

Cleer™ 600 A Loadbreak  
Connector System

COOPER POWER  
SERIES



## Cleer™ visible break. Cleer visible ground. The Cleer solution for distribution systems.

New 600 amp loadbreak technology provides efficient, reliable visible break and visible ground. Eaton's Cooper Power™ series Cleer™ 600 A loadbreak connector system cuts operating time in half and achieves visible break without requiring removal of 600 A bolted terminations, or moving heavy cables.

**Providing uninterrupted service and improved reliability to energy consumers is a top priority in utility operations.**

The patented Cleer loadbreak connector reduces outages by providing reliable switching under load – as reliable as traditional 200 A loadbreak connectors – and allows other circuits to remain energized, limiting the amount of downtime and inconvenienced customers.

As the size and scale of the electrical grid continues to grow and load requirements increase, more utilities are migrating from 200 A to 600 A circuits. The increased demand for reliability is pushing utilities to have less of their 600 A system off-line during operation, restoration, or expansion.

The new Cleer loadbreak is the only 600 A available in 15, 25, and 28 kV class, three-phase rated loadbreak connector system in the industry. This unique solution offers both a visible break and visible ground without having to de-energize, unbolt 600 A terminations, or move heavy cables. This system offers an efficient and reliable visible break when used for sectionalizing, splicing, or in-line with vacuum switchgear. For operators working on a piece of energized equipment, the Cleer connector system provides peace-of-mind through visible, circuit traceability.

Eaton pioneered the 200 A loadbreak systems in use today, and now has incorporated the same proprietary, superior switching capability of Eaton's Cooper Power series POSI-BREAK™ technology into this new solution for 600 A systems.



**EATON**

*Powering Business Worldwide*



**Cleer loadbreak connector: the ultimate visible break and visible ground**

Once an underground circuit is sectionalized, for maximum safety, a visible break and visible ground must be achieved prior to performing any repair or maintenance. Distribution feeders can easily retrofit the Cleer loadbreak connector into 600 A applications, allowing operators confidence when working on a piece of underground equipment or cable as they can clearly see the open circuit.

Cleer loadbreak connectors allow the operator to safely pull the loadbreak interface while the system is energized to sectionalize the system into smaller segments to prevent taking longer outages. The Cleer 600 A loadbreak connector makes this easy:

- The C-shaped connector breaks the circuit in two

places for twice the contact separation

- The Cleer loadbreak connector incorporates field-proven POSI-BREAK™ technology which provides:
  - Increased strike distance, greatly reducing the possibility of partial vacuum flashovers
  - Added dielectric strength along the probes for superior switching performance and reliability
- The remainder of this simple system consists of:
  - Two Eaton's Cooper Power series 600 A loadbreak interfaces
  - Two IEEE Std 386™-2006 standard 600 A deadbreak interfaces
- A yellow latch indicator is included to assure positive connection
- Fully submersible, and exceeds the applicable requirements of IEEE Std 386™-2006 standard for use in above- and underground environments prone to flooding
- When using Eaton's Cooper Power series BT-TAP™ or T-OP™ II connectors, a visible ground can be achieved by connecting a grounding elbow directly to a 200 A loadbreak reducing tap plug
- Cleer grounding elbow
  - Available to provide visible ground on Eaton's Cooper Power systems 600 A, 15, 25, and 28 kV Cleer loadbreak connector system
  - Designed to be installed directly on the 600 A loadbreak interfaces after the circuit is verified to be de-energized

**Perfect solution for multiple applications**

The compact design of the Cleer 600 A loadbreak connector system allows numerous configurations and applications, including use in space-constrained locations such as vaults, manholes, and sectionalizing cabinets:



**In-line or replacement of oil/vacuum switches**

- Easily retrofittable
- Provides a visible break, assuring a circuit is de-energized prior to performing maintenance for added safety
- The submersibility of this device makes it suitable for installations above- and underground



**Sectionalizing**

- Allows for isolating a circuit to perform maintenance
- Provides a visible break and grounding point for added safety



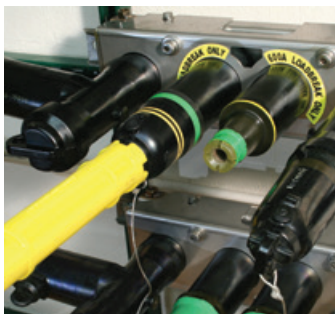
**Separable splicing for long cable runs**

- Provides loadbreak capability
- More efficient than other deadbreak splicing alternatives with quick and easy separation of circuits

### Cleer exceptional field efficiency

- Cut operating time in half and achieve visible break without requiring removal of 600 A bolted terminations, or moving heavy cables
- Faster restoration of service with faster and easier sectionalizing
- Easy clampstick operation
  - Easy push-pull operation breaks surface adhesion and provides momentum during separation of the latch mechanism
  - Lightweight “C” connector –only five pounds – plus no heavy cables to move
  - 600 A “C” connector requires just slightly more force than a 200 A, 25 kV loadbreak
  - Metal-to-metal latch makes the latching forces less sensitive to extremes in temperature
  - Reinforced, standard operating-eye on the C-shaped loadbreak connector for repeated use
- Adjustable in-line or compact square stainless steel brackets available for convenient positioning
  - Designed to be mounted inside a vault, directly to manhole wall, or inside an enclosure
  - Various in-line bracket angles provide easy access for underground applications from above ground with clampstick
  - Includes two grounding lugs for convenient grounding location

### Loadbreak sequence



**PUSH:** Simply thrust the clampstick forward until the connector moves further onto the bushings and the yellow latch indicator rings on the bushings are visible.

**PULL:** Pull the clampstick and withdraw the connector from bushings with a fast, firm, straight motion.

**CAP:** Using a clampstick, place an insulated protective cap with ground wire on the exposed energized source side bushing.

**TEST & GROUND:** Test to verify circuit is de-energized (not shown). Using a clampstick, install a Cleer grounding elbow on the remaining 600 A loadbreak bushing.

### IMPORTANT:

Refer to the following service instructions for comprehensive information before attempting any operating procedures:

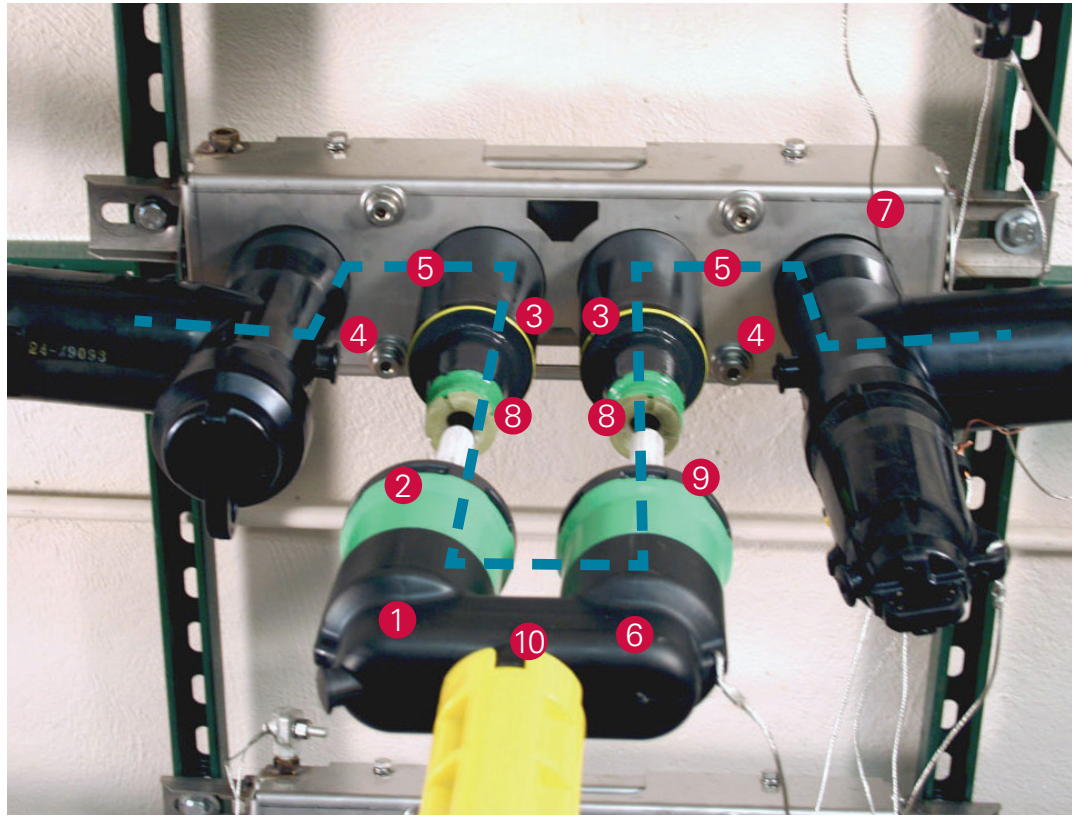
- S600-100-1, Cleer 600 A loadbreak connector system installation instructions
- S600-100-2, Cleer 600 A loadbreak protective cap installation instructions

# The only 600 A separable connector system in the market today with loadbreak capability.

### Cleer loadbreak made easy

A reliable, visual, traceable method for loadbreaking 600 A systems.

1. EPDM semi-conductive material and insulation
2. Colored cuff and nose-piece for 600 A 15 and 25/28 kV loadbreak identification
3. Loadbreak interface
4. Deadbreak interface IEEE Std 386™ -2006 standard interfaces
5. Deadbreak/loadbreak junction (2) (current path indicated by dotted line)
6. POSI-BREAK™ technology inside
7. Adjustable bracket
8. 600 A loadbreak probes
9. Latch design and indication window
10. Standard operating eye



### Cleer SecTER™ cabinet

Eaton offers 600 A 15, 25, and 28 kV class Eaton's Cooper Power series Cleer SecTER™ cabinets. The cabinets are designed as cable sectionalizing centers and can be used wherever underground cable must be sectionalized or connected. Functions include:

- Sectionalizing cable
- Switching cable
- Isolating cable and feeder taps