

**Mounting Hole for #1208-635B Elliott
35 kV Air-Insulated SuperWell Bushing
with a #LRTP635
Loadbreak Reducing Tap Plug Installed**

ELRIM Cycloaliphatic Epoxy Provides:

- Nontracking, self-scouring, nonweathering performance
- Superior dielectric strength, dielectric loss and power factor
- Choice of shapes allows design innovation
- Mechanical and thermal toughness
- Shatter-free arc flashover performance
- Oil resistant

Elliott Design Provides:

- Precision molded interfaces
- Uni-Mount "Bolt-In" design
- Integral shielding to prevent destructive corona discharge
- Increased leakage distance and square-edge skirts resist contamination - wet or dry
- Generous dry arcing (strike) distance
- Large diameter live end terminal pad with female threads for direct contact of current-carrying parts and improved corona performance
- Thermal cycle withstand from +200° to -200° F for long life
- High Strength - field proven performance since 1975

For 35-kV Connectors (Elbows)

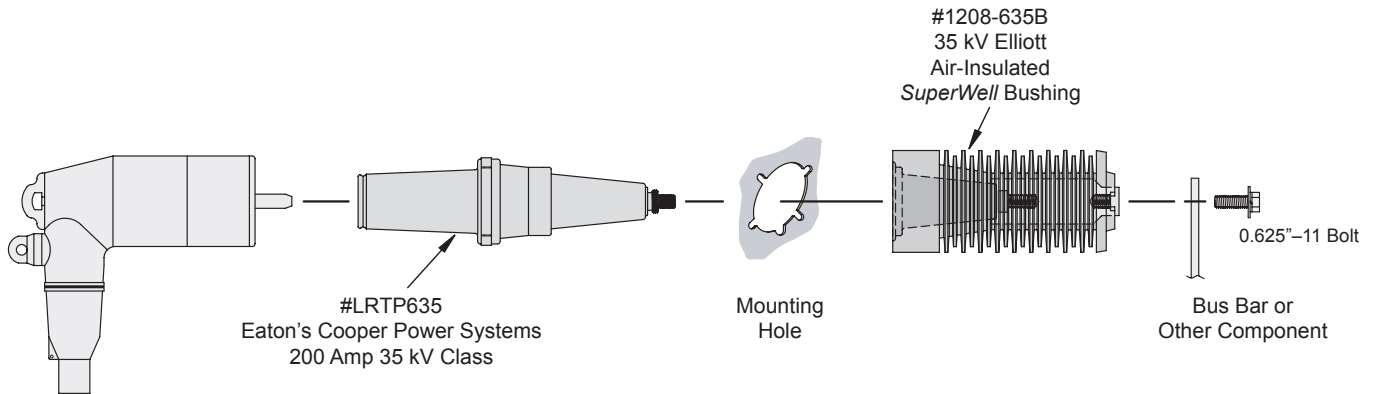
Elliott "B" Series (bolt-in) *SuperWell* bushings are used to construct air-insulated equipment that connects to the utility's underground shielded cable system with IEEE Standard separable insulated connectors (i.e. elbows). The special mounting hole allows installation of the *SuperWell* without removing the #LRTP635 that is installed prior to corona and withstand tests. Integral shielding prevents "edge-of-hole" corona discharge. The live side of the bushing is provided with unique square-edge skirts and increased leakage distance to resist flashover when severely contaminated and wet. The large diameter live end terminal pad (with female threads) provides for direct contact of current-carrying parts and eliminates exposed sharp threads, which could induce destructive corona discharge. The heavy-duty flange provides exceptionally high cantilever strength so bushings can be used to provide physical support for energized parts. In addition to IEEE Standard 386 design tests, Elliott bushings are design tested for thermal cycle withstand from +200° to -200° F to assure long field life. Every bushing is production tested "in-air" mounted in a grounded steel plate with an insulated protective cap and a #LRTP635 Loadbreak Reducing Tap Plug installed in the interface to accurately simulate operating conditions.

Ratings and Dimensions of SuperWell Bushings

Catalog Number	Voltage Class kV	Continuous Current Amps	Withstand Test Voltage Kilovolts			Minimum Leakage Inches	Minimum Strike Inches
			Impulse 1.2 x 50	One Min. Dry	10 Sec. Dew		
1208-635B-LRTP SuperWell	35	200	150	50	50	43	10

35-kV 200 Amp SuperWell Apparatus Bushing

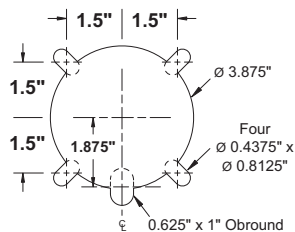
“B” Series (bolt-in) for Elbow to Air-Insulated Service



Eaton's Cooper Power Systems
200 Amp 35 kV Class
Loadbreak Elbow per
IEEE Standard 386-200 A
Loadbreak Interface Fig. 8 No. 1A or
Fig. 9 No. 1B (large 35 kV interface)

Common Mounting - All “B” Series bushings have the same mounting bolt pattern. The installer can punch one mounting hole pattern (either Standard or Uni-Mount) and install any “B” Series bushing or insulator. For example, equipment can be designed for 600 amp bushings, but actually be assembled with 600 and 200 amp bushings. A bushing-style insulator can be used to support one end of a bus bar and be replaced in the field with a 200 or 600 amp bushing.

Exception - The mounting hole shown below is larger than the Standard or Uni-Mount hole dimensions in order to accommodate the SuperWell with a #LRTP635 installed (without removing the #LRTP635 after the bushing has been tested for corona and AC voltage withstand).

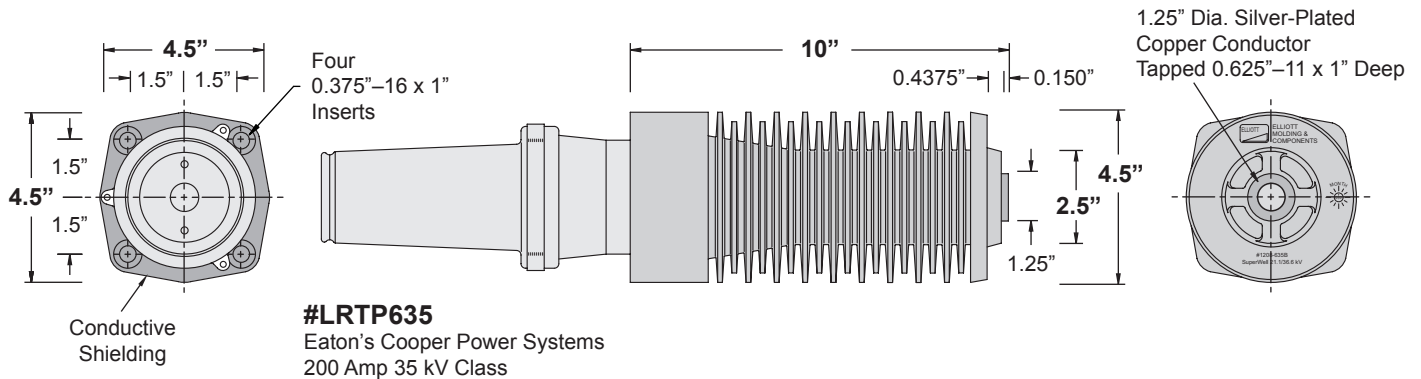


**Mounting Hole for #1208-635B Elliott
35 kV Air-Insulated SuperWell Bushing
with a #LRTP635
Loadbreak Reducing Tap Plug Installed**

Index Slots - Elliott “B” Series bushings and insulators feature four keying slots on the live end. Fuse clips and hinge kits are available that bolt directly to the bushing conductor and key in the slots to prevent rotation.

Conductor Connection - Female threads in the live end of the conductor allow the attachment of live parts of almost any thickness. The bolted connection of current-carrying parts does not depend on current transfer through the fastener's thread-to-thread contact. Additional advantages of the bolted connection are higher clamping pressure and elimination of exposed sharp threads that could initiate corona.

200 Amp SuperWell Bushing #1208-635B with #LRTP635 Installed



Voltage Class.....	35 kV
Phase-to-Ground Voltage.....	21.1 kV
BIL.....	150 kV
AC Withstand - 1 Min. Dry.....	50 kV
10 Sec. Dew.....	50 kV
DC Withstand - 15 Min. Dry.....	103 kV
Corona Extinction Level - Minimum.....	26 kV
Continuous Current.....	200 Amps
Momentary - RMS, Sym., 0.17 sec.....	10,000 Amps
RMS, Sym., 3 sec.....	3,500 Amps

Leakage Distance, Inches.....	43
Dry Arcing Distance, Inches.....	10
Mechanical - Strength Rating, Pounds	
Cantilever, Ultimate 2.5 inches past end.....	>1,000
Tensile, Pounds.....	>5,000
Torsion, Inches-Pounds (bolt breaks).....	>700
Compression, Pounds.....	20,000
Insert Thread Size.....	0.375"-16 x 1"
Conductor (live end) Thread Size.....	0.625"-11 x 1"
Net Weight, Pounds (kg).....	9.55 (4.34)

Typical Specifications - 200 Amp 35-kV SuperWell Bushings

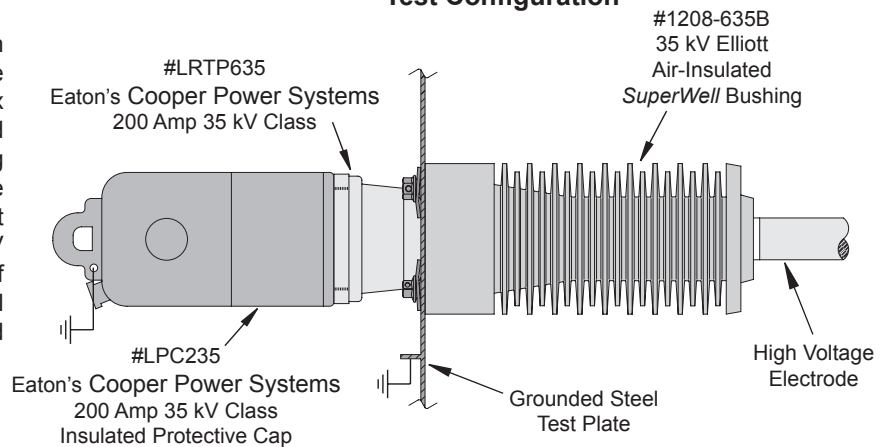
Bushings shall be 200 ampere Elliott #1208-635B, 35 kV Class (21.1 kV to ground) Air-Insulated SuperWell Bushing, 150 kV BIL, with female interface similar to IEEE Standard 386 Fig. 13 (600 A Deadbreak Interface No. 1, 21.1 kV) with Eaton's Cooper Power Systems Loadbreak Reducing Tap Plugs #LRTP635 (or equal) installed for use with 21.1 kV and 21.1/36.6 kV Eaton's Cooper Power Systems Loadbreak Elbow Connectors meeting the requirements of IEEE Standard 386—200 A Loadbreak Interface Fig. 8 No.1A or Fig. 9 No. 1B (large 35 kV class interface). The bushing shall be pressure-molded cycloaliphatic epoxy with a 1.25-inch diameter copper conductor on the "air-insulated" side that is drilled and tapped 0.625-inch—11UNC x 1-inch deep to provide direct connection of the bus and/or live parts. Leakage distance from the apparatus connection end of the bushing to ground shall be not less than 40 inches to assure trouble-free operation in a wet and/or contaminated environment. Integral shielding shall be provided to eliminate partial discharge caused by off-center mounting and mounting holes that may have sharp edges or burrs. SuperWell Bushings shall mount in a 3.875-inch diameter opening and bolt in place to allow field replacement with standard tools. The bushing mounting bolts shall be self-locking stainless steel serrated-flange hex-head

bolts with stainless steel bushing mounting support plates that "cut" through the enclosure protective finish to ground the integral shielding of each bushing. The head of one or more of the mounting bolts for each bushing shall include a 0.156-inch diameter hole to provide a connection to ground for the LRTP shielding ground wire as recommended by separable insulated connector manufacturers. To assure adequate strength for apparatus support, the bushing shall withstand a minimum cantilever loading of 600 pounds for five minutes without damage. The bushing interface shall be free of all voids, holes and heat sinks to assure proper mating with separable insulated connectors. Each bushing shall be tested in free air, mounted in a grounded steel plate not less than 10 inches x 10 inches, and with an Eaton's Cooper Power Systems Loadbreak Reducing Tap Plug (#LRTP635 or equal) installed in the well interface and insulated with an Eaton's Cooper Power Systems 200 Amp Insulated Protective Cap (#LPC235) to accurately simulate operating conditions (*gas or liquid dielectric in the interface shall not be acceptable for this test*). Each bushing shall meet the requirements for 35 kV devices in accordance with IEEE Standard 386 (latest revision), including 100 percent production testing.

Production Tests

Every *SuperWell* Bushing is production tested in free air, mounted in an 11-gauge grounded steel plate not less than 10 inches x 10 inches, with an insulating protective cap and a #LRTP635 Loadbreak Reducing Tap Plug installed in the interface to accurately simulate operating conditions. Each bushing must meet or exceed the requirements for 21.1/36.6 kV devices in accordance with the test values of IEEE Standard 386 (latest revision) for partial discharge (corona) and AC voltage withstand when tested in this manner.

Test Configuration



Installation Instructions

Elliott “B” Series *SuperWell* Bushings require a 3.875-inch diameter mounting hole with four 0.4375-inch obround bolt holes. The bushing bolts in place utilizing four 0.375-inch–16UNC x 1-inch serrated-flange hex-head bolts (or bolts with external tooth lock washers). All mounting hardware is located on the elbow side of the equipment mounting plate to eliminate the possibility of reduced phase-to-ground clearance.

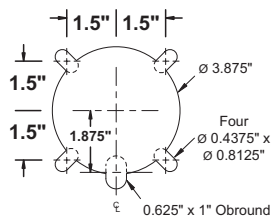
Every Elliott Bushing is tested at the factory, mounted in a grounded steel plate. A #LRTP635 Loadbreak Reducing Tap Plug is installed in the *SuperWell* interface and a greased insulating protective cap is installed on the #LRTP635 to accurately simulate operating conditions. To prevent contamination of the silicone grease, it is important to keep the shipping cap in place until you are ready to install the elbow. Should the grease become contaminated, thoroughly clean the interface and reapply silicone grease before installing the elbow.

NOTE: The shipping cap on the bushing should be left in place to prevent contamination of the interface.

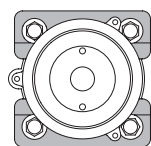
1. The bushing installs from the rear (live) side for easy installation.
2. Serrated-flange bolts (or bolts and external tooth lock washers) and #1908-BMSP bushing mounting support plates are installed. The bolts should be tightened in a uniform manner (rather than one-by-one in a random sequence). Do not apply more than 90 inch-pounds torque to each bolt. The bushing mounting support plates must “cut” into the mounting plate to provide a connection from the shielding to the grounded mounting plate. If the bushing is mounted on an ungrounded or insulated plate (such as fiberglass) a ground strap should be attached to one of the mounting bolts.

IMPORTANT:

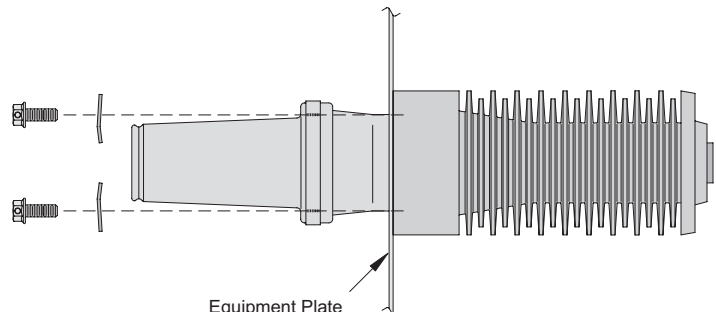
Do not energize this bushing with only the shipping cap in place. To do so would lead to failure of the bushing and create a hazard to operating personnel. This product is designed to be used **only** when it is mated with an appropriate 200 Amp 35 kV Class Eaton’s Cooper Power Systems loadbreak elbow conforming to the latest revision of IEEE Standard 386. The elbow should be installed in accordance with the instructions supplied by the connector manufacturer.



Mounting Hole for #1208-635B Elliott 35 kV Air-Insulated *SuperWell* Bushing with a #LRTP635 Cooper Loadbreak Reducing Tap Plug Installed



#1908-BMSP Elliott Bushing Mounting Support Plates



Equipment Plate