

AKR 30

Closing Spring Assembly

Replacement Instructions

"AKR 30" Closing Spring Identification

Examine the breaker closing spring assembly. Any closing spring having a 3" long lower anchor plate must be replaced with a closing spring assembly having a 4" long lower anchor plate and a ¼" diameter identification hole located at the top of that plate. When the closing spring assembly is replaced, any 5.63" long spring pin must be replaced with a spring pin having a 6.38" length. See figure 1 for a comparison of the old and new closing spring assembly and spring pin. Figures 2 and 3 show the new closing spring assembly and spring pin completely assembled on the breaker.

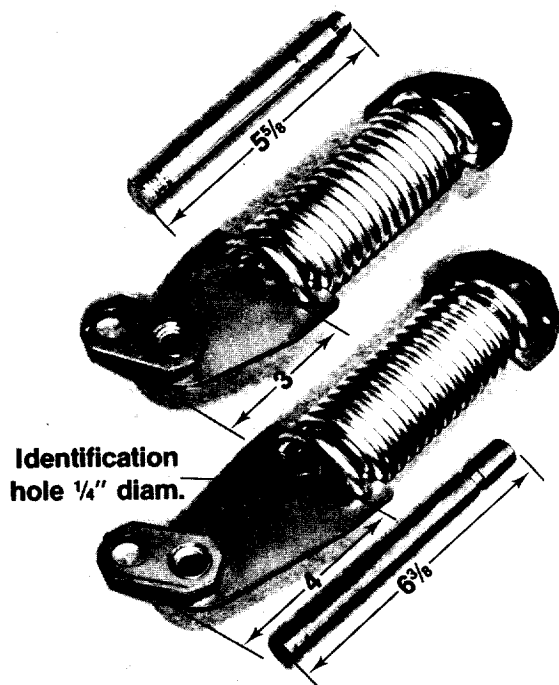


FIG. 1

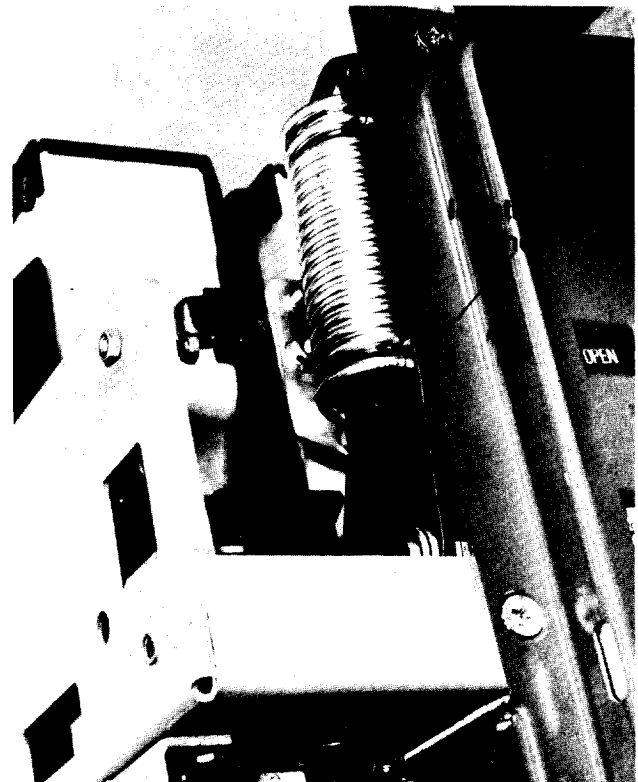
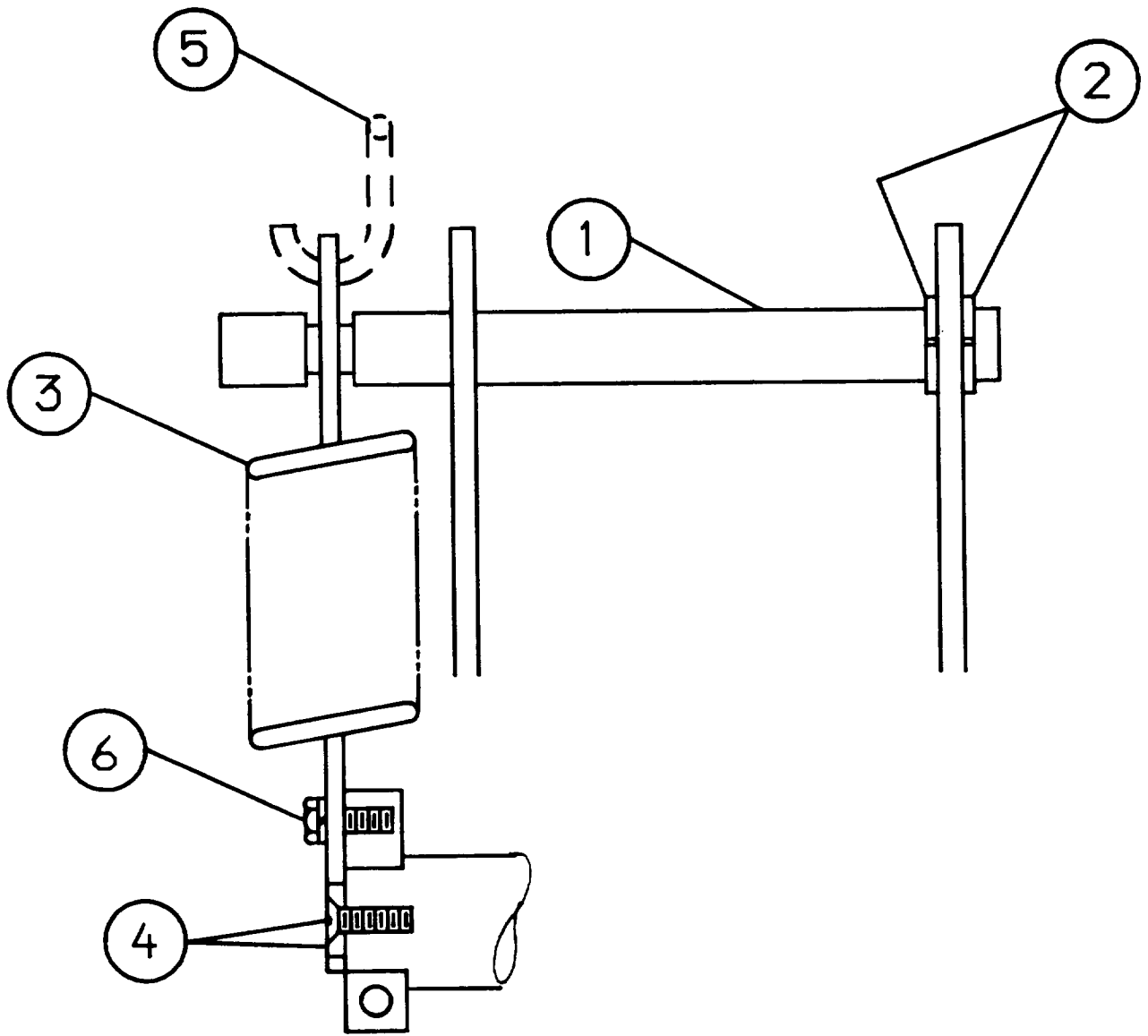


FIG. 2



- 1. Spring Pin
- 2. Squeeze Rings
- 3. Spring Assembly
- 4. Flat Head Screw and Countersunk Washer
- 5. Double Hook
- 6. Hex Head Bolt

FIG. 3

Tools Required for AKR-30 Closing Spring Replacement

- 1.* Double hook, 193A1816P1, for lifting the closing spring.
2. Maintenance handle 568B386G1.
3. Racking handle 673D500SH636G5.
4. Six inch long screwdriver for removing the flat head screw.
5. Eight inch blade screwdriver or larger for use as lever in removing closing spring.
6. Slip-joint pliers.
7. Thin bladed screwdriver for wedging squeeze rings out of groove.
8. 9/16 box wrench.

*supplied with kit

“AKR 30” Closing Spring Replacement Procedures

1. Remove the breaker from the switchgear cubicle and drawout rails.
2. Crank the racking mechanism to the “connected position” (clockwise to the end of travel).
3. Charge the breaker with a maintenance handle, then close and trip the breaker. This orients the main shaft in the best position for subsequent work.
4. Using a screwdriver and a pair of pliers remove and discard two squeeze rings from the spring pin as shown in figures 4, 5, and 6.

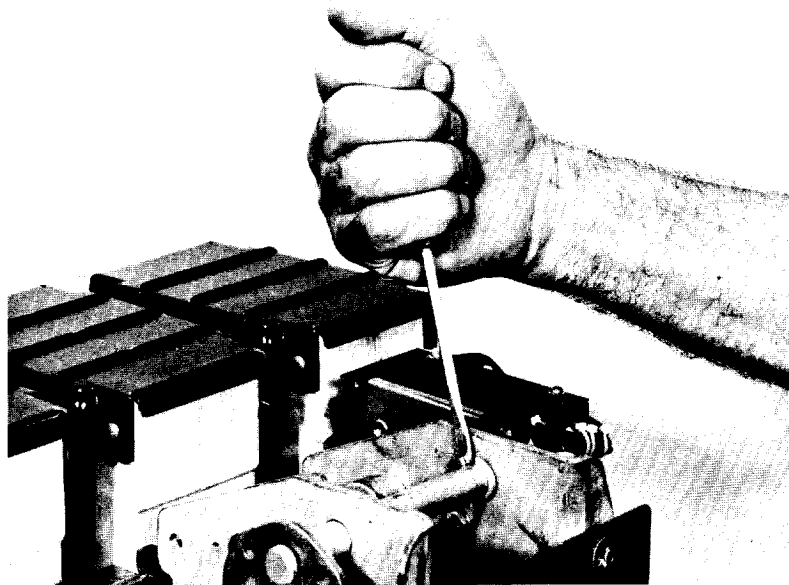


FIG. 4

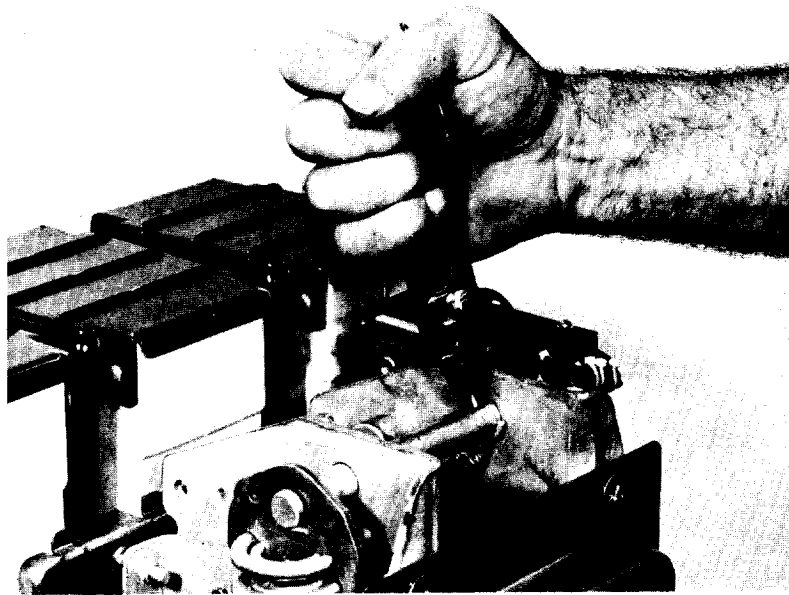


FIG. 5

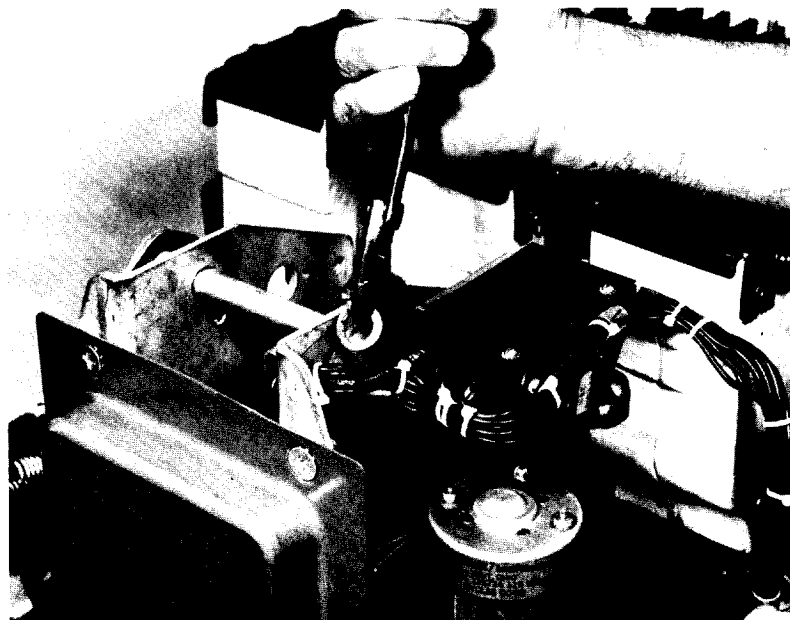


FIG. 6

5. To remove the closing spring assembly from the spring pin, place the ends of the double hook into the holes of the upper anchor plate. Insert a screwdriver or other levering device into the loop of the hook as shown in figure 7. Extend the closing spring and disengage the spring pin by drifting it to the right.

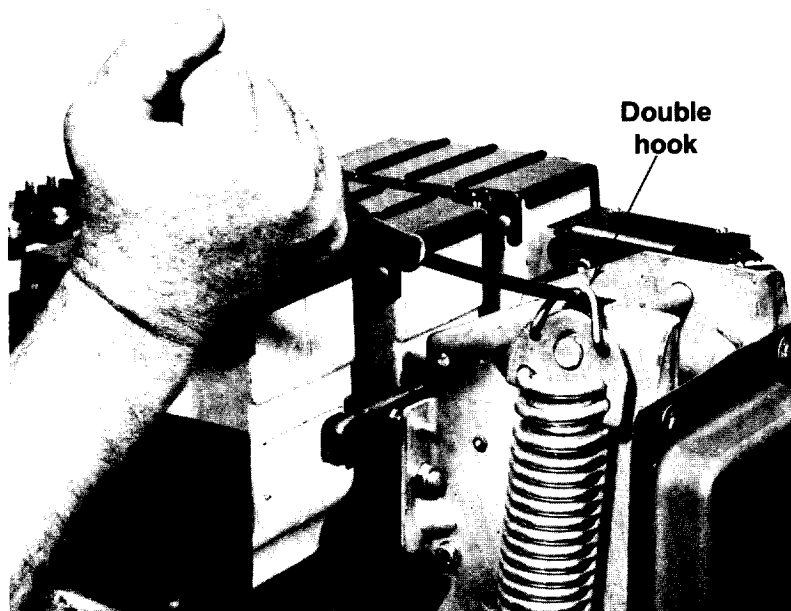


FIG. 7

6. Remove the spring pin from the breaker by sliding it to the left as shown in figure 8. Discard the pin.

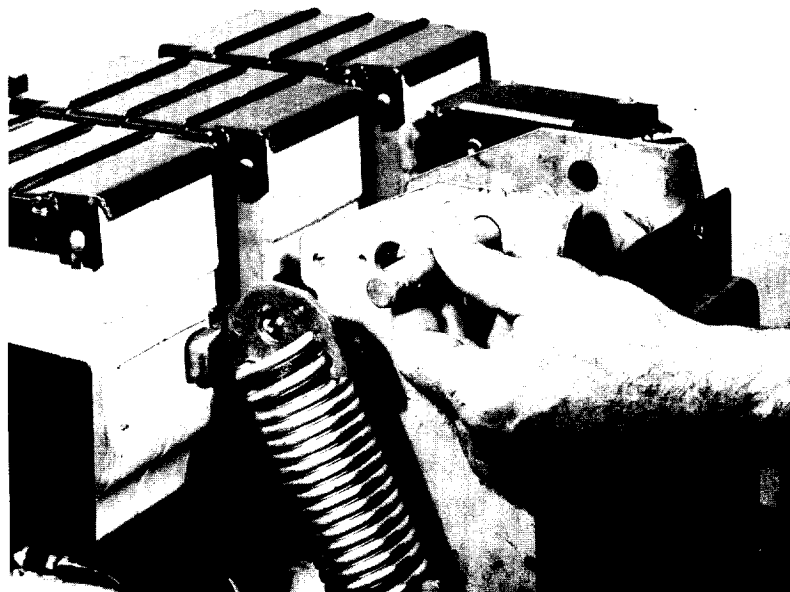


FIG. 8

7. Unscrew and discard the flat head screw, which has been secured with locktite, by using a large screwdriver through the access hole provided, (see figure 9). It may be necessary to turn the breaker on its side and use a pair of pliers with the screwdriver to unscrew the flat headscrew, (see figure 10). If this attempt fails, warm up the screw with a large soldering iron or hot air gun to soften the locktite for screw removal.

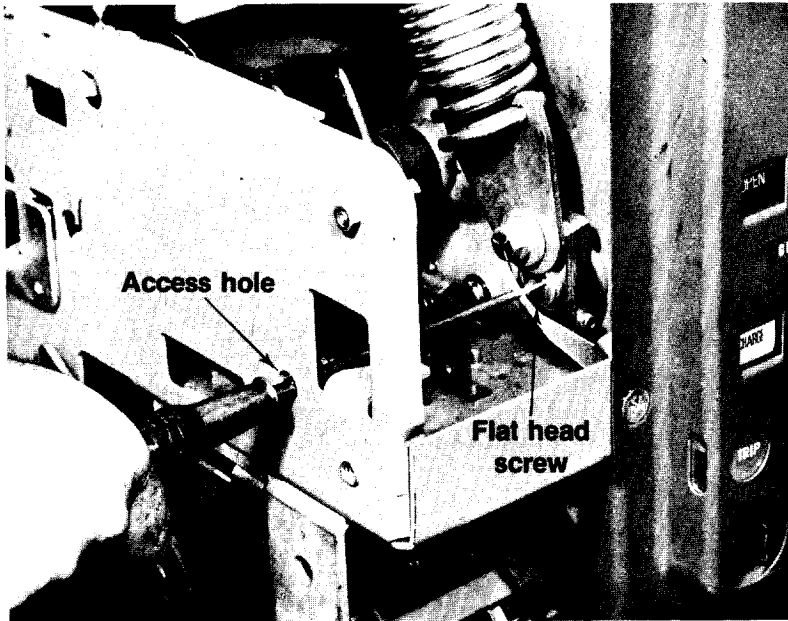


FIG. 9

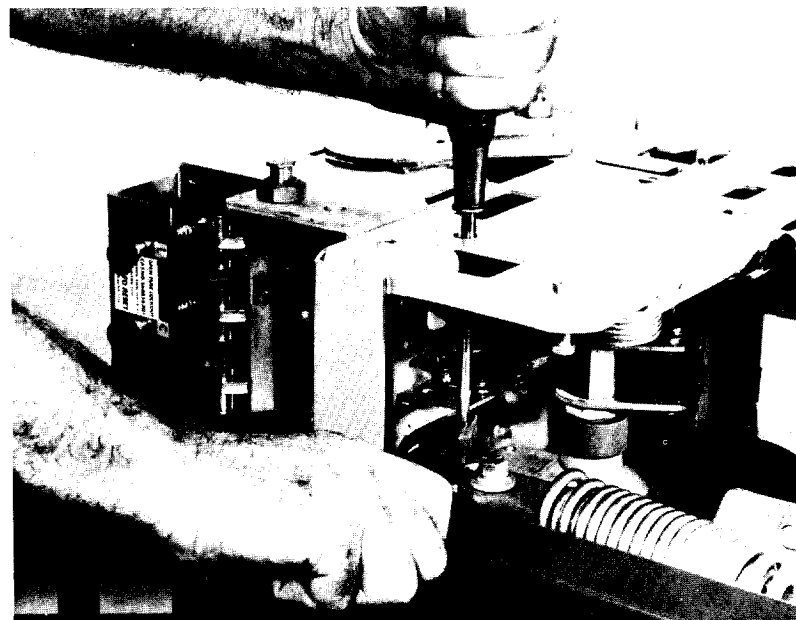


FIG. 10

8. Remove the $\frac{3}{8}$ -16 bolt and lockwasher on the crank shaft, (see figure 11) and lift the old spring assembly out of the breaker.

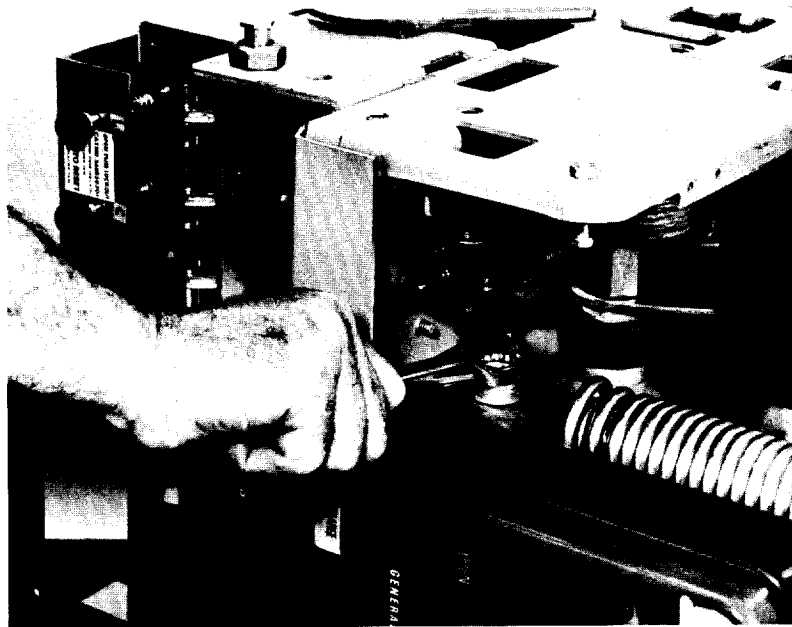


FIG. 11

9. Slide a new spring pin through the left hole of the mechanism frame, and slip a new squeeze ring on the pin, (see figure 12). Continue to slide the pin through the right hole.



FIG. 12

10. Position the new spring assembly into the breaker.
11. Put the large countersunk washer on the new flat head screw and coat the threads of the screw with locktite. Tighten the screw until secure but do not tighten all the way at this time.
12. Use the double hook to extend and seat the closing spring assembly upper anchor plate into the groove of the spring pin, (see figure 13).

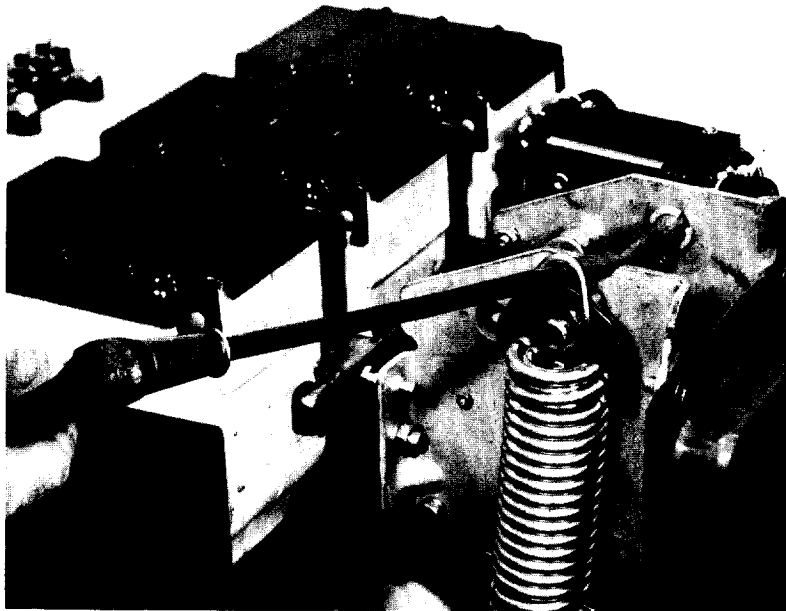


FIG. 13

13. To replace the hex head bolt and washer, rotate the crankshaft with a maintenance handle to align the holes of the lower spring anchor and the crankshaft. If the crankshaft rotation is stopped by the closing spring prop, release the closing spring prop from the roller of the ratchet assembly by pulling the armature of the closing solenoid forward. See figure 14. Manually trip the breaker, continue to rotate the crankshaft until the holes of the lower anchor plate and crankshaft are aligned. Assemble the hex head bolt to the breaker.

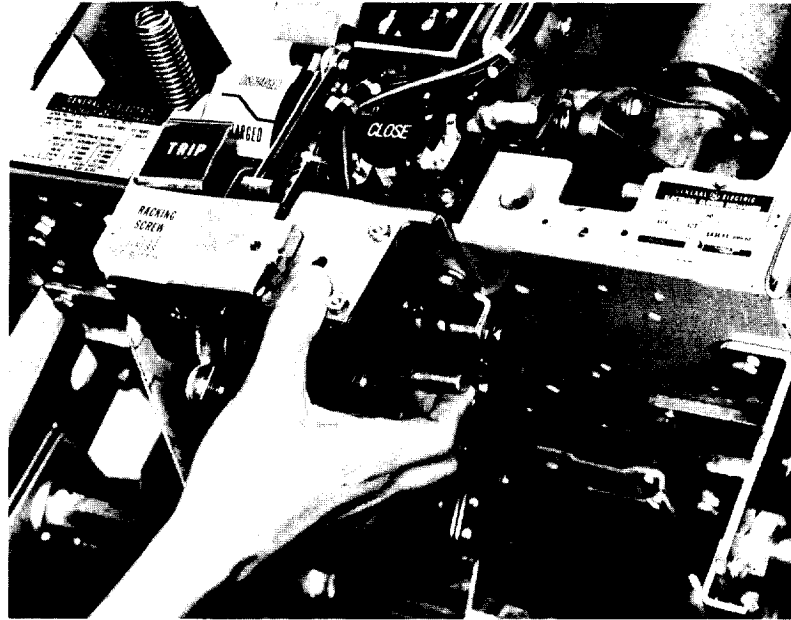


FIG. 14

14. After the closing assembly upper anchor plate is seated on the spring pin and the hex head bolt applied, tighten the flat head screw. Verify that the hex head bolt is tight.
15. Secure the spring pin with the two squeeze rings, (see figure 15).
16. Readjust contact wipe per instruction book GEI-86134A.

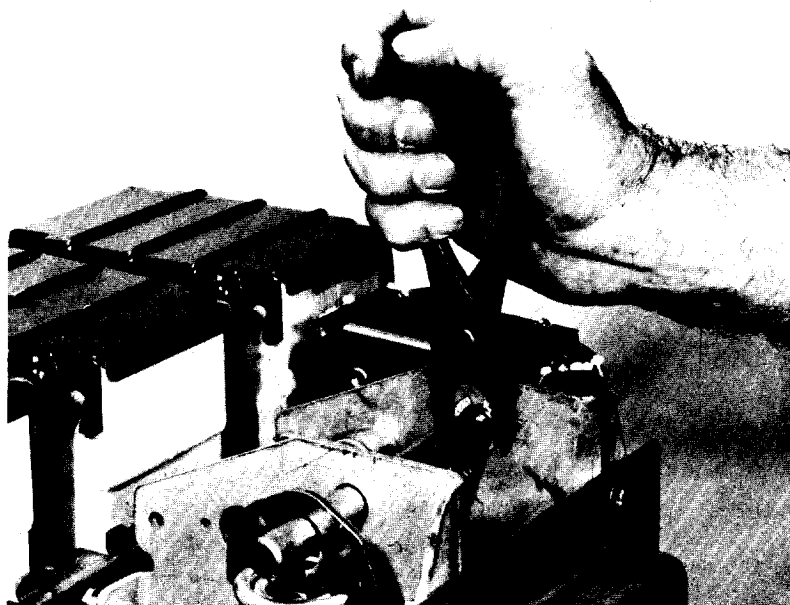


FIG. 15

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