Dielectric grease application to recloser cable instructions

Powering Business Worldwide

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Contents

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 MN280070EN provides factory recommended inspection and cleaning of recloser/control cables and the application instructions for dielectric grease.

Refer to the appropriate Service Information for complete installation and maintenance instructions for your specific product.

- *Service Information MN280060EN, Installation of Types VWE, VWVE27, VWVE38X, WE, WVE27 and WVVE38X*
- *Service Information S280-40-7, Types RXE and WE Maintenance Instructions*
- *Service Information MN280061EN, Maintenance of Types VWE and VWVE Reclosers*
- *Service Information S280-40-4, Maintenance of Early WE Reclosers*
- *Service Information MN280063EN, Installation of Types VSA12, VSA16, VSA20 and VSA20A Reclosers*
- *Service Information MN280064EN, Maintenance of Types VSA12, VSA16, and VSA20/800 Reclosers*
- *Service Information S280-45-3, VSML Recloser Maintenance Manual*
- *Service Information S280-45-2, Maintenance of Early VSA Reclosers*
- *Service Information S280-42-1, NOVA™ 15, 27 and 38 kV Reclosers Installation and Operation Instructions*
- *Service Information MN280046EN, Types NOVA STS-15, NOVA STS-27, and NOVA STS-38 Single-Tank, Triple-Single, Electronically Controlled Recloser Installation and Operation Instructions*
- *Service Information MN280045EN, NOVA-TS 15, 27, and 38 Recloser Installation and Operation Instructions*
- *Service Information MN280048EN, SPEAR™ Single-Phase Recloser System Installation and Operation Instructions*
- *Service Information MN280049EN, Form 4D Control Installation and Operation Instructions*
- *Service Information MN280065EN, Type VSO12 and VSO16 Motor-Operated, Electronically Controlled Recloser Operation and Installation Instructions*
- *Service Information MN280066EN, Maintenance of Type VSO Reclosers*
- *Service Information S280-70-2, Form 6 Yard Mount Recloser Control Instructions*
- *Service Information S280-70-3, Form 6 Pole Mount Recloser Control Instructions*

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. When additional information is desired to satisfy a problem not covered sufficiently for the user's purpose, please contact your Eaton representative.

Acceptance and initial inspection

Cables are thoroughly inspected at the factory. They are in good condition when accepted by the carrier for shipment. Upon receipt of the cables, a thorough inspection should be made for damage, evidence of rough handling, or shortages. Should this initial inspection reveal evidence of rough handling, damage, or shortages, it should be noted on the bill of lading and a freight claim should immediately be made with the carrier. Also, notify your Eaton representative.

Handling and storage

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

Quality standards

ISO 9001 Certified Quality Management System.

Note: Any cable (any manufacturer) is subject to the environment; Eaton's Cooper Power series cables are no different. If the cable is not installed properly, a potential for moisture ingress exists and therefore, a potential for corrosion exists.

It is recommended practice to train and support cables (e.g., with cable ties, etc.) in such a manner as to relieve the connector of excessive dead weight strain and minimize the effect of wind force on the cable.

Materials and tools required

- Small wire brush
- Pipe cleaners
- Disposable cleaning towels
- Electrical insulating compound - AGS® High Energy Dielectric Protector, Dow Corning® 4 electrical insulating compound, or approved equivalent.

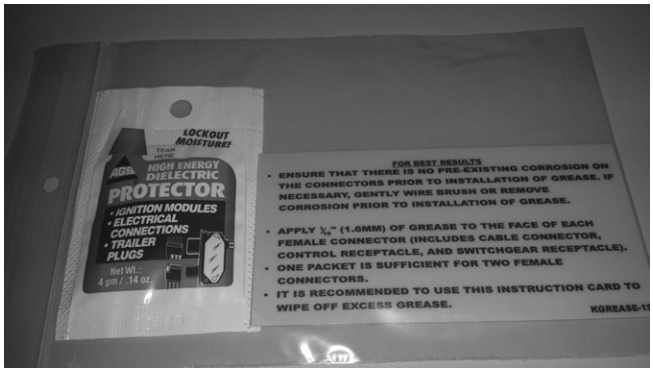

Figure 1. Use only approved electrical insulating compounds (AGS® high energy dielectric protector shown)

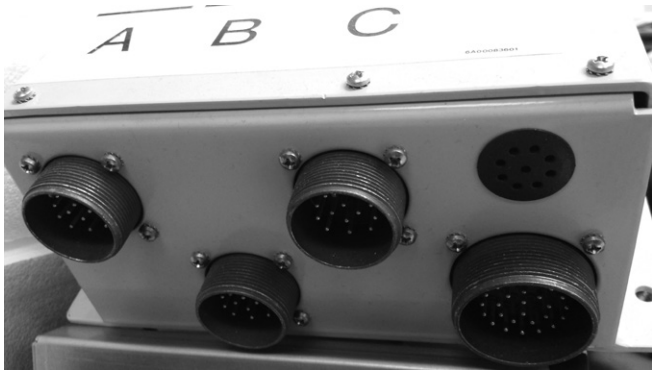

Figure 2. Disconnect the cable(s) at the recloser and junction box

⚠ CAUTION

Use only approved electrical insulating compound. Equipment damage may occur if an incompatible electrical insulating compound is used. T381.0

Inspection and cleaning procedure

1. Ensure the equipment (recloser, control and junction box (if present)) is de-energized.

⚠ WARNING

Hazardous voltage. De-energize switchgear before attempting to disconnect control cable from control. Failure to do so may result in contact with high voltage pulse (300 V peak) from the CT protection circuit. Failure to de-energize switchgear can result in contact with high voltage, which will cause death or severe personal injury. G124.0

2. If connected, remove the cable(s) from the recloser, control and junction box. See Figure 2.

3. Inspect recloser receptacle and control cable connector for signs of corrosion.
4. If corrosion is present, use a small brush to clean the accessible surfaces and pipe cleaners to clean hard to reach places to remove as much of the corrosion as possible.

Figure 3. Corrosion residue left on 26-pin J-Box receptacle

5. If extensive corrosion is seen or in the event of visible damage to pins, replace the affected parts. Contact your Eaton representative for further assistance.

Note: If connection was previously greased, and both connectors have evidence of dielectric grease on them, there is no need to apply a second coat of dielectric grease.

If either connector is new or has no evidence of dielectric grease, apply to the female connector per the instructions steps 6 through 13.

Dielectric grease application procedure

6. If no corrosion is present or after a majority of the corrosion has been removed, clean and dry the female recloser receptacle and female cable connector. Next, apply 1/16th of an inch of AGS® High Energy Dielectric Protector, Dow Corning® 4 electrical insulating compound, or approved equivalent (approximately the thickness of a quarter) uniformly across the clean and dried face of the female connector. There is no need to apply dielectric grease to the male recloser receptacle and male cable connector. Dielectric grease will displace any moisture from bridging the gap between the pins and prevent corrosion.

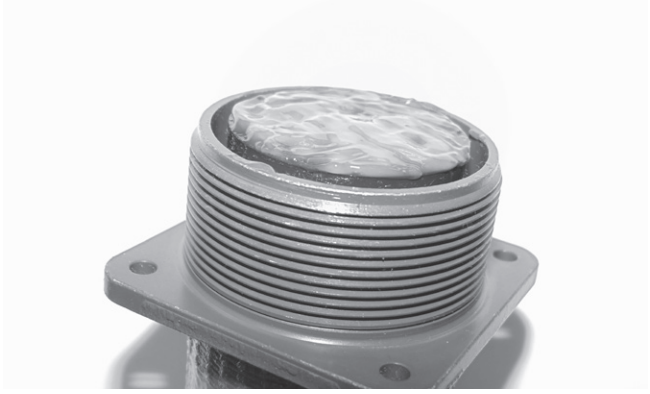

Figure 4. Female receptacle with dielectric grease applied

Note: A properly installed cable is fully seated when connected such that the O-ring is compressed.

7. Insert the cable connector into the receptacle on the recloser. Ensure the keyway lines up properly.
8. Ensure the cable connector is fully mated with the receptacle.
9. Rotate the cinch ring on the cable connector until the cable connector is fully seated – this means that the cinch ring is turned a full 7 revolutions (approx. 20 turns of the wrist).
10. The cinch ring should be hand tightened. When it can be turned no further by hand, give the plug body a push into the mating receptacle and continue turning the cinch ring. Continue this process until the cinch ring will turn no further by hand and the plug body cannot be pushed any further into the mating receptacle.

⚠ CAUTION

If the cinch ring cannot be turned any further but the plug body can be pushed in and out of the receptacle, the connector is likely cross-threaded. In this condition, the connection seal is compromised. This condition must be corrected or equipment damage may result. T380.0

11. Repeat the same procedure for the control and junction box (if present).
12. Verify the recloser and control operation by opening and closing the recloser several times via the front panel buttons on the control. Verify the open and close status lights on the control correspond to the state of the recloser.
13. The recloser is ready to put into service.

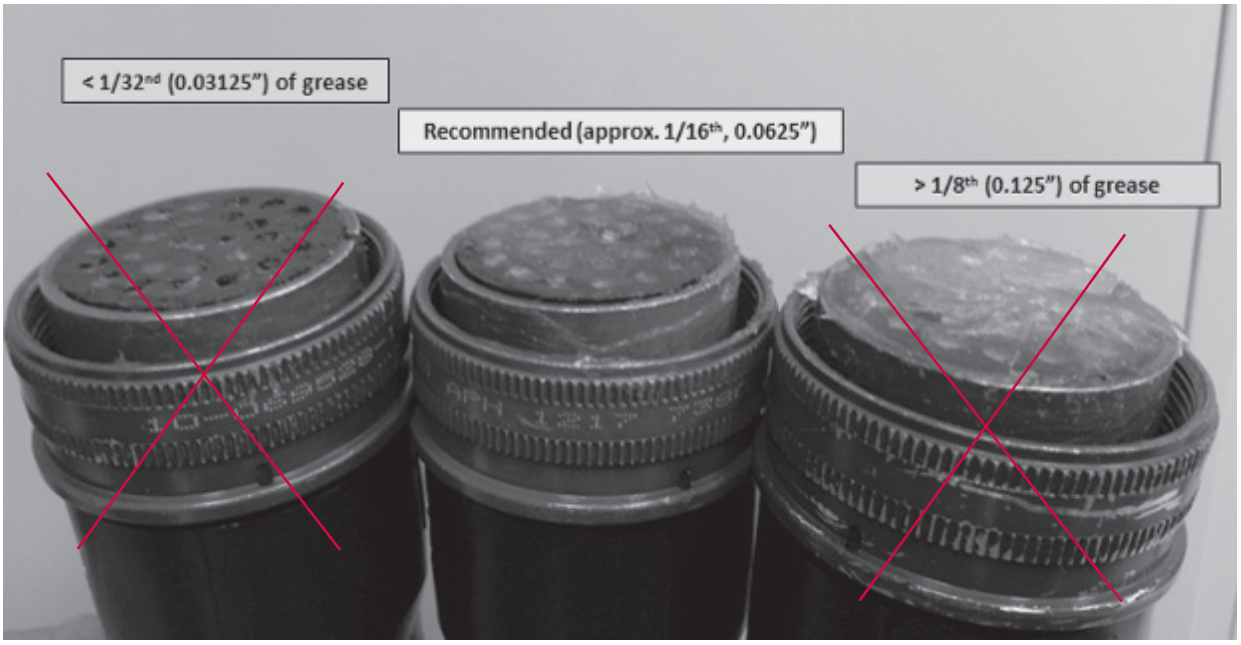

Figure 5. Visual aid for application of dielectric grease.

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