



Spectra Series™ Busway Evolution™ Switchboard Stub Connection



DANGER: DO NOT perform any installation procedures described below without de-energizing the Busway/Switchboard AND ensuring the main circuit breaker device is OFF.

Before Installation

Before any installation work is performed, study all drawings furnished by the supplier for the installation. These include arrangement drawings (front, end, and plan view), connection diagrams, and schedule of equipment. Any material exterior to the equipment that may be required to meet any local codes is not furnished.

Storage Precautions

Before storing, unpack sufficiently to check the busway for possible concealed damage resulting from shipping and handling. If damage has occurred, notify the shipper immediately. If the busway is free of damage, restore the packing until ready for installation.

Store indoors in a clean, dry area, preferably close to the installation points.

Protect the busway from mechanical damage and any contact with or exposure to corrosive fumes, liquids, salts, or concrete.

Failure to store and protect the busway properly can cause serious damage and will void the warranty.

NOTICE: No busway, including outdoor rated, is weatherproof until completely and properly installed

Installation for Top Feed (See page 6 for Bottom Feed)

1. Unpacking and Inspecting the Unit

- Inspect the **Evolution™ Switchboard Busway Connection** and ensure that there is no noticeable shipping damage that could interfere with the operation of the device. Contact surfaces must be clean. Do **NOT** attempt to polish tarnished contact surfaces.
- Check that joint insulators are not damaged or cracked and are firmly in place.
- Megohm test the piece before installation.
- Consult DEH40087 **Spectra Series™ Plug-in and Feeder Busway** and GEH-5893 **Evolution Switchboard™** for additional reference.

2. Remove Shipping Screws in Switchboard

- Remove the top cover of the switchboard as shown in Fig. 1.
- Remove the (2) 10-32 shipping screws on the integrated **Spectra™ Busway Joint** as shown in Fig. 1 and dispose of screws accordingly.

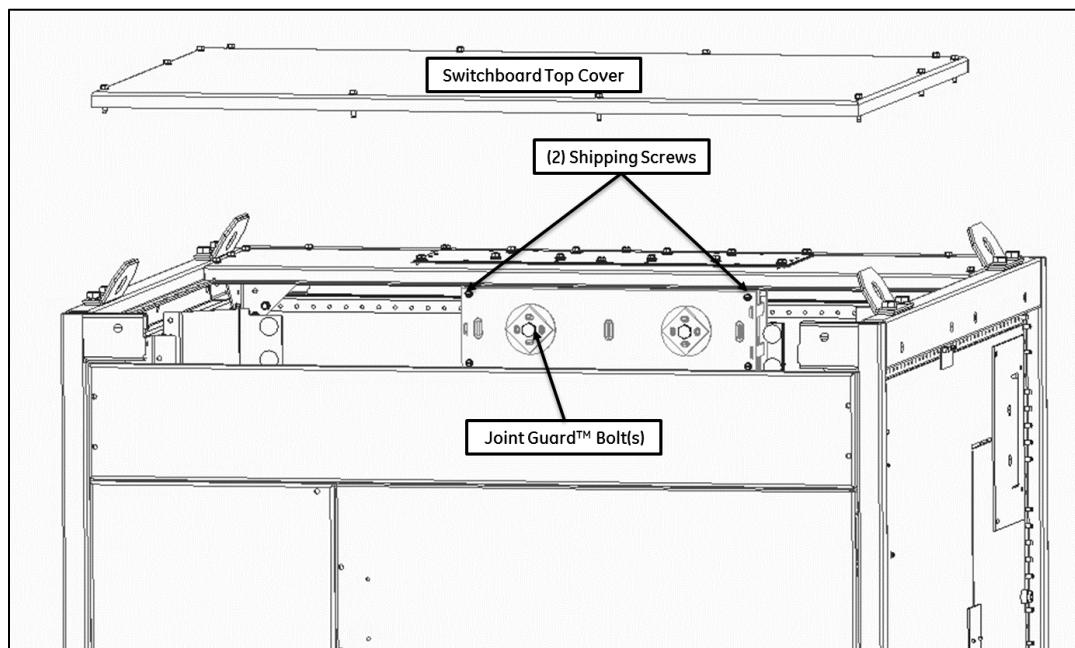



Figure 1. Location of removable shipping screws (front top width post removed for clarity)

3. Remove Shipping Cover Plate

- Remove all Grade-5 $\frac{1}{4}$ "-20 bolts and gasketed washers (Fig.2) from the top of the shipping plate (Note: the quantity will vary depending on the width of the switchboard and flange connection).
- Take off the removable shipping cover plate as shown in Fig. 2 and dispose of accordingly.

- Remove any remaining gasket material or residue to ensure clean surface for new gasket application

	<p>CAUTION: Application of gasket material is required for NEMA-3R constructions. Failure to apply gasket could result in serious injury and equipment damage</p>
	<p>NOTICE: Gasket material is not required for non NEMA-3R applications. Gasket material will still be supplied to provide a more robust design if desired</p>

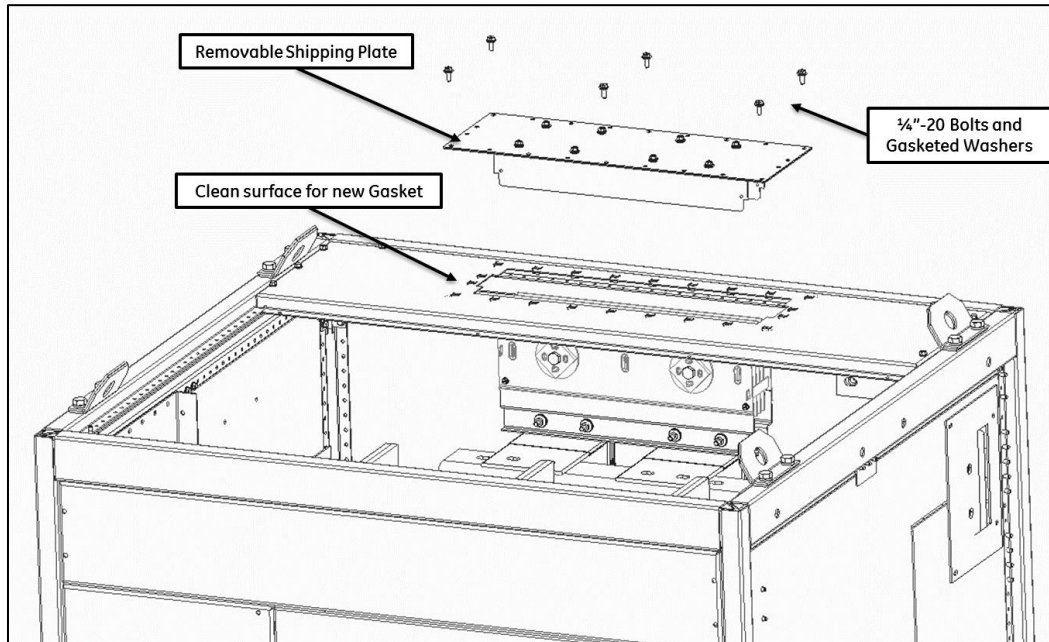


Figure 2. Removing shipping plate

4. Preparing/Applying Gasket Material (NEMA 3R Construction Only)

- Inspect the top of the switchboard to identify the gasket locator dimples as shown in Fig. 3. These will be used to align the gasket on the top of the switchboard.

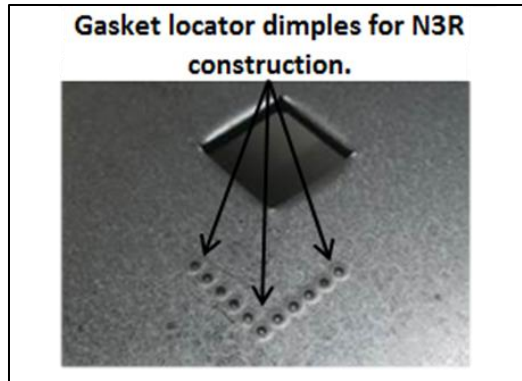


Figure 3. Gasket locator dimples diagram

- Cut the supplied gasket into (4) total strips – (2) shorter to be applied in the vertical direction and (2) longer to be applied in the horizontal direction (Fig. 4)
- The length of the horizontal (longer) pieces of gasket will vary depending on the **Spectra Busway™** material and amperage rating. Cut the horizontal strips per Table 1. The vertical strips must always be cut to 7.75"

Table 1. Gasket Length Chart

Vertical Length	Horizontal Length	AL Busway	CU Busway
7.75"	11"	225A-1350A	225A-2000A
	21"	1600A-3000A	2500-4000A
	31"	3200A-4000A	5000A

- Apply the gasket to the clean surface of the switchboard using the gasket locator dimples shown in Fig. 4.

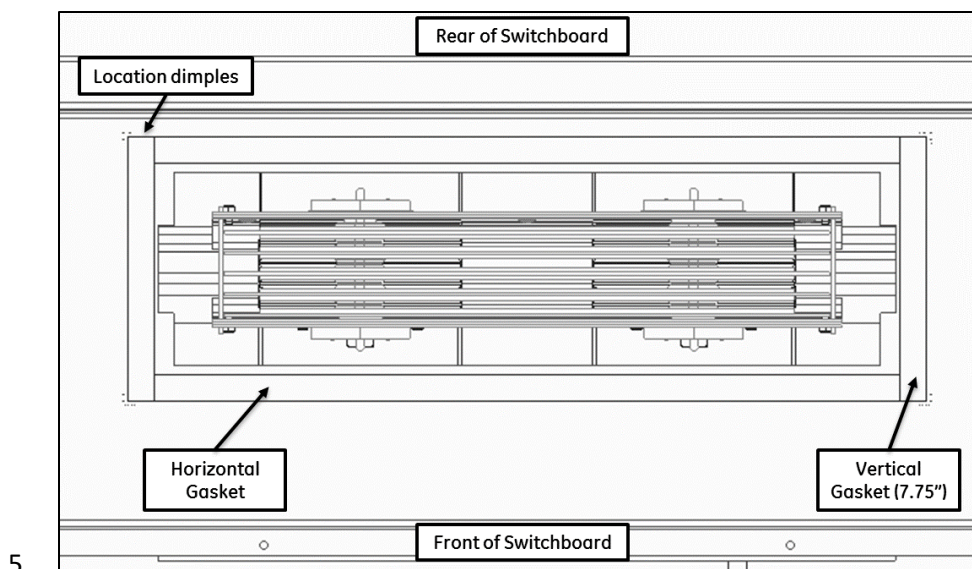



Figure 4. Application of Gasket

6. Installing Evolution™ Switchboard Busway Connection to Switchboard

- Establish the bus bar phase sequence (\emptyset side is labeled) that determines how the busway connection should be installed, so that correct phasing is maintained
NOTE: The phase side of the integrated busway connection inside the switchboard will always be facing the front of the switchboard.
- Slightly loosen the ½" **Joint Guard™** bolt on the integrated busway joint inside the switchboard (Fig. 1)

	<p>WARNING: The housing-ground side plates must pass between the outside insulator and the joint-ground side plate to avoid a phase-to-ground short circuit.</p>
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- Raise or lower the busway so that the bus bars interweave the insulators as shown in Fig. 5. The busway should be adjusted until the flange mounting plate is flush against the switchboard.

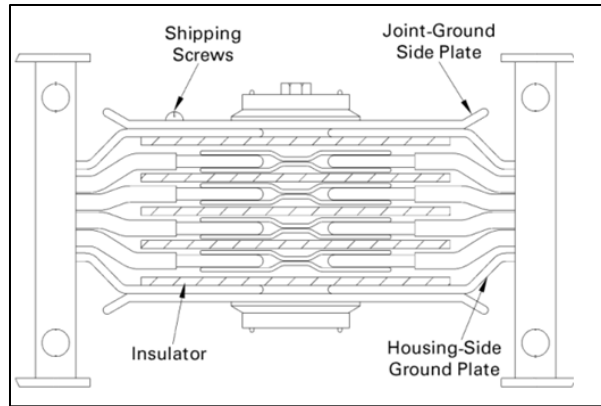


Figure 5. Busbars interweaving with the joint

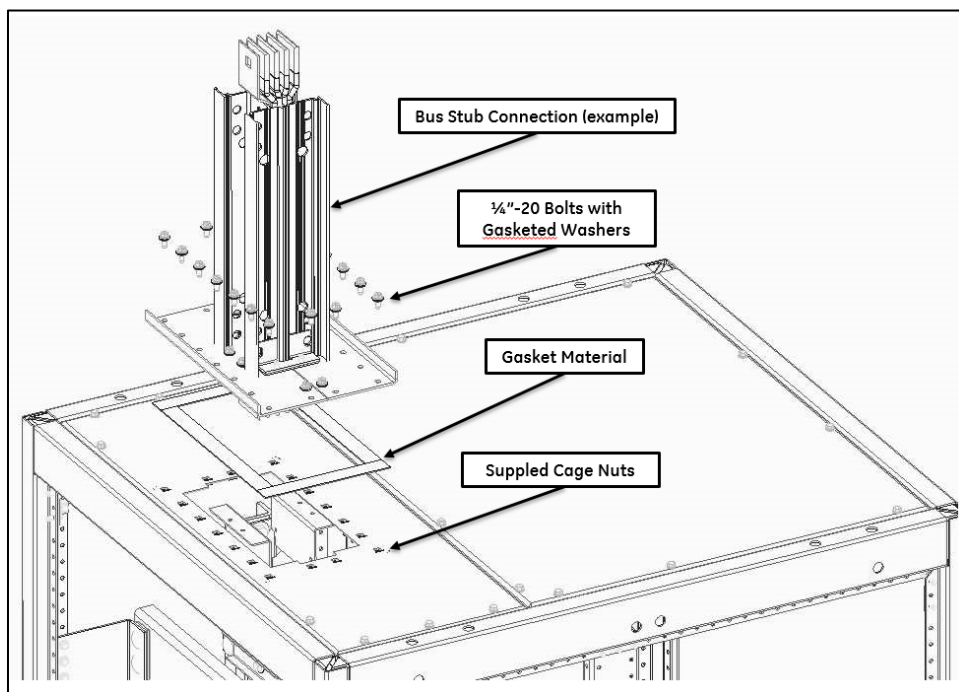




Figure 6. Exploded view of bus stub installation

- Inspect the busway run for straightness in all planes and make any adjustments necessary for good alignment.



CAUTION: The bus stub connection must be externally supported from the switchboard. Failure to do so may cause damage to equipment or injury.

- Tighten the **Joint Guard™** torque-indicating bolt to 50 ft-lb (68 N-m) using a ¾" or 19-mm socket torque wrench set. The color indicator should turn fully black and can be viewed periodically to ensure proper torque.
- Bolt down the Busway flange mounting plate with supplied ¼"-20 bolts with gasketed washers (Fig. 6).
- Torque these screws to 4 ft-lb (5.5 N-m) into the supplied cage nuts.

	WARNING: Failure to use gasketed washers in NEMA-3R applications will result in major equipment damage or injury.
	CAUTION: Failure to tighten bolts to required torque could result in major equipment damage or injury.

7. Reinstall top cover

- Reinstall the top cover of the switchboard with ¼"-20 thread rolling screws.
- Torque the ¼"-20 thread rolling screws to 4 ft-lb (5.5 N-m).

8. Continue with general installation instructions

- Continue with general installations instructions for **Spectra™ Busway** (DEH40087) and **Evolution™ Switchboard** (GEH-5893)

Installation for Bottom Feed

1. Unpacking and Inspecting the Unit

- Inspect the **Evolution™ Switchboard Busway Connection** and ensure that there is no noticeable shipping damage that could interfere with the operation of the device. Contact surfaces must be clean. Do **NOT** attempt to polish tarnished contact surfaces.
- Check that joint insulators are not damaged or cracked and are firmly in place.
- Megaohm test the piece before installation.
- Consult DEH40087 **Spectra Series™ Plug-in and Feeder Busway** and GEH-5893 **Evolution Switchboard™** for additional reference.

2. Remove Shipping Screws in Switchboard

- a. Remove the top cover of the switchboard as shown in Fig. 1.
- b. Remove the (2) 10-32 shipping screws on the integrated **Spectra™ Busway Joint** as shown in Fig. 1 and dispose of screws accordingly.