

Installation

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★ Instructions also applicable to discontinued S&C Pad-Mounted Gear PMS Model.



Introduction

Qualified Persons

WARNING

Only qualified persons knowledgeable in the installation, operation, and maintenance of overhead and underground electric distribution equipment, along with all associated hazards, may install, operate, and maintain the equipment covered by this publication. A qualified person is someone trained and competent in:

- The skills and techniques necessary to distinguish exposed live parts from nonlive parts of electrical equipment
- The skills and techniques necessary to determine the proper approach distances corresponding to the voltages to which the qualified person will be exposed
- The proper use of special precautionary techniques, personal protective equipment, insulated and shielding materials, and insulated tools for working on or near exposed energized parts of electrical equipment

These instructions are intended only for such qualified persons. They are not intended to be a substitute for adequate training and experience in safety procedures for this type of equipment.

Read this Instruction Sheet

NOTICE

Thoroughly and carefully read this instruction sheet and all materials included in the product's instruction handbook before installing or operating PMH Pad Mounted Gear. Become familiar with the Safety Information and Safety Precautions on pages 4 and 5. The latest version of this publication is available online in PDF format at sandc.com/en/contact-us/product-literature/.

Retain this Instruction Sheet

This instruction sheet is a permanent part of PMH Pad-Mounted Gear. Designate a location where users can easily retrieve and refer to this publication.

Proper Application

WARNING

The equipment in this publication is only intended for a specific application. The application must be within the ratings furnished for the equipment. Ratings for PMH Pad Mounted Gear are listed in the ratings tables in S&C Specification Bulletin 662A-31 for manually operated models, in 663A-31 for source-transfer models, and in 664-31 for remote supervisory models. The ratings are also on the nameplate affixed to the product. Current limiting fuses are not used in all models of PMH Pad Mounted Gear. Consult the nameplate for fusing details.

S&C Holders for use with current-limiting fuses are designed for use with PMH Pad-Mounted Gear equipped with Fault Fiter® Electronic Power Fuse mountings. These holders will accommodate the single-barrel current-limiting fuses listed in Table 1 of S&C Information Bulletin 660-50. The following instructions cover installation of S&C Holders for use with current-limiting fuses rated 14.4 kV and 25 kV.

Warranty

The warranty and/or obligations described in S&C's Price Sheet 150, "Standard Conditions of Sale—Immediate Purchasers in the United States," (or Price Sheet 153, "Standard Conditions of Sale—Immediate Purchasers Outside the United States"), plus any special warranty provisions, as set forth in the applicable product-line specification bulletin, are exclusive. The remedies provided in the former for breach of these warranties shall constitute the immediate purchaser's or end user's exclusive remedy and a fulfillment of the seller's entire liability. In no event shall the seller's liability to the immediate purchaser or end user exceed the price of the specific product that gives rise to the immediate purchaser's or end user's claim. All other warranties, whether express or implied or arising by operation of law, course of dealing, usage of trade or otherwise, are excluded. The only warranties are those stated in Price Sheet 150 (or Price Sheet 153), and THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ANY EXPRESS WARRANTY OR OTHER OBLIGATION PROVIDED IN PRICE SHEET 150 (OR PRICE SHEET 153) IS GRANTED ONLY TO THE IMMEDIATE PURCHASER AND END USER, AS DEFINED THEREIN. OTHER THAN AN END USER, NO REMOTE PURCHASER MAY RELY ON ANY AFFIRMATION OF FACT OR PROMISE THAT RELATES TO THE GOODS DESCRIBED HEREIN, ANY DESCRIPTION THAT RELATES TO THE GOODS, OR ANY REMEDIAL PROMISE INCLUDED IN PRICE SHEET 150 (OR PRICE SHEET 153).

**Warranty
Qualifications**

The standard warranty contained in the seller's standard conditions of sale (as set forth in Price Sheet 150) does not apply to PMH Pad-Mounted Gear where fuse units, fuse unit end-fittings, holders, refill units, or switch blades of other than S&C manufacture are used in conjunction with S&C SML Mountings. Nor does it apply to PMH Pad-Mounted Gear where other than Fault Fiter® Electronic Power Fuses, S&C Switch Blades, or the current-limiting fuses listed in Table 1 of S&C Information Bulletin 660-50 are used in conjunction with Fault Fiter Electronic Power Fuse mountings and S&C Holders designed therefore, or when current-limiting fuses are applied other than as set forth in the "Recommended Voltage Ratings" section of S&C Information Bulletin 660-50.

Safety Information

Understanding Safety-Alert Messages

Several types of safety-alert messages may appear throughout this instruction sheet and on labels and tags attached to PMH Pad-Mounted Gear. Become familiar with these types of messages and the importance of these various signal words:

DANGER

“DANGER” identifies the most serious and immediate hazards that will likely result in serious personal injury or death if instructions, including recommended precautions, are not followed.

WARNING

“WARNING” identifies hazards or unsafe practices that can result in serious personal injury or death if instructions, including recommended precautions, are not followed.

CAUTION

“CAUTION” identifies hazards or unsafe practices that can result in minor personal injury if instructions, including recommended precautions, are not followed.

NOTICE

“NOTICE” identifies important procedures or requirements that can result in product or property damage if instructions are not followed.

Following Safety Instructions

If any portion of this instruction sheet is unclear and assistance is needed, contact the nearest S&C Sales Office or S&C Authorized Distributor. Their telephone numbers are listed on S&C’s website sandc.com, or call the S&C Global Support and Monitoring Center at 1-888-762-1100.

NOTICE

Read this instruction sheet thoroughly and carefully before installing PMH Pad-Mounted Gear.



Replacement Instructions and Labels

If additional copies of this instruction sheet are required, contact the nearest S&C Sales Office, S&C Authorized Distributor, S&C Headquarters, or S&C Electric Canada Ltd.

It is important that any missing, damaged, or faded labels on the equipment be replaced immediately. Replacement labels are available by contacting the nearest S&C Sales Office, S&C Authorized Distributor, S&C Headquarters, or S&C Electric Canada Ltd.

⚠ DANGER



S&C PMH Pad-Mounted Gear operates at high-voltage. Failure to observe the precautions below will result in serious personal injury or death.

Some of these precautions may differ from your company's operating procedures and rules. Where a discrepancy exists, follow your company's operating procedures and rules.

1. **QUALIFIED PERSONS.** Access to PMH Pad-Mounted Gear must be restricted only to qualified persons. See the "Qualified Persons" section on page 2.
2. **SAFETY PROCEDURES.** "Always follow safe operating procedures and rules.
3. **PERSONAL PROTECTIVE EQUIPMENT.** Always use suitable protective equipment, such as rubber gloves, rubber mats, hard hats, safety glasses, and flash clothing, in accordance with safe operating procedures and rules.
4. **TEST FOR VOLTAGE.** Test for voltage using proper high-voltage test equipment before touching any device to be inspected, serviced, or repaired in the high-voltage compartments.
5. **ENERGIZED COMPONENTS.** Always consider all parts live until de-energized, tested, and grounded. Voltage levels can be as high as the peak line-to-ground voltage last applied to the unit. Units that have been energized or installed near energized lines should be considered live until tested and grounded.
6. **MAINTAINING PROPER CLEARANCE.** Always maintain proper clearance from energized components.
7. **GROUNDING EQUIPMENT.** Install suitable grounding equipment before touching any device that is to be inspected, serviced, or repaired in the high-voltage compartments.

Identifying Fuses Accommodated and Adapters Required

S&C Holders will accommodate the single-barrel current-limiting fuses listed in Table 1 of S&C Information Bulletin 660-50 when the fuses are equipped with $\frac{5}{8}$ -inch diameter mounting studs at both ends. Depending on the length and diameter of the current-limiting fuse to be used, adapters may be required to fit the fuse in the holder.

Adapters, when required, are furnished with the S&C Holder and are signified by a suffix to the holder's catalog number. An "-A1" suffix indicates a latch-end adapter is provided with the holder, and an "-A2" suffix indicates a hinge-end adapter is provided. See Figure 2 on page 8 and Figure 3 on page 9. Similarly, an "-A3" suffix signifies both latch-end and hinge-end adapters are furnished. See Figure 4 on page 10.

When the catalog number of the holder does not include a suffix, no adapters are required or provided.

Before Starting

If the S&C Holder catalog number includes a suffix (“-A1,” “-A2,” or “-A3”), install the adapters furnished with the holder as instructed in the “Installing Adapters on the Fuse” section on page 8. If the holder catalog number does not include a suffix, no adapters are required to install the fuse in the holder. See Figure 1. In that case, proceed directly to the “Installing a Fuse In the Holder” section on page 10.

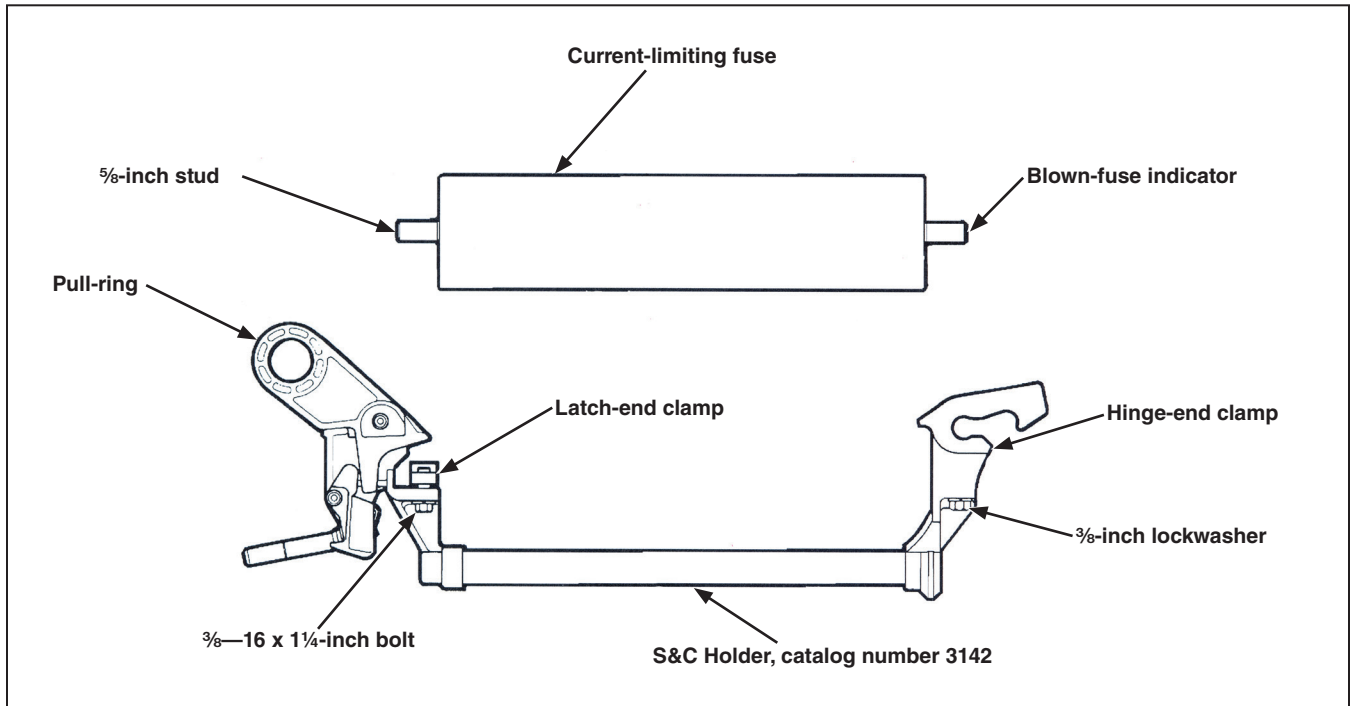


Figure 1. Installing a fuse requiring no adapters in S&C Holder, catalog number 3142.

Installing Fuse Adapters and Fuses in the Holder

Installing Adapters on the Fuse

If the S&C Holder catalog number includes the “-A1” suffix, follow these steps to install the latch-end adapter on the fuse:

- STEP 1.** Loosen the $\frac{3}{8}$ —16 x $1\frac{1}{4}$ -inch stainless steel hex-head bolts on the latch-end adapter and slip the adapter over the $\frac{5}{8}$ -inch diameter stud at one end of the current-limiting fuse. See Figure 2.
- STEP 2.** *For fuses with blown-fuse indicators:* Install the adapter on the stud opposite the indicator and tighten the bolts securely.
- STEP 3.** Depending on the fuse length, the latch-end adapter may have to be shortened to fit the fuse and adapter assembly in the S&C Holder. The length from the bottom of the fuse barrel to the top of the adapter should be $16\frac{1}{4}$ inches (413 mm) for the 14.4-kV holder and $24\frac{1}{8}$ inches (613 mm) for the 25-kV holder. See Figure 2.

STEP 4. If necessary, shorten the adapter by cutting off any excess length with a hacksaw. Remove any burrs from the sawed edge of the adapter.

STEP 5. Install the fuse and adapter assembly in the holder as instructed in the “Installing a Fuse In the Holder” section on page 10.

If the S&C Holder catalog number includes an “-A2” suffix, follow these steps to install the hinge-end adapter on the fuse:

STEP 1. Loosen the $\frac{3}{8}$ —16 x $1\frac{1}{4}$ -inch stainless steel hex-head bolts of the hinge-end adapter and slip the adapter over the $\frac{5}{8}$ -inch diameter stud at one end of the current-limiting fuse. See Figure 3 on page 9.

STEP 2. *For fuses with blown-fuse indicators:* Install the adapter on the stud with the indicator and tighten the bolts securely.

STEP 3. Install the fuse and adapter assembly in the holder as instructed in the “Installing a Fuse In the Holder” section on page 10.

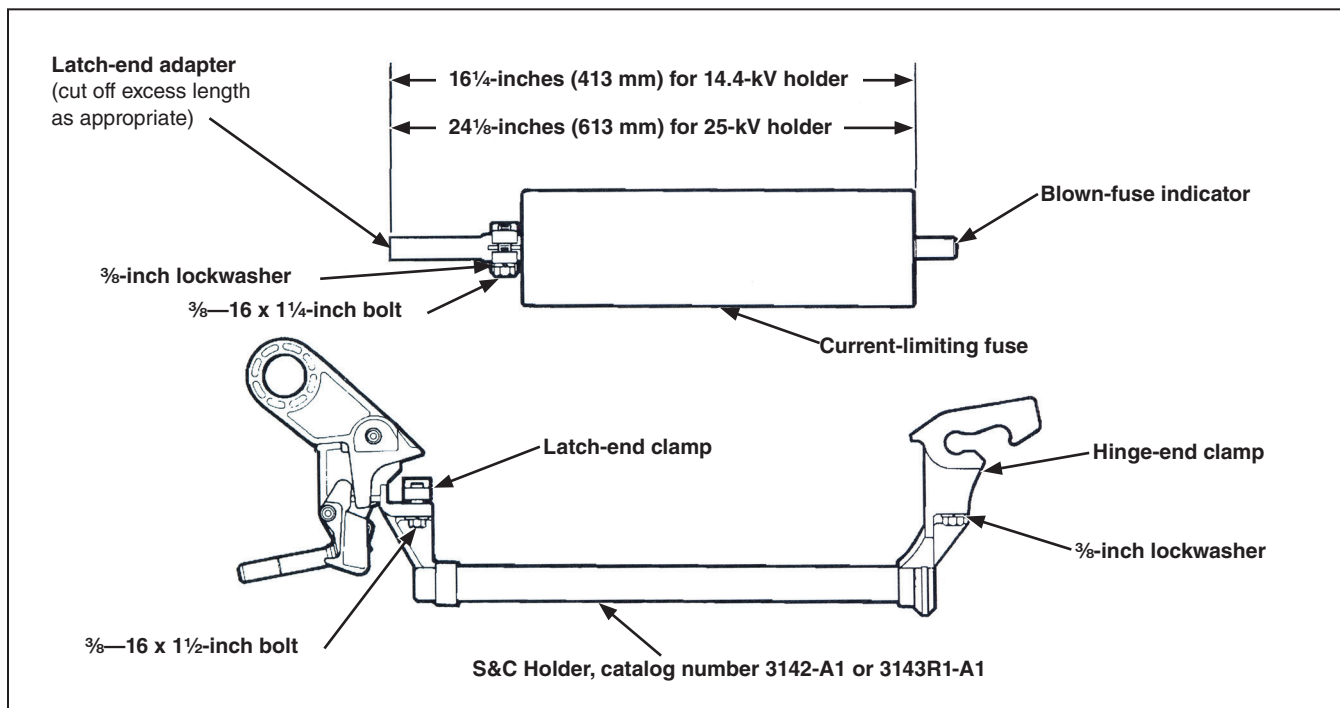


Figure 2. Installing a fuse requiring a latch-end adapter in S&C Holders, catalog numbers 3142-A1 and 3143R1-A1.

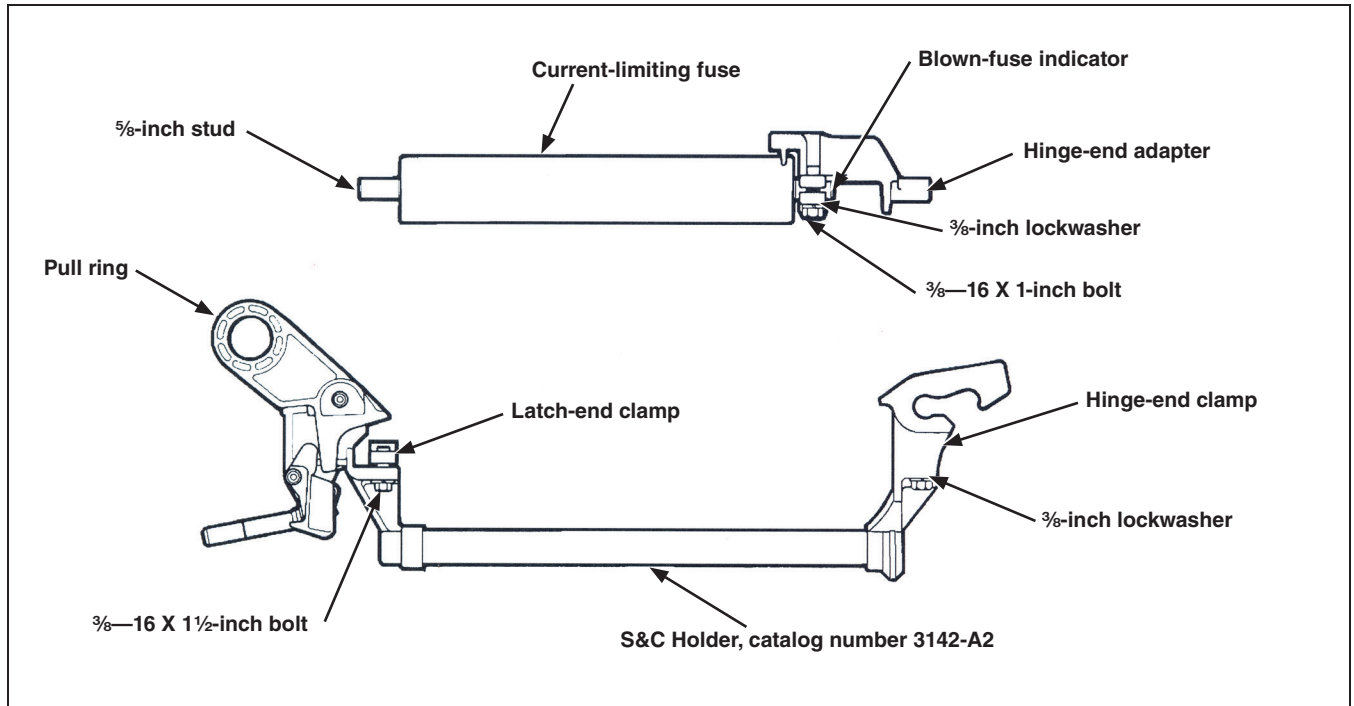


Figure 3. Installing a fuse requiring a hinge-end adapter in the S&C Holder, catalog number 3142-A2.

Installing Fuse Adapters and Fuses in the Holder

If the catalog number of the S&C Holder includes an “-A3” suffix, follow these steps to install the hinge-end and latch-end adapters on the fuse:

- STEP 1.** Loosen the $\frac{3}{8}$ —16 x $1\frac{1}{4}$ -inch the hinge-end adapter stainless steel hexhead bolts and slip the adapter over the $\frac{5}{8}$ -inch diameter stud at one end of the current-limiting fuse. See Figure 4.
- STEP 2.** *For fuses with blown-fuse indicators:* Install the adapter on the stud with the indicator and tighten the bolts securely.
- STEP 3.** Loosen the $\frac{3}{8}$ —16 x $1\frac{1}{4}$ -inch latch-end adapter stainless steel hexhead bolts and slip the adapter over the $\frac{5}{8}$ -inch diameter stud at the end of the current-limiting fuse opposite the hinge-end adapter. Tighten the bolts securely.
- STEP 4.** Depending on the fuse length, the latch-end adapter may have to be shortened to fit the fuse and adapter assembly in the S&C Holder. The length from the bottom of the hinge-end adapter (less the stud) to the top of the latch-end adapter should be $16\frac{1}{4}$ inches (413 mm) for the 14.4-kV holder and $24\frac{1}{8}$ inches (613 mm) for the 25-kV holder. See Figure 4.

- STEP 5.** If necessary, shorten the latch-end adapter by cutting off any excess length with a hacksaw. Remove any burrs from the sawed edge of the adapter.
- STEP 6.** Install the fuse and adapter assembly in the holder as instructed in the “Installing a Fuse In the Holder” section.

Installing a Fuse In the Holder

Refer to Figure 1 on page 7, Figure 2 on page 8, Figure 3 on page 9, or Figure 4 on page 10, as appropriate, and follow these steps to install the current-limiting fuse in the S&C Holder:

- STEP 1.** *If adapters were installed on the fuse:* Make sure the adapters’ stainless steel hex-head bolts have been tightened enough to flatten the $\frac{3}{8}$ -inch stainless steel lockwashers under the bolt heads.
- STEP 2.** Loosen the $\frac{3}{8}$ —16 x $1\frac{1}{4}$ -inch the stainless steel hex-head bolts of the holder’s latch-end and hinge-end clamps and insert the fuse (with adapters, if any) into the clamps.
- STEP 3.** *For current-limiting fuses with blown-fuse indicators:* Make sure the indicator is positioned at the hinge-end clamp and tighten the bolts of the clamps so the $\frac{3}{8}$ -inch stainless steel lockwashers under the bolt heads are flat.

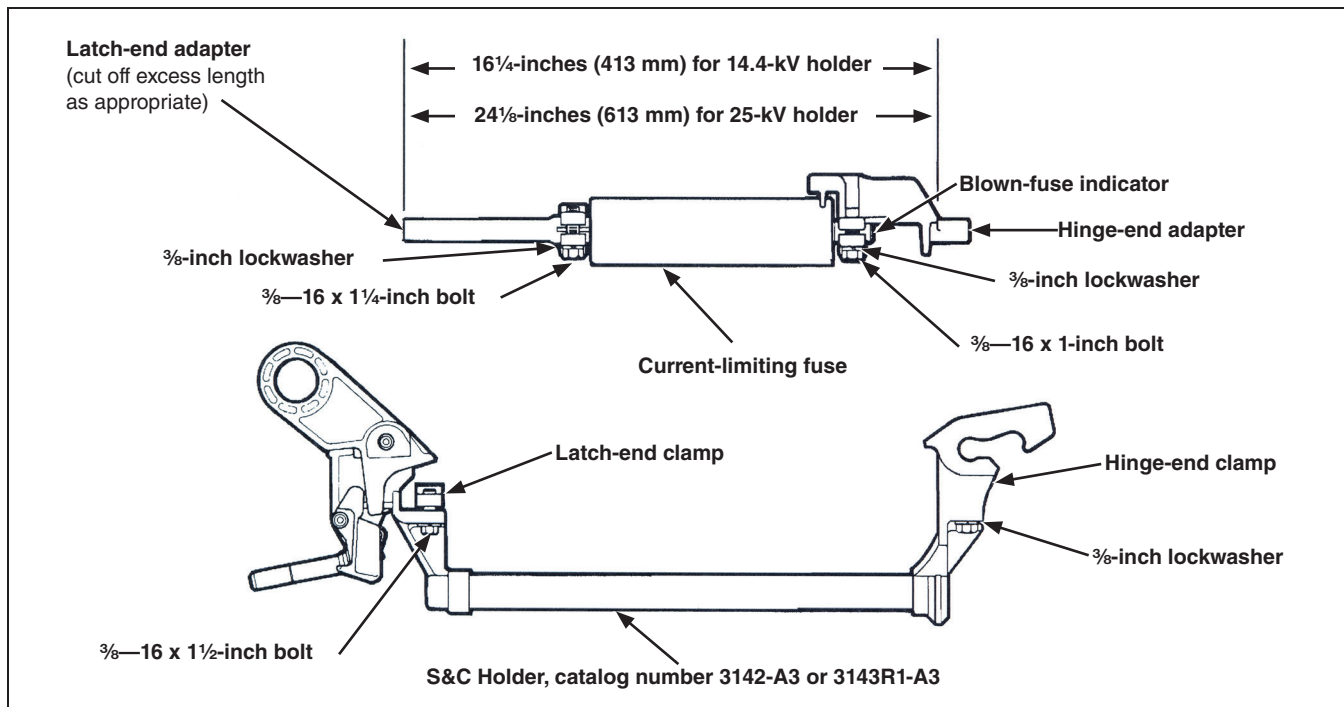


Figure 4. Installing a fuse requiring latch-end and hinge-end adapters in S&C Holders, catalog numbers 3142-A3 and 3143R1-A3.

If no adapters were used to install the fuse in the S&C Holder and the replacement fuse is the same length and diameter as the blown fuse, follow these steps to replace the blown fuse:

- STEP 1.** Loosen the $\frac{3}{8}$ —16 x 1 $\frac{1}{4}$ -inch stainless steel hex-head bolts of the latch-end and hinge-end clamps of the holder and remove the blown fuse from the holder and discard the blown fuse.
- STEP 2.** Install the replacement fuse in the holder as instructed in the “Installing a Fuse In the Holder” section on page 10.

If adapters were used to install the fuse in the S&C Holder and the replacement fuse is the same length and diameter as the blown fuse, follow these steps to replace the blown fuse:

- STEP 1.** Loosen the $\frac{3}{8}$ —16 x 1 $\frac{1}{4}$ -inch stainless steel hex-head bolts of the holder’s latch-end and hinge-end clamps and remove the fuse and adapter assembly from the holder.
- STEP 2.** Unbolt the adapters, remove them from the fuse, and discard the blown fuse.
- STEP 3.** Install the adapters on the replacement fuse as instructed in the “Installing Adapters on the Fuse” section on pages 8 and 9.
- STEP 4.** Install the fuse and adapter assembly in the holder as instructed in the “Installing a Fuse In the Holder” section on page 10.

If the replacement fuse is not the same length and diameter as the blown fuse, new adapters may be required to fit the fuse in the S&C Holder. The size of the current-limiting fuse may change when a higher or lower ampere rated fuse is used. Refer to the nearest S&C Sales Office for assistance.