

⚠ WARNING

VacuFuse II Self-Resetting Interrupters must be installed, operated, and maintained by qualified persons knowledgeable in overhead electric power distribution equipment and the associated hazards. This guide is not a replacement for adequate training and experience in safety procedures for this product. Read S&C Instruction Sheet 466-500 thoroughly and carefully before installing or operating your VacuFuse II Self-Resetting Interrupter.

⚠ DANGER

VacuFuse II Self-Resetting Interrupters may be energized from either side and in any position. Always consider all parts live until de-energized, tested, and grounded.

Understanding the Closing Sequence

Note: The VacuFuse II Self-Resetting Interrupter is shipped from the factory with the vacuum interrupter in the **Open** position.

When closing the VacuFuse II Self-Resetting Interrupter into the cutout mounting the CHARGING LED will blink at a one-second interval as long as there is sufficient voltage present in the cutout mounting and the vacuum interrupter is open. The READY TO CLOSE LED will steadily illuminate when the VacuFuse II interrupter has harvested enough energy to close the vacuum interrupter and when the manual operating lever is in the **Down** position.

The VacuFuse II Self-Resetting Interrupter requires 45 ± 10 seconds to harvest enough energy to close the vacuum interrupter.

There are two ways to close the vacuum interrupter:

Option 1: Automatic Delayed Close

Place the manual operating lever into the **Up** position at any time prior to closing the unit into the cutout mounting, or less than 35 seconds after the CHARGING LED has begun blinking. When closed into the cutout mounting in this state, the CHARGING LED will blink at a one-second interval if there is sufficient voltage present in the cutout mounting and the vacuum interrupter is open. The VacuFuse II interrupter will automatically close the vacuum interrupter after 45 ± 10 seconds.

Option 2: Manual Close

Place the manual operating lever into the **Down** position prior to closing the unit into the cutout mounting or less than 35 seconds after the CHARGING LED has begun blinking.

Wait until the READY TO CLOSE LED illuminates and is solidly lit. At that time, the interrupter is ready to be closed manually by moving the manual operating lever to the **Up** position. Three seconds after the lever is moved to the **Up** position, the vacuum interrupter will close.

Always check the position of the vacuum interrupter by confirming the POSITION indicator at the base of the interrupter is red before walking away. See Figure 1.

Understanding the LED Indicators and POSITION Indicator

LED Indicators

There are two LEDs on the base of the VacuFuse II interrupter. See Figure 2.

The CHARGING LED is white and indicates the VacuFuse II interrupter is harvesting energy to close the vacuum interrupter. When the VacuFuse II interrupter is powered, the CHARGING LED will start flashing at one flash per second as long as sufficient voltage is present in the cutout mounting and the vacuum interrupter is open. When full charge is achieved, the READY TO CLOSE LED will illuminate and the CHARGING LED will continue blinking.

POSITION Indicator

The POSITION indicator is located on the base of the VacuFuse II interrupter's housing. It contains a highly reflective visible red or green target that indicates the position of the vacuum interrupter inside the device. The target is green when the vacuum interrupter is in the **Open** position and red when the vacuum interrupter is in the **Closed** position, unless the VacuFuse II interrupter was ordered with the "-J1" suffix (red open/green closed).

Installing a VacuFuse II Interrupter into the Cutout Mounting

⚠ WARNING

Provide training to line crews on the use of both a hotstick and an extendostick before installing or operating the VacuFuse II Self-Resetting Interrupter. The VacuFuse II interrupter is different from other cutout-mounted devices. Failure to properly handle a VacuFuse II interrupter with a hotstick and/or an extendostick may lead to serious injury or death.

For instructions on how to install a cutout mounting to the pole, see the "Installing the VacuFuse II Self-Resetting Interrupter Mounting" section of S&C Instruction Sheet 466-500.

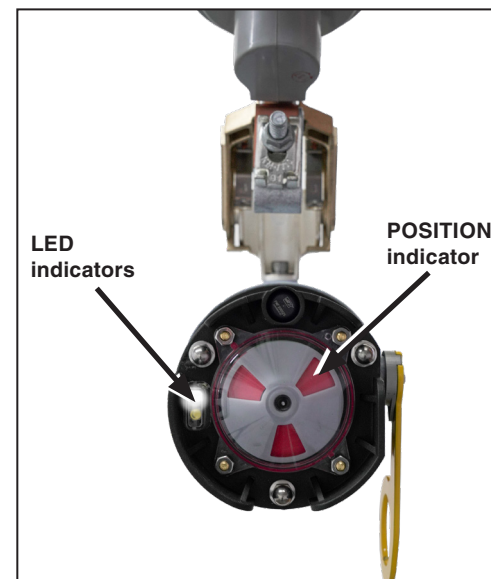


Figure 1. A VacuFuse II Self-Resetting Interrupter (vacuum interrupter closed).

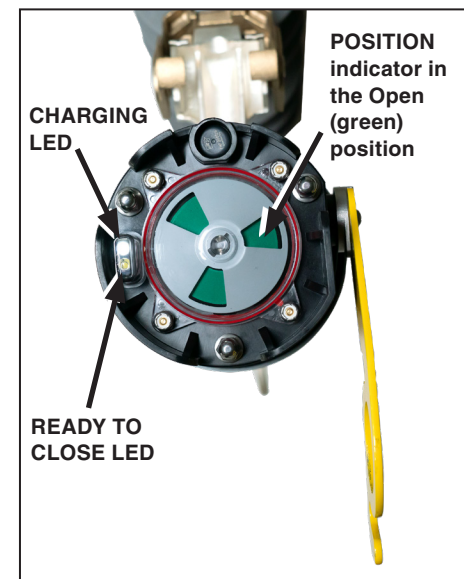


Figure 2. A VacuFuse II Self-Resetting Interrupter (vacuum interrupter open).

STEP 1. If using an existing cutout mounting: Visually inspect the cutout mounting for damage or excessive wear, particularly in the upper and lower contact areas. If ANY damage is visible, replace the cutout mounting before proceeding. DO NOT install and/or energize a VacuFuse II interrupter into a damaged cutout mounting.

STEP 2. Installation using insulated gloves: With the manual operating lever in the **Up** position, insert the VacuFuse II interrupter into the proper cutout mounting with gloved hands, as shown in Figure 5 on page 2.

Installation using the Talon™ Handling Tool: Attach a Talon Handling Tool to a short hotstick. Insert the curled prong of the Talon tool into the lifting eye of the trunnion, and raise the VacuFuse II interrupter into the mounting. Rotate the hotstick counterclockwise 180 degrees to disengage it.

Closing the VacuFuse II Interrupter into the Cutout Mounting

NOTICE

Read the "Understanding the Closing Sequence" section before closing the VacuFuse II interrupter into its cutout mounting.

STEP 1. Confirm the VacuFuse II interrupter is in the **Open** position by viewing its POSITION indicator. Place the manual operating lever in the correct position for the closing sequence desired.

STEP 2. Stand firmly in front of and in line with the cutout mounting. Do not operate standing directly underneath the VacuFuse II interrupter. If using an extendostick, stand from 6 to 10 feet (1.8 to 3.1 m) away from the utility pole.

STEP 3. Insert the straight prong of a Talon tool or distribution prong into the pull-ring.

STEP 4. Swing the VacuFuse II interrupter to within approximately 45 degrees of the fully **Closed** position. See Figure 3.

STEP 5. While firmly gripping the stick, drive the VacuFuse II interrupter closed with forward force. Maintain the forward force until the interrupter properly closes and latches into the cutout mounting.

STEP 6. Disengage the prong from the pull-ring, taking care to avoid pulling the VacuFuse II interrupter open.

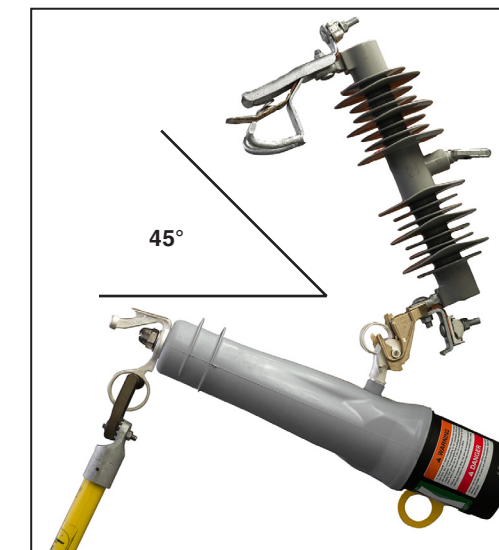


Figure 3. A VacuFuse II interrupter within approximately 45 degrees of the fully Closed position.

If the VacuFuse II Self-Resetting Interrupter Is Found Open

⚠ WARNING

The VacuFuse II Self-Resetting Interrupter is designed to protect distribution transformers from internal and external fault current. A VacuFuse II interrupter found in the **Open and Drop Out** position should not be closed using the manual operating lever until the cause of the fault current has been determined and repaired. Closing without repairing the fault could result in equipment damage, injury, or death.

⚠ WARNING

VacuFuse II Self-Resetting Interrupters must be dropped out from the cutout mounting to be considered open.

VacuFuse II Self-Resetting Interrupters are different from other cutout-mounted devices, including the VacuFuse® Self-Resetting Interrupter. VacuFuse II interrupters have a voltage-harvesting power supply that allows up to 1 mA of current to go through them, even when the vacuum interrupter is open.

Failure to consider the current through the VacuFuse II interrupter when the vacuum interrupter is open may lead to serious injury or death.

After responding to an overcurrent event, the VacuFuse II interrupter's vacuum interrupter will open and the POSITION indicator will show a green target. If the overcurrent event persists after the reclosing event, the interrupter will lock out and drop out from the cutout mounting. Note that non-reclosing VacuFuse II interrupters will lock out and drop out from the cutout mounting every time the device responds to an overcurrent event. Follow these steps if the VacuFuse II Self-Resetting Interrupter has operated and is in the **Open and Drop Out** position:

- STEP 1.** Remove the VacuFuse II interrupter from its mounting, if required by utility practice, following the steps in the “Removing the VacuFuse II Interrupter from the Cutout Mounting” section.
- STEP 2.** Determine and resolve the cause of the fault. After the fault has been resolved and repairs completed, install the VacuFuse II interrupter and close it into the mounting as described in the “Installing a VacuFuse II Interrupter into the Cutout Mounting” section.

If Maintenance Is to Be Performed on the Transformer

- STEP 1.** Open the vacuum interrupter inside the VacuFuse II interrupter by moving the manual operating lever to the **Down** position using the straight prong of the Talon Handling Tool or a distribution prong. See Figure 4.
- STEP 2.** After the VacuFuse II Self-Resetting Interrupter opens and drops out (after approximately 1 minute and 45 seconds), remove the unit from its mounting, if required by utility practice. Follow the steps in the “Removing the VacuFuse II Interrupter from the Cutout Mounting” section. This creates a visible open gap showing the transformer is isolated from the feeder. Depending on utility practice, additional grounds may be required.
- STEP 3.** Follow your utility's standard practice for transformer maintenance. After maintenance is complete, install the VacuFuse II interrupter and close it into the mounting as described in the “Installing a VacuFuse II Interrupter into the Cutout Mounting” section.

Opening and Closing the VacuFuse II Interrupter

⚠ WARNING

The VacuFuse II Self-Resetting Interrupter is designed to protect distribution transformers from internal and external fault current. A VacuFuse II interrupter found in the **Open and Drop Out** position (POSITION indicator displaying a green target) should NOT be closed until the cause of the fault current has been determined and repaired. Closing without repairing the fault could result in equipment damage, injury, or death.

The vacuum interrupter inside the VacuFuse II interrupter can be opened using the yellow manual operating lever on the side of the VacuFuse II interrupter, with or without power. The interrupter must be closed in the cutout mounting with sufficient voltage present for at least 45 seconds before the vacuum interrupter can be closed by moving the lever to the **Up** position.

The VacuFuse II Self-Resetting Interrupter will drop out of the cutout mounting after one minute when the vacuum interrupter is in the **Open** position and the READY TO CLOSE LED is lit.

To open: Pull the yellow manual operating lever down firmly using the straight prong of the Talon tool or a distribution prong. Remove the tool right away. The vacuum interrupter inside the VacuFuse II interrupter will open, and the POSITION indicator will show the green target. See Figure 2 on page 1. After one minute and 45 seconds of the vacuum interrupter in the **Open** position, the VacuFuse II interrupter will drop out.

To close: Push the pull-ring of the manual operating lever up firmly using the straight prong of the Talon tool or a distribution prong. The vacuum interrupter inside the VacuFuse II interrupter will close after 45 seconds of sufficient voltage present at the cutout mounting, and the POSITION indicator will show the red target. See Figure 2. If the VacuFuse II interrupter is inadvertently closed into a fault, the vacuum interrupter will trip open independently of any force still applied to the manual operating lever.

To reset the manual operating lever after manually closing into fault current: When the VacuFuse II interrupter trips in response to a fault, the lever does not move, leaving the lever in the **Up** position when the vacuum interrupter is in the **Open** position. The lever can be “reset” by operating it into the **Down** position while the vacuum interrupter is in the **Open** position.

Removing the VacuFuse II Interrupter from the Cutout Mounting

⚠ WARNING

DO NOT attempt to remove a VacuFuse II interrupter from its cutout mounting with the vacuum interrupter in the **Closed** position. The vacuum interrupter is in the **Closed** position when the POSITION indicator at the base of the VacuFuse II interrupter displays a red target. Removing the VacuFuse II interrupter from its cutout mounting with the vacuum interrupter in the **Closed** position may cause arcing, equipment damage, serious injury, or death.

- STEP 1.** Open the vacuum interrupter by pulling down on the yellow manual operating lever. Confirm the POSITION indicator at the base of the VacuFuse II interrupter displays a green target. See Figure 2 on page 1.

- STEP 2.** Wait about one minute 45 seconds until the VacuFuse II interrupter drops out.

If the VacuFuse II Self-Resetting Interrupter stays in its cutout mounting, confirm the POSITION indicator at the base of the VacuFuse II interrupter displays a green target. In this case, the VacuFuse II interrupter may not be powered and cannot drop out. Refer to the “Troubleshooting” section of S&C Instruction Sheet 466-500 to determine the appropriate action to take.

If the VacuFuse II Self-Resetting Interrupter is in its cutout mounting with the vacuum interrupter in the **Closed** position and operating the manual operating lever to the **Open** position does not work, or the VacuFuse II interrupter is to be removed from its cutout mounting in the **Closed** position for any other reason, follow the instructions in the “Removing the VacuFuse II Interrupter from the Cutout Mounting using Loadbuster®—The S&C Loadbreak Tool” section of S&C Instruction Sheet 466-500.

⚠ WARNING

DO NOT attempt to open a VacuFuse II Self-Resetting Interrupter that is in the **Closed** position without using a loadbreak tool, such as S&C's Loadbuster tool. An arc started by opening a VacuFuse II Self-Resetting Interrupter under load without a loadbreak tool can cause equipment damage, serious injury, or death.

Instructions for using S&C's Loadbuster tool can be found in S&C Instruction Sheet 466-500.

- STEP 3. Removal using gloved hands:** Remove the VacuFuse II interrupter from its mounting with gloved hands, as shown in Figure 5.

- STEP 4. Removal using the Talon Handling Tool:** Attach a Talon tool to a short hotstick. Insert the curled prong of the Talon tool into the lifting eye of the trunnion, and raise the VacuFuse II interrupter out of its mounting.

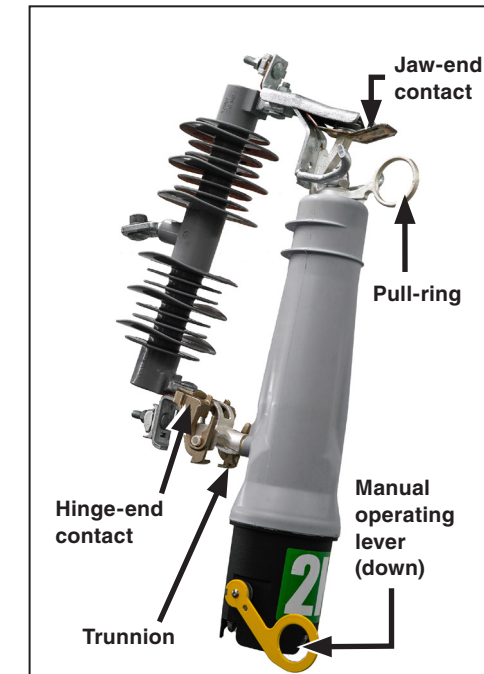


Figure 4. A VacuFuse II Self-Resetting Interrupter.

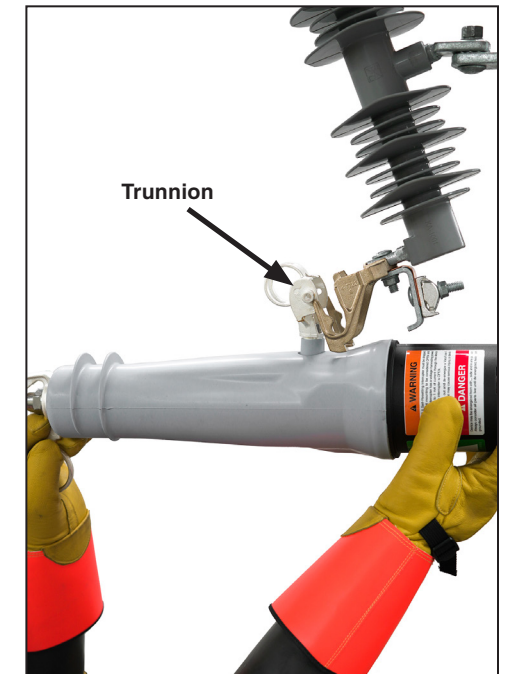


Figure 5. Guiding or removing the trunnion from the hinge using gloved hands.