Series NRX type NF removal/installation instructions for drawout levering (racking) mechanism

Instructions apply to:

UL1066 / ANSI, UL489 series NRX NF frame
IEC IZM16

⚠️ 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 HAVE TO BE FOLLOWED. OBSERVE THE FIVE SAFETY RULES:
– DISCONNECTING
– ENSURE THAT DEVICES CANNOT BE ACCIDENTALLY RESTARTED
– VERIFY ISOLATION FROM THE SUPPLY
– EARTHING AND SHORT-CIRCUITING
– 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 drawout levering mechanism provides all the required capabilities to lever (rack) a circuit breaker into and out of a drawout cassette (Figure 1). It permits the circuit breaker to reach three drawout positions (DISCONNECT, TEST, CONNECT), and includes a mechanical position indicator that is visible from the front of the circuit breaker. Right and left side sheets, already attached to the mechanism, provide the means for securely mounting the mechanism to the breaker body. The side sheets include breaker lifting handles, as well as drawout wheels that allow the breaker to move into and out of the cassette on the cassette’s drawout rails.

Figure 1. Drawout levering mechanism.

Section 2: Removal of drawout levering mechanism

Remove the circuit breaker from its drawout cassette to a suitable work surface. Proceed with the following seven steps.

Step 1: Remove the four screws holding the front cover in place (two on each side of the cover).

Step 2: Remove the front cover. Pull down on the charging handle to simplify removal.

Step 3: Carefully lay the circuit breaker back until it rests on its primary finger clusters as shown.

Figure 2. Step 1.
Figure 3. Step 2.
Figure 4. Step 3.
Step 4: Note in Step 4 and 4a graphics on page 3 that the left and right side sheets are each attached with five screws. Two M5 x 16 screws go through each lifting handle on both sides. The left side uses three M5 x 12 and the right side two M5 x 12 and one M5 x 25 screws that go directly into the breaker. All of the mounting screws are secured by small square nuts positioned in individual mounting slots. The one M5 x 25 screw is used in conjunction with an M5 nut on the inside of the breaker housing to provide a grounding (earthing connection). Make sure that all square nuts are accounted for to ensure that none are dropped into any part of the breaker.

Figure 5. Step 4.

Step 6: After all ten mounting screws are removed, carefully slide the levering mechanism off of the breaker as shown.

Figure 8. Step 6.

Step 7: Follow the instructions outlined in Section 3 to install another levering mechanism.

Step 5: Remove the five screws from each side sheet as shown.

Figure 7. Step 5.
Section 3: Installation of drawout levering mechanism

It is recommended that the new mounting hardware supplied with a new drawout levering mechanism be used to mount a new mechanism. The installation process may be simplified if the top and bottom finger cluster shrouds and primary stabs are first removed from the rear outer corners of the breaker. Proceed with the following 11 steps.

Step 1: If necessary, remove the front cover from the breaker by performing Steps 1 and 2 of Section 2.

Step 2: If necessary, make sure the breaker is resting back on its primary finger clusters as described and shown in Step 3 of Section 2.

Step 3: Place the ten small square nuts supplied in the nut retention slots, five on each side of the breaker as shown. Be careful not to drop any mounting hardware into the breaker itself.

Step 4: Position the levering mechanism as shown for installation on the circuit breaker.

Step 5: Carefully slide the mechanism into place as shown so the mounting slots and holes in the side sheets line up with the square nuts installed in Step 3.

Step 6: Connect the top of one side sheet first by aligning the slots in the lifting handle with the slots in the top of the side sheet as shown.

Step 7: Insert two of the M5 x 16 screws provided into the slots in the lifting handle, and then into the slots in the top of the side sheet. Screw the two screws into the small square nuts and loosely hand tighten. Make certain that these two screws are recessed into the handle so as not to interfere with removal of the accessory tray.
Figure 13. Step 7.

**Step 8:** Insert the three remaining mounting screws provided into the mounting holes in the same side sheet started with in Step 7, and screw them into the small square nuts. Keep in mind that the one M5 x 25 mounting screw and M5 nut provided are only used on the right side of the breaker, and provide for a grounding (earthing) connection to the breaker mechanism. The M5 x 25 screw goes through the side of the breaker housing and is secured from the inside by the M5 nut. If the mounting process was started on the left side of the breaker, three M5 x 12 screws only would be used in this step. Loosely hand tighten these screws also.

Figure 14. Step 8.

**Step 9:** Perform Steps 6, 7, and 8 again on the other side of the breaker with the other side sheet.

**Step 10:** Once both sides are connected, complete the mounting process by firmly hand tightening all mounting screws on both sides of the circuit breaker.

**Step 11:** Replace the front cover and secure it in place with the mounting screws previously removed in Step 1.
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