

UB-TYPE RELAY

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 UB-type relays. It also covers approved procedures for replacing these parts.

1.02 This section is reissued to revise Fig. 3 and to revise the List of Tools and Gauges.

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 the 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.

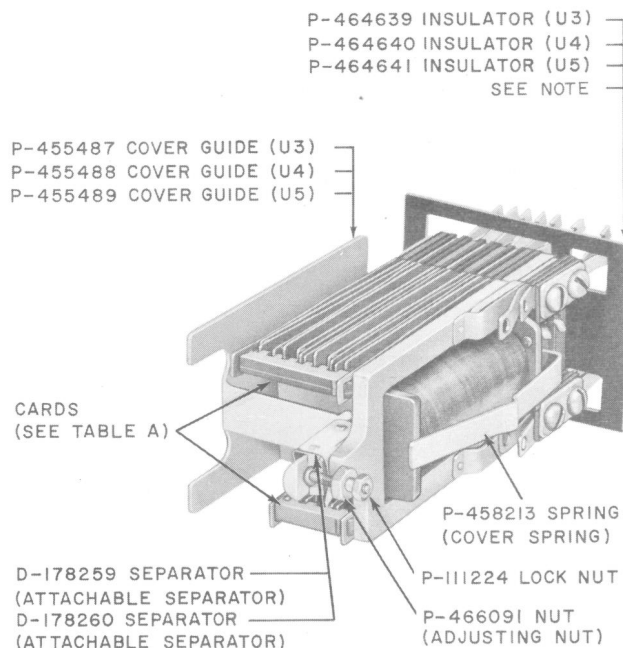
1.04 Part 3 of this section covers the approved procedures for the replacement of the parts covered in Part 2. This information is called Replacement Procedures.

1.05 Before making any replacement on the apparatus covered herein remove the circuit from service.

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 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.

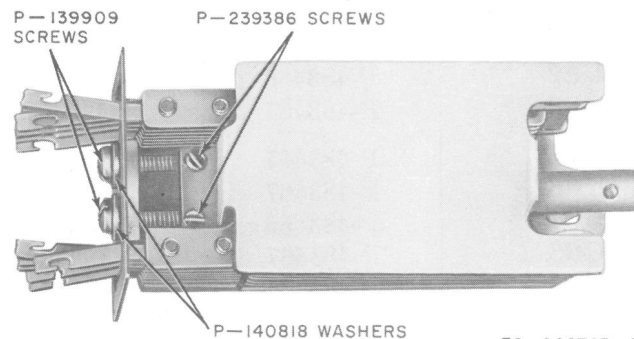
2.02 When ordering parts for replacement purposes, give both the piece-part number and the name of the piece part. For example, "P-466091 Nut." Do not refer to the BSP number or to any information shown in parentheses following the piece-part number.



NOTE:
USED WITH COVER GUIDE STAMPED AS DESIGNATED IN PARENTHESES.

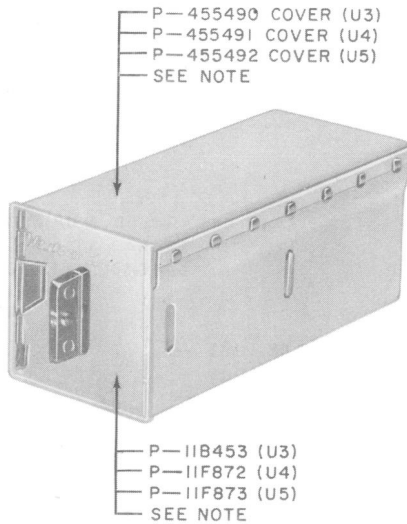
ES-908763-1

Fig. 1—UB-Type Relay—General View



ES-908763-2

Fig. 2—UB-Type Relay—Side View



NOTE:
 USED WITH COVER GUIDE STAMPED
 AS DESIGNATED IN PARENTHESES

TPA 571213

◆ Fig. 3—Cover and Cover Cap (U4 Illustrated) ◆

TABLE A (See Note)

RELAY CODE	CARD (USED ON)	
	TOP SPRING COMB.	BOTTOM SPRING COMB.
UB1	P-483467	P-483467
UB2	P-483466	P-483466
UB3	P-483467	P-483467
UB5	P-483467	P-483467
UB6	P-483467	P-483467
UB7	P-483466	P-483465
UB8	P-483467	P-483466
UB9	P-483465	P-483465

RELAY CODE	CARD (USED ON)	
	TOP SPRING COMB.	BOTTOM SPRING COMB.
UB12	P-483467	P-483467
UB13	P-483467	P-483466
UB14	P-483463	P-483462
UB15	P-483466	P-483465
UB16	P-483464	P-483463
UB17	P-483463	P-483463
UB18	P-483466	P-483466
UB19	P-483464	P-483464
UB20	P-484464	P-483463
UB21	P-483465	P-483465
UB22	P-483466	P-483465
UB23	P-483467	P-483466
UB24	P-483466	P-483466
UB25	P-483464	P-483464
UB26	P-483463	P-483463
UB27	P-483465	P-483462
UB28	P-483467	P-483465
UB29	P-483467	P-483467
UB30	P-483467	P-483466
UB31	P-483466	P-483465
UB32	P-483463	P-483463
UB33	P-483467	P-483467
UB34	P-483467	P-483467
UB35	P-483467	P-483467
UB36	P-483467	P-483467
UB37	P-483467	P-483467
UB38	P-483465	P-483465
UB6000	P-483466	P-483466
UB6001	P-483464	P-483464
UB6002	P-483466	P-483466
UB6003	P-483466	P-483466
UB6004	P-483463	P-483463
UB6005	P-483464	P-483464
UB6006	P-483467	P-483467
UB6007	P-483467	P-483467
UB6008	P-483466	P-483466
UB6009	P-483467	P-483467

Note: When ordering cards for replacement purposes, specify the P-number followed by the name of the part. For example, "P-483465 Card."

3. REPLACEMENT PROCEDURES

3.01 *List of Tools and Gauges*

CODE OR SPEC NO.	DESCRIPTION
TOOLS	
474A (2 reqd)	3/16-in. by 1/4-in. Hex. Closed Double-end Offset Wrench
614A	Card Remover
KS-6320	Orange Stick
◆ —	3-Inch C Screwdriver (or the replaced 3-inch cabinet screwdriver)
◆ —	4-Inch E Screwdriver (or the replaced 4-inch regular screwdriver)
◆ AT-7860	B Long-nose Pliers
GAUGES	
131A	Thickness Gauge Nest

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

3.03 After making any replacement of parts of a UB-type relay, the part or parts replaced shall meet the readjust requirements involved as specified in Section 040-520-701. 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.

3.04 *Cover Spring, Cover Guide, and Insulator:*

To replace a cover spring, cover guide, or insulator, remove the relay from the mounting plate as follows. Unsolder and tag the leads. Remove the mounting screws with the 4-inch E screwdriver and remove the relay. If the insulator is to be replaced, remove it and substitute the new insulator. If the cover spring or cover guide is to be replaced, remove the associated mounting screws using the 3-inch C screwdriver. Remove the spring or guide as required and substitute the new parts. Place the cover spring under the winding connections at the rear of the relay core and while holding the spring in place mount the cover guide over the core at the opposite side of

the relay. Insert and securely tighten the mounting screws. Check that the cover spring clears the terminals. Remount the relay securely on the mounting plate. Connect and solder the leads to the proper terminals.

3.05 *Cards:* To replace a card proceed as follows.

Note the location of the springs in the slots of the card to be replaced to ensure properly locating them on the new card. Slide the slots in the jaws of the 614A card remover over the front end of the balancing spring at the left of the card to be replaced. If the spring does not fully enter the slots in the remover, or the remover binds on entering, operate the relay manually. This will move the balancing spring away from the adjacent contact spring and provide sufficient clearance for the jaws of the remover. Then insert the remover as far as possible without forcing. While maintaining an inward pressure on the remover toward the contact springs, bend the tip of the balancing spring approximately 30 degrees to the left as shown in Fig. 4. The pressure in the remover is required to prevent the bending operation from removing the tension from the main portion of the spring. If adjacent apparatus on the panel is mounted too close to the relay to permit a 30-degree swing of the remover, loosen the mounting nuts or screws of this apparatus and move the apparatus aside to provide adequate clearance for the swing of the remover. In the same manner, apply the remover to the balancing spring at the other end of the card and, while maintaining pressure toward the contact springs, bend the tip of the balancing spring approximately 30 degrees to the right as shown in Fig. 5. Remove the card and substitute a new card as follows. Hold the new card so the small notch on the side of the card opposite the contact spring notches is toward the armature. Then mount the card over the balancing spring at the left so the lip of the card is over the tongue of the cutout portion of the spring. Working from the left, engage the springs in their proper notches in the card using the KS-6320 orange stick. Place the right end of the card in the balancing spring at the right. Then, while holding the card in position with a finger, bend the tips of the balancing springs back into line with the main portion of the springs using the 614A card remover. Take care not to bend the tips more than the required amount to avoid weakening the springs at the tips.

3.06 *Adjusting Nut and Locknut:* To replace the locknut, hold the adjusting nut with a

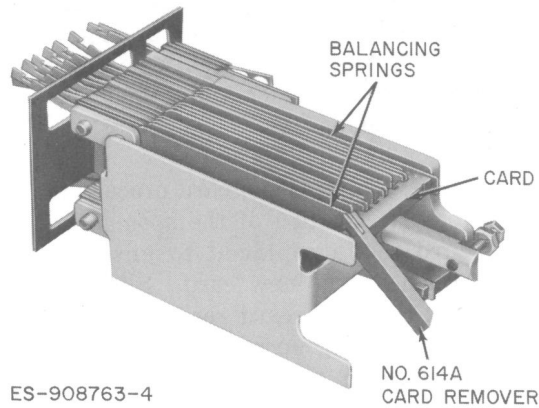


Fig. 4—Method of Bending Balancing Spring at Left

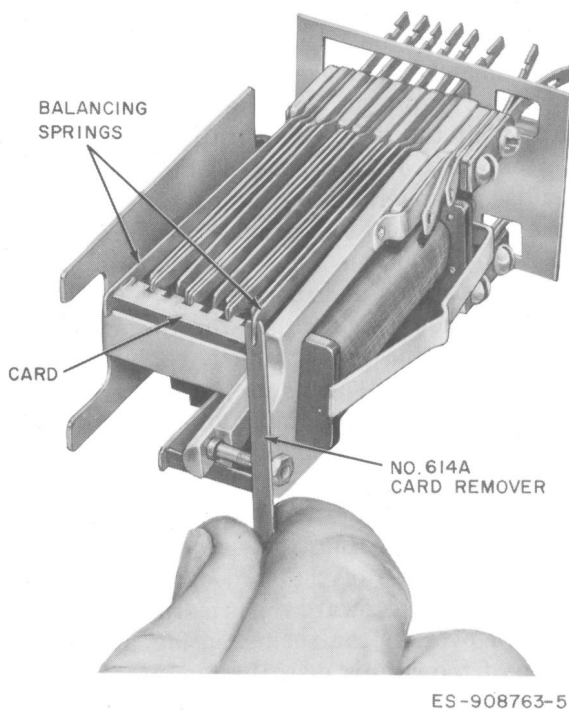


Fig. 5—Method of Bending Balancing Spring at Right

474A wrench and remove the locknut using another 474A wrench. Substitute the new locknut and tighten it in place to meet the adjusting nut locknut tightness requirement covered in Section 040-520-701. To replace the adjusting nut, remove the locknut, if provided, and then the adjusting nut using the 474A wrench. Substitute the new adjusting nut.

Position and tighten the adjusting nut to meet the armature travel and adjusting nut tightness requirements covered in Section 040-520-701. Mount the locknut, if provided, and tighten it in place to meet the adjusting nut locknut tightness requirement covered in Section 040-520-701.

3.07 Attachable Separator

(1) Where an attachable separator has previously been used and is to be replaced, use a 3-inch C screwdriver to remove the separator from the core. Note the thickness of the separator that was removed. Where the metal clip of the separator is marked 5, replace it with the D-178259 separator (0.005-inch designated 5 on the clip) and when it is marked either 10 or 15 replace it with the D-178260 separator (0.010-inch designated 10 on the clip). Mount a new separator as covered in (2) and (3).

(2) Insert the 132AF (0.004-inch) gauge into the armature gap, as shown in Fig. 6, to guide the flap of the attachable separator into position. This is done to prevent the flap of the separator from snagging on the stop discs. Hold the cardboard strip of separators in the left hand with the flap of the first separator toward the core of the relay and the free edge of the flap downward. Straighten the righthand end of the strip. Using the index finger of the left hand, slide the first separator approximately 1/8 inch over the end of the strip and insert the free edge of the flap between the gauge and the core. Take care that the flap is entirely behind the adjusting stud and that the front and rear corners of the flap enter the armature gap at the same time. Slide the flap into position and while holding the separator in place with the index finger of the left hand, as shown in Fig. 6, withdraw the strip. Turn the metal clip in a counterclockwise direction until the ears are in a vertical position. Snap the metal clip over the core so that the ears rest against the step on the core and then remove the gauge.

(3) With the separator in place, make sure that the edges of the window of the flap do not touch the stop discs and that there are no wrinkles or snags in the flap. If there are wrinkles or snags, remove the separator as covered in (1) and replace it.

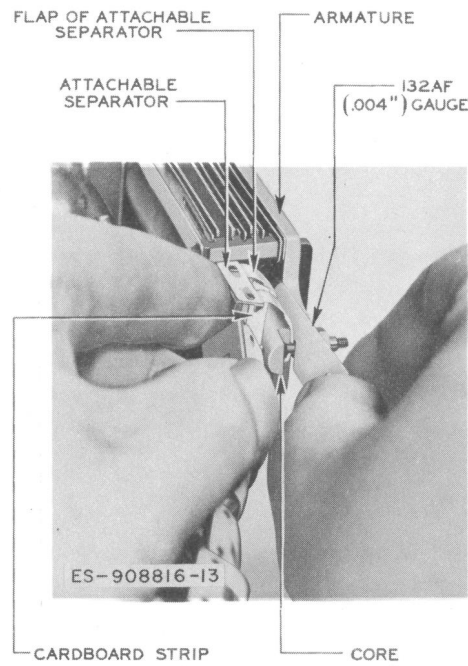


Fig. 6—Method of Applying Attachable Separator on Core