

# Charging handle replacement parts kit in Magnum low-voltage circuit breakers

## ⚠ 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.**

## ⚠ WARNING

**THE INSTRUCTIONS CONTAINED IN THIS IL AND ON PRODUCT LABELS MUST BE FOLLOWED. OBSERVE THE FIVE SAFETY RULES.**

- DISCONNECTING;
- ENSURE THAT DEVICES CANNOT BE ACCIDENTALLY RESTARTED;
- VERIFY ISOLATION FROM THE SUPPLY;
- EARTHING AND SHORT-CIRCUITING; AND;
- COVERING OR PROVIDING BARRIERS TO ADJACENT LIVE PARTS.

**DISCONNECT THE EQUIPMENT FROM THE SUPPLY. USE ONLY AUTHORIZED SPARE PARTS IN THE REPAIR OF THE EQUIPMENT. THE SPECIFIED MAINTENANCE INTERVALS AS WELL AS THE INSTRUCTIONS FOR REPAIR AND EXCHANGE MUST BE STRICTLY ADHERED TO PREVENT INJURY TO PERSONNEL AND DAMAGE TO THE SWITCHBOARD.**

## Section 1: General information

The charging handle is used to manually charge a breaker's closing spring. It takes from five to seven downward strokes on the handle to complete the manual charging process.

This product is intended for use in Magnum circuit breakers with PXR or Digitrip trip units.

**Note:** All images show a Magnum circuit breaker with a PXR trip unit unless stated otherwise.

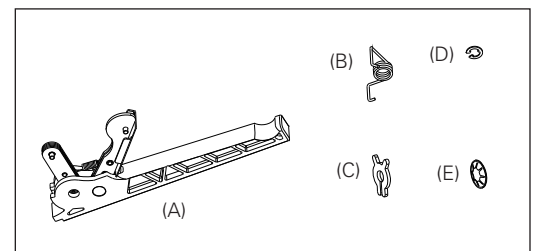
### Required tools

- 1/4-inch socket drive
- 10 mm socket
- Phillips screwdriver
- Flat head screwdriver
- T-20 security bit

### Kit parts identification

Refer to **Figure 1** for visual identification of the parts listed below:

- (A) Charging handle with links (one)
- (B) Charging spring (one)
- (C) X-washer (one)
- (D) M8 E-clip (one)
- (E) Quick-lock retainer (one)



**Figure 1. Contents of kit**

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## Section 2: Installation of charging handle

Proceed with the following 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.

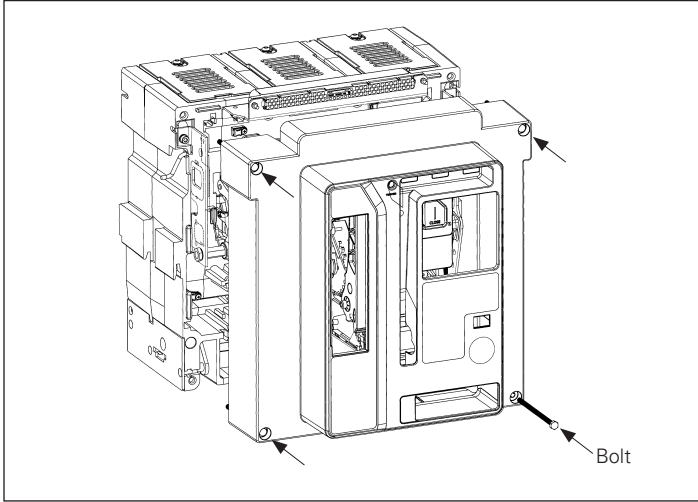


Figure 2. Step 1

**Step 2:** If the breaker is equipped with a Digitrip trip unit, proceed with this step. If the breaker is equipped with a PXR trip unit, proceed to Step 3. Remove the Digitrip trip unit by first unfastening the rating plug mounting screw located behind its hinged front cover. Then pull down on the retaining spring on the bottom of the Digitrip trip unit case, and pull the case off the connectors. Proceed to step 6.

**Note:** Be aware that if it is a Digitrip 1150 trip unit, there will be an additional retaining spring on the top of the case.

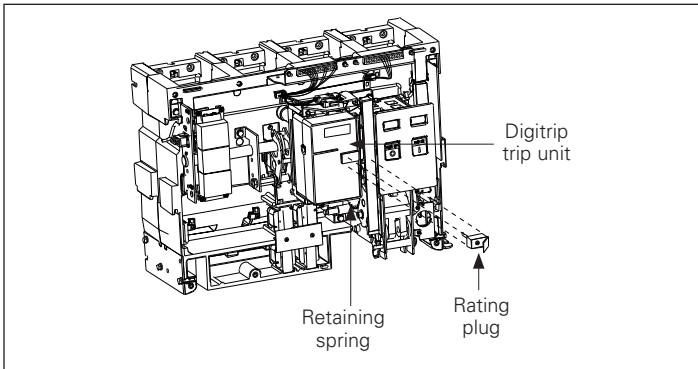


Figure 3. Step 2 Magnum with Digitrip

**Step 3:** Remove the PXR trip unit by unscrewing the two captive screws. Unplug the connector from above.

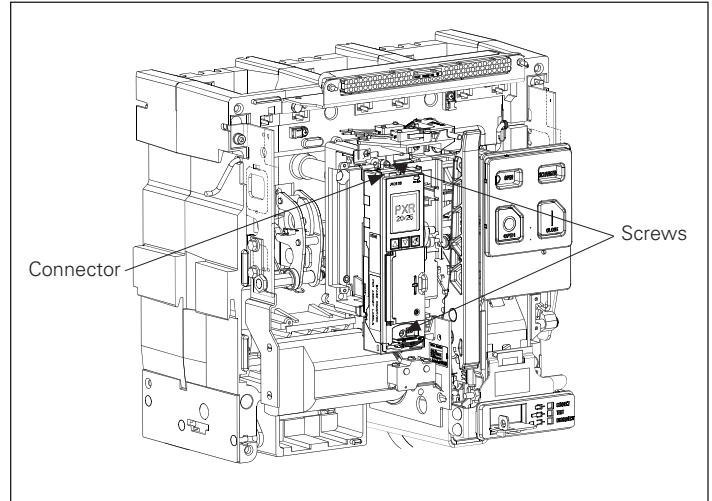


Figure 4. Step 3 Magnum with PXR

**Step 4:** Remove the frame rating module by unscrewing the security bolt. DO NOT UNPLUG WIRES. Move frame rating module aside.

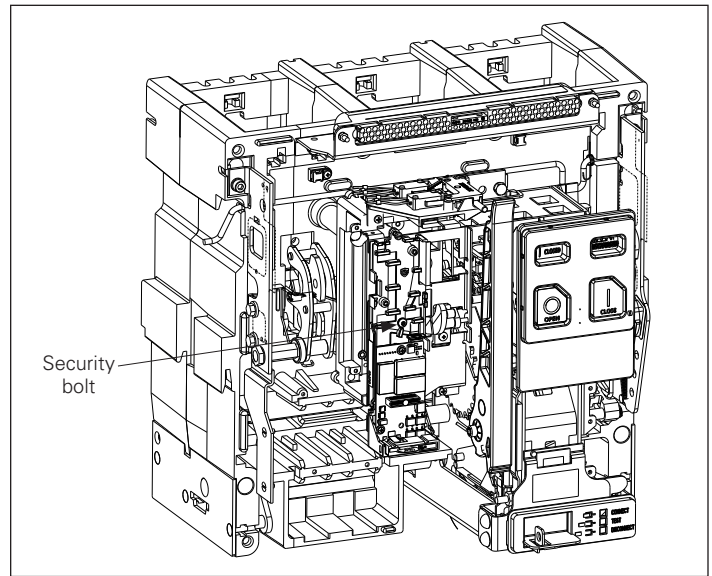
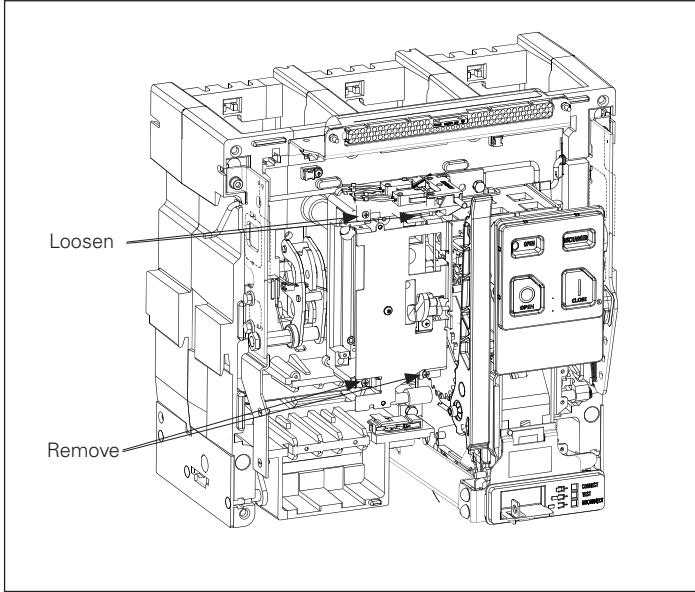


Figure 5. Step 4 Magnum with PXR

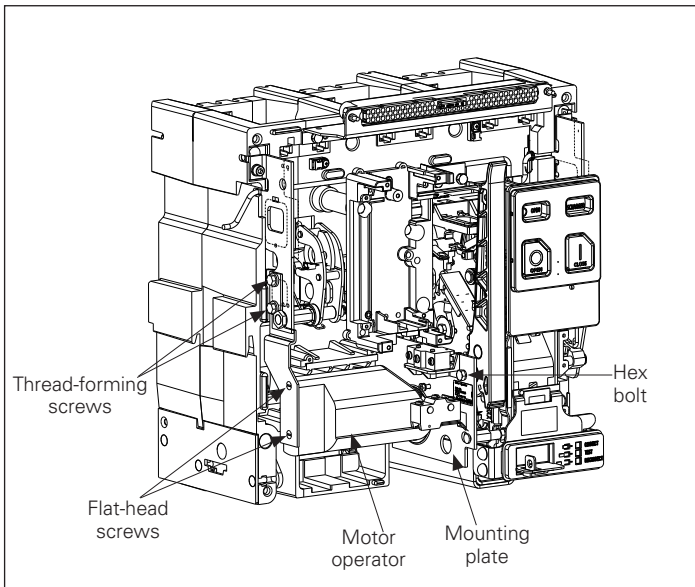
**Step 5:** Remove the interlocking plate. Remove the two screws at the bottom and loosen the two screws at the top. Slide the plate down.



**Figure 6. Step 5 Magnum with PXR**

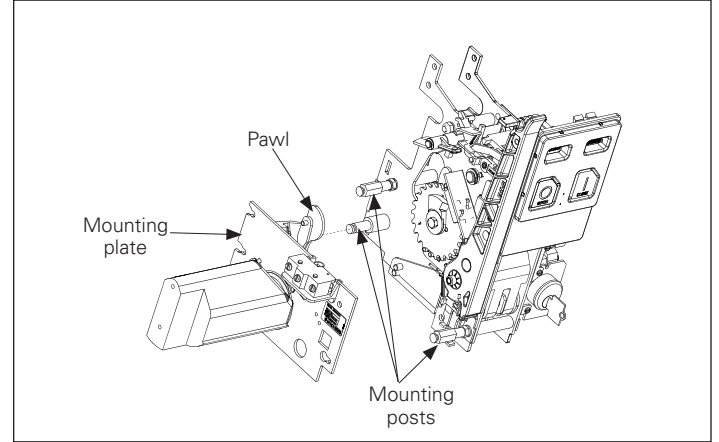
**Step 6:** If the breaker is equipped with a motor operator, it must be removed. Unfasten two flat-head screws, two thread-forming screws, and one hex bolt as shown.

For detailed information relative to the installation of a motor operator, refer to IL2C13769 (Standard Motor Operator) or IL2C12702 (Compact Motor Operator).



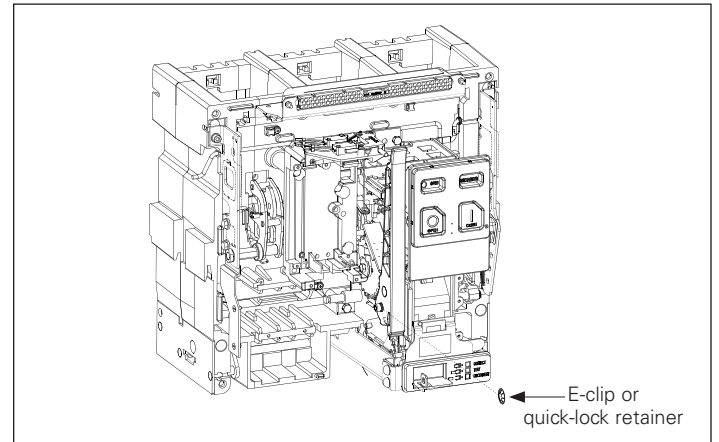
**Figure 7. Step 6 Standard motor operator shown**

**Step 7:** Remove the motor operator by holding the pawl back with a screwdriver while sliding the mounting plate forward and off of the three mounting posts.



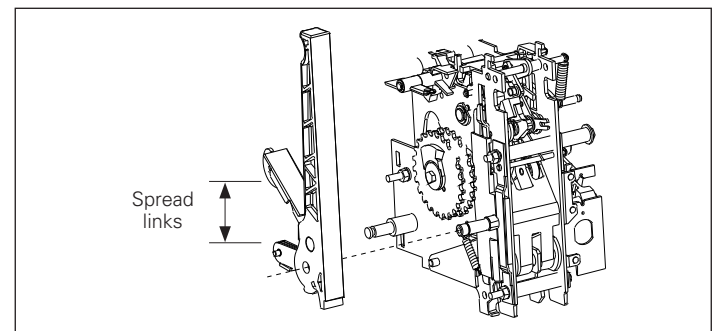
**Figure 8. Step 7 Standard motor operator shown**

**Step 8:** Use a screwdriver to remove the E-clip or quick-lock retainer from the charging handle shaft.



**Figure 9. Step 8**

**Step 9:** Slide the charging handle along with its links and the charging spring off of the shaft. Spread the links apart just enough to clear the gears.



**Figure 10. Step 9**

**Step 10:** Assemble the charging spring (B) supplied to the new charging handle (A). One end of the spring hooks under the handle, and the other end hooks under the lower link.

**⚠ IMPORTANT**

**VERIFY THAT ALL WIRES ARE CLEAR FROM MOTOR OPERATOR MOUNTING POINTS AND PATH TO INSTALL TO ENSURE NO DAMAGE TO WIRES. REPOSITION WIRES AS NEEDED.**

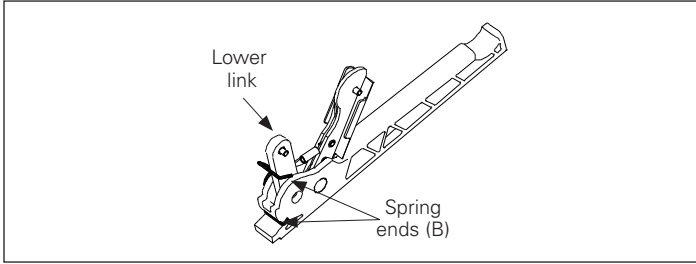


Figure 11. Step 10

**Step 11:** Slide the new charging handle assembly onto the shaft while spreading the two links apart just enough to clear the gears.

There are two possible fasteners that can be used, depending on the type of shaft supplied in the breaker. Both types of fasteners are supplied with the kit.

1. Use the X-washer (C) with a yellow chromate shaft.
2. Use the quick-lock retainer (E) with a stainless steel shaft.

With the new charging handle assembly in place, push the new fastener into the groove on the shaft to secure the charging handle assembly.

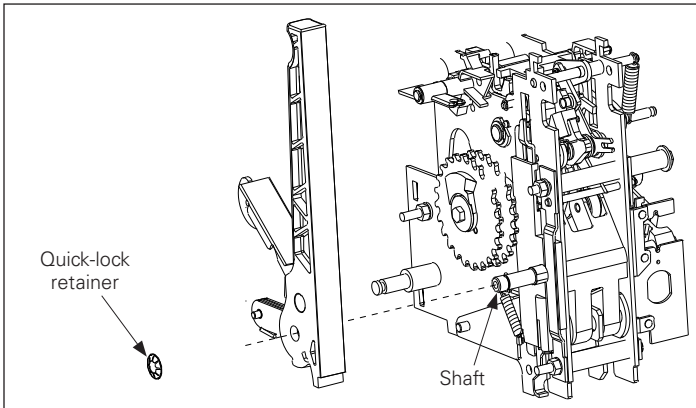


Figure 12. Step 11 Quick-lock retainer shown

**Step 12:** Test for proper operation by performing the following series of operations:

1. Manually charge breaker and close it
2. Manually recharge breaker
3. Open, close and re-open breaker

**Note:** Verify if a UVR is installed. It may have to be temporarily removed to perform checks.

**Step 13:** If a Digitrip trip unit was previously removed in Step 4, re-install it as this time. If a PXR trip unit was previously removed in Step 5, wait to re-install at Step 18. Mount the Digitrip trip unit on the connectors, and fasten the rating plug back in place with its mounting screw.

**Step 14:** If a motor operator was previously removed in Step 3, re-install it at this time. If no motor operator needs to be re-installed, proceed to Step 18. The motor operator is now ready to be installed.

**Note:** Magnum breakers with PXR trip units have less space, so additional instructions are included for installing motor operators on these breakers.

**Step 14a:** Using the straight-blade screwdriver, rotate and hold the pawl back with the spring extended. Do not release the pawl until instructed.

**Step 14b:** Move the motor operator toward the gears without engaging the support pins. Ensure the levering interlock switch is in the proper position to avoid interference.

**Note:** Do not bend the levering interlock switch.

**Step 14c:** Align and engage the front support pin with the front slot of the motor operator plate, ensuring the two back support pins are aligned with their respective slots.

**Step 14d:** Once the motor operator plate is engaged with the pins, slide the assembly all the way into the fixed position.

**Step 14e:** Release the pawl and ensure engagement of the gear.

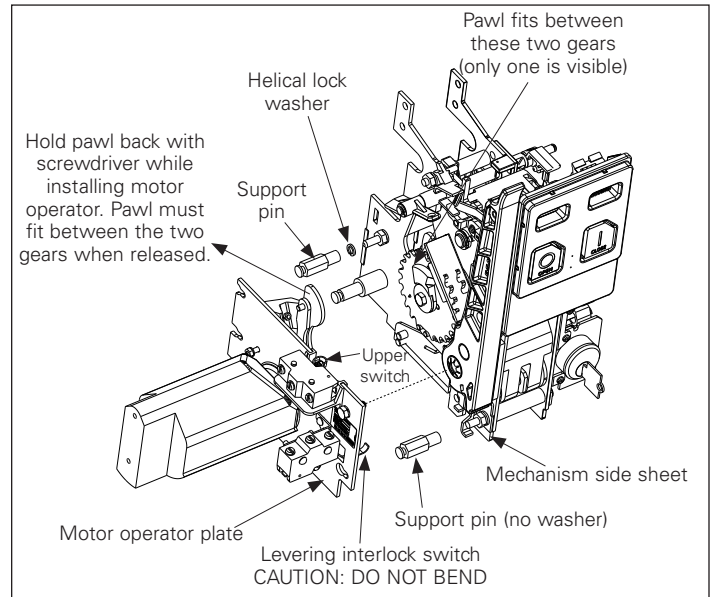


Figure 13. Step 14

**Step 15:** Fasten the assembly with M6 x 20 mm bolt and M6 helical lock washer. Torque to 75–85 in-lbs (8.5–9.6 Nm).

If the breaker is equipped with a levering device, verify that the levering interlock switch (if equipped) is centered on the levering device door tab. The switch should be closed when the levering device door is closed. The switch must be open when the door is open to access the levering drive socket.

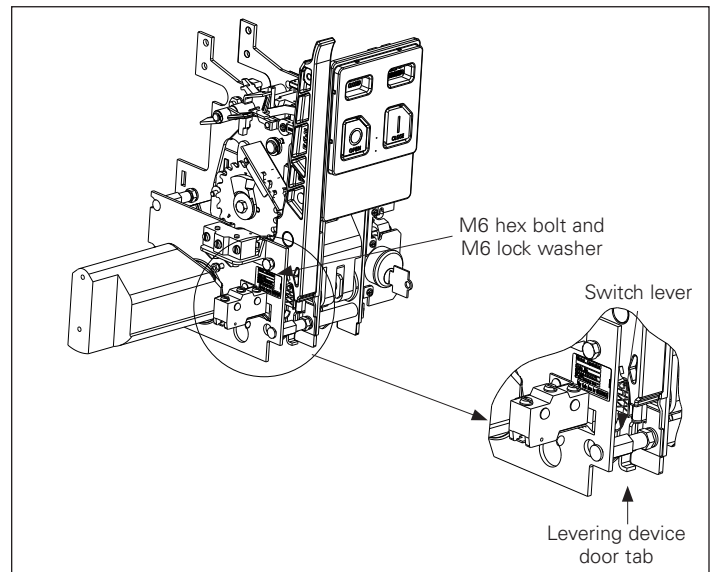
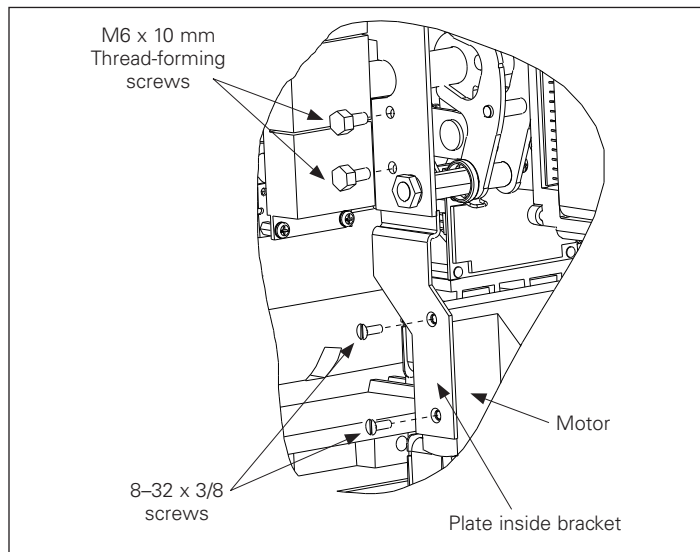


Figure 14. Step 15

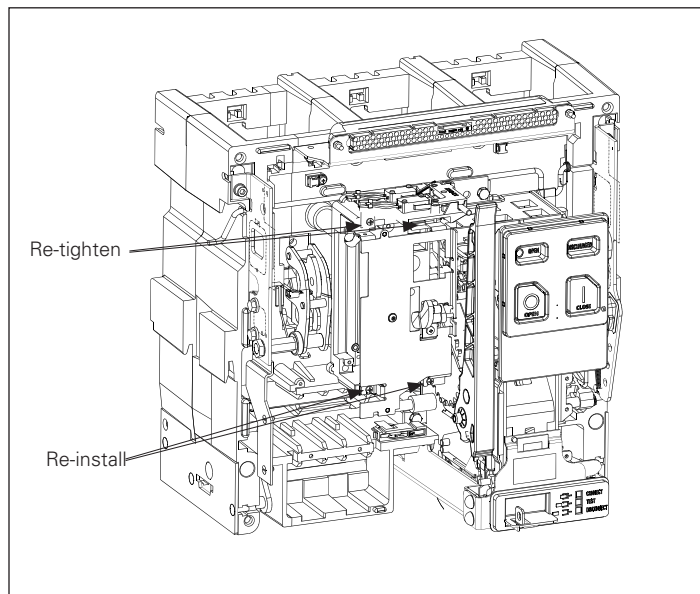
**Step 16:** First mount the plate inside the bracket to the motor with two 8–32 x 3/8 large flat-head screws. Apply thread-locking adhesive to threads. Torque to 75–85 in-lbs (8.5–9.6 Nm).

**Step 17:** Mount plate inside the bracket on the breaker with two M6 x 10 mm thread-forming screws. Torque to 75–85 in-lbs (8.5–9.6 Nm).



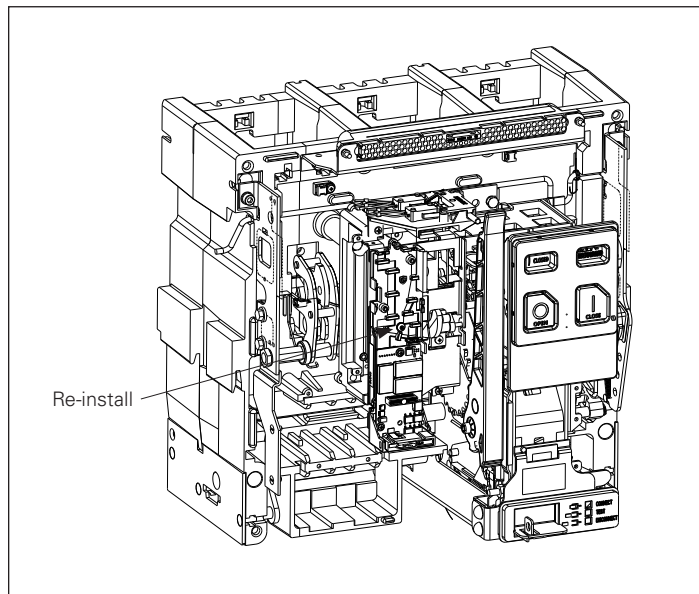
**Figure 15. Steps 16 and 17**

**Step 18:** Re-install the interlocking plate. Re-tighten the two top screws and re-install the two screws at the bottom.



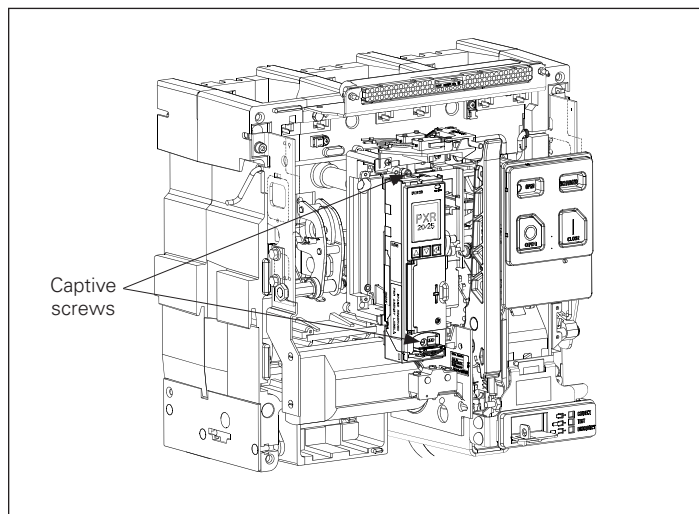
**Figure 16. Step 18 Magnum with PXR**

**Step 19:** Re-install the frame rating module using the security bolt. Check that all wires are plugged in.



**Figure 17. Step 19 Magnum with PXR**

**Step 20:** Re-install the PXR trip unit with the two captive screws. Plug in connector.



**Figure 18. Step 20 Magnum with PXR**

**Step 21:** Re-install front cover removed in Step 1.

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