

## TELEPHONE SETS

500, 501, 507, 509, 532, 533, 535, 536, 554, AND 556 TYPES

### IDENTIFICATION AND ASSEMBLY OF PARTS

#### 1.00 INTRODUCTION

This section covers the identification and the assembly of parts of 500 series telephone sets for station use. Key telephone sets for key systems are covered in other C Sections.

#### 2.00 GENERAL

**2.01** General uses of sets can be found in the C Section entitled Selection of Common Battery Station Sets, Selection for General Use. Special uses for these sets may be found in the C Section entitled Station Sets, Selection for Specific Use.

**2.02** Code numbers such as 500CR/DR cover both manual and dial versions of each type telephone set. This permits converting to either without changing the code number stamped on the base. The letter R has been added to indicate that the sets are equipped with spring handset cords.

**2.03** Description of telephone set components (i.e., handsets, ringers, networks, ampli-

fiers, and equalizers) may be found in C Sections pertaining to these items.

#### 3.00 IDENTIFICATION

**3.01** 500 series telephone sets are for use in common battery areas, manual or dial.

**3.02** All parts of the set enclosed by the housing, including the network, line switch (switch-hook), dial, ringer, tube, and cords are mounted on the metal base. The plungers are part of the housing assembly. The housing is fastened to the base with two special roundhead captive machine screws with lockwashers and can be replaced easily. The network and line switch are riveted to the baseplate and are not to be replaced in the field.

**3.03** Transmission equalizers are provided in all 500-type sets except those coded J and K.

- Sets coded 500A/B and 501A/B have 311A equalizers, Fig. 1, and 425A networks, Fig. 2.

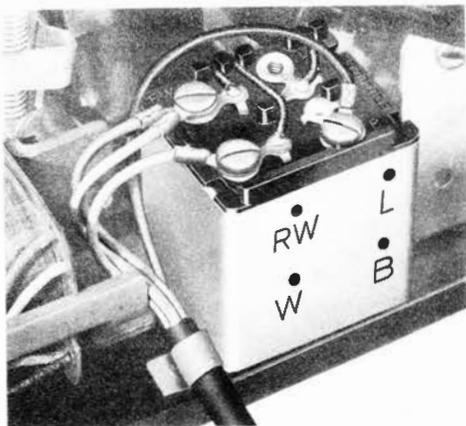


Fig. 1 — 311A Equalizer

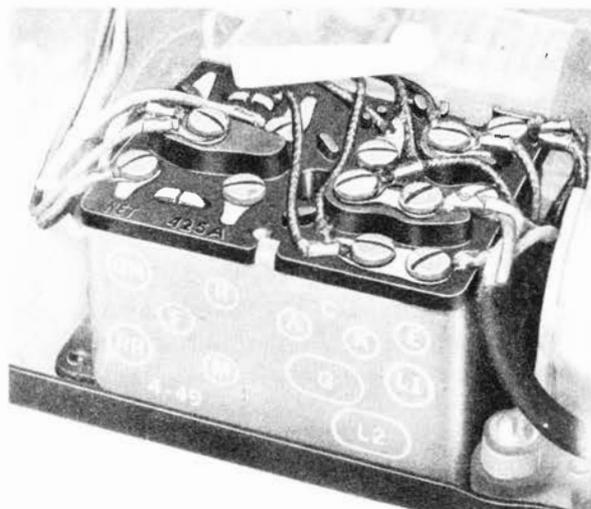


Fig. 2 — 425A Network

- Sets coded 500J/K and 501J/K have 425A networks and **do not** have equalizers.
- Sets coded 507A/B and 509A/B have a 151C amplifier and a 425C network which contains apparatus for equalization.
- All other 500 series sets have 425B networks which contain necessary apparatus for equalization (see Fig. 3).

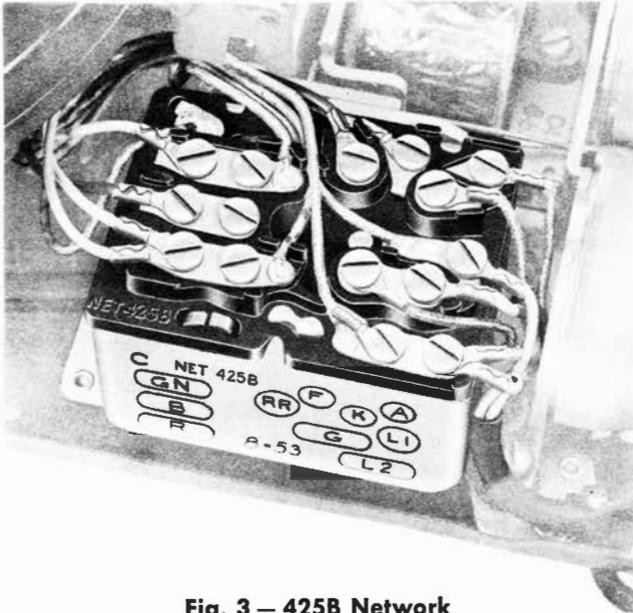


Fig. 3 — 425B Network

**3.04** The card-operated line switch (switch-hook) uses bifurcated springs which are protected by a plastic cover. Since G-type handsets are too light to operate the switch directly, the necessary force is furnished by a coil spring which is opposed by the contact springs. The handset weight, through lever arms, is required to overcome the force differential between the coil spring and the contact springs.

**3.05** All 500-type sets are manufactured with 7-type dials (see Fig. 4). Manual sets are obtained by replacing 7-type dials with a 95-type apparatus blank at distributing houses (see Fig. 5).

**3.06** All 500 series sets are manufactured with C4A ringers. Earlier 500-type sets were manufactured with C2A ringers and 501-type sets had C3A ringers. The volume of these ringers may

be adjusted to one of four levels. A modification can be made by the installer to provide bell cutoff when authorized locally.

**3.07** The ringing circuit of 501, 509, 533, and 556-type telephone sets employs a 3-element, cold cathode, gas-filled tube which is coded 426A. A 4-element tube coded 425A is available to care for conditions of excessive power induction.

**3.08** All 500 series telephone sets are equipped with G-type handsets.



Fig. 4 — 500DR Set, Exterior

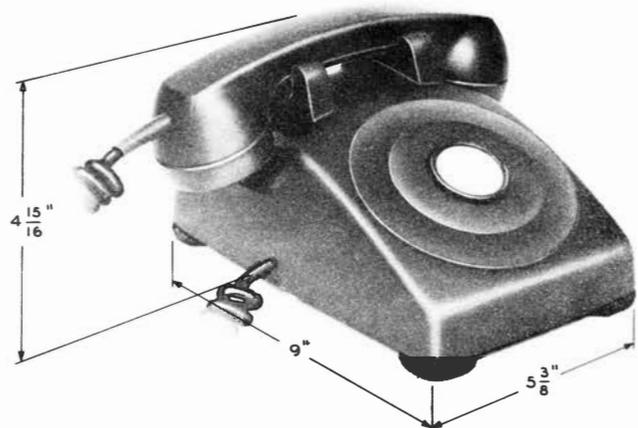


Fig. 5 — 500CR Set, Exterior

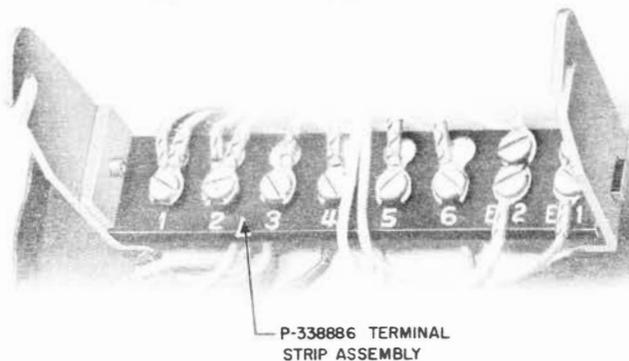
**3.09** A code and an assembly date are stamped on the base of each set as shown in Fig. 6. Earlier 500A/B sets did not have the suffix code letters. 500-type sets manufactured without equalizers were stamped with the letter **T** above the number.

Example: **T**  
500

**3.10** The P-10E943 neoprene foot shown in Fig. 6 replaces the P-339765 felt-covered foot previously used on 500 series telephone sets.



**Fig. 6 — Base of 500-type Set**



**Fig. 7 — Terminal Strip**

**3.11** A 4-conductor mounting cord and a terminal strip are provided in the 500 LR/MR set (terminal strip is shown in Fig. 7). This set is used at installations which require that the ringing circuit be brought separately through the mounting cord. Otherwise, the 500LR/MR telephone set is the same as the 500CR/DR set.

**3.12** 500ER/FR and 501FR telephone sets are equipped with a plunger switch and wired to avoid interference with the dialing or talking of another customer on a party line when the handset is lifted to make a call (see Fig. 8). Only a low-loss receiver circuit is bridged across the line with normal operation of the switchhook contacts. When it is found that the line is not busy, or when an incoming call is to be answered, pulling up the left plunger operates the plunger switch and closes through the talking and/or dialing circuits. Replacing the handset restores both switches.



**Fig. 8 — 500FR or 501FR Set**

**3.13** The 500H, 500PR, 501PR, 500UR, and 501UR telephone sets are equipped with a lucite finger wheel, a lamp which illuminates the dial, and a 4- or 6-conductor mounting cord (see Fig. 9). 500UR and 501UR sets are equipped with a 584A key and resistor to provide a night light feature with the handset resting in the cradle (see Fig. 10). When the key is turned to the ON position, the lamp is illuminated at reduced brilliance through the addition of a series resistor in the dial light circuit. When the handset is lifted from the cradle, the switchhook contacts shunt the night light switch and resistor, and full brilliance is obtained from the lamp. With the 584A key in the normal position, illumination is provided only when the handset is removed from the cradle.

**3.14** A 6- to 8-volt ac or dc power supply must be provided by means of a transformer or battery to light the dial lamp.



Fig. 9 — 500H, PR, or 501PR Set

**3.15** Features for speakerphone systems are provided by the 500RR/SR set. This set has the following features:

- 10-conductor mounting cord
- Terminal strip (see Fig. 7)
- Extra dial contacts
- Extra switchhook contacts
- Separate ringer leads for speakerphone control.

**3.16** 507- and 509-type telephone sets are intended for use on long loops (1500- to 2400-ohm resistance). These loops are beyond the transmission capabilities of 500-type sets. 507- and 509-type telephone sets employ a 151C fixed-gain amplifier to provide a transmission level comparable to that of 500-type telephone sets on the shorter loops. These sets use a 425C network which contains a sidetone balancing network especially designed to provide a satisfactory impedance match to open wire or loaded cable. The 507- and 509-type sets are electrically similar except that 509 sets have a 426A electron tube in the ringing circuit. The 507- and 509-type sets are similar in external appearance to the 500-type set (see Fig. 4). Internally they resemble the 536-type set (see Fig. 17).

**Note:** Photographs of 507- and 509-type telephone sets were not available when this section was prepared.



Fig. 10 — 500UR or 501UR Set

**3.17** 532- and 533-type telephone sets are for use where customers require receiver amplification (see Fig. 11, 12, and 13). They operate on normal line voltage and do not require power from local batteries. The input to the amplifier is connected in place of the receiver and the receiver is connected across the output of the amplifier. The operating current for the amplifier is controlled by moving the potentiometer knob clockwise to increase receiver amplification and counterclockwise to decrease amplification.



Fig. 11 — 532- or 533-type Set, Exterior

**3.18** The 535-type telephone set is for use at noisy locations (see Fig. 14 and 15). It provides limited receiver amplification and limited reduction of transmitter and sidetone levels with the handset push-to-listen button normal. At high

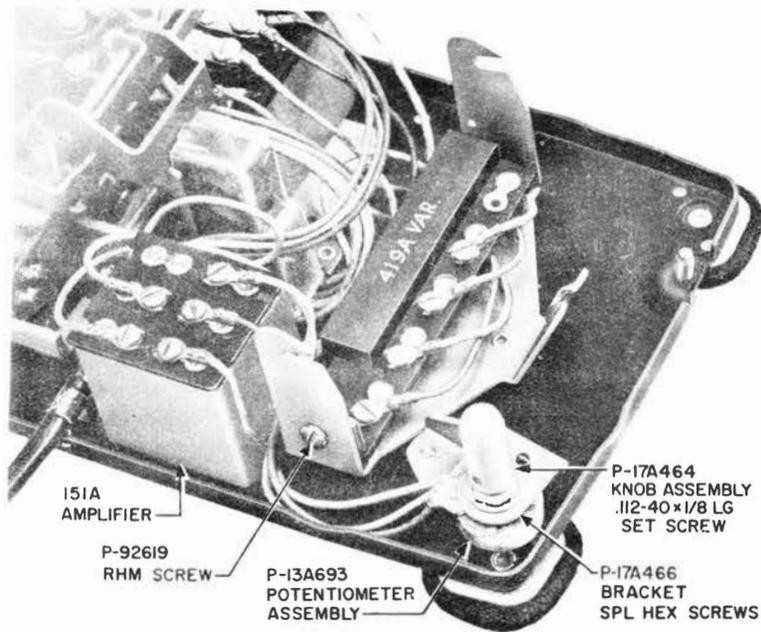


Fig. 12 - 532-type Set, Interior

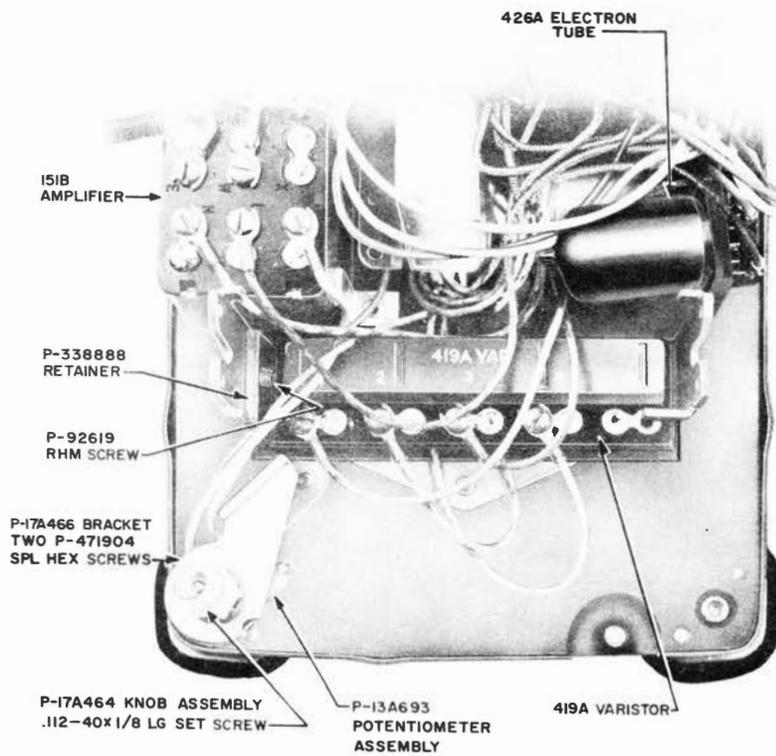


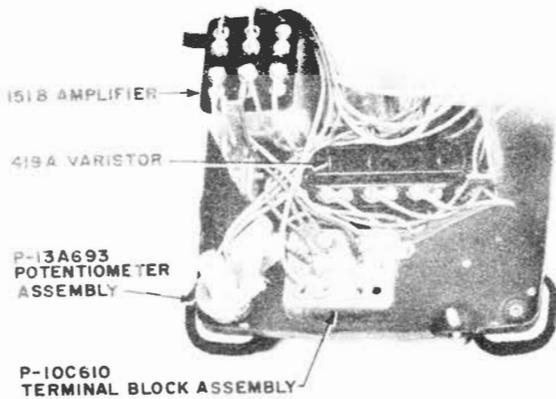
Fig. 13 - 533-type Set, Interior

**SECTION C38.595.1**

noise levels, it provides full receiver amplification and almost complete disabling of the transmitter when the handset push-to-listen button is operated. The operating current for the amplifier is obtained from the central office line. Moving the



**Fig. 14 — 535-type Set, Exterior**



**Fig. 15 — 535-type Set, Interior**

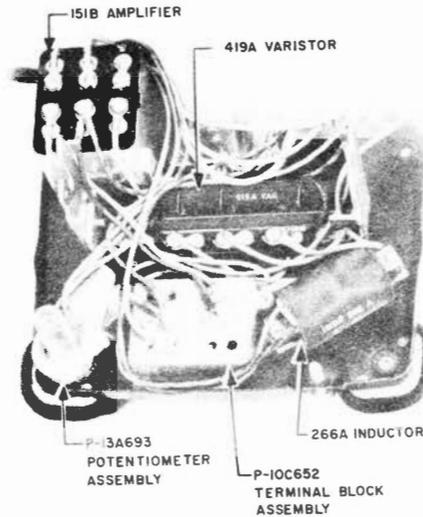


**Fig. 16 — 536-type Set, Exterior**

potentiometer knob clockwise will increase amplification.

**3.19** The 536-type telephone set is used for customers requiring speech amplification or for whispered confidential conversations (see Fig. 16 and 17).

**3.20** 554- and 556-type telephone sets are for wall mounting in common battery areas, manual or dial (see Fig. 18). All components of these sets, except the early model C4A ringers, are interchangeable with the components of the 500 series telephone sets (see Fig. 19 and 20).



**Fig. 17 — 536-type Set, Interior**



**Fig. 18 — 554BR or 556BR Set, Exterior**

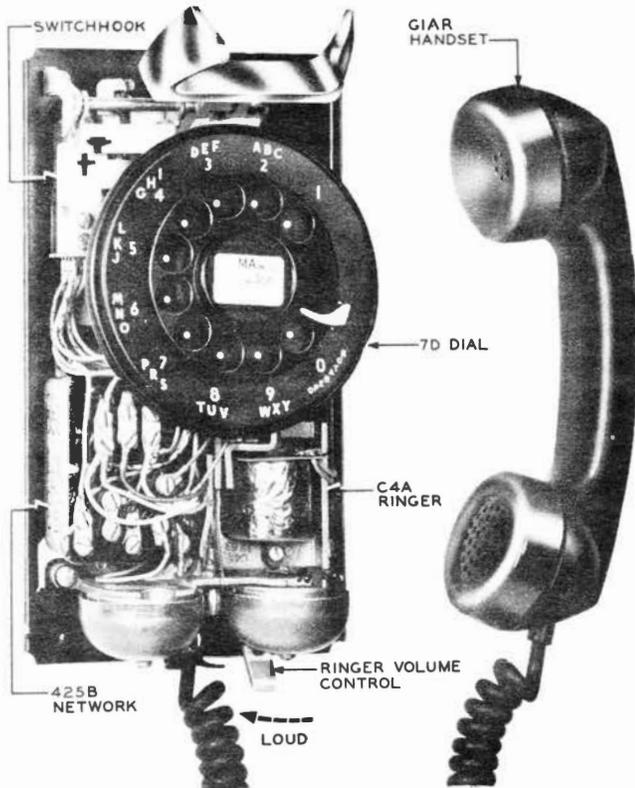


Fig. 19 - 554BR Set, Interior

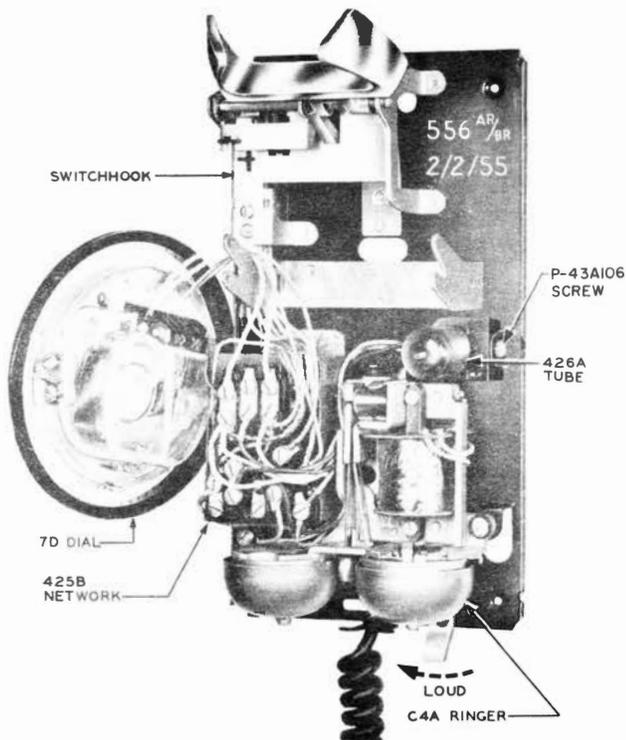


Fig. 20 - 556BR Set, Interior

The frames on all C4A ringers, manufactured after January 15, 1955, have been changed in design so that they will not interfere with the free movement of the volume-adjusting arm as did the earlier model. Additional holes in the baseplate have been added. One hole at the top, which is in line with the bottom hole, makes it possible to locate two mounting screws in a wall stud. The holes added behind the dial are for attaching the set to an electrical outlet box.

#### 4.00 ASSEMBLY OF PARTS

4.01 The housing on all 500-type desk sets is secured to the base by two captive mounting screws with lockwashers under the head (see Fig. 21).

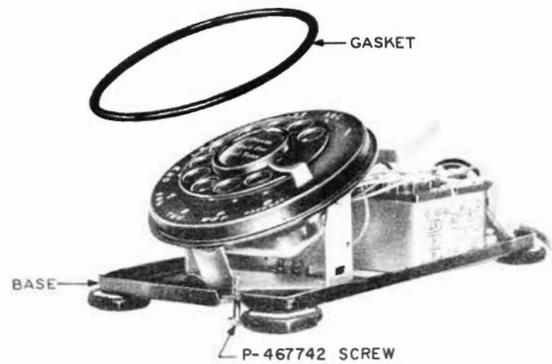
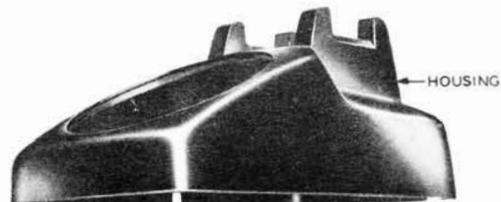


Fig. 21 - 500- or 501-type Set, Housing Assembly

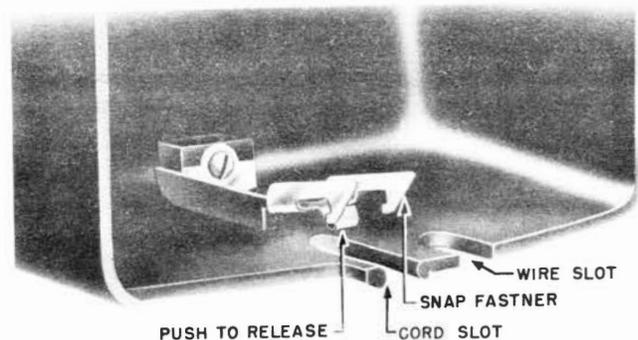
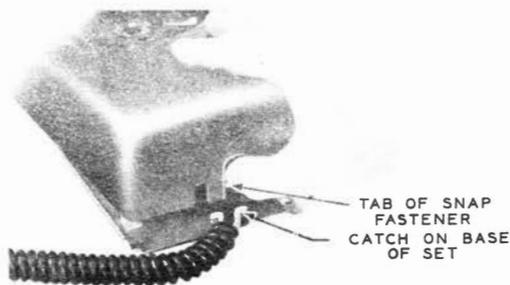
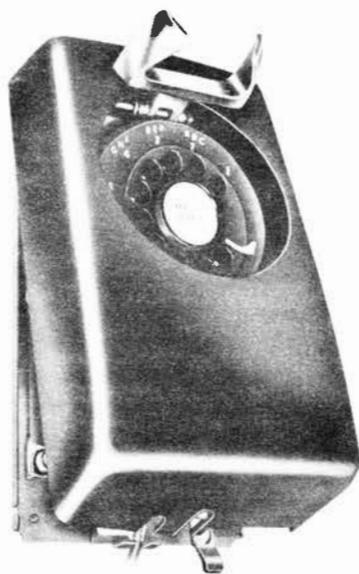


Fig. 22 - 554- or 556-type Set, Cover Interior



**Fig. 23 — 554- or 556-type Set, Method of Removing Housing**

**4.02** To remove housing on 554- and 556-type telephone sets, push inward on tab of snap fastener located in cord slot and, while tab is depressed, lift lower part of housing outward, releasing fastener catch (see Fig. 22 and 23). To replace, slip housing over switchhook and dial, then press firmly on lower part of housing to engage snap fastener and catch (see Fig. 24).



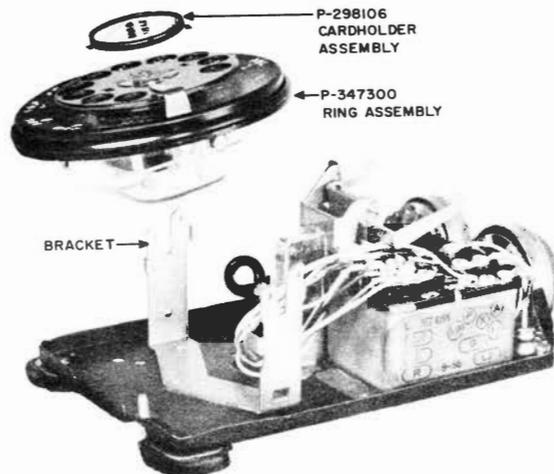
**Fig. 24 — 554- or 556-type Set, Replacement of Housing**

**4.03** Plungers in desk-type sets are accessible by removing the handhole cover mounting screw and the handhole cover (see Fig. 25).

**4.04** The dial is attached to the dial mounting bracket with two or three screws. The new-type dial bracket assembly does not have a front mounting attachment (see Fig. 26).



**Fig. 25 — Handhole Cover**



**Fig. 26 — Dial Assembly**

**4.05** Fig. 27 shows the assembly of the 95A apparatus blank in 500- and 501-type desk sets. The 95A apparatus blank can be used only on sets with three-legged dial mountings. Fig. 28 and 29 show front and rear views of the 95B apparatus blank assembly in 500- and 501-type desk sets. Fig. 30 and 31 show assembly of the 95B apparatus blank in the 554- and 556-type sets. Note that bracket position is inverted when used on 554- and 556-type sets.

**4.06** The tube assembly is held in position by the tube assembly mounting screw (see Fig. 20 and 32).

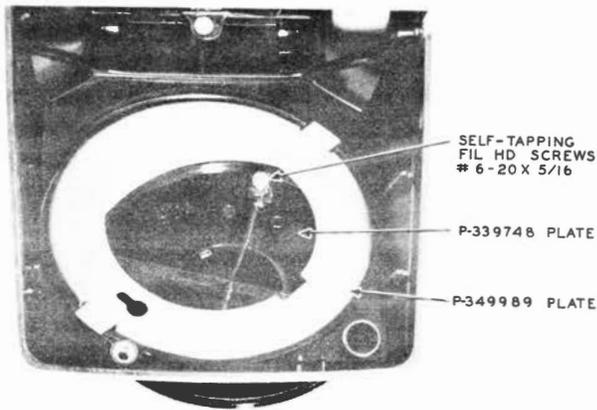


Fig. 27 - 95A Apparatus Blank

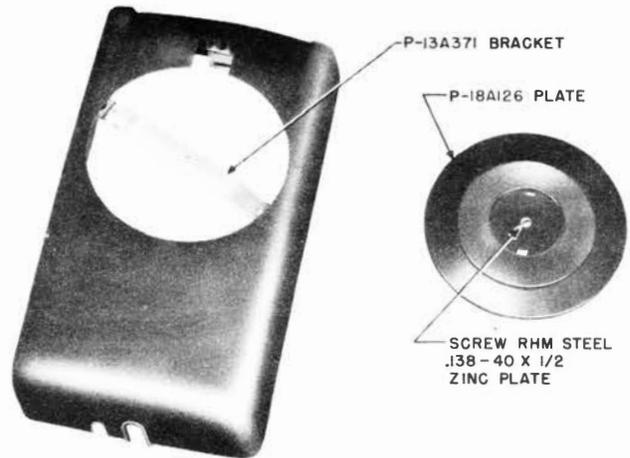


Fig. 30 - 554-type Housing with 95B Apparatus Blank, Exterior

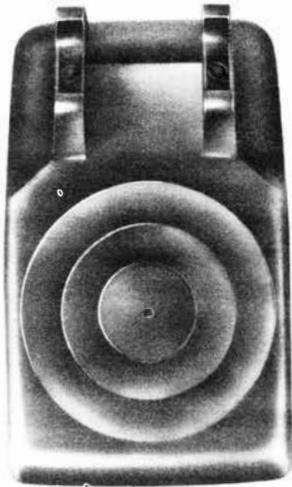


Fig. 28 - 500-type Set with 95B Apparatus Blank, Exterior

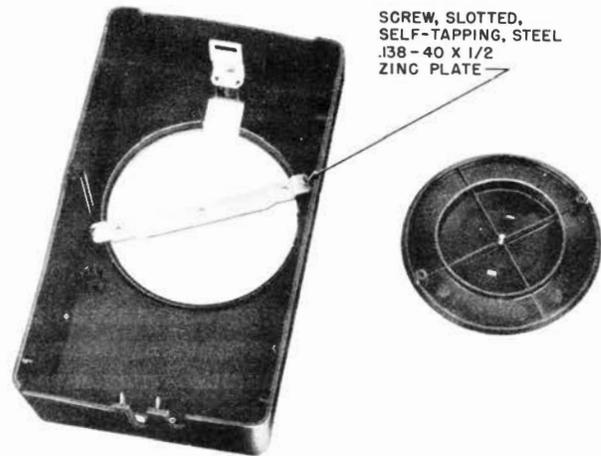


Fig. 31 - 554-type Housing with 95B Apparatus Blank, Interior

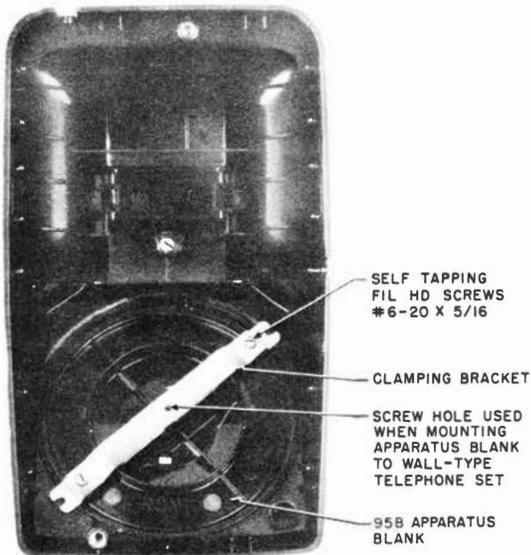


Fig. 29 - 500-type Set with 95B Apparatus Blank, Interior

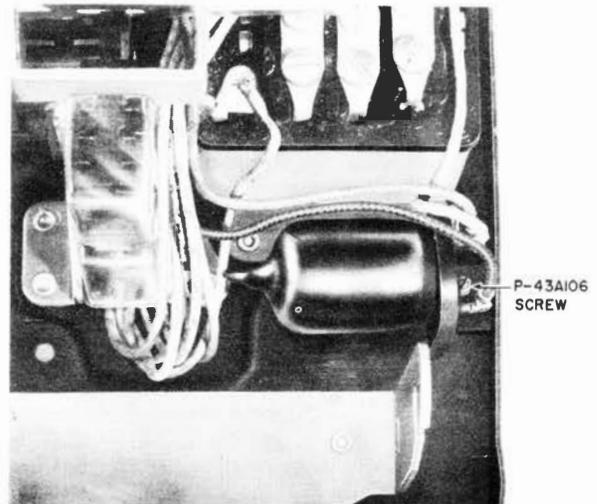


Fig. 32 - 501-type Desk Set, Tube Assembly

4.07 Two mounting screws with lockwashers hold the ringer on base of set (see Fig. 33)

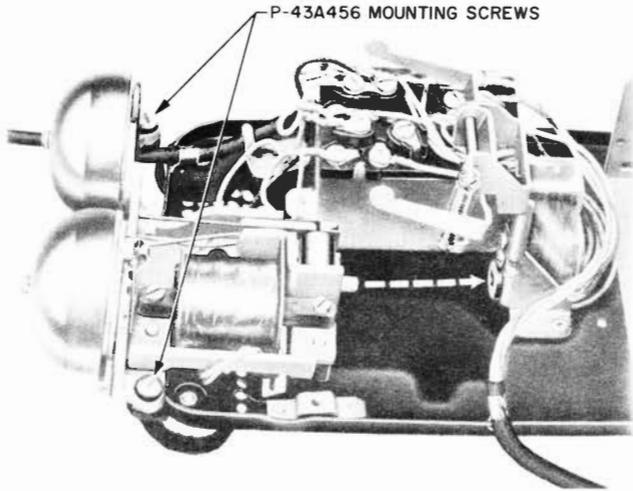


Fig. 33 - 500-type Desk Set, Ringer Assembly

4.08 The ringer volume-control lever in the 554- and 556-type telephone sets is riveted at one end to the base of the set (see Fig. 34). In the 500-type telephone set, the ringer volume-control assembly is part of the ringer.

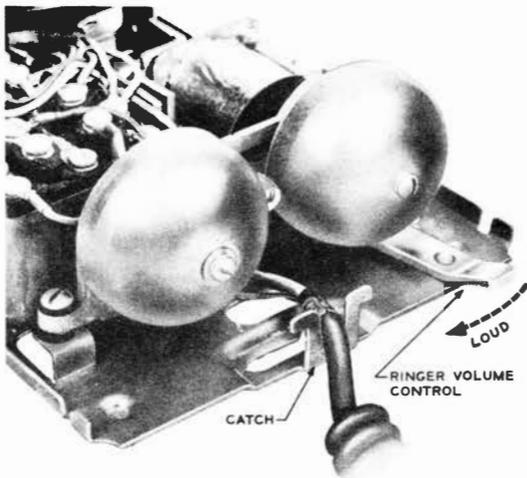


Fig. 34 - 554- or 556-type Set, Ringer Volume-control Lever

4.09 Cord leads should be dressed to avoid interference with moving parts and ringer gongs. On the 500-type set, anchor the mounting

cord beneath the stay hook in the right rear corner of the base to prevent interference with the ringer gong.

4.10 The switch cover is held in place by ears on the cover which engage indentations on switch assembly mounting (see Fig. 35).

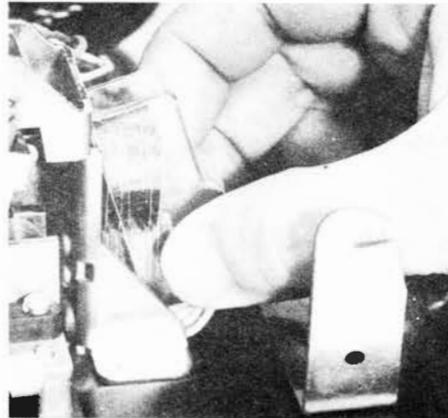


Fig. 35 - Switch-cover Assembly

4.11 On dial illuminated sets, the lamp screws into the lamp socket, and the lamp cap fits into a bayonet socket (see Fig. 36).

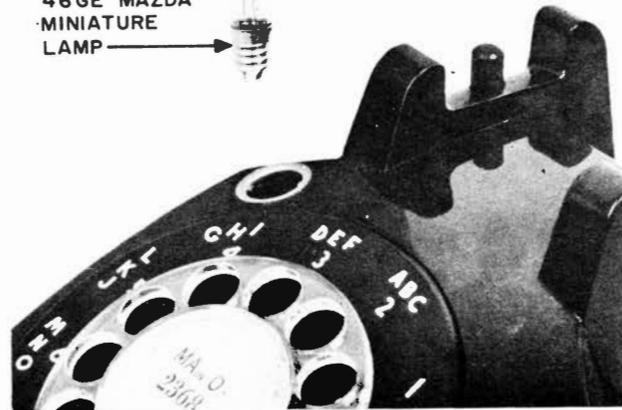


Fig. 36 - 500H, PR, UR, or 501PR, UR Set, Lamp Assembly

## 5.00 COLOR SETS

5.01 Refer to Table A for set colors.

5.02 Two-tone sets may be made in the field as required. Order the housing assembly in the color required and convert a black telephone set.

TABLE A — SELECTION OF COLOR SETS

Color	Full	Two-tone (Convert Locally)	500CR/DR 500ER/FR 500PR 500UR 500LR/MR 500RR/SR 532AR/BR 535AR/BR	501CR/DR 501FR 501PR 501UR 507AR/BR 509AR/BR 533AR/BR 536AR/BR	554A, B 556A, B
Ivory	-50	-50A✘	★	★	★
Green	-51	-51A✘			
Red	-53	-53A✘			
Yellow	-56	-56A✘			
White	-58				
Rose Pink	-59				
Light Beige	-60				
Light Gray	-61				
Aqua Blue	-62				
Gray	-52	-52A✘			
Brown	-54	-54A✘			
Beige	-55	-55A✘			
Blue	-57	-57A✘			

★ AT&amp;TCo Standard.

✘ Mfr Disc.