

TELEPHONE SETS

500, 501, 554, AND 556 TYPES

IDENTIFICATION AND ASSEMBLY OF PARTS

1.00 INTRODUCTION

1.01 This section covers the identification and the assembly of parts of 500-, 501-, 554-, and 556-type telephone sets for station use. Key telephone sets for key systems are covered in other sections.

1.02 This section is being revised to:

- Include caution in dressing wires on terminals of the 425-type networks to prevent electric shock.
- Add information on use of the 14E582 retainer ring.

2.00 GENERAL

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

2.02 Selection of station apparatus for the 1A and 1A1 key telephone systems can be found in the sections covering common battery connections, for any particular type telephone set.

2.03 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.

2.04 Description of telephone set components (ie, handsets, ringers, networks, and equalizers) may be found in sections pertaining to these items.

3.00 IDENTIFICATION

3.01 The 500-, 501-, 554-, and 556-type 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 round head 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.
- Sets coded 500J/K and 501J/K have 425A networks and do not have equalizers.
- All other 500 series sets have 425B networks which contain necessary apparatus for equalization (see Fig. 3).

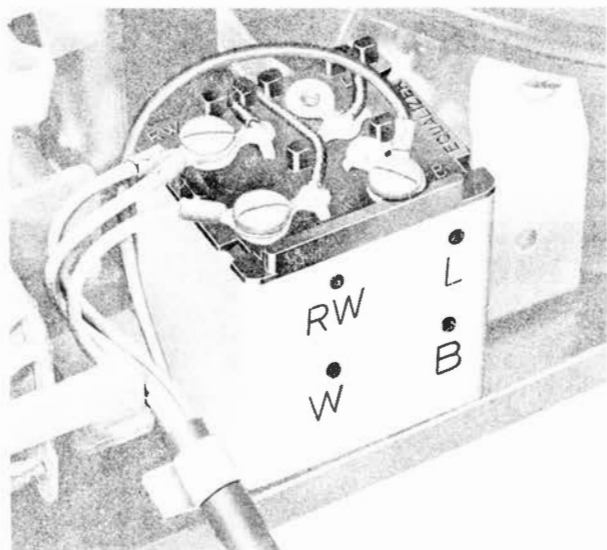


Fig. 1 - 311A Equalizer

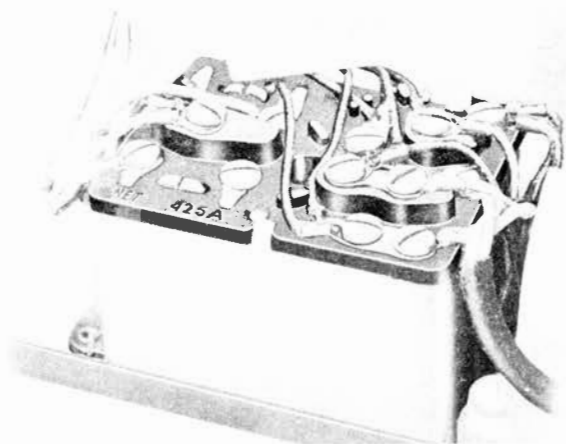


Fig. 2 - 425A Network



Fig. 3 - 425B Network

3.04 The card-operated line switch (switchhook) uses bifurcated springs which are protected by a plastic cover. Since G-type hand sets 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-, 501-, 554-, and 556-type sets are manufactured with 7-type dials (see Fig. 4). These 7-type dials will be replaced with 95-type apparatus blanks at distribution houses when manual sets are specified.



Fig. 4 - 500DR Set, Exterior

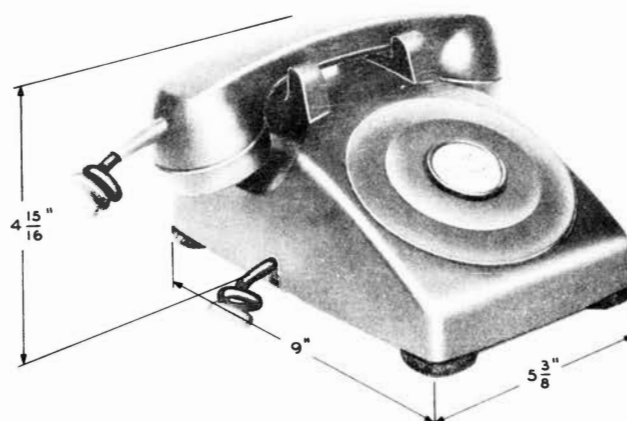


Fig. 5 - 500CR Set, Exterior

3.06 All 500-, 501-, 554-, and 556-type sets are manufactured with C4A ringers. Earlier 500-type sets were manufactured with C2A ringers; 501-type sets had C3A ringers. The volume of these ringers may be adjusted to one of four levels. A modification can be made to provide bell cutoff when authorized locally.

3.07 The ringing circuit of 501-, 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 hand sets. On sets equipped with a 425B network the handsets may be replaced by a handset containing an amplifier such as the G6AR hand set for customers with impaired hearing or the G7AR for customers with impaired speech.

3.09 Housing assembly numbers for the various types of sets are shown in Table A.

TABLE A
HOUSING ASSEMBLIES

Telephone Sets	Housing Assembly*
500CR, DR	P-80D203
500FR, 501FR	P-80D503
500H, PR	P-80E103
500UR, 501UR	P-80E303
554BR, 556 BR	LP-800F403

* The housing numbers shown are for black telephone sets. If other colors are desired, change the last two digits to indicate the color.

3.10 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. The 500-type sets manufactured without equalizers were stamped with the letter T above the number.

Example: T
 500



Fig. 6 — Base of 500-Type Set

3.11 The P-10E943 neoprene foot shown in Fig. 6 replaces the P-339765 suede leather foot previously used on 500 series telephone sets.

3.12 The 500LR/MR telephone sets are equipped with a 4-conductor mounting cord and terminal strip (Fig. 7). They are used at installations which require that ringing circuit be brought separately through the mounting cord. These sets may also be used with the 1A1 key telephone system.

3.13 The 500LR/MR telephone sets will be supplied wired for 1A1 key telephone systems. Sets converted for 1A1 operation will have an asterisk (*) on the base after the code number.

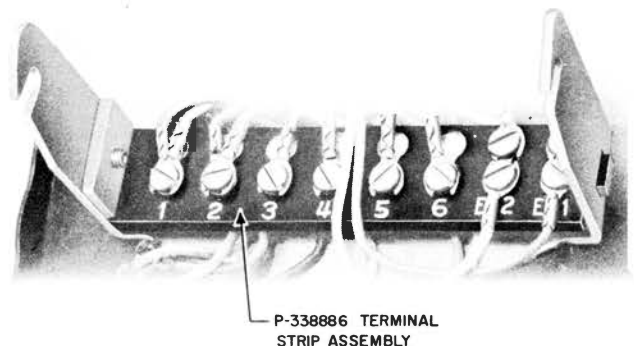


Fig. 7 — Terminal Strip

3.14 The 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.

3.15 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). The 500UR and 501UR sets are equipped with a 584C 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 584C key in the normal position, illumination is provided only when the handset is removed from the cradle.

3.16 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.

3.17 The 500WR/YR telephone sets are equipped with a lamp to provide a message-waiting feature (see Fig. 11). They are arranged to receive and hold a visual signal under control of an attendant at a PBX. General application for this feature is in a hotel or motel; however, it can be provided for any station under the control of an attendant. The message-waiting lamp cap is red with a metal insert which provides tongs for engagement with retaining rings in the housing. The lamp is a GE NE 51 which protrudes through the housing into the cap. The lamp cap assembly is →LP-11E100.



Fig. 8 — 500FR or 501FR Set

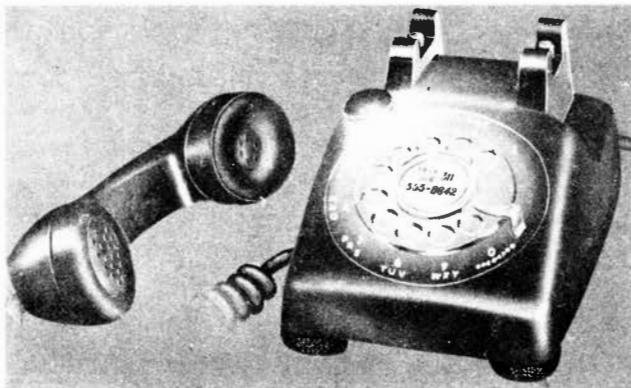


Fig. 9 — 500H, PR, or 501 PR Set



Fig. 10 — 500UR or 501UR Set

3.18 The 500WR/YR message-waiting phone cannot be changed from either manual or dial without changing the housing assembly. When such a change in service is requested, the appropriate housing must be ordered and installed. The housing assemblies are as follows:

- P-81K000-(color suffix), manual.
- P-80E100-(color suffix), dial.

3.19 The 500WR/YR telephone sets can be equipped in the field with a 14E582 retainer ring to prevent pilferage of the lamp cap assembly (see Fig. 12). To install the retainer ring, remove the housing of the telephone set with the lamp cap assembly in place. Press the two tabs of the retainer ring together and insert into the lamp cap assembly so that the retainer engaging pins fit into the lamp cap slots (see Fig. 13). This prevents normal rotation and removal of the lamp cap. The retainer ring is removed in like manner.

3.20 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 speaker-phone control.

3.21 The housing of the 550-type telephone set is designed as a handset hanger (see Fig. 14).



Fig. 11 — 500WR/YR Set



Fig. 12 — Retainer Ring 14E582



Fig. 13 — Retainer Ring 14E582 Mounted in Set Housing



Fig. 14 — 550-Type Set, Housing Handset Rest

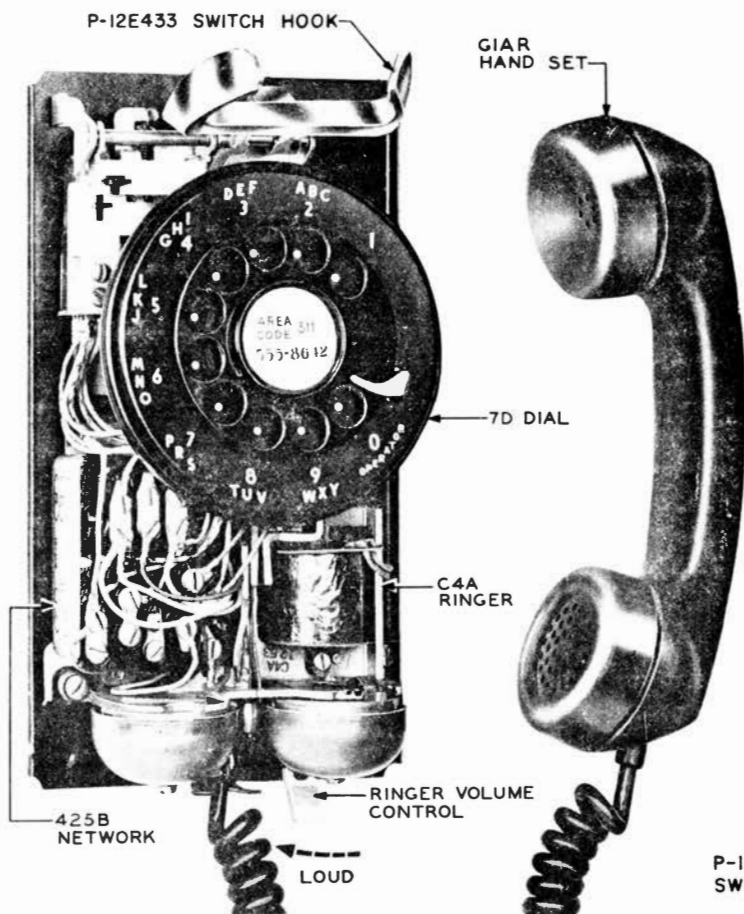


Fig. 15 - 554BR Set, Interior



Fig. 16 - 554BR or 556BR, Exterior

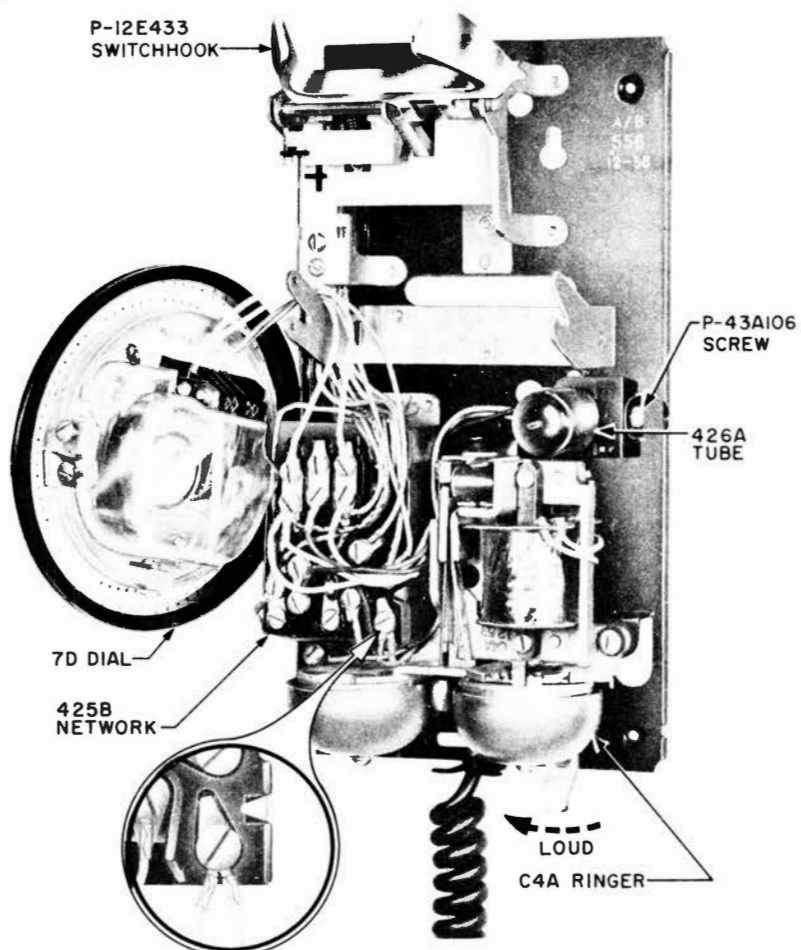


Fig. 17 - 556BR Set, Interior

3.22 The 554- and 556-type telephone sets are for wall mounting in common battery areas, manual or dial (see Fig. 16). All components of these sets, except the early model C4A ringers, are interchangeable with the components of the 500 series telephone sets (see Fig. 15 and 17). 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.

Spade tips or skinned wires should come in contact only with terminal to which the connection is made. Electrical contact with the metal tab of the housing of the network may cause the exposed dial finger stop or handset hook on wall sets to become energized with ringing current or dc line current.

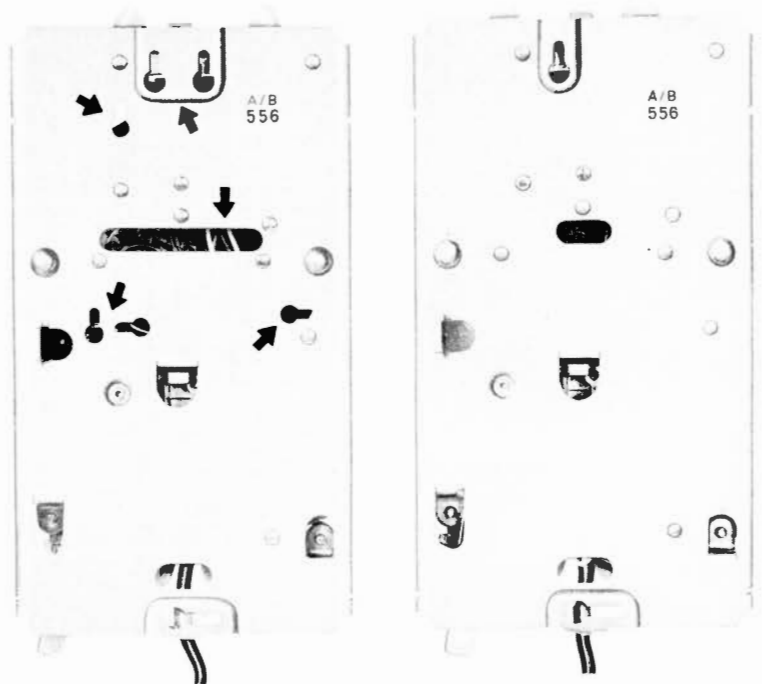
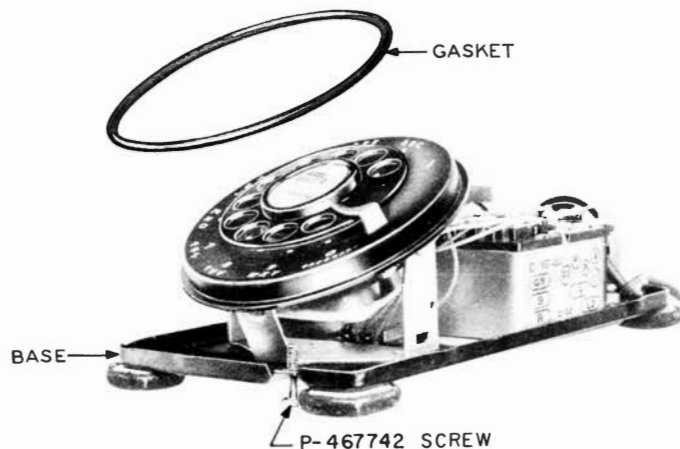


Fig. 18 — New- and Old-Type Baseplates

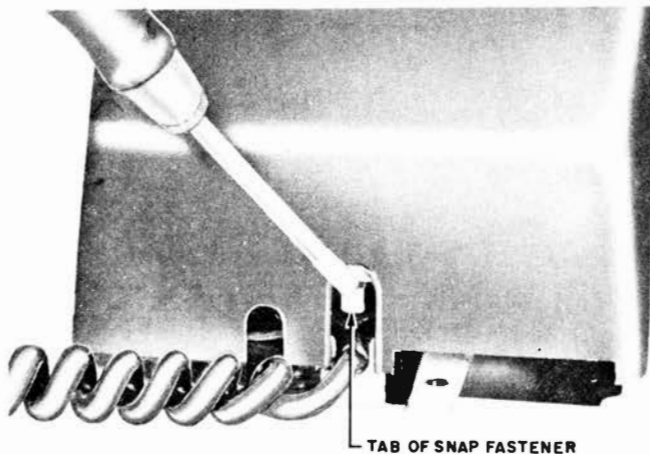


3.23 Additional holes have been provided in the baseplate of 500-type wall telephone sets. These holes will provide more flexibility in mounting the sets, thereby minimizing the use of backboards. The telephone set can be mounted directly over a conduit outlet box. For comparison between the new- and old-type baseplates, see Fig. 18.

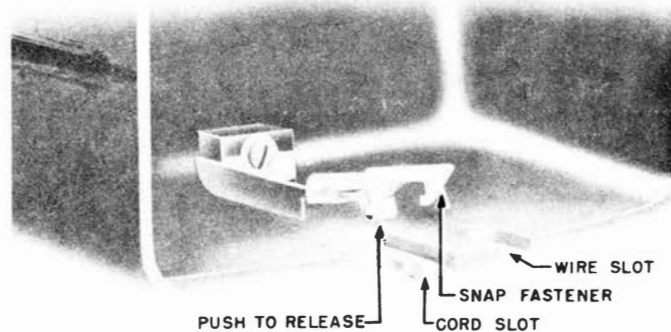
4.00 ASSEMBLY OF PARTS

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. 19).

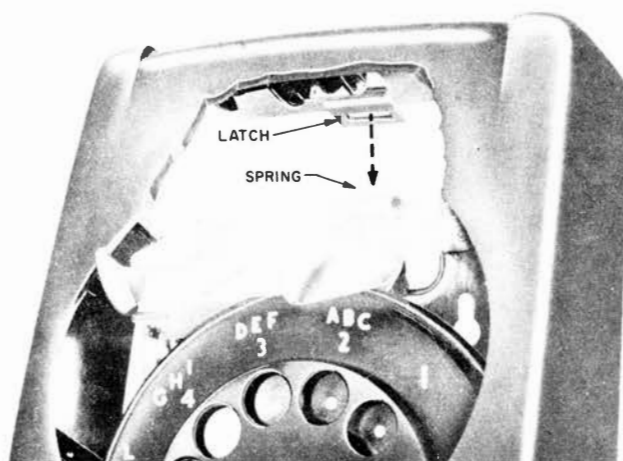
Fig. 19 — 500- or 501-Type Set Housing Assembly



**Fig. 20 — Wall-Type Telephone Set,
Method of Removing Housing**



**Fig. 21 — 554- or 556-Type Set, Cover
Interior**



**Fig. 22 — Wall-Type Telephone Set,
Replacement of Housing**

4.02 To remove housing on wall-type telephone sets, push inward on tab of snap fastener located in the cord slot and, while the tab is depressed, lift the lower part of the housing outward and upward, releasing fastener catch and disengaging latch opening assembly (see Fig. 20 and 21). To replace, slip housing over switchhook and dial, engage the latch spring assembly, then press firmly on lower part of housing to engage snap fastener and catch (see Fig. 22).

4.03 Plungers in desk-type sets are accessible by removing the handhole cover mounting screw and the handhole cover (see Fig. 23).

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. 24).

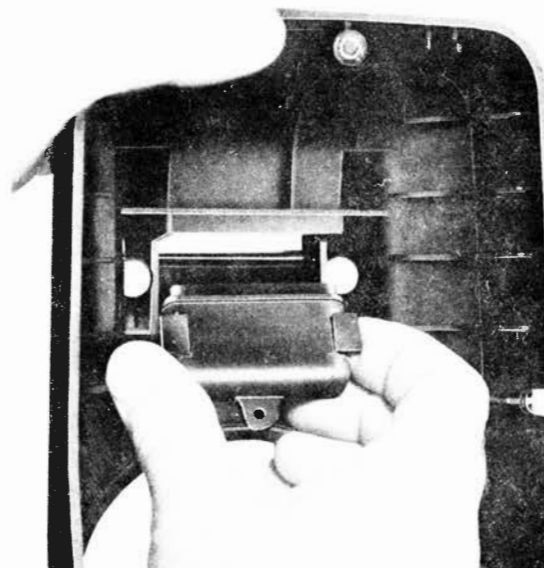


Fig. 23 — Handhole Cover

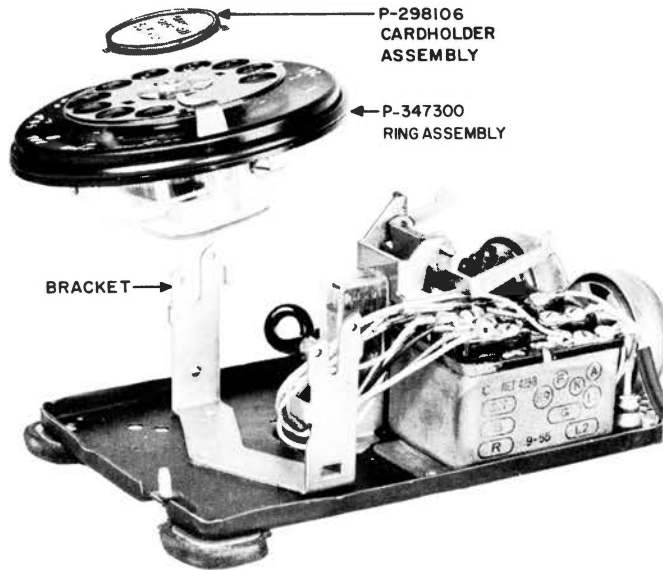


Fig. 24 — Dial Assembly

4.05 Fig. 25 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 3-legged dial mountings. Fig. 26 and 27 show front and rear views of the 95B apparatus blank assembly in 500- and 501-type desk sets. Fig. 28 and 29 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.

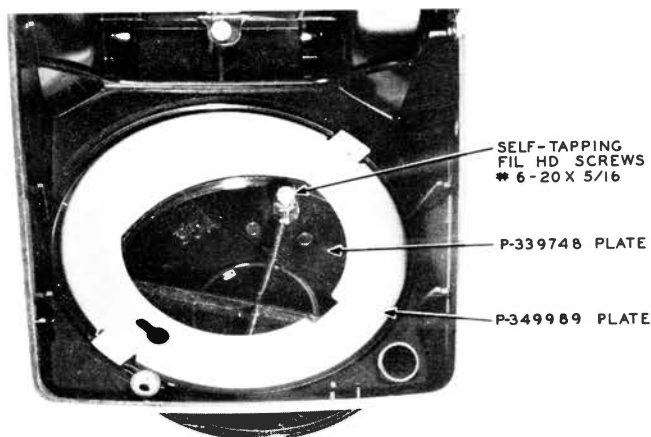
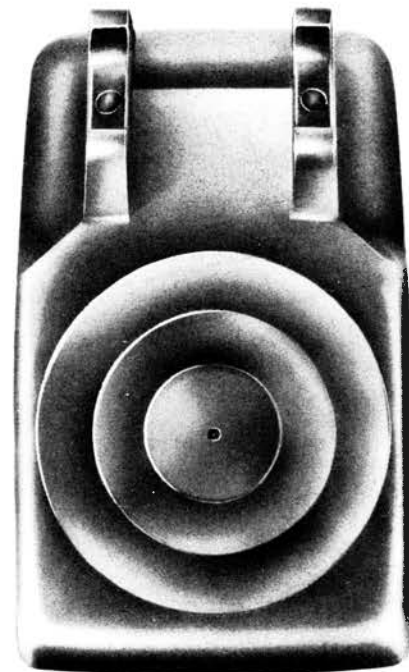
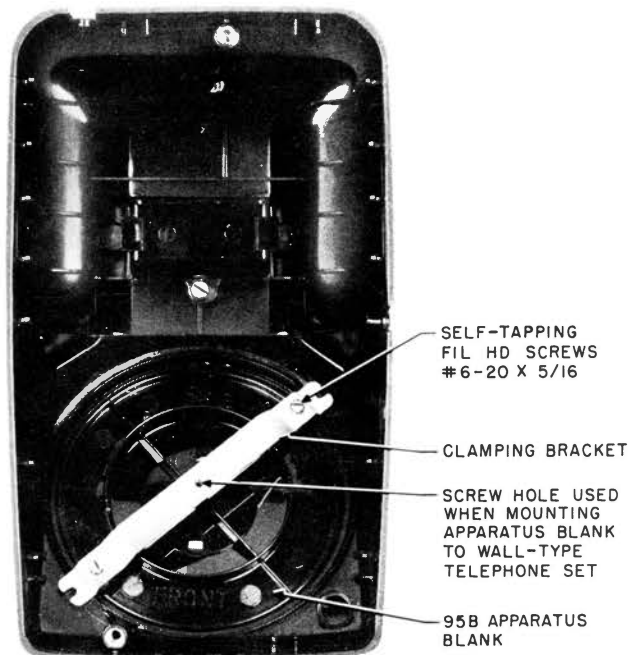


Fig. 25 — 95A Apparatus Blank

Fig. 26 — 500-Type Set with
95B Apparatus Blank,
ExteriorFig. 27 — 500-Type Set with 95B
Apparatus Blank, Interior

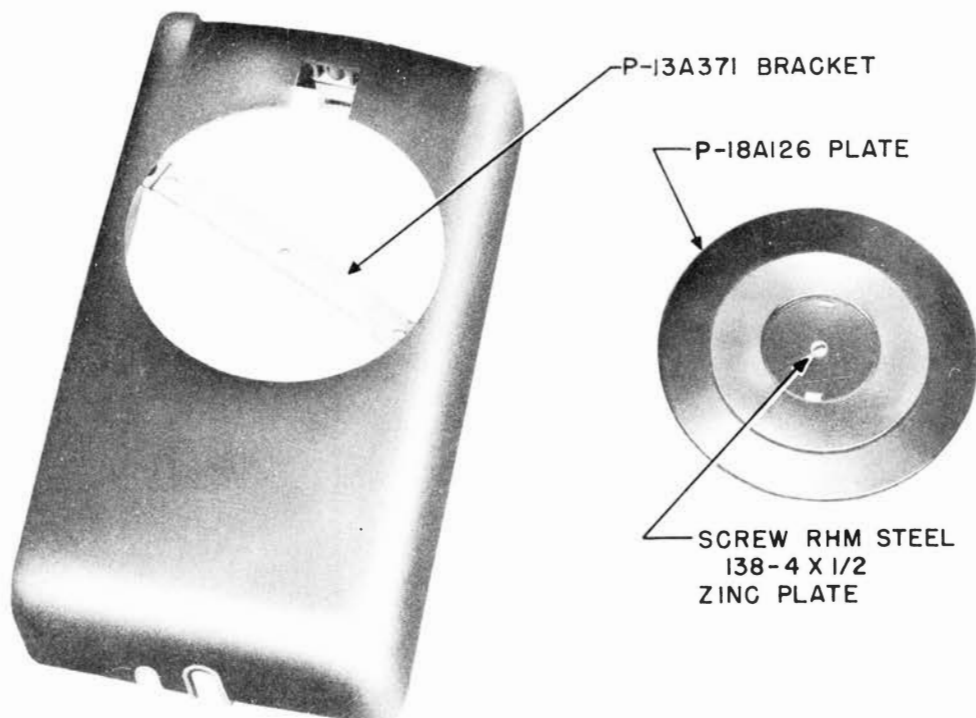


Fig. 28 — 554-Type Housing with 95B
Apparatus Blank, Exterior

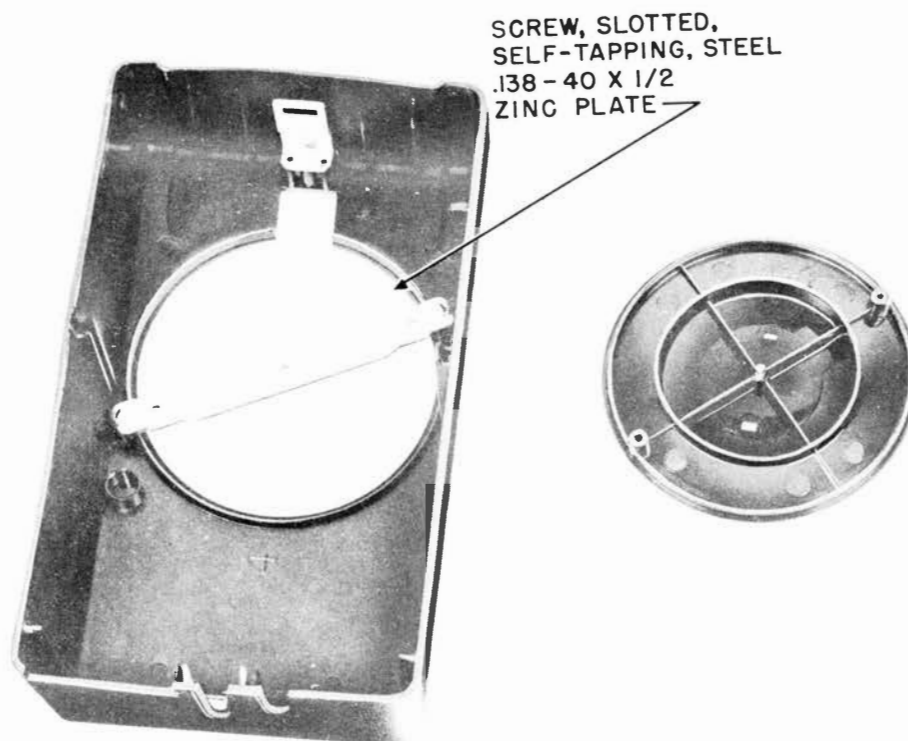


Fig. 29 — 554-Type Housing with 95B
Apparatus Blank, Interior

4.06 The tube assembly is held in position by tube assembly mounting screw (see Fig. 30).

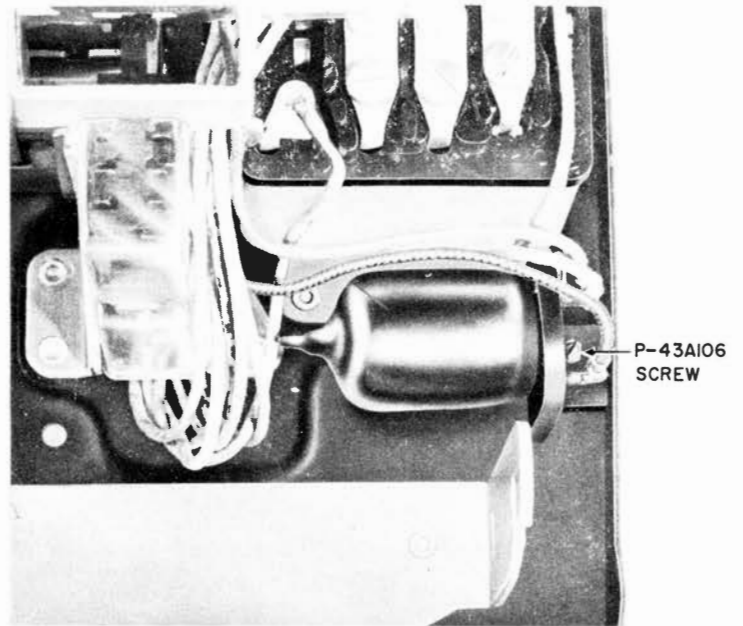


Fig. 30 — 501-Type Set, Tube Assembly

4.07 Two washer head mounting screws placed through rubber grommets hold the ringer on base of set (see Fig. 31).

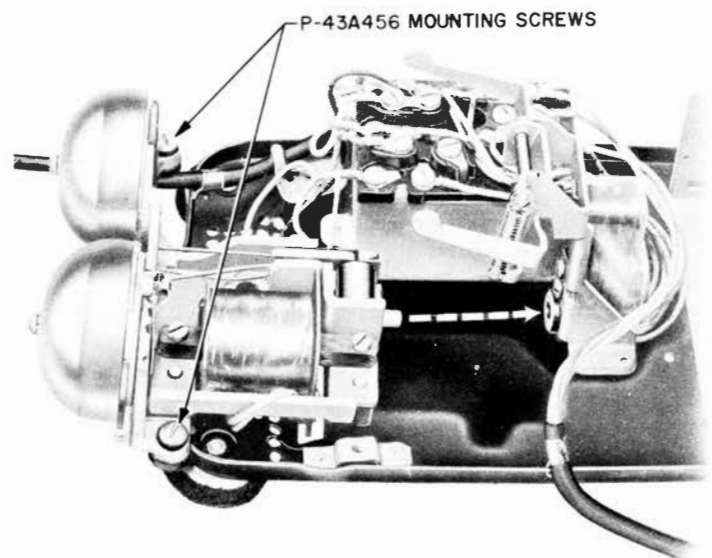


Fig. 31 — 500-Type Set, Ringer Assembly

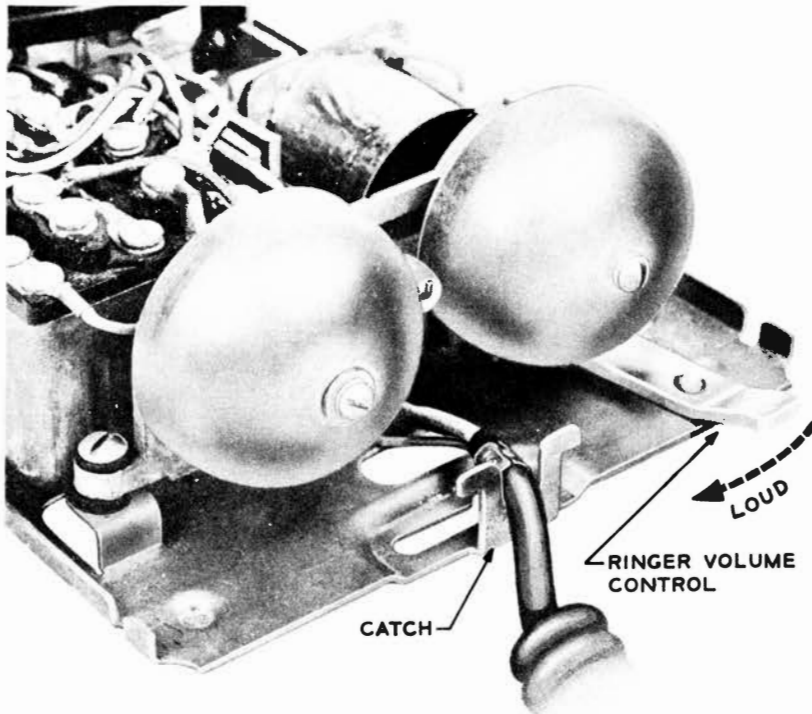


Fig. 32 — 554- or 556-Type Set, Ringer Volume-Control Lever

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. 32). In the 500-type telephone set, the ringer volume-control assembly is part of the ringer.

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. 33).

4.11 On dial illuminated sets, the lamp screws into the lamp socket and the lamp cap fits into a bayonet socket (see Fig. 34).

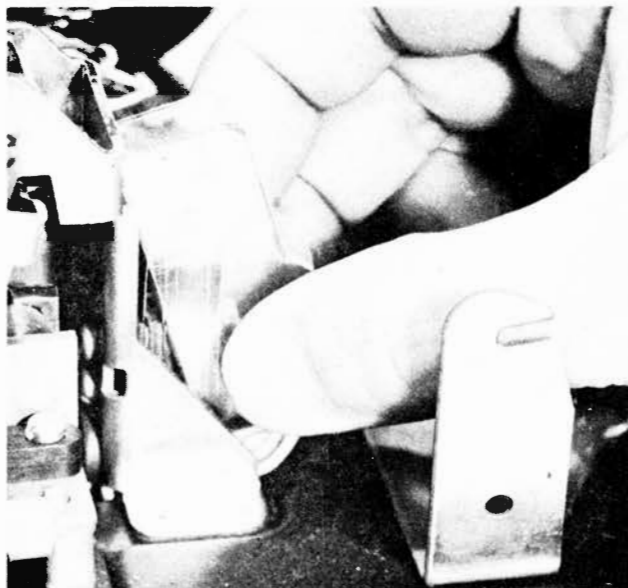


Fig. 33 — Switch-Cover Assembly

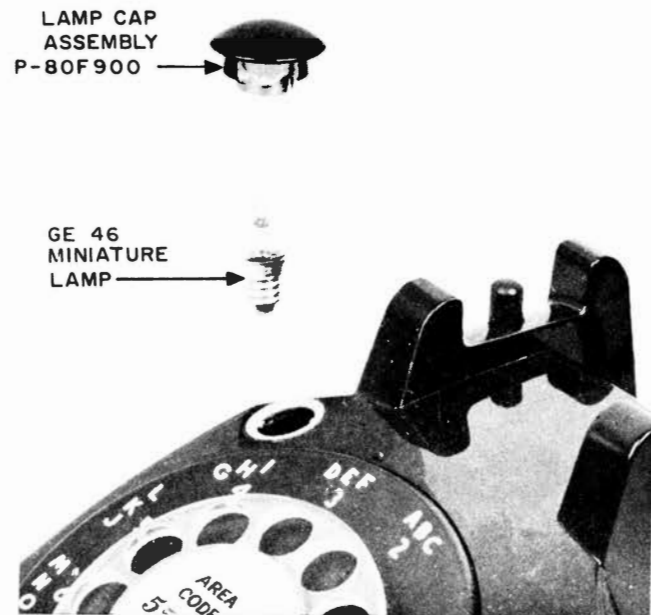


Fig. 34 — 500H, PR, UR, or 501PR, UR Set, Lamp Assembly