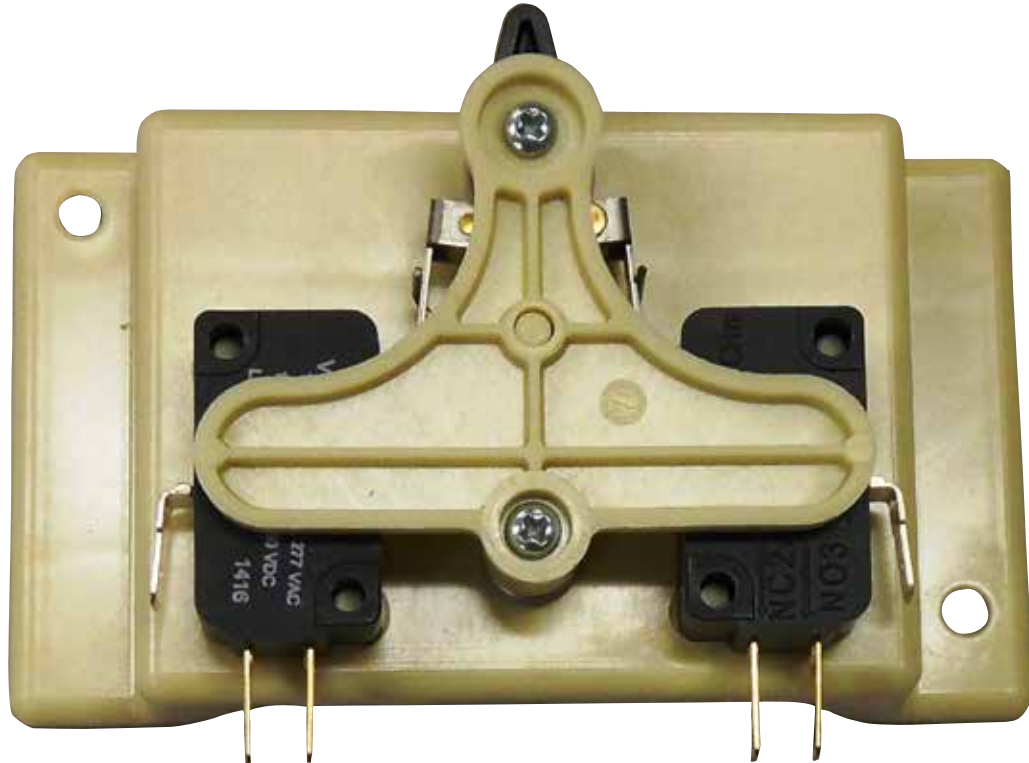


Quik-Drive™ tap-changer holding switch assembly replacement instructions



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Safety for life



Eaton's Cooper Power™ series products meet or exceed all applicable industry standards relating to product safety. We actively promote safe practices in the use and maintenance of our products through our service literature, instructional training programs, and the continuous efforts of all Eaton employees involved in product design, manufacture, marketing, and service.

We strongly urge that you always follow all locally approved safety procedures and safety instructions when working around high voltage lines and equipment, and support our "Safety For Life" mission.

Safety information

The instructions in this manual are not intended as a substitute for proper training or adequate experience in the safe operation of the equipment described. Only competent technicians who are familiar with this equipment should install, operate, and service it.

A competent technician has these qualifications:

- Is thoroughly familiar with these instructions.
- Is trained in industry-accepted high and low-voltage safe operating practices and procedures.
- Is trained and authorized to energize, de-energize, clear, and ground power distribution equipment.
- Is trained in the care and use of protective equipment such as arc flash clothing, safety glasses, face shield, hard hat, rubber gloves, clampstick, hotstick, etc.

Following is important safety information. For safe installation and operation of this equipment, be sure to read and understand all cautions and warnings.

Hazard Statement Definitions

This manual may contain four types of hazard statements:

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.

CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in equipment damage only.

Safety instructions

Following are general caution and warning statements that apply to this equipment. Additional statements, related to specific tasks and procedures, are located throughout the manual.

DANGER

Hazardous voltage. Contact with hazardous voltage will cause death or severe personal injury. Follow all locally approved safety procedures when working around high- and low-voltage lines and equipment.

G103.3

WARNING

Before installing, operating, maintaining, or testing this equipment, carefully read and understand the contents of this manual. Improper operation, handling or maintenance can result in death, severe personal injury, and equipment damage.

G101.0

WARNING

This equipment is not intended to protect human life. Follow all locally approved procedures and safety practices when installing or operating this equipment. Failure to comply can result in death, severe personal injury and equipment damage.

G102.1

WARNING

Power distribution and transmission equipment must be properly selected for the intended application. It must be installed and serviced by competent personnel who have been trained and understand proper safety procedures. These instructions are written for such personnel and are not a substitute for adequate training and experience in safety procedures. Failure to properly select, install or maintain power distribution and transmission equipment can result in death, severe personal injury, and equipment damage.

G122.3

Product information

Introduction

Service Information MN225009EN contains instructions for the replacement of the holding switch on all models and revisions of Eaton's Cooper Power™ series Quik-Drive™ tap-changer.

Read this manual first

Read and understand the contents of this manual and follow all locally approved procedures and safety practices before installing or operating this equipment.

Additional information

These instructions cannot cover all details or variations in the equipment, procedures, or processes described nor provide directions for meeting every possible contingency during installation, operation, or maintenance. For additional information, contact your Eaton representative.

Acceptance and initial inspection

Each holding switch assembly is in good condition when accepted by the carrier for shipment. Upon receipt, inspect the shipping container for signs of damage. Unpack the holding switch assembly and inspect it thoroughly for damage incurred during shipment. If damaged is discovered, file a claim with the carrier immediately.

Handling and storage

Be careful during handling and storage of the holding switch to minimize the possibility of damage. If the module is to be stored for any length of time prior to installation, provide a clean, dry storage area.

Standards

ISO 9001 Certified Quality Management System

Description

The Quik-Drive tap-changer holding switch assembly kit provides the hardware needed to replace the holding switch on all of the Quik-Drive tap-changer models.

Parts Supplied

Table 1. Kit Part Identification

Item	Description	Qty
1	Holding Switch Assembly	1
2	Screw, 8-32x0.38	1

Tools required

Description

Pliers

Phillips-Head Screwdriver

Standard Flat-Blade Screwdriver

Allen Wrench, 9/64 inch

Installation procedures

1. Take note of the position of the wires and wire colors connected to the existing holding switch. See Figures 1, 2, and 3 for some examples of the holding switch wiring.

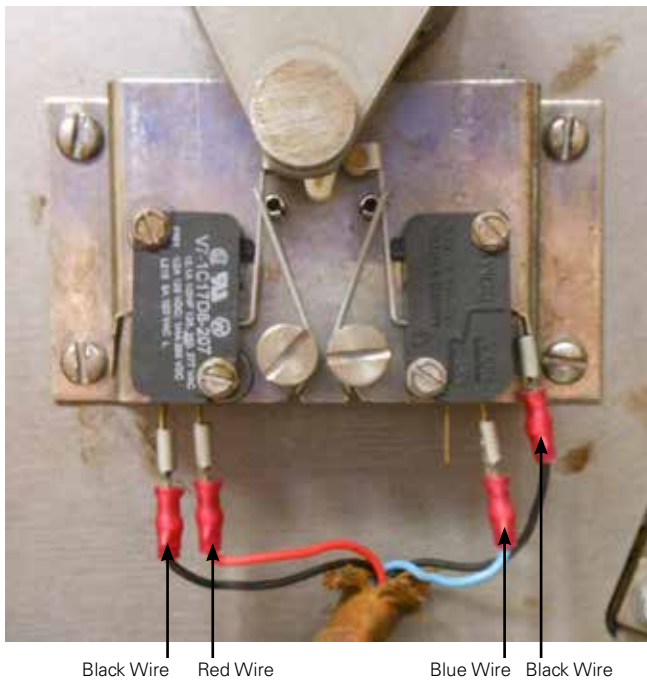


Figure 1. Holding switch on phenolic-board style QD8 tap-changer.

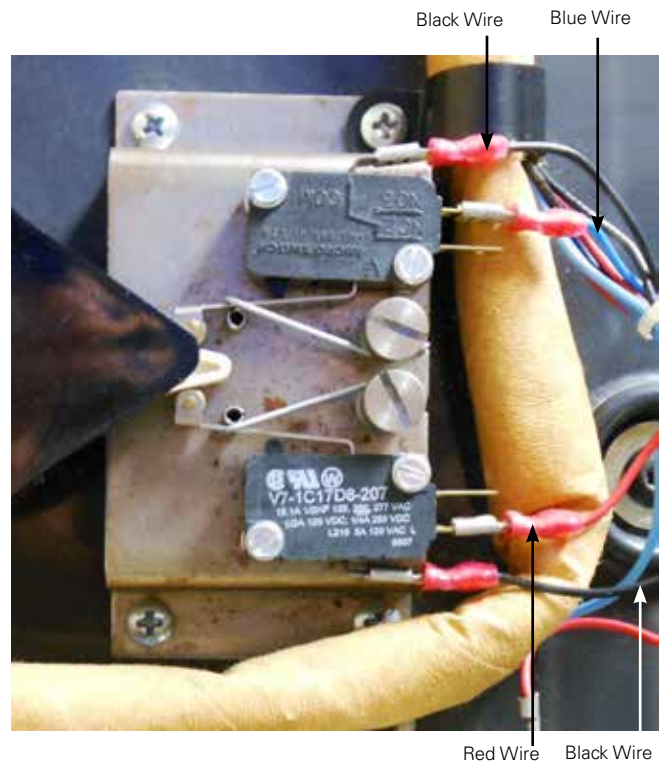


Figure 2. Holding switch on QD3 tap-changer.



Figure 3. Holding switch on molded polymer-style QD5 tap-changer.

2. Using a pair of pliers remove the four leads from the existing holding switch assembly.
3. As required, use either a Phillips screwdriver, blade screwdriver or a 9/64" Allen wrench to remove the screws fastening the holding switch in place.
4. Install the new holding switch using the two 9/64" Allen-head screws provided in the kit. The holding-switch actuator should be positioned toward the pinion cam on the tap-changer. See Figure 4 of a fully installed holding switch on a molded-polymer-style QD8 Quik-Drive tap-changer.
7. After completing the maintenance work, refer to *Service Information MN225008EN (S225-10-30) VR-32 Voltage Regulator with Quik-Drive Tap-Changer Installation, Operation, and Maintenance Instructions* for information on retuning the regulator to the neutral position, voltage regulator tanking, and installation instructions.

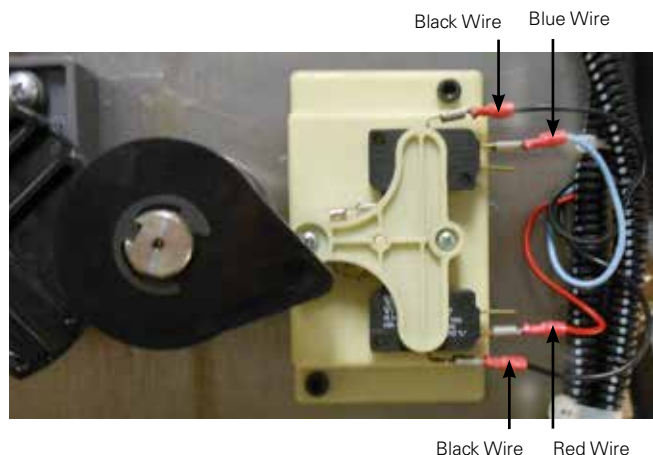


Figure 4. A fully installed holding switch on QD8 tap-changer.

5. Connect the wires to the new holding switch using a pair of pliers. Make sure that the wires are connected as they were on the old switch. Use Figures 1, 2, 3, and 4 as guides for the connections.
6. After completing the work on the tap-changer, return the mechanism to the neutral position. If unsure about the neutral position, contact Voltage Regulator support for assistance at 866-975-7347 (international callers use 262-896-2591).

⚠ WARNING

Explosion Hazard. Bypass a regulator with the line energized only if the position indicator, the neutral light, and the control tap position indicate neutral and the voltage measured between the source and the load bushings using an approved voltmeter is zero. If all indications of neutral do not agree, the line should be de-energized to avoid shorting part of the series winding and resultant high circulating current. Failure to comply can result in death or personal injury and equipment damage.

VR-T232.0



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For Eaton's Cooper Power series Quik-Drive tap-changer product information call 1-877-277-4636 or visit: www.cooperpower.com.