

## Replacing the Gear Drive Motor Assembly and GFCI Module for Operation with the Chain Drive Motor Assembly

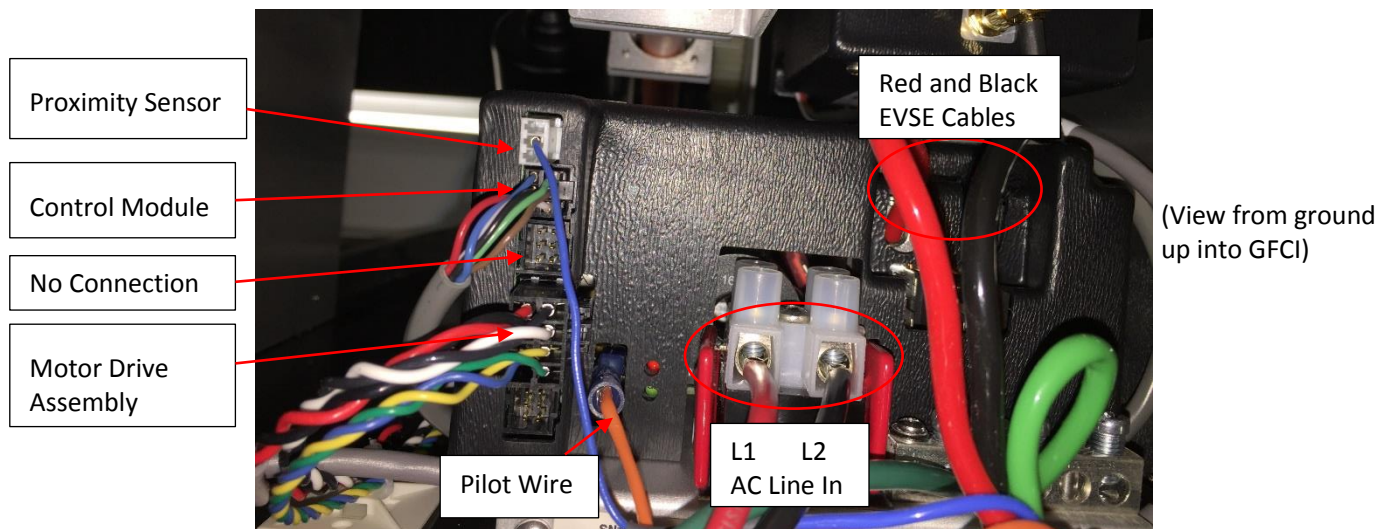
### Kit Contents

- B00009035-3 Motor Drive Assembly (Return original to CMI)
- B00007698-8 GFCI Module (Return original to CMI)
- New Motor Assembly Wiring Harness
- 2 Cable Ties for new Wiring Harness
- Proximity Sensor Wire (Blue Wire with Connector)
- 2 motor nuts and washers (Extras)
- 2 tamper-proof screws and washers
- 2 screws for GFCI (Extras)
- One pull rope for reinstalling the cable
- New labels for the 3704 cover
- New label for the J1772 Connector

### Recommended Tools

- Large Flat Head Screwdriver
- Phillips Head Screwdriver (large and small)
- Pin-in Torx T25H
- Needle-nose Pliers
- Cable Tie Cutters
- Wire-Stripper
- 3/8" Ratchet with a 3/8" Socket
- 18-inch-pounds Torque Flat Blade Screwdriver
- 25-inch-pounds Torque Flat Blade Screwdriver
- 35-inch-pounds Torque Flat Blade Screwdriver
- Electrical Tape
- Butt Crimp
- Multi-meter

### GFCI Cable Connection Location



## Replacing the Motor Drive Assembly and GFCI Module



### WARNING:

**Step 1:** Perform the lockout/tagout procedure per electrical code to ensure power is removed at the source, or if the 3704 is equipped with a Power Disconnect switch, after removing the 3704's cover in **Step 2** below, turn the switch to **OFF**.



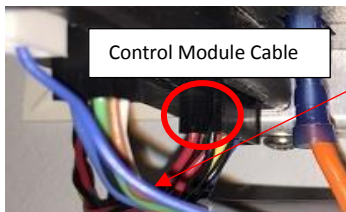
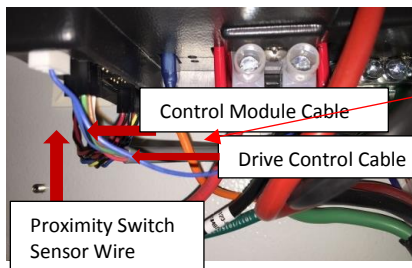
Bee Guard



**Step 2:** Remove the two screws near the conduit knock-out access holes in the bottom of the cover. These screws will either need a large Phillips or the Pin-in Torx T25H. Pull the cover slightly out at the bottom of the EVSE to clear the cover's bottom tab from the bottom of the EVSE frame. The Front Cover slides up and away from the assembly after the two screws are removed. Set the cover aside. You now have access to the GFCI Module and connecting wires and, if present, the Power Disconnect switch in the bottom left corner. Turn that switch to **OFF**.





**Important!** - While pulling the cover out, carefully maneuver both the cover and J1772 cable connector to allow the connector and "Bee-Guard" to pass through the cover's access hole

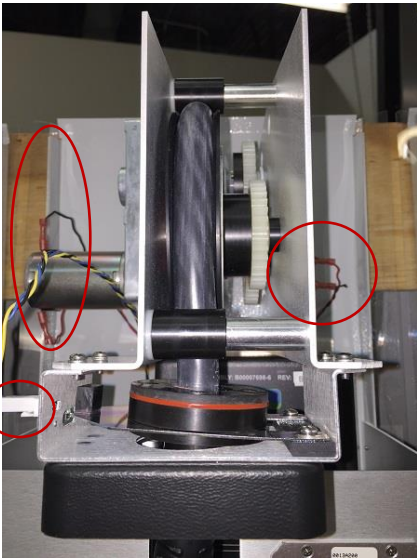
**Step 2A:** Put a multi-meter across the GFCI's L1 and L2 main incoming AC power conductors to verify the correct breaker was shutoff during the Lockout/Tagout process, and/or the Power Disconnect Switch is **OFF**.



**Step 3:** Unplug the round gray cable with the 6-pin Control Module connector, and the Drive Control cable connector from the bottom of the GFCI Module. Note: This connector might have a locking tab that must be depressed in order to pull it off. If present, remove the blue Proximity Switch sensor wire from the Vehicle Sensor connector.

**Step 4:** Carefully disconnect the orange pilot wire from the Pilot connector, which is next to the Driver Control connector, using needle-nose pliers.

	<p><b>Step 5:</b> Use a small Phillips Head screwdriver to remove four (4) front screws holding the Control Module to the front panel. Lift the module out, being careful of the cables attached to it, and move it out of the way. Note the number of cables plugged in and where, for re-assembly.</p>
	<p><b>Step 6:</b> Place a large flat head screwdriver through the Control Module hole and disconnect the red and black power wires on the GFCI coming from the J1772 cable.</p> <p><b>Step 6A:</b> Disconnect the two green ground wires attached to the ground bar located on the bottom of the GFCI.</p>
	<p><b>Step 7:</b> Disconnect the red (L1) and black (L2) wires at the AC Line In connector on the GFCI Module.</p>
	<p><b>Step 8:</b> Using a large Phillips screwdriver, remove the two bottom screws (extras are provided) securing the GFCI module, and slide it down and out over the cable tub. The old GFCI needs to be returned to CMI.</p> <p><b>Record the dip switch settings as you will need them for the new GFCI Module.</b></p>

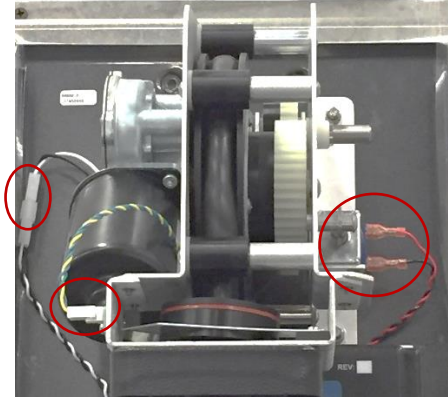


Older Version



Cut Ties

**Step 9:** Disconnect the Wiring Harness' three cables from the Motor Drive Assembly. Cut the cable tie-downs and discard the old wiring harness.



Later Version

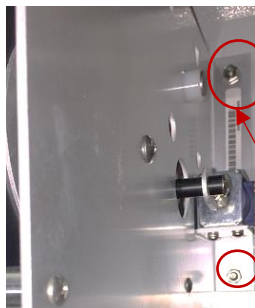


**Step 10:** Remove the nuts holding down the two P-Clamps securing the J1772 cable on the side and underneath the cable shelf. Remove both P-Clamps from the cable. Place the nuts, washers and P-Clamps in a safe place.



**Step 11:** Press down on the solenoid shaft on the right side of the Motor Assembly and remove the J1772 cable by grasping the connector and pulling through until the entire cable has been removed.

**Note:** Pressing the solenoid requires a fair amount of pressure.

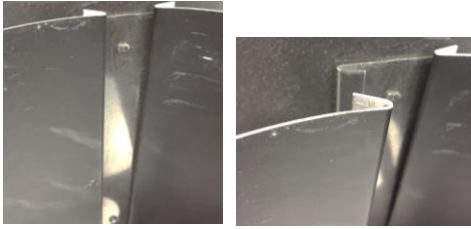


Nuts and Washers

**Step 12:** Remove the four nuts and washers, two on either side of the motor assembly, and place them in a safe place. (Extras are provided) Pull the assembly out and remove. The old Motor Assembly needs to be returned to CMI.

**Step 12A:** Place the old GFCI and Motor Assembly in the box the new parts came in and ship back to CMI. You will be charged a core charge if these old parts are not returned.

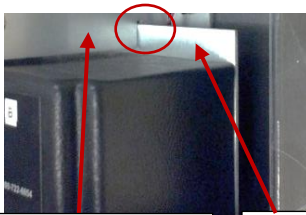




**Step 13:** Remove the empty cable tub by gently pushing the sides together and lifting it out of the back panel. Make sure there is no tape holding the tub in place. Put the tub aside.



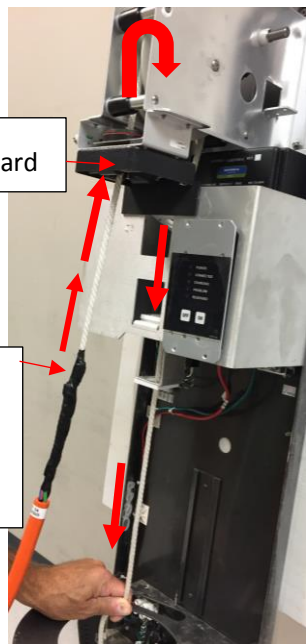
**Step 14:** Install the new chain drive motor assembly with the supplied nuts and washers (extras are provided). The chain side should be to your right.



Motor Drive Assembly

GFCI

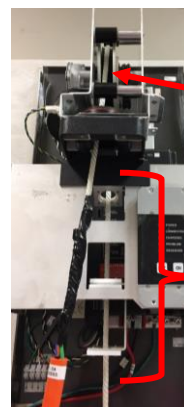
**Step 15:** Ensuring all wires are clear, install the new GFCI Module by sliding it up into position with the top going into the slots on the motor assembly. Screw the two bottom screws back in. Set the dip switch settings to the old GFCI's settings.



Bee Guard

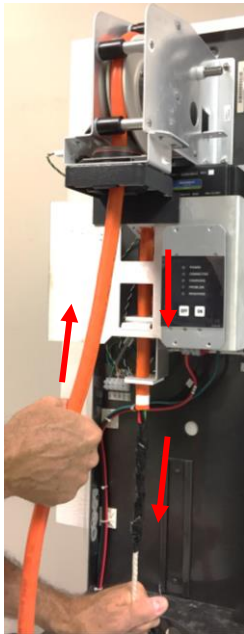
Tape  
this  
end to  
the  
J1772

**Step 16:** Starting 1 inch from the J1772 cable jacket, securely tape one end of the pull rope to the J1772 wires. Thread the other end of the rope through the Bee Guard, over the top of the pulley and out through the three cable eyelets. Ensure the pull rope stays between the pulley and all the roller guides (up to 5, depending on the vintage).



Pulley

3 Cable Eyelets



**Step 17:** Pull the cable up over the top of the pulley, fitting the cable between the pulley and the 4 or 5 rollers. Pushing the front of the cable upward from the bottom while pulling the back of the cable down with the rope works best.

**Note:** Cables will be either black or orange, depending on your version.

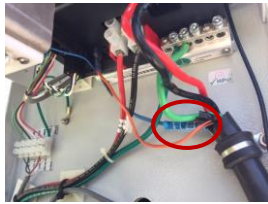
**Step 18:** Continue threading the cable through the three cable eyelets until three feet of excess cord hangs out the bottom. Remove the pull rope.



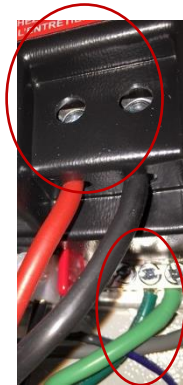
**Step 19:** Place the cable down through the back slot opening on the drum platform.



**Step 20:** Place the excess cable up through the right side hole, up to the GFCI.



**Step 21:** If the blue proximity sensor wire is not present, you will need to crimp the supplied wire from the upgrade kit onto where the blue wire was cut short. You may need to cut back the jacket of the J1772 cable to better expose the blue wire.



**Step 22:** Reattach all green ground wires that were previously removed to the ground bar on the bottom of the GFCI Module.

Recommended torque = 25-inch/pounds. If the wires appear damaged, remove the bare wire and re-prepare by stripping off 3/8 inch of insulation.

**Step 23:** Reattach the Red and Black wires from the J1772 cable to the GFCI connector as shown here (note color orientation). If the wires appear damaged, remove the bare wire and re-prepare by stripping off 3/8 inch of insulation. Recommended torque = 35-inch/pounds.



Pilot Wire



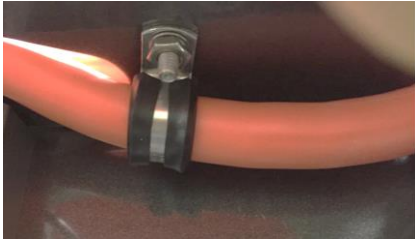
Proximity  
Sensor Wire

**Step 24:** Plug in the orange Pilot wire from the J1772 connector as shown. Ensure the connector is properly plugged onto the mating clip. Needle-nose pliers can be helpful here.

**Step 25:** Connect the blue Proximity sensor wire to the top connector on the GFCI module.



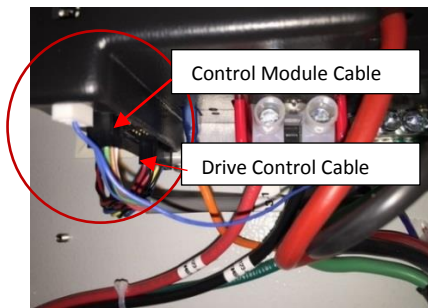
**Step 26:** Place one P-Clamp on the end of the cable, making sure one inch of cable jacket protrudes past the clamp. Secure the P-Clamp with the nut and washer.



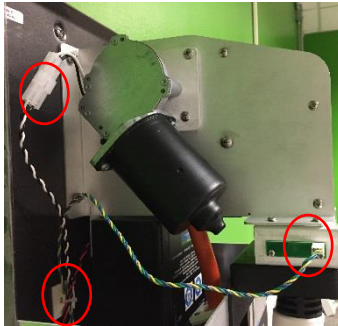
**Step 27:** Place the second P-Clamp around the cable under the tub platform. Lightly pulling the J1772 cable taut, secure the P-Clamp with the nut and washer.



**Step 28:** Reattach the Red (L1) and Black (L2) wires to the main L1-L2 AC Line-IN connector as shown here (note color orientation). Recommended torque = 18.5-inch/pounds. If the wires appear damaged, remove the bare wire and re-prep by stripping off 3/8 inch of insulation.



**Step 29:** Using the new Wiring Harness, connect the 6-pin Control Module connector cable and the Motor Drive connector into the GFCI Module. Then connect the other end of the Wiring Harness to the two mating connectors on the Motor Drive Assembly.



**Step 30:** Secure the new wiring harness with the new cable ties, ensuring both ends have a nice service loop.





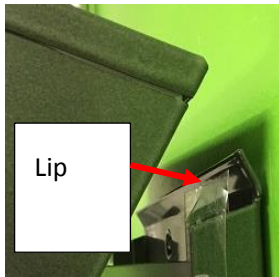
**Step 31:** Ensure all cables are still properly plugged into the back of the Control Module. Use a small Phillips Head screwdriver to reinstall the four (4) front screws holding the Control Module to the front panel.



**Step 32:** Install the empty cable drum by gently pushing the rear sides together and sliding it into the guides on the back panel.



**Step 33:** Restore power at the source following lockout/tagout procedures, or if available, turn the Power Disconnect switch to **ON**. After about five seconds, the excess cable will automatically coil up inside the drum.



**Step 34:** Replacing the cover involves the same steps, in opposite order, as removing the cover. However, pulling the J1772 cable out a little, to run it through the cover first, makes the job much easier. Press the **ON** button on the Control Module, push the Proximity switch on the top of the J1772 and discharge approximately 2 feet of cable. Run the connector and cable through its access cutout in the front of the cover. If the charger is associated with a Payment Module, turn on the Payment Station and insert the test card that came with the Payment Module into the Payment Module card reader. Use the Up and Down arrows to scroll to **EVSE Info** and press **Enter**. Use the Up and Down arrows to scroll through the list of EVSEs connected to this Payment Module. Highlight this 3704 and press **Enter**. The Payment Module sends a Charge message to this 3704. It will remain on for five minutes. You can now discharge 2 feet of cable.

Slide the cover on slightly above the EVSE, with the top pushed slightly farther on than the bottom, allowing the top tab of the cover enough room to slide over and behind the top lip of the EVSE frame. Re-install the service cover by carefully replacing the cover, making sure to hook the top of the cover over the top of the base and aligning the screw holes. Push the bottom in until the mounting holes in the bottom line up and you hear a click. Install the two new tamper-proof screws and lock washers using the Pin-in Torx T25H. Threading by hand, replace the two cover screws and washers removed earlier with the supplied tamper-proof screws and washers.

## Apply New Operating Instructions

Remove the existing instruction label and apply the new appropriate label to the front cover (**Figures 1, 2, 3**).

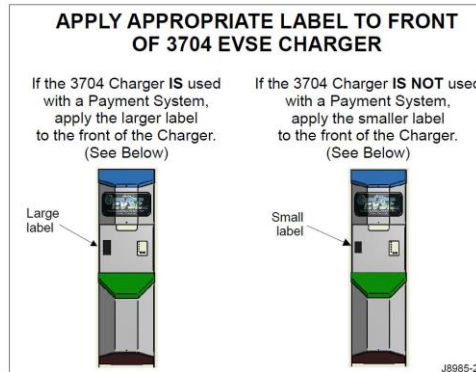


Figure 1

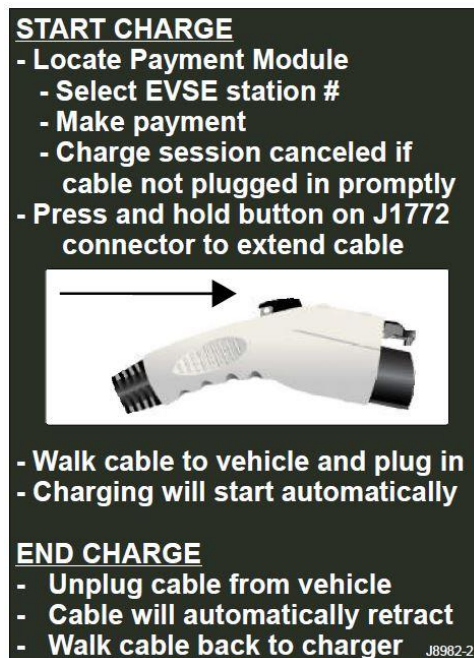


Figure 2: With Payment Module

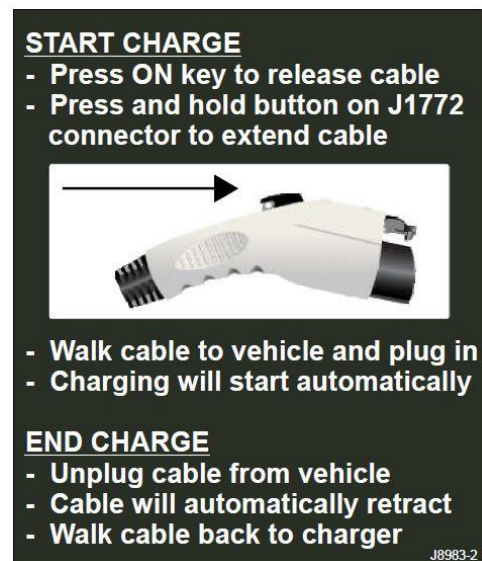


Figure 3: Without Payment Module

## Apply New Label to the J1772 Connector

Place the new label on the the connector as pictured below.



Figure 4

**Note:** Please return the old GFCI and Motor Assemblies to avoid a core charge.

## Contact Information

Should questions about installation, operation, optional features, maintenance or service arise, please call Technical Support at 1-888-753-8222 between the hours of 8:30 am to 5:00 pm EST, Monday to Friday.

Letter	Service Department Attn: Jack Batalha, Director Product Support Control Module Inc. 89 Phoenix Avenue Enfield, CT 06082
Fax	1-860-741-6064
e-mail	<a href="mailto:jbatalha@controlmod.com">jbatalha@controlmod.com</a>