8-TYPE BUZZERS
REQUIREMENTS AND ADJUSTING PROCEDURES

1. GENERAL

1.01 This section covers 8-type buzzers.

1.02 This section is being reissued to incorporate material from the addendum in its proper location.

1.03 Reference shall be made to Section 020-010-711 for additional information necessary for the proper application of the requirements listed herein.

*1.04 **Asterisk:** Requirements are marked with an asterisk when to check for them would necessitate the dismantling of apparatus or would affect the adjustment involved or other adjustments. No check need be made for these requirements unless the apparatus or part is made accessible for other reasons or its performance indicates that such a check is advisable.

2. REQUIREMENTS

2.01 **Cleaning:** The buzzer assembly shall be clean.

2.02 **Lubrication:** The buzzers shall not be lubricated.

2.03 **Mounting:** The buzzer shall be fastened securely to the switchboard or other piece of apparatus.

*2.04 **Adjusting Screw Torque:** Figs. 1 and 2—The adjusting screw shall be sufficiently tight to insure that it will not be turned inadvertently, but shall not be so tight as to prevent its being turned through the complete range when the knob is turned by hand.

Gauge by feel.

*2.05 **Adjusting Screw Arm Position (Buzzers Equipped With an Adjusting Screw Arm):** Fig. 1—With the buzzer held in the position in which it is normally mounted and with the adjusting screw arm resting against the underside of the adjusting screw bracket stop, the clearance between the high stop pin on the armature and the core shall be

Approx 0.001 inch.

This requirement is met if, when the adjusting screw is turned in a counterclockwise direction to the limit of its stroke (with the adjusting screw arm against the underside of the stop) and then backed off approximately 1/8 inch, the clearance between the high stop pin and the core is

Approx 0.002 inch.

Use the No. 74D gauge.

*2.06 **Position of Adjusting Screw Locknuts (Buzzers Not Equipped With an Adjusting Screw Arm):** Fig. 2—With the adjusting screw in its outermost position and with the armature operated manually, the low stop pin shall be in contact with the core and the tip of the adjusting screw shall just touch the armature.

*2.07 **Tightness of Locknuts:** Figs. 1 and 2

(a) **Buzzers Equipped With an Adjusting Screw Arm:** The locknuts shall be sufficiently tight to hold the adjusting screw arm in its adjusted position.

Gauge by feel.

(b) **Buzzers Not Equipped With an Adjusting Screw Arm:** The locknuts shall be sufficiently tight to prevent the adjusting screw from moving away from the armature in its outermost position.

Gauge by feel.

2.08 **Position of Adjusting Screw Knob:** The adjusting screw knob shall not touch the face of the mounting board when the knob is turned to its extreme counterclockwise position.

2.09 **Electrical Requirements**

(a) **Buzzers Equipped With an Adjusting Screw Arm:** When the buzzer is connected to the current supply in its circuit, and the adjusting screw is turned from the position at which the arm rests against the uppermost side of the adjusting screw bracket stop to the position at which the arm rests against the underside of the adjusting screw bracket stop, the sound output shall be reduced gradually until it is barely audible, and shall give a clear, steady signal in any position of the adjusting screw.

(b) **Buzzers Not Equipped With an Adjusting Screw Arm:** When the buzzer is connected to the current supply in its circuit, and the adjusting screw is turned from its outermost position to its innermost position, the sound output of the buzzer shall be reduced gradually from maximum to complete cutoff and shall give a clear, steady signal in all positions of the adjusting screw, except at cutoff.

3. ADJUSTING PROCEDURES

3.001 **List of Tools and Gauges**

Code or Spec No.	Description
Tools	
417A (2 required)	1/4-in. and 3/8-in. Hex. Open Double-end Flat Wrench
KS-2993	Brush
KS-6854	Screwdriver
R-1005	Jeweler's Screwdriver (or Equivalent)
R-2958	Wrench (No. 8 Allen Wrench)
R-2959	Wrench (No. 6 Allen Wrench)
—	4-in. Regular Screwdriver
Gauges	
74D	Thickness Gauge Nest

3.002 When necessary to remove a buzzer from its mounting, loosen the adjusting screw knob setscrew with either the R-1005 jeweler's screwdriver or the R-2958 or R-2959 wrenches, as required and remove the knob. Loosen the terminal screws with the KS-6854 screwdriver and remove the leads. Remove the buzzer mounting screws with the 4-inch regular screwdriver and withdraw the buzzer from its mounting. Remount the buzzer in the reverse order and tighten all screws securely.

3.01 **Cleaning (Rq 2.01)**

(1) Clean the buzzer assembly by brushing it with the KS-2993 brush taking care not to remove any lubricant.

Note: If lubricant is removed by the cleaning process, it will be necessary to replace the buzzer in accordance with 3.02(1).

3.02 **Lubrication** (Rq 2.02)

(1) Buzzers which require lubrication, including those having a "B" marking and those having a date of manufacture marking prior to May 1956, shall be replaced by buzzers having permanent lubrication.

Note: All buzzers having a date of manufacture marking subsequent to April 1956, a date of repair marking subsequent to May 1955, or a white stripe on the terminal block assembly, have been lubricated with a permanent type of lubrication.

3.03 **Mounting (Rq 2.03)**

(1) Tighten the mounting screws with the 4-inch regular screwdriver.

3.04 **Adjusting Screw Torque (Rq 2.04)**

(1) If the torque requirement is not met, the tightness of fit between the adjusting screw and the bracket arm should be changed. To do this, loosen the two locknuts which position the adjusting screw (left-hand threads) with one or two No. 417A wrenches, as required. Turn the adjusting screw in a clockwise direction until the end of the screw is free at the rear of the adjusting screw bracket. Use the No. 417A wrenches, as required, to prevent the locknuts from binding when turning the screw. To obtain the smallest torque possible, turn the adjusting screw in a counterclockwise direction until it re-enters the rear of the bracket without pressing on the bracket arm through which the adjusting screw passes. To obtain a greater torque, press inward on the bracket arm before turning the adjusting screw in a counterclockwise direction. The amount of torque is determined by the amount the bracket arm is pressed inward before the screw re-enters the rear of the adjusting screw bracket. Reposition the adjusting screw as outlined in 3.05 or 3.06.

3.05 **Adjusting Screw Arm Position (Buzzers Equipped With an Adjusting Screw Arm) (Rq 2.05)**

(1) To reset the adjusting screw, loosen the adjusting screw locknuts with the No. 417A wrenches. Place the 0.002-inch blade of the No. 74D gauge between the high stop pin on the armature and the core. Turn the adjusting screw in a counterclockwise direction until the gauge blade fits lightly between the high stop pin and the core. Turn the adjusting screw arm in a counterclockwise direction until it strikes the stop and then back it off approximately 1/8 inch. Tighten the adjusting screw locknuts securely. Remove the gauge blade.

3.06 **Position of Adjusting Screw Locknuts (Buzzers Not Equipped With an Adjusting Screw Arm)** (Rq 2.06)

(1) To reset the adjusting screw, loosen the adjusting screw locknuts with the No. 417A wrenches. Turn the adjusting screw in a clockwise direction until the low stop pin on the armature, when operated manually, is in contact with the core and the tip of the adjusting screw is just touching the armature. With the adjusting screw in this position, the two locknuts shall be securely locked together against the underside of the bracket arm, using the No. 417A wrenches, so that the adjusting screw cannot be turned to move away from the armature.

3.07 **Tightness of Locknuts** (Rq 2.07)

(1) If the adjusting screw locknuts are loose, check the position of the adjusting screw arm or locknuts and tighten the locknuts with the No. 417A wrenches.

3.08 **Position of Adjusting Screw Knob** (Rq 2.08)

(1) Remove the adjusting screw knob from the adjusting screw and turn the adjusting screw to its extreme counterclockwise position. With the adjusting screw in this position, replace the knob, making sure that it does not touch the face of the mounting board, and tighten the knob setscrew.

3.09 **Electrical Requirements** (Rq 2.09)

(1) When operating under circuit operating conditions, and the desired volume cannot be obtained, it may be due to any of the following conditions:

(a) If due to defective coils or broken leads, replace the buzzer.

(b) If the armature binds in its bearings due to lack of lubrication, replace the buzzer in accordance with 3.02(1).

(c) If due to excessive wear in the bearings or pin and the buzzer is equipped with an adjusting screw arm, it may be possible to eliminate this condition by removing the arm. If removal of the arm does not eliminate the condition, replace the buzzer.

(d) If due to excessive wear in the bearings or pin and the buzzer is not equipped with an adjusting screw arm, replace the buzzer.

(2) To remove the adjusting screw arm, loosen the two adjusting screw arm locknuts (left-hand thread) with one or both of the No. 417A wrenches. With the two nuts in a loosened position, turn the adjusting screw clockwise until the end of the adjusting screw is backed away from the rear of the adjusting screw bracket enough to permit removal of the rear adjusting screw locknut and the adjusting screw arm. Use the No. 417A wrenches, as required, to prevent the locknuts from binding when turning the screw. Discard the arm. Replace the nut on the adjusting screw, and with the two nuts in a loosened position, turn the adjusting screw counterclockwise until it has re-entered the rear of the adjusting screw bracket from which it was removed. Adjust the adjusting screw locknuts as outlined in 3.06.

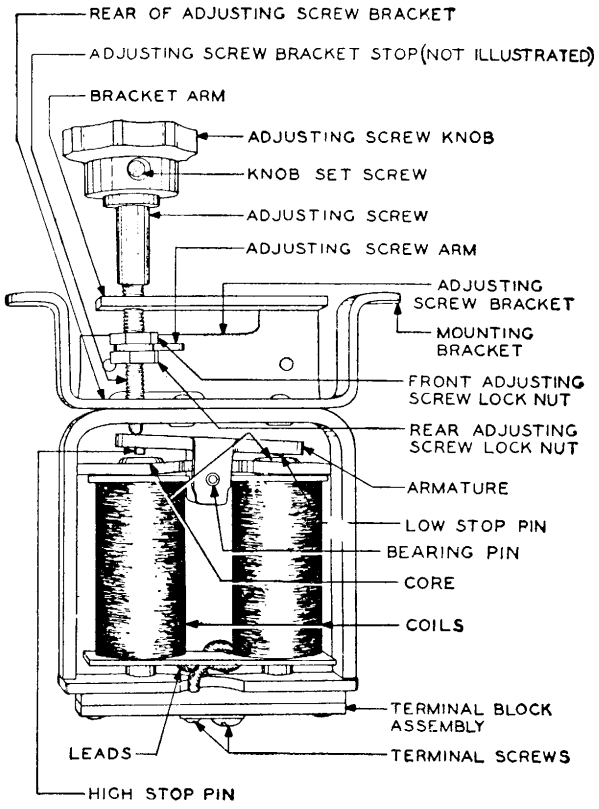

Fig. 1—8-type Buzzer Equipped With an Adjusting Screw Arm

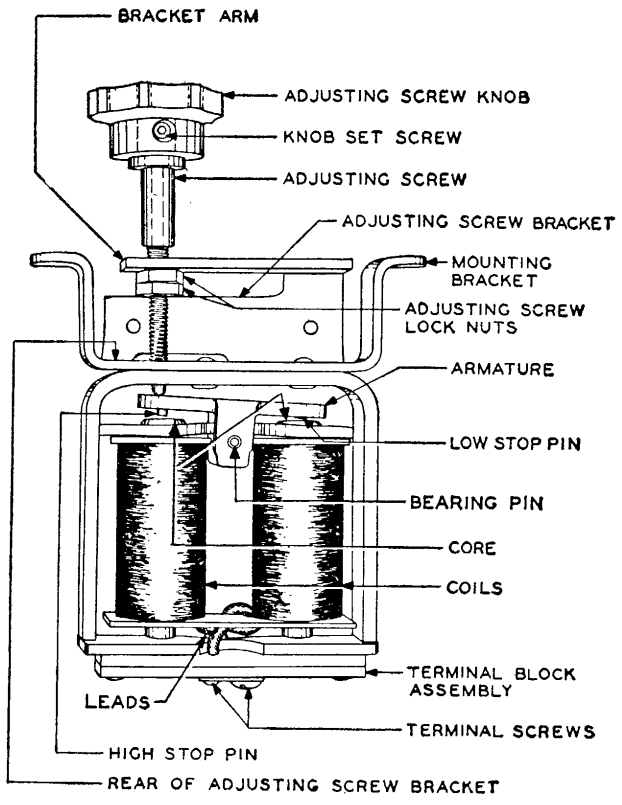

Fig. 2—8-type Buzzer Not Equipped With an Adjusting Screw Arm