

## RINGERS—B-TYPE MAINTENANCE

### 1. GENERAL

**1.01** This section covers maintenance, adjustment procedures, and requirements for B-type ringers, including 592-type subscriber sets (loud ringing bells).

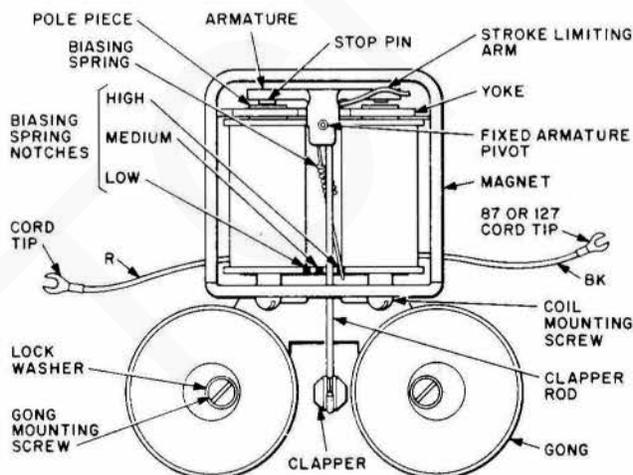
**1.02** This section is reissued to:

- Add B1AB, B2AL, and B3A ringers
- Show B1E, B3B, B3C, and 592-type subscriber sets (loud ringing bells) MD
- Revise Tables B and C

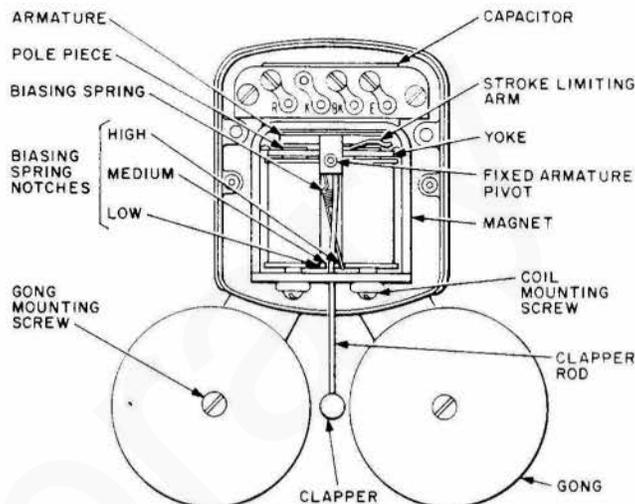
Since this reissue covers a general revision, arrows have been used to indicate significant changes only.

### 2. MAINTENANCE

**2.01** Fig. 1 shows a typical B-type (B1AL) ringer and its component parts. Fig. 2 illustrates a typical 592-type (MD) subscriber set (loud ringing bell).



**Fig. 1—B1AL Ringer**



**Fig. 2—592-Type (MD) Subscriber Set**

**2.02** Some B-type ringers have red-striped markings on the coil covers. These ringers have lower impedance than the unmarked ringers and increased susceptibility to inductive noises on grounded ringing party lines. For this reason it may be necessary to replace them with a regular unmarked B-type ringer. For more complete information, refer to the section covering inductive noise.

**2.03** If the armature pin of a B-type ringer does not function properly, replace ringer. Check by feel and visual inspection for binding, excessive wear, or end play.

**2.04** The B-type ringer has a fixed air-gap. However, inspection should be made for missing or defective stop pins.

#### Gong Adjustment and Gong Attachments

**2.05** Operate armature and see that the clapper strikes each gong to produce a single clear tone. The clapper must not rest against either gong.

**2.06** To reduce the loudness of B-type ringers, the stroke of the armature may be adjusted or a 100B (MD) gong attachment may be used.

(a) To reduce stroke, use long-nose pliers for bending and proceed as follows:

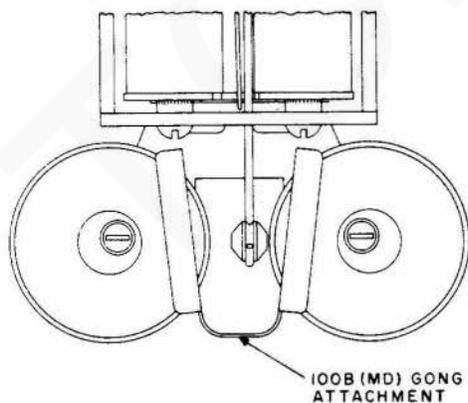
- (1) Place pliers on stroke limiting arm approximately 1/8-inch from point where it enters the armature.
- (2) Bend arm against yoke until the stop pin on the other side strikes the pole piece.
- (3) Back off arm until desired volume is attained.
- (4) Move pliers to the middle of the arm and bend there for final adjustments.



**Do not reduce airgap below 0.004 inch. Use a 127A gauge to measure on side opposite stroke limiting arm. Do not use this method to silence ringer. To silence, disconnect ringer.**

(b) The 100B (MD) gong attachment is installed as shown in Fig. 3.

(c) If the 100B (MD) gong attachment is used on the ringer in a 531-type (MD) subscriber set, the open end of the attachment must be located in the opposite direction to the one shown in Fig. 3 to prevent interference between the attachment and the subscriber set cover.

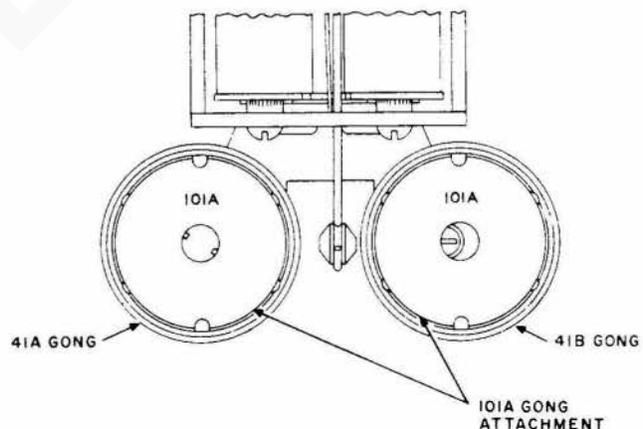


**Fig. 3—100B (MD) Gong Attachment on B-Type Ringer**

**2.07** If, with full armature travel, the ringer does not provide sufficient loudness, a 101A gong attachment (with knockout in place) may be added to the 41A gong. For a further increase in loudness, add a 101A gong attachment (with knockout removed) to the 41B gong.

**2.08** To install a 101A gong attachment, proceed as follows:

- (1) Remove screw and lockwasher attaching gong.
- (2) Place gong attachment shell next to gong with triangular openings in line with the clapper.
- (3) Replace screw, lockwasher, and flat washer (furnished with gong attachment).
- (4) Adjust gongs for proper clapper clearance (see 2.05).
- (5) Tighten gong mounting screw, ensuring that the attachment shell does not touch the gong.
- (6) Place the attachment cover on the shell and bend tabs over cover as shown in Fig. 4.



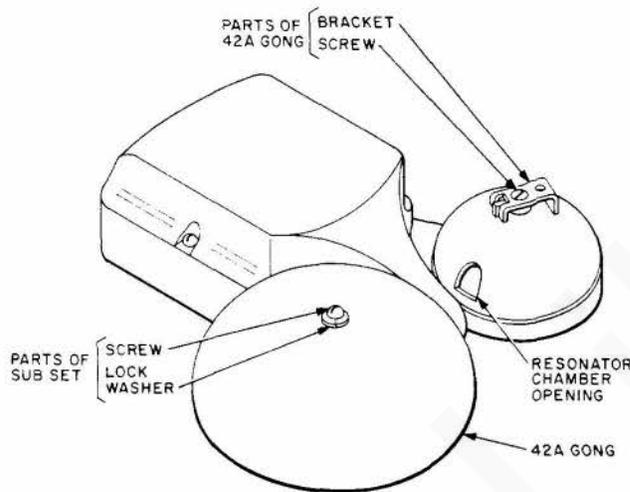
**Fig. 4—101A Gong Attachment on B-Type Ringer**

**2.09** If a buzzer tone is desired, change the ringer as follows:

- (1) Spread gongs as far apart as possible.

- (2) Reduce armature stroke (see 2.06) until clapper does not strike gongs.
- (3) If the above adjustments cannot be made, remove the gongs.

**2.10** The 592-type (MD) subscriber set is normally equipped with 26B (MD) 3-inch gongs. When a louder signal is desired, 42A 4-inch gongs may be used. The 42A gongs are mounted on the set by means of extension brackets, (furnished with gongs) as shown in Fig. 5.



**Fig. 5—Method of Assembling 42A Gong to 592-Type (MD) Subscriber Set**

#### Bias Spring Position

**2.11** B-type ringers, sent to the field in instruments or shipped separately, have the bias spring located in the high notch as shown in Fig. 1. Two exceptions, the B3A and B3C (MD) have the bias spring in the low notch.

**2.12** Table A illustrates proper notch for bias spring to prevent bell tap and cross ring, and to provide proper ringing margin. Where the conductor loop resistance is about 1000 ohms, ring may be unsatisfactory. To correct, place bias spring in next lower notch.

**2.13** Obtain a ring for ringing test in accordance with local instructions. Ringing should be

**TABLE A**

CLASS OF SERVICE	BIAS SPRING NOTCH
<b>BRIDGED RINGING</b>	
Individual Line and PBX Stations*	High
Nonselective Party Lines†	Medium
<b>Grounded Ringing</b>	
2-party Flat and Message Rate	High
4-party Semiselective‡	High
4-party Selective and 8-party Semiselective	Low
Divided Code‡	Medium

\* When three or more ringers are bridged across the line and ringer operation is unsatisfactory, placing bias spring in medium notch on all ringers may clear the trouble.

† If ringer buzzes on short loop installations, when the party of opposite polarity is being called, place bias spring in high notch. If ringer still buzzes or fails to ring properly, replace ringer.

‡ Where four ringers are connected between one side of line and ground, and ringer operation is unsatisfactory, placing bias spring in medium notch on all ringers on that side of line may clear the trouble.

clear and steady. Observe during dialing that bell does not tap.

**2.14** If bell tap is encountered with bias spring in medium notch and ringer is poled properly, move bias spring to high notch. Repeat ringer test and, if ringer fails to operate properly, change ringer.



**Make certain line and ringer are poled correctly. Correct bias spring tension has been set at the factory. Do not bend bias spring.**

#### B-Type Ringers—Replacements For Numbered-Type Ringers

**2.15** Table B gives information about B-type ringers and lists the numbered type they replace.

TABLE B

RINGER	DC RESISTANCE OHMS	BIASED OR UNBIASED	CAPACITOR UF	GONGS	REPLACES MD RINGERS
B1D	4600	B	1/2	29A recm†	6L, 6JA, 8JA, 49B
B1E (MD)				26A recm†	66JA
B1F		U		38B, 45B	
B3A	2000	B		41A, 41B†	
B3B (MD)				29A recm†	6A, 8A
B3C (MD)					
B4A	510/510		1	36A or 37A recm†	78AB
B1AB	4600		1/2	41A, 41B†	78A, 78JA, 68L, B1A, B1AA 8AA, 78AA, B2A
B1AL*					
B2AL					

\* B1AL ringer and P-340698 bracket replace the 68L ringer. The original screws (or two P-205552 screws) are used to mount bracket P-340698 to original mounting bracket. Two P-926619 screws and two P-221613 lockwashers are required to fasten B1AL ringer to bracket P-340698.

† Gongs and gong mounting hardware not furnished and must be ordered separately.

‡ Can be equipped with two 40C or one 40D and one 40E gongs when specified in the order.

#### Distinctive Tones

2.16 Table C lists types of gongs and gong combinations which may be used at locations where two or more adjacent ringers require distinctive tones.

2.17 Gongs of the 41-type equipped with the 101A gong attachments as resonators are recommended for customers with impaired hearing.

TABLE C

CHOICE	GONGS FOR B-TYPE RINGERS
1	1 No. 40A (MD) and 1 No. 41A regular brass
2	1 No. 40B (MD) and 1 No. 41B regular brass
3	Same as above with 100B (MD) gong attachment
4	1 No. 40D and } aluminum 1 No. 40E
5	2 No. 40C brass
6	1 No. 41A and } with one or two 1 No. 41B } 101A gong attachments
7	2 No. 41A or } with or without one or two 2 No. 41B } 101A gong attachments
8 (Buzzer)	Gongs spread apart so clapper does not strike them (see 2.09)