INSTALLATION

W. E. Co. 631A1 Telephone (Call Director)

Fig. 1. 631A1 Telephone

1. GENERAL

1.01 This Practice provides installation procedures for the 631A1 Telephone (Fig. 1). Included is information on mounting cord assignment, cord connectors, and internal wiring of the set.

1.02 The 631A1 key set is intended for use where the standard push button set is inadequate.

2. DESCRIPTION

2.01 The 631A1 Telephone is an illuminated button set arranged for originating, or answering and holding calls on up to 29 central office trunks, PBX trunks, and tielines associated with 10A, 10A1, and 16A relay equipment.

2.02 The 631A1 telephone can accommodate up to five 6 button key units. However, the set is initially furnished with one 599A key unit (1 red hold key and 5 pick up keys) and two 598A key units (6 pick up keys). 105 apparatus blanks fill the remaining two positions. The apparatus blank gives the appearance of a key unit (see Fig. 3). As additional key units are required the 105 apparatus blank is replaced by a 598A key unit.

2.03 The pick up keys are mechanically interlocked within a key unit so that any key, upon being depressed, will release any operated key within that unit. A latch bar mechanism releases any operated pick up key on other key units, but does not prevent simultaneous operation of keys in different key units.

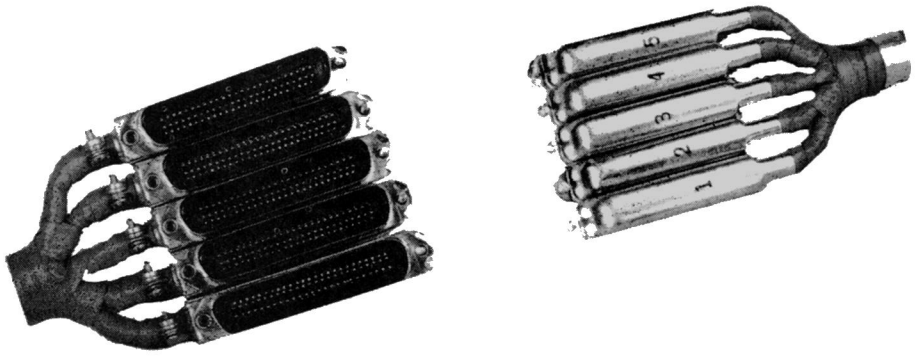


Fig. 2. Mounting and Running Cord Connectors.

2.04 To prevent the possible connection of more than one line to the handset, each key unit is equipped with a "chaining switch". When a key is depressed, the chaining switch operates, disconnecting all succeeding key units.

3. INSTALLATION

3.01 The 631A1 set employs a multicontact plug and jack system to connect the instrument mounting cord to the running cable (See Fig. 2.)

3.02 The eight foot mounting cord terminates in the set on a cord frame. This frame is made up of five 50 contact plugs which connect to key unit receptacles.

3.03 The running cable is a 100 pair cable. One end is equipped with five 50 contact receptacles. The other end may be connected directly to an intermediate bridging terminal. The running cable is available in 50 and 100 foot lengths.

3.04 After the mounting and running cord connectors have been assembled, they may be housed in a 105 apparatus box or other suitable enclosure.

3.05 When it is necessary to replace a 105 apparatus blank with a 598 A key unit, the following method is recommended:

Note - When installing a new key unit, remove the latch bar spring from the end of the unit.

(A) Remove the face plates and plastic housing.

(B) Loosen the apparatus blank mounting screw. (See Fig. 3.)

(C) Remove apparatus blank.

(D) Hold key unit by both ends, and lower the upper end into the key well.

(E) Slide key unit toward rear of well, until lower end clears the mounting frame and goes into key well.

(F) Position key unit to engage latch bar. Push firmly into place to connect plug and receptacle.

(G) Tighten key unit mounting screws (see Fig. 3) and replace plastic housing and face plates.

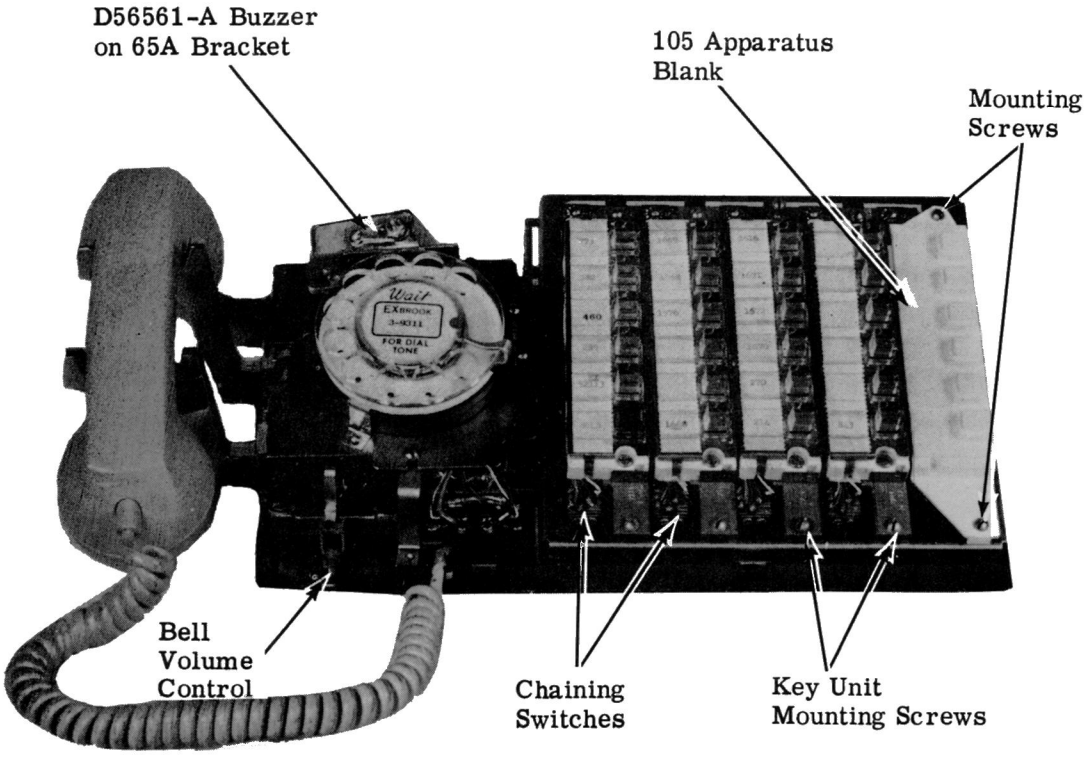


Fig. 3. 631A1 Telephone with Housing Removed.

3.06 Block all unused buttons with key stop bushings.

3.07 The standard ringer circuit used in the 631A1 set may be connected to any line, or to a common signaling circuit. The volume of the bell may be adjusted by means of the bell volume control. See Fig. 3.

3.08 When a common signaling circuit is used, a buzzer may be substituted for the ringer. The buzzer is fastened on a 65A bracket and mounted as shown in Fig. 3.

4. MODIFICATIONS

4.01 The 631A1 set is wired for use with 10A1 (1A1) relay equipment. However, using Table A, the set may be modified for use with 10A (1A), or a combination of both 10A1 and 10A relay equipment.

4.02 When both types of relay equipment will be used with this telephone, the lines associated with 10A1 equipment must appear on the first key units, and those associated with 10A equipment on the last key units. Both types of equipment cannot be connected to the same key unit.

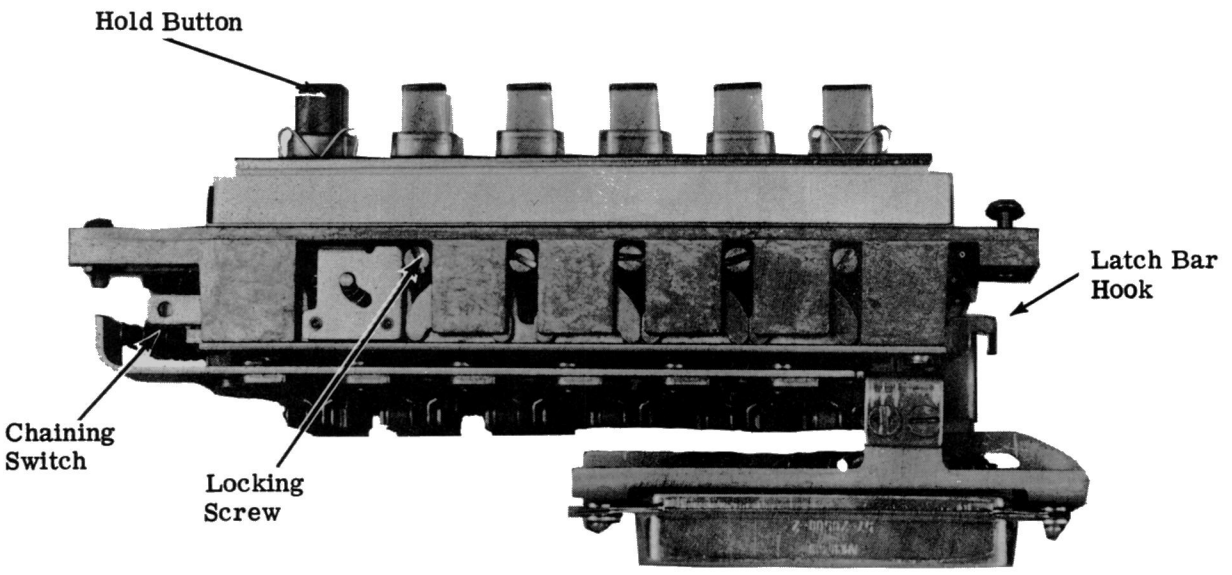


Fig. 4. - 599A Key (598A Similar)

4.03 All line pickup keys may be changed to non-locking signal keys by removing the locking screw from the plunger of the key. (See Fig. 4.)

4.04 Circuit and wiring information is shown in Figures 5, 6, and 7. Fig. 5 shows a schematic of the 631A1 Telephone Circuit. Fig. 6 shows a schematic of the 599A key unit. Fig. 7 shows a schematic of the 598A key unit. Table A shows the wiring changes necessary for modifying the 631A set for use with 10A (1A) relay equipment. Table B shows the wiring changes necessary when converting pick up keys to signal keys.

5. FINAL TESTS

5.01 Before leaving the customer's premises check every telephone for:

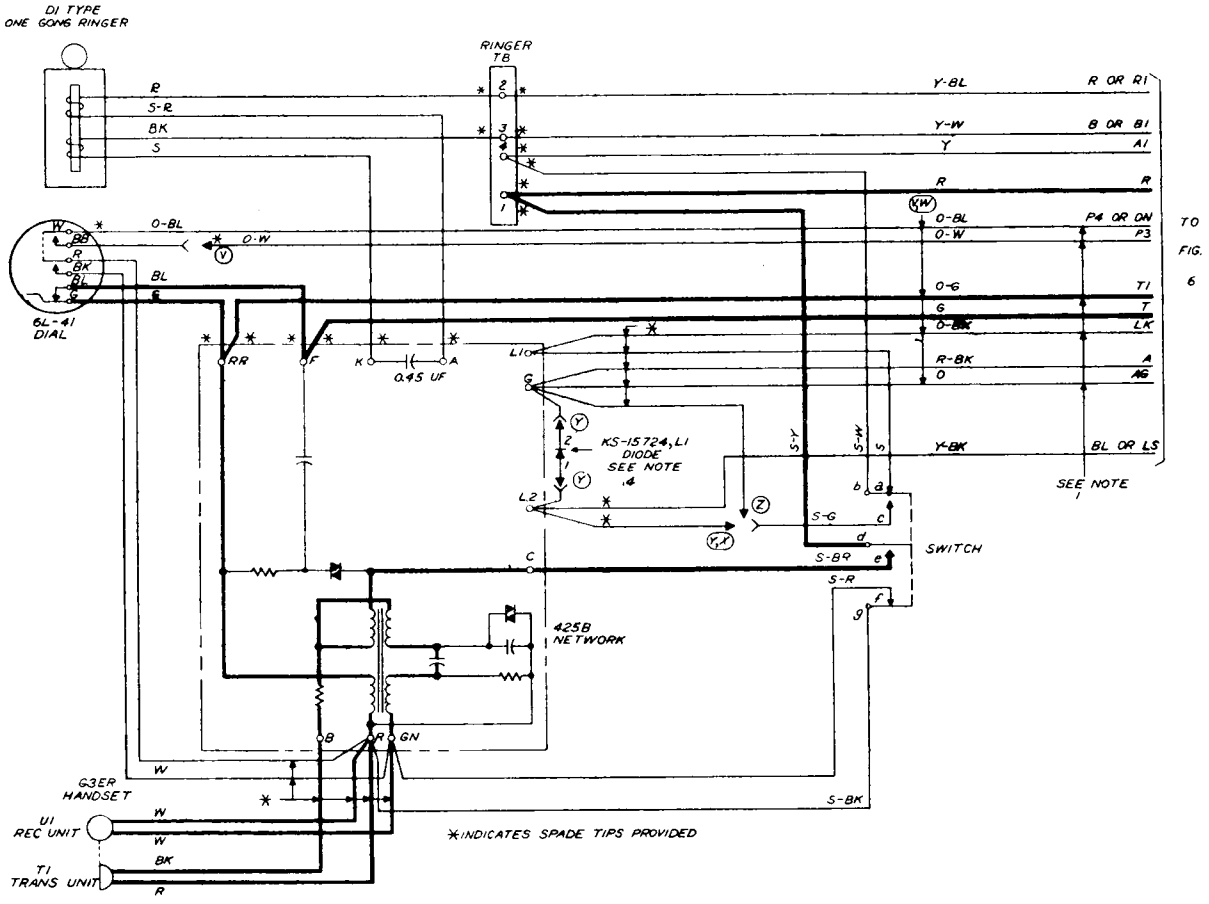
(A) Dial card and key designation in place and correct.

(B) Lights and signals operating properly.

(C) Holding on each line.

(D) Proper dial operation by originating a call.

5.02 Make sure the customer knows the proper operation of the set.



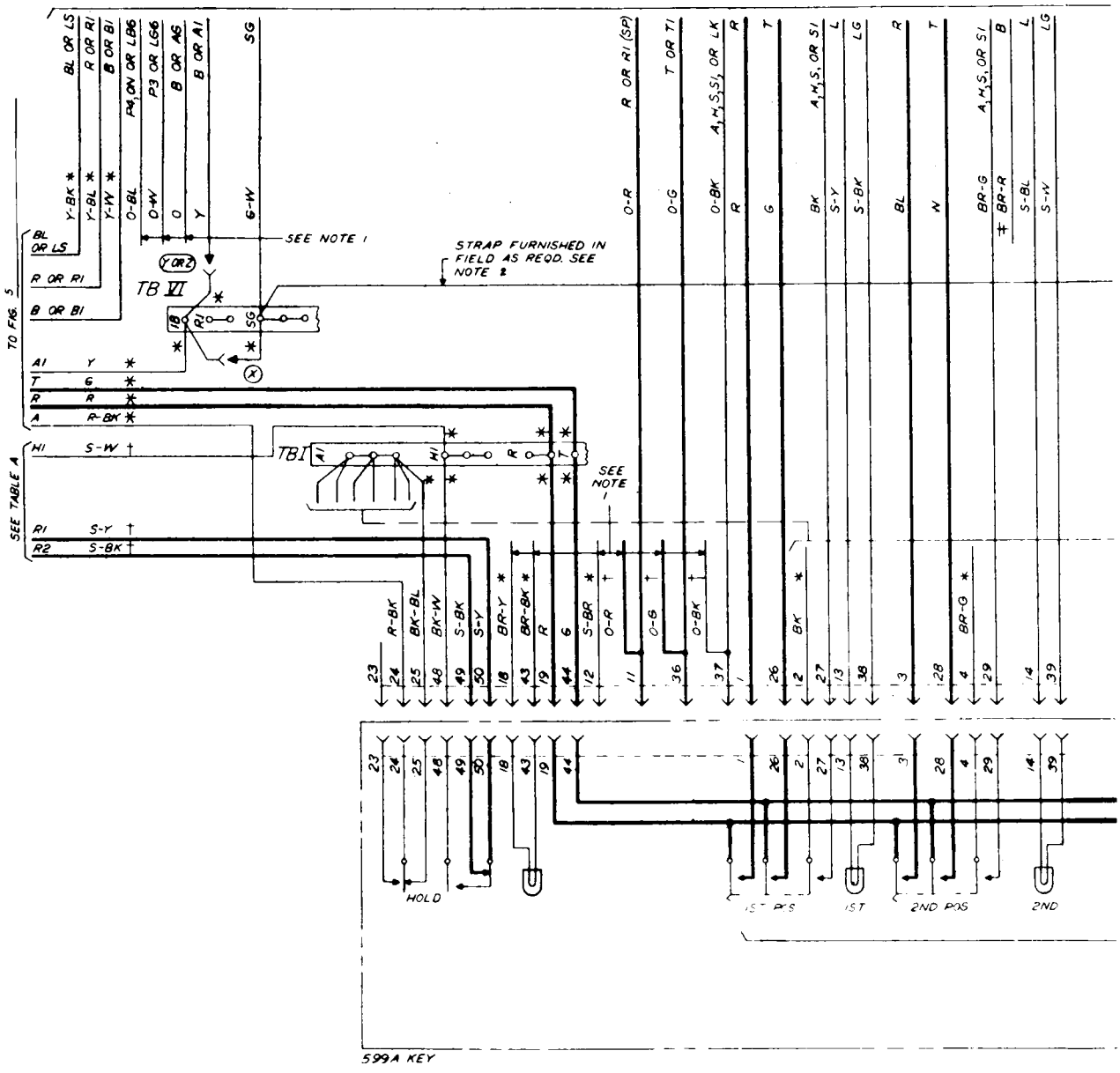
Circuit Notes:

1. Sets will be furnished with indicated leads spade tipped, taped and stored when hold key is required. When the 599A key unit is replaced by a 598A key unit (no hold key) the leads should be terminated as follows:

   O-R Remains stored
   O-G Remains stored
   O-BK Remains stored
   O- Remains stored
   O-BL and BR-Y to same unused terminal
   O-W and BR-BK to same unused terminal
   S-BR to terminal A1 of terminal strip (TB I)

4. The diode must be connected so there is no possibility of it touching the housing of the 425B network.

Fig. 5. 631A1 Telephone Circuit.



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O-BL and BR-Y to same unused terminal

O-W and BR-BK to same unused terminal

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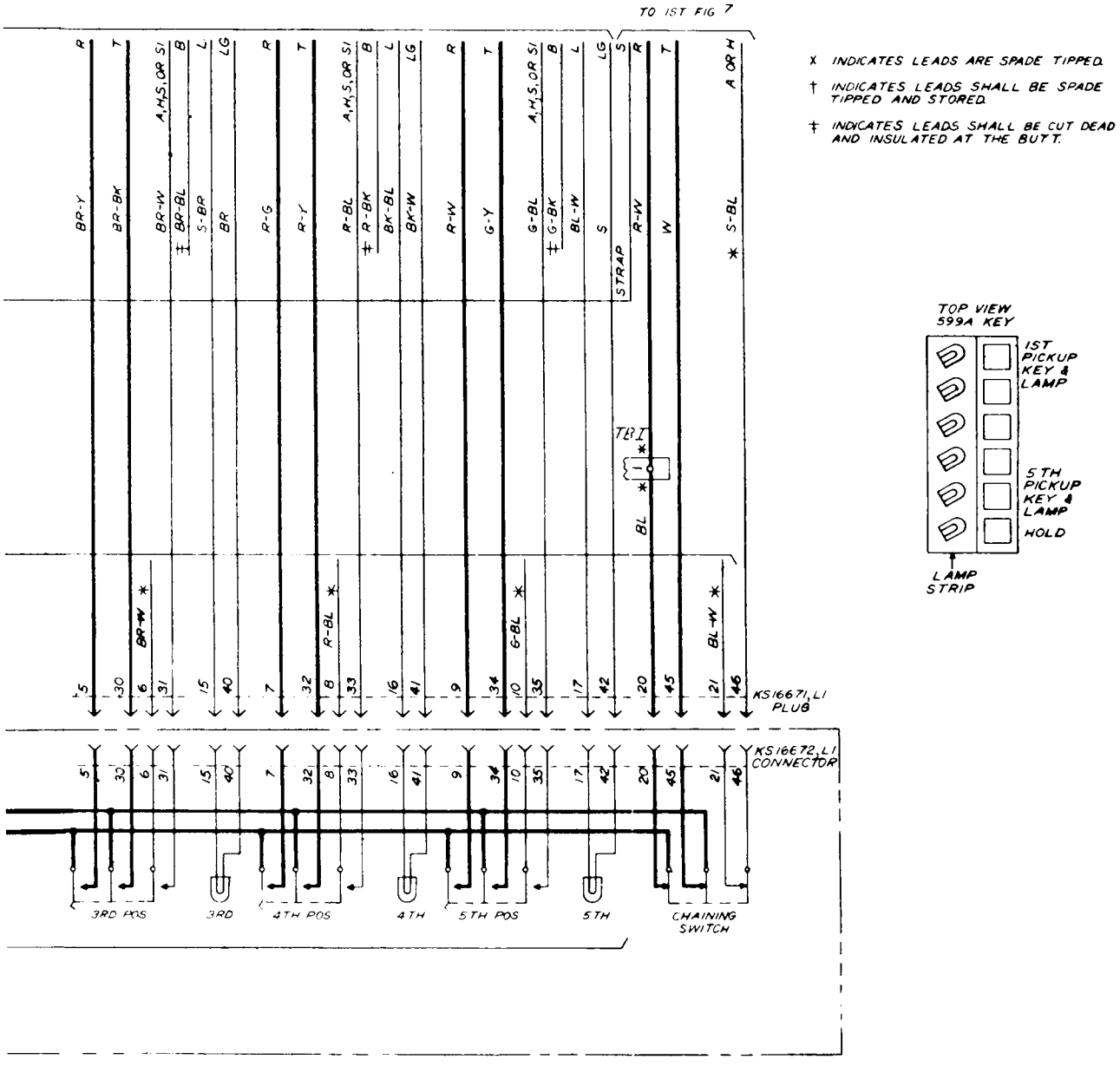
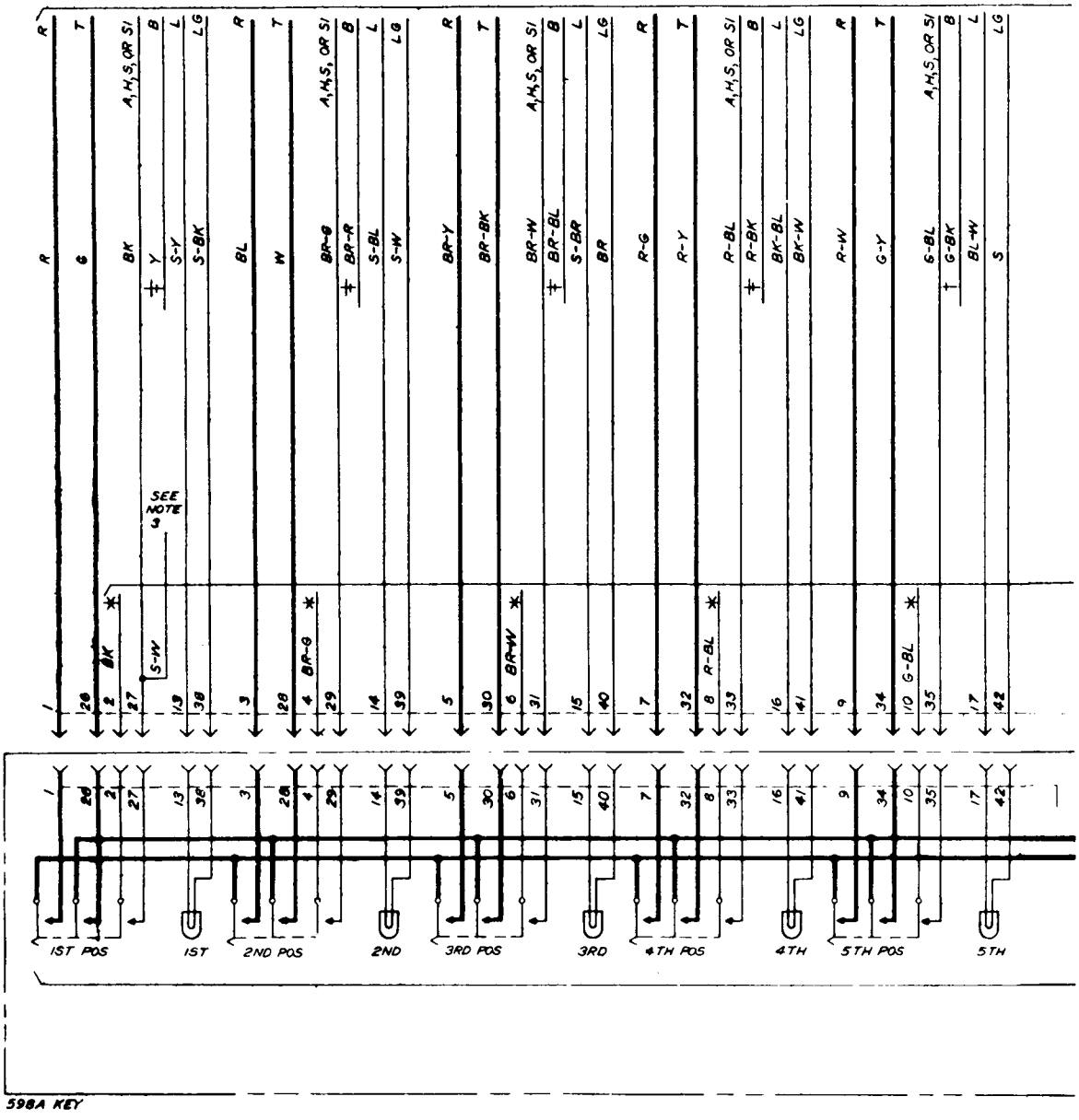


2. When signaling keys are to be provided on any supplementary key unit, the spade leads associated with pickup keys to be used as signaling keys shall be connected to the "S" terminal associated with the key unit involved. These "S" terminals shall be strapped to terminal "SG" of terminal strip (TB VI).

Fig. 6. 599A Key.



Circuit Notes:

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3. S-W lead is connected to terminal 27 of the fifth plug in the set. The free end is spade tipped, taped and stored.

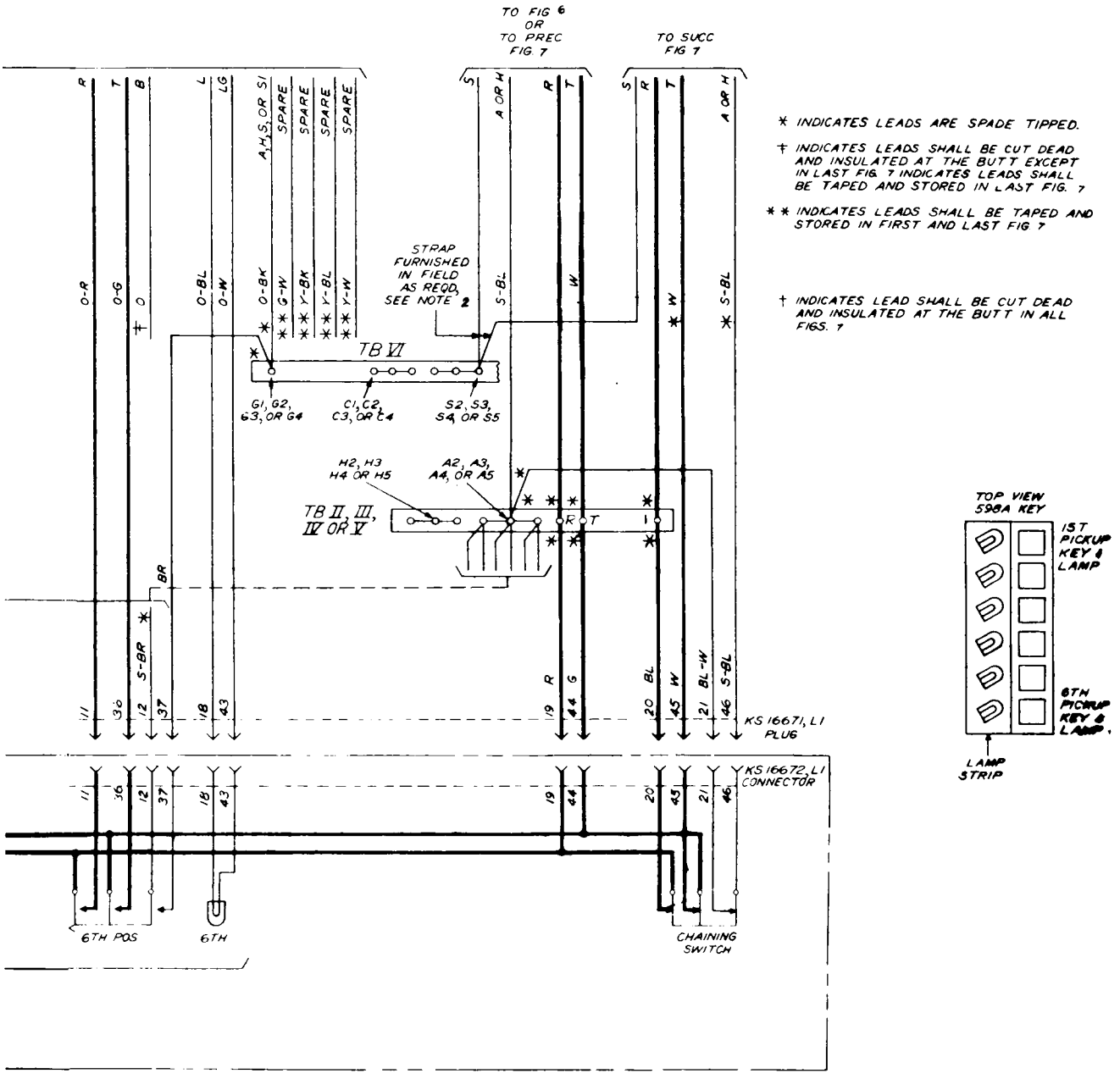

Fig. 7. 598A Key.

NOS. 1A1 AND 1A SYSTEM CONVERSION - STATION BUSY LAMP CONNECTIONS
CONNECTION OF HOLD KEY AND SWITCH LEADS.

KEY TELEPHONE SYSTEM CENTRAL OFFICE OR PBX LINE FEATURE	SWITCH, HOLD KEY AND CHAINING SWITCH LEADS												
	HOLD KEY					CHAINING SWITCH					SWITCH		
	BK-BL	BK-W	S-W	S-Y	S-BK	BL-W 1ST KEY	BL-W 2ND KEY	BL-W 3RD KEY	BL-W 4TH KEY	BL-W 5TH KEY	R ◊	Y ◊	S-G
NO. 1A1 ONLY (AS FURNISHED BY SHOP)	A1 (I)	H1 (I)	†	†	†	A1 (I)	A2 (II)	A3 (III)	A4 (IV)	A5 (V)	R (I)	1B (VI)	*
FIRST KEY UNIT NO. 1A1; REMAINING KEY UNITS NO. 1A	A1 (I)	H1 (I)	†	1 (I)	R (II)	H1 (I)	A2 (II)	A3 (III)	A4 (IV)	A5 (V)	R (I)	1B (VI)	*
FIRST & SECOND KEY UNITS NO. 1A1; REMAINING KEY UNITS NO. 1A	A1 (I)	H1 (I)	H2 (II)	1 (II)	R (III)	A1 (I)	H2 (II)	A3 (III)	A4 (IV)	A5 (V)	R (I)	1B (VI)	*
FIRST, SECOND & THIRD KEY UNITS NO. 1A1; REMAINING KEY UNITS 1A	A1 (I)	H1 (I)	H3 (III)	1 (III)	R (IV)	A1 (I)	A2 (II)	H3 (III)	A4 (IV)	A5 (V)	R (I)	1B (VI)	*
FIRST THRU FOURTH KEY UNITS NO. 1A1; FIFTH KEY UNIT NO. 1A	A1 (I)	H1 (I)	H4 (IV)	1 (IV)	R (V)	A1 (I)	A2 (II)	A3 (III)	H4 (IV)	A5 (V)	R (I)	1B (VI)	*
NO. 1A ONLY	H1 (I)	A1 (I)	†	R1 (VI)	R (I)	A1 (I)	A2 (II)	A3 (III)	A4 (IV)	A5 (V)	R1 (VI)	SG (VI)	L2

* S-G LEAD CONNECTS: TO TERMINAL G OF NETWORK WITH NO CONNECTION TO STATION BUSY LAMP CIRCUIT OR TO TERMINAL L2 OF NETWORK WHEN STATION BUSY LAMP CIRCUIT IS USED.
◊ R LEAD CONNECTS TO S-Y SWITCH LEAD AT TERMINAL 1 OF RINGER TERMINAL STRIP.
Y LEAD CONNECTS TO S-W SWITCH LEAD AT TERMINAL 4 OF RINGER TERMINAL STRIP.
( )ROMAN NUMERALS ENCLOSED IN PARENTHESES INDICATE TERMINAL STRIP DESIGNATIONS.
† INDICATES LEAD SHALL BE SPADE TIPPED, TAPED AND STORED.

TABLE A

PICKUP - SIGNALING CONVERSION OF SUPPLEMENTARY KEY UNIT
CONVERT KEYS FROM LOCKING TO NONLOCKING OR VICE VERSA

NO. OF PICKUP KEYS	NO. OF SIG KEYS CONVERTED FROM PICKUP KEYS		NO. OF PRIVATE & INTERCOM LINES WITH COM SIG KEYS	KEY LEADS & TERMS. OF KEY UNIT OR UNITS INVOLVED						
	599A ORIG KEY	599A SUPL KEY		BK	BR-G	BR-W	R-BL	G-BL	S-BR SUPL KEY ONLY	BR SUPL KEY ONLY
6	-	-	-	A	A	A	A	A	A	G
5	-	1	-	A	A	A	A	A	S	G
4	1	2	-	A	A	A	A	S	S	G
3	2	3	-	A	A	A	S	S	S	G
2	3	4	-	A	A	S	S	S	S	G
1	4	5	-	A	S	S	S	S	S	G
-		6	-	S	S	S	S	S	S	G
5		1	2	A	A	A	C	C	C	S
5		1	3	A	A	C	C	C	C	S
5		1	4	A	C	C	C	C	C	S
5		1	5	C	C	C	C	C	C	S

TABLE B
Pickup to Signal Conversion