S-C 1810 AND 2810 SERIES, WALL, ROTARY-DIAL AND TONE-DIAL®, 11-LINE TELEPHONES

CONNECTIONS AND MAINTENANCE

HT1755

Figure 1. *S-C 1810-11B11 Series, Wall, Rotary Dial, 11-Line Telephone*

HT1756

Figure 2. *S-C 2810-11B11 Series, Wall, TONE-DIAL, 11-Line Telephone*

CONTENTS

1. INTRODUCTION

1.01 This section provides installation and maintenance information for the S-C 1810 and 2810 series wall, rotary-dial and TONE-DIAL, 11-line telephones. These telephones are designed for use with 1A2 or similar key telephone systems. Figures 1 and 2 show models of the S-C 1810 and 2810, 11-line telephones.

2. RELATED INFORMATION

2.01 For telephone parts information, refer to the Telephones and Telephone Components Repair Parts Catalog (T-917). For special accessories, refer to the Telephones and Components Catalog (T-916). For handset repair and replacement parts, refer to section 89-903-70.

2.02 A Sales and Instructional Literature Index, which lists the latest publications available from Stromberg-Carlson Corporation, can be obtained from your Stromberg-Carlson sales representative, or from Publications Services, Stromberg-Carlson Corporation, 100 Carlson Road, Rochester, New York 14603.

3. DESCRIPTION AND IDENTIFICATION

3.01 Description.

a. The S-C 1810 and 2810 series wall, rotary-dial and TONE-DIAL telephones are equipped with 12 pushbutton keys. Normally, operation of 11 of these pushbuttons (white) connects the telephone to 11 selected lines in a key telephone system. The remaining pushbutton is designated HOLD. The HOLD pushbutton (red) is used to provide a hold condition, which permits the telephone user to have lines on-hold while conversing on another line.

b. Both rotary- and pushbutton-dial models are available with or without a line cord. Wall models with a line cord use a 50-pair cable which is plug-ended in a type 57 connector.

c. Incoming calls are indicated by visual or visual and audible signals.

d. Lamps in the pushbuttons light to indicate line-hold and line-busy conditions.

e. A polarity guard must be installed on all pushbutton-dial telephones that are used on telephone lines subject to reversed polarity before dialing is completed (that is, additional station signaling (dialing) after central-office switching is completed, computer accessing from step-by-step office or PABXs, etc.). Polarity guard installation is described in paragraph 4.06.

3.02   Identification.

The models, stock numbers, and features of the S-C 1810 and 2810 series wall, rotary-dial and TONE-DIAL telephones, are listed below:

S-C MODEL NO.	STOCK NO.*	DESCRIPTION**
1810-11B5(LR)00	703071-7XX	Rotary-dial, one key strip, plug-ended line cord.
1810-11B11(LR)00	703071-8XX	Rotary-dial, two key strips, plug-ended line cord.
1810-11L5(LR)00	703071-5XX	Rotary-dial, one key strip, less line cord.
1810-11L11(LR)00	703071-6XX	Rotary-dial, two key strips, less line cord.
2810-11B5(LR)00	703072-1XX	TONE-DIAL, one key strip, plug-ended line cord.
2810-11B11(LR)00	703072-2XX	TONE-DIAL, two key strips, plug-ended line cord.
2810-11L5(LR)00	703071-9XX	TONE-DIAL, one key strip, less line cord.
2810-11L11(LR)00	703072-0XX	TONE-DIAL, two key strips, less line cord.

* The XX in the stock number represents color. Refer to the Telephones and Components Catalog (T-916) for current color information.

** All telephones listed are wall models with plug-in key strips, and less ringer.

3.03   Application.

The S-C 1810 and 2810 series telephones are used with 1A2 or similar key systems.

3.04   Additional Features.

NOTE. For stock number of equipment for the following additional features, available as optional equipment, refer to the Telephones and Components Catalog (T-916).

a. Typical audible signal packages or parts.

　　1. S-C series 20, straight-line ringer package.

　　2. S-C series 20, 60-Hz ringer package.

　　3. S-C No. 95 tone ringer package.

　　4. S-C 687(T) external tone ringer package.

　　5. S-C 687(WA) external straight-line ringer package.

　　6. S-C 687(NJ) external 60-Hz ringer package without volume control.

　　7. S-C 687(WJ) external 60-Hz ringer package with volume control.

　　8. S-C No. Q-20 buzzer (18 Vac) or Q-20HV (105 Vac).

b. Miscellaneous special feature packages or parts.

　　1. S-C 827 diode for 24-Vdc busy-station number display.

　　2. Diode assembly package for 20-Vac busy-station number display.

　　3. Polarity-guard package assembly.

　　4. S-C HRA-500A handset with receiver-amplifier in all standard colors.

4.   INSTALLATION AND CONNECTIONS

4.01   Precautions.

When doing work on the S-C 1810 and 2810 series wall, 11-line telephones, take the following precautions:

a. When removing or replacing housing, first remove bezel with facemat and faceplate (par. 4.02).

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b. When removing or replacing housing, avoid bending parts or disarranging wiring.

c. Spade-tips and skinned wires must make contact only with their designated terminals. Electrical contact with the metal base, network tabs, or other components could result in malfunctions in the operation of the telephone and possible energizing of dial fingerstop with line or ringing voltages.

d. Ensure that all wiring is dressed away from ringer components and other moving parts of the telephone.

e. Use electricians scissors or diagonal cutting pliers to remove insulating tubing used on spare leads to avoid breaking leads or pulling spade-tips from the leads.

f. When using a busy-station number display, a diode or diode package assembly must be installed in each telephone (par. 4.07).

4.02   Housing Removal and Replacement.

a. To remove housing, proceed as follows:

1. Remove bezel, facemat and faceplate by lifting the bezel out from bottom of housing, then lift away from telephone with an upward motion. Use care in removing bezel to avoid marring the housing.

2. Loosen two housing screws located at bottom of telephone.

3. Lift housing out and up, disengaging housing clip from base at top of telephone.

b. To replace housing, proceed as follows:

1. Hook housing clip into socket located at top of telephone base.

2. Slide housing in and down over telephone, until housing screws enter slots at bottom of base. Tighten screws.

3. Insert bezel clips in slots at top of housing; swing bezel, facemat, and faceplate downward to engage bottom clips on bezel into bottom housing slots.

4. If bezel does not seat properly or is loose, check clips on bezel and reform as necessary.

4.03   Mounting.

The S-C 1810 and 2810 series, wall rotary-dial and TONE-DIAL, 11-line telephones can be mounted directly on a wall or on a standard electrical wall outlet box. Telephone mounting hole locations are shown in figure 3.

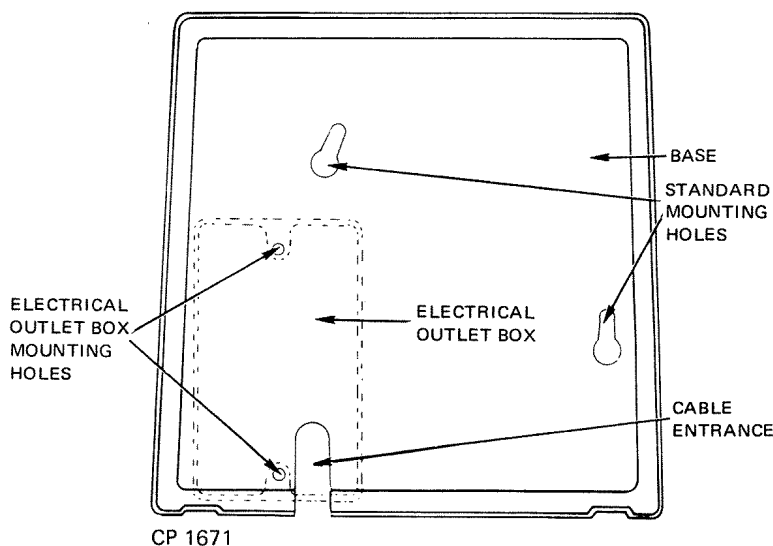a. To mount telephone directly on wall, proceed as follows:

CP 1671

Figure 3.   Mounting Holes for S-C 1800 and 2810 Series Telephones

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1. Remove housing (par. 4.02a).

2. Using telephone base plate as a template, mark position of mounting holes on wall (fig. 3).

3. Insert proper type of mounting screws part way into the wall. (Screws not provided.)

4. Place telephone base over screws, align telephone and tighten screws.

5. Replace housing (par. 4.02b).

b. To mount telephone on electrical outlet box, proceed as follows:

1. Remove housing (par. 4.02a).

2. Using mounting holes shown in figure 3, secure telephone base to electrical outlet. Normally, screws are provided with electrical box. If not, use round-head screws of proper thread size.

3. It is recommended that telephone also be secured to wall using at least one of the standard mounting holes in the base. (par. 4.03a).

4. Replace housing (par. 4.02b).

4.04   Telephone Line Connections.
The telephone line connections will vary slightly depending on the number of lines, number of key strips, and features desired. Also, read the instructions accompanying the key system.

a. Telephones without line cord.

1. Remove housing (par. 4.02a).

2. Bring line cord cable into telephone through cable entrance (fig. 3).

3. Remove three screws securing top terminal board. Be careful not to lose related terminal board spacers and lockwashers. Move terminal board to one side.

4. Connect line cord leads in accordance with figure FO-1 for applicable model telephone.

5. Dress all wires so that they do not interfere with moving parts of telephone.

6. Replace top terminal board using screws, spacers, and lockwashers removed in 3 above.

7. Connect remaining leads as required to correct terminal in accordance with figure FO-1.

8. Tape and store unused leads.

9. Replace housing (par. 4.02b).

b. Telephones with line cord.
Telephones equipped with line cord are plug-ended and must be terminated into type 57 connector-equipped cables, adapters, or terminal blocks.

4.05   Ringer and Buzzer Installation.

a. Mount ringers and buzzers as shown in the following figures:

NOTE. If necessary, remove dial to provide easy access to ringer and buzzer mounting points.

1. S-C series 20 straight-line ringer (fig. 4).
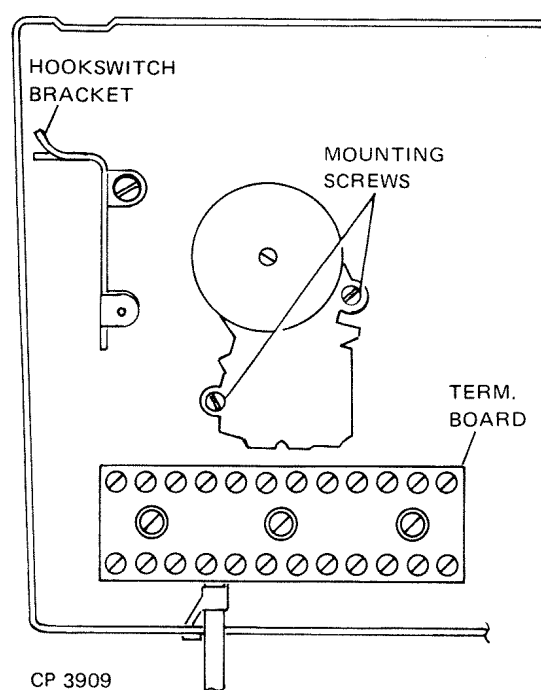

CP 3909

Figure 4.   S-C Series 20 Straight-Line Ringer Mounting

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2. S-C No. 95 tone ringer (fig. 5).

3. S-C Q-20 buzzer can be mounted at any convenient point within telephone.

b. Connections are made as follows:

NOTE. The S-C 1810 and 2810 series, 11-line telephones accommodate 1 ringer only.

1. The S-C series 20 straight-line ringer leads are normally wired to telephone terminal-board terminals 26 (red) and 47 (black). If it is required to block dc from the ringer, connect red wire from the ringer to network terminal K and strap terminals 26 to network terminal A.

2. S-C No. 95 tone ringer leads (green and red) are connected to terminal-board terminals 26 and 47 with the following options:

a) For ground-connected ringing or insulated-generator ringing, remove and store the black, spade-tipped strap of tone ringer. Replace the 560-ohm resistor with an S-C 827 diode (stock No. 202852-138) (insulate from all metallic parts).

HOOKSWITCH BRACKET

No. 2-32 (SELF-TAPPING) SCREWS INSERTED FROM BENEATH TELEPHONE

TERM. BOARD

CP 3910

Figure 5.   S-C No. 95 Tone Ringer Mounting

b) For battery connected ringing, install as received. When loop is heavily loaded, move red lead of tone ringer from terminal A to terminal B. If results are not satisfactory, move red lead back to terminal A and connect black lead to terminal B.

c) To change tone of ringer, connect a 0.0047-uF capacitor (stock No. 202864-345) between tone ringer terminals M and N.

NOTE. Most key system power supply ringing outputs are limited to a load of two high-impedance ringers with capacitors or eight high-impedance ringers without capacitors.

3. Stromberg-Carlson provides an S-C Q-20 buzzer for intercom. The S-C Q-20 buzzer operates from a source of 8 to 24 Vac. Buzzer leads are connected to terminal-board terminals 25 and 48.

4.06   Polarity Guard.
A polarity guard circuit is required for pushbutton-dial telephones generating dual-tone multifrequency (DTMF) signaling beyond a PBX. The polarity guard circuit prevents the tone oscillator from being disabled when reverse supervision occurs on tip and ring leads to the telephone.

a. Mount polarity guard assembly as shown in figure 6 and secure with screw provided.

b. Connect polarity guard as follows:

1. Remove slate-white lead from network terminal G and connect it to polarity guard terminal T.

2. Connect green polarity guard lead to network terminal G.

3. Remove blue lead from network terminal C and connect it to polarity guard terminal S.

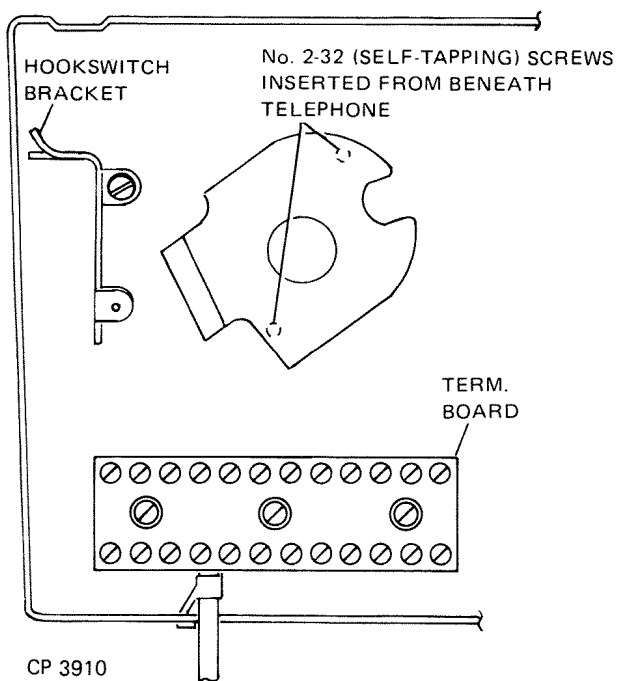4. Connect white polarity guard lead to network terminal C.

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No. 6-32 P.H.I.M. SCREW

S-C 425E-1 NETWORK

GRN

G   S

POLARITY GUARD ASSEMBLY

T   W

WHT

NETWORK
BRACKET

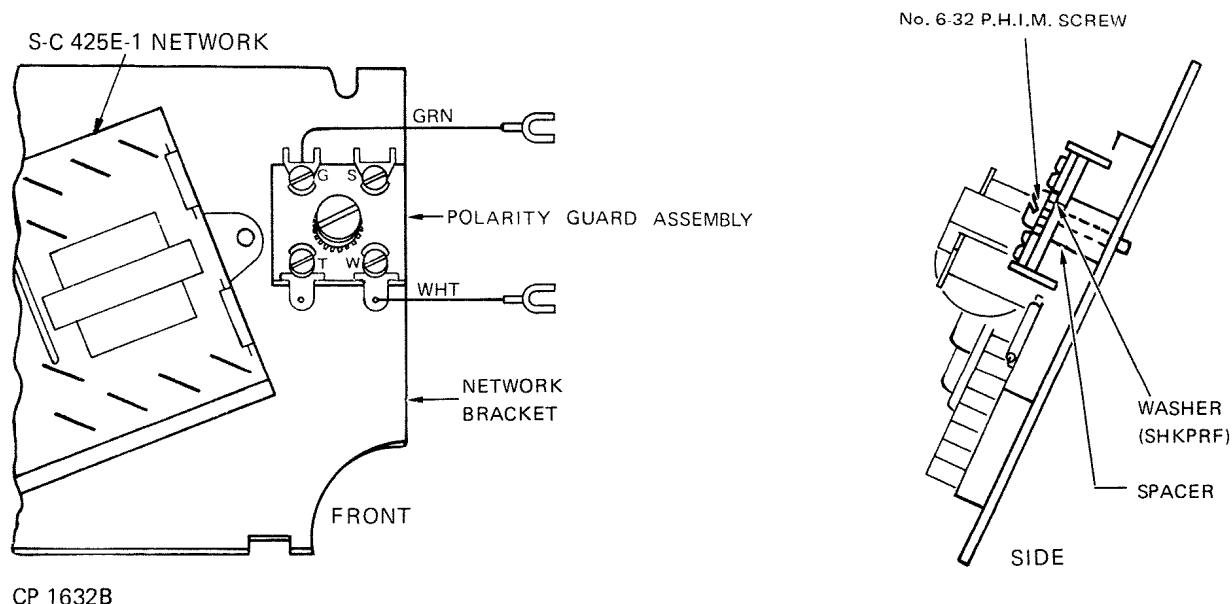FRONT

CP 1632B

WASHER
(SHKPRF)

SPACER

SIDE

Figure 6.   Polarity Guard Mounting

4.07   Busy-Station Number Display.

To use the telephone with a busy-station number display (BSND), a diode must be connected in each telephone as described below:

a. 24-Volt Lamps.

When BSND uses 24-volt lamps and power supply is 24 Vdc, make connections as follows:

1. Remove housing (par. 4.02a).

2. Remove slate-green hookswitch lead from terminal-board terminal 24 and reconnect it to terminal 1.

3. Connect the cathode (−) of an S-C 827 (1N1694) diode to terminal-board terminal 24. Connect anode (+) to terminal 1.

4. Connect yellow-brown line cord lead from terminal-board terminal 1 (connector pin number 44) to assigned BL lead of BSND.

5. Replace housing (par. 4.02b).

b. 10-Volt Lamps.

When the BSND uses 10-volt lamps and the power supply is 18 Vac, diode package assembly 206286-451 is required. Make connections as follows:

1. Remove housing (par. 4.02a).

2. Connect slate lead of diode assembly to terminal-board terminal 1.

3. Connect black lead of diode assembly to terminal-board terminal 24.

4. Connect red lead of diode assembly to network terminal L2.

5. Remove red key lead from terminal-board terminal 24 and reconnect it to network terminal L2.

6. Secure diode assembly in telephone to prevent interference with moving parts or shorting to metal parts.

7. Connect yellow-brown line cord lead (BL) from terminal-board terminal 1 (connector pin number 44) to assigned BL lead of the BSND.

8. Replace housing (par. 4.02b).

4.08   Line Key to Signal Key Conversion.

a. Remove housing (par. 4.02a).

b. Remove key assembly (par. 5.03).

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c. Remove locking screw from shaft of key to be converted.

d. Make connections as shown in table 1.

e. If more than one key position is required for signaling, multiple the position leads on terminal-board terminal 52.

NOTE. Store the key locking screw on the telephone base using adhesive tape. This screw is special and is necessary to restore key to normal line use.

f. Replace key assembly (par. 5.03).

g. Replace housing (par. 4.02b).

4.09 Pushbutton Transfer.

a. Order a transfer pushbutton package assembly (S-C 206290-551).

b. Remove housing (par. 4.02a).

c. Use instruction sheet stock number 300981-251, figure 1A or 1B as a template. (Instruction sheet is a part of package assembly.)

d. Place template on housing, perpendicular to face as shown in figure 7 for a telephone with one key assembly, or figure 8 for a telephone with two key assemblies.

e. Drill a pilot hole in housing and increase size of hole to a 0.343-inch diameter.

f. Mount switch assembly to network bracket with two screws provided in package assembly, as shown in figure 9.

g. Connect black lead of switch to network terminal L1.

h. Connect yellow lead of switch to network terminal L2.

i. Connect one end of a spare line cord conductor to network terminal L2. Connect other end of same spare line cord conductor to earth ground.

j. Replace housing (par. 4.02b).

4.10 All-Buttons-Released Intercom.

a. Remove housing (par. 4.02a).

b. Connect T, R, LG, and L leads to dial or manual intercom circuit as shown in figure FO-1.

Table 1. Key Position to Signaling Position Conversion Chart

KEY POSITION TO BE CONVERTED	LEAD COLOR	REMOVE FROM TERMINAL	CONNECT TO TERMINAL
1	White	51	52
2	Orange	51	52
3	Brown	50	52
4	Green	49	52
5	Slate	49	52
6	White	53	52
7	Orange	53	52
8	Brown	54	52
9	Black	54	52
10	Green	55	52
11	Slate	55	52
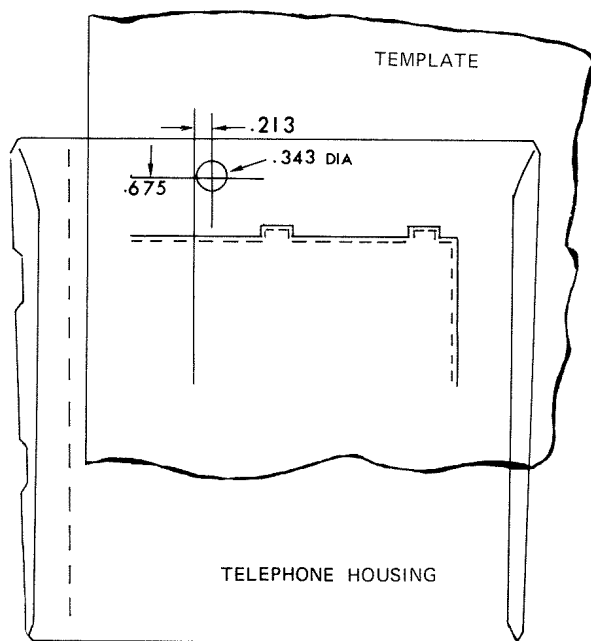
CP 1708

Figure 7. Locating Template on Housing Face
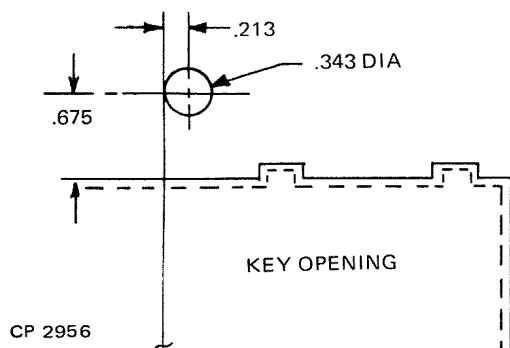
CP 2956

Figure 8. Template for Housing With Two Key Assemblies

CP 2957

Figure 9. Switch Assembly Mounting Instructions

c. If telephone has only one key strip (11B5 code), do not connect slate-yellow, yellow-slate, or yellow-brown leads in orange-white binder.

d. If telephone has two key strips (11B11 code), the blue-yellow, yellow-blue, and violet-slate line cord leads in blue-white binder must be disconnected from terminal-board terminals 13, 14, and 15.

e. Replace housing (par. 4.02b).

4.11   Speakerphone Connections (W.E. 3B and 4A Models).
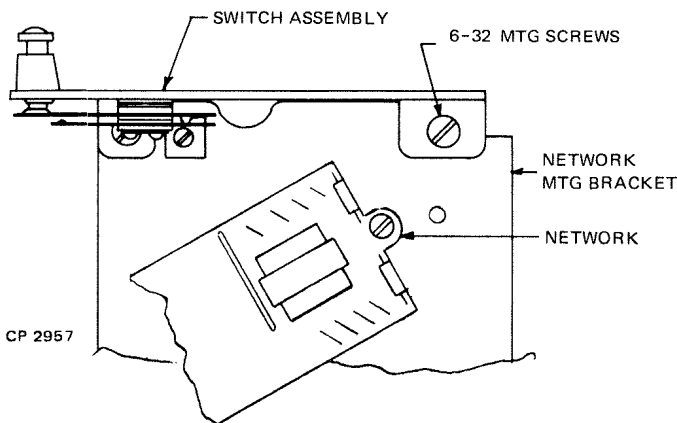
The S-C 1810 and 2810 series, wall, 11-line telephones can be used with W.E.-type speakerphones. Telephone models with special feature code 06 (example: 1810-11B11(LR)06) are equipped for use with speakerphones. In other models, it is necessary to order a speakerphone package assembly which provides the appropriate dial and instructions to adapt the telephone for use with a speakerphone. To arrange the telephone for use with a speakerphone, proceed as follows:

a. Remove housing (par. 4.02a).

b. Remove dial (par. 5.05).

c. Replace with an S-C 9-2H (rotary-dial) or S-C 35C3A (pushbutton-dial).

d. Connect dial leads as shown in table 2 for rotary-dial, or table 3 for pushbutton-dial. Figures 10 and 11 provide a wiring diagram of dial lead connections.

Table 2. S-C 9-2H Dial Connections for Use With W.E. Speakerphone

DIAL LEAD	*CONNECT TO TERMINAL*
Blue	Network RR
Green	Network F
White	Network R
White	Network GN
Yellow	*
Yellow	*

* Use D connector or spare terminal.

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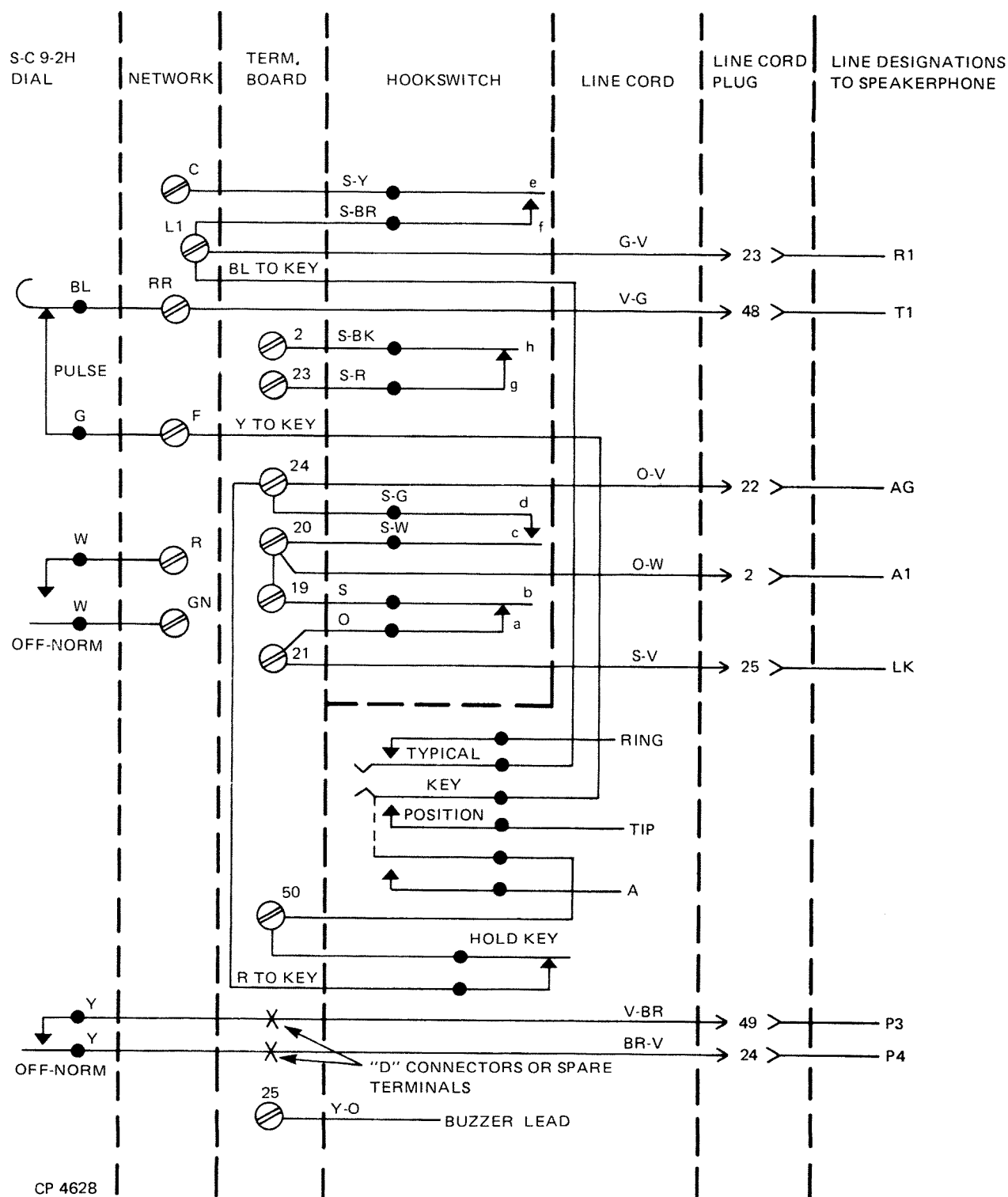
Figure 10. Speakerphone Connections for S-C 1810 Series, Wall Telephones

NOTE: Connections to speakerphone made by way of adapter cable or line cord leads.

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S-C 35C3A LEADS	NETWORK	TERM. BOARD	HOOKSWITCH	LINE CORD	LINE CORD PLUG	LEAD DESIGNATIONS TO SPEAKERPHONE

O —————— G ——————————————————— V-G ————> 48 > ————— T1

———————————————— O-V ————> 22 > ————— AG

24 S-G ————> d

S-W ————> c

20 O-W ————> 2 > ————— A1

19 S ————> b

L1 O ————> a

S-V ————> 25 > ————— LK

L2 Y TO KEY

G —————— G ——————— Y TO KEY

C S-BR ————> f

G-W —————— "D" CONN S-Y ————> e

O-BK —————— G-V ————> 23 > ————— R1

BL TO KEY

R W 2 S-BK ————> h

R-G —————— 23 S-R ————> g

W-BL —————— 22

RR RING

BK —————— TYPICAL

GN KEY

W —————— POSITION TIP

B A

BL —————— 50

4

R ——————

"D" CONN BR-V ————> 24 > ————— 1R

V —————— 21 V-BR ————> 49 > ————— 1T

25 Y-O BUZZER LEAD

CP 4629

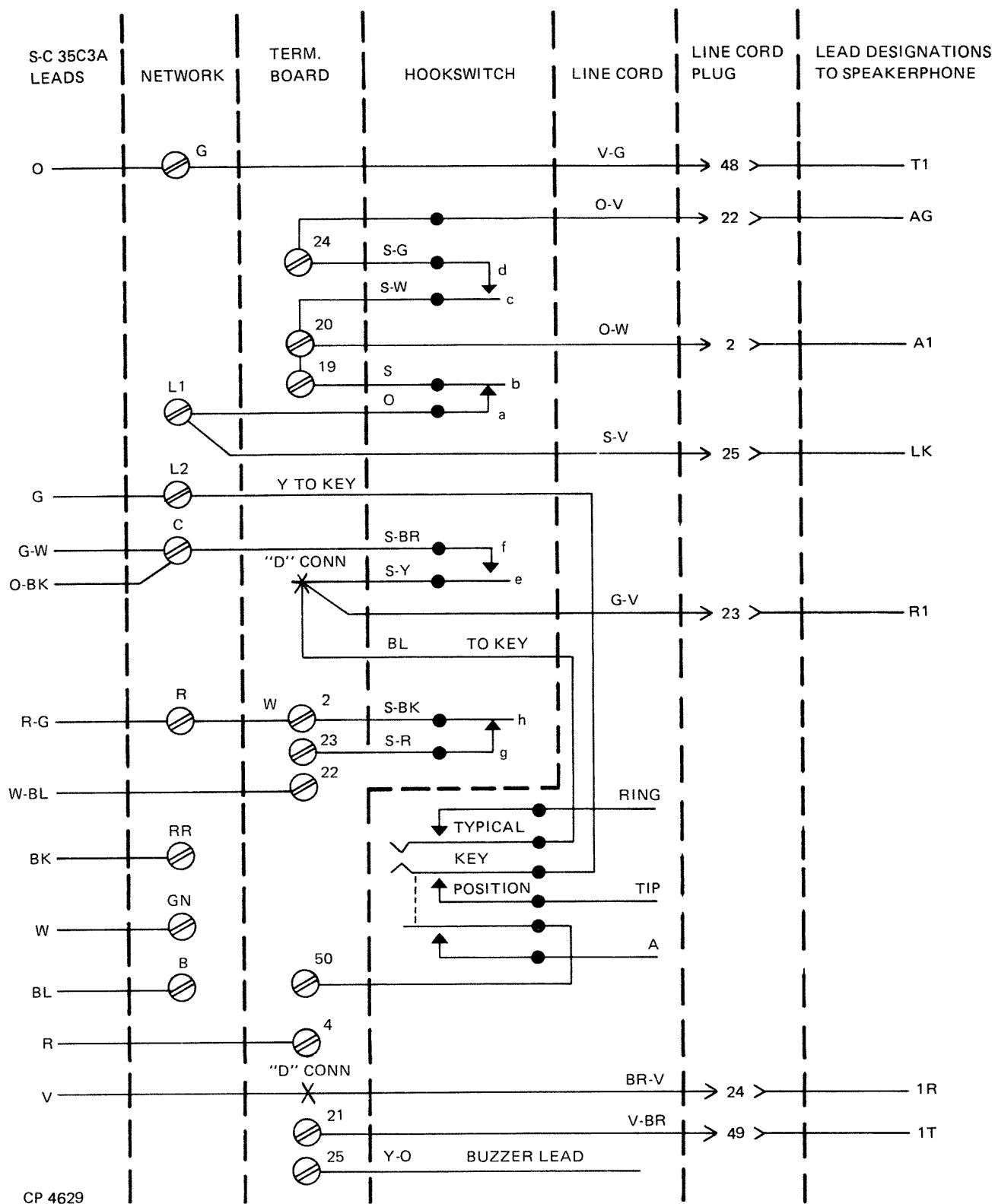NOTE: Connections to speakerphone made by way of adapter cable or line cord leads.

Figure 11. Speakerphone Connections for S-C 2810 Series, Wall Telephones

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**Table 3. S-C 35C3A Dial Connections for
Use With W.E. Speakerphone**

DIAL LEAD	CONNECT TO TERMINAL
Green	Network L2
Black	Network RR
Orange	Network G
Red-Green	Network R
White	Network GN
Green-White	Network C
Orange-Black	Network C
Blue	Network B
White-Blue	Term. Bd 22
Red	Term. Bd 4
*Violet	Slate Lead (Adapter Cable) or Brown-Violet Lead (Line Cord)

*Use D connector or spare terminal.

e. Connect telephone to speakerphone as shown in table 4 (rotary-dial) or table 5 (pushbutton-dial). Figures 10 and 11 provide a wiring diagram of telephone-to-speakerphone connections.

f. Replace housing (par. 4.02b).

4.12   Make-Busy Feature, Series 5R PAX.

a. Remove housing (par. 4.02a).

b. Move black lead from terminal-board terminal 50 to 52.

NOTE. If black lead is not long enough to be moved to terminal 52, add a wire lead and use a D connector. If terminal 52 is not available, move black lead to any spare terminal and use a spare lead to connect the spare terminal to the PAX make-busy terminals. For instance, figure 12 shows spare terminal 20 and spare B lead being used in place of terminal 52 and lead SG.

Table 4. W.E. 3B and 4A Speakerphone and Telephone Connections for S-C 1810 Series Telephones

LEAD DESIGNATION AND COLOR		REMOVE FROM TERMINAL		CONNECT TO TERMINAL	
Key	Yellow	Network	L1	Network	F
Key	Blue	Network	C	Network	L1
Hookswitch	Slate	Term. Bd	21	Term. Bd	19
Buzzer	Yellow-Orange	Term. Bd	21	Term. Bd	25
Hookswitch	Slate-Yellow	Network	F	Network	C
SZ	Orange-Violet	Term. Bd	18	Term. Bd	24
**Line Cord:					
R1	Green-Violet			Network	L1
T1	Violet-Green			Network	RR
AG	Orange-Violet			Term. Bd	24
A1	Orange-White			Term. Bd	20
LK	Slate-Violet			Term. Bd	21
P3	Violet-Brown			Dial off-normal yellow lead*	
P4	Brown-Violet			Dial off-normal yellow lead*	

*Use D connector.
** Speakerphone designations.

Table 5. W.E. 3B and 4A Speakerphone and Telephone Connections for S-C 2810 Series Telephones

LEAD DESIGNATION AND COLOR		REMOVE FROM TERMINAL		CONNECT TO TERMINAL	
Hookswitch	Slate-Yellow	Network	G	*Key	Blue
Key	Blue	Network	C	*Hookswitch	Slate-Yellow
Key	Yellow	Network	L1	Network	L2
Hookswitch	Slate-Brown	Network	L1	Network	C
Hookswitch	Slate	Term. Bd	25	Term. Bd	19
Hookswitch	Orange	Term. Bd	25	Network	L1
Buzzer	Yellow-Orange	Term. Bd	21	Term. Bd	25
Terminal Board:					
Term. No. 2	White (Strap)	Network	GN	Network	R
SZ	Orange-Violet	Term. Bd	18	Term. Bd	24
**Line Cord:					
R1	Green-Violet			*Key	Blue
				*Hookswitch	Slate-Yellow
T1	Violet-Green			Network	G
AG	Orange-Violet			Term. Bd	24
A1	Orange-White			Term. Bd	20
LK	Slate-Violet			Network	L1
1T	Violet-Brown			Term. Bd	21
1R	Brown-Violet			*Dial	Violet-Orange

*Use D connector.
**Speakerphone designations.

c. Add an S-C 827 diode between terminal 50 and 52. (If a spare terminal was used instead of terminal 52, add a diode between terminal 50 and the spare terminal.) Note polarity of the diode as shown in figure 12.

d. Connect tip and ring of any key position (including hold position) to tip and ring, respectively, of series 5R PAX system.

e. Connect SG lead (or spare lead as shown in figure 12) to station make-busy terminal of the series 5R PAX.

f. When telephone is off-hook on the trunk, PAX station shows busy.

g. If two intercom lines are required on a telephone, the associated make-busy leads must be tied together at make-busy terminals in the series 5R PAX cabinet (fig. 12).

h. Replace housing (par. 4.02b).

5.   MAINTENANCE

NOTE. For S-C stock number of components required to maintain telephone instrument, refer to the Telephones and Telephone Components Repair Parts Catalog (T-917).

5.01   Network Assembly Replacement.

NOTE. The S-C 425E-1 network assembly is secured to the telephone chassis by a plastic collar. This collar (S-C stock No. 703030-956) has three molded retaining tabs to secure the network assembly. Be careful when removing and replacing network in collar to prevent damage to the retaining tabs.

a. Remove housing (par. 4.02a).

b. Remove spade-tipped leads from network terminals.

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TELEPHONE

SERIES 5R PAX
MAKE BUSY TERMINALS

STRAP IF TWO PAX LINES
ARE TERMINATED AT A
KEY TELEPHONE STATION.

W

ORN

51

BRN

R - BLK

50

*   BLK

GRN

49

S

S-C 202852-138
DIODE

"B" LEAD

20   S - W

CP 1714

SPARE TERMINAL (OR "D" CONNECTOR)
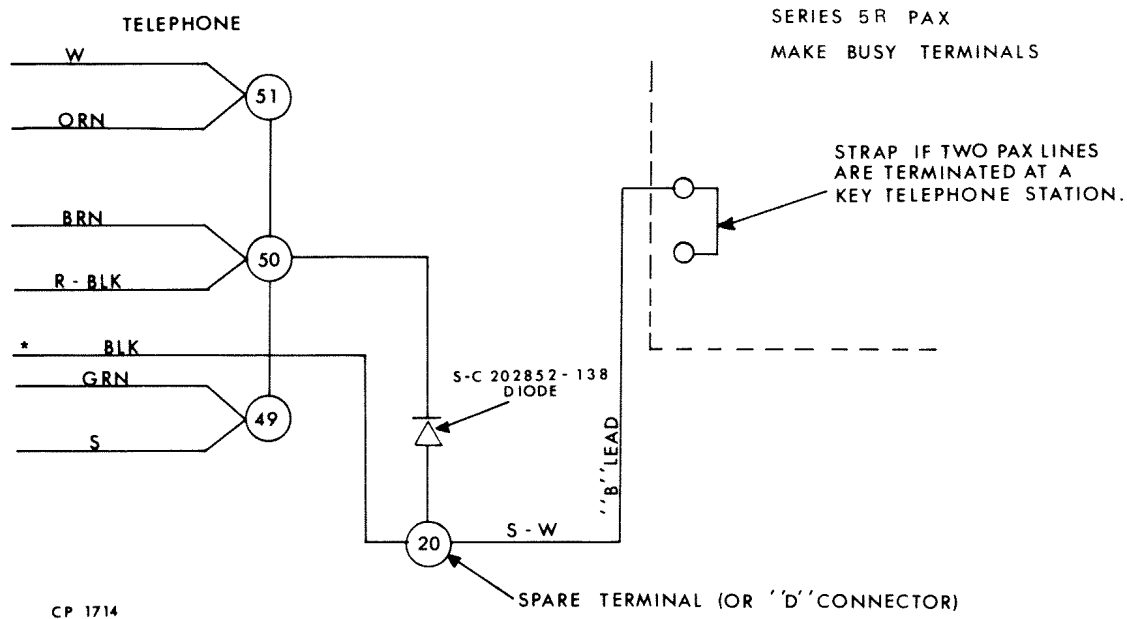
*   IF BLACK LEAD IS NOT LONG ENOUGH - ADD STRAP USING A "D" CONNECTOR

Figure 12.   S-C Series 5R PAX Intercom, Make-Busy Wiring Diagram

c. Carefully pull thumb tab away from network and lift front end of transformer. The capacitor-end of network will release and lift approximately 1/4-inch (0.6 cm).

d. Holding the transformer, slide network toward thumb tab. (Two rear tabs will unhook.)

e. Holding the transformer, lift network out of collar.

f. Place new network over two rear tabs.

g. Holding the transformer, press network and slide it into collar. (Two rear tabs will hook over board.)

h. Carefully pull thumb tab away from network and push down front end of transformer. Network snaps into place.

i. Insert spade-tipped leads in network terminals per applicable wiring diagram at the end of this section.

j. Replace housing (par. 4.02b).

5.02   Button Restoration Linkage Adjustment.

NOTE. Button restoration models have a special feature code 03 in the "S-C Code." Example: 1810-11B11(LR)03.

a. Remove housing (par. 4.02a).

b. Locate button restoration assembly wire forms (adjacent to and beneath the HOLD key). Larger wire form is actuated by the hookswitch cradle arm and is used to control the point of travel at which button restoration occurs. To change this adjustment, proceed as follows:

1. Carefully bend large wireform toward hookswitch cradle arm to shorten travel before button restoration occurs.

2. Carefully bend large wireform away from hookswitch cradle arm to increase cradle arm travel before the button restoration occurs.

NOTE. It is recommended that button restoration occurs midrange between upper and lower limit of hookswitch arm travel.

c. Replace housing (par. 4.02b).

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5.03 Key Assembly Replacement (S-C 635-5B and 635-6B).

a. Remove housing (par. 4.02a).

b. Loosen two screws which hold key assembly to key-mounting bracket.

c. Disengage key assembly from connector by lifting the key assembly at top mounting screw retainer (key assembly will "pop" free).

d. Remove key assembly.

e. Install new key assembly by reversing the removal procedure. Ensure latch bar mates properly with latch bar retainer.

5.04 Hookswitch Replacement and Adjustment.

a. Replacement.

1. Remove housing (par. 4.02a).

2. Loosen two wall mounting screws and lift telephone off screws.

3. Remove four screws holding hookswitch handset assembly to its base (fig. 13).

4. Remove two screws that secure terminal board inside hookswitch handset assembly.

5. Unsolder hookswitch leads.

6. Remove two screws that secure hookswitch assembly.

7. Replace with new hookswitch assembly and reassemble reversing above procedure.

b. Contact Spring Adjustment.

1. The hookswitch consists of four sets of twin contacts. Contact "W" closes before "X"; contact "X" closes before "Y" and "Z" open (fig. 13).
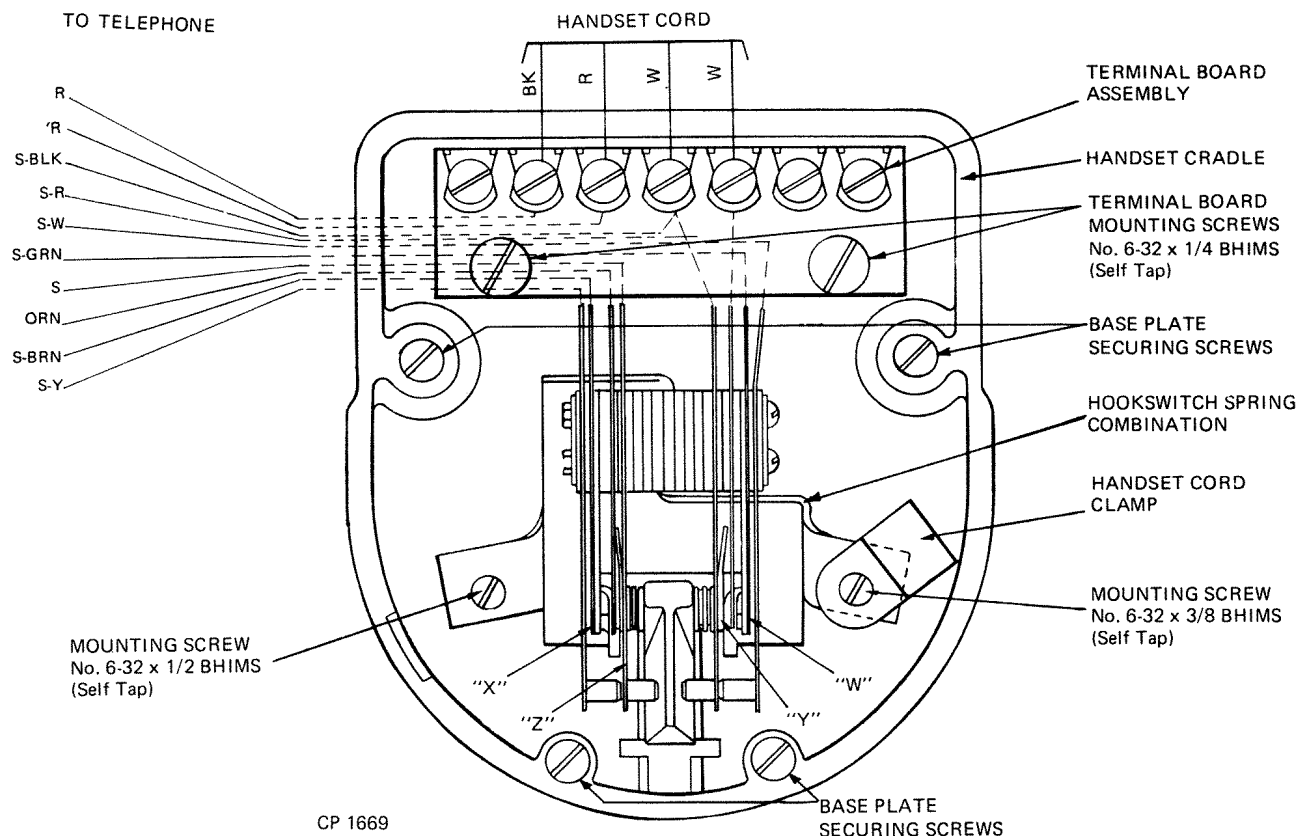

Figure 13. Handset Hookswitch Assembly and Wiring Diagram

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2. The springs have a slight curve and the upper spring of the combination should have a slight follow when operating. In adjusting these springs, be sure that the bar contacts on the lower spring of the combination engage the bar contacts of the upper springs simultaneously. Bending of springs is done with standard relay adjusting tools.

5.05   Dial Replacement.

NOTE. For repair and replacement of S-C 35-type pushbutton dials, refer to section 89-922-70. For repair and replacement of parts of S-C No. 9 rotary dials, refer to section 89-925-70.

a. Remove housing (par. 4.02a).

b. Loosen wing screw on right side of dial and slotted screw on left side of dial.

c. Disconnect dial leads from network and terminal board.

d. Replace with new dial and connect leads to network as shown in figure FO-1.

e. Replace housing (par. 4.02b).

5.06   Line Lamp Replacement.

a. Remove bezel, facemat, and faceplate (par. 4.02a.1).

b. Remove plastic retaining collar around key buttons.

c. Remove key designation cap.

d. Remove key lamp cover.

e. Carefully remove lamp with lamp extractor (S-C stock No. 896264-000 or equivalent).

f. Clean metal contact surface of new lamp and check spring tension and alignment of lamp contact springs.

g. Insert new lamp with glass end up.

h. Replace items removed in steps a through d in reverse order.

5.07   Handset Replacement.

NOTE. For handset repair and replacement parts refer to section 89-903-70.

a. Order handset in applicable color.

b. Remove housing (par. 4.02a).

c. Remove hookswitch handset assembly (par. 5.04a).

d. Disconnect handset cord leads from handset hookswitch assembly terminals (fig. 13).

e. Remove handset cord clamp.

f. Replace with new handset assembly or handset cord and reconnect leads to terminals (fig. FO-1).

g. Replace hookswitch handset assembly (par. 5.04a).

h. Replace housing (par. 4.02b).

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Table 6. Circuit Notes for Figure FO-1

1. When a common audible signal is required, using standard ringing voltage, the following options are available:

    a. S-C series 20 straight-line ringer — Order package assembly S-C part No. 702100-244 and wire as shown per instruction sheet. Exception — when capacitor is required to block dc from ringer. Connect red ringer wire to network terminal K and strap terminal 26 to network terminal A.

    b. S-C series 20 ringer for 60 Hz — Order package assembly S-C part No. 702100-260. Connect black wire to terminal 47 and red wire to terminal 26. Do not wire in capacitor to network terminals A — K.

    c. Tone ringer — Order package assembly S-C part No. 202100-488 and wire as shown per instruction sheet using terminals 26 and 47.

2. When an intercom signal (8 to 24 Vac) is required, order S-C Q-20 buzzer (S-C part No. 703504-023) and install per instructions included with buzzer.

3. For the intercom signal to be audible when telephone is off-hook, connect signal lead to terminal-board terminal 21 instead of 25.

4. When telephone is to be used with a busy-station number display (BSND) with 24-volt lamps, move the slate-white hookswitch wire from terminal-board terminal 24 to 1 and add 1N1694 (S-C 827) diode (S-C part No. 202852-138) as shown. When 10-volt lamps (and 18-Vac power) are used, order diode package assembly (S-C part No. 206286-451) and change wiring per instructions included in package assembly.

5. B leads may be used as spares or multipled together as A1 leads on terminal-board terminals 19 and 20.

6. To convert line key from pickup to signal function, remove plunger locking screw to make key nonlocking, and make the following wiring change at the terminal-board terminals:

    a. Position 1 — move white wire from terminal 51 to 52.
    b. Position 2 — move orange wire from terminal 51 to 52.
    c. Position 3 — move brown wire from terminal 50 to 52.
    d. Position 4 — move green wire from terminal 49 to 52.
    e. Position 5 — move slate wire from terminal 49 to 52.
    f. Position 6 — move white wire from terminal 53 to 52.
    g. Position 7 — move orange wire from terminal 53 to 52.
    h. Position 8 — move brown wire from terminal 54 to 52.
    i. Position 9 — move black wire from terminal 54 to 52.
    j. Position 10 — move green wire from terminal 55 to 52.
    k. Position 11 — move slate wire from terminal 55 to 52.

7. To provide "all buttons released intercom" on telephones equipped with one key strip, connect blue-yellow (R), yellow-blue (T), yellow-green (LG), and green-yellow (L) wires (all in blue-white binder) to intercom circuit. On telephones equipped with two key strips, connect slate-yellow (R), yellow-slate (T) wires (all in orange-white binder) and yellow-green (LG), green-yellow (L) wires (all in blue-white binder) to intercom circuit; also, disconnect blue-yellow, yellow-blue, and violet-slate line cord leads from terminal-board terminals 13, 14, and 15.

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Table 6. Circuit Notes for Figure FO-1   (Cont)

|	
8.	When polarity guard is required for TONE-DIAL signaling under reversed battery conditions, order package assembly (S-C part No. 703016-852) and wire per instructions included.
9.	When an amplifier is required, order package assembly (S-C part No. 206290-761) and wire per instructions included. When the amplifier is not required, connect operators jack wires to terminal-board terminals as follows: blue to 84 and green to 85.
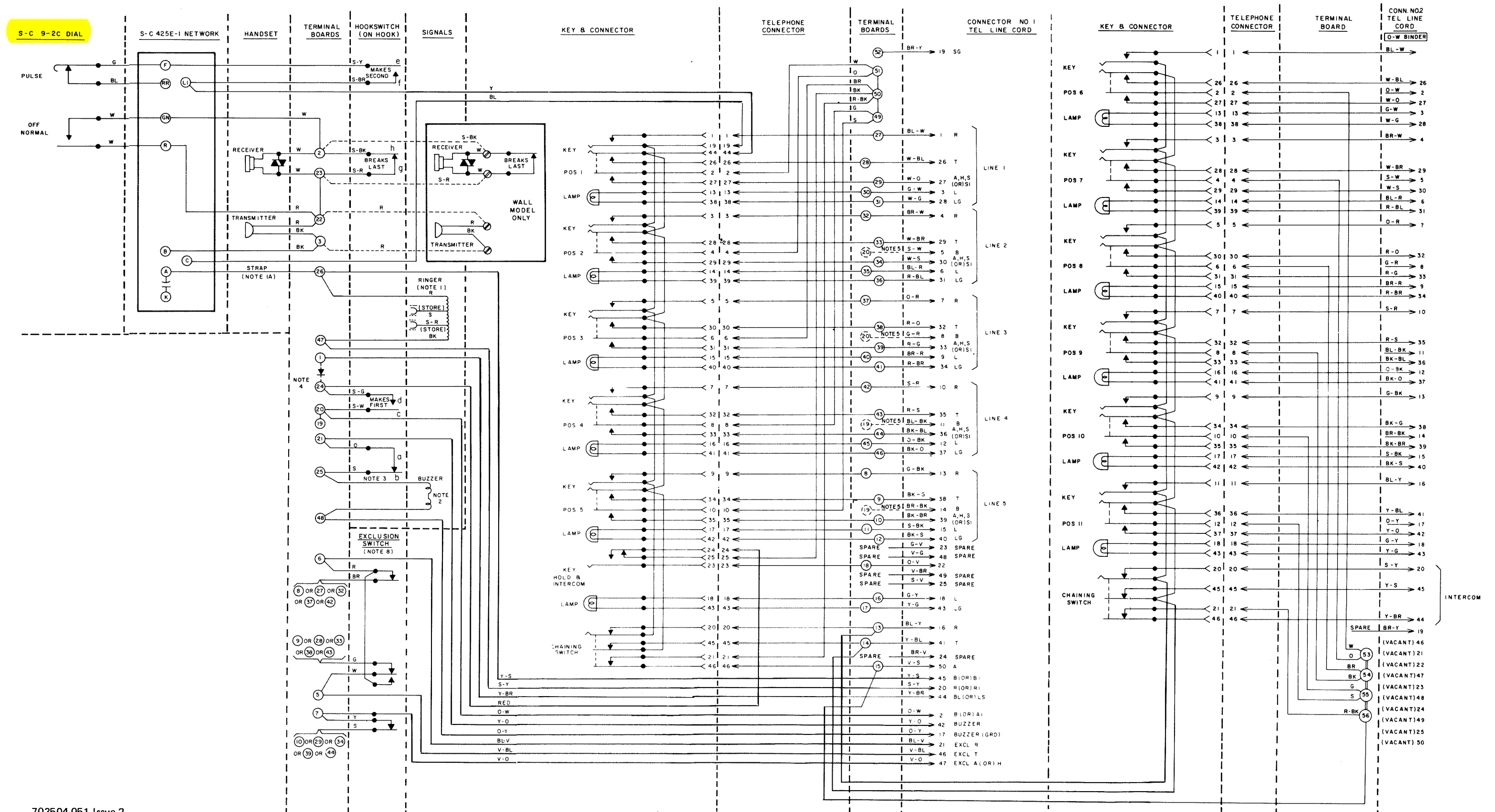
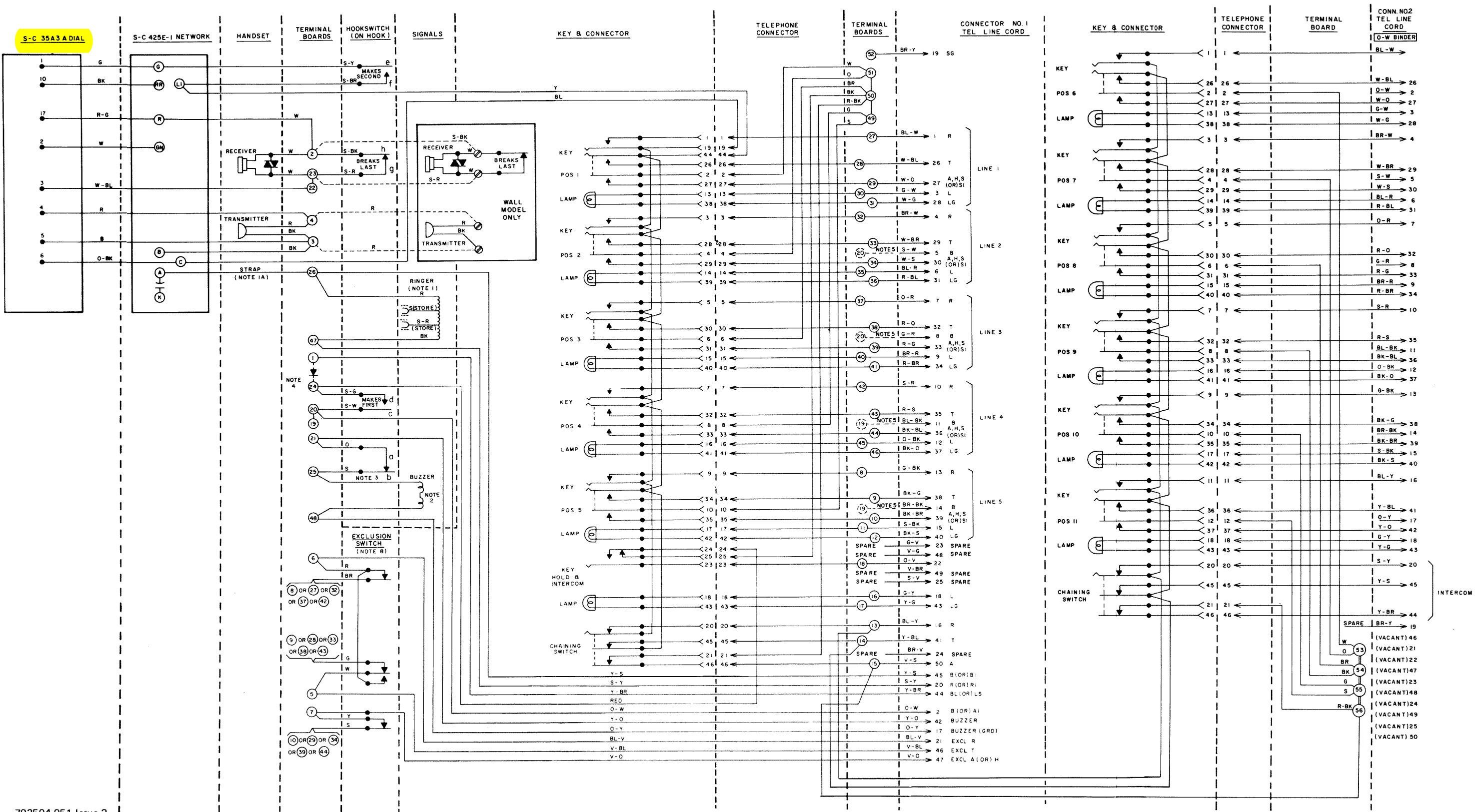*Figure FO-1.   S-C 11-Line Telephone Wiring Diagram*
(Sheet 1 of 2)

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Figure FO-1. S-C 11-Line Telephone Wiring Diagram
(Sheet 2 of 2)