STATION DIALS—36-TYPE

IDENTIFICATION, OPERATION, MAINTENANCE, AND CONNECTIONS

1. GENERAL

1.01 This section is reissued to add information on 36M dial.

2. IDENTIFICATION

2.01 *Purpose:*

- Provides automatic dialing of telephone numbers from precoded plastic cards in addition to manual dialing
- Used as a component in other telephone apparatus.

2.02 *Ordering Guide:*

Dial, 36—(See Table A for specific code)

(1) Replaceable Components

- P-21F752 Dialing Card (pkg of 20 for 36E, H, J, K, and L Dials)
- P-28E382 Dialing Card (pkg of 20 for 36D (MD) Dial).

2.03 *Design Features:*

- Manual TOUCH-TONE® dial in combination with card dialing mechanism.
- Gear train assembly—controls speed and timing (Fig. 3)
- Frame assembly—for positioning in apparatus assemblies (Fig. 4)
- Sprocket assembly—provides motor action (Fig. 4)
- Front plate assembly—controls start and stop action (Fig. 3)
- Stop switch—allows manual dialing while card is at stop position (Fig. 4)

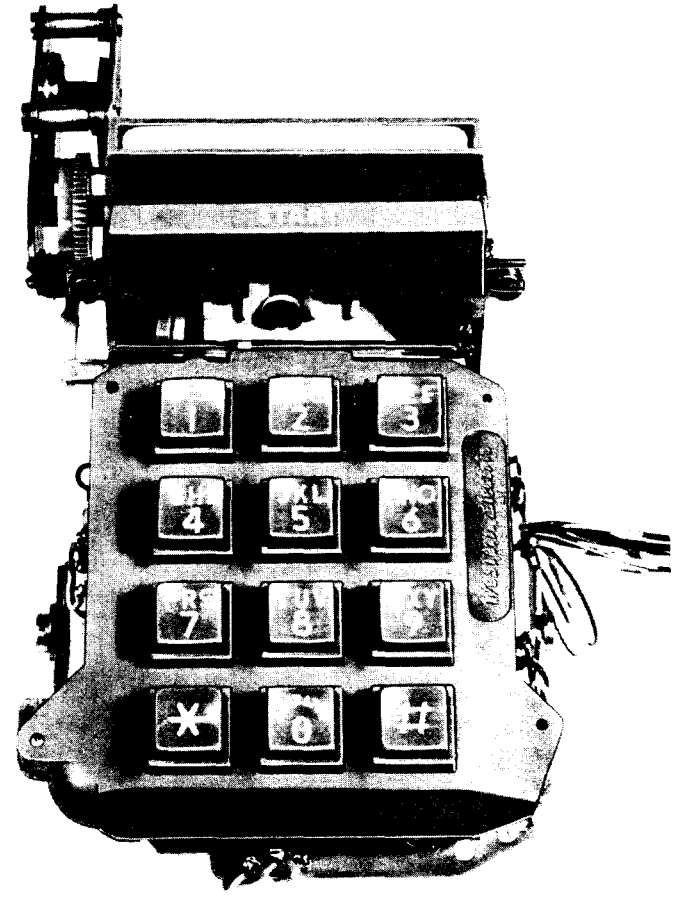

Fig. 1—36E or K Dial

- Card—provides switching (Fig. 7 and 8).

2.04 *Application:*

- See Table A

2.05 *Operating Features:*

- START BAR (Fig. 1) when depressed, operates the common switch of associated TOUCH-TONE dial and starts dialing mechanism.

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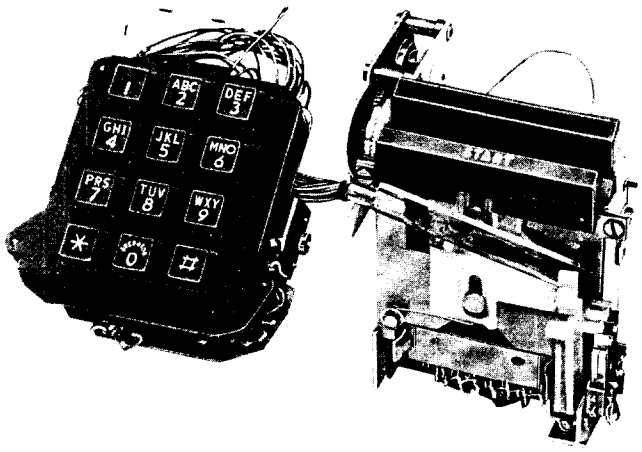

Fig. 2—36H Dial

- P-21F752 and/or P-28E382 dialing card set for encoding telephone numbers and to originate calls when inserted in throat of dialer.

3. OPERATION

3.01 *TOUCH-TONE Dial:*

(1) Refer to Section 501-164-115 for operation of 35-Type Dial.

3.02 *Dialing Card:*

(1) Prepare dialing card.

(2) Write name and telephone number in spaces as shown in Fig. 7 and 8.

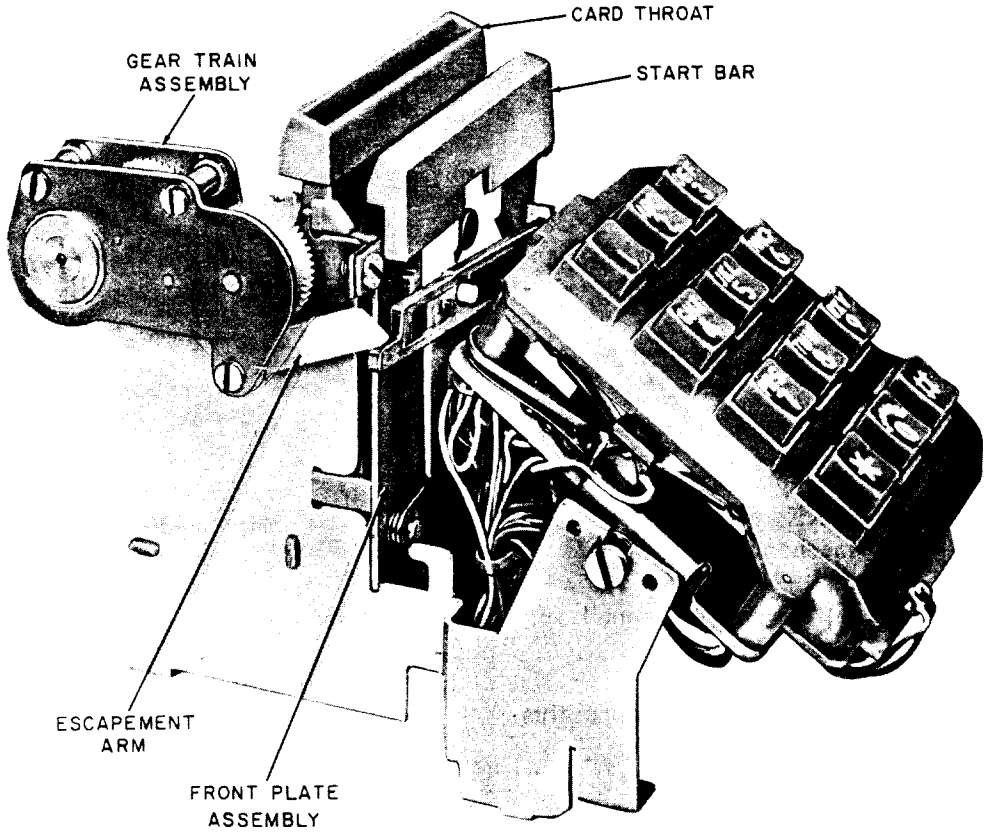

Fig. 3—36E, J, or K Dials, Left Side View

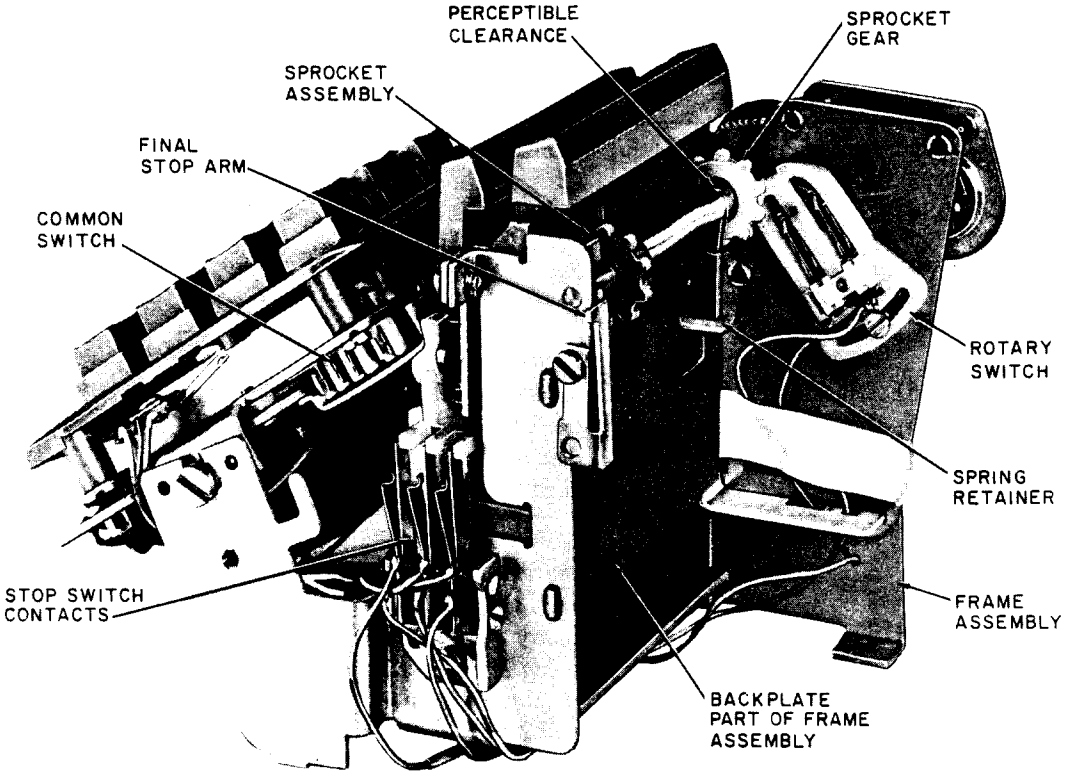

Fig. 4—36E, J, K, or L Dials, Right Side View

(3) Convert prefix letters to numbers.

Note: There are two groups of numbers 1 through 0 plus symbols * and # or (☆ and ◇ MD) on the card (Fig. 7).

(4) In Fig. 7 the first digit of the telephone number is 5. In column 1 locate digit 5 in the first group of numbers and punch out the perforation with a pencil or ballpoint pen. In the same column, locate digit 5 in the second group of numbers and again punch out the perforation.

Note: The STOP in column 1 is already punched.

(5) Repeat this procedure for each digit in the telephone number. Digit 0 and symbols * and # or (☆ and ◇ MD) must be punched out in each group of numbers just as any other digit.

(6) Do not punch STOP following the last digit.

Note: STOP is used for certain operations requiring an interruption in the automatic dialing process, such as, in PBX systems where it is necessary to dial an access code to obtain CO dial tone.

(7) To prepare a card for dialing an access code, punch out the appropriate digit in column 1 (Fig. 8). If a second dial tone is required punch out STOP in column 2.

(8) For DDD calling , punch out the access code, if required, area code, and the complete telephone number (Fig. 8).

TABLE A

DIAL	APPLICATION	REMARKS	CONNECTION FIG. NO.
36D (MD)	1036D (MD) Dial	Combination of 35M3 (MD) dial and card reading mechanism Manual dialing when card is in stop position on models manufactured after Oct. '66	9
36E	1036E Dial, 2660, 2662, 2663, and 2664 series Telephone Sets	Combination of 35D3A dial and card reading mechanism Manual dialing when card is in stop position Can be used with speakerphone and polarity guard	
36H	804P3 Data Auxiliary Set	Combination of 35L3A dial and card reading mechanism Dial and card reader are not mechanically coupled and a relay functions as a common switch during the card dialing sequence A 12-inch cable electrically connects the dial and card reader so that dial may be mounted in any position within 12 inches of the card reader. Manual dialing when card is in stop position. Requires external 24-volt dc source.	10
36J	M33 and M35 Teletypewriter	Combination of 35P1A dial and card reading mechanism Manual dialing when card is in the STOP position	11
36K		Same as 36J except buttons are number-letter instead of number only.	
36L	557A and 557B PBX	Consists of 35J3A dial and card reading mechanism Manual dialing when card is in STOP position Dial leads are terminated in a KS-19088, L5 plug for connection to PBX dial auxiliary unit	12
36M	Testing MF receivers in 350A or 355A SXS central office	Consists of 35AK3A dial and card reading mechanism Dial and card reader are not mechanically coupled	13

Fig. 5—36L Dial

(9) Check card before using to ensure that there are two punched holes in each column (plus a STOP when required). Holes should be punched out completely and neatly.

3.03 ***Calling a Number:***

(1) Insert prepunched card in card throat with name facing you and press down all the way.

(2) Remove handset and listen for dial tone. When dial tone is heard, depress START bar. When calling from a PBX extension, the card will stop after the access code has been dialed. After hearing the second dial tone, depress the START bar again.

(3) Manual dialing may be done while the card is in a stop position.

3.04 ***Card Dialer:***

(1) Dialer mechanism determines the digit or frequencies by passing the coded card against hole sensing feelers located in the card throat.

(2) When the card hole passes, the feelers drop in, closing frequency selector contacts. These contacts are connected in parallel with the frequency selector contacts on the TOUCH-TONE dial.

(3) Linkage couples the START bar to the common switch of the TOUCH-TONE dial so that when the bar is depressed, the common switch is held operated.

(4) A rotary switch controls the exciter path to the oscillator and is adjusted to open the exciter path after card feelers drop into coded holes.

4. MAINTENANCE

4.01 Field adjustment of the 36-type dial is not recommended.

4.02 To determine if a dial is inoperative, use the following method:

(a) Check for dial tone by listening to receiver on telephone set.

(b) If no dial tone is heard, use 1011B test set to check at connecting block. If dial tone is heard at connecting block, make normal test of station components as described in appropriate sections.

(c) Check line polarity. Dial will function only when orange-black dial lead is negative (−) and green lead is positive (+).

(d) Check all buttons for tone feedback. Two tones should be heard in receiver when any button is depressed

(e) If tone troubles are suspected, proceed as follows:

(1) Dial ringer—test code for testing TOUCH-TONE dials or dial local test desk and request access to ringer-test circuit for testing TOUCH-TONE dials.

Note: Dial the appropriate code for testing 12-button dials. Access to the test circuit via the local test desk permits testing 10-button dials only.

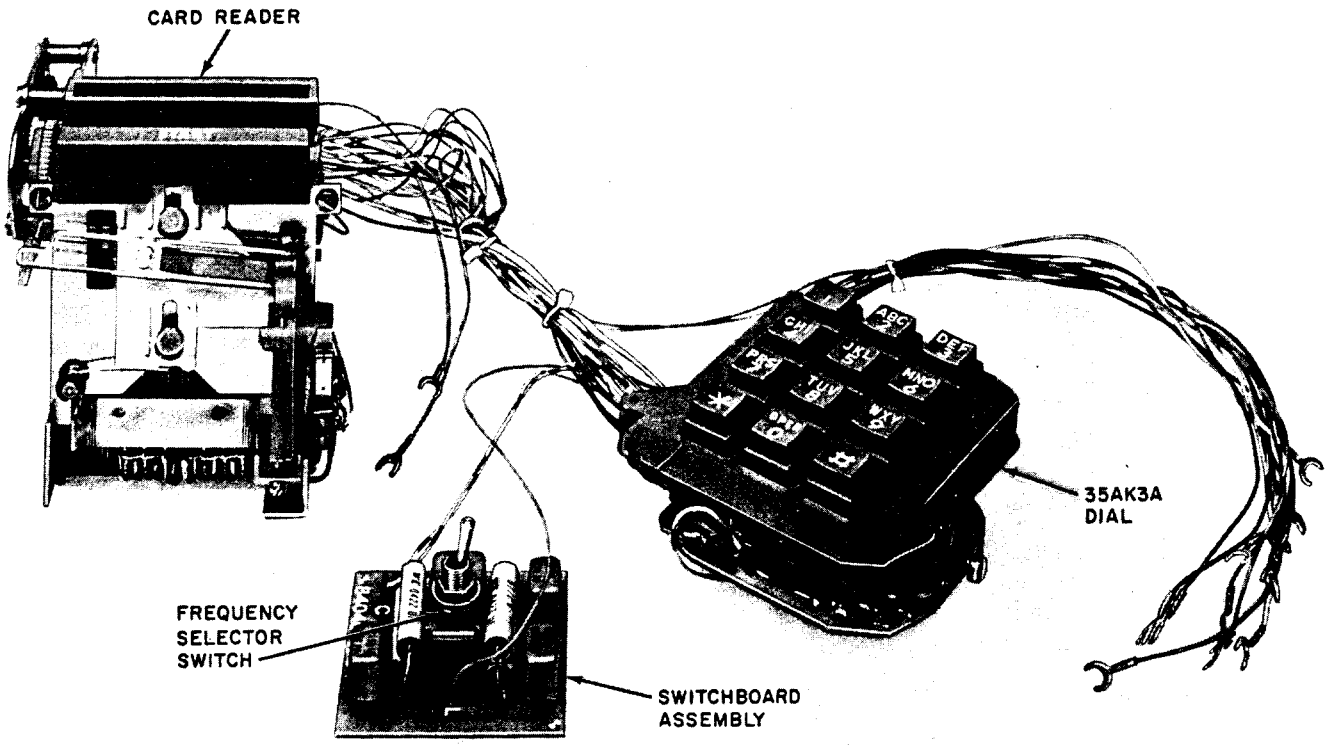

Fig. 6—36M Dial

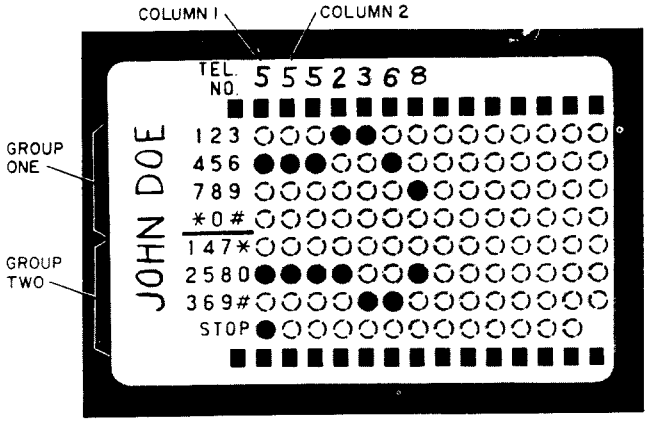

Fig. 7—Card Coded for 7-Digit Telephone Number

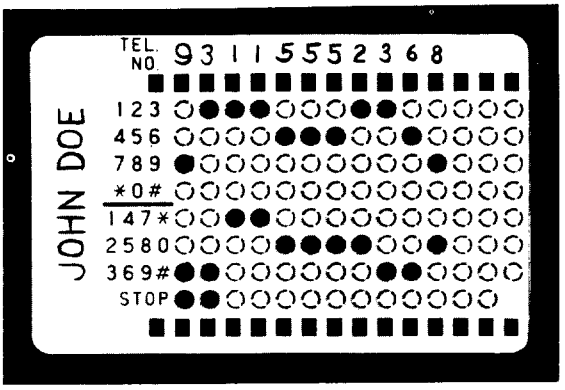

Fig. 8—Card Coded for Access Code (9), Stop, Area Code (311), and 7-Digit Telephone Number

(2) When second dial tone is heard, key digits 1 through 9 then * ,0, and #, or (☆ , and ◇ MD).

(3) If dial is operating properly, two spurts of tone will be returned by the dial tester.

(4) If any digit fails to meet the test or if test is not completed in 15 seconds, one spurt of tone will be returned by the dial tester.

(5) Disconnect from ringer-test circuit by hanging up.

(f) Replace dial if it fails to meet the tests.

(g) If troubles are suspected in the card dialer, proceed as follows:

(1) Inspect card throat for foreign material.

(2) Place a properly coded test card in throat and depress fully.

(3) Depress START bar, dial tone should be broken and two tones should be heard at each coded line as card advances.

Notes: Card should not bind or stick in transport mechanism at any point during deposit or return.

(4) Stop switch contacts (Fig. 4) must be closed while card is advancing and must be open when card is in stop position or at end of run.

(5) Card drive spring should have consistent tension as the card is lifted. If card rises too slowly, check drive spring tension as follows:

(a) Unwind drive spring by pulling out on final stop arm (Fig. 4) until there is no tension on spring retainer. ▶On current production dialers, spring retainers screws must be loosened and retainer moved out of the way.◀

(b) Release final stop arm.

(c) Hold START bar operated and turn sprocket assembly 12 full turns.

(d) When spring is properly wound, there should be a perceptable clearance between the hub of the sprocket gear and the spring retainer.

Hold spring retainer to the left for this measurement.

Caution: Do not exceed 12 turns for spring tension. Do not try to overcome other resistance such as dirty card or dirty gears by tightening spring.

(e) Escapement arm (Fig. 3) should work freely without binding or catching.

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

(6) Inspect precoded cards. All cards bent, warped, dirty (heavy accumulation of dirt), or deformed by heat (such as cigarette burns) should be replaced.

5. CONNECTION INDEX

Fig. 9—36D (MD) and 36E Dials, Connections

Fig. 10—36H Dial, Connections

Fig. 11—36J and 36K Dials, Connections

Fig. 12—36L Dial, Connections

Fig. 13—36M Dial, Connections

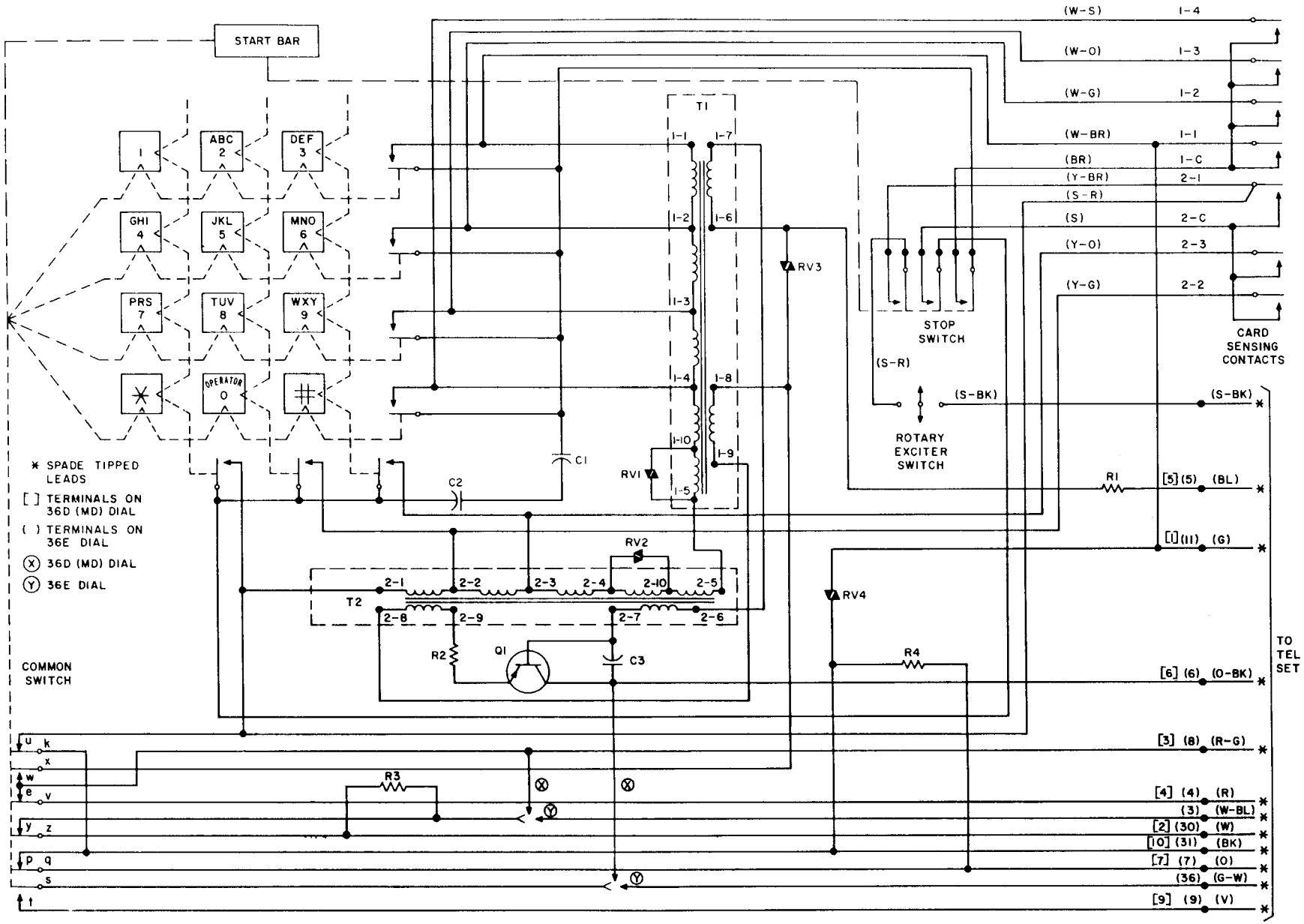

Fig. 9—36D (MD) and 36E Dials, Connections

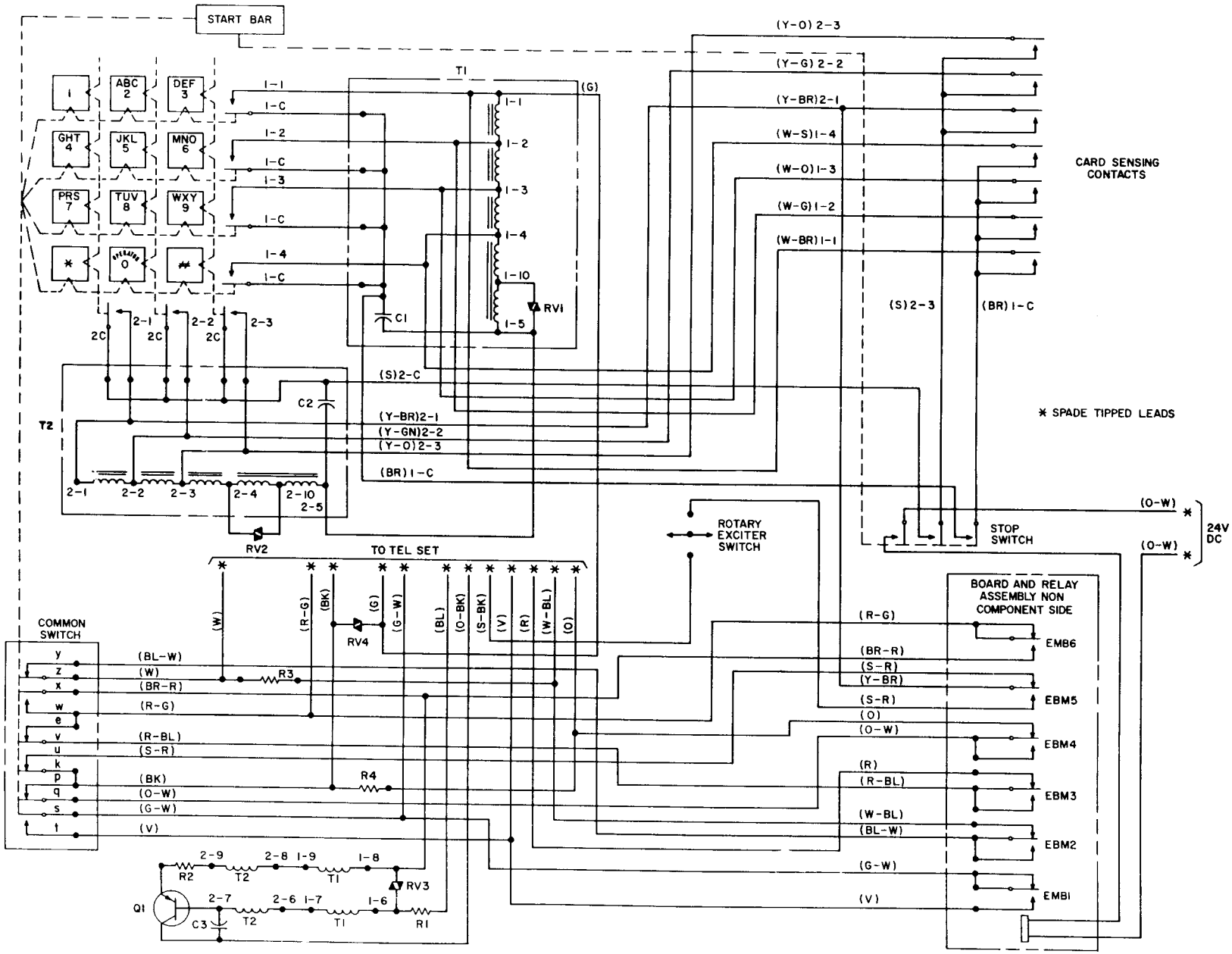

Fig. 10—36H Dial, Connections

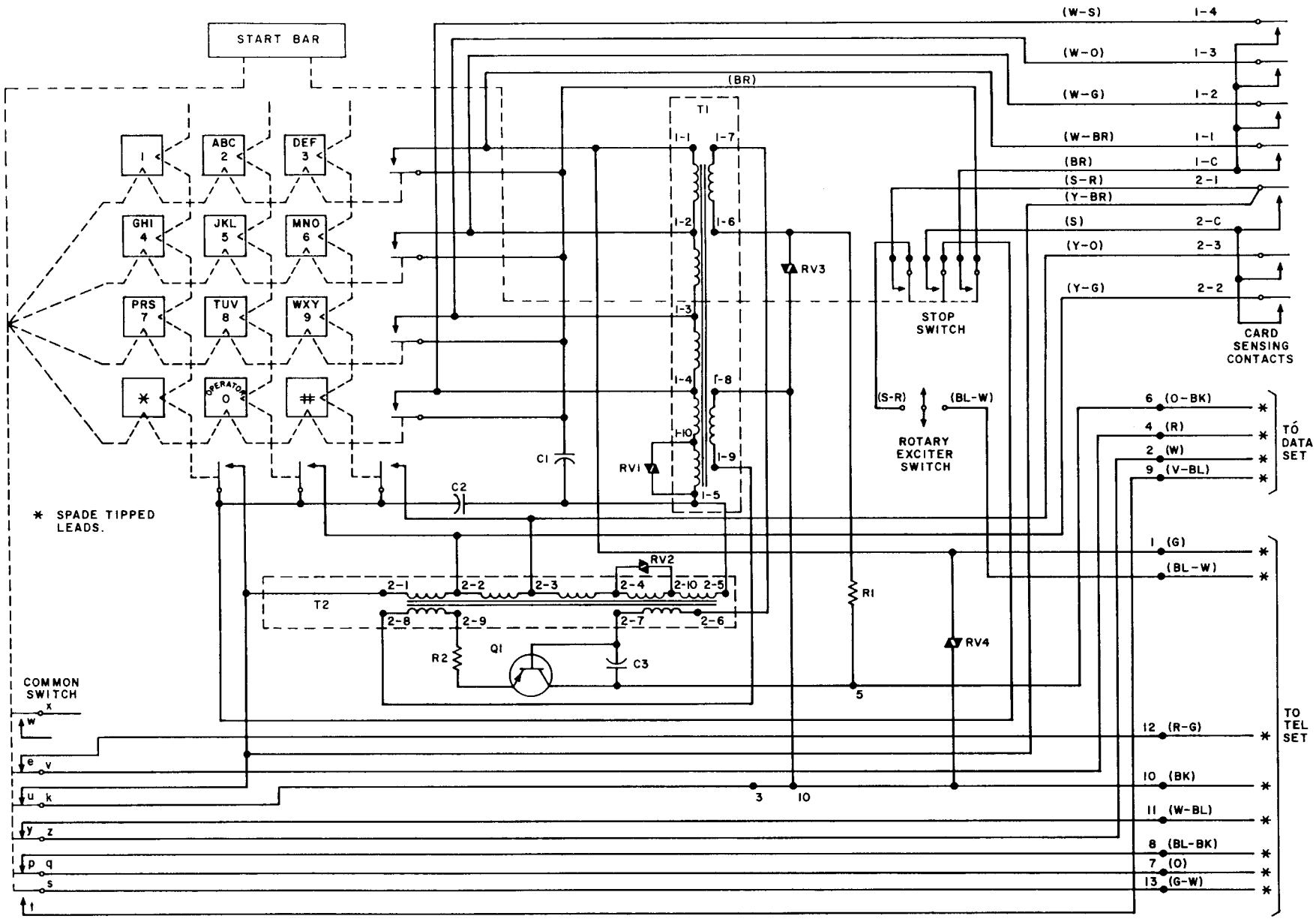

Fig. 11—36J and 36K Dials, Connections

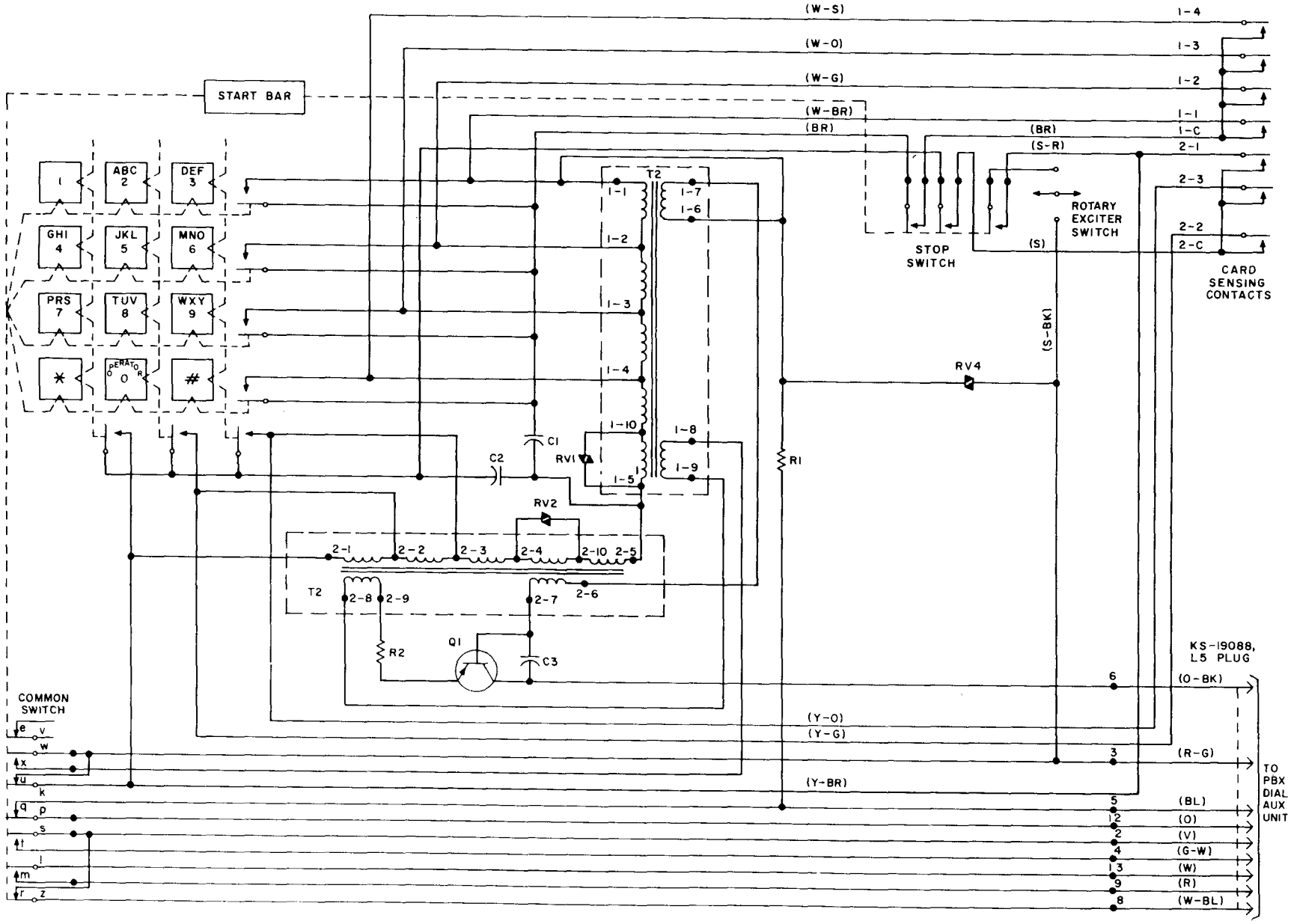

Fig. 12—36L Dial, Connections

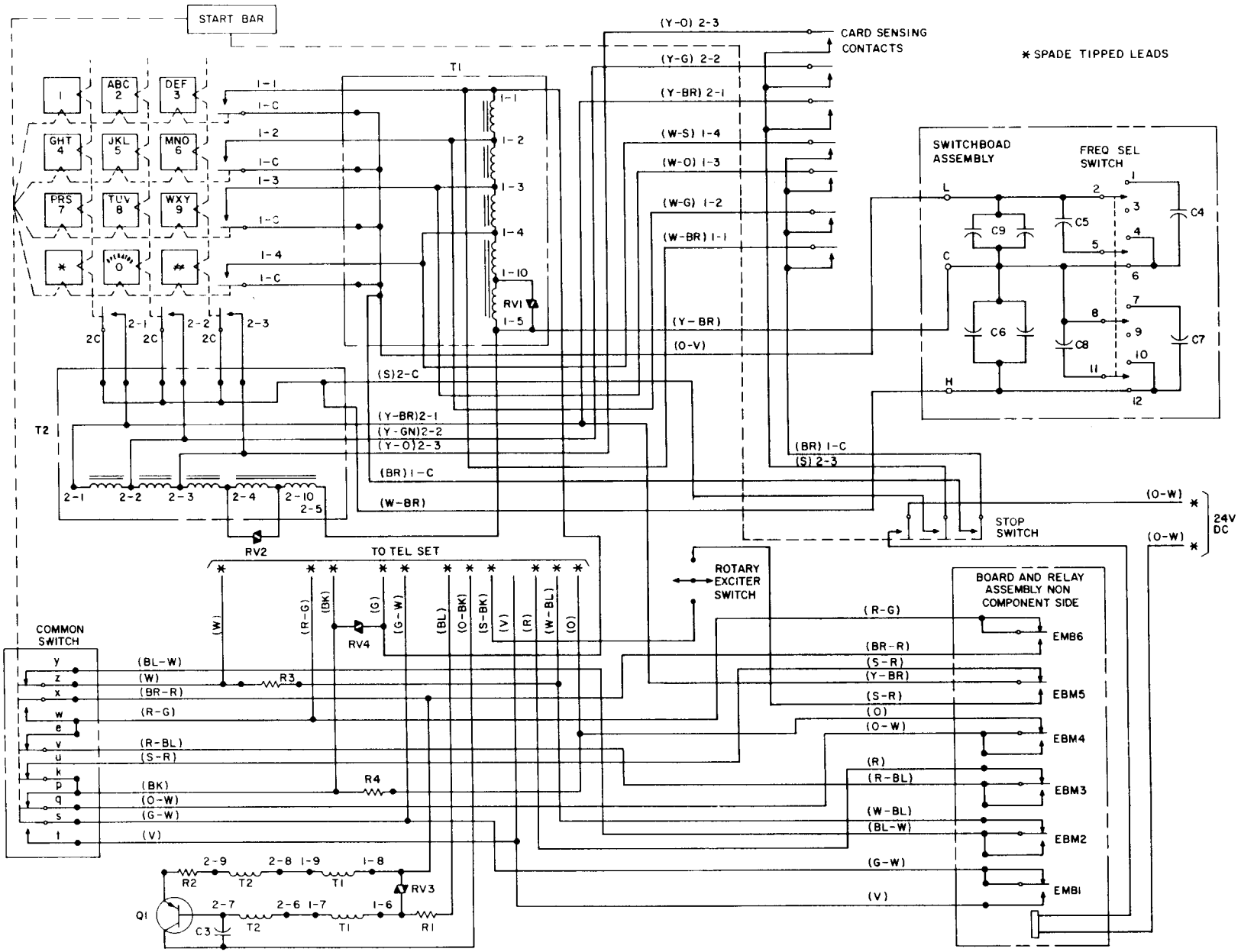

Fig. 13—►36M Dial, Connections◄