

MODEL 79939 RINGER MECHANISM

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1. INTRODUCTION

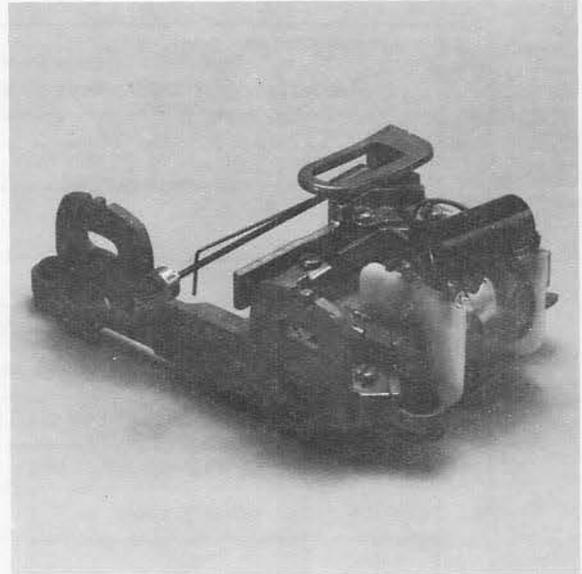
1.01 This document covers the Model 79939 Ringer Mechanism. (See Figure 1.) A general description as well as information on removal, disassembly, replacement parts, assembly, installation, and adjustments is included.

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

1.03 This ringer mechanism is used in the Model 75 loud ringing bell. Refer to Section 55-075-113 for information concerning the loud ringing bell.

2. GENERAL DESCRIPTION

2.01 The Model 79939 ringer mechanism (see Figure 2) is a frequency-selective, biased-type ringer mechanism that is used in the Model 75 loud ringing bell. The mechanism consists of a coil and core assembly, armature and clapper assembly, frame, and magnet. The ringer mechanisms are tuned to ring at different specific frequencies by using various core laminations, clapper weights, and capacitors.



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Figure 1: Model 79939 Ringer Mechanism

2.02 A laminated soft-iron core holds a double-wound coil in place. 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 gongs that are mounted on the base plate assembly of the Model 75 ringer. Increased sensitivity is provided by biasing the armature with a small permanent magnet. Adjustment for sensitivity is facilitated by a slotted adjusting cam washer and locked by a separate locking screw.

2.03 Frequency-selective ringers are divided into three classes: HA ringers are classed as harmonic, HB ringers are classed as synchrononic, and HC ringers are classed as decimonic.

2.04 The Model 79939 ringer mechanism is identified by code number stamped on the ringer frame. Refer to ordering information in Table A for an explanation of each code number and a list of available ringers.

3. REMOVAL

3.01 To remove the ringer mechanism from the Model 75 loud ringing bell, proceed as follows:

TABLE A
ORDERING INFORMATION

CODE NUMBERS			
RINGER MECHANISM CODE NUMBERS ARE FORMED IN TWO STEPS AS FOLLOWS:			
(1) Ringer Mechanism Model Number _____		079939	101
(2) Selective Frequency Code _____			
PART 1 RINGER MECHANISM MODEL NUMBER			
CODE	DESCRIPTION	SELECTIVE FREQUENCY CODE	
079939	Model 79939 Ringer Mechanism	101 Through 115	
PART 2 SELECTIVE FREQUENCY CODE			
CODE	DESIGNATOR	FREQUENCY	CLASS
101	HA1	33 1/3 Hz	Harmonic
102	HA2	50 Hz	
103	HA3	66 2/3 Hz	
104	HA4	16 2/3 Hz	
105	HA5	25 Hz	
106	HB1	30 Hz	Synchronomic
107	HB2	42 Hz	
108	HB3	54 Hz	
109	HB4	66 Hz	
110	HB5	16 Hz	
111	HC1	20 Hz	Decimonic
112	HC2	60 Hz	
113	HC3	30 Hz (Same As HB1)	
114	HC4	40 Hz	
115	HC5	50 Hz (Same As HA2)	

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- (a) Remove the cover of the loud ringing bell by removing the three screws on the base plate assembly and lifting the cover.
- (b) Disconnect the ringer mechanism leads from the terminal board.
- (c) Loosen and remove the two hex-head screws that hold the ringer mechanism to the base plate. Lift the ringer mechanism from the base plate.
- 4. DISASSEMBLY**
- 4.01** To disassemble the ringer mechanism, proceed as follows:
- (a) Loosen and remove the two screws that hold the bias spring to the ringer frame. Remove the bias spring.
- (b) Lift the armature and clapper assembly from the ringer frame.
- (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 clamping plate to the ringer frame. Remove the clamping plate.
- (e) Remove the magnet.
- (f) Loosen and remove the two screws that hold the shunt bar to the ringer frame. Remove the shunt bar.

- (g) Loosen and remove the screw that holds the slide plate and lamination assembly to the ringer frame.
- (h) Lift the slide plate and lamination assembly from the ringer frame. Slide the coil assembly from the core laminations.
- (j) Lift the slotted adjusting cam washer from the ringer frame.

5. REPLACEMENT PARTS

5.01 Replacement parts for the Model 79939 ringer mechanism are listed in Table B.

6. ASSEMBLY

6.01 To assemble the ringer mechanism, perform the following procedure:

- (a) Place the slotted adjusting cam washer in the indentation provided on the ringer frame.

(b) Slide the coil assembly onto the core laminations, and position the slide plate and lamination assembly (with the coil assembly) onto the ringer frame. Ensure that the slide plate rests flat against the ringer frame in the tracks provided, and that the slotted adjusting cam washer is positioned in the hole of the slide plate. (See Figure 2.)

(c) Mount the slide plate to the ringer frame using one screw. Final adjustment of the slide plate is provided in paragraph 8.01.

(d) Position the shunt bar on the ringer frame and mount it to the ringer frame using two screws. (See Figure 2.)

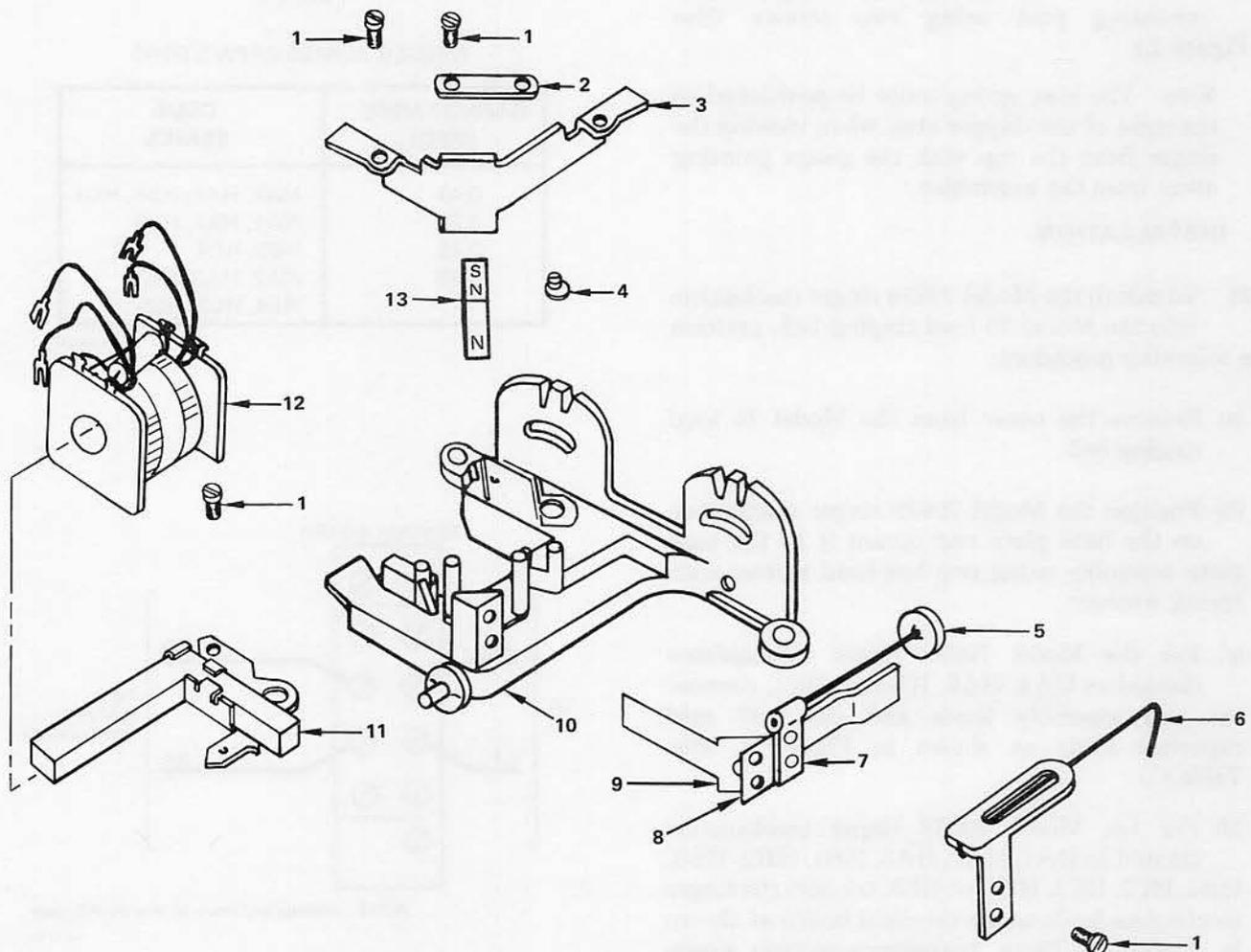


Figure 2: Model 79939 Ringer Mechanism, Exploded View

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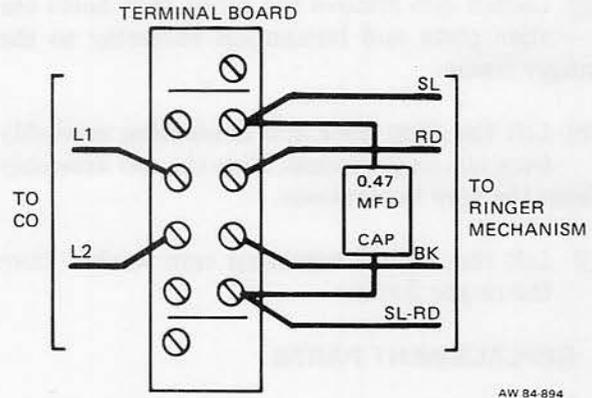
- (e) Place the magnet securely against the shunt bar. The end of the magnet nearest the armature and clapper assembly must attract the north-seeking pole of a compass.
- (f) Position the clamping plate over the magnet and mount it to the ringer frame using two screws. (See Figure 2.)
- (g) Place the armature and clapper assembly into the gap between the magnet and the ringer frame mounting post. Ensure that the armature return spring of the assembly is outside the ringer frame mounting post. (See Figure 2.)
- (h) Position the bias spring on the ringer frame mounting post, and align the mounting holes with the holes in the armature return spring and the holes in the ringer frame mounting post.
- (j) Mount the bias spring to the ringer frame mounting post using two screws. (See Figure 2.)

Note: The bias spring must be positioned to the right of the clapper arm, when viewing the ringer from the top with the gongs pointing away from the assembler.

7. INSTALLATION

7.01 To install the Model 79939 ringer mechanism into the Model 75 loud ringing bell, perform the following procedure:

- (a) Remove the cover from the Model 75 loud ringing bell.
- (b) Position the Model 79939 ringer mechanism on the base plate and mount it to the base plate assembly using two hex-head screws with spring washers.
- (c) For the Model 79939 ringer mechanisms classed as HA4, HA5, HB5, or HC1, connect the coil assembly leads and the 0.47 mfd capacitor leads as shown in Figure 3. (See Table C.)
- (d) For the Model 79939 ringer mechanisms classed as HA1, HA2, HA3, HB1, HB2, HB3, HB4, HC2, HC3, HC4, or HC5, connect the ringer mechanism leads to the terminal board as shown in Figure 4. These frequency-selective ringer mechanisms have the capacitor factory-wired to the coil. (See Table C.)



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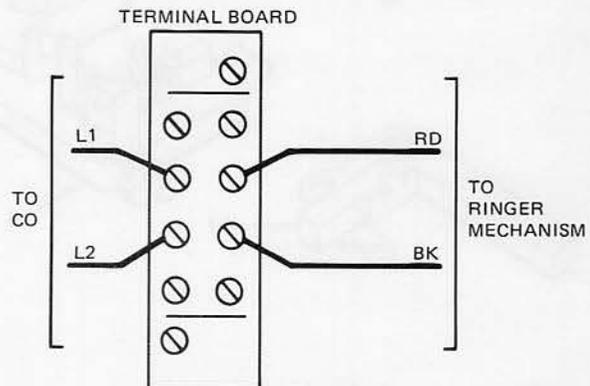
Figure 3: Terminal Board Connecting Diagram

TABLE C

RINGER SERIES CAPACITORS

CAPACITANCE (MFD)	CODE SERIES
0.47	HA4, HA5, HB5, HC1
0.25	HA1, HB1, HC3
0.15	HB2, HC4
0.08	HA2, HA3, HB3, HB4, HC2, HC5

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NOTE: Insulate and store SL and SL-RD leads.

AW 83-579

Figure 4: Terminal Board Connecting Diagram

8. ADJUSTMENTS

Slide Plate

8.01 The slide plate can be adjusted to move the core laminations closer to or farther away from the armature and clapper assembly. Adjustment is as follows:

- (a) Loosen the locking screw of the slide plate.

Note: Turning the cam washer clockwise moves the core laminations closer to the armature and clapper assembly and increases ringer sensitivity. Turning the cam washer counterclockwise moves the core laminations away from the armature and clapper assembly and decreases ringer sensitivity.

Caution: *Over-adjustment of the slide plate can introduce cross ringing (undesired ringing at a frequency other than the ringer's tuned frequency).*

- (b) Turn the slotted adjusting cam washer to move the slide plate.

- (c) When clear ringing is obtained, tighten the locking screw.

Clapper-to-Gong Clearance

8.02 If the clapper is not centered between the gongs and it causes improper ringing, the bias spring can be bent slightly to provide coarse adjustment. The gongs can be rotated to provide fine adjustment.

Bias Spring

8.03 For frequency-selective ringer mechanisms, the bias spring must rest against the clapper arm at all times. Move the clapper arm to rest against the right-hand gong and ensure that the bias spring remains in contact with the clapper arm. The bias spring can be bent slightly, but carefully, if adjustment is required.

TABLE B
REPLACEMENT PARTS LIST

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED														
			HA1	HA2	HA3	HA4	HA5	HB1	HB2	HB3	HB4	HB5	HC1	HC2	HC3	HC4	HC5
		Model 79939 Ringer Mechanism															
1	180221-101	Screw	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
2	075563-101	Plate, Clamping	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	088492-101	Bar, Shunt	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	075560-101	Washer, Eccentric	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	183134-101	Weight	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
5	183134-102	Weight	-	-	1	-	-	1	-	1	-	1	-	-	-	-	-
5	183134-103	Weight	-	1	-	-	-	-	1	-	-	-	-	-	1	1	1
5	183134-104	Weight	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-
5	183134-105	Weight	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-
6	183923-101	Damper Spring And Holder Assembly	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	081056-103	Clapper Stem Assembly	-	1	-	-	-	-	-	1	1	-	-	-	1	-	1
7	081056-101	Clapper Stem Assembly	1	-	1	1	1	1	1	-	-	1	1	1	-	1	-
8	075587-101	Reed	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-
8	075587-103	Reed	-	-	1	-	-	-	-	-	-	1	-	-	1	-	-
8	075587-104	Reed	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-
8	075587-105	Reed	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-
8	075587-106	Reed	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
8	075587-107	Reed	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
8	075587-108	Reed	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
8	075587-109	Reed	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
9	075565-101	Armature	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	088501-101	Frame, Mounting	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11	075578-101	Slide Plate And Lamination Assembly	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	185480-104	Coil Assembly	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-
12	185480-105	Coil Assembly	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-
12	185480-106	Coil Assembly	-	1	-	-	-	-	-	-	1	-	-	-	-	-	1
12	185480-107	Coil Assembly	-	-	1	-	-	-	-	-	-	1	-	-	1	-	-
12	185480-108	Coil Assembly	-	-	-	1	1	-	-	-	-	1	1	-	-	-	-
13	075562-102	Magnet	-	1	1	-	-	-	1	1	1	-	-	1	-	1	1
13	075562-103	Magnet	1	-	-	1	1	1	-	-	-	1	1	-	1	-	-