

## KS-16620, LIST 1 RELAY REQUIREMENTS AND ADJUSTING PROCEDURES

### 1. GENERAL

1.01 This section covers the KS-16620, List 1 relay which is used primarily in test set circuit SD-59785-01 of the TH radio system.

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

1.03 In order to check the requirements in this section, it may be necessary to remove the relay from its mounting in the equipment.

1.04 **Operate:** A relay is said to operate if, when current is connected to the winding, the armature moves until it rests against the core and all normally closed contacts are open.

1.05 **Nonoperated Position:** A relay is said to be in the nonoperated position when the armature arm is resting against the armature backstop.

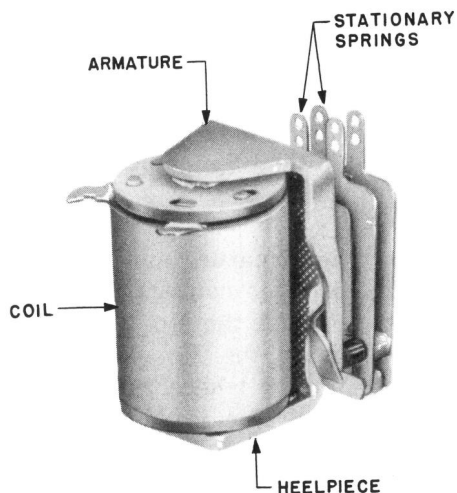


Fig. 1 - KS-16620, List 1 Relay

### 2. REQUIREMENTS

2.01 **Cleaning:** The contacts and other parts of the relay shall be cleaned when necessary in accordance with Section 069-306-801.

2.02 **Relay Mounting:** The relay shall be fastened securely to the mounting surface. Gauge by feel.

2.03 **Contact Alignment:** Fig. 2(A) — Contacts shall not be out of alignment by more than two-fifths of their base diameter. Gauge by eye.

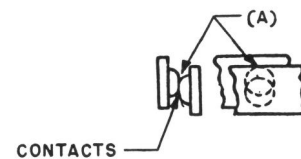


Fig. 2 - Maximum Permissible Contact Misalignment

2.04 **Armature Movement:** The armature shall move freely when operated. Gauge by feel.

2.05 **Contact Separation:** The separation between normally closed contacts when the relay is operated shall be

Min 0.005 inch

Gauge by eye.

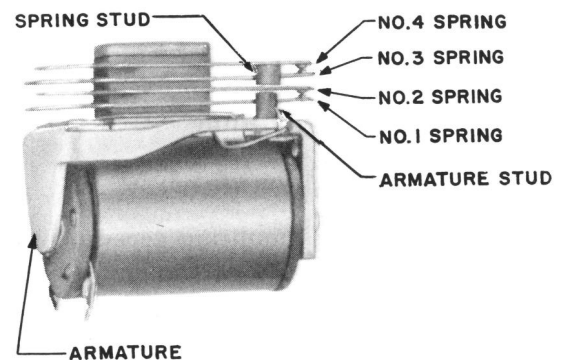


Fig. 3 - General View of Relay

**2.06 Contact Pressure:** Fig. 3 — The pressure between normally closed contacts shall be

Test — Min 18 grams  
Readjust — Min 20 grams

Use the No. 70H gauge.

To check this requirement on the No. 2 spring, move the No. 4 spring far enough away to avoid interference with the measurement.

**2.07 Stud Gap:** Fig. 3 — With the relay in the nonoperated position, the clearance between the armature stud and the No. 2 spring, and between the stud on the No. 4 spring and the No. 2 spring shall be

Min 0.002 inch

Gauge by eye.

**2.08 Electrical Requirements:** The relay shall meet the electrical requirements shown on the circuit requirement table.

Use the 35-type test set.

### 3. ADJUSTING PROCEDURES

#### 3.001 List of Tools, Gauges, and Test Apparatus

CODE OR SPEC NO.	DESCRIPTION
<b>TOOLS</b>	
415B	Spring Adjuster
485A	Pliers
—	4-inch Regular Screwdriver
<b>GAUGE</b>	
70H	0-30 Gram Gauge
<b>TEST APPARATUS</b>	
35 Type	Test Set

#### 3.01 Cleaning (Rq 2.01)

- (1) Clean the contacts and other parts of the relay in accordance with Section 069-306-801.

#### 3.02 Relay Mounting (Rq 2.02)

- (1) To tighten the mounting screws, use the 4-inch regular screwdriver.

#### 3.03 Contact Alignment (Rq 2.03)

- (1) If the requirement is not met, replace the relay.

#### 3.04 Armature Movement (Rq 2.04)

- (1) If the armature does not operate freely, clean the relay as covered in 3.01. If it still does not operate freely, replace the relay.

#### 3.05 Contact Separation (Rq 2.05)

#### 3.06 Contact Pressure (Rq 2.06)

#### 3.07 Stud Gap (Rq 2.07)

#### 3.08 Electrical Requirements (Rq 2.08)

- (1) Operate the relay armature manually. If the separation between contacts is not satisfactory, adjust the stationary spring (No. 1 or 3) as required using the No. 415B spring adjuster applied to the spring near the point where the spring leaves the insulators. Adjusting the spring toward the armature will increase the separation.

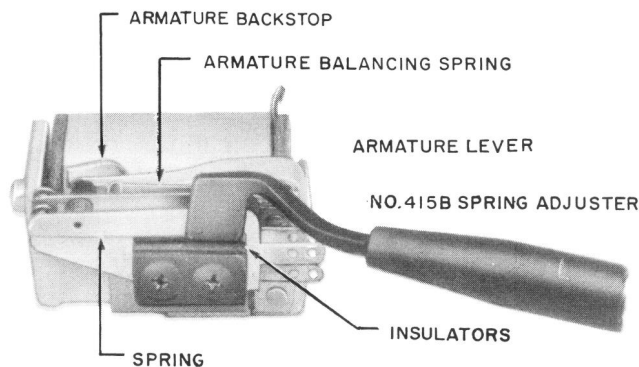


Fig. 4 — Adjusting Spring for Tension

- (2) Release the armature and check that the pressure between contacts is satisfactory. If it is not, readjust the No. 2 and 4 springs, as required, using the No. 415B spring adjuster applied near where the spring leaves the insulators (see Fig. 4). Make sure that the separation between contacts with the relay operated is satisfactory.

- (3) With the relay adjusted to meet the contact separation and contact pressure requirements, check that the gap between the studs and their associated springs is satisfactory. If it is not, adjust the No. 3 spring to meet the gap between the No. 4 spring stud and the No. 2 spring, and adjust the

No. 1 spring to meet the gap between the No. 2 spring and the armature stud. In doing this, apply the No. 415B spring adjuster to the spring to be adjusted at a point near which the spring leaves the insulators. With the spring satisfactorily adjusted, position the armature backstop using the No. 485A pliers so that the backstop rests against the armature.

**Note:** In adjusting the backstop, make sure that the stud gap does not exceed 0.010 inch.

(4) If the relay fails to meet the electrical requirements, reduce the pressure of the armature balancing spring against the armature using the No. 415B spring adjuster applied near the point where the spring leaves the insulators. After making this adjustment, recheck the stud gap (Rq 2.07) and the electrical requirements. If the relay cannot be adjusted, it should be replaced.

(5) In making any of the above adjustments, take care not to distort the springs.