

**TELEPHONE SET COMPONENTS**  
**DIALS, DIAL MOUNTINGS, KEYS, KEY MOUNTINGS, AND LINE SWITCHES**  
**FOR INSTALLATION IN CUSTOMER-OWNED ENCLOSURES**  
**IDENTIFICATION, INSTALLATION, CONNECTIONS, AND MAINTENANCE**

**1. GENERAL**

**1.01** This section describes suitable telephone components that may be used in providing special installations of telephone sets where a custom "built-in" effect is required. The components are adaptable for various mounting arrangements in credenzas, cabinets, desk drawers, desk panels, wall panels, or similar locations. Section 501-420-102 also contains components for this purpose.

**1.02** This section is reissued to:

- Add typical connection information on 611A key when used with 236A amplifier and 613B or C key
- Add information on 25Y3 dial
- Add information on 613C key
- Change references in Fig. 6
- Change reference in Fig. 9

Since this reissue covers a general revision, arrows ordinarily used to indicate changes have been omitted.



*The customer must provide mounting facilities, backboards, panels, and brackets. All cutouts and drilling to accept telephone components must be done by the customer.*

**1.03** Unless otherwise indicated, dimensions are approximate measurements. For precise measurements, the components should be used for drilling or cutting templates.

**2. IDENTIFICATION AND INSTALLATION**

(a) *Ordering Guide*

Dial, 6J-(\*)  
Dial, 8C-58  
Dial, 9H-(\*)  
Dial, 9K-(\*)  
Dial, 25Y3  
Mounting, Dial, 46A-(\*)  
Mounting, Dial, 47A  
Mounting, Dial, 48A  
Mounting, Dial, 51A-(\*)  
Key, 611A  
Key, 612B  
Key, 613C  
Key, 613B  
Key, 635A  
Key, 598-type  
Key, 599-type  
Mounting, Key, 397A-(\*)  
Switch, 235E  
Switch, 235F

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Switch, 236E

Handset, G8B-(\*)

Switch, 236F

(c) *Associated Components (order separately)*

Switch, 236A

P-88E100 Collar (for 635A key; see Table A)

Switch, 264A

P-29E330 Collar (for 635A key)

(b) *Replaceable Optional Components*

P-26E912 Bracket (2 required; for 25B3 or 25Y3 dial)

Kit of Parts, D-180115 (for 25Y3 dial)

\* Add Color Suffix

Cord, Mounting D50Y-(\*)(for 635A key)

Handset, G6B-(\*)

(d) *Color*

**TABLE A  
COLOR ORDERING GUIDE**

COLOR *		DIAL MOUNTINGS					D-88E100 COLLAR †	D50Y MTG CORD	HANDSET		397A KEY MOUNTING
		6J	9H	9K	46A	51A			G6B	G8B	
Black	-03	•	•	•	•	•	•	•	•	•	
Gray	-41	•									
Ivory	-50		•				•	•	•	•	
Green	-51		•				•	•	•	•	
Red	-53		•				•	•	•		
Brown	-54								•		
Yellow	-56		•				•	•	•	•	
White	-58		•	•	•	•	•	•	•	•	
Rose Pink	-59		•				•	•	•	•	
Light Beige	-60		•				•	•	•	•	
Light Gray	-61		•				•	•	•	•	
Aqua Blue	-62		•				•	•	•	•	
Gold	-63						•	•			
Turquoise	-64		•				•	•	•	•	
Medium Gray	-66		•				•				

\*Refer to Section 500-120-100 for promoted colors.

†The last two digits of the part number shall indicate the color.

**DIALS**

**2.01** Table B lists the dials that may be used in custom installations and typical telephone sets and dial mountings with which the dials are used.

**TABLE B**  
**DIALS**

DIAL	TELEPHONE SETS	DIAL MOUNTING
6J	211P and 211PR	47A-type
8C	600 types	
9H	532, 533, 535, 536 types	48A-type
9K	Modular telephone panels	46A-type
25B3	1500-type	51A-type
25Y3	Recommended to replace 25B3	51A-type

**2.02** These dials are equipped with the necessary contacts to provide loudspeaker shunting when used with speakerphone.

**2.03** The 9K differs from the 9H in that the flange has been removed from the number plate for use with modular telephone panels.

**2.04** Other dials may be used in custom installations where color or off-normal shunt contacts for speakerphone use are not required. Refer to Sections 501-162-100 and 501-162-101 covering rotary dials or Sections 501-164-105 and 501-164-115 covering TOUCH-TONE® dials for further information and schematics.

**2.05** The 6J dial is equipped with three tapped mounting holes on the rear of the dial. The 8- or 9-type dials are equipped with tapped holes in projections from the dial baseplates. Mounting screws are furnished.

**2.06** The 25B3 and 25Y3 dials are designed for flush mounting and are normally covered by a faceplate. Brackets are required (order separately) to facilitate mounting the dial to a 1/8-inch thick wall panel or similar flat location. Two screws, furnished as part of the dial, secure the brackets to the dial frame. Hardware for securing the brackets to the panel is not furnished. Fig. 1 shows the dial with two brackets attached.

**2.07** The convertible 25Y3 dial is recommended to replace the 25B3 dial. The 25Y3 dial may be converted from 10 to 12 buttons with a D-180115 kit of parts. The 25Y3 dial allows the joint use of speakerphone and polarity guard along with improved 2-4 wire operation. The G6- and G8-type amplifying handsets are compatible with the 25Y3 dial. For other information and schematics, refer to Section 501-164-105.

**2.08** Panels or housings to which TOUCH-TONE dials are mounted should allow free operation of the pushbuttons. Dials must be securely mounted to prevent rocking and possible damage to dial components.

**DIAL MOUNTINGS**

**2.09** The 46A dial mounting (Fig. 2) consists of a plastic housing, adapter, and terminal block and is arranged for mounting a 9K dial at a 24 degree angle.

**2.10** The dial mounting is 4-1/2 inches in diameter and 2-19/32 inches high. The terminal block is equipped with screw-type terminals to permit connection of the dial leads and associated circuit wiring. Three screws are provided for securing the dial mounting to the enclosure.

**2.11** The adapter secures the dial to the housing in any of eight different angular positions. Screws furnished as part of the dial are used to attach the dial to the adapter.

**2.12** The 47A dial mounting (Fig. 3) consists of a 3-1/4 inch square formed metal adapter and a rubber gasket (59B dial adapter) and is arranged for mounting a 6J dial flush on a 1/4-inch thick panel. The gasket serves to reduce dialing noise. Four mounting screws are furnished.

**2.13** The 48A dial mounting (Fig. 4) consists of a formed metal adapter and a terminal strip which is arranged to mount a 9H dial flush on a 1/4-inch thick panel. The terminal strip is equipped with six screw-type terminals to permit connection of dial leads and associated circuit wiring. Two screws furnished with the dial secures the dial to the mounting. Four mounting screws are also provided for securing dial mounting to panel.

**2.14** The 51A dial mounting (Fig. 5) is designed for mounting the 25B3 or the 10-button 25Y3 TOUCH-TONE dial. It consists of a plastic housing, adapter, and terminal block.

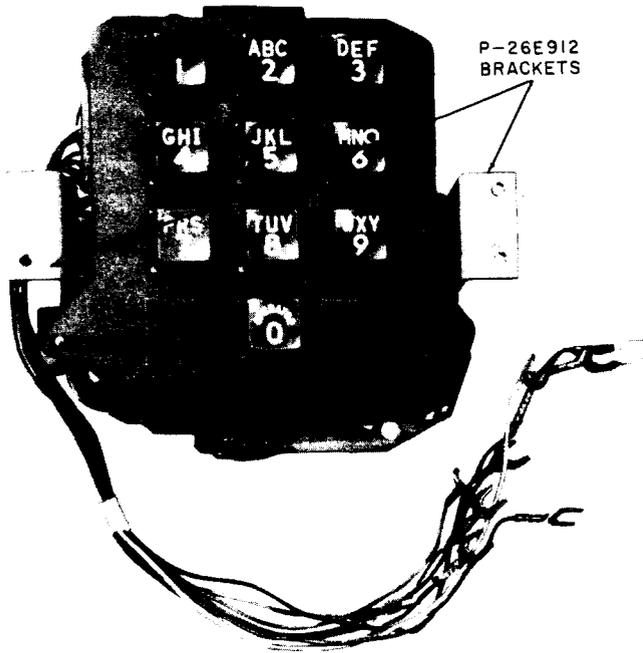


Fig. 1—25Y3 Dial With P-26E912 Brackets

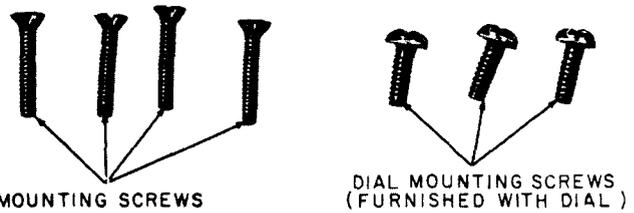
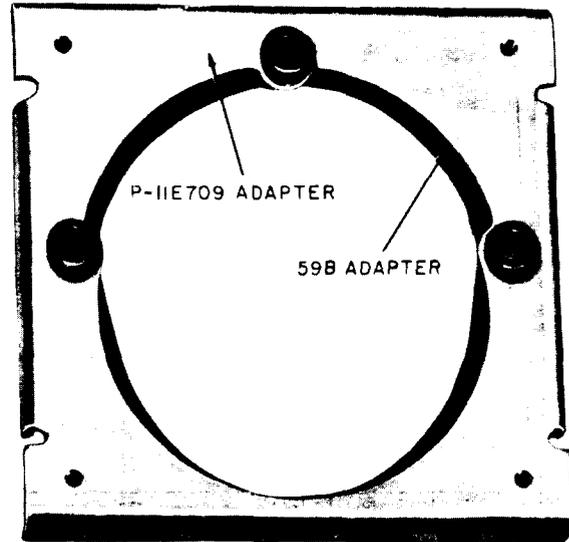


Fig. 3—47A Dial Mounting

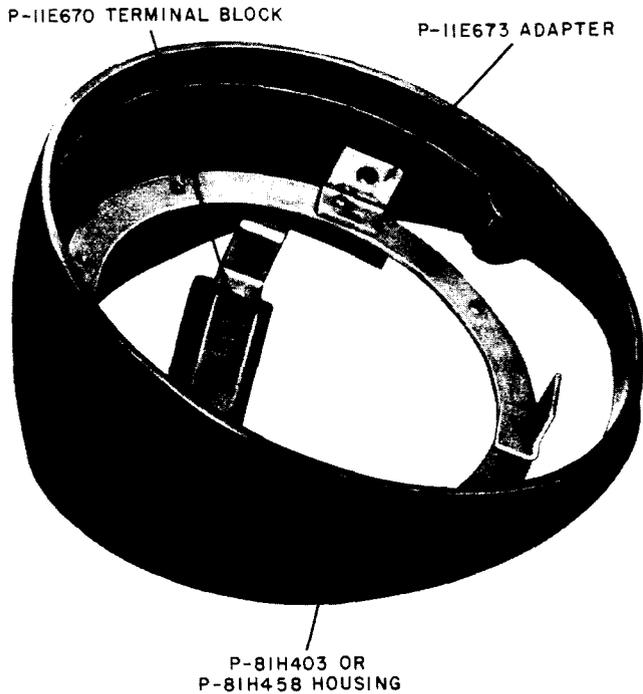


Fig. 2—46A Dial Mounting

2.15 The housing has ten square holes in the face portion and serves as a faceplate for the dial. A number card holder is provided below the dial button openings. Mounting hardware is not provided.

2.16 Other dial mountings may be used for custom designed installations where dials other than those in Table B are used. For more information on dial mountings and dial adapters, refer to Section 501-160-100.

**KEYS**

2.17 The 611A key (Fig. 6) consists of a modified 589H key (five pickups and hold), a lamp strip assembly equipped with five 51A lamps, a D42A-3 mounting cord, and a bracket for mounting the assembly. A clear plastic window, having six holes through which the buttons of the key protrude, is furnished to hold a standard designation strip. Two retaining clips are provided to secure the window to the mounting surface. This key assembly is intended for use with 1A, 1A1, or 1A2 Key

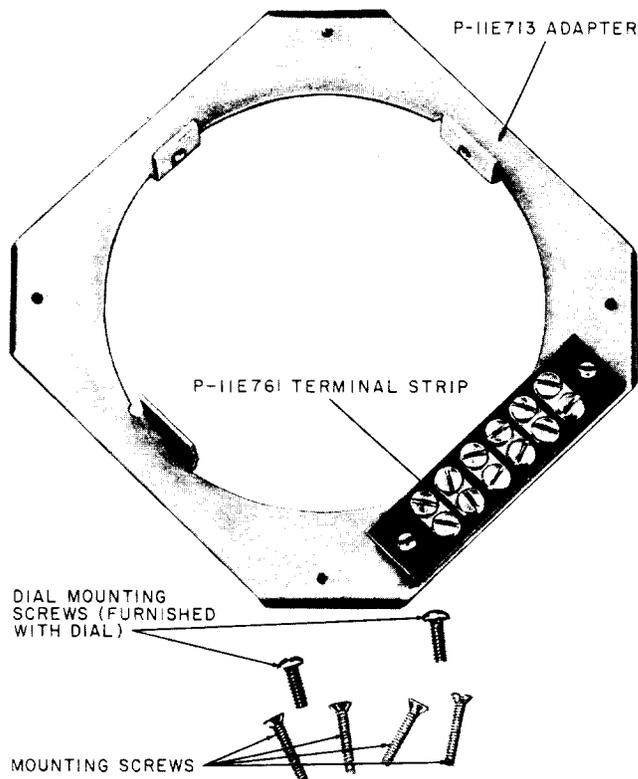


Fig. 4—48A Dial Mounting

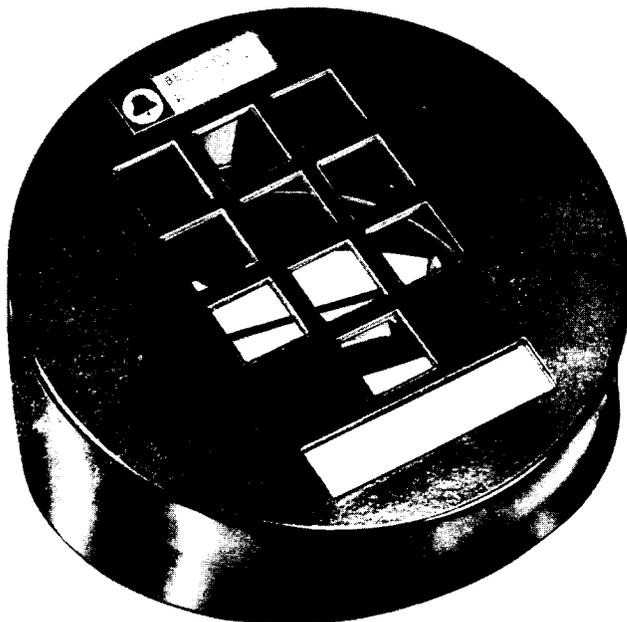


Fig. 5—51A Dial Mounting

Telephone Systems and can be mounted in various positions.

**2.18** The 611A key is 5-11/32 inches long, 4-1/2 inches wide, and 2-13/16 inches high. Four holes, tapped for No. 4-40 screws, are provided in the bracket for use in fastening the key to the customer-owned enclosure. Mounting hardware is not furnished.

**2.19** Maximum thickness of the customer-owned enclosure, limited by the length of the two P-462118 clips used to retain the window, is 3/32-inch. If the plastic window is not used, or if other means are used to secure the window to the enclosure (ie: screws, rivets, etc.) allowable thickness of mounting surface can be increased to 1/2-inch.

**2.20** The key should be so mounted that the pushbuttons operate freely without binding or sticking and lighted units may be easily viewed.

**2.21** The plastic window is installed by first pushing the two P-462118 clips through holes in the panel and bending the three tabs on each clip over on the opposite side of the panel to lock the clip in place. The window is then aligned over the key pushbuttons and its mounting pins inserted into the clips.

**2.22** The 612B key (Fig. 7) consists of a 584G key equipped with a bracket for mounting to a 1/8-inch maximum thickness panel or housing. The key is 2 inches long, 29/32 inches wide, and 2 inches high and is intended for use as a line transfer or cutoff and signaling key for 1A, 1A1, or 1A2 Key Telephone Systems. It can also be used with interphone circuit similar to 1A home interphone or 2A farm interphone. Refer to Section 502-750-401 for typical circuit and schematic for this key.

**2.23** The turnbutton contacts are locking type for line transfer and the pushbutton contacts are nonlocking for signaling. Two tapped mounting holes are provided in the bracket and mounting screws are furnished. Key can be mounted in any position.

**2.24** The 613C key (Fig. 8), an on-off switch and volume control for speakerphone circuits similar to 1A, consists of a two-pushbutton (ON-OFF) key and a 5000-ohm potentiometer assembled on a

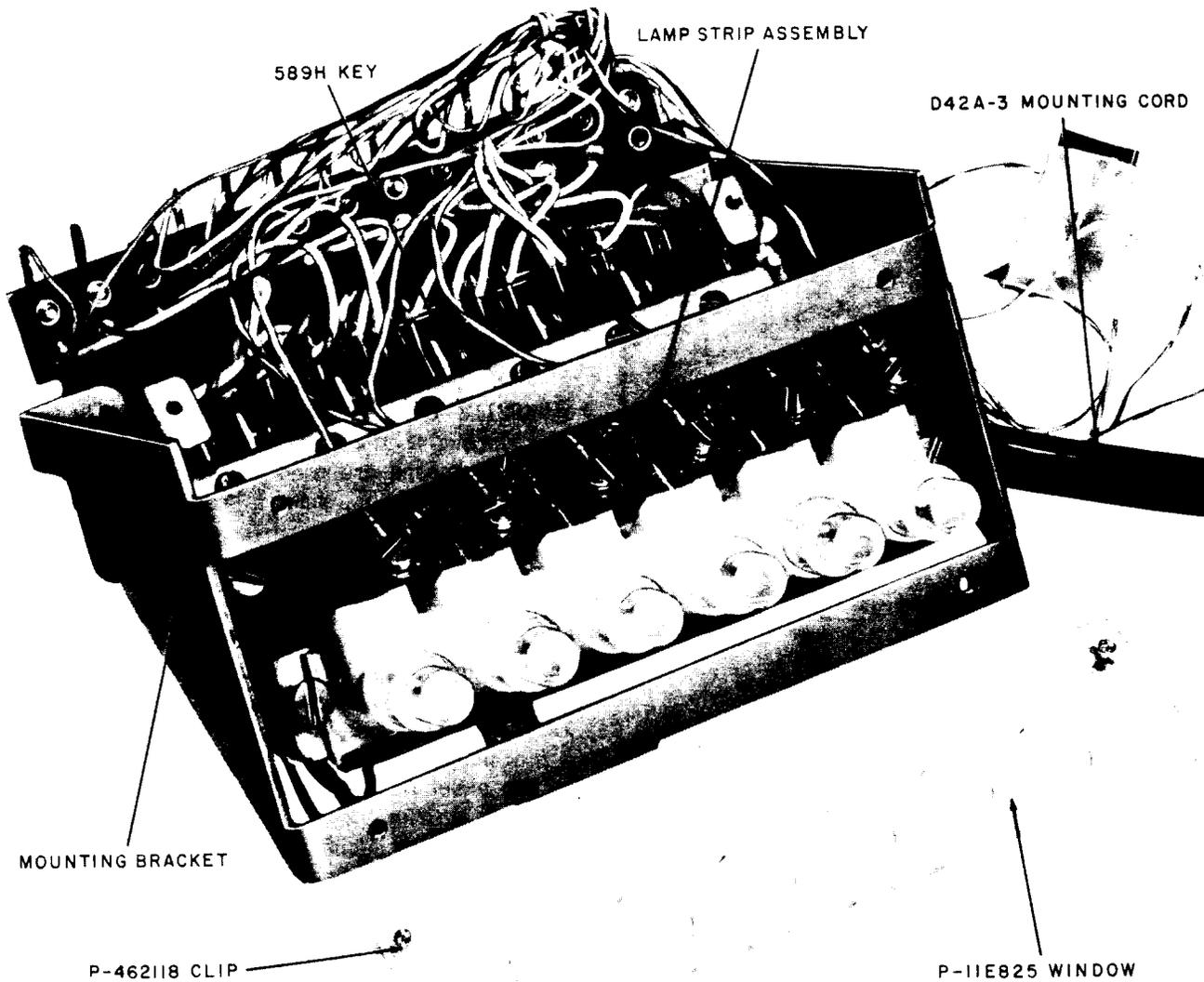


Fig. 6—611A Key

metal mounting bracket, a designation strip, a clear plastic window, and two P-462118 clips. The ON button is equipped with a 51A lamp for button illumination. The 613B key is equipped with round pushbuttons and a P-11E669 window; otherwise it is the same as the 613C.

**2.25** The 613C key is 3 inches long, 2-1/2 inches wide, and 1-13/16 inches high and is equipped with 18-inch long spade-tipped leads. Four tapped holes are provided in the bracket for mounting

the key to the customer-owned enclosure. Mounting screws are furnished.

**2.26** Maximum thickness of the customer-owned enclosure, limited by the length of the P-462118 clips used to retain the plastic window, is 3/32-inch. If the window is not used, or if other means are used to secure the window to the enclosure (ie: screws, rivets, etc.) allowable thickness of the mounting surface can be increased to 5/16-inch.

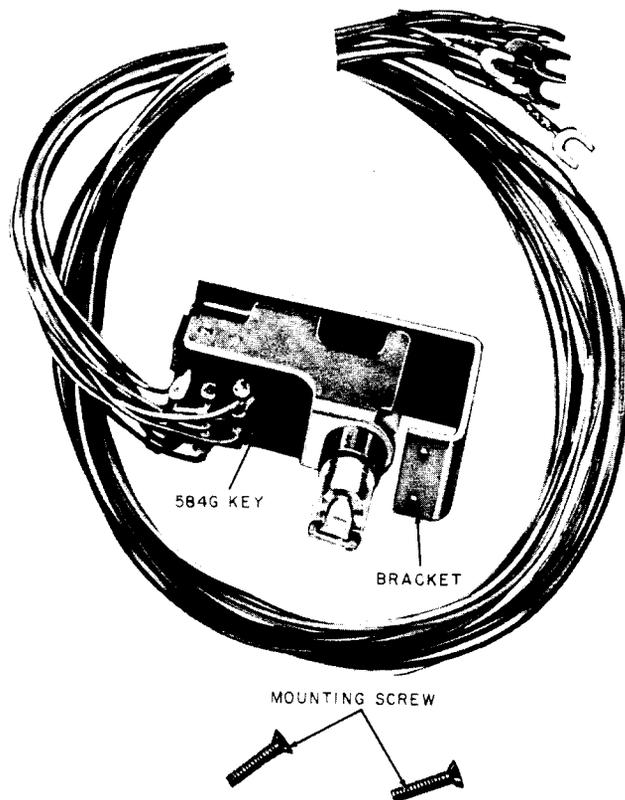


Fig. 7—612B Key

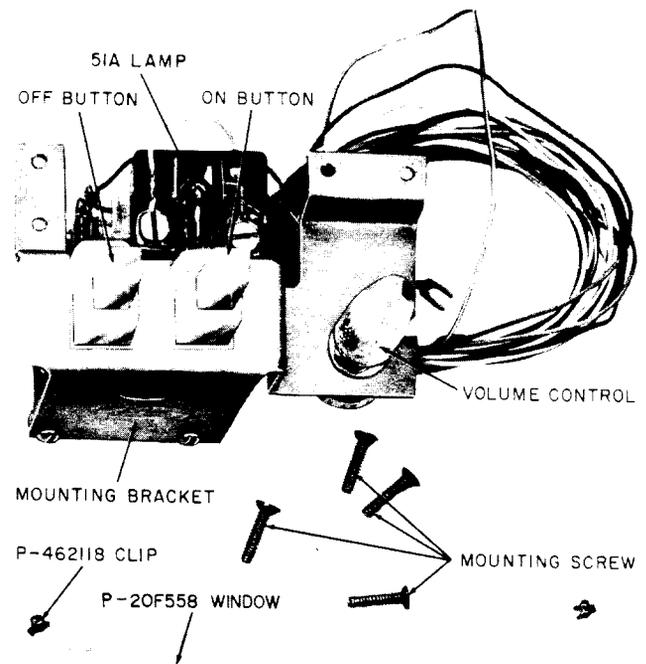


Fig. 8—613C Key

**2.27** The key should be mounted so that the pushbuttons and volume control operate without binding. The plastic window is installed (using the P-462118 clips) as follows:

- (1) Push the two clips through holes in the enclosure and bend the three tabs on each clip to the mounting surface.
- (2) Align the window over the key pushbuttons and push the two mounting pins into the clips.

**2.28** The 635A key (Fig. 9) is a 6-button key (5 pickups and hold) intended for use in wall or panel type telephone sets. The key is 4-3/4 inches long, 1-1/16 inches wide, and 1-15/16 inches high. The six self-designating buttons are illuminated by 53A lamps under the button caps. Connections to the key are made by a plug-ended D50Y mounting cord (ordered separately).

**2.29** The five pickup (locking) positions can be converted to signaling (nonlocking) by removal

of a locking pin. The buttons can be rotated 90 degrees for lining up the designations either horizontally or vertically. Designations are held in place by snap-off caps on the buttons. Refer to Section 512-230-100 covering 635-type keys for procedures covering pin, lamp, button, and designation removal. For a schematic of the key, refer to Section 502-640-400.

**2.30** A plastic collar is required for use with this key and must be *ordered separately*. The collar retains a released button when another button is depressed. Two collars are available. See Fig. 9.

- (a) P-88E100, an open rectangular collar for use with horizontally arranged buttons.
- (b) P-29E330, a ladder style collar for use with vertically arranged buttons. It is available in medium gray (-66) only.

**2.31** The 635A key mounts to the underside of the customer-owned enclosure by four mounting holes in the key frame. Maximum housing thickness

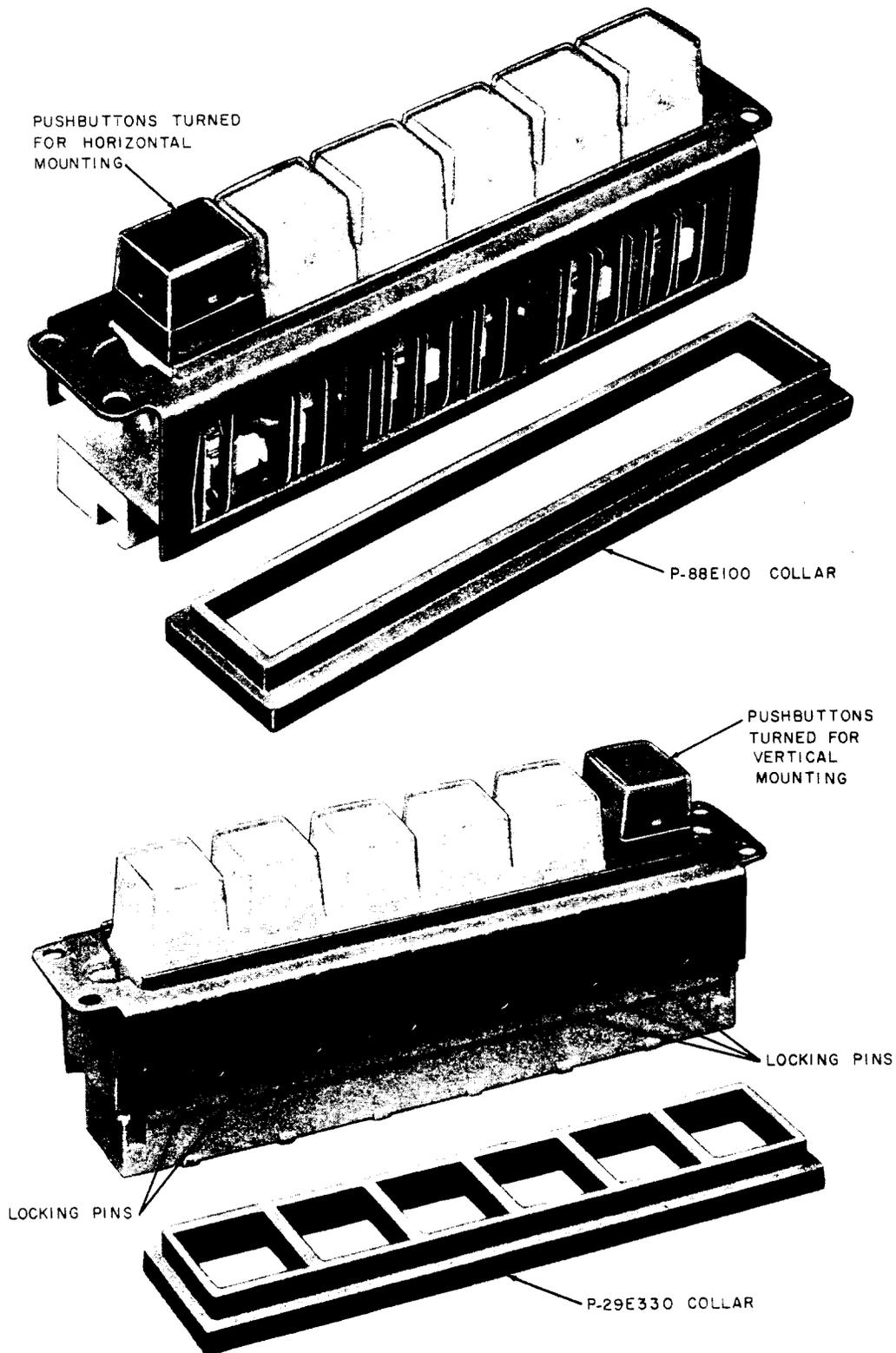


Fig. 9—635A Key Showing Both Collar Types

is 1/8-inch. The cutout in the housing must retain the collar which is placed over the buttons before the key is installed. Mounting hardware is not furnished with the key.

**2.32** The *598-type* (Fig. 10) and *599-type* (Fig. 11) keys are modular key units having various mechanical and electrical features. These keys are designed for mounting in the 396A key mounting and are used with mounting cords equipped with 50-pins KS-type connectors. Refer to Section 512-230-100 covering modular keys for further information on 598- and 599-type keys. Section 512-210-401 shows schematics for these keys.

#### KEY MOUNTINGS

**2.33** The *397A* key mounting (Fig. 12) consists of a metal frame, plastic housing, clear plastic faceplate, and five paper mats for a choice of color contrasts. The mat colors are silver, gold, blue, green, and cream white. The key mounting is used to secure a 598- or 599-type key to the customer housing. For button color information, refer to Section 512-230-100. Refer to Section 512-210-401 for connection information.

**2.34** This key mounting is 6-1/2 inches long, 1-1/2 inches wide, 3-1/4 inches high, and can be used with housings up to 3/32-inch in

thickness. Mounting holes are provided in the metal frame to permit installation in various positions and angles. Mounting hardware is not furnished.

#### LINE SWITCHES

**2.35** The *235E and F* switches (Fig. 13) are card operated line switches having contacts arranged for use with speakerphone and 1A, 1A1, or 1A2 Key Telephone Systems.

**2.36** The 235E switch has the hook arranged for mounting the handset horizontally and the 235F switch is arranged for mounting the handset vertically.

**2.37** The mounting plates of these switches have four slots used for mounting the switch to a 3/8-inch maximum thickness housing or panel. The switches are 3-3/4 inches long and 1-1/2 inches wide. Depth behind the panel or housing is 1-27/32 inches and the hook extends 2-1/4 inches from the panel front. Mounting hardware is furnished.

**2.38** Both switches are equipped with 18-inch spade-tipped leads for connection to circuit components. For further information and schematics refer to Section 463-241-100.

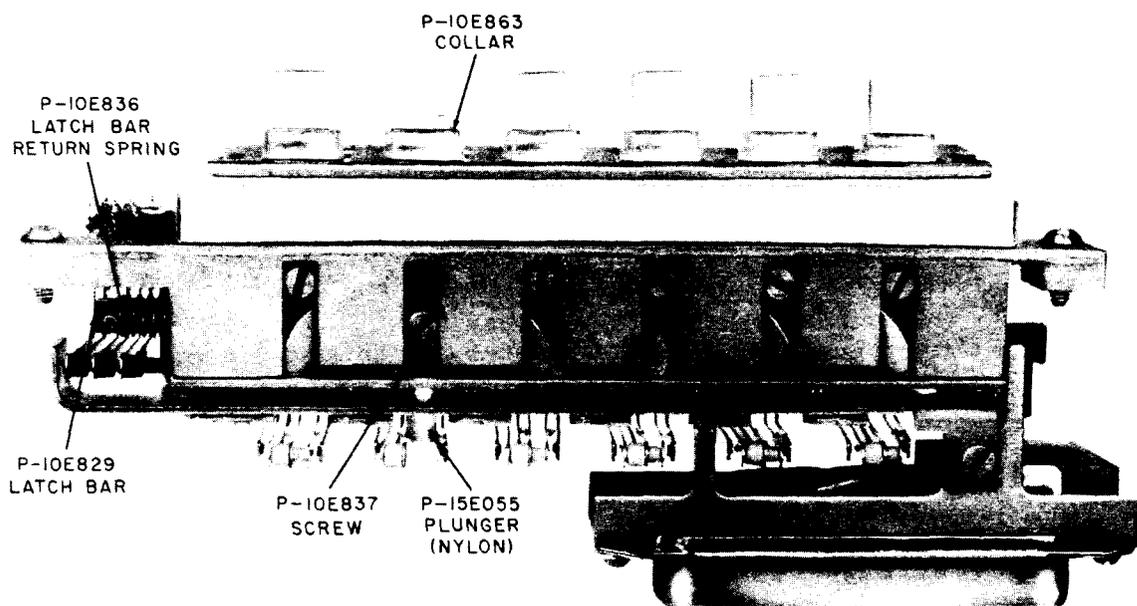


Fig. 10—598-Type Key

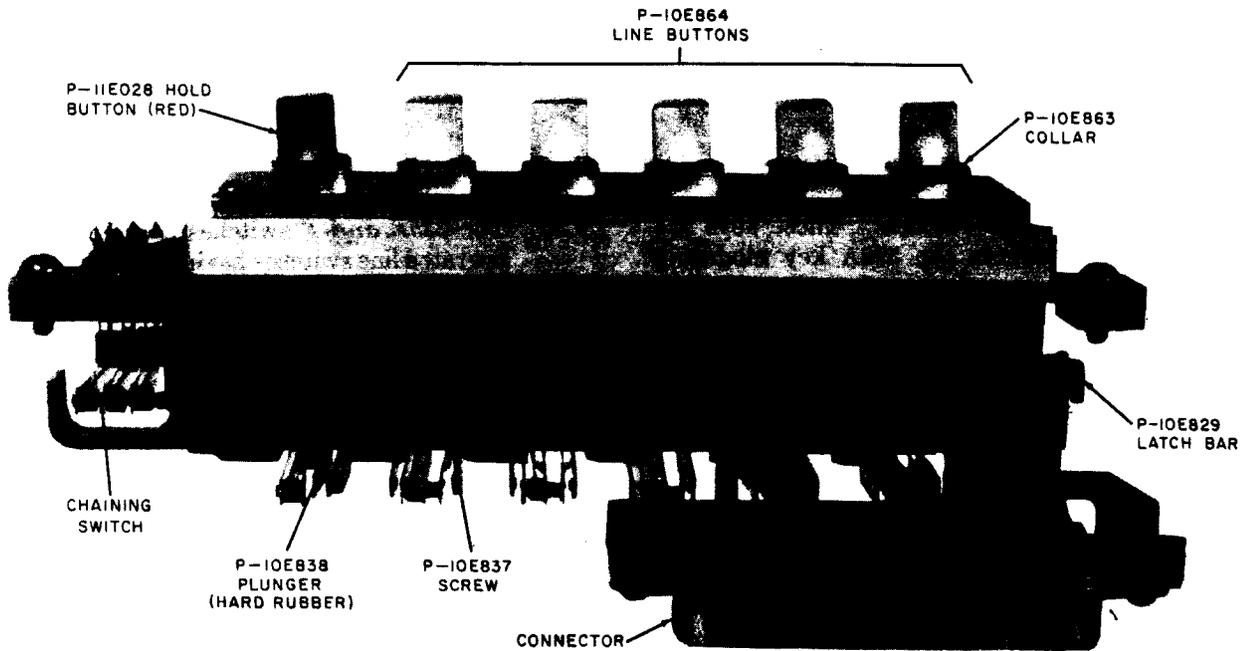


Fig. 11—599-Type Key

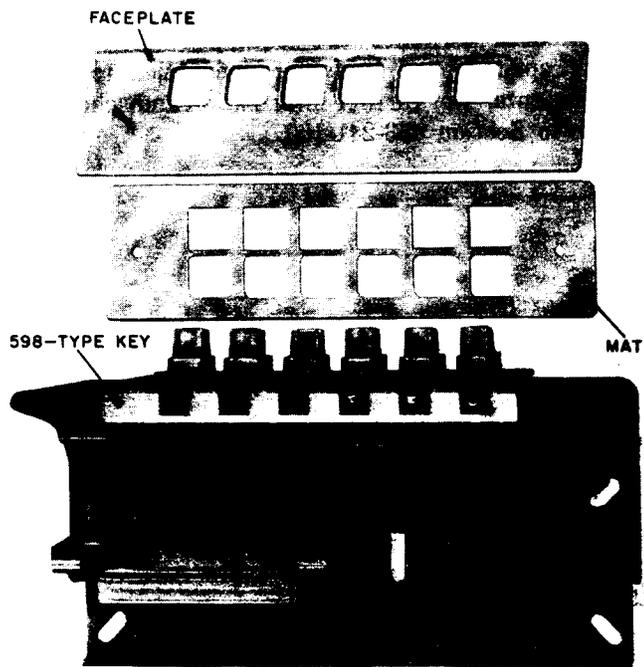


Fig. 12—397A Key Mounting With 598-Type Key Installed (Cover Removed)

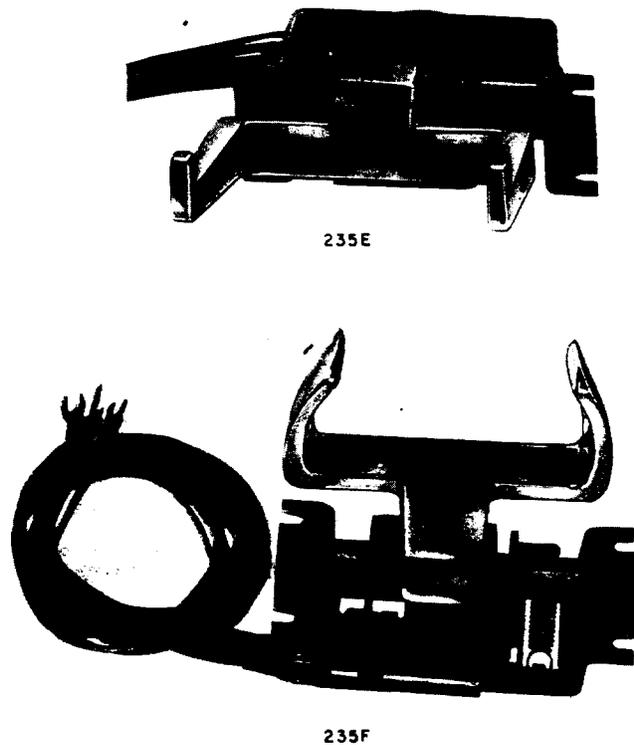


Fig. 13—235E and F Line Switch

**2.39** The **236E and F** switches (Fig. 14) consists of a 235-type line switch equipped with a hold key and is intended for use on 3/8-inch maximum thickness panel installations where a hold or exclusion feature is desired. The hold key is mechanically linked to the operating mechanism of the line switch. The handset must be removed to operate the hold key and replacing the handset automatically restores the hold key.

**2.40** Refer to Section 463-241-100 for further information on 236-type line switches.

**2.41** The **263A** switch (Fig. 15) is a card operated line switch similar to that used in 750-type panel telephone sets. The contacts are arranged for use with speakerphone and 1A, 1A1, or 1A2 Key Telephone Systems.

**2.42** The switch is furnished with a chrome-plated hook that permits vertical mounting of the handset. A plastic *tongue* between the hook arms operates the switch mechanism. This switch is 3 inches long and 2-3/8 inches wide. Depth behind a 1/16-inch mounting panel is 1-3/8 inches and the hook extends 2 inches from the panel.

**2.43** The switch is mounted to a 1/16-inch maximum thickness mounting plate or bracket by

removing four screws from the rear of the switch body and separating the hook from the switch assembly. Install the switch assembly on the rear of the mounting plate or bracket with the actuator *tongue* through a 1-inch square cutout, place the hook on the front surface, and secure both, using the four screws. The plate or bracket, with the switch assembled, can then be mounted to a 1/8-inch panel having a rectangular cutout through which the hook arms are passed. If a panel thicker than 1/8-inch is used, it may be necessary to bevel the lower edge of the cutout to provide sufficient actuator *tongue* travel space.

**2.44** The **264A** switch (Fig. 16) is similar to the 263A switch except it is equipped with a hold key for use in installations where a hold or exclusion feature is desired. This switch is similar to that used on 751-type panel telephone sets (see Sections 502-750-300 and 502-750-401) except 18-inch spade-tipped leads are provided. The switch is mounted in the same manner as the 263A switch.

### 3. CONNECTIONS

**3.01** When making connections between components in customer-owned enclosures, use component leads and M1W cords (6-1/2 inches long) wherever possible. Use D-161488 connectors to connect M1W

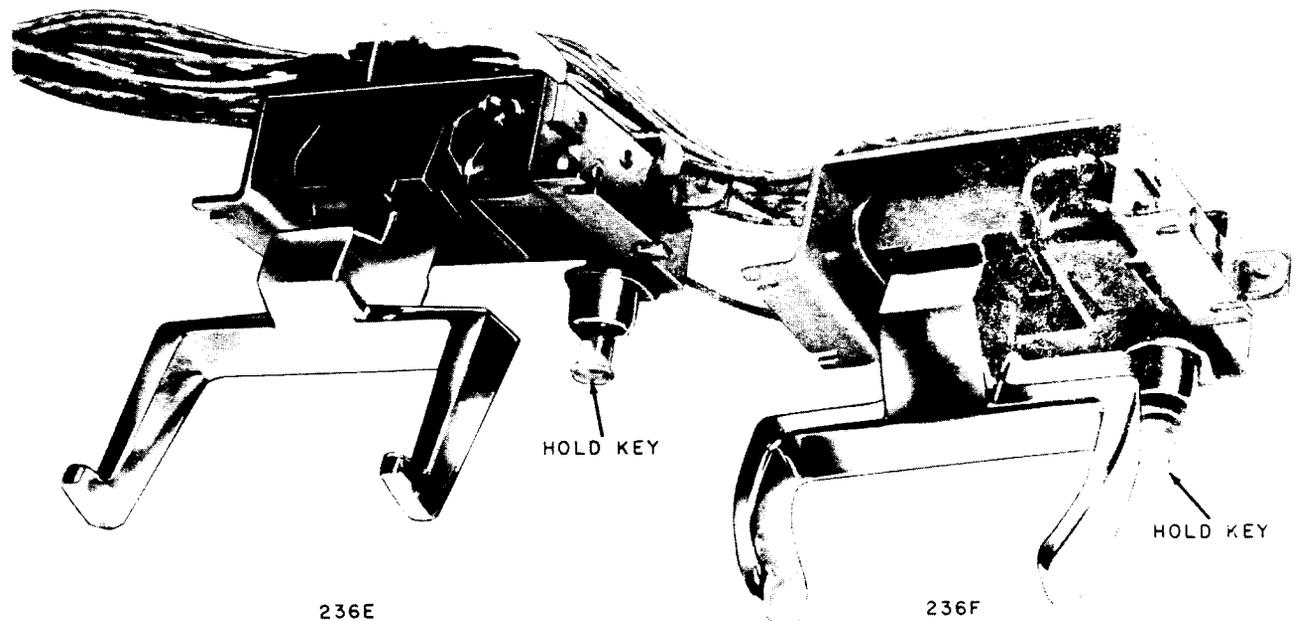


Fig. 14—236E and F Line Switch

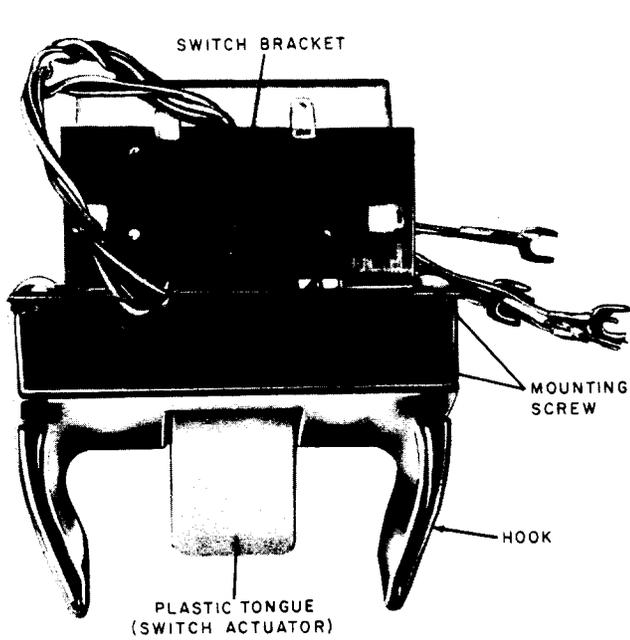


Fig. 15—263A Line Switch

ords to component leads. Where component lead and M1W cord length is not sufficient, strap wire may be used. Fig. 17 shows typical connections for 236A amplifier and 236C key when used with 611A key. Fig. 18 shows typical connections in 611A key when used with 236A amplifier and 613C key.

**4. MAINTENANCE**

**4.01** Maintenance of custom installations is limited to components installed by the telephone companies. No maintenance is authorized for the customer-owned enclosures.

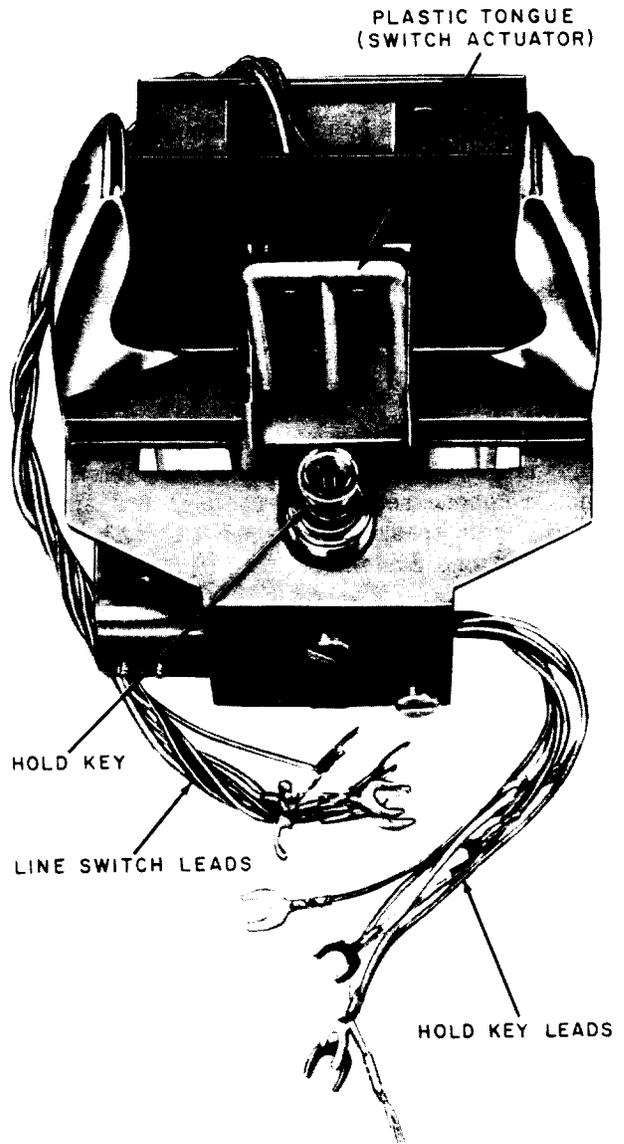


Fig. 16—264A Line Switch

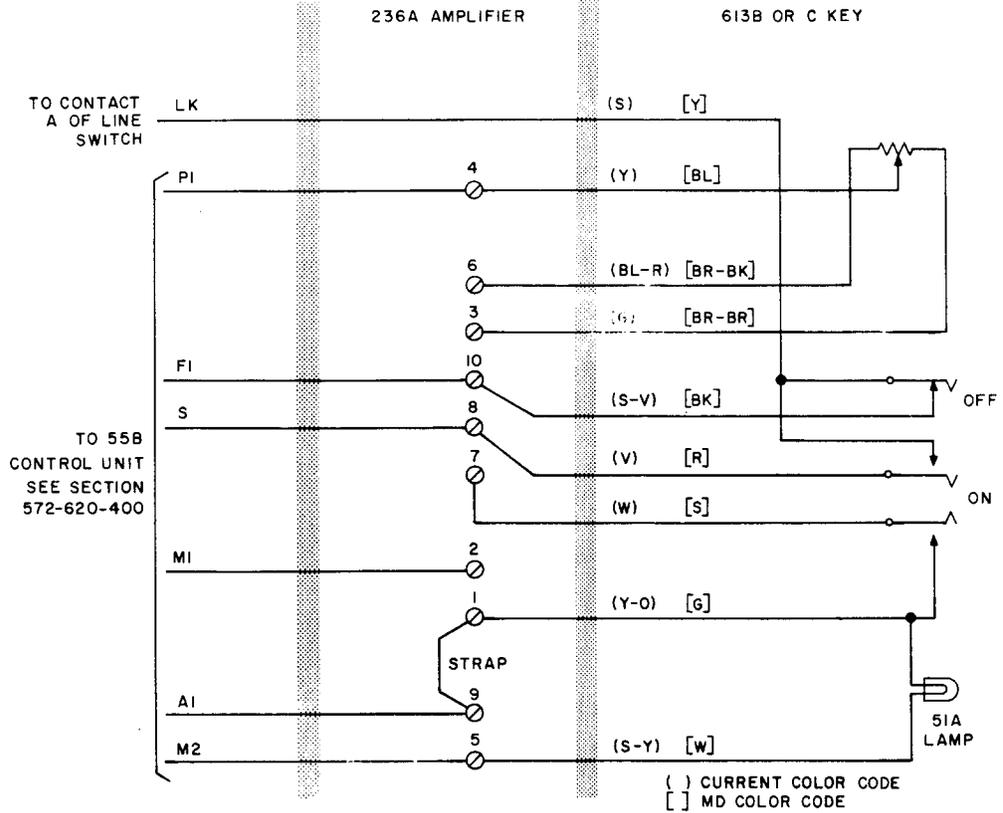


Fig. 17--Typical Connections For 236A Amplifier and 613B or C Key When Used With 611A Key

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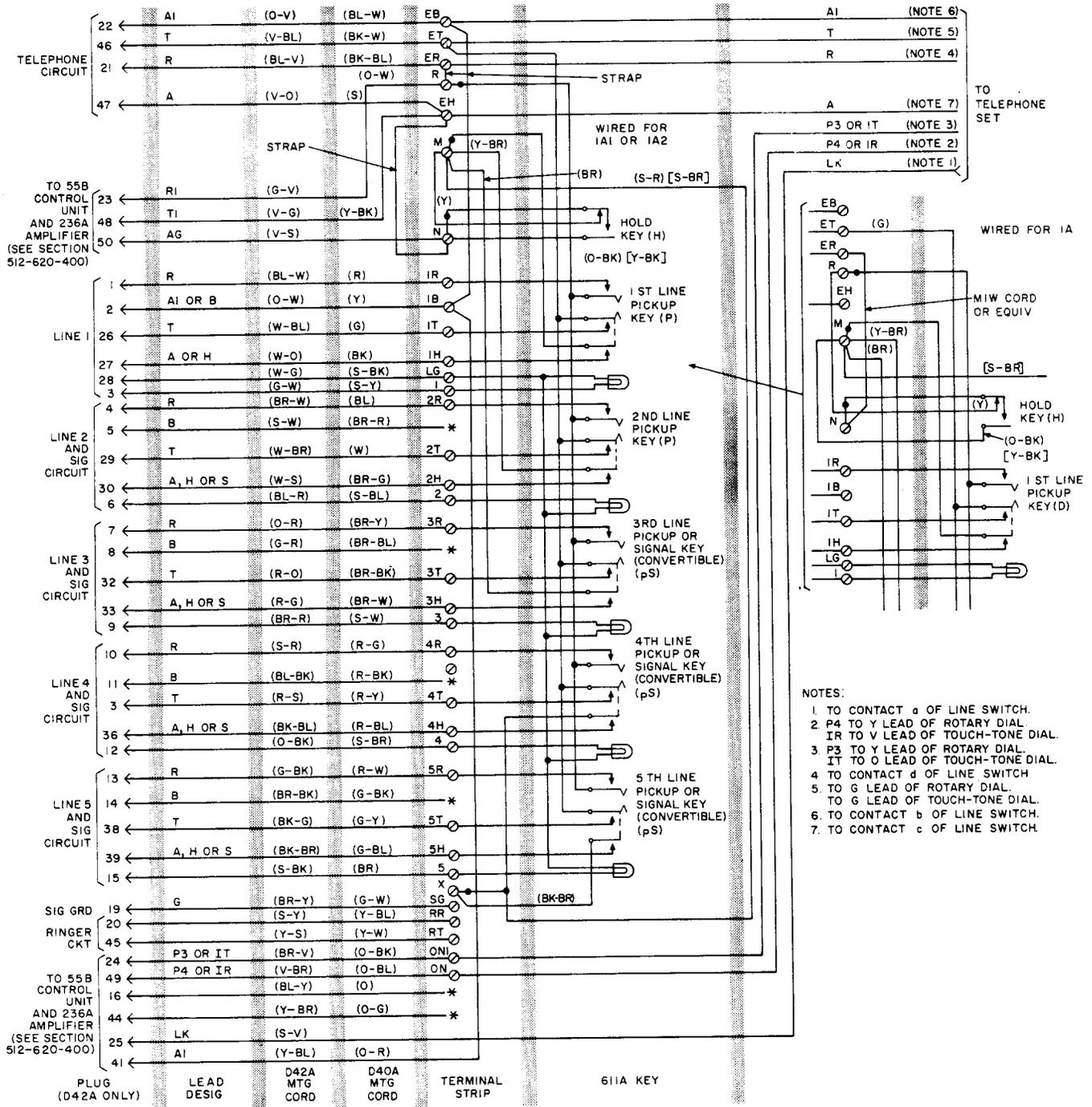


Fig. 18—Typical Connections For 611A Key When Used With 236A Amplifier and 613B or C Key