

REFERENCE

702B AND 702BM TELEPHONE SETS

IDENTIFICATION, INSTALLATION, CONNECTIONS, AND MAINTENANCE

1. GENERAL

1.01 This section contains information for the 702B manufacture discontinued (MD) and 702BM telephone sets (Fig. 1).

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

- To remove information on 701B (MD) telephone set
- To remove information that 702BM telephone set is MD
- To add information that 702BM telephone sets manufactured after 6-1-82 will be marked (under or near the date code) "1-PTY." This marking indicates that the set is not adaptable for multiparty service connection or A-lead control.

2. IDENTIFICATION

2.01 These sets are equipped with a concealed lamp which illuminates the dial when the handset is removed. This lamp also serves as a night light under control of a slide switch located in the base at rear of set (Fig. 2).

2.02 Table A lists the major components of 702B (MD) and 702BM PRINCESS® telephone sets.

♦**Note:** If party line service is required with a 702BM telephone set, a 702B2M telephone set base, housing, and handset must be ordered separately.♦

2.03 For set component and color ordering guide, refer to Table A.

2.04 The 702B (MD) telephone set (Fig. 3) is similar to the 701B (MD) which it replaces, except that an internal ringer (M1A or P-type) is provided.

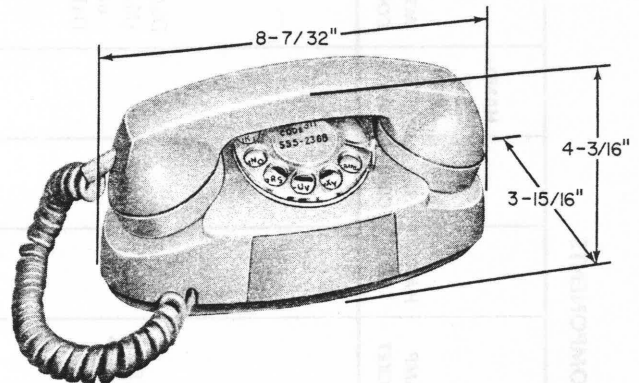


Fig. 1—700-Type Telephone Set

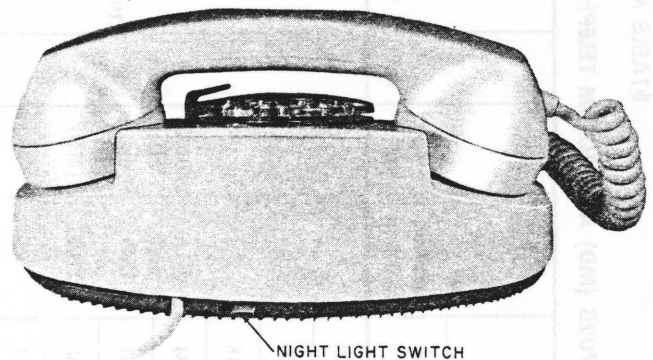


Fig. 2—700-Type Telephone Set, Rear View

2.05 The 702BM telephone set (Fig. 4 or 5) is a modular PRINCESS telephone set. It has the same feature as the 702B (MD) set plus modular features.

2.06 These telephone sets may be used with 1A1 or 1A2 key telephone system (KTS).

NOTICE

Not for use or disclosure outside the
Bell System except under written agreement

TABLE A

702B (MD) AND 702BM TELEPHONE SET COMPONENTS

| TEL SET | COLOR | HOUSING AND PLUNGER ASSEMBLY (NOTE 1) | | RINGER (NOTE 2) | NET. | DIAL | DIAL LAMP | LAMP SOCKET | HAND-SET | HAND-SET JACK ASSY | MTG CORD | MTG CORD JACK ASSY | ADAPTER FOR LIGHT AND PHONE CORDS |
|-----------|-----------------|---------------------------------------|-------------|--------------------|--------------------------------|-----------|-------------|-------------|----------|--------------------|-------------------|--------------------|-----------------------------------|
| | | P-NO. | COMCODE NO. | | | | | | | | | | |
| 702B (MD) | Black (-03) | P-89A803 | 818918039 | M1A and P1A or P3A | 4010B (MD), 4228F or 4293-Type | 8A or 88A | KS-19387L1* | KS-19240L3* | G3 | H4CJ | D5AK (MD) or D4BT | | |
| | Ivory (-50) | P-89A850 | 818918500 | | | | | | | | | | |
| | Green (-51) | P-89A851 | 818918518 | | | | | | | | | | |
| | Red (-53) | P-89A853 | 818918534 | | | | | | | | | | |
| | Yellow (-56) | P-89A856 | 818918567 | | | | | | | | | | |
| | White (-58) | P-89A858 | 818918583 | | | | | | | | | | |
| | Rose Pink (-59) | P-89A859 | 818918591 | | | | | | | | | | |
| | Lt. Beige (-60) | P-89A860 | 818918609 | | | | | | | | | | |
| | Aqua Blue (-62) | P-89A862 | 818918625 | | | | | | | | | | |
| | | | | | | | | | | | | | |
| 702BM† | Black (-03) | | 840186035 | M1A and P1A or P3A | 4010B (MD), 4228F or 4293-Type | 8FA | KS-19387L1* | KS-19240L3* | G15A | H4DU | D4BU† | 623P4 or 623P6 | 281A (MD) or 338A \$ |
| | Ivory (-50) | | 840186506 | | | | | | | | | | |
| | Green (-51) | | 840186514 | | | | | | | | | | |
| | Red (-53) | | 840186530 | | | | | | | | | | |
| | Yellow (-56) | | 840186563 | | | | | | | | | | |
| | White (-58) | | 840186589 | | | | | | | | | | |
| | Rose Pink (-59) | | 840186597 | | | | | | | | | | |
| | Lt. Beige (-60) | | 840186605 | | | | | | | | | | |
| | Aqua Blue (-62) | | 840186621 | | | | | | | | | | |

Note 1: Two 124A apparatus blanks must be ordered with each housing that is to be used with a 702B-type telephone set.

Note 2: M1A and P1A or P3A ringers are not interchangeable. Sets equipped with a M1A ringer must use a M1A for replacement. Sets equipped with a P-type ringer must use a P-type for replacement.

* Available as D-179919 Kit of Parts containing dial lamp, socket, and installation instructions.

† If party line service is required, a 702B2M telephone set base, housing, and handset can be ordered separately.

‡ Ordered separately.

§ Available as D-181059 kit of Parts containing 338A adapter, transformer with adapter cord, wall cord clips, and instruction sheet.

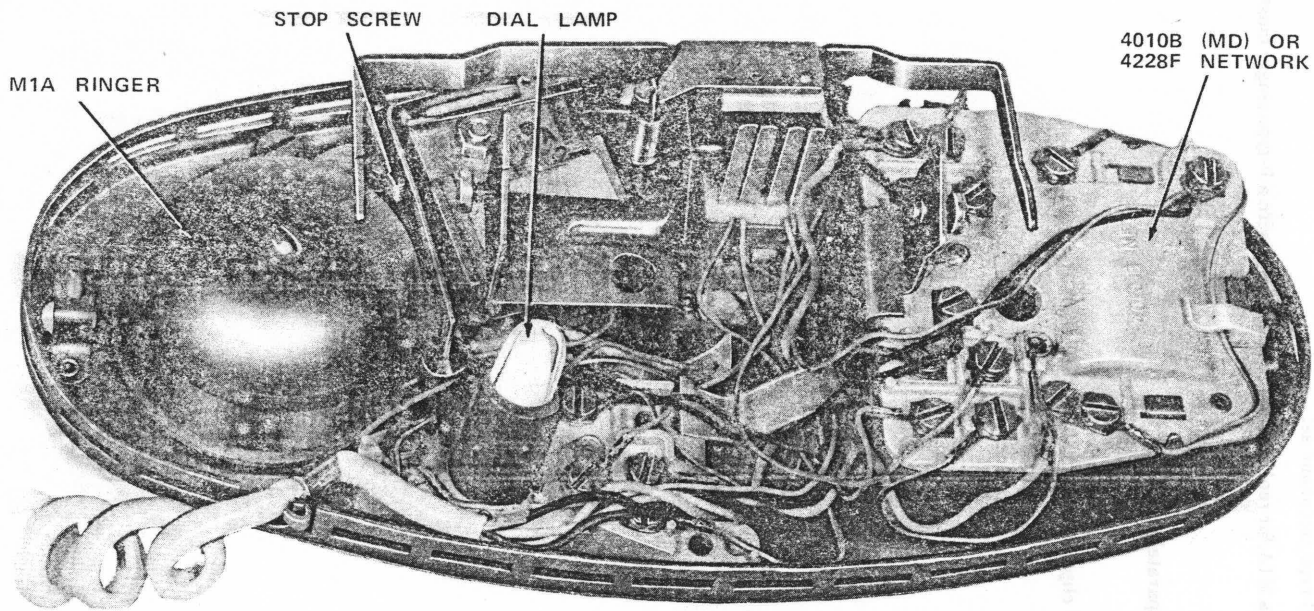


Fig. 3—702B (MD) Telephone Set, Dial and Housing Removed

♦2.07 The 702BM telephone sets manufactured after 6-1-82 are marked "1-PTY" on or near the date code. These sets are not adaptable for multi-party service connections or for A-lead control. If service other than individual or bridged ringing is required, a 702B2M telephone set base, housing, and handset must be ordered separately. The 702BM telephone sets **not** marked "1-PTY" are adaptable for all classes of line and ringer connections and for A-lead control.

2.08 Associated with the production of "1-PTY" telephone sets are changes in the ringer, line switch, and network. These changes were not necessarily introduced simultaneously and therefore sets marked "1-PTY" may have only one or more of the planned changes. Also, recovered sets may have only one or more of the planned changes. Figure 15 is a partial schematic showing the connections when all the changes are incorporated. For sets with less than all the changes, refer to the following paragraphs for each new component.

- (a) The (R) 623P4 mounting cord jack lead is removed from L2 of network and connected to A of network.
- (b) The two-lead P1D ringer replaces the four-lead P3A ringer (702BM). The (BK) lead ter-

minates on L1 of network and (R) on K of network. The (S) and (S-R) ringer leads have been removed from the P1D ringer.

- (c) The 842622102 line switch replaces the 842622110 (702BM). Contact "a" and (S) lead have been removed; also, contacts "d", "e" (BR-W) and (S-W) leads have been removed. The (BR) line switch lead at control "c" terminates on terminal C of network. The (Y) line switch lead at contact "b" terminates on terminal A of network.

- (d) The 4293-type network replaces the 4228-type (MD) network. Screw terminals "G" and "L2" have been removed, also 840704001 (BK) strap lead has been removed from terminal A on network.♦

3. INSTALLATION

3.01 Consider the following before installation:

- Customer's wishes
- Safety for yourself, customer, and maintenance personnel
- Availability of power outlet for transformer
- Location of telephone set so ringer volume is adequate for area

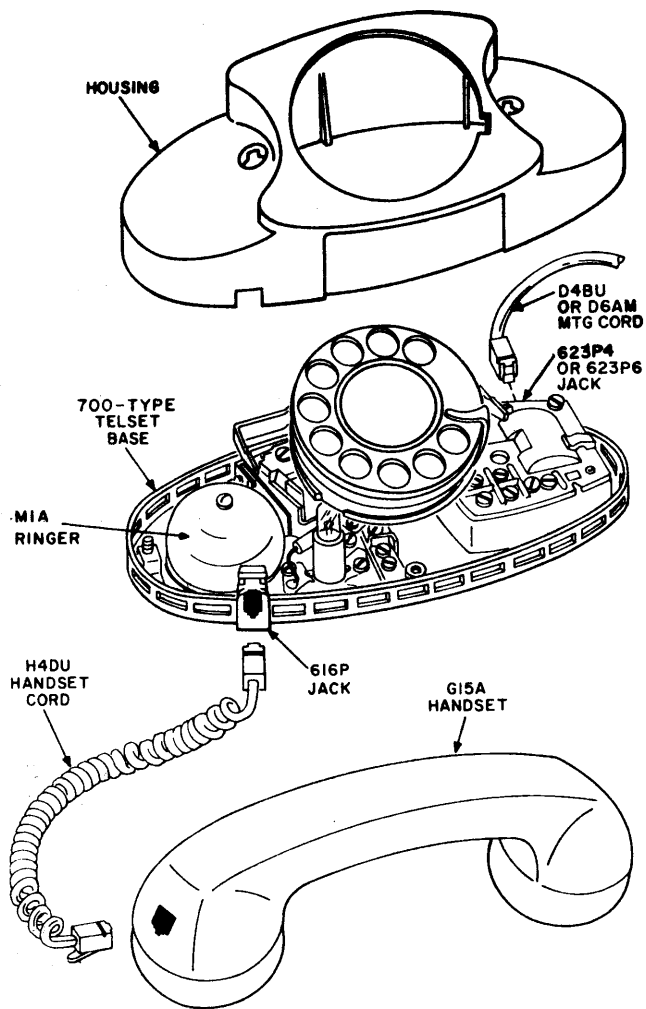


Fig. 4—702BM Telephone Set Equipped With a M1A Ringer

- General appearance of installation.

A. D-181059 Kit of Parts (Dial Illumination)

3.02 When dial illumination is required use the D-181059 Kit of Parts which consists of the following:

- 338A Adapter
- D4BU Cord (7-foot long)
- 2012C Transformer
- 248B Adapter

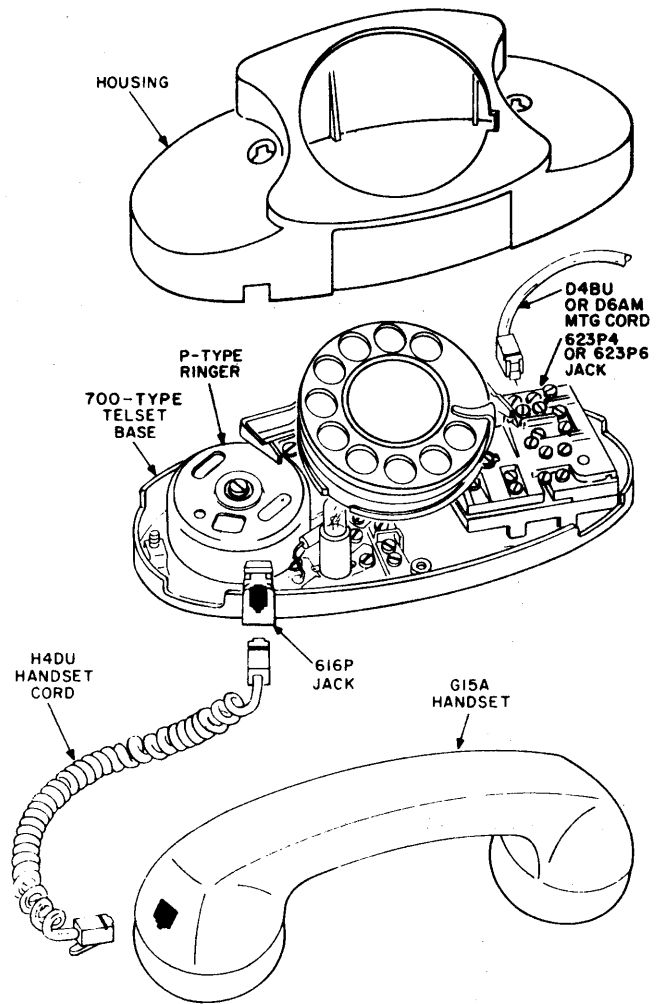


Fig. 5—702BM Telephone Set Equipped With a P-Type Ringer

- Four (4) Baseboard Clips
- Instruction Sheet.

B. Dial Light Transformer

3.03 **DANGER: Hazardous voltage is present in ac receptacle box in paragraph 3.05.** Do not use 2A or similar clamp on outlets where center mounting screw holds the duplex outlet in box.

3.04 **DANGER: Hazardous voltage is present in ac receptacle box in paragraph 3.05.** Do not connect more than one transformer to the same inside wire pair.

3.05 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 (early version) 2012A (MD) transformer to the service outlet. Later production 2012A (MD) and 2012C transformers have folded-blade prongs and the 2A clamp is not required. For multiple dial lamp sets, refer to section covering station transformers for selection information.



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.

C. Ringer

3.06 When no external ringer is used with the 702B (MD) telephone set, the mounting cord of the telephone set should be terminated on a connecting block or plug as required.

3.07 No provisions are made for using an external ringer with the 702BM set.

D. Cold-Cathode Tube

3.08 If 4-party selective or 8-party semiselective service is desired, a 425A or 426A cold-cathode tube may be ordered and installed in the base of 702B (MD) telephone sets. Refer to Section 501-320-100 for additional tube information

E. 28A Ringer Isolator

3.09 The 28A ringer isolator is a replacement for the 10A (MD), 11A (MD), and 11B (MD) extenders. It offers the same selectivity as the 425A or 426A cold-cathode tubes plus greater voice isolation than those or the D-180036 ringer isolator. It also provides additional ringing range on all lines using grounded ringers.

3.10 Only one 28A ringer isolator is required per main station instead of one per phone and must be mounted near the station protector. For connection tables or other information on the 28A ringer isolator or 11-type extender, refer to Section 501-375-101 or 501-322-101, respectively.

3.11 If an 11-type extender or 28A ringer isolator is used with 702BM telephone set, the 623P4

jack must be replaced with a 623P6 jack. Connections are made using 338A adapter, 248B adapter, and two D4BU mounting cords.

F. 603A Ringing Extender

3.12 The 603A ringing extender is intended for use on single party long loops with bridged ringing. If the 603A is required, refer to Section 501-380-102 for connections.

G. Portable Installation [702B (MD) and 702BM]

3.13 Jacks, plugs, and connecting block are available for portable installation of telephone sets. Refer to appropriate section for selection of proper types.

4. MODIFICATION OF 702B (MD) SET TO MODULAR CONCEPT

4.01 To convert an existing 702B (MD) set to a 702BM, refer to Section 503-100-100.

5. MAINTENANCE

5.01 Maintenance of the 702B (MD) and 702BM PRINCESS telephone sets is limited to replacing defective components (Table A) and modifying housings per paragraphs 5.04, 5.05, and 5.06.

5.02 Refer to sections covering dials, handsets, cords, ringers, networks, line keys, etc, for maintenance of these components.

5.03 **Warning: Scouring cleaners may damage finish on colored components.** Housings, dial plates, and handsets may be cleaned with a damp KS-2423 cloth.

5.04 Housings manufactured prior to 1970 have no tabs, and housings manufactured after 1978, identified by an embossed "NP" inside the housing, do not have a clearance problem and do not require modification.

5.05 Housings manufactured from 1970 through 1974 must be modified due to a clearance problem, if they are used with a base containing a 4228-type (MD) network. Modify per paragraph 5.06.

5.06 Housings manufactured from 1974 to 1978, identified by an embossed "N" inside the

housing, do not require modification for a 4228-type (MD) network but do require modification for use with a P-type ringer. Modify 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.

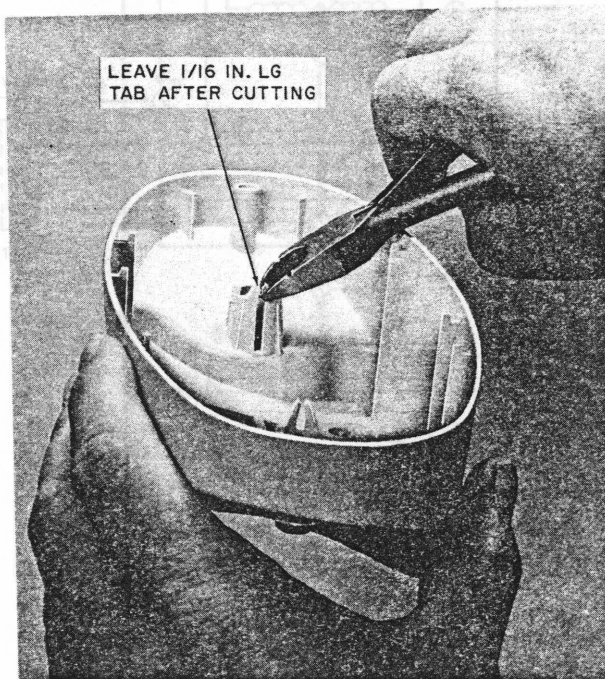
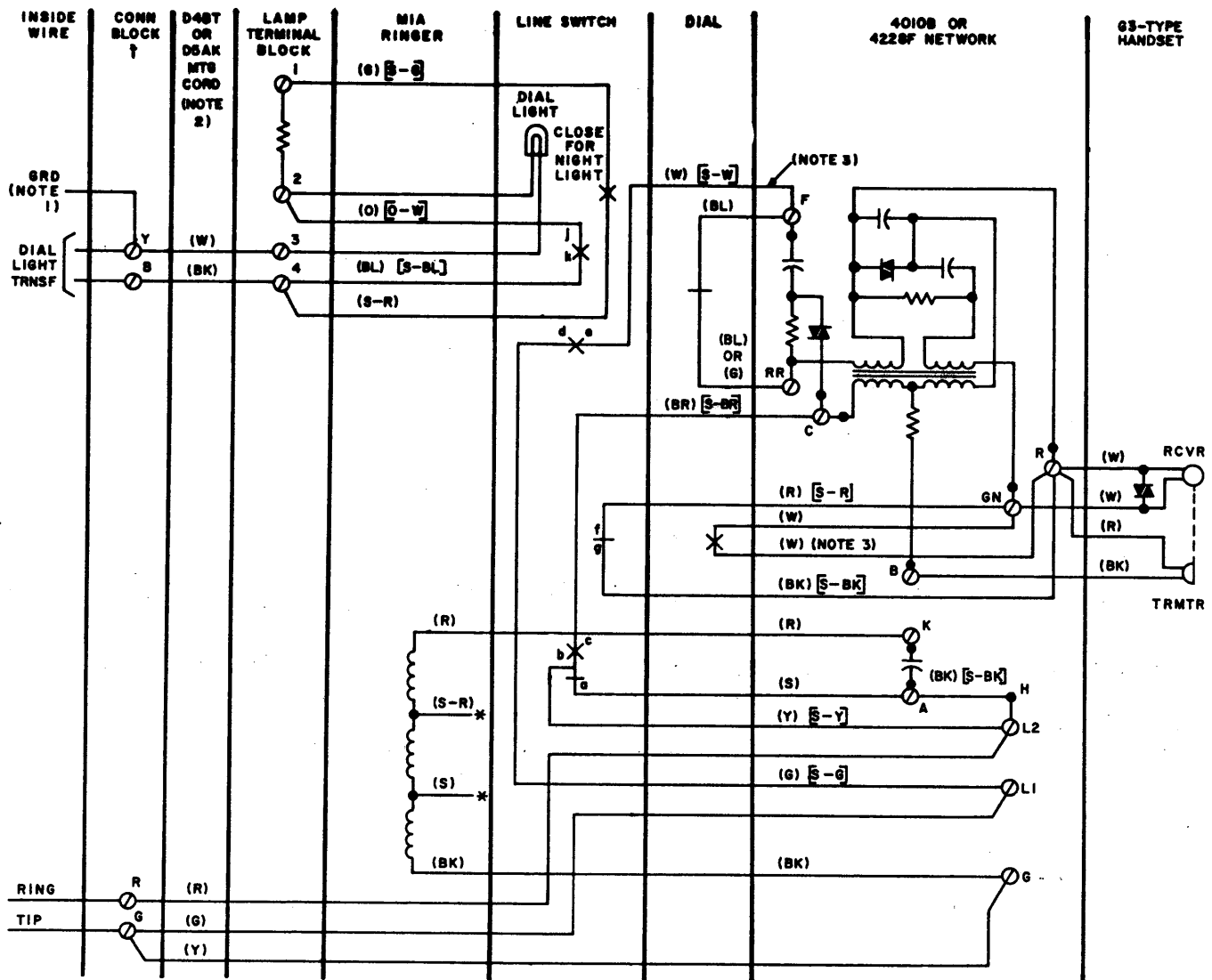


Fig. 6—Modification of Housing

6. CONNECTIONS

6.01 Refer to Tables B through D and Fig. 7 through 14.



NOTES:

1. INSIDE WIRE CONDUCTOR SHALL BE CONNECTED TO THE GROUND TERMINAL AT THE PROTECTOR OR EQUIVALENT ONLY IF REQUIRED FOR SERVICE BEING INSTALLED.
2. CONNECTIONS SHOWN ARE FOR D5AK MOUNTING CORD, FOR D4BT CORD SEE TABLE F.
3. FOR MANUAL SERVICE, MOVE (W) [S-W] LINE SWITCH LEAD FROM F TO RR TERMINAL AND MOVE (W) DIAL LEAD FROM R TO GN TERMINAL. THE DIAL REMAINS ON THE SET.

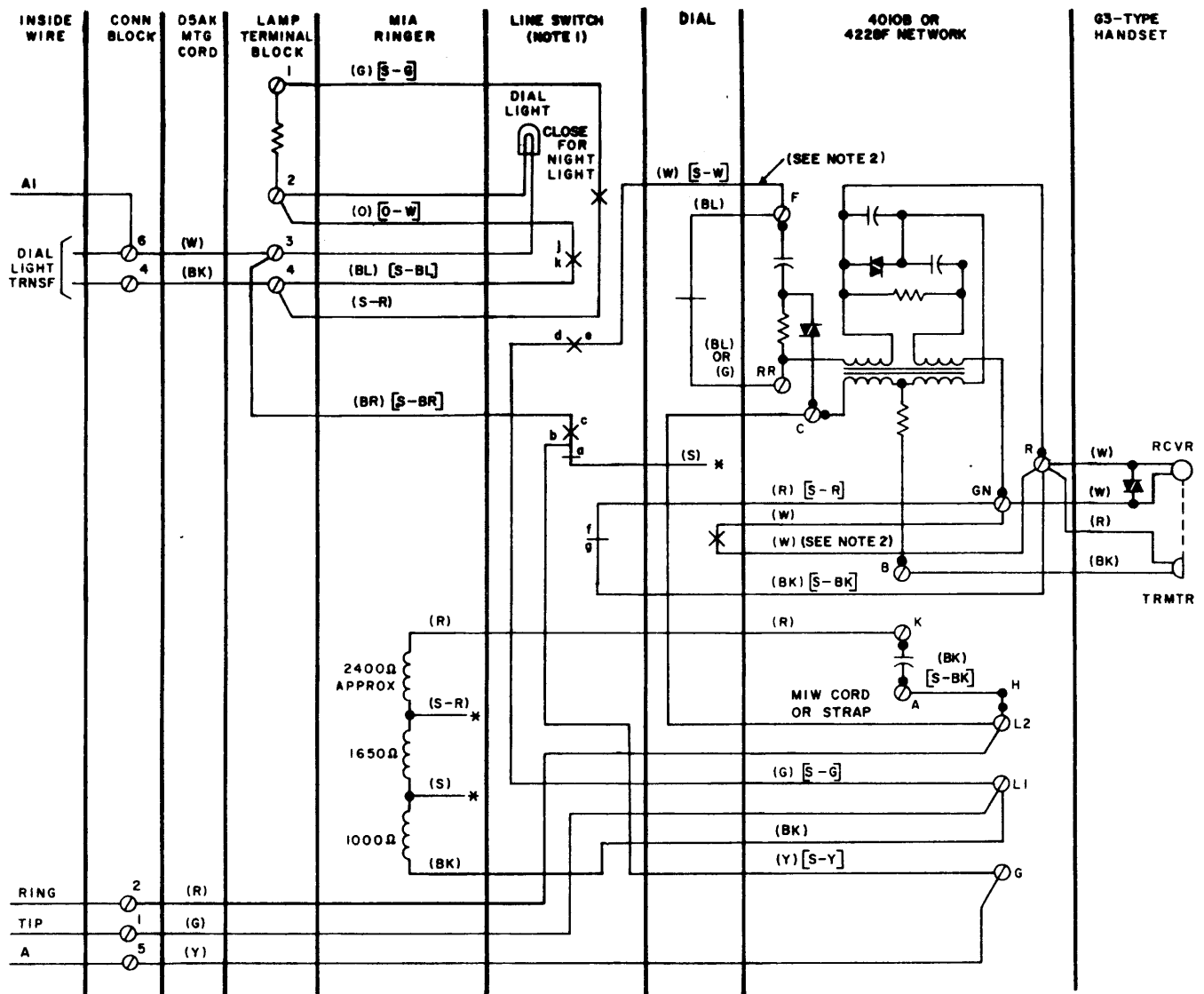
* INSULATE AND STORE

† JACKS AND PLUGS ARE AVAILABLE FOR PORTABLE INSTALLATION. REFER TO DIVISION 461 FOR SELECTION OF APPROPRIATE TYPES.

() CURRENT COLOR CODE

[] MD COLOR CODE

Fig. 7—702B (MD) Telephone Set, Factory Wiring



WIRING CHANGES FOR 1A1 AND 1A2

| LEAD OR CONDUCTOR | | FROM | TO |
|-------------------|-------------|------|--------------------|
| RINGER | (BK) | G | L1 |
| LINE SWITCH | (S) | A | INSULATE AND STORE |
| | [S-Y] (Y) | L2 | G |
| | [S-BR] (BR) | C | 3 |
| ADD STRAP | MIW | L2 | C |

NOTES:

1. TO PREVENT FALSE HOLD CONDITION WHEN GOING ON-HOOK, THE TIP AND RING CONTACTS OF THE LINE SWITCH MUST BREAK BEFORE "A" LEAD CONTACTS, (FIELD ADJUSTMENT OF LINE SWITCH IS NOT RECOMMENDED)
2. FOR MANUAL SERVICE, MOVE (W) [S-W] LINE SWITCH LEAD FROM F TO RR TERMINAL, AND MOVE (W) DIAL LEAD FROM R TO GN TERMINAL. THE DIAL REMAINS ON THE SET,

* INSULATE AND STORE.

() CURRENT COLOR CODE.

[] MD COLOR CODE.

Fig. 8—702B (MD) Telephone Set, Wired for 1A1 or 1A2 Key Telephone System

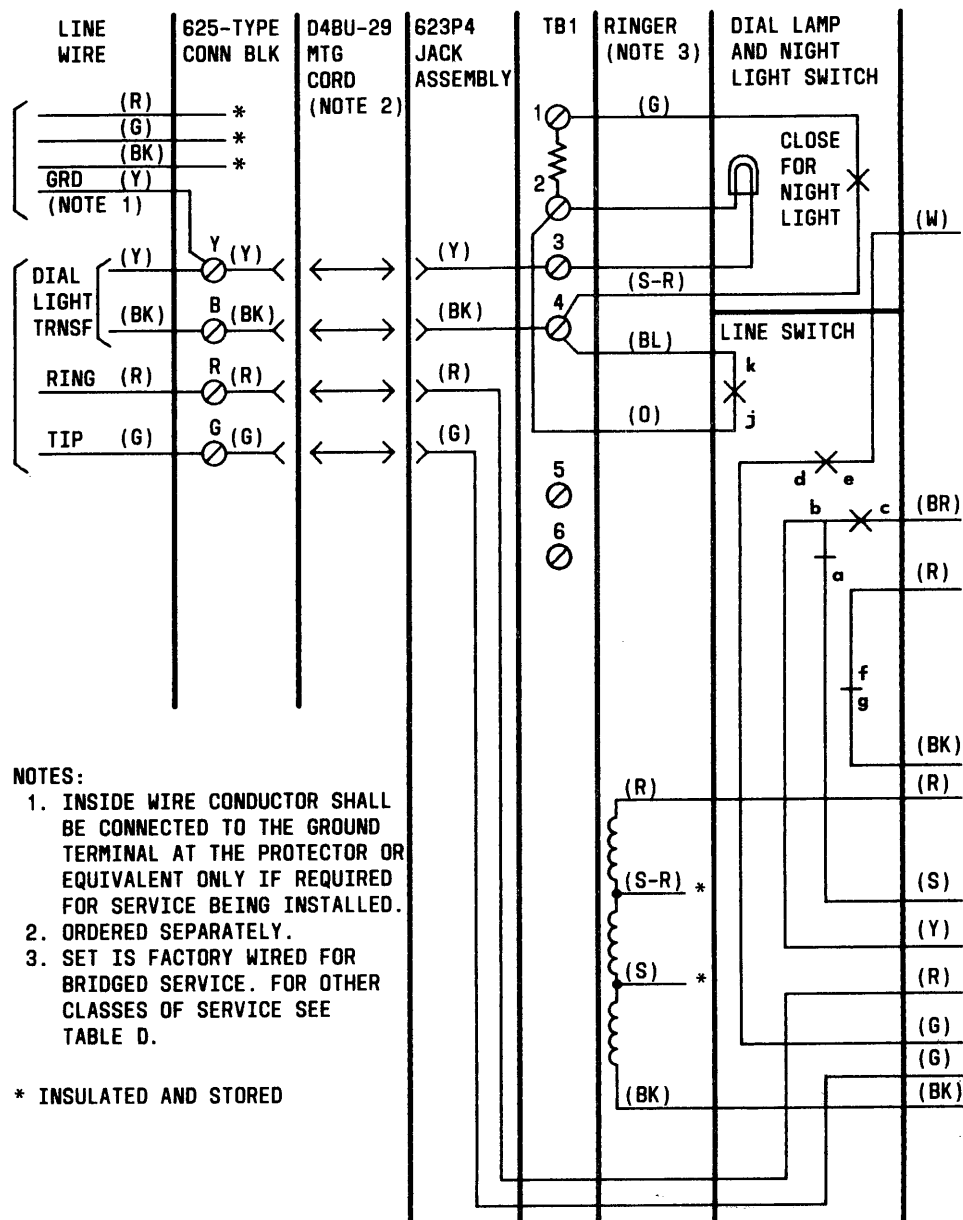


Fig. 9—702BM Telephone Set, Factory Wiring (Sheet 1 of 2)

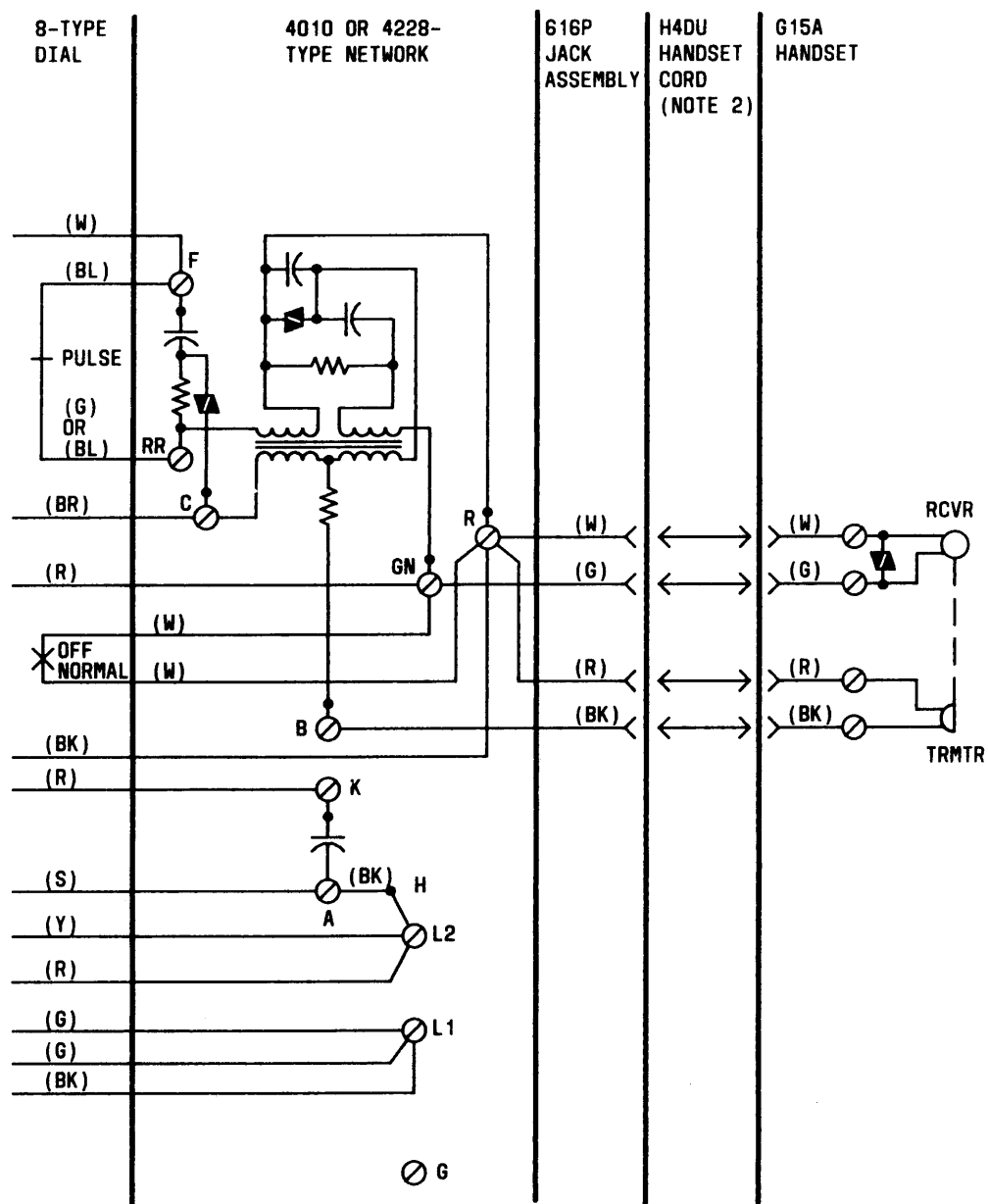


Fig. 9—702BM Telephone Set, Factory Wiring (Sheet 2 of 2)

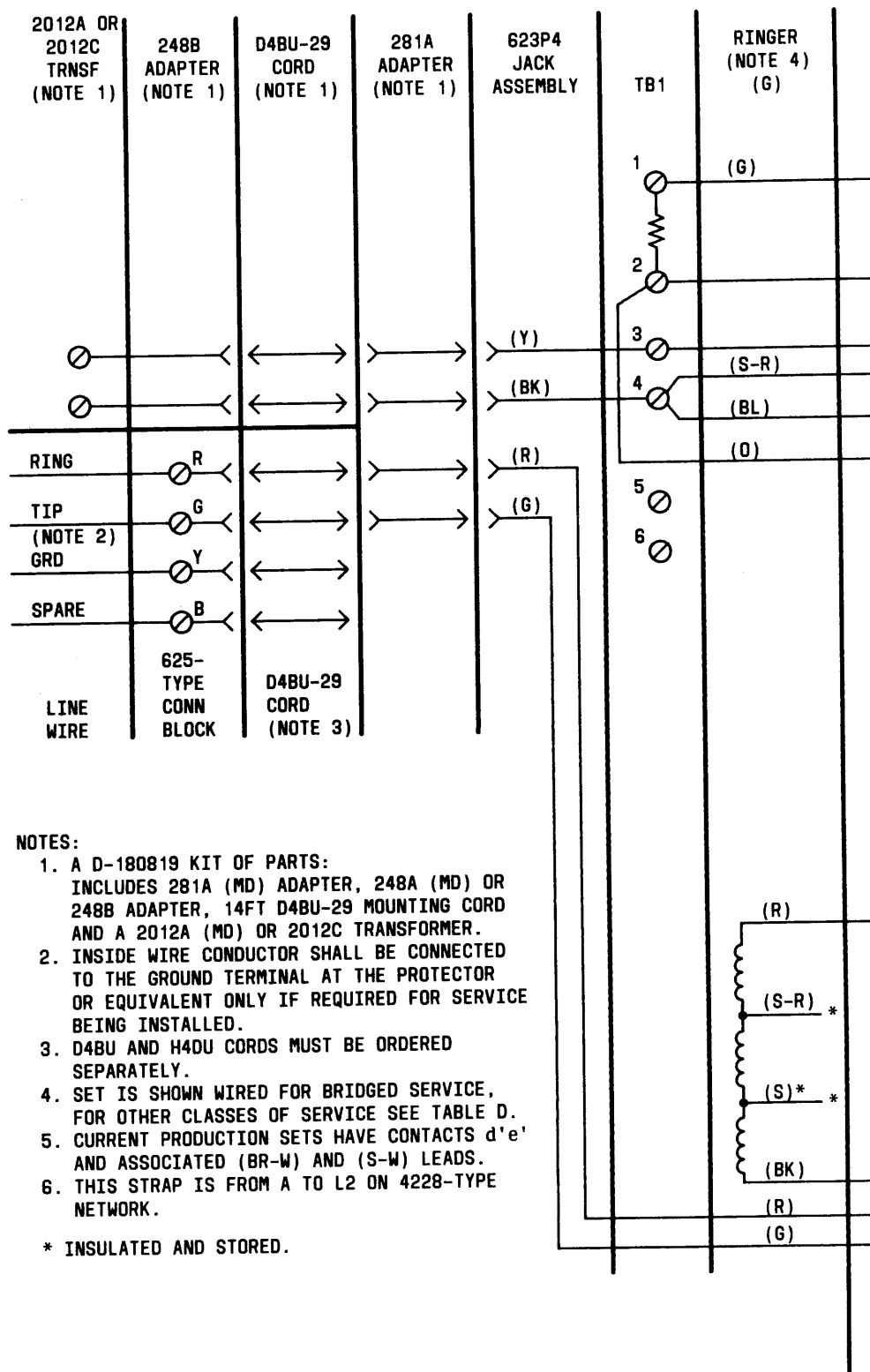


Fig. 10—702BM Telephone Set, Factory-Wired Using D-180819 (MD) Kit of Parts
(Sheet 1 of 2)

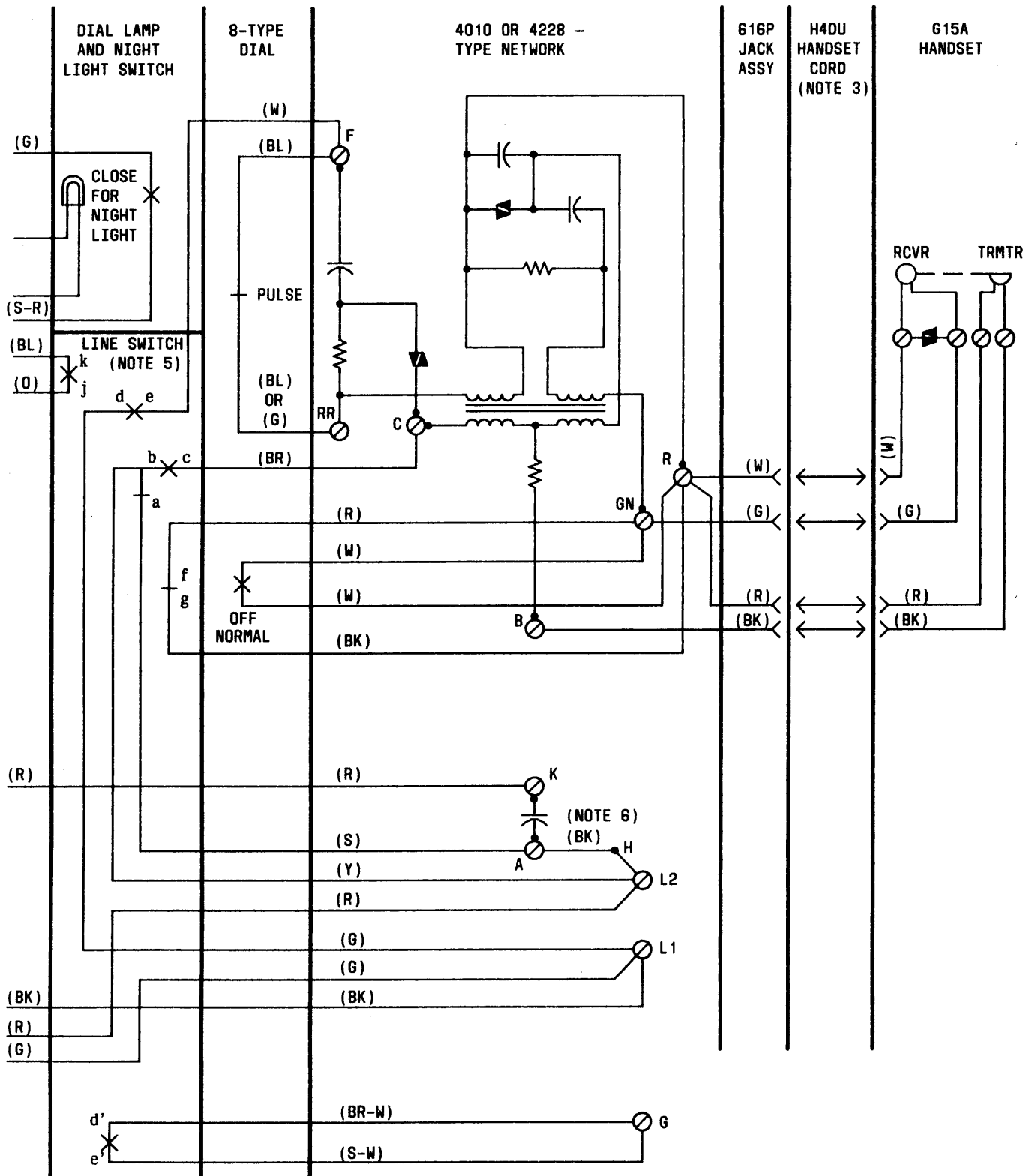


Fig. 10—702BM Telephone Set, Factory-Wired Using D-180819 (MD) Kit of Parts
(Sheet 2 of 2)

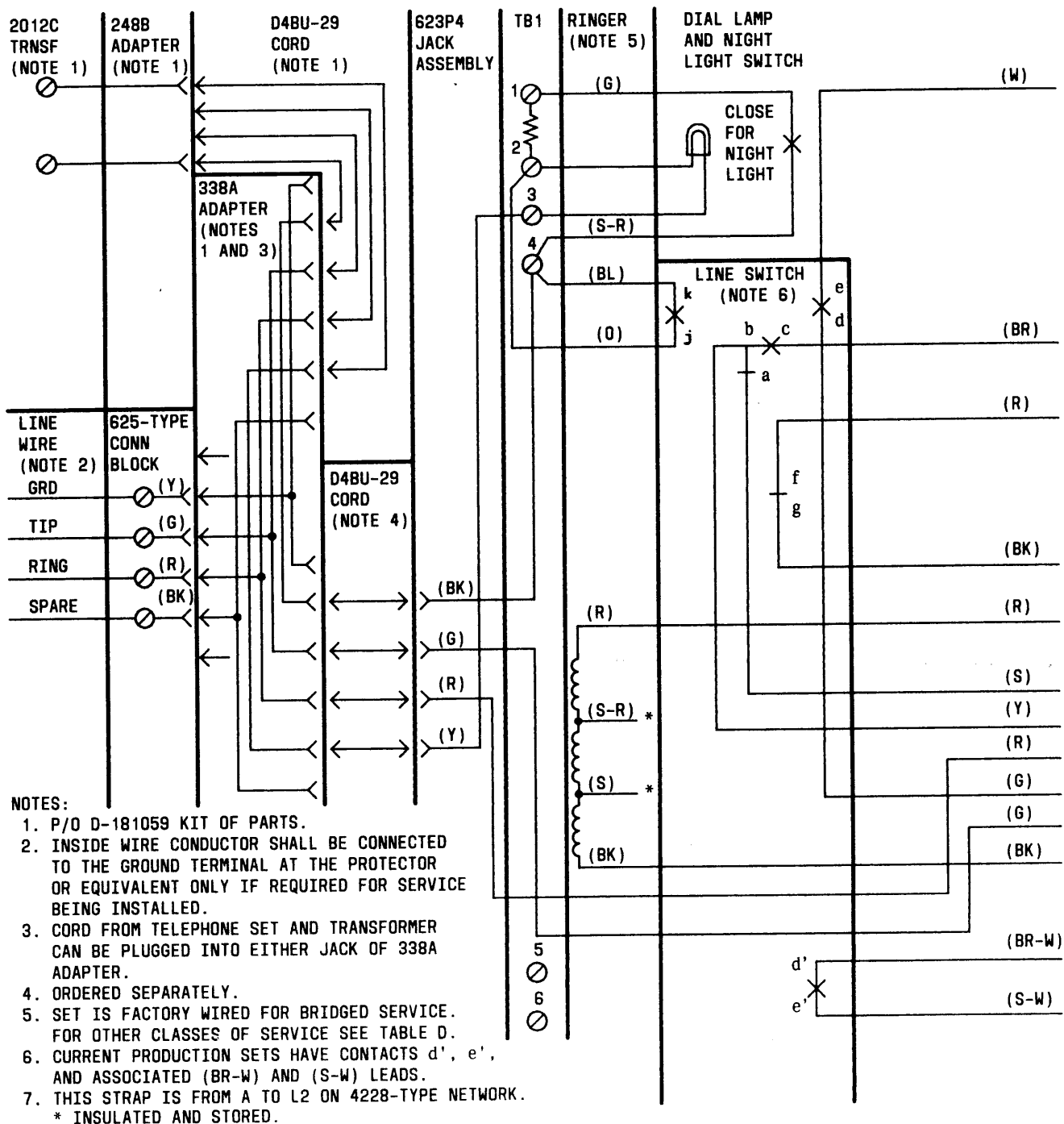


Fig. 11—702BM Telephone Set, Factory-Wired Using D-181059 Kit of Parts (Sheet 1 of 2)

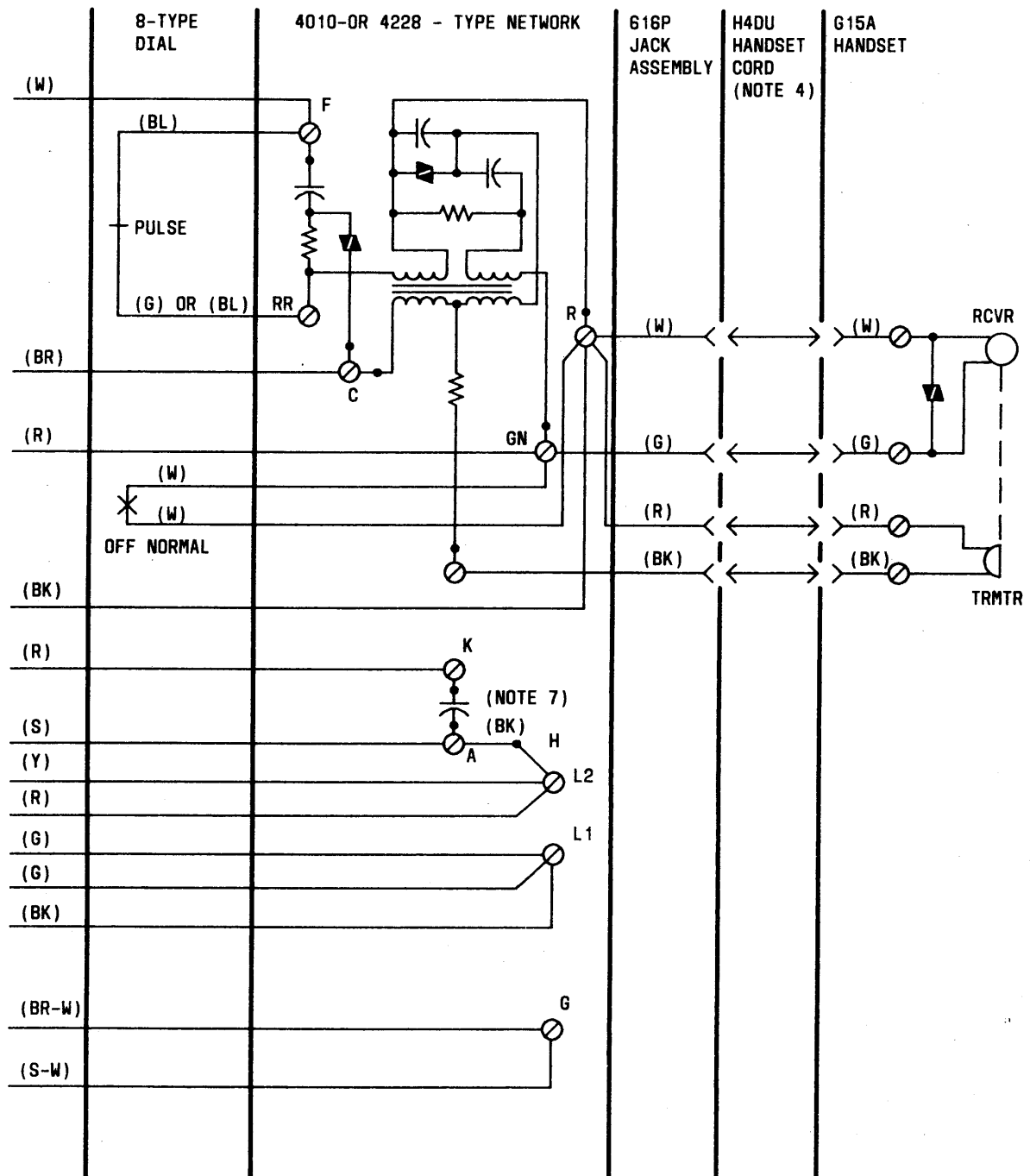
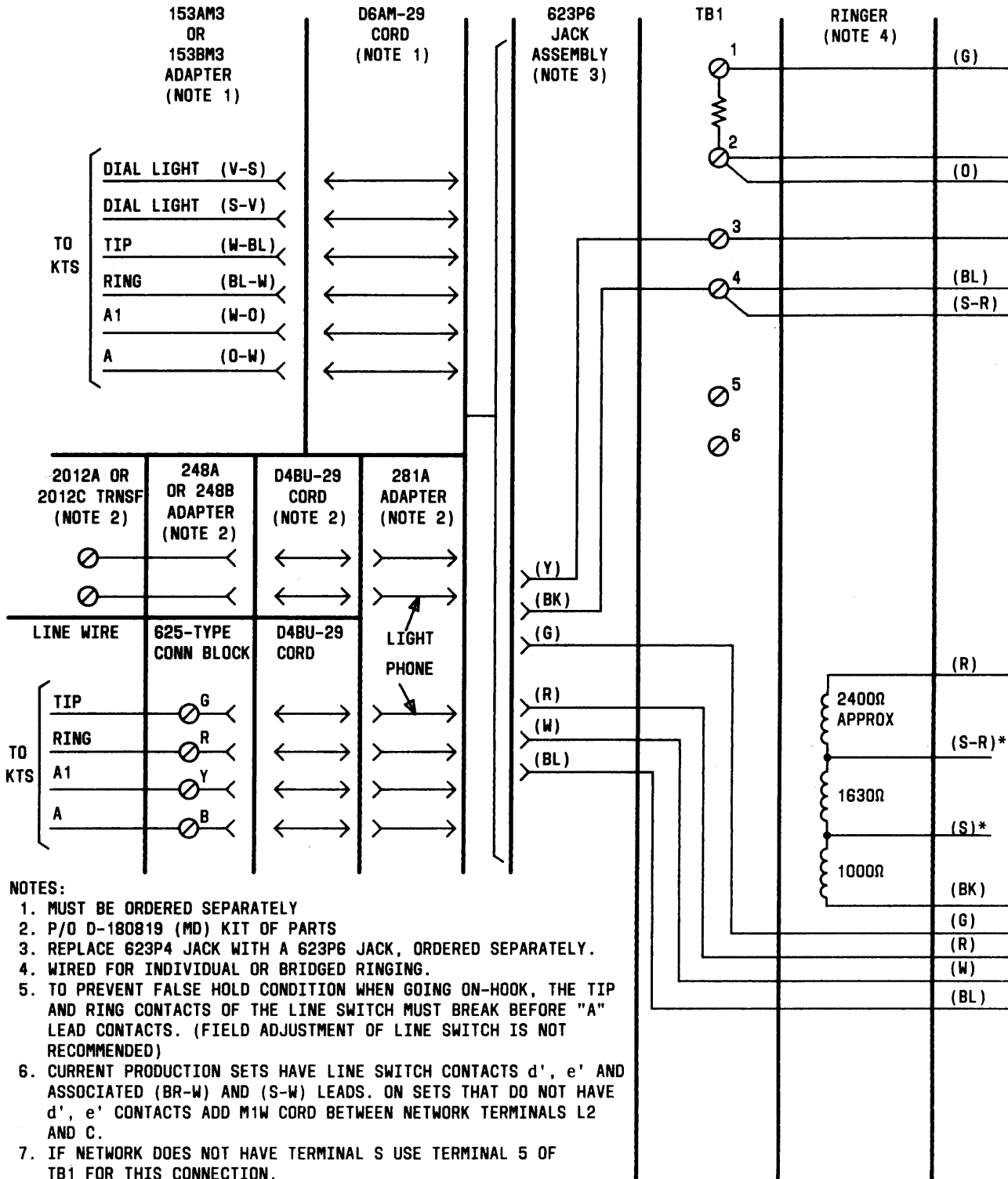


Fig. 11—702BM Telephone Set, Factory-Wired Using D-181059 Kit of Parts (Sheet 2 of 2)



* INSULATE AND STORE
DP DIAL PULSE CONTACT
ON DIAL OFF-NORMAL CONTACT

Fig. 12—702BM Telephone Set, Wired for 1A1 or 1A2 Key Telephone System Using D-180819 (MD) Kit of Parts, or 153AM3 or 153BM3 Adapter (Sheet 1 of 2)

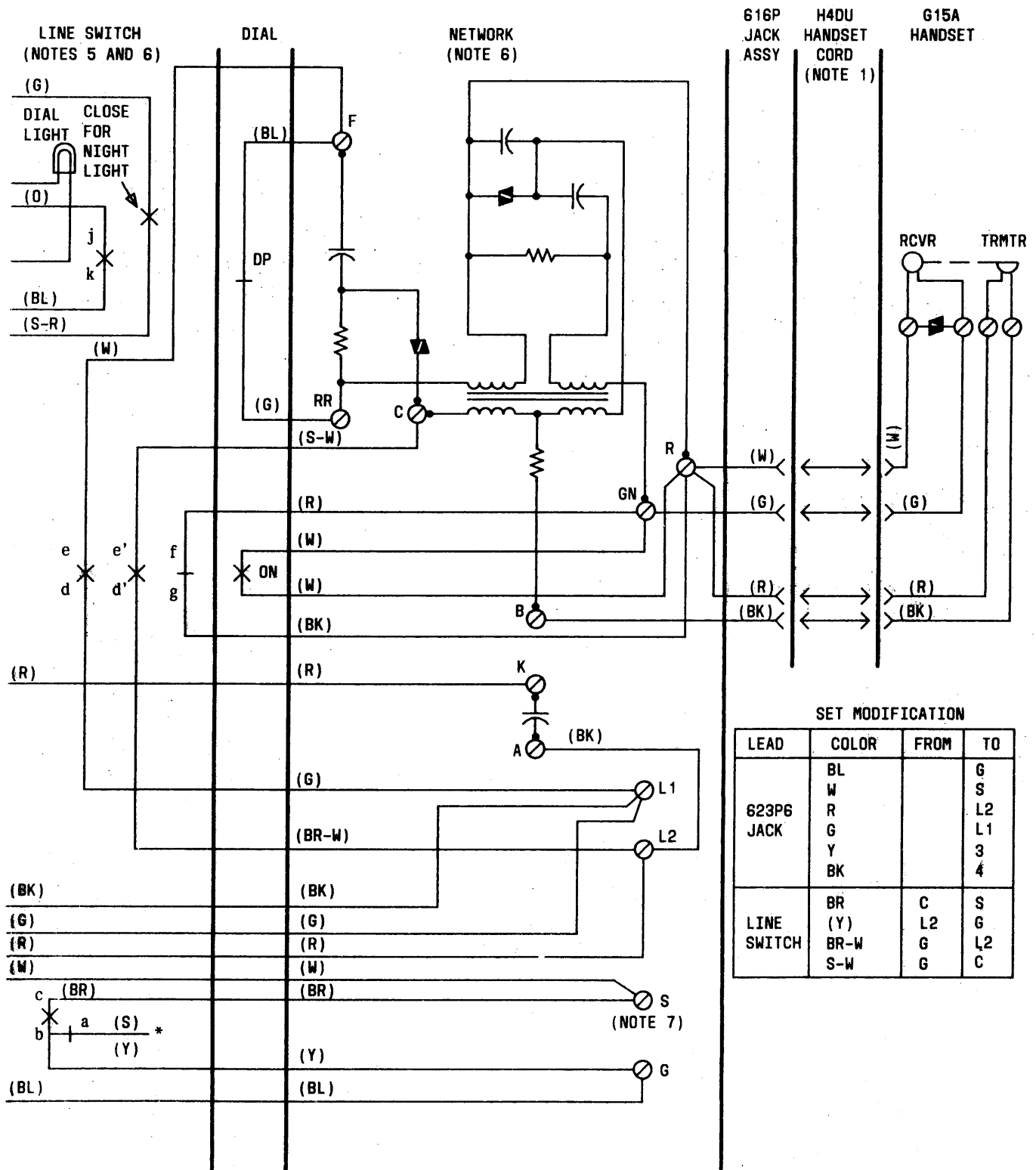


Fig. 12—702BM Telephone Set, Wired for 1A1 or 1A2 Key Telephone System Using D-180819 (MD) Kit of Parts, or 153AM3 or 153BM3 Adapter (Sheet 2 of 2)

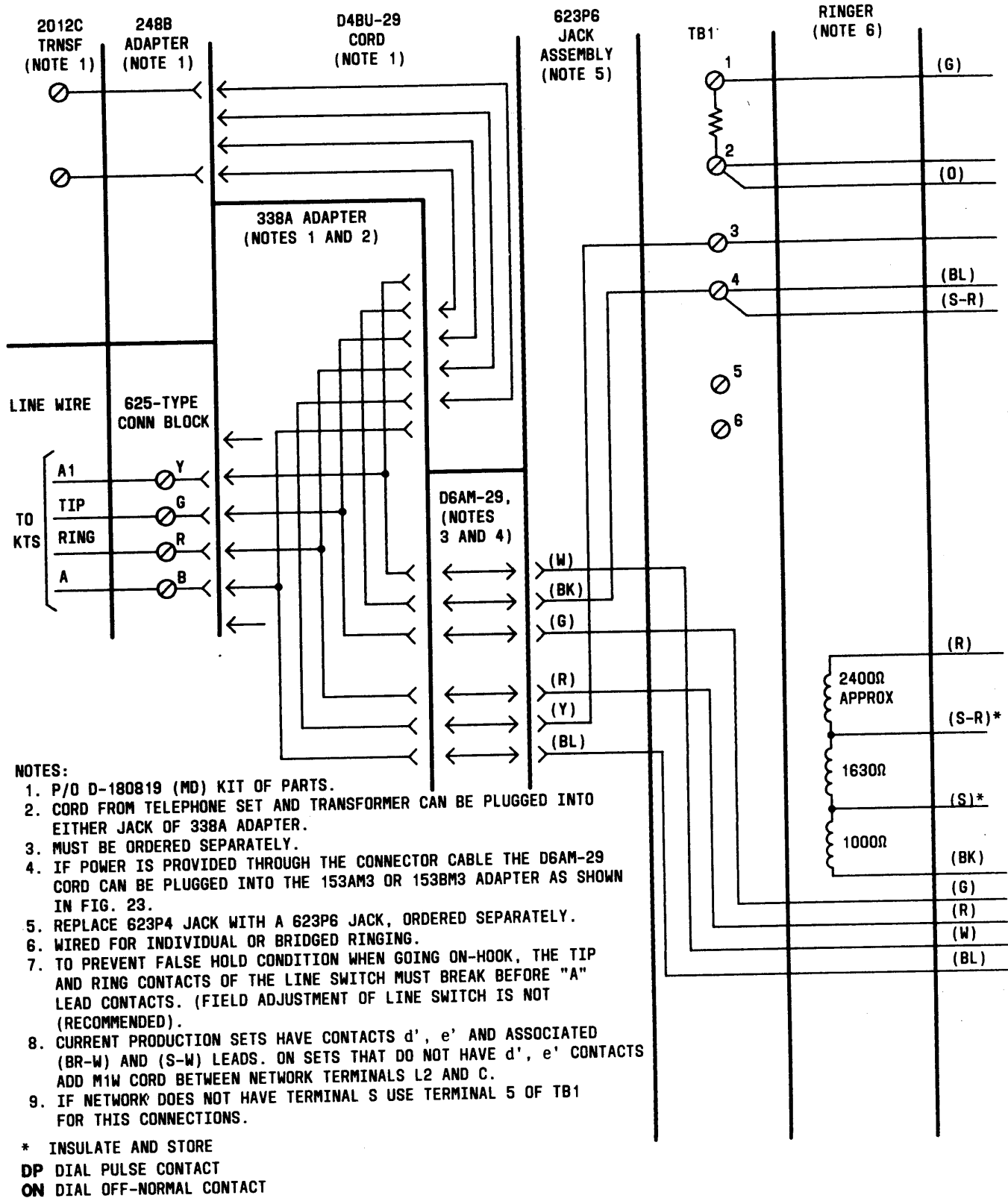


Fig. 13—702BM Telephone Set, Wired for 1A1 or 1A2 Key Telephone System Using D-181059 Kit of Parts (Sheet 1 of 2)

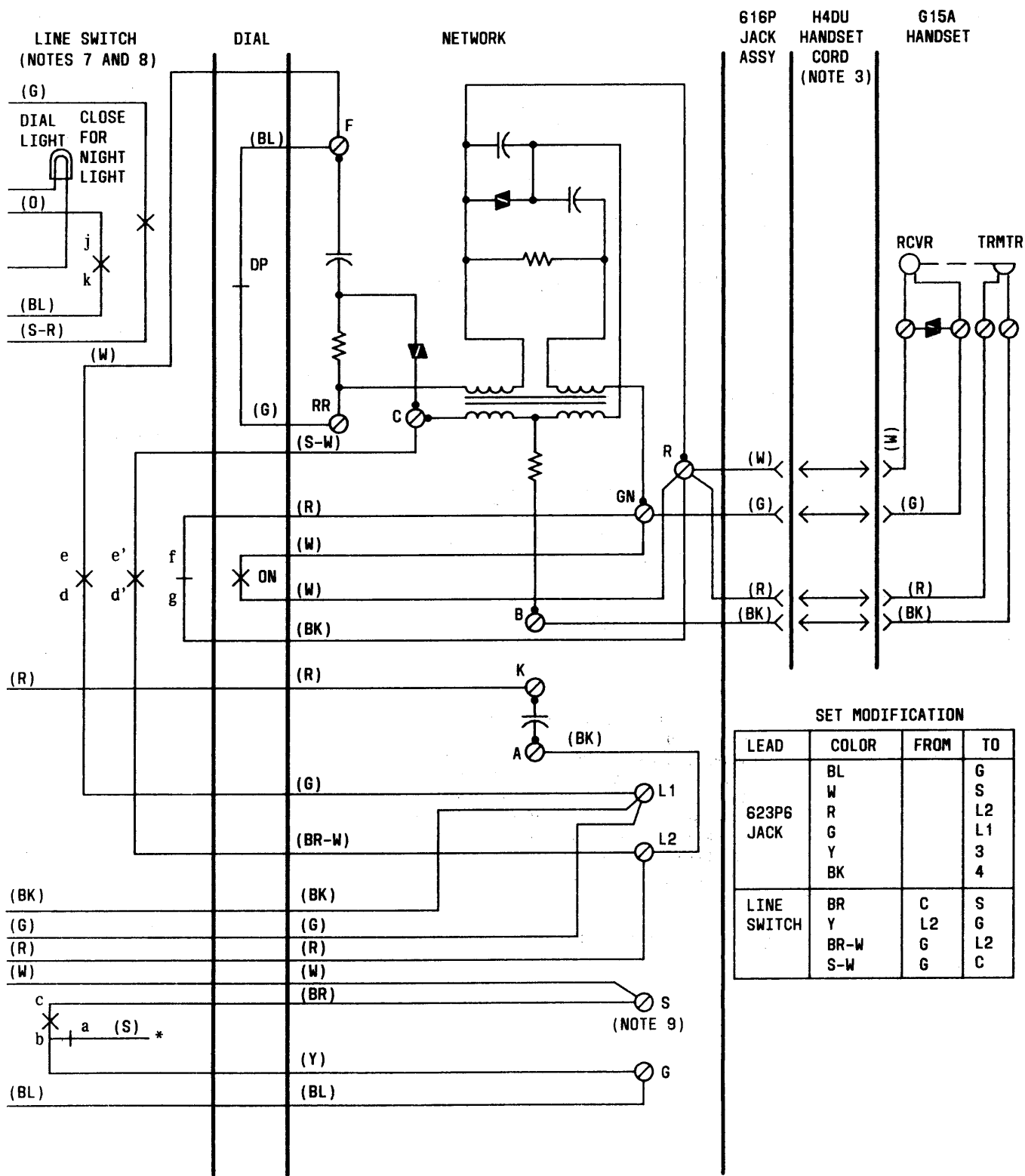
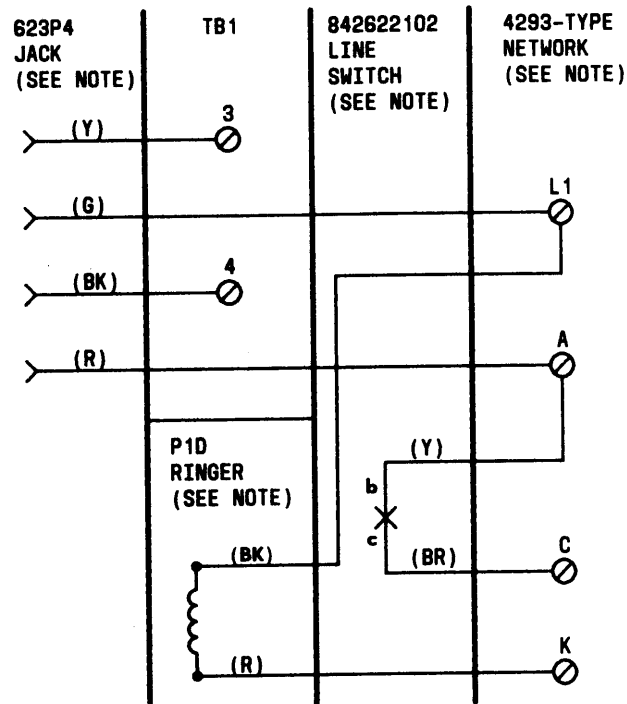


Fig. 13—702BM Telephone Set, Wired for 1A1 or 1A2 Key Telephone System Using D-181059 Kit of Parts (Sheet 2 of 2)

**NOTE:**

THIS PARTIAL DRAWING SHOWS HOW A TELEPHONE SET MANUFACTURED AFTER 6-1-82 AND MARKED FOR "1-PTY" SERVICE CONNECTIONS IS WIRED IF IT IS EQUIPPED WITH ALL THE ABOVE LISTED COMPONENTS. A SET CAN BE MARKED "1-PTY" WITHOUT HAVING ALL THE LISTED COMPONENTS. IF THIS ARRANGEMENT IS ENCOUNTERED, REFER TO THE FULL SCHEMATIC DRAWING OF THE TELEPHONE SET AND PARAGRAPH 2.08 (a) THROUGH (d) TO COMPARE DIFFERENCES IN THE WIRING.

Fig. 14—702BM Telephone Set, Connections (See Note)

TABLE B

**702B (MD) TELEPHONE SET WITH D5AK MOUNTING CORD
LINE AND RINGER CONNECTIONS**

| WIRE OR LEAD | | INDIV OR BRIDGED (SEE NOTE) | RING PARTY (SEE NOTE) | TIP PARTY | | |
|--|-------|--------------------------------------|-----------------------------|-----------------|-----------|-------|
| | | | | NO ID GRD | ID GROUND | |
| | | | | | 1000Ω | 2650Ω |
| 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 |
| D5AK 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 | F | F |
| | (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 | (W) | F | F | F | B | B |
| Strap from H or L2 or of Net. | (BK) | A | A | A | § | § |

Note: Factory-wired for bridged or ring party.

* 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.

† Terminals on lamp terminal block.

‡ To silence ringer permanently, refer to appropriate ringer section in Division 501.

§ Insulated and stored.

TABLE C

**702B (MD) TELEPHONE SET WITH D4BT MOUNTING CORD
LINE AND RINGER CONNECTIONS**

| WIRE OR LEAD | | INDIV OR BRIDGED | RING PARTY | TIP PARTY | | |
|---|-------|------------------------|---------------|-----------------|-----------|-------|
| | | | | NO ID GRD | ID GROUND | |
| | | | | | 1000Ω | 2650Ω |
| 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 | F | F |
| | (Y) | 3* | 3* | 3* | 3* | 3* |
| | (BK) | 4* | 4* | 4* | 4* | 4* |
| Ringer Lead† | (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 or L2 of Net. | (BK) | A | A | A | ‡ | ‡ |

* Terminals on lamp terminal block.

† To silence ringer permanently, refer to appropriate ringer section in Division 501.

‡ Insulated and stored.

TABLE D

**702B (MD) TELEPHONE SET WITH D5AK MOUNTING CORD
LINE AND RINGER CONNECTIONS**

| WIRE OR LEAD | | INDIV OR BRIDGED (NOTE 1) | RING PARTY (NOTE 2) | TIP PARTY (NOTE 3) | | |
|---|-----|--|-------------------------------|------------------------|--------------|--------------|
| | | | | NO ID GRD GRD | ID GROUND | |
| | | | | | 1000 OHMS | 2650 OHMS |
| 623P4 or 623P6 Jack Assembly in Set | R | L2 | L2 | L1 | F | F |
| | G | L1 | L1 | L2 | L2 | L2 |
| | BK | 4* | † | † | † | † |
| | Y | 3* | G | G | G | G |
| | BL | | 4* | 4* | 4* | 4* |
| | W | | 3* | 3* | 3* | 3* |
| Ringer Leads‡ | R | K | K | K | K | K |
| | BK | L1 | G | G | G | G |
| | S | † | † | † | L1 | † |
| | S-R | † | † | † | † | L1 |
| Line Switch | W | F | F | F | B | B |
| Strap from H or L2 of Net. | BK | A | A | A | † | † |

Note 1: Sets are factory-wired for bridged service.

Note 2: For all classes of service except individual or bridged station ground is required, also replace 623P4 with a 623P6 jack assembly and connect as shown.

Note 3: For tip party service with identifying ground, remove insulate and store (BK) strap between network terminals A and H.

* Terminals on lamp terminal block.

† Insulated and stored.

‡ To silence ringer for all classes of service, refer to appropriate section in Division 501.