RELAYS
208 AND 214 TYPES
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 208- and 214-type relays. It also covers approved procedures for replacing these parts.

1.02 This section is reissued to bring the information up to date. Detailed reasons for reissue will be found at the end of the section. Since this reissue covers a general revision, the arrows ordinarily used to indicate changes 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 practicable to replace in the field in the maintenance of these relays. No attempt should be made to replace parts not designated. Part 2 also contains explanatory figures showing the different parts. This information is called Piece-part Data.

1.04 Part 3 of this section covers the 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 of the relay. The piece-part numbers of the various parts are given together with the names of the parts as listed by the Western Electric Company Merchandise Department. When these names differ from those in general use in the field, the latter names in some cases are shown in parentheses.

2.02 When ordering parts for replacement purposes, give the piece-part number and the name of the piece part. For example, "P-163618 Base Plate." Do not refer to the BSP number or to any information shown in parentheses following the piece-part numbers.

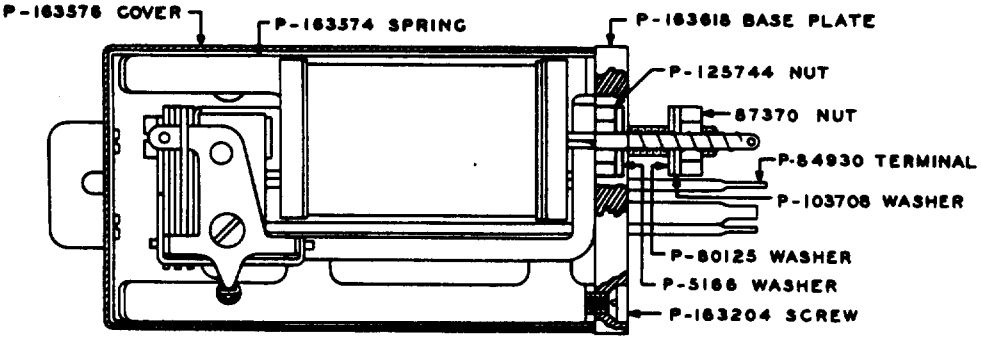


Fig. 1 - No. 214A Relay

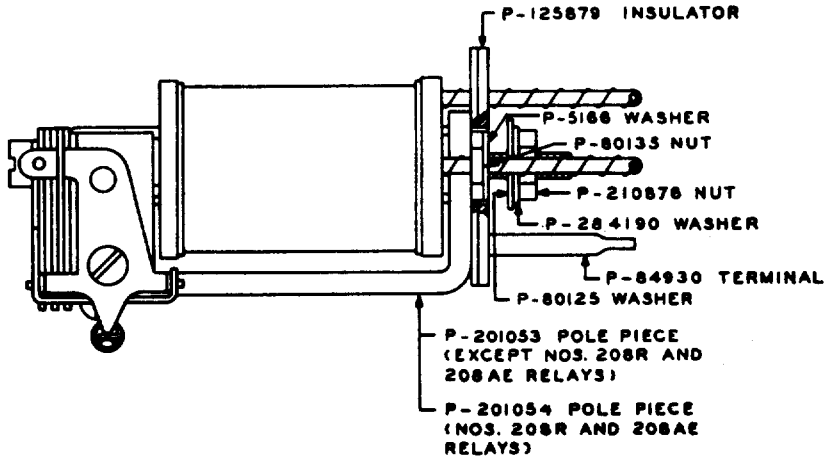


Fig. 2 - 208-type Relay With Fillister Head Contact Assembly Screw

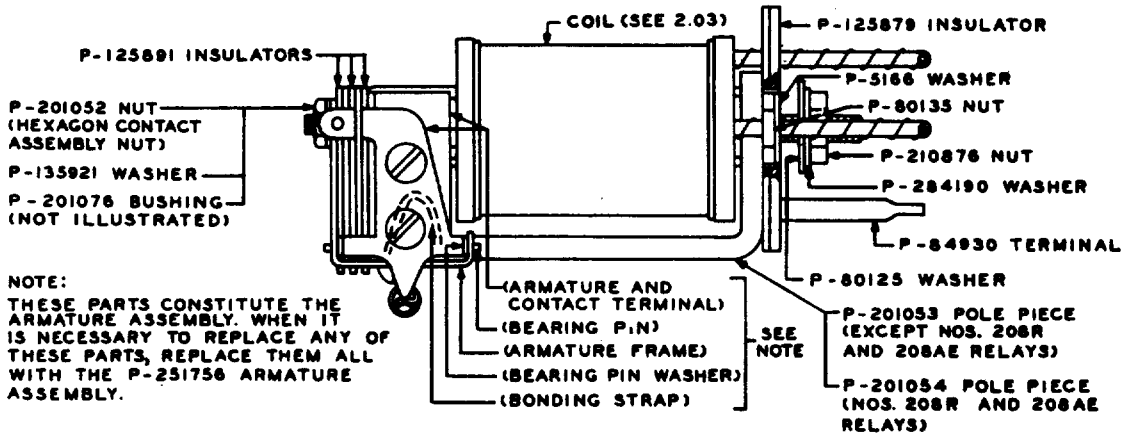


Fig. 3A

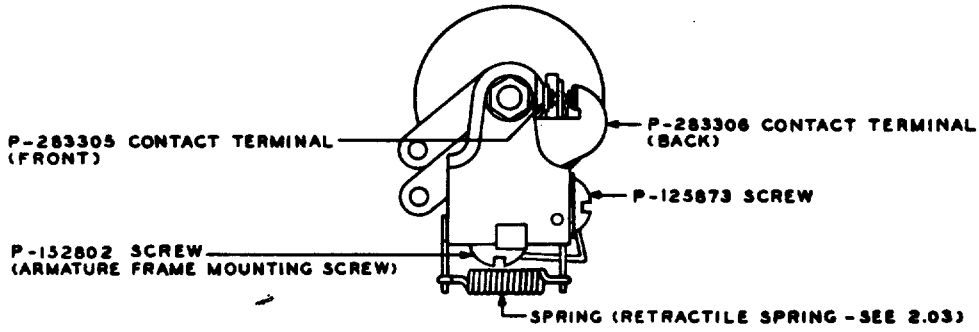


Fig. 3B

Fig. 3 - 208-type Relays Having Hexagon Contact Assembly Nut and Bearings Integral With Armature Frame

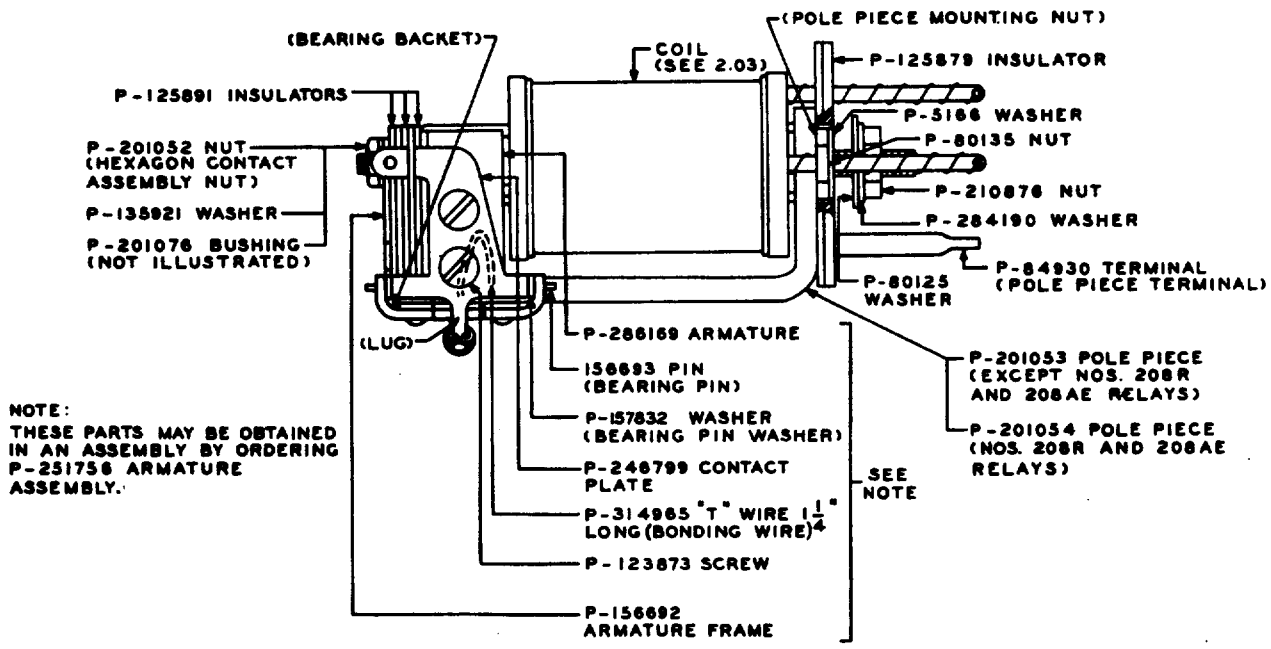


Fig. 4A

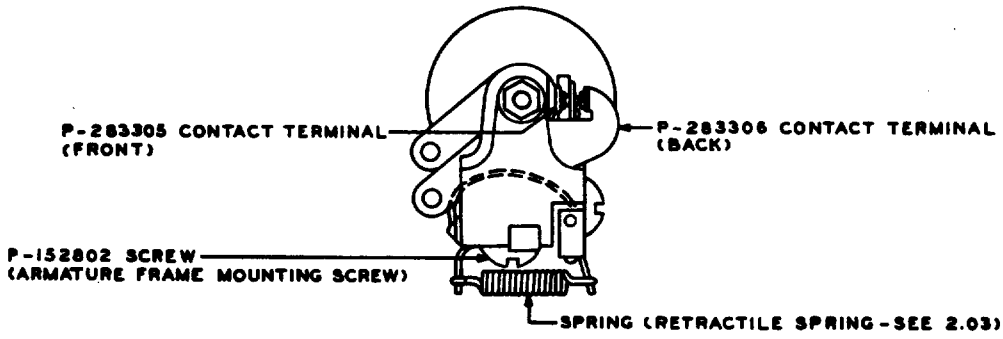


Fig. 4B

Fig. 4 - 208-type Relay Having Bearing Bracket Riveted to Armature Frame

2.03 The following is a list of springs and coils which are not common to all 208-type relays. These parts are replaceable only on relays having a hexagon head contact assembly nut and bearings integral with the armature frame and on relays having the bearing bracket riveted to the armature frame.

Relay	Spring	Coil
208B	P-156694	P-201045
C	P-156694	P-201044
E	P-156695	P-201041
F	P-156694	P-201042
G	P-156695	P-201042
H	P-156695	P-201047
J	P-156695	P-201047
K	P-156695	P-201047
L	P-156694	P-201047
M	P-156694	P-201045
N	P-156695	P-201044
P	P-156694	P-201043
R	P-156695	P-201038
S	P-156694	P-201039
T	P-156694	P-201039
U	P-156695	P-201040
W	P-156694	P-201041
Y	P-156694	P-201040
AA	P-156694	P-201041
AB	P-156695	P-201042
AC	P-156694	P-201044
AD	P-156694	P-201045
AE	P-156695	P-204085
AF	P-156694	P-204089
AG	P-156695	P-201039

3. REPLACEMENT PROCEDURES

3.01 List of Tools

Code or Spec No.	Description
46	3/8-in. Hex. Socket Wrench
220	3/16-in. Hex. Socket Wrench
485A	Smooth Jaw Pliers
-	3-in. Cabinet Screwdriver
KS-8511	Tweezers

3.02 In replacing some parts of these relays, it will be necessary to remove the relay from the mounting in order to obtain access to the part. After making any replacement in parts or after removing the relay from its mounting, check the relay to see that it meets the requirements specified in Section 040-230-701 covering this apparatus.

3.03 No replacement procedures are specified for screws and other parts where the replacement consists of a simple operation.

3.04 Armature Assembly:

(1) To remove the armature assembly; remove the retractile spring, remove the armature frame mounting screw with the 3-inch cabinet screwdriver, remove the hexagon contact assembly nut with the No. 220 wrench, and remove the associated washer.

(2) Disassemble the armature assembly, the front and back contact terminals and their associated insulators and bushings, by grasping these parts and the armature frame with the fingers and pulling them away from the end of the relay.

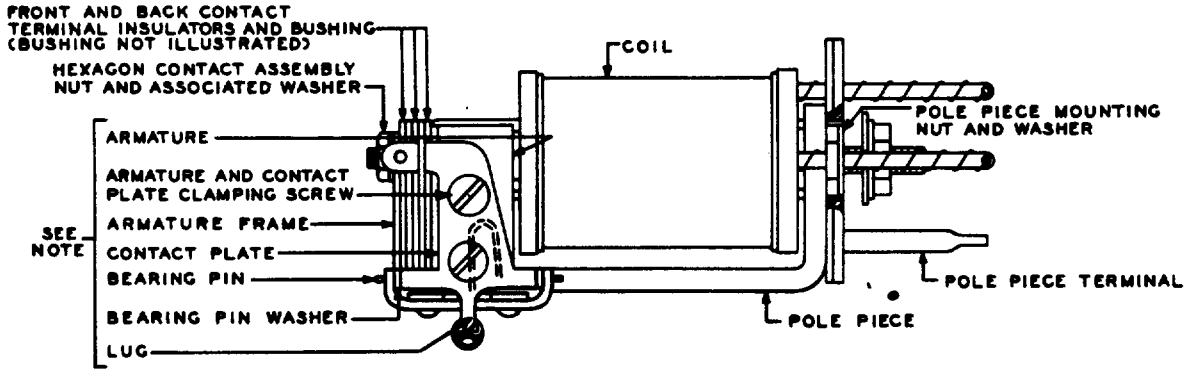
(3) If the front or back contact terminals, their associated insulators or bushing, the coil, the pole piece, or the bonding wire are to be removed, do it at this time.

(4) After replacement of the necessary parts, assemble the contact terminals, insulators, and armature assembly on the bushing and push into place on the core and pole piece, assemble the hexagon contact assembly nut, its washer, and the armature frame mounting screw. Tighten the screw and nut securely.

(5) Assemble the retractile spring on the lugs.

3.05 Bearing Pin and Bearing Pin Washer: To replace a bearing pin or a bearing pin washer, loosen the two screws that clamp the armature and the contact plate together with the 3-inch cabinet screwdriver, thereby relieving the tension on the pin. Withdraw the pin taking care not to lose the two bearing pin washers while removing the pin. If the pin is being replaced, insert the new pin into the outermost hole in the bearing bracket of the contact plate assembly, hold the outermost bearing pin washer in its proper location with the KS-8511 tweezers and feed the pin through the washer and through the bearing slot in the contact plate assembly to a point where it will pass through the innermost washer when the washer is held in its proper location. When the pin has passed through the second washer, feed the pin through the innermost hole in the bearing bracket. Position the pin in the bearing bracket so that it extends approximately an equal distance at both ends of the bracket. Tighten the two screws in the contact plate assembly, taking care that the bonding wire is clamped between the armature and the contact plate.

3.06 Armature and Contact Plate: To replace either of these parts, remove the retractile spring and remove the bearing



NOTE:
THESE PARTS CONSTITUTE THE ARMATURE ASSEMBLY.

Fig. 5A

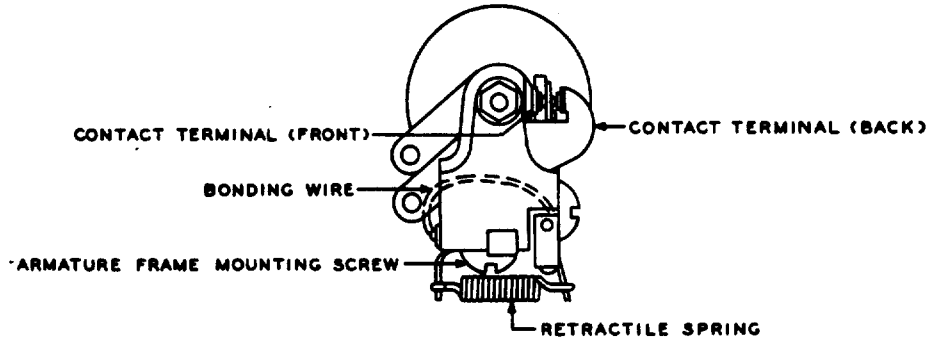


Fig. 5B

Fig. 5 - 208-type Relays

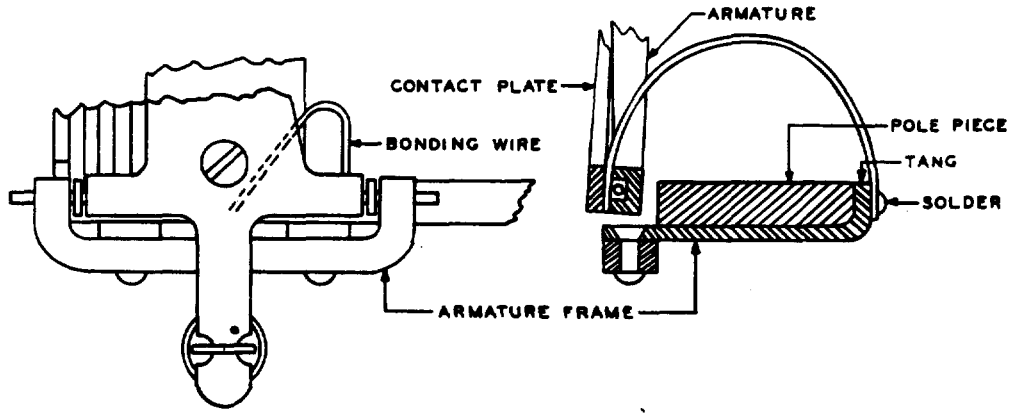


Fig. 6 - Bonding Wire Position

pin and bearing pin washers as outlined in 3.05. Pull out the end of the bonding wire and replace the armature or contact plate as required, leaving the screws loose. Put them in place in the armature frame, assemble the bearing pin and bearing pin washers, and clamp the bonding wire as outlined in 3.05. Replace the retractile spring.

3.07 Bonding Wire: To replace a bonding wire, remove the armature assembly as outlined in 3.04. Loosen the two screws that clamp the contact plate assembly and the armature together, thus freeing the end of the bonding wire which is clamped between these parts. Unsolder the bonding wire from the tang on the armature frame assembly and remove the wire. Install the new bonding wire as illustrated in Fig. 6. Tighten the two screws that clamp the contact plate assembly and the armature, thus clamping one end of the bonding wire between these parts as shown in Fig. 6. Solder the other end of the bonding wire to the tang on the armature frame using an approved method of soldering. Make sure that the wire is looped sufficiently as indicated in the figure, to prevent the bonding wire from touching the armature frame except where it is soldered. Reassemble the contact terminal parts and the armature assembly as outlined in 3.04.

3.08 Coil: To replace a coil, remove the armature assembly and contact terminal parts as outlined in 3.04. Remove the pole-piece mounting nut and washers with the No. 46 wrench and withdraw the coil from the pole piece. Mount the new coil on the pole piece and reassemble the washers and nut, tightening the nut securely. Reassemble the contact terminal parts and the armature assembly as outlined in 3.04.

3.09 Pole Piece: To replace a pole piece, remove the armature frame mounting screw with the 3-inch cabinet screwdriver and remove the pole-piece mounting nut and washers with the No. 46 wrench. Pull the pole piece out from the relay and unscrew the pole-piece terminal with the No. 485A pliers. Assemble the pole-piece terminal in the new pole piece, tightening it with the No. 485A pliers, and assemble the pole piece in place on the relay. Assemble the pole-piece mounting washers and nut, and tighten the nut securely. Reassemble the contact terminal parts and armature assembly as outlined in 3.04.

REASONS FOR REISSUE

1. Figs. 1 and 2 revised, and Figs. 3 and 4 added to cover revisions in piece-part information.
2. To delete information covering noninterchangeable parts (2.03).
3. Figs. 5 and 6 added to cover designation of parts.
4. To add procedures for replacement of parts (3.04 to 3.09 inclusive).
5. To revise the tool list (3.01).