

600 A 15, 25 and 35 kV class bushing adapter installation 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 flash clothing, safety glasses, face shield, hard hat, rubber gloves, 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 a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

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

CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

CAUTION

Indicates a hazardous situation which, if not avoided, could 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 high voltage will cause death or severe personal injury. Follow all locally approved safety procedures when working around high- and low-voltage lines and equipment.

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.

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 may result in death, severe personal injury and equipment damage.

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.

WARNING

Hazardous Voltage

- **Terminators must be de-energized during operation or maintenance. Visible break and adequate grounding must be provided before cable work proceeds. (Ensure that the component is rated for the intended application before it is installed.)**
- **Failure to comply could result in death or serious injury.**
- **The Bushing Adapter should be installed and serviced only by personnel familiar with good safety practice and the handling of high-voltage electrical equipment.**

Product information

Introduction

The Eaton Cooper Power series 600 A Bushing Adapter is a factory assembled Loadbreak Reducing Tap Plug (LRTP) and bushing extender unit. It is used to convert a 600 A deadbreak interface to a 200 A loadbreak interface* allowing for safe testing and grounding. It has electrical characteristics identical to those of the LRTP. Used with a 200 A insulated protective cap, M.O.V.E. arrester, grounding elbow or loadbreak elbow connector, a bushing adapter provides a fully shielded, submersible unit that meets the requirements of IEEE Std 386™ standard.

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 representative.



Figure 1. 15 kV 600 A Bushing Adapter, including Loadbreak Reducing Tap Plug (LRTP) and bushing extender

Acceptance and initial inspection

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

Handling and storage

Be careful during handling and storage of the bushing adapter to minimize the possibility of damage. If the bushing adapter 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

Installation instructions

Equipment required

Choose one of the following:

- Tools
 - Torque Tool & T-Wrench Combination:
 - 15 and 25 kV - Torque Tool Catalog Number TQHD625
 - 35 kV - Torque Tool Catalog Number TQHD635
 - 5/16" T-Wrench - Catalog Number TWRENCH
 - or**
 - O & T Tool & Torque Tool Combination:
 - 15 kV - Catalog Number OT615
 - 25 kV - Catalog Number OT625
 - 35 kV - Catalog Number OT635
 - 15 and 25 kV - Torque Tool Catalog Number TQHD625
 - 35 kV - Torque Tool Catalog Number TQHD635

or

- Combined O & T/Torque Tool:
15 kV - Catalog Number OTTQ615
25 kV - Catalog Number OTTQ625
35 kV - Catalog Number OTTQ635

Note: If Combined O & T/Torque Tool is used, a separate O & T tool and torque wrench is not required.

Step 1

Install stud into apparatus bushing

Note: Ensure unit is de-energized.

- Thread the shorter threaded end of the extended stud into the apparatus bushing until hand tight. (Refer to Figure 2).
- Engage the flats on the stud with a 1/2" wrench and thread the stud into the bushing an additional 1/4 revolution past hand tight.
- Remove any shavings that may have been raised during the threading procedure.

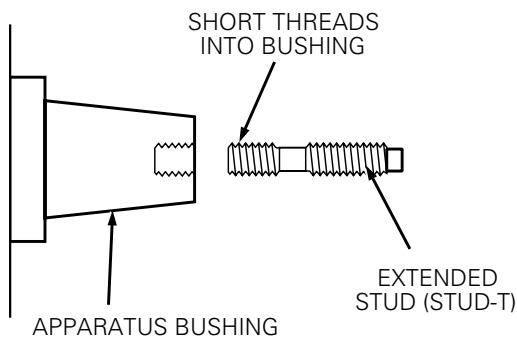


Figure 2. Line illustration of bushing stud installation

Step 2

Install the bushing adapter assembly on the apparatus bushing

- Clean and lubricate mating 600 A interfaces of the apparatus bushing and bushing adapter with the lubricant supplied.
- Remove shipping cap from 200 A interface of the bushing adapter.
- Push the bushing adapter onto the apparatus bushing until the extended length stud makes contact with the rotating nut in the LRTP.
- Insert the 5/16" torque tool into the 200 A tap and engage the rotating nut. (Refer to Figure 3.)

- Place a screwdriver or the T-wrench through the hotstick operating eye of the torque tool and tighten the bushing adapter until the tool ratchets. (20-25 ft.-lbs.)

Note: If 5/16" hex rod (HD625) is used with customer supplied torque wrench, tighten to 20-25 ft.-lbs.

- Remove torque tool.

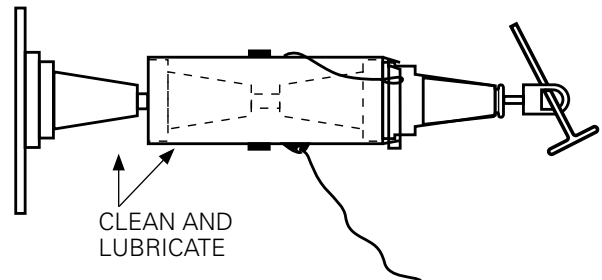


Figure 3. Installing the bushing adapter onto the apparatus bushing

Step 3

Cap the 200 A Interface

- Clean and lubricate the 200 A interface of LRTP and mating apparatus (i.e. protective cap, grounding elbow, M.O.V.E. arrester) with lubricant supplied. (Refer to Figure 4.)
- To cap interface, follow installation instructions supplied with the separable insulated connector used.

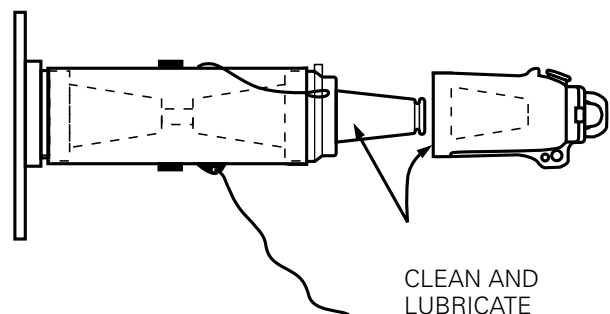


Figure 4. Installation of protective cap

Step 4

Attach drain wire

- Connect apparatus drain wire to common ground point leaving adequate slack for hotstick operation. (Refer to Figure 5.)

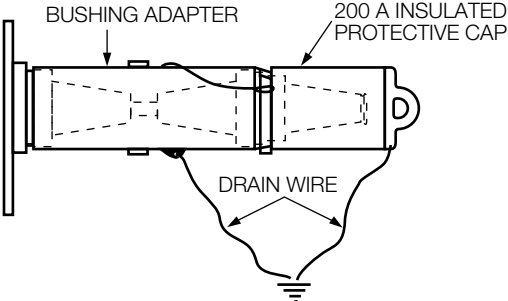


Figure 5. Drain wire connection



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