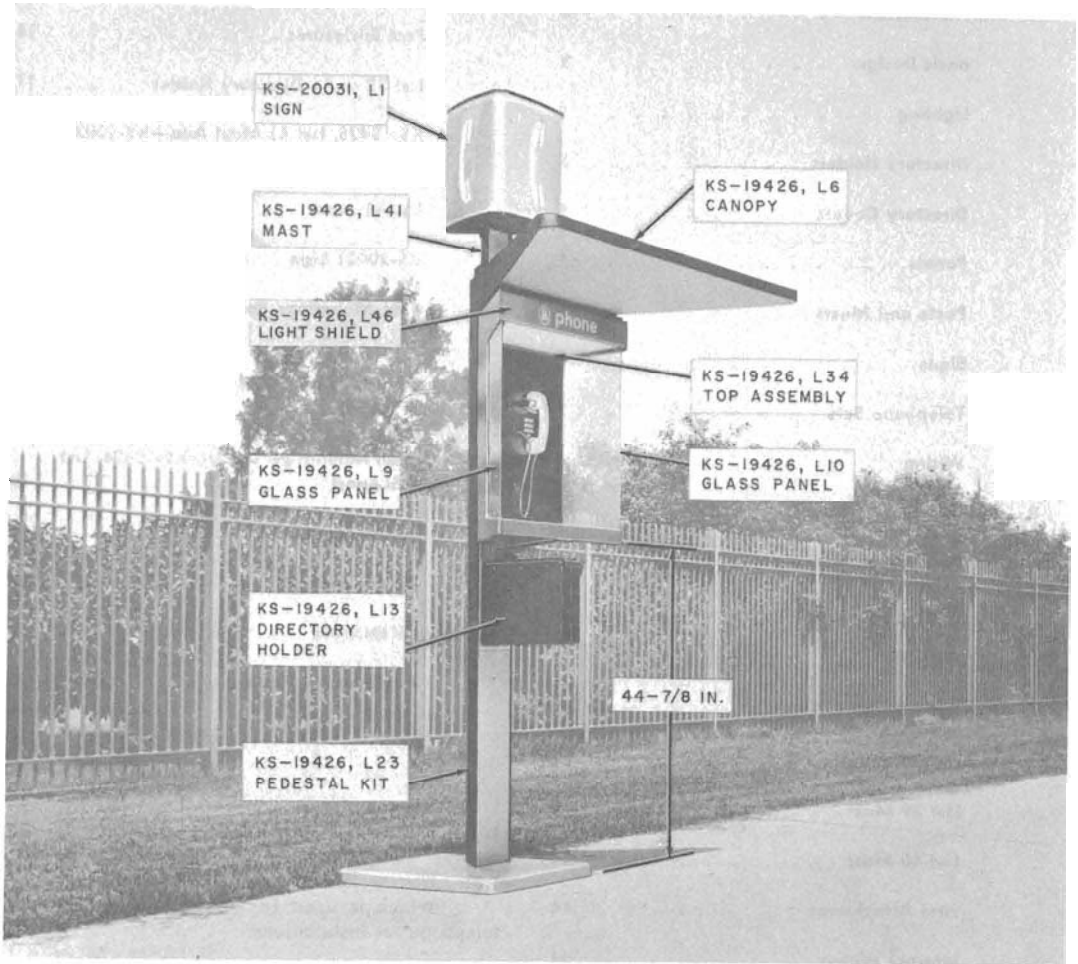


Fig. 1—KS-19426 Mounting for Walk-Up Outdoor Service with List 41 Mast and KS-20031 Illuminated Sign

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1. GENERAL	
1.01 This section describes the KS-19426 mounting which is used for walk-up, drive-up coin telephone set installations.	
1.02 Information contained in this section was formerly found in Sections 508-470-100 and 508-470-200 which are hereby canceled.	
2. IDENTIFICATION	
2.01 Table A describes the list numbers and parts available for the KS-19426 mounting. Use the appropriate list number for ordering information. Table B describes post and pedestal requirements.	



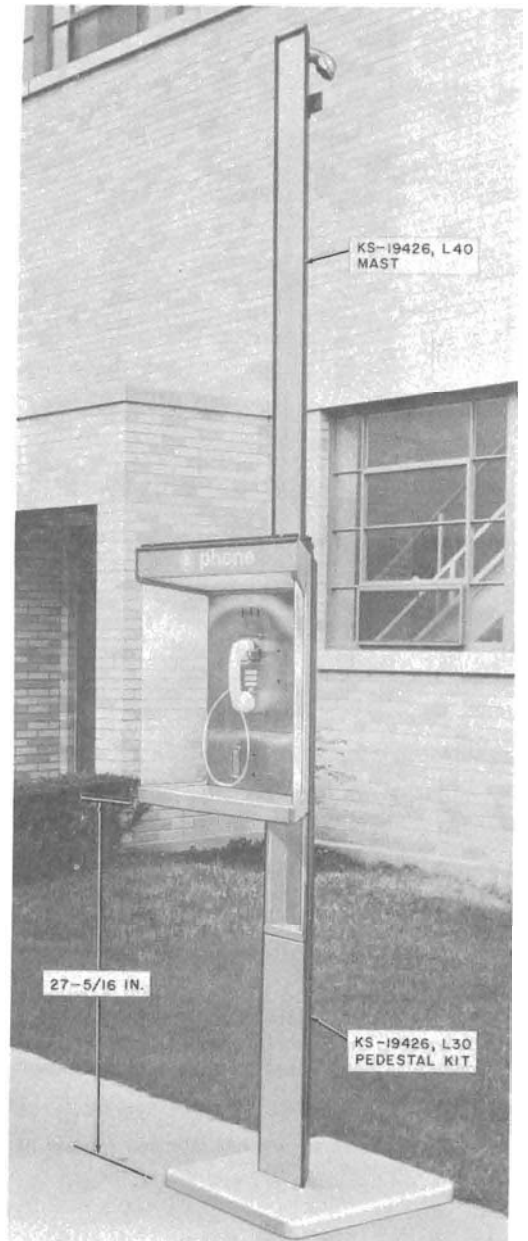
### Basic Design

**2.02** The KS-19426 mounting consists of a 90-degree wedge-shaped housing for post- or wall-mounting of coin telephone sets (Fig. 1 through 5).



**Fig. 2—KS-19426 Mounting for Walk-Up Outdoor Service with List 39 Mast**

**2.03** Post mountings (Fig. 1 through 3) may be installed singly or in multiple combinations as shown in Fig. 6.



**Fig. 3—KS-19426 Mounting for Drive-Up Service with List 40 Mast**

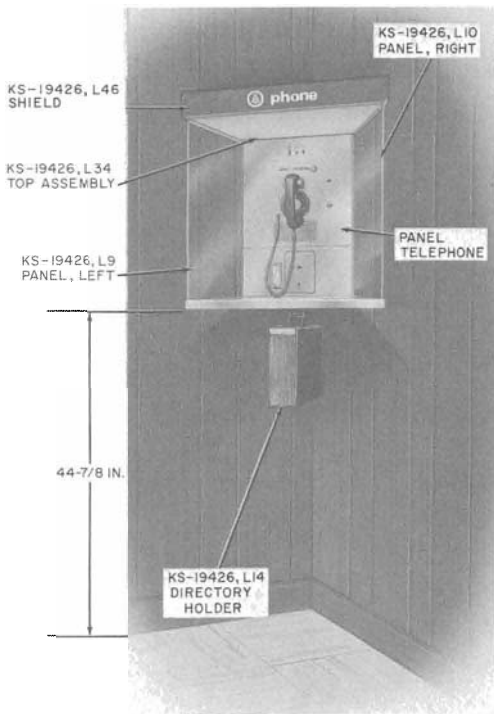


Fig. 4—KS-19426 Mounting in Corner

**2.04** Wall mountings (Fig. 4 and 5) may be installed on a flat wall, in a corner, or around a corner in various multiple combinations as shown in Fig. 7.

**2.05** A wedge-shaped KS-19426, List 6 canopy (Fig. 1) is available for installation above a single housing to protect the user from the weather. Canopies also may be used in multiple arrangements.

**Note:** Canopies are not intended for use at drive-up installations.

**2.06** The basic KS-19426, List 1 housing (Fig. 8) consist of a top section containing a light fixture and light shield, side cutouts for replaceable panels, a backboard for mounting the coin telephone set, and a stainless steel writing shelf.

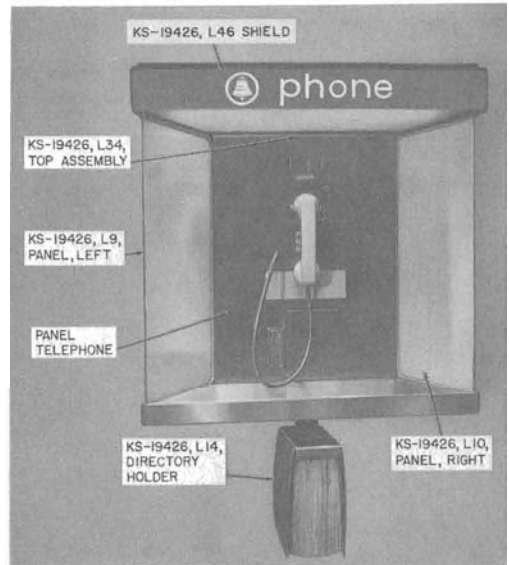


Fig. 5—KS-19426 Mounting on Flat Surface

**2.07** The rear of the housing is provided with holes for attaching to post or support.

**Lighting**

**2.08** The light shield (Fig. 10) is a translucent panel which illuminates the coin telephone set, writing shelf, and surrounding area. The light shield is available in various options as follows:

- White background with a Bell System emblem and word "phone" printed in blue letters (KS-19426, List 45)
- Blue background with a Bell System emblem and word "phone" printed in white letters (KS-19426, List 46)
- White background with no letters (KS-19426, List 47)



*Unless otherwise specified KS-19426, List 1 housing will be furnished with List 46 light shield.*

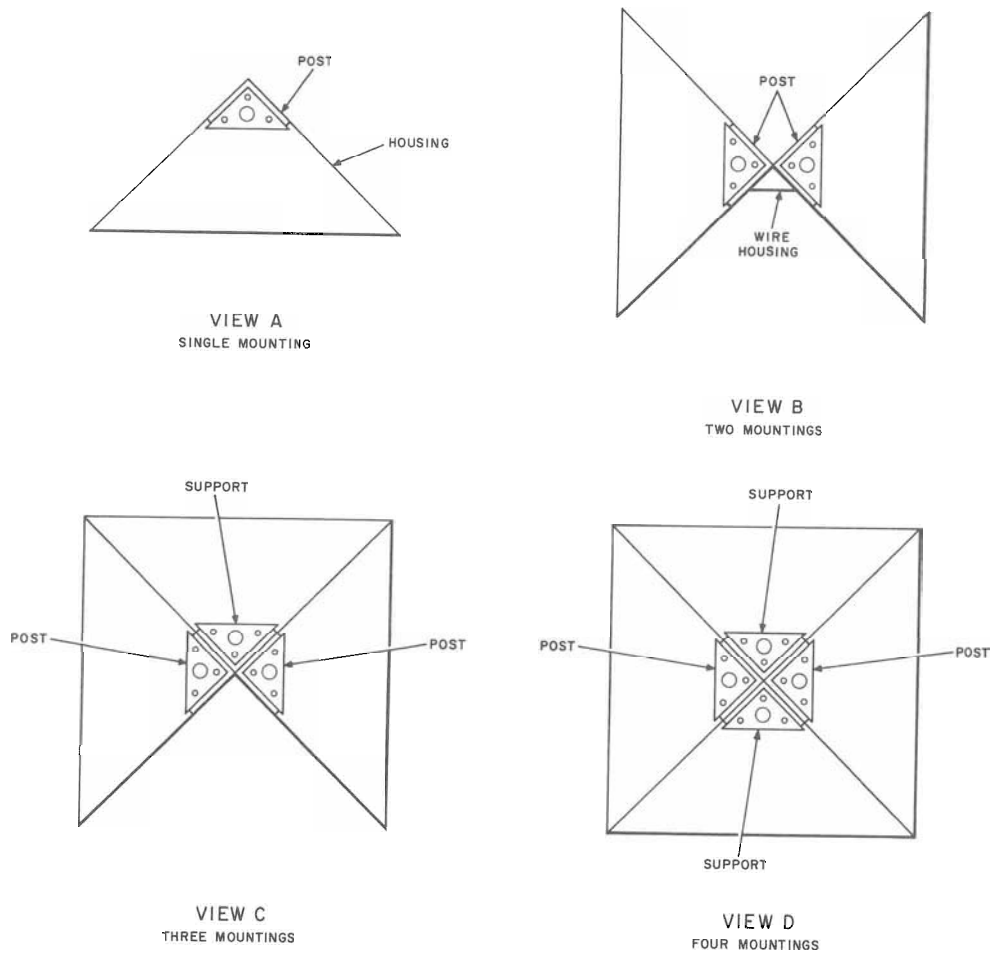


Fig. 6—Various Arrangements for Post Mountings

2.09 The 24-inch lamp (F-20-T12-CW or equivalent) is not furnished with housing and must be ordered separately.

(b) List 14 directory holder (Fig. 4 and 5) for indoor use.

**Directory Holders**

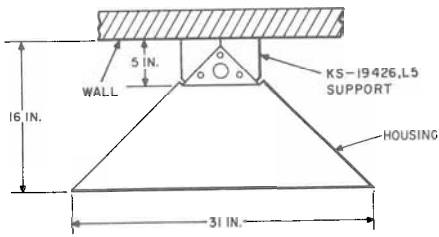
2.10 Two directory holders are available for attachment beneath the basic housing.

(a) List 13 directory holder (Fig. 1) for outdoor use, walk-up installations.

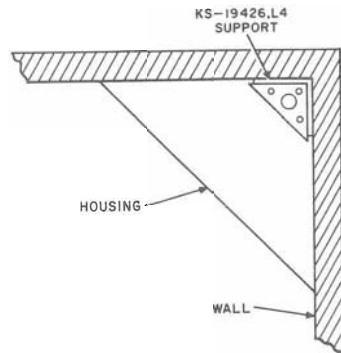
**Directory Covers**

2.11 Replacement covers for the List 13 and List 14 directory holders are available for field replacement. The List 42 closed end cover is used with List 13 holder and List 43 open end cover with List 14 holder.

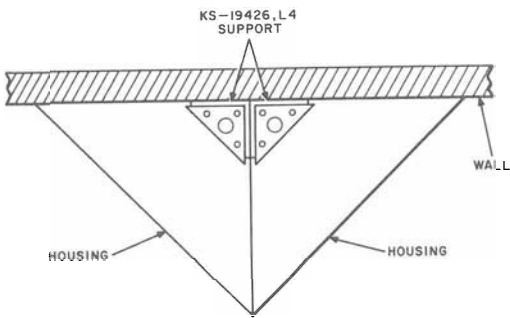
SECTION 508-451-100



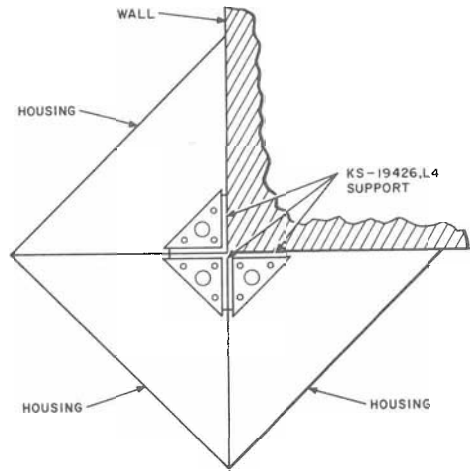
VIEW A  
SINGLE MOUNTING  
FLAT SURFACE



VIEW B  
SINGLE MOUNTING, CORNER



VIEW C  
TWO WALL MOUNTINGS  
AT RIGHT ANGLES



VIEW D  
THREE MOUNTINGS  
AROUND CORNER

Fig. 7—Various Arrangements for Wall Mountings

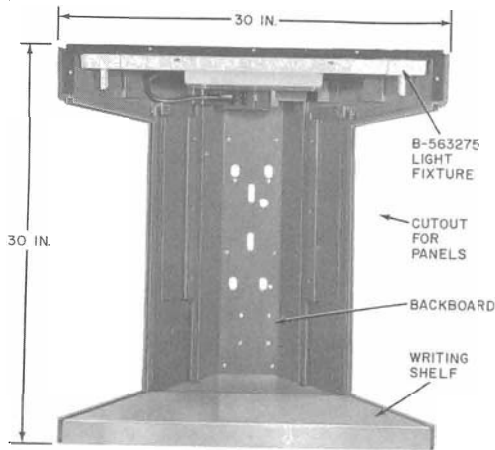


Fig. 8—KS-19426, List 1 Housing Less Light Shield

#### Panels

**2.12** The housing side panels are available in two widths: 8-1/16 inches and 17-9/16 inches. These panels extend outward on each side to provide privacy. Acoustic material and clear tempered glass panels are available.

#### Posts and Masts

**2.13** A black angular steel post, with an aluminum cover on the flat front face, is available for walk-up or drive-up service (Fig. 9).

**2.14** Two masts are available for bringing overhead power and telephone wires into an outdoor installation.

- (a) List 39 mast (Fig. 2) for use on outdoor mounting with canopy.
- (b) List 40 mast (Fig. 3) for use on outdoor mounting without canopy.

#### Signs

**2.15** A KS-20031, List 1 sign, illuminated with a special 100-watt mercury lamp, is available for use with the mounting. If a List 39 or List 40 mast is not used, a List 41 mast must be ordered for mounting the sign (Fig. 1). See Section 508-810-202 for additional information on the sign.

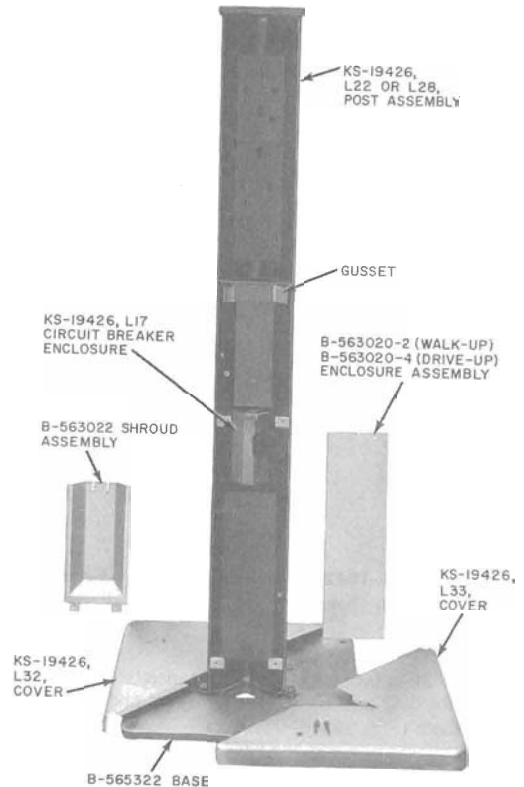


Fig. 9—Typical Pedestal Kit

*Caution: Do not expose eyes or skin to ultra violet rays of a burning mercury arc if the outer glass envelope is broken.*

#### Telephone Sets

**2.16** The KS-19426 mounting is designed primarily for panel-type coin telephone sets. These sets fill the space between the light shield and shelf.



*A List 34 top assembly must be installed with a panel-type coin telephone set.*

**2.17** The 1-type coin telephone set may be used with the KS-19426 mounting but requires a



**Fig. 10—KS-19426 Mounting Using 1-Type Coin Telephone Set**

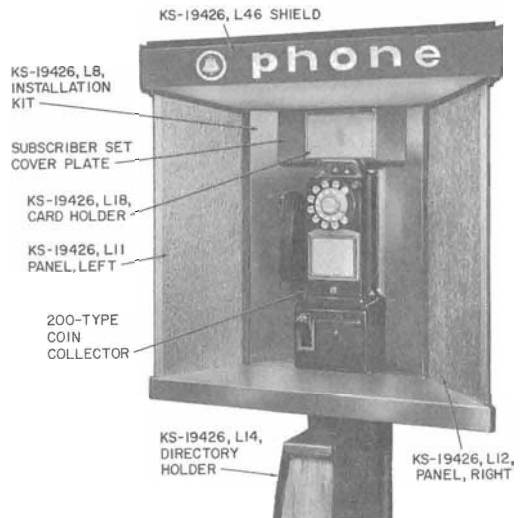
List 7 installation kit. This kit consists of mounting screws, left and right side shrouds, and associated brackets (Fig. 10).

**2.18** The 200-type coin collector, plus 685-type subscriber set, also may be used with KS-19426 mounting but requires a List 8 installation kit. This kit consists of mounting screws, 685-type subscriber set adapter, left and right side shrouds, bottom plate, and subscriber set coverplate (Fig. 11).

**Note:** Handsets equipped with 6-foot H4CY armored cords for drive-up coin telephones must be ordered separately. Use G3AD or G3AF (moisture proof) handset for single slot sets and G3AE or G3AG (moisture proof) handset for multislot sets.

### Wiring

**2.19** Electric power and telephone line wire entrance may be at the top or bottom of mounting post or through mast opening. For wall mountings, the entrance shall be behind the KS-19426 housing.



**Fig. 11—KS-19426 Mounting Using 200-Type Coin Collector**

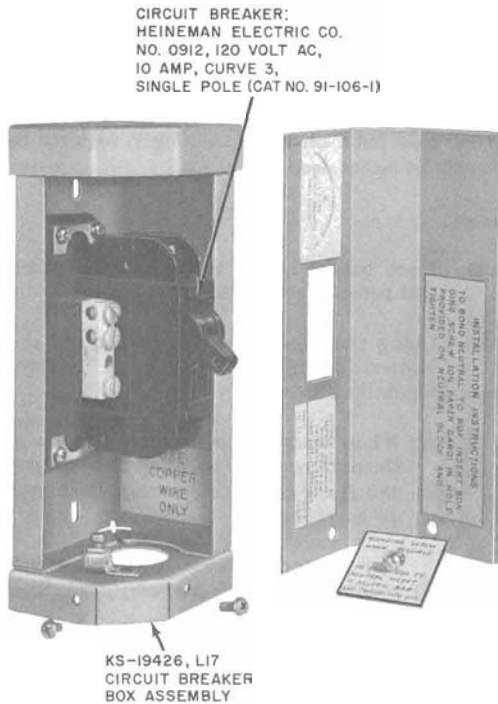
**2.20** Connections to the power outlet box and telephone station protector unit are in the cavity behind the light shield. Removal of the light shield allows access to connections.

**2.21** The housing is prewired from the power receptacle to a terminal strip located in a junction box on the housing under the writing shelf (Fig. 17 or 18).

**2.22** A KS-19426, List 17 circuit breaker enclosure (Fig. 12), for mounting a Heineman Electric Co. No. 0912, 15 amp Cat #91-106-1 single pole circuit breaker (obtained locally) mounts in the lower section of the post when housings are post-mounted. Access is by removing the post cover assembly.

**2.23** A List 16 wire housing (Fig. 13) provides a channel through which interconnecting wires are to be run when mountings are installed back-to-back on posts.

**2.24** A KS-19261, List 3 light control may be used to switch the light on at darkness and off at daylight. A bracket for mounting the relay box is welded onto the upper portion of the housing



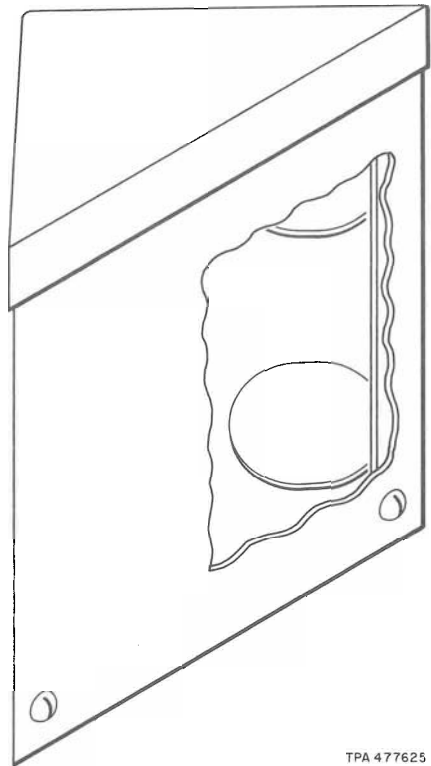
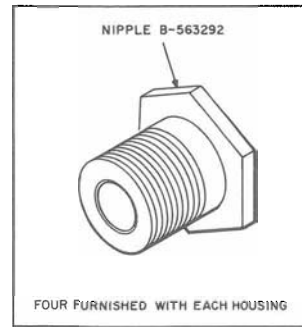
**Fig. 12—Circuit Breaker Box with Circuit Breaker Installed**

on the right-hand side. The wire channel for the light cell cord is attached to this side and permits the cell, or sensing element, to be located in a metal box below the shelf in a protected location. See Section 508-825-100 for additional information on the light control.

**Ordering Examples (See Table A and B)**

- (a) For pedestal-mounted, single unit, 1-type coin telephone sets, for walk-up outdoor service with a canopy, narrow glass panels, illuminated sign, and a mast for overhead power and telephone line:

- 1—Pedestal Kit, KS-19426, L23
- 1—Housing, KS-19426, L1
- 1—Mast, KS-19426, L39
- 1—Canopy, KS-19426, L6
- 1—Installation Kit, KS-19426, L7



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**Fig. 13—KS-19426, List 16 Wire Housing**

- 1—Panel, Left, KS-19426, L9
- 1—Panel, Right, KS-19426, L10
- 1—Directory Holder, KS-19426, L13
- 1—Sign, KS-20031, L1

(b) For two wall-mounted units at right angles, without canopies, with wide acoustic panels, for use with the 200-type coin collectors:

- 2—Housings, KS-19426, L1
- 2—Supports, KS-19426, L8
- 2—Panels, Left, KS-19426, L26 (see note)
- 1—Panel, Right, KS-19426, L27 (see note)
- 1—Multiplying Strip, Right, KS-19426, L25 (see note)
- 2—Directory Holders, KS-19426, L14 (L15 if outside and other than Drive-Up location)

**Note:** Two right panels, one left panel, and one KS-19426, List 24 left multiplying strip, may be used.

(c) For pedestal-mounted, back-to-back, for drive-up service with panel telephone sets, narrow glass panels; to be installed with underground power and telephone line:

- 1—Pedestal Kit, KS-19426, L31
- 2—Directory Holders, KS-19426, L13
- 2—Housing, KS-19426, L1
- 2—Panels, Left, KS-19426, L9
- 2—Panels, Right, KS-19426, L10
- 1—Wire Housing, KS-19426, L16
- 2—Top Assemblies, KS-19426, L34
- 1—Circuit Breaker Box, KS-19426, L17

### 3. INSTALLATION

#### Pedestal Mounting (Fig. 1, 2, and 3)



- 3.01** Pedestal kit KS-19426, List 23 may be installed on concrete or wooden surfaces. When the surface is asphalt, a concrete base 24 inches square and 36 inches deep is required. Wooden surfaces must have a minimum thickness of 2 inches.
- 3.02** The concrete base for walk-up installations shall be flush with ground level and 6 inches above road level for drive-up installations.
- 3.03** Where a curb does not exist to protect drive-up mountings, a concrete base 48 inches long, 24 inches wide, and 36 inches deep shall be embedded in the ground with the 24-inch dimension paralleling the road and 6 inches extending above ground level.
- 3.04** Where a curb already exists the concrete base for a drive-up mounting is required to be only 24 inches deep.
- Base**
- 3.05** Place base (Fig. 14) in the exact position that pedestal will be mounted.
- 3.06** Using the base as a template, mark the location for eight mounting holes. Remove base from drilling area.
-  **When installation requires the use of the underground wire entrance cutout, the front-center mounting hole may be sacrificed.**
-  **Eye protection shall be worn while drilling operations are being performed.**
- 3.07** The base is secured to a masonry surface with 1/2-inch by 3-inch machine bolts. Select the proper size machine bolt anchors to accommodate bolts and drill holes to accept anchors.
- 3.08** The base is secured to a wooden surface with 5/8-inch by 3-inch lag screws. Drill 1/2-inch holes 2 inches deep for these screws.
- 3.09** Secure base to mounting surface using hardware describe in 3.07 or 3.08.
- Note:** The baseplate must be level to ensure proper operation of coin collector or telephone set. Use shimming washers as necessary to ensure base is level.
- Post**
- 3.10** Loosen the tamperproof screws and remove shroud from the post(s) (Fig. 9).
- 3.11** Remove enclosure assembly (Fig. 9) from the post(s) by removing two 10-24 by 3/8-inch Phillips FHMS.
- 3.12** Install the post to the base over the underground wire entrance hole using four 5/8-11 by 1-1/2 inch hex head bolts. Do not tighten bolts. See Fig. 17 or 18 for installation requirements.



TABLE A  
SUMMARY OF LIST NUMBERS

KS-19426 LIST NO.	DESCRIPTION	REMARKS
1	Housing, Fig. 8	Includes KS-19426, List 46 light shield unless List 45 or 47 is specified
2	Post	Embedded in concrete for walk-up service
3		Embedded in concrete for drive-up service
4	Support, Fig. 14 and 15	For mounting List 1 housing in a corner, at right angle on a wall, or between back-to-back housings on post when housings are installed in multiples of three and four
5		For mounting List 1 housing on flat surface
6	Canopy* Fig. 1	Weather protection for outdoor, walk-up installations
7	Installation Kit, Fig. 10 and 11	For use with 1A/1C/1E-type coin telephone set
8		For use with 200-type coin telephone set
9	Glass Panel, Fig. 1	Left side, 8-1/16 inches wide
10		Right side, 8-1/16 inches wide
11	Acoustic Panel, Fig. 10 and 11	Left side, 8-1/16 inches wide
12		Right side, 8-1/16 inches wide
13	Directory Holder, Fig. 1 through 5	For outdoor use, Walk-Up Installation
14		For indoor use
16	Wire Housing, Fig. 13	Enclosure for wiring between back-to-back housings
17	Circuit Breaker Enclosure, Fig. 12	For wire connection in post or for circuit breaker. Use Heineman Electric Co. No. 0912, 15 amp cat #91-106-1.
18	Cardholder Fig. 11	For use with 200-type coin collector
20	Glass Panel*	Left side, 17-9/16 inches wide
21		Right side, 17-9/16 inches wide
22	Post, Fig. 9	For pedestal mounting, walk-up service (used as repair part or for extending single installation to multiple installation). Component of List 23 and List 29.
23	Pedestal Kit, Fig. 9 (typical)	For walk-up service with single housing (includes List 22 post, base, and List 32 and List 33).
24	Multiplying Strip	Left Side
25		Right Side
26	Acoustic Panel*	Left side, 17-9/16 inches wide
27		Right side, 17-9/16 inches wide
28	Post, Fig. 9	For pedestal mounting, drive-up service (used as repair part or for extending single installation to multiple installation). Component of List 30 and List 31.
29	Pedestal Kit, Fig. 9 (typical)	For walk-up service, back-to-back installation (includes 2 List 22 posts, base, and 2 List 33 covers)
30		For drive-up service with single housing (includes List 28 post, base, and List 32 and List 33 covers)
31		For drive-up service, back-to-back installation (includes 2 List 28 posts, base, and 2 List 33 covers)

TABLE A (Cont)  
SUMMARY OF LIST NUMBERS

KS-19426 LIST NO.	DESCRIPTION	REMARKS	
		32	Cover, Fig. 10
33	Cutout for post	Used as repair part. Component of List 23, 29, 30, and 31.	
34	Top Assembly	Use with all panel telephone sets to support rear edge of sign shield	
39	Mast, Fig. 1, 2, and 3	For overhead power and/or KS-20031, List 1 sign where canopy exists — Walk-Up Installations	
40		For overhead power and/or KS-20031, List 1 sign where canopy does not exist — Drive-Up Installations	
41		For mounting KS-20031, List 1 sign on canopy — Walk-Up Installations	
42	Directory Cover Assembly	Used on List 13	
43		Used on List 14	
45	Light Shield	White background — blue letters	
46	Light Shield	Blue background — white letters Furnished with List 1 housing unless otherwise specified	
47	Light Shield	White background — no letters	

\*Do not use canopies nor wide panels on drive-up mountings.

TABLE B  
POST AND PEDESTAL APPLICATIONS

ARRANGEMENT	NUMBER OF HOUSINGS	TYPE OF INSTALLATION	REQUIRED COMPONENTS
Single	1	Walk-up	1 Pedestal Kit, KS-19426, L23 or 1 Post, KS-19426, L2 (embedded)
		Drive-up	1 Pedestal Kit, KS-19426, L30 or 1 Post, KS-19426, L3 (embedded)
Back-to-Back	2	Walk-up	1 Pedestal Kit, KS-19426, L29 or 2 Posts, KS-19426, L2 (embedded) plus 1 Wire Housing, KS-19426, L16
		Drive-up	1 Pedestal Kit, KS-19426, L31 or 2 Posts, KS-19426, L3 (embedded) plus 1 Wire Housing, KS-19426, L16
Cluster of Three	3	Walk-up	1 Pedestal Kit, KS-19426, L29 or 2 Posts, KS-19426, L2 (embedded) plus 1 Support, KS-19426, L4
Cluster of Four	4	Walk-up	1 Pedestal Kit, KS-19426, L29 or 2 Posts, KS-19426, L2 (embedded) plus 2 Supports, KS-19426, L4

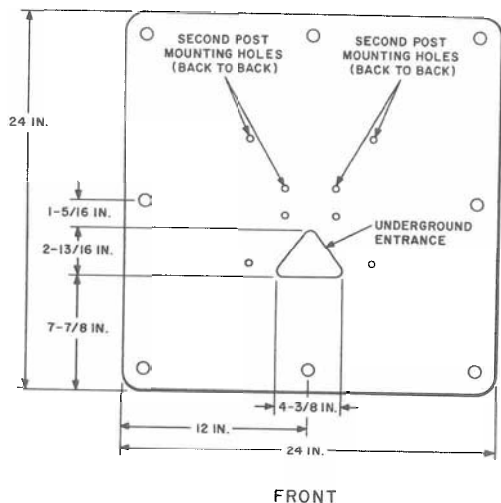


Fig. 14—B-565322 Base

- 3.13 For back-to-back installations, secure the second post to the base in the position provided using bolts as described in 3.12. Do not tighten bolts.



*When assembling posts back-to-back with wire housing or supports, do not tighten bolts securely until all parts have been mounted. This allows for final alignment before tightening bolts.*

- 3.14 For back-to-back installations (View B, Fig. 6), install KS-19426, List 16 wire housing (Fig. 13) between the two posts using the four nipples supplied with wire housing. Install wire housing with the lip flush with top of posts.
- 3.15 For cluster mounting installations (Views C and D, Fig. 6) install KS-19426, List 4 supports between the posts using (6) 1/4-20 by 1/2-inch hex head bolts for each support.
- 3.16 Ensure that post(s) are plumb and tighten mounting bolts.
- 3.17 If this installation is to have underground wiring, install telephone set wiring at this time using the right-hand hole in the gusset (Fig. 9).

#### List 1 Housing

- 3.18 Remove two screws and remove light fixture from housing.
- 3.19 Install KS-19426, List 1 housing on post(s) and/or support(s) using six No. 8-32 by 3/8-inch flathead screws and three No. 8-32 by 3/8-inch round head screws. Install round head screws at the top.



*Ensure that the neoprene gasket (furnished with housing) is installed between housing and post(s) and/or support(s) across the top.*

- 3.20 For multiple installations, tie the housings together using 1/4-20 by 1/2-inch machine bolts. Ensure that front edges of housing are even.

*Note:* One knockout is located behind the light fixture on each side of the housing where a machine bolt is to be installed.

- 3.21 Install light fixture, removed in 3.18, using two No. 8-32 by 1/4-inch round head screws. Ensure that back edge engages bracket on inside-top of housing.

#### List 6 Canopy

- 3.22 Install KS-19426, List 6 canopy (Fig. 1), if required, as follows:



*If a mast for overhead wiring is used, install B-564433 fitting inside canopy into threaded hole in post. This will separate the telephone and power wires. See 3.23 for installation of mast.*

- Remove and discard three machine bolts from the top of posts(s) and/or support(s).
- Place canopy on post or support.
- Place B-563018 plate and neoprene gasket on top of canopy at the apex.
- Secure canopy to post and/or support using one 3/8-16 by 6-3/4 inch hex head bolt (at apex) and two 3/8-16 by 6-1/2 inch hex head bolts which are furnished with canopy.

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- (e) Unless a mast is used plug up the two wiring holes in B-563018 plate using the pipe plugs furnished.
- (f) For multiple installations, tie the canopies together, 4 inches from the front corners using No. 12-24 by 3/4 inch machine bolts and 12-24 hex nuts.

### List 39 Mast

- 3.23** If a canopy is used, install KS-19426, List 39 mast, if required, as follows:
- (a) Install B-696200 adapter with neoprene gasket on top of canopy using two 3/8-16 by 7 inch hex socket head cap screws. Leave hole at apex open.
  - (b) Insert power wires through opening in adapter and canopy (with B-564433 fitting) and install mast on adapter. Secure mast to adapter using two 3/8-16 by 1-1/2 inch hex head bolts. Further secure mast at apex by inserting 3/8-16 by 8-1/2 inch hex head bolt through mast, adapter, canopy, and into post.

### List 40 Mast

- 3.24** If a canopy is not used, install KS-19426, List 40 mast, if required, as follows:
- (a) Remove and discard three bolts from top of post.
  - (b) Install B-696201 adapter with neoprene gasket on top of post using two 3/8-16 by 1-1/4 inch hex socket head cap screws. Leave hole at apex open.
  - (c) Insert power wires through opening in adapter and install mast on adapter. Secure mast to adapter using two 3/8-16 by 1-1/2 inch hex head bolts. Further secure mast at apex by inserting 3/8-16 by 2-1/2 inch hex head bolt through mast, adapter, and into post.

### First Attachment

- 3.25** If a mast is used make the first attachment for telephone entrance.



*Observe local regulations for minimum wire clearance. Bottom entrance head*

*on mast is for telephone wire entrance. A drop wire hook or first attachment bracket is fastened by a 1/4-inch bolt under entrance head. The slit rubber grommet may be used and the entrance head omitted if conditions permit.*

### Internal Wiring

- 3.26** Install telephone set wiring as outlined in 3.57 through 3.60 and install electric wiring as outlined in 3.61 through 3.67.

### Side Panels

- 3.27** Install panels as follows (Fig. 19).

**Note:** For ease of installation, screws under shelf may be loosened and shelf moved forward.

- (a) Slide left panel into position.
- (b) Secure bottom of panel to housing using three 8-32 by 5/16-inch round head screws, inserted from under shelf.
- (c) Secure top rear portion of panel to housing using B-564411 slotted retainer and one No. 8-32 by 5/16-inch round head screw.



*In the acoustic panels, the slotted retainer must be tapered in order for it to slide down in the panel.*

- (d) **FOR NARROW PANEL, INSTALL B-563247 TOP RETAINER WITH LIP TOWARD INSIDE USING ONE NO. 8-32 BY 3/16-INCH FLATHEAD SCREW.**
- (e) **FOR NARROW PANEL, INSTALL B-563234-2 BOTTOM RETAINER, WITH LIP TOWARD OUTSIDE USING ONE NO. 8-32 BY 5/8-INCH ROUND HEAD SCREW.**
- (f) **FOR WIDE PANEL, INSTALL B-563234-1 BOTTOM RETAINER WITH LIP TOWARD OUTSIDE, USING ONE NO. 8-32 BY 5/8-INCH ROUND HEAD SCREW.**
- (g) If an acoustic panel is used, secure top of panel to housing using No. 8 self-tapping screw.
- (h) Slide right panel into position.

- (i) Perform operations outlined in (b) and (c).
- (j) **FOR NARROW PANEL, INSTALL B-563248 TOP RETAINER, WITH LIP TOWARD INSIDE, USING ONE NO. 8-32 BY 3/16 FLATHEAD SCREW.**
- (k) **FOR NARROW PANEL, INSTALL B-563235-2 BOTTOM RETAINER, WITH LIP TOWARD OUTSIDE USING ONE NO. 8-32 BY 5/8-INCH ROUND HEAD SCREW.**
- (l) **FOR WIDE PANEL, INSTALL B-563235-1 BOTTOM RETAINER, WITH LIP TOWARD OUTSIDE USING ONE NO. 8-32 BY 5/8-INCH ROUND HEAD SCREW.**



*When two housings are mounted side-by-side in multiple installations, and glass panels are used, a filler multiplying strip (List 24 or List 25) is used in place of one of the panels. Do not use wide panels on drive-up mountings.*

#### List 34 Top Assembly

- 3.28** If a 235- or 1235-type coin collector or a 2A/2C-type coin telephone set is used, install KS-19426, List 34 top assembly on the coin telephone set using two screws furnished with top assembly.
- 3.29** Install the coin collector or coin telephone set with top assembly attached, at this point. Use security studs with KS-19426 mounting, see Sections 506-410-400, 506-411-401, or 506-412-402 for stud selection.

#### List 7 Installation Kit

- 3.30** If 1-type coin telephone set is used, install KS-19426 List 7 installation kit (Fig. 20) as follows:
- (a) Ensure that studs and insert in backboard are tight.
  - (b) Install backboard in housing using six 1/4-20 by 5/8-inch round head screws.
  - (c) Install B-564432 bracket on bottom of housing using two No. 8-32 by 1/4-inch round head screws.

- (d) Install B-563229 bracket on the top of backboard using two No. 8-32 by 1/4-inch flathead screws.
- (e) Remove protective paper from edges only of B-563227 left shroud assembly. Install shroud assembly in the housing using 1/4-20 by 1/2-inch round head screw at top.
- (f) Secure left shroud assembly to B-564432 bracket, installed in (c) using one No. 8-32 by 1/4-inch round head screw.
- (g) Remove protective paper from edges only of B-563228 right shroud assembly. Install shroud assembly in the housing using one 1/4-20 by 1/2-inch round head screw at top.
- (h) Secure right shroud assembly to B-564432 bracket, installed in step (c) using one No. 8-32 by 1/4-inch round head screw.
- (i) Install coin telephone set using security studs, 3.29.
- (j) Install B-564435 strip assembly above coin telephone set using two No. 8-32 by 1/4-inch tamper proof screws and KS-19192, List 1 wrench.
- (k) Remove protective paper completely from shrouds after installation is complete.

#### List 8 Installation Kit

- 3.31** If a 200-type coin collector is used, install KS-19426, List 8 installation kit (Fig. 21) as follows:
- (a) Ensure that studs and insert in adapter backboard are tight.
  - (b) Place B-563284 back shelf in bottom rear of housing. Secure by inserting two No. 8-32 by 1/4-inch round head machine screws from the underside of the housing. Do not tighten.
  - (c) Install backboard in housing using six 1/4-20 by 5/8-inch round head screws.
  - (d) Install B-563229 bracket on top of backboard using two No. 8-32 by 1/4-inch flathead screws. Do not tighten.

- (e) Remove protective paper from edges only of B-563289 left shroud assembly. Insert bottom of shroud into slots of back shelf, installed in (b) and secure shroud to housing using one 1/4-20 by 1/2-inch round head screw at top. Do not tighten.
- (f) Remove protective paper from edges only of B-563290 right shroud assembly. Insert bottom of shroud into slots of back shelf installed in (b) and secure shroud to housing using one 1/4-20 by 1/2-inch round head screw at top. Do not tighten.
- (g) Align back shelf, shrouds, and bracket. Tighten all screws.
- (h) Install 200-type coin collector. Use P-12E793 security studs with KS-19426 mounting.
- (i) Install appropriate subscriber set on top of adapter backboard and on B-563229 bracket using four No. 8-32 by 1/4-inch round head screws.

**Note:** Do not attach plastic subscriber set cover.

- (j) Install B-564418 subscriber set cover assembly on B-563229 bracket using two No. 10-24 by 1/2-inch tamper proof screws and KS-19192, List 1 wrench.
- (k) Remove protector paper completely from shrouds after installation is complete.

#### List 18 Cardholder

**3.32** If a List 18 cardholder is required for the 200-type coin collector, install as follows (Fig. 11):

- (a) Loosen two No. 8-32 by 1/4-inch round head screws located on bottom of subscriber set cover assembly.
- (b) Insert appropriate card into cardholder frame.
- (c) Slide notched clip of cardholder under the two loose screws.
- (d) Insert tab at top of cardholder into notch of subscriber set cover.

- (e) Tighten the two screws.

#### Light Shield

**3.33** Insert fluorescent lamp in light fixture and install light shield as follows:

- (a) Slide light shield over the panel retaining channels and verify that shield is seated properly against gasket. Ensure that back edge of shield is engaged in KS-19426, List 34 top assembly or B-564418 subset cover assembly (whichever is applicable).
- (b) Install shield retainer bar across top of housing using four No. 10-24 by 1/2-inch tamperproof screws and KS-19192, List 1 wrench.

#### List 32 and 33 Base Covers

**3.34** Install KS-19426, List 32 and List 33 base covers or two KS-19426, List 33 base covers as follows (Fig. 9)

**Note:** KS-19426, List 33 has a cutout for post. If two posts are back-to-back, two List 33 covers are used.

- (a) Slide List 32 cover over base from rear as shown, being careful to get bottom angles under base between base standoffs.
- (b) Slide List 33 cover over base from front, being careful to get bottom angles under base. Apply KS-19094 antiseize compound to the threads of two 1/4-20 by 1-1/4 inch hex head self-tapping screws. Secure cover to post using these screws.
- (c) Apply KS-19094 antiseize compound to the threads of two No. 8-32 by 3/8-inch flathead self-tapping screws. Secure the interlocking portion of the two covers together using these screws.

#### Post Enclosures

**3.35** Install enclosure assembly removed in 3.11 (Fig. 9) on the lower portion of the post by engaging the clips of the enclosure with the corresponding brackets on the post and sliding down flush against the base cover.

- 3.36** Install shroud removed in 3.10 on the upper portion of the post by engaging the bottom of the assembly with the top of the previously installed enclosure assembly and using two tamperproof screws and KS-19192, List 1 wrench.

#### List 13 or 14 Directory Holder

- 3.37** Install KS-19426, List 13 or List 14 directory holder, if required, as outlined below.

**Note:** KS-19426, List 13 is used for outdoor walk-up service; KS-19426, List 14 is used for indoor service.

- (a) Install slide mechanism under shelf of housing using six No. 8-32 by 1/2-inch round head screws.
- (b) Fasten the book holder to the slide mechanism by inserting the hinge pin through the hinge arm and securing with No. 10-32 by 3/8 phillips head nylock screw. Refer to Section 508-710-102 for additional information on directory holders.

#### KS-19426, List 41 Mast and KS-20031 Sign (Fig. 1)



*The KS-20031, List 1 sign can be installed on top of KS-19426, List 39 or 40 mast. If neither of these masts is used and a sign is desired, it will be necessary to install a KS-19426, List 41 mast. The List 41 mast cannot be installed on mountings without canopies.*

#### List 41 Mast

- 3.38** Install KS-19426, List 41 mast on canopy as follows:
- (a) Install adapter with neoprene gasket (both furnished with mast) on top of canopy using two 3/8-16 by 7-inch hex socket-head cap screws. Leave hole at apex open.
  - (b) Secure List 41 mast to adapter using two 3/8-16 by 1-1/2 inch hex head bolts. Secure mast at apex by inserting 3/8-16 by 8-1/2 inch hex head bolt through mast, adapter, canopy, and into post.

#### KS-20031 Sign

- 3.39** Install KS-20031, List 1 sign as follows:

**Note:** The KS-20031, List 1 sign may be mounted with a flat side of the lens facing forward or it may be rotated 180 degrees to provide a corner in the forward position. Change mounting positions by removing four cap nuts from the bottom, rotating the lens 180 degrees, and securing it again with the cap nuts. For complete information on the sign refer to Section 508-810-202.

- (a) Mount the sign on the mast and secure sign with four 1/4-20 by 1/2-inch FH screws.
- (b) KS-20031, List 1 sign lamps shall be wired to junction box below housing with No. 14 AWG wire. Connections should conform to connections of the housing fluorescent lamp.

**Caution:** *Do not expose eyes or skin to ultra violet rays of a burning mercury arc if the outer glass envelope is broken.*

#### Post Mountings Embedded in Concrete

**Note:** Refer to 3.01, 3.02, 3.03, or 3.04 for concrete thickness requirements when installing post mountings.

- 3.40** Embed KS-19426, List 2 post(s), for walk-up mountings, or KS-19426, List 3 post(s), for drive-up mountings, in the center of the base to concur with the dimensions shown in Fig. 17 or 18.
- 3.41** Determine that the post(s) is perfectly plumb to ensure proper operation of the coin telephone set.
- 3.42** Perform the operations outlined in 3.14, 3.15, 3.17 through 3.33, and 3.35 through 3.39.

#### Wall Mountings, Using KS-19426, List 4 Support

**Note:** KS-19426, List 4 support may be installed in a corner (View B, Fig. 7), at right angles (View C, Fig. 7), or around a corner (View D, Fig. 7).

- 3.43** Place support on the wall 45-1/8 inches from ground or floor. See Fig. 22 for installation requirements.

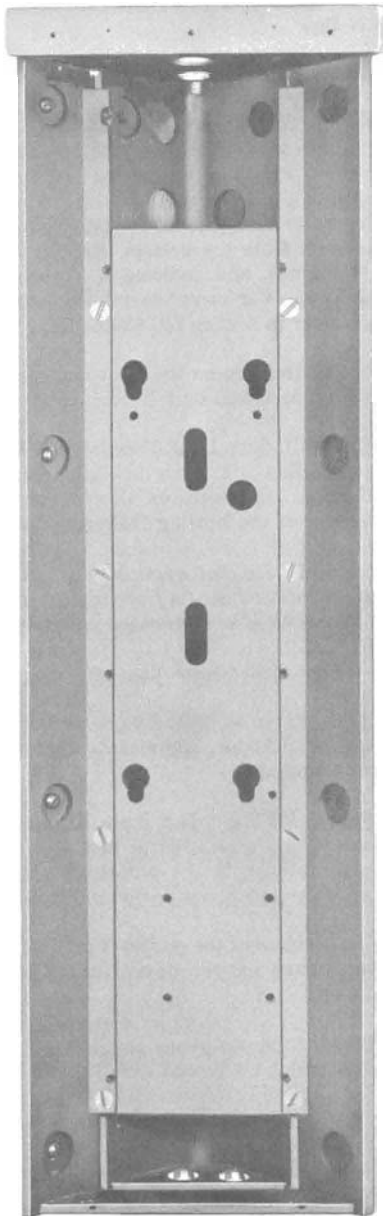


Fig. 15—KS-19426, List 4 Support

- 3.44 Remove sliding backboard to expose mounting holes.
- 3.45 Using the support as a template, mark for the drilling of eight holes in wall.
- 3.46 Drill anchor holes in masonry or lead holes in wood and use fasteners as indicated in Table C to fasten support to surface.

**THINK** *Eye protection shall be worn while drilling operations are being performed.*

- 3.47 Install sliding backboard in support.
- 3.48 When installing two mountings adjacent to each other (View C, Fig. 7), secure two supports together using six 1/4-20 by 1/2-inch hex head bolts.
- 3.49 To install a mounting around a corner (View D, Fig. 7), secure the center support to the adjacent supports using twelve 1/4-20 by 1/2-inch hex head bolts.
- 3.50 Perform operations outlined in 3.18 through 3.22, 3.26 through 3.33, and 3.37.

#### Wall Mountings, Using KS-19426, List 5 Support

**Note:** KS-19426, List 5 support is used to install a wall mounting on a flat surface (View A, Fig. 7).

- 3.51 Place support on the wall 45-1/8 inches from ground or floor. See Fig. 22 for installation requirements.
- 3.52 Remove sliding backboard to expose mounting holes.
- 3.53 Using the support as a template, mark for the drilling of eight holes in wall.
- 3.54 Drill anchor holes in masonry or lead holes in wood and use fasteners indicated in Table C to fasten support to surface.

**THINK** *Eye protection shall be worn while drilling operations are being performed.*

- 3.55 Install sliding backboard in support.



**TABLE C**  
**FASTENERS FOR WALL MOUNTINGS**

FASTENER	DRILL SIZE	MOUNTING SURFACES			
		SOFT WOOD	HARD WOOD	MASONRY (CONCRETE, BRICK)	CINDER BLOCK, HOLLOW TILE
1-1/4 inch No. 14 tapping screw	3/32		•		
5/16 by 2-inch hex cr RH machine screw and 5/16-inch expansion shield	5/8			•	
1/4 by 4-inch RH toggle bolt	3/4	•			•

- 3.56** Perform operations outlined in 3.18, 3.19, 3.21, 3.22, 3.26 through 3.33, and 3.37.

#### Telephone Wiring

- 3.57** The wiring for a post mounting may enter from the ground or from a mast (Fig. 17, or 18).
- 3.58** The wiring for a wall mounting may enter from the bottom of the housing, top of housing, or from the back of the housing through the wall (Fig. 22).
- 3.59** If station protection is required, install 123A1A protector on the bracket provided in the rear of the housing (Fig. 19) and terminate station wiring on protector.
- 3.60** If 123A1A protector is not used, install a fused-type protector at a convenient location and connect to telephone ground rod. Install a 42-type connecting block on the housing bracket and terminate station wiring on this block.



*When station wiring is installed for single mountings, consideration should be given for future requirements (back-to-back or clustered mountings). The 44A-type connecting block may be substituted to terminate a 6-pair cable.*

- 3.61** Ground for the station protector is usually provided by the power system ground. See

Section 508-100-100 for complete grounding information.

#### Electric Wiring

- 3.62** Install 110-volt wiring to conform with current requirement of the National Electrical Code, Governmental Agencies, and company standards.
- 3.63** Observe the following safety rules.



*Under no circumstances shall any makeshift or temporary electrical connections be made on lighting equipment. Before making any repairs or replacements in electrical equipment, operate the electric switch and make sure that the circuit is dead. Verification can be made by using an electric wire tester or other approved testing devices. Wear eye protection when handling fluorescent lamps.*

- 3.64** Use the 3-wire arrangement between the power service equipment and the housing. It is recommended that this 3-wire arrangement to the service equipment or to a circuit breaker enclosure be used at all installations.
- 3.65** Use Fig. 23 as a guide for internal wiring.
- 3.66** When a service entrance box is used in post mounted installations, interconnect the service entrance box and the circuit breaker enclosure, Heineman Electric Co. No. 0912, 15 amp Cat

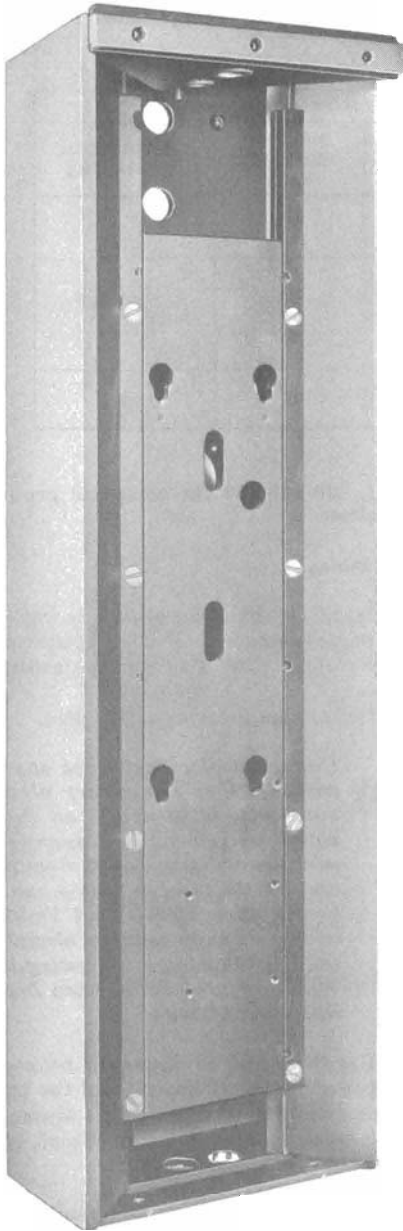


Fig. 16—KS-19426, List 5 Support

#91-106-1 circuit breaker (obtained locally) terminal block under the housing with B-564428 cable assembly.

**Note:** Install cable with long end fitting at top.

**3.67** Interconnect power receptacles in back-to-back or cluster mountings using No. 14, 3-wire armored cable and fittings. Feed cable *through* top side hole of post and housings or supports (2.23).

**3.68** A KS-19261, List 3 light control is available to switch the light on at darkness and off at daylight; install in accordance with Section 508-825-100.

#### 4. MAINTENANCE

**4.01** The local telephone company shall establish appearance standards of all exposed surfaces.

**4.02** The local telephone company shall establish safety standards for all mountings.

**4.03** Inspect the approach to the mounting and ensure it is free of all safety hazards.

**4.04** Clean these mountings in accordance with Section 508-100-101.



**Wear eye protection when removing light shield or replacing lamps. Turn power off before working on lighting equipment or electrical wiring.**

**4.05** Replace light shields and lamps which do not meet company standards. Replace broken or damaged KS-20031, List 2 lens assembly as follows:

- (1) Remove four cap nuts from bottom of assembly and remove old lens.
- (2) Install new lens using reverse procedure.

**Caution:** Do not expose eyes or skin to ultra violet rays of a burning mercury arc if the outer glass envelope is broken.

**4.06** To replace broken or damaged side panels (3.27).

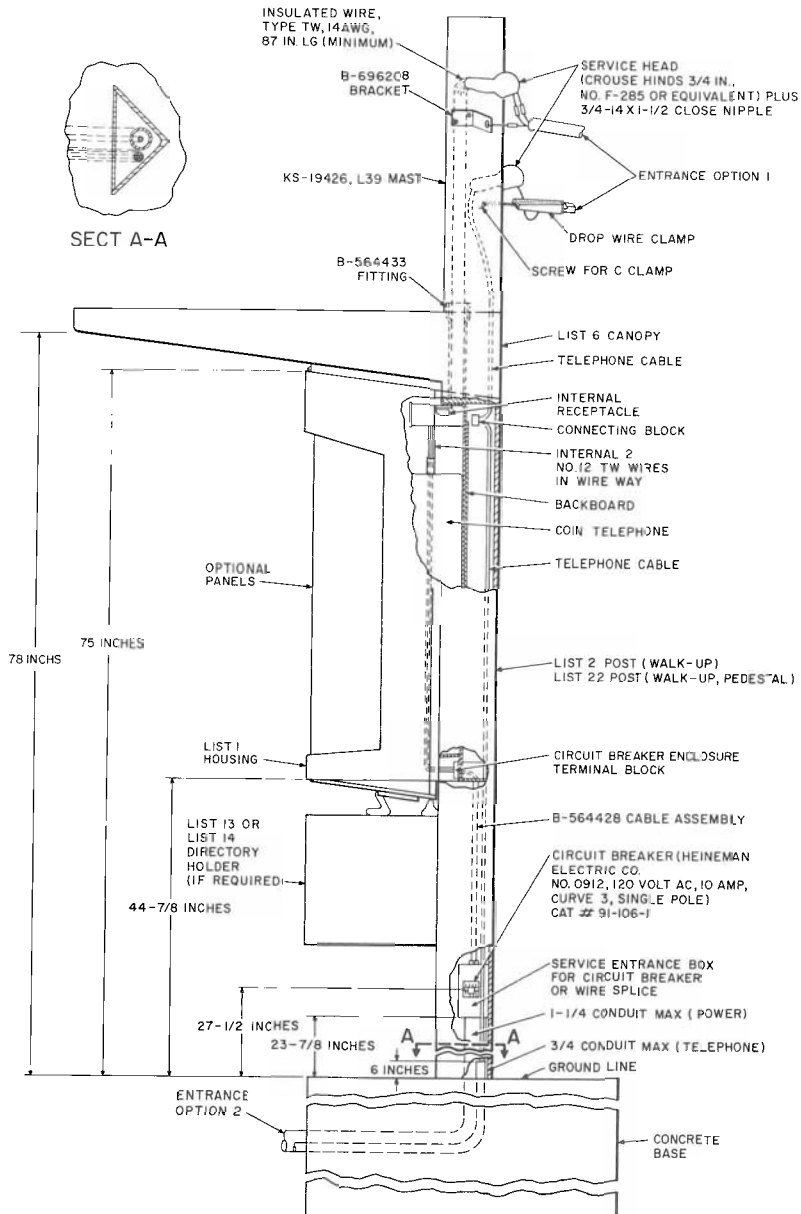


Fig. 17—Installation Requirements for Post or Pedestal Mounting, Walk-Up Location

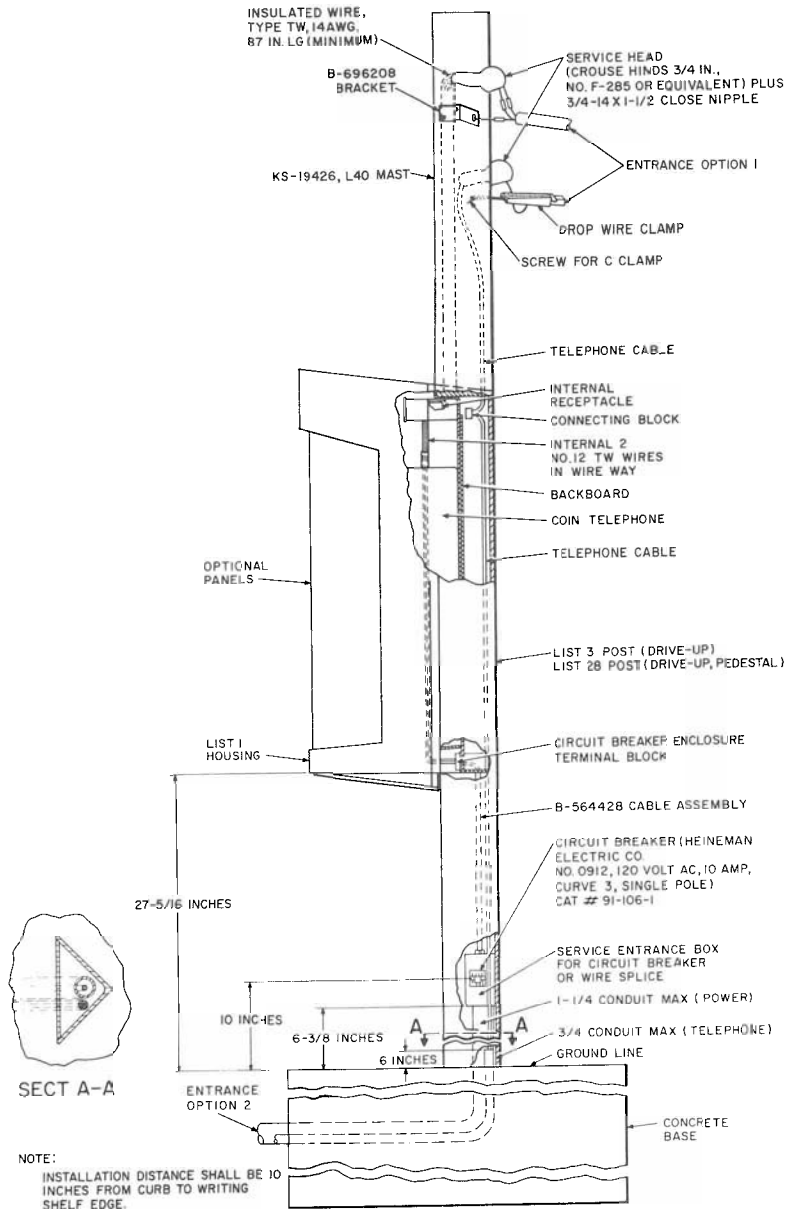
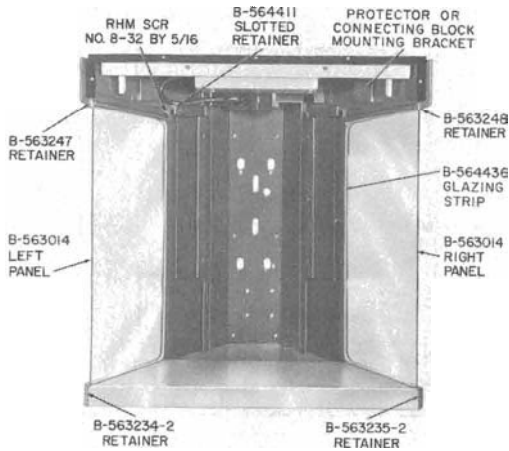


Fig. 18—Installation Requirements for Post or Pedestal Mounting, Drive-Up Location



**Fig. 19—KS-19426, List 1 Housing Showing Installation of Panels**

**Caution:** After replacing side panels, ensure that all retainers on panels are in place.

**4.07** In pedestal or post mountings, replace post covers or pedestal covers which are damaged (3.34 through 3.36).

**Note:** Repair kits for installing new type covers on damaged old type post assemblies are available as follows:

- SI-378—Used on KS-19426 List 2 walk-up embedded post
- SI-379—Used on KS-19426 List 3 drive-up embedded post
- SI-380—Used on KS-19426 List 22 walk-up surface mounted post
- SI-381—Used on KS-19426 List 28 drive-up surface mounted post

**4.08** Ensure that mounting bolts for canopy and mast (if provided) are tight.

**4.09** In pedestal mountings, ensure that the mounting bolts in the base are tight.

**4.10** Replace telephone directories, holders, and covers which show signs of excessive wear or damage by removing screw and hinge pin which secures cover to hanger assembly.

#### Replacement Parts

**4.11** For replacement parts other than those previously illustrated or listed in Table A, refer to Table D.

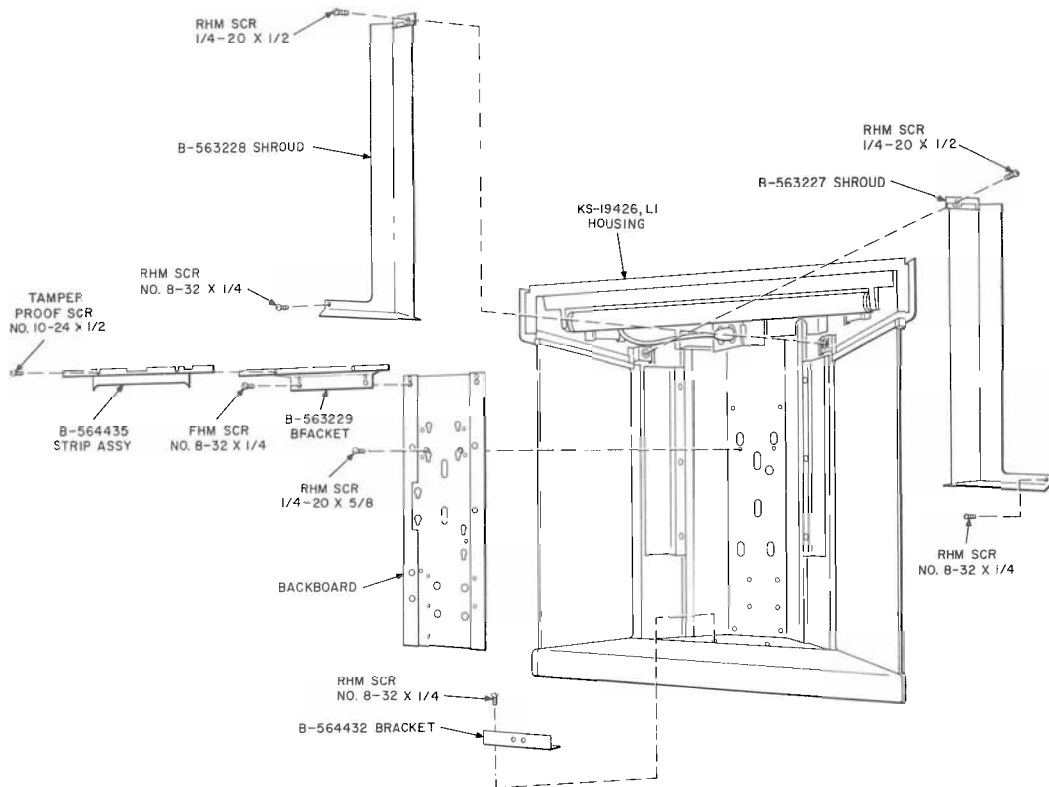


Fig. 20—KS-19426, List 7 Installation Kit

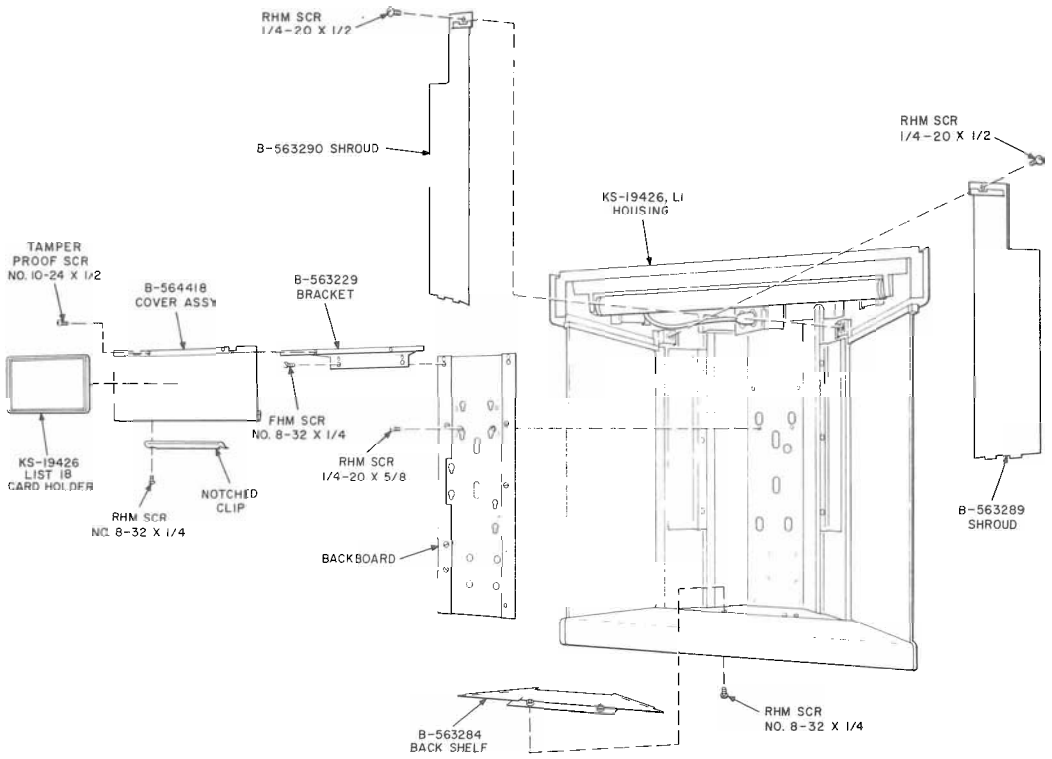


Fig. 21—KS-19426, List 8 Installation Kit

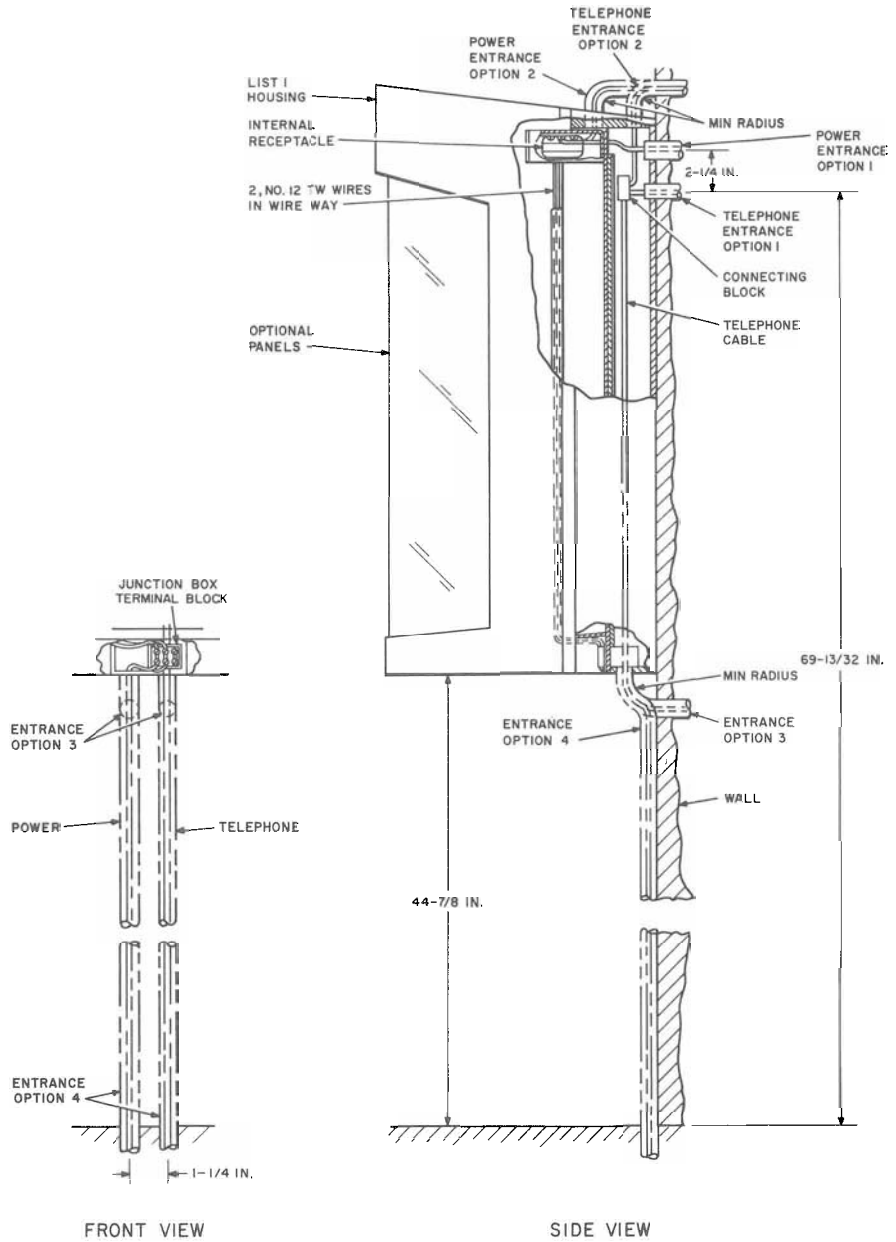
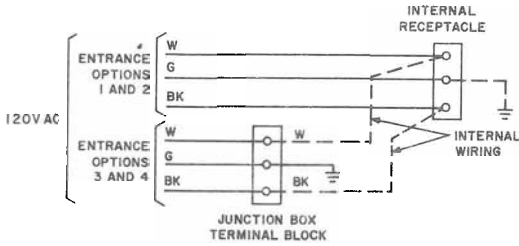


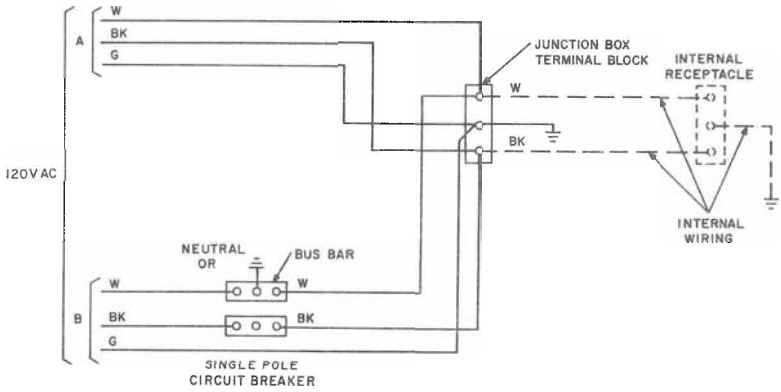
Fig. 22—Installation Requirements for Wall Mountings



WALL MOUNTING



WALK-UP, DRIVE-UP MOUNTING



- STANDARD WIRING
- A-NO CIRCUIT BREAKER
- OPTIONAL WIRING
- B-SINGLE POLE CIRCUIT BREAKER. (HEINEMAN ELECTRIC CO NO. 0912, 120 VOLT AC, 10 AMP, CURVE 3)

Fig. 23—Wiring Diagram

TABLE D  
REPLACEMENT PARTS

NAME	PART NO. OR DESCRIPTION	REMARKS	
Ballast	G. E. Co. No. 6G3744 or equivalent	Component of B-563275 light fixture	
Cable Assembly	B-564428	Power cable in post — Connects between circuit breaker box and L1 housing	
Cord Assembly	B-563276	Component of B-563275 light fixture	
Shroud Assembly		Shown on Fig. 9	
Enclosure Assembly	B-563020-1		Front of all list number posts
	B-563020-2		Front of List 2 Post
	B-563020-3		Front of List 22 Post
	B-563020-4	Front of List 3 Post	
Glass Panel	B-563013	Component of List 20 and List 21	
	B-563014	Component of List 9 and List 10	
Glazing Strip	B-564436	Rear strip on Lists 9, 10, 20, and 21	
	B-564437	Front strip on List 20 and 21	
Grommet	B-696207	Used at wire entrance hole on L39 and L40 masts	
Retainer	B-563234-1	Bottom retainer of wide panel when panel is used on left side of housing	
	B-563234-2	Bottom retainer of narrow panel or multiplying strip when panel or strip is used on left side of housing	
	B-563235-1	Bottom retainer of wide panel when panel is used on right side of housing	
	B-563235-2	Bottom retainer of narrow panel or multiplying strip when panel or strip is used on right side of housing	
	B-563247	Top retainer of narrow panel or multiplying strip when panel or strip is used on left side of housing	
	B-563248	Top retainer of narrow panel on multiplying strip when panel or strip is used on right side of housing	
	B-564411	Top rear retainer on all glass panels and multiplying strips	
Pipe Plug	Graybar Co. No. 15 or equivalent	Threaded plug used to plug telephone wire entrance hole in top of post or support	
	Graybar Co. No. 25 or equivalent	Threaded plug used to plug power wire entrance hole in top of post or support	
Post	List 22	Component of List 23 and List 29	
	List 28	Component of List 30 and List 31	
Cover	List 32	Component of List 23 and List 30	
	List 33	Component of List 23, 29, 30, and 31	
Directory Cover	List 42	Component of List 13	
	List 43	Component of List 14	

## TELEPHONE MOUNTING

### KS-20842

#### 1. GENERAL

**1.01** This section provides information required for installing and maintaining the KS-20842 telephone mounting.

**1.02** The telephone mounting is an indoor-outdoor, vandal-resistant unit designed to provide additional security for the coin telephone.

#### 2. IDENTIFICATION

**2.01** The KS-20842 mounting (Fig. 1 and 2) consists of a post, a shelf or housing, and a base. Refer to Table A for the various combinations of the shelf, housing, and base that may be used with the post to make up the different mounting assemblies.

**2.02** The mounting may be installed singly as a free standing unit, against the wall, or multiple back-to-back arrangement.

**2.03** The unit is approximately 5-1/2 feet high and mounts a coin telephone approximately 4 feet (bottom of set) above the surface.

##### LIST 40 POST

**2.04** The List 40 post (Fig. 1) is common to each of the mounting assemblies. The post is approximately 5-1/2 feet high, 10 inches wide, and 4 inches deep. A black textured vinyl finish covers the 3/16-inch thick steel unit.

**2.05** A recessed area on the upper part of the post provides facilities for mounting any 1-type coin telephone. The area limits access to the lip of the front cover and the back half of the telephone including the rear mounting surface.

**2.06** Entrance holes are provided in the top and bottom of the post so that power and telephone wiring connections may be from overhead or underground.

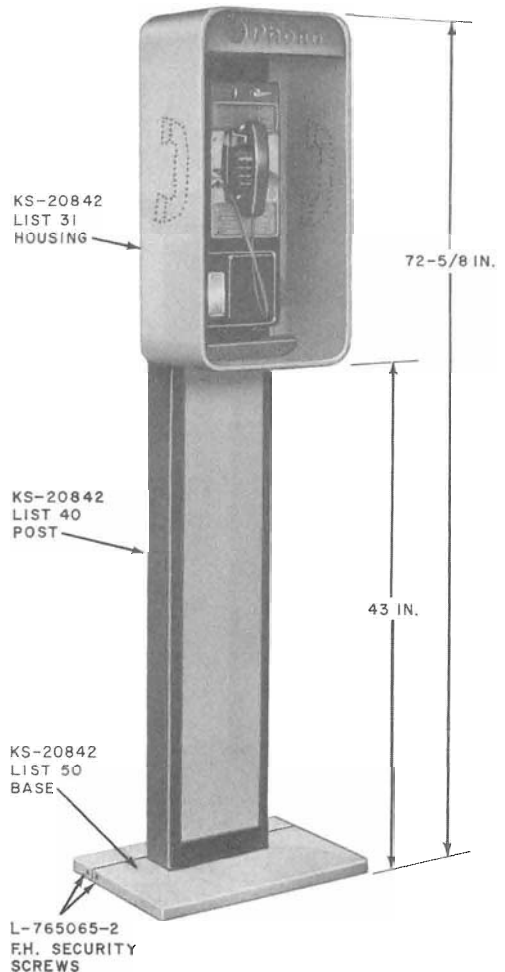


Fig. 1—KS-20842, List 5 Telephone Mounting

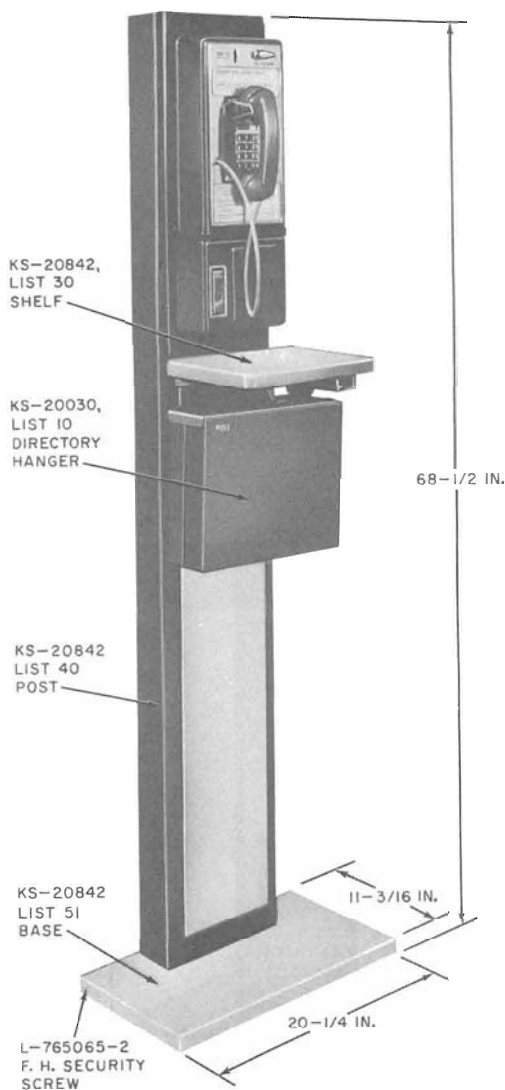


Fig. 2—KS-20842, List 2 Telephone Mounting

**2.07** An aluminum panel on front of the post provides access to an outlet box and protector for terminating the power and telephone service coming into the post.

**2.08** The panel is secured to the post with two screws and a fastening arrangement using spring-loaded pins. A specific procedure must be followed to remove the panel.

#### MOUNTING BASE

**2.09** A steel base is provided for mounting the post assembly. One of three bases may be used; the List 50 regular pedestal base, the List 51 short pedestal base, and the List 52 buried base.

**2.10** *List 50 regular base* (Fig. 1) is 20 inches long, 14 inches wide, 7/8-inch thick, and weighs approximately 70 pounds. Ten holes are provided for securing the base to a mounting surface. Two aluminum covers protect the mounting hardware and provide a finished appearance. The regular base is used in all pedestal installations except next-to-wall or back-to-back installations.

**2.11** *List 51 short base* (Fig. 2) mounts the post assembly flush with the back of the base to permit a next-to-wall or back-to-back pedestal installation. The base is 20 inches long, 11 inches wide, 7/8-inch thick, and weighs approximately 55 pounds. Eight mounting holes and only one cover are provided with the short base.

**2.12** *List 52 buried base* (Fig. 3) is 10 inches wide, 4 inches deep, and 24 inches long. The base is normally embedded full length in concrete with the top flush with the surface. The base top provides four threaded holes for use when mounting the post. Holes are provided through the base for four reinforcement rods which add strength and stability when installed.

#### LIST 31 HOUSING

**2.13** An aluminum housing, 14-5/8 inches wide, 9-1/2 inches deep, 29-1/2 inches high, and 1/4-inch thick, is provided for indoor and outdoor use. The housing mounts on top of post (Fig. 1) and may be installed or replaced without removing the telephone or interrupting the telephone service.

TABLE A  
COMPONENTS OF KS-20842 BASIC LIST NUMBERS

COMPLETE ASSEMBLY LIST NO.	COMPONENT DESCRIPTION						REMARKS
	LIST 40 WALK-UP POST	LIST 30 SHELF	LIST 31 HOUSING	BASE ASSEMBLY			
				LIST 50 REGULAR	*LIST 51 SHORT	LIST 52 BURIED	
1	•	•		•			Indoor only
2	•	•			•		
5	•		•	•			Indoor or Outdoor
6	•		•		•		
7	•		•			•	

\* Used on back-to-back or back-flush-to-wall installations only.

The housing limits unauthorized access to sides of telephone, offers some voice privacy and weather protection, and provides a light and sign for the station.

**2.14** Electrical service from the post to the housing is provided by a plug-connected cord. A light fixture is located in top of housing to illuminate the sign and the telephone set. The light fixture is plug connected to the housing for easier replacement.

#### LIST 30 SHELF

**2.15** A List 30 shelf assembly (Fig. 2) is to be used indoors only and when the List 31 housing is not provided. The shelf mounts on front of post below the recessed telephone. Made of stainless steel, the shelf is approximately 13 inches wide and extends 8-3/4 inches from post.

#### WIRING

##### Electrical Wiring

**2.16** Electrical service terminates in an electrical outlet located on the lower left inside of post (Fig. 4). The power wiring feeds up through a rectangular entrance hole when coming from below ground level (Fig. 5) or follows a channel down the left side of the post when entering from overhead (Fig. 6).

**2.17** Mounting space is provided on a bracket, below electrical outlet, for installing an

optional circuit breaker box when required (Fig. 4). The following items must be ordered separately:

- KS-19426, List 17 circuit breaker box
- Heinemann Electric Co. No. 0912 single-pole circuit breaker, 120V, 15 amp, time-delay curve No. 3.

**2.18** A lug (Fig. 4) is provided below electrical outlet for connecting the ground wires.

##### Telephone Wiring

**2.19** The telephone wiring terminates on either a 123A1A protector or a 42A connecting block which mounts on a bracket located inside, lower-rear of post behind an access cover (Fig. 7). When the coin telephone provides the appropriate mounting holes, the protector may be installed inside the set if desired.

**2.20** When telephone service enters the post from overhead or from below ground level, the wires are directed to an entrance hole in the rear of the recessed area for connecting to the coin telephone.

##### LIGHT CONTROL ASSEMBLY

**2.21** The lamps in the housing may be wired for continuous illumination, however, a KS-19261, List 4 light control assembly, an optional item, may be used to switch the lamps on at darkness and off at daylight (Fig. 8).

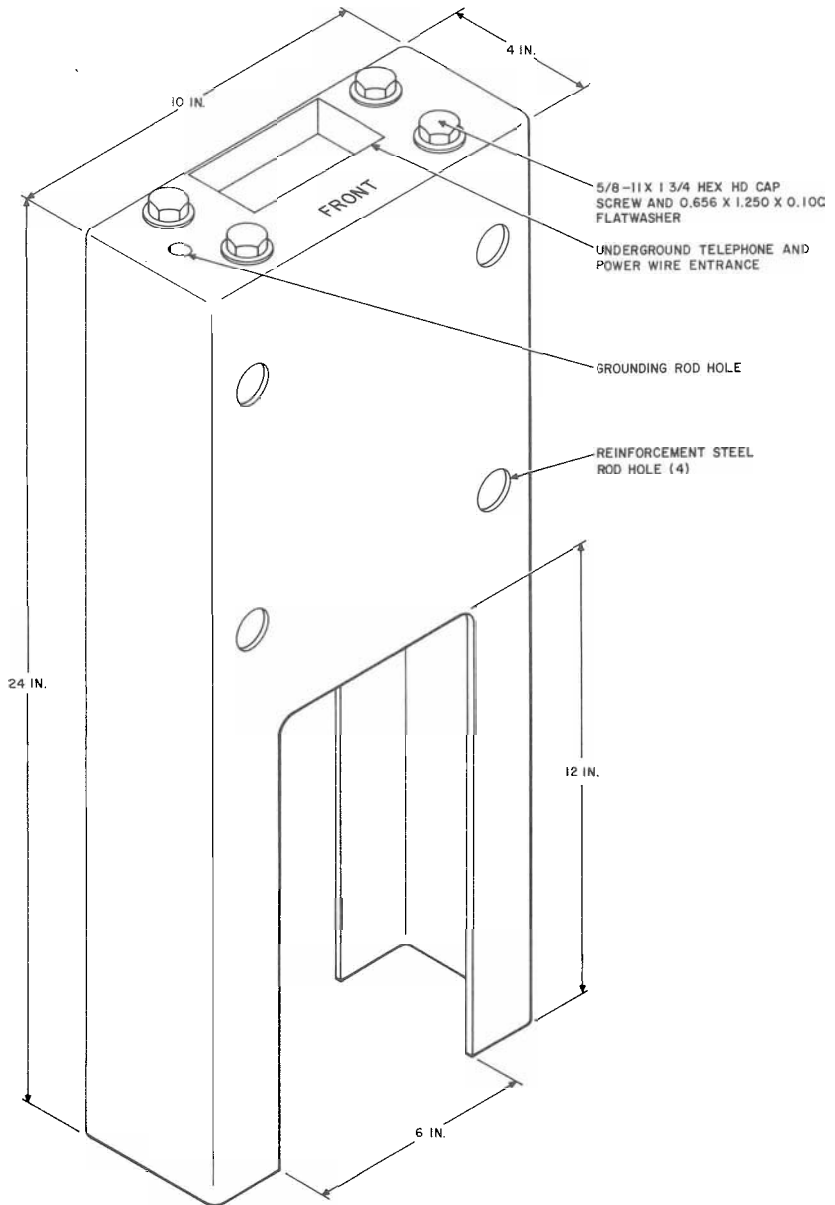


Fig. 3—KS-20842, List 52 Buried Base

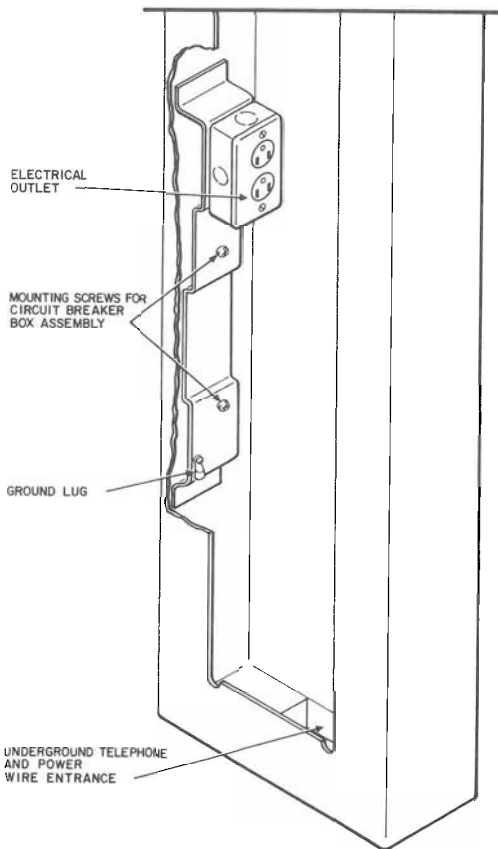


Fig. 4—Outlet for Terminating Electrical Service

**2.22** One List 4 light control unit may be used to control the lamps in both housings in a back-to-back installation.

#### OPTIONAL DIRECTORY HANGER

**2.23** A directory hanger may be used with each telephone mounting. The KS-20842, List 30 shelf will accept a KS-20030, List 9 directory hanger (Fig. 2) and the KS-20842, List 31 housing will accept a KS-20030, List 10 directory hanger. Each hanger must be ordered separately.

#### ORDERING GUIDE

**2.24** Orders for the telephone mounting shall specify the quantity, KS number, the list number, and any desired item which must be ordered separately (Table A). The following are typical orders:

##### *Example 1:*

One single, indoor, back-to-wall, pedestal-mounted unit with shelf

1—Mounting, Telephone, KS-20842, List 2

##### *Example 2:*

One single, indoor or outdoor, free standing, pedestal-mounted unit with housing and directory hanger

1—Mounting, Telephone, KS-20842, List 5

1—Hanger, Directory, KS-20030, List 10

##### *Example 3:*

One indoor or outdoor, pedestal-mounted, back-to-back installation with housing and electrical service entrance box

2—Mounting, Telephone, KS-20842, List 6

1—Box, Circuit Breaker, KS-19426, List 17

1—Circuit Breaker, Single-Pole, 120V, 15 Amp, Time-Delay Curve No. 3, Heinemann Electric Co. No. 0912

### 3. INSTALLATION

**3.01** Location of telephone mounting should be:

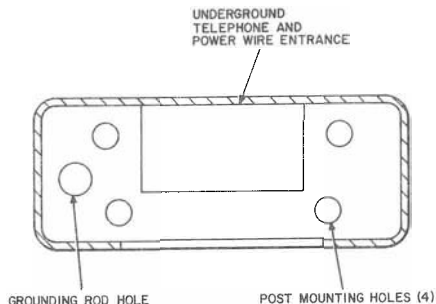
- Readily accessible to customer
- Free of such hazards as broken or uneven pavements or surfaces
- Clear of wall switches, outlets, or fuse boxes
- In sufficient space to permit access for maintenance purposes.

**3.02** Telephone mountings may be installed on a concrete or wooden surfaces. The concrete base shall be a 36-inch cube flush with ground level wherever possible. Wooden surfaces must have a minimum thickness of 2 inches.

**PEDESTAL BASE INSTALLATION (KS-20842, List 1, 2, 5, and 6)**

*List 50 and 51 Base and List 40 Post*

**Note:** Installation procedure given is for the KS-20842, List 50 regular base. Procedure for the List 51 short base is identical with the exception there are only eight mounting holes in the base and only one cover. Refer to Fig. 9 for layout of mounting holes on each base. The solid line for the List 51 base represents a single mounting installation while the solid line plus the broken lines show the outline of a back-to-back installation. The List 50 base will be used for all pedestal installations except post-against-wall or back-to-back installations.



**Fig. 5—Layout of Holes in Bottom of Post**

**3.03** Install the List 50 regular base and the List 40 post assembly as follows:

- (1) Using a KS-19192, List 1 wrench, remove the four security screws and two covers from the List 50 base (Fig. 1).
- (2) Place the base in exact position that the telephone mounting is to be installed. If underground power and telephone wires are to be used, ensure that the conduit studs in the

mounting surface correspond to the wire entrance hole in the base.

- (3) If a ground rod must be provided for the installation (refer to Section 508-100-100 for grounding requirements), install the rod so that 4 to 5 inches will extend above the top of the base.
- (4) Using the base as a template, mark the locations of the ten mounting holes.
- (5) Remove the base from the drilling area.



**Use eye protection while drilling the mounting holes.**

- (6) The base is secured to a masonry surface with ten 1/2 by 3 machine bolts. Select the proper anchor to accommodate this size bolt and drill holes to accept the anchors.
- (7) The base is secured to a wooden surface with ten 5/8 by 3 lag screws. Drill 1/2-inch lead hole 2 inches deep for these screws.
- (8) Lay the List 40 post adjacent to the mounting area with the recessed area up.
- (9) Using a KS-19192, List 1 wrench, remove the two flat head screws from the upper part of the front panel. Remove the panel from the post as follows:
  - (a) Brace knee against the right side of the post.
  - (b) Place both hands on the left side of the panel as shown in Fig. 10.
  - (c) Pull forward both top and bottom of the panel at the same time.
  - (d) When the locking flange on the left side of the panel clears the post, pivot the left side away from the post.
  - (e) Pull the entire panel to the left until freed from the post.
- (10) Remove the four 5/8-11 by 1-3/4 hex head cap screws and four 5/8-inch flatwashers



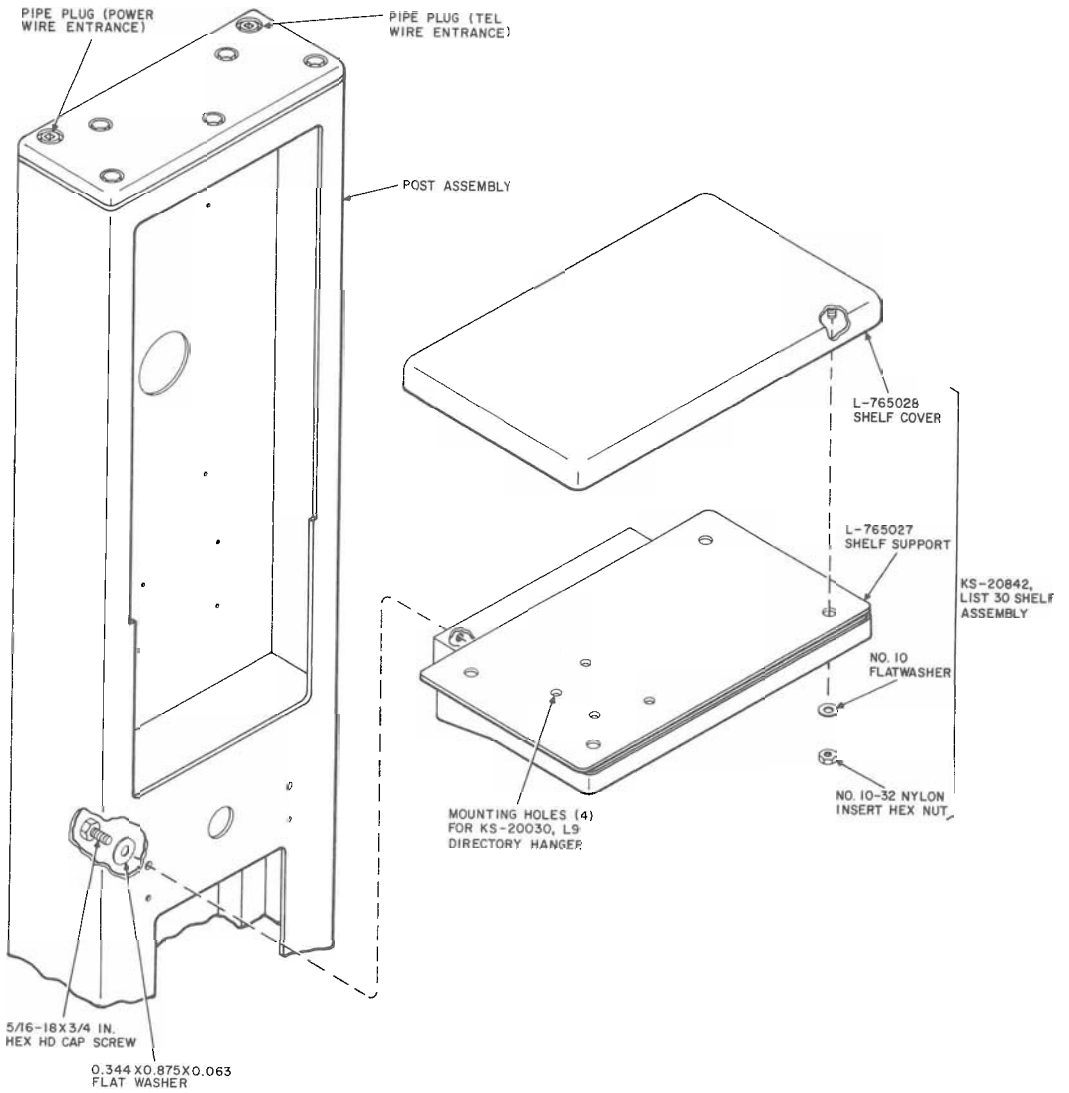


Fig. 6—Installation of List 30 Shelf on Post

from the base. Align the four mounting holes in bottom of post (Fig. 5) with holes in base (Fig. 9) and using the removed hardware, install the post assembly to the base.



**To assure maximum security, the cap screws should be tightened by applying a maximum force to the wrench at an 18-inch radius.**

(11) Position the assembled base and post over the drilled holes. Secure the base to the mounting surface using the appropriate hardware as indicated in either (5) or (6). The post must be plumb to ensure proper operation of the coin telephone. Use shimming washers under the base as necessary.

(12) Install the two covers on the base and secure using the four L-765065-2 flat head security screws (No. 10-32 by 1/2) removed in (1).

**3.04** For back-to-back installations, install two List 51 short bases and two List 40 posts following the procedure outlined in 3.03 and preceding note.

### List 30 Shelf

**Note:** The KS-20842, List 30 shelf assembly is intended for use only on indoor installations and when the List 31 housing is not provided.

**3.05** Install the List 30 shelf on the post as follows:

- (1) If the front panel is installed on the post, remove the panel as outlined in 3.03(9).
- (2) Remove two 5/16-18 by 3/4 hex head cap screws and two 0.344 by 0.875 by 0.063 flatwashers from the rear of the shelf assembly.
- (3) Align the holes in the rear of the shelf with the mounting holes on the front of the post (Fig. 6). Using the screws and washers removed in (2), reach in through the opening under the shelf, and insert the screws through the post and into the rear of the shelf. Tighten the screws to secure the shelf

### List 31 Housing

**3.06** Install the KS-20842, List 31 housing on the post (Fig. 11) as follows:

- (1) Remove two cap screws and two flatwashers from top of the post; front row, outside positions.
- (2) Using KS-19192, List 1 wrench, remove the two security screws and L-765038 sign and lens assembly from the upper part of the housing.



**Wear eye protection when handling the fluorescent lamps.**

- (3) Remove the two fluorescent lamps from the housing and place in a secure area.
- (4) Remove the two cap screws and two flatwashers from the lower rear of the housing and remove the L-765034 cover.
- (5) Position housing on the post with the upper support plate resting on top.
- (6) Pull the housing cord through the round hole on front of the post, press the cord into the clip, and plug into electrical outlet.
- (7) Using the two 3/8-16 by 1-1/2 hex head cap screws and two 0.406 by 0.734 by 0.063 flatwashers removed in (1), secure upper part of the housing by inserting the screws through the upper support plate on the housing, the post cap, and into the post assembly.
- (8) Secure lower part of the housing using the L-765034 cover, the two 5/16-18 by 3/4 hex head cap screws and two 0.344 by 0.875 by 0.063 flatwashers removed in (4). Reach in through opening on lower part of the post and insert the screws through the post, through the housing, and into the rear of the cover.
- (9) Ensure that the two connectors in upper part of the housing are properly engaged, and install the two 12-inch, 13-watt fluorescent lamps (GE Co. No. F13T8CW) into the lamp sockets.

- (10) Install the L-765038 sign and lens assembly to upper part of the housing, and secure using the two L-765065-2 flat head security screws (No. 10-32 by 1/2) removed in (2).

### Telephone Wiring

- 3.07** Telephone wire entrance holes are located on the top-right side (Fig. 6) and lower-inside of post (Fig. 5).

**Note:** When the underground wire entrance is used, install flexible conduit between the studs in the mounting surface and the bottom of the protector access cover (Fig. 7).

- 3.08** Feed the wire through the entrance hole and terminate on 123A1A station protector or 42A connecting block (whichever is required). The protector or connecting block mounts inside

lower-rear of the post behind the access cover. Use KS-19192, List 1 wrench to loosen the security screw securing the cover to the post. Remove two of the 8-32 by 1/2 Phillips pan head screws from the mounting brackets. Using the two screws, secure the protector or connecting block to the bracket.

**Note 1:** When desired and if the appropriate mounting holes are provided, the protector may be installed in the coin telephone.

**Note 2:** When the overhead entrance is used and the protector is located in the lower part of the post, the wire must feed down channel (Fig. 7) to the protector and back up to the wire exit hole in the recessed area. Remove the pipe plug (Fig. 6) on top of the post to gain access to the wire conduit.

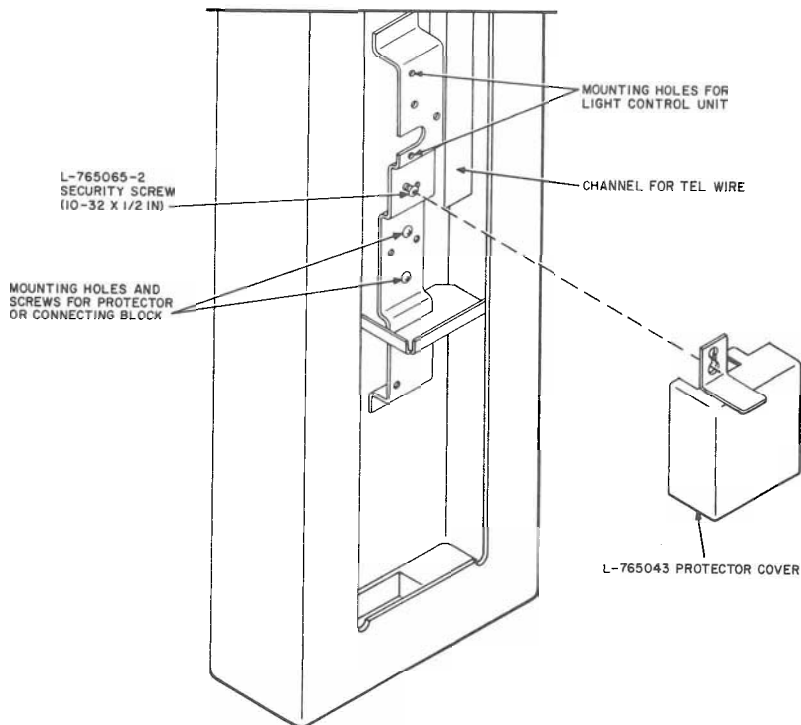


Fig. 7—Location of Station Protection

## SECTION 508-452-100

**3.09** Ensure that the protector ground terminal is properly connected to the post and to an appropriate station ground as specified in Section 508-100-100. A grounding lug is provided inside lower-left of the post on a mounting bracket (Fig. 4).

### *Electrical Wiring*

**3.10** Electrical service (120V, 60Hz), which is required for telephone mounting providing the List 31 housing, may enter at the top or bottom of the post.

**3.11** If the entrance is made from the top, remove the top-left pipe plug (Fig. 6), feed the wiring down the channel in the left side, and terminate at the electrical outlet located inside, lower-left of the post on a mounting bracket (Fig. 4).

**3.12** If the entrance is made from below ground level, feed wiring through the underground conduit, up through the entrance hole in the base and the post (Fig. 5), and terminate at the electrical outlet (Fig. 4).

**3.13** When the installation requires a service entrance box, a KS-19426, List 17 circuit breaker box assembly may be installed on the mounting bracket below the electrical outlet (Fig. 4). Remove the two 8-32 by 1/2 Phillips pan head screws from the mounting bracket. Using the two screws, secure the box assembly to the bracket. Equip the enclosure with a Heinemann Electric Co. No. 0912 single-pole circuit breaker, 120V, 15 Amp, time-delay curve No. 3. Interconnect from the circuit breaker to the electrical outlet using approved No. 14 gauge wire.

**3.14** Ensure that electrical service is properly grounded as specified in Section 508-100-100. A grounding lug is provided in lower part of the post on a mounting bracket (Fig. 4).

### **OPTIONAL LIGHT CONTROL ASSEMBLY**

**3.15** When desired, install the KS-19261, List 4 light control assembly as follows:

- (1) Remove the two screws and washers and the L-765034 cover from the lower part of the KS-20842, List 31 housing (Fig. 11).

- (2) Install the light control unit on the mounting bracket inside the post assembly and secure using the two 6-32 by 1/4 Phillips pan head screws (Fig. 8).

- (3) Insert the light sensitive cell, from inside the post, through the keyhole in the lower part of the housing.

- (4) Using the two clamps and two 8-32 by 1/4 Phillips pan head screws, secure the light cell to the housing as shown in Fig. 8. Position the end of the cell so that it will just touch the edge of the 0.56 hole (Fig. 11) in the bottom of the housing.

- (5) Remove the power cord from the electrical outlet.

- (6) Plug the light unit cord into the electrical outlet.

- (7) Insert the power cord into the rear of the light unit plug.

- (8) Press both the power cord and the light cell cord into the spring clip inside the post.

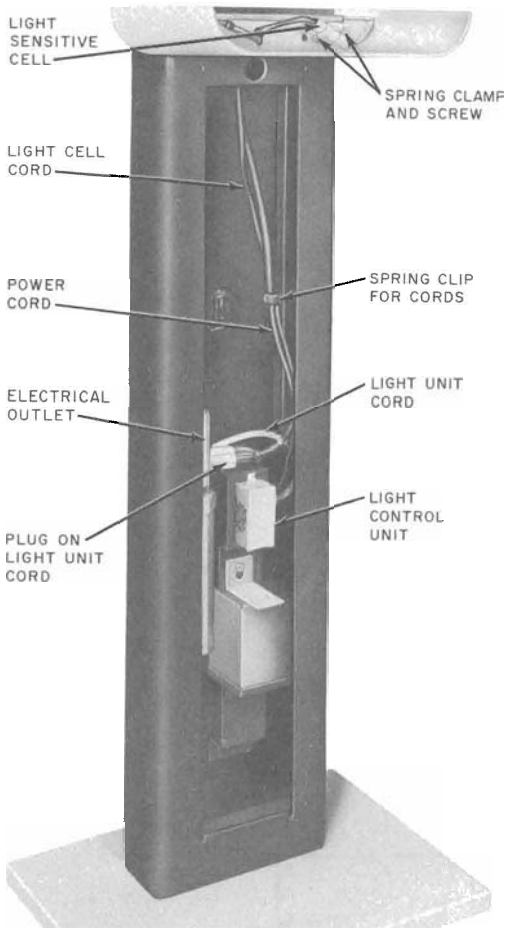
- (9) Install the L-765034 cover in the lower part of the housing using the two 5/16-18 by 3/4 hex head cap screws and two 0.344 by 0.875 by 0.063 flatwashers removed in (1). Reach in through opening on post and insert the screws through the post, through the housing, and into the rear of the cover (Fig. 11).

### **OPTIONAL DIRECTORY HANGER**

**3.16** When the KS-20842, List 31 housing is used, install a KS-20030, List 10 directory hanger to the bottom of the housing using the four L-765065-2 flat head security screws (No. 10-32 by 1/2) and four No. 10 nylon-insert nuts supplied with the hanger and the KS-19192, List 1 wrench. See mounting holes on Fig. 11.

**3.17** When the KS-20842, List 30 shelf is used, install a KS-20030, List 9 directory hanger (Fig. 2) as follows:

- (1) Remove the four nylon-insert nuts and flatwashers and the L-765028 shelf cover from the List 30 shelf (Fig. 6).



**Fig. 8—Installation of KS-19261, List 4 Light Control Unit**

- (2) Install the KS-20030, List 9 directory hanger to the bottom of the L-765027 shelf support (Fig. 6) using the four No. 10 flathead screws and four No. 10 nylon-insert nuts supplied with the hanger.
- (3) Install the L-765028 shelf cover on the shelf support and secure using the four No. 10-32 stop nuts and No. 10 flatwashers removed in (1).

### Front Panel

**3.18** Install front panel and post on follows:

- (1) Position the locking flange on right side of the front panel against the right-side opening of the post.
- (2) Pull both top and bottom of the panel to the right at the same time (Fig. 10) until the flange on left-side of the panel drops past the opening on the left side of the post, then release the panel which will lock in place.
- (3) Using a KS-19192, List 1 wrench, install the two L-765065-2 flat head security screws (No. 10-32 by 1/2), removed in 3.03(9), through the upper part of the panel and into the post.

### Coin Telephone

**3.19** Install the coin telephone into recessed area on the post and secure using hardware furnished with the telephone. Refer to the appropriate coin telephone section for complete installation procedures.

*Note: Telephone security studs are never used with this installation.*

### BURIED BASE INSTALLATION (KS-20842, List 7)

**3.20** When a List 52 buried base is used, install the base and a List 40 post as follows:

- (1) Prepare a form which is a minimum of 36 inches square with a minimum inside depth of 36 inches.
- (2) Remove the four 5/8-11 by 1-3/4 hex head cap screws and four 0.656 by 1.250 by 0.100 flatwashers from the base. Position the List 40 post on the base with the recessed area to the front. Ensure that the post is plumb, and secure to the base using the removed hardware.



*To assume maximum security, the cap screws should be tightened by applying a maximum force to the wrench at an 18-inch radius.*

- (3) Insert four 3/4-inch diameter, 30-inch minimum long steel reinforcement rods through the base (Fig. 3).

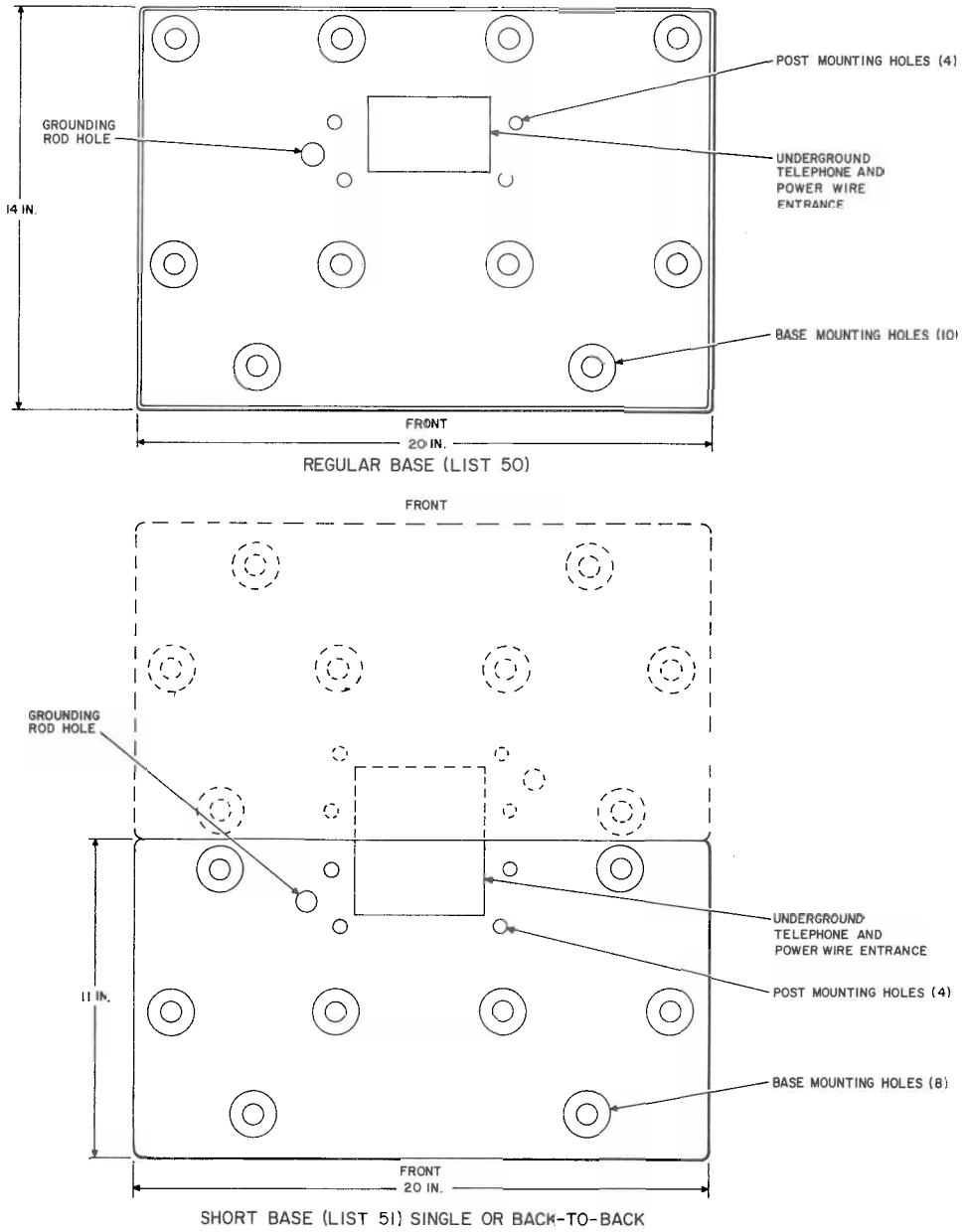
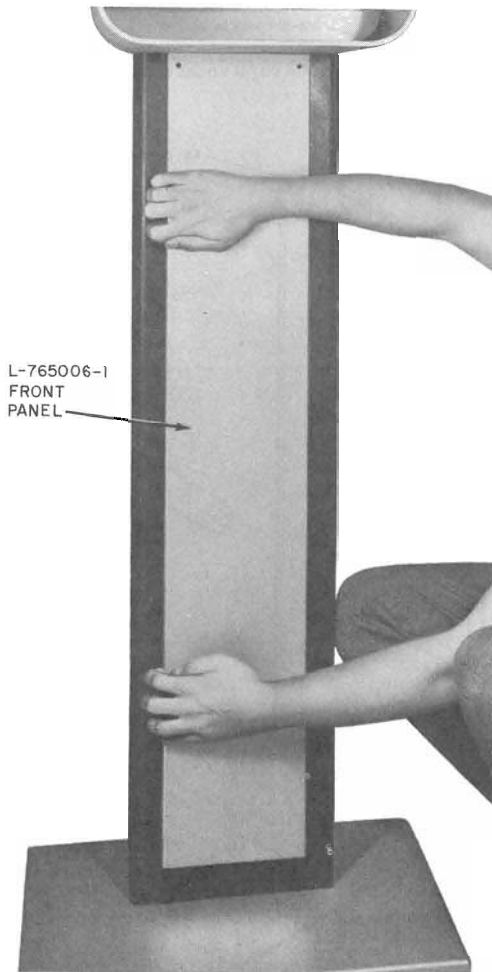


Fig. 9—Layout of Holes on List 50 and List 51 Bases, With Cover(s) Removed



**Fig. 10—Installing or Removing the Front Panel on Post Assembly**

- (4) Position the base in the center of the form so that the top of the concrete will be flush with or slightly below the bottom edge of the post. Ensure that the post is plumb.

**Note:** Top of the concrete should also be flush with the ground.

- (5) If underground power and telephone wires are to be used, provide conduit stubs in

the form to correspond with the wire entrance hole in the top of the base (Fig. 3).

- (6) If a ground rod must be provided for the installation (3.09 and 3.14), install the rod with 4 to 5 inches extending above the top of the base. See Fig. 3 for the ground rod hole in the base.

**Note:** Although it is not recommended, the base may be embedded in the concrete without the post attached [ie step (2) may follow step (7)]. If this procedure should be used, the following must be ensured prior to performing step (7):

- That the base is properly positioned to ensure that the List 40 post will be plumb when later attached on the base.
  - That stamping FRONT on top of the base faces in the proper direction.
  - That the top of the base will be flush with the top of the concrete.
- (7) Pour concrete around the base to fill the form.

- 3.21** Perform the procedures outlined in 3.05 or 3.06, whichever is required, and 3.07 through 3.19.

#### **4. MAINTENANCE**

**4.01** The local telephone company shall establish the appearance standards of all exposed surfaces.

**4.02** The local telephone company shall establish the safety standards for all mountings.

**4.03** Inspect the approach to the mounting and ensure that it is free of all hazards.

**4.04** Ensure that all visible assembly screws are secure.

**4.05** Clean the mounting as indicated in Section 508-100-101.

**4.06** Refer to Fig. 1 through 12, except 5 and 9, and Tables A and B for repair and replacement parts.

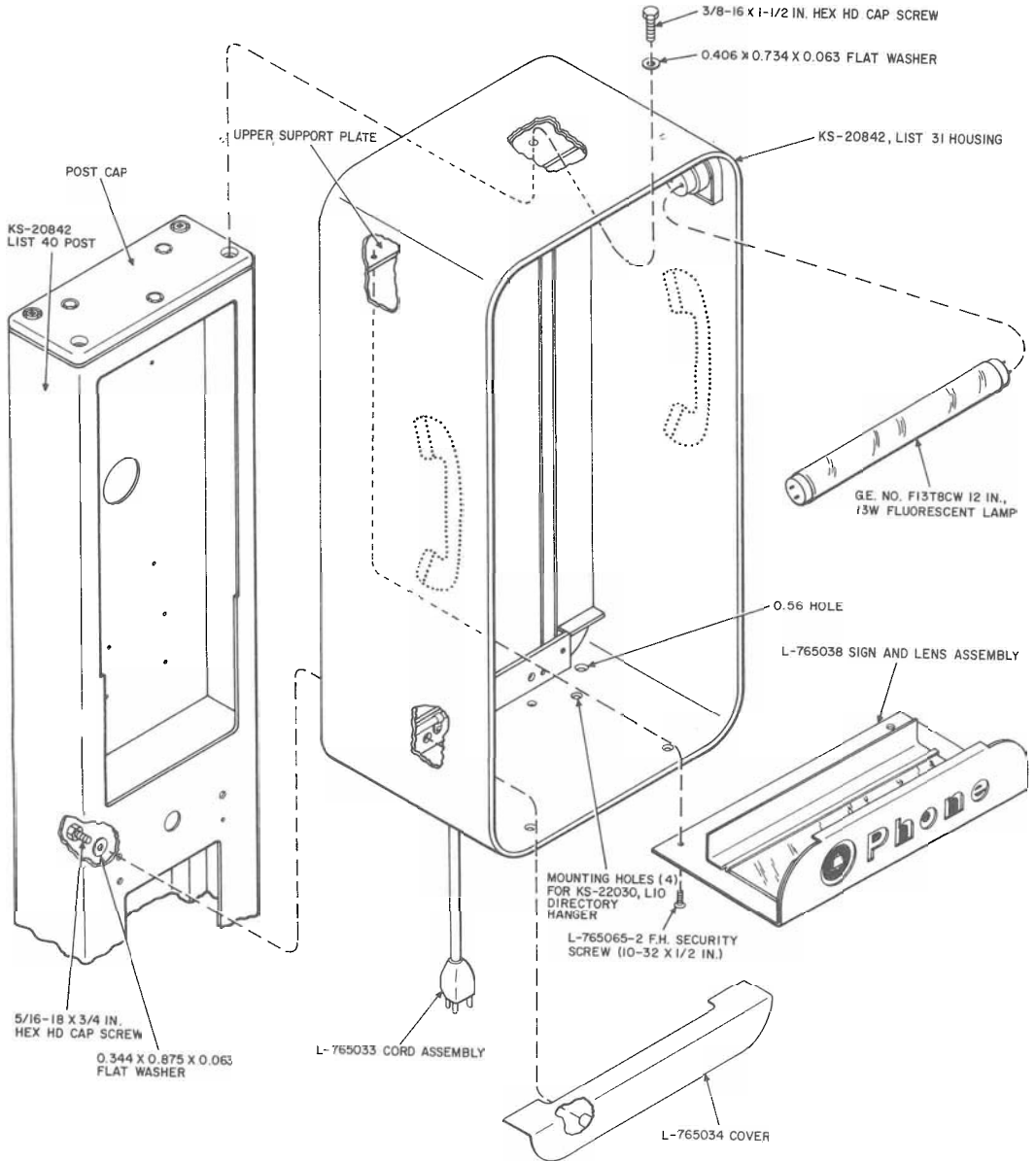


Fig. 11—Installing List 31 Housing on Post



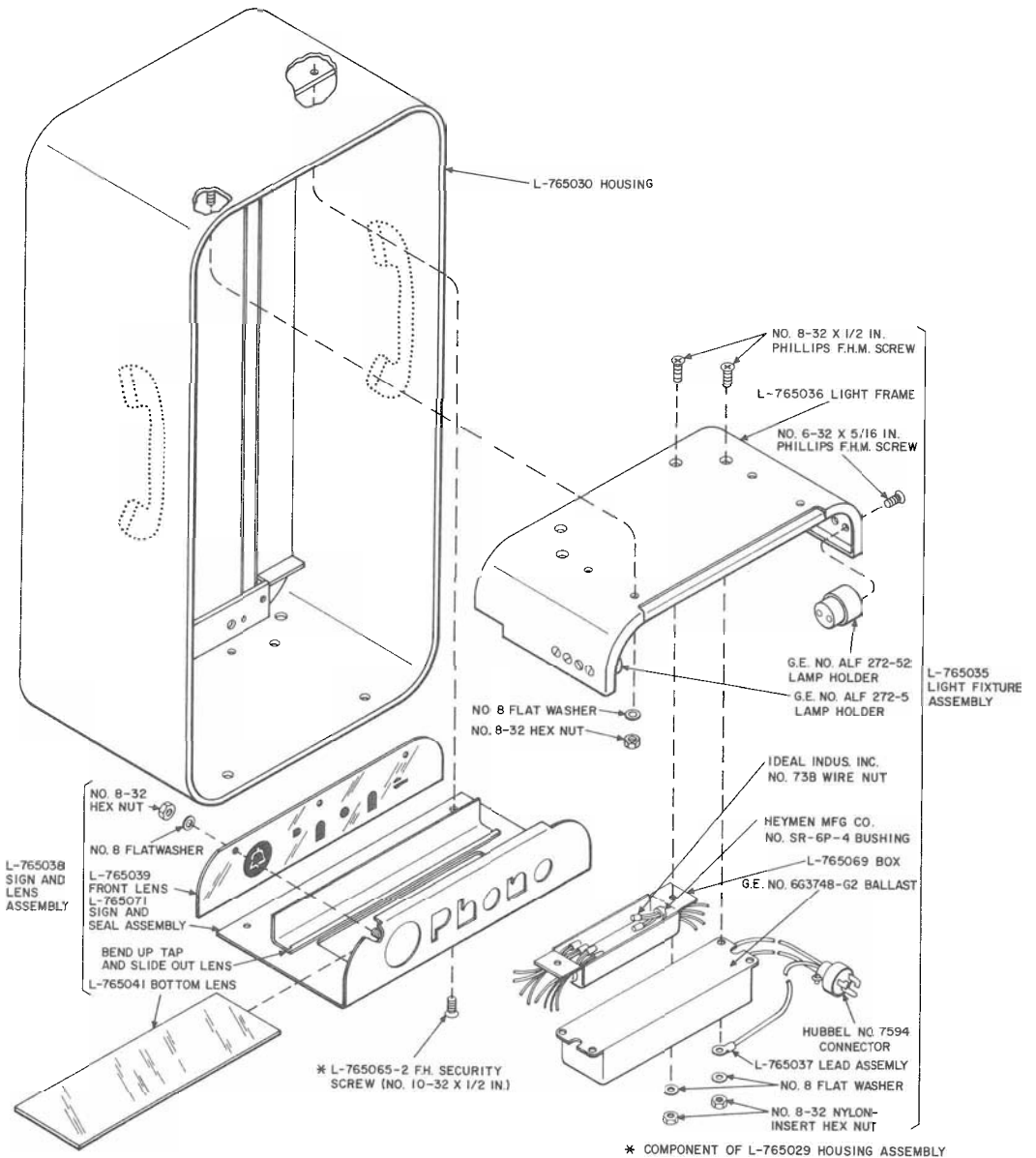


Fig. 12—Partial Exploded View of List 31 Housing

TABLE B  
REPAIR AND REPLACEMENT PARTS

NAME	PART NO	REMARKS
Cover, Base	L-765014	Used on list 50 and 51 Bases
Cover, Rear	L-765015	Used on list 50 Base
Support, Shelf	L-765027	Used on list 30 Shelf
Cover, Shelf	L-765028	Used on list 30 Shelf
Sign, Rear	L-765066	Located upper-rear of housing
Sign and Lens Assembly	L-765038	Located upper part of housing
Lens, Front	L-765038	Located upper-front of housing
Lens, Bottom	L-765041	Located upper-inside of housing
Sign Assembly	L-765042	Used on sign and lens assembly
Fixture, Light	L-765035	Located upper-inside of housing
Lead Assembly	L-765037	Provides ground for housing
Lamp	G. E. NO. F13T8CW	12 inches long, 13 watt, Flourescent used in housing
Ballast	G. E. NO. 6G3748-G2	Located upper-inside of housing
Cover	L-765034	Located lower inside of housing
Cord Assembly	L-765033	Provides electrical service from post to housing
Panel, Front	L-765006-1	Special attachment procedure to discourage unauthorized removal
Cover, Protector	L-765043	Located lower-inside of post
Cap, Post	L-765005	Located top of post
Gasket	L-765044	Located under post cap
Screw, F. H. Security	L-765065-2	Secures front panel, sign and lens assembly, base and protector covers

## KS-20030 DIRECTORY HANGERS

### IDENTIFICATION, INSTALLATION, AND MAINTENANCE

#### 1. GENERAL

**1.01** This section is reissued to revise installation procedure for KS-19267, List 14 mounting bracket (Fig. 15 and 16).

**1.02** The KS-20030 directory hangers (Fig. 1 and 2) are universal hangers designed for use with various coin telephone booths and shelves.

**1.03** It is intended that these hangers be used in protected or semiprotected locations.

#### 2. IDENTIFICATION

**2.01** List numbers have been assigned to the directory hangers as described in Table A.

**2.02** The hangers consist of a stainless steel mechanism that permits rotation of a directory and cover assembly in both horizontal and vertical planes.

**2.03** Each hanger supports the directory, below and parallel to the front edge of a shelf (Fig. 3 through 6).

**2.04** Springs are provided to act as detents when access is acquired and will return the directory to normal position when rotated manually out of the detent area.

**2.05** The vertical motion, subsequent to the horizontal rotation permits the directory to be raised to rest on the shelf for access (Fig. 7 through 10).

#### ORDERING INFORMATION

**2.06** Orders shall specify the quantity, KS number, and list number.

#### 3. INSTALLATION

**Note:** No. 10-32 by 3/8 SEMS Phillips RHM screws are furnished with each hanger for securing it to the shelf.

**3.01** Refer to Table A for use of each hanger.

**3.02** Current model booths and shelves are equipped with writing shelves designed to accept the KS-20030 directory hangers but early models must be modified as follows:

##### *KS-14611 and KS-19580 Booths*

**3.03** Remove all existing writing shelves, directory racks, and apparatus blanks. Retain hardware.

**3.04** Install KS-19580, List 29 shelf assembly using hardware retained.

**3.05** Secure the List 1 or 2 directory hanger to the shelf assembly.

##### *KS-16797 and KS-19425 Booths*

**3.06** Repeat 3.03.

**3.07** Install KS-19425, List 27 shelf assembly using hardware retained.

**3.08** Secure the List 3 directory hanger to the shelf assembly using retained hardware.

##### *KS-19267 Shelf*

**3.09** Remove the KS-19267, List 11 directory rack per Fig. 11 or the KS-19267, List 13 cover assembly per Fig. 12.

**3.10** If present, remove subset and subset mounting bracket per Fig. 13.

**3.11** Remove writing shelf from frame of shelf assembly per Fig. 14.

**3.12** Mount KS-19267, List 14 mounting bracket (Fig. 15) temporarily and secure it at the left front with one No. 8-32 by 7/16 RHM screw.

**3.13** Using the mounting bracket as a template, mark the location for drilling a second hole

♦ TABLE A ♦

## KS-20030 DIRECTORY HANGERS

LIST NO.	DESCRIPTION	DIRECTION OF ROTATION	DEGREE OF ROTATION	USED WITH	FIG. REF
1	Single Binder — will accept a directory up to 4 inches thick	Counter-clockwise	90°	KS-19267 Shelf	3
2	Two Single Binders— each will accept a directory up to 4 inches thick			KS-14611 Booth KS-19580 Booth	
3	Same as List 1	Clockwise	60°	KS-16797 Booth KS-19425 Booth KS-20255 Booth	5
5				KS-20194, List 1 Shelf KS-20194, List 3 Shelf KS-20194, List 5 Shelf	6
6		Counter-clockwise	KS-20194, List 2 Shelf KS-20194, List 4 Shelf	Not Available	
7	Directory Assembly — can be ordered as a replacement part	Not applicable		KS-20030, List 1 KS-20030, List 2 KS-20030, List 3	1 and 2
8				KS-20030, List 5 KS-20030, List 6	1

on the front cross rail and three holes (Fig. 16) on the rear cross rail.

**3.14** Remove the screw and mounting bracket.

**3.15** Using a ♦No. 25♦ drill, drill the hole marked on the front cross rail.

**3.16** Using a ♦No. 17♦ drill, drill the holes marked on the rear cross rail.

**3.17** Install KS-19267, List 14 mounting bracket and secure with ♦one No. 8-32 by 7/16 RHM screw, one No. 8-32 by 7/16 RH self-tapping screw, and three No. 7 10-32 by 1/2 RH self-tapping screws.♦ Screws are furnished with mounting bracket.

**3.18** If subset was removed in 3.10, perform following operations:

(1) Place flange of KS-19267, List 15 subset mounting bracket (Fig. 17) on edge of right-hand curved column and secure to List 14 mounting bracket using two No. 8-32 by 5/16 RHM screws, two No. 8 lockwashers, and two No.8-32 hex nuts (Fig. 18). Hardware is furnished with List 15 bracket.

(2) Install subset on mounting bracket.

**3.19** Install writing shelf per Fig. 14.

- 3.20 Install List 1 or List 2 directory hanger to shelf assembly.

**Note:** Install directories in hangers using same method shown in Section 508-710-101. There are 5 rods in each KS-20030 hanger.

#### 4. MAINTENANCE

- 4.01 Maintenance of the KS-20030 directory hangers consists of replacing broken or damaged parts and lubricating bearings with KS-19589 lubricant. Refer to Fig. 1 and 2 for replacement parts.

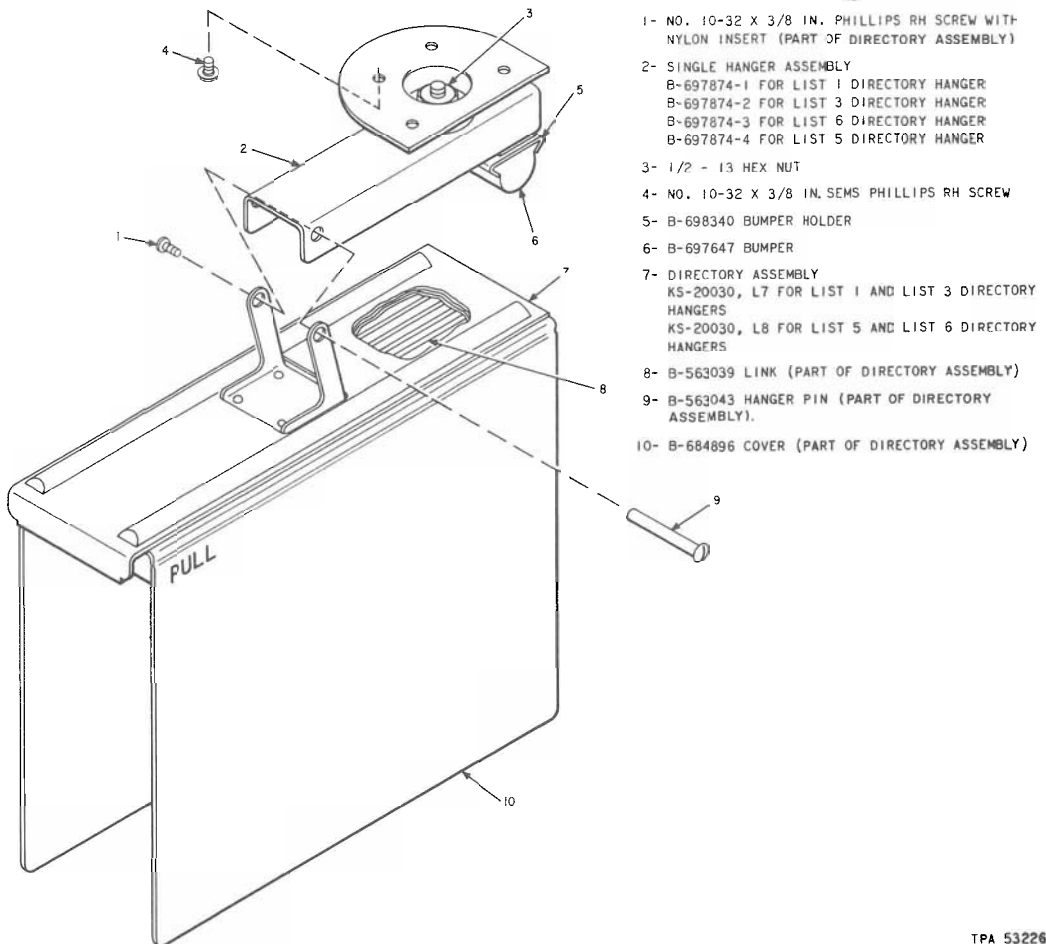
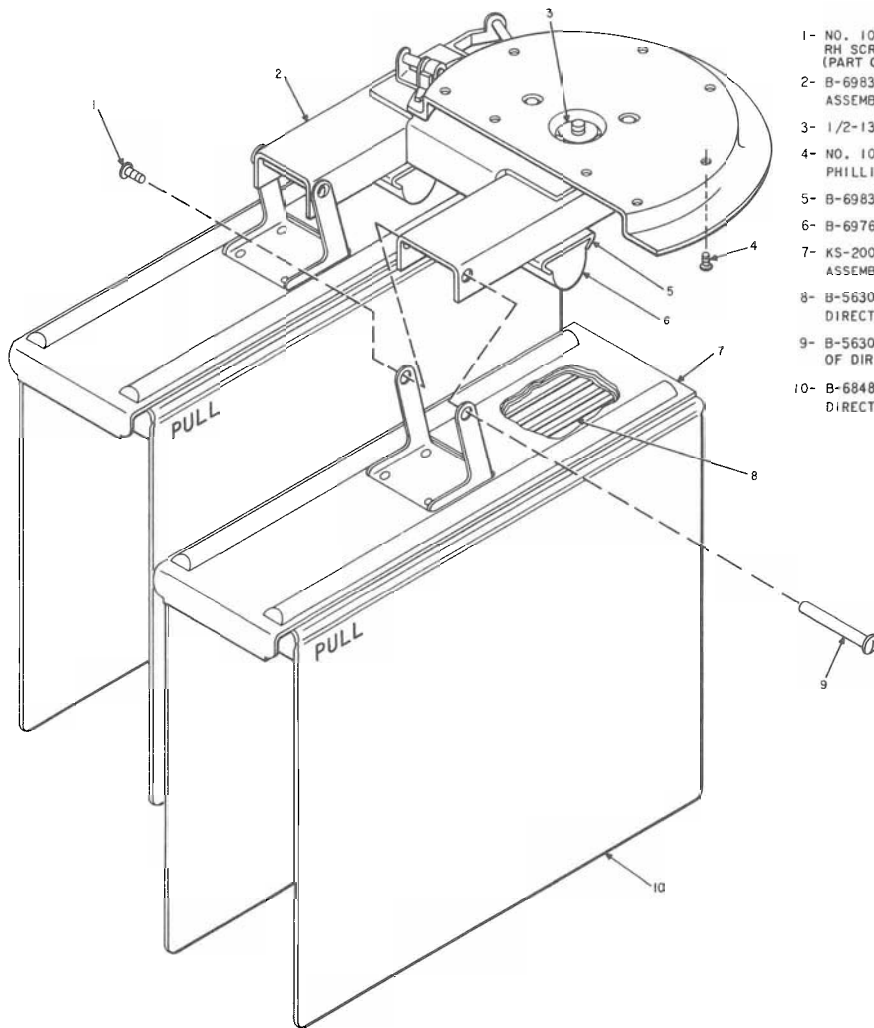


Fig. 1—KS-20030 Directory Hanger (Typical for Single Binder)

TPA 532261



LEGEND

- 1- NO. 10-32 X 3/8 IN. PHILLIPS RH SCREW WITH NYLON INSERT (PART OF DIRECTORY ASSEMBLY)
- 2- B-698324 PLATE AND HANGER ASSEMBLY.
- 3- 1/2-13 HEX NUT
- 4- NO. 10-32 X 3/8 IN SEMS PHILLIPS RH SCREW.
- 5- B-698340 BUMPER HOLDER
- 6- B-697647 BUMPER
- 7- KS-20030, L7 DIRECTORY ASSEMBLY
- 8- B-563039 LINK (PART OF DIRECTORY ASSEMBLY)
- 9- B-563043 HANGER PIN (PART OF DIRECTORY ASSEMBLY)
- 10- B-684896 COVER (PART OF DIRECTORY ASSEMBLY)

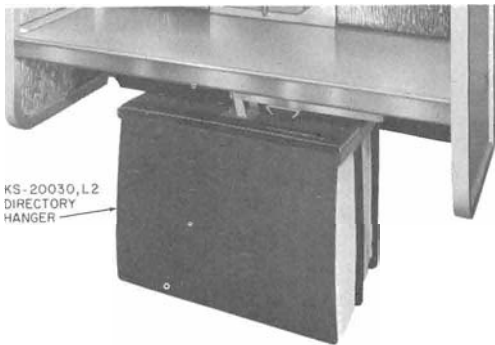
Fig. 2—KS-20030, List 2 Directory Hanger

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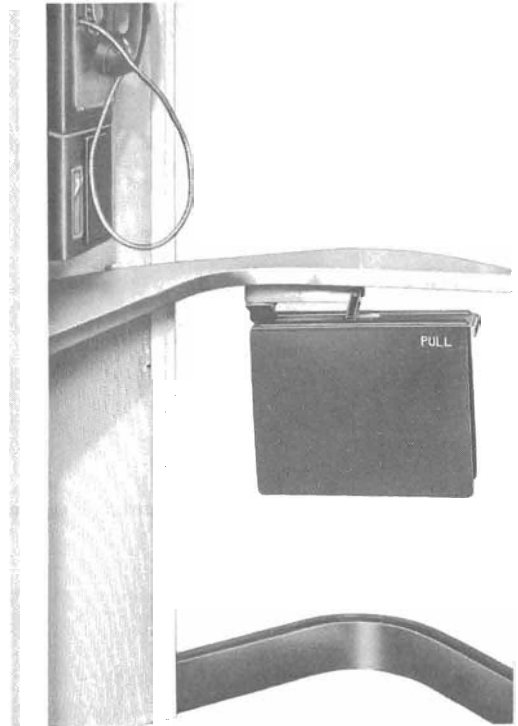
KS-20030, L1  
DIRECTORY  
HANGER

**Fig. 3—KS-20030, List 1 Directory Hanger Mounted on KS-19267 Shelf**



KS-20030, L2  
DIRECTORY  
HANGER

**Fig. 4—KS-20030, List 2 Directory Hanger Mounted on KS-19267 Shelf**



**Fig. 5—KS-20030, List 3 Directory Hanger in KS-20255 Telephone Kiosk**

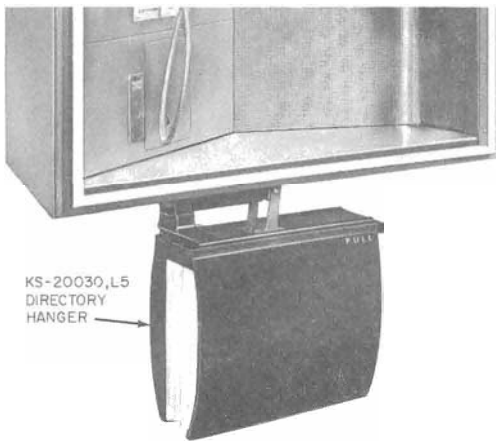


Fig. 6—KS-20030, List 5 Directory Hanger Mounted on KS-20194 Shelf

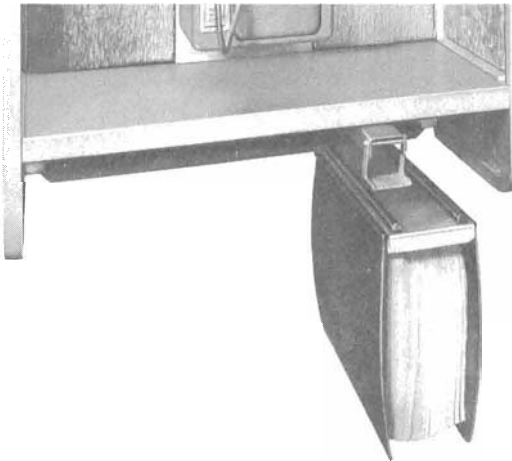


Fig. 7—KS-20030, List 1 Directory Hanger Rotated 90°

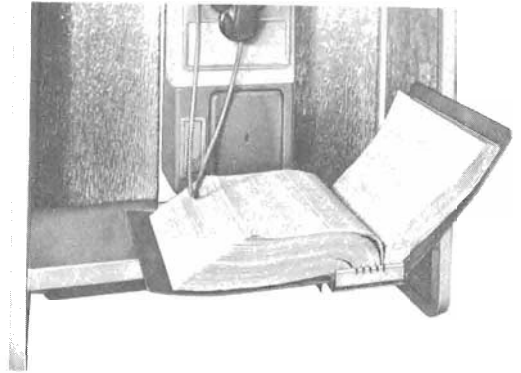


Fig. 8—KS-20030, List 1 Directory Hanger in Reading Position

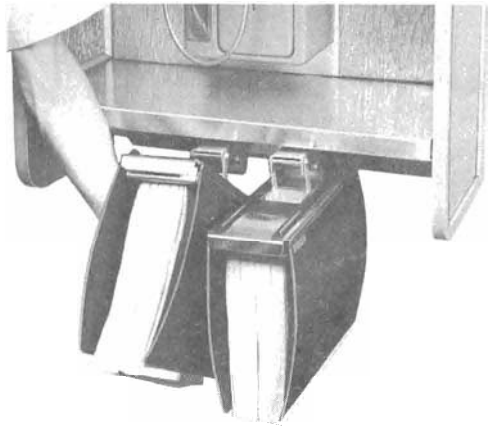


Fig. 9—KS-20030, List 2 Directory Hanger Rotated 90°



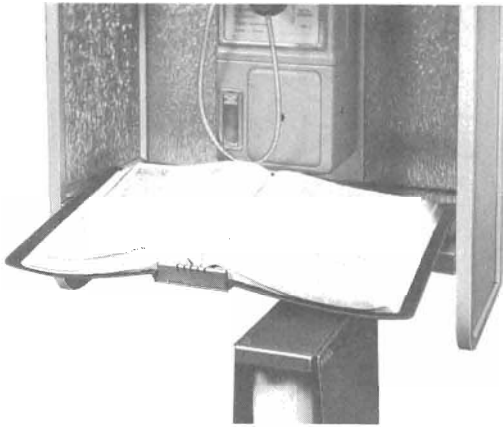


Fig. 10—KS-20030, List 2 Directory Hanger in Reading Position

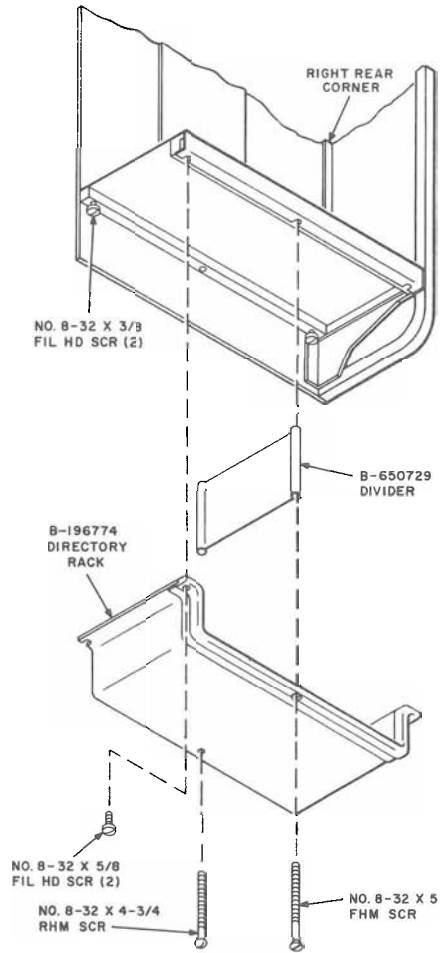


Fig. 11—Assembly of KS-19267, List 11 Directory Rack

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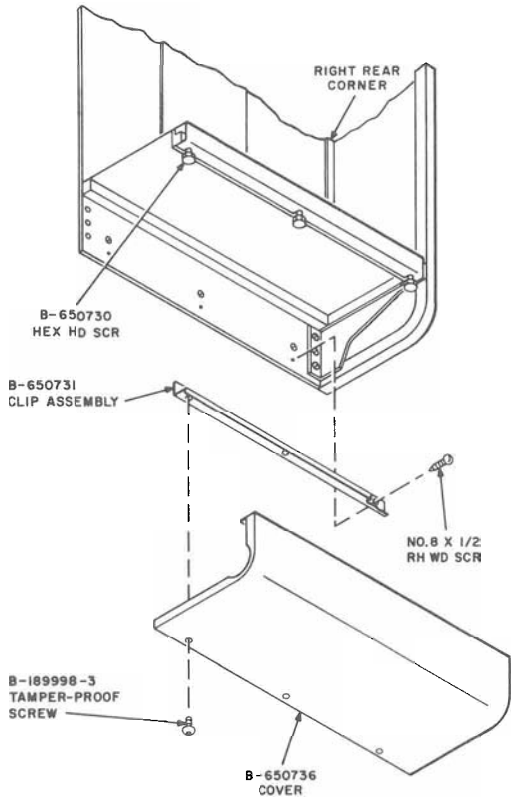
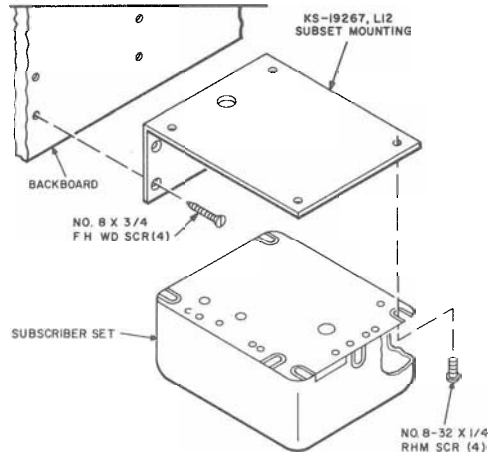
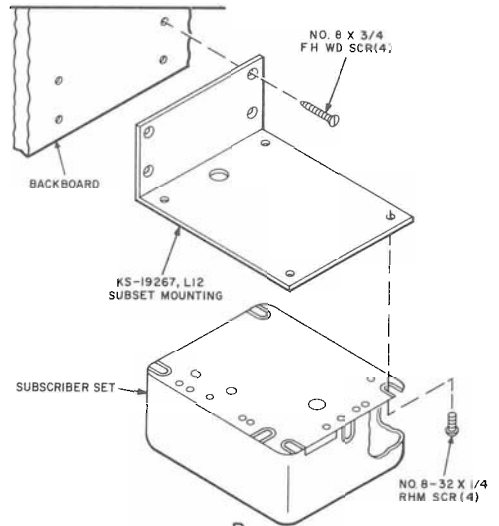


Fig. 12—Assembly of KS-19267, List 13 Cover Assembly



A  
METHOD FOR MOUNTING  
WITHOUT DIRECTORY RACK



B  
METHOD FOR MOUNTING  
WITH DIRECTORY RACK

Fig. 13—Assembly of KS-19267, List 12 Subset Mounting Bracket

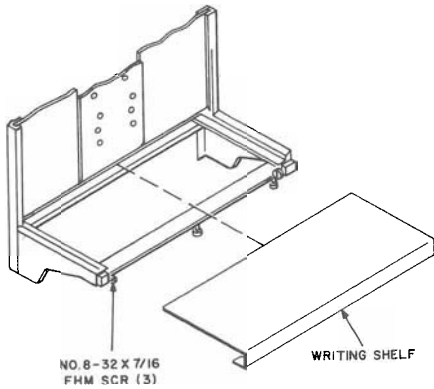


Fig. 14—Assembly of Writing Shelf

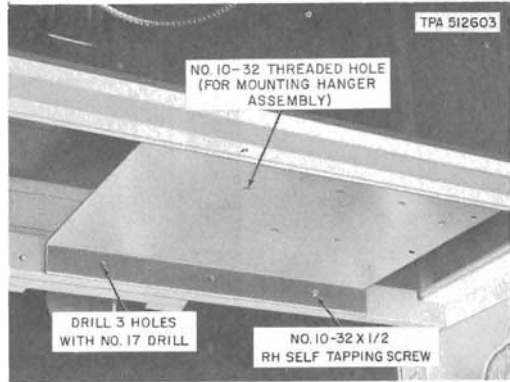


Fig. 16—Installation of KS-19267, List 14 Mounting Bracket

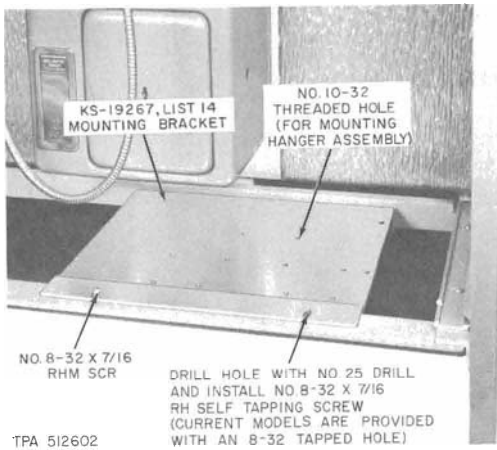
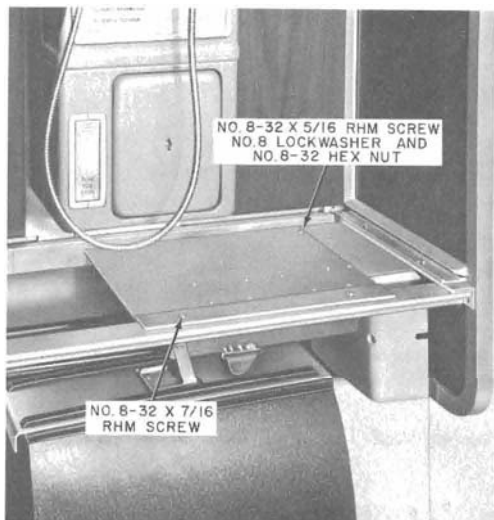


Fig. 15—Locating KS-19267, List 14 Mounting Bracket



Fig. 17—KS-19267, List 15 Subset Mounting Bracket



**Fig. 18—Installation of KS-19267, List 15 Subset Mounting Bracket**

## KS-19928 CARD FRAME

### IDENTIFICATION AND INSTALLATION

#### 1. IDENTIFICATION

1.01 The KS-19928 card frame (Fig. 1) is a universal card frame used to display a 7 by 10-1/4-inch advertising or instruction card in public telephone booths.

1.02 Two card frames are available: KS-19928, List 1 which replaces KS-14123 card frame and KS-19928, List 2 which replaces KS-14611, Lists 39 and 139 used in KS-14611 booth.

1.03 *KS-19928, List 1:* Consists of a semibright aluminum frame, aluminum backplate assembly, and a plastic window; overall dimensions are 1/2 by 7-1/2 by 10-1/2 inches.

1.04 List 1 card frame is designed for flatwall mounting and is provided for use in KS-19206, KS-19340, and KS-19442 telephone booths (Fig. 2).

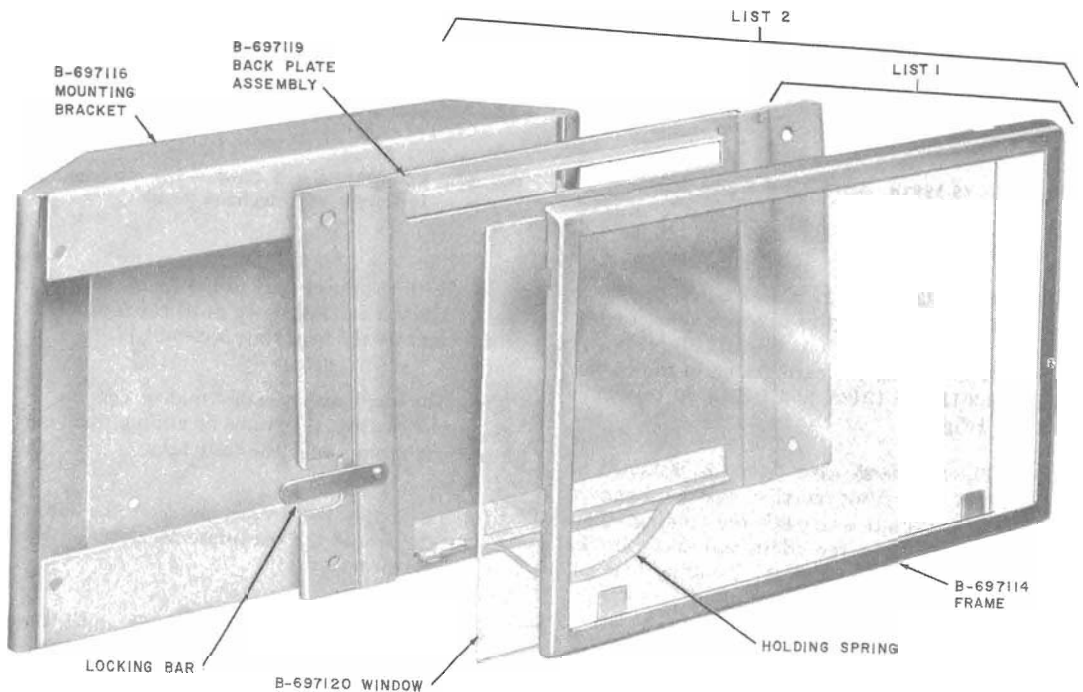


Fig. 1 — KS-19928 Card Frame



Fig. 2 — KS-19928, List 1 Card Frame Mounted on a Flat Wall



Fig. 3 — KS-19928, List 2 Card Frame Mounted in Corner of Telephone Booth

1.05 *KS-19928, List 2:* Consists of the same items as List 1 plus a 2-inch thick wedge-shaped mounting bracket (B-697116) (Fig. 1) used for mounting the card frame in the corner of KS-14611, KS-19425, and KS-19580 telephone booths (Fig. 3).

1.06 The KS-19928 card frame is designed so that the front portion can be removed from the backplate assembly for loading. This eliminates the need for additional space in the booth for top or side loading. Loading and unloading is accomplished as follows:

- (a) Push in on the locking bar at left and at the same time push the frame up to its maximum position.
- (b) With the frame in the upward position, pull the top of the frame forward until the upper tabs are clear of the backplate assembly.

(c) With the upper part of the frame forward, allow it to slide down until the lower tabs are clear of the backplate assembly.

(d) The card and plastic window can be removed from the frame by sliding them out the side from under the four tabs.

(e) To install the frame, position the lower tabs behind the backplate assembly in the channels provided.

(f) Push the frame up and back until the upper tabs are in position behind the backplate assembly.

(g) Allow the frame to slide down until it is locked in place by the locking bar at left.

*Ensure that the upper tabs are completely behind the backplate assembly and down in position since the holding spring may allow the upper corners of the frame to rest on the upper corners of the backplate assembly without being properly secured.*

## 2. INSTALLATION

**2.01** On flatwall surfaces, only the List 1 card frame is required. Install as follows:

- (a) Mount the B-697117 backplate assembly in the desired position and hold it in this position with one hand.
- (b) Using the backplate assembly as a marking template, mark the location for drilling four holes.
- (c) Using a No. 27 drill, drill the four holes.
- (d) Install the backplate assembly with locking bar to left, using four No. 8 self-tapping screws. (Screws must be obtained locally.)

- (e) Install card and secure frame as directed in 1.06 (e) through (g).

**2.02** In booth corners List 2 card frame is required. Install as follows:

- (a) Mount the B-697116 wedge-shaped mounting bracket in the desired position and hold it in this position with one hand.
- (b) Using the mounting bracket as a marking template, mark the location for drilling four holes.
- (c) Using a No. 27 drill, drill the four holes.
- (d) Install the mounting bracket using four No. 8 self-tapping screws. (Screws must be obtained locally.)
- (e) Install the backplate assembly (with locking bar to left) on the mounting bracket using the four No. 8-32 by 3/16 RH screws which are furnished.
- (f) Install card and secure frame as directed in 1.06 (e) through (g).





**KS-19207**  
**LIGHT AND BLOWER UNIT**  
**IDENTIFICATION, INSTALLATION, AND MAINTENANCE**

**1. GENERAL**

**1.01** This section is reissued to:

- Revise references

**1.02** The KS-19207 light and blower unit provides light and ventilation for the KS-14611, KS-16797, KS-19206, KS-19340, KS-19425, KS-19442, and KS-19580 telephone booths.

**1.03** The basic unit consists of a plate which contains either one or two ballasts, a starting ring assembly or clips, lamp cords, and in some cases a blower (Fig. 1).

**1.04** The overall dimensions of a unit with two lamps and a blower are 21-3/4 by 16-1/2 by 4-1/2 inches.

**1.05** The blower consists of a motor and an impeller which are mounted in the center of the unit; however, a unit may be ordered without a blower. The blower may be controlled by a manual wall switch which is turned on or off at will and/or a door operated switch.

**1.06** The lamps are 40-watt Circline, cool white fluorescent. One lamp may be used for indoor booths but two are recommended for outdoor use. The lamps are not furnished as part of the unit and must be ordered separately as a part of the booth in which the unit is installed.

**1.07** The lamps are wired for continuous illumination but may be wired to be controlled by a door operated switch. They also may be automatically controlled by a KS-19261 light control unit. See Division 508 section entitled: KS-19261 Light Controls, Identification, Installation, and Maintenance.

**1.08** The rapid-start ballasts will operate in temperatures as low as -10 degrees F.

**2. IDENTIFICATION**



*List numbers have been assigned to facilitate ordering of various options as follows:*

**2.01** *KS-19207, List 1 Light and Blower Unit (Fig. 1)*

(a) List 1 unit is designed for use in KS-19206, KS-19340, and KS-19442 indoor telephone booths where ventilation is required.

(b) List 1 unit consists of the following basic items:

- B-555214-1 light fixture plate
- G.E. No. 6G3640 rapid-start ballast
- Three B-555207 clips (for mounting single lamp)
- B-555679 terminal board assembly
- B-556232 motor assembly consisting of:

KS-19218, List 1 motor

B-555204 motor mount

B-555208 impeller assembly

(c) Two twistlock connectors are provided, one for connecting a customer-controlled blower switch, and the other for connecting a door operated switch.

(d) See Fig. 2 for List 1 unit connections.

**2.02** *KS-19207, List 2 Light Fixture*

SECTION 508-820-100

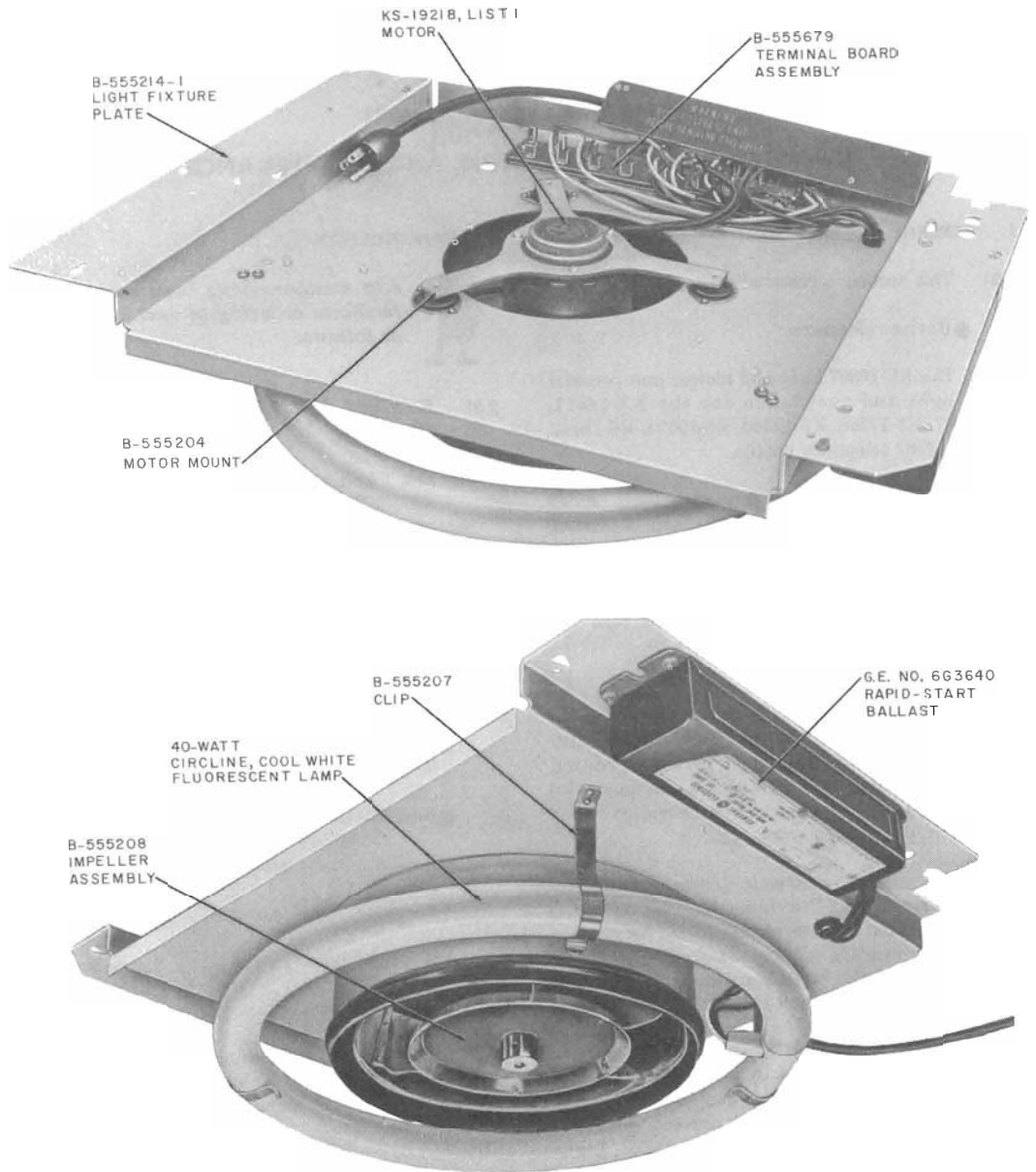


Fig. 1—KS-19207, List 1 Light and Blower Unit Plus Lamp

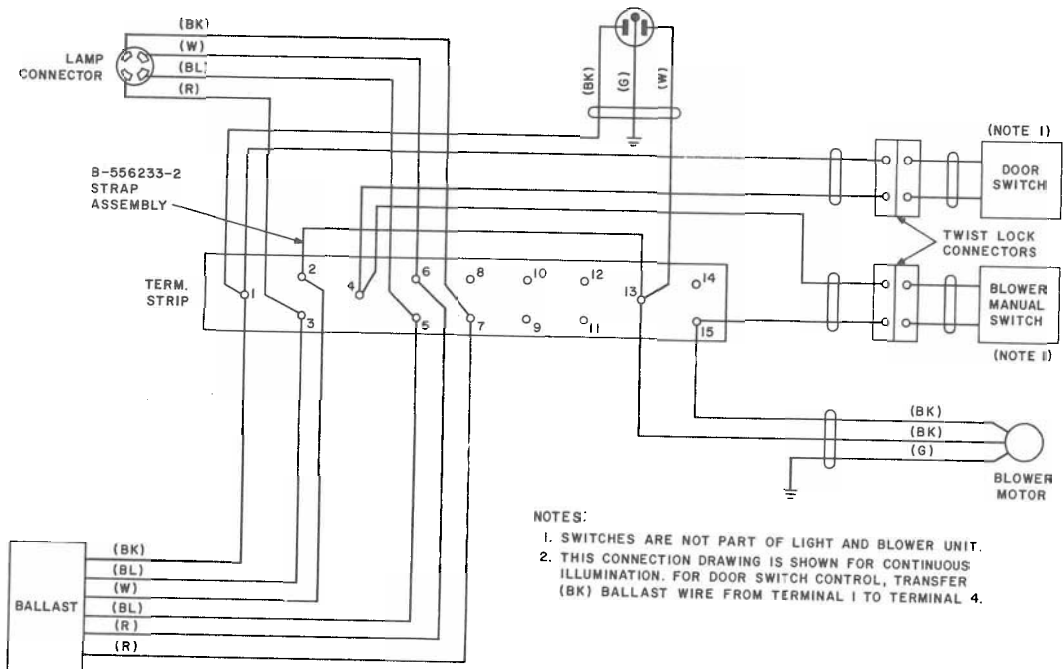


Fig. 2—Connections For List 1 Unit

(a) List 2 unit is similar to the List 1 unit except that it has no blower. It is designed for use in KS-19206, KS-19340, and KS-19442 indoor telephone booths where no ventilation is required.

(B) List 2 unit consists of the following basic items:

- B-555214-1 light fixture plate
- G.E. No. 6G3640 rapid-start ballast
- Three B-555207 clips (for mounting single lamp)
- B-555679 terminal board assembly

(c) See Fig. 3 for List 2 unit connections.

**2.03 KS-19207, List 3 Light and Blower Unit (Fig. 4)**

(a) List 3 unit is designed for use in KS-19425 and KS-19580 indoor or outdoor telephone booths where ventilation is required.

(b) List 3 unit consists of the following basic items:

- B-555214-1 light fixture plate
- Two G.E. No. 6G3640 rapid-start ballasts
- B-555215 starting ring assembly (for mounting two lamps)
- B-555679 terminal board assembly
- B-556232 motor assembly consisting of:

KS-19218, List 1 motor

B-555204 motor mount

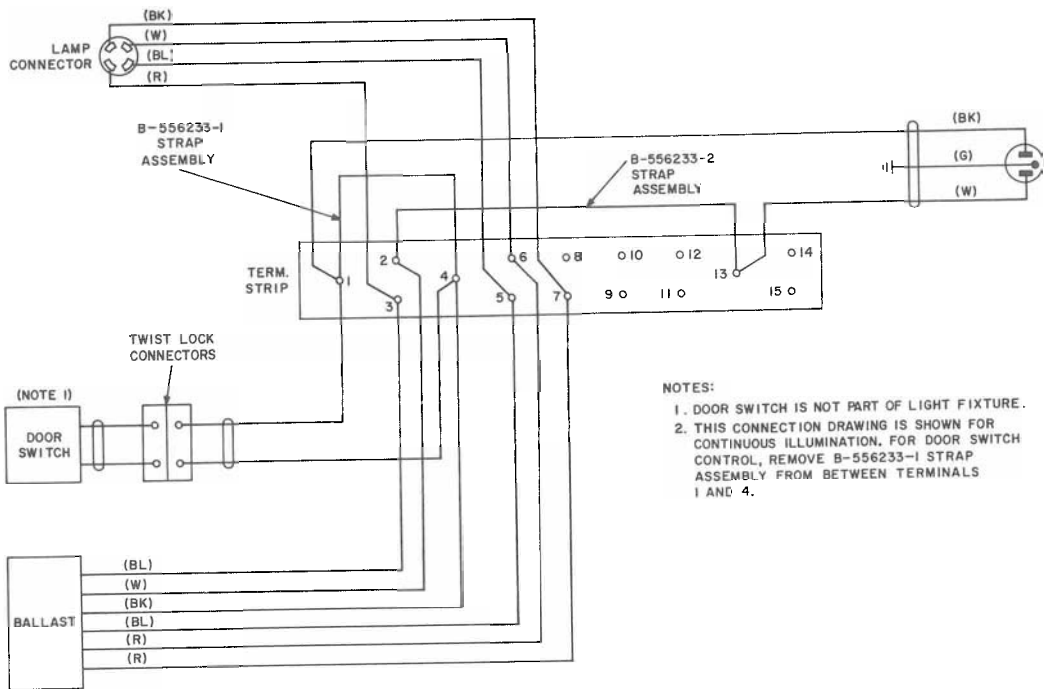


Fig. 3—Connections For List 2 Unit

B-555208 impeller assembly

- (c) Two twistlock connectors are provided, one for connecting a customer-controlled blower switch, and the other for connecting a door operated switch.
- (d) List 3 unit is provided with terminals to be connected for continuous illumination or for automatic operation with a light control unit or door operated switch (Fig. 5).

#### 2.04 KS-19207, List 4 Light Fixture (Fig. 6)

- (a) List 4 unit is designed for use in KS-14611 outdoor telephone booth as a replacement for B-185379 light fixture.
- (b) List 4 unit consists of the following basic items:
- B-555214-1 light fixture plate

- Two G.E. No. 6G3640 rapid-start ballasts
  - B-555215 starting ring assembly (for mounting two lamps)
  - B-555679 terminal board assembly
  - Four B-555213 standoff assemblies
- (c) List 4 unit is provided with terminals to be connected for continuous illumination or for automatic operation with a light control unit (Fig. 7).

#### 2.05 KS-19207, List 5 Blower

- (a) List 5 blower is designed to be added to List 2 or List 7 light fixtures if it becomes necessary to ventilate a booth.
- (b) This blower is also a replacement part for defective blowers in the field.

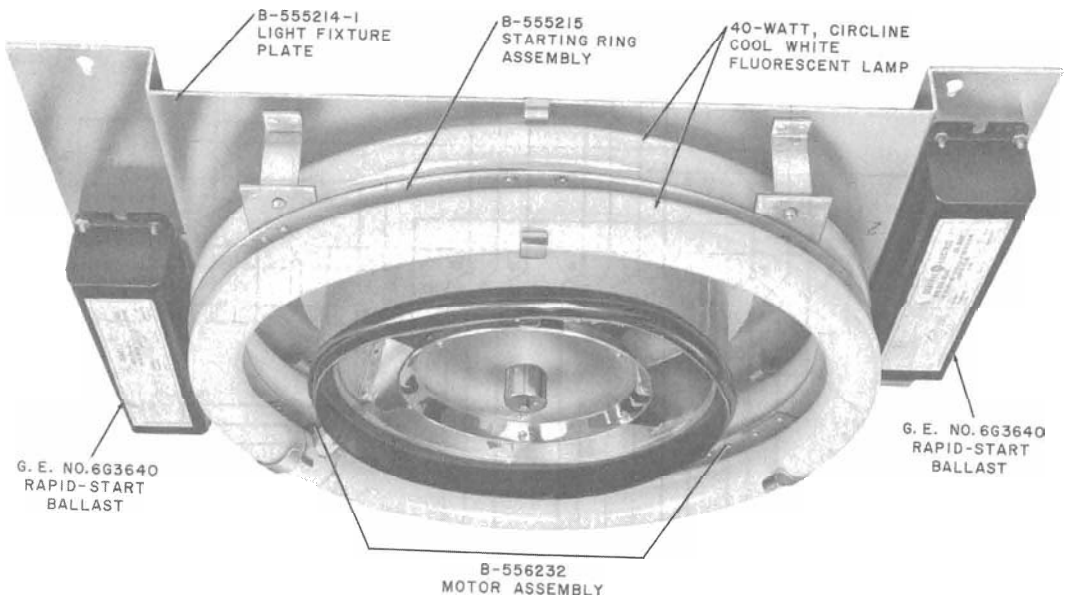


Fig. 4—KS-19207, List 3 Light and Blower Unit Plus Lamps

- (c) List 5 blower consists of the following basic items:

- B-556232 motor assembly consisting of:

KS-19218, List 1 motor

B-555204 motor mount

B-555208 impeller assembly

- Two G.E. No. 6G3640 rapid-start ballasts
- B-555215 starting ring assembly (for mounting two lamps)
- B-555679 terminal board assembly
- Four B-555213 standoff assemblies

- (c) List 6 unit is provided with terminals to be connected for continuous illumination or for automatic operation with a light control unit (Fig. 7).

#### 2.06 KS-19207, List 6 Light Fixture

**Note:** List 6 unit is similar to List 4 (Fig. 6) except that the light fixture plates are different for mounting purposes.

- (a) List 6 unit is designed for use in KS-16797 telephone booth as a replacement for B-185379 light fixture.

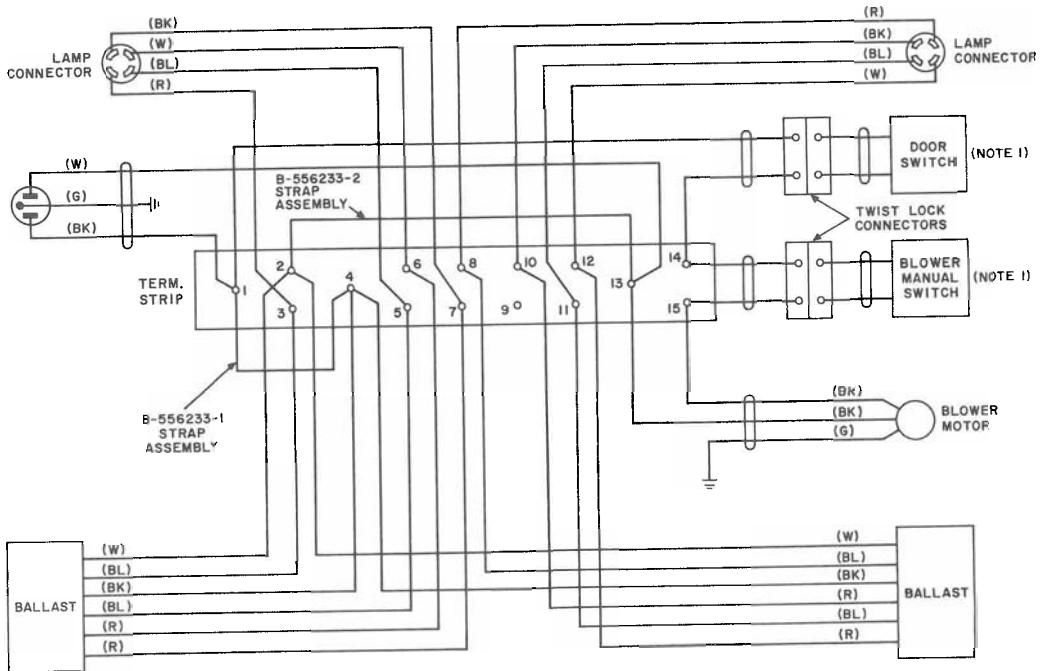
- (b) List 6 consists of the following basic items.

- B-555214-2 light fixture plate

#### 2.07 KS-19207, List 7 Light Fixture

**Note:** List 7 unit is similar to List 4 (Fig. 6) except that List 7 unit is equipped with a B-556772 collar assembly.

- (a) List 7 unit is designed for use in KS-19425 and KS-19580 telephone booths where no ventilation is required.



## NOTES:

1. SWITCHES ARE NOT PART OF LIGHT AND BLOWER UNIT.
2. THIS CONNECTION DRAWING IS SHOWN FOR CONTINUOUS ILLUMINATION. FOR DOOR SWITCH CONTROL, REMOVE B-556233-1 STRAP ASSEMBLY FROM TERMINALS 1 AND 4 AND TRANSFER THE DOOR SWITCH AND BLOWER MANUAL SWITCH WIRES FROM TERMINAL 14 TO TERMINAL 4.
3. FOR AUTOMATIC LIGHT CONTROL, REFER TO SECTION 508-825-100.

Fig. 5—Connections For List 3 Unit

(b) List 7 unit consists of the following basic items:

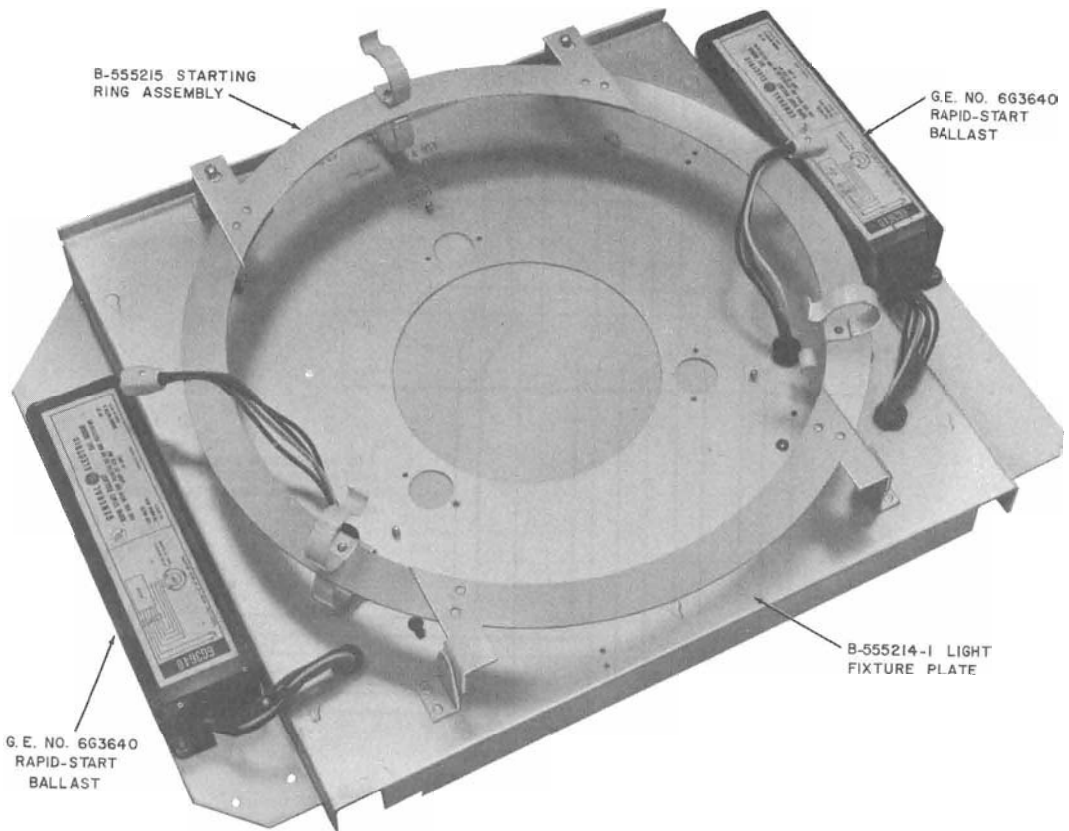
- B-555214-1 light fixture plate
- Two G.E. No. 6G3640 rapid-start ballasts
- B-555215 starting ring assembly (for mounting two lamps)
- B-555679 terminal board assembly

(c) See Fig. 8 for List 7 unit connections.

## 3. INSTALLATION



*The KS-19207, List 4 and List 6 light fixtures are replacement units for B-185379 light fixture and are designed for field installation in KS-14611 and KS-16797 telephone booths, respectively.*



**Fig. 6—KS-19207, List 4 Light Fixture**

**3.01** Replace the B-185379 light fixture in KS-14611 telephone both with a KS-19207, List 4 light fixture as follows:

- (a) Lower dome and remove the two lamps to a safe area.
- (b) Remove roof fasteners by reaching through dome opening in ceiling and remove roof.
- (c) Unplug light cord from electrical receptacle.
- (d) Loosen the four light fixture mounting screws (Fig. 9) and carefully lower the light fixture and place it in dome.
- (e) Remove and retain the cord plate screws (Fig. 9) and dispose of the light fixture in accordance with local regulations.
- (f) Remove and discard the light fixture mounting screws.
- (g) Install four B-555213 standoffs (Fig. 10) (furnished with light fixture) in the holes vacated by the light fixture mounting screws.
- (h) Position KS-19207 light fixture in a suitable work area, loosen the two starter ring assembly mounting screws, and raise the starter ring assembly as shown (Fig. 11).

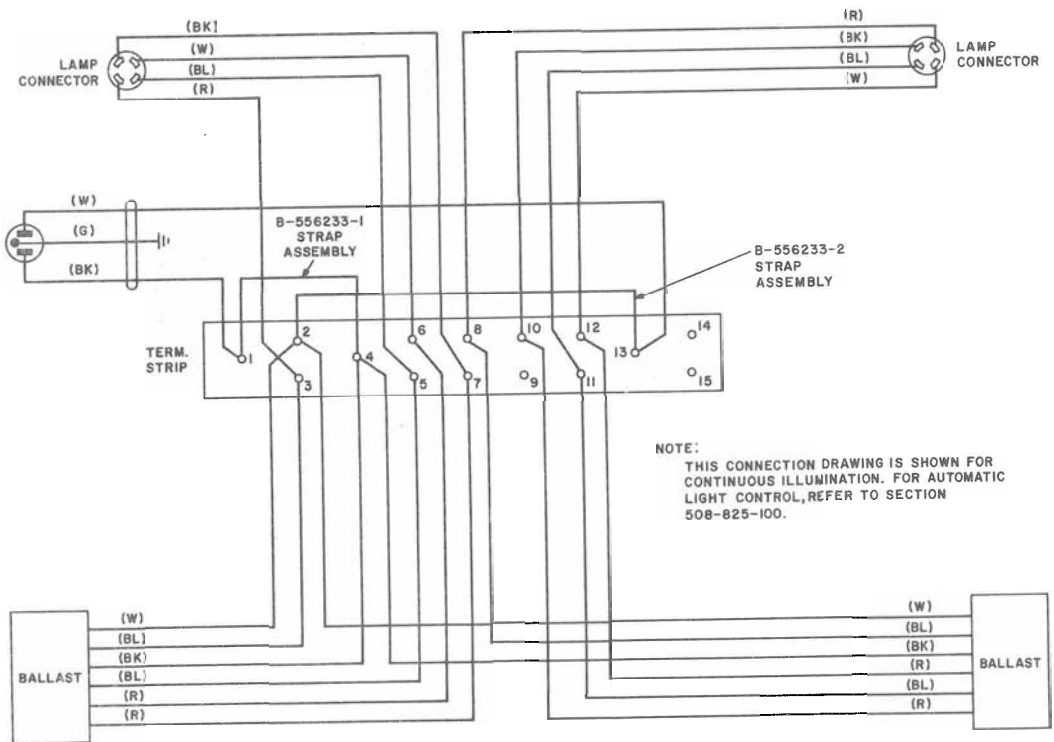

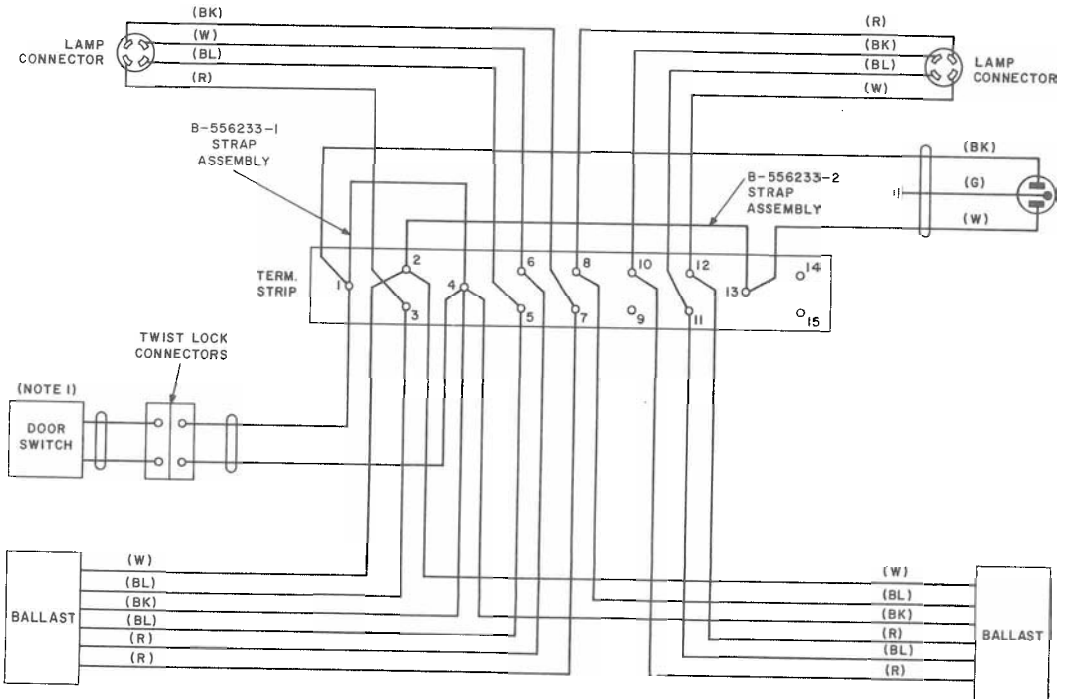


Fig. 7—Connections For List 4 or List 6 Unit

- (i) Remove the knockouts (Fig. 11) as shown in Fig. 12.
- (j) Position the light fixture in the dome as shown in Fig. 13 and insert light cord through hole in ceiling.
-  **The cord is not centered in mounting plate. Plate should be mounted so that cord is as far toward front of booth as possible.**
- (k) Secure mounting plate to ceiling using the four screws retained in (e).
- (l) Install light fixture on standoffs and secure by tightening the standoff screws.
- (m) Install one of the lamps, removed in (a), on starter ring assembly (Fig. 14).
- (n) Secure the starter ring assembly in its normal position and install the remaining lamp (Fig. 15).
- (o) Plug the light cord plug into the electrical receptacle and verify that lamps will illuminate.
- (p) Install and secure roof on booth.
- (q) Fasten dome assembly in its original position.
- 3.02** Replace the B-185379 light fixture in KS-16797 telephone booth with a KS-19207, List 6 light fixture as follows:
- (a) Perform the operations outlined in 3.01 (a) through (g).
- (b) Move connecting block or protector (and subset if mounted on underside of ceiling)





## NOTES:

1. DOOR SWITCH IS NOT PART OF LIGHT FIXTURE.
2. THIS CONNECTION DRAWING IS SHOWN FOR CONTINUOUS ILLUMINATION. FOR DOOR SWITCH CONTROL, REMOVE B-556233-1 STRAP ASSEMBLY FROM BETWEEN TERMINALS 1 AND 4.
3. FOR AUTOMATIC LIGHT CONTROL REFER TO SECTION 508-825-100.

Fig. 8—Connections For List 7 Unit

to top surface of ceiling. Relocate service wires as required.

**THINK** Check roof at protector location and determine that telephone line is not shorted or grounded to roof.

- (c) Perform the operations outlined in 3.01 (h) through (q).

## 4. MAINTENANCE

4.01 Maintenance on KS-19207 light and blower units consists primarily of replacing components listed in Table A.

4.02 Refer to Fig. 2, 3, 5, 7, and 8 for various connections if electrical failure should occur.

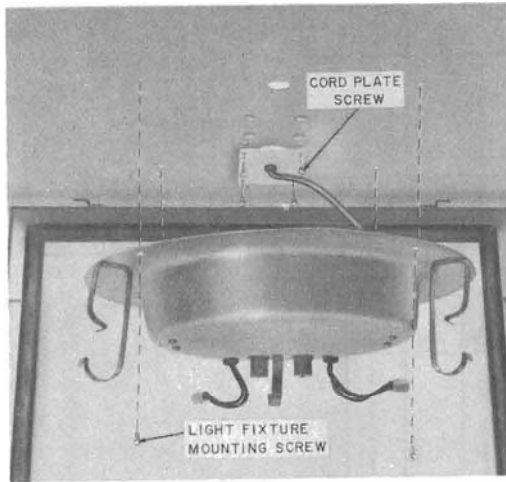


Fig. 9—Removal of B-185379 Light Fixture

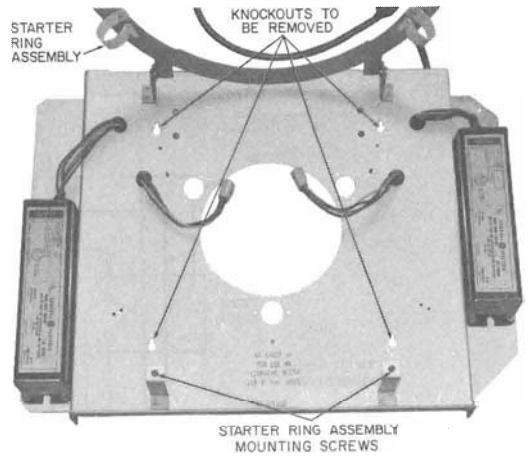


Fig. 11—KS-19207 Light Fixture With Starter Ring Assembly in Raised Position

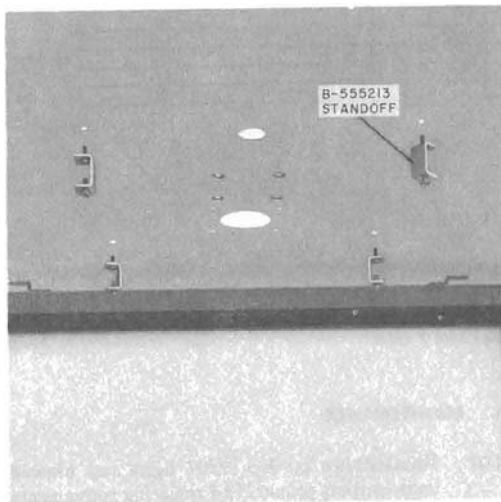


Fig. 10—Installation of B-555213 Standoffs

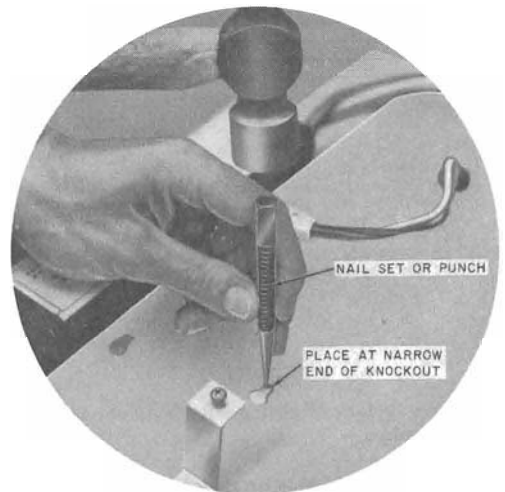


Fig. 12—Removing Knockout

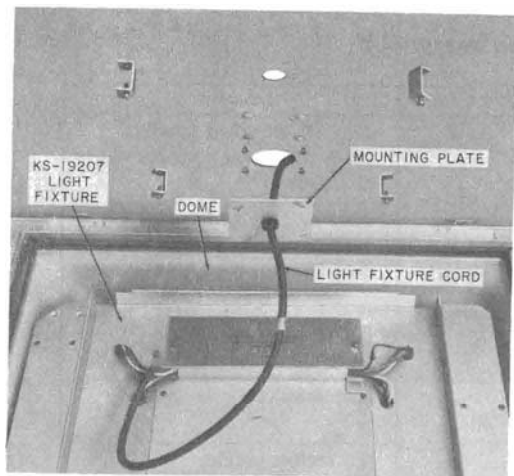


Fig. 13—Securing Mounting Plate to Ceiling

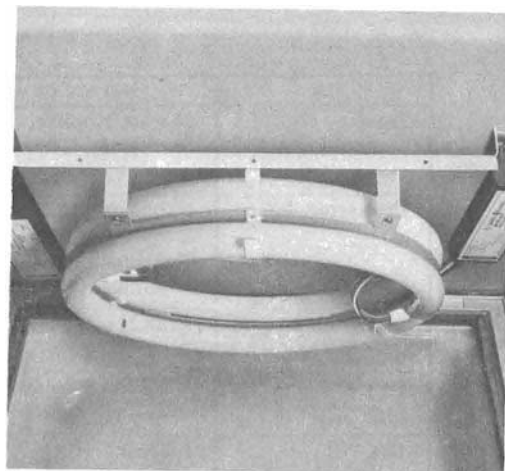


Fig. 15—Starter Ring Assembly Secured in Normal Position

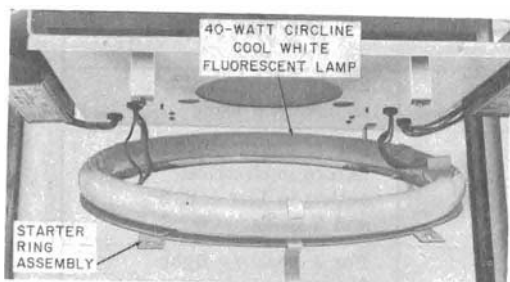


Fig. 14—Installing Lamp on Starter Ring Assembly

**TABLE A**  
**REPLACEMENT PARTS**

ITEM	PART NO. OR DESCRIPTION	REMARKS
Lamp	40-watt Circline, fluorescent, CW	May be obtained locally through normal supply channels
Connector, lamp	16-inch leads (BL, BK, R & W) equipped w/Electric Terminal Co. No. DF-210-THB terminals	May be obtained from Heyman Mfg. Corp, Kenilworth, N. J.
Terminal	Kent No. 121179, type R	To fasten all leads to terminal board
Ballast	G.E. No. 6G3640 w/15-inch leads	Rapid-start
Clip	B-555207	To secure single lamp to fixture
Tube clamp	Tinnerman No. C3049-A-7-108	To secure double lamps to starting ring assembly
Starting ring assembly	B-555215	For mounting lamps
Terminal board assembly	B-555679	For termination of all electrical leads
Cord assembly	B-555216-1	For connecting light fixture to electrical outlets in List 1, 2, 3 and 7 units
Cord assembly	G-555216-2	For connecting light fixture to electrical outlet in List 4 and 6 units
Strap assembly	B-556233-1	2-inch long strap for providing wire options
Strap assembly	B-556233-2	6-1/2 inch long strap for providing wire options
Cord assembly	B-650344-1	For connecting lamp circuit to door switch
Cord assembly	B-650344-2	For connecting blower motor circuit to door or manual switch
Standoff assembly	B-555213	For mounting unit to ceiling
Motor assembly	B-556232	Contains motor and blower for replacement

## KS-19261

### LIGHT CONTROLS

#### IDENTIFICATION, INSTALLATION, AND MAINTENANCE

#### 1. GENERAL

1.01 This section is reissued to:

- Change signs from TELEPHONE to phone
- Change wiring diagram on KS-19261, List 3 light control unit

#### 2. IDENTIFICATION

2.01 The KS-19261 light control units are used to control the lights in outdoor telephone booths and mountings.

2.02 The light control units are designed to operate the lamp(s) when exposed to a light level of not less than three-foot candles; the lamp(s) will be extinguished at a light level of 10 or more foot candles.



*The unit will not control fixtures exceeding 500 watts.*

2.03 The KS-19261, List 1 light control unit (Fig. 1) is used in outdoor booths equipped with a KS-19207 light and blower unit.

2.04 The KS-19261, List 2 light control unit (Fig. 2) is used in outdoor booths equipped with light units other than a KS-19207 light and blower unit.

2.05 The KS-19261, List 3 light control unit (Fig. 3) is used in the KS-19426 walk-up, drive-up mounting.



*Prior to beginning installation procedures, personnel responsible should familiarize themselves with the following outline. The outline provides a comprehensive view of the numerous arrangements and the paragraph sequence in which they appear.*

#### PARAGRAPH

#### TEXT CONTENT

3	INSTALLATION (SINGLE BOOTH)
3.01	List 1 unit in KS-16797 booth
3.02	List 1 unit in KS-14611 booth
3.03	List 1 unit in KS-19425 or KS-19580 booth
3.04	List 2 unit in KS-16797 booth
3.05	List 2 unit in KS-14611 booth
3.06	List 3 unit in KS-19426 mounting
4	INSTALLATION (MULTIPLE BOOTHS)
4.01 — 4.06	List 1 unit in booths without blowers
4.07 — 4.12	List 1 unit in booths with blowers
4.13 — 4.15	List 2 unit in KS-14611 or KS-16797 booths
4.16 — 4.18	List 3 unit in KS-19426 mounting

#### 3. INSTALLATION (SINGLE BOOTH)

##### LIST 1 UNIT

3.01 Install List 1 unit in KS-16797 universal booth, equipped with KS-19207 light and blower unit, as follows:

**THINK** Use eye protection for the following operations.

- (a) Remove power cord from receptacle.
- (b) Lower the dome as shown in Fig. 4 and remove lamp(s).
- (c) Release roof fasteners and remove roof from booth.
- (d) Remove knockout from side of light fixture (Fig. 5) and install control unit as shown.

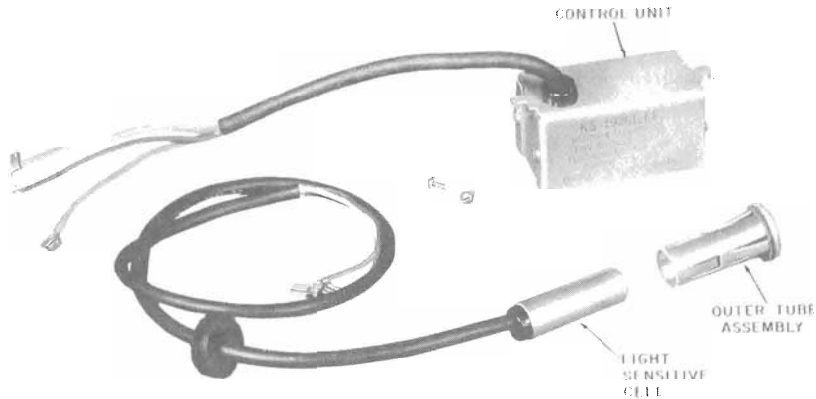


*The light cell is mounted in the right-front corner of the roof. Some booths have a plug or knockout for this purpose. If a plug or knockout does not exist, drill one 11/16-inch diameter hole in the roof as shown in Fig. 6. A Greenlee knockout punch should be used if available.*

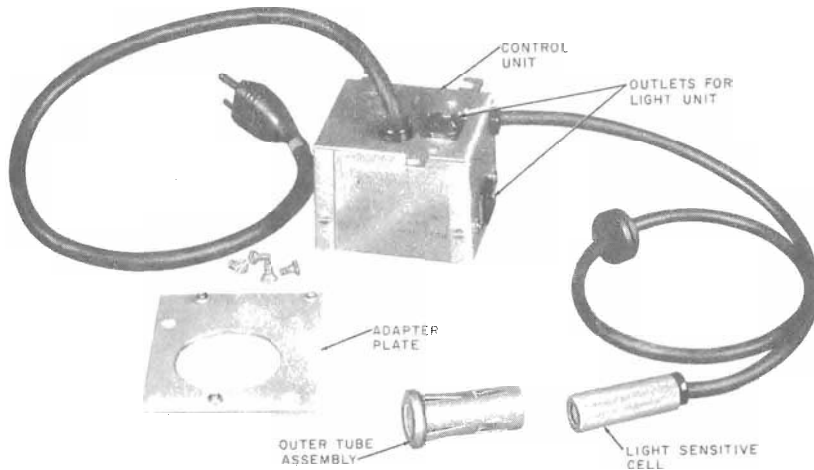
- (e) Insert outer tube assembly (Fig. 1) through 11/16-inch hole in roof from outside until tabs lock behind edge of hole (Fig. 7).

- (f) Remove terminal board cover and connect control unit wiring to terminals as follows:

Wire Color	Connect to Terminal
W	9
R	4
BK	1



**Fig. 1—KS-19261, List 1 Light Control Unit**



**Fig. 2—KS-19261, List 2 Light Control Unit**

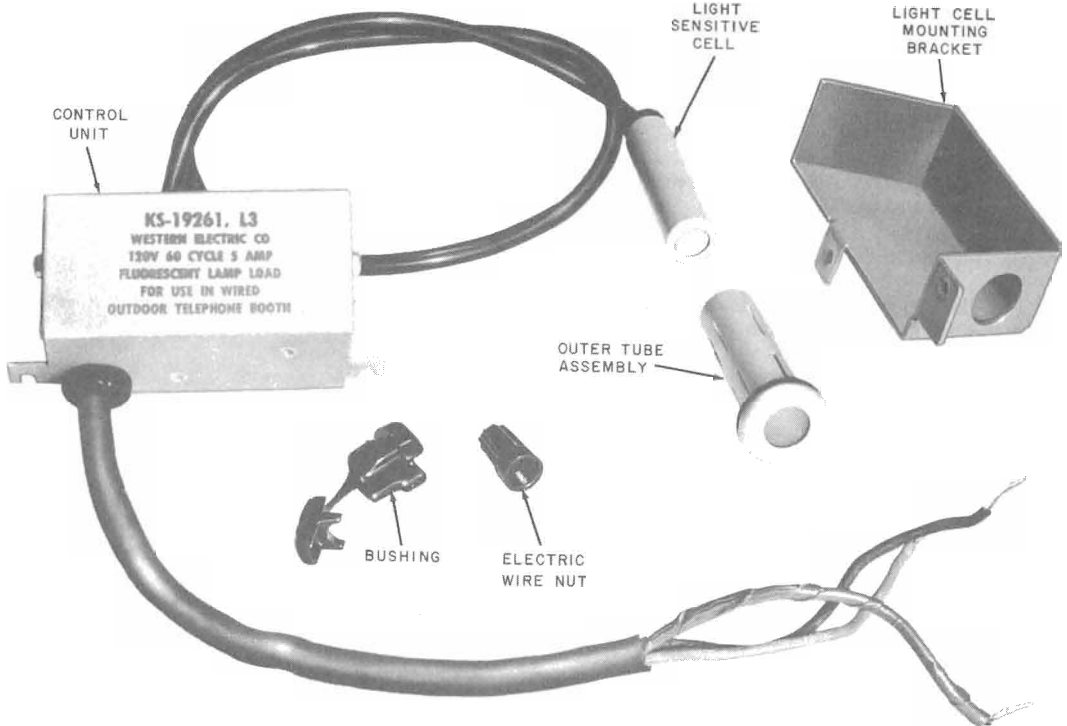


Fig. 3—KS-19261, List 3 Light Control Unit



Fig. 4—Dome in Lowered Position (KS-14611 or KS-16797 Booth)†

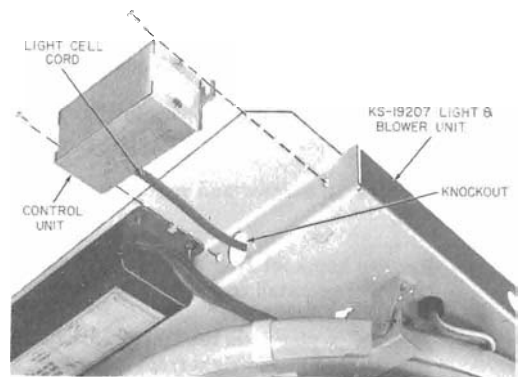


Fig. 5—Installation of List 1 Light Control Unit on Light Fixture

- (g) Connect light cell wiring to terminals as follows:

Wire Color	Connect to Terminal
WH	13
BK	9

- (h) Remove strap wire from between terminals 1 and 4 of terminal strip.
- (i) Install terminal board cover.
- (j) Place roof on booth and insert light sensitive cell fully into outer shell.
- (k) Secure roof to booth.
- (l) Install lamp(s) and fasten dome.
- (m) Connect power cord to receptacle.

(n) Cover light cell to exclude light. Lamps should light within two minutes. If lamps do not light, check wiring and refer to Part 5.

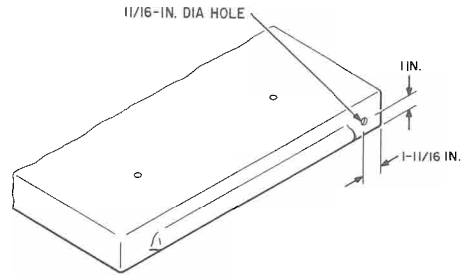
**3.02** Install List 1 unit in KS-14611 outdoor booth, equipped with KS-19207 light unit, as follows:

- (a) Perform the operations outlined in 3.01 except when an 11/16-inch diameter hole has to be drilled in the roof for the light cell, use the locating dimensions shown in Fig. 8.

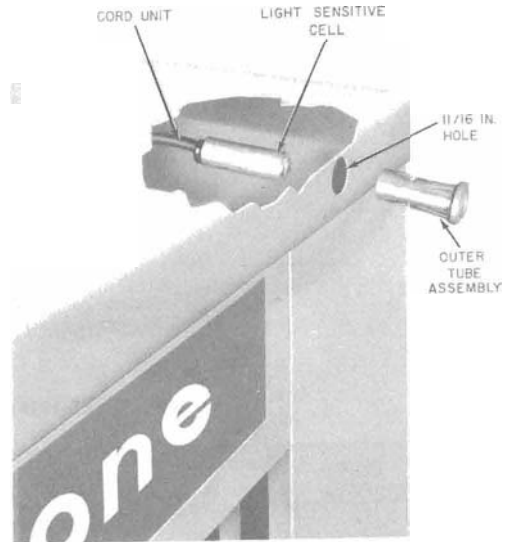
**3.03** Install List 1 unit in KS-19425 or KS-19580 telephone booth as follows:

**THINK** Use eye protection for the following operations.

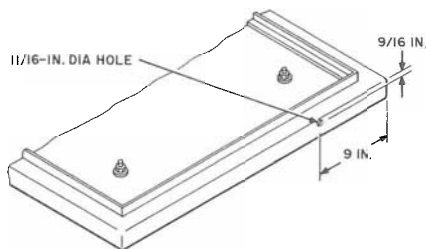
- (a) Remove power cord from receptacle.
- (b) Remove the dome as shown in Fig. 9 and remove lamps.
- (c) Remove 12 screws and move roof to one side.
- (d) Remove knockout from rear of light fixture (Fig. 5) and install control unit as shown.
- (e) Remove the plug from the 11/16-inch diameter hole located in the right-front-top corner of the booth.
- (f) Perform operations outlined in 3.01(e) through (n).



**Fig. 6—Locating Hole in Roof of KS-16797 Booth for Light Cell**

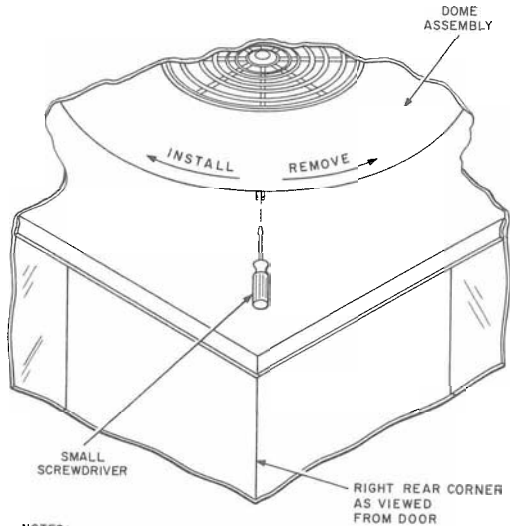


**Fig. 7—Method of Installing Light Cell**



**Fig. 8—Locating Hole in Roof of KS-14611 Booth for Light Cell**





## NOTES:

1. FOR REMOVAL, INSERT SMALL SCREWDRIVER THROUGH SLOT IN CEILING, DEPRESS DETENT SPRING, AND TURN DOME ASSEMBLY COUNTERCLOCKWISE.
2. FOR INSTALLATION, PLACE DOME ASSEMBLY IN CEILING AND TURN IT CLOCKWISE UNTIL DETENT SPRING ENGAGES AND LOCKS DOME.

**Fig. 9—Method of Removing Dome Assembly**

## LIST 2 UNIT

**3.04** Install List 2 unit in KS-16797 universal booth equipped with B-185379 light fixture as follows:

**THINK** Use eye protection for the following operations.

- (a) Remove power cord from receptacle.
  - (b) Lower the dome as shown in Fig. 4, unplug light fixture, and remove lamps.
  - (c) Remove roof retaining nuts and cord plate.
  - (d) Remove light fixture and cord mounting plate and set it aside.
  - (e) Remove roof from booth.
- The light cell is mounted in the right-front corner of the roof. Some booths have a plug or knockout for this purpose. If a plug or knockout does not exist, drill one 11/16-inch-diameter hole in the roof as shown in Fig. 6. A Greenlee knockout punch should be used if available.
- (f) Secure light control adapter plate on ceiling where cord plate was removed (Fig. 10). This adapter plate must be placed with the two control unit mounting bolts toward the left rear corner of booth.
  - (g) Locate and drill one 11/16-inch diameter hole in the ceiling as shown in Fig. 10.
  - (h) Push light cell and cord through hole drilled in ceiling and secure grommet. Push the power cord through 2-inch hole and attach control unit to adapter plate (Fig. 11).
  - (i) Place outer tube assembly (Fig. 2) through roof hole from outside until the tabs lock behind edge of hole (Fig. 7).
  - (j) Place control unit power cord plug near receptacle so that it may be reached from inside of booth.
  - (k) Place light cell into shell and put roof into position.
  - (l) Bend light unit cord plate and wedge under ballast (Fig. 12).
  - (m) Hold light fixture near ceiling and plug light cord into ceiling unit. Position light fixture so that ballast lies along the diagonal from left to rear right booth (starters toward left rear of booth).
  - (n) Secure light assembly and roof, replace lamps, and plug control unit into receptacle.
  - (o) Secure dome and plug power cord into receptacle.
  - (p) Cover light cell to exclude light. Lamps should light within two minutes.

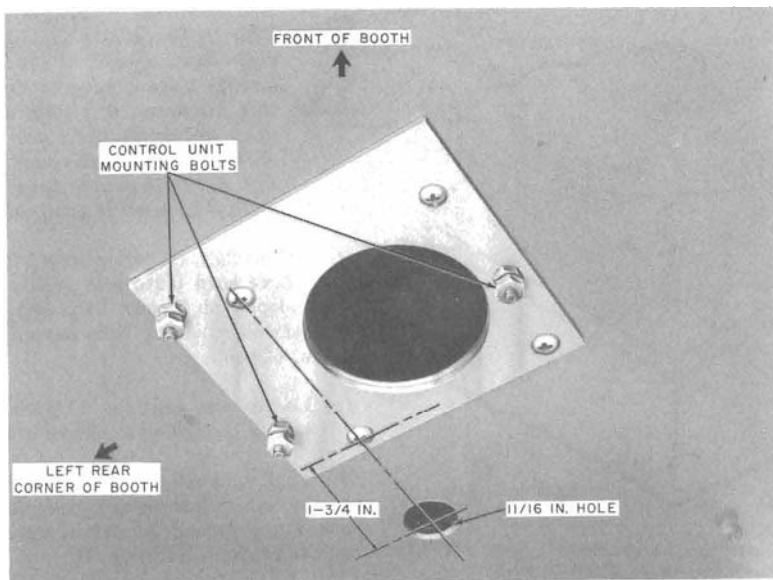


Fig. 10—Installation of Adapter Plate to Ceiling of KS-16797 Booth

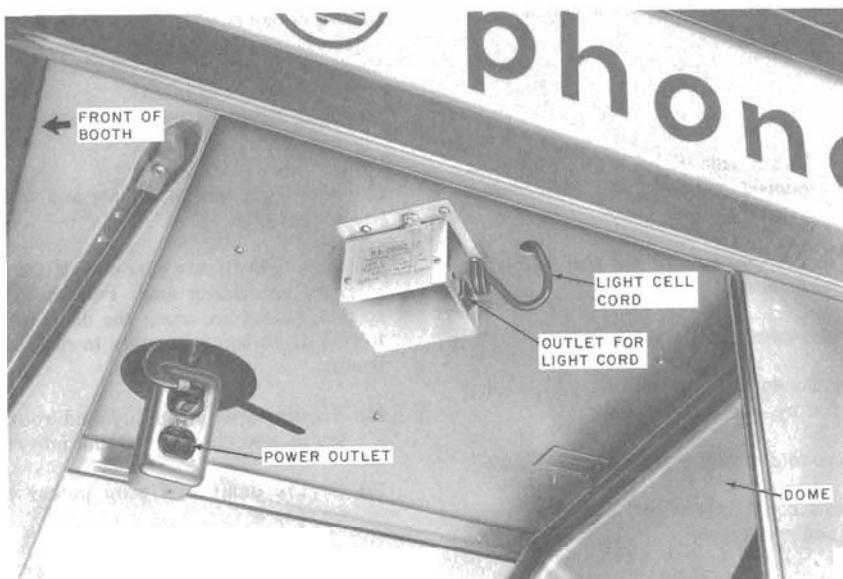


Fig. 11—Position of Light Control on Ceiling of KS-16797 Booth

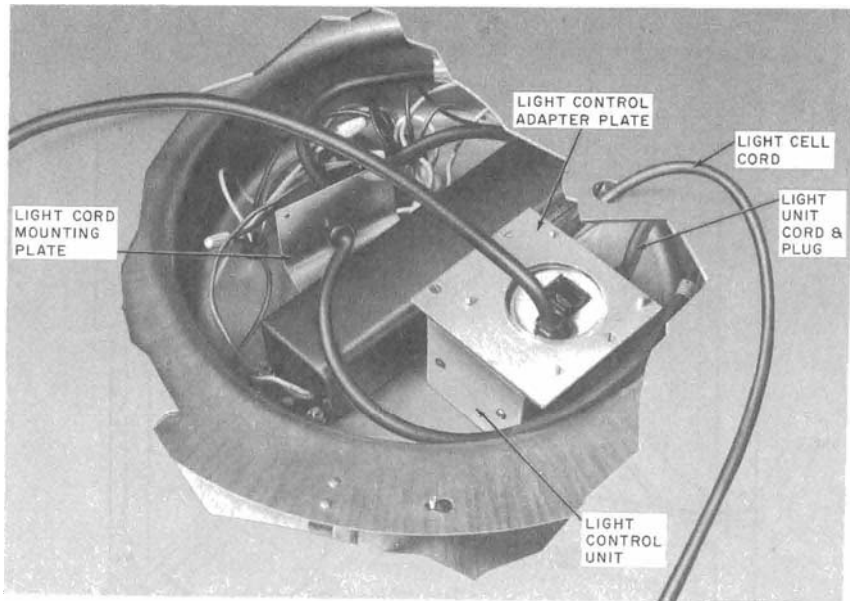


Fig. 12—Position of Light Control in Light Fixture

3.05 Install List 2 unit in KS-14611 outdoor booth, equipped with B-185379 light fixture as follows:

**THINK** Use eye protection for the following operations.

- (a) Remove power cord from receptacle.
- (b) Lower the dome as shown in Fig. 4, unplug light fixture, and remove lamps.
- (c) Remove top access plate located in right-rear inside corner, and remove light plug from receptacle.
- (d) Remove roof retaining nuts.
- (e) Remove light fixture and light fixture cord mounting plate.
- (f) Remove roof from booth.
- (g) Drill an 11/16-inch diameter hole down through ceiling 4-1/2 inches toward front of booth from center of cross braces (Fig. 13).
- (h) Attach light cell adapter plate to inside of ceiling so that the pair of light control unit mounting bolts are toward the front of booth (Fig. 14).
- (i) Place light control cord up through large hole and secure light control unit to adapter plate.



*The light cell is mounted in the right-front corner of the roof. Some booths have a plug or knockout for this purpose. If a plug or knockout does not exist, drill one 11/16-inch diameter hole in the roof as shown in Fig. 8. A Greenlee knockout punch should be used if available.*

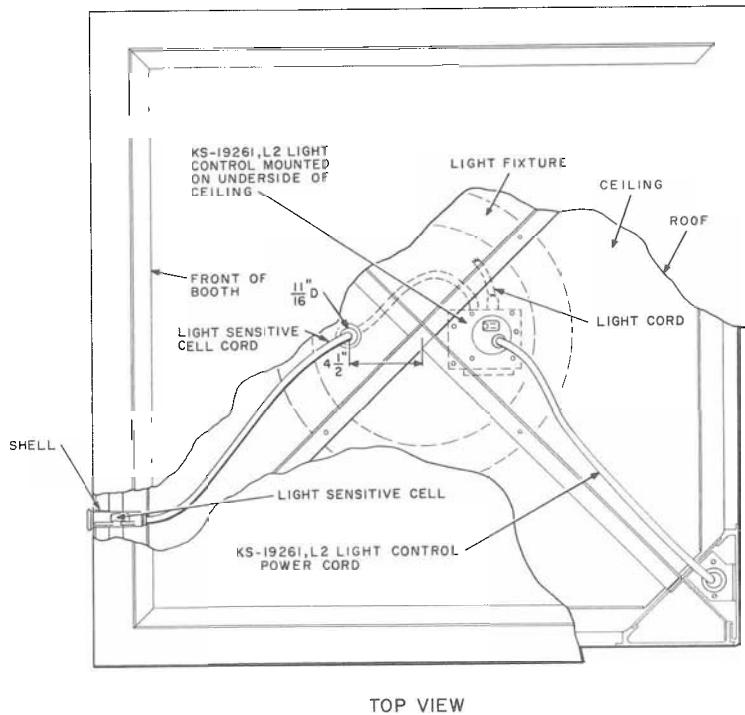


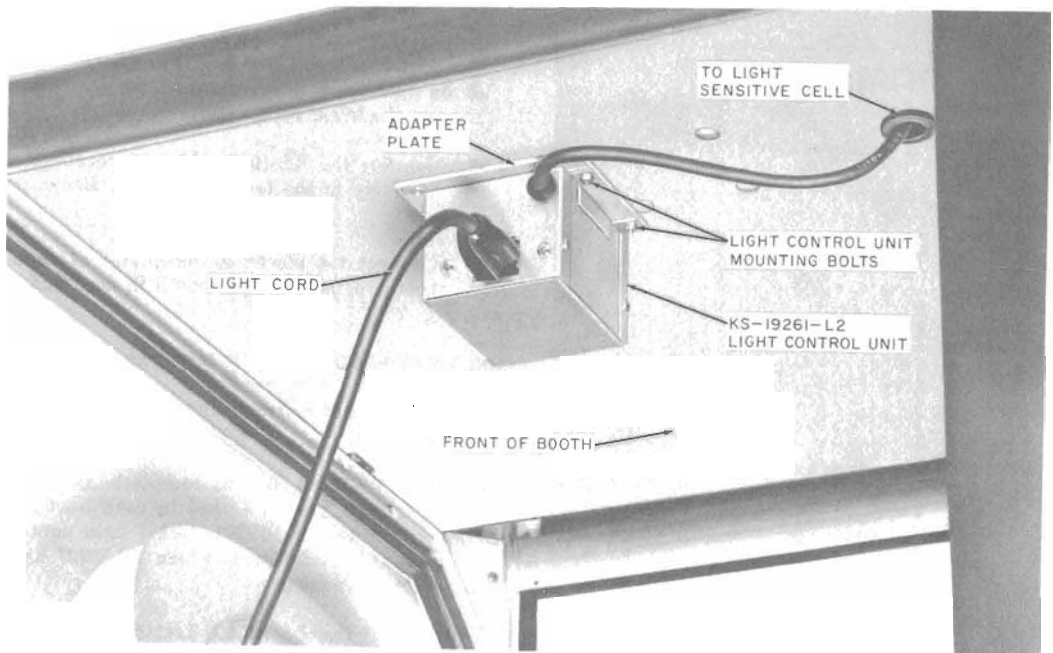
Fig. 13—Ceiling Layout of KS-14611 Booth (Top View)

- (j) Place light cell up through previously drilled hole and insert grommet.
- (k) From top of booth, place light control unit cord plug into area of power receptacle.
- (l) Place outer tube assembly through roof hole from outside until tabs lock behind edge of hole (Fig. 7).
- (m) Place light cell into shell and put roof into position.
- (n) Bend light cord mounting plate and wedge it under ballast (Fig. 12).
- (o) Plug light cord into control unit (Fig. 14).
- (p) Replace lamps and roof retaining nuts.
- (q) Plug light control unit cord into receptacle and replace access plate.
- (r) Secure dome and plug the power cord into receptacle.
- (s) Cover light cell to exclude light. Lamps should light within two minutes. If lamps do not light, check wiring and refer to Part 5.

#### LIST 3 UNIT

**3.06** Install List 3 unit in KS-19426 walk-up, drive-up mounting as follows:

- (a) Using KS-19192, List 1 wrench, remove four tamper proof screws, retainer bar, and the light shield from housing.
- (b) Remove coin telephone from housing.



**Fig. 14—Position of List 2 Light Control Unit on Ceiling of KS-14611 Booth**

- (c) Remove wire channel (Fig. 15) from right side of housing.
- (d) Install control unit in the upper portion of the housing on the bracket provided.
- (e) Connect control unit wires to electrical receptacle as shown in Fig. 16.
- (f) Run the light cell cable down the channel to the underside of the housing.
- (g) Install the wire channel, removed in (c), in its original position.
- (h) Install the light cell in the light cell mounting bracket as shown in Fig. 17.
- (i) Secure the bracket to the bottom of the housing as shown in Fig. 18.
- (j) Install the coin telephone.
- (k) Install light shield as follows:
  - (1) Slide light shield over the panel retaining channels and verify that shield is seated properly against gasket. Ensure that back edge of shield is engaged in KS-19426, List 34 top assembly, or B-564418 subset cover assembly (whichever is applicable).
  - (2) Install shield retainer bar across top of housing using four No. 10-24 by 1/2 tamper proof screws, and KS-19192, List 1 wrench.
  - (l) Cover light cell to exclude light. Lamps should light within two minutes. If lamps do not light, check wiring and refer to Part 5.

#### **4. INSTALLATION (MULTIPLE BOOTHS)**

**4.01** A KS-19261 light control unit may be used to control the lights in multiple installations of five or less booths.

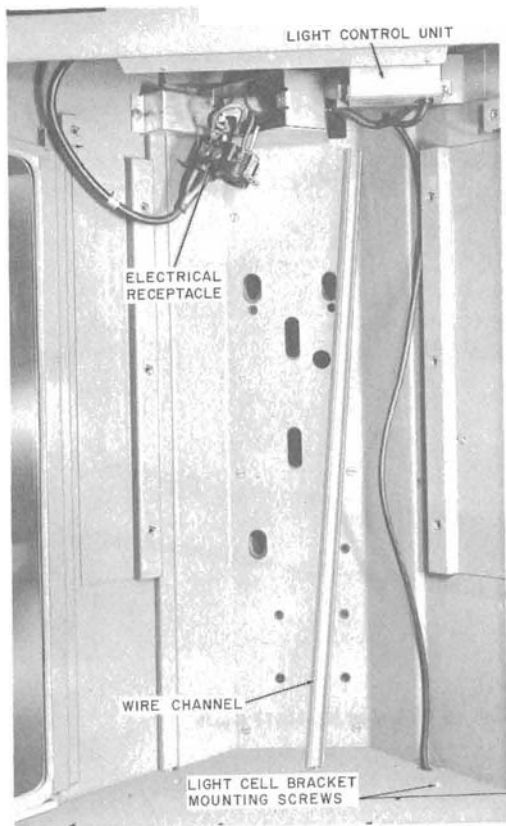


Fig. 15—Installation of List 3 Light Control Unit

#### LIST 1 UNIT IN BOOTHS WITHOUT BLOWERS

- 4.02** Install light control in first booth as directed in Part 3.
- 4.03** One KS-19580, List 51 receptacle assembly (Fig. 19), must be used in conjunction with a KS-19261, List 1 light control unit in multiple installations where KS-19207 light units without blowers are used.
- 4.04** Install the KS-19580, List 51 receptacle assembly above the ceiling area in first booth.



*The KS-19580 booth has a bracket provided for the receptacle assembly. In other type booths, install the assembly in any convenient area near electrical receptacle.*

- 4.05** Connect the KS-19580, List 51 receptacle assembly to the terminal strip as shown in Fig. 20.
- 4.06** Connect the electrical receptacle of each booth to the previous booth in accordance with Fig. 20.

#### LIST 1 UNIT IN BOOTHS WITH BLOWERS

- 4.07** Install light control in first booth as directed in Part 3.
- 4.08** One KS-19580, List 51 receptacle assembly (Fig. 19), must be used in each booth in conjunction with a KS-19261, List 1 light control unit in multiple installations where KS-19207 light and blower units are used.
- 4.09** Install the KS-19580, List 51 receptacle assembly above the ceiling area in each booth.



*The KS-19580 booth has a bracket provided for the receptacle assembly. In other type booths, install the assembly in any convenient area near electrical receptacle.*

- 4.10** Connect the KS-19580, List 51 receptacle assemblies to the terminal strips as shown in Fig. 21.
- 4.11** Connect the List 51 receptacle assembly of the second, third, fourth, and fifth booth to the List 51 receptacle assembly of the previous booth in accordance with Fig. 21.
- 4.12** Connect the electrical receptacle of the second, third, fourth, and fifth booth to the electrical receptacle of the previous booth in accordance with Fig. 21.
- LIST 2 UNIT IN KS-14611 OR KS-16797 BOOTH**
- 4.13** Install light control in first booth as directed in Part 3.

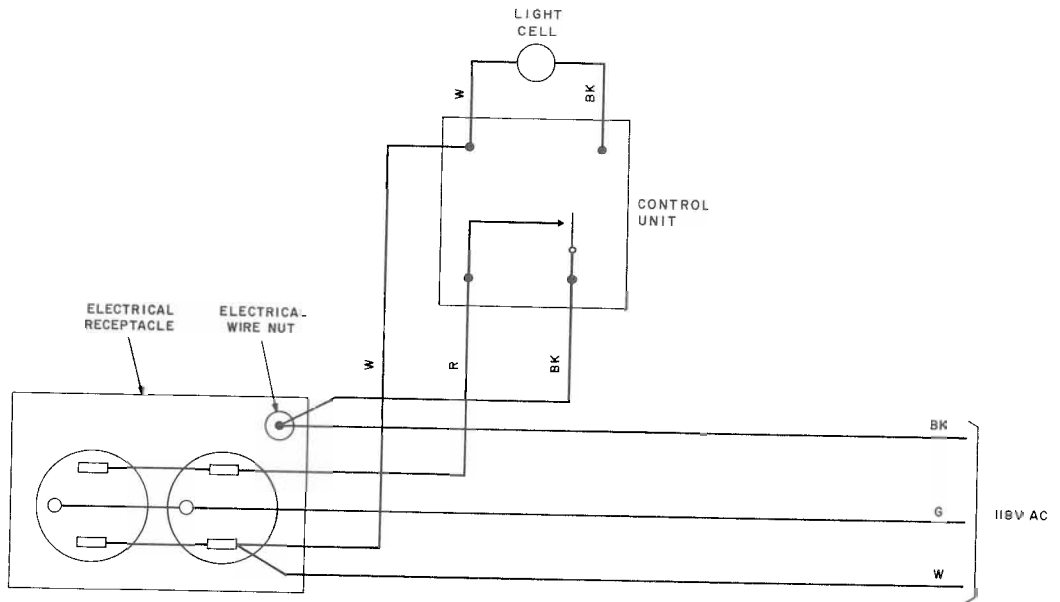


Fig. 16—Wiring Diagram of KS-19261, List 3 Light Control Unit

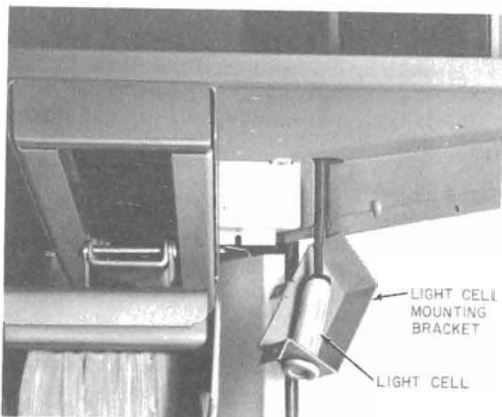


Fig. 17—Installation of Light Cell in Mounting Bracket

4.14 Plug power cord from electrical receptacle of second booth into extra outlet in light control unit of first booth.

4.15 Plug power cord from electrical receptacle of third, fourth, and fifth booth into electrical receptacle of previous booth.

#### LIST 3 UNIT IN KS-19426 MOUNTING

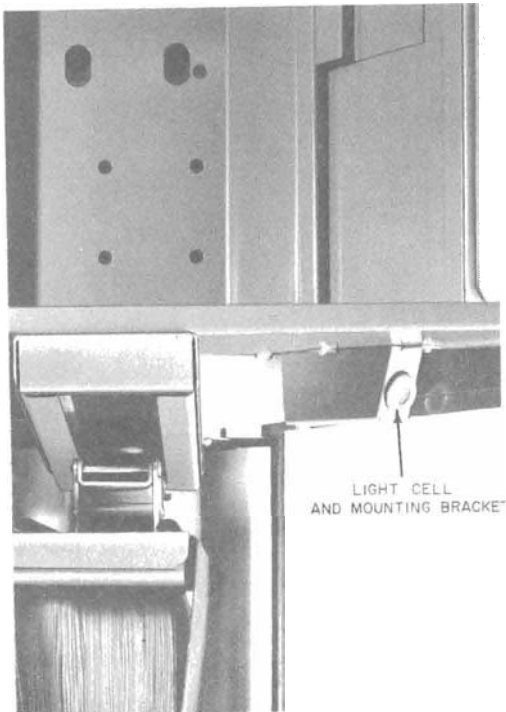
4.16 Install light control in first mounting as directed in Part 3.

4.17 Connect wires of control unit to electrical receptacle of prime mounting as shown in Fig. 16.



*The prime mounting is the one into which the outside power wiring is connected.*

4.18 Connect the electrical receptacle of each succeeding mounting to the electrical receptacle of previous mounting with approved No. 14 gauge wire.



**Fig. 18—Installation of Light Cell Mounting Bracket on KS-19426 Mounting**

## 5. MAINTENANCE

**5.01** Cover light cell to exclude light. If lamp(s) does not illuminate within two minutes, proceed as follows:

### LIST 1

- (a) Place a strap between terminals 1 and 4 in first mounting.



**Fig. 19—KS-19580, List 51 Receptacle Assembly**

- (b) If lamp(s) illuminates, remove strap and replace existing light control unit with a new light control unit.

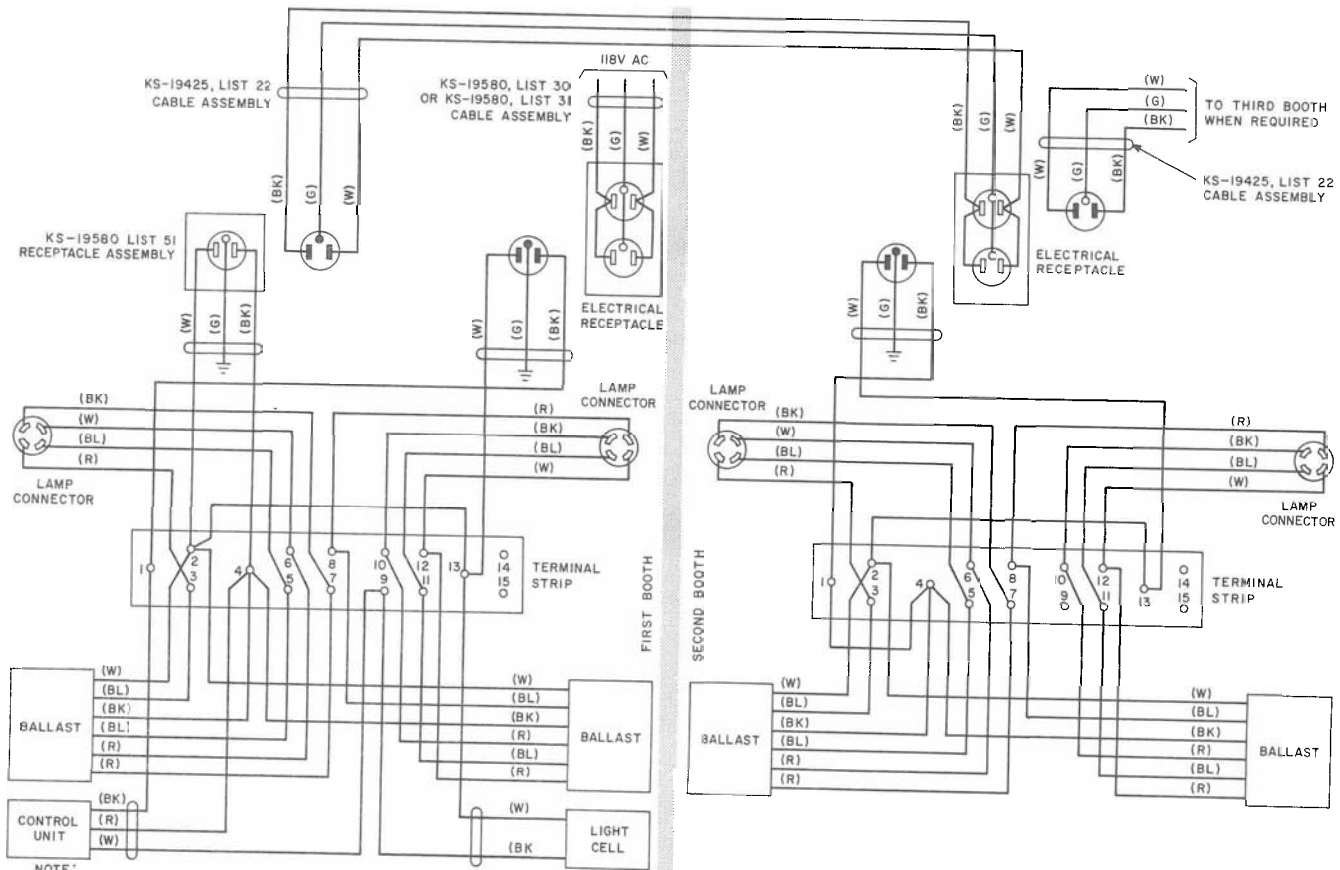
### LIST 2

- (a) Remove light plug from light control unit and plug it into electrical receptacle.
- (b) If lamp(s) illuminates, replace light control unit.

### LIST 3

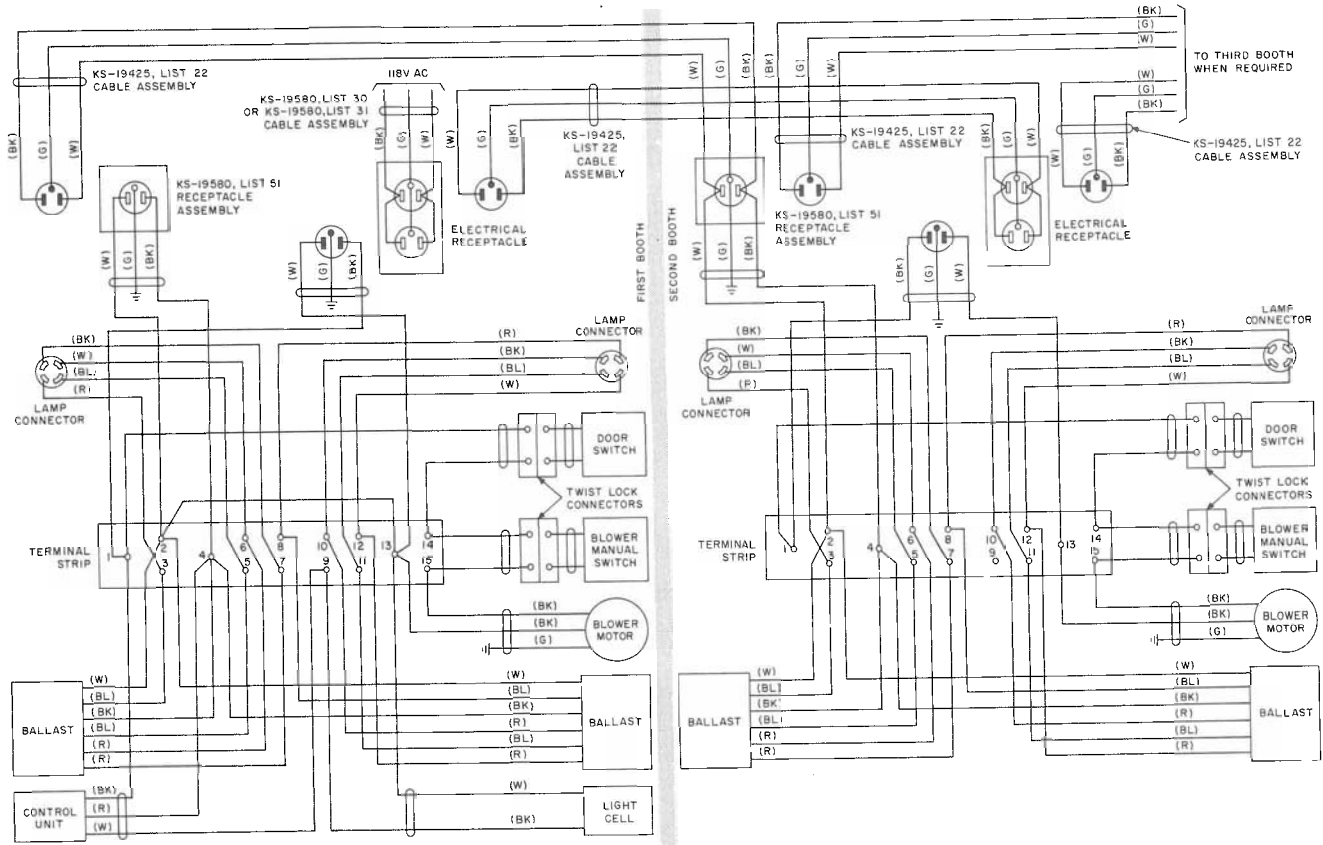
- (a) Remove electric wire nut (Fig. 16) from black wires. Connect black wire from ac power source to electrical receptacle on terminal opposite white wire.
- (b) If lamp illuminates, replace light control unit.





NOTE:  
 FOR MULTIPLE INSTALLATIONS USING KS-19207, LIST 7 UNITS, AND USING A KS-19261 LIGHT CONTROL UNIT (MAXIMUM OF FIVE BOOTHS FOR EACH CONTROL UNIT), REMOVE THE STRAP WIRE FROM TERMINAL STRIP TERMINALS 1 AND 4 IN FIRST BOOTH. INSTALL A KS-19580, LIST 51 RECEPTACLE ASSEMBLY IN THE FIRST BOOTH. CONNECT ELECTRICAL RECEPTACLE OF SECOND BOOTH TO LIST 51 RECEPTACLE OF FIRST BOOTH USING KS-19425, LIST 22 CABLE ASSEMBLY. CONNECT ELECTRICAL RECEPTACLE OF THIRD, FOURTH, AND FIFTH BOOTHS TO ELECTRICAL RECEPTACLE OF PREVIOUS BOOTH USING KS-19425, LIST 22 CABLE ASSEMBLY.

Fig. 20—Wiring Diagram of KS-19261 Light Control Unit Used In Multiple Installation without Blowers



NOTE:  
 FOR MULTIPLE INSTALLATIONS USING KS-19207 LIST 3 LIGHT AND BLOWER UNITS, AND USING A KS-19261 LIGHT CONTROL UNIT (MAXIMUM OF FIVE BOOTHS FOR EACH CONTROL UNIT), REMOVE THE STRAP WIRE FROM TERMINAL STRIP TERMINALS 1 AND 4 IN ALL BOOTHS. REMOVE THE STRAP WIRE FROM TERMINALS 2 AND 13 IN ALL BOOTHS EXCEPT FIRST BOOTH. INSTALL A KS-19580, LIST 51 RECEPTACLE ASSEMBLY IN EACH BOOTH. CONNECT LIST 51 RECEPTACLE OF SECOND, THIRD, FOURTH AND FIFTH BOOTHS TO LIST 51 RECEPTACLE OF PREVIOUS BOOTH USING KS-19425, LIST 22 CABLE ASSEMBLY. CONNECT ELECTRICAL RECEPTACLES IN SAME MANNER.

Fig. 21—Wiring Diagram of KS-19261 Light Control Unit Used In Multiple Installation with Blowers