

Instructions - Molded Vacuum Switch with 600AMP Elbow End

Contents: MVS3 Molded Vacuum Switch, Lubricant, Instruction Sheet.

Elastimold MVS molded rubber vacuum switches are suitable for submersible service in underground vaults and manholes, or above grade in a padmount enclosure.

Handling and Storage: Switch(es) are shipped in the closed position and securely mounted in a sturdy shipping carton that includes provisions for forklift use during handling. Each 3-phase switch is provided with lifting eyes to allow the switch to be lifted into position. If the switch is not installed immediately and is stored outside, an insulated cap must be used. **If switch(es) are moved before installation, maintain switch(es) in closed position.**

DANGER

All apparatus must be de-energized during installation or removal of part(s).

Do not touch or move energized products in the work area.

These instructions do not attempt to provide for every possible contingency.

Failure to follow these instructions will result in damage to the product and serious or fatal injury.

This product should be installed only by competent personnel trained in good safety practices involving high voltage electrical equipment. These instructions are not intended as a substitute for adequate training or experience in such safety practices.

FOR MORE INFORMATION ON PARTS, INSTALLATION RATINGS AND COMPATIBILITY, CALL THE NEAREST ABB OFFICE.

All apparatus must be installed and operated in accordance with individual user, local and national work rules and electrical standards.

If this product is supplied with a protective shipping cover(s), remove this shipping cover(s) and replace with the appropriate HV insulated cap(s) or connector(s) before submerging or energizing the circuit.

Inspect parts for damage, rating and compatibility with mating parts.

Excess distortion of the assembled product may result in its failure.

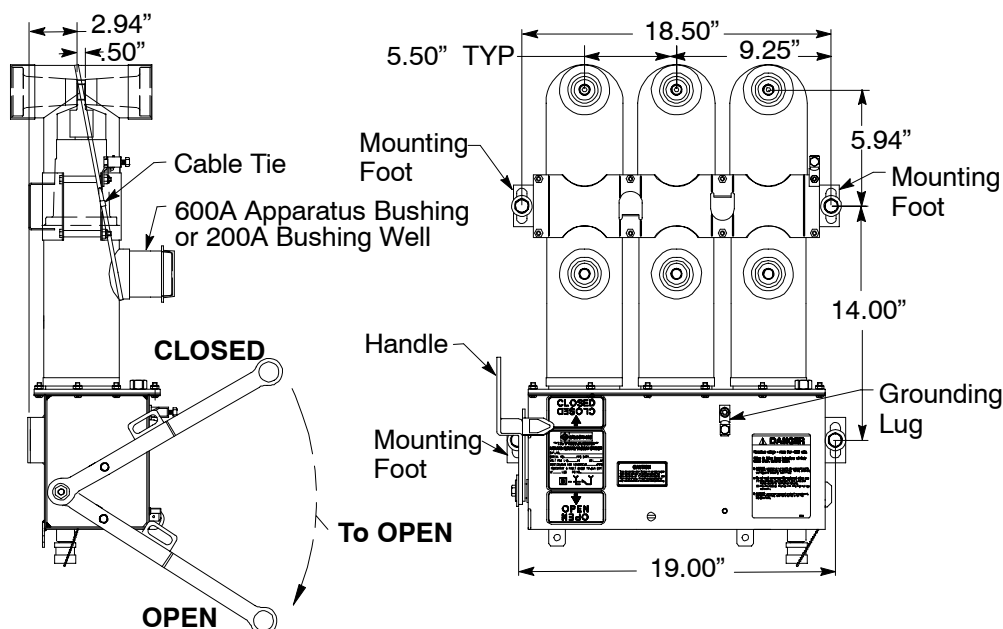
Limited Warranty:

1. ABB Installation Products Inc. warrants that its products will be free from defects in materials or workmanship for a period of two (2) years, except for tools which are warranted separately (see warranty accompanying those products). Fisher Pierce® products and Elastimold® Reclosers are warranted for three years; and Joslyn™ VBT and VBU capacitor switches are warranted for four years or 40,000 operations whichever occurs first. Upon prompt notification of a warranted defect, ABB Installation Products Inc. will, at its option, repair or replace the defective product.
2. In no event shall ABB Installation Products Inc. be liable for any consequential, indirect or special damages, nor will ABB Installation Products Inc. be liable for transportation, labor, or other charges arising out of the removal or reinstallation of its products. Liability for breach of warranty is limited to the cost of repair or replacement of the warranted product only.
3. Misuse, misapplication or modification of ABB Installation Products Inc. products immediately voids all warranties.

THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE EXCLUSIVE AND ARE IN LIEU OF ALL OTHER WARRANTIES AND REMEDIES, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE SPECIFICALLY DISCLAIMED.

IMPORTANT

1. Check contents of package to ensure they are complete and undamaged.
2. Check all components to ensure proper fit with cable and/or mating products.
3. Read entire installation instructions before starting.
4. Have all required tools at hand and maintain cleanliness throughout the procedure.
5. Do not remove cable ties securing switch until unit is installed.

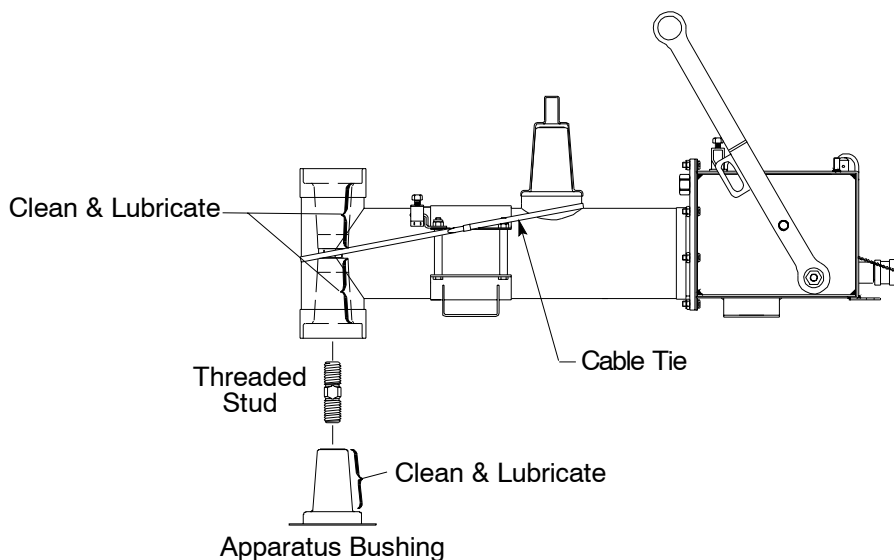


INSTALLATION

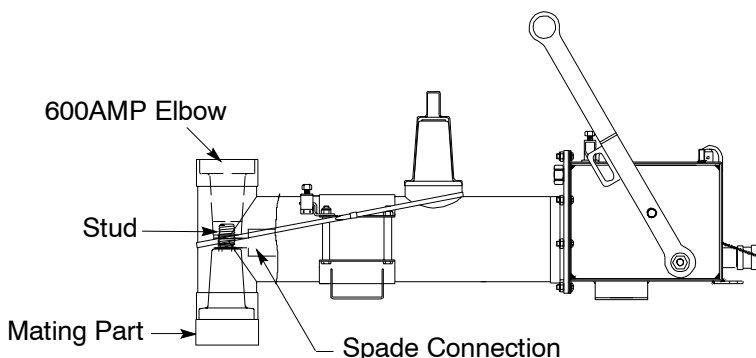
Note: Any reference to lubricant within these instructions, is to Elastimold® approved silicone lubricant SL-5 or supplied lubricant. Other lubricants may be harmful to product. Do not substitute.

1. Follow handling instructions (above) to remove the switch from the shipping carton.
2. Remove the protective caps from the elbow and mating part. Hand tighten the threaded stud supplied into mating part. Clean elbow and mating part ; lubricate with lubricant supplied.

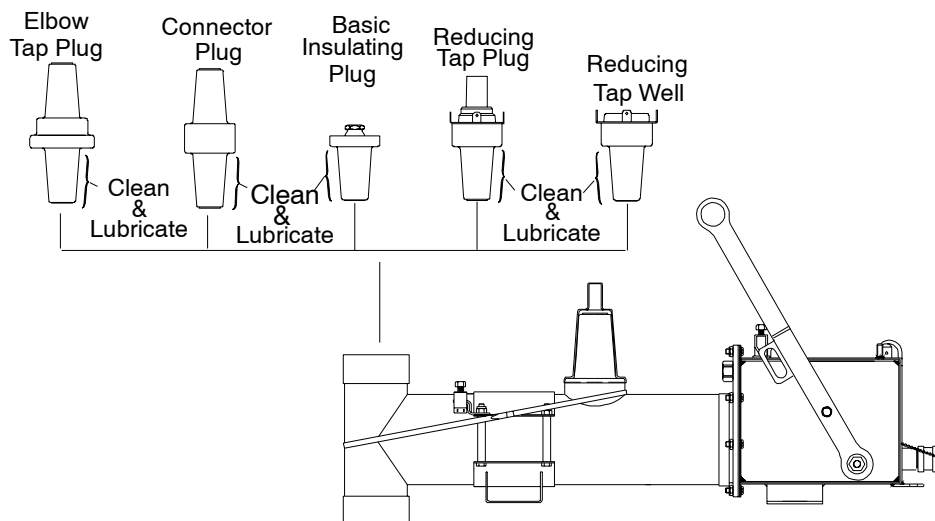
Note: Use spacers to keep switch perpendicular to axis of bushing surface when switch is attached to bushing or junction.



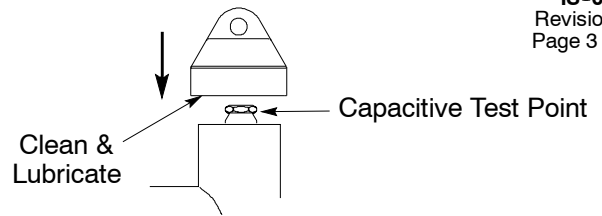
3. Push elbow onto mating part, line up the hole in the spade connector with the stud on the mating part.



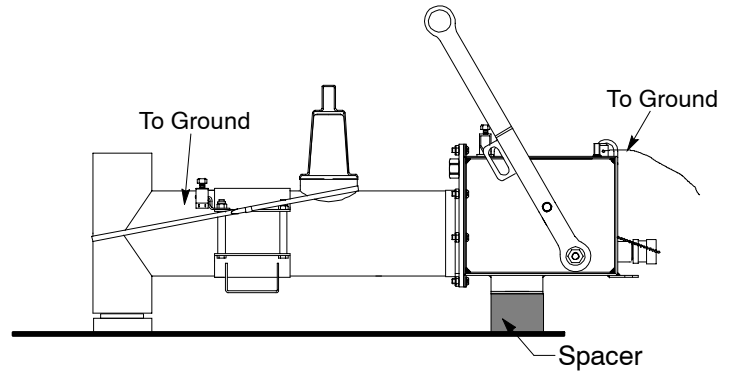
4. Clean and lubricate the mating part for the opposite end of the elbow. Insert the mating part into the elbow. Engage the threads and hand tighten. Torque mating part according to the instructions supplied with the mating part.



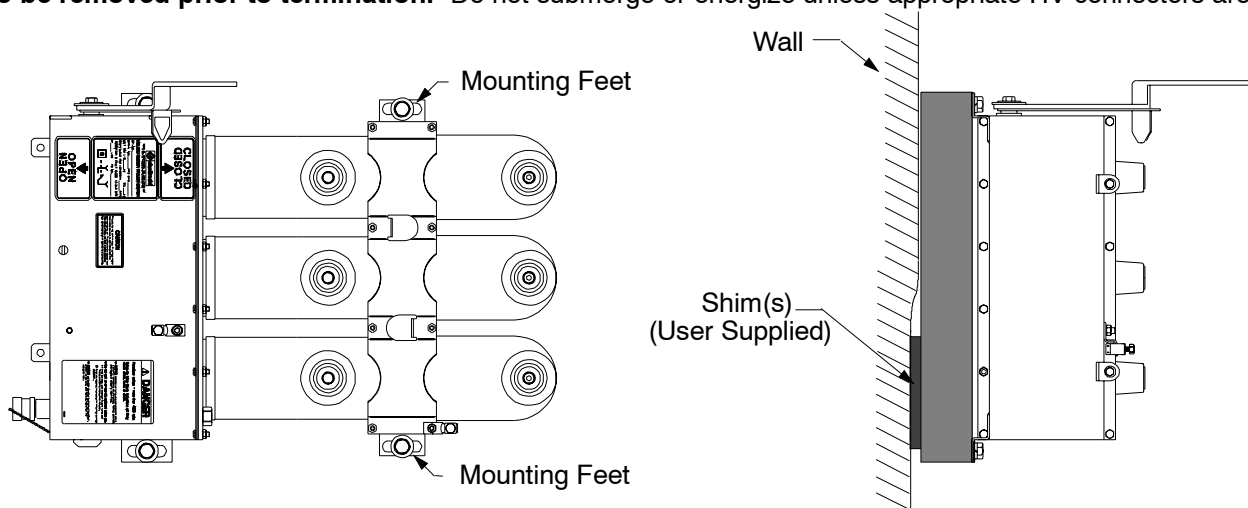
5. If an insulating plug is used as a mating part, clean and lubricate inner surface of the voltage detection cap and place on elbow. Push down firmly until cap snaps into place. Confirm that circuit is de-energized, using VOLTAGE TEST on page 5.



6. Use spacers to ensure switch is level and elbow is not damaged. Use shims if wall is uneven. Secure switch with bolt and washer at each mounting foot. Cut and remove cable ties. Insert a wire with minimum ampacity of #14 AWG cooper into ground lug and connect to ground using suitable connector.

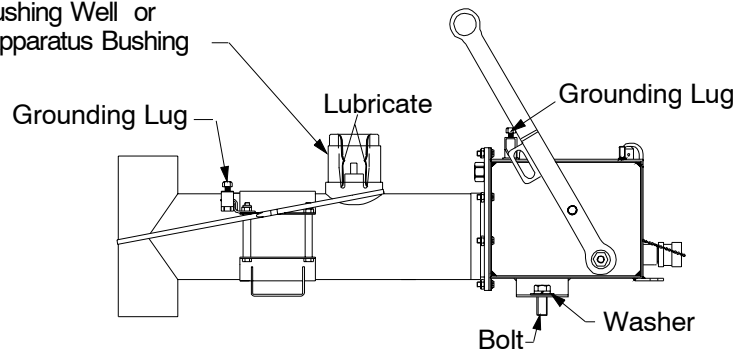


DANGER: Protective shipping covers are used to protect the bushing(s) or bushing well(s) during shipment and are to be removed prior to termination. Do not submerge or energize unless appropriate HV connectors are installed.

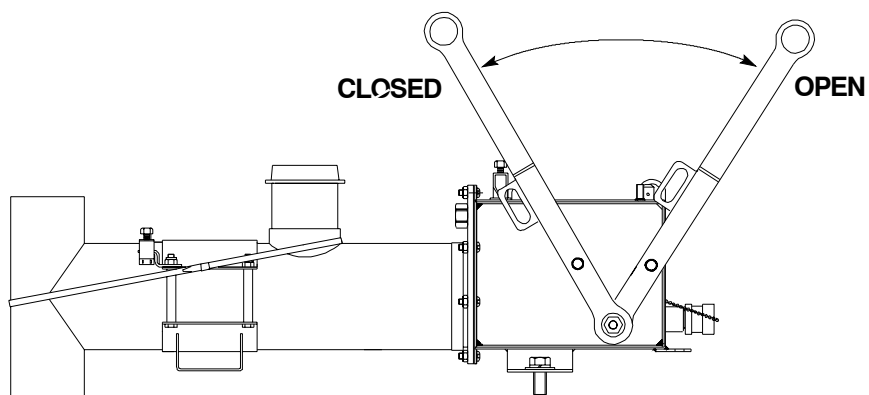


7. Test MVS as outlined in, TESTING AND EVALUATION OF MOLDED VACUUM SWITCH(ES).
8. Remove the shipping covers and clean the interfaces. Lubricate with supplied lubricant or Elastimold® approved lubricant.
9. Install connectors following the instructions included with those products. Note: Interfaces can be 600 amp apparatus bushings, 200 amp bushing wells or a combination of both.
10. Ground lugs are provided for the switch ground. Switch grounds and all cable shields must be properly attached to the system ground.

200Amp Bushing Well or
600Amp Apparatus Bushing



Handle Locations



The switch is shipped with the handle in the closed positioned. The handle may be adjusted in 60° increments by removing the bolt, lockwasher and flat washer. To adjust the position, remove the handle. **DO NOT REMOVE THE POINTER.** Adjust the handle 60° in either direction, and insert the handle on the hex, reassemble the flat washer, lockwasher and hex bolt and torque to 15-20 ft-lbs., (see Fig. A)

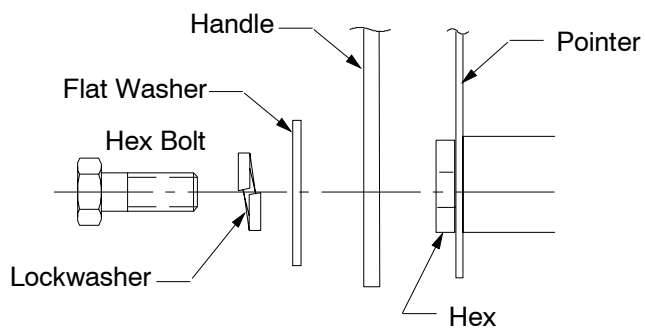
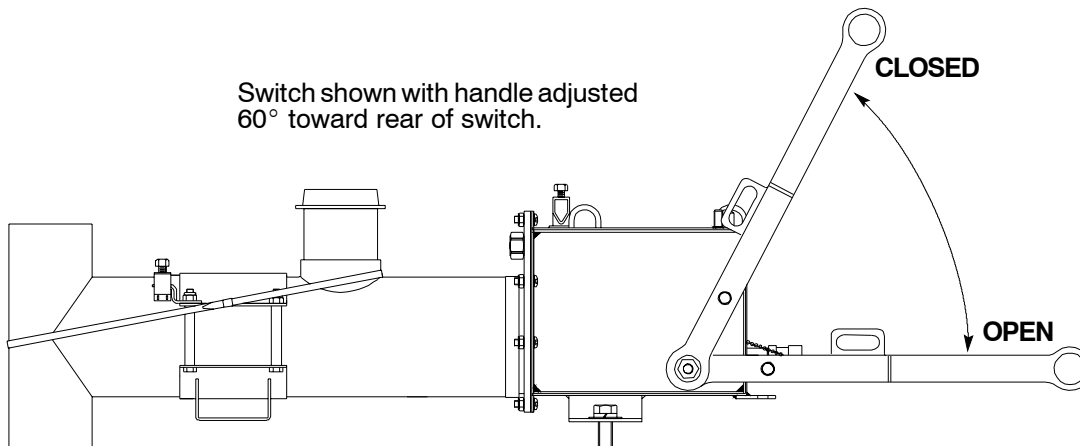
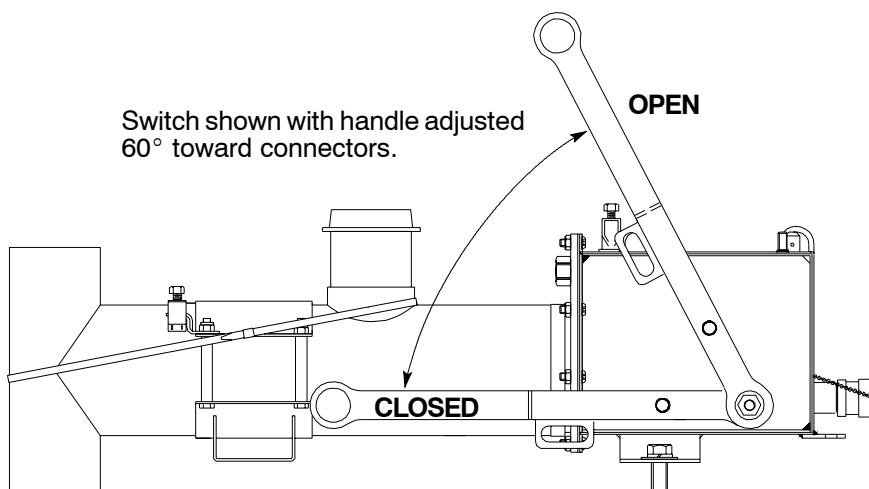


Figure A



TESTING AND EVALUATION OF MOLDED VACUUM SWITCH(ES)

Under normal service conditions, MVS switches require no maintenance.

CAUTION: All sources must be isolated prior to performing these checks. Be sure that clearance has been obtained and established user safety procedures are being followed.

1. Mechanically operate the MVS for three closings and openings. Confirm latching by noting the position of the pointed indicator and listening for an audible “click” as the switch handle is rotated between the two positions.
2. With the switch contacts closed, measure the resistance. Each switch module must be below 200 micro-ohms.
3. Confirm vacuum retention by performing 30KVAC or 40KVDC hi-potential test across the open contacts of the MVS for 5 minutes. To avoid possible generation of harmful x-rays do not exceed 30kV AC or 40kV DC. With the circuit de-energized, open the switch and ground one tap. With the opposite tap properly terminated, perform either an AC or DC hi-potential test across the open contacts.

OPERATING INSTRUCTIONS

These switches should be operated by qualified personnel. Termination should be fully connected and in good condition. Do not exceed the continuous, loadbreak, or fault close rating shown on the unit nameplate.

1. Switch operation - Remove the padlock from the switch handle to be operated. Operate locks if installed and if required.
2. TO CLOSE THE SWITCH - Push the handle forward approximately 45 degrees until the switch operates and an audible “click” is heard. The position indicator pointer will align with the red “Closed” position status indicator.
3. TO OPEN THE SWITCH - Pull the handle in a reverse motion approximately 45 degrees until the switch operates and an audible “click” is heard. The position indicator pointer will align with the green “Open” position status indicator.
4. Reinstall padlocks and operate locks as required by the applicable operating system.

VOLTAGE TEST

The ELASTIMOLD® elbow connectors are equipped with an integral capacitance test point that can be used to establish whether or not the circuit is energized. When using the test point, complete the following steps:

1. Remove test point cap with a hotstick. When removing cap, PEEL OFF AT AN ANGLE rather than pulling directly in line with the test point assembly.
 2. **WARNING:** THE VOLTAGE TEST POINT IS A CAPACITANCE DEVICE, IT IS NOT DIRECTLY CONNECTED TO THE CONDUCTOR. Do not use conventional voltage measuring equipment. Follow the manufacturer’s directions for the meter that is used. Test with a suitable sensing device, made for use with separable connectors manufactured with capacitive test points. Contamination, moisture, dirt, etc. around the test point or use of the wrong measuring equipment can provide a false “no voltage” indication on an energized elbow. To prevent serious or fatal injury, treat the elbow as energized until the “no voltage” test point indication is confirmed by other means.
 3. After voltage detection has been made, clean and lubricate the inside surface of the cap with silicone lubricant and replace cap on the test point.
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