

**KEYS**

**547-, 552-, 576-, 579-, 585-, 588-, 589-, 590-, 592-, 596-,  
597-, 611-, 614-, 615-, 618-, 624-, 625-, 626-, 629-, 630-,  
636-, 638-, 648-, 649-, 650-, 651-, 656-, 657-, 658-, 661-,  
663-, 664-, 665-, 680-, 681-, AND 683-TYPE**

**PIECE-PART DATA AND REPLACEMENT PROCEDURES**

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**NOTICE**

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Bell System except under written agreement

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**1. GENERAL**

1.01 This section covers the information necessary for ordering parts to be used in the maintenance of the keys listed above. It also covers the approved procedures for replacing these parts.

1.02 Revision arrows are used to emphasize significant changes. The reasons for reissue are listed below.

- (a) Add 651K to 651-type keys.
- (b) Change part numbers on 656-type keys.
- (c) Change part numbers on 657-type keys.
- (d) Add 658A key.
- (e) Add part numbers to 661A key.
- (f) Add part numbers to 663A2 and 663A3 keys.
- (g) Change spring clip part number on 664A and 664B keys and 665-type keys.
- (h) Add part numbers to 664C key.
- (i) Change screw part number and delete dust cover on 680B keys.
- (j) Add 683C to 683-type keys.

1.03 Part 2 of this section covers the piece-part numbers and the corresponding names of parts which are practicable to replace in the field. No attempt should be made to replace parts not designated.

1.04 Part 4 of this section covers the approved procedures for the replacement of the parts on some keys.

**2. PIECE-PART DATA**

2.01 Figures 1 through 47 show the various parts in relation with the key. The piece-part numbers are given with the names as listed by the Western Electric Merchandise Department. Where these names differ from those in general use in the field, the latter names, in some cases, are shown in parentheses.

2.02 When ordering for replacement purposes, give both the piece-part number and the part name; for example, P44A621 plunger rod. Do not refer to the section number or to any information shown in parentheses following the piece-part number.

**2.03** Information enclosed by parentheses ( ) is not ordering information. This information may be references to notes, parts referred to in other portions of the section and not considered replaceable, or part names in general use in the field if these names differ from those assigned by the manufacturer.

**2.04** The KS-20221 designation cards, used in the 624-, 625-, 630-, and 650-type keys, are available in five list numbers with arrangement of characters as shown below. The characters are to be specified on the order.

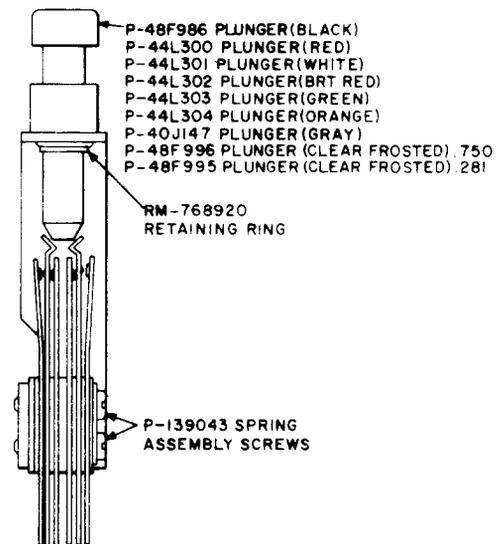
- KS-20221, L1—A blank card
- KS-20221, L2—Arranged for a single row of characters
- KS-20221, L3—Arranged for a double row of characters
- KS-20221, L4—Arranged for one character on each of three edges
- KS-20221, L5—To be used for miscellaneous designations only.

**2.05** The KS-21234 lamp cap is a thin wall, molded nylon part. This single piece translucent red, yellow, or white cap has a reflection free-top surface in which designations are deep hot stamped. This lamp cap may be used on the 624-, 625-, 630-, and 650-type keys in lieu of the standard retainer, lens, and designation card used in Fig. 19, 20, 23, and 28. The 374B tool is used in removing lamp caps.

**2.06** The KS-21234 lamp caps may be ordered as individual parts or as a set of parts for certain applications. Color and characters to be hot stamped must be specified on the order.

- KS-21234, L1—Has a blank face
- KS-21234, L2—Has one row of characters
- KS-21234, L3—Has two rows of characters
- KS-21234, L4—A set of 89 lamp caps with predetermined colors and characters to equip each operator position of the 100B and 100C Traffic Service Position (TSP)
- KS-21234, L5—Miscellaneous designations not part of a standard font and which must be specified in the order
- KS-21234, L6—A set of 112 lamp caps with predetermined colors and characters to equip most operator positions of the 100A TSP

- KS-21234, L7—A set of 37 lamp caps for the Central Intercept Bureau (CIB) position No. 3A Automatic Interrupt System (AIS)
- KS-21234, L8—A set of 37 lamp caps for the Operator Number Identification (ONI) position No. 4A AIS.



**Fig. 1—547-Type Keys**

### 3. APPARATUS

**3.01 List of Tools and Materials:** The following tools and materials are needed to service the keys listed in this section.

TOOLS	DESCRIPTION
209	5/16-Inch Hex Open Single-End Offset Wrench
211	Key-Button Pliers
374B	Contact Burnisher Blade (Used to remove KS-21234 lamp cap and retainers)
KS-14440	Soldering Copper
R-1005	Jewelers Screwdriver
AT-7825	3-Inch C Screwdriver
AT-7825	4-Inch E Screwdriver

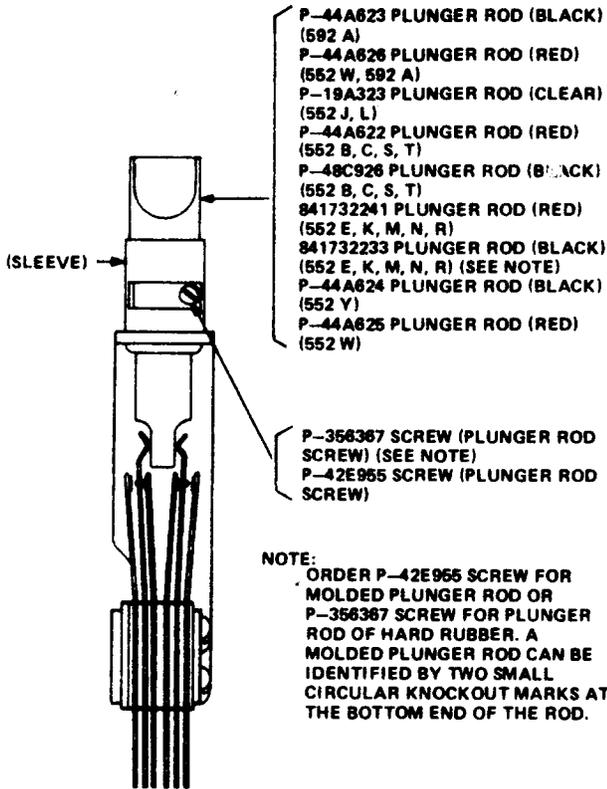


Fig. 2—552- and 592-Type Keys (552J Illustrated)

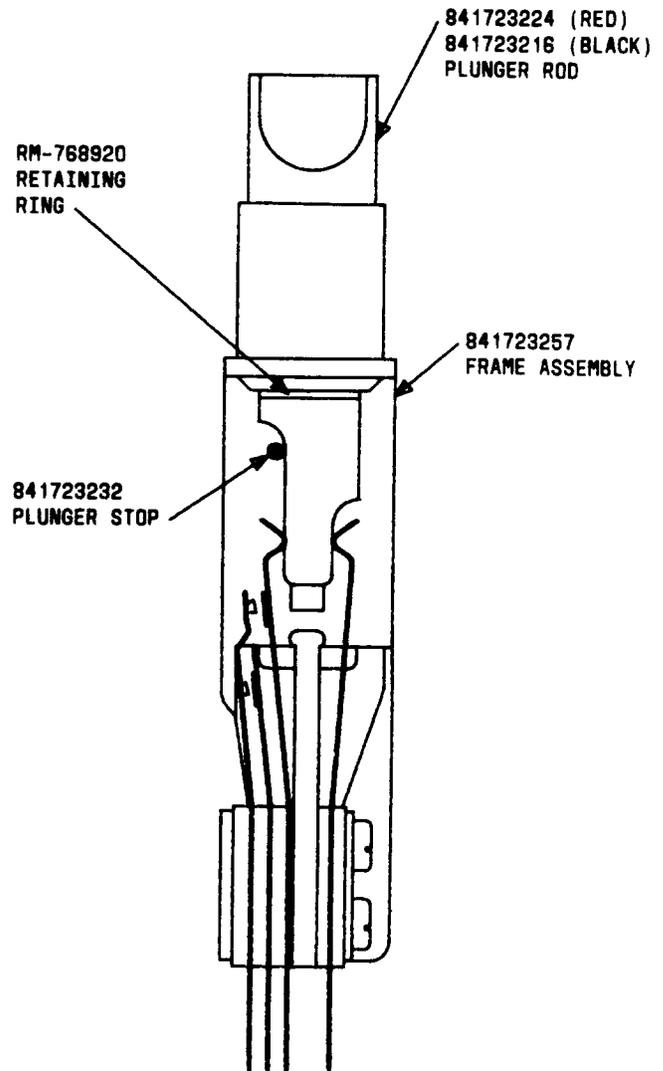


Fig. 3—552A, D, G, and H Keys (552G Illustrated)

TOOLS	DESCRIPTION
AT-7860	B Long-Nose Pliers
<b>MATERIALS</b>	
1A or 2A	Cushion (or equivalent tubing)

**4. REPLACEMENT PROCEDURES**

**4.01** No replacement procedures are specified for screws and other parts where the replacement consists of a simple operation.

**4.02** After making any replacement of parts, check the key and, where necessary, readjust it to meet the requirements covered in Section 032-724-701.

**4.03** To remove a 547-, 552-, 576-, 579-, 585-, 592-, 596-, or 597-type key from its mounting, unsolder the leads to the terminals and tag the leads to

facilitate reconnecting them. Remove the key mounting screw using the E screwdriver.

**4.04 Caution:** Have available a 614 key space which should be inserted in place of the key immediately after the key has been removed. This will close the chain circuit and maintain service on the position. To remove the 614A or 648A key when it is mounted in the PBX switchboard cord unit, proceed as follows. Remove the screws that secure the keyshelf plate to the keyshelf using the E screwdriver and remove the plate. Remove the two key mounting screws using the C screwdriver and lift the key from the keyshelf

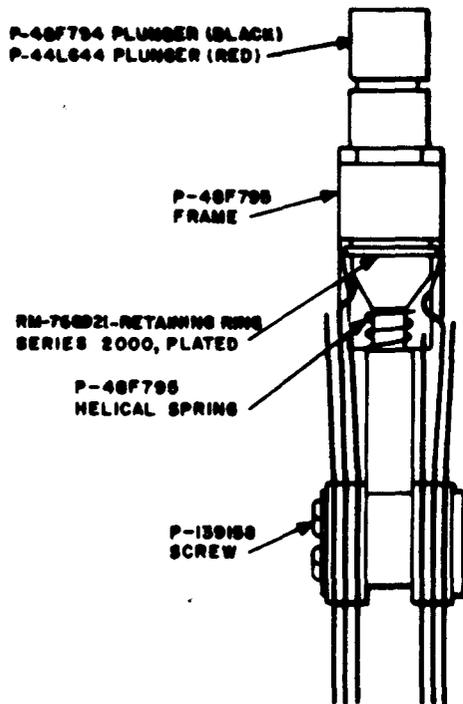


Fig. 4—576A Key

using the handle. Immediately replace it with the 614 key space.

**4.05** To remove the 615-type or 649A key when it is mounted in the PBX switchboard cord unit, remove the keyshelf plate as covered in paragraph 4.04. Remove the two key mounting screws using the C screwdriver, and lift the key from the keyshelf as far as the skimmers will permit.

**4.06** To remove a 625-type key when it is mounted in a traffic service desk, withdraw the plunger as covered in paragraph 4.14.

**4.07 547-, 576-, and 579-Type Keys (Key Button Replacement):** To replace the button, proceed as follows. Hold the washer with the 209 wrench, and remove the button with the fingers by turning it in a counterclockwise direction. If the button cannot be removed with the fingers, hold the washer with the 209 wrench and with the 211 pliers, equipped with a 1A or 2A cushion or equivalent slid over each jaw, remove the key button by turning in a counterclockwise direction. Screw the new key button on, tightening it securely. Care should be taken

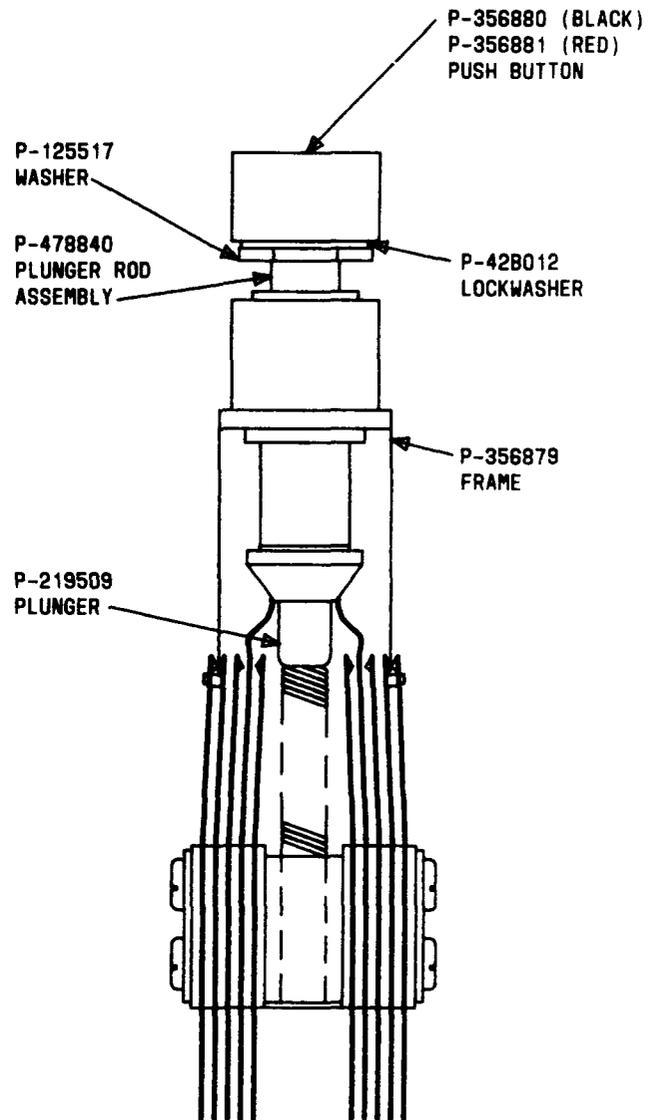


Fig. 5—576B Key

to ensure that the washer is seated properly on the shoulder of the plunger rod.

**4.08 614A Key (Key Button and Base Replacement):** To replace the button or base, remove the key as covered in paragraph 4.04. Remove the two key frame mounting screws using the C screwdriver. Position the key frame to clear the base, being careful not to break the wires. Substitute the new button as required. If the base is to be replaced, remove the four lamp socket block mounting screws using the C screwdriver. Substitute the new base.

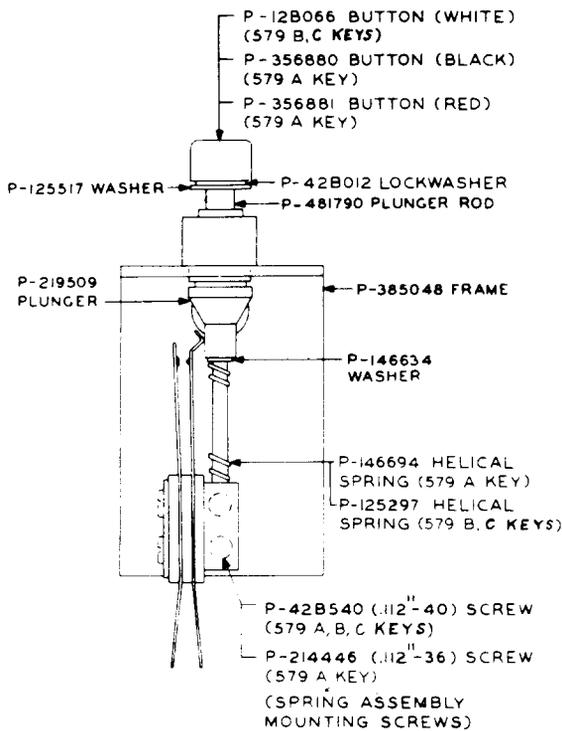


Fig. 6—579-Type Keys

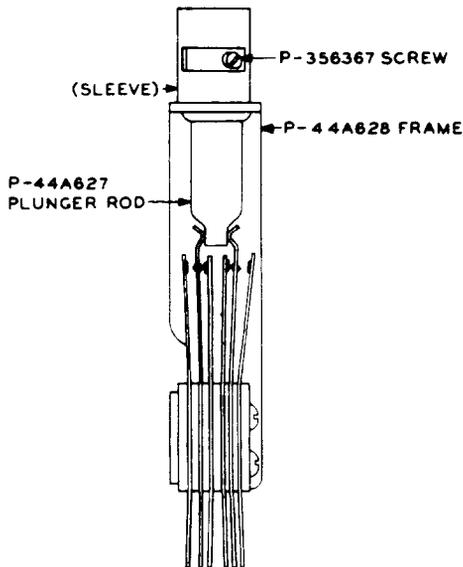


Fig. 7—585A and B Keys

Reassemble the base, buttons, and key frame and insert and tighten the mounting screws securely.

**4.09 615-Type Keys (Key Button and Base Replacement):** To replace the button or base, remove the key as covered in paragraph 4.05. Remove the mounting screws from the base using the C screwdriver. Remove the base and buttons. Substitute the new part as required. Reassemble the base and buttons and insert and tighten the mounting screws securely.

**4.10 624-, 625-, 630-, and 650-Type Keys (Lens, Filter, Retainer, and Designation Card Replacement):** To replace the lens, filter, retainer, or designation card, remove the retainer using the 374B tool and replace the part as required. When replacing the designation card of the 625-type key, the plunger should be removed from the key frame and the designation card numbers positioned with reference to the projection on the plunger as shown in Fig. 46.

**4.11 547-Type Keys (Plunger Rod Replacement):** To replace the plunger, first operate the plunger, then grasp the center of the retaining ring with the B long-nose pliers, and remove the ring and plunger. Position the new plunger in the sleeve, and operate the plunger. Hold the center of the retaining ring with the pliers, and push the ring in place on the plunger.

**4.12 552-, 585-, 592-, 596-, and 597-Type Keys (Plunger Rod Replacement):** To replace the plunger rod, remove the plunger rod screw with the R-1005 jewelers screwdriver and withdraw the plunger from the sleeve. Position the new plunger rod, and tighten the screw securely.

**4.13 624- and 650-Type Keys (Plunger Replacement):** To replace the plunger, remove the plunger retaining screw with the R-1005 jewelers screwdriver and withdraw the plunger. Remove the retainer with the fingers. Substitute the new plunger. Reassemble the retainer and plunger, insert in the frame, and tighten the screw securely.

**4.14 625-Type Keys (Plunger Replacement):**  
**Warning:** When inserting a plunger in the frame of a 625-type key, take care to center the plunger in the recess and carefully apply pressure. Do not tilt the plunger nor force it into position; otherwise, the plunger

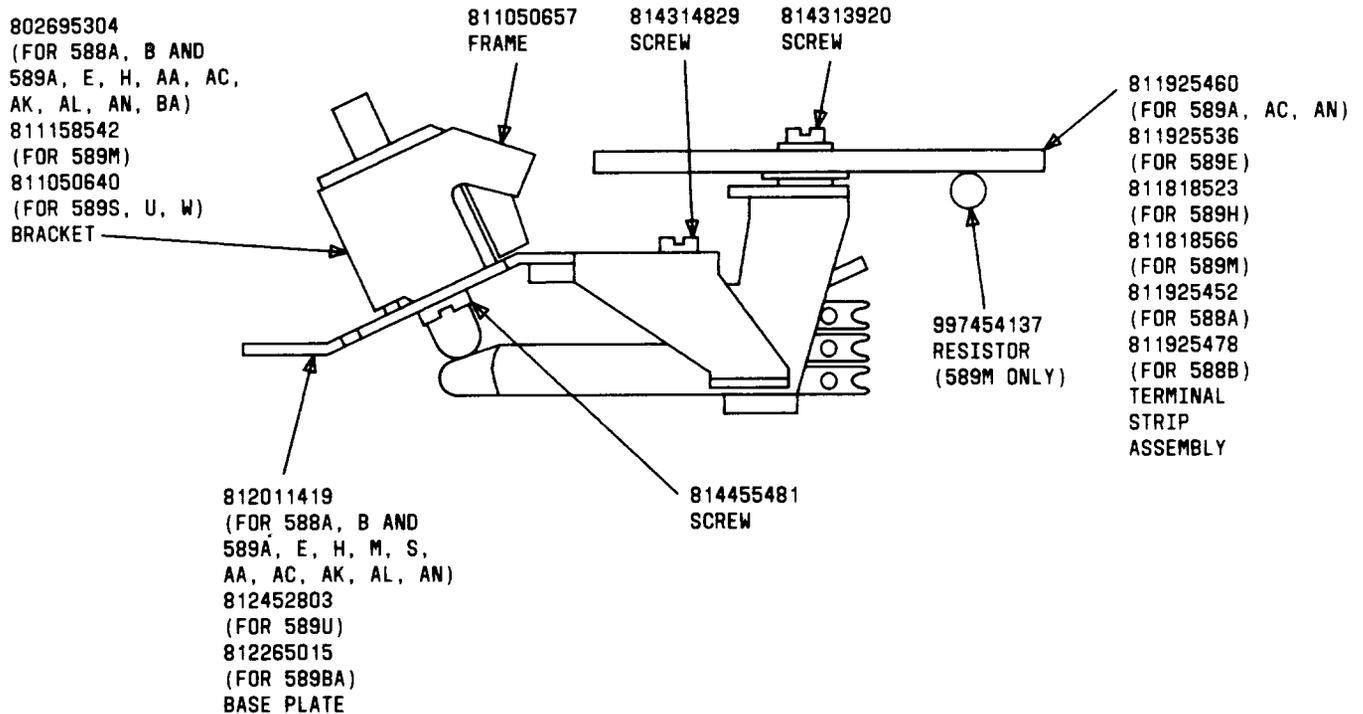


Fig. 8—588A and B and 589-Type Keys

*tip may butt against the end of a contact spring and deform the spring.* Plungers of 625-type keys can be withdrawn directly.

#### 4.15 630-Type Keys (Plunger Replacement):

**Warning:** *When inserting the plunger of a 630-type key, take care that the plunger leg with the rotating catch is aligned with the stop side of the key frame to avoid damage to the contact springs and plunger.* Plungers of 630-type keys require removal of the stop. (See Fig. 23.)

#### 4.16 576- and 579-Type Keys (Plunger Rod, Sleeve, Helical Spring, Washer, and Plunger Replacement):

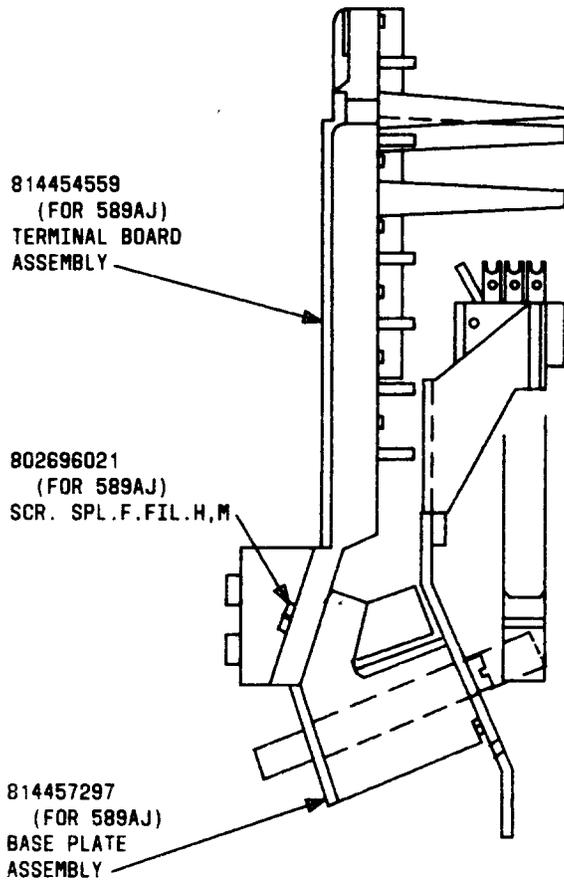
To replace the plunger rod, helical spring, washer, or plunger, remove the button as covered in paragraph 4.07. Remove the spring assembly mounting screws as shown in Fig. 47 with the C screwdriver and remove the spring assembly, helical spring, washer, plunger, or plunger rod as required. Substitute the new part. Reassemble the parts in the reverse order of removal. Tighten the spring assembly mounting screws securely.

#### 4.17 614A Key (Plunger Rod, Sleeve, Helical Spring, Washer, and Plunger Replacement):

To replace the plunger rod, sleeve (plunger stop), helical spring (plunger restoring spring), plunger, or washer, proceed as follows. Remove the key from the switchboard as covered in paragraph 4.04. Remove the two key frame mounting screws using the C screwdriver. Position the key frame to clear the base and lamp socket block, being careful not to break the wires. Remove the spring assembly mounting screws, shown in Fig. 47, using the C screwdriver, and position the spring assembly to clear the plunger rod. Substitute the new part as required. Reassemble the parts in the reverse order of removal, and tighten all mounting screws securely.

#### 4.18 615-Type Keys (Plunger Rod, Sleeve, Helical Spring, Washer, and Plunger Replacement):

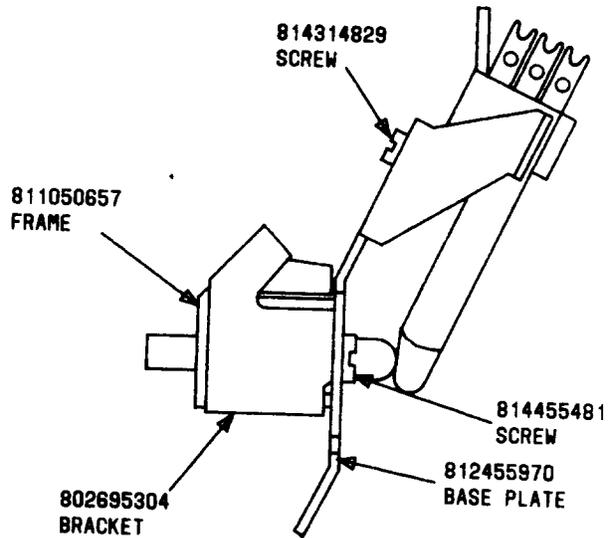
To replace the plunger rod, sleeve, helical spring, washer, or plunger, remove the key from its mounting as covered in paragraph 4.05 as applicable. In the case of the 615-type key, unsolder the leads to the switchboard cord unit and tag to facilitate reconnecting them. Remove the spring assembly mounting screws shown in Fig. 47 with the C



◆Fig. 9—589AJ Keys◆

screwdriver and remove the spring assembly, sleeve, helical spring, washer, plunger, or plunger rod as required. Substitute the new part. Reassemble the parts in the reverse order of removal. Tighten the spring assembly mounting screws securely. Connect and resolder the leads to the proper terminals of the 615-type keys.

**4.19 614A and 648B Keys (KS-14672, L1, Connector Replacement):** Remove the two mounting screws from the connector with the C screwdriver. Move the connector to a position convenient for unsoldering the wires. Tag and unsolder the leads. Substitute the new connector. Connect and solder the leads to the proper terminals. Remount the new connector and insert and securely tighten the screws.



◆Fig. 10—Terminal Board Assembly (589AJ Key)◆

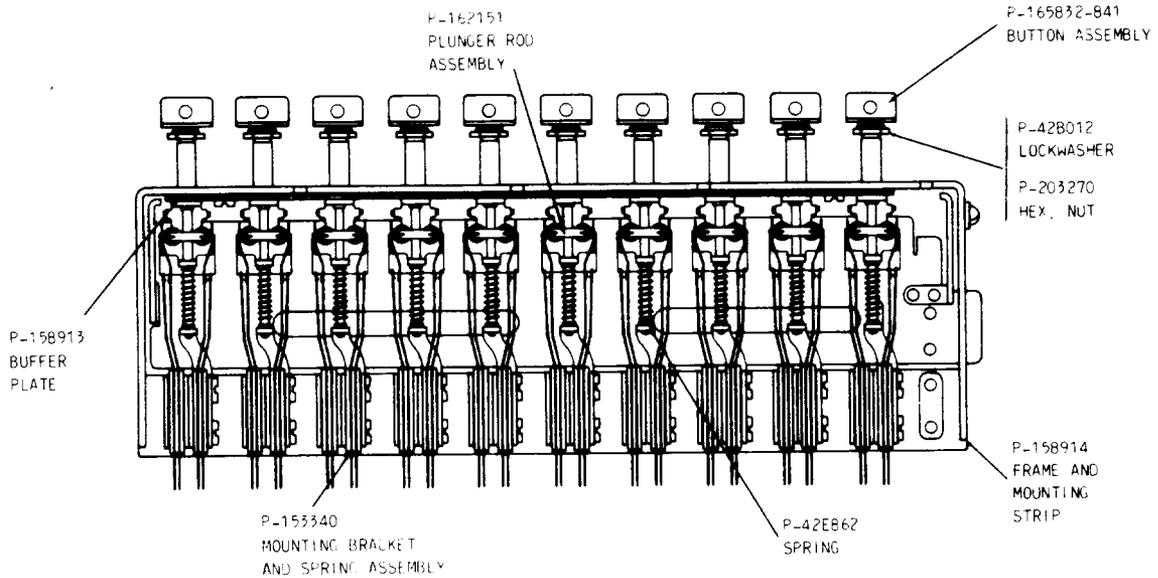


Fig. 11—590A Key

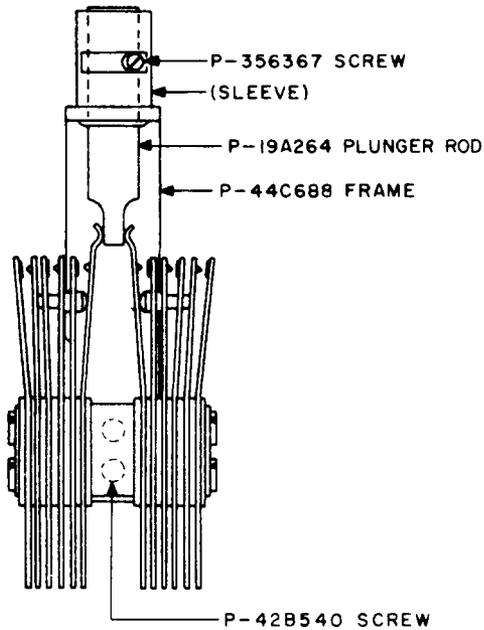


Fig. 12—596-Type Keys

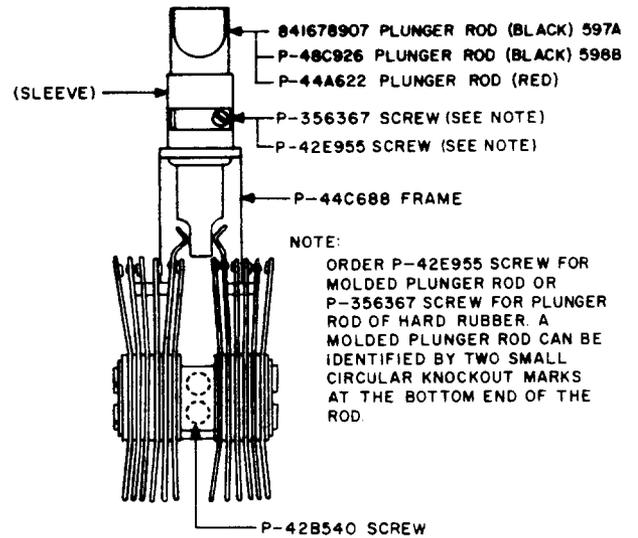


Fig. 13—597-Type Keys

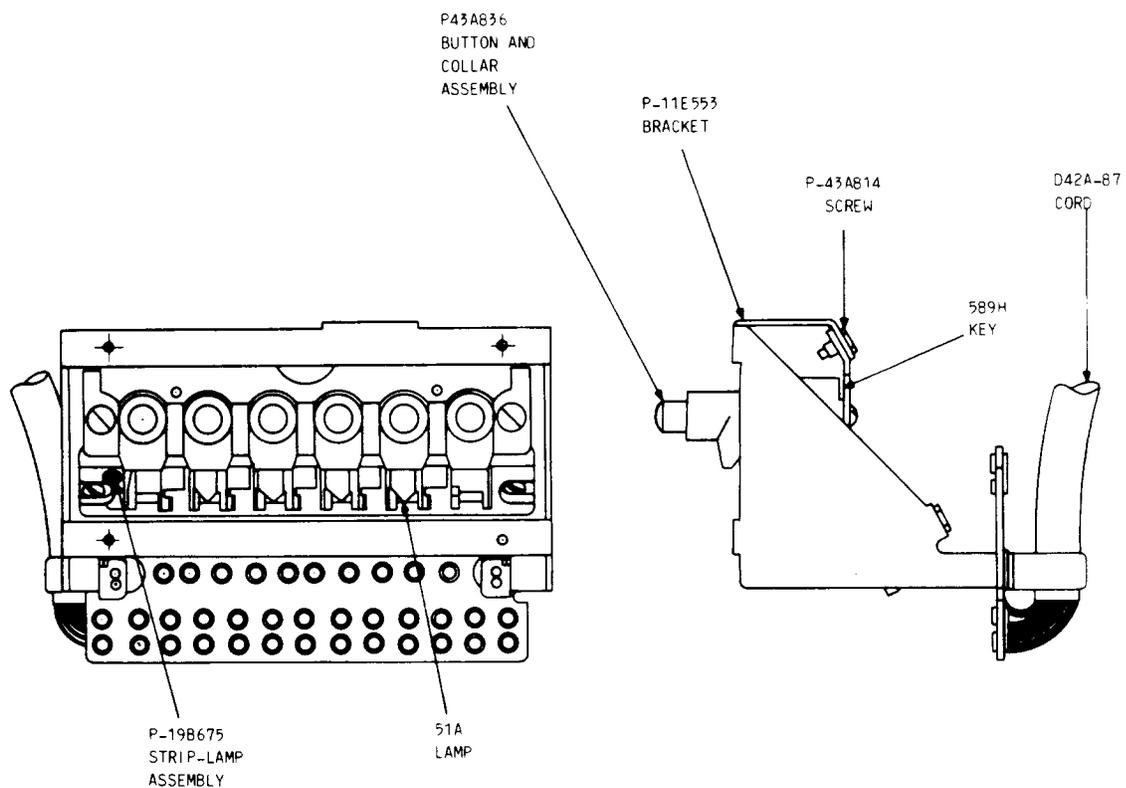


Fig. 14—611A Key

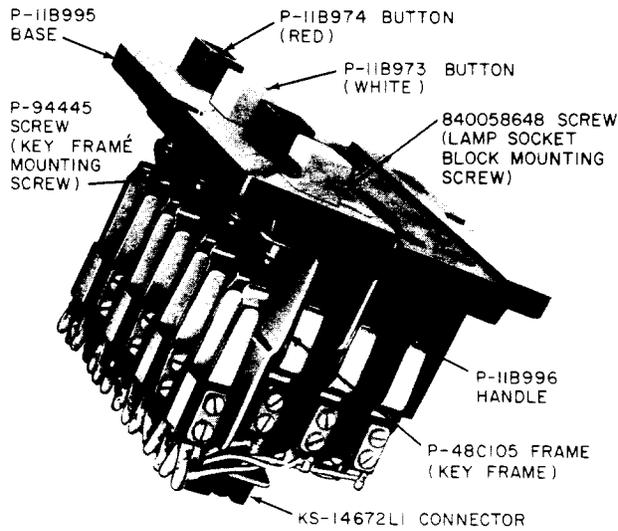


Fig. 15—614A Key

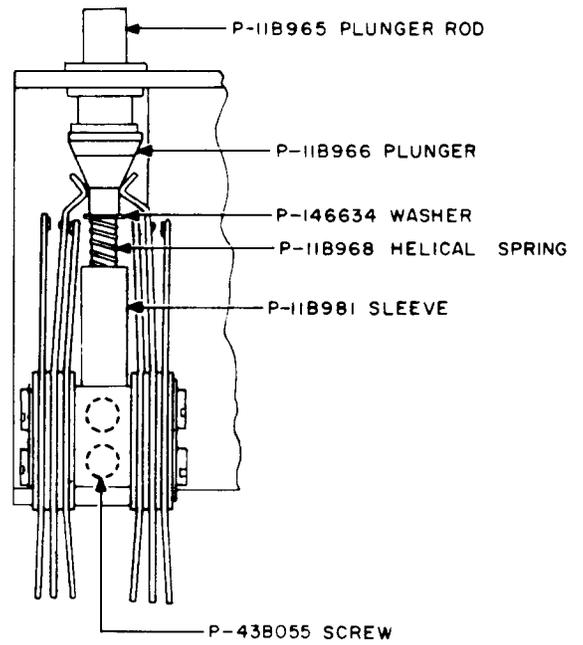


Fig. 17—Key Unit Assembly Used on 614- and 615-Type Keys

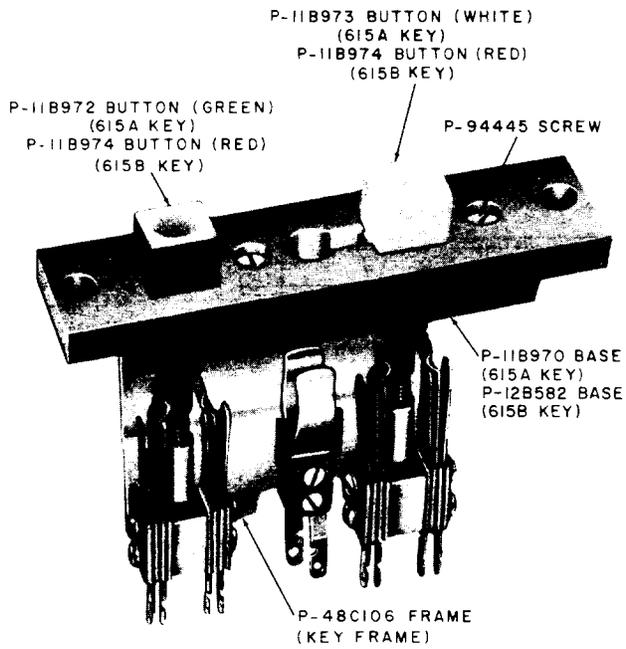


Fig. 16—615-Type Keys

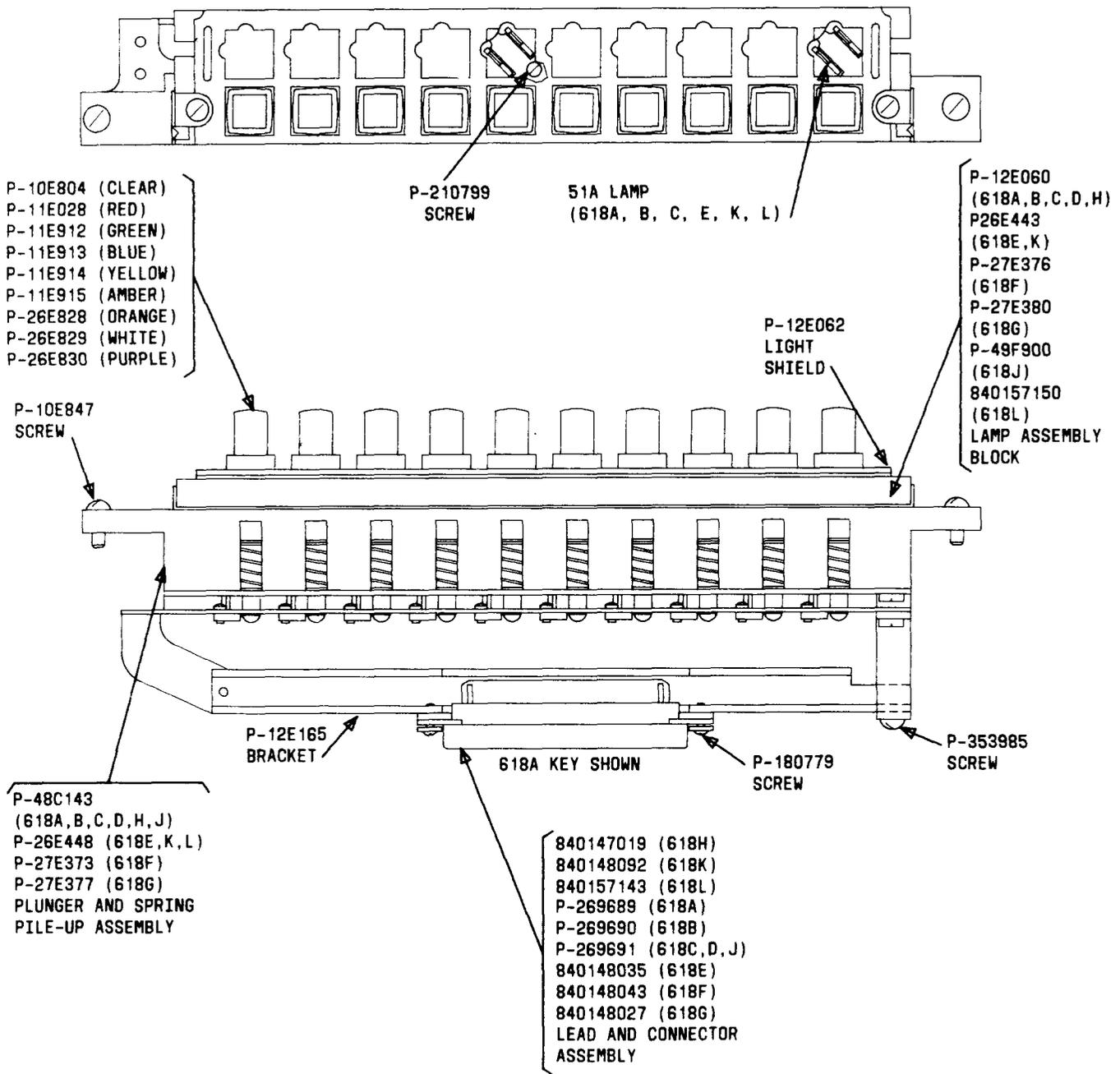
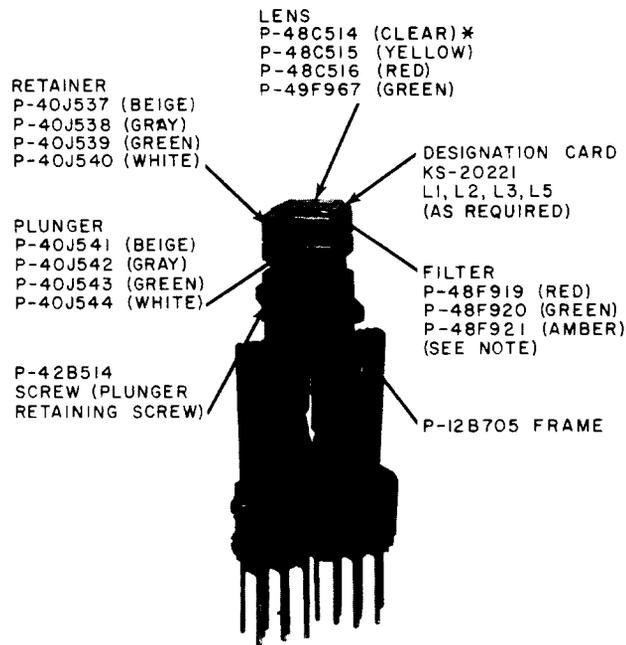


Fig. 18—618-Type Keys



NOTE:  
USED UNDER DESIGNATION CARD IF A COLORED  
SIGNAL IS REQUIRED ONLY WHEN LAMP IS ON.

\*CLEAR WILL BE FURNISHED UNLESS  
OTHERWISE SPECIFIED

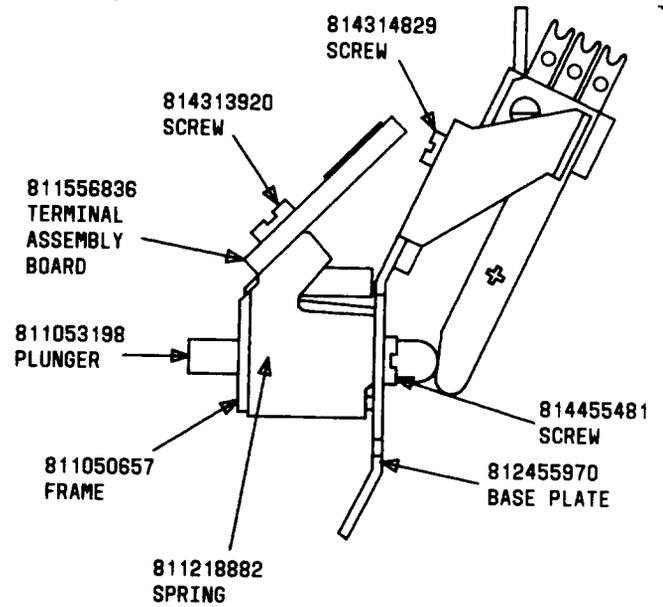
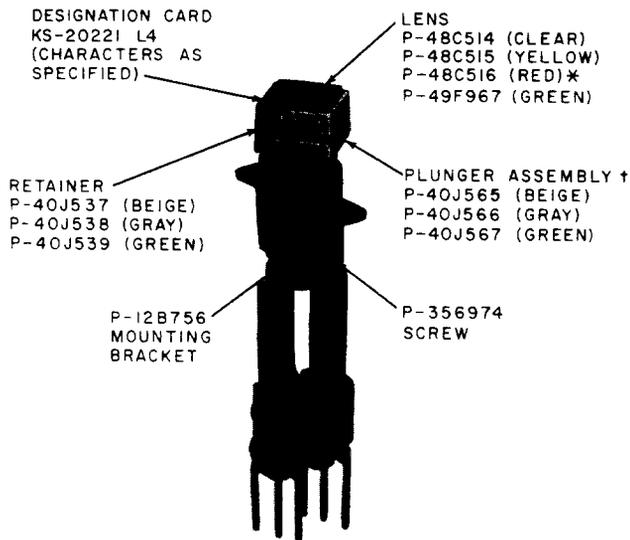


Fig. 21—626A Key

Fig. 19—624-Type Keys



\* RED WILL BE FURNISHED UNLESS  
OTHERWISE SPECIFIED

† INCLUDES RETAINER AND LENS

Fig. 20—625-Type Keys

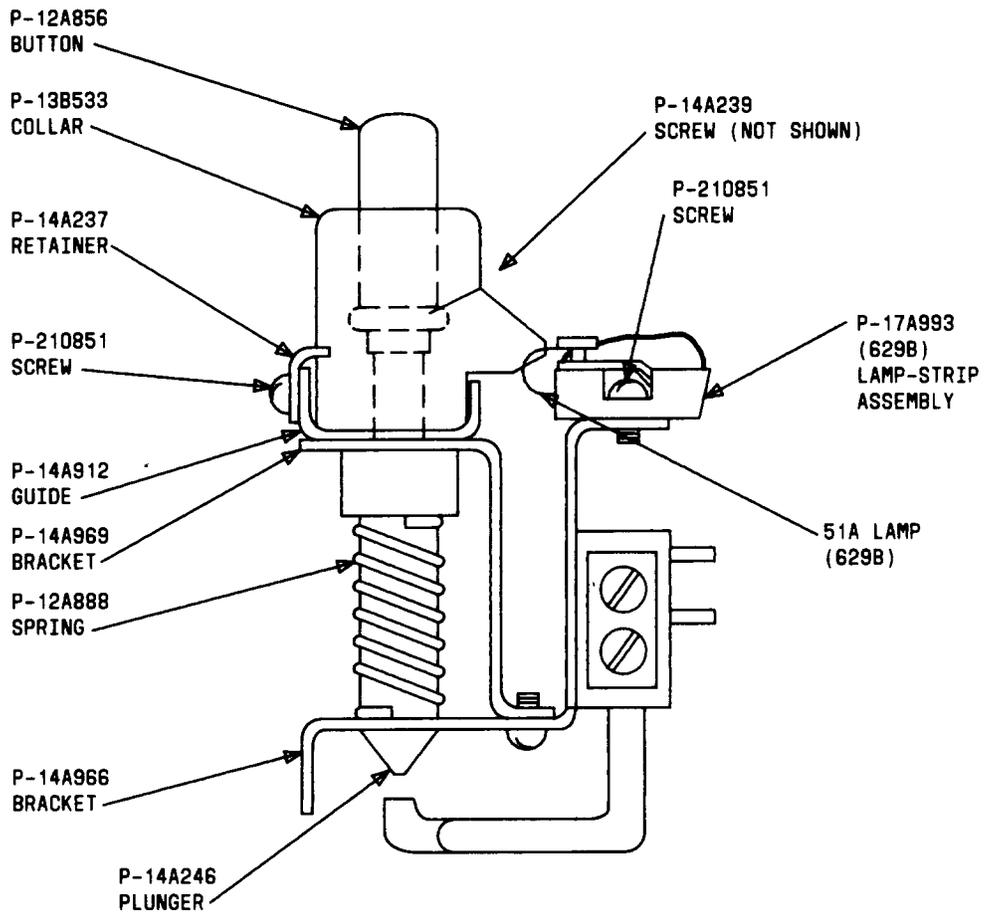
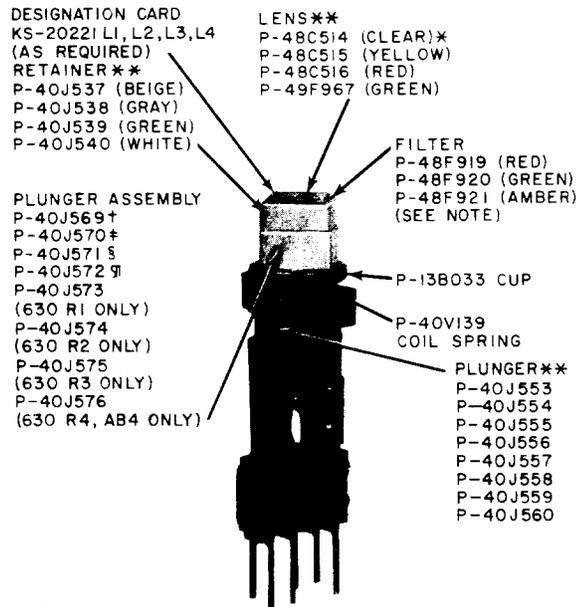


Fig. 22—629A and B Keys



NOTE:  
USED UNDER DESIGNATION CARD IF A COLORED SIGNAL IS REQUIRED ONLY WHEN LAMP IS ON.

- \* CLEAR WILL BE FURNISHED UNLESS OTHERWISE SPECIFIED.
- † FOR USE ON ALL -1 KEYS EXCEPT R1
- ‡ FOR USE ON ALL -2 KEYS EXCEPT R2
- § FOR USE ON ALL -3 KEYS EXCEPT R3
- ¶ FOR USE ON ALL -4 KEYS EXCEPT R4
- \*\* COMPONENTS OF PLUNGER ASSEMBLY

Fig. 23—630-Type Keys

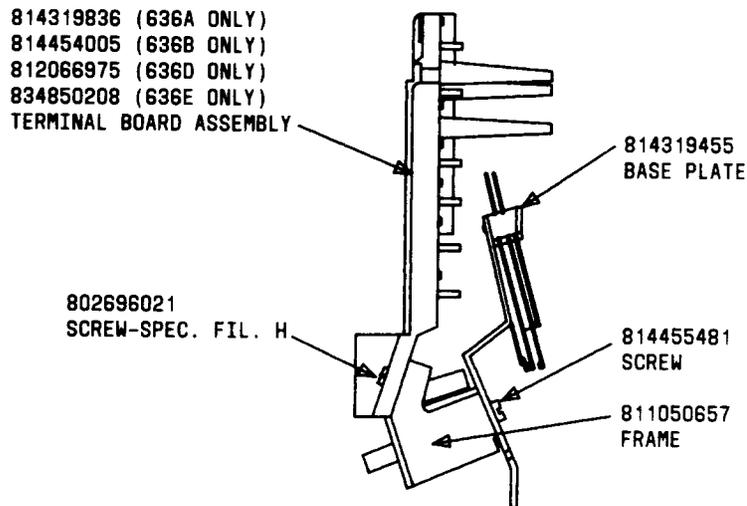


Fig. 24—636-Type Keys

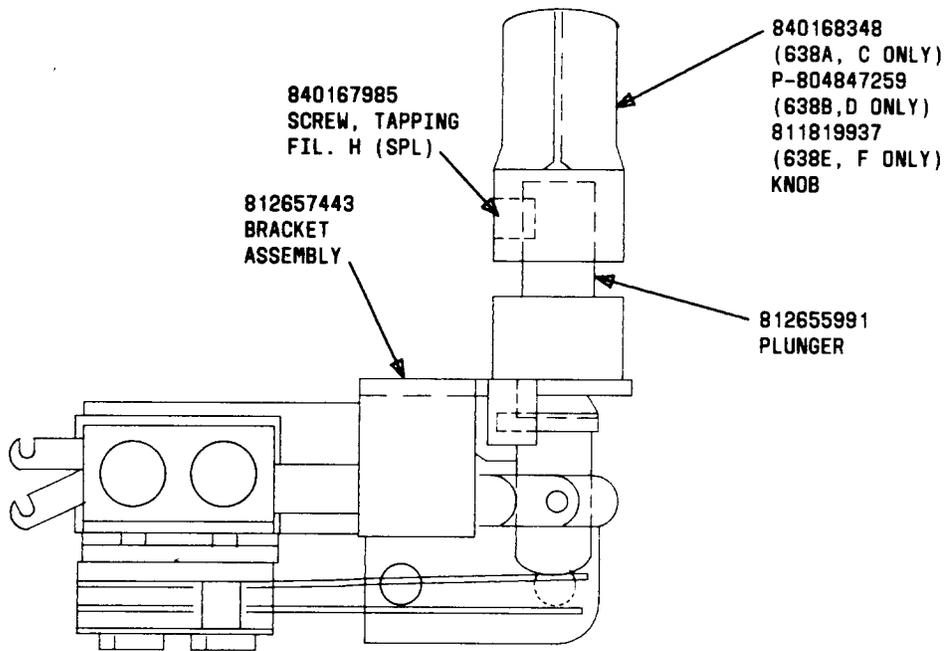


Fig. 25—638-Type Keys

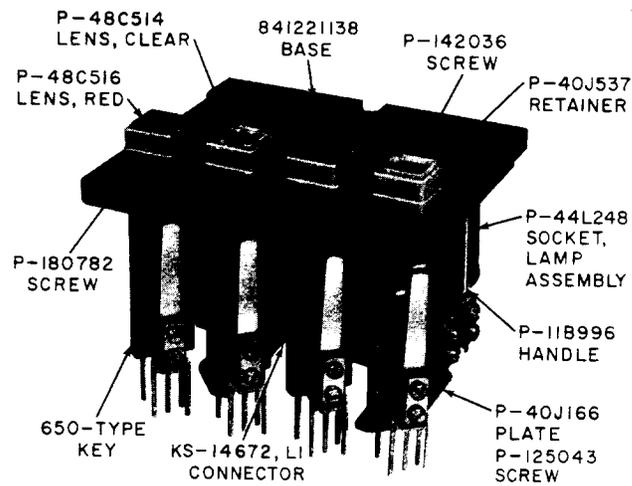


Fig. 26—648B Key

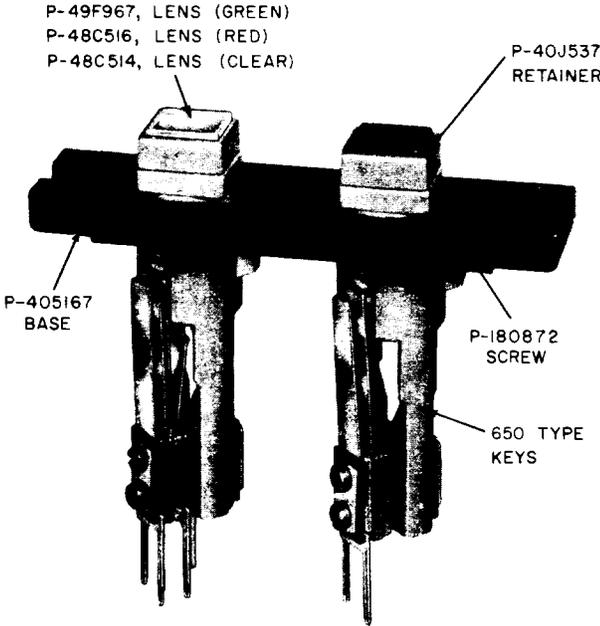
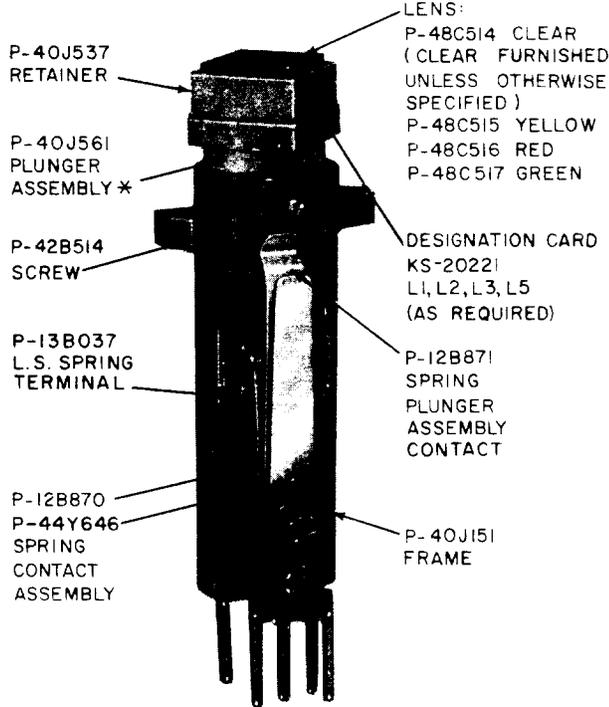
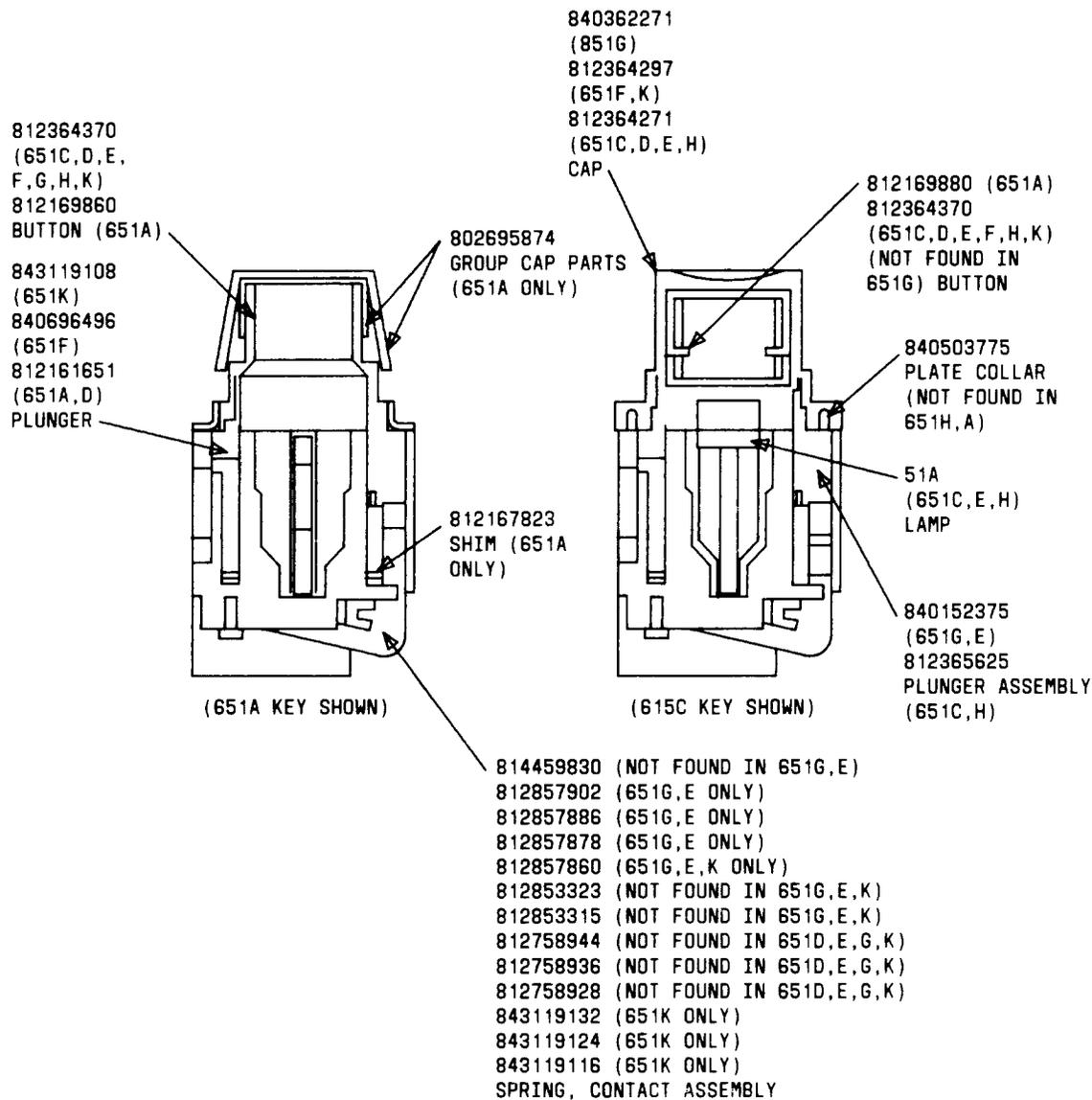


Fig. 27—649C and 649D Keys

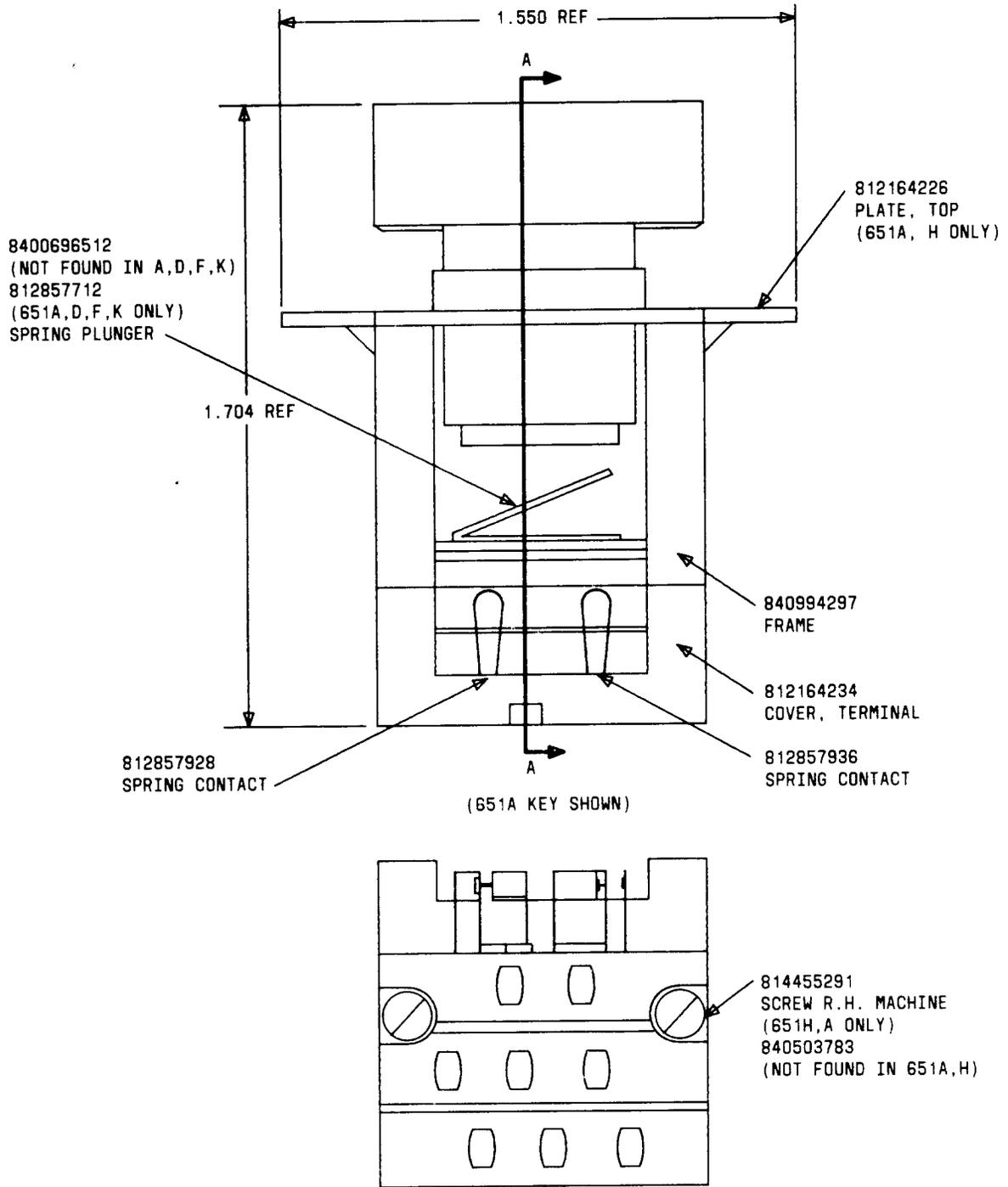


\* INCLUDES RETAINER AND LENS

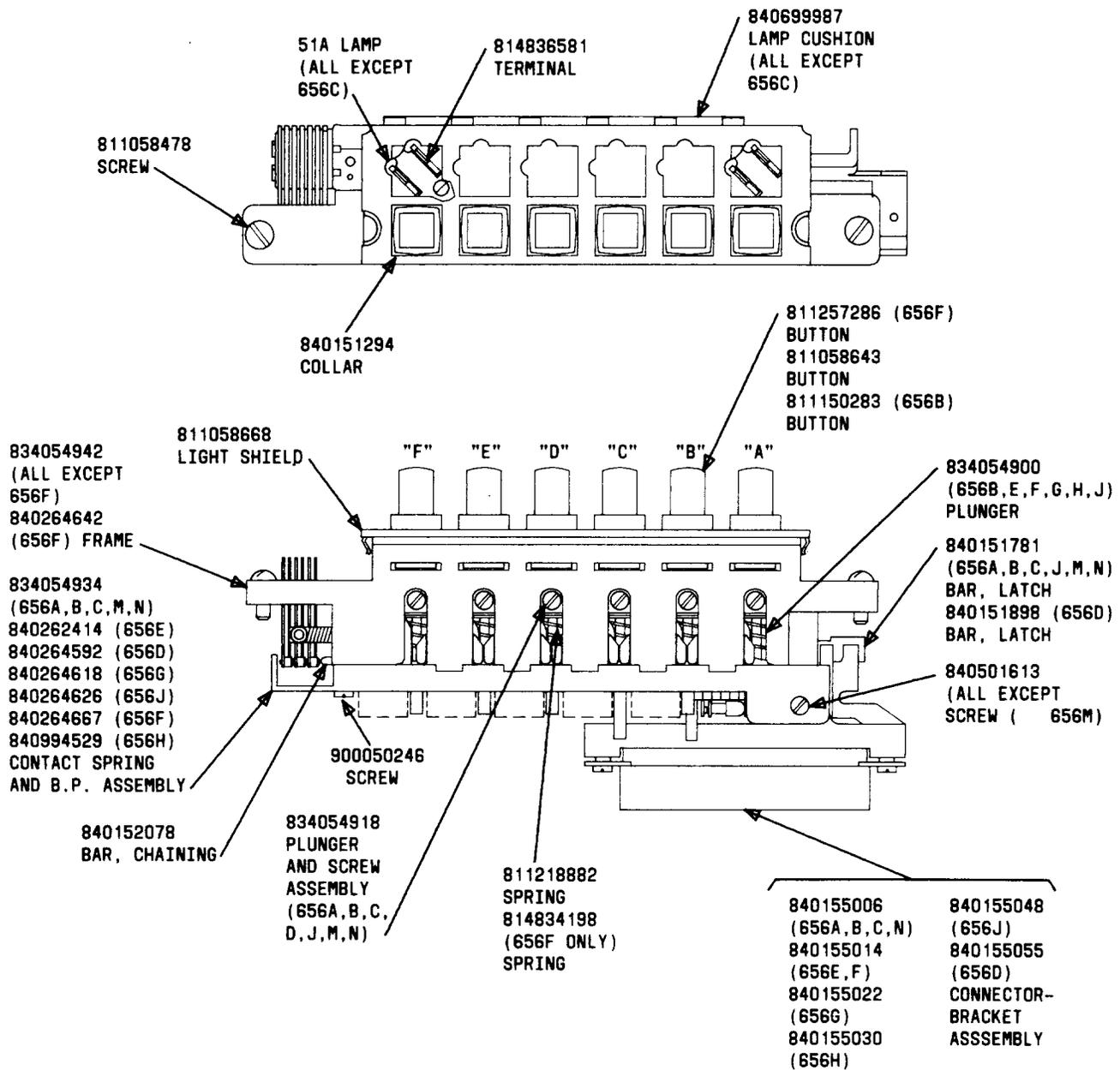
Fig. 28—650-Type Keys



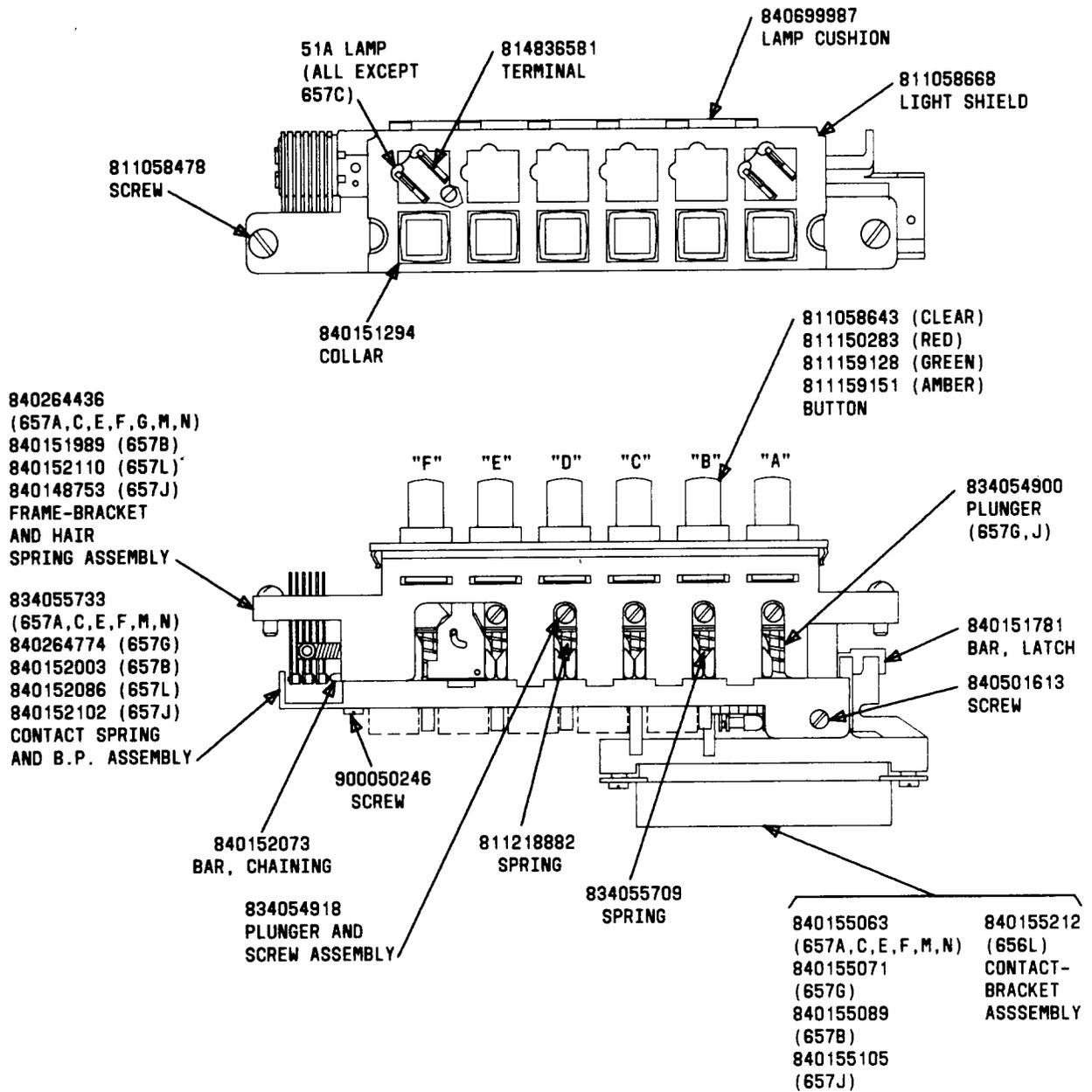
◆ Fig. 29— 651-Type Keys ◆



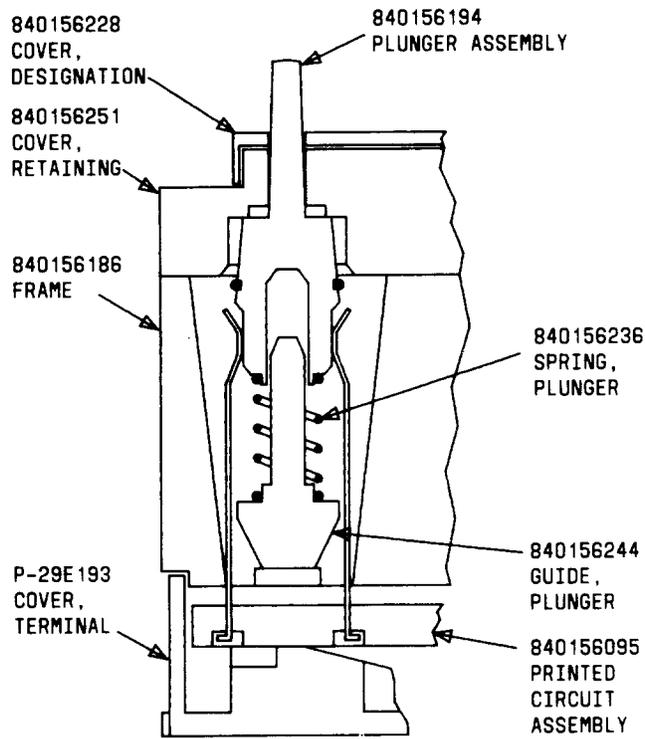
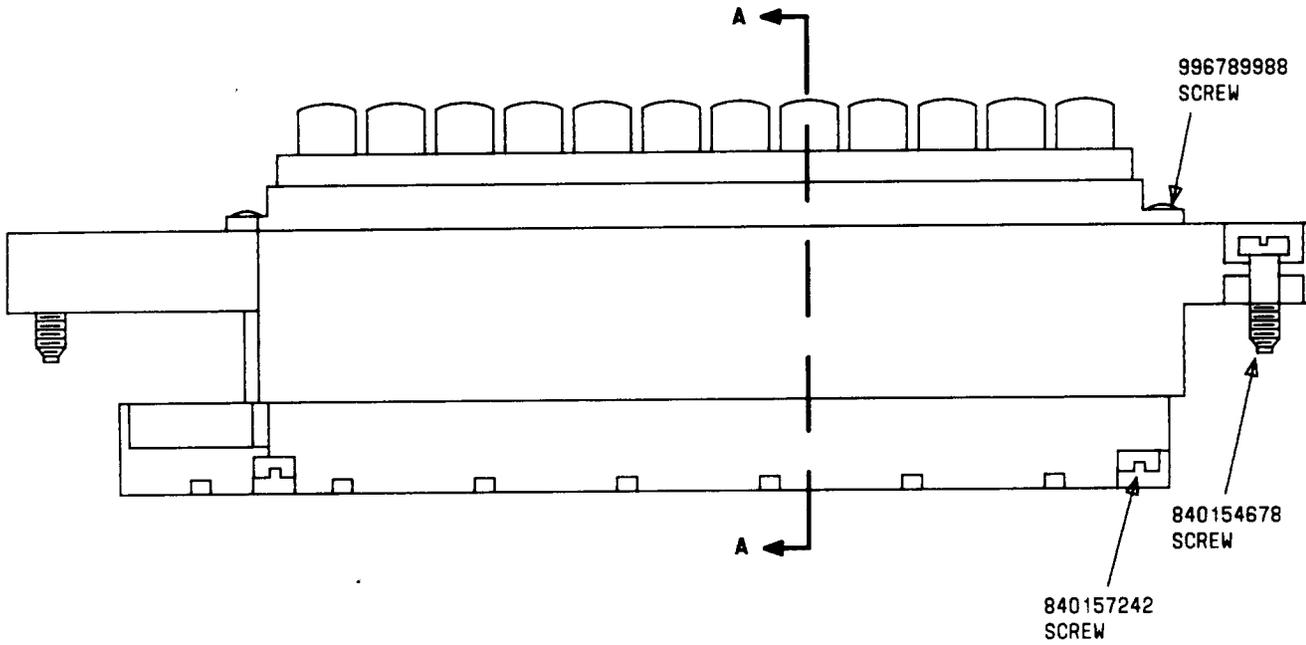
◆Fig. 30—651-Type Keys◆



◆Fig. 31—656-Type Keys◆

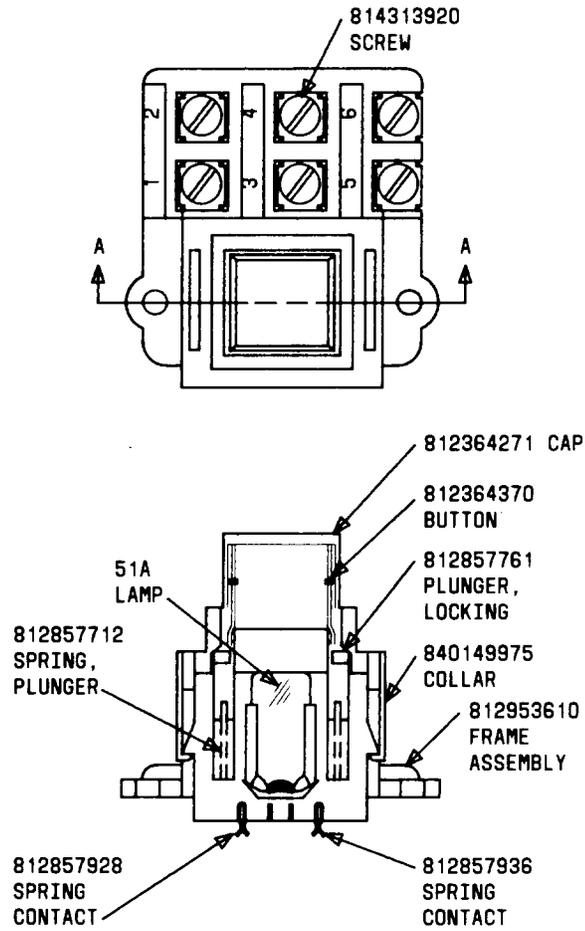


◆ Fig. 32—657-Type Keys◆

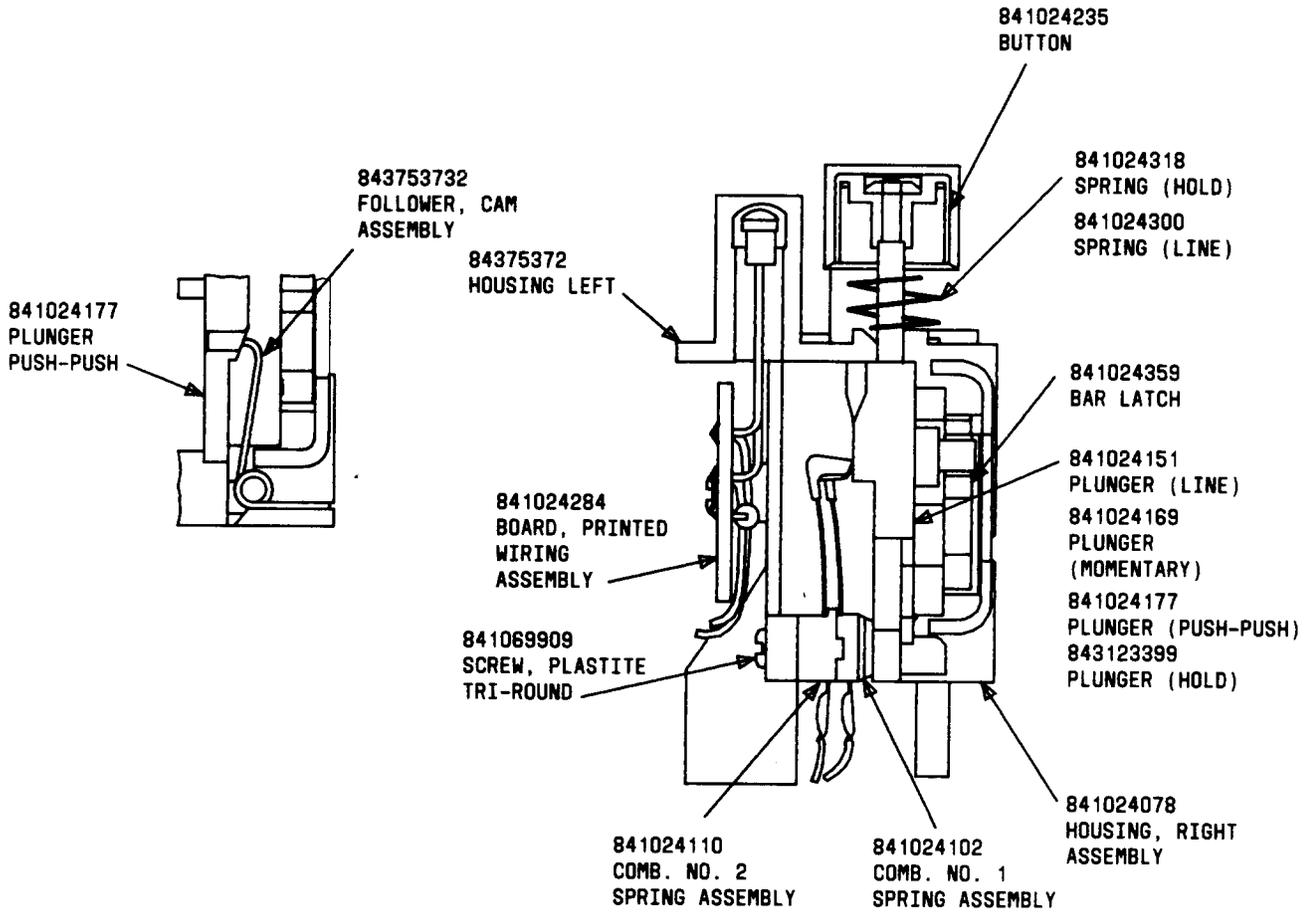


SECT AA

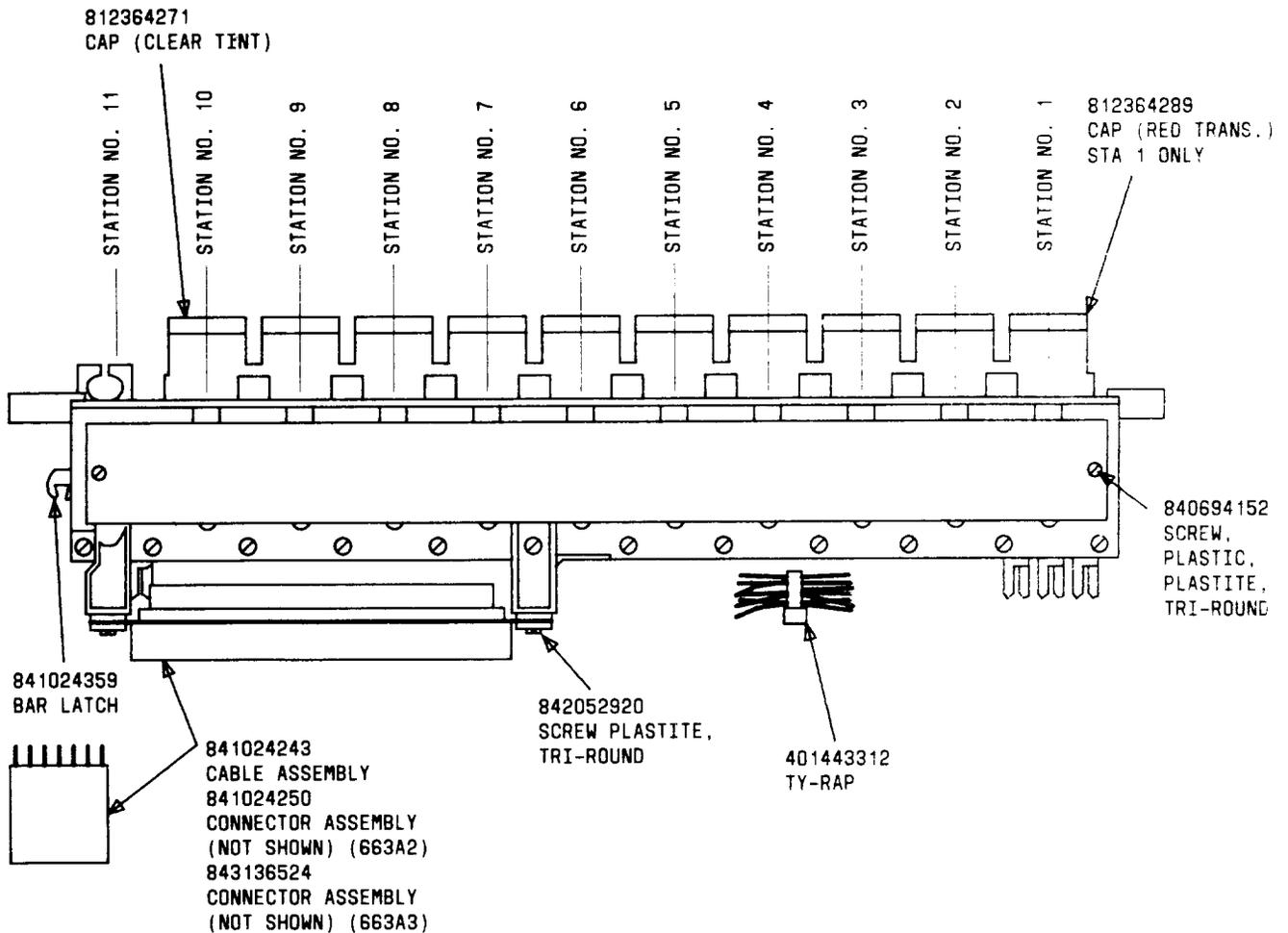
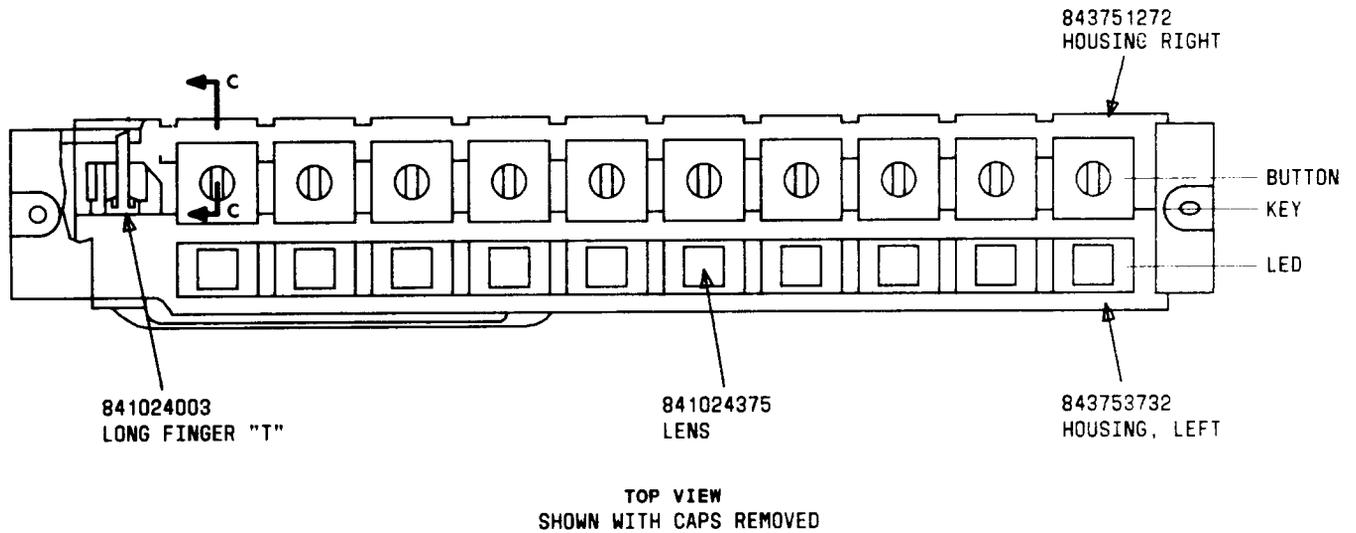
◆Fig. 33—658A Key◆



◆ Fig. 34—661A Key ◆



◆ Fig. 35—663A2 and 663A3 Keys ◆



◆ Fig. 36—663A2 and 663A3 Keys ◆

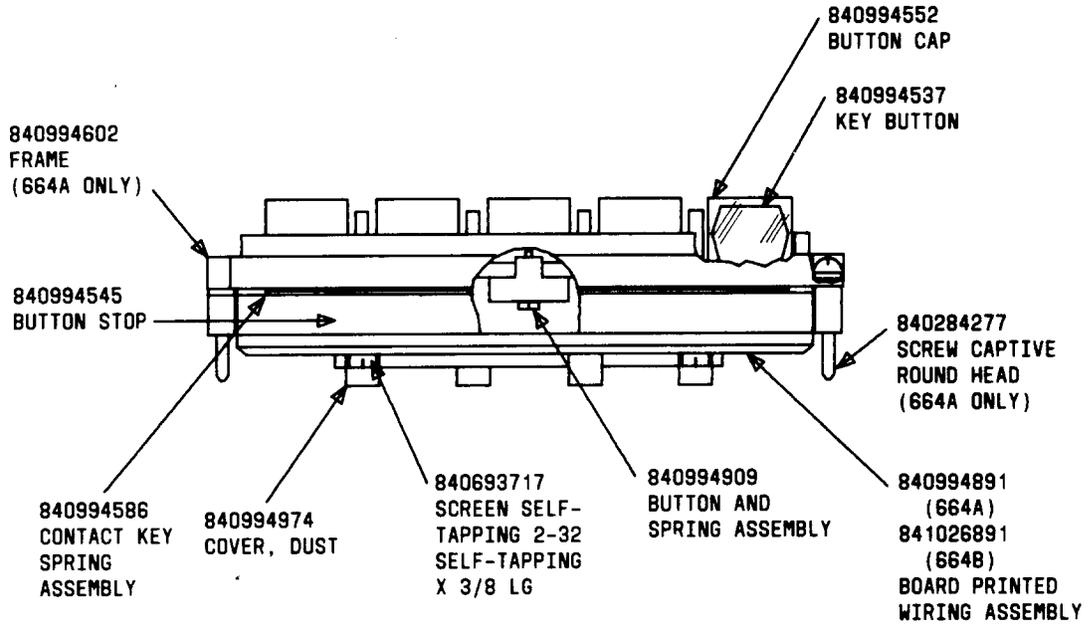
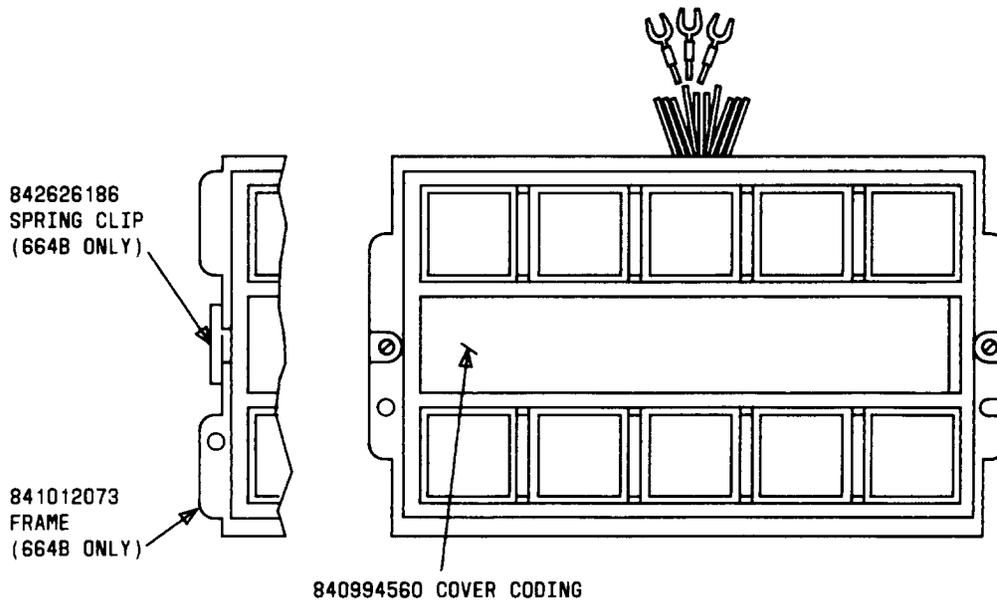
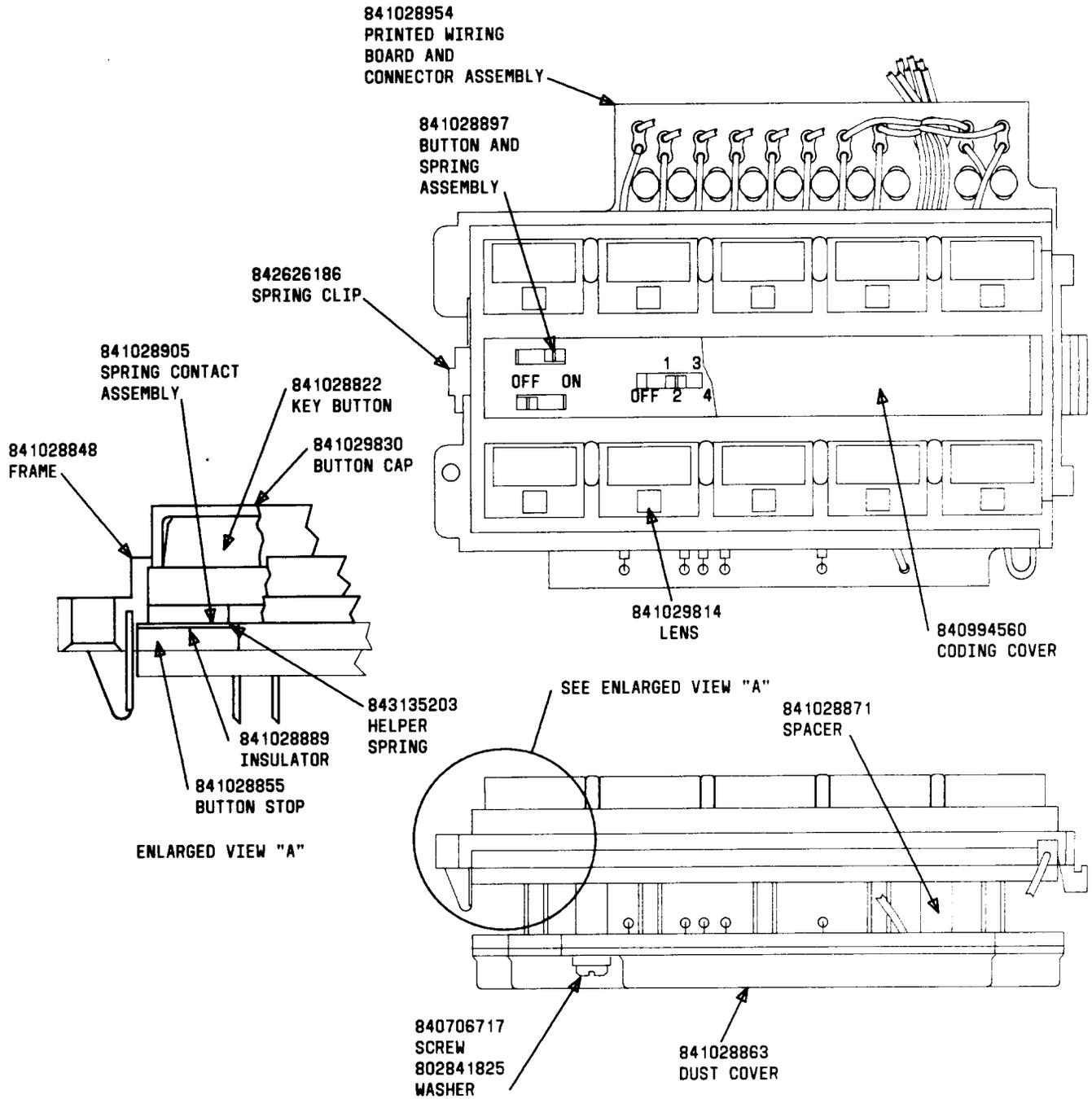


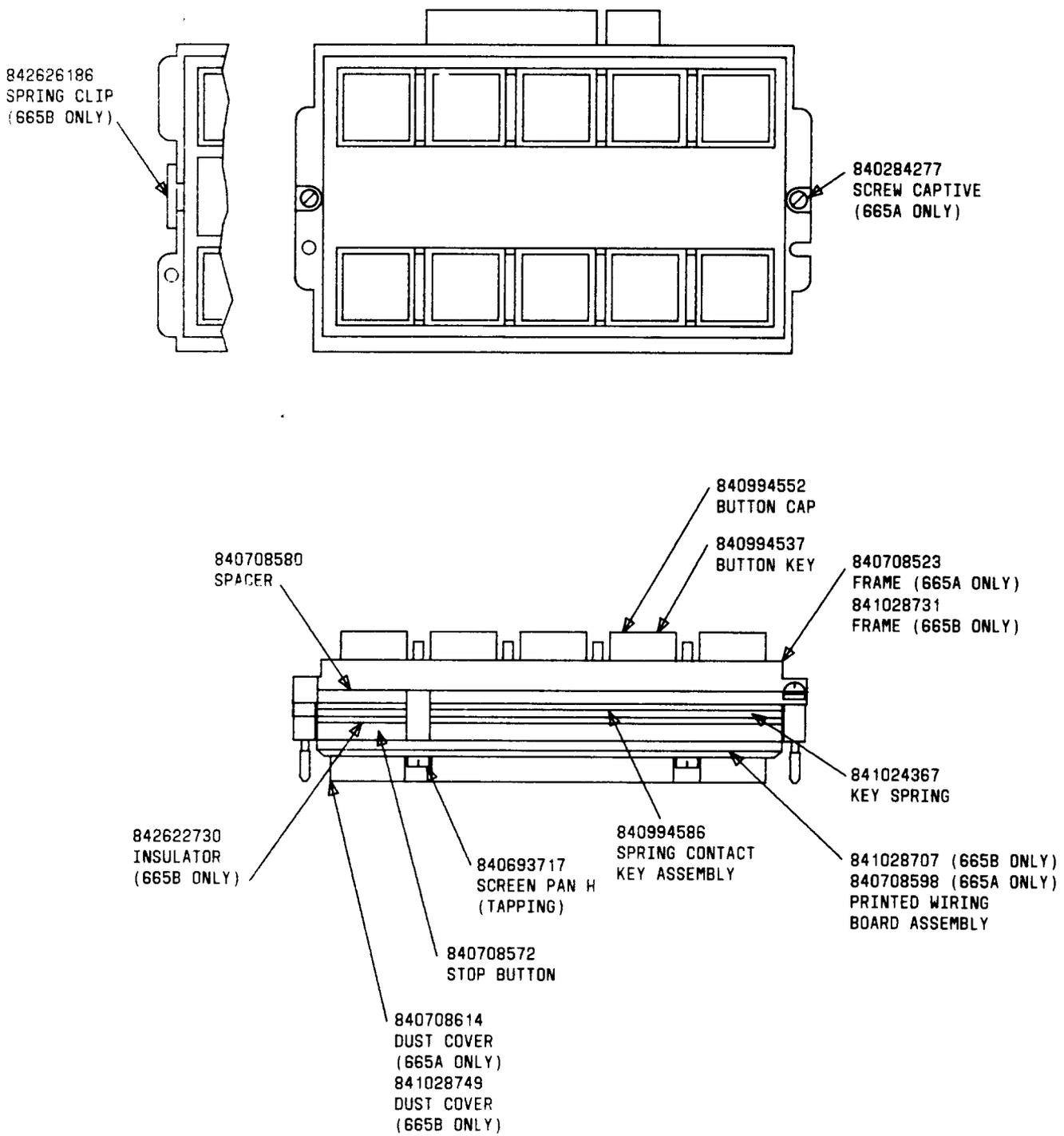
Fig. 37—664A and B Keys



◆ Fig. 38—664A and B Keys ◆



◆ Fig. 39—664C Key ◆



◆ Fig. 40—665-Type Keys ◆

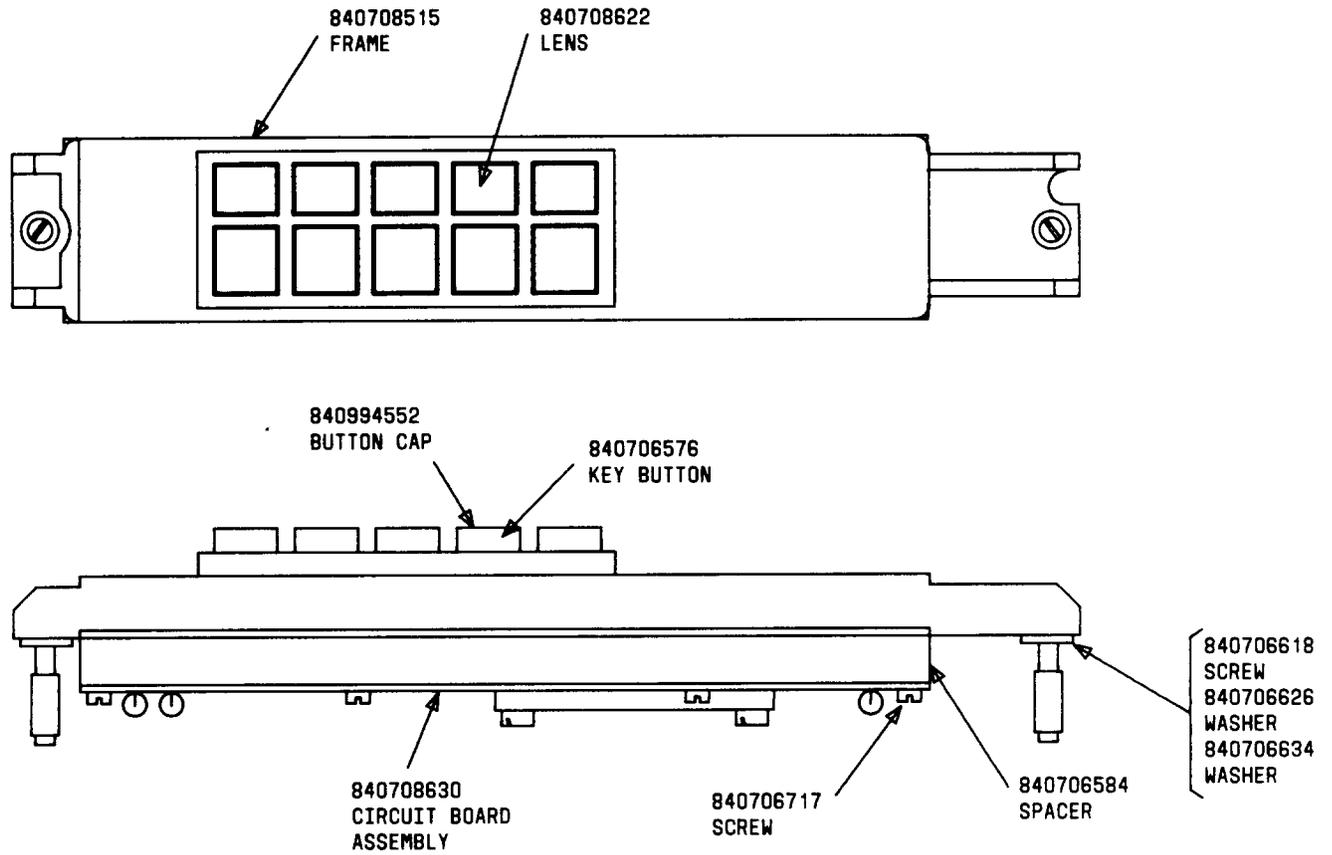
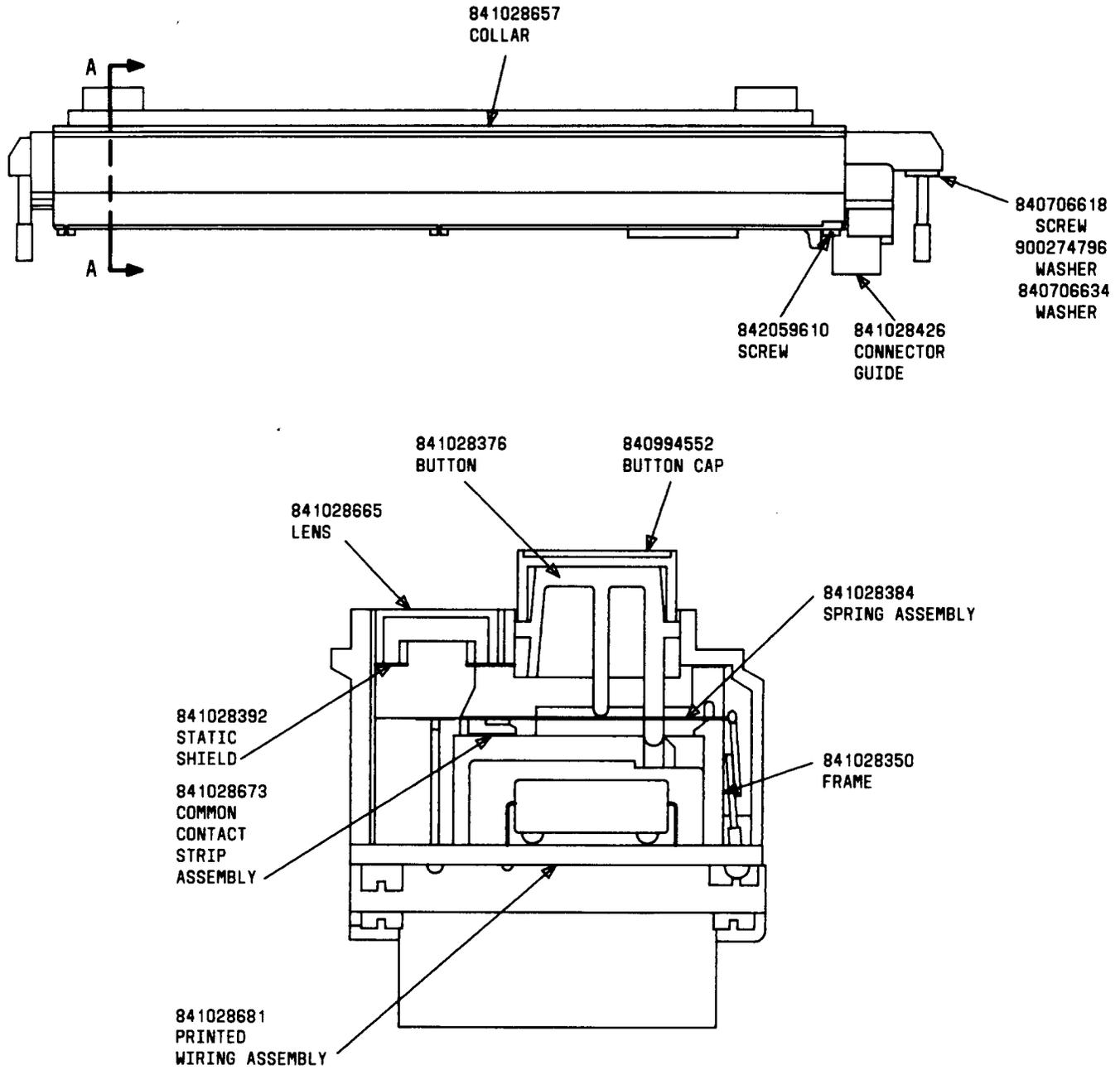


Fig. 41 — 680A Key



SECT A-A

◆ Fig. 42 — 680B Key ◆

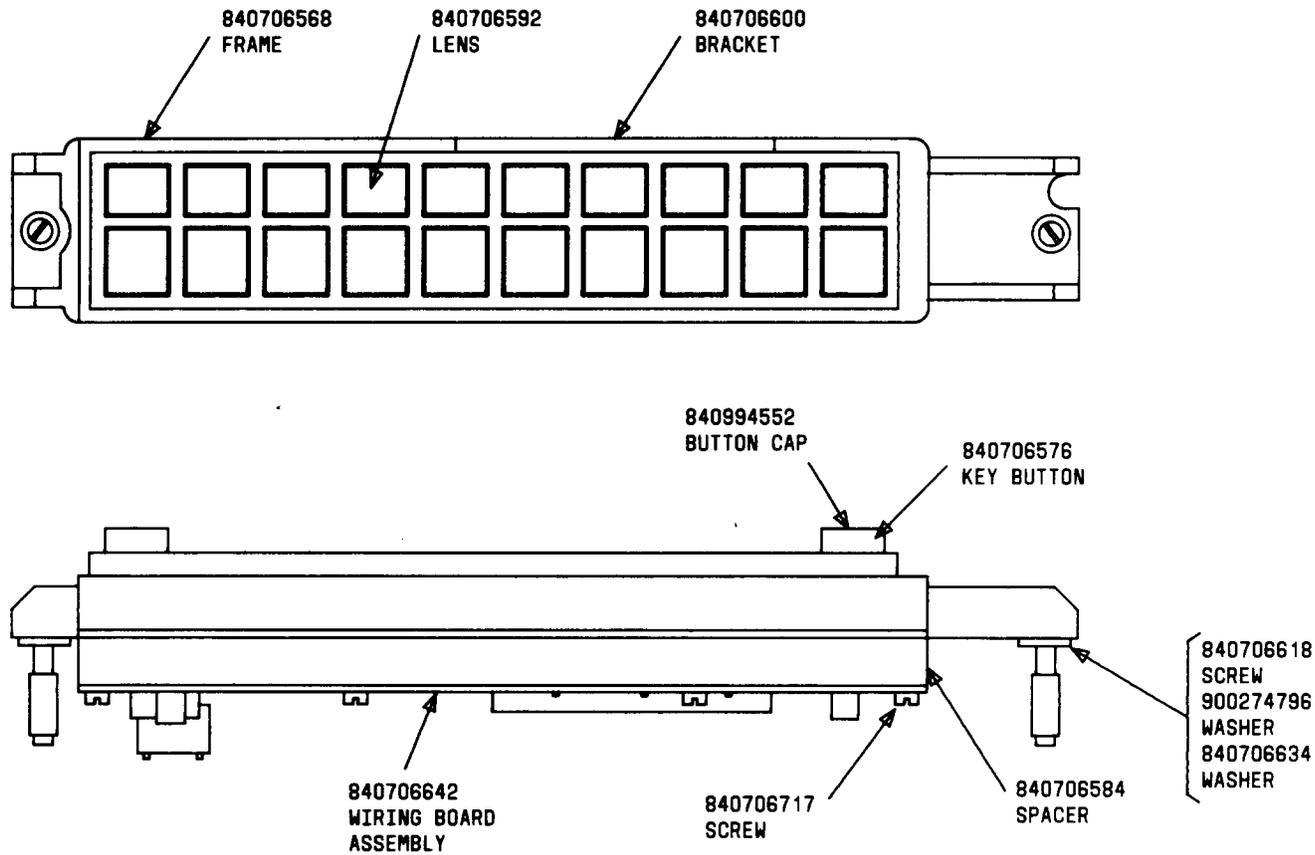
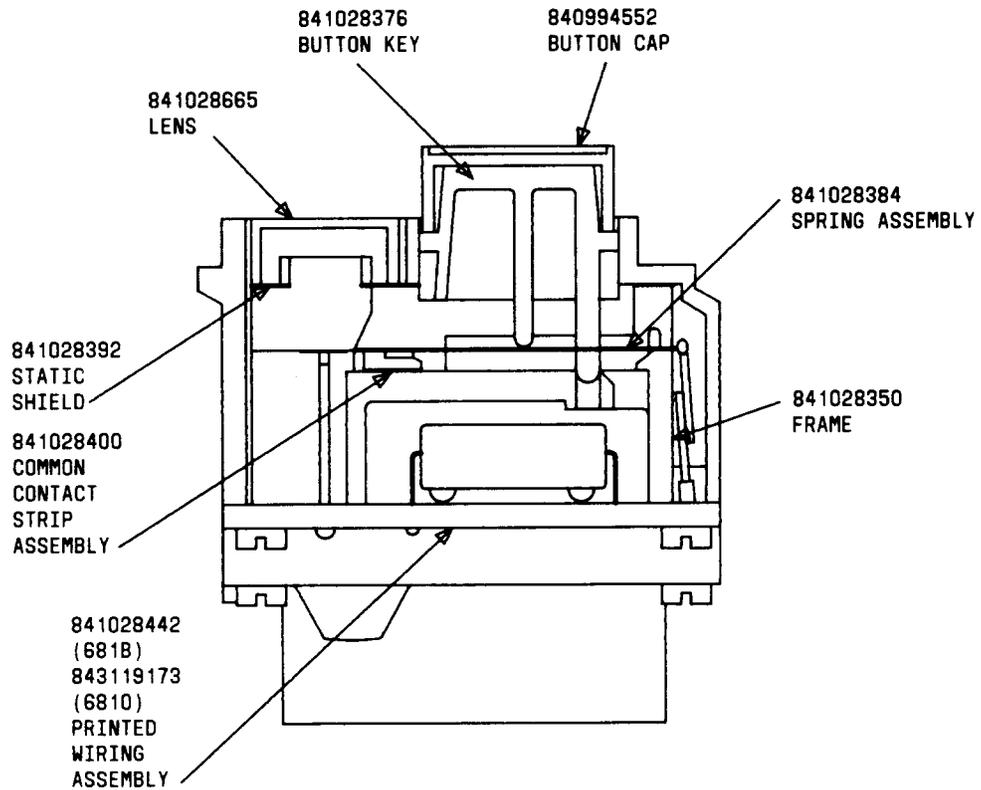
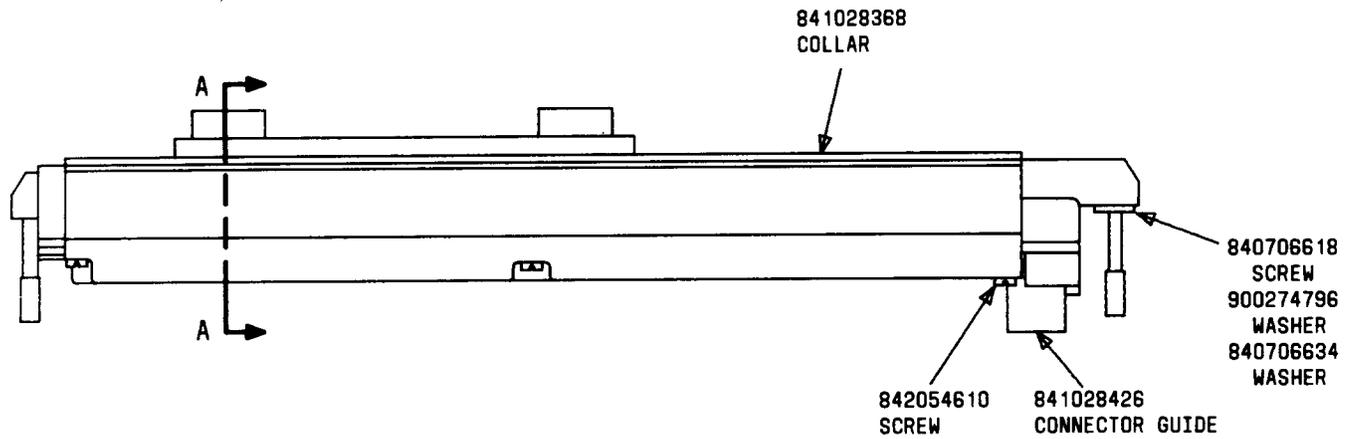
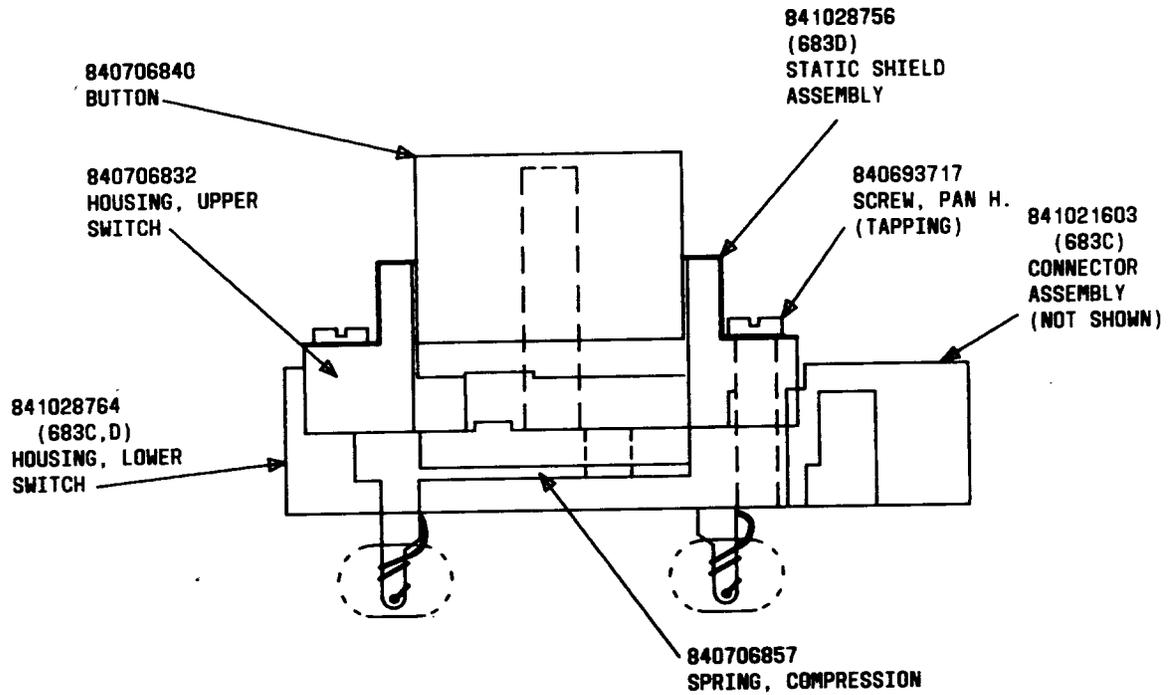


Fig. 43—681A Key



SECT A-A

◆Fig. 44—681B and 681D Keys◆



◆ Fig. 45—683-Type Keys ◆

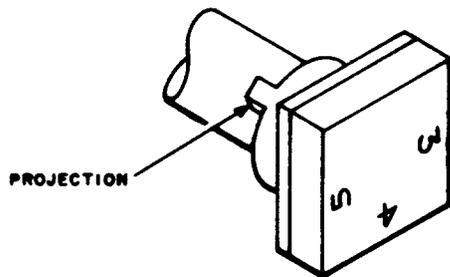


Fig. 46—625-Type Keys—Designation Card Numbers Correctly Positioned With Reference to Projection on Plunger

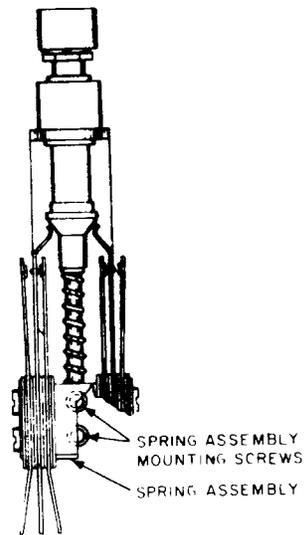


Fig. 47—Position of Spring Assembly Mounting Screws for the 576-, 579-, 596-, 597-, 614-, and 615-Type Keys (576A Illustrated)