

**PLEASE NOTE AND RETURN:**

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## DIALS

### 27 TYPE

#### 1. GENERAL

**1.01** This section provides a general description covering the operation, connection, and maintenance of the 27A3 dial (Fig. 1 and 2).

**1.02** The initial use of the 27A3 dial is located in the master control center of the No. 1 Electronic Switching System (ESS).

#### 2. IDENTIFICATION

**2.01** The 27A3 dial is similar to the 25-type TOUCH-TONE dial except for an additional start button and two additional dial leads.

**2.02** Ten of the eleven pushbuttons are for normal letter-number dialing. The eleventh button (colored red) performs a start function and informs the ESS when dialing is completed.

#### 3. OPERATION

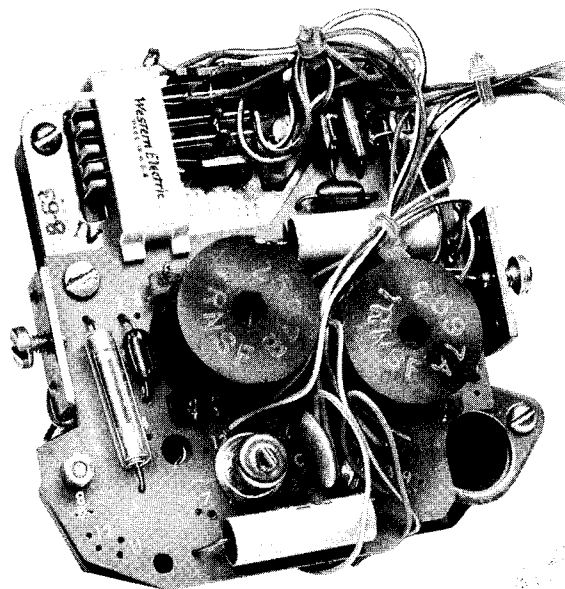
**3.01** Dialing frequencies in the 27A3 dial are generated by a line-powered transistor oscillator.

**3.02** When a pushbutton is depressed, three dial switches operate as follows:

- (a) The common switch (Fig. 3) connects the dial to the line. The line supplies power and transmits the generated frequencies to the switching equipment.
- (b) The two frequency select switches (Fig. 3) select the proper circuit elements to generate the desired frequencies.



**Fig. 1 - 27A3 Dial, Front View**



**Fig. 2 - 27A3 Dial, Rear View**

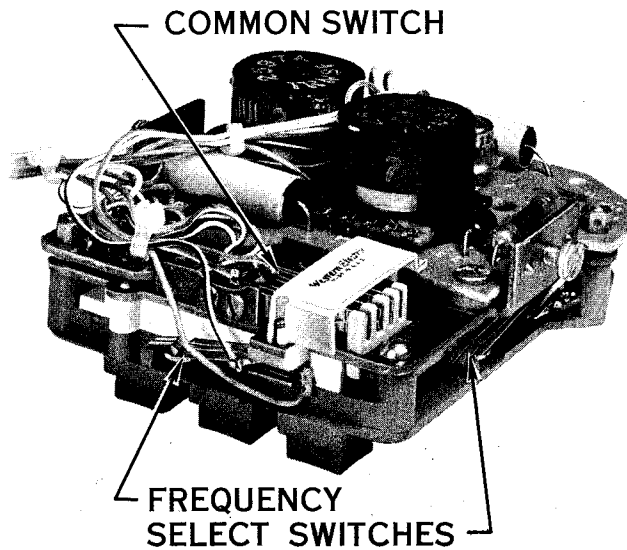


Fig. 3 - 27A3 Dial Assembly

**3.03** Two frequencies are generated simultaneously when a pushbutton is depressed. Fig. 4 shows the relationship of pushbuttons to selected frequencies.

**3.04** The pushbutton linkage is arranged so that depressing two adjacent buttons causes only one frequency to be generated.


**3.05** The signals generated by the TOUCH-TONE dial are received by a converter in the central office. This converter translates these signals into codes suitable for the particular central office.

**4. CONNECTIONS**

**4.01** Connections for the 27A3 dial are shown in the section on connections for the master control center.

**4.02** A 27A3 dial schematic is shown in Fig. 5.

**5. MAINTENANCE**

 Do not attempt repairs to the dial. Replace defective dial.

**5.01** Check all pushbuttons for tone feedback. Two tones should be heard in the receiver when any button is depressed. These tones are blended

together, but can be identified as two separate tones. Replace dial if feedback tones are not as described.

**5.02** The 27A3 dial will function only when the orange-black dial lead is negative (-) and the green lead is positive (+). Check line polarity before replacing dial.

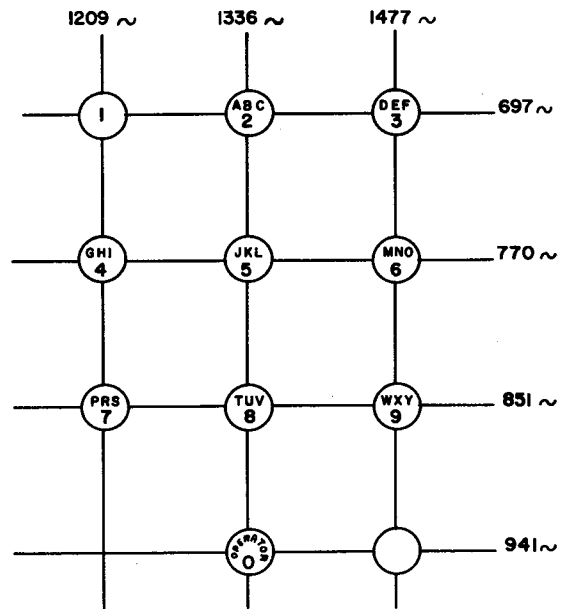


Fig. 4 - Dial Frequencies

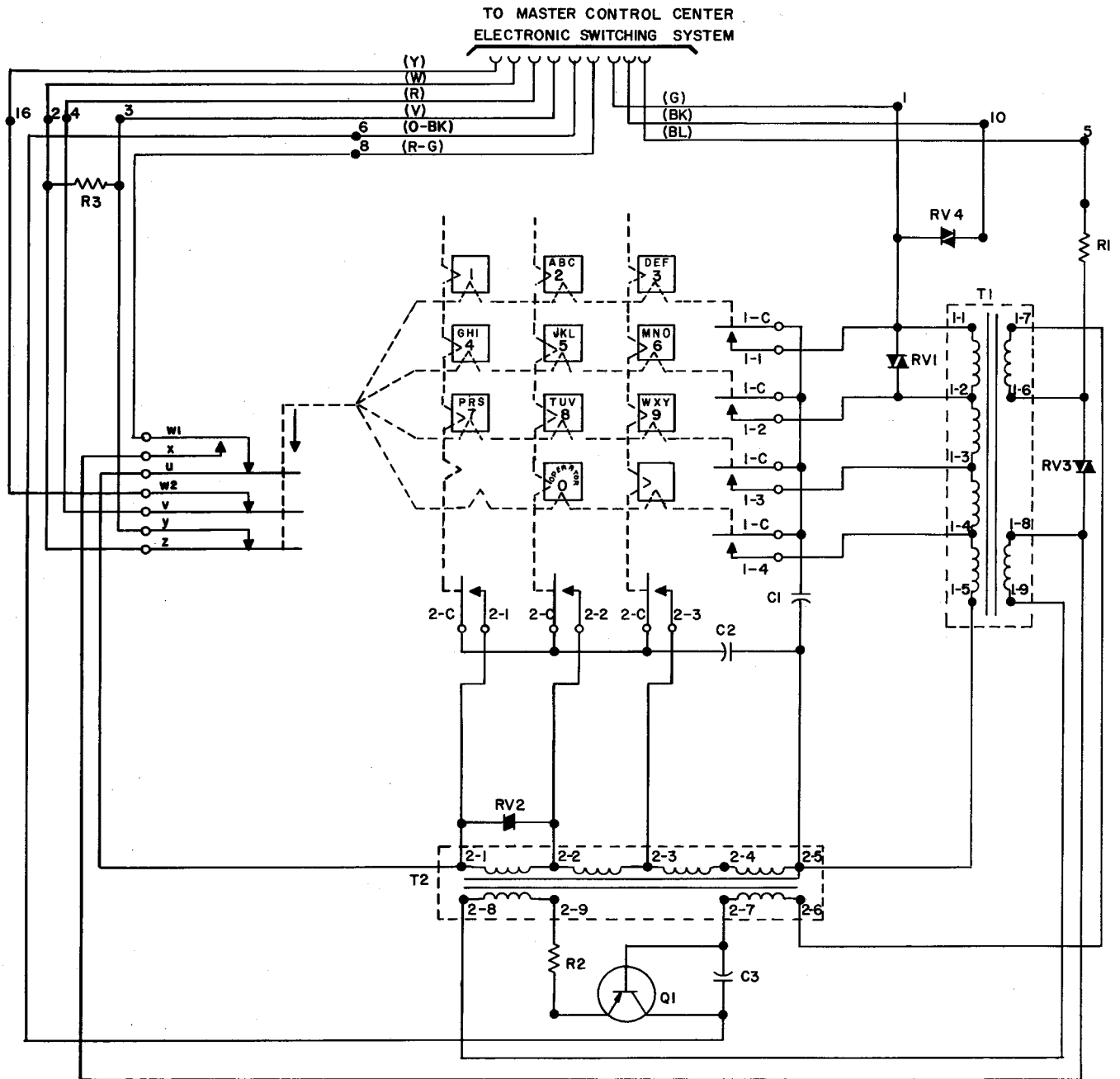


Fig. 5 - 27A3 Dial, Schematic

