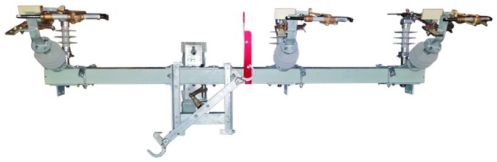
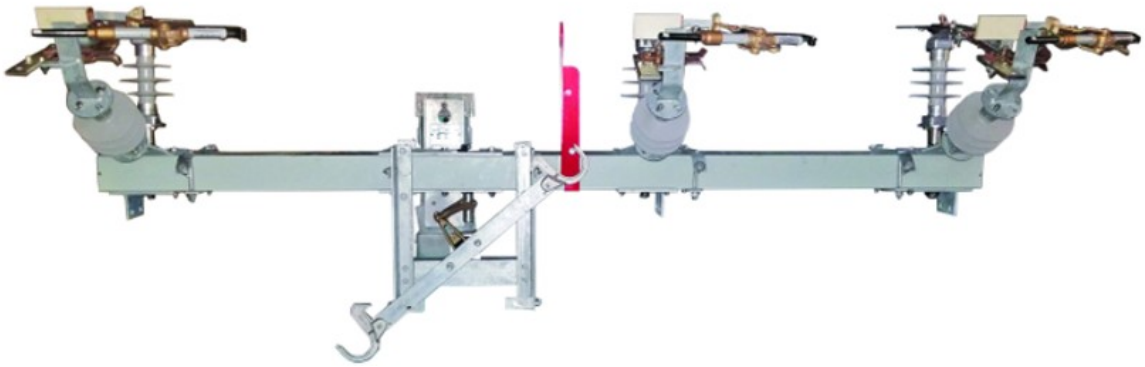


SIEMENS HOG Vector Hog Switch Instruction Manual

SIEMENS

INSTRUCTION MANUAL



HOG Vector®
group-operated switches

Contents

HOG Vector Hog Switch

Installation / check-out instructions
usa.siemens.com/disconnectswitches

	⚠ **DANGER**
	Hazardous voltages and high speed moving parts. Will cause death, serious injury or property damage. Always de-energize and ground the equipment before maintenance. Read and understand this instruction manual before using equipment. Maintenance should be performed only by qualified personnel. The use of unauthorized parts in the repair of the equipment or tampering by unqualified personnel will result in dangerous conditions that will cause death, severe injury or equipment damage. Follow all safety instructi ons contained herein.

Important

The information contained herein is general in nature and not intended for specific application purposes. It does not relieve the user of responsibility to use sound practices in application, installation, operation, and maintenance of the equipment purchased. Siemens reserves the right to make changes in the specifications shown herein or to make improvements at any time without notice or obligation. Should a conflict arise between the general information contained in this publication and the contents of drawings or supplementary material or both, the latter shall take precedence.

Qualified person

For the purpose of this instruction manual a qualified person is one who has demonstrated skills and knowledge related to the installation, construction, and operation of the equipment and the hazards involved. In addition, this person has the following qualifications:

- Is trained and authorized to de-energize, clear, ground and tag circuits and equipment in accordance with established safety procedures.
- Is trained in the proper care and use of protective equipment, such as: rubber gloves, hard hat, safety glasses or face shields, flash clothing, etc. in accordance with established safety practices.
- Is trained in rendering first aid."

  Further, a qualified person shall also be familiar with the proper use of special precautionary techniques, personal protective equipment, insulation and shielding materials, and insulated tools and test equipment. Such persons are permitted to work within limited approach of exposed live parts operative at 50 volts or more, and shall, at a minimum, be additionally trained in all of the following:
- The skills and techniques necessary to distinguish exposed energized parts from other parts of electric equipment.
- The skills and techniques necessary to determine the nominal voltage of exposed live parts.
- The approach distances specified in NFPA 70E® and the corresponding voltages to which the qualified person will be exposed.
- The decision-making process necessary to determine the degree and extent of the hazard and the personal protective equipment and job planning necessary to perform the task safely.

Signal words

The signal words “danger,” “warning,” and “caution” used in this instruction manual indicate the degree of hazard that may be encountered by the user. These words are defined as:

Danger – Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

Warning – Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Caution – Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

Notice (without safety alert symbol) – Indicates a potentially hazardous situation which, if not avoided, may result in property damage.

Field service operation and warranty issues

Siemens can provide competent, well trained field service representatives to provide technical guidance and advisory assistance for the installation, overhaul, repair and maintenance of Siemens equipment, processes and systems. Contact regional service centers, sales offices or the factory for details, or telephone Siemens field service at +1 800-347-6659 or +1 423-262-5700 outside the U.S.

For medium voltage customer service issues, contact Siemens at +1 800-347-6659 or +1 423-262-5700 outside the U.S.

⚠	⚠ **CAUTION**
	The equipment described by this bulletin must be operated and properly m aintained by qualified personnel who are thoroughly trained and who understand any and all hazards that m ay be involved. This bulletin is not intended to be a substitute for adequate t raining and experience in safety procedures for the equipment listed.

NOTE: These instructions do not purport to cover all details or variations in equipment, nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise that are not covered sufficiently for the purchaser’s purposes, the matter should be referred to the local sales office.

The contents of this instruction manual shall not become part of or modify any prior or existing agreement, commitment or relationship. The sales contract contains the entire obligation of Siemens Industry, Inc. The warranty contained in the contract between the parties is the sole warranty of Siemens Industry, Inc. Any statements contained herein do not create new warranties or modify the existing warranty.

A. Inspection of switch components:

1. The palletized Vector Hog Switch system includes the following components and assemblies (see Vector Hog Switch assembly drawing for exact Bill of Materials (BOM)):
   a. A completely assembled and factory adjusted three phase switch

b. Documentation Package

• Vector Hog Switch assembly drawing

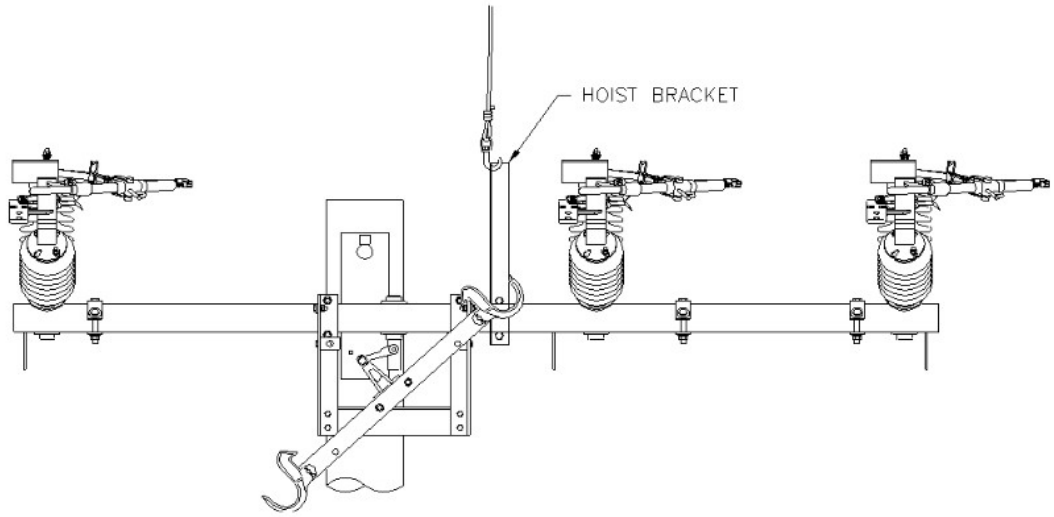
• Vector Hog Switch unit drawing

• Installation / check-out instruction (this document)

2. Uncrate the Siemens Vector Hog Switch and inspect carefully for shipping damage.
   Look closely for:
   a. Insulators that are chipped, cracked, etc.
   b. Bent and/or broken hot parts
   c. Bent and/or broken interrupters
   d. Any missing items. See Vector Hog Switch assembly drawing for BOM.

B. Installation instructions:

1. Drill two (2) mounting holes that are 11/16″ in diameter located per customer construction standards and spaced per Siemens Vector Hog Switch assembly drawing.
2. Install the mounting bolts in the holes (mounting bolts not furnished).
3. Use the hoist bracket to lift the switch approximately four (4) feet off the ground.
   NOTE: Be very careful when handling the switch not to damage the interrupters or hot parts.

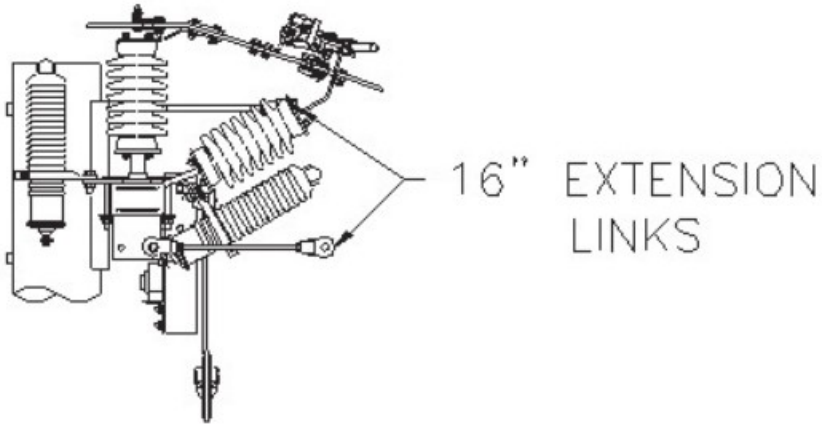


4. Cut the hinge ties.
5. If lightning arrestors (supplied by the customer) are required, some customers prefer to mount and make-up the arrestors at this point.

⚠	⚠ **CAUTION**
	It is the customer's responsibility to adjust arrestor brackets, arrestors, ground lead wires and "Hot" lead wires to provide proper phase to ground and phase to phase clearance.

   NOTE: Be very careful when lifting the switch unit not to damage the interrupters or hot parts.

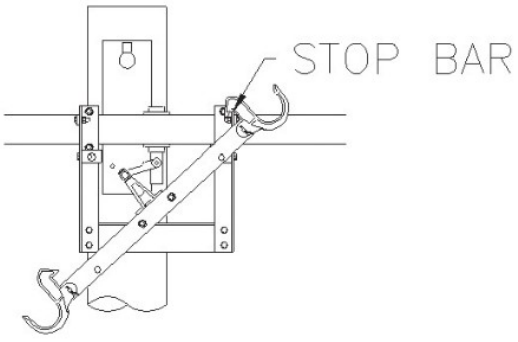
6. Extension links (supplied by the customer) are required on the jaw side of the switch only, if dead ending on the switch unit. Some customers prefer to install the extension links (see Siemens Vector Hog Switch assembly drawing at this point). The center phase may require dead ending on the pole mounting channel or above the switch on the pole using an eye bolt with certain base mounting configurations.

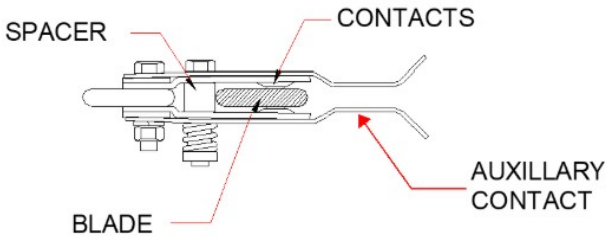


7. Lift the switch unit and mount it on the pole, over the previously installed mounting bolts and tighten bolts until the split washer is flattened. Keyhole slots for this purpose have been machined in the mounting channel. Remove blade ties from all three jaw assemblies so that the switch can be operated.
8. Remove hoist bracket.
9. Ground the switch unit (and lightning arrestors if required) using #2 or larger copper wire.
   A grounding point (1/2-13 tapped hole) is provided in the side of the mounting bracket (see Siemens Vector Hog Switch assembly drawing).

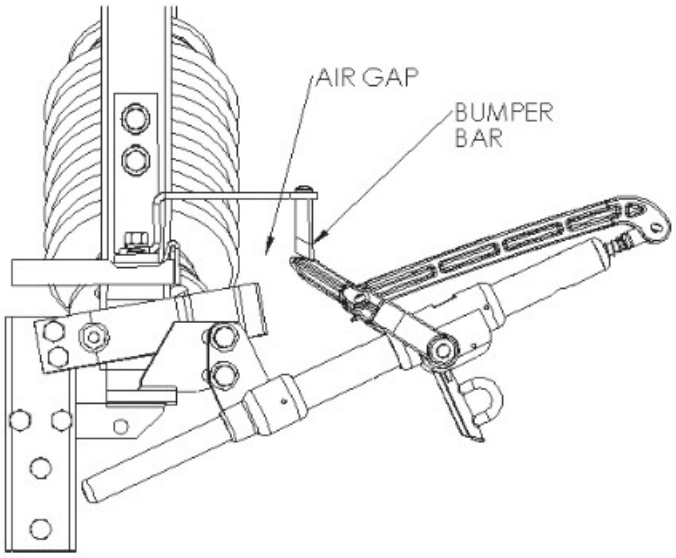
C. Operational check-out instructions

1. SWITCHES ARE FULLY ADJUSTED AND INSPECTED before they leave the factory.
   There should not be any need to adjust the switch unit.
2. Check the rotation of the hinge terminals. They should rotate approximately 180° with slight resistance.
3. The following checks should be performed on all three phases, independently, to verify proper operation of the switch and interrupters. This will be done manually.
   a. Close the switch fully. Verify that the hook is securely latched over the stop bar.
   Bounce the blade toward the open position. The blade should stay within 1/8” of the spacer (blade stop).





   b. With the switch still fully closed and the interrupter cocked (set to trip), the lever should stick above the nylon bumper at least 1/8″. There should be no metal-to-metal contact between the interrupter’s lever and the contactor casting. The lever should rest in the air gap as shown below. Raise the interrupter lever and make sure the lever clears without touching any metal.



c. Slowly open the switch and be sure that the following operations occur:

• As the blade opens, the bottom of the blade touches the auxiliary contacts before the blade leaves the main contacts (see Figure 1 below). This transfers the load from the main contacts to the auxiliary contacts. As the switch continues to open, the main contacts will part and no longer carry the load, while the auxiliary contacts carry the full load (see Figure 2 below).

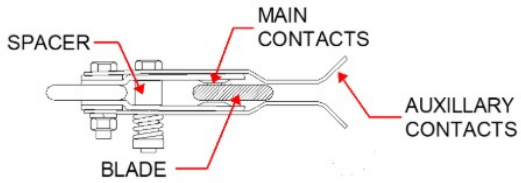


Figure 1

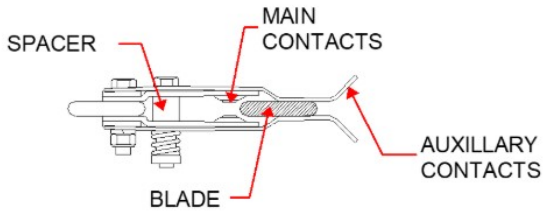
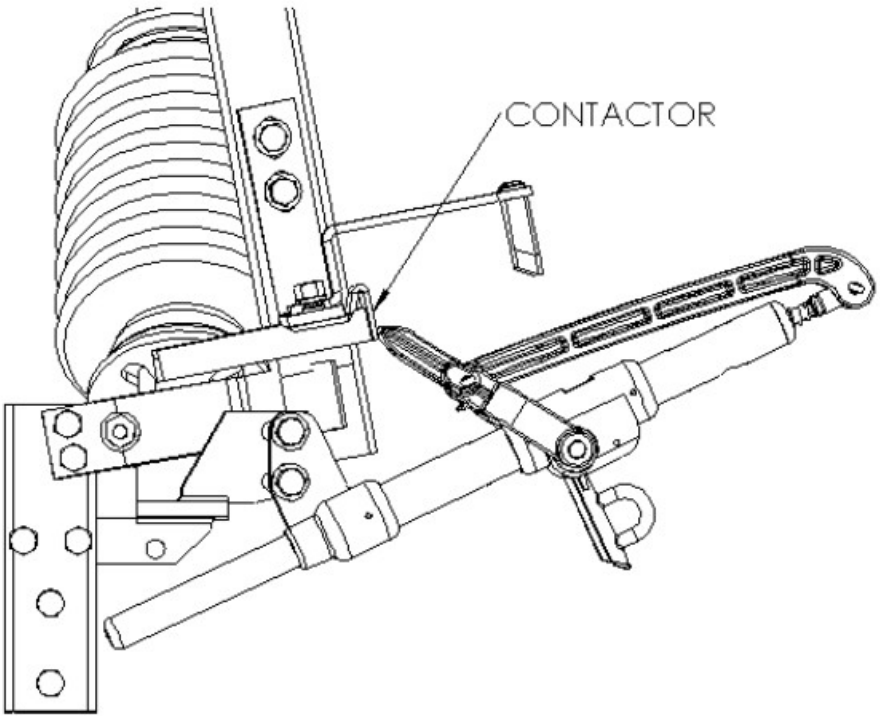


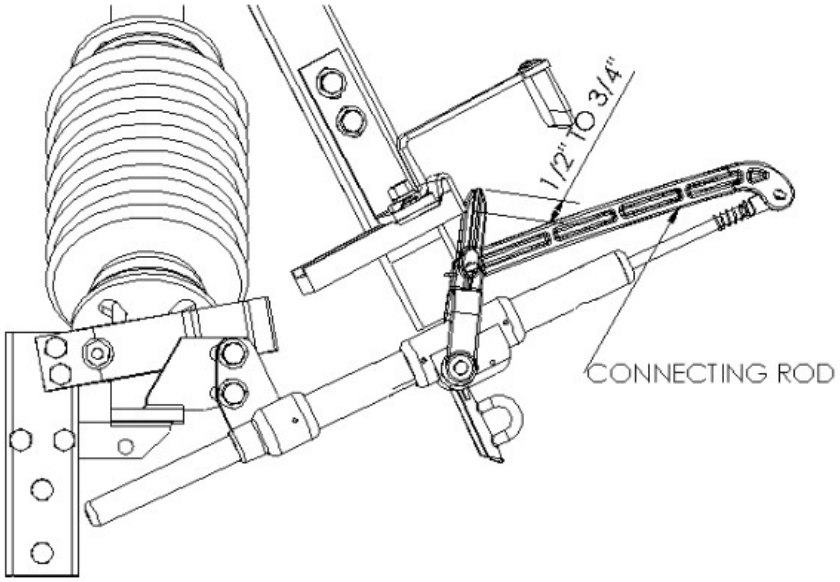
Figure 2

• As the blade continues to rotate open, the interrupter lever must make full metal-to-metal contact with the contactor. At this point the load then transfers from the auxiliary contacts to the interrupter's lever arm so that the interrupter now carries the full load.



• As the blade continues to rotate open, the interrupter will trip thus interrupting the load. The interrupter must

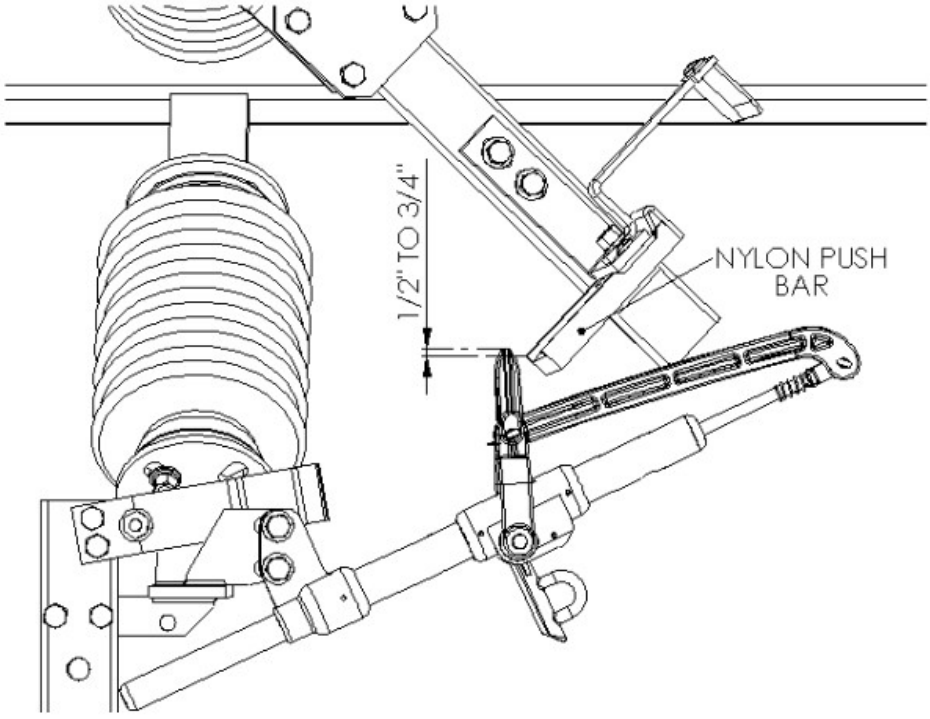
trip while the lever arm is in metal-to-metal contact with the contactor. The interrupter should trip (fire) before the contactor gets within 1/2″ to 3/4″ of the end of the lever.



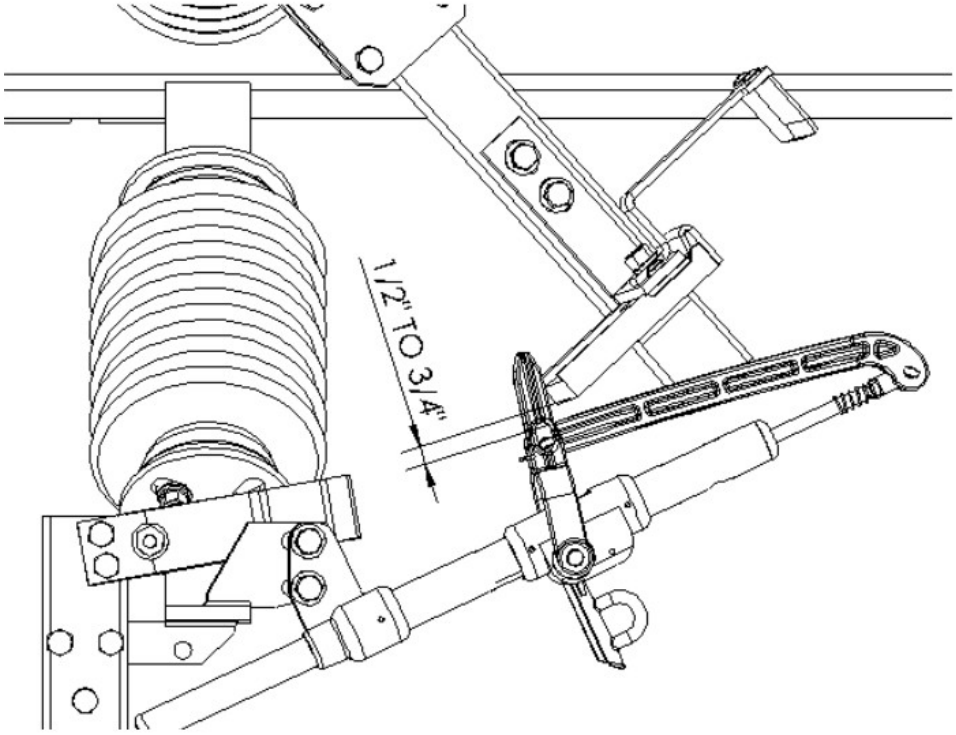
• Continue to open switch until the interrupter lever has cleared the end of the nylon push bar of the contactor assembly. Once the lever has cleared the push bar, the lever will spring back slightly. This allows the nylon bumper of the contactor assembly to engage the lever and lift the lever into position, when the switch is being closed. Open the switch fully.

4. Now, close the switch slowly. The following operations and checks should be made:

a. As the blade rotates closed the push bar must pick up the lever at least 1/2″ from the end of the lever.

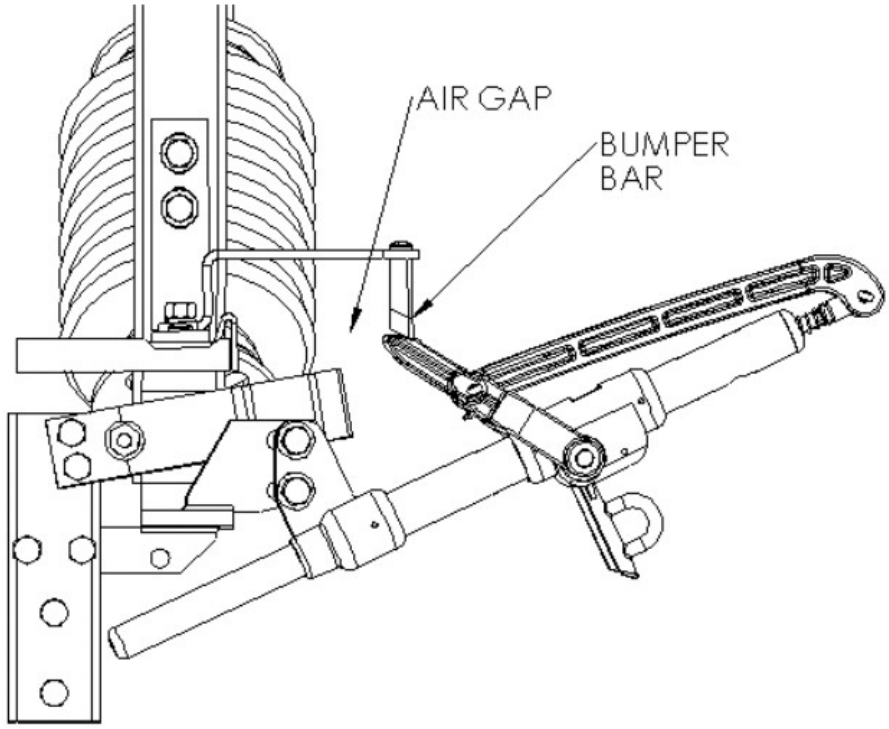


b. Continue to close the blade, when the lever is at 90° to the interrupter, the push bar should be at least 1/2″ from the side of the connecting rod. At no time during the closing of the switch should the push bar touch the connecting rod.



c. Close the switch completely and make sure that the interrupter resets (cocks) for the next opening operation.

d. In the fully closed position, the lever should rest on the bumper, and stick above the bumper at least 1/8″.



e. These adjustment checks should be repeated on each independent switch blade/phase.

5. The switch is now ready for installation of the conductors.

D. Maintenance:

1. Periodically operate the switch and check for actions described in Section C. Lubricate the jaw, auxiliary contacts and the end of the blade with factory approved grease.
2. With the switch in the closed position, verify that the switch is fully closed and that the hook latched over the stop bar.
3. Refer to ANSI C37.35 for additional recommendations. C37.35 is “IEEE Guide for the Application, Installation, Operation and Maintenance of High-Voltage Air Disconnecting and Load Interrupter Switches.”

Disposal

Siemens equipment is environmentally friendly product predominantly consisting of recyclable materials. For disposal, some disassembly, separation, and professional services handling may be required.
Materials to be handled include but are not limited to:

- Metals: Should be transferred and recycled as mixed scrap metals.
- Plastics: Plastic containing a recycle symbol should be recycled. Plastic lacking the recycle symbol should be discarded as industrial waste.
- Small electronics, insulated cables, and motors: Should be recycled via electronics scrap disposal companies specialized in separating and sorting as described above.
- Batteries: Should be recycled via a recycling company.

Disposal regulations vary from locality to locality and may be modified over time. Specific regulations and guidelines should be verified at the time of waste processing to ensure that current requirements are being fulfilled. For specific assistance in understanding and applying regional regulations and policies or manufacturer's recommendations, refer to the local Siemens service representative for additional information.

	**WARNING**
	Stored energy. Can cause death, serious injury, or property damage. Mechanisms contain stored energy, which may be released during disasse mbly. Wear suitable protection and take appropriate precautions when disconnecting and removing moving parts.
	**WARNING**
	Heavy objects. Can cause death or serious injury. Disassembly may cause an unbalanced load, and could result in falling obj ects. Take appropriate precautions in a properly designated workspace to maxmi ze support and stability.

This document contains a general description of available technical options only, and its effectiveness will be subject to specific variables including field conditions and project parameters. Siemens does not make representations, warranties, or assurances as to the accuracy or completeness of the content contained herein. Siemens reserves the right to modify the technology and product specifications in its sole discretion without advance notice.

Legal Manufacturer
Siemens Industry, Inc.
7000 Siemens Road
Wendell, North Carolina 27591
United States of America
Telephone: +1 800-347-6659
usa.siemens.com/disconnectswitches
Order No. SIEA-T40005-00-4AUS

Documents / Resources

	SIEMENS HOG Vector Hog Switch [pdf] Instruction Manual HOG Vector Hog Switch, Hog Switch, Switch

References

- User Manual