

## 35-TYPE STATION DIALS IDENTIFICATION AND MAINTENANCE

### 1. GENERAL

1.01 This section contains information on the 35-type dials.

1.02 This section is reissued to:

- Add information on 35AF3A, 35U3A, 35BC3A, and 35BG4A dials
- Revise Fig. 9 and Table A.

1.03 The 35-type dial (Fig. 1 and 2) is a 12-button TOUCH-TONE® dial. Ten of the pushbuttons are used for number or number and letter calling and two pushbuttons designated \* and # are for special service.

1.04 Each of the pushbuttons, when operated, will generate a signal distinctive to that pushbutton (Fig. 3). All pushbuttons operate the common switch which reduces sidetone to the receiver, opens the transmitter path, and turns on the oscillator to generate the proper frequencies.

1.05 Dials used with speakerphone have additional common switch contacts to connect the bias voltage to the oscillator through the control unit and to remove the shunt across the resistor in series with the tip of the line to the control unit.

### 2. IDENTIFICATION

Refer to Table A

### 3. MAINTENANCE



*Field adjustments of the 35-type dial are not recommended. Maintenance consists only of determining if the dial is defective. Under no circumstances should a burnishing tool be used to clean gold plated contacts.*

3.01 The 35-type dial must be properly poled. To maintain the proper dial polarity, refer to the telephone set service section for connections, and section on polarity guards, if required.

3.02 To determine if a dial is defective.

- (1) Verify wiring for secure and correct connections.
- (2) Check for presence of dial tone. If no dial tone is heard, make test with 1013A or equivalent hand test set across incoming CO line to telephone set. If dial tone is heard, make normal tests of telephone set components as described in appropriate sections.
- (3) Break dial tone by dialing a digit as prescribed by local instructions. If unable to break dial tone, replace the dial.
- (4) Check all buttons for tone feedback to the receiver. If feedback tones are not present, replace dial.

3.03 To test dial frequency and amplitude outputs.

- (1) Dial local number for testing TOUCH-TONE dials, or dial local test desk and request access to the dial-test circuit.
- (2) When second dial tone is heard, dial appropriate code for testing 12-button dials, dial digits 1 through 9, and then \*, 0, and #.

3.04 Replace dial if it fails to meet the tests.

### 4. SCHEMATICS

Fig. 4—35A3A, 35E4A (MD), 35Y3A, 35Y3D, 35AD4A, 35AH3D, 35AW3D, and 35BB3D Dial, Schematic

Fig. 5—35B3 (MD) Dial, Schematic

### NOTICE

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Fig. 6—35C3A, 35D3A, 35AF3A, 35AF3D, and 35AJ3D Dial, Schematic

Fig. 7—35F3A Dial, Schematic

Fig. 8—35G3A (MD) and 35T3A Dial, Schematic

Fig. 9—35H3A and 35J3A Dial, Schematic

Fig. 10—35L3A Dial, Schematic

Fig. 11—35M3 (MD) Dial, Schematic

Fig. 12—35N1A (MD) and 35N3A Dial, Schematic

Fig. 13—35P1A (MD) and 35P3A Dial, Schematic

Fig. 14—35R3A, 35AE3A, and 35BC3A Dial, Schematic

Fig. 15—35S3A (MD), 35S3D, and 35U3A Dial, Schematic

Fig. 16—35AB3A (MD) Dial, Schematic

Fig. 17—35AC3A and 35AL3A Dial, Schematic

Fig. 18—35AG3A and 35AT3A Dial, Schematic

Fig. 19—35AK3A Dial, Schematic

Fig. 20—35AR3A Dial, Schematic

Fig. 21—35AU3A Dial, Schematic

Fig. 22—35AY3A Dial, Schematic

Fig. 23—35BA3A Dial, Schematic

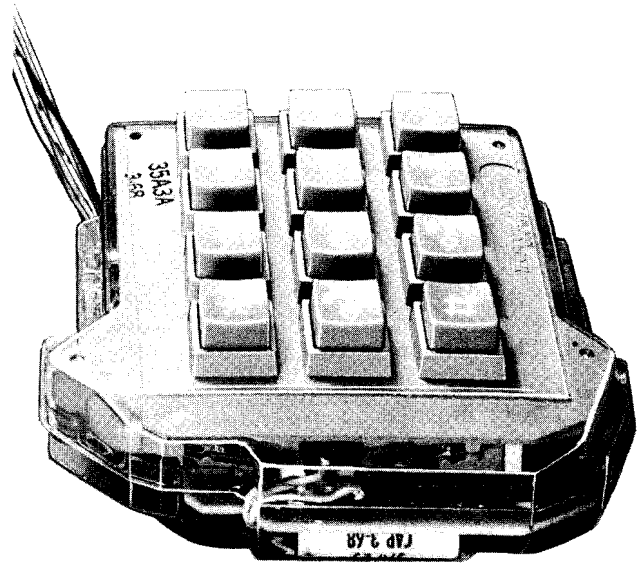


Fig. 1—35-Type Dial—Front View

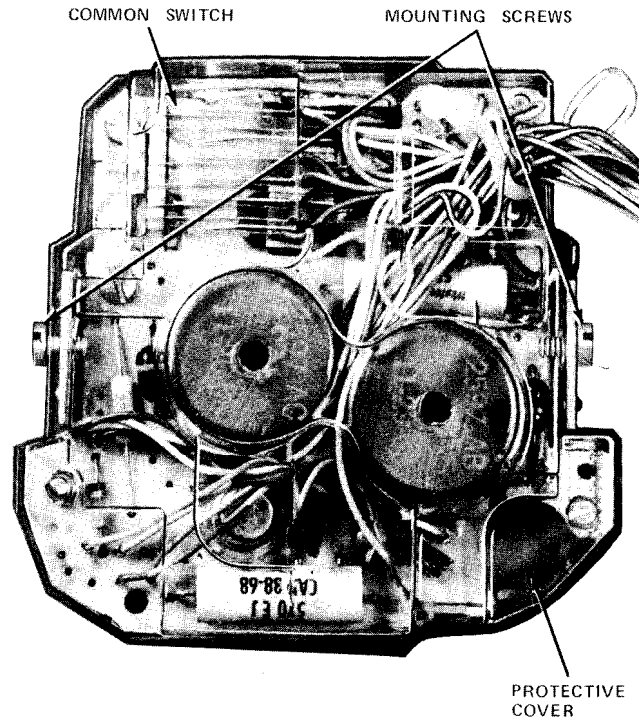


Fig. 2—35-Type Dial—Rear View, With Protective Cover

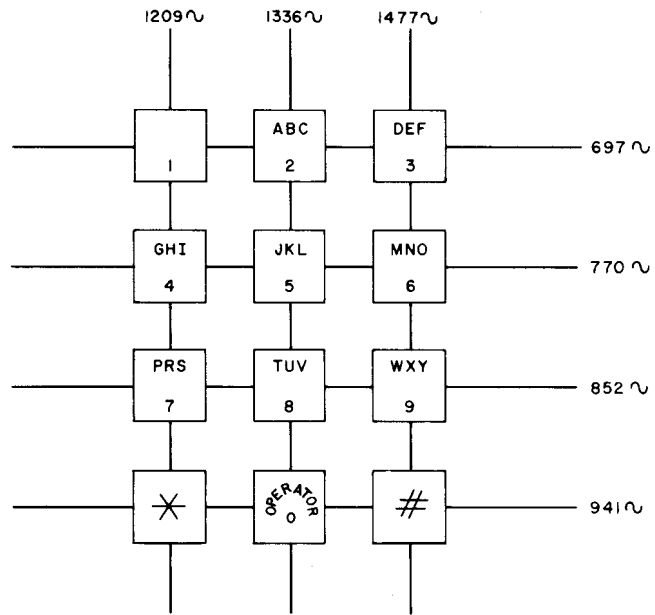


Fig. 3—Dial Frequencies

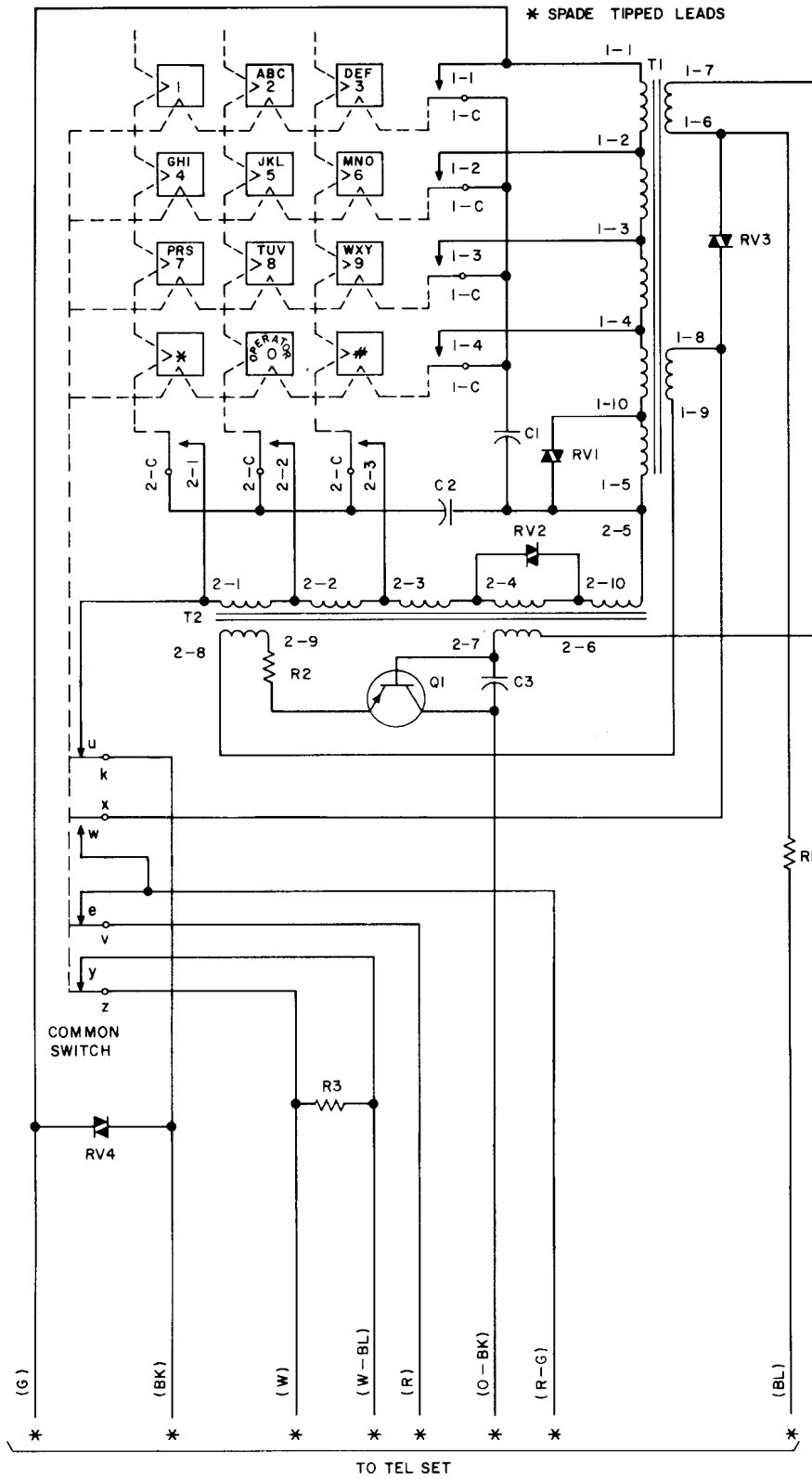


Fig. 4—35A3A, 35E4A (MD), 35Y3A, 35Y3D, 35AD4A, 35AH3D, 35AW3D, and 35BB3D Dial, Schematic

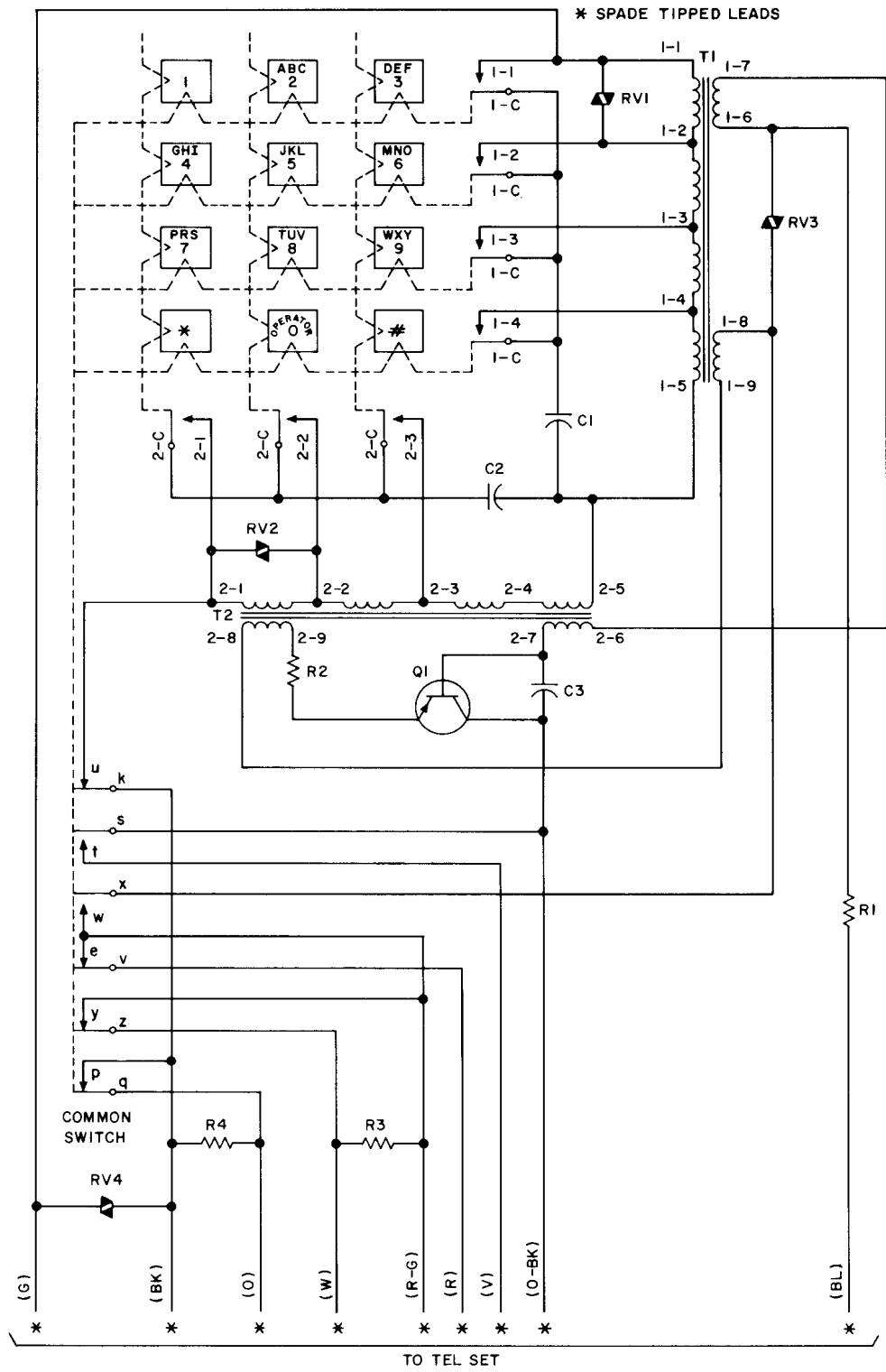


Fig. 5—35B3 (MD) Dial, Schematic

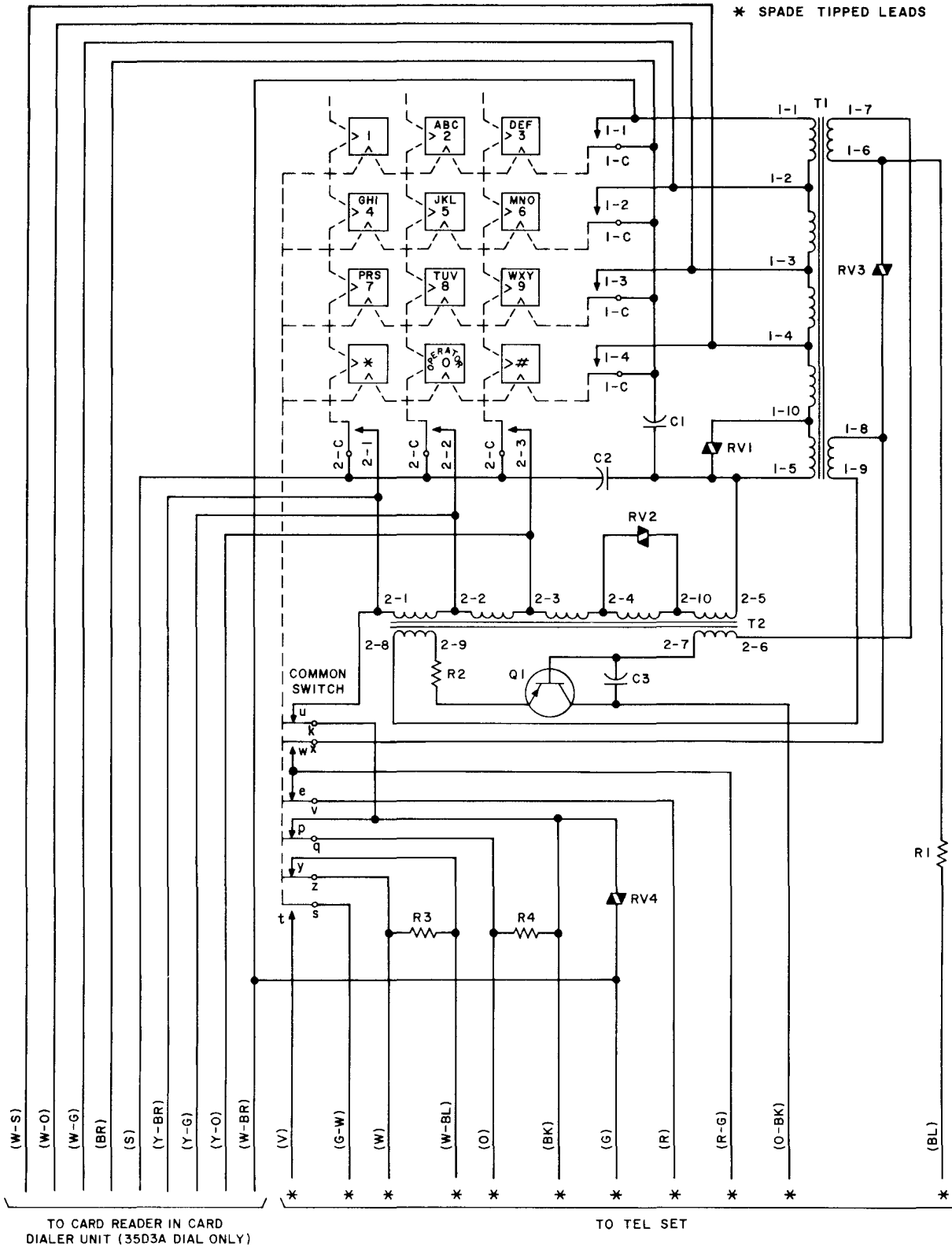


Fig. 6—35C3A, 35D3A, 35AF3A, 35AF3D, and 35AJ3D Dial, Schematic

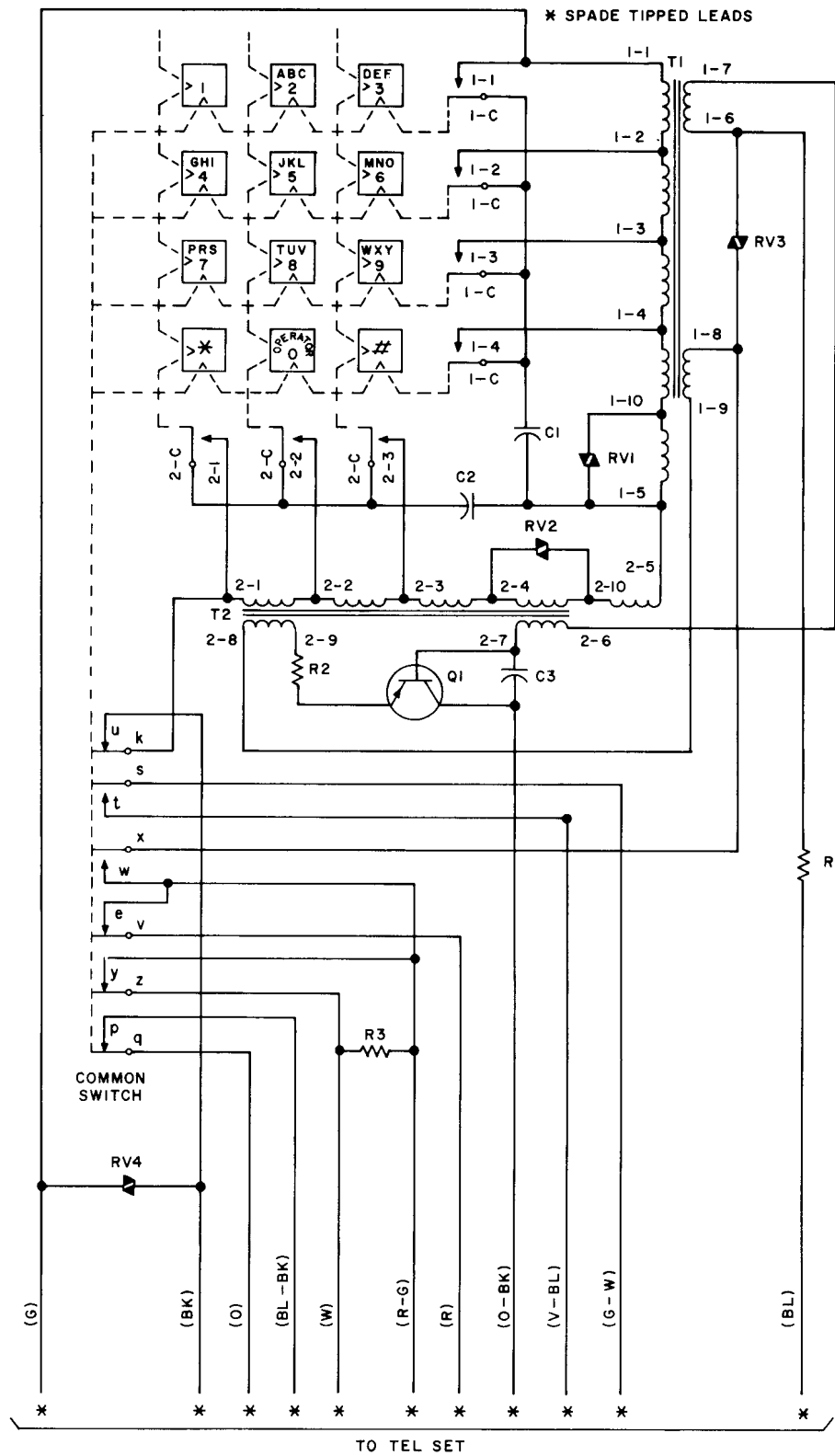


Fig. 7—35F3A Dial, Schematic

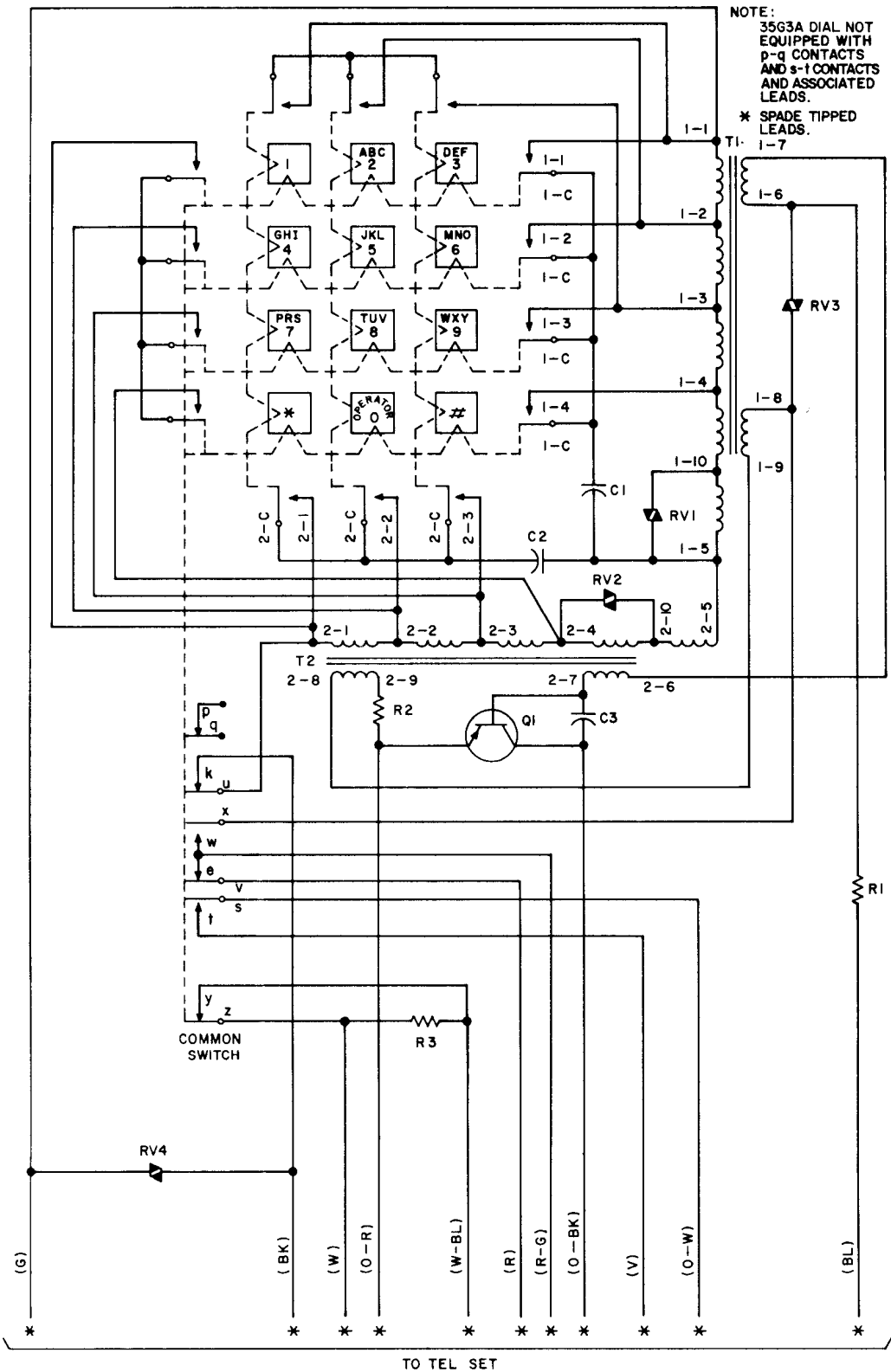


Fig. 8—35G3A (MD) and 35T3A Dial, Schematic



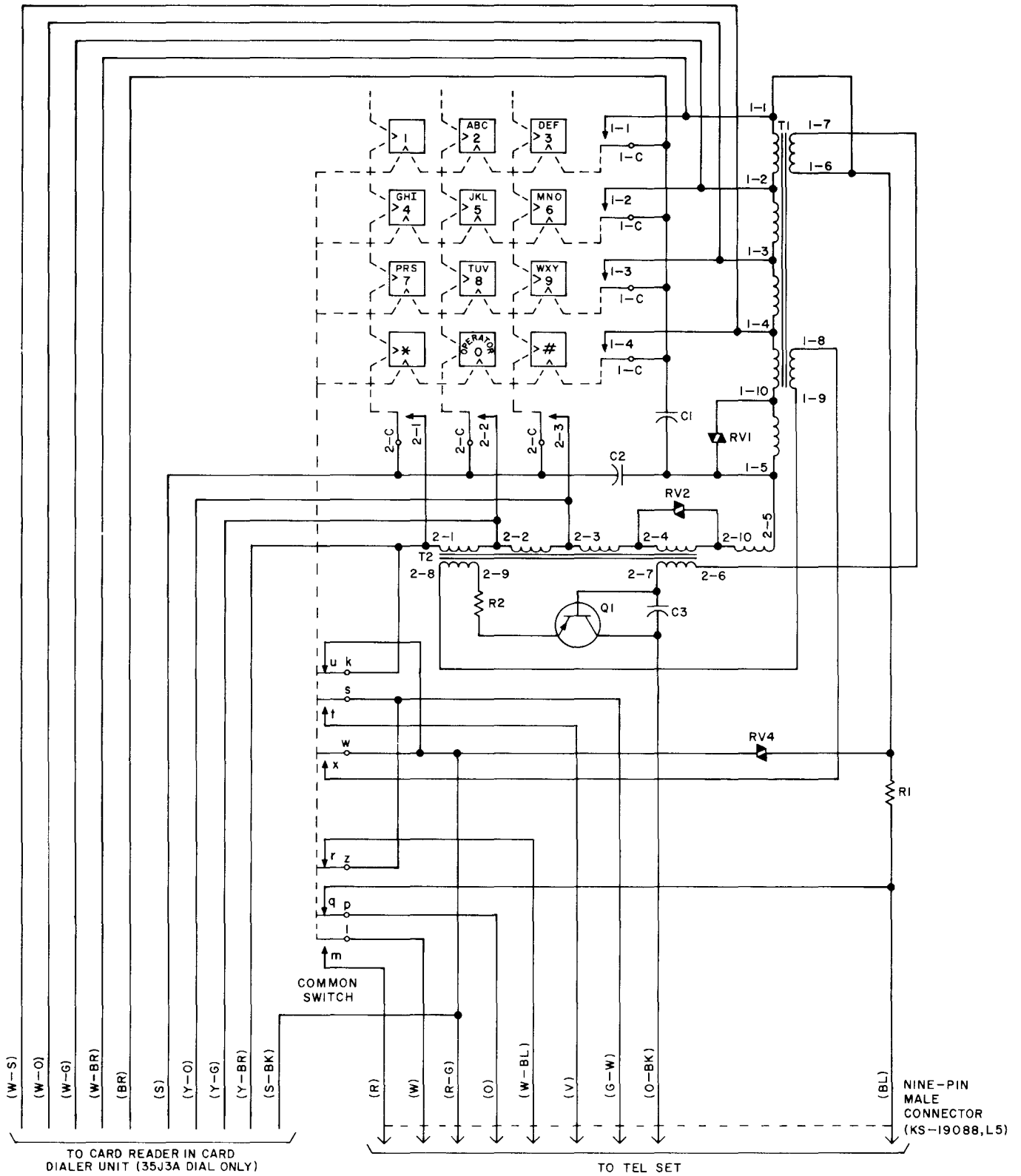


Fig. 9—35H3A and 35J3A Dial, Schematic

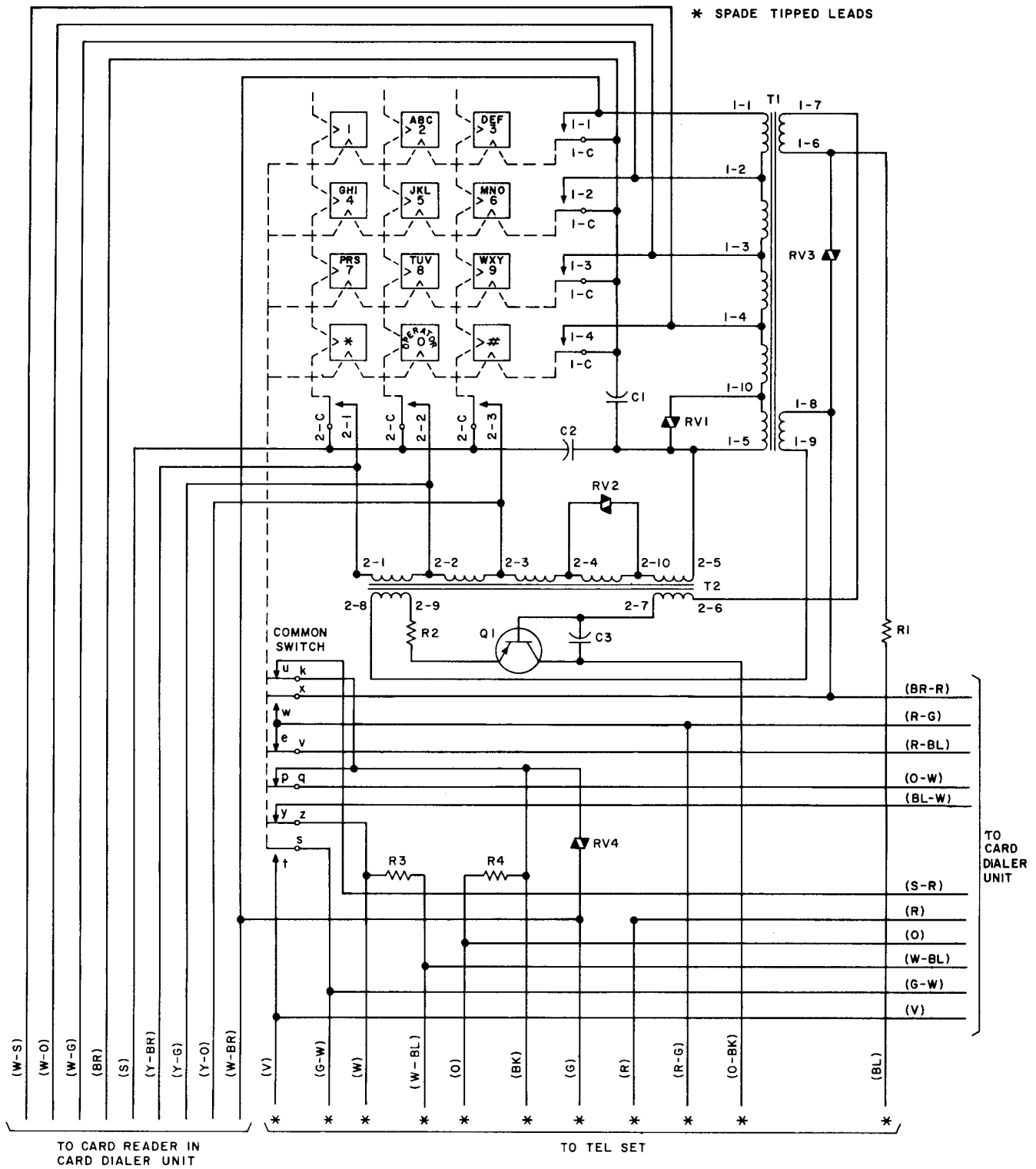


Fig. 10—35L3A Dial, Schematic

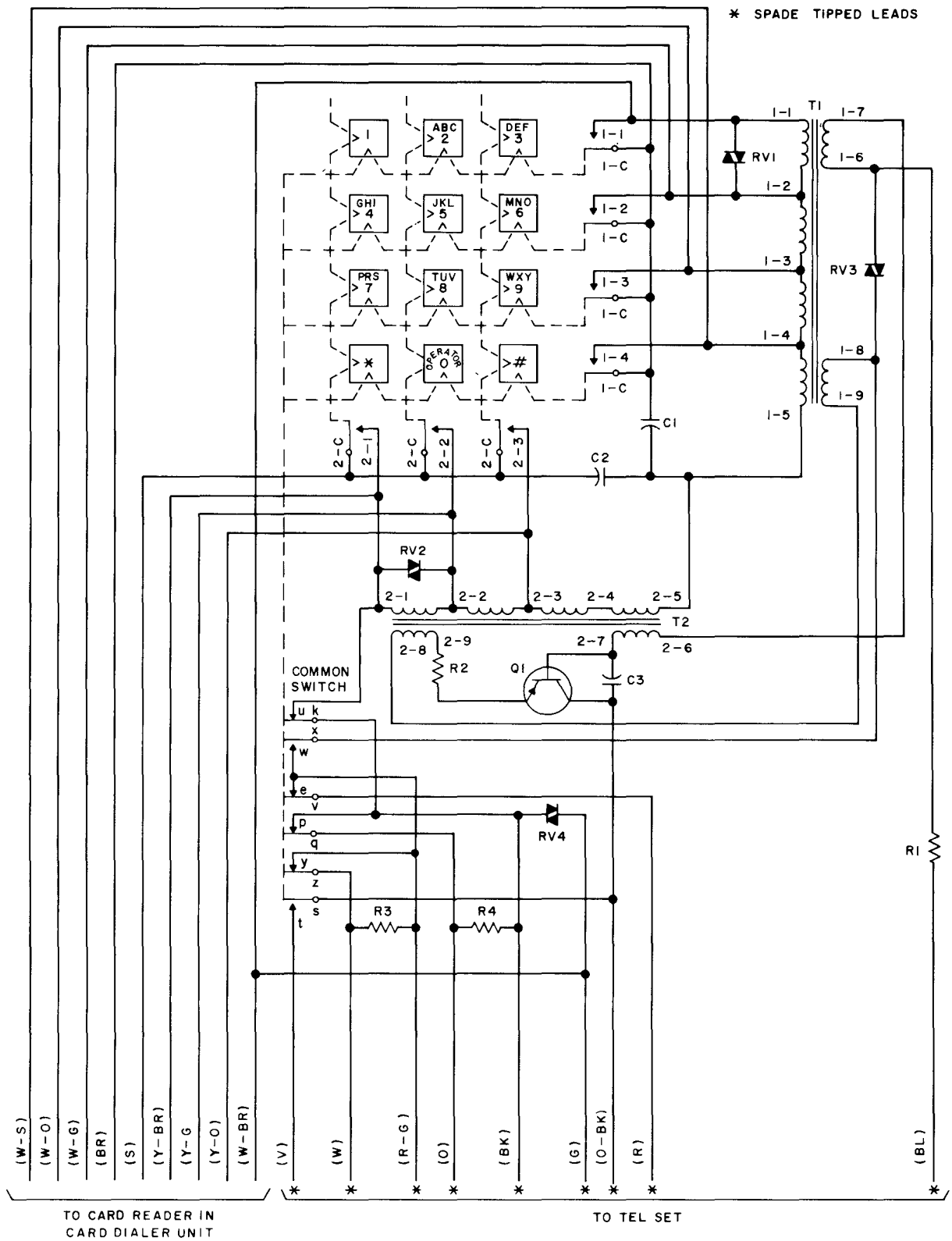


Fig. 11—35M3 (MD) Dial, Schematic

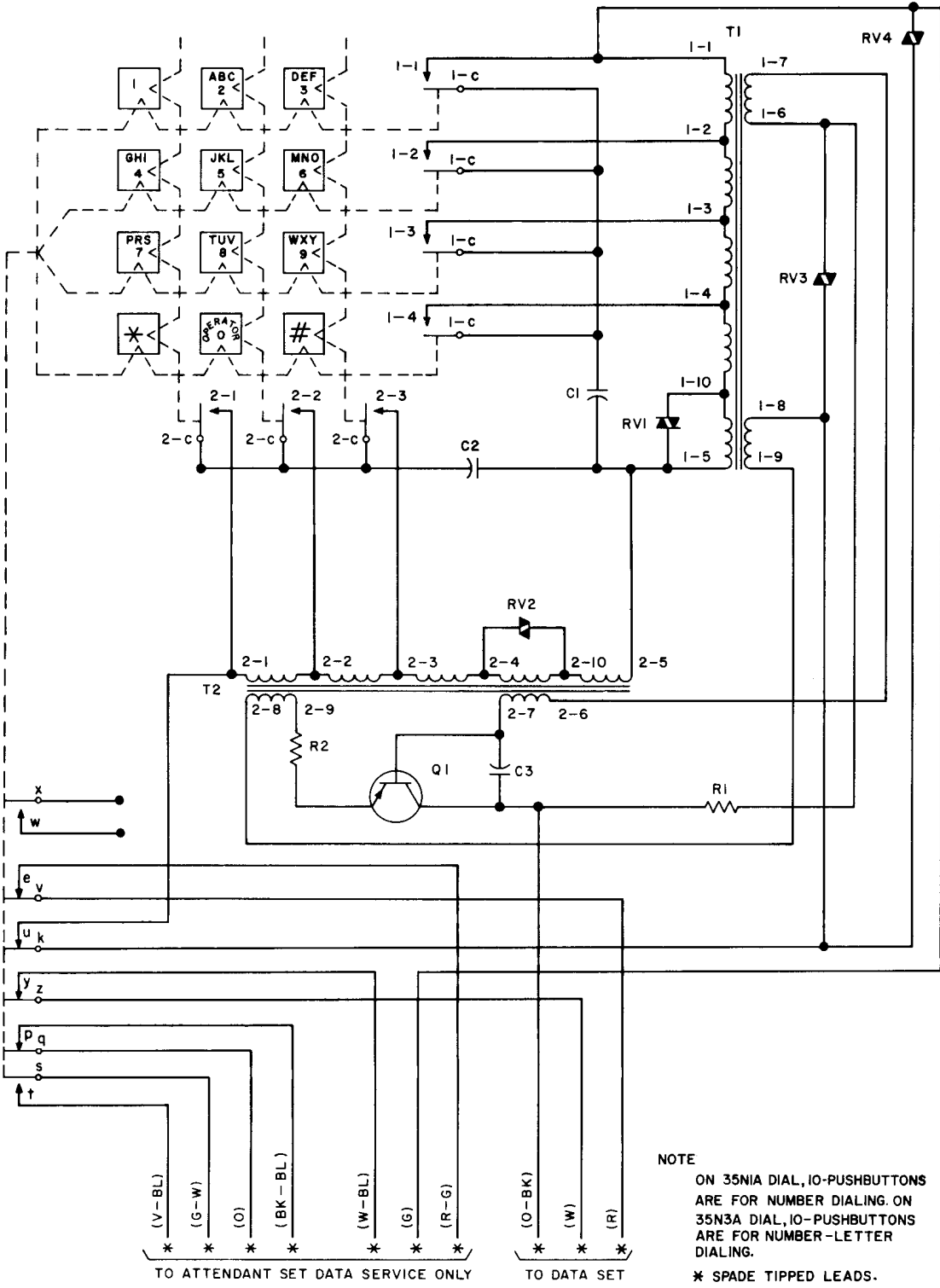


Fig. 12—35N1A (MD) and 35N3A Dial, Schematic

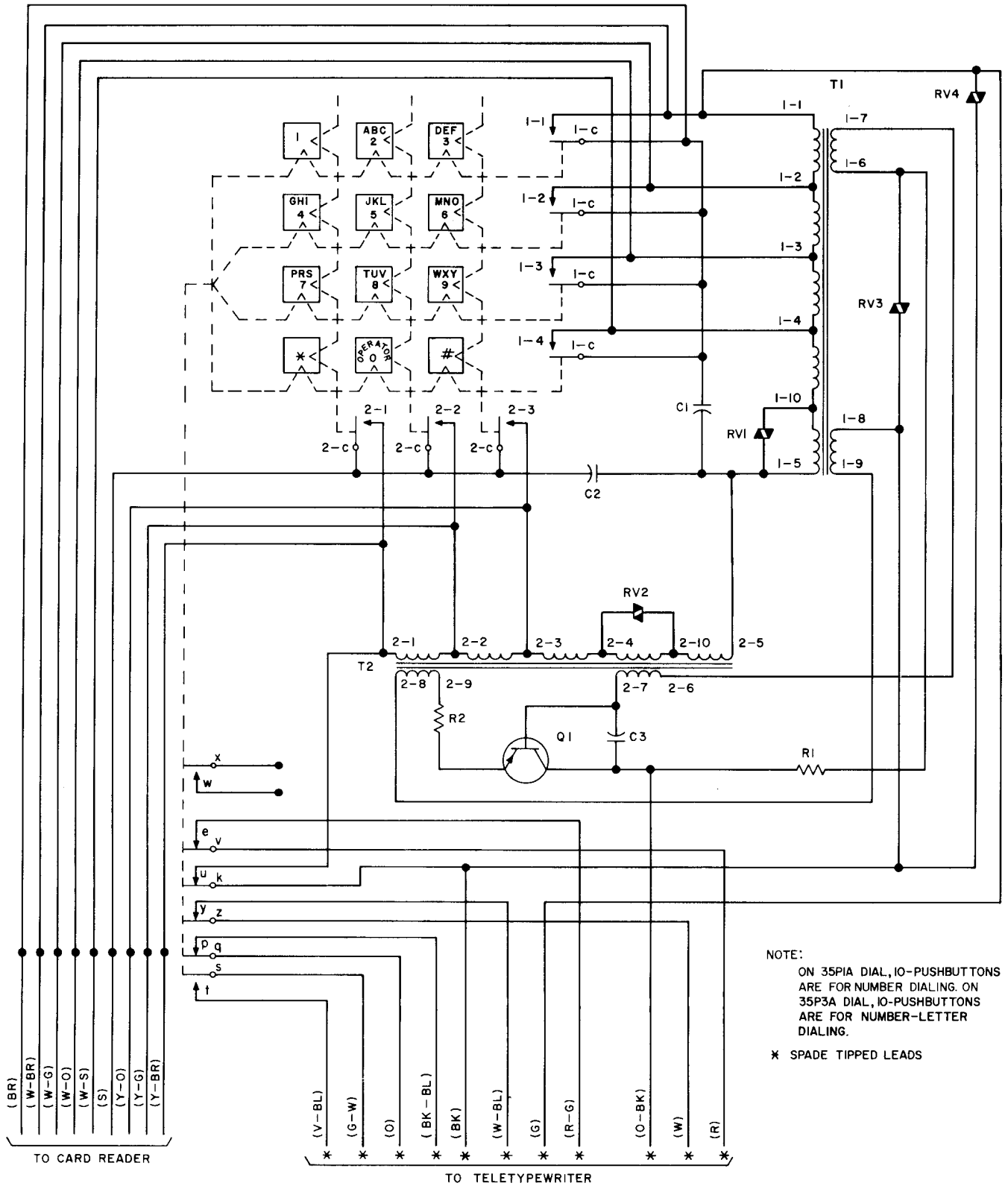
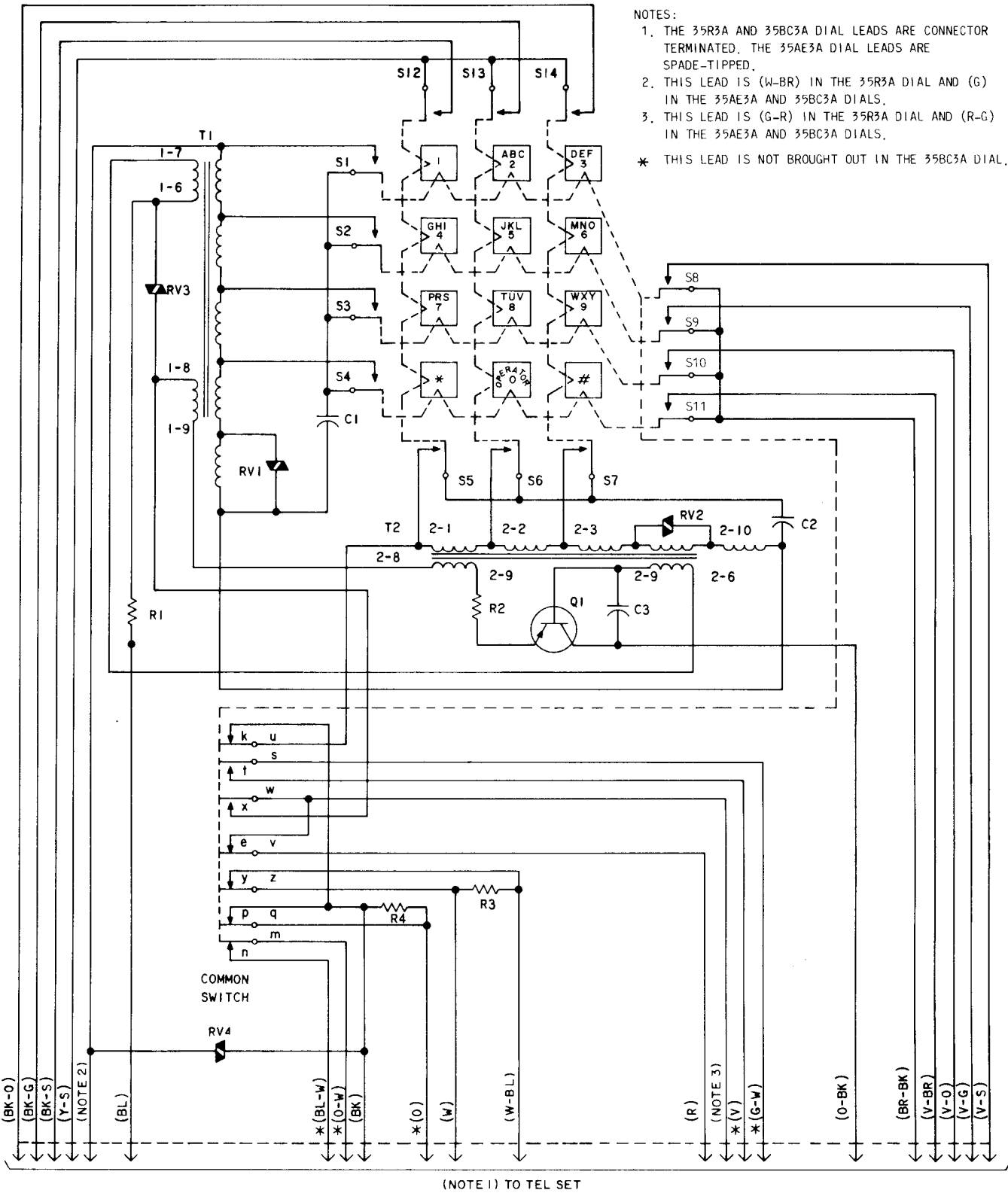


Fig. 13—35P1A (MD) and 35P3A Dial, Schematic



- NOTES:
1. THE 35R3A AND 35BC3A DIAL LEADS ARE CONNECTOR TERMINATED. THE 35AE3A DIAL LEADS ARE SPADE-TIPPED.
  2. THIS LEAD IS (W-BR) IN THE 35R3A DIAL AND (G) IN THE 35AE3A AND 35BC3A DIALS.
  3. THIS LEAD IS (G-R) IN THE 35R3A DIAL AND (R-G) IN THE 35AE3A AND 35BC3A DIALS.
- \* THIS LEAD IS NOT BROUGHT OUT IN THE 35BC3A DIAL.

Fig. 14—35R3A, 35AE3A, and 35BC3A Dial, Schematic

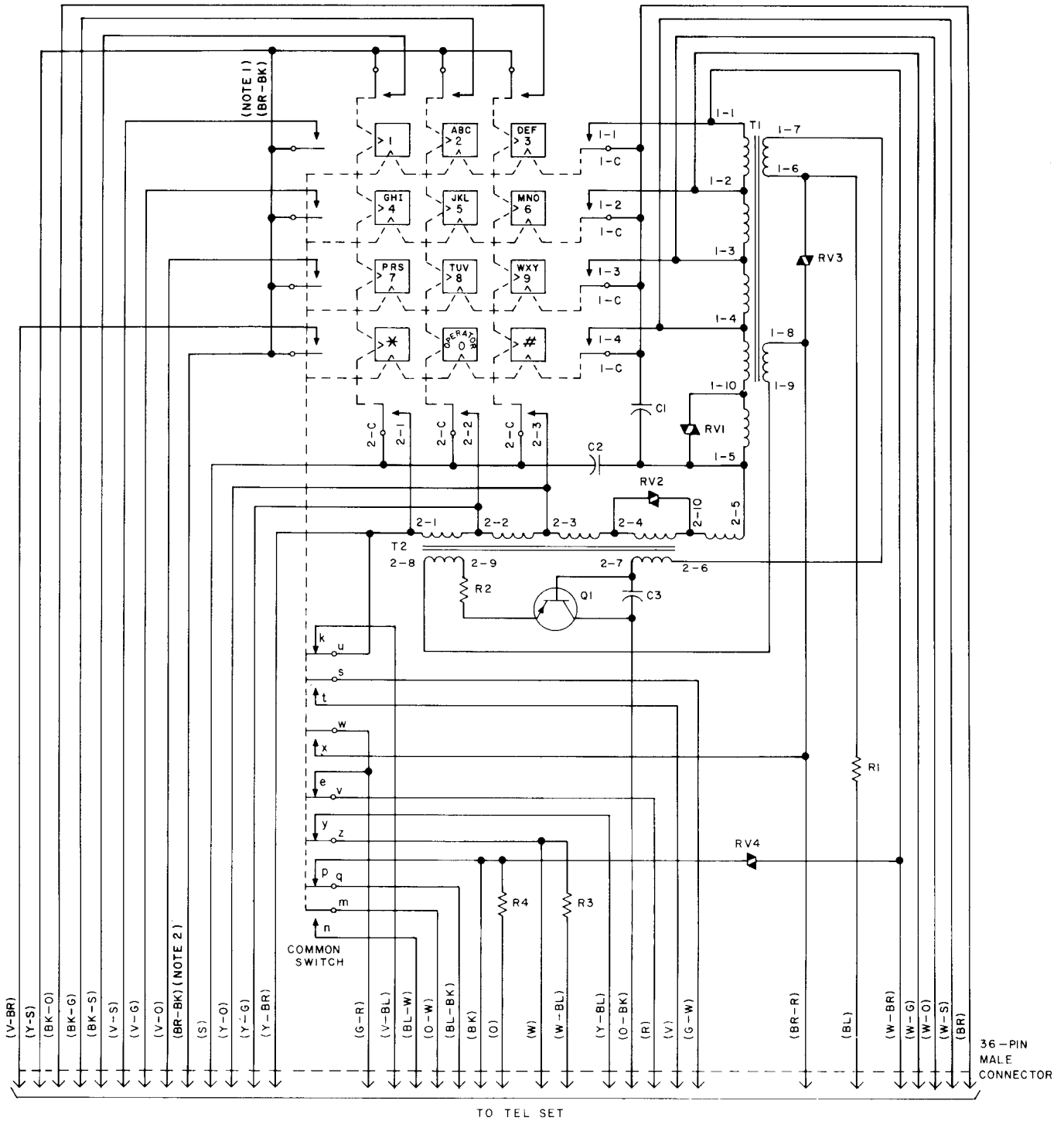


Fig. 15—35S3A (MD), 35S3D, and 35U3A Dial, Schematic

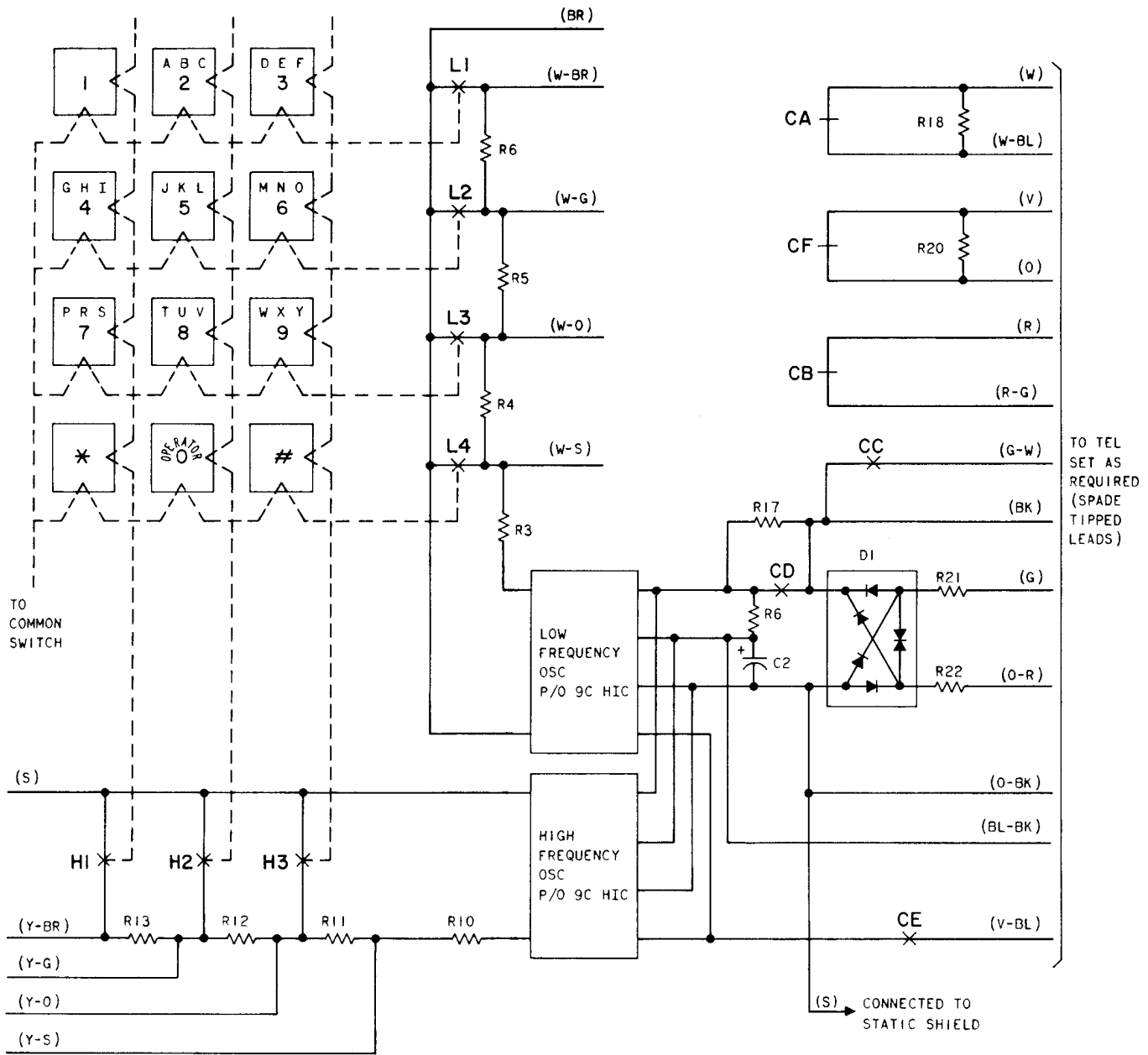


Fig. 16—35AB3A (MD) Dial, Schematic



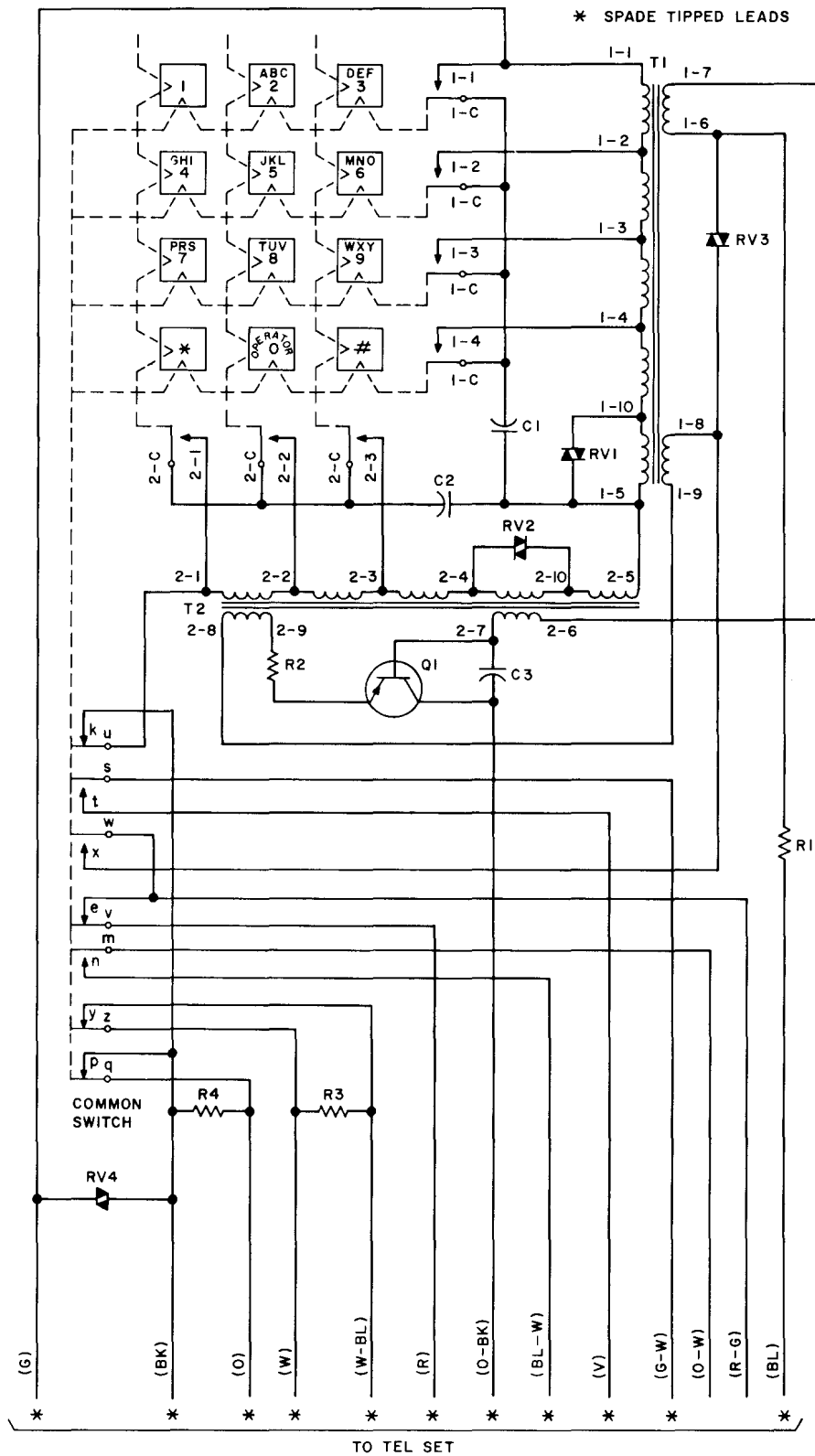


Fig. 17—35AC3A and 35AL3A Dial, Schematic

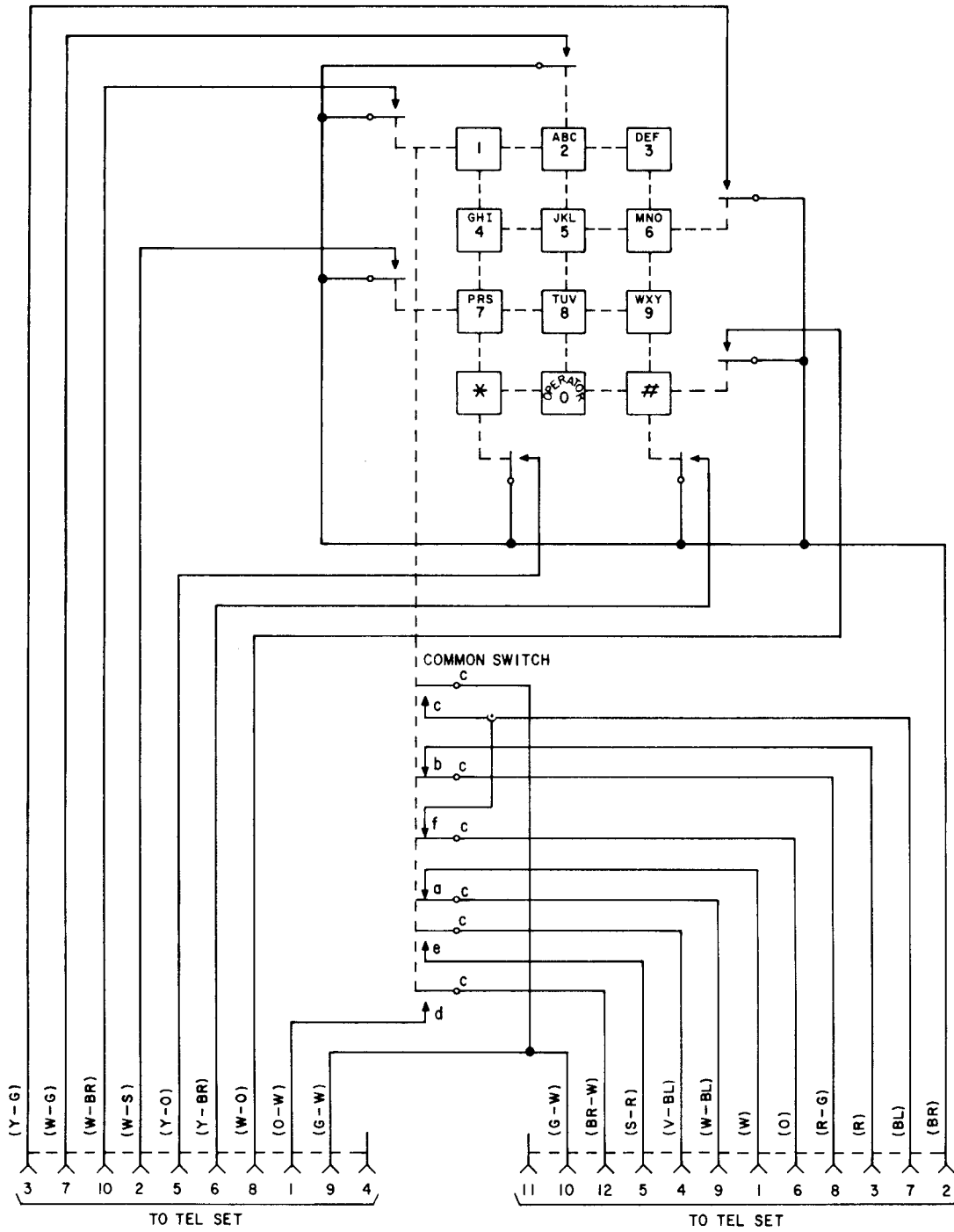


Fig. 18—35AG3A and 35AT3A Dial, Schematic

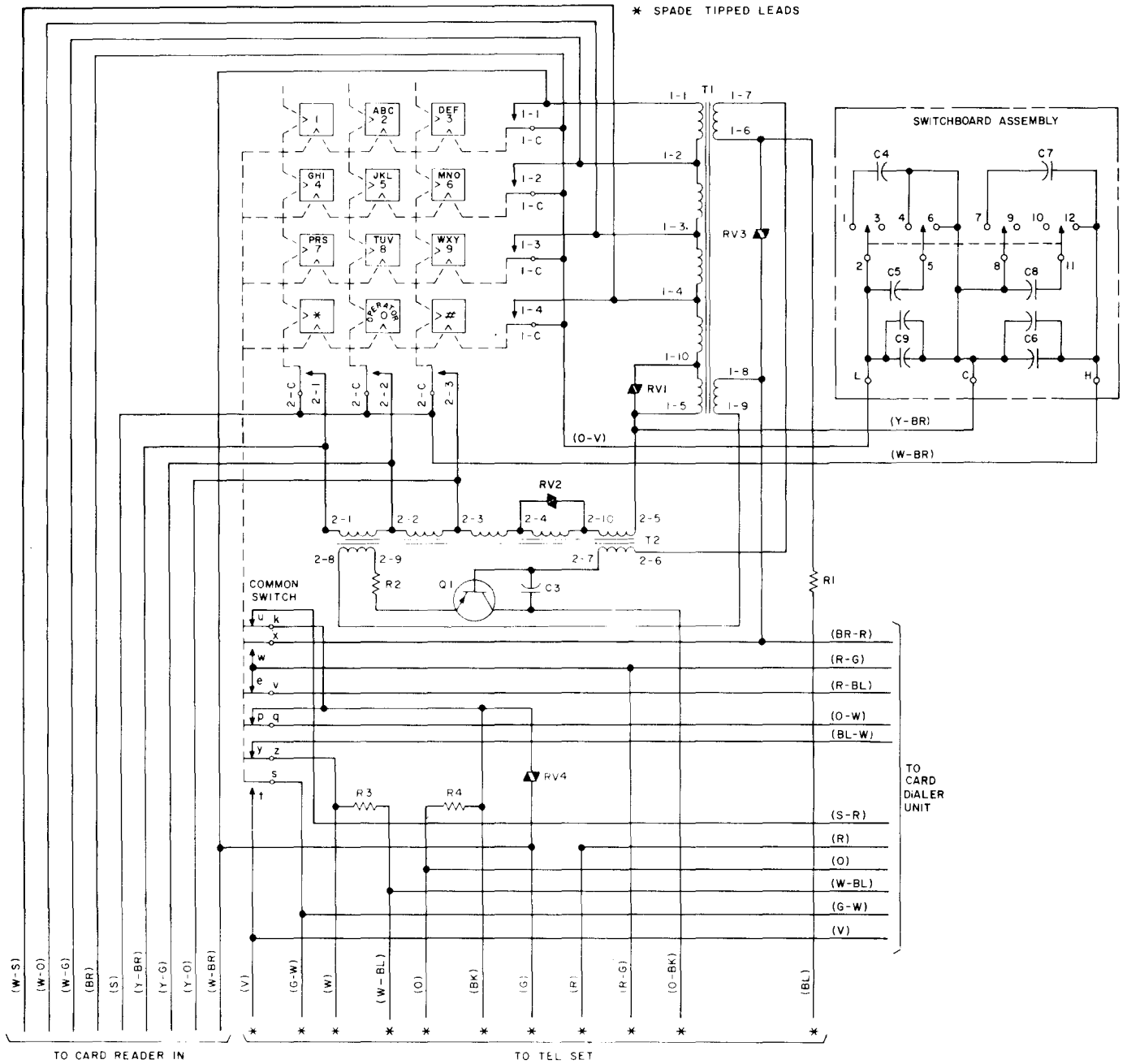


Fig. 19—35AK3A Dial, Schematic

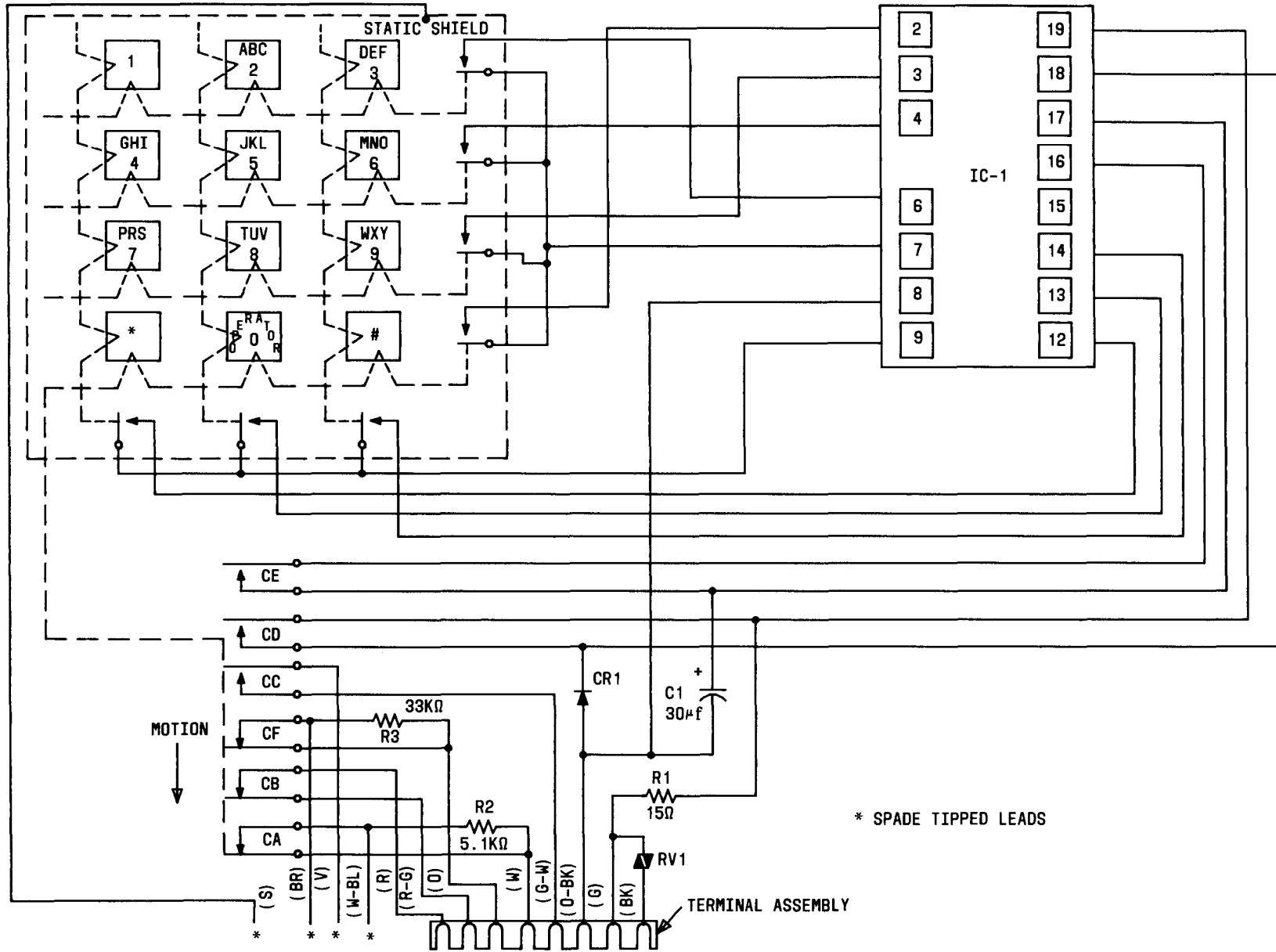


Fig. 20—35AR3A Dial, Schematic

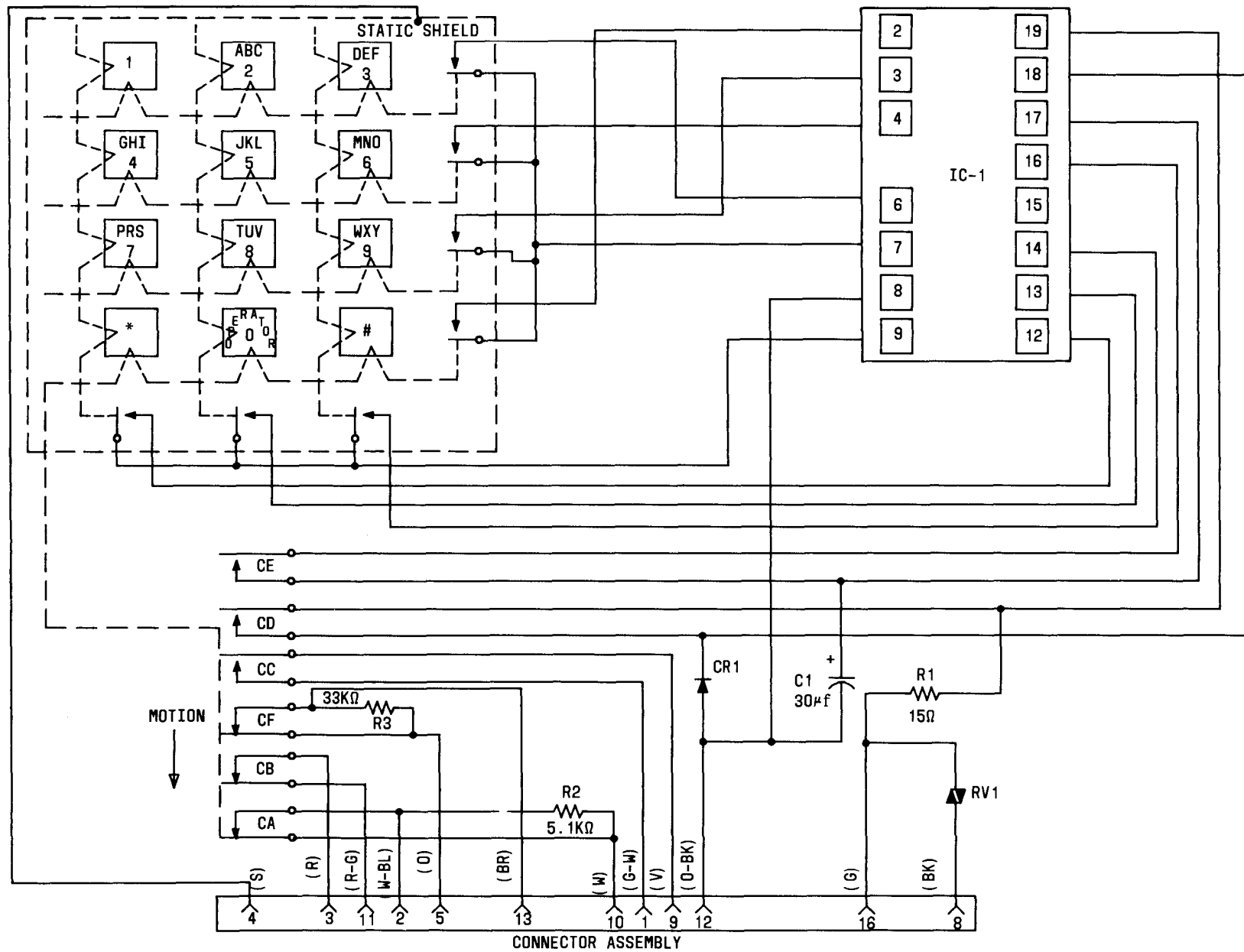


Fig. 21—35AU3A Dial, Schematic

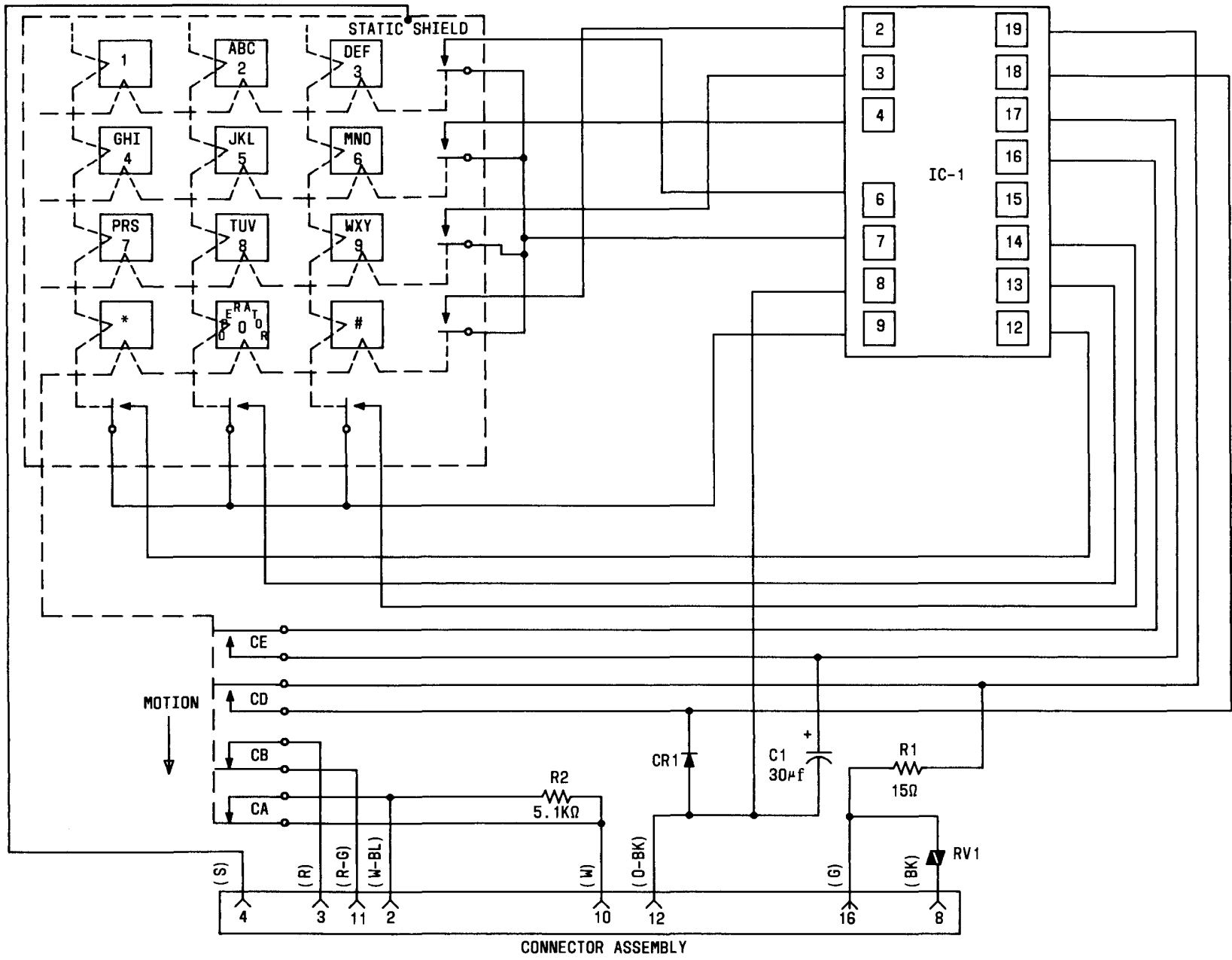


Fig. 22—35AY3A Dial, Schematic

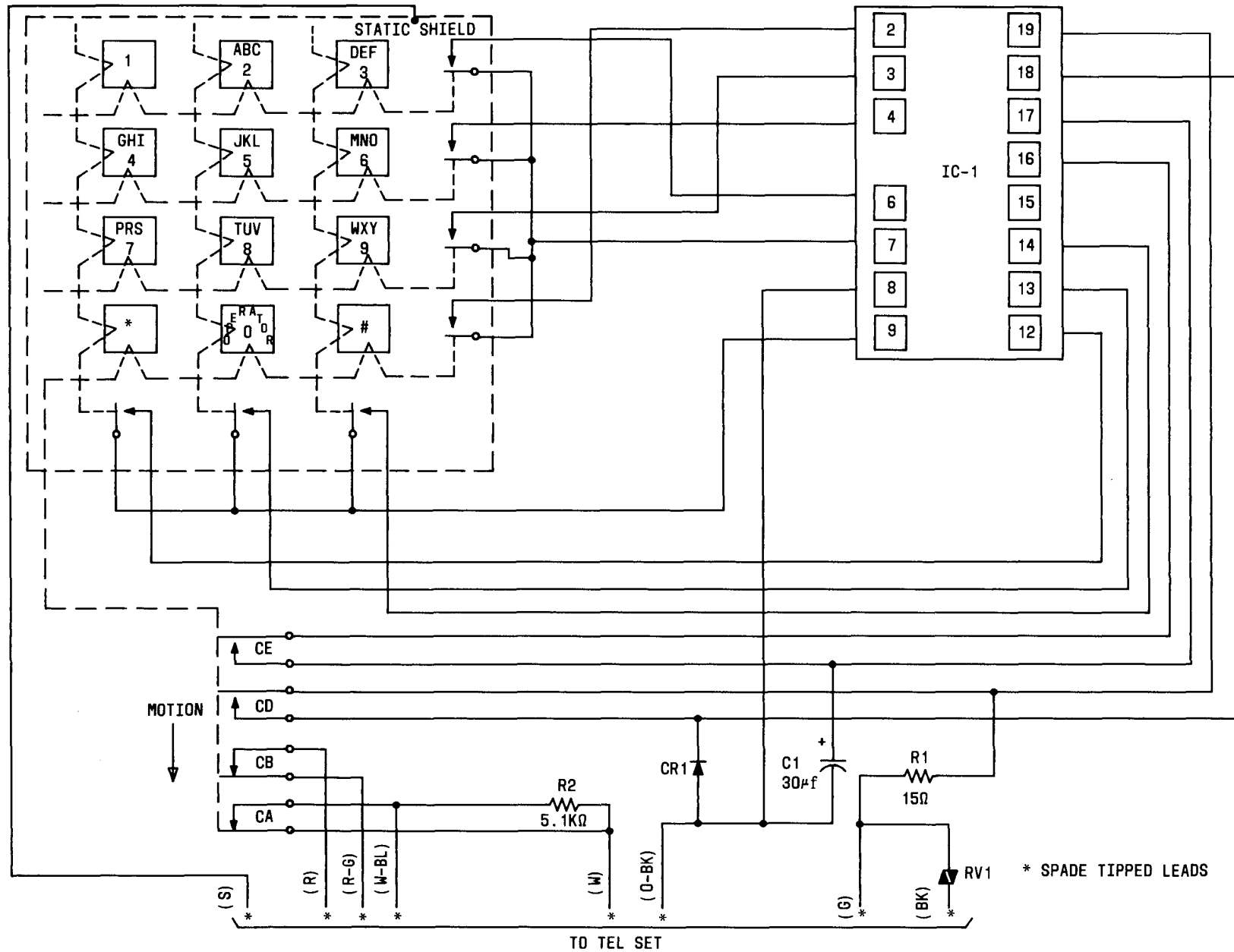


Fig. 23—35BA3A Dial, Schematic

◆ TABLE A ◆

DIAL	APPLICATION	DESIGN FEATURES
35A3A	General purpose 2500 series telephone sets, 1035A3A dial.	Replaces 35A3 (MD). May be used with telephone sets having a polarity guard and surge protector. G6- and G8-type handsets and telephone sets wired for 2-wire or 4-wire operation.
35C3A	In 2500 and 2600 series telephone sets and 1035C3A dial. Intended for use with 3-type speakerphone.	Replaces 35C3 (MD). Same as 35A3A except provides switching for use with 3-type speakerphone.
35D3A	36E dial, 1036E dial	Replaces 35D3 (MD). Same as 35C3A except provides leads for connections to 36-type dial.
35F3A	1B- and 2B-type telephone consoles.	Same as 35A3A, except has expanded common switch for providing additional functions.
35H3A	50-type dial mounting on PBX	Common switch provides two makes and two breaks for external switching. Leads are terminated in a KS-19088, List 5 connector.
35J3A	36-type dial for PBX switchboards.	Same as 35H3A dial except provides leads for connection to the 36-type dial.
35L3A	36H dial	Same as 35D3A except arranged for parallel operation of the common switch functions by means of a relay on the card reading mechanism.
35N3A	DATA-PHONE <sup>®</sup> service with 33- and 35-type teletypewriters.	Replaces 35N1A (MD), except ten pushbutton are marked for number-letter dialings.
35P3A	36K dial in DATA-PHONE service with 33- and 35-type teletypewriters.	Replaces 35P1A (MD), except ten pushbutton are marked for number-letter dialings.
35R3A	2644A-type telephone sets	For use with standard telephone sets and 3-type speakerphone systems. Ten pushbuttons are marked for number-letter dialing. Leads from dial terminate in a 25-pin connector.
35S3D†	Recommended as a substitute for the 35S3A in 2671B1M telephone sets.	Replaces 35S3A (MD) dial. Equipped with spring clipped frequency transformers.
35T3A	1A2, 2A2, 1C2, and 2C2 coin telephones	Replaces 35G3A, (MD) dial, except equipped with an additional set of off-normal contacts.
35U3A	J1B007C Supervisory Console	Similar to 35S3D except 33 leads are brought out to a 33-pin connector.
35Y3A	General purpose 2500 series telephone sets.	May appear in certain proportion of telephone sets that presently use 35A3A dial. Proposed replacement for 35A3A dial.
35Y3D†	Intended for use in the 2500-, 2554-, 2555-, and 2558-type telephone sets.	Equipped with spring clipped frequency transformers.
35AC3A	2505B-type telephone set.	For use in standard telephone sets using a 425E network or equivalent and with 3-type speakerphone systems. Extra switch contact provided for SS3 application.
35AD4A	2712-type telephone set	Same circuit and button design as 35E4A, replaces 35E4A dial.
35AE3A	Intended for use in the 45A9B and 45A9C telephone consoles.	Same circuit and mechanical assembly as 35R3A dial. Leads from dial terminate with spade tips.
35AF3A	Substitute for 35C3A dial. Not for general purpose type telephone sets. Intended for use in 2565GK, HK, LK, 2568HU, HAA, and 2580A telephone sets, and 1035AF3A adjunct dial.	Same circuit and mechanical assembly as 35C3A dial. A newly designed common switch uses springs and pins. The frequency switches are now connected to the printed wiring board by welded tips.
35AF3D†	2580-, 2581-type and 2566HAA telephone set.	Same as 35AF3A dial, except equipped with spring clipped frequency transformers.



◆TABLE A (Contd)◆

DIAL	APPLICATION	DESIGN FEATURES
35AG3A	2872AM telephone set.	For use in special application in 2872AM TOUCH-A-MATIC® telephone set.
35AH3D†	F-59471 and F-59473 telephone sets (STS).	Equipped with spring clipped frequency transformers.
35AJ3D†	F-59471 telephone set. Intended for use with speakerphone.	Same as 35AF3D except buttons and coverplate are White and button characters are Black.
35AK3A	Component of 36M dial in SD-35034-01 Trunk and Converter Test Circuit.	Contains capacitor tuning assembly.
35AL3A	F-58472 telephone set	For use in the Small Telephone System (STS).
35AR3A	Electronic Key Telephone sets	RC dial using 557 Hybrid Integrated Circuit (HIC) with speakerphone capability. Leads from dial terminate with spade tips on a terminal strip.
35AT3A	Intended for use in the 2960AD1M Repertory Dialer Set.	Same as 35AG3A, except buttons and coverplate are White and button characters are Black.
35AU3A	COM KEY* 416	RC dial using 557 HIC with speakerphone capability. Leads from dial terminate in a 16 pin connector.
35AW3D	DESIGN LINE* 2931B33, 35 sets.	Same as 35Y3D but with metal button caps.
35AY3A	COM KEY* 416	Same as 35AU3A but without speakerphone capability.
35BA3A	Multibutton electronic telephone sets.	RC dial using 557 HIC for use in a standard telephone set. Dial leads terminate with spade tips.
35BB3D	DESIGN LINE* 2991A1 sets	Same as 35AH3D except 35BB3D dial has a black coverplate and Black button with White Characters.
35BC3A	DIMENSION* PBX Telephone Console	Similar to 35AE3A except only 17 leads are brought out to a 18-pin connector.
35BG4A	J1G036 Telephone Console	Similar to mechanical assembly of 35AD4A dial, however, it does not have leads, common switching or associated circuitry.

\* Trademark of AT&TCo.

† Dial codes in which the last letter has been changed from A to D are recommended replacements for the codes ending in A. The D coded dials have transformers reinforced with steel clops and require approximately 0.070 inch additional mounting space. This space may not be available in some telephone sets.