

DEH40466 INSTALLATION INSTRUCTIONS

Power Break® II Circuit Breakers

Replacement Stop Block Kit

Application

This kit is provided to replace the stop block assembly in the Power Break II insulated-case circuit breakers. The parts included in this kit are illustrated in Figure 1 and listed in Table 1. In the following instructions and figures, numbers in brackets refer to the items in Table 1.

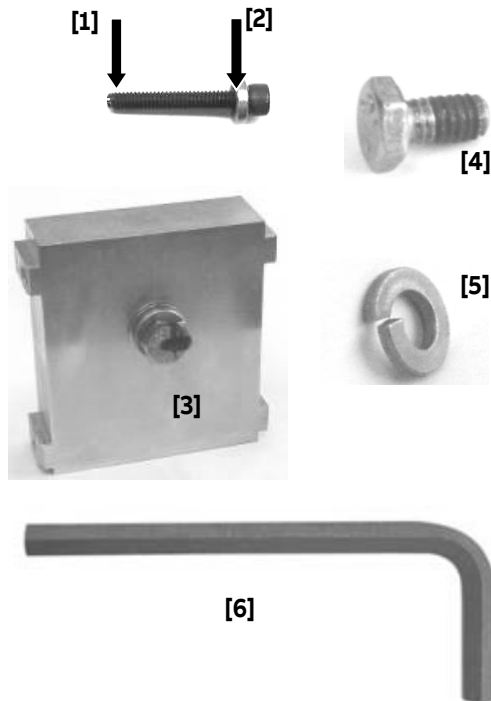


Figure 1: Parts included in the stop block gasket kit

| Item | Part # | Description | Qty. |
|------|--------------|---------------------------------|------|
| 1 | N170P19024 | SPRING ASSEMBLY SCREW | 1 |
| 2 | 192A6368P1 | SPACER | 1 |
| 3 | 10054595G1 | ASSEMBLY, STOP BLOCK | 1 |
| 4 | 192A6976P233 | BOLT, N22P21008B6 W/NYLON PATCH | 4 |
| 5 | N405P41B6 | LOCKWASHER, STL SPRING 1/4 | 4 |
| 6 | 10103502P1 | 5/32 ALLEN WRENCH TOOL | 1 |

Table 1. Parts list for the stop block gasket kit.

Installation



WARNING: Before beginning this procedure, turn the breaker OFF, disconnect it from all voltage sources, and discharge the closing springs.



AVERTISSEMENT: Mettre le disjoncteur à OFF, le débrancher de toutes les sources de tension et déclencher les ressorts de fermeture avant d'entamer cette procédure.

1. Turn the breaker off and discharge the closing spring by depressing the OFF and ON buttons in the sequence OFF-ON-OFF. Verify that the breaker OFF-ON indicator shows OFF on a green background and that the charge indicator shows DISCHARGED on a white background.
2. A draw-out and stationary mounted breaker need not be removed from their enclosures, but be careful that all primary and control power to the breakers are disconnected.
3. Loosen the four #8-32 screws that attach the trim plate to the breaker, if present, and remove the trim plate.
4. Loosen the four screws at the corners of the breaker cover. Operate the charging handle one time and hold it extended to remove the cover from the breaker face, as illustrated in Figure 2.



Figure 2: Removing or installing the breaker top cover.

5. Operate the charging handle four more times (for a total of five, one less than the six needed to fully charge the closing spring). If the closing spring does not charge, use the following steps:
 - a. With a large screwdriver, put pressure on the end of the closing spring, as shown in Figure 3 and Figure 4.
 - b. Maintain pressure with the screwdriver while operating the charging handle one time.
 - c. Remove the screwdriver and operate the handle four more times.
6. Install the spring assembly screw [1] with spacer [2] at the end of the spring assembly, as shown in Figure 5 with the supplied $\frac{5}{32}$ Allen Wrench tool [6].
7. Release the closing spring by pressing the close de-latch lever with a screwdriver, as shown in Figure 6. Then press the lever nearest the spring to release the breaker mechanism, as shown in Figure 8.
8. Using a screwdriver pull the ratchet arm away from the sprocket to allow for the shaft mechanism to rotate freely (Figure 10). While holding the ratchet arm away from the sprocket, press the spring against the stop block as shown in Figure 11, then lift the front end of the spring assembly up and out, as shown in Figure 12.

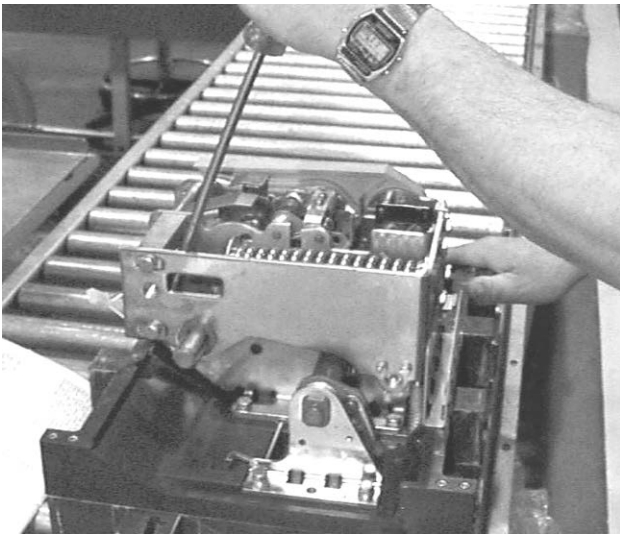


Figure 3: Applying pressure to the end of the closing spring.

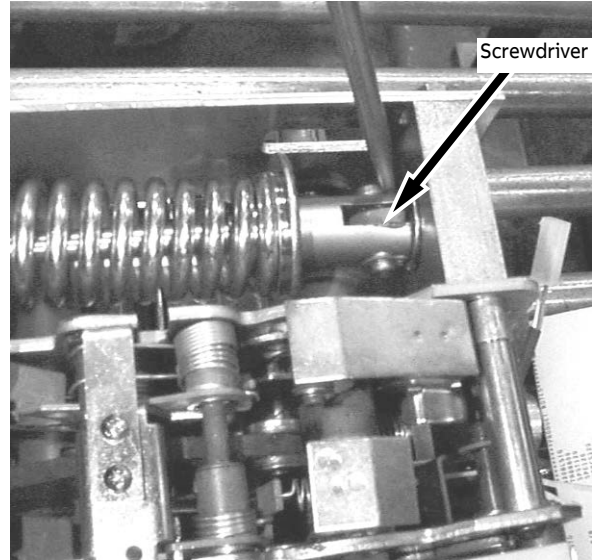


Figure 4: Application point of screwdriver.

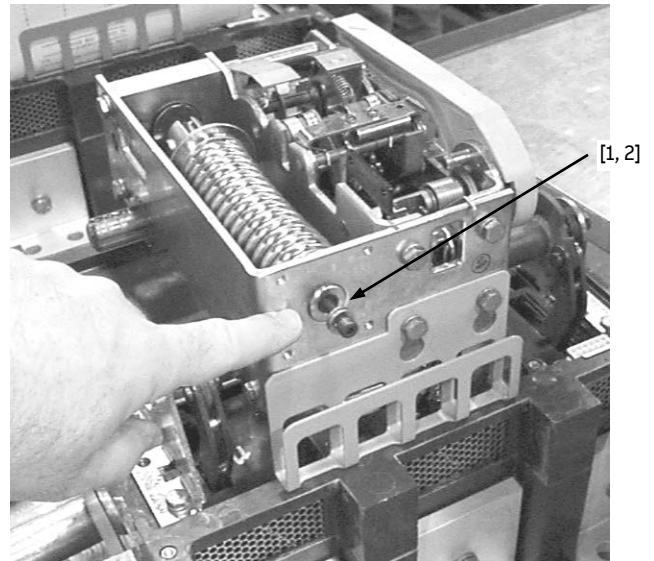


Figure 5: Installing the spring assembly screw.

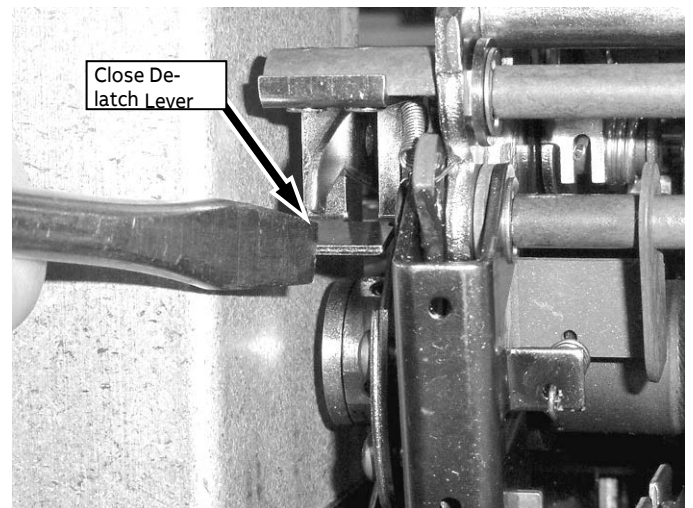


Figure 6: Pressing the close de-latch lever to release the closing spring.

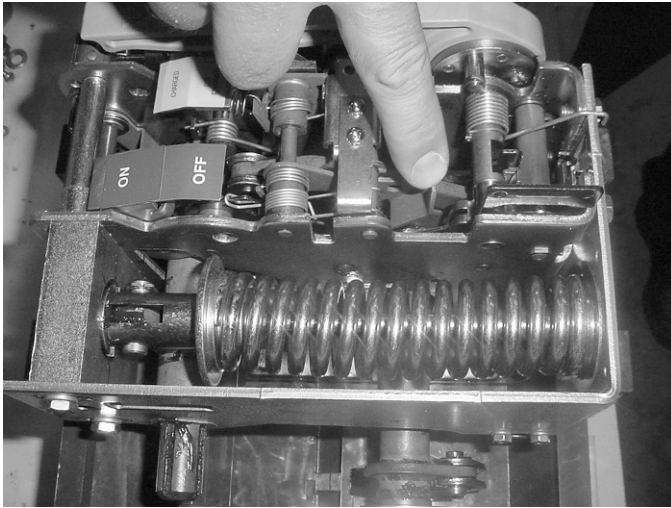


Figure 8: Releasing the breaker mechanism.

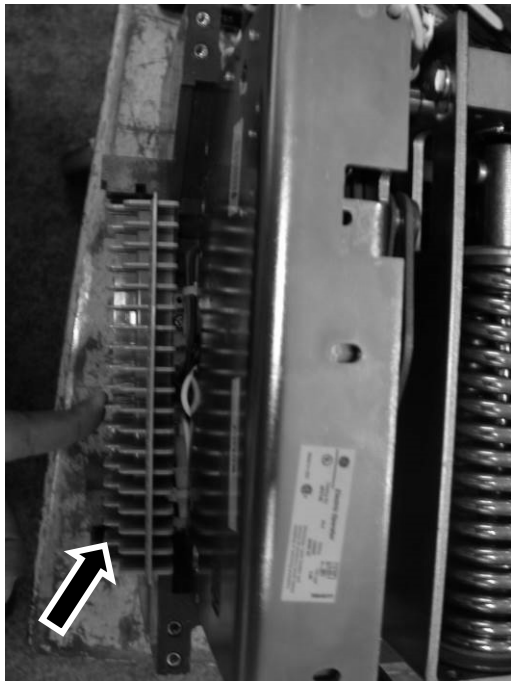


Figure 9: Secondary Connections Piece to be Removed Before Electric Operator

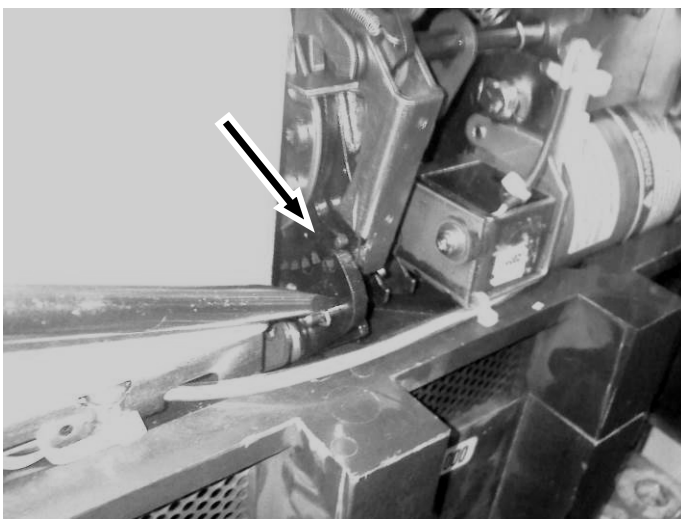


Figure 10: Illustration of ratchet arm being pulled away from sprocket

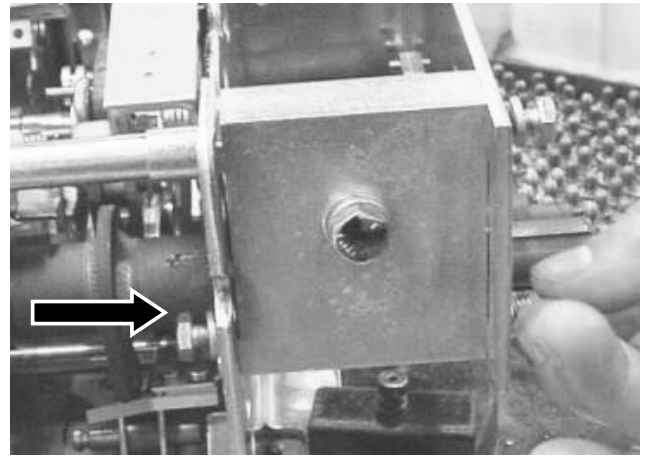


Figure 7: Illustration of Bolt on Handle Side of Assembly Wall

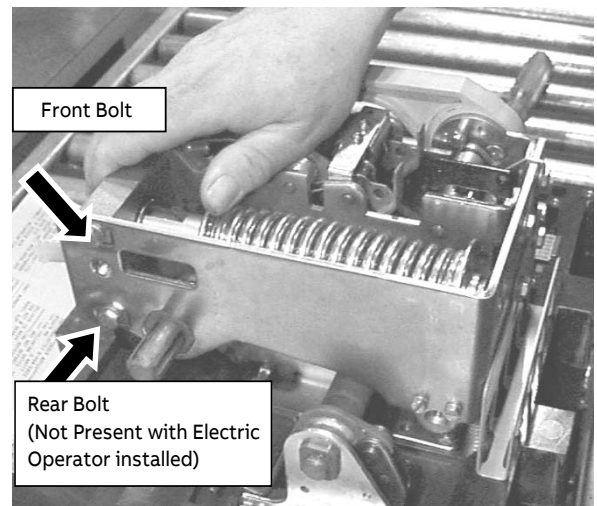


Figure 11: Pressing the spring assembly to allow removal.

9. If the Electric Operator is installed on a stationary breaker it must be detached before the Stop Block is replaced. First remove the gray plastic secondary connection piece from the left side of the breaker (Figure 9). Remove the two long Phillips screws and external tooth lock washers from the left side of the Electric Operator (Figure 22 & Figure 23) with a #3 Phillips screwdriver.
10. If working on the stationary model, support the Electric Operator with your hand so it does not fall following the next step. Remove the two smaller hex screws and split lock washers from the silver bottom plate that secures the Electric Operator to the assembly walls (Figure 23). The Electric Operator may now be set-aside without disconnecting the electric snap connections. The Draw-out model only requires that the electric operator be slid to the left slightly allowing for a $\frac{7}{16}$ wrench to access the bolt on the side of the assembly wall (Figure 21 & Figure 22).
11. Remove the front and rear bolts that secure the stop block to the left side of the spring assembly wall (Figure 11), and the bolt securing the stop block

assembly to the handle side of the assembly wall (Figure 10). If Electric Operator is installed, then only the front and handle side bolts will need to be removed because the rear bolt will not be installed.

12. Loosen any screws on the front face of the accessories (Figure 13) until the screws are fully loosened from the housing, and then loosen the $\frac{1}{4}$ -in setscrews located on the side of the shunt trip guide housing (Figure 14). This will allow the guide housing and accessories to be removed.
13. Using the supplied $\frac{5}{32}$ Allen Wrench [6], unscrew the long bolt (BH HEX SKT $\frac{1}{4}$ -20 X 3.56 SCREW) located on the structure as seen in Figure 15 from the stop block but it is not necessary to fully remove from the Spacer Side Frame Pin tubing with collar that it passes through.
14. Wedge a flat head screwdriver between the spring frame bearing and shaft and then rotate 90 degrees in order to deflect the left side of the spring assembly wall outward (Figure 16) to allow for the removal of the stop block (Figure 17).
15. Discard the currently installed stop block, replace with the new stop block assembly [3], and secure with the three new Bolts with nylon patch [4] with Steel Spring Lock Washers [5] on each to 65 inch-pounds min. For models with the Electric Operator only replace the front and handle side bolts. Ensure that the holes in the new stop block align with the screw holes in the assembly to avoid installing the new stop block incorrectly. Looking at the block with the stop block gasket facing down, there should be three holes on the left side of the stop block and two holes on the right side.
16. Screw in the long bolt as seen in Figure 15 with a $\frac{5}{32}$ Allen Wrench [6] to 90 inch-pounds min., and secure the Shunt Trip guide casing and unit back into place.
17. Align the charging spring back in position, as shown in Figure 8.
18. Operate the breaker charging handle five times. Remove the spring assembly screw[1] and spacer[2] from the end of the spring.
19. Press on the close de-latch lever with a screwdriver, rotating it clockwise as seen from the handle side of the breaker, as shown in Figure 19. Then, with another screwdriver, rotate the close de-latch mechanism to release the charging pawl.
20. Rotate the trip de-latch lever fully back against the frame, as shown in Figure 20, while pressing down on the cradle to release the closing mechanism. While holding the cradle down, rotate the spring forward against the stop block.

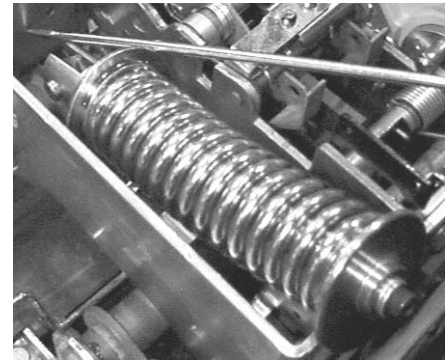


Figure 12: Spring Removed Up and Out of Assembly.

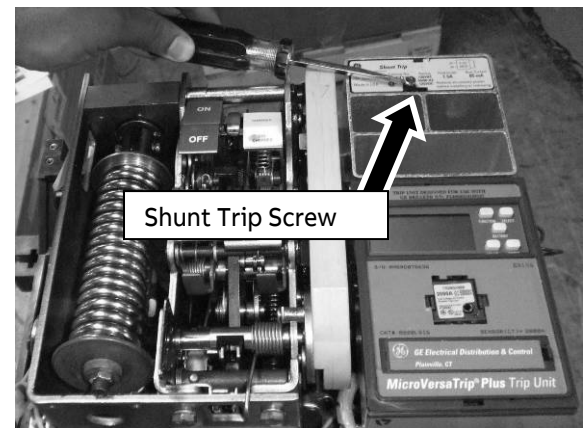


Figure 13: Shunt Trip Screw to be Unscrewed

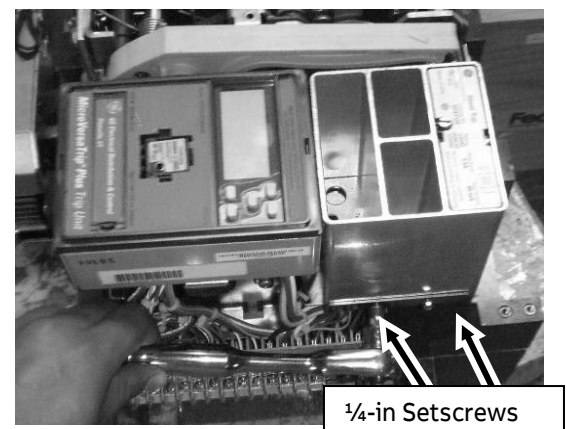


Figure 14: 2 Setscrews

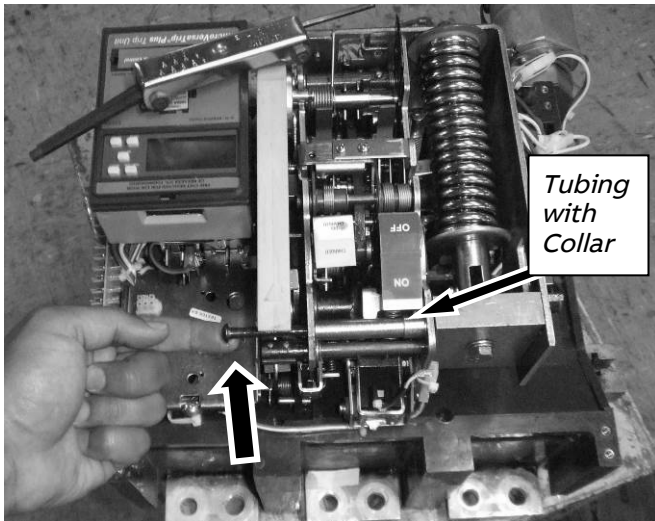


Figure 15: Allen Screw to be loosened for Stop Block Removal

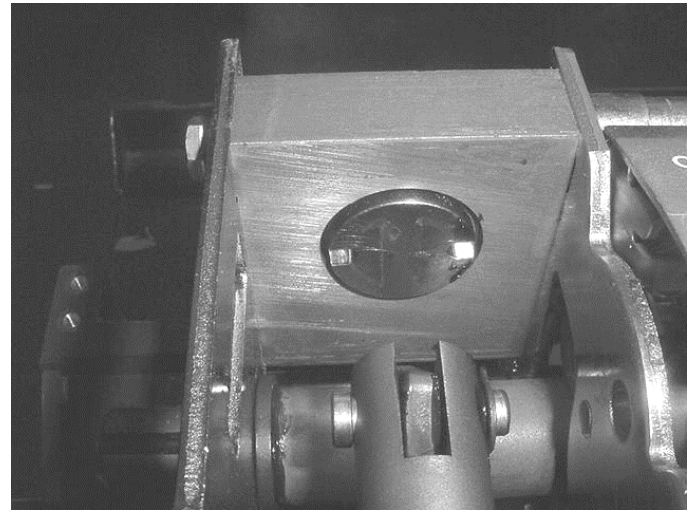


Figure 18: Stop block in position in breaker.

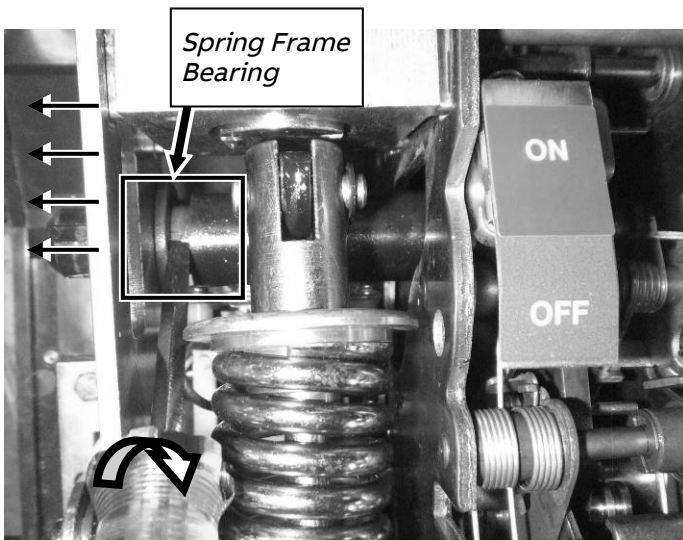


Figure 16: Screwdriver Placement for Deflection of Assembly Wall

21. Replace the Electric Operator if previously removed by securing with the long screws on the left side of the spring assembly wall and the short hex screws on the bottom of the spring assembly (Figure 23).
22. Operate the charging handle one more time to fully charge the spring, then close and trip the breaker.
23. Operate the charging handle once and hold the handle extended while reinstalling the breaker top cover, as shown in Figure 2. Tighten the four #10-32 screws to 15 in-lb.
24. Replace the trim plate, if present, and tighten the four #8-32 mounting screws to 20 in-lb.
25. Operate the charging handle until the spring is completely charged. Close and trip the breaker.
26. Return the breaker to operation.

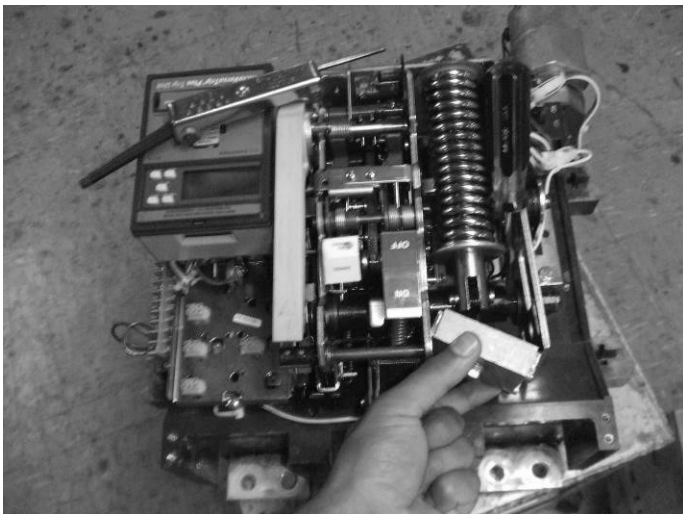


Figure 17: Removal of Stop Block Assembly

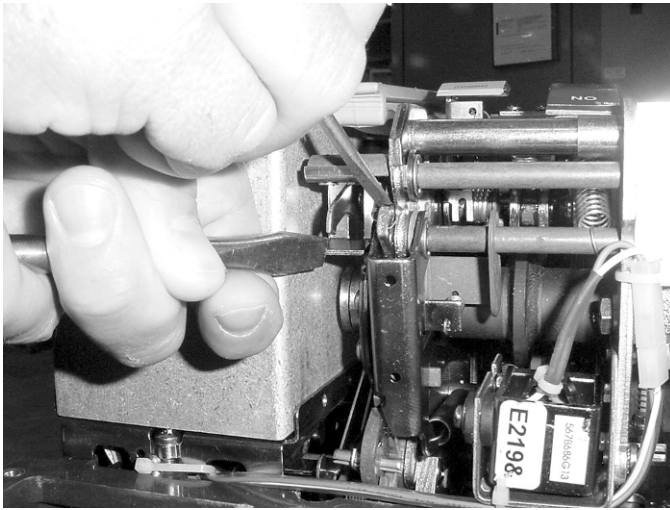


Figure 19: Rotating the close de-latch mechanism to release the charging pawl.

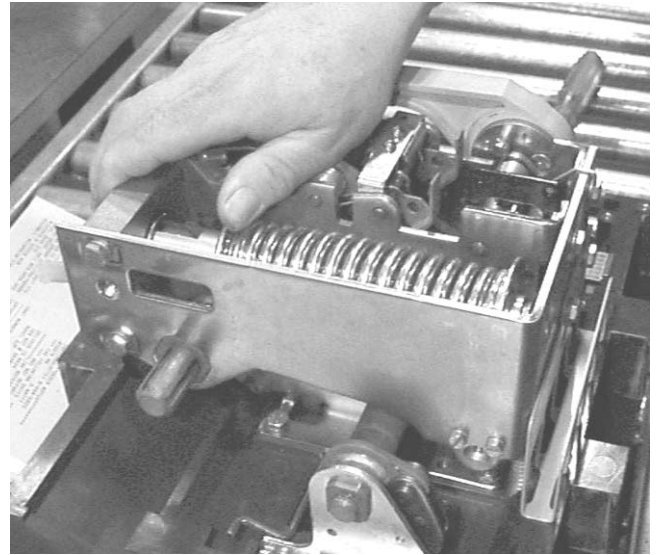


Figure 20: Reinstalling the closing spring.

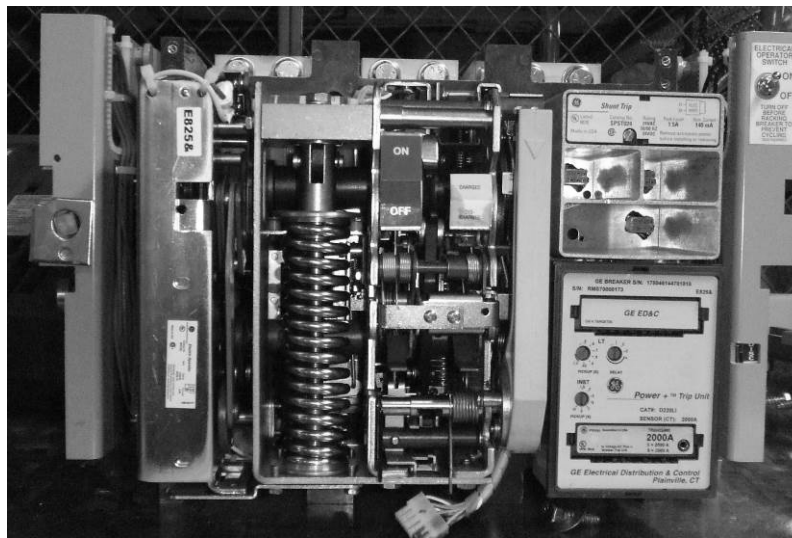


Figure 21: Draw-out Breaker with Electric Operator

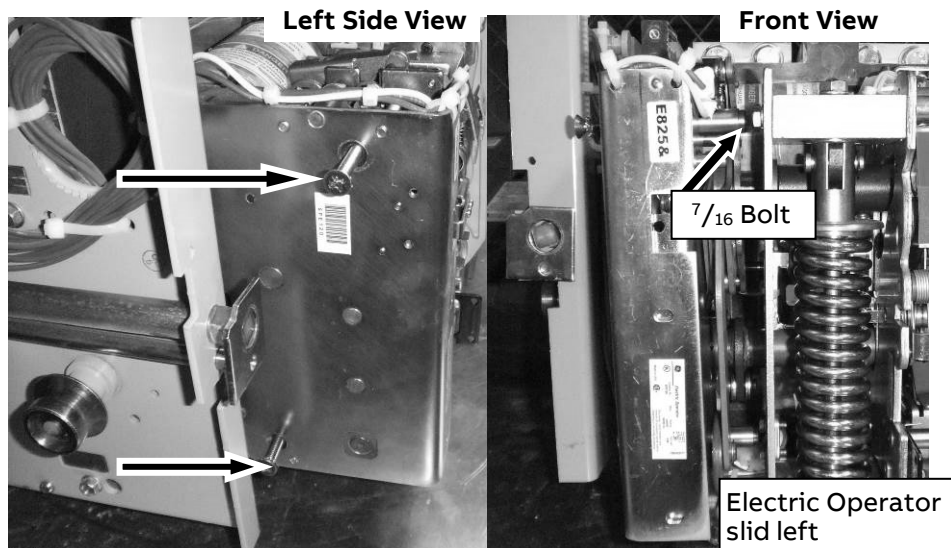


Figure 22: Electric Operator Slid Left on Draw-out Breaker after long Phillips screws unscrewed

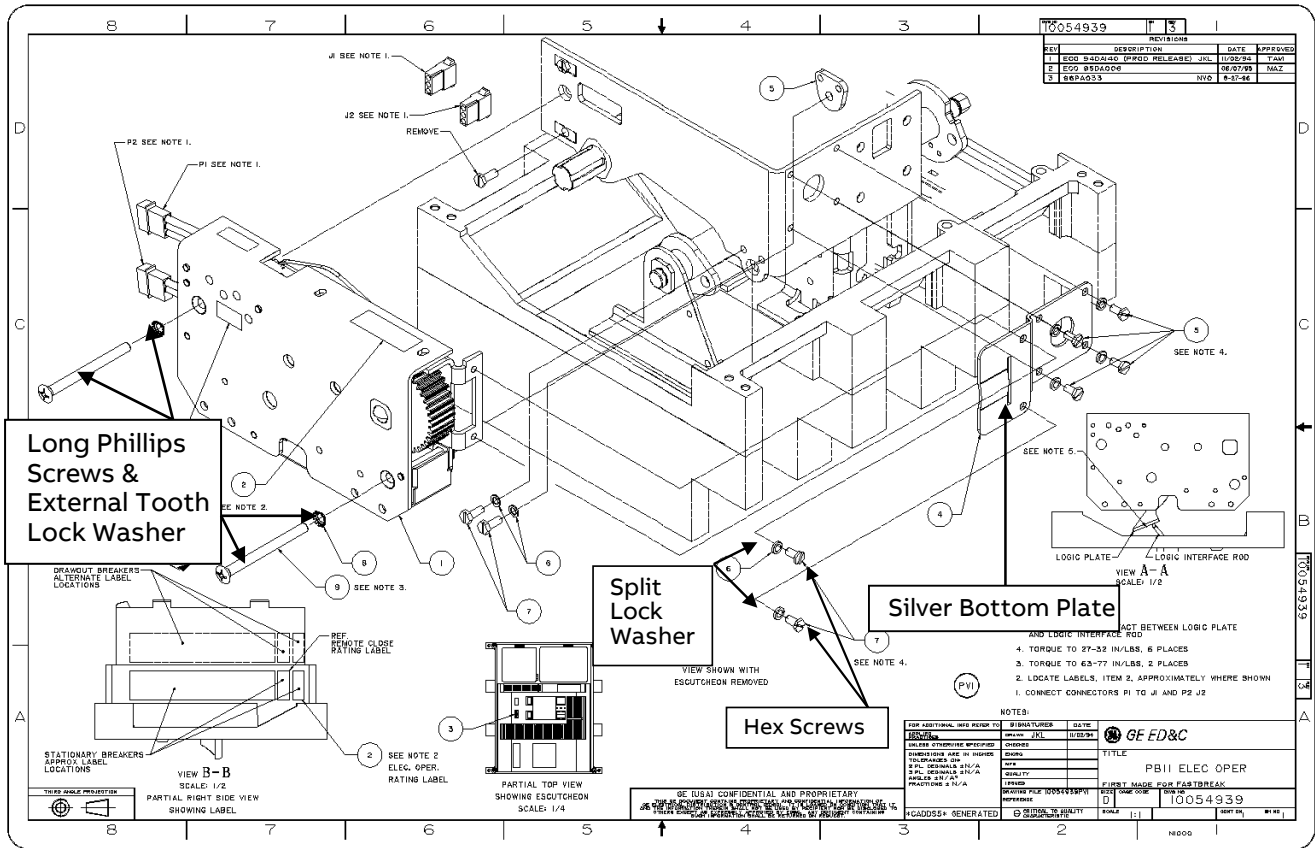


Figure 23: Electric Operator Diagram

These instructions do not cover all details or variations in equipment nor do they provide for every possible contingency that may be met in connection with installation, operation, or maintenance. Should further information be desired or should particular problems arise that are not covered sufficiently for the purchaser's purposes, the matter should be referred to the ABB Inc.