

REFERENCE

2702B AND 2702BM TELEPHONE SETS

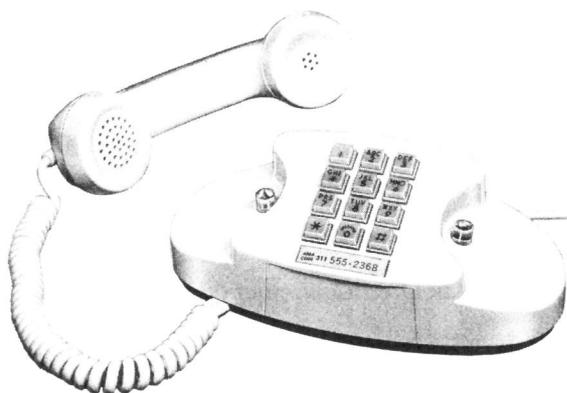


Fig. 1—2702B Telephone Set

1. GENERAL

1.01 This section provides identification, installation, maintenance, and connection information for 2702B PRINCESS® telephone sets.

1.02 This section is reissued to:

- Add 2702BM modular telephone set
- Add 4228G network
- Revise Tables A, D, and E
- Revise Fig. 8 and 9
- Add Table C
- Add Fig. 6, 7, and 10
- Add information on 11A Extender
- Add modification procedure for housing

2. IDENTIFICATION

2.01 The 2702B (Fig. 1) and 2702BM (Fig. 7) telephone set are primarily intended for

individual, 2-party flat rate or 2-party message rate service (CO or key telephone system lines).

2.02 Design Features:

- Ringer volume/OFF-control
- Dial/night lamp

Optional Features

2.03 Optional features include a 1-line pickup when used with 1A1 or 1A2 key telephone system (without hold) and 3-type or 4A speakerphone.

2.04 These sets are available in all promoted colors.

Operating Features

2.05 The night light switch allows dial lamp to be operated at reduced intensity (dial lamp illuminates dial at full intensity with handset off-hook Fig. 2).

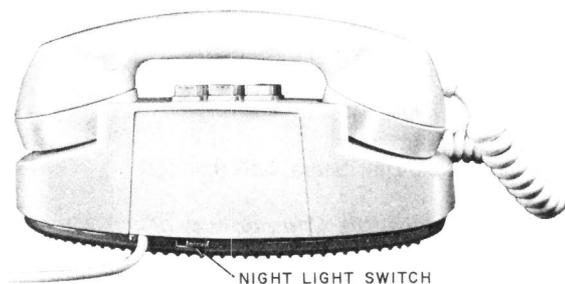


Fig. 2—2702B Telephone Set, Rear—Night Light Switch Location

Ordering Guide

2.06 Replaceable Components (2702B):

- Cord, Handset, H4CJ-*

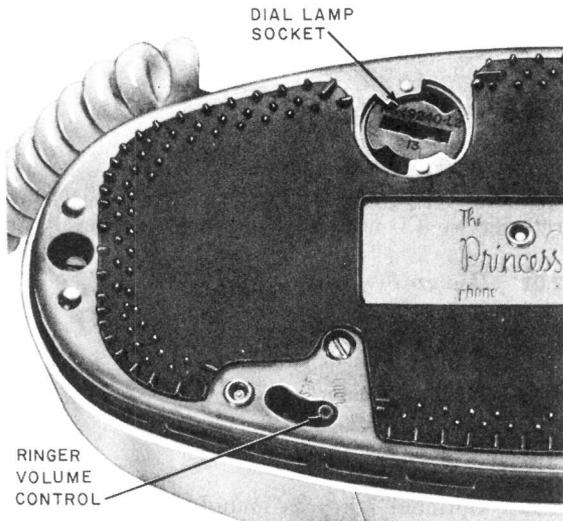


Fig. 3—PRINCESS Telephone Set, Partial Bottom View

- Cord, Mounting D5AK-29 or D4BT-29
- Dial, 35E4A or 35AD4A
- Housing and Plunger Assembly, P-84D8-*
- Lamp, Dial, KS-19387,L1†
- Retainer, Number Card, P-25E803
- Ringer, M1A
- Set, Hand, G3A-type*‡
- Socket, Dial Lamp, KS-19240L2†

2.07 ♦ *Replaceable Components (2702BM):*

- Cord, Handset, H4DU-* (6 and 12 foot lengths)
- Cord, Mounting, D4BU (transparent) jacket in 7, 14, and 25 foot lengths)
- Housing and Plunger Assembly, 2702B2-*
- Set, Hand, G15A-*
- Base, Telephone Set, 2702BM includes:
Dial, 35E4A or 35AD4A

- Lamp, Dial, KS-19387L1†
- Retainer, Number Card, P-25E803
- Ringer, M1A
- Socket, Dial Lamp, KS-19240L2†
- Jack, 623P4
- Jack, 616P‡

2.08 *Optional Components:*

- Kit of Parts (polarity guard), D-1802296S

2.09 *Associated Components:*

- Transformer (dial lamp), 2012A (or equivalent)

* Add appropriate color suffix.

† Available as D-179919 Kit of Parts (containing dial lamp, socket and installation instruction).

‡ Cords available in 4, 9, and 13 foot lengths.

§Consists of P-90D054 guard assembly, P-21F675 terminal board assembly, P-26E164 retainer, and P-43A392 screw.

3. INSTALLATION

Planning

3.01 Insofar as possible be guided by the customer's wishes in placing apparatus. Consider the following:

- Safety for yourself, customer, and maintenance personnel.
- Availability of power outlet for dial lamp transformer.
- Location of telephone to provide adequate ringer coverage of area.
- General appearance of installation.

3.02 Select a 105-120 volt ac receptacle on a circuit not controlled by a switch for dial lamp transformer. A 2A clamp is available to secure the 2012A transformer to the service outlet.

Current production transformers have folded-blade prongs and the 2A clamp is not required. For multiplied dial lamp sets, see section covering station transformers for selection information.

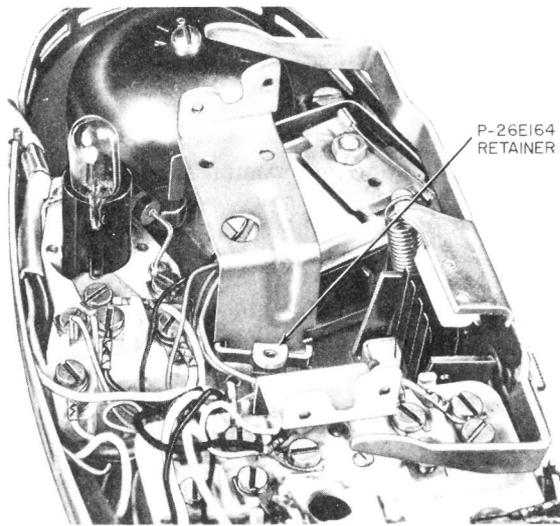


Fig. 4—Installing Terminal Board Retainer in PRINCESS Telephone Set

3.03 For proper illumination of the dial, the wire run between transformer and telephone set should not exceed 250 feet of standard inside wire. Do not use a 25-foot mounting cord because the added resistance may result in decreased illumination.

Installing

3.04 Install the 2702B telephone set in accordance with standard practices for desk-type telephone sets.

3.05 Refer to appropriate section in Division 461 for selection of appropriate jacks and plugs for these sets.

3.06 Install the 2702BM modular telephone set using appropriate 625-type connecting block.

3.07 Install polarity guard (D-180229 Kit of Parts) only when specified by local instructions for end-to-end signaling. Installation is as follows:

- (1) Remove housing, loosen dial mounting screws, and move the dial to one side without disconnecting the dial leads.
- (2) Insert the P-26E164 retainer in left-hand dial mounting bracket (Fig. 4).
- (3) Insert tabs of P-21F675 terminal board into notches in right-hand dial mounting bracket and secure to retainer using P-43A392 screw.
- (4) Connect polarity guard per Table D.
- (5) Reinstall dial mounting bracket, securing the P-90D054 guard assembly mounting bracket under the right-hand dial mounting screw (Fig. 5).
- (6) Reinstall housing.

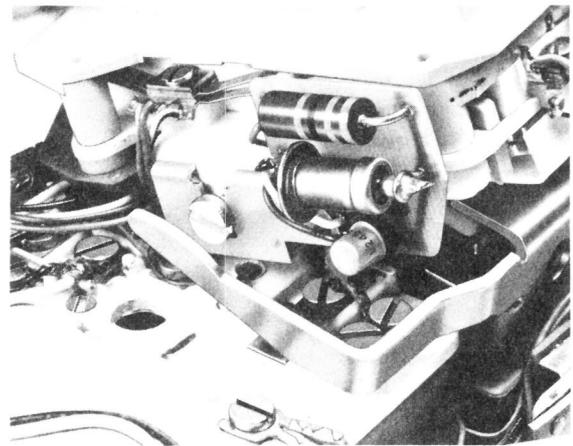


Fig. 5—Polarity Guard Mounted in PRINCESS Telephone Set

▶11A Extender

3.08 An 11A extender may be used with a 2702B for:

- (a) Isolating the ringer from ground to prevent inductive noise.
- (b) To provide ringing range extension.
- (c) To provide 4-party full selective ringing.

3.09 If an 11A extender is required, refer to appropriate table in Section 501-322-101 for connection information.

Note: An 11A extender can not be used with a 2702BM due to lack of conductors in modular mounting cord.⚡

4. ▶TO CONVERT TO MODULAR CONCEPT

4.01 To convert an existing 2702B set to a 2702BM, refer to Section 503-100-100.⚡

5. MAINTENANCE

5.01 Maintenance of the 2702B telephone sets is limited to replacing defective components,

burnishing or adjusting switch contacts, and modifying housing per 5.04.

5.02 Housings, handsets, and cords may be cleaned with a damp KS-2423 (or equivalent) cloth. **Do not use scouring cleaners or volatile solvents as these may damage finish.**

5.03 Refer to sections covering dials, handsets, cords, ringers, etc., for maintenance of these components.

5.04 ▶Those housings manufactured from 1970 through 1974 must be modified due to a clearance problem, if they are used with a base containing a 4228G network. Modify as follows:

- (1) Using diagonal side cutters, clip off a portion of the **plunger-well snap-tabs**, which interfere with the network, as shown in Fig. 6.

Note: Tabs should be cut at an angle leaving 1/16-inch at the plunger well. Tabs longer than 1/16-inch will cause the plunger to bind when housing is installed. Tabs less than 1/16-inch will permit plunger to fall through.

5.05 Housings manufactured prior to 1970 have no tabs. Housings manufactured after 1974, identified by an embossed "N" inside the housing, do not require modification.⚡

◆ TABLE A ◆

LINE AND RINGER CONNECTIONS

2702B TELEPHONE SET WITH D5AK MOUNTING CORD

| WIRE OR LEAD | INDIVIDUAL OR BRIDGED | RING PARTY | TIP PARTY | | | |
|--------------------------------|-----------------------|------------|--------------|--------------------|-----------|----|
| | | | NO IDENT GRD | IDENTIFYING GROUND | | |
| | | | | 1000 OHMS | 2650 OHMS | |
| Inside Wire at Conn Block | Ring | R | R | R | R | R |
| | Tip | G | G | G | G | G |
| | Grd | Y | Y | Y | Y | Y |
| Dial Light Transformer | 1 | Y | Y | Y | Y | Y |
| | 2 | B | B | B | B | B |
| D5 AK Mtg Cord at Conn Block | (R) | R | R | G | G | G |
| | (G) | G | G | R | R | R |
| | (Y) | G | Y | Y | Y | Y |
| | (BK) | B | B | B | B | B |
| | (W) | Y | Y | Y | Y | Y |
| D5AK Mtg Cord at Set Terminals | (R) | L2 | L2 | L2 | L2 | L2 |
| | (G) | L1 | L1 | L1 | C | C |
| | (Y) | G | G | G | G | G |
| | (BK) | 4† | 4† | 4† | 4† | 4† |
| | (W) | 3† | 3† | 3† | 3† | 3† |
| Ringer Leads | (R) | K | K | K | K | K |
| | (BK) | G | G | G | G | G |
| | (S) | * | * | * | L1 | * |
| | (S-R) | * | * | * | * | L1 |
| Line Switch | (BR) | C | C | F | F | F |
| | (W) [S-W] | F | F | C | B | B |
| Strap from H | (BK) [S-BK] | A | A | A | * | * |

* Insulated and stored.

† Terminals on lamp terminal block.

() Current color code.

[] MD color code.

Note: 1. To silence ringer permanently (for all classes of service), disconnect (R) ringer lead from K; insulate and store or use spare terminal.
 2. When connecting the D5AK mounting cord leads for tip party identifying ground, use D-161488 connectors and M1W straps as required to extend conductor leads.

TABLE B
LINE AND RINGER CONNECTIONS
2702B TELEPHONE SET WITH D4BT MOUNTING CORD

| WIRE OR LEAD | | INDIVIDUAL OR BRIDGED | RING PARTY | TIP PARTY | | |
|---|----------------|-----------------------------|---------------|--------------------|--------------------|--------------|
| | | | | NO IDENT GRD | IDENTIFYING GROUND | |
| | | | | | 1000 OHMS | 2650 OHMS |
| Inside Wire at Conn Block | Ring | R | R | R | R | R |
| | Tip | G | G | G | G | G |
| | Grd | Y | Y | Y | Y | Y |
| Dial Light Transformer | 1 | Y | Y | Y | Y | Y |
| | 2 | B | B | B | B | B |
| D4BT Mtg Cord at Conn Block | (R) | R | R | G | G | G |
| | (G) | G | G | R | R | R |
| | (Y) | Y | Y | Y | Y | Y |
| | (BK) | B | B | B | B | B |
| D4BT Mtg Cord at Set Terminals | (R) | L2 | L2 | L2 | L2 | L2 |
| | (G) | L1 | L1 | L1 | C | C |
| | (Y) | 3† | 3† | 3† | 3† | 3† |
| | (BK) | 4† | 4† | 4† | 4† | 4† |
| Ringer Leads | (R) | K | K | K | K | K |
| | (BK) | L1 | 3† | 3† | 3† | 3† |
| | (S) | * | * | * | L1 | * |
| | (S-R) | * | * | * | * | L1 |
| Line Switch | (BR) | C | C | F | F | F |
| | (W) [S-W] | F | F | C | B | B |
| Strap from H | (BK) [S-BK] | A | A | A | * | * |

* Insulated and stored.

† Terminals on lamp terminal block.

() Current color code.

[] MD color code.

Note: To silence ringer permanently (for all classes of service), disconnect (R) ringer lead from K; insulate and store or use spare terminal.

TABLE C

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 |
| | R | K | K | K | K | K |
| | 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 D
POLARITY GUARD CONNECTIONS FOR
2702B 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 | C | | 4 |
| | W ② | | | |
| D5AK Cord | G‡ ③ | | | |
| Polarity Guard | R | | | 3 |
| | BK | | | 4† |
| | G | | RR | |
| | W | | C | |

- * Component of polarity guard assembly.
- † Connect to L2 of network when associated with 1A1 or 1A2 KTS.
- ‡ On 2702BM, this would be (R) lead from 623P4 jack 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).

TABLE E
2702B TELEPHONE SET MODIFICATION FOR USE
WITH 1A1 OR 1A2 KEY TELEPHONE SYSTEM

| WIRE OR LEAD | COLOR | REMOVE FROM | CONNECT TO | |
|--------------|-------|-------------|----------------------------------|-------------|
| | | NET. | NET. | TERM. BLOCK |
| Line Switch | BR | C | | 3 |
| | Y | L2 | G | |
| | S | A | Insulate or store on spare term. | |
| Ringer | BK | G | L1 | |
| Strap* | | | C↔L2 | |

* M1W cord or equivalent. Do not use strap if polarity guard is to be installed.

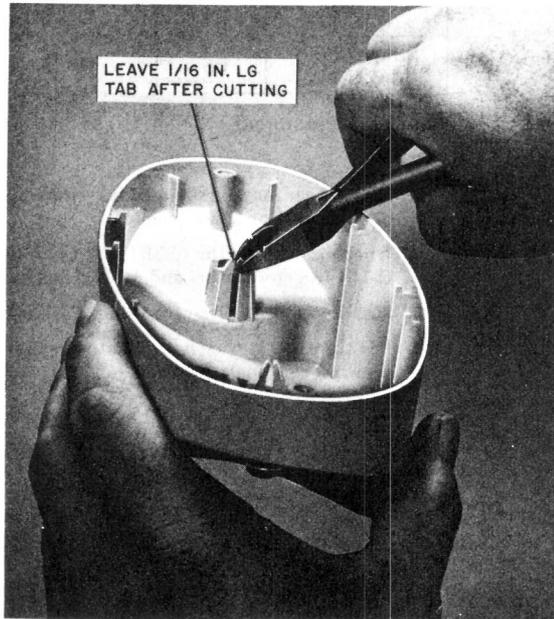
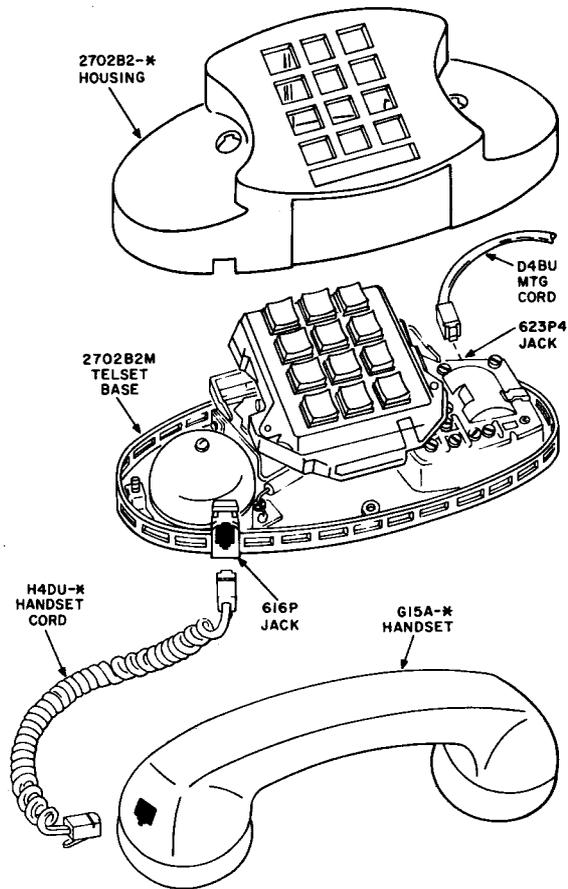


Fig. 6—Modification of Housing



2702BM TELEPHONE SET

* ADD TWO DIGIT COLOR CODE

NOTE:
CORDS SHOWN ARE NOT INCLUDED WITH TELEPHONE
SET AND MUST BE ORDERED SEPARATELY.

Fig. 7—2702BM Telephone Set

NOTES:

1. SET IS SHOWN WIRED FOR BRIDGED SERVICE. FOR OTHER CLASSES OF SERVICE SEE TABLE A OR B.
2. GROUND MAY BE OMITTED IF NOT REQUIRED FOR SERVICE. NOT NECESSARY FOR PROTECTION OF DIAL LIGHT TRANSFORMER.
3. CONNECTIONS SHOWN ARE FOR D5AK MOUNTING CORD. IF D4BT MOUNTING CORD IS USED, REFER TO TABLE B.

- * INSULATED AND STORED.
- † LINE SWITCH OFF-HOOK SEQUENCE
- bc CLOSSES
- de CLOSSES
- ab OPENS
- fg OPENS

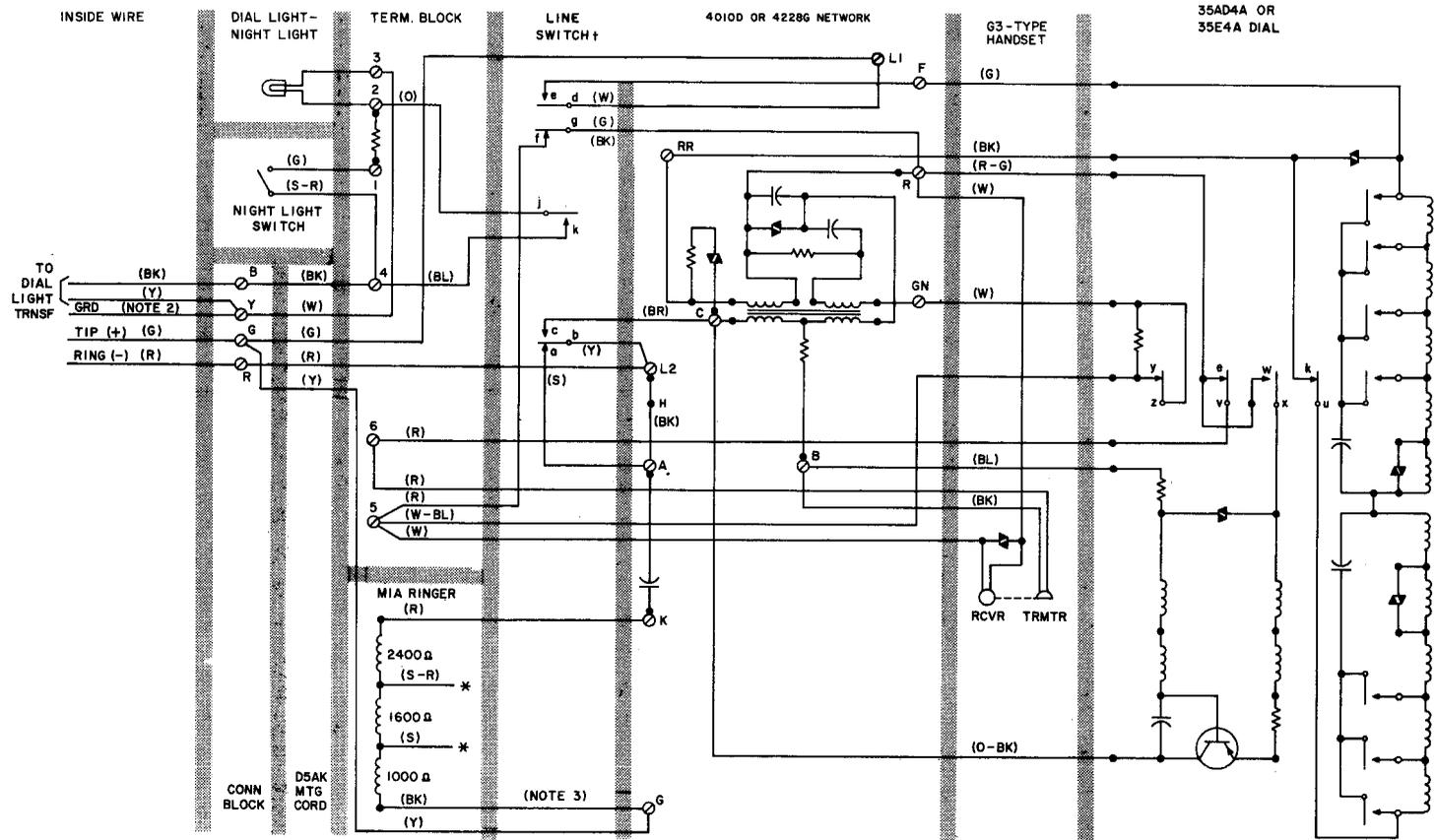


Fig. 8—2702B Telephone Set, Factory Wiring

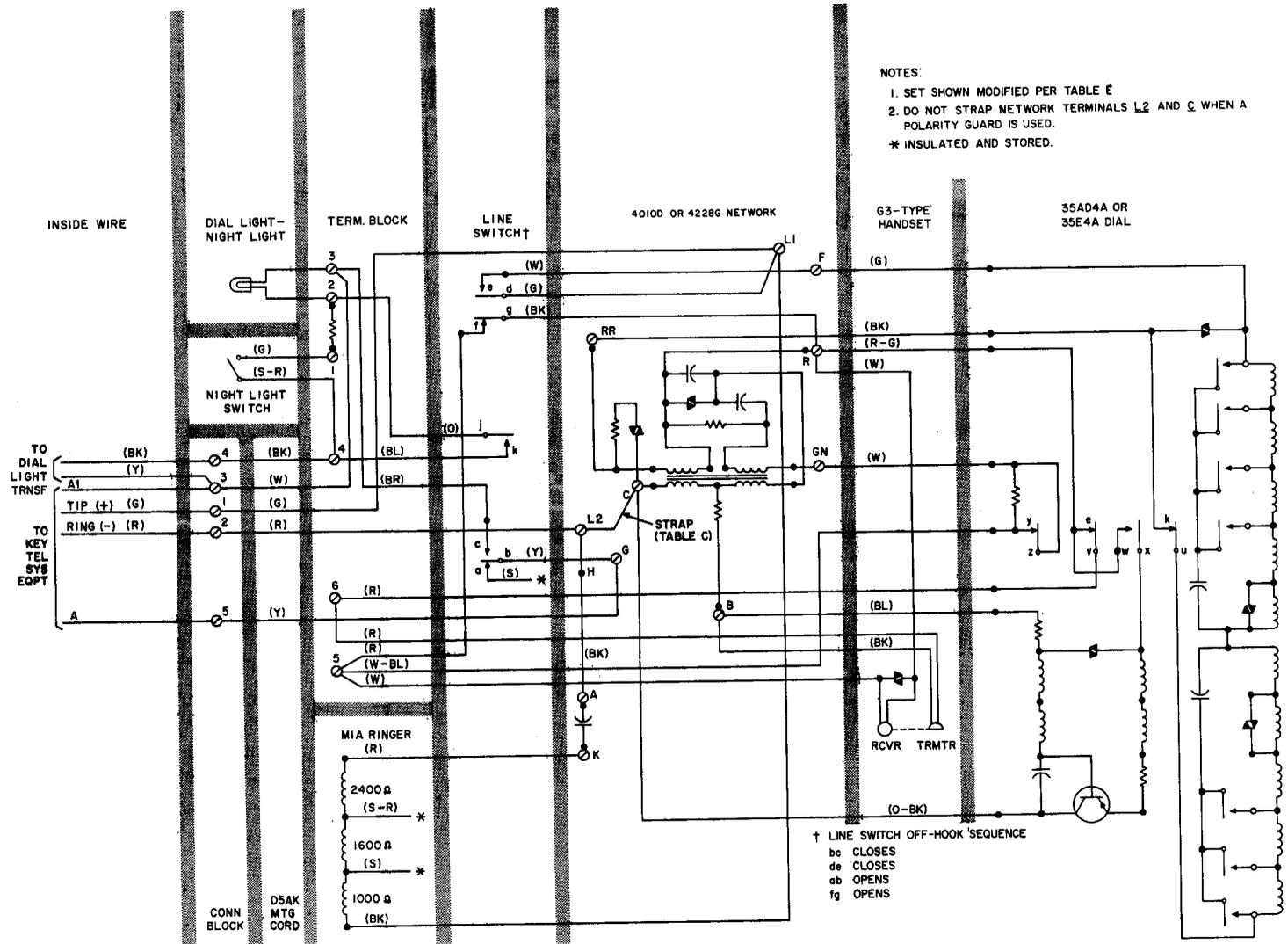
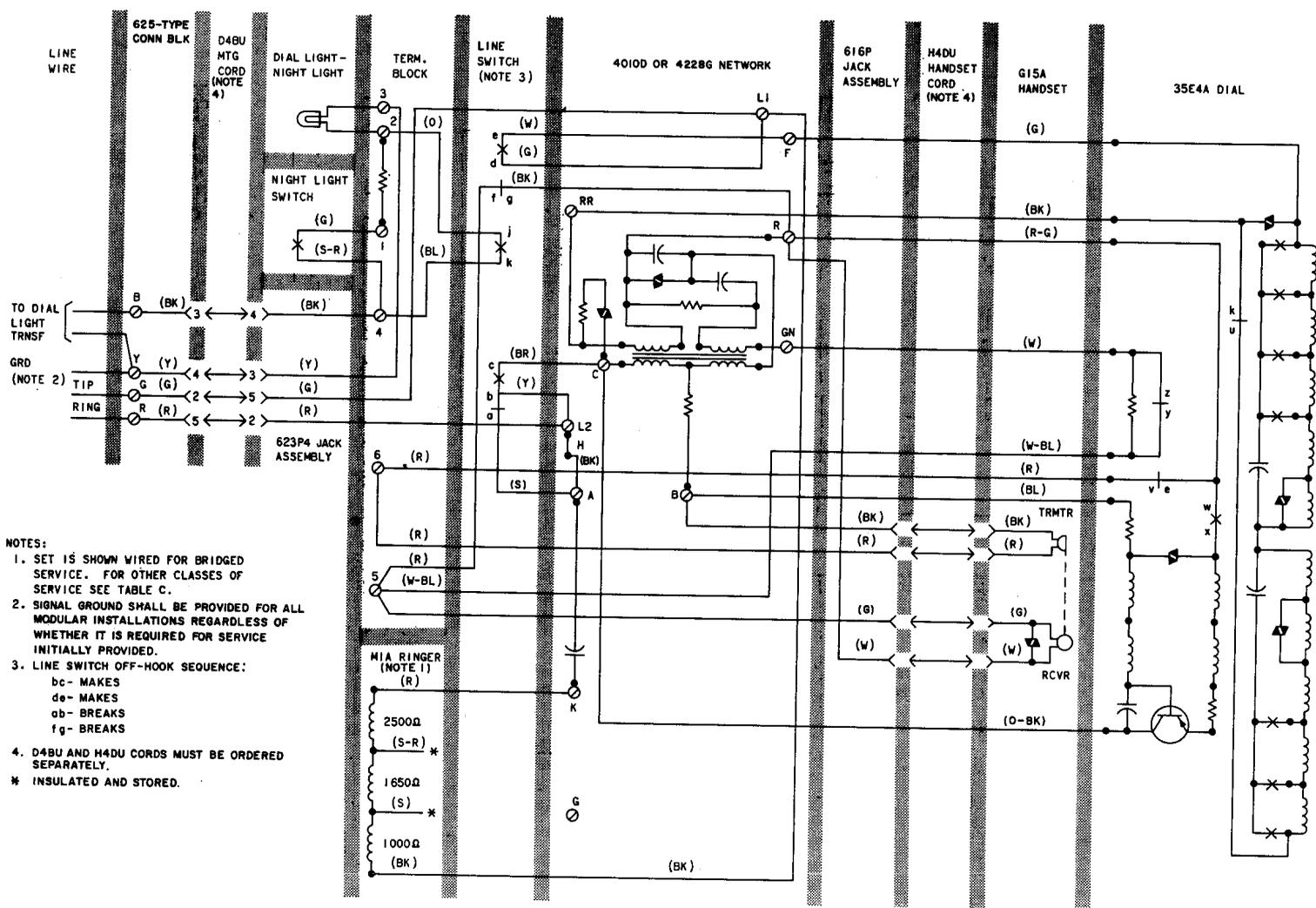


Fig. 9—2702B Telephone Set, Wired For Use With 1A1 or 1A2 Key Telephone System



- NOTES:
1. SET IS SHOWN WIRED FOR BRIDGED SERVICE. FOR OTHER CLASSES OF SERVICE SEE TABLE C.
 2. SIGNAL GROUND SHALL BE PROVIDED FOR ALL MODULAR INSTALLATIONS REGARDLESS OF WHETHER IT IS REQUIRED FOR SERVICE INITIALLY PROVIDED.
 3. LINE SWITCH OFF-HOOK SEQUENCE:
bc- MAKES
de- MAKES
ab- BREAKS
fg- BREAKS
 4. D4BU AND H4DU CORDS MUST BE ORDERED SEPARATELY.
- * INSULATED AND STORED.

Fig. 10—2702BM Telephone Set, Connections