

QD5 Quik-Drive tap-changer VR reversing stationary contact assembly kit 5791646A27 installation instructions



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Safety for life



Eaton meets or exceeds all applicable industry standards relating to product safety in its Cooper Power™ series products. 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

Eaton's Cooper Power™ series QD5 Quik-Drive tap-changer VR reversing stationary contact assembly kit and installation instructions gives customers the ability and guidance to replace the VR reversing stationary contacts during maintenance cycles when contact erosion has occurred to the point of needing replacement.

Refer to *Service Information MN225003EN CL-7 Series Control Installation, Operation, and Maintenance Instructions* for information on the CL-6 voltage regulator control. Refer to *Service Information MN225016EN CL-6 Series Control Installation, Operation, and Maintenance Instructions* for information on the CL-6 voltage regulator control. Refer to *Service Information MN225008EN VR-32 Voltage Regulator with Quik-Drive Tap-Changer Installation, Operation, and Maintenance Instructions* for information on Eaton's voltage regulator with 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 process 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 VR reversing stationary contact is in good condition when accepted by the carrier for shipment. Upon receipt, inspect the shipping container for signs of damage. Unpack the reversing stationary contact 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 stationary contacts to minimize the possibility of damage. If the stationary contacts are to be stored for any length of time prior to installation, provide a clean, dry storage area.

Standards

ISO 9001 Certified Quality Management System

Parts supplied

Item	Part Number	Description	Qty
1	0791646A27	VR Reversing Stationary Contact	1

Tools required

- Ratchet Wrench
- 9/16 inch Deep-well Socket
- Torque Wrench in-lbs
- 3/8 inch Socket



Figure 1. VR reversing stationary contact.

Installation procedure

VR reversing stationary contact removal and installation

1. Each QD5 tap-changer has one VR reversing stationary contact. Note that in the photo, the nylon separating bar has been removed. It is not necessary to remove the bar to perform these steps. See Figure 2.

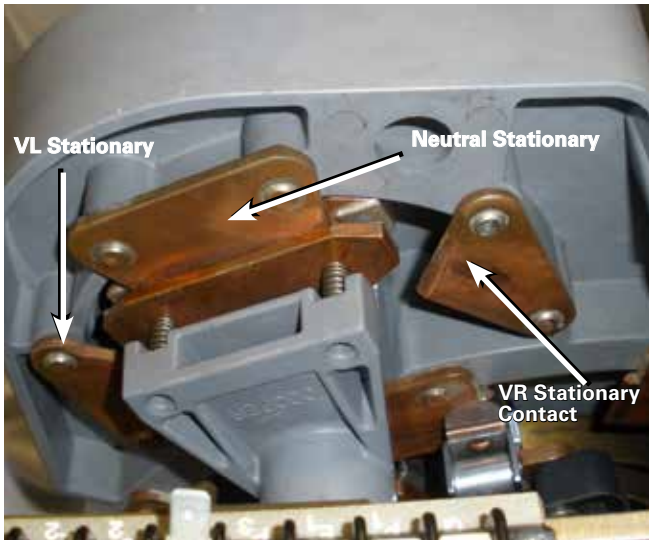


Figure 2. Reversing stationary contact.

2. If the reversing movable contacts are located on the VR reversing stationary contact, place a 3/8" socket onto the rear shaft of the motor. See Figure 97. Using a ratchet, rotate the motor shaft clockwise to move the reversing movable contacts off of the reversing stationary contact. It may be necessary to rotate the tap-changer through several positions before the movable reversing contact will begin to move.

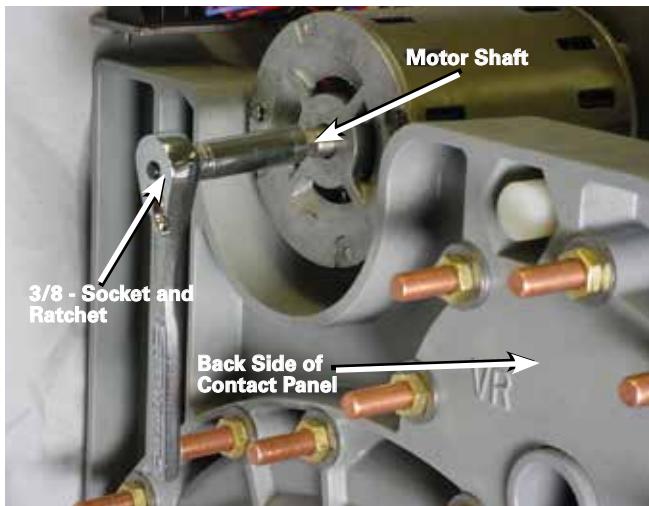


Figure 3. Motor and reversing movable contact rotation.

3. To remove a VR Reversing Stationary Contact use a 9/16" socket and ratchet to loosen and remove both the nuts and flat washers from each of the contact studs. See Figure 4.



Figure 4. Reassembling hardware.

4. Remove the VR reversing stationary contact from the contact assembly panel. See Figure 5.

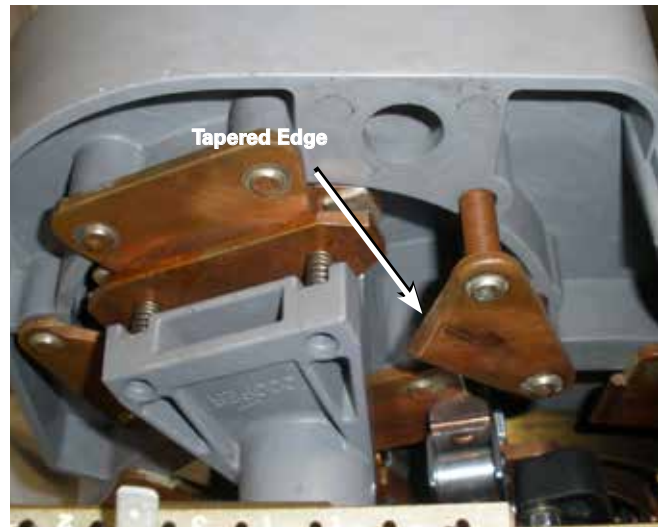


Figure 5. VR reversing stationary contact removal

5. Install the new VR reversing stationary contact into the mounting holes in the contact assembly board. Make sure when installing the contact that the leading tapered edge is positioned toward the reversing neutral stationary contact. If the tapered edge is facing in the wrong direction, the stationary VL contact is being used. See Figure 5.

6. Place a flat washer and nut on each stud. Use a 9/16" socket and ratchet to tighten the nuts on each contact stud. Using a torque wrench tighten the nuts to a torque of 80–90 lb-ins (9.0–10.2 Nm). See Figures 6.



Figure 6. Removing hardware.

7. Once the work has been completed, place the tap-changer in the neutral position.

Placing tap-changer into neutral

1. Place a 3/8" socket and ratchet on the output shaft of the motor; rotate the motor so that the contacts and other components are aligned in the neutral position
2. Confirm that the regulator is in the neutral position.
 - A. Main movable contacts are located on the neutral stationary contact, which is located at the 11 o'clock position and under the reversing switch movable contact assembly. See Figure 7.

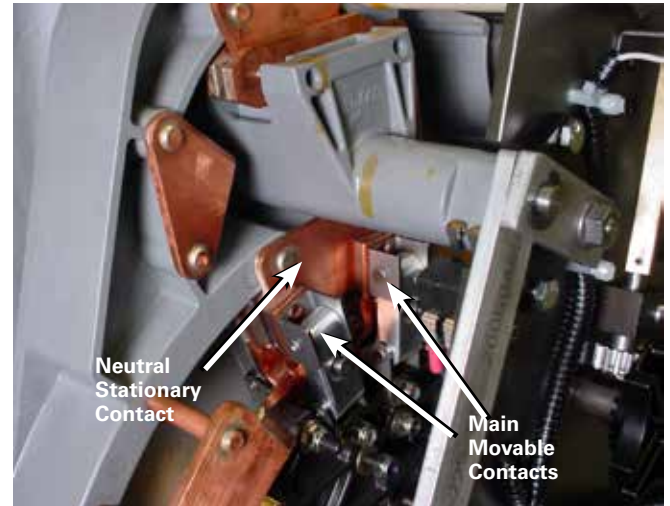


Figure 7. Neutral stationary contact.

- B. The reversing movable contact is located on the reversing neutral stationary contact. See Figure 8.

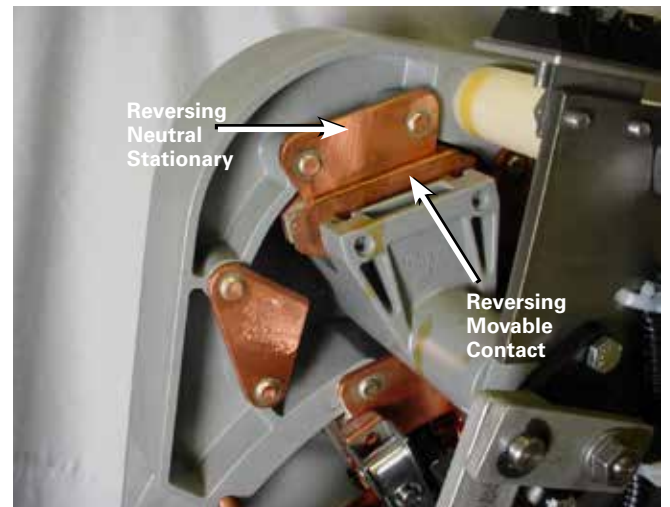


Figure 8. Neutral position for reversing movable.

C. The pinion cam is pointing to the right over the holding switch actuator. See Figure 9.

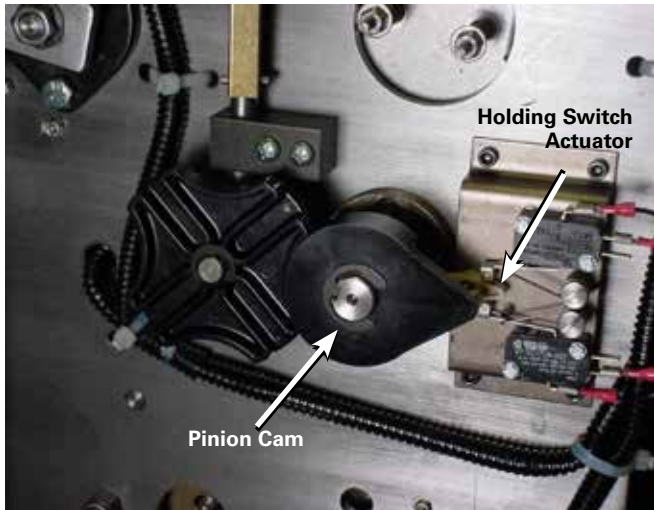


Figure 9. Neutral position for position indicator pinion cam and holding switch.



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