

## G6-, G7-, G8-, G13-, G66-, AND K6-TYPE HANDSETS (AMPLIFIER) IDENTIFICATION, CONNECTIONS, CONVERSION, AND MAINTENANCE

### 1. GENERAL

**1.01** This section contains information for G- and K-type amplifier handsets. Also information on D-180413 (modified G8-type) handset is included. These handsets are intended to replace standard G- or K-type handsets for use by persons with impaired hearing or weak speech and for noisy locations.

**1.02** The reasons for reissuing this section are listed below. Revision arrows are used to emphasize the more significant changes.

- Add G13D-104
- Add G66AM-type handsets
- Add K6C handset.

**1.03** Table A lists these handsets and their component parts.

### 2. IDENTIFICATION

#### A. G6-Type (Impaired Hearing)

**2.01** The G6-type handset is equipped with an internal receiver amplifier unit. The volume control potentiometer in the center of the handle adjusts the loudness setting of the receiver so the handset may be used by persons with normal hearing as well as persons with impaired hearing.

**2.02** The G6B (MD) handset assembly has two transistorized amplifiers and will operate on either polarity. The units are located on a printed circuit board in the receiver cavity. The amplifier, potentiometer assembly, and handset cord connect to a terminal board located in the transmitter cavity.

**2.03** Three versions of G6B (MD) handsets have been produced and are referenced as *early* (before 1974), *later* (1974-1977), and *last* (1977-1979). The *last* version can be identified by a black

plastic plate around the volume control assembly instead of the chrome metal plate on previous versions. The receiver amplifier board on the *last* version has three screw terminals. In the G6B *last* version, the yellow conductor in the handset cord is removed. This is a normal condition since the yellow lead is not used.

**2.04** The G6BM handset is identical to the G6B (MD) *last* version handset except that it is equipped with a jack to receive the plug-ended H4DU handset cord which must be ordered separately.

#### B. G7-Type (Weak Speech)

**2.05** The G7-type handsets are equipped with an internal transistorized transmitter amplifier intended for use by persons with weak speech. The potentiometer in the handle controls the level of the transmitter output. The transistorized transmitter amplifier is located on a printed circuit board at the receiver end of the handle. The polarity guard and one inductor are on a terminal board in the transmitter cavity. The potentiometer assembly, amplifier, and handset cord connect to a terminal board in the transmitter cavity. Internal connections are made by spade-tipped leads.

**2.06** The G7BM handset is identical to the G7B (MD) handset except that it is equipped with a jack to receive the plug-ended H4DU handset cord which must be ordered separately.

#### C. G8-Type (Noisy Locations)

**2.07** The G8-type handset is equipped with a transistorized receiver amplifier, a volume control potentiometer, and a push-to-listen switch and is intended for use in noisy locations. The volume control provides up to 10 db of additional receive gain. The push-to-listen switch, when operated, decreases the transmitter output and increases the gain of the receiver amplifier.

**2.08** Two versions of G8B (MD) handsets have been produced and are referenced as *early* (before

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1977) and **current** (since 1977). The **current** version can be identified by a black plate around the switch assembly instead of the chrome metal plate on the previous version. Also, the receiver amplifier board in the **current** version has three screw terminals.

**2.09** The G8BM handset is identical to the G8B (MD) handset except it is equipped with a jack to receive the plug-ended H4DU handset cord which must be ordered separately.

**D. D-180413 Handset (Modified G8-Type; Impaired Hearing)**

**2.10** The D-180413 handset is a G8-type handset modified by the service-center. This handset is intended for use by customers that require more receiver gain than is available in the G6-type handset. Both modular and nonmodular versions of the G8-type handset can be modified.

**2.11** The D-180413 handset is equipped with a receiver amplifier unit. The volume control potentiometer in the center of the handle adjusts the loudness setting of the receiver so the handset may be used by persons with normal hearing as well as persons with impaired hearing. It also has a pushbutton, which when operated, provides an additional 15 dB gain in the receiver circuit and 10 dB loss in the transmitter circuit.

◆**Note:** The D-180413 handset is replaced by the G66 handset, paragraph 2.06.◆

**2.12** Connect the D-180413 handset in the same manner as the modular or nonmodular G8-type handset.

**E. G13-Type (Impaired Hearing)**

**2.13** The G13-type handset is equipped with an armored cord and a receiver amplifier unit. The volume control switch in the center of the handle controls the loudness setting of the receiver so the handset may be used by persons with normal hearing as well as persons with impaired hearing. Coin telephones are not assembled or coded with these handsets. The handset must be ordered separately and connected per Table C.

**2.14** The G13A (MD) and G13B (MD) handsets furnish normal unamplified receiver output until the slide switch is moved to the center or extreme

position. The center position furnishes 10 dB and the extreme position furnishes 20 dB of gain. When the slide switch is released a spring returns the switch to its normal position.

**2.15** The G13D handset equipped with a H4EH handset cord replaces the G13B handset. The G13D handset equipped with a H4EG handset cord (specify cord on order) replaces the G13A handset. The G13D furnishes normal unamplified receiver output until at least one of the two buttons on the handset is depressed. With either button depressed the amplifier furnishes 10 dB of gain and with both buttons depressed 20 dB of gain.

◆**F. G66AM (Impaired Hearing)**

**2.16** The G66AM handset is equipped with a receiver-amplifier unit and a polarity guard. The volume control potentiometer in the center of the handle adjusts the loudness setting of the receiver so the handset may be used by persons with normal hearing as well as persons with impaired hearing. It also has a pushbutton which when operated, provides an additional 10 dB gain in the receiver circuit and 10 dB loss in the transmitter circuit.

**2.17** This handset is intended for use by customers who require more receiver gain than is available in the G6-type handset.

**2.18** It is equipped with a jack to receive the plug-ended H4DU handset cord which must be ordered separately.

**2.19** The G66AM is recommended for use in place of the D-180413 handset.◆

◆**G. K6A or K6C (Impaired Hearing)**

**2.20** The K6A is a repairable modular handset which replaces the K1A (MD) nonrepairable handset. It is available in the colors listed in Table B.

**2.21** The K6A has a screw located in the hanger indentation under the receiver which holds the handset shell to the chassis and deck assembly. Inside the handset is an inner chassis which holds the handset cord jack assembly, receiver, and transmitter. The amplifier printed circuit board is clipped to the inner chassis. The circuit board contains a volume control potentiometer and a transistorized amplifier.

**2.22** This handset has a U-type receiver which is compatible with hearing aid pickups.

**2.23** The K6C is the same as the K6A, except it has a Bell System logo and is available only in ivory (-50) color.

**2.24** For additional information, refer to Section 501-210-105.♦

#### H. D-180838 Kit of Parts (4-Wire Operation)

**2.25** This kit of parts contains a terminal board (new) and a M1W strap (G), 616WG jack, and two screws which are used to convert the G6B (current), G6BM, G8B (current), and G8BM handsets from two- to four-wire operation per Table D. These handsets can be identified by a black plastic plate around the volume control assembly instead of the chrome metal plate on earlier models and the three screw terminals on the receiver terminal board.

**2.26** Remove and discard the *old* terminal board (not in all handsets) and modular jack (if a modular handset) in the transmitter end of the handset. Connect the *new* terminal board and modular jack (if desired) or handset cord per Table E.

#### I. D-180851 Kit of Parts

**2.27** This kit of parts contains modified transmitter and receiver caps, to enable G-type handsets to be used with 900-series desk telephone sets. The modified handsets cannot be used with 900-series wall telephone sets.

#### J. 226A and 2226A (TRIMLINE® Telephone Sets) Hand Telephone Sets

**2.28** These hand telephone sets provide up to 20 dB of receive gain for customers with impaired hearing. For additional information refer to Section 502-303-102.

### 3. CONNECTIONS

**3.01** Perform the following to connect amplifier-type handsets equipped with spade-tipped cords to rotary dial equipped telephone sets.

- (1) Connect red and black leads to the terminals from which the red and black leads of the replaced handset were removed.
- (2) Connect yellow and green leads to the terminals from which the white leads were removed

so that the yellow lead is electrically wired to the **R** terminal on the network and the green lead is wired to the **GN** terminal on the network.

- (3) Test the handset through the full range of volume control.

**3.02** When connecting G6- and G8-type (nonmodular) handsets to telephone sets equipped with TOUCH-TONE® dialing, the dial must provide common switch contact arrangements which will prevent dial sidetone amplification by the handset amplifier. If the set contains a 25A3 (MD), 25B3 (MD), or 25H4 (MD) dial, install a 25W3, 25Y3, or 25P4 dial, respectively. If these dials are not available replace set.

**3.03** The G6BM, G7BM, and G8BM handsets require a plug-ended H4DU handset cord to be connected between the handset and the telephone set base. The H4DU cord must be ordered separately.

**3.04 Schematics:** Internal connections of the amplifier type handsets are shown in Fig. 1 through 10.

## 4. HANDSET CONVERSION

### MODULAR-TO-NONMODULAR

**4.01** Modular G6-, G7-, and G8-type handsets may be used on nonmodular telephones equipped with spade-tipped cords as follows.

- (1) Remove the transmitter cap, transmitter unit, and transmitter board assembly.
- (2) Remove the jack from the transmitter cup.
- (3) Install a H4CJ cord in accordance with 5.05.
- (4) Reassemble the transmitter board transmitter unit and cup.
- (5) Connect the handset leads in accordance with Part 3.

**4.02** Modular G6-, G7-, and G8-type handsets may be used on consoles equipped with headset jacks by using a 478A adapter. This device plugs into the console jack and converts it to a modular jack. The 478A adapter contains the appropriate padding resistor to compensate for the use of a carbon transmitter.

**NONMODULAR-TO-MODULAR**

**4.03** Nonmodular G6-, G7-, and G8-type handsets manufactured since 1974 may be converted to modular type in the field. These handsets may be recognized by the shape of the handset cord entry hole in the handset handle. Only handles with the rectangular holes may be field modified. These handles are equipped with a special convertible transmitter cup so they can be converted to modular by the addition of a 616W-type jack. Convert the handset as follows.

- (1) Remove the transmitter cup, transmitter unit, and transmitter board assembly.
- (2) Remove the spade-tipped handset cord leads from the handset.
- (3) Install a 616W-type jack (ordered separately) by snapping the jack into the cutout provided on the transmitter cup. On G6- and G8-type handsets the white jack lead is not required and may be clipped off.
- (4) Connect and dress the leads from the 616W-type jack to the transmitter board terminals as shown in Fig. 3, 4, or 6.
- (5) Reassemble the transmitter board in the handset and replace transmitter cup on handset.

**5. MAINTENANCE**

**5.01** Maintenance of G6-, G7-, G8-, modified G8-, and G66-type handsets is limited to the following:

- Replacing cracked or broken receiver and transmitter caps
- Replacing defective transmitter units
- Replacing defective handset cords
- Cleaning with water-dampened cloth.

**5.02** Maintenance of G13-type handsets is limited to cleaning with a water-dampened cloth, as the transmitter and receiver caps are bonded to the handset handle at the time of assembly.



**Do not use cleaning fluids or antirust compounds on transmitter units, receiver units, or other component parts of handset. Discoloration or**

**tarnish on the silver-plated contact surfaces is not objectionable and no attempt should be made to remove it.**

**5.03** ♦Maintenance of K6-type handsets is limited to replacing the T1 transmitter unit and U5 receiver unit.♦

**5.04** The H4CT handset cord furnished with G6B, G7B, and G8B handsets is no longer available. If the original cord requires replacement or if a modular handset is to be modified for use on a nonmodular telephone, modify and install an H4CJ cord as follows.

- (1) Tone-out and identify one white conductor. For identifying purposes, loose knots may be tied in each end of this conductor, designating it green. The other white conductor is designated as yellow.
- (2) Loop and tie or tape the excess length of white conductors to approximate length of red and black conductors.
- (3) Insert conductors in transmitter bowl carefully so as not to disrupt the printed circuit board.
- (4) Connect to transmitter terminal board as shown in Fig. 1, 2, 3, 4, 5, or 6.

**5.05 Radio Frequency Interference:** If RFI problems, including Citizen Band Radio, are encountered the procedures of Section 500-150-100 should be followed. If it is found necessary to replace the telephone set with one modified for radio frequency suppression, the appropriate handset (modified for radio suppression) should be ordered at the same time.

**5.06 872A1M and 2872A1M Telephone Sets:**

On some 872A1M and 2872A1M telephone sets (TOUCH-A-MATIC® telephone sets 32 number), the white or yellow and green leads from the modular handset jack may have been reversed. If a G6-type handset installed on these sets does not have a receive output, refer to Section 503-603-101 or 503-603-102 for handset jack wiring.

**5.07 Modular Telephone Set:** When G6BM or G8BM handsets are connected to some modular telephone sets, an insufficient receiver gain may

result. Reverse the white and green handset jack leads on the network. For additional information refer to the appropriate telephone set service section.

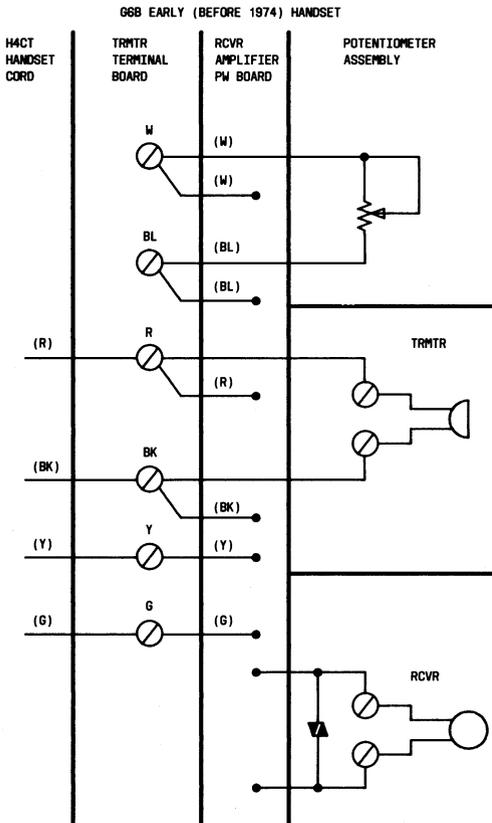


Fig. 1—G6B (MD) Early (Before 1974) Handset, Connections

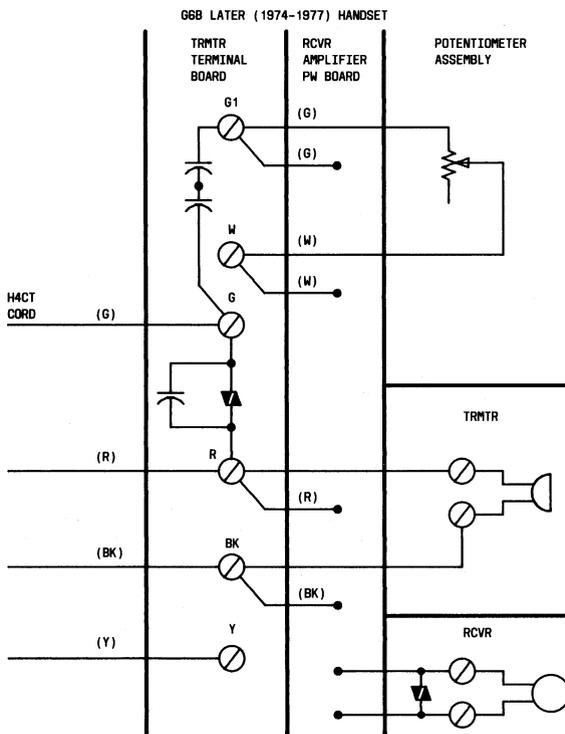


Fig. 2—G6B (MD) Later (1974-1977) Handset, Connections

G6B (SINCE 1977) AND G6BM HANDSET

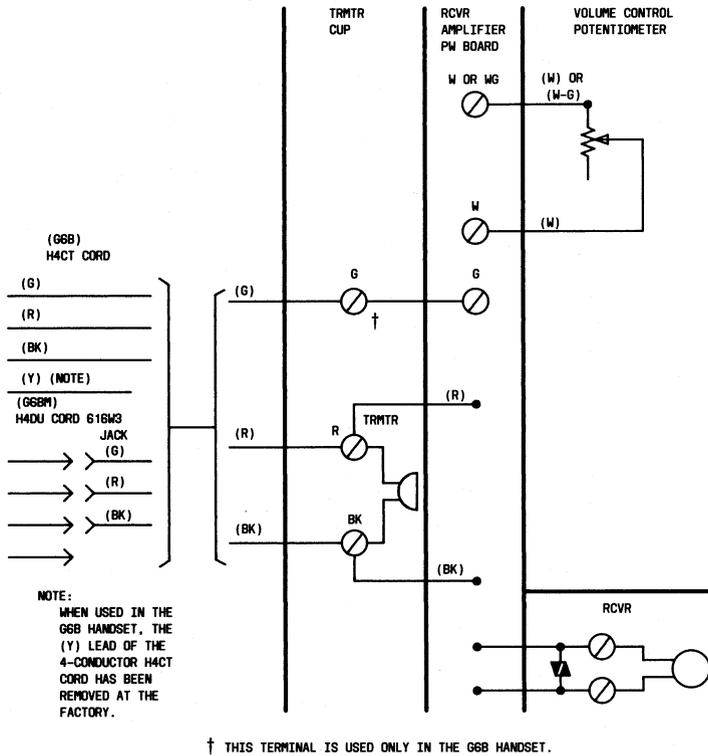


Fig. 3—G6B (MD) Last (1977-1979) and G6BM Handset, Connections

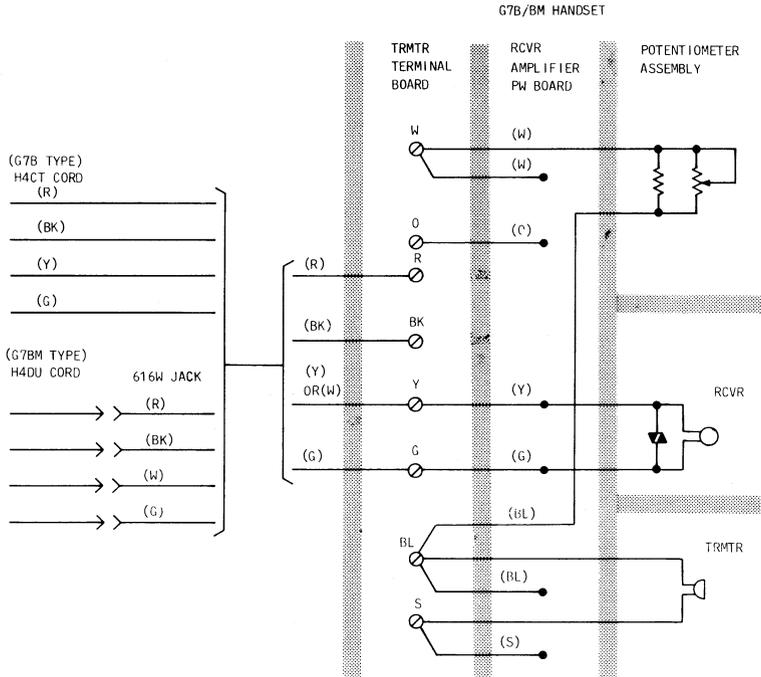
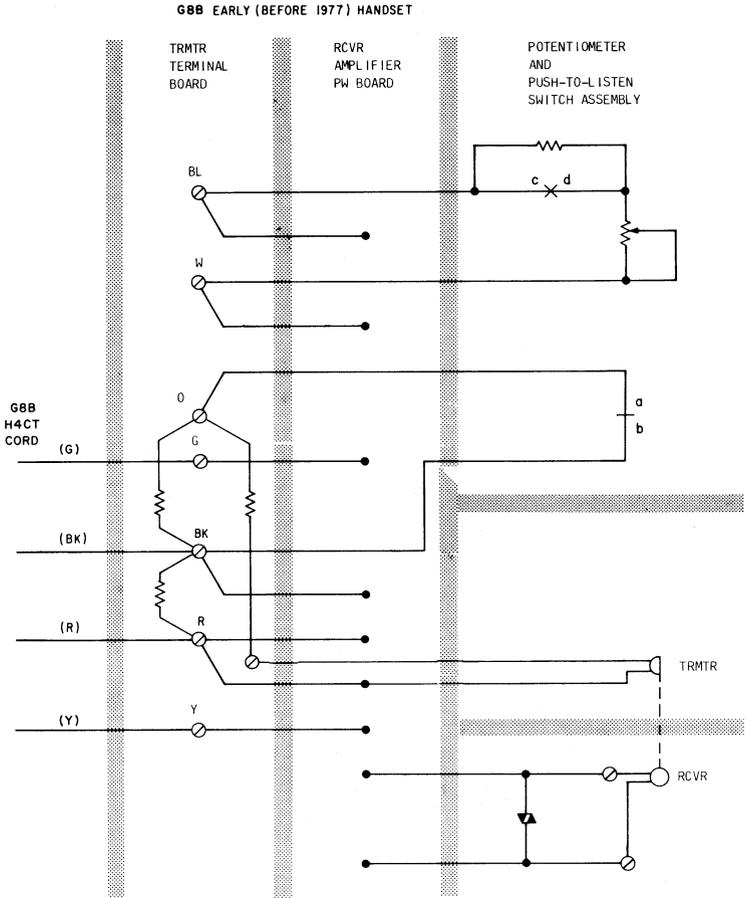


Fig. 4—G7B (MD) and G7BM Handset, Connections



**Fig. 5—G8B (MD) Early (Before 1977) or D-180413 Handset, Connections**

G8B (SINCE 1977) AND G8BM HANDSET

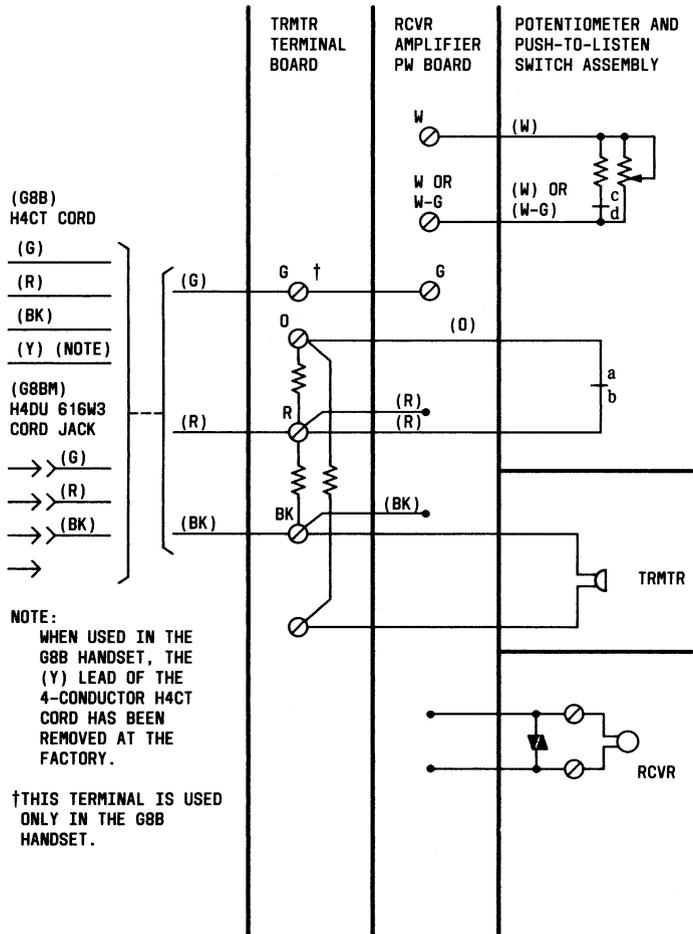


Fig. 6—G8B (MD) Last (Since 1977) and G8BM or D-180413 Handset, Connections

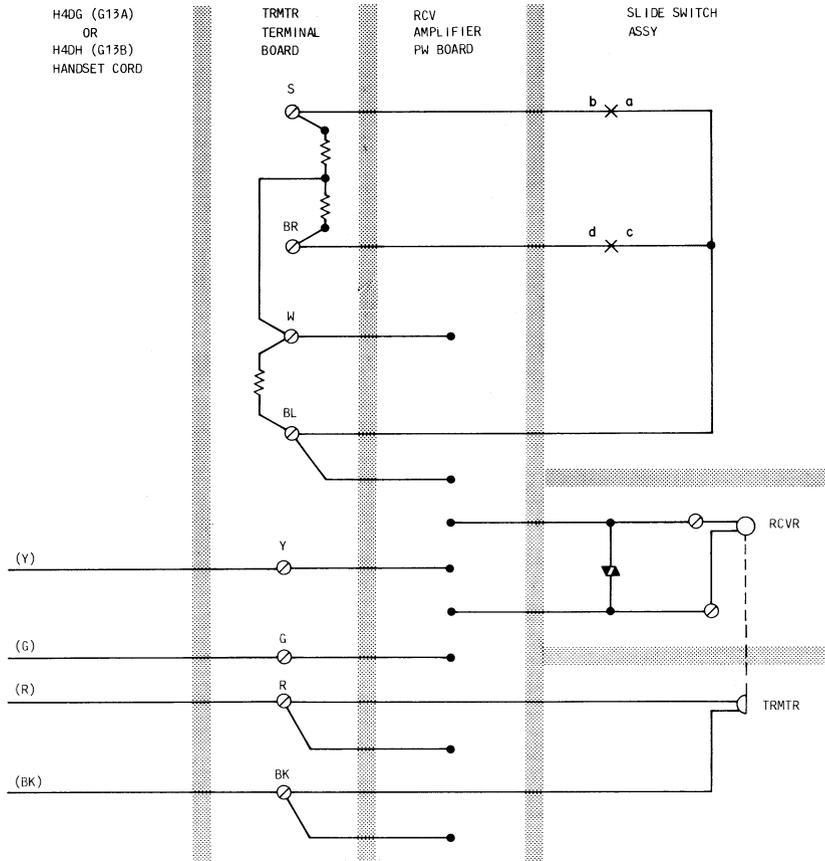
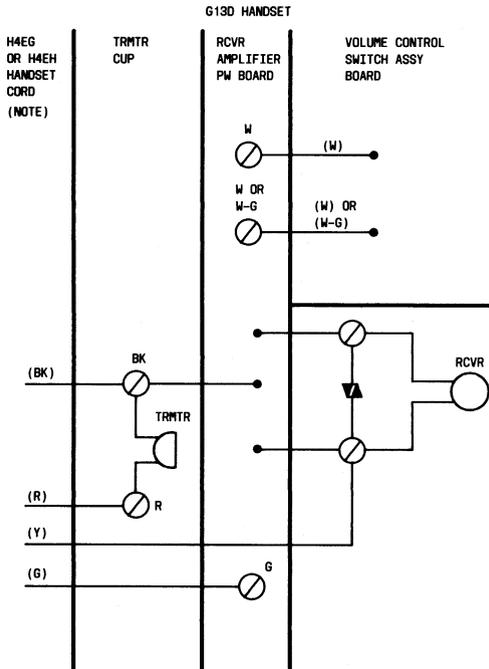


Fig. 7—G13A (MD) and G13B (MD) Handset, Connections



NOTE: WHEN G13D USED AS A REPLACEMENT FOR G13A, ORDER HANDSET WITH H4EG HANDSET CORD.

Fig. 8—G13D Handset, Connections

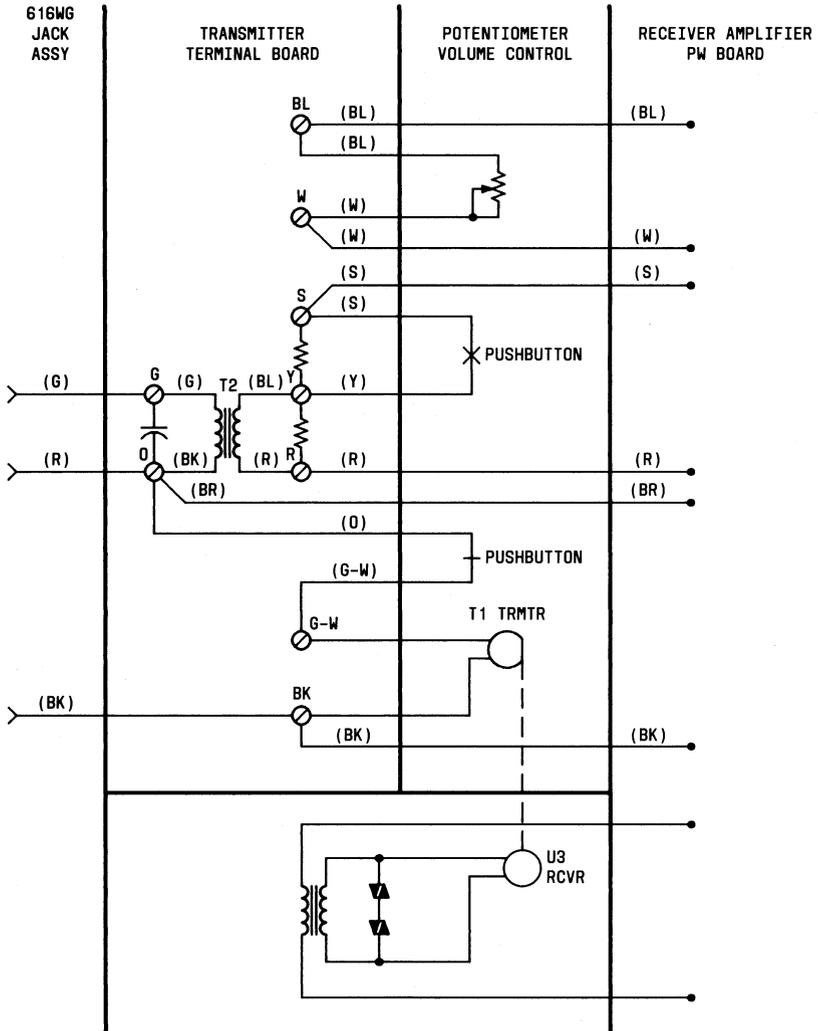


Fig. 9—G66AM Handset, Connections

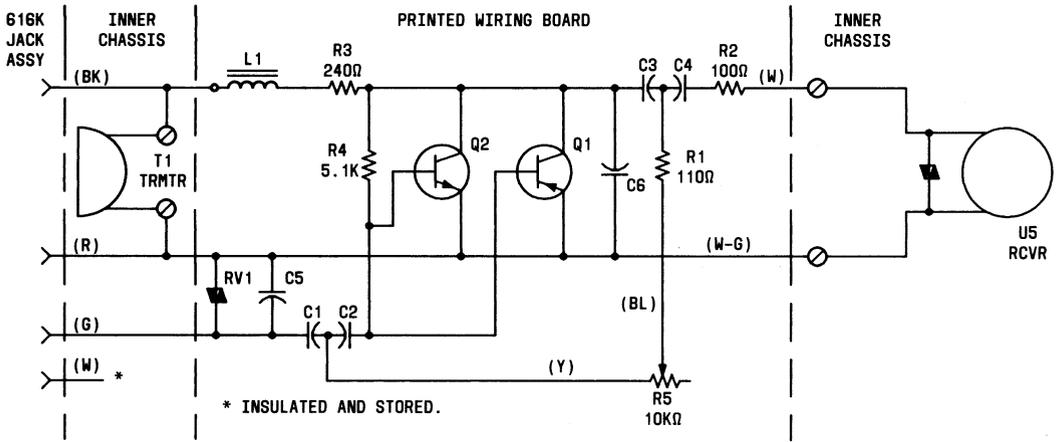


Fig. 10—K6-Type Handset, Connections

**◆TABLE A◆**  
**G-SERIES HANDSETS**

HANDSET	CONN. FIG. NO.	REPLACEABLE COMPONENTS				
		TRMTR UNIT	RCVR UNIT	TRMTR CAP	RCVR CAP	HANDLE
G6B (Early)*,†	1	T1	U-Type	Table B	Table B	Table B
G6B (Later)*,†	2					
G6B (Current) *,†	3					
G6BM†						
G7B*†	4					
G7BM†						
G8B (Early)*,†	5					
G8B (Current) *,† (D-180412)	6					
G8BM †						
G13A-52*	7					
G13B-52*						
G13D-52, -104	8					
G66AM‡	9	T1	U-Type	Table B		
K6A§	10		U3 or U5	None		
K6C ¶	10		U3 or U5	None		
D-180413 **	6		U-Type	Table B		

\* MD.

† Add color suffix shown in Table B.

‡ Available in -03 (black), -50 (ivory), -51 (green), -53 (red), -56 (Yellow), -58 (White), -60 (Light Beige), -61 (Light Gray), and -62 (Aqua Blue).

§ Available in -03 (Black), -50 (Ivory), -58 (White), -93 (Yellow), -104 (Brown), -105 (Dark Green), -106 (Lime Green), and -115 (Blue)

¶ Available in -50 (Ivory) only.

\*\* The D-180413 handset is a service-center modified G8-type handset. Specify modular or nomodular version on order.

TABLE B

**ORDERING GUIDE G6-, G7-, AND G8-TYPE TRANSMITTER CAP, RECEIVER CAP,  
AND HANDLE**

COLOR	SUFFIX	TRANSMITTER CAP		RECEIVER CAP		HANDLE	
		COMCODE	P-NUMBER	COMCODE	P-NUMBER	COMCODE	P-NUMBER
Black	-03	818011033	P-80A103	818012031	P-80A203	818077034	P-80G703
Ivory	-50	818011504	P-80A150	818012502	P-80A250	818077505	P-80G750
Green	-51	818011512	P-80A151	818012510	P-80A251	818077513	P-80G751
Red	-53	818011538	P-80A153	818012536	P-80A253	818077539	P-80G753
Yellow	-56	818011561	P-80A156	818012569	P-80A256	818077562	P-80G756
White	-58	818011587	P-80A158	818012585	P-80A258	818077588	P-80G758
Rose Pink	-59	818011595	P-80A159	818012593	P-80A259	818077596	P-80G759
Lt. Beige	-60	818011603	P-80A160	818012601	P-80A260	818077604	P-80G760
Aqua Blue	-62	818011629	P-80A162	818012627	P-80A262	818077620	P-80G762

♦TABLE C♦

**G13-TYPE HANDSET CONNECTIONS FOR COIN AND COINLESS PUBLIC  
TELEPHONE SETS (NOTES 1 AND 2)**

HANDSET LEADS	G13A AND G13D		G13B AND G13D		G13D			
	1234G TEL SET	1235G TEL SET	1A2, 2A2, 1C2 2C2, 2755 TYPE TEL SET	1A1, 2A1, 1C1, 2C1 TEL SET	1D1 2D1	1D2 2D2	10A OR 20A COINLESS TEL SET	F-60678 OR F-60761 TEL SET
	CONNECT TO	CONNECT TO TB4 TERM.	CONNECT TO TB2 TERM.	CONNECT TO TB2 TERM.	CONNECT TO TB2 TERM.	CONNECT TO TB2 TERM.	CONNECT TO NET. TERM.	CONNECT TO TB2 TERM.
R	TR	R	3	3	3	3	R	6
BK	BB	BK	5	6	6	6	L2	5
Y*	BBX	W†	8	8	7	8	R	6
G*	W	W‡	7	2	4	7	F	11

**Note 1:** If G13D handset is used instead of the G13A, order a G13D equipped with a H4EG handset cord.

**Note 2:** Specify length of handset cord (2 feet 8 inches, 4 feet 6 inches, or 6 feet). H4EM handset cord is not available in 6-foot length.

\* Early production G13D handsets have yellow and green wire marking tape to designate the yellow and green leads.

† Connect the (Y) handset lead to the W terminal with the (W) lead going to terminal 2 of TB2.

‡ Connect the (G) handset lead to the W terminal with the (W) lead going to terminal 10 of TB2.

TABLE D

## D-180838 KIT OF PARTS FOR 4-WIRE OPERATION

HANDSET	COMPONENT	LEAD COLOR	CONNECT TO NEW TERM. BOARD
G6B (Current) or G6BM *	616WG Jack Leads	BK	BK
		R	R
		G	G
		W	Y
	H4CT Cord	BK	BK
		R	R
		G	G
		Y	Y
	Amplifier Board	BK	BK
		R	R
		G †	G-W
	New Term. Board	W-BL	BL
G8B (Current) or G8BM *	616WG Jack Leads	BK	BK
		R	R
		G	G
		W	Y
	H4CT Cord	BK	BK
		R	R
		G	G
		Y	Y
	Amplifier Board	BK	BK
		R	R
		G †	G-W
	Potentiometer	R	R
		O	O
	New Term. Board	W-BL	W

\* Remove terminal board on transmitter cup and replace with terminal board provided in D-kit of parts.

† Use (G) strap provided in kit of parts to connect G of amplifier board to G-W of terminal board in G6BM and G8BM handsets.