

**SEPARABLE CONNECTOR, DEADBREAK,
COOPER POWER SYSTEMS T-OP II, KITS, 900 A, 125 KV BIL**



1. Scope

This material standard covers the requirements for Cooper Power Systems, 900 A, 125 kV BIL, T-OP II, deadbreak, separable connector system kits. Kits are cable specific and include a T-body with test point, test point cap, cable adapter, threaded copper stud, copper compression connector, and an insulated cap for the 200 A bushing.

This Material Standard applies to the following Seattle City Light Stock Numbers:

| Stock Number | Description |
|--------------|---|
| 686223 | T-OP II kit for 28 kV, 1/0 AWG cable |
| 012486 | T-OP II kit for 28 kV, 500 kcmil cable |
| 686226 | T-OP II kit for 28 kV, 750 kcmil cable |
| 686227 | Combined operating, test, and torque tool |
| 686228 | 5/16-inch T-wrench |

2. Application

A separable connector (elbow) is a fully insulated and shielded system for terminating and electrically connecting an insulated power cable to electrical

apparatus, other power cables, or both, so designed that the electrical connection can be readily established or broken by engaging or separating the connector at the operating interface.

The separable connectors specified in this material standard are intended for use on the following three-phase, 60 Hz system: 26.4 kV, 4-wire, solidly-grounded, wye-connected.

A T-OP II separable connector may be used where a 200 A interface is required for testing, grounding, or overvoltage protection.

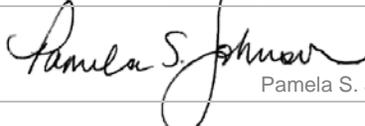
A T-OP II separable connector has an alignment segment and internal rotating nut feature in the loadbreak reducing tap plug which, along with the extended length stud, eliminates cross threading and ensures proper torque.

For cable technical data, refer to E6-1.0/NGE-70.

3. Industry Standards

T-OP II separable connectors shall meet the applicable requirements of the following industry standard:

IEEE 386-2006 – Standard for Separable Insulated Connector Systems for Power Distribution Systems Above 600 V

| standards coordinator | standards manager | unit director |
|--|--|--|
|  John Shipek |  John Shipek |  Pamela S. Johnson |

MATERIAL STANDARD

superseding: January 25, 2008

Separable Connector, Deadbreak, Cooper Power Systems T-OP II, Kits,
900 A, 125 kV BIL

effective date: June 11, 2010

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4. Detailed Requirements

600 A interfaces shall have the following electrical ratings and attributes:

| | |
|-------------------------------|--|
| voltage class | 25 kV |
| maximum voltage rating (ph-g) | 15.2 kV RMS |
| BIL | 125 kV crest |
| continuous current rating | 900 A RMS (with included all-copper compression connector) |
| short-time current rating | 25 kA RMS, symmetrical |
| IEEE 386 interface | Figure 11 |

200 A loadbreak interfaces shall have the following electrical ratings and attributes:

| | |
|-------------------------------------|------------------------|
| voltage class | 25 kV |
| maximum voltage rating (ph-g) | 15.2 kV RMS |
| maximum voltage rating (ph-g/ph-ph) | 15.2/26.3 kV RMS |
| BIL | 125 kV crest |
| continuous current rating | 200 A RMS |
| short-time current rating | 10 kA RMS, symmetrical |
| IEEE 386 interface | Figure 7 |

Each T-OP II separable connector kit shall consist of:

- T-body with test point and cap
- Cable adapter
- Copper compression connector
- Extended length, T-OP II threaded copper stud
- 200 A, loadbreak reducing tap plug (LRTP)
- Insulated cap
- Silicon lubricant
- Assembly instructions

Insulated caps shall be provided with grounding tab for the purpose of attaching a drain wire lead.

5. Testing

T-OP II separable connectors shall be tested according to the requirements of IEEE 386, Section 7.

Test results shall be provided upon request.

6. Design Changes

Manufacturer shall inform Seattle City Light in writing of all design changes that could affect the product's understood or published capabilities.

7. Marking

T-OP II separable connectors shall be marked according to the requirements of IEEE 386, Section 6.1.

8. Packaging

T-OP II separable connectors shall be individually packaged in heavy duty, clear plastic bags or cardboard boxes.

Each individual package shall be marked with the following information:

- Manufacturer's identification
- Product description

Each shipping container shall be legibly marked with the following information:

- Manufacturer's identification
- Product description
- Quantity contained
- Seattle City Light's Purchase Order Number
- Seattle City Light's Stock Number

9. Issuance

EA

10. Approved Manufacturers

Stock Number: 686223

Description: T-OP II separable connector kit for 1/0 AWG

Application: 28 kV, 1/0 AWG solid aluminum, bare CN cable, Stock Number 602025

28 kV, 1/0 AWG solid aluminum, jacketed CN cable, Stock Number 012098

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|----------------------|-------------|---------------------|
| Cooper Power Systems | TP625CC12TC | photo not available |
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10. Approved Manufacturers, continued

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|----------------------|---|
| Stock Number: | 012486 |
| Description: | T-OP II separable connector kit for 500 kcmil |
| Application: | 28 kV, 500 kcmil compact stranded copper cable, Stock Number 012100 |
| Cooper Power Systems | TP625FF22TC |

photo not available

| | |
|----------------------|---|
| Stock Number: | 686226 |
| Description: | T-OP II separable connector kit for 750 kcmil |
| Application: | 28 kV, 750 kcmil compact stranded copper cable, Stock Number 012101 |
| Cooper Power Systems | TP625HH24TC |



| | |
|----------------------|---|
| Stock Number: | 686227 |
| Description: | Combined operating, test, and torque tool |
| Application: | Allows single hotstick operation of Cooper Power System T-OP II. The tool is used with a hotstick to test for circuit de-energization and to install and remove a 25 kV Class loadbreak reducing tap plug (LRTP) equipped connector for an apparatus tap. Tool is equipped with a molded EPDM rubber cap and torque limiter to allow proper tool seating and gripping of the T-OP II connector. It also ensures that the connector has been properly torqued into the mating bushing. |

Cooper Power Systems OTTQ625



| | |
|----------------------|---|
| Stock Number: | 686228 |
| Description: | 5/16-inch T-Wrench |
| Application: | For installing loadbreak reducing tap plug (LRTP) into Cooper Power Systems T-OP II |
| Cooper Power Systems | TWRENCH |

**11. References**

600-32; "Molded Rubber Products, 600 A 25 kV Class, T-OP II Deadbreak Connector"; Cooper Power Systems; 2005

E6-1.0/NGE-70; "Properties of Medium Voltage Cables"; Construction Guideline; SCL

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