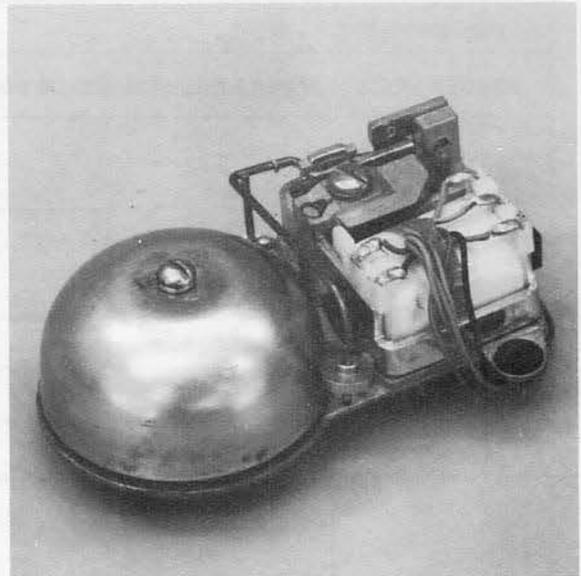


**MODEL 148 RINGER**

CONTENTS	PAGE
1. INTRODUCTION .....	1
2. GENERAL DESCRIPTION .....	1
3. REMOVAL .....	1
4. DISASSEMBLY .....	2
5. REPLACEMENT PARTS .....	2
6. ASSEMBLY .....	2
7. INSTALLATION .....	4
8. ADJUSTMENTS .....	4
Volume Control .....	4
Clapper-to-Gong Clearance .....	4
Bias Spring .....	4



AW 84-818

Figure 1: Model 148 Ringer

**1. INTRODUCTION**

**1.01** This document covers the Model 148 ringer. (See Figure 1.) A general description as well as information on removal, disassembly, replacement parts, assembly, installation, and adjustments is included.

**1.02** Whenever this section is reissued, reason for reissue will be listed in this paragraph.

**1.03** For applications of the Model 148 ringer in telephones, refer to the appropriate section in Volume 1 of the ITT Telephone Apparatus Practices Manual.

**2. GENERAL DESCRIPTION**

**2.01** The Model 148 ringer (see Figure 2) is a miniature, single-gong, straight-line, biased-type ringer equipped with a mechanical volume control and assembled on a die-cast frame. A laminated soft-iron core holds the single-wound coil in place. The ringer is designed to ring at 20 or 30 Hz.

**2.02** The armature and clapper assembly is spring-mounted to the ringer frame. The fluctuating magnetic field produced by the coil causes the armature to vibrate and the clapper to strike the gong. Increased sensitivity is provided by biasing the armature with a small permanent magnet.

**2.03** The ringer is mounted on two shock-absorbing rubber grommets located on the ringer frame.

**2.04** Two variations of the Model 148 ringer are available. The 000148-ABA ringer is a straight-line, biased-type ringer designed to ring at 20 Hz or 30 Hz. The 000148-DBA ringer is identical to the 000148-ABA except the ringer can be silenced by means of the volume control. Refer to Table A for ordering information.

**3. REMOVAL**

**3.01** To remove the ringer from the telephone, proceed as follows:

- (a) Remove the telephone housing.
- (b) Remove any telephone components that may obstruct access to the ringer.

TABLE A  
ORDERING INFORMATION

CODE NUMBERS			
RINGER CODE NUMBERS ARE FORMED IN TWO STEPS AS FOLLOWS:			
(1) Ringer Model Number (See Part 1)		000148	ABA
(2) Ringer Style (See Part 2)			
PART 1 RINGER MODEL NUMBER		PART 2 RINGER STYLE	
CODE	DESCRIPTION	CODE	DESCRIPTION
000148	Model 148 Ringer	ABA	Straight-Line, Biased-Type Ringer With Volume Control
		DBA	Straight-Line, Biased-Type Ringer With Volume Control Silencer

AW 84-188

- (c) Disconnect the ringer leads.
- (d) Loosen the two mounting screws and lift the ringer from the telephone base.

**4. DISASSEMBLY**

**4.01** To disassemble the ringer, proceed as follows:

- (a) Loosen and remove the screw that holds the gong to the ringer frame.
- (b) Remove the gong and the resonator.
- (c) Using a permanent marker, place a reference mark on the magnet to ensure that proper polarity is maintained during reassembly. The end of the magnet nearest the armature and clapper assembly must attract the north-seeking pole of a compass.
- (d) Loosen and remove the two screws that hold the armature and clapper assembly to the ringer frame.
- (e) Lift the armature and clapper assembly from the ringer frame.

- (f) Loosen and remove the screw that holds the retaining plate to the ringer frame. Remove the retaining plate.

- (g) Remove the magnet.

- (h) Lift the pole piece assembly from the ringer frame.

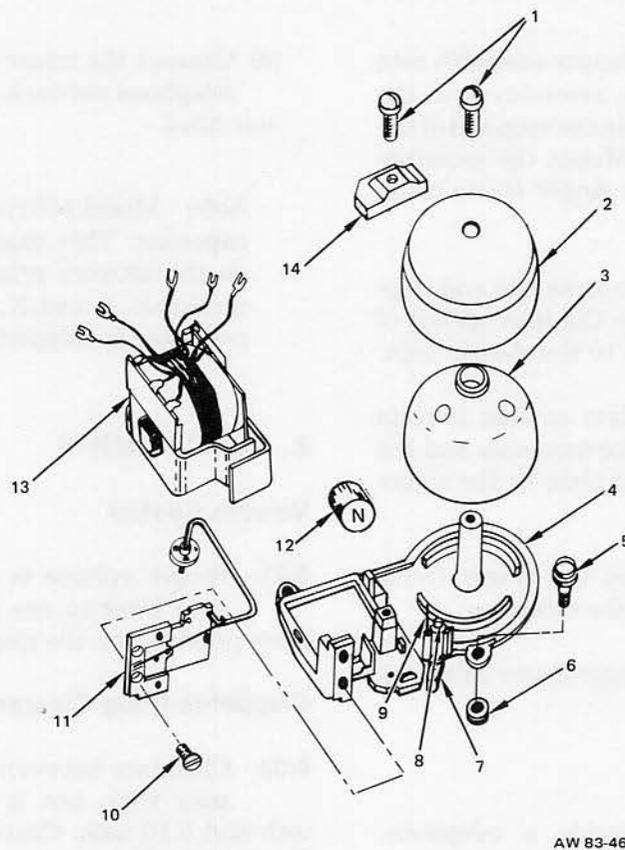
**5. REPLACEMENT PARTS**

**5.01** Replacement parts for the Model 148 ringer are listed in Table B.

**6. ASSEMBLY**

**6.01** To assemble the ringer proceed as follows:

- (a) Place the pole piece assembly on the ringer frame while ensuring proper alignment with the locating pins on the ringer frame.
- (b) Place the magnet securely against the pole piece assembly. The end of the magnet nearest the armature and clapper assembly must attract the north-seeking pole of a compass.



AW 83-46

Figure 2: Model 148 Ringer, Exploded View

TABLE B  
REPLACEMENT PARTS LIST

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			148-ABA	148-DBA
Model 148 Ringer				
1	075408-102	Lockwasher Screw (Gong And Retaining Plate Mounting)	2	2
2	075396-101	Gong	1	1
3	075372-101	Resonator	1	1
4	088480-104	Frame, Ringer Mounting	1	1
5	095966-102	Screw (Ringer Mounting)	2	2
6	088209-101	Grommet	2	2
7	180122-101	Lever, Tone	1	1
8	095972-101	Nut, Push	1	1
9	182739-101	Rod, Stop	1	1
10	063975-101	Screw (Armature And Clapper Assembly Mounting)	2	2
11	182734-101	Armature And Clapper Assembly	1	1
12	184176-101	Magnet	1	1
13	088481-107	Pole Piece Assembly	1	—
13	088481-105	Pole Piece Assembly	—	1
14	088483-101	Plate, Retaining	1	1
	095995-103	Capacitor, 0.47 MFD (Not Shown)	1	1

AW 84-189

(c) Place the armature and clapper assembly into the gap of the pole piece assembly with the clapper arm positioned outside the stop rod of the mechanical volume control. Mount the armature and clapper assembly to the ringer frame using two screws.

*Note:* When installing the armature and clapper assembly, ensure that the bias spring of the assembly is connected to the clapper arm.

(d) Position the retaining plate so that it rests against both the pole piece assembly and the magnet. Mount the retaining plate to the ringer frame using one screw.

(e) Position the resonator on the ringer frame and place the gong over the resonator.

(f) Mount the gong to the ringer frame using one screw.

## 7. INSTALLATION

7.01 To install the ringer inside a telephone, proceed as follows:

(a) Remove the telephone housing.

(b) Position the ringer on the telephone base so that the two ringer frame mounting holes align with the mounting holes in the telephone base.

*Note:* The shock-absorbing rubber grommets must be in place in the ringer frame mounting holes.

(c) Mount the ringer to the telephone base using two screws.

(d) Connect the ringer coil assembly leads to the telephone network. Refer to the telephone circuit label.

*Note:* Model 148 ringers use a series matching capacitor. This capacitor is usually provided on the network printed circuit board between terminals A and K. Additionally, a 0.47 mfd capacitor is shipped loose with the ringer.

## 8. ADJUSTMENTS

### Volume Control

8.01 Ringer volume is controlled by moving the tone lever to one of the three selector positions provided on the ringer frame.

### Clapper-to-Gong Clearance

8.02 Clearance between the clapper and the gong may vary, but it should be between 0.030 inch and 0.10 inch. Coarse adjustment is made by bending the clapper arm. Fine adjustment is made by rotating the gong.

### Bias Spring

8.03 The ringer is factory-adjusted to prevent dial tap up to 80 VDC. If ringer dial tap occurs, readjust the bias spring as follows:

(a) Remove the bias spring from the clapper arm.

(b) Add tension to the bias spring by bending it outward slightly and carefully.

(c) Hook the bias spring onto the clapper arm.