

## TRIAL INSTRUCTION NO. 350

### MODULAR TELEPHONE SETS

# IDENTIFICATION, INSTALLATION, CONVERSION, CONNECTIONS, AND MAINTENANCE

#### 1. GENERAL

**1.01** The modular plan is the same as the kit plan (see Section 503-100-110) except the telephone set base and handset are jack-equipped to accept a plug-ended mounting cord (desk set) and handset cord.

**1.02** The modular plan provides for installation of the following telephone sets: 500DM, 2500DM (Fig. 5); 554BM, 2554BM (Fig. 6); 702BM, 2702BM (Fig. 7); and AC1M (Fig. 8), AD2M (Fig. 9) telephone bases.

**1.03** The modular plan also provides for the installation of modular components, conversion and/or repair of nonmodular telephone sets and components, and the installation of 625 (wall) type jacks.

#### 2. IDENTIFICATION

**2.01** Refer to Tables A through F for ordering information on the modular telephone set codes and components. For a complete telephone set (cords are ordered separately), order by telephone set code. Components such as telephone set base, housing, handset, etc., may be ordered separately.

#### 3. INSTALLATION

**3.01** The following work operations may be encountered:

- Installation of assembled telephone sets (3.02)
- Installation of modular telephone components (3.03 through 3.08)
- Installation of 625-type jacks (3.09)

- Installation of special purpose handsets (3.15 and 3.16)
- Replacement of existing components with modular components (Part 4)

#### *Assembled Telephone Sets*

**3.02** Install as follows:

- (1) Install appropriate 625-type jack (3.09).
- (2) Plug handset and mounting cords into appropriate jacks (Fig. 5 through 9).
- (3) Provide station number card.

#### *Installation of Modular Telephone Set Components*

**Note:** When assembling the following sets, make any required wiring changes (Part 5) before installing housing.

**3.03** To assemble and install a 500-type telephone set:

- (1) Install universal number plate and dust ring which is packed with the housing (Fig. 3 or 4).
- (2) Install dial adapter parts which are packed with the base and provide station number card for 7- or 9-type dial (Fig. 1 or 2).
- (3) Install housing, handset, handset cord, and mounting cord as shown in Fig. 5.
- (4) Install appropriate 625-type jack (3.09), plug mounting cord into 625-type jack.

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**3.04** To assemble and install 2500-type telephone set:

- (1) Install housing, faceplate, handset, handset cord, and mounting cord as shown in Fig. 5.
- (2) Provide station number card.
- (3) Install appropriate 625-type jack (3.09).
- (4) Plug mounting cord into 625-type jack.

**3.05** To assemble and install 554-type telephone set:

- (1) Install dial parts in same manner as 500-type set [3.03 (1) and (2)].
- (2) Install housing, handset, and handset cord (Fig. 6).

**3.06** To assemble and install 2554-type telephone set:

- (1) Remove station number card retainer from housing to expose housing mounting screws.
- (2) Install housing, handset, and handset cord (Fig. 6).
- (3) Provide station number card.

**3.07** To assembly and install 702/2702-type telephone sets:

- (1) Install housing, handset cord, handset, and mounting cord (Fig. 7).
- (2) Install appropriate 625-type jack (3.09).
- (3) Plug mounting cord into mounting cord jack.
- (4) Provide station number card.

**3.08** To assemble and install AC1/AD2 telephone base and 220A or 2220B hand telephone set:

- (1) Remove station number card retainer from housing to expose mounting screws.
- (2) Install housing (Fig. 8 or 9).
- (3) Provide station number card.

(4) Install handset and handset cord. Use H4DB or H5AA cord.

(5) For AD2 base, install appropriate 625-type jack (3.09) and install mounting cord.

### **625-Type Jacks**

**3.09** These jacks provide a termination for the mounting cord as follows:

- The 625A jack is intended for replacement of the 42A connecting block and replacement of 549A jacks. Dress leads as shown in Fig. 10.
- The 625F jack (Fig. 11) is intended for new installations requiring flush type jack or replacement of 548A jacks. Install in same manner as 548A jack, Sections 461-630-101 and 461-630-102.
- The 625B jack assembly (Fig. 12) includes 625F jack, bracket, faceplate, and six screws.



**Connections to 625-type jacks shall be made according to Table R to insure compatibility of service. Wiring changes for party line service shall be made within the set and not at the jack.**

### **Adapters**

**3.10** Adapters are intended for use when it is not desirable to replace existing jacks.

- The 224A adapter (Fig. 27) is used to adapt D4BU mounting cord to the 541A and 551A jacks (12 pin jack).
- The 225A adapter (Fig. 28) is used to adapt D4BU mounting cord to 404B (MD), 493A (MD), 497A (MD), 548A and 549A jacks (4 pin).

**3.11** 541A, 551A, 548A, and 549A jacks should not be mixed with 625-type jacks where portable telephone service is required.

### **Apparatus Blanks**

**3.12** The 123A or 124A apparatus blank (Fig. 24) is a one-piece slip-on blank which is required whenever a modular plan housing (notched for

jack) is used with a spade-tipped handset and/or mounting cord. See Table E and 3.15 for usage and ordering information.

**3.13** The 123A apparatus blank slips on the baseplate flange (Fig. 25) and fills the housing notch for handset cord and/or mounting cord in the 500D2 and 2500D2 housings.

**3.14** The 124A apparatus blank has two faces. The higher face is used to fill and conceal the notch in the 2554B2 housing (Fig. 26). The lower face fills and conceals the notches in the 702B2 and 2702B2 housings. The blank is slipped on the housings so that its unused face is inside the housing and the notched edge up.

### *Special Purpose Handsets*

**3.15** Where conditions warrant, the G15A handset used with these sets can be replaced with other types as follows:

- For impaired hearing, G6-type
- For weak speech, G7-type
- For noisy locations, G8-type or D-180413
- For shoulder rest, G4-type

**3.16** Remove handset cord jack and leads and install handset. Refer to Division 501 for connections of these handsets. Installations such as this will (except 554) require the use of apparatus blanks (3.12).



*Replaceable transmitters used for noisy locations cannot be used on G15A handset. For installations requiring the use of these transmitters install appropriate handset. For installations requiring 238-, 276-, or 277-type amplifiers, install amplifier on G15A handset transmitter cup and connect leads from jack on transmitter cup to terminals shown for handset leads in Section 501-226-100.*

*When nonmodular components must be replaced during installation or repair visits, refer to Part 4.*

## **4. CONVERSION AND/OR REPAIR OF NONMODULAR TELEPHONE SETS AND COMPONENTS**

### *Conversion of 500-Type Telephone Sets*

**4.01** Conversion requiring housing change:

- (1) Remove housing, handset, spade-tipped handset cord, mounting cords, finger stop, fingerwheel, and dial number plate.
- (2) On sets equipped with 7-type dials with metal fingerwheels, replace clamp plate with P-11E206 clamp plate.
- (3) On 7-type dials, remove the protrusion of the finger stop support (part of the dial frame) in such a manner that the remaining top surface shall not project above the lip of the frame. Install the universal number plate (Fig. 1 and 3), dust ring, and 840161285 finger stop. Provide station number card and install fingerwheel.
- (4) For sets equipped with 9-type dial, install universal number plate (Fig. 2 and 4), finger stop, and dust ring. Provide station number card and install fingerwheel.
- (5) Mount the 616D (Fig. 23) handset jack to the telephone set base by positioning the boss located at the bottom rear portion of the jack into the hole in basepan as shown in Fig. 17. Jack leads are connected as shown in Fig. 34.
- (6) Mount the 623D4 (Fig. 23) mounting cord jack in the left rear corner of the telephone set base. Position the boss located on the bottom right portion of the jack into last ringer hole on the left (Fig. 18). Jack leads are connected as shown in Fig. 34 or Table G.
- (7) Install 500D2 housing, G15A handset, appropriate 625-type jack (3.09), and plug-in handset and mounting cord as shown in Fig. 5.

**4.02** Conversion requiring no housing change:

- (1) Remove housing, handset, and spade-tipped handset, and mounting cords.

- (2) Notch the housing to permit the mounting of jacks as follows:

- Position the housing on the template as shown in Fig. 29, 30, 31, 32, and 33.

**Note:**

- (a) All housings are located by at least two marked pins and/or slots on the template.
- (b) Desk set housings locate on pins which engage the metal screw inserts.
- (c) The 554B (wall) set housing locates in slots which engage its two bottom interior ribs.
- (d) The 2554B (wall) set housing locates on a notched bar which engages its two top interior ribs, and a hollow post which engages one of its mounting bosses.
- Position the notching tool (Fig. 30), in the correctly marked guide opening in the template, as shown in Fig. 29.

**Caution, Before Punching Determine the Following:**

- The tool is in the correct guide opening.
- The punch is inside the housing and will punch outward when the tool is operated (Fig. 30 and 33).
- The stops on the tool die engage fully with the stops on the template (if present) or the template surface (Fig. 30).
- The tool is perpendicular to the bottom edge of the housing. This insures a vertical notch (Fig. 33).

**Caution, After Punching**

- Check the height of the punched notch using the check gauge on the template. If the notch is too shallow, repunch using the above procedure.
- Should more than four chips accumulate in the punching tool die (Fig. 30), remove them with a blunt object (KS-6320, orange stick)

before further punching. Always clear chips from the die before storing the tool.

- (3) Mount jacks as described in 4.01 (5) and (6).
- (4) Install 625-type jack (3.09), modified housing, G15A handset, and plug-ended handset and mounting cords as shown in Fig. 5.

**Conversion of 2500-Type Telephone Set**

**4.03** Convert as follows:

- (1) Remove housing, handset, handset cord, and mounting cord.
- (2) Install jacks as described in 4.01 (5) and (6) and connect as shown in Fig. 35 and Table H.
- (3) On sets requiring housing change, install 2500D2 housing.
- (4) On sets requiring no housing change, notch housing per 4.02(2) and install housing.
- (5) Install 625-type jack (3.09), housing, faceplate, handset cord, handset, and mounting cord as shown in Fig. 5.
- (6) Provide station number card and install retainer.

**Conversion of 702- and 2702-Type Telephone Sets**

**4.04** Telephone set basepans manufactured prior to 9-1-72 must be modified as follows:

- (1) Remove housing, handset, handset cord, and mounting cord.
- (2) Modify the front of the basepan to accommodate the 616P (Fig. 23) jack by bending the ear as shown in Fig. 20.
- (3) Modify the rear of the basepan to accommodate the 623P4 (Fig. 23) jack by breaking off the ear as shown in Fig. 21 and 22.

**4.05** Conversion requiring no housing change:

- (1) Remove housing, handset, handset cord, and mounting cord.
- (2) Modify basepan if necessary per 4.04 (2) and (3).
- (3) Modify housing per 4.02(2).
- (4) Install the 616P jack as shown in Fig. 15 and dress jack leads away from ringer gong.
- (5) Connect the jack leads as shown in Fig. 38 or 39.
- (6) Install the 623P4 jack as shown in Fig. 16.
- (7) Connect the jack leads as shown in Fig. 38 or 39 or Tables K and L.
- (8) Install modified housing, G15A handset, handset cord, and mounting cord as shown in Fig. 7 and provide station number card.
- (9) Install 625 jack as described in 3.09 and plug in mounting cord.

**4.06** Conversion requiring housing change:

- (1) Remove housing, handset, handset cord, and mounting cord.
- (2) Modify basepan if necessary per 4.04 (2) and (3).
- (3) Install 616P jack as shown in Fig. 15.
- (4) Connect the jack leads as shown in Fig. 38 or 39 and dress jack leads away from ringer gong.
- (5) Install the 623P4 jack as shown in Fig. 16.
- (6) Connect the jack leads as shown in Fig. 38 or 39 or Tables K and L.
- (7) Install new housing, handset, handset cord, and mounting cord as shown in Fig. 7 and provide station number card.
- (8) Install 625-type jack (3.09) and plug in mounting cord.

**Conversion of 554-Type Telephone Set****4.07** Conversion requiring housing change:

- (1) Remove housing, handset, handset cord, finger stop, fingerwheel, and dial number plate.
- (2) For dial conversion refer to 4.01 (2), (3), and (4).
- (3) Position 616C jack in left bottom corner of basepan (Fig. 6 and 13), connect jack leads as shown in Fig. 36.

*Note:* It may be necessary to loosen telephone set base mounting screws to install jack.

- (4) Install 554B2 housing, handset, and handset cord as shown in Fig. 6.

**4.08** Conversion requiring no housing change:

- (1) Remove housing, handset, and handset cord.
- (2) Notch housing per 4.02(2).
- (3) Mount 616C (Fig. 23) jack as described in 4.07(3) and connect leads as shown in Fig. 36.
- (4) Install housing, handset, and handset cord.

**Conversion of 2554-Type Telephone Set****4.09** Telephone set basepans manufactured prior to 3-1-72 must be modified as follows:

- (1) Remove housing, handset, and handset cord.
- (2) Bend ear as shown on Fig. 19 to accommodate handset jack (616B).

**4.10** Conversion requiring no housing change:

- (1) Remove housing, handset, and handset cord.
- (2) Modify basepan if necessary per 4.09(2).
- (3) Position 616B (Fig. 23) jack on basepan as shown in Fig. 14 and connect leads as shown in Fig. 37.
- (4) Modify housing per 4.02(2).

- (5) Install housing, handset, handset cord, and provide station number card.

**4.11 Conversion requiring housing change:**

- (1) Remove housing, handset cord, and handset.
- (2) Modify basepan if necessary per 4.09(2).
- (3) Mount 616B jack as shown on Fig. 14 and connect leads as shown in Fig. 37.
- (4) Install housing, handset, handset cord, and provide station number card.

**4.12 Field conversion of AD1 telephone base is not possible.**

**5. CONNECTIONS**

**5.01** All modular telephone sets supplied for this trial will be connected for bridged ringing (Fig. 34 through 41). For telephone set connection index, refer to Table S.

**5.02** Tables G through N list the internal line connections that are made for other classes of service or when converting existing sets for modular use or new installations. The jack assemblies must be wired as shown in the connection figures and Table R.

**5.03** Tables O, P, and Q provide connections for polarity guards. A polarity guard (surge protector) for end-to-end signaling installations may be installed in TOUCH-TONE® dial equipped sets when specified by local instructions. Refer to appropriate Reference section in Division 502 for ordering and installation information.

**6. MAINTENANCE**

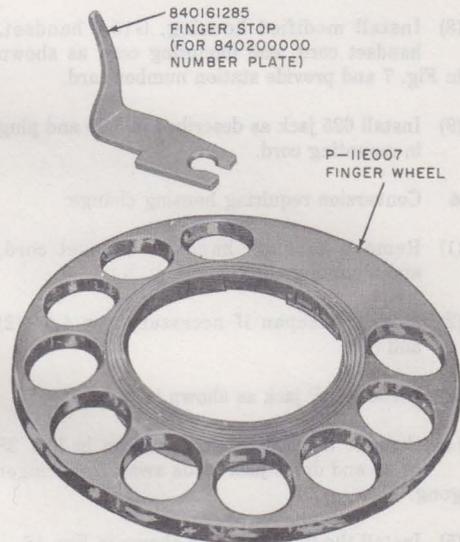
**6.01** The modular plan requires complete interchangeability of modular components (base, housing, handset, cords).

**6.02** Standard replaceable items such as ringers, dials, receiver units, etc., which are not new for this trial can be replaced or maintained in accordance with sections covering the particular item.

**6.03** The telephone sets listed in Table T may be repaired using H4DU and D4BU cords and G15A handset after installation of appropriate jacks, as indicated. All telephone sets not listed in Table T must be repaired using standard components. Refer to the appropriate BSP.



**Defective components are to be tagged with white linen tags and marked "Return to Western Electric Company for Repairs."**



**Fig. 1—7-Type Dial Adapter Parts**

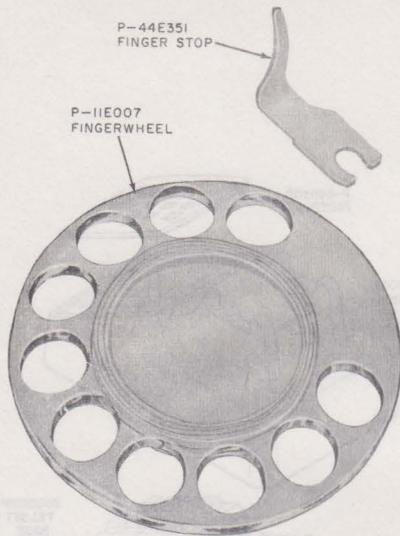


Fig. 2—9-Type Dial Adapter Parts

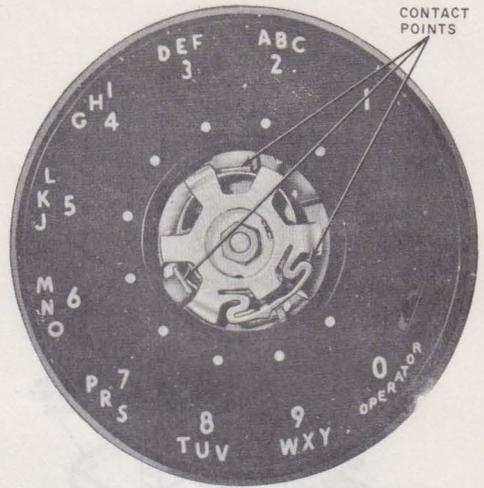


Fig. 4—Current Universal Dial Number Plate With 9-Type Dial

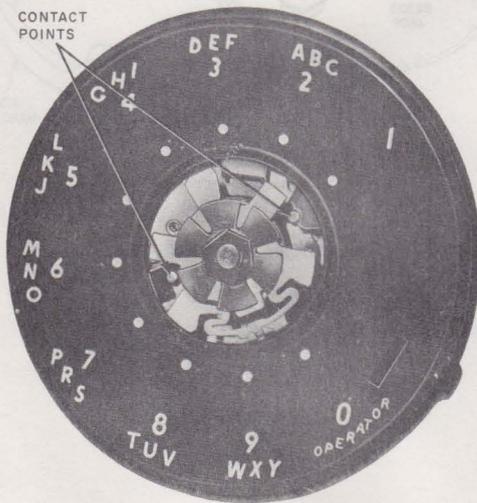


Fig. 3—Current Universal Dial Number Plate With 7-Type Dial

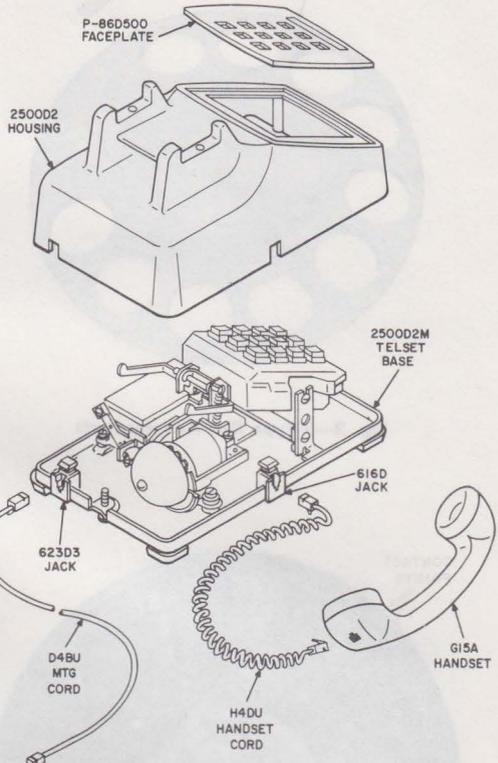
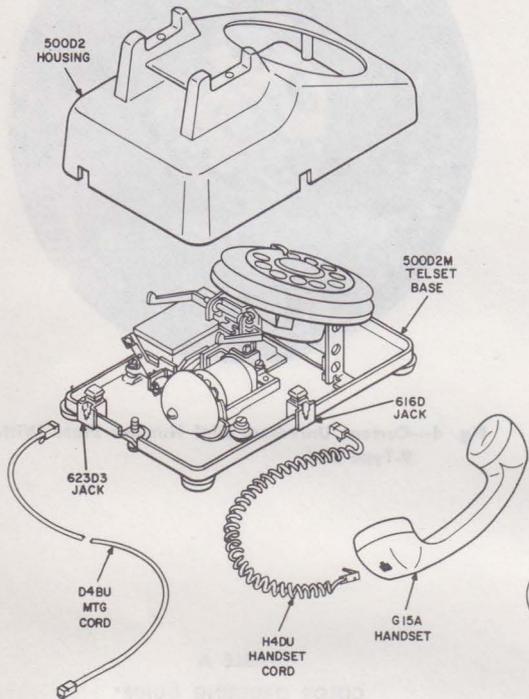
TABLE A  
COLOR ORDERING GUIDE\*

TEL SET, HOUSING, HANDSET, AND HANDSET CORD COLOR		COORDINATED FACEPLATE† COLOR	
Black	-03	Charcoal	-70
Ivory	-50	Muted Ivory	-80
Moss Green	-51	Light Green	-71
Red	-53	Muted Red	-69
Pastel Yellow	-56	Light Yellow	-72
White	-58	Light Gray	-73
Rose Pink	-59	Muted Pink	-74
Light Beige	-60	Muted Beige	-75
Light Gray	-61	Charcoal	-70
Aqua Blue	-62	Muted Blue	-76
Turquoise	-64	Muted Turquoise	-77

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

† Faceplates same color as housing are MD.

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500DM TELEPHONE SET

2500DM TELEPHONE SET

Fig. 5—500DM and 2500DM Telephone Set, Assembly

TPA 551297

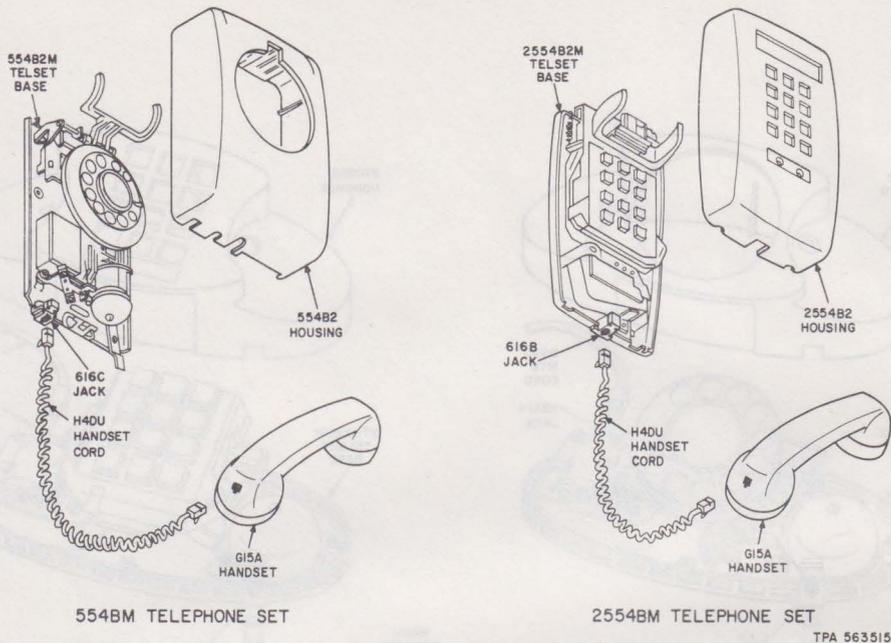


Fig. 6—554BM and 2554BM Telephone Set, Assembly

TABLE B  
MODULAR TELEPHONE SET COMPONENTS

TEL BASE*	TEL SET	TEL SET BASE	TEL BASE	HAND TEL SET*	HOUSING*	MTG CORD (NOTE)	HANDSET*	HANDSET CORD* (NOTE)
	500DM	500D2M†			500D2‡	D4BU	G15A	H4DU
	554BM	554B2M†			554B2‡		G15A	H4DU
	702BM	702B2M			702B2	D4BU	G15A	H4DU
	2500DM	2500D2M			2500D2§	D4BU	G15A	H4DU
	2554BM	2554B2M			2554B2¶		G15A	H4DU
	2702BM	2702B2M			2702B2	D4BU	G15A	H4DU
AD2			AD2M	220A or 2220B	AD1	D4BU		H4DB or H5AA
AC1			AC1M		AC1			

\* Add color suffix, Table A.

† Includes 9-type or 7-type dial adapter package.

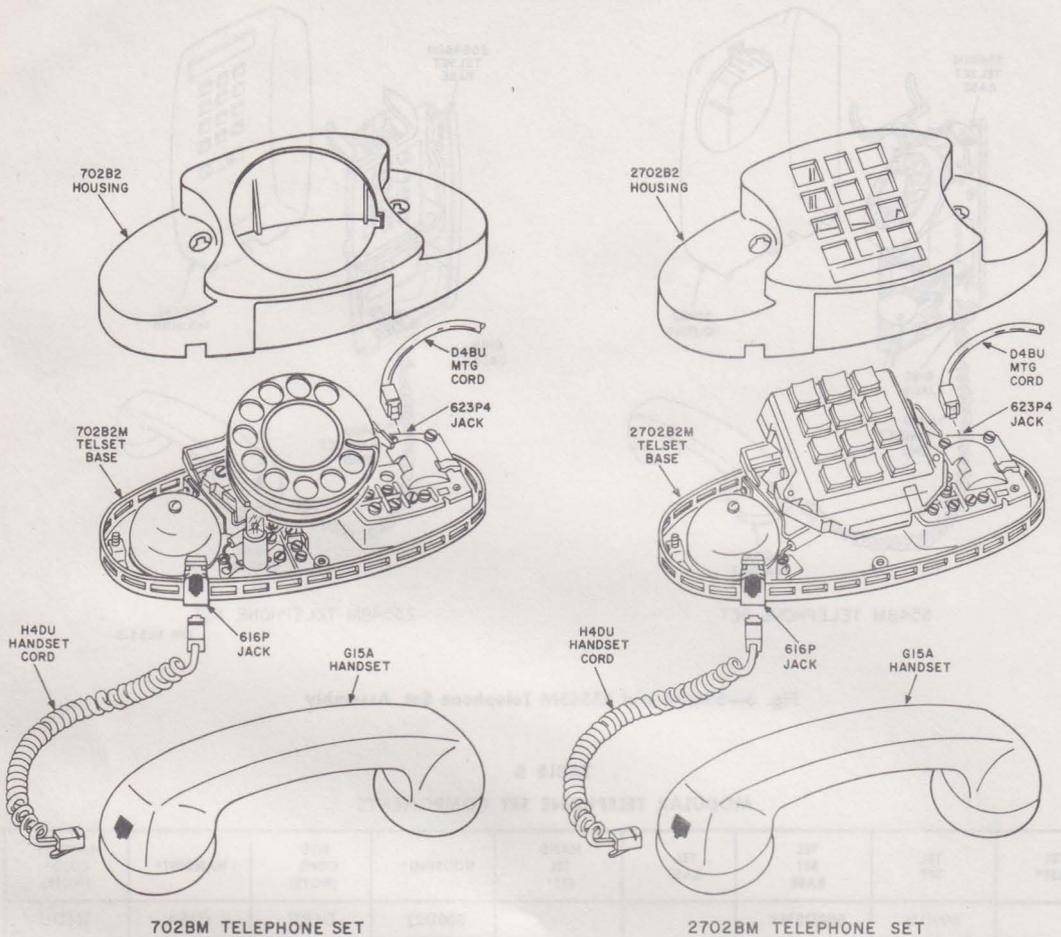
‡ Includes 840200000 universal dial number plate.

§ Includes P-86D5\* faceplate and P-25E803 retainer.

¶ Includes P-44E773 screws (2) and P-25E803 retainer.

Note: Cords must be ordered separately to complete telephone set.

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702BM TELEPHONE SET

2702BM TELEPHONE SET

TPA 563587

Fig. 7—702BM and 2702BM Telephone Set, Assembly

TABLE D  
UNIVERSAL DIAL  
NUMBER PLATE

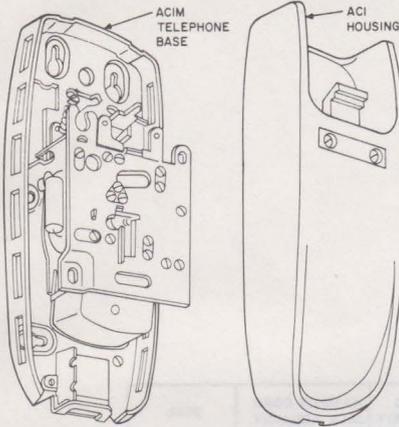
PART NUMBER	SWITCH	COLOR
840200084	02	Black
840200085	03	Grey
840200086	04	Green
840200087	05	Red
840200088	06	Yellow
840200089	07	White
840200090	08	Blue
840200091	09	Orange
840200092	10	Purple
840200093	11	Brown
840200094	12	Pink

TABLE C  
BASE COMPONENTS

BASE ASSEMBLY	RINGER	NETWORK	MTG CORD JACK ASSEMBLY	HANDSET CORD JACK ASSEMBLY	DIAL
500D2M	C4A	425E	623D3 or 623D4†	616D	9C*
554B2M	C4A	425E		616C	9C*
702B2M	M1A	4010B	623P4	616P	8A
2500D2M	C4A	425K	623D3 or 623D4†	616D	35A3A or 35Y3A
2554B2M	P1A	4010D		616B	35A3A or 35Y3A
2702B2M	M1A	4010D	623P4	616P	35E4A
AC1M	P1A				
AD2M			623T4		

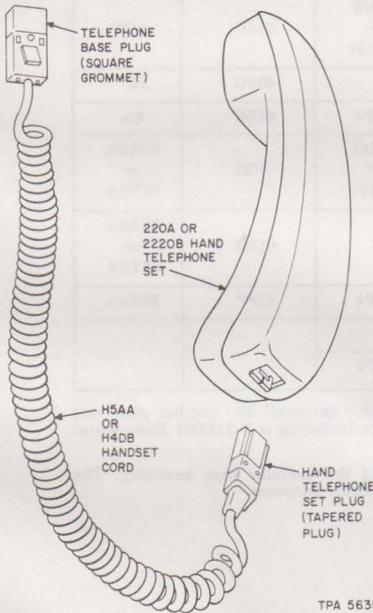
\* 9C dial consists of P-48V484 dial assembly, 840200000 universal dial number plate and ring assembly, and a package of dial adapter parts including a P-11E007 fingerwheel and a P-44E351 finger stop.

† The 623D3 jack will be available only as parts of the modular base assembly. The 623D4 can be ordered separately for conversion or repair purposes.



**TABLE D**  
**NUMBER PLATE**  
**(UNIVERSAL DIAL)**

COLOR	SUFFIX	PART NUMBER
Black	-03	840200034
Ivory	-50	840200505
Green	-51	840200513
Red	-53	840200539
Yellow	-56	840200562
White	-58	840200588
Rose Pink	-59	840200596
Lt. Beige	-60	840200604
Lt. Gray	-61	840200612
Aqua Blue	-62	840200620
Turquoise	-64	840200646

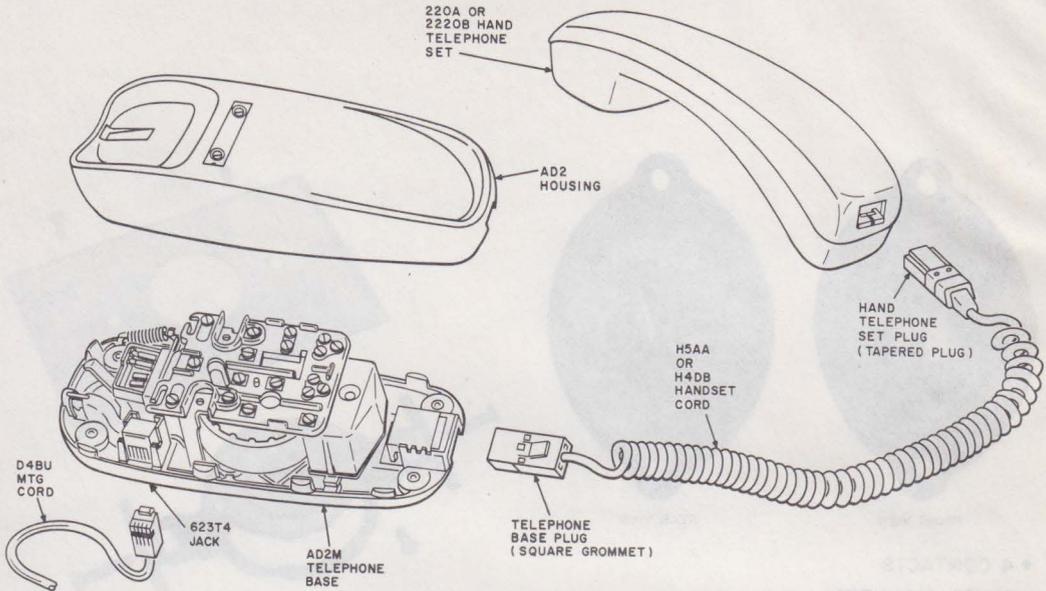


**TABLE E**  
**123A OR 124A APPARATUS BLANK**

HOUSING	TEL SET BASE	APP BLANK	NO. REQUIRED
500D2-Type	500D1	123A	2
2500D2-Type	2500D1	123A	2
702B-Type	702B1	124A	2
2702B-Type	2702B1	124A	2
2554B2-Type	2554B1	124A	1

TPA 563589

**Fig. 8—220A or 2220B Hand Telephone Set and AC1 (Wall) Telephone Base, Assembly**



TPA 563588

Fig. 9—220A or 2220B Hand Telephone Set and AD2 (Desk) Telephone Base, Assembly

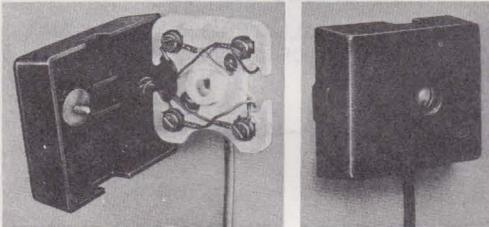
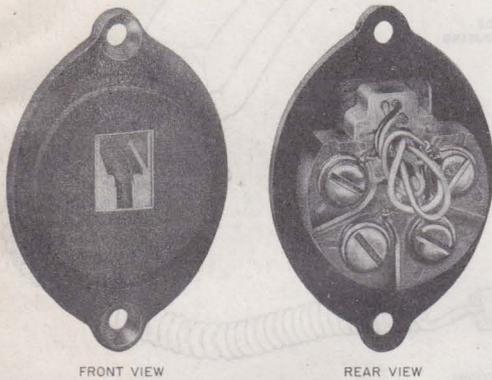


Fig. 10—625A Jack

TABLE F  
JACKS USED FOR CONVERSION OR REPAIR

TEL SET	HANDSET JACK	MTG CORD JACK
500D	616D	623D4
2500D		
554B	616C	
2554B	616B	
702B	616P	623P4
2702B		

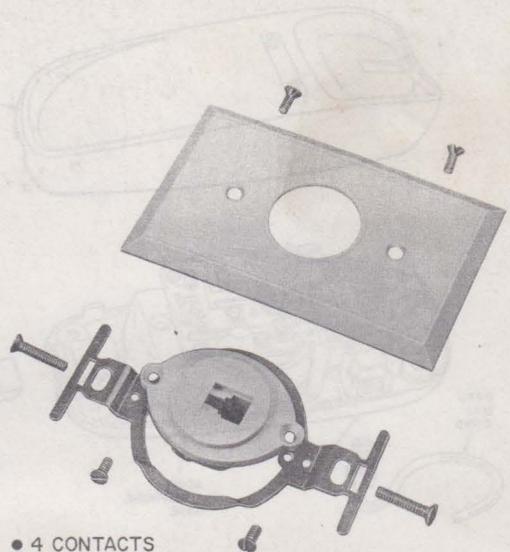


FRONT VIEW

REAR VIEW

- 4 CONTACTS
- FLUSH MOUNTED:  
USING 63A OR KS-19407, LI BRACKET  
AND 16A FACEPLATE OR IN STANDARD  
ELECTRICAL OUTLET BOX USING 43B  
BRACKET OR IN WOODWORK USING  
1-1/4 INCH HOLE
- MATES WITH D4BU MOUNTING CORD PLUG
- MOUNTING SCREWS SUPPLIED
- FOR NEW INSTALLATIONS OR MODULAR  
REPLACEMENT OF 548-TYPE JACKS

Fig. 11—625F Jack



- 4 CONTACTS
- FLUSH MOUNTED:  
USING 63A OR KS-19407, LI BRACKET  
AND 16A FACEPLATE OR IN STANDARD  
ELECTRICAL OUTLET BOX USING 43B  
BRACKET OR IN WOODWORK USING  
1-1/4 INCH HOLE.
- MATES WITH D4BU MOUNTING CORD PLUG
- MOUNTING SCREWS SUPPLIED
- FOR NEW INSTALLATIONS OR MODULAR  
REPLACEMENT OF 548-TYPE JACKS

Fig. 12—625B Jack Assembly

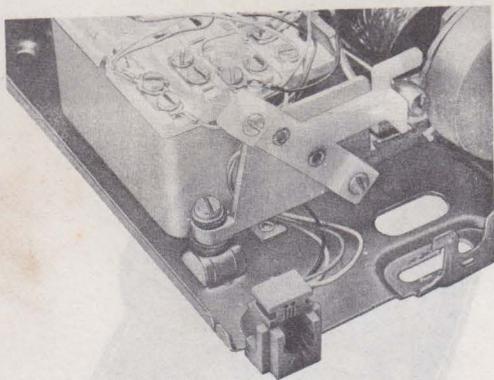


Fig. 13—554B2M Telephone Set Base With Handset Jack Installed

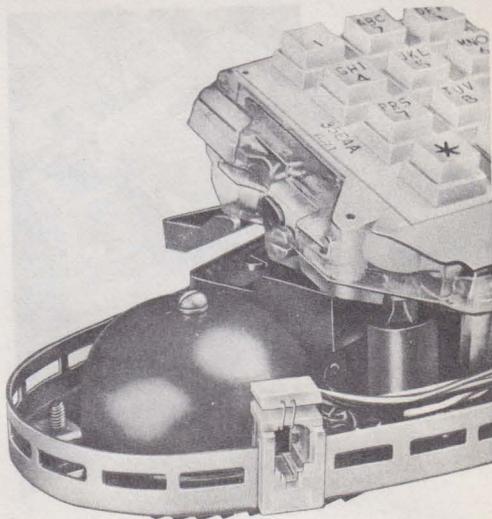


Fig. 15—2702B2M Telephone Set Base With Handset Jack Installed

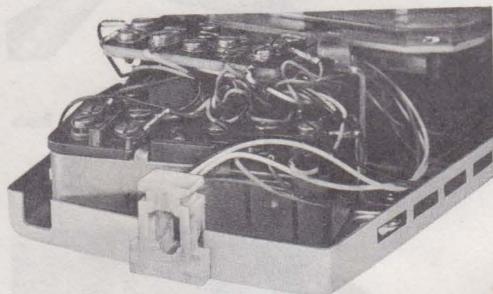


Fig. 14—2554B2M Telephone Set Base With Handset Jack Installed

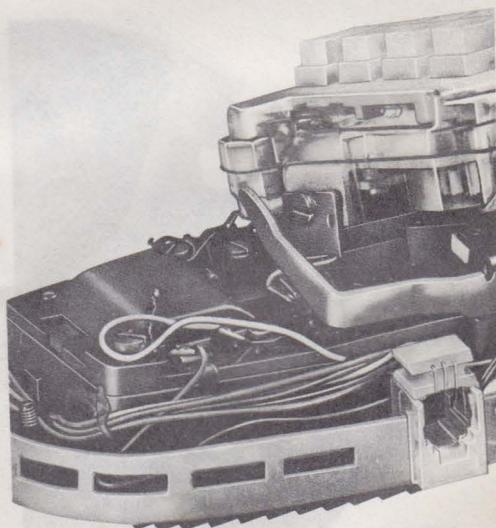


Fig. 16—2702B2M Telephone Set Base With Mounting Cord Jack Installed

7

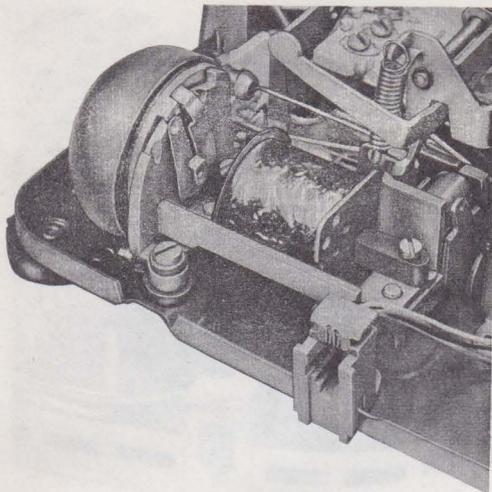


Fig. 17—500D2M or 2500D2M Telephone Set Base With Handset Jack Installed



Fig. 19—Modifying 2554B-Type Telephone Set Base to Accommodate Handset Jack



Fig. 18—500D2M or 2500D2M Telephone Set Base

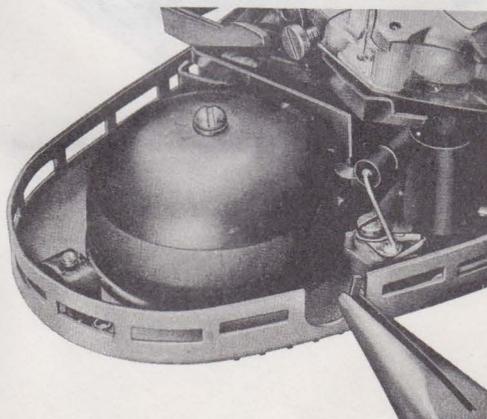


Fig. 20—Modifying 2702B-Type Telephone Set Base to Accommodate Handset Jack

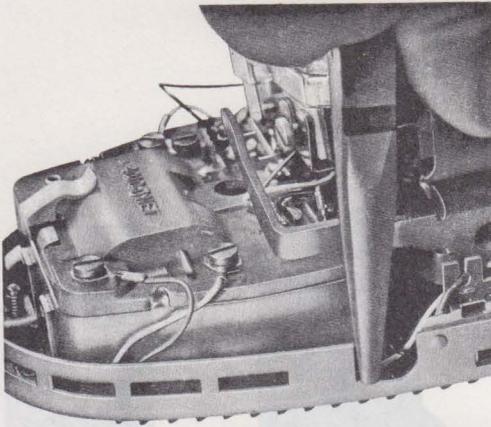


Fig. 21—Modifying 2702B-Type Telephone Set Base to Accommodate Mounting Cord Jack

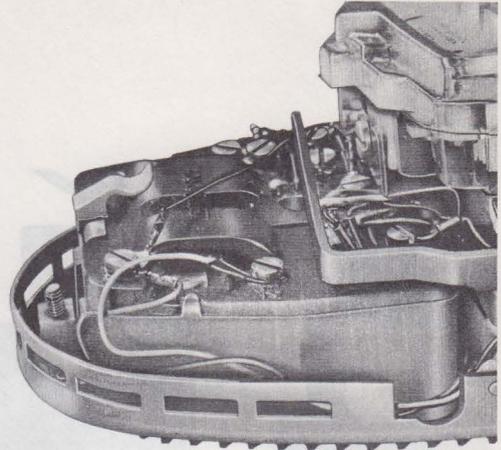


Fig. 22—2702B-Type Telephone Set Base Modified to Accommodate Mounting Cord Jack

TABLE G  
500DM TELEPHONE SET LINE AND RINGER CONNECTIONS

WIRE OR LEAD	COLOR	INDIV OR BRIDGED (NOTE 2)	RING PARTY	TIP PARTY NO IDENT GRD	TIP PARTY IDENT GRD			
					NORMAL CONN		RINGER REV WHEN CONN TO LL. EQUIP	
					1000Ω	2650Ω	1000Ω	2650Ω
Ringer Leads (Note 1)	R	L2	L2	L1	K	B	B	G
	BK	L1	G	G	G	B	B	K
	S	K	K	K	B	K	G	B
	S-R	A	A	A	B	G	K	B
Line Switch Lead	S	L2	L2	L2	A	A	A	A
623D-Type Jack Assembly in Set	R	L2	L2	L2	L1	L1	L1	L1
	G	L1	L1	L1	L2	L2	L2	L2
	Y	G	G	G	G	G	G	G
	BK	*	*	*	*	*	*	*

\* Insulate and store (if provided).

Notes:

1. To silence ringer permanently:
  - (a) For all classes of service except tip party identification remove (R) ringer lead from L1 or L2, insulate and store or connect to spare terminal.
  - (b) For tip party with 1000 ohms identification ground; remove (R) ringer lead from K of network, insulate and store or connect to unused terminal.
  - (c) For tip party with 2650 ohms identification ground; remove the (S) ringer lead from K of network, insulate and store or connect to unused terminal.
2. Factory-wired for bridged ringing.

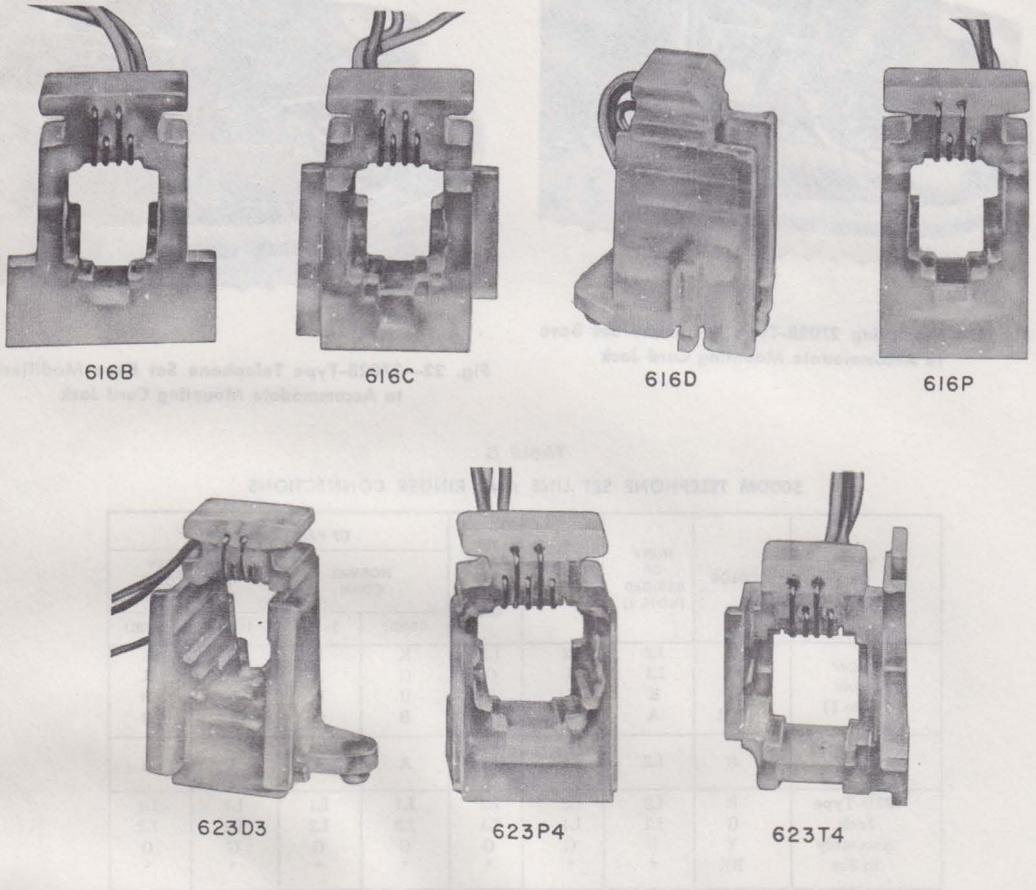


Fig. 23—Modular Jacks

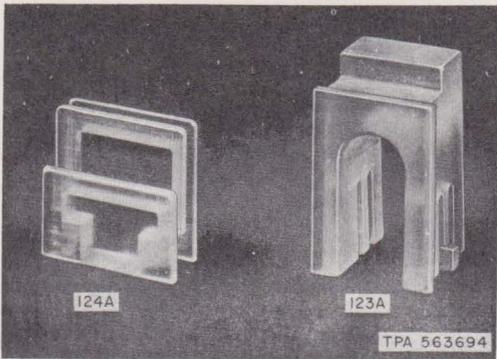


Fig. 24—Apparatus Blanks

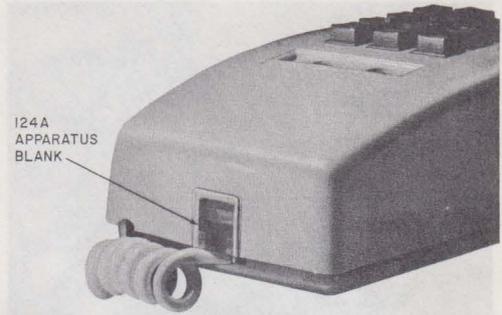


Fig. 26—124A Apparatus Blank Installed in 2554B-Type Telephone Set

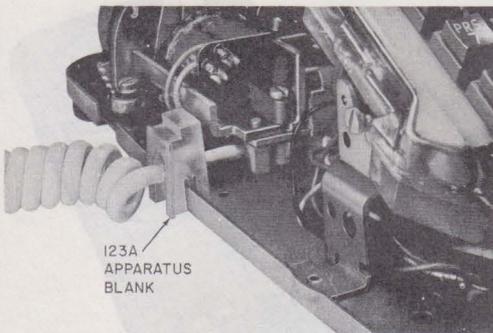
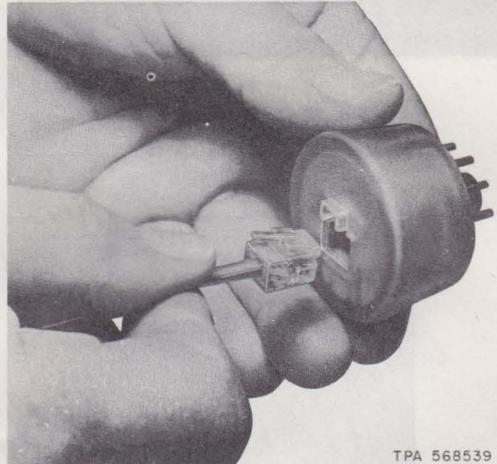
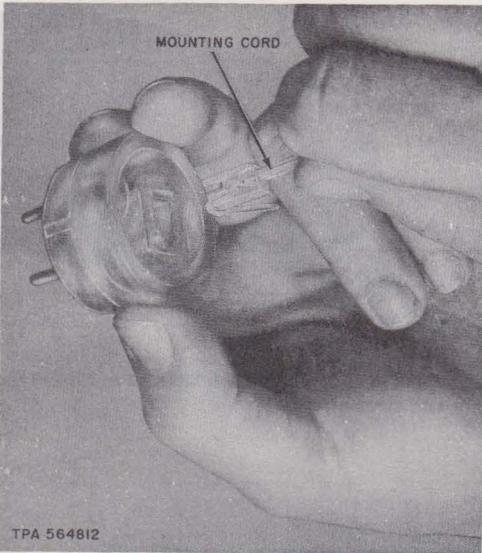


Fig. 25—123A Apparatus Blank Installed in 2500D-Type Telephone Set Base



TPA 568539

Fig. 27—224A Adapter



TPA 564812

Fig. 28—225A Adapter

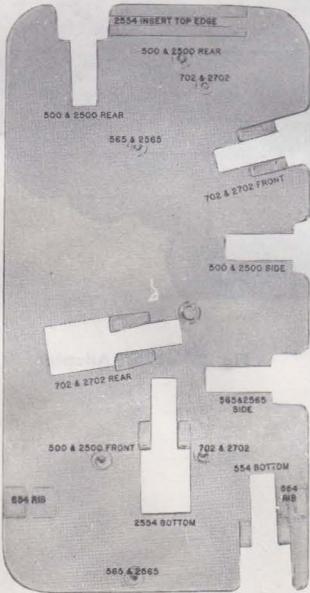


Fig. 29—Template



Fig. 30—Notching Tool

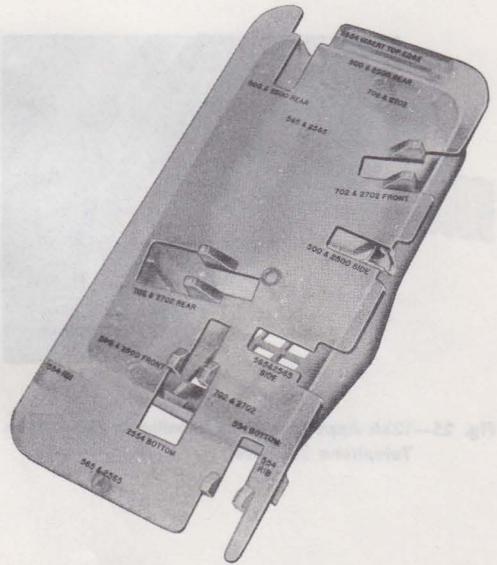


Fig. 31—2500D-Type Housing Mounted on Template

**TABLE H**  
**LINE AND RINGER CONNECTIONS FOR 2500DM TELEPHONE SET**

WIRE OR LEAD	COLOR	INDIV OR BRIDGED (NOTE 2)	RING PARTY	TIP PARTY		
				NO IDENT. GROUND	IDENT. GROUND	
					1000Ω	2650Ω
623D3 or 623D4 Jack Assembly in Set	G	L1	L1	L1	L2	L2
	Y	G	G	G	G	G
	R	L2	L2	L2	L1	L1
	BK	*	*	*	*	*
Ringer Leads (Note 1)	R	L2	L2	L1	K	B
	S-R	A	A	A	B	G
	S	K	K	K	B	K
	BK	L1	G	G	G	B
Line Switch Leads	S	L2	L2	L2	A	A
	W	F	F	F	C	C
	BR	C	C	C	F	F

\* Insulate and store (if provided).

**Notes:**

1. To silence ringer permanently:

- (a) For all classes except tip party identification, remove (R) ringer lead from L1 or L2, insulate and store or connect to spare terminal.
- (b) For 1000Ω grd — insulate and store (S-R) ringer lead or connect to spare terminal.
- (c) For 2650Ω grd — insulate and store (BK) ringer lead or connect to spare terminal.

2. Factory-wired for bridged ringing.

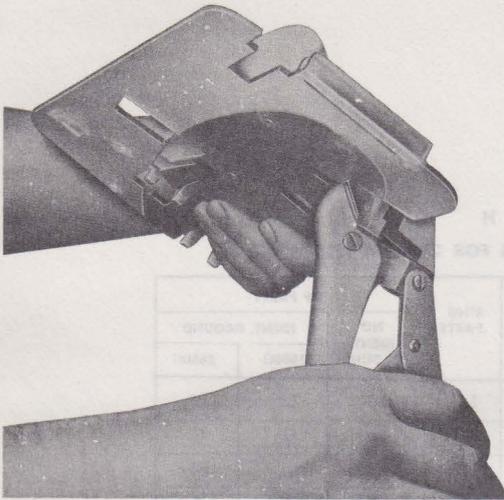


Fig. 32—Positioning Notching Tool

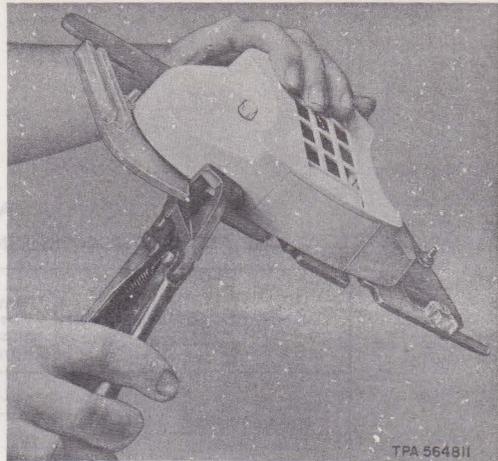


Fig. 33—Notching 2702B-Type Housing to Accommodate Handset Jack

TABLE I  
554BM TELEPHONE SET LINE AND RINGER CONNECTIONS

WIRE OR LEAD	COLOR	INDIVIDUAL OR BRIDGED (NOTE 2)	RING PARTY	TIP PARTY NO IDENT GRD	TIP PARTY IDENT GROUND			
					NORMAL CONNECTIONS		RINGER REV. WHEN CONN TO LL. EQUIP†	
					1000Ω	2650Ω	1000Ω	2650Ω
Ringer Leads (Note 1)	R	L2	L2	L2	K	B	B	G
	BK	L1	G	G	G	B	B	K
	S	K	K	K	B	K	G	B
	S-R	A	A	A	B	G	K	B
Line Switch		S	L2	L2	A	A	A	A
Line Wire in Set	Ring	R	L2	L2	L1	L1	L1	L1
	Tip	G	L1	L1	L2	L2	L2	L2
	Grd	Y	G*	G	G	G	G	G

\* No ground required

Notes:

1. To silence ringer:
  - (a) For all classes of service except tip party identification, connect (BK) ringer leads to K terminal of network.
  - (b) For tip party with 1000Ω identification ground, remove (R) ringer lead from K of network, insulate and store or connect to spare terminal.
  - (c) For tip party with 2650Ω identification ground, remove (S) ringer lead from K of network, and insulate and store or connect to spare terminal.
2. Factory-wired for bridged ringing.

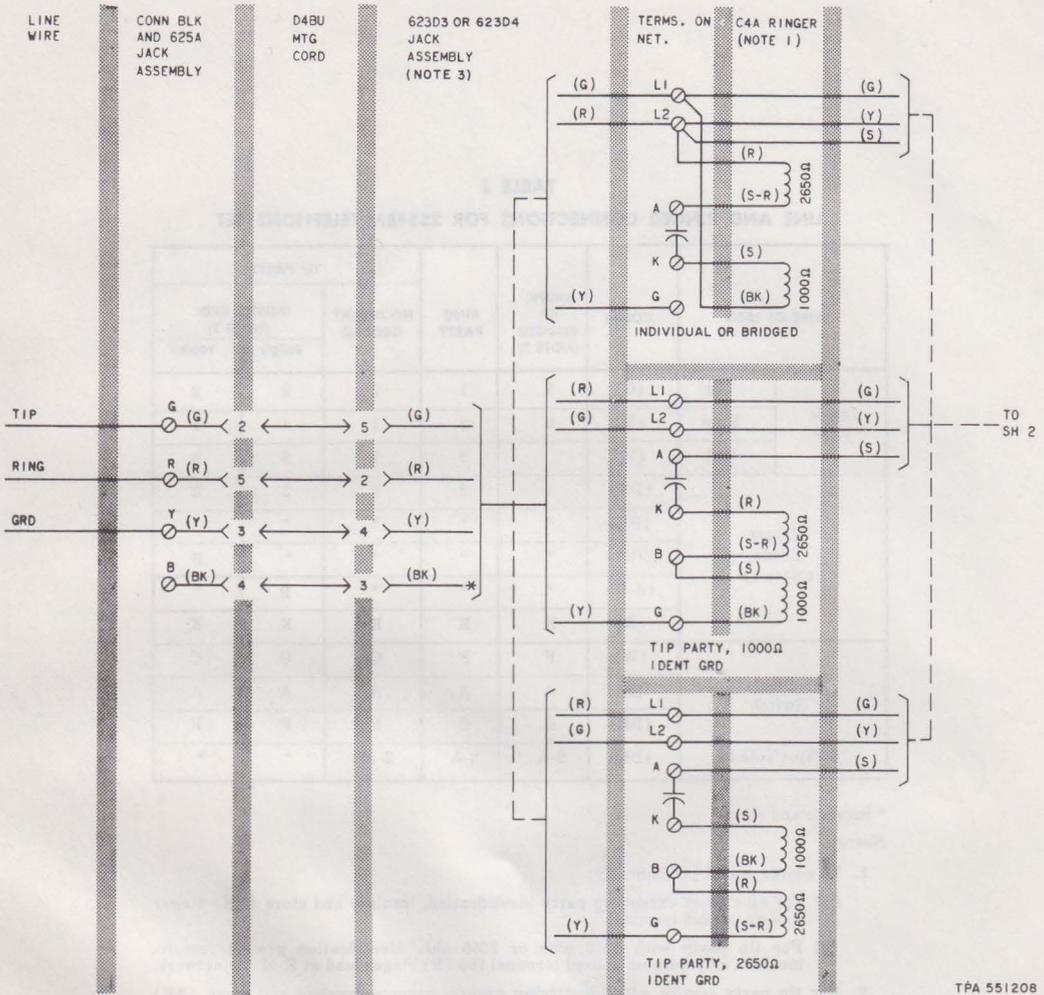
**TABLE J**  
**LINE AND RINGER CONNECTIONS FOR 2554BM TELEPHONE SET**

WIRE OR LEAD		COLOR	INDIV. OR BRIDGED (NOTE 3)	RINGER PARTY	TIP PARTY		
					NO INDENT. GROUND	INDENT. GRD. (NOTE 2)	
						2650Ω	1000Ω
Inside Wire	Tip	(G)	1	1	2	2	2
	Ring	(R)	2	2	1	1	1
	Grd	(Y)		3	3	3	3
Ringer Leads (Note 1)		(BK)	1	3	3	3	3
		(BL)	*	*	*	*	*
		(S)	*	*	*	*	B
		(S-R)	*	*	*	B	*
		(R)	K	K	K	K	K
Line Switch		(W)	F	F	C	C	C
		(S)	A	A	A	A	A
		(BR)	C	C	F	F	F
Strap (Note 2)		(BK)	2-A	2-A	2-A	*	*

\* Insulate and store.

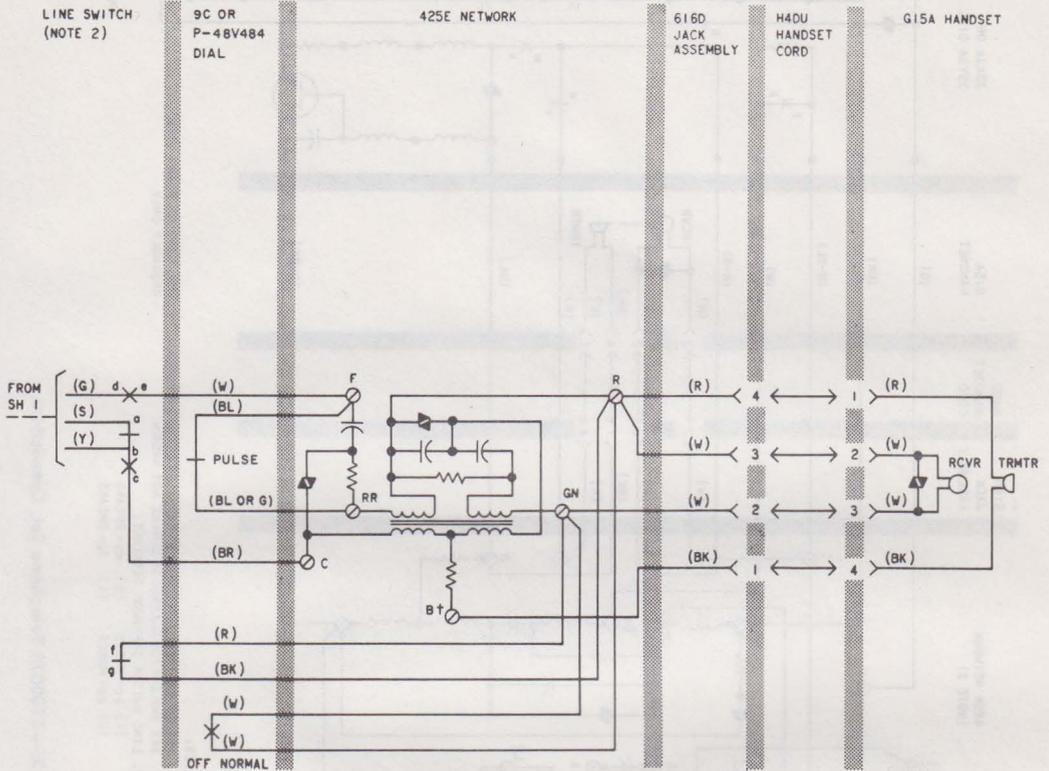
**Notes:**

1. To silence ringer permanently:
  - (a) For all classes except tip party identification, insulate and store (BK) ringer lead on unused terminal.
  - (b) For tip party with 1000 ohm or 2650 ohm identification ground remove, insulate, and store on unused terminal the (R) ringer lead at K of the network.
2. For tip party service with identifying ground, remove, insulate and store (BK) strap from terminal 2 on terminal strip and A of network.
3. Factory-wired for bridged ringing.



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Fig. 34—500DM Telephone Set, Connections (Sheet 1 of 2)



NOTES:

1. 500DM FACTORY WIRED FOR INDIVIDUAL OR BRIDGED RINGING. SEE TABLE G FOR ALL CLASSES OF SERVICE.
2. LINE SWITCH OFF HOOK SEQUENCE
  - (1) bc MAKES (3) ab BREAKS
  - (2) de MAKES (4) fg BREAKS
3. (BK) LEAD ON 623D4 JACK ASSEMBLY ONLY.

\* INSULATED AND STORED  
 † SAME TERMINAL MAY APPEAR IN RINGER CONNECTIONS

TPA 551208

Fig. 34—500DM Telephone Set, Connections (Sheet 2 of 2)



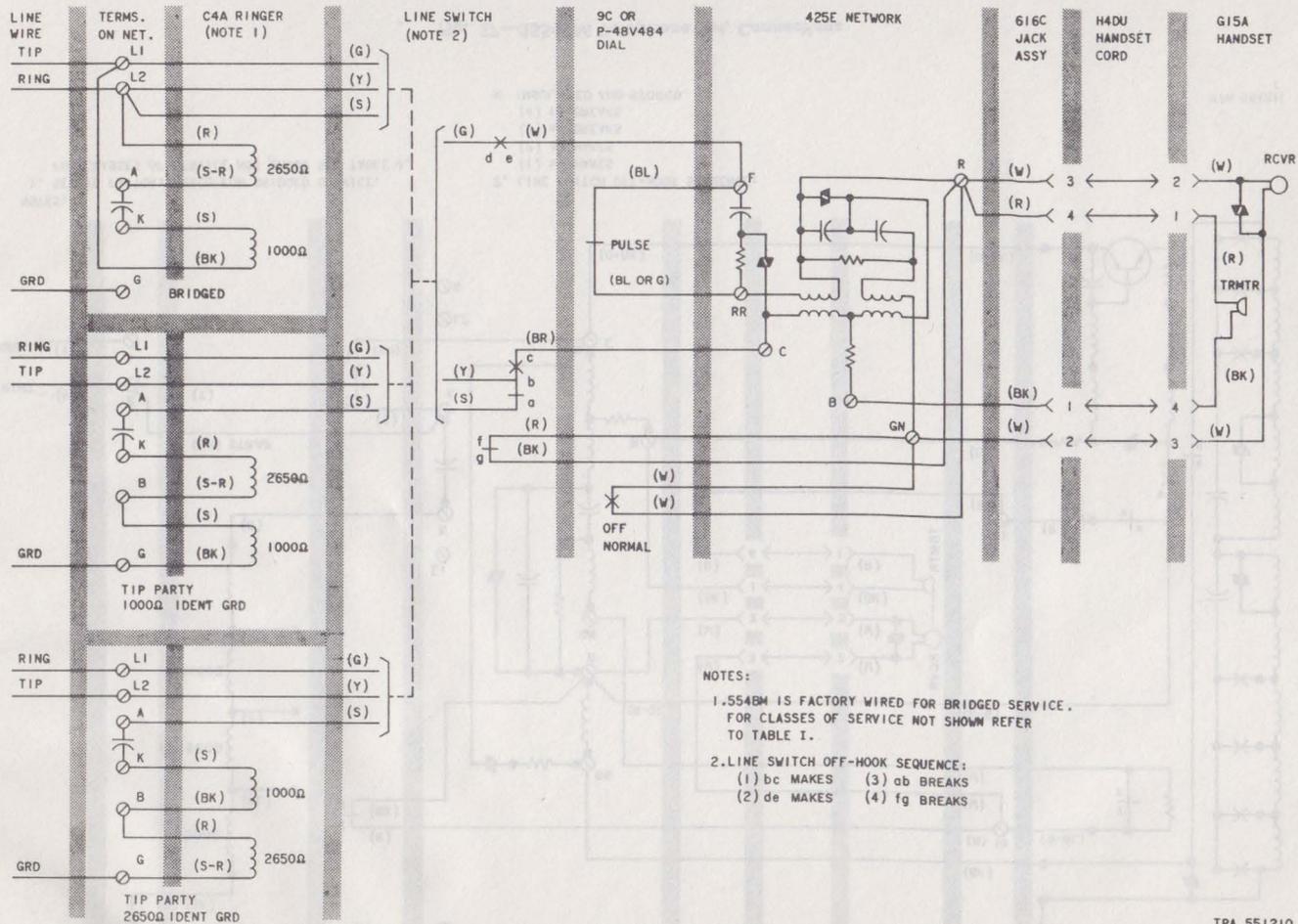
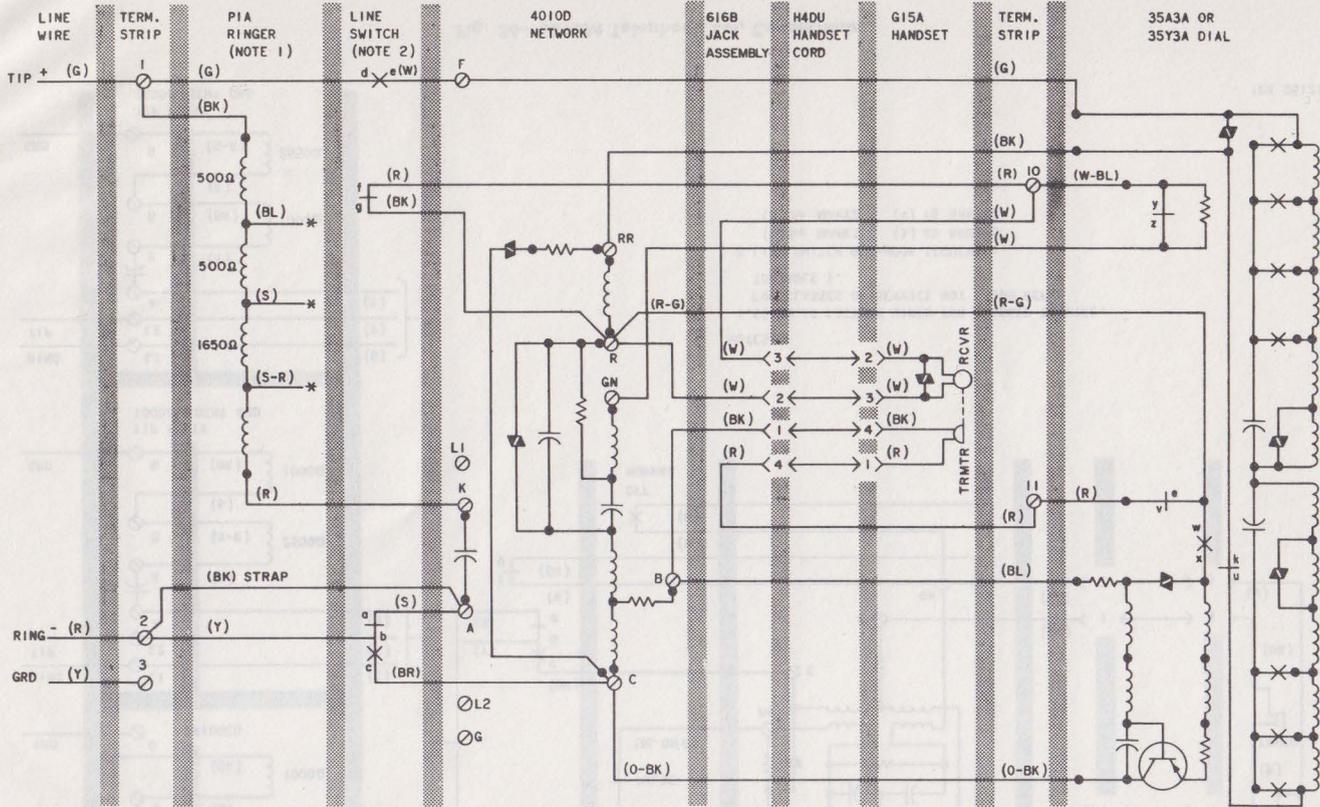


Fig. 36—554BM Telephone Set, Connections

TPA 551210





NOTES:

1. SET IS FACTORY WIRED FOR BRIDGED SERVICE.  
FOR CLASSES OF SERVICE NOT SHOWN SEE TABLE J.

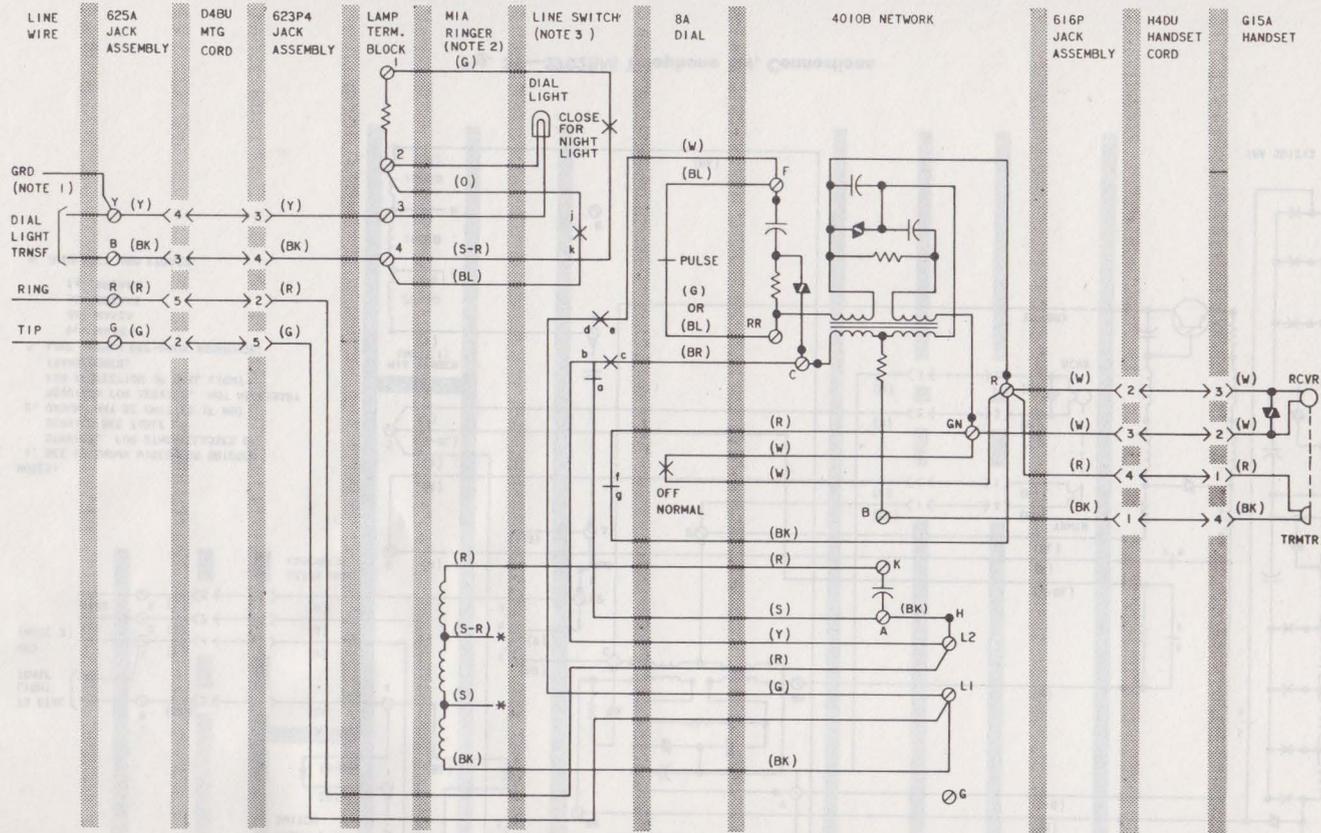
2. LINE SWITCH OFF-HOOK SEQUENCE:

- (1) bc MAKES
- (2) da MAKES
- (3) ab BREAKS
- (4) fg BREAKS

\* INSULATED AND STORED.

TPA 551211

Fig. 37—2554BM Telephone Set, Connections

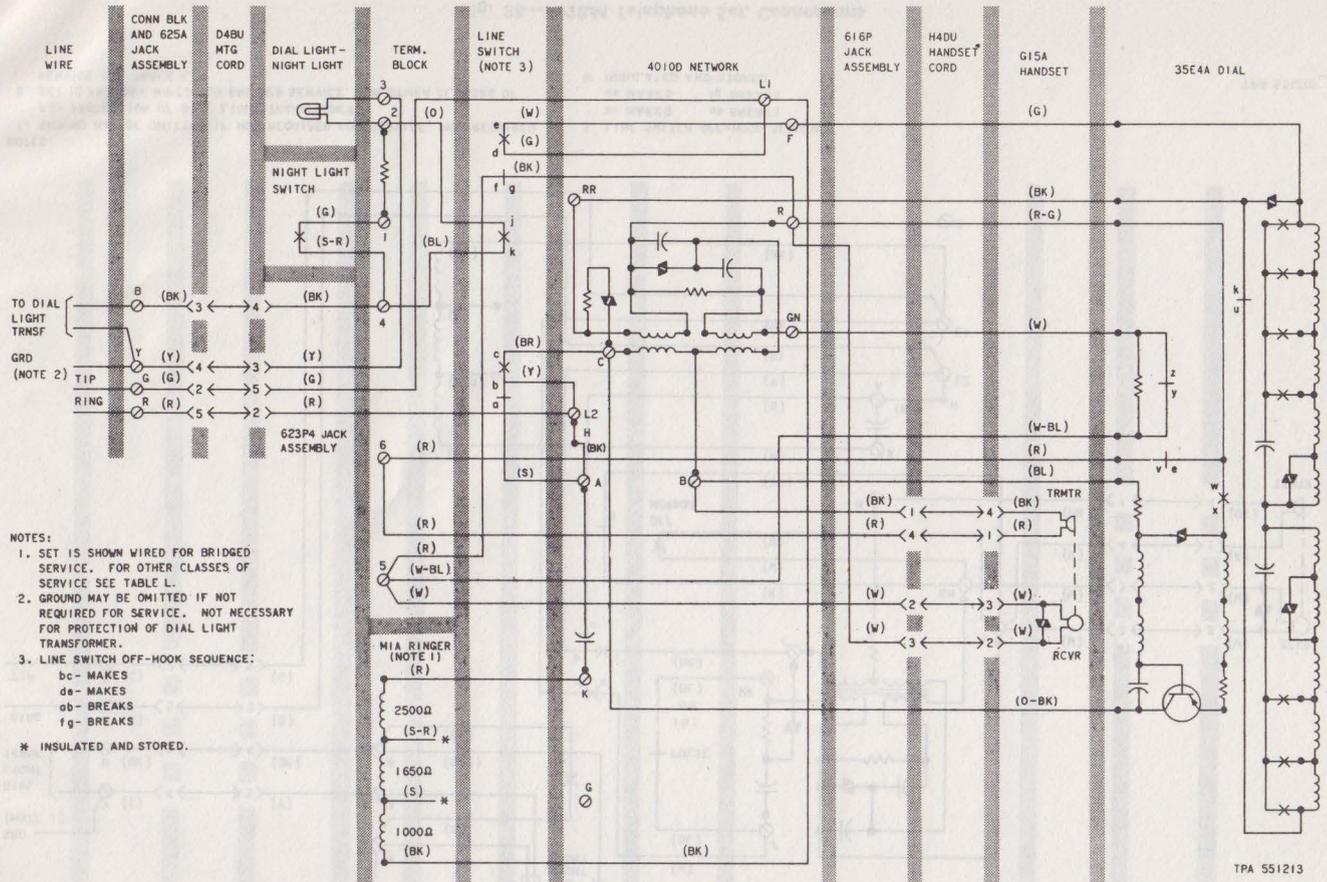


NOTES:

1. GROUND MAY BE OMITTED IF NOT REQUIRED FOR SERVICE, NOT REQUIRED FOR PROTECTION OF DIAL LIGHT TRANSFORMER.
2. SET IS FACTORY WIRED FOR BRIDGED SERVICE. FOR OTHER CLASSES OF SERVICE SEE TABLE K.
3. LINE SWITCH OFF-HOOK SEQUENCE  
 bc MAKES    ab BREAKS  
 de MAKES    fg BREAKS  
 \* INSULATED AND STORED

TPA 551212

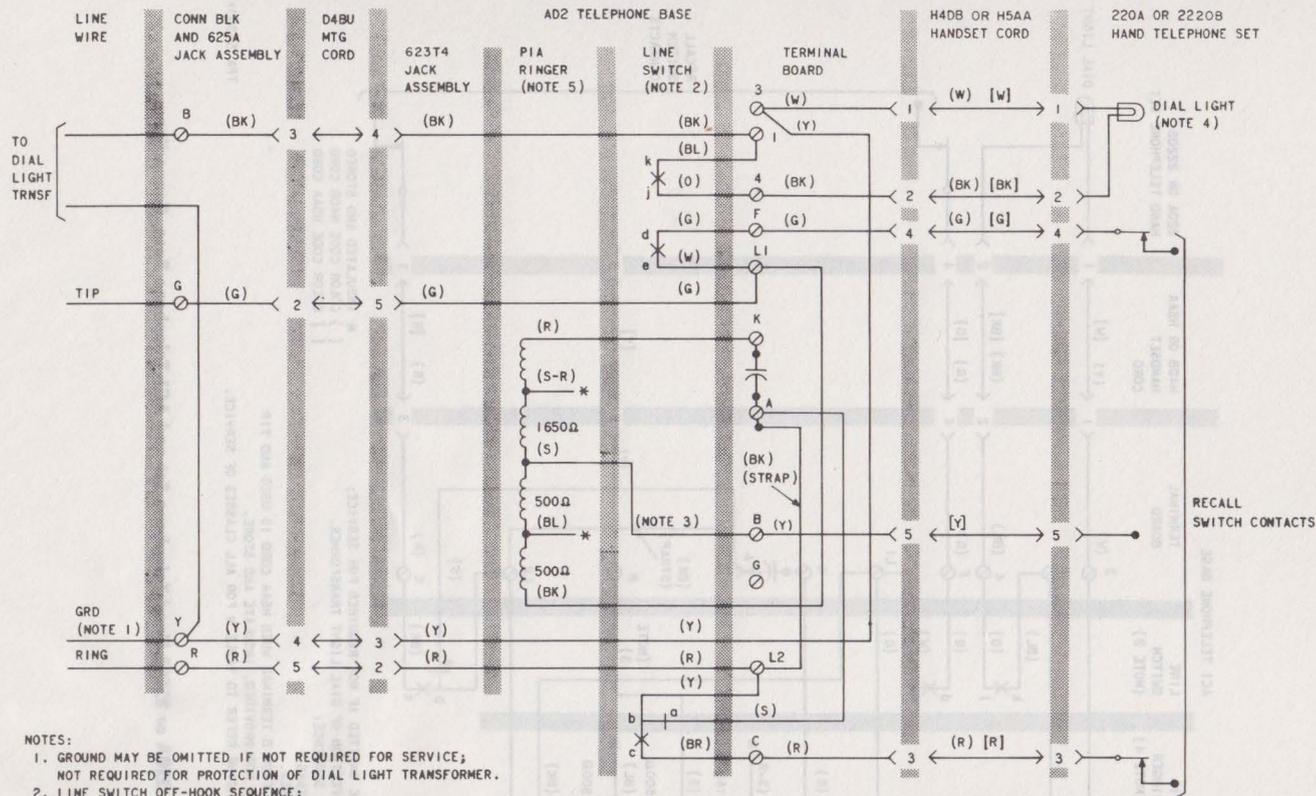
Fig. 38—702BM Telephone Set, Connections



- NOTES:
1. SET IS SHOWN WIRED FOR BRIDGED SERVICE. FOR OTHER CLASSES OF SERVICE SEE TABLE L.
  2. GROUND MAY BE OMITTED IF NOT REQUIRED FOR SERVICE. NOT NECESSARY FOR PROTECTION OF DIAL LIGHT TRANSFORMER.
  3. LINE SWITCH OFF-HOOK SEQUENCE:  
 bc - MAKES  
 de - MAKES  
 ab - BREAKS  
 fg - BREAKS
- \* INSULATED AND STORED.

Fig. 39—2702BM Telephone Set, Connections

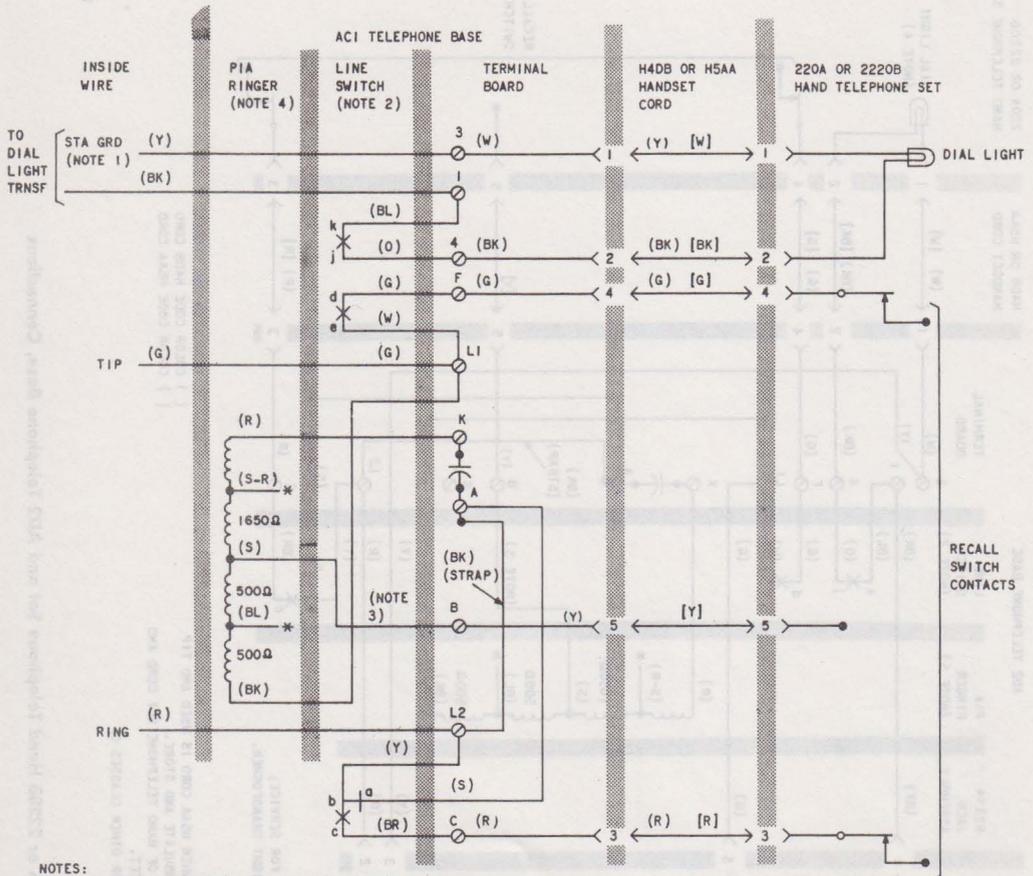
TPA 551213



- NOTES:
1. GROUND MAY BE OMITTED IF NOT REQUIRED FOR SERVICE; NOT REQUIRED FOR PROTECTION OF DIAL LIGHT TRANSFORMER.
  2. LINE SWITCH OFF-HOOK SEQUENCE:  
bc MAKES      ab BREAKS  
de MAKES      jk MAKES
  3. DISCONNECT (S) LEAD FROM B TERMINAL WHEN H5AA CORD IS USED AND TIP IDENTIFYING GROUND IS NOT PROVIDED, INSULATE AND STORE.
  4. CHANGE TO 53A LAMP IF COMBINED LENGTH OF HAND TELEPHONE SET CORD AND (AD2 BASE) MOUNTING CORD EXCEEDS 15 FEET.
  5. FACTORY-WIRED FOR BRIDGED RINGING. FOR OTHER CLASSES OF SERVICE SEE TABLE M.

\* INSULATED AND STORED  
( ) COLOR CODE H4DB CORD  
[ ] COLOR CODE H5AA CORD

Fig. 40—220A or 2220B Hand Telephone Set and AD2 Telephone Base, Connections



- NOTES:
1. STATION GROUND MAY BE OMITTED IF NOT REQUIRED FOR SERVICE; NOT REQUIRED FOR PROTECTION OF DIAL LIGHT TRANSFORMER.
  2. LINE SWITCH OFF-HOOK SEQUENCE:  
bc MAKES      ab BREAKS  
de MAKES      jk MAKES
  3. DISCONNECT (S) LEAD FROM B TERMINAL WHEN H5AA CORD IS USED AND TIP IDENTIFYING GROUND IS NOT PROVIDED, INSULATE AND STORE.
  4. WIRED FOR BRIDGED RINGING REFER TO TABLE N FOR ALL CLASSES OF SERVICE.

\* INSULATED AND STORED  
( ) COLOR CODE H4DB CORD  
[ ] COLOR CODE H5AA CORD

TPA 563601

Fig. 41—220A or 2220B Hand Telephone Set and AC1 Telephone Base, Connections

TABLE J

702BM TELEPHONE SET LINE AND RINGER CONNECTIONS FOR  
BRIDGED, RING, AND TIP PARTY SERVICE

TABLE K 702BM TELEPHONE SET LINE AND RINGER CONNECTIONS						
WIRE OR LEAD	INDIVIDUAL OR BRIDGED (NOTE 3)	RING PARTY	TIP PARTY			
			NO IDENT GRD	IDENTIFYING GROUND (NOTE 1)		
				1000 OHMS	2650 OHMS	
Dial Light Transformer	1	Y	Y	Y	Y	Y
	2	B	B	B	B	B
623P4 Jack Assembly in Set	(R)	L2	L2	L1	F	F
	(G)	L1	L1	L2	L2	L2
	(BK)	4†	4†	4†	4†	4†
	(Y)	3†	3†	3†	3†	3†
Ringer Leads (Note 2)	(R)	K	K	K	K	K
	(BK)	L1	3†	3†	3†	3†
	(S)	*	*	*	L1	*
	(S-R)	*	*	*	*	L1
Line Switch	(W)	F	F	F	B	B
Strap from H of Net.	(BK)	A	A	A	*	*

\* Insulated and stored.

† Terminals on lamp terminal block.

Notes:

1. For tip party service with identifying ground, remove insulate and store (BK) strap between network terminals A and H.
2. To silence ringer permanently: For all classes of service except tip party identification move (BK) ringer lead from L1 to G of network. For 1000Ω or 2650Ω identifying ground, disconnect (R) ringer lead from K, insulate and store or use spare terminal.
3. Sets are factory-wired for bridged service.

TABLE I

2702BM TELEPHONE SET LINE AND RINGER CONNECTIONS FOR BRIDGED, RING, AND TIP PARTY SERVICE

WIRE OR LEAD	COLOR	INDIVIDUAL OR BRIDGED (NOTE 3)	RING PARTY	TIP PARTY		
				NO IDENT GRD	IDENTIFYING GROUND (NOTE 4)	
					1000 OHMS	2650 OHMS
623P4 Jack Assembly in Set (Note 2)	R	L2	L2	L1	C	C
	G	L1	L1	L2	L2	L2
	Y	3	3	3	3	3
	BK	4	4	4	4	4
Ringer Lead (Note 1)	BK	L1	3	3	3	3
	S	*	*	*	L1	*
	S-R	*	*	*	*	L1
Line Switch at Net.	W	F	F	C	B	B
	BR	C	C	F	F	F
Strap from H of Net.	BK	A	A	A	*	*

\* Insulated and stored.

Notes:

1. M1A ringer may be silenced by removing (R) ringer lead from network terminal K. Insulate or store lead on spare terminal.
2. When connecting the 623P4 jack assembly leads for tip party identifying ground, use D-161488 connectors and M1W straps as required to extend conductor leads.
3. Sets are factory-wired for bridged service.
4. For tip party service with identifying ground, remove insulate and store (BK) strap between network terminals A and H.

**TABLE M**  
**LINE AND RINGER CONNECTIONS FOR AD2 (DESK)**  
**TELEPHONE BASE**

WIRE OR LEAD	COLOR	INDIV. OR BRIDGED (NOTE 3)	RING PARTY	TIP PARTY	
				NO IDENT GROUND	WITH IDENT GROUND (NOTE 1)
623T4 Jack Assembly in Tel Base	R	L2	L2	L1	L1
	G	L1	L1	L2	L2
	Y	3	3	3	3
	BK	1	1	1	1
Ringer Leads (Note 2)	R	K	K	K	K
	BK	L1	3	3	3
	S*	B	B	B	B
Handset Cord Jack†	R	C	C	F	F
	G	F	F	C	C
Strap from A of Net.	BK	L2	L2	L2	A

\* Disconnect (S) lead from terminal B when H5AA cord is used and tip identifying ground is not provided, insulate and store.

† Connections when 2220B hand telephone set is used. No wiring changes involved for 220A hand telephone set.

**Notes:**

1. Same connections for either 1000 or 2650 ohm Central Offices. For tip party identifying ground — 1000Ω or 2650Ω H5AA cord must be used. Remove (BK) strap from network terminal L2, loop back and connect to network terminal A.
2. To permanently silence ringer; move (R) ringer lead from K to G of terminal board. For tip party identification (BK) ringer lead must remain on 3 of terminal board.
3. Factory-wired for bridged ringing.

**TABLE N**  
**LINE AND RINGER CONNECTIONS FOR**  
**AC1 (WALL) TELEPHONE BASE**

	WIRE OR LEAD	COLOR	INDIV. OR BRIDGED	RING PARTY	TIP PARTY	
					NO IDENT GROUND	WITH IDENT GROUND (NOTE 1)
Inside Wire	Ring	R	L2	L2	L1	L1
	Tip	G	L1	L1	L2	L2
	GRD and TRNSF	Y	3	3	3	3
	TRNSF	BK	1	1	1	1
Ringer Leads (Note 2)	R	R	K	K	K	K
	BK	BK	L1	3	3	3
	(S)*	(S)*	B	B	B	B
Handset Cord Jack†	R	R	C	C	F	F
	G	G	F	F	C	C
Strap from A	BK	BK	L2	L2	L2	A

\* Disconnect (S) lead from terminal B when H5AA cord is used and tip identifying ground is not provided, insulate and store

† Connections when 2220B hand telephone set is used. No wiring changes involved for 220A hand telephone set.

**Notes:**

1. Same connections used for either 1000 or 2650 ohm Central Offices. For tip party identifying ground — 1000Ω or 2650Ω H5AA cord must be used. Remove (BK) strap from network terminal L2, loop back and connect to network terminal A.
2. To permanently silence ringer; remove (R) ringer lead from K to G on terminal board. For tip party identification (BK) ringer lead must remain on 3 of terminal board.

TABLE O

**P-90D052 OR P-90D053 POLARITY GUARD ASSEMBLY, CONNECTIONS FOR 2500DM OR 2554BM TELEPHONE SET, RESPECTIVELY**

WIRE OR LEAD	COLOR	REMOVE FROM	CONNECT TO
Dial	(BK)	RR net.	T of guard assembly
Line Switch	(BR)	C net.	S of guard assembly
Guard Assembly	(G)		Term. RR net.
	(W)		Term. C net.

Note: For use when specified by local instructions for end-to-end signaling installation.

TABLE P

**P-90D231 POLARITY GUARD ASSEMBLY CONNECTIONS (AC1 OR AD2 TELEPHONE BASE)**

WIRE OR LEAD	COLOR	REMOVE FROM	CONNECT TO	
		TERMINAL BOARD	POLARITY GUARD ASSEMBLY	TERMINAL BOARD
Handset Cord Jack	R	C	Term. C	
	G	F	Term. F	
Polarity Guard Assembly	R			C
	G			F

Note: For use when specified by local instructions for end-to-end signaling installations.

TABLE Q

**POLARITY GUARD CONNECTIONS FOR 2702BM TELEPHONE SETS (D-180229 KIT OF PARTS)**

WIRE OR LEAD	COLOR	REMOVE FROM NET.	CONNECT TO	
			NET.	TERM. BOARD*
Dial	BK	RR		3
Line Switch	BR ①			
	W ②			
623P4 Jack Assembly in Set	R ③	C		4
Polarity Guard	R			3
	BK			4
Guard	G		RR	
	W		C	

\* Component of polarity guard assembly.

- ① If wired for ring or bridged service.
- ② If wired for tip party (no identification ground).
- ③ If wired for tip party (with identification ground).

Note: For use when specified by local instruction for end-to-end signaling.

TABLE R

**CONNECTIONS TO 625-TYPE JACKS**

INSIDE WIRE	625-TYPE JACK
Tip	G
Ring	R
Ground* and/or Transformer	Y
Transformer	B

\* Ground may be omitted if not required for service.

**TABLE S**  
**LINE, RINGER, AND CONNECTION INDEX**

TEL SET	CONN DIAGRAM	LINE AND RINGER CONN
500DM	Fig. 34	Table G
2500DM	Fig. 35	Table H
554BM	Fig. 36	Table I
2554BM	Fig. 37	Table J
702BM	Fig. 38	Table K
2702BM	Fig. 39	Table L
AD2	Fig. 40	Table M
AC1	Fig. 41	Table N

**TABLE T**  
**REPAIRABLE NONMODULAR TELEPHONE SETS**

TEL SET CODE	HANDSET CORD JACK	MTG CORD JACK		
500L/M	616D	623D4		
500R/S				
500W/Y				
502A/B				
510A/B				
510E/F				
511F/H*				
514B				
515B				
555B			616C	
558D				
702D	616P	623P4		
2500M	616D	623D4		
2500S				
2500Y				
2502B				
2510F				
2511F/H*				
2514B				
2515B				
2555B			616B	
2558D				
2702D	616P	623P4		
564HC	616D†			
565GK				
565HK				
2564HC				
2565GK				
2565HK				

\* Except sets equipped with home/farm interphone.

† Push jack under terminal board.

Note: All telephone sets not listed in table shall be repaired using standard components.