

RELAYS

206, 227, 231 AND 239 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 206-, 227-, 231-, and 239-type relays. It also covers approved procedures for replacing these parts.

1.02 This section is reissued to add piece-part information for the No. 239KJ and No. 239KK relays and to revise piece-part data and replacement procedures. 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 206-, 227-, 231-, and 239-type 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."

1.05 When a relay has a code number stamped adjacent to a cancelled D-specification number, the latter should be disregarded and replacement parts ordered as specified for the coded relay.

2. PIECE-PART DATA

2.01 The figures included in this part show the various piece parts in their proper relation to the 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 Merchandise Department. Where 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 piece parts for replacement purposes, give both the number and the name of the piece part. For example,

"P-162436 Armature." Do not refer to the BSP number or any information shown in parentheses following piece-part numbers.

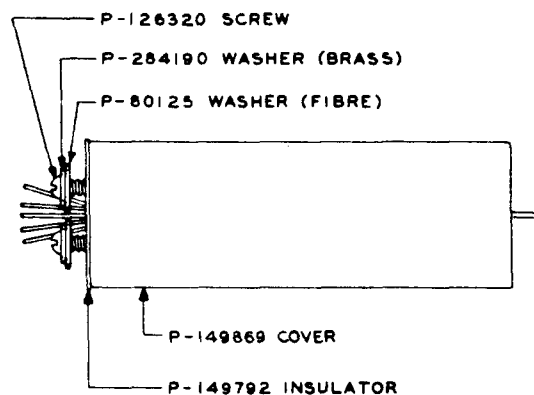


Fig. 1 - No. 206 Relay Cover

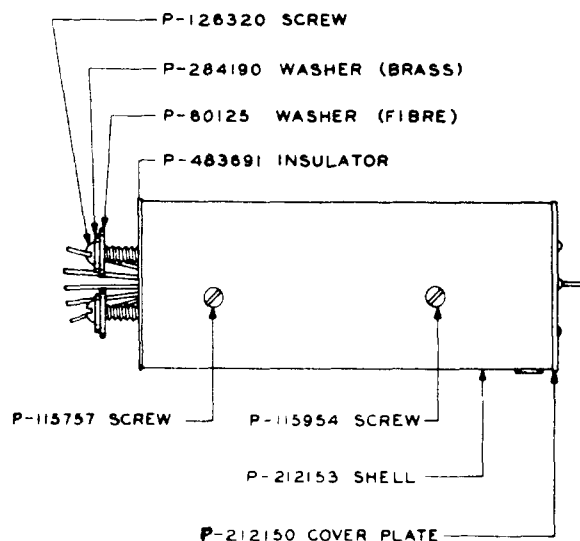


Fig. 2 - No. 227 Relay Cover - Bottom View

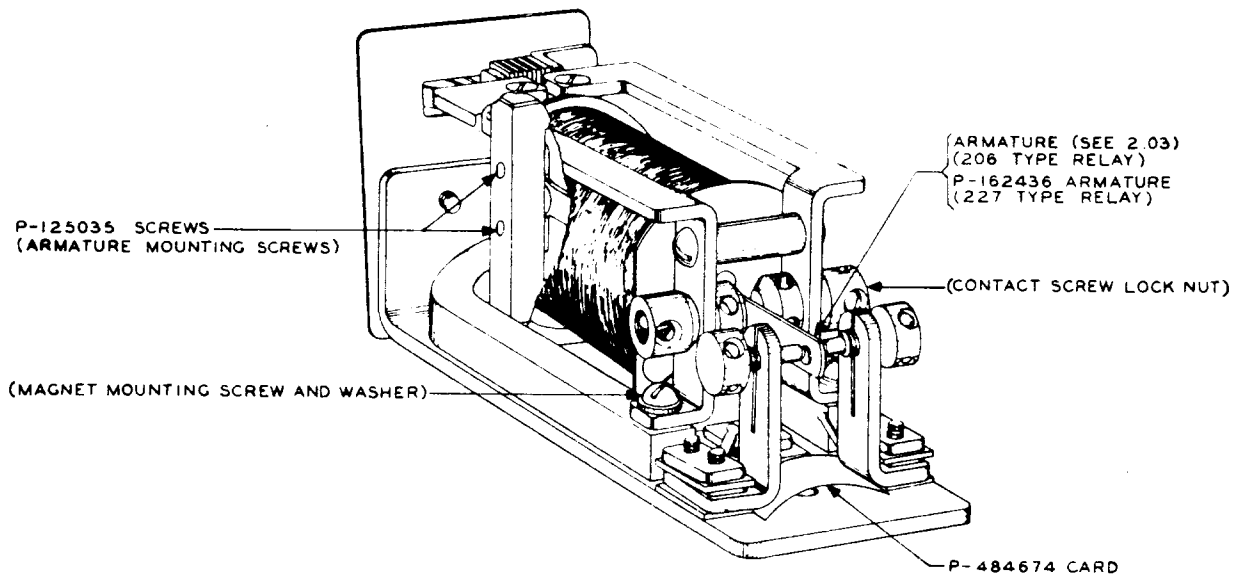


Fig. 3 - 206- and 227-type Relays

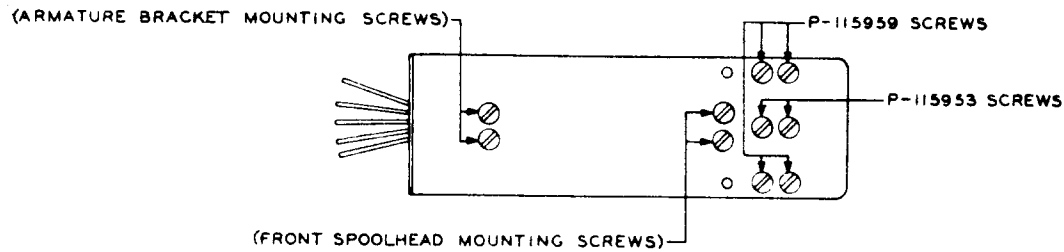


Fig. 4 - 206- and 227-type Relays - Bottom View

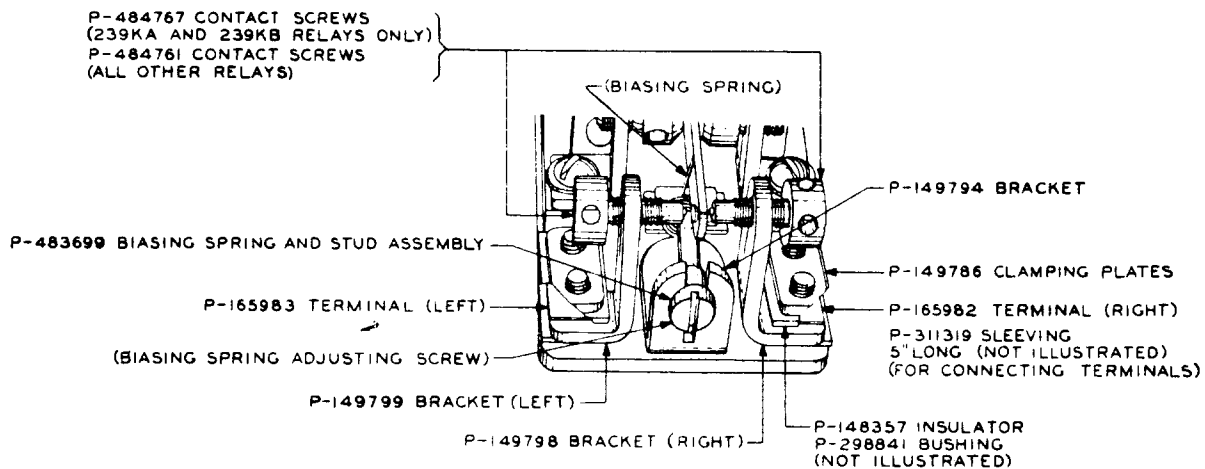


Fig. 5 - Contact Combinations for 206-, 227-, 231-, and 239-type Relays

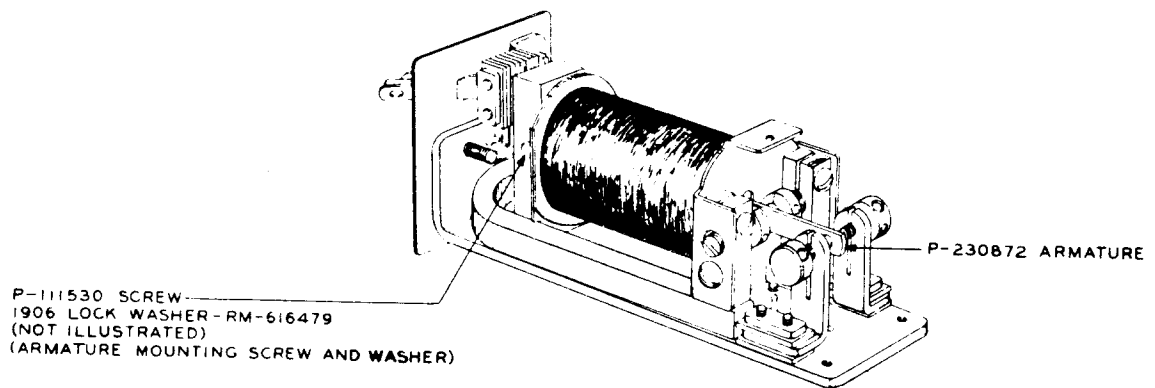


Fig. 6 - 231-type Relay

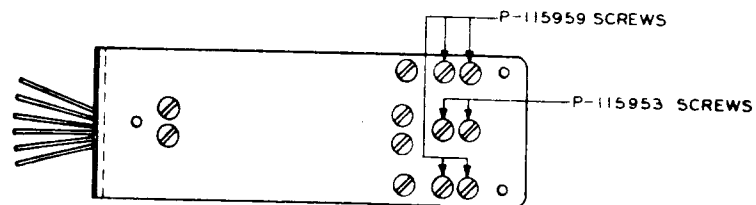


Fig. 7 - 231-type Relay - Bottom View

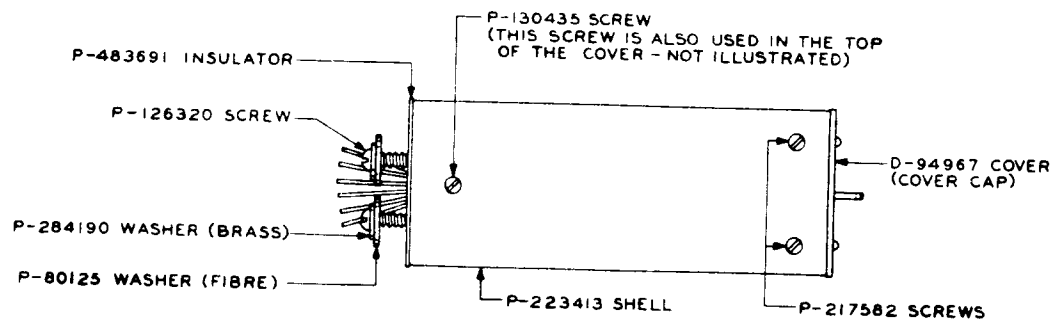


Fig. 8 - 231-type Relay Cover - Bottom View

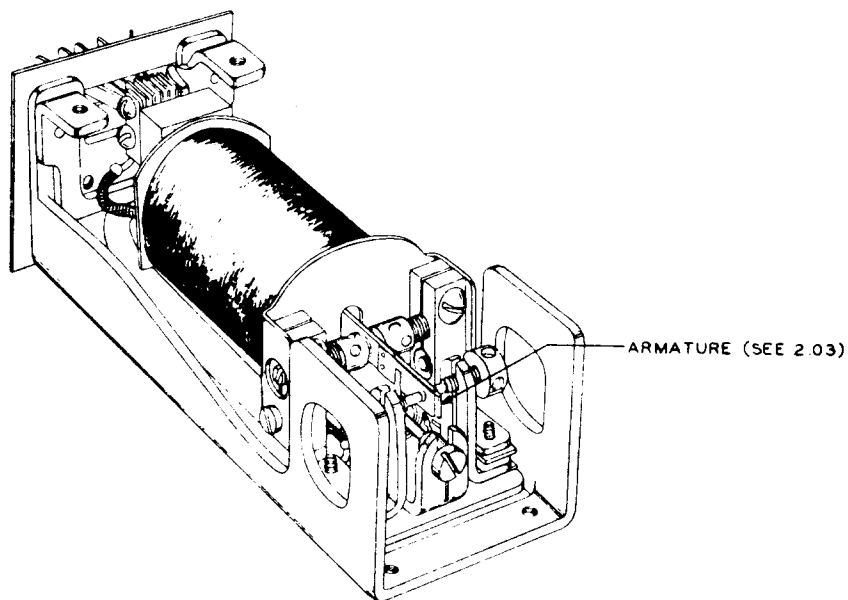


Fig. 9 - 239-type Relay

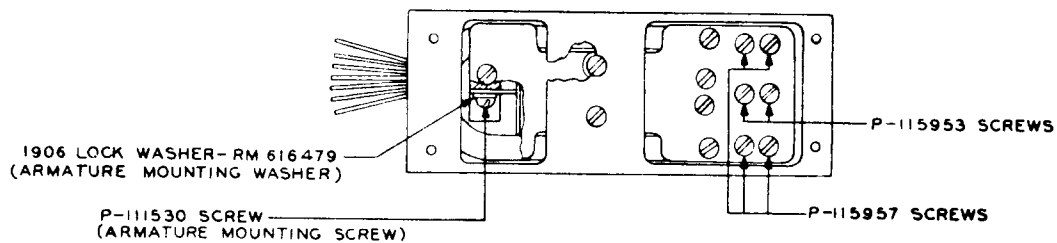


Fig. 10 - 239-type Relay - Bottom View

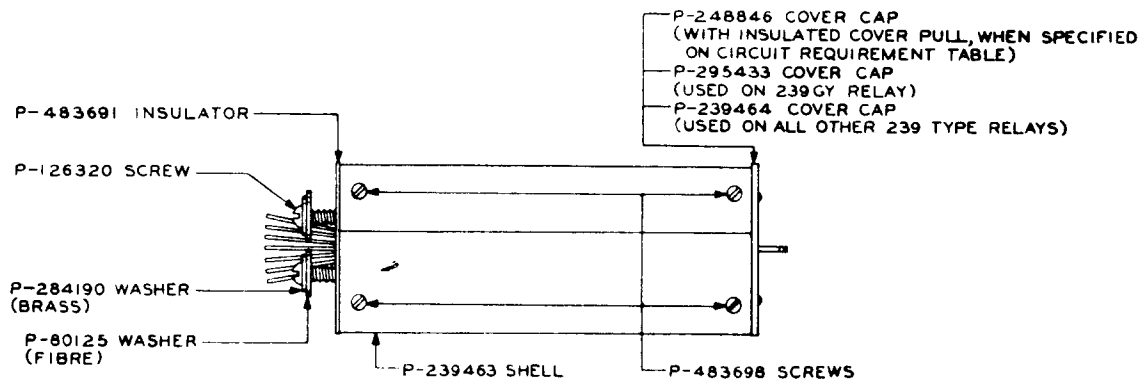


Fig. 11 - 239-type Relay Cover - Bottom View

2.03 The following is a list of armatures which are not common to all 206- or 239-type relays.

Relay	Armature	Relay	Armature	Relay	Armature	Relay	Armature
206C	P-162436	206BT	P-162436	206GR	P-287856	239HD	P-230872
206E	P-162436	206BU	P-162436	206GS	P-229645	239HE	P-248111
206G	P-162436	206BW	P-162436	206GT	P-287856	239HF	P-230872
206H	P-162436	206BY	P-162436	206GU	P-229645	239HG	P-230872
206J	P-162436	206CA	P-162436	206GW	P-229645	239HH	P-230872
206L	P-162436	206CB	P-162436	206GY	P-229645	239HJ	P-230872
206M	P-162436	206CC	P-162436	239FA	P-230872	239HK	P-230872
206N	P-162436	206CD	P-162436	239FB	P-230872	239HL	P-230872
206P	P-162436	206CE	P-162436	239FC	P-230872	239HM	P-248111
206R	P-162436	206CF	P-287854	239FD	P-230872	239HN	P-230872
206S	P-162436	206CH	P-162436	239FE	P-230872	239HP	P-230872
206T	P-162436	206CJ	P-162436	239FF	P-230872	239HR	P-230872
206U	P-162436	206CK	P-162436	239FG	P-230872	239HS	P-248111
206W	P-162436	206CL	P-162436	239FH	P-230872	239HT	P-248111
206Y	P-287854	206CM	P-162436	239FJ	P-230872	239HU	P-230872
206AA	P-287854	206FA	P-229645	239FK	P-230872	239HW	P-230872
206AC	P-162436	206FB	P-229645	239FL	P-230872	239HY	P-230872
206AD	P-162436	206FC	P-229645	239FM	P-230872	239JA	P-230872
206AE	P-162436	206FD	P-229645	239FN	P-230872	239JB	P-230872
206AF	P-162436	206FE	P-229645	239FO	P-230872	239JC	P-230872
206AG	P-162436	206FF	P-229645	239FR	P-230872	239JD	P-230872
206AH	P-162436	206FG	P-229645	239FS	P-230872	239JE	P-248111
206AJ	P-162436	206FH	P-229645	239FT	P-230872	239JF	P-230872
206AK	P-162436	206FJ	P-229645	239FU	P-230872	239JG	P-230872
206AL	P-162436	206FK	P-229645	239FW	P-230872	239JH	P-230872
206AM	P-162436	206FL	P-229645	239FY	P-230872	239JJ	P-230872
206AN	P-162436	206FM	P-229645	239GA	P-230872	239JK	P-248111
206AP	P-287854	206FN	P-229645	239GB	P-230872	239JL	P-230872
206AR	P-162436	206FF	P-229645	239GC	P-230872	239JM	P-248111
206AS	P-162436	206FR	P-229645	239GD	P-248111	239JN	P-230872
206AT	P-162436	206FS	P-229645	239GE	P-248111	239JP	P-230872
206AU	P-162436	206FT	P-229645	239GF	P-248111	239JR	P-248111
206AW	P-162436	206FU	P-229645	239GG	P-248111	239JS	P-248111
206AY	P-162436	206FW	P-229645	239GH	P-230872	239JT	P-248111
206BA	P-162436	206FY	P-229645	239GI	P-230872	239JU	P-230872
206BD	P-162436	206GA	P-287856	239GJ	P-280872	239JW	P-230872
206BE	P-162436	206GF	P-229645	239GK	P-248111	239JY	P-230872
206BF	P-162436	206GG	P-229645	239GN	P-230872	239KA	P-248111
206BG	P-162436	206GD	P-229645	239GO	P-248111	239KB	P-230872
206BH	P-162436	206GE	P-229645	239GP	P-230872	239KC	P-230872
206BJ	P-162436	206GG	P-229645	239GR	P-248111	239KD	P-230872
206BK	P-162436	206GH	P-287856	239GS	P-248111	239KE	P-230872
206BL	P-162436	206GJ	P-229645	239GU	P-230872	239KF	P-230872
206BM	P-162436	206GK	P-229645	239GV	P-230872	239KG	P-230872
206BN	P-162436	206GL	P-229645	239GY	P-248111	239KH	P-248111
206BP	P-162436	206GM	P-229645	239HA	P-248111	239KJ	P-230872
206BR	P-287854	206GN	P-229645	239HB	P-230872	239KK	P-248111
206BS	P-162436	206GP	P-229645	239HC	P-230872		

SECTION 040-228-801

2.04 In replacing parts for the D-specification relays listed in the following table, order only those parts which are designated in the figures for the corresponding coded relays listed in the second column of the table, unless otherwise indicated in the third column of the table. Where any of these parts are special as indicated by the notes in the third column of the table, order the parts by giving the name of the part and the D-specification number of the relay, for example "Shell for D-80833 Relay," instead of by the part number and name designated in the figure for the corresponding coded relay. However, no attempt should be made to replace parts not designated in the figures for the coded relays, such as the coil and magnetic circuit parts.

Relay Per "D" Specification	Coded Relay	Replaceable D-Specification Parts Not Common to Coded Relay See Note
206-type Relay Per		
D-78668	206AE	
D-78733	206AY	
D-78919	206AC	
D-79798	206BD	
D-79904	206BD	
D-79995	206J	
D-80616	206AC	
D-80623	206BJ	
D-80624	206FD	
D-80833	206H	1
D-80834	206L	1
D-81292	206BP	
D-81951	206FD	
D-85195	206FD	
D-85298	206Y	
D-87772	206FL	
D-94621	206GC	2
231-type Relay Per		
D-87462		3
D-91725	231FT	
D-93123	231GD	
D-95305	231FE	
239-type Relay Per		
D-96629	239GW	
D-97109	239GR	4
D-97341	239GR	5

Notes

1. The shell (cover) and mounting insulator are special.
2. The armature assembly and contact screws are special.
3. All replaceable parts are special.
4. The cover cap assembly is special.
5. The cover cap and armature assemblies are special.

2.05 The following is a list of D-specification relays which are entirely replaced by a coded relay.

Relay Per "D" Specification	Coded Relay	Relay Per "D" Specification	Coded Relay
D-45504	280AB	D-88149	280AC
D-76513	280AC	D-95195	280FE
D-77319	280CF	D-95197	280S
D-80740	280BA	D-95418	280CY
D-85733	280J	D-96121	280E
D-86178	280FJ	D-97514	280S
D-86422	280E	D-98303	280AC
D-87481	280B	D-156749	280FH

3. REPLACEMENT PROCEDURES

3.01 List of Tools

Code or Spec No.	Description
206	30-degree Offset Screwdriver
207	90-degree Offset Screwdriver
340 (2 required)	Adjusting Key
KS-6854	3-1/2-in. Screwdriver
-	3-in. Cabinet Screwdriver
-	4-in. Regular Screwdriver

3.02 After making any replacement of parts of a relay the part or parts replaced shall meet the readjust requirements involved as specified in Section 040-228-701. Other parts whose adjustments may have been directly disturbed by the replacing operations shall be checked to the readjust requirements and an over-all operation check shall be made of the relay before restoring the circuit to service.

3.03 In replacing some parts of these relays, it will be necessary to remove the relay from the mounting plate in order to obtain access to the part. Remove the relay from the mounting plate by removing the mounting screws with the 4-inch regular screwdriver. In replacing parts on 227-, 231-, and 239-type relays, where it is necessary to remove the shell to obtain access to the part, use the 3-inch cabinet screwdriver to remove the shell mounting screws.

3.04 In reassembling a 206-or 227-type relay, the screws mounting the armature, pole pieces, and magnet, should be tightened in the following order to insure a stable adjustment.

- (1) Check that all screws holding the return pole pieces in place, including the roundhead screws in the spacer bar, are loose.
- (2) Check and if loose, tighten the two flathead screws securing the armature mounting bracket to the base of the relay

- (3) Tighten the two flathead screws at the rear of the return pole pieces.
- (4) Tighten the roundhead screws into the spacer bar.
- (5) Finally, tighten the roundhead steel screws which hold the front ends of the return pole pieces and the ends of the magnet, to the base.

3.05 After replacing any part observe that the pole pieces and pole-piece screws are free from dirt, especially magnetic particles and, if necessary, clean these parts.

3.06 No replacement procedures are specified for screws and other parts when the replacement procedure consists of a simple operation.

Armature (206- and 227-type Relays - Figs. 3 and 4)

3.07 To replace the armature, back the biasing spring, if one is used, away from the armature with the 3-inch cabinet screwdriver if the head of the adjusting screw is slotted, or with the fingers if the head of the adjusting screw is knurled. Remove the contact screw locknuts with the No. 340 adjusting key, remove the magnet mounting screws with the No. 206 and No. 207 offset screwdrivers, remove the front spoolhead mounting screws, the armature bracket mounting screws,

and the armature mounting screws with the 3-inch cabinet screwdriver. Lift the coil, pole pieces, and armature thus dismounted, as an assembly from the relay and turn the assembly to one side sufficiently to withdraw the armature from the rear of the coil. Replace the armature taking care not to damage the leads during this operation. Reassemble the parts and tighten all screws observing the sequence specified in 3.04.

REASONS FOR REISSUE

1. To revise the piece-part data in order to omit the coil, pole piece, pole-piece screw, armature bracket, magnet, and base plate information.
2. To revise Figs. 2 to 11 to make them consistent with the above.
3. To add piece-part data for the No. 239KJ and No. 239KK relays.
4. To bring the D-specification information up to date.
5. To revise the procedure for replacing the armature on the 206- and 227-type relays.
6. To delete procedures for replacing pole piece, pole-piece screw, armatures (except Nos. 206 and 227 types), armature bracket, magnet, coil, and base plate.