

## EXTERNALLY ADJUSTED DASH POT RELAYS

### PIECE-PART DATA AND REPLACEMENT PROCEDURES

#### 1. GENERAL

1.01 This section covers the information necessary for ordering parts to be used in the maintenance of D-55526J1, D-55526K1, D-811487 and D-811529 A.E. Company externally adjusted dash pot relays. It also covers approved procedures for replacing these parts.

1.02 This section is reissued to incorporate material from the addendum in its proper location. In this process marginal arrows have been omitted.

1.03 Part 2 of this section covers the piece part numbers and the corresponding names of the parts which it is practical to replace in the field in the maintenance of the relays covered by this section. No attempt should be made to replace parts not designated. Part 2 also contains supplementary figures showing these different parts. This information is called "Piece Part Data".

1.04 Part 3 of this section covers approved procedures for the replacement of the

parts covered in Part 2. This information is called "Replacement Procedures".

#### 2. PIECE PART DATA

2.01 The figures included in this part show the various piece parts in their proper relation to other parts. The A.E. Company piece part numbers of the various parts are given together with the names of the parts as listed on the A.E. Company piece part drawings. Where these names differ from those in general use in the field the latter names, in some cases, are shown in parenthesis.

2.02 When ordering parts for replacement purposes give the piece part number as well as the name of the part. Example: "D-67118 - Piston". Do not refer to the B.S.P. number or to any information in parenthesis following the piece part numbers.

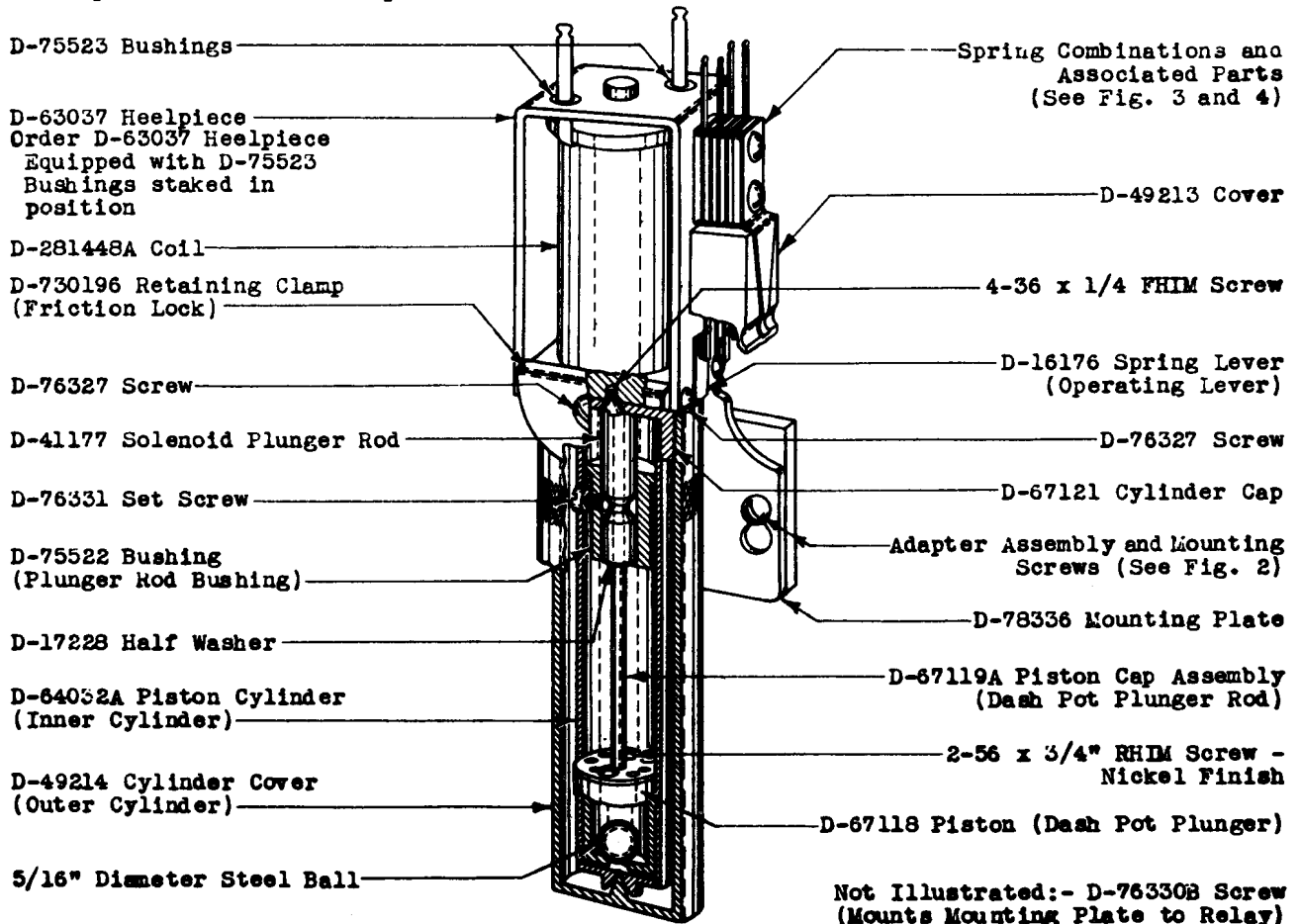


Fig. 1 - Externally Adjusted Dash Pot Relays

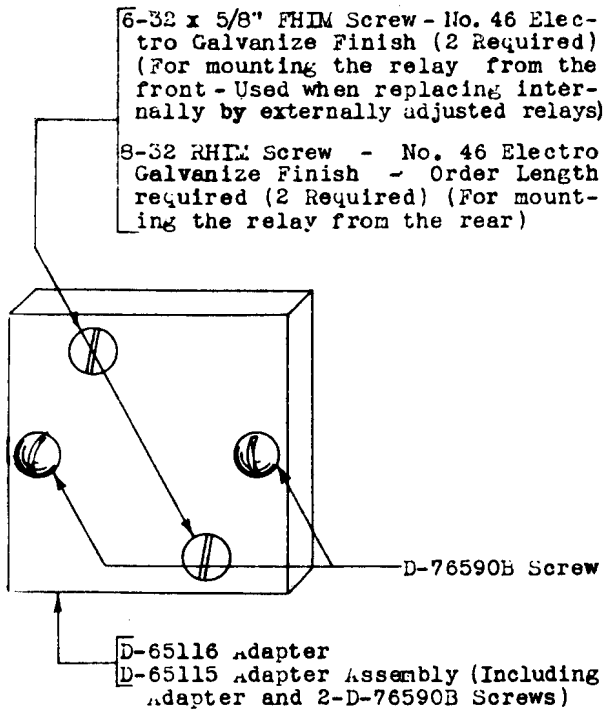


Fig. 2 - Adapter Assembly for Mounting Externally Adjusted Dash Pot Relays - (Also Used When Internally Adjusted Relays are Replaced by Externally Adjusted Relays)

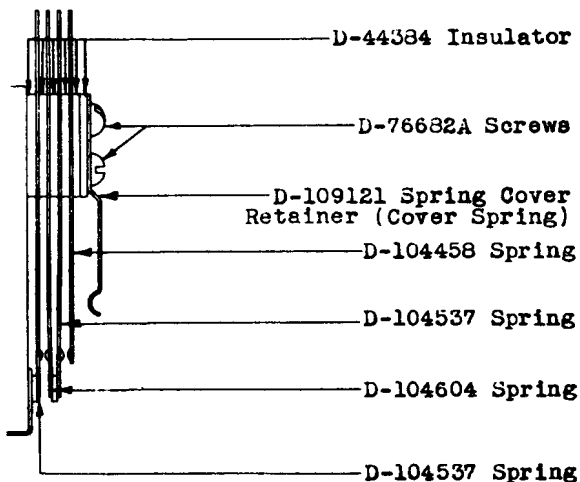


Fig. 3 - Spring Combination for A.E. Co. n-811487 and D-55526-K1 Relays

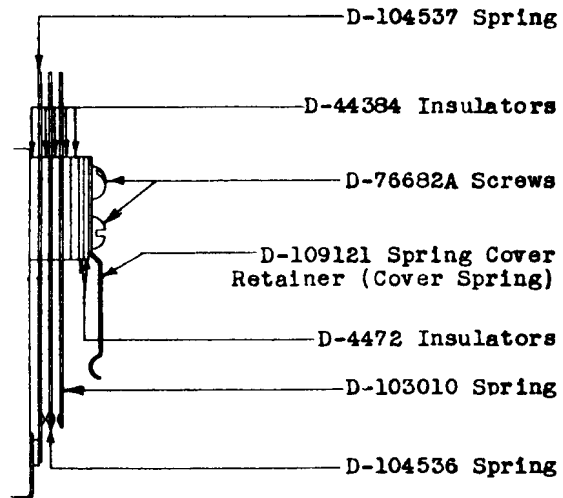


Fig. 4 - Spring Combination for A.E. Co. D-811529 and D-55526-J1 Relays

**3. REPLACEMENT PROCEDURES**

**3.01 List of Tools and Materials**

| Code No.     | Description                |
|--------------|----------------------------|
| <u>Tools</u> |                            |
| 206          | 30° Offset Screwdriver     |
| 207          | 90° Offset Screwdriver     |
| -            | 3" Cabinet Screwdriver     |
| -            | KS-6854 3-1/2" Screwdriver |
| -            | R-72833 Offset Screwdriver |

Materials

- 6-32 Hexagon Nuts(2 Required)
- KS-7860 Petroleum Spirits

3.02 No replacement procedures are specified for screws or other parts where the replacement consists of a single simple operation.

3.03 After making any replacements the relay shall meet the requirements specified in the 040-801-701 section. Parts whose adjustment may have been disturbed by the replacing operations shall be checked and an overall operation check made of the relays before restoring them to service.

Cover Spring, Insulators and Contact Springs in the Spring Assembly

3.04 Cover Spring: Remove the lower spring assembly mounting screw and loosen the upper one. Swing the cover spring forward

until it is clear of the spring assembly and temporarily reinsert the lower mounting screw so as to hold the spring assembly in place. Remove the upper mounting screw. Mount the new cover spring with the upper mounting screw, swing the cover spring over the spring assembly and mount the lower mounting screw. Tighten both mounting screws securely. Make sure that the springs line up with each other and that the assembly lines up properly with the operating lever.

**3.05 Insulators and Contact Springs in the Spring Assembly:** Remove the cover to the spring assembly. Unsolder the wires to any contact springs which are to be replaced. Then remove the spring assembly mounting screws with the R-72833 screwdriver. Remove the part which is to be replaced and mount the new part in position. Hold the springs so that they are in proper alignment and so that the studs are properly seated in the mounting holes in the springs. Also make sure that the spring assembly lines up properly with the operating lever. Tighten the spring assembly mounting screws securely.

#### Heelpiece and Heelpiece Bushing

**3.06 Heelpiece:** Unsolder the leads to the coil. Remove the heelpiece mounting screws with the 206 and 207 offset screwdrivers. Raise the heelpiece until it is clear of the winding terminals, taking care not to break the leads to the spring assembly. If the heelpiece bushing is to be replaced proceed as outlined in 3.07. Remove the spring assembly from the heelpiece as covered in 3.05 and mount it on the new heelpiece. Remount the parts in the reverse order.

**3.07 Heelpiece Bushing:** Unsolder the leads to the coil. Remove the heelpiece mounting screws with a 206 and 207 offset screwdriver. Raise the heelpiece until it is clear of the winding terminals, taking care not to break the leads to the spring assembly.

**3.08** Remove the spring assembly mounting screws with the 3" cabinet screwdriver and temporarily fasten two No. 6-32 hexagon head nuts finger tight onto the screws to hold the spring assembly together while the bushings are being mounted in position. Force the bushings which are to be replaced from the heelpiece with the P-long nose pliers or a screwdriver. Place the new bushing on the inside of the heelpiece and force it into position with the P-long nose pliers, taking care not to break the bushing. If difficulty is experienced in positioning the bushing, the heelpiece may be heated slightly with a soldering iron, which will soften the bushing sufficiently to permit it to be forced into position.

**3.09** Remove the clamping nut which temporarily held the spring assembly together and remount the spring assembly onto the

heelpiece as covered in 3.05. Remount the heelpiece in position on the relay, taking care that the operating lever is between the heelpiece and the springs, on the spring assembly.

#### Outer and Inner Cylinders, Plunger and Plunger Rod Assembly, Cylinder Cap, Operating Lever and Coil

**3.10 General:** When replacing any of these parts loosen the friction lock clamping screw with the 3" cabinet screwdriver, remove the inner and outer cylinders and the dash pot plunger and plunger rod assembly, and drain off the oil. Clean these parts with petroleum spirits as covered in Section 040-801-701 and permit them to dry before they are reassembled to the relay. Refill the outer cylinder with a fresh supply of oil as covered in Section 040-801-701 before reassembling the cylinders to the relay. Make sure that the oil has been allowed to attain normal room temperature.

**3.11 Outer and Inner Cylinders:** Remove the outer and inner cylinders as outlined in 3.10. When the inner cylinder is removed the dash pot plunger and plunger rod assembly should be removed with it. If any parts of the dash pot plunger and plunger rod assembly, the cylinder cap, the operating lever or coil require replacement, replace these parts as covered in 3.13 to 3.17 before proceeding as covered in 3.12.

**3.12** Mount the dash pot plunger and plunger rod assembly in the new inner cylinder and reassemble them to the relay. Tighten the friction lock clamping screw.

**3.13 Dash Pot Plunger and Steel Ball:** With the outer and inner cylinders and the dash pot plunger and plunger rod assembly removed as covered in 3.11, remove the screws which mount the dash pot plunger rod to the dash pot plunger using the KS-6854 screwdriver. Replace the steel ball or dash pot plunger as required. Place the steel ball in the dash pot plunger and mount the dash pot plunger rod to the dash pot plunger. Then proceed as covered in 3.12.

**3.14 Dash Pot Plunger Rod, Solenoid Plunger Rod, Plunger Rod Bushing, and Associated Half Washers:** Remove the outer and inner cylinders, and the dash pot plunger and plunger rod assembly as covered in 3.11. Loosen the set screw in the plunger rod bushing and if necessary, replace the solenoid plunger rod at this time. Exercise care not to allow the solenoid plunger rod bushing to slide down on the dash pot plunger rod since this will result in the displacement of the half washers. If necessary to replace the plunger rod bushing or dash pot plunger rod remove the dash pot plunger rod from the dash pot plunger as covered in 3.13. Lower the plunger rod bushing on the dash pot plunger rod until the two half washers can be removed. Substitute the necessary part.

## SECTION 040-801-801

3.15 Pass the dash pot plunger rod through the bottom of the plunger rod bushing and up through the top sufficiently to permit the two half washers to be put into position on the dash pot plunger rod. Hold the half washers carefully in the notch while the dash pot plunger rod is being lowered into the plunger rod bushing. Mount the solenoid plunger rod in position and tighten the set screw securely. Place the steel ball in the dash pot plunger and assemble the dash pot plunger rod assembly to the dash pot plunger. Then proceed as outlined in 3.12.

3.16 Cylinder Cap and Operating Lever: Remove the inner and outer cylinders and the dash pot plunger and plunger rod assemblies from the relay as covered in 3.11. Loosen the cylinder cap mounting screws with the 3" cabinet screwdriver and remove the cylinder cap. Replace the operating lever at this time if necessary. Mount the oper-

ating lever so that it is between the heelpiece and stud of the No. 1 spring and mount the cylinder cap. Tighten the cylinder cap mounting screws securely. Proceed as covered in 3.12.

3.17 Coil: Unsolder the leads to the coil. Dismount the relay. Remove the heelpiece mounting screws with the 3" cabinet screwdriver, and remove the heelpiece and spring assembly, taking care not to break the wires to the spring assembly. Remove the mounting plate mounting screws and the friction lock clamping screw with the 3" cabinet screwdriver and remove the mounting plate and the friction lock. Remove the inner and outer cylinders and the dash pot plunger and plunger rod assembly as covered in 3.11. Remove the cylinder cap and operating lever as covered in 3.16. Substitute the new coil and mount the friction lock, the cylinder cap, operating lever and mounting plate on the new coil. Remount the heelpiece and remount the relay.