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## TELEPHONE SETS — 320 TYPE — EXPLOSIVE ATMOSPHERES

### INSTALLATION, CONNECTIONS, AND MAINTENANCE

#### 1.00 GENERAL

**THINK** Before performing any work on the 320-type telephone set, the craftsman must be familiar with the section entitled *Telephone Sets, Explosive Atmospheres, General Requirements*.

**WARNING:** Telephone apparatus or wiring shall not be installed in a location where acetylene may become present in the atmosphere.

#### 2.00 IDENTIFICATION

**2.01** The 320-type set as shown in Fig. 1 consists of four major parts: handset, base, housing, and cover (see Fig 2). The latter three parts are made of cast iron or high tensile strength aluminum alloy to withstand any explosion within the set. The 320ER set is intended for manual service. The 320FR set is to be used in dial areas.

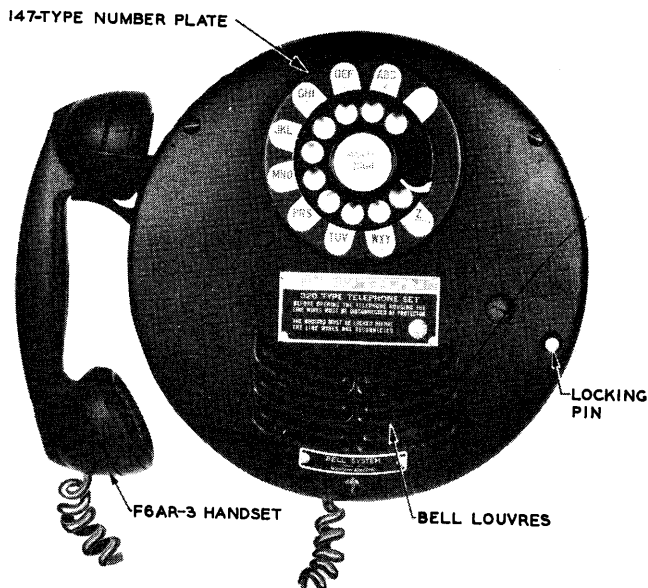


Fig. 1 — 320-type Telephone Set

**2.02** The base provides an externally threaded projection to engage corresponding threads in the housing. It also provides spring-type contact terminals for line and ground conductors (see Fig. 4).

**2.03** The housing, which screws onto the base, contains the usual telephone apparatus (see Fig. 5). In addition, two 1-megohm resistors KS-13491, List 1 are provided, one across each capacitor to discharge the circuit before the housing is removed. Three projecting studs located on the back of the housing make contact with the three spring terminals in the base, thus carrying line and ground connections into the housing. The housing is equipped with a 23A lock and two keys; the same key fits all locks. Housing cannot be locked in place unless the locking pin is engaged in the locking hole in base of set.

**2.04** The 320ER and FR telephone sets are equipped with F6AR handsets. The F6CR handset may be used where impaired transmission is experienced because of long loops. When the F6CR handset is used with the 320A or C telephone set, a 37B varistor is required. The 37B varistor prevents overheating of the HC5 receiver unit should excessive current be applied to the line. *The F6CR handset must be ordered separately.*

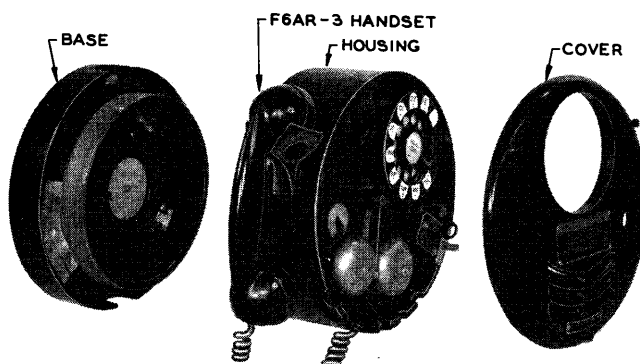


Fig. 2 — 320-type Telephone Set, Exploded View

2.05 Connect 37B varistor as follows:

- Connect varistor mounting lug to *R* terminal of induction coil, so that varistor is located over winding of the induction coil.
- Connect flexible green lead to *GN* terminal on induction coil.

2.06 The 320-type telephone set is designed for wall or pedestal mounting. The 166A backboard is used for wall installations. The 5A pedestal is used for desk installations (see Fig. 3).

2.07 It has been found desirable to supply the 320ER and FR telephone set less base assembly for maintenance purposes. The telephone set less base assembly P-10E665 has been coded as the 9A apparatus unit for manual service and the 9B apparatus unit for dial service. Fig 5 shows the 9B apparatus unit without the cover. Although these apparatus units are being made available, the complete set is still ordered as the 320ER or FR telephone set.

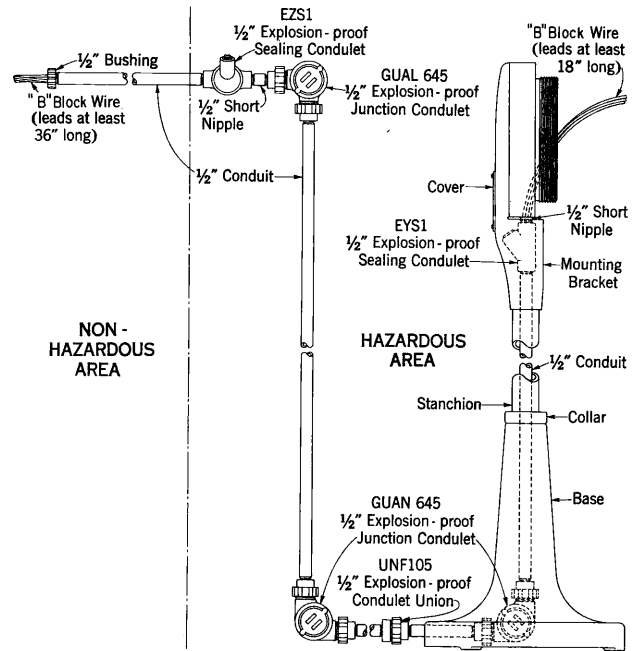


Fig. 3 — Desk Installation Using 5A Pedestal

### 3.00 CONNECTIONS

3.01 Connect local wiring to terminals in base of set (see Fig. 4). Check unused pipe plug to see that a minimum of five threads is engaged.

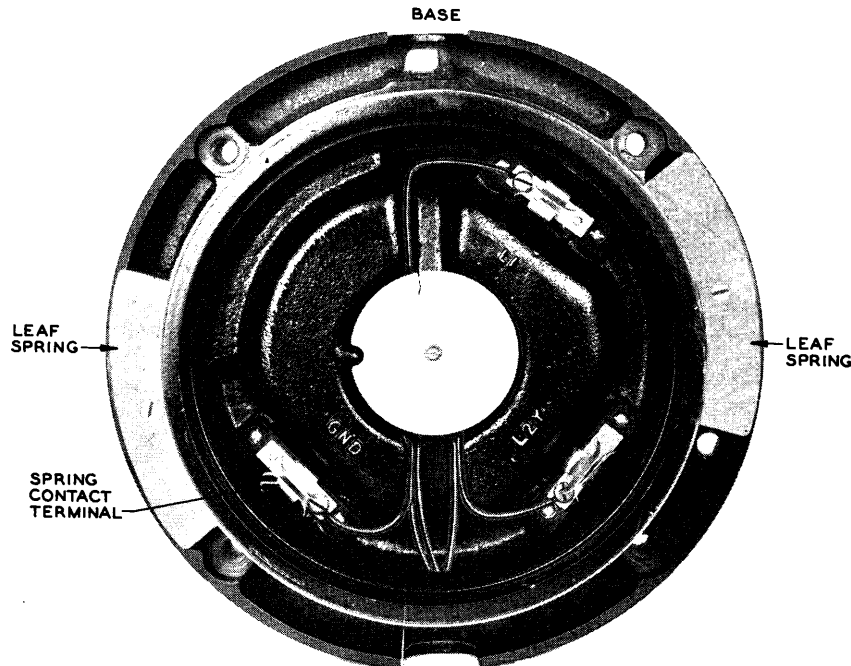


Fig. 4 — Local Wiring in Base

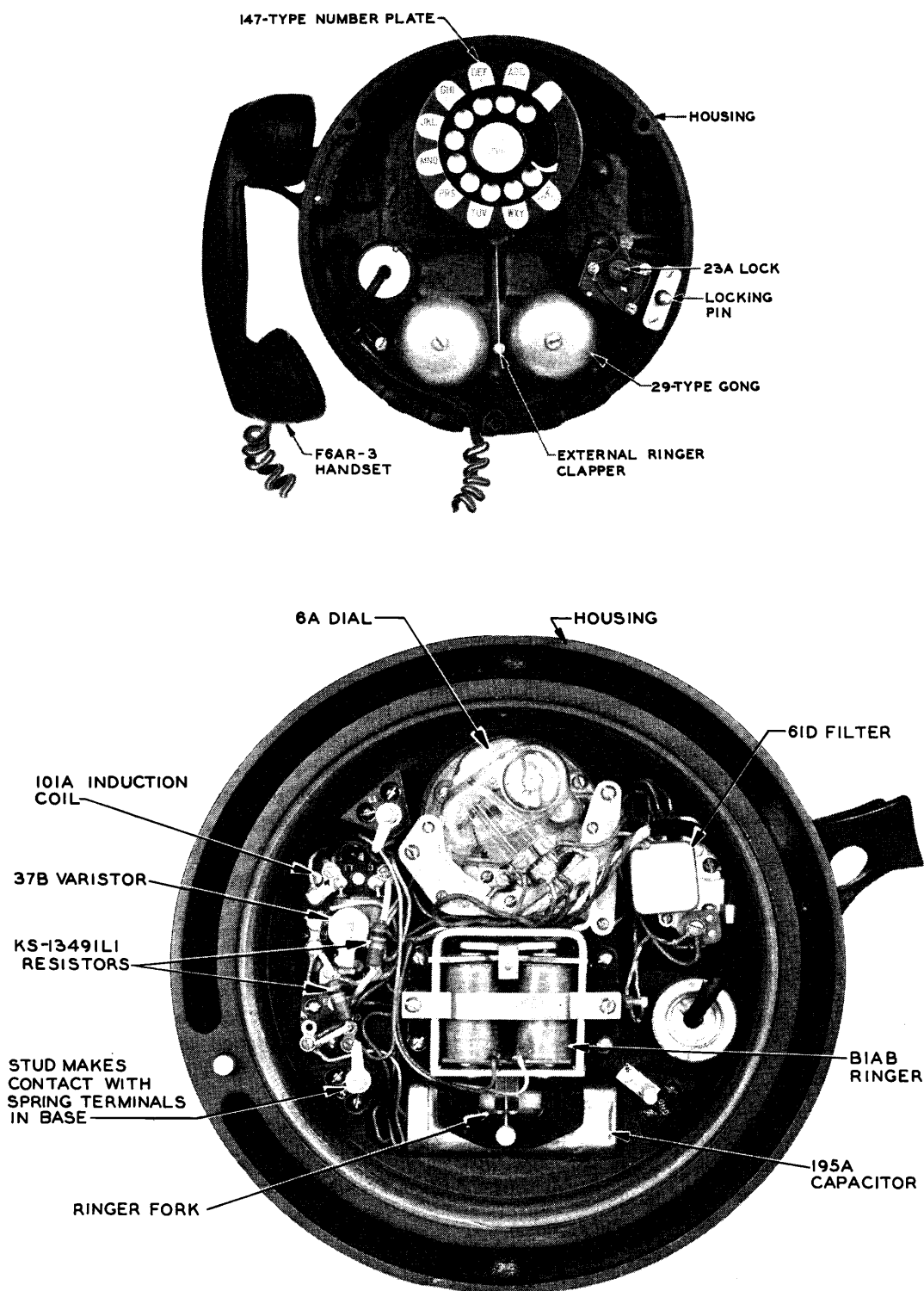


Fig. 5 — Interior and Front View of 9B Apparatus Unit

Slide special cap fitting into place over pipe plug. It is important to apply antiseize compound (P-283240 furnished with set) to threads of both base and housing. If this compound is not applied, galling and freezing of threads will be encountered. This will prohibit the proper assembly or disassembly of the set. Screw housing to base (minimum of 8 turns) until leaf springs make contact with housing. Engage locking pin and lock housing in place. The connections for the 320-type telephone set are shown in Fig. 6.

**3.02** Where grounded ringing is employed, the line and ringer connections shown in Table A should be used.

**TABLE A**  
**LINE AND RINGER CONNECTIONS**

Party	Line Connections in Base of Set	Ringer Connections in Housing of Set
Ring	Ring to L2Y Tip to L1 Ground to GND	Red lead to K Black lead to GND
Tip	Ring to L1 Tip to L2Y Ground to GND	Black lead to K Red lead to GND

#### 4.00 MAINTENANCE



*Before removing housing for any reason, be sure line wires are disconnected at protector.*

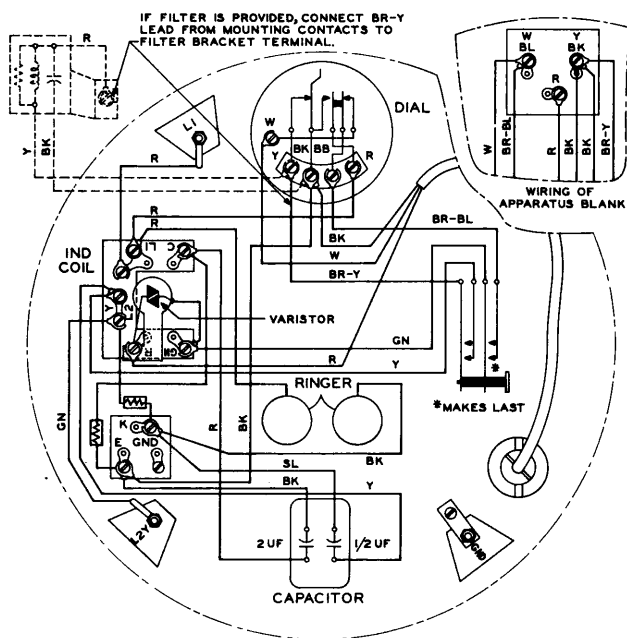
*Defects due to any cause, even though seemingly slight, shall be corrected without delay.*

#### Handset

**4.01** Only transmitter and receiver caps are replaceable. If any other part is defective, replace entire handset. If handset is replaced, tighten cord bushing until firm against housing.

#### Ringer

**4.02** To remove B1AB ringer, remove ringer mounting strap and loosen locknut and set-screw on side of ringer mounting.



**Fig. 6 - Wiring Diagram**

**4.03** To reinstall ringer, place ringer in mounting so that clapper rod is engaged and is touching both sides of the V-shaped slot of external clapper rod arm. The clapper rod may be bent slightly to accomplish this. Check to make sure ringer is resting against stops on left side and bottom of mounting bracket. Tighten setscrew and locking nut and reinstall ringer mounting strap.

**4.04** To adjust ringer gongs, remove cover assembly. Gongs must be readjusted each time ringer is loosened or replaced.

#### Capacitor

**4.05** To replace capacitor, remove ringer mounting bracket.

#### Induction Coil

**4.06** A 101A induction coil may be used temporarily until a special 101A coil is obtained. When ordering replacement coil, specify

for use with 320-type set. This coil requires a special lacquer finish.

#### Dial

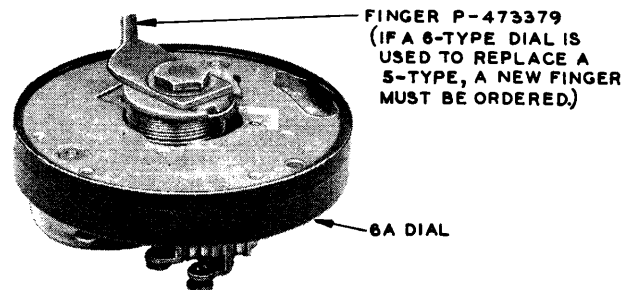
**4.07** To replace dial, remove the dial from the mounting bracket and install a new dial, less finger wheel, number plate, clamping ring, and finger stop. Transfer finger from old dial to new (see Fig. 7). If a 6-type dial is used to replace a 5 type, a new finger P-473379 is required. The filter will also require changing from 61L to 61D type. It may be necessary to install a new P-473405 (dial mounting) bracket in order to obtain suffi-

cient clearance (at least 1/16 inch) between Y terminal of 6-type dial and P-473405 bracket.

**4.08** If it becomes necessary to remove housing, be sure that threads of both the base and housing are free of grit and that antiseize compound P-283240 has been applied before re-assembly.

**4.09** Housings and bases of aluminum and cast iron may be used interchangeably.

**4.10** The 23A lock may be replaced in the field, if necessary.



**Fig. 7 — Finger P-473379**

