

B-TYPE RINGERS MAINTENANCE

1. GENERAL

1.01 This section covers the maintenance, adjustment procedures, and requirements for B-type ringers including loud ringing bells. This section is issued to cover the following:

- (a) To include all information on B-type ringers formerly shown in Section C31.205, Ringers and Loud Ringing Bells.
- (b) To add new position for 100B gong attachment on B-type ringer in the 531A set.
- (c) To include information on "Red Stripe" B-type ringer.
- (d) To add new coded B-type ringers to be used as replacement of numbered-type ringers.

1.02 This section is reissued to convert it to letter size and to incorporate material from the addendum in its proper location. In the process of this conversion, marginal arrows have been omitted.

Description

1.03 The following figures show typical B-type ringers and the component parts. The B1AL ringer is similar to the B1A except that it has longer leads and can be mounted with two screws. B2AL is similar to B1AL except that one coil has two windings arranged for tip-party identification service.

Red Stripe Ringers

1.04 B-type ringers having red stripe markings on both coils are tested and adjusted the same as regular B-type ringers. Since they are lower in impedance and increase the susceptibility to inductive noises on grounded ringing party lines, it may be necessary to replace them.

Aluminum Base Telephone Set

1.05 B1A and B1AL ringers which have been adjusted to operate in telephone sets having aluminum bases are marked with the designation "A" following the date marked on the cover. B1A and B1AL ringers ordinarily carried for replacement purposes are adjusted to operate on steel bases and are susceptible to bell tapping and cross ringing when mounted on aluminum bases. In general, the next higher tension notch for the biasing spring will take care of the situation. If the replacement ringer does not give satisfactory results, another ringer may be tried (if available) otherwise the telephone set should be replaced.

2. MECHANICAL REQUIREMENTS

Armature Bearing Check

2.01 If the armature pivot pin of a B-type ringer does not function properly, replace the ringer. Check by feel and visual inspection for binding, etc.

Airgap

2.02 The B-type ringer has a fixed airgap, however, inspection should be made for missing or defective stop pins.

3. GONG ADJUSTMENT AND GONG ATTACHMENTS

Gong Adjustment

3.01 Operate armature and see that clapper ball strikes each gong so as to produce a single clear tone but does not rest against either gong including the 592A loud ringing bell. The clapper ball may touch the gong lightly on the 592B loud ringing bell.

Adjustments for Reduced Loudness of Signal

3.02 Reduce the stroke of B-type ringers by bending the stroke limiting arm, which projects from the armature, against the yoke until the armature stop pin on the other side strikes the pole piece. Then back off until proper volume is obtained. Use long-nose pliers for bending and do not bend the arm closer than 1/8 inch from the point where it enters the armature; make final adjustment by bending it near the middle; readjust gongs to meet requirement in 3.01.

Caution: Do not reduce airgap below 0.004 inch (using 127A gauge), measure on the side opposite the stroke limiting arm. If ringer is to be silenced, do not use this method. Disconnect the ringer.

100B Gong Attachment

3.03 Install the 100B gong attachment on B-type ringers as shown in Fig. 3. This gong attachment should not be used with 41-type gongs equipped with 101A gong attachments.

Note: The 100B gong attachment, when installed on the ringer in the 531-type set, shall have the open end located in the opposite direction to the one shown in Fig. 3. This will prevent interference with the attachment when the cover is fastened to the set.

101A Gong Attachment

3.04 If with full armature travel the ringer does not provide sufficient loudness, a 101A gong attachment with the cover solid, that is with the knockout in the center of the cover in place, may be added to a 41A gong, or a 40A gong may be replaced by a 41A and the attachment added.

3.05 A 41A gong should be assembled with the 101A gong attachment shell (with the cover off) next to the gong then the flat washer provided with the attachment and the lock washer and screw from the gong. The screw should be turned down until it is possible to rotate the gong with some friction. The gongs should then be adjusted for clapper clearance as in 3.01. When the proper clapper clearance is obtained, the 101A gong attachment shell should be rotated to a position so that the triangular openings in the side of the shell are in line with the clapper. The gong mounting screw should then be set up tight. The gong attachment should not touch the sides of the gong after the screw is tightened. After these adjustments are made the cover should be placed on the shell of the attachment and the tabs on the shell be bent over the cover to hold the latter in place, as shown in Fig. 4.

3.06 If a 41A gong with a 101A gong attachment and a 40B or 41B gong does not provide sufficient loudness, a 101A gong attachment with the hole in the cover, that is with the knockout in the center pushed out, may be added to a 41B gong, or a 40B gong may be replaced by a 41B and the attachment added. The assembly and adjustment of the 41B gong and 101A gong attachment is the same as given in 3.05 for the 41A gong.

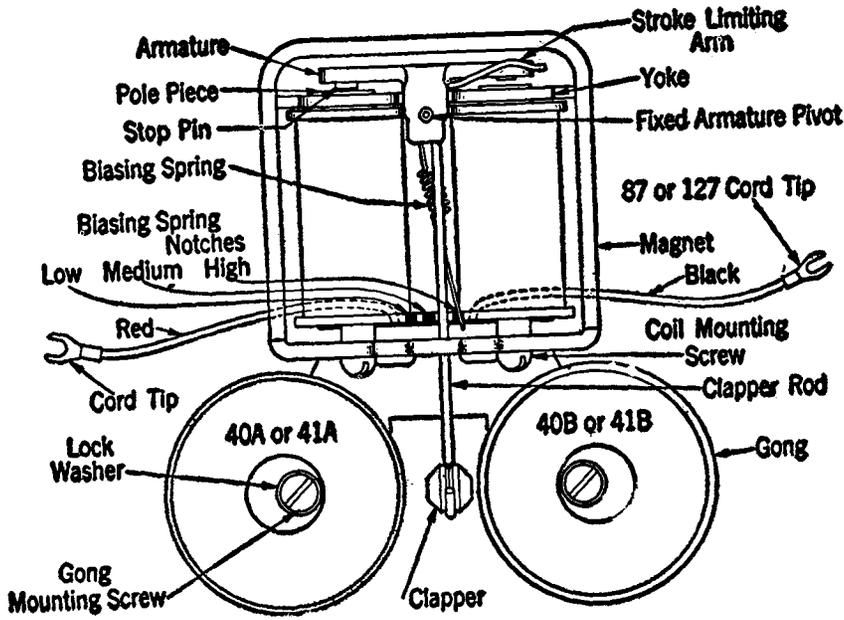


Fig. 1 - Typical B-Type Ringer

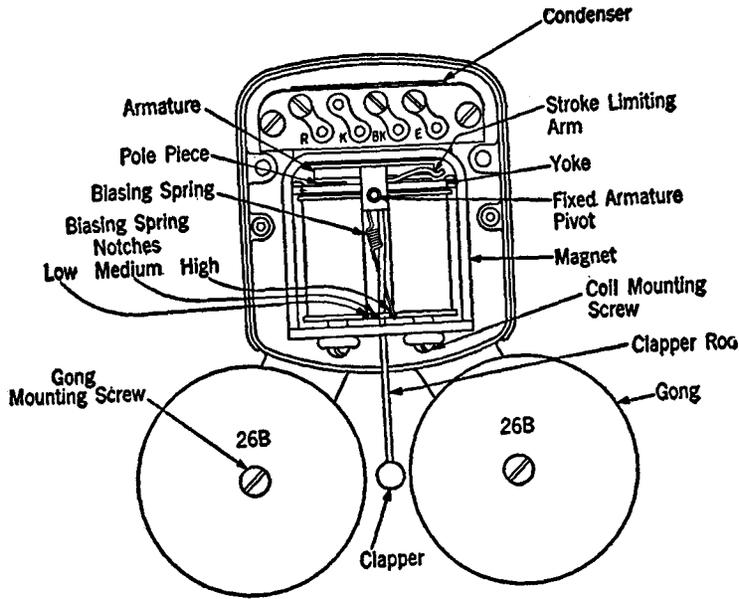


Fig. 2 - 592-Type Subscriber Set (Loud Ringing Bell)

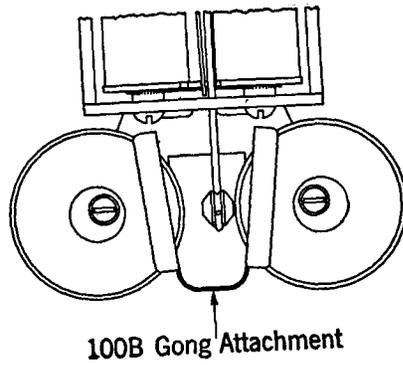


Fig. 3 - 100B Gong Attachment on B-Type Ringer

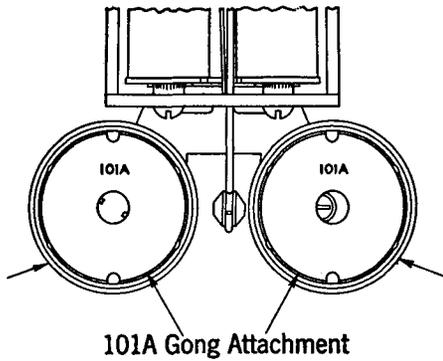


Fig. 4—101A Gong Attachment

Note: It is important in order to obtain an increase of volume with the 41-type gong and 101A gong attachment to use the solid cover with the 41A gong and the cover having a hole with the 41B gong.

Buzzer Tone—B-Type Ringers

3.07 If a buzzer tone is desired with B-type ringers, the gongs should be spread as far apart as possible and the armature stroke reduced as in 3.02 until the clapper does not strike either gong when ringing current is applied. If this adjustment cannot be made, the gongs may be removed.

Loud Ringing Bell—592-Type

3.08 While the 592-type subscriber set is normally equipped with 26B (3 inch) gongs, 42A (4 inch) gongs may be used with it when a louder signal is desired. These gongs are mounted on the set by means of the extension brackets, which are provided with the gongs, in the manner shown in Fig. 5.

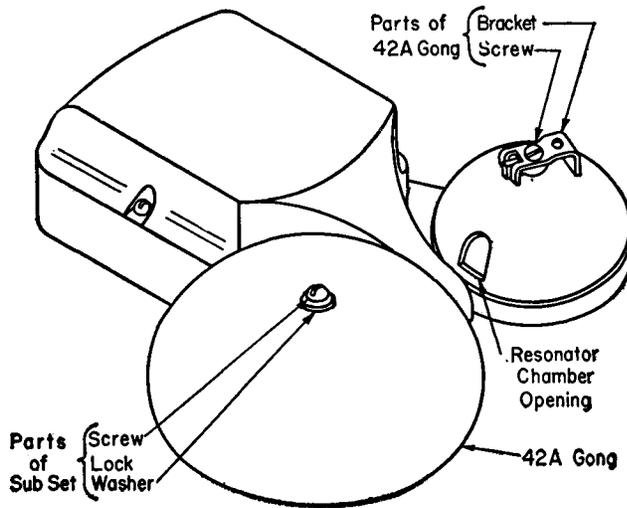


Fig. 5—Method of Assembling 42A Gong to 592-Type Subscriber Set

Distinctive Signals for Adjacent Ringers

3.09 Where two or more ringers require distinctive signals, select gong arrangements from the following table.

Table A

<u>Choice</u>	Sets with B-Type Ringers
1. 1 No. 40A and 1 41A}	Regular Brass
2. 1 No. 40B and 1 41B}	
3.	Same as above with 100B Gong Attachment
4. 1 No. 40D}	Aluminum
1 No. 40E}	
5.	2 No. 40C, Brass
6. 1 No. 41A}	with one or two 101A Gong Attachments
1 No. 41B}	
7. 2 No. 41A}	with or without one or two 101A Gong Attachments
2 No. 41B}	
8.	Spread gongs apart so that clapper does not strike them when ringing current is applied. If clapper hits with gongs farthest apart, reduce armature travel, if permissible, or remove gongs.

Note 1: Any other combination of these gongs, with or without the 100B gong attachment, may be used. Do not use 100B gong attachment on 41-type gongs equipped with 101A gong attachment.

Note 2: 41-type gongs with resonators recommended for subscribers with impaired hearing.

4. BIASING SPRING POSITION

4.01 All B-type ringers sent to the field whether installed in instruments or shipped loosely for repair purposes will have the biasing spring located in the high tension notch (see Figs. 1 and 2).

4.02 The following table illustrates the best possible location for the biasing spring to prevent bell tapping, and cross ringing and to provide margin for proper ringing.

Caution: Make certain bell is poled correctly and never bend biasing spring.

Table B

<u>Class of Service</u>	<u>Biasing Spring Notch</u>
<u>Bridged Ringing Services</u>	
Individual Line and PBX Stations except as noted in Note 1	*High
Nonselective Party Lines (Note 3)	*Medium
<u>Grounded Ringing Services</u>	
2-Party Flat and Message Rate	*High
4-Party Semiselective (except as stated in Note 2)	*High
4-Party Selective } 8-Party Semiselective }	Low
Divided Code Ringing (Note 3)	*Medium

*Where the conductor loop resistance is about 1,000 ohms or more, difficulty may be encountered in obtaining a satisfactory ring. This may be overcome by placing the biasing spring in the next lower notch.

Note 1: When three or more ringers are bridged across the line and ringer operation is unsatisfactory, placing the biasing spring in the medium notch on all ringers may clear the trouble.

Note 2: Where four ringers are connected between the same side of line and ground, and ringer operation is unsatisfactory, placing the biasing spring in the medium notch on all ringers on the side of the line may clear the trouble.

Note 3: If the ringer buzzes on short loop installations when the party of opposite polarity is being called, place the biasing spring in the high tension notch. If it still buzzes or fails to ring, replace the ringer.

4.03 Obtain a ring for the ringing test as outlined in Section C31.204, Ringers and Loud Ringing Bells—General Maintenance and Ringing Tests, or in accordance with local instructions. Ringing should be clear and steady. Observe during the dialing that the bell does not tap.

4.04 If bell tapping is encountered with biasing spring in medium tension notch and the ringer is poled properly, increase biasing spring tension by moving to a high notch. Repeat ringer test and if ringer fails to operate properly, change ringer.

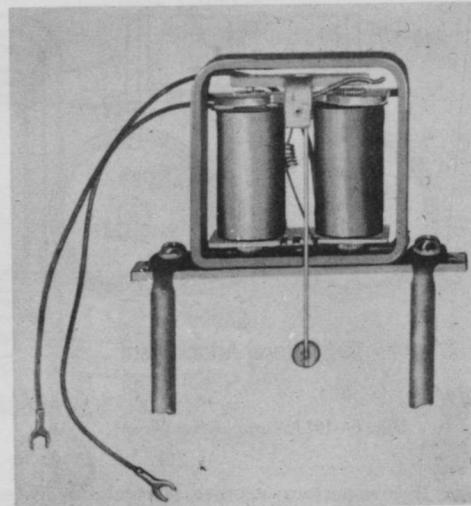


Fig. 6—New Typical B-Type Ringer for Replacing a Numbered-Type Ringer

5. B-TYPE RINGERS—REPLACING NUMBERED RINGERS

5.01 The following table gives information about coded B-type ringers and the codes of numbered ringers they replace. The ringers may be mounted interchangeably with the ringers which they replace with the same mounting screws and same gongs. The gongs, gong screws, and ringer mounting screws will not be furnished as part of the new ringers. They must be ordered separately if required (see Fig. 6).

Table C

Code Number of Replaced Ringers	Replacement Ringer	DC Res Ohms	Biased or Unbiased	Condenser Capacity mf	Gongs	See Note
6L, 6JA	B1D	4600	B	1/2	29A	1,2
66JA	B1E	4600	B	1/2	26A	1,2
38B, 45B	B1F	4600	U	1/2	26A	3
8A	B3B	2000	B	1	29A	
8A	B3C	2000	B	—	29A	4
78AB	B4A	510/510	B	1	29A	5
52A	B5A	2000-I } 2000-NI }	B	—	29A	6
68L	B1AL (Bracket) (P-340698)		B	1/2	29A	7

Note 1: The B1D and B1E to be used on common battery lines but not for 4-party full selective service with tube.

Note 2: B1D and B1E meet requirements of the B1A ringer.

Note 3: B1F is intended for use on magneto lines no biasing, and is equipped with a feather spring.

Note 4: Used with tube for 4-party selective or 8-party semiselective.

Note 5: B4A is intended for use in the 584DG subscriber set (component of 126A-1 teletype set).

Note 6: Use on local battery magneto 4-party full selective.

Note 7: 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 required to fasten B1AL ringer to bracket P-340698.