# STATION DIALS
# 66 AND 67 TYPES
# IDENTIFICATION, INSTALLATION, CONNECTIONS, AND MAINTENANCE

## 1. GENERAL

**1.001** This addendum supplements Section 529-120-106, Issue 1.

**1.002** This addendum is issued to revise ordering information for P-29E718 and P-29E719 card sets for the 67-type dial.

## 2. IDENTIFICATION

The following changes apply to Part 2 of this section:

(a) 2.02 (a) —Revised

(b) 2.02 (b) —Added

(a) ***Replaceble Components***

- Lamp, 53A (illuminated dials only)
- Snap-on caps for special service buttons (Table B)

(b) ***Associated Components*** (Order Separately)

- P-29E718 card set (20 dialing cards) 67-type dial only
- P-29E719 card set (9 index cards)

## 3. INSTALLATION

The following change applies to Part 3 of this section:

(a) 3.04—Revised.

**3.04** Two P-29E718 card sets, each containing 20 cards, and one P-29E719 set of 9 index cards may be ordered separately for the 67-type dial. The dialing cards have a storage capacity of sixteen digits and provide for encoding all sixteen characters appearing on a 67-type dial.

# STATION DIALS

# 66 AND 67 TYPES

# IDENTIFICATION, INSTALLATION, CONNECTIONS, AND MAINTENANCE

## 1. GENERAL

**1.01** These dials are intended solely for use with specially engineered systems — ***not for general telephone use.***

**1.02** This section contains information formerly found in Section 501-164-123, Issue 1 and Section 501-164-124, Issue 1. In addition, information has been included on:

- 66A3C dial
- 66C4B dial
- 66E3A dial
- Snap-on caps with clear windows for special-service buttons on 66-type dials.
- Lamp, 53A (illuminated dials only)
- Snap-on caps for special service buttons (Table B).

## 2. IDENTIFICATION

**2.01** ***Purpose*** — To provide six special service buttons in addition to the ten used in regular letter-number dialing. In addition, the 67-type dials provide automatic dialing of telephone numbers from precoded plastic cards. These dials are used as components of other telephone apparatus.

**2.02** ***Ordering Guide***

Dial, 66-*

Dial, 67-*

* Refer to Table A for specific code.

(a) ***Replaceable Components***

- P-29E718 card set (20 dialing cards)
- P-29E719 card set (9 index cards)

} 67-type dial only

**2.03** ***Color*** — Dial faces are medium gray (light gray in illuminated dials). Buttons 1 through 0, ☆, and A are medium gray (milky white in illuminated dials) and the FO, F, I, and P buttons are red. The six special service buttons on the 66A3C dial are gray with transparent windows.

**2.04** ***Design Features***

- Six special-service buttons
- Replaceable caps on nonilluminated special-service buttons
- Illuminated dials
- Speakerphone dials

} See Table A

- Operation by remote switching (66E3A only)

**2.05** ***Applications*** — Used as components of other telephone apparatus as indicated in Table A.

**2.06** ***67-Type Dial Operating Features***

(a) Dialing cards, which store encoded numbers, orginate calls when inserted in dialer throat.

## TABLE A
## 66- AND 67-TYPE DIALS

| DIAL CODE | INTENDED USE | REMARKS | LEADS | TERMINATION | FIG. |
|---|---|---|---|---|---|
| 66A3A | 1066A3A Adjunct Dial 3504B, 3568HT, 3640A1A, 3641A1A Telephone Sets (Autovon) | Wired for speakerphone | 11 | Spade-tipped | 1, 7, 11 |
| 66A3C | 3623A3A Telephone Set | Wired for speakerphone, special service buttons not designated. | 11 | Spade-tipped | 7, 11 |
| 66A4B | 1066A4B Adjunct Dial 3504C, 3568HH, 3640A1B, 3641A1B Telephone Sets (Autovon) | Wired for speakerphone, illuminated version of 66A3A | 13 | Spade-tipped | 2, 7, 11 |
| 66B3A | 67A Card Dialer | Wired for speakerphone | 11<br>10 | Spade-tipped<br>Soldered | 3, 7, 15 |
| 66B4B | 67B Card Dialer | Wired for speakerphone, illuminated version of 66B3A | 13<br>10 | Spade-tipped<br>Soldered | 7, 15 |
| 66C3A | Dial Restoration Panel (Autovon) | Wired for speakerphone | 22 | Connector | 4, 7, 12 |
| 66C4B | 3673A Telephone Set (Autovon) | Wired for speakerphone, illuminated version of 66C3A | 24 | Connector | 7, 12 |
| 66D3A | 50B Dial Mounting for PBX Switchboards (Autovon) | | 9 | Connector | 5, 7, 13 |
| 66D4B | 1066D4B Adjunct Dial (Autovon and SAGE) | Illuminated version of 66D3A | 9<br>2 | Connector<br>Spade-tipped | 7, 13 |
| 66E3A | No. 5 Crossbar Master Test Frame | Can be operated by remote switching apparatus | 27 | Spade-tipped | 7, 14 |
| 67A | 3666A1A Telephone Set (Autovon) | Card dialer wired for speakerphone | 12 | Spade-tipped | 6, 8, 15 |
| 67B | 3666A1B Telephone Set (Autovon) | Illuminated card dialer wired for speakerphone | 14 | Spade-tipped | 6, 8, 15 |

**TABLE B**

**SPECIAL SERVICE BUTTON CAPS ***

| DESIGNATION | COLOR | CAP PART NUMBER |
|---|---|---|
| ☆ | Medium Gray | P-29E600 |
| A | Medium Gray | P-29E601 |
| FO | Red | P-29E602 |
| F | Red | P-29E603 |
| I | Red | P-29E604 |
| P | Red | P-29E605 |
| Customer-provided, Cap has transparent window | Red | P-29E750 |
| | Medium Gray | P-29E751 |

* Illuminated dials do not have snap-on caps.

(b) With dialing card inserted in dialer throat, depressing START bar (Fig. 6) operates common switch on associated 66B-type dial and starts dialing mechanism.


Fig. 1 — 66A3A Dial — Front View

## 3. INSTALLATION

**3.01** Flat tabs extending from each side of the 66-type dials are provided for mounting the dial in other telephone apparatus. The 67-type dials are mounted with three screws.


Fig. 2 — 66A4B Dial — Front View


Fig. 3 — 66B3A Dial — Front View

**3.02** Dial leads are either spade-tipped or terminated in a plug. Illuminating lamp leads are spade-tipped in all except the 66C4B dial where they terminate in a plug.

### 66E3A DIAL

**3.03** Access leads are provided so that all dial switching functions may be performed by external switches.


***Attachment of remote switches to the 66E3A dial may detune the dial oscillator. Whenever such apparatus is connected, all dial output frequencies should be measured and if the change in frequency, due to the connections, is less than +0.00, −0.18 percent, the dial will still meet system requirements.***

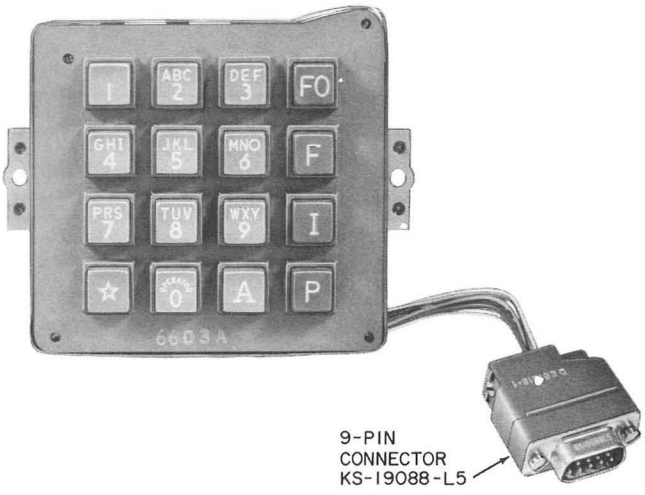



**Fig. 5 — 66D3A Dial — Front View**


**Fig. 4 — 66C3A Dial — Front View**

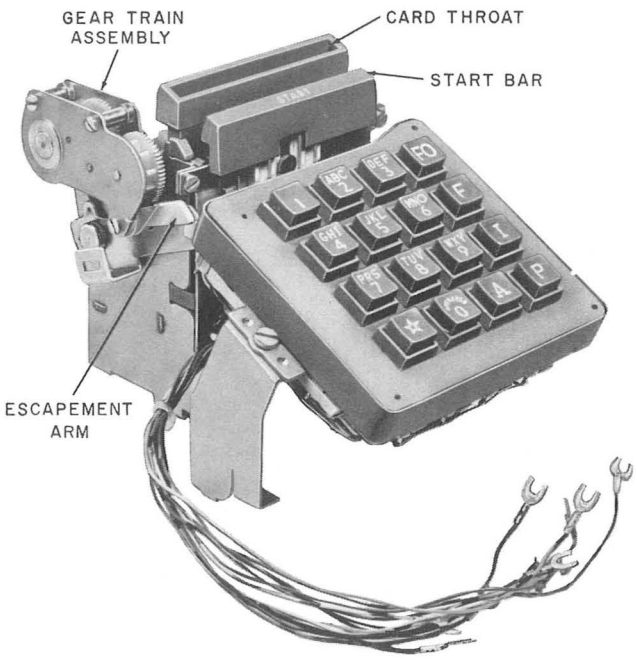
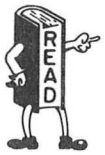



**Fig. 6 — 67-Type Dial — Front View**

## CODING DIALING CARDS

**3.04** Two P-29E718 card sets, each containing 20 cards, and one P-29E719 set of 9 index cards are furnished with each 67-type dial. The dialing cards have a storage capacity of sixteen digits and provide for encoding all sixteen characters appearing on a 66-type dial.




***Card must be properly punched and checked for accuracy to ensure satisfactory results. Use a pencil or ballpoint pen to punch perforations from the card. Perforation must be completely removed, leaving clean hole in card. Do not use broken or damaged cards.***

**3.05** For stations not requiring special access codes, code cards as follows:

- Write name and telephone number on card in space provided (Fig. 9).
- Convert exchange letters to numbers. For example; use 2 for A, B, or C; 7 for P, R, or S; etc.

*Note:* There are two groups of characters on the card (Fig. 9). A perforation must be punched for each group to code a single character.

- In column 1, locate and punch first digit of telephone number in both character groups.
- Repeat in second column for second digit and so forth for remaining digits. All digits, including zero (0), must be punched out in both groups of characters.
- Do not punch out STOP in column following last digit.
- Check card for accuracy.

**3.06** In some PBX systems it may be necessary to dial an access code then wait for second dial tone. In this case, code card as follows:

- Write name and telephone number (with exchange letters converted to numbers) on card in space provided (Fig. 10).
- Punch out access code in column 1.
- In column 2, punch out STOP. (The STOP in column 1 is already punched.)
- Starting in column 2, punch out first digit of telephone number as described in 3.05.
- Repeat in succeeding columns for each digit of telephone number.
- Do not punch STOP in column following last digit.
- Check card for accuracy.

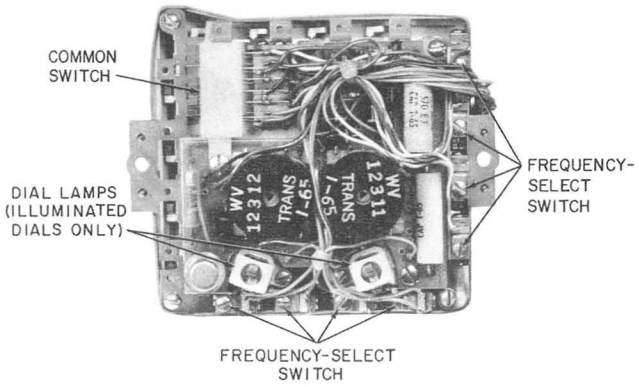



**Fig. 7 — 66-Type Dial — Rear View**

## SNAP-ON CAPS

**3.07** Replacement snap-on caps are available for the special-service buttons on 66-type dials (see Ordering Guide and Table B). These caps are also available with clear plastic windows for designations to be furnished and changed by the customer. The opaque collar is provided with a slot on one side so that the cap assembly may be removed from a button by simply prying upward at the top of the slot with a KS-16750L2 tool, paper clip, or similar tool. Transparent snap-on caps are standard on special service buttons of the 66A3C dial.

**3.08** The designation provided by the customer should be approximately 11/32-inch square and no more than 0.010-inch thick. The actual viewing area is only 5/16-inch square.

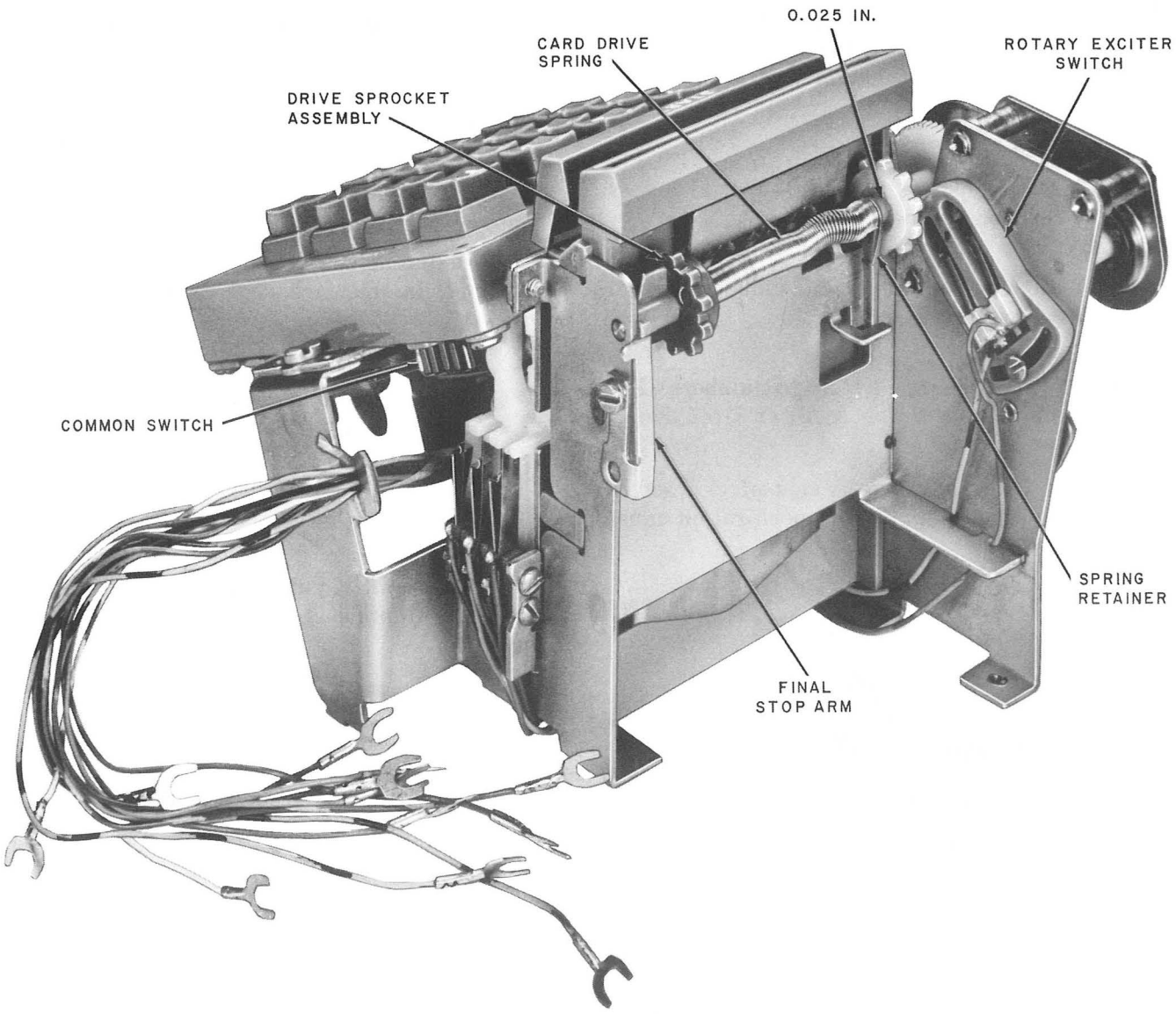



**Fig. 8 — 67-Type Dial — Rear View**

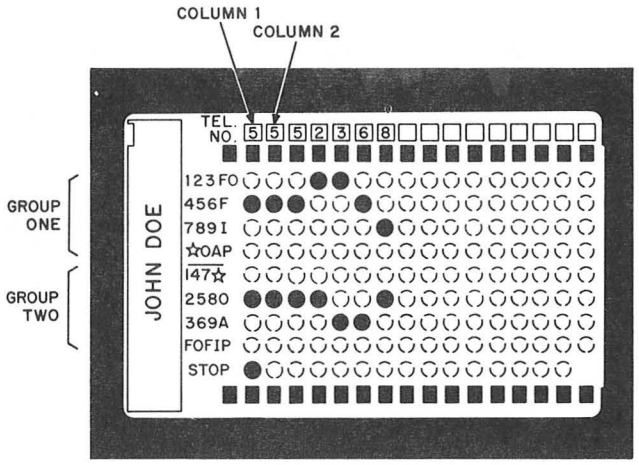



**Fig. 9 — Card Coded For 7-Digit Telephone Number**

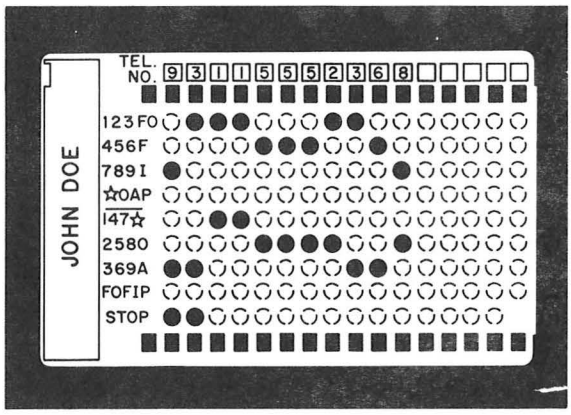



**Fig. 10 — Card Coded For Access Code (9), STOP, Area Code (311), and 7-Digit Telephone Number**

## 4. CONNECTION INDEX


***No changes in wiring other than those specified in this practice shall be made.***

Fig. 11 — 66A3A/3C/4B Dial, Connections

Fig. 12 — 66C3A/4B Dial, Connections

Fig. 13 — 66D3A/4B Dial, Connections

Fig. 14 — 66E3A Dial, Connections

Fig. 15 — 67A/B Dial Connections (Includes 66B3A/4B Dial Connections)

## 5. MAINTENANCE


***Maintenance of 66- and 67-type dials consists only of determining if dial is defective. Do not attempt adjustments of these dials in the field other than those prescribed in this section.***

### TROUBLE LOCATION PROCEDURE

(a) Check all connections between dial and associated apparatus.

(b) Check line polarity. The orange-black lead must be negative (−) and the green lead must be positive (+). Some associated circuits contain a polarity guard to assure correct dial polarity at all times. This should also be checked.

(c) Check for presence of dial tone. If no dial tone is heard, make check with 1011B test set at connecting block. If dial tone is heard at connecting block, make normal test of station components as described in appropriate sections and replace as necessary.

(d) Break dial tone by depressing digit button as prescribed by local instructions. If unable to break dial tone, remove set housing, restore line switch, and connect 1011B test set across incoming line terminations in set. Using test set, break dial tone by dialing prescribed digit. If dial tone can be broken, replace dial.

(e) Check all buttons for tone generation. When any button is depressed, two tones can be heard blended together. When any two buttons in the same row or column are depressed, only the one tone common to that row or column should be heard.

(f) Dial ringer test code for TOUCH-TONE® dials. For stations associated with a PBX, tests should be conducted through the

Local Test Desk in the serving Central Office. If dial fails test, replace.

**CARD DIALER MECHANISM**

(a) Inspect card throat for foreign material.

(b) Test mechanism as follows:

(1) Insert properly coded test card in card throat and depress fully.

(2) Lift handset and listen for dial tone.

(3) When dial tone is received, depress and hold START bar operated.

(4) Wiggle test card in card dialer. No tones, other than muted dial tone, should be heard and dial tone should not be broken.

(5) Release card and START bar. Dial tone should be broken and two blended tones should be heard at each coded line as card advances upward.

*Note:* There should be no binding or sticking of card or transport mechanism at any point during insertion or return of card.

(c) The card drive spring should have consistent tension as card is being driven upward. If card is suspected of rising too slowly, set drive spring to proper tension as follows:

(1) Unwind drive spring by pulling out on final stop arm until there is no tension on spring retainer (Fig. 8).

(2) Release final stop arm.

(3) Holding START bar operated, turn sprocket assembly sixteen full turns. Turns can be counted by listening to the clicks as final stop arm passes over drive shaft return stop.

(4) When drive spring is fully wound, there should be at least 0.025-inch clearance between hub of sprocket gear and spring retainer (Fig. 8). Spring retainer must be held to the left as far as possible for this measurement.

(d) The escapement arm (Fig. 6) should work freely without binding or catching.

(e) Replace dial if it does not meet the above requirements.

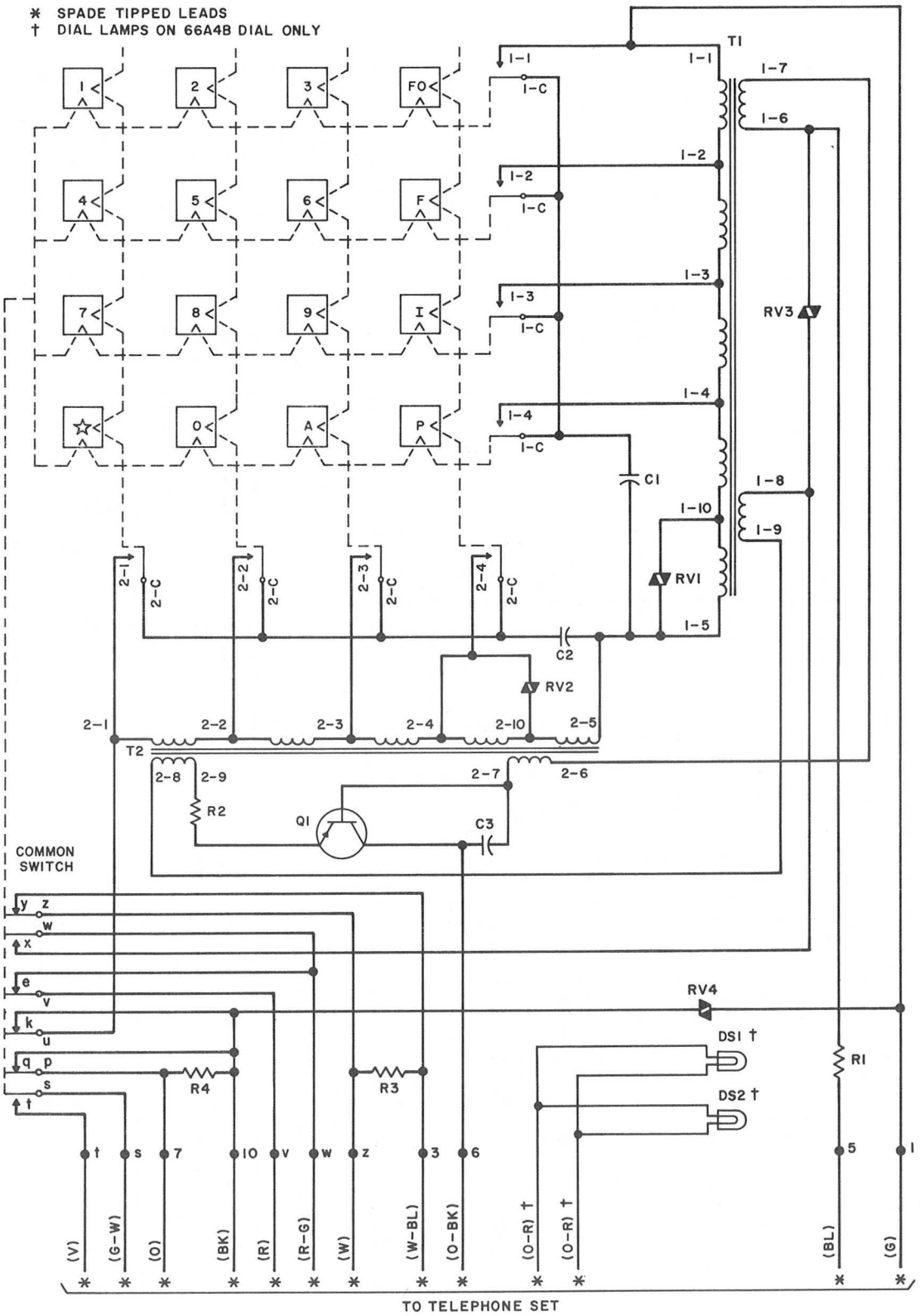



**Fig. 11 66A3A/3C/4B Dial, Connections**

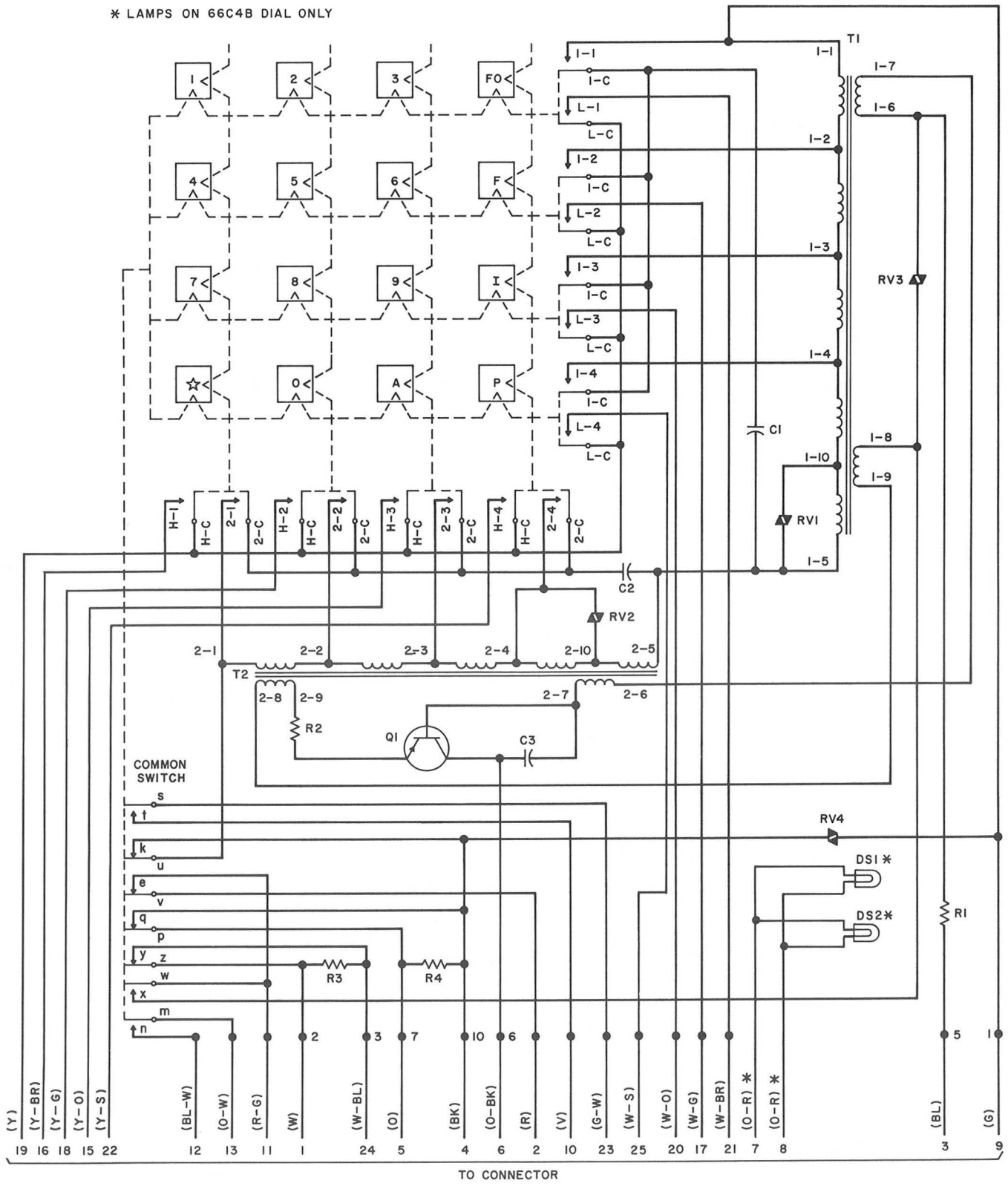



**Fig. 12 — 66C3A/4B Dial, Connections**

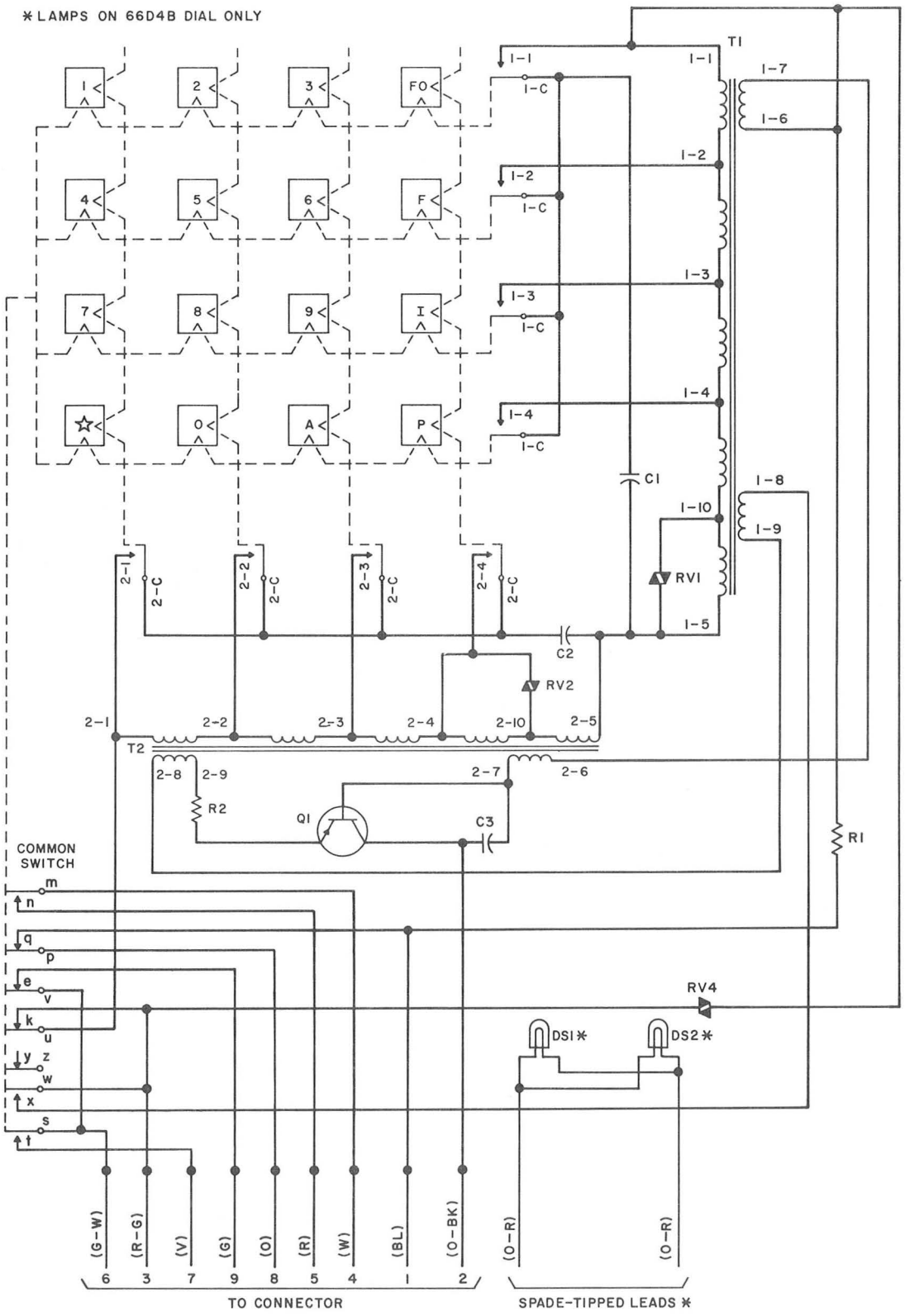



**Fig. 13 — 66D3A/4B Dial, Connections**

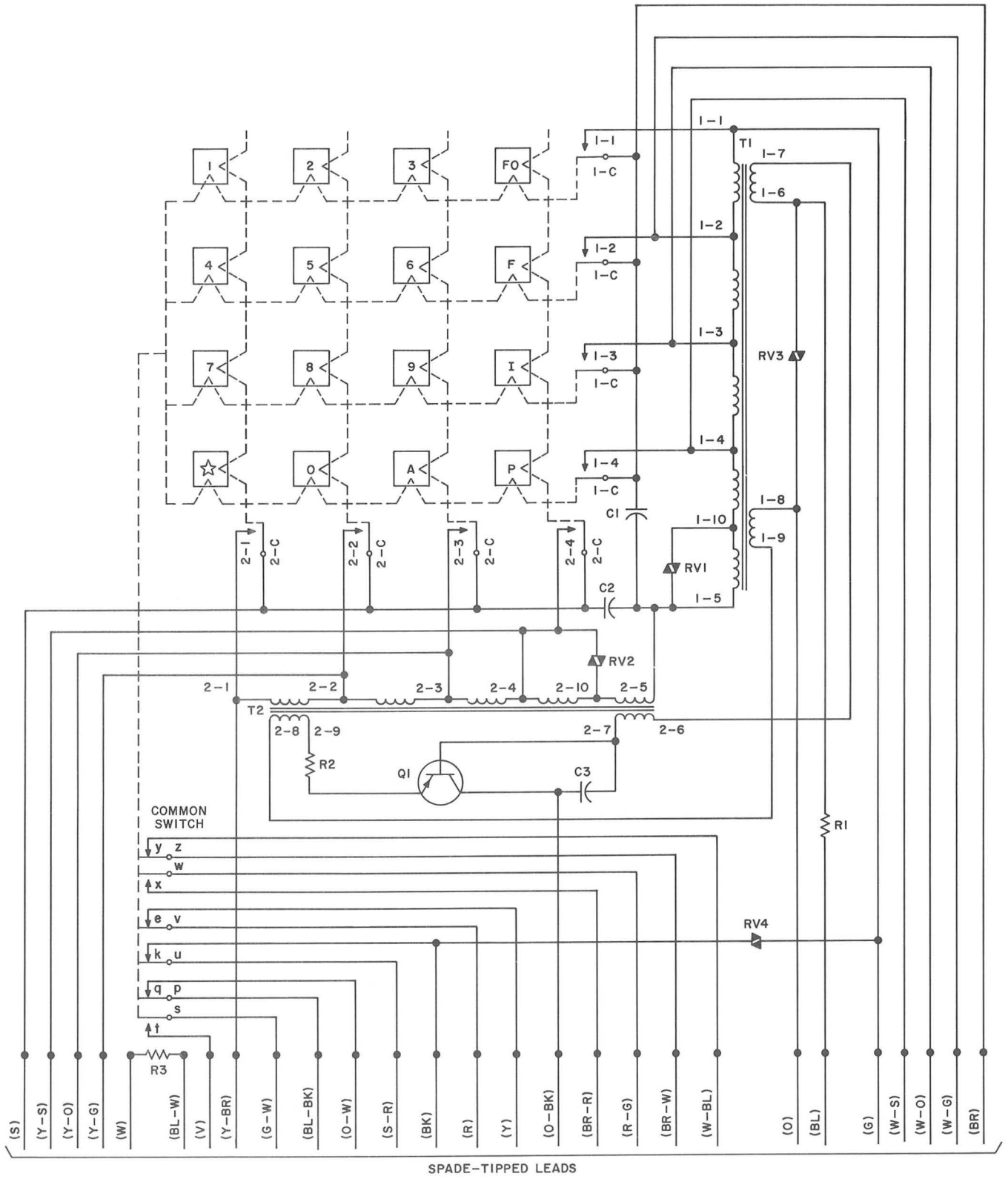



**Fig. 14 — 66E3A Dial, Connections**

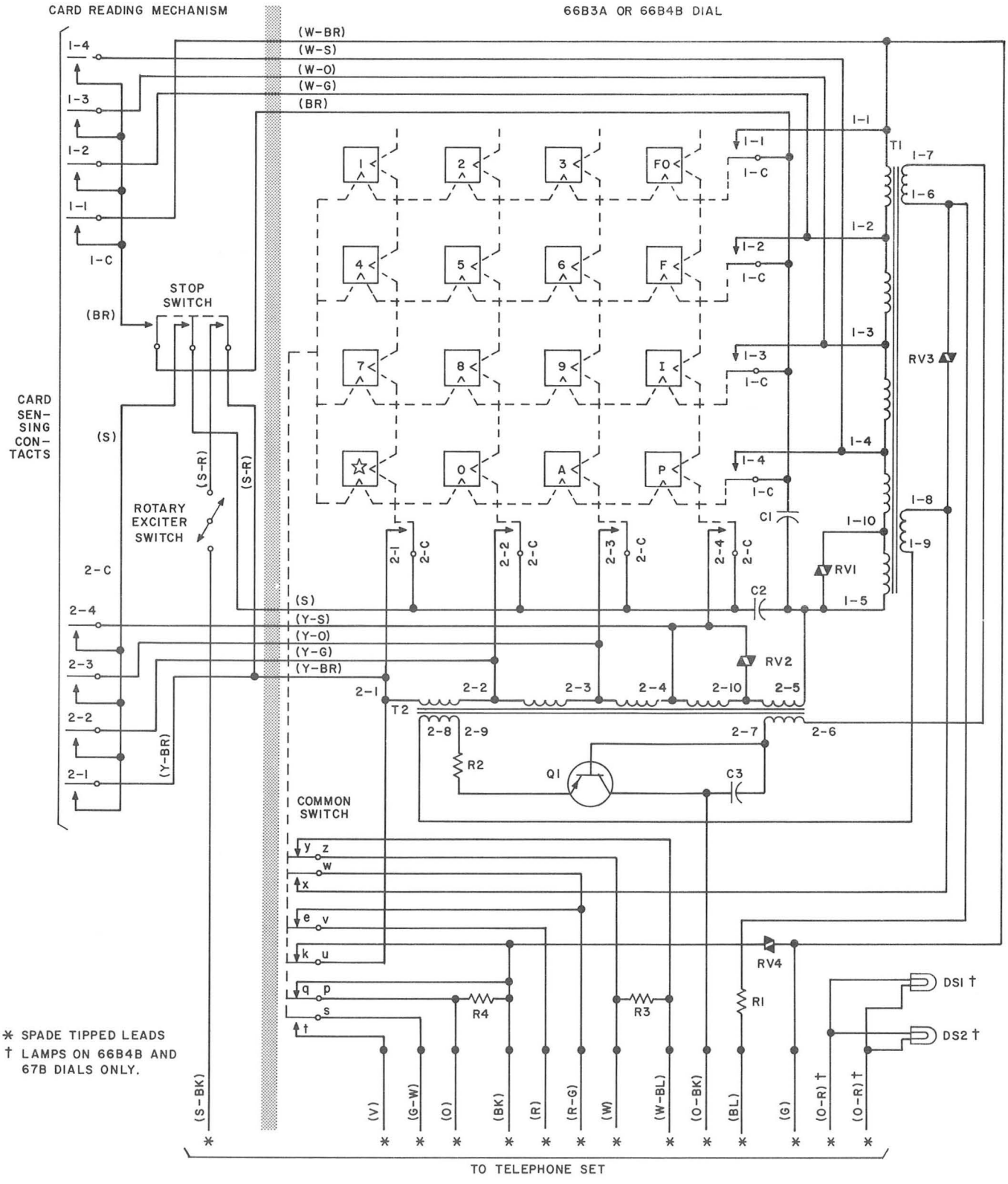



**Fig. 15 — 67A/B Dial, Connections (Includes 66B3A/4B Dial, Connections)**