

## 500-SERIES TELEPHONE SETS (500 AND 501 TYPES) MAINTENANCE

### 1. GENERAL

1.01 This section covers maintenance requirements and procedures for the following sets:

500 Type			501 Type	
500A/B	500E/F	500J/K	501A/B	501F
500C/D	500H/P	500L/M	501C/D	501J/K

1.02 This section is reissued to include information pertaining to the 500P (illuminated dial) and colored 500-series telephone sets, and to bring the information up to date. Due to extensive changes, marginal arrows have been omitted.

1.03 The maintenance of handsets, dials, and ringers shall be in accordance with the sections dealing with these apparatus items.

1.04 Sections dealing with description, installation, connections, and cording of these sets should be consulted for information pertinent to the maintenance procedures covered in this section.

### 2. ASSEMBLY OF REPLACEABLE UNITS

#### Housing Assembly

2.01 The housing is removed by loosening the two captive mounting screws located in the right-front and left-rear portions of the base.

2.02 When housing is replaced, the gasket must be in place on outer rim of dial, cords properly anchored and in place, and housing aligned with base of set before tightening the two captive mounting screws.

**Caution:** Mounting screws must be tightened securely to eliminate the possibility of housing becoming loose.

#### Plunger Assembly

2.03 Plungers are accessible by removing hand-hold cover mounting screw and the hand-hold cover.

2.04 When reassembling, place lip of hand-hold cover beneath lip of housing and slide cover into place. Center cover so plungers will not fall past, and replace screw.

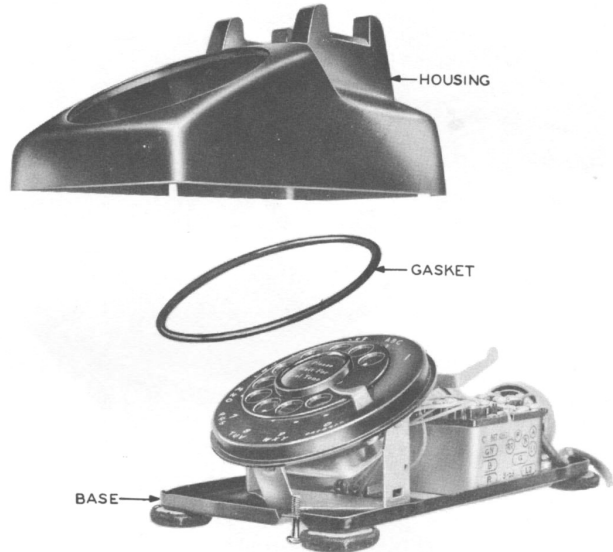


Fig. 1—Housing Assembly

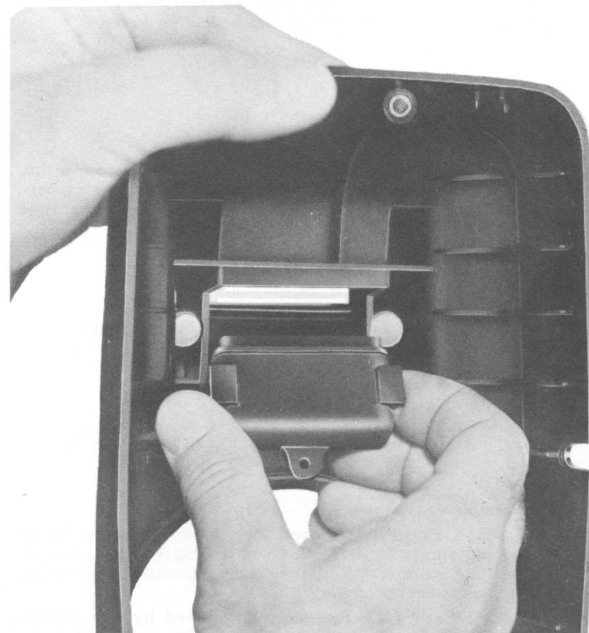


Fig. 2—Plunger Assembly

## SECTION C32.539

### Dial Assembly

2.05 To remove dial assembly, disconnect dial leads at their respective terminals on the network, loosen mounting screws, and slide unit from bracket.

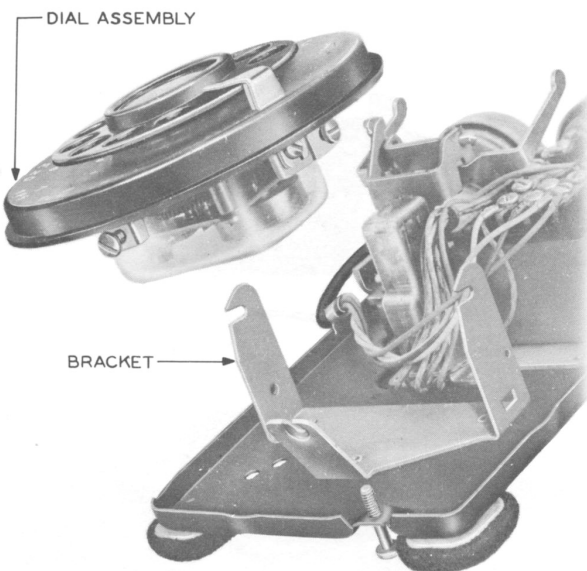


Fig. 3—Dial Assembly

2.06 To install dial assembly, slide unit into position and tighten mounting screws. Connect dial leads to their proper terminals and dress dial leads to avoid interference with movement of the operating bracket of the switch assembly.

**Caution:** Mounting screws must be tightened securely to eliminate the possibility of dial becoming loose.

### Tube Assembly—501-Type Sets

2.07 The 426A tube assembly is removed by disconnecting the yellow, black, and red tube leads from their respective terminals on the network and removing the tube assembly mounting screw.

2.08 To install tube assembly, slide into position and replace mounting screw. Connect tube leads to their proper terminals and dress leads to avoid interference with movement of operating bracket.

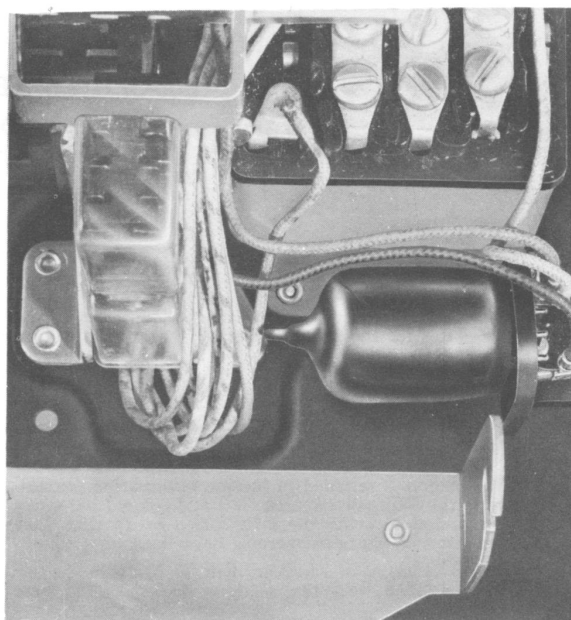


Fig. 4—Tube Assembly

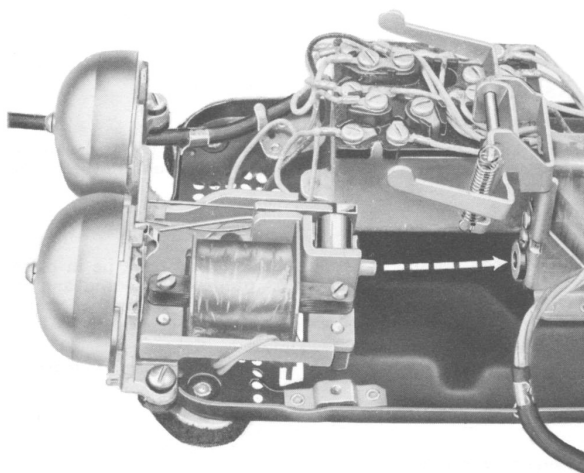


Fig. 5—Ringer Assembly

### Ringer Assembly

2.09 The C3A ringer is removed by disconnecting the black and red ringer leads from their respective terminals on the network and removing the two ringer assembly mounting screws and lockwashers.

2.10 The C2A and C4A ringers are removed by disconnecting the black, red, slate, and slate-red ringer leads from their respective terminals on the network and removing the two ringer assembly mounting screws and lockwashers.

2.11 Install ringer assembly as follows:

- (1) Place ringer leads beneath coil and dress from left to right.
- (2) Slide ringer assembly into position by locating guide pin in grommet hole of switch assembly mounting.
- (3) Align ringer assembly so that volume control knob is parallel with the slot in base. The control knob should turn freely without binding.
- (4) Replace the two ringer assembly mounting screws and lockwashers.
- (5) Connect ringer leads to their proper terminals and dress ringer leads between frame of network and right-hand ringer gong mounting to avoid interference with gong.

**Cord Assembly**

- 2.12 To disconnect either the handset or mounting cord from the set base, disconnect cord leads from their respective terminals on the network and hold ferrule of stay hook at right angles to base and remove stay hook from base slot.

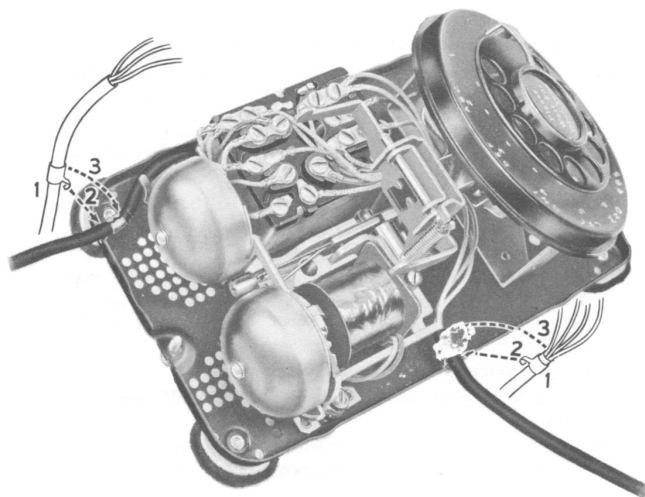


Fig. 6—Cord Assembly

- 2.13 To connect either cord to the set base:

- (1) Hold ferrule of stay hook at right angle to base.
- (2) Slide stay hook into base slot.
- (3) Tilt ferrule of stay hook parallel to base which locks stay hook in slot.
- (4) Connect cord leads to their respective terminals on the network and dress to avoid interference with moving parts and ringer gongs.

**Note:** Anchor mounting cord beneath stay hook in right-rear corner of base to prevent interference with ringer gong.

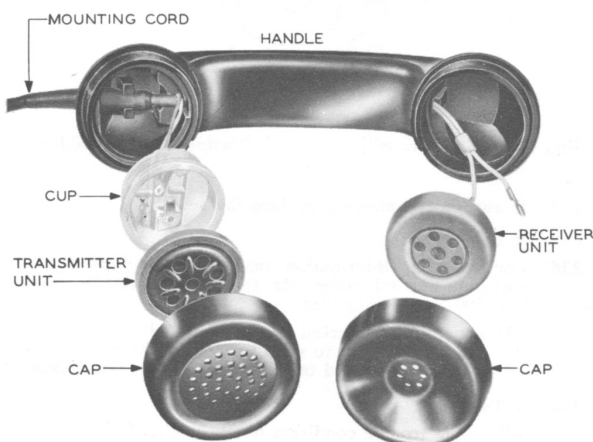
**Handset Assembly—G1 Type**

Fig. 7—Handset Assembly—G1 Type

- 2.14 When the handset cord leads are connected to transmitter cup terminals, the spade tips are pushed forward toward the raised shoulder (molded on the cup) before tightening the terminal screws.



Fig. 8—Transmitter Cup—G1-Type Handset

- 2.15 When the handset cord leads are connected to receiver unit terminals, the shank of the spade tips are placed between the guides (molded on the receiver unit) before tightening terminal screws.

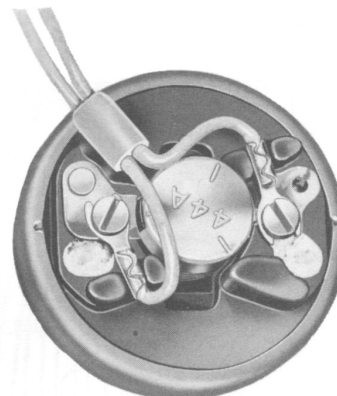


Fig. 9—Receiver Unit—G1-Type Handset

- 2.16 The receiver conductors of the H4BF cord have been lengthened 3 inches. The excess conductor length should be dressed into the transmitter bowl in loop form. Assemble the transmitter cup with the center projection inside the loop.

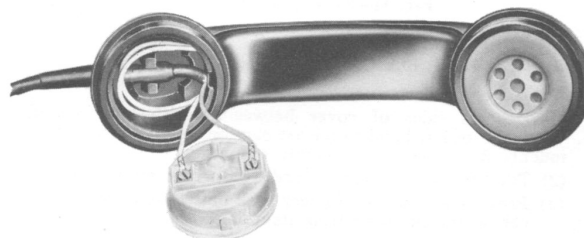


Fig. 10—Disposition of Excess Receiver Conductor Length

## 3. MAINTENANCE

## General

3.01 When the telephone set is dirty, clean the external surfaces and remove loose dust from the interior in accordance with instructions included in Section C30.012, Station Sets, Cleaning.

3.02 Make a visual inspection of the exterior and interior of the sets for obvious defects, such as loose, displaced, or broken parts; obstruction of moving parts; or the presence of foreign matter that may interfere in some way with the proper operation of the set.

3.03 Check that all terminations are secure and that screw terminal threads are not stripped. Where stripped holes are found at the terminals of the network, the regular screws shall be replaced with P-174074 self-tapping screws, or approved equivalent.

## Plungers

3.04 Both plungers shall move freely throughout their entire travel. Where binding or squeaking exists, remove housing and determine the cause. Clean plungers and plunger holes with a KS-2423 twill jean cloth moistened with KS-7860 petroleum spirits. If plungers do not move freely after cleaning, replace the plungers.

## Operating Bracket—Switch Assembly

3.05 The operating bracket shall function without binding or squeaking when removing or restoring the handset. If necessary, remove housing and determine cause. Clean the following bearing surfaces with a KS-2423 twill jean cloth moistened with KS-7860 petroleum spirits: bosses on operating bracket arms, spring anchor points, operating bracket, and shaft bearing points. Lubricate the previously cleaned bearing surfaces with No. 2 or softer graphite pencil. If cleaning and lubricating does not correct the condition, replace the set.

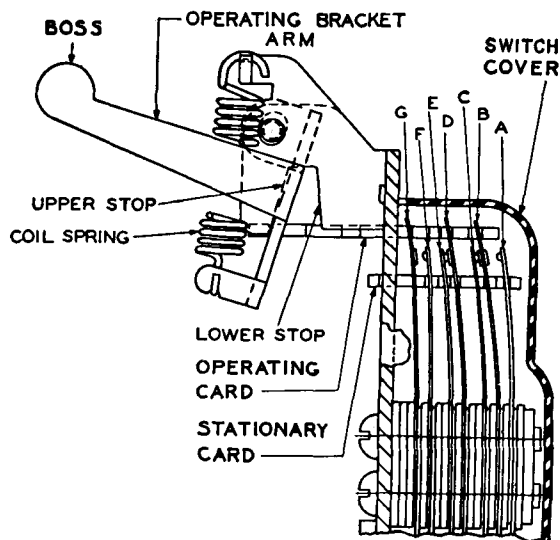


Fig. 11—Switch Assembly

## Switch Cover—Switch Contact Springs

3.06 To remove switch cover:

- (1) Depress sides of cover between thumb and second finger of left hand to release ears on sides of cover from indents in the switch assembly mounting.
- (2) Tilt bottom of cover up and away from mounting.
- (3) Press down on top of cover with index finger to release ear on top of cover from its indent.

3.07 To replace cover:

- (1) Place ear at top of cover in its indent.
- (2) Depress sides of cover and push cover forward and upward until ears on sides of cover are in their indent.

**Note:** If cover ears are broken or cannot be properly secured in their indents, change cover.

## Contact Cleaning—Switch Contact Springs

3.08 Remove housing, dial assembly, and switch cover when necessary to clean contacts with a 265B tool.

**Note:** No field maintenance shall be performed on the switch contact spring assembly except replacement of the switch cover and cleaning of contacts. Replace set when required.

## Plunger Switch Assembly—500E/F and 501F Sets

3.09 If left-hand plunger fails to lock when pulled upward to its extreme position, replace set.

3.10 If required, burnish crossbar contacts with a 265B tool.

**Note:** No field maintenance shall be performed on the plunger switch assembly except cleaning of contacts. Replace set when required.

## Dial Light Assembly—500H and 500P Sets

3.11 The 500P telephone set supersedes the 500H telephone set.

3.12 To replace lamp in the 500H or 500P set:

- (1) Remove lamp cover by turning counterclockwise and lifting.
- (2) Unscrew lamp by turning counterclockwise.
- (3) Screw new lamp firmly in place.
- (4) Replace lamp cover, turning it clockwise in its receptacle until secured.

## Feet

3.13 Feet or friction pads shall not be cut, worn, or have foreign matter imbedded in them to an extent which might scratch the surfaces on which the set is placed. If necessary, the feet may be cleaned with a cloth or stiff bristle brush.

3.14 Feet that do not meet the requirements in 3.13 shall be equipped with friction pad KS-8035. If the set is already equipped with friction pads and they do not meet specified requirements, they shall be replaced with new friction pads. Pads shall be applied as shown in Fig. 12.

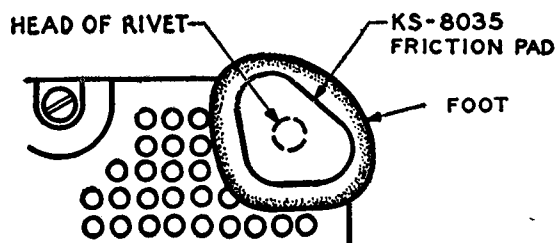


Fig. 12—Base Plate with Foot and Friction Pad Assembled

3.15 If any foot is missing, replace the set.

## Colored Sets

3.16 For ordering information on replacement parts for two-tone and full-color sets, see Section C32.544, Telephone Sets, 500 Series, Supplies.

3.17 Black neoprene-jacketed cords manufactured prior to 1951 have a tendency to stain light-colored surfaces and should not be used on colored telephone sets other than black.

## Station Testing

3.18 When the trouble condition has been rectified, make a test of the station in accordance with local practices, or as outlined in Section C61.711, Tests with Test Desk, Common Battery Stations.