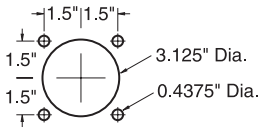
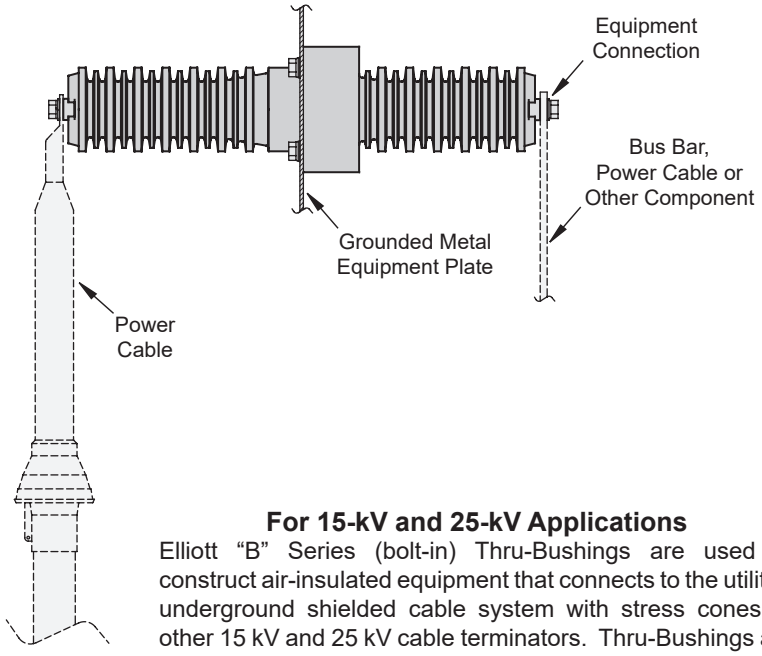
15-kV and 25-kV Thru-Bushings

"B" Series (bolt-in) for Air-Insulated to Air-Insulated Service
200 Amp, 600 Amp and 900 Amp



Standard Mounting Holes



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:

- "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

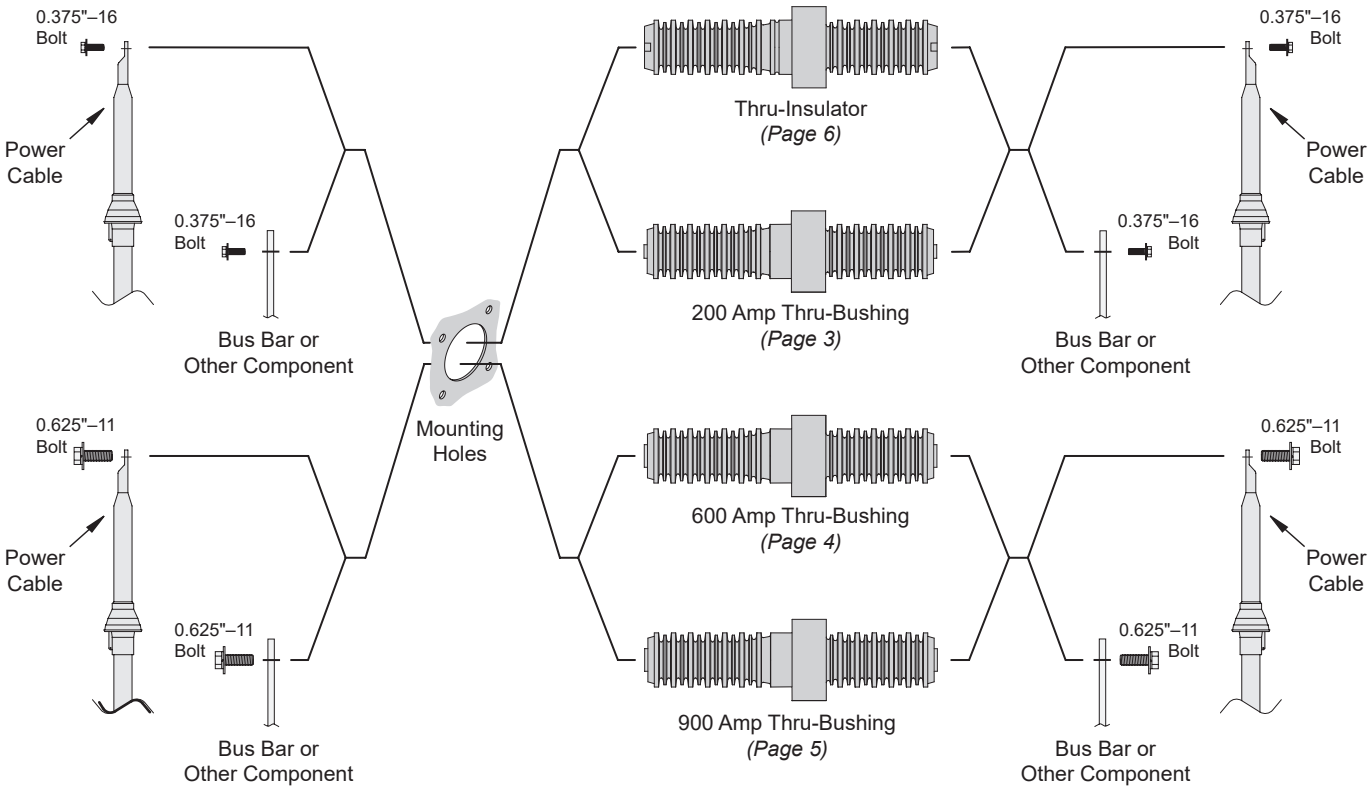
For 15-kV and 25-kV Applications

Elliott "B" Series (bolt-in) Thru-Bushings are used to construct air-insulated equipment that connects to the utility's underground shielded cable system with stress cones or other 15 kV and 25 kV cable terminators. Thru-Bushings are also used as roof-bushings, wall-bushings and to construct rear-connected switch and fuse mountings. The same 5-hole mounting provision accommodates all "B" Series bushings. Gaskets are available when a liquid-tight seal is desirable. Integral shielding prevents "edge-of-hole" corona discharge. The bushing is provided with unique square-edge skirts and increased leakage distance to resist flashover when contaminated and wet. The heavy-duty flange provides excellent cantilever strength so bushings can be used to provide physical support for energized parts. In addition to IEEE Standard 386 design tests, Elliott Thru-Bushings are design tested for thermal cycle withstand from +200° to -200° F to assure long field life. Every Thru-Bushing is production tested "in-air" mounted in a grounded steel plate to accurately simulate operating conditions.

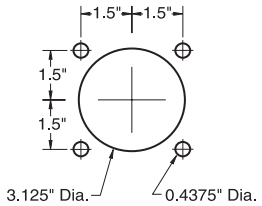
Ratings and Dimensions of Thru-Bushings

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		
1351-215TB	15	200	95	34	34	17	8.5
1351-225TB	25	200	125	40	40	17	8.5
1351-615TB	15	600	95	34	34	17	8.5
1351-625TB	25	600	125	40	40	17	8.5
1351-915TB	15	900	95	34	34	17	8.5
1351-925TB	25	900	125	40	40	17	8.5

Elliott Molding and Components
A Division of Elliott Industries, Inc.
1509 Hamilton Road
Phone 318-746-3296
Bossier City, LoUiSiAna 71111
Fax 318-741-1127
sales@elliott-industries.com
www.elliott-industries.com
© Copyright 2023



Common Mounting - All "B" Series bushings have the same mounting bolt pattern. The installer can punch one mounting hole pattern 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.



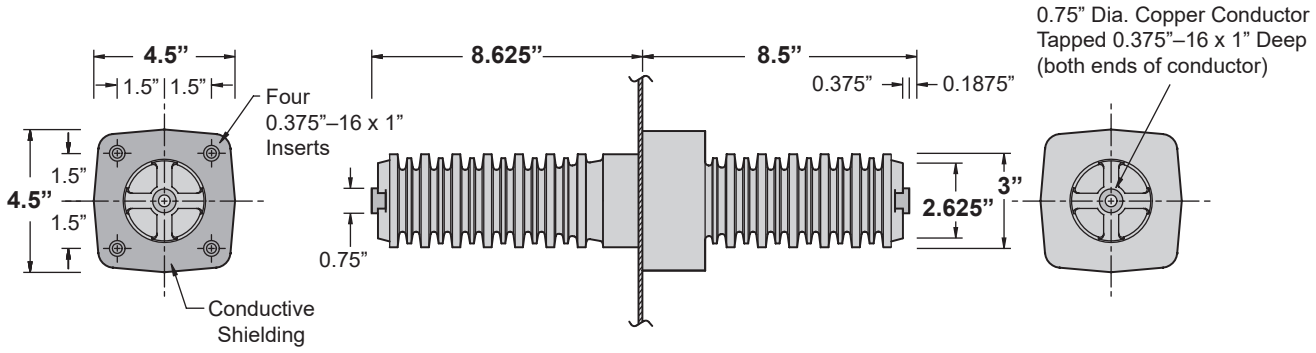
Standard Mounting Holes for Elliott "B" Series Bushings

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 (or the Thru-Insulator insert) 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.

Elliott Molding and Components
A Division of Elliott Industries, Inc.
1509 Hamilton Road
Phone 318-746-3296
Bossier City, LoUiSiAna 71111
Fax 318-741-1127
sales@elliott-industries.com
www.elliott-industries.com
© Copyright 2023

200 Amp Thru-Bushing



Catalog Number	#1351-215TB	#1351-225TB
Voltage Class	15 kV	25 kV
Phase-to-Ground Voltage	8.3 kV	15.2 kV
BIL	>95 kV	125 kV
AC Withstand - 1 Min. Dry	>34 kV	40 kV
10 Sec. Dew	>34 kV	40 kV
DC Withstand - 15 Min. Dry	>53 kV	78 kV
Corona Extinction Level - Minimum	>11 kV	>19 kV
Continuous Current	200 Amps	200 Amps
Momentary - RMS, Sym., 0.17 sec.	10,000 Amps	10,000 Amps
RMS, Sym., 3 sec.	3,500 Amps	3,500 Amps

Leakage Distance, Inches	>17
Dry Arcing Distance, Inches	8.5
Mechanical - Strength Rating, Pounds	
Cantilever, Ultimate 2.5 inches past end	>450
Tensile, Pounds	>2,500
Torsion, Inch-Pounds	>700
Compression, Pounds	20,000
Insert Thread Size	0.375"–16 x 1"
Conductor (live end) Thread Size	0.375"–16 x 1"
Net Weight, Pounds (kg)	7.4 (3.35)

Typical Specifications - 200 Amp Thru-Bushings

15-kV Thru-Bushing - 200 Amps

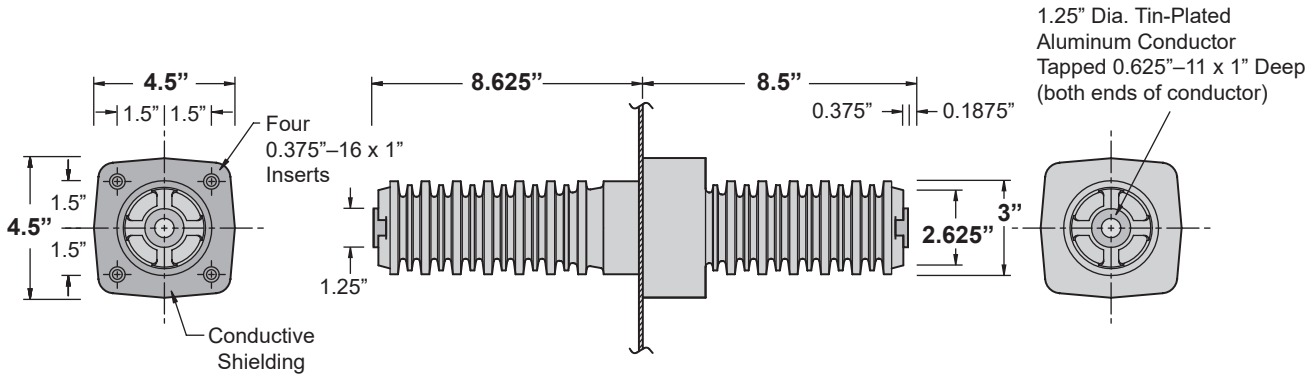
Bushings shall be 200 ampere Elliott #1351-215TB, 15 kV Class (8.3 kV to ground) Air-Insulated Live Terminal Thru-Bushings, 95 kV BIL, *for use with 8.3/14.4 kV systems*. The bushings shall be pressure-molded cycloaliphatic epoxy with a 0.75-inch diameter copper conductor that is drilled and tapped 0.375-inch–16UNC x 1-inch deep on both ends to provide for connection of the bus and/or live parts. Integral shielding shall be provided to eliminate partial discharge caused by off-center mounting and mounting holes that may have sharp edges or burrs. Bushings shall mount in a 3.125-inch diameter opening and bolt in place to allow field replacement with standard tools. To assure adequate strength for apparatus support, the bushing shall withstand a minimum cantilever loading of 250 pounds for five minutes without damage. The bushing mounting bolts shall be self-locking stainless steel serrated-flange hex-head bolts that "cut" through the enclosure protective finish to ground the integral shielding of each bushing. Each bushing shall be tested in free air, mounted in a grounded steel plate not less than 10 inches x 10 inches and shall meet the requirements for 15 kV devices in accordance with IEEE Standard 386 (latest revision), including 100 percent production testing.

25-kV Thru-Bushing - 200 Amps

Bushings shall be 200 ampere Elliott #1351-225TB, 25 kV Class (15.2 kV to ground) Air-Insulated Live Terminal Thru-Bushings, 125 kV BIL, *for use with either 8.3/14.4 kV or 15.2/26.3 kV systems*. The bushings shall be pressure-molded cycloaliphatic epoxy with a 0.75-inch diameter copper conductor that is drilled and tapped 0.375-inch–16UNC x 1-inch deep on both ends to provide for connection of the bus and/or live parts. Integral shielding shall be provided to eliminate partial discharge caused by off-center mounting and mounting holes that may have sharp edges or burrs. Bushings shall mount in a 3.125-inch diameter opening and bolt in place to allow field replacement with standard tools. To assure adequate strength for apparatus support, the bushing shall withstand a minimum cantilever loading of 250 pounds for five minutes without damage. The bushing mounting bolts shall be self-locking stainless steel serrated-flange hex-head bolts that "cut" through the enclosure protective finish to ground the integral shielding of each bushing. Each bushing shall be tested in free air, mounted in a grounded steel plate not less than 10 inches x 10 inches and shall meet the requirements for 25 kV devices in accordance with IEEE Standard 386 (latest revision), including 100 percent production testing.

© Copyright 2023

600 Amp Thru-Bushing



Catalog Number	#1351-615TB	#1351-625TB
Voltage Class	15 kV	25 kV
Phase-to-Ground Voltage	8.3 kV	15.2 kV
BIL	>95 kV	125 kV
AC Withstand - 1 Min. Dry	>34 kV	40 kV
10 Sec. Dew	>34 kV	40 kV
DC Withstand - 15 Min. Dry	>53 kV	78 kV
Corona Extinction Level - Minimum	>11 kV	>19 kV
Continuous Current	600 Amps	600 Amps
Momentary - RMS, Sym., 0.17 sec.	25,000 Amps	25,000 Amps
RMS, Sym., 3 sec	10,000 Amps	10,000 Amps

Leakage Distance, Inches	>17
Dry Arcing Distance, Inches	8.5
Mechanical - Strength Rating, Pounds	
Cantilever, Ultimate 2.5 inches past end	>900
Tensile, Pounds	>4,000
Torsion, Inch-Pounds	>2,500
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)	6.87 (3.09)

Typical Specifications - 600 Amp Thru-Bushings

15-kV Thru-Bushing - 600 Amps

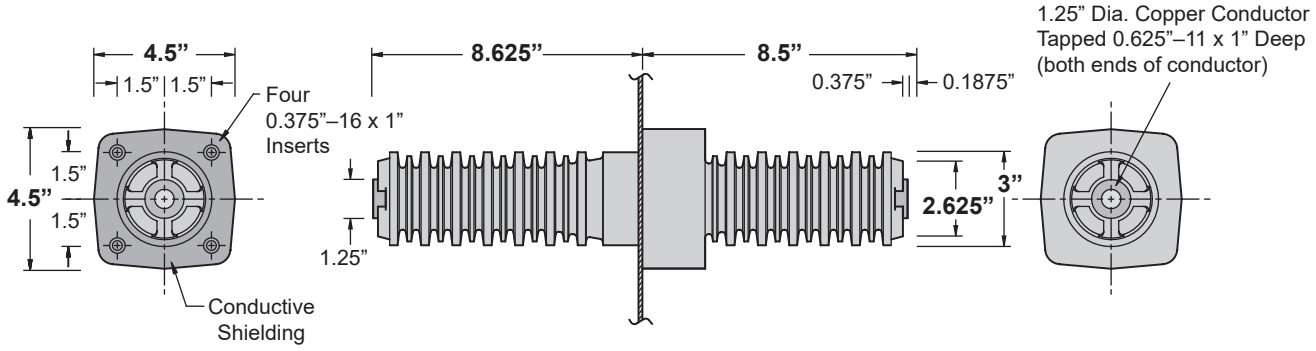
Bushings shall be 600 ampere Elliott #1351-615TB, 15 kV Class (8.3 kV to ground) Air-Insulated Live Terminal Thru-Bushings, 95 kV BIL, *for use with 8.3/14.4 kV systems*. The bushings shall be pressure-molded cycloaliphatic epoxy with a 1.25-inch diameter tin-plated aluminum conductor that is drilled and tapped 0.625-inch–11UNC x 1-inch deep on both ends to provide for connection of the bus and/or live parts. Integral shielding shall be provided to eliminate partial discharge caused by off-center mounting and mounting holes that may have sharp edges or burrs. Bushings shall mount in a 3.125-inch diameter opening and bolt in place to allow field replacement with standard tools. To assure adequate strength for apparatus support, the bushing shall withstand a minimum cantilever loading of 500 pounds for five minutes without damage. The bushing mounting bolts shall be self-locking stainless steel serrated-flange hex-head bolts that "cut" through the enclosure protective finish to ground the integral shielding of each bushing. Each bushing shall be tested in free air, mounted in a grounded steel plate not less than 10 inches x 10 inches and shall meet the requirements for 15 kV devices in accordance with the test values of IEEE Standard 386 (latest revision), including 100 percent production testing.

25-kV Thru-Bushing - 600 Amps

Bushings shall be 600 ampere Elliott #1351-625TB, 25 kV Class (15.2 kV to ground) Air-Insulated Live Terminal Thru-Bushings, 125 kV BIL, *for use with either 8.3/14.4 kV or 15.2/26.3 kV systems*. The bushings shall be pressure-molded cycloaliphatic epoxy with a 1.25-inch diameter tin-plated aluminum conductor that is drilled and tapped 0.625-inch–11UNC x 1-inch deep on both ends to provide for connection of the bus and/or live parts. Integral shielding shall be provided to eliminate partial discharge caused by off-center mounting and mounting holes that may have sharp edges or burrs. Bushings shall mount in a 3.125-inch diameter opening and bolt in place to allow field replacement with standard tools. To assure adequate strength for apparatus support, the bushing shall withstand a minimum cantilever loading of 500 pounds for five minutes without damage. The bushing mounting bolts shall be self-locking stainless steel serrated-flange hex-head bolts that "cut" through the enclosure protective finish to ground the integral shielding of each bushing. Each bushing shall be tested in free air, mounted in a grounded steel plate not less than 10 inches x 10 inches and shall meet the requirements for 25 kV devices in accordance with the test values of IEEE Standard 386 (latest revision), including 100 percent production testing.

Elliott Molding and Components
A Division of Elliott Industries, Inc.
1509 Hamilton Road
Phone 318-746-3296
Bossier City, LoUiSiAna 71111
Fax 318-741-1127
sales@elliott-industries.com
www.elliott-industries.com
© Copyright 2023

900 Amp Thru-Bushing



Catalog Number	#1351-915TB	#1351-925TB
Voltage Class	15 kV	25 kV
Phase-to-Ground Voltage	8.3 kV	15.2 kV
BIL	>95 kV	125 kV
AC Withstand - 1 Min. Dry	>34 kV	40 kV
10 Sec. Dew	>34 kV	40 kV
DC Withstand - 15 Min. Dry	>53 kV	78 kV
Corona Extinction Level - Minimum	>11 kV	>19 kV
Continuous Current	900 Amps	900 Amps
Momentary - RMS, Sym., 0.17 sec.	40,000 Amps	25,000 Amps
RMS, Sym., 3 sec.	10,000 Amps	10,000 Amps

Leakage Distance, Inches	>17
Dry Arcing Distance, Inches	8.5
Mechanical - Strength Rating, Pounds	
Cantilever, Ultimate 2.5 inches past end	>900
Tensile, Pounds	>4,000
Torsion, Inch-Pounds	>2,500
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)	11.34 (5.10)

Typical Specifications - 900 Amp Thru-Bushings

15-kV Thru-Bushing - 900 Amps

Bushings shall be 900 ampere Elliott #1351-915TB, 15 kV Class (8.3 kV to ground) Air-Insulated Live Terminal Thru-Bushings, 95 kV BIL, *for use with 8.3/14.4 kV systems*. The bushings shall be pressure-molded cycloaliphatic epoxy with a 1.25-inch diameter copper conductor that is drilled and tapped 0.625-inch–11UNC x 1-inch deep on both ends to provide for connection of the bus and/or live parts. Integral shielding shall be provided to eliminate partial discharge caused by off-center mounting and mounting holes that may have sharp edges or burrs. Bushings shall mount in a 3.125-inch diameter opening and bolt in place to allow field replacement with standard tools. To assure adequate strength for apparatus support, the bushing shall withstand a minimum cantilever loading of 500 pounds for five minutes without damage. The bushing mounting bolts shall be self-locking stainless steel serrated-flange hex-head bolts that "cut" through the enclosure protective finish to ground the integral shielding of each bushing. Each bushing shall be tested in free air, mounted in a grounded steel plate not less than 10 inches x 10 inches.

25-kV Thru-Bushing - 900 Amps

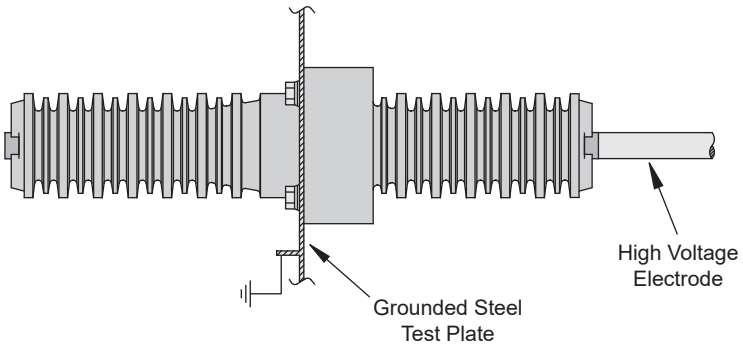
Bushings shall be 900 ampere Elliott #1351-925TB, 25 kV Class (15.2 kV to ground) Air-Insulated Live Terminal Thru-Bushings, 125 kV BIL, *for use with either 8.3/14.4 kV or 15.2/26.3 kV systems*. The bushings shall be pressure-molded cycloaliphatic epoxy with a 1.25-inch diameter copper conductor that is drilled and tapped 0.625-inch–11UNC x 1-inch deep on both ends to provide for connection of the bus and/or live parts. Integral shielding shall be provided to eliminate partial discharge caused by off-center mounting and mounting holes that may have sharp edges or burrs. Bushings shall mount in a 3.125-inch diameter opening and bolt in place to allow field replacement with standard tools. To assure adequate strength for apparatus support, the bushing shall withstand a minimum cantilever loading of 500 pounds for five minutes without damage. The bushing mounting bolts shall be self-locking stainless steel serrated-flange hex-head bolts that "cut" through the enclosure protective finish to ground the integral shielding of each bushing. Each bushing shall be tested in free air, mounted in a grounded steel plate not less than 10 inches x 10 inches.

Elliott Molding and Components
A Division of Elliott Industries, Inc.
1509 Hamilton Road
Phone 318-746-3296
Bossier City, LoUiSiAna 71111
Fax 318-741-1127
sales@elliott-industries.com
www.elliott-industries.com
© Copyright 2023

Production Tests

Every Thru-Bushing is production tested in free air, mounted in an 11-gauge grounded steel plate not less than 10 inches x 10 inches, to accurately simulate operating conditions.

Test Configuration



Installation Instructions

Elliott "B" Series Apparatus Bushings require a 3.125" diameter mounting hole with four 0.4375" diameter bolt holes. The Thru-bushing bolts in place utilizing four 0.375"–16UNC x 1" serrated-flange hex-head bolts (or bolts with external tooth lock washers). Gaskets are available when a liquid-tight seal is desirable.

15 kV and 25 kV Thru-Bushings mount on either side of the mounting hole. When installed in a 0.125" plate, both sides of the bushing extend 8.5 inches.

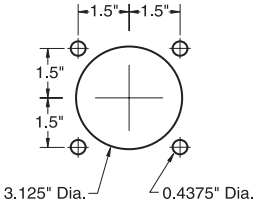
1. The Thru-Bushing installs from either side for easy installation.

2. Serrated-flange bolts (or bolts and external tooth lock washers) 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 serrated-flange bolts (or external tooth lock washers) 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.

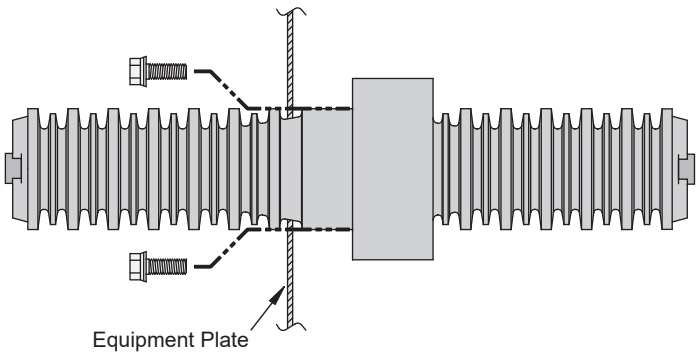
3. **Conductor Connection**
   Attach the bus bar (or another component) to the conductor using a threaded bolt. 200A bushings use a 3/8"-16 UNC bolt, and the 600/900A bushings use a 5/8"-11 UNC bolt. The table below indicates the maximum torque for the conductor connection when using stainless steel bolts. The bolts you use may require lower values.

Torque Values for Conductor Connection

200A	3/8"-16 UNC Bolt	18 ft. lbs
600/900A	5/8"-11 UNC Bolt	88 ft. lbs



Standard Mounting Holes for Elliott "B" Series Bushings



Elliott Molding and Components
A Division of Elliott Industries, Inc.
1509 Hamilton Road
Phone 318-746-3296
Bossier City, LoUiSiAna 71111
Fax 318-741-1127
sales@elliott-industries.com
www.elliott-industries.com
© Copyright 2023