Breaker moving contact replacement kit on Magnum circuit breaker

⚠️ WARNING

(1) ONLY QUALIFIED ELECTRICAL PERSONNEL SHOULD BE PERMITTED TO WORK ON THE EQUIPMENT.
(2) ALWAYS DE-ENERGIZE PRIMARY AND SECONDARY CIRCUITS IF A CIRCUIT BREAKER CANNOT BE REMOVED TO A SAFE WORK LOCATION.
(3) DRAWOUT CIRCUIT BREAKERS SHOULD BE LEVERED (RACKED) OUT TO THE DISCONNECT POSITION.
(4) ALL CIRCUIT BREAKERS SHOULD BE SWITCHED TO THE OFF POSITION AND MECHANISM SPRINGS DISCHARGED.

FAILURE TO FOLLOW THESE STEPS FOR ALL PROCEDURES DESCRIBED IN THIS INSTRUCTION LEAFLET COULD RESULT IN DEATH, BODILY INJURY, OR PROPERTY DAMAGE.

Section 1: General information

Depending upon the frame size, each primary moving contact assembly is comprised of multiple individual copper contact fingers connected to the load conductor through flexible connectors. Two flexible connectors are used to connect each finger to the load conductor. The number of fingers used depends upon the circuit breaker’s continuous and short-circuit current ratings. The single contact finger performs both the main and arcing contact functions on different parts of the same finger.

Required tools
- 3/8-inch socket drive (with torque measuring capability)
- 10 mm socket
- 10 mm wrench
- 4 mm Allen wrench
- 8 mm Allen wrench
- 17 mm socket
- #2 Phillips head screwdriver

Kit parts identification

Refer to Figure 1 for visual identification of the parts for the different 2A10897 kits listed below:

(A) Carrier assembly (three for G01, G02, G03, G04, G09, G10, G21, G22, and G25; four for G05, G06, G07, G08, G11, G12, G23, and G24)
(B) M10 x 30 mm hex bolt (six for G01, G02, G03, and G09; eight for G05, G06, G07, and G11)
(C) M10 x 45 mm hex bolt (six for G01, G10, G21, and G23; eight for G08, G12, G22, and G24)
(D) M10 ribbed lock washer (six for G01, G02, G03, G04, G09, G10, G21, and G23; eight for G05, G06, G07, G08, G11, G12, G22, and G24)

Figure 1. Contents of Kit
Section 2: Installation of moving contact replacement kit

Proceed with the following 32 steps:

**Step 1:** Remove the front cover by unscrewing the hex-head captive bolts (four for three-pole, six for four-pole) that join the cover to the breaker housing using a 10 mm 1/4-inch drive socket. Then hold the charge handle down approximately 45 degrees to pull off the cover.

**Step 2:** Remove all of the arc chutes from the breaker by unthreading the captive mounting screw in each arc chute. Then slide the vented cover toward the rear, and lift the arc chute up and out.

**Step 3:** Remove all primary disconnects, vertical adapters, heat sinks, and so on as applicable from the primary line and load conductors.

**Step 4:** Remove the current sensor cover by unscrewing the self-threading screws (seven in three-pole breaker, nine in four-pole breaker).

**Step 5:** Remove the current sensors by sliding the sensors off the load conductors. Unplug the sensors by squeezing the tabs on the connectors.
Breaker moving contact replacement
kit on Magnum circuit breaker

Step 6: If the bottom of the breaker is equipped with a rejection bracket, remove it by unscrewing the three hex-head bolts securing the bracket in place.

Figure 6. Step 6

Step 7: Loosen the breaker’s side plates by removing the rearmost two bolts/screws from the side plates on both sides of the breaker. Loosen the front bolt/screw just enough to pivot the plates away from the notch in the rear housing.

Note: A fixed breaker configuration is shown in the illustration. Drawout (Lev-in type) breakers have flat side plates mounted with flat-head screws.

Figure 7. Step 7

Step 8: If the line or load side conductors have fast-on voltage tap connectors attached, remove them with needle-nose pliers.

Figure 8. Step 8

Step 9: Remove the M6 hex-head bolts that join the rear housing to the front housing using a 10 mm 1/4-inch drive socket.

Step 10: Remove the rear housing. Be careful not to catch the current sensor plugs or lose the M6 square nuts.

Figure 9. Steps 9 and 10

Step 11: If air-core sensors are located on the load conductors, remove them by pulling them out of the plastic insulator. Then remove the plastic insulator by squeezing the sides inward to free it from the metal bracket.

Figure 10. Step 11

Step 12: Remove the two M10 bolts that hold the load conductor to the front housing using a 17 mm socket. Also remove the metal bracket that held the plastic insulators.

Figure 11. Step 12
Step 13: Close the poleshaft. On the front side of the circuit breaker, locate the compression spring and guide. Place a #2 Phillips standard length screwdriver between the poleshaft and the pin that the spring guide drives. Rotate the poleshaft counterclockwise (as viewed from the left side of the breaker) until the mechanism latches. This will hold the poleshaft in the closed position.

**Note:** Do not attempt to close the breaker using the closing spring.

Step 14: Remove the screwdriver.

Step 15: Remove the carrier assemblies. At the rear of the breaker, tip the carrier assembly upward and gently pull the carrier assembly away from the front housing to disengage the drive system.

Step 16: Install new carrier assemblies using the M10 hex head bolts and serrated washers supplied with the kit. Place the air-core coil bracket between the serrated washers and the conductor, and snug up the bolts loosely. Do not tighten the bolts at this time. Refer to Step 12.

Step 17: Snap the air-core insulator back into the bracket on the conductor with the notched edge facing into the breaker. Then snap the air-core coil into the insulator. Refer to Step 11. The wire leads from the coil should lay in the notch in the insulator.

**Note:** On double-wide breakers, the colored band on the coil must be positioned on the left when viewed from the rear.

Step 18: Press the OFF button on the front of the breaker. The poleshaft should rotate clockwise. Some manual assistance may be needed.

Figure 14. Step 18

Step 19: Place the rear housing on the front housing. Be careful routing the wires so as not to pinch them between the housings. Refer to previously performed Steps 9 and 10.

Step 20: Reinstall the M6 housing bolts and torque to 75–85 in-lbs (8.5–9.6 Nm). Refer to previously performed Steps 9 and 10.

Step 21: Reinstall the fast-on terminals if previously removed. Refer to Step 8.

Step 22: Reinstall the rejection bracket if previously removed. Refer to Step 6.

Step 23: Reinstall the M6 square bolts, with the flat side facing the outside of the breaker, and install the side plates on both sides of the breaker. Refer to previously performed Step 7.

Step 24: Temporarily place the current sensor cover over the load conductors and use it as a gauge to determine the proper alignment of the conductors. If the load conductors are not centered in the openings, gently tap with a rubber mallet to achieve proper alignment.

Step 25: Remove the current sensor cover and tighten the load conductors. Torque to 20–25 ft-lbs (26–33 Nm). Refer to Step 12.

Step 26: Test the breaker to ensure proper operation by doing the following:
- Charge and CLOSE the breaker
- Recharge and OPEN and CLOSE the breaker
- OPEN the breaker

Step 27: Plug the current sensors into the connectors and hook the wires into the molded housing clips.

Step 28: Slide the current sensors over the conductors, making sure the wires are completely below the horizontal protrusion on the current sensor housing. The sensor should rest flush with the recessed shoulder in the breaker housing.
Step 29: Reinstall the current sensor cover into the breaker rear housing. Use screws and washers in the top row of holes and screws only in the bottom row, taking care to find the original screw threads in each hole.

Figure 15. Steps 24–29

Step 30: Reinstall all primary disconnects, vertical adapters, heat sinks, and so on as applicable to the line and load conductors. Torque to 100–150 in-lbs (11–17 Nm). Refer to Step 3.

Step 31: Reinstall the arc chutes and secure with their captive screws. Refer to Step 2.

Step 32: Reinstall the front cover removed in Step 1.
Breaker moving contact replacement kit on Magnum circuit breaker
Breaker moving contact replacement kit on Magnum circuit breaker
Disclaimer of warranties and limitation of liability

The information, recommendations, descriptions, and safety notations in this document are based on Eaton Corporation’s (“Eaton”) experience and judgment, and may not cover all contingencies. If further information is required, an Eaton sales office should be consulted.

Sale of the product shown in this literature is subject to the terms and conditions outlined in appropriate Eaton selling policies or other contractual agreement between Eaton and the purchaser.

THERE ARE NO UNDERSTANDINGS, AGREEMENTS, WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, OTHER THAN THOSE SPECIFICALLY SET OUT IN ANY EXISTING CONTRACT BETWEEN THE PARTIES. ANY SUCH CONTRACT STATES THE ENTIRE OBLIGATION OF EATON.

THE CONTENTS OF THIS DOCUMENT SHALL NOT BECOME PART OF OR MODIFY ANY CONTRACT BETWEEN THE PARTIES.

In no event will Eaton be responsible to the purchaser or user in contract, in tort (including negligence), strict liability, or otherwise for any special, indirect, incidental, or consequential damage or loss whatsoever, including but not limited to damage or loss of use of equipment, plant or power system, cost of capital, loss of power, additional expenses in the use of existing power facilities, or claims against the purchaser or user by its customers resulting from the use of the information, recommendations, and descriptions contained herein.

The information contained in this manual is subject to change without notice.