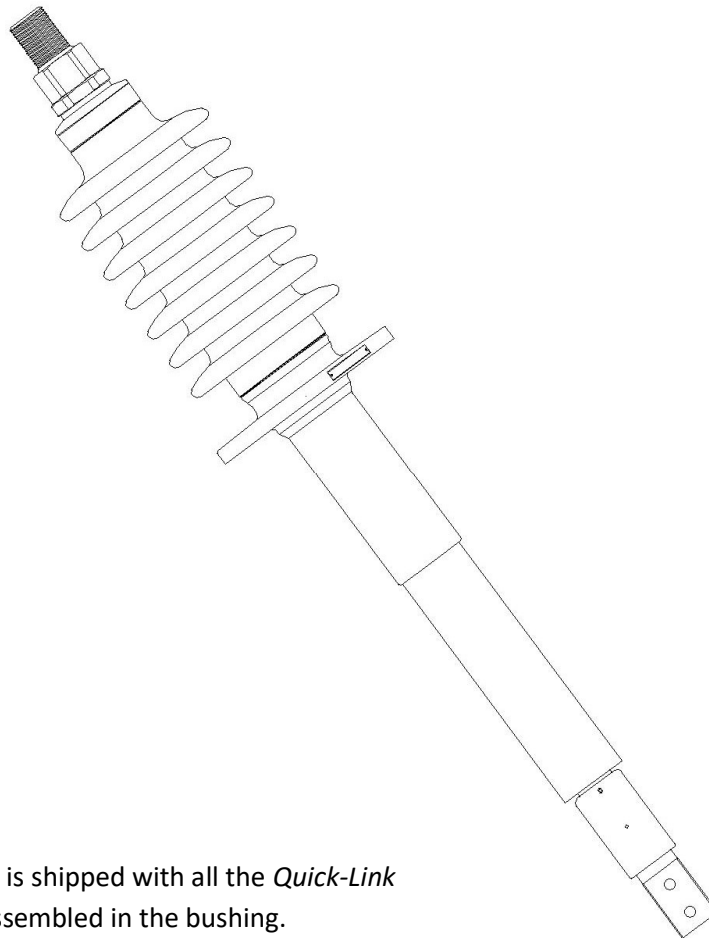




Instructions for Installation and Removal of PCORE Quick-Link Bushings (15kV – 72.5kV, 1200A – 3000A)

Instructions for Installation: B-331044 2/5/21



The bushing is shipped with all the *Quick-Link* hardware assembled in the bushing.



Initial Installation Instructions

1. Lay the bushing horizontally on a surface that will not damage the porcelain.
2. Unscrew the top terminal and set aside (with the o-ring).
3. Unscrew the nut from the brass (*Top-Link*) rod that is under the top terminal.
4. Remove the pin that holds the *Top-Link* rod to the bushing conductor. Do not lose the pin, it will be necessary to use the pin to reassemble the bushing.
5. Push down on the top of the *Top-Link* rod, or pull the bottom (*Quick-Link*) connector out of the bushing. The connector fits tightly in the bottom (*Quick-Link*) socket. It may be necessary to firmly tap the *Top-Link* rod on the top to loosen the bottom *Quick-Link* connector. Be careful not to damage the *Top-Link* rod, it will need to be used to pull the *Quick-Link* connector into the *Quick-Link* socket. It may help to twist the connector while pulling it out.
6. The *Quick-Link* rod is as long as the bushing conductor. Pull the rod out of the bushing from the bottom. It must be pulled out far enough to allow cleaning of the contact surfaces. You may pull the rod all the way out, but it is not necessary at this time.



CAUTION

Do not damage the contact surfaces. The contact surfaces are on the outside of the Quick-Link connector and the inside of the Quick-Link socket. These surfaces must remain clean and smooth to be able to pass rated current.

7. Wipe both the inside and the outside contact surfaces with a dry lint-free cloth.



CAUTION

Be careful not to snag the contact strip inside the Quick-Link socket while cleaning.

8. Wipe a light coat of transformer oil on the connector and on the inside of the socket.

9. Reinstall the *Quick-Link* rod and connector assembly; insert the pin, but do not tighten the nut.



NOTE

The Quick-Link connector fits tightly in the socket; it will take some force to push it in fully.

10. Mount the bushing to the transformer cover using your normal procedure.
11. Attach the transformer lead(s) to the *Quick-Link* NEMA pad connector. If the nut is not tight, you should be able to turn the *Quick-Link* connector to align it with the leads.



CAUTION

Do not turn the Quick-Link connector more than 90° in either direction while adjusting the alignment.

12. Insert a screwdriver in the top hole, and remove the pin from the stud.
13. Pull the *Top-Link* up fully until it stops, the *Quick-Link* terminal is now fully engaged in the socket.
14. Thread the *Top-Link* down while pulling up on the screwdriver until the holes are aligned and the pin can be inserted fully.
15. Insert the pin, and tighten the nut to **20 FT-LBS**.
16. Reinstall the top terminal (with the o-ring). Tighten to **50 FT-LBS**.
17. The bushing is now fully functional, and the transformer may now be tested.



Removal Instructions

1. Remove the top terminal and o-ring.
2. Remove the nut on the *Top-Link* brass rod under the terminal.
3. Attach a wire or strong cord to the rod, using the small hole on top.
4. Remove the fasteners holding the bushing to the transformer.
5. Remove the pin holding the *Top-Link* to the stud.
6. Push the rod down from the top to disengage the *Quick-Link* connector from the socket on the bottom. You may need to use a hammer or mallet to apply enough force to disengage the *Quick-Link* connector. You may want to place a piece of wood or plastic over the end of the rod to prevent damage.



Be sure to have a good hold on the wire so the assembly does not fall into the transformer.

7. Lift the bushing out of the transformer while holding the wire to keep the rod and connector assembly from falling into the transformer.



Do not pull the assembly too hard, you may damage the internal transformer connections.

8. When the bottom of the bushing clears the top of the transformer tank, you will see the *Bottom-Link* rod. Keep lifting the bushing until you have enough room to comfortably reach in and grab the rod.
9. The *Quick-Link* rod has a joint in the middle. On the standard designs, this joint is located $\frac{3}{4}$ inch above the flange mounting-surface. The joint is threaded, allowing for $\pm \frac{1}{4}$ inch adjustment. The normal location is such that approximately $\frac{1}{4}$ inch of threads are visible between the two sections.
10. While firmly grasping the link rod let go of the wire and lift the bushing up and out of the way.



*Be sure to have a good hold on the *Bottom-Link* so the assembly does not fall into the transformer.*

11. Pull the rod up, or push down so the 0.44" hole at the top of the *Bottom-Link* is just above the top of the transformer tank



*On the standard design the hole is located $1\frac{1}{2}$ inches below the top of the *Bottom-Link*. You will need to pull the *Bottom-Link* up $\frac{3}{4}$ inch.*

12. Insert a rod or screwdriver, which is longer than the transformer tank opening, through the 0.44" diameter hole so the rod and connector assembly is held in place.
13. After the bushing is fully removed from the *Quick-Link* rod and the *Quick-Link* rod is secured, unthread the *Top-Link* rod from the bottom section.
14. Install the *Top-Link*, pin, and the nut to the bushing for shipment.
15. The *Bottom-Link* should be left in the transformer. A modification to the cover plates that cover the bushing mounting holes on the transformer must be made to allow the *Bottom-Link* (with the *Quick-Link* connector attached) to be attached to the cover for shipping. The *Quick-Link* connector assembly must be attached securely to the cover (or the transformer) for shipment.



Field Installation Instructions

1. Lay the bushing horizontally on a surface that will not damage the porcelain.
2. Unscrew the top terminal and set aside (with o-ring).
3. Unscrew the nut for from the (*Top-Link*) rod that is under the top terminal.
4. Remove the pin that holds the *Top-Link* to the bushing conductor.
5. Remove the *Top-Link* from the bushing.
6. Remove the fasteners holding the cover on the bushing –mounting hole.
7. Lift the cover plate about 2 inches, enough to insert a small rod or long screwdriver through the 0.44” hole in the brass *Bottom-Link* rod. (The hole is 1¼ inches from the top of the *Bottom-Link* rod.) The rod or screwdriver must be long enough to span the opening in the transformer tank and hold the *Quick-Link* assembly.
8. Remove the top cover, by unthreading, while insuring that any possible connection to the *Bottom-Link* does not pull tightly on the transformer connections.
9. Position the *Bottom-Link* approximately in the center of the mounting hole. A fabricated installation plate can be placed over the bushing mounting hole and around the brass rod. The split plate will cover most of the hole and help prevent small items from falling into the transformer. This plate can be made from almost any material, but it must have a hole in the center, and it must be split for removal. If the split plate is designed to hold the *Quick-Link* assembly, it can be used in place of the rod or screwdriver required in step 7.
10. Connect the *Top-Link* to the *Bottom-Link* leaving about ¼ inch of threads visible between the two sections.
11. Attach a wire or strong cord to the rod, using the small hole on top.



NOTE

This will function in the same manner as the wire used in a draw-lead application.

12. Hoist the bushing over the mounting position and fish the wire through the center bushing conductor.
13. Remove the split plate, rod, or screwdriver while pulling on the wire.



CAUTION

14. Lower the bushing over the *Quick-Link* assembly; continue pulling the wire to keep the assembly from falling into the transformer.
15. Once the bushing is in place, the *Quick-Link* assembly will need a firm tug to pull it into place at the bottom. The fit is very tight to insure a low resistance connection. Insert a screwdriver through the 0.31” hole at the top of the *Top-Link* and pull up.



CAUTION

- Be sure to have a good hold on the wire so the assembly does not fall into the transformer.*
- Make sure you pull the Quick-Link assembly all the way up until the connector stops inside the socket. You should feel it stop. If the Quick-Link connector is not fully inserted, you may run out of threads trying to align the pin holes and drop the bottom rod into the transformer.*
16. Once the *Quick-Link* connector is seated, the top should look just like a standard PCORE draw-lead terminal with a longer extension.
 17. Rotate the *Top-Link* while pulling up on the screwdriver until the holes align, and insert the pin. The *Quick-Link* assembly is designed so the holes align when there is a ¼ inch gap in the two rods. The contact surface at the bottom is long enough to maintain the proper contact throughout the adjustment range. The *Top-Link* and *Bottom-Link* do NOT carry current. The gap will not affect the current capacity.



CAUTION

- Do not turn the Quick-Link connector more than 90° in either direction while adjusting the alignment.*
18. Remove the wire and install the nut in the same manner you would a draw-lead. **Tighten to 20 FT-LBS.**
 19. Reinstall the top terminal (with the o-ring), and **tighten to 50 FT-LBS.**
 20. The bushing is installed and can be energized.