

CT4000 Family ChargePoint® Networked Charging Station



Installation Guide

SAVE THESE IMPORTANT SAFETY INSTRUCTIONS

This manual contains important instructions that must be followed during installation of a ChargePoint® Networked Charging Station.

Grounding instructions

The ChargePoint® Charging Station must be connected to a grounded, metal, permanent wiring system; or an equipment-grounding conductor is to be run with circuit conductors and connected to the equipment grounding terminal or lead on the Electric Vehicle Supply Equipment (EVSE). Connections to the EVSE shall comply with all applicable codes and ordinances.

FCC Compliance Statement

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case, you will be required to correct the interference at your own expense.

Important: Changes or modifications to this product not authorized by ChargePoint, Inc., could affect the EMC compliance and revoke your authority to operate this product.

Exposure to Radio Frequency Energy: The radiated power output of the 802.11 b/g/n radio and cellular modem (optional) in this device is below the FCC radio frequency exposure limits for uncontrolled equipment. This device should be operated with a minimum distance of at least 20 cm between the 802.11 b/g/n and cellular antennas and a person's body and must not be co-located or operated with any other antenna or transmitter by the manufacturer, subject to the conditions of the FCC Grant.

Industry Canada

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

FCC/IC Compliance Labels

Go to <http://www.chargepoint.com/labels/>.

Safety and compliance

This document provides instructions to install the ChargePoint® Charging Station and should not be used for any other product. Before installing the ChargePoint® Charging Station, you should review this manual carefully and consult with a licensed contractor, licensed electrician and trained installation expert to ensure compliance with local building practices, climate conditions, safety standards, and all applicable codes and ordinances.

The ChargePoint® Charging Station should be installed only by a licensed contractor and a licensed electrician and in accordance with all local and national codes and standards. The ChargePoint® Charging Station should be inspected by a qualified installer prior to the initial use. Under no circumstances will compliance with the information in this manual relieve the user of his/her responsibility to comply with all applicable codes or safety standards. This document describes the most commonly-used installation and mounting scenarios. If situations arise in which it is not possible to perform an installation following the procedures provided in this document, contact ChargePoint, Inc. ChargePoint, Inc. is not responsible for any damages that may occur resulting from custom installations that are not described in this document.

No accuracy guarantee

Reasonable effort was made to ensure that the specifications and other information in this manual are accurate and complete at the time of its publication. However, the specifications and other information in this manual are subject to change at any time without prior notice.

Warranty information and disclaimer

Your use of, or modification to, the ChargePoint® Charging Station in a manner in which the ChargePoint® Charging Station is not intended to be used or modified will void the limited warranty. Other than any such limited warranty, the ChargePoint products are provided "AS IS," and ChargePoint, Inc. and its distributors expressly disclaim all implied warranties, including any warranty of design, merchantability, fitness for a particular purposes and non-infringement, to the maximum extent permitted by law.

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Introduction

1

This document provides step-by-step instructions on how to install a CT4000 ChargePoint® Charging Station.

Summary of Shipping Boxes

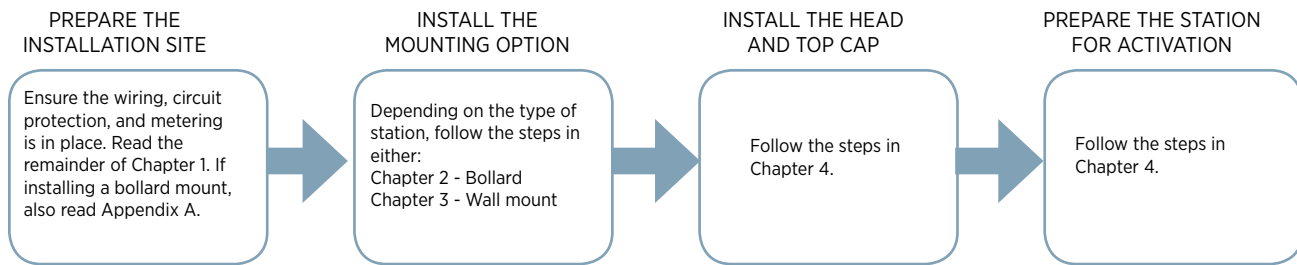
| Assembly name... | Label on box says.... | Overview of box contents... | Shipping Weight | For Installation Instructions, see... |
|--|---|---|--|---|
| Top Cap  IMPORTANT: Open this box first—it contains this Installation Guide | CT40XX-CAP* |  | 5 lbs (2.1 kg) | Chapter 4 |
| Body | CT40X1-BD or CT40X3-BD | Bollard Mount (CT40X1-BD):  Wall Mount (CT40X3-BD):  | Bollard: 50 lbs (22.7 kg) Wall: 15 lbs (6.8 kg) | Chapter 2 - Bollard Chapter 3 - Wall Mount |
| Cord Management Retractor | CT4000-CMK |  | CMK: 40 lbs (18.1 kg) CMK8: 50 lbs (22.7 kg) | Chapter 2 - Bollard Chapter 3 - Wall Mount |
| Head | CT40X0-HD* or CT40X0-HD-GW* For gateway stations the box also includes a Network Enablement Kit, CT4000-NEK1 (US) or CT4000-NEK2 (Canada) |  | Dual Port: 31 lbs (14 kg) Single Port: 25 lbs (11.3 kg) | Chapter 4 |
| OPTIONAL: Power Management Kit | CT4000-PMGMT Allows both ports on a dual port station to share a single 40A circuit (Power Share). Also allows a CT4000 to be set up to operate at a lower current (Power Select). |  | 5 oz (.14 kg) | Appendix B |

**The last two digits of the four-digit model number depends on the station's features. The third digit (CT40X0) is "1" if the station has a single charging port, or "2" if the station has two charging ports. The last digit (CT401X) is either a 1 (bollard mount) or 3 (wall mount).*

NOTE: A more detailed list of the contents in each shipping box is provided in the associated chapter with the step-by-step installation instructions.

Installation Sequence

Regardless of the specific type of CT4000 charging station you are installing, and the options included, the high level installation sequence is the same:



Before Installing

You must complete an online training class to become a ChargePoint Certified Installer, and to get a login for ChargePoint. If you do not complete this training, you will be unable to complete the installation process.

- Ensure that the appropriate wiring, circuit protection, and metering is in place at the installation location by reviewing the specifications, wiring diagrams, and grounding requirements in the remainder of this chapter.
- Ensure that adequate CDMA (Verizon, Sprint) or GSM (AT&T, Rogers) cellular coverage is available at the installation location. To ensure adequate signal strength in underground garages or other enclosed parking structures, cellular repeaters may be required.
- For bollard mount charging stations, prepare the installation site by following the instructions in Appendix A. The mounting template for the bollard is stapled into the center fold of this document and a PDF version is available at www.chargepoint.com/support-installation-guides.php. Ensure the PDF version is accurate by printing it at 100% scale on 11" x 17" paper and then verifying at least one dimension.
- Review the CT4000 Data Sheet (available at www.chargepoint.com/support-product-data-sheets.php).
- Review the contents of this document to familiarize yourself with the contents of each shipping box and the required installation steps.

Specifications

| Electrical Input | SINGLE PORT | | | DUAL PORT | | |
|------------------------------|---|------------------------|--------------------------------|--------------------------------|-------------------------------------|-----------------------------------|
| AC Voltage | 208/240VAC | | | 208/240VAC | | |
| | Current | Input Power Connection | Required Service Panel Breaker | Current | Input Power Connection | Required Service Panel Breaker |
| Standard | 30A | One 40A branch circuit | 40A dual pole (non-GFCI type) | 30A x 2 | Two independent 40A branch circuits | 40A dual pole (non-GFCI type) x 2 |
| Standard Power Share | n/a | n/a | n/a | 32A | One 40A branch Circuit | 40A dual pole (non-GFCI type) |
| Power Select 24A | 24A | One 30A Branch circuit | 30A dual pole (non-GFCI type) | 24A x 2 | Two independent 30A branch circuits | 30A dual pole (non-GFCI type) x 2 |
| Power Select 24A Power Share | n/a | n/a | n/a | 24A | One 30A branch circuit | 30A dual pole (non-GFCI type) |
| Power Select 16A | 16A | One 20A Branch circuit | 20A dual pole (non-GFCI type) | 16A x 2 | Two independent 20A branch circuits | 20A dual pole (non-GFCI type) x 2 |
| Power Select 16A Power Share | n/a | n/a | n/a | 16A | One 20A branch circuit | 20A dual pole (non-GFCI type) |
| Service Panel GFCI | Do not provide external GFCI as it may conflict with internal GFCI (CCID) | | | | | |
| Wiring - Standard | 3-wire (L1, L2, Earth) | | | 5-wire (L1, L1, L2, L2, Earth) | | |
| Wiring - Power Share | n/a | | | 3-wire (L1, L2, Earth) | | |
| Station Power | 8W typical (standby), 15W maximum (operation) | | | | | |

Electrical Output

| | | |
|------------------------------|--------------------|--|
| Standard | 7.2kW (240VAC@30A) | 7.2kW (240VAC@30A) x 2 |
| Standard Power Share | n/a | 7.2kW (240VAC@30A) x 1 OR 3.8kW (240VAC@16A) x 2 |
| Power Select 24A | 5.8kW (240VAC@24A) | 5.8kW (240VAC@24A) x 2 |
| Power Select 24A Power Share | n/a | 5.8kW (240VAC@ 24A) x 1 OR 2.9kW (240VAC@12A) x 2 |
| Power Select 16A | 3.8kW (240VAC@16A) | 3.8kW (240VAC@16A) x 2 |
| Power Select 16A Power Share | n/a | 3.8kW (240VAC@16A) x 1 OR 1.9kW (240VAC@8A) x 2 |

Functional Interfaces

| | | |
|----------------------------------|--|----------------------|
| Connector(s) Type | SAE J1772™ | SAE J1772™ x 2 |
| Charging Cable Length | 18' (5.5 meters) | 18' (5.5 meters) x 2 |
| Overhead Cable Management System | Yes | |
| LCD Display | 5.7" full color, 640x480, 30fps full motion video, active matrix, UV protected | |
| Card Reader | ISO 15693, 14443, NFC | |
| Locking Holster | Yes | Yes x 2 |

Safety and Connectivity Features

| | |
|------------------------------|---|
| Ground Fault Detection | 20mA CCID with auto retry |
| Open Safety Ground Detection | Continuously monitors presence of safety (green wire) ground connection |
| Plug-Out Detection | Power terminated per SAE J1772™ specifications |
| Power Measurement Accuracy | +/- 2% from 2% to full scale (30A) |
| Power Report/Store Interval | 15 minute, aligned to hour |
| Local Area Network | 2.4 GHz Wi-Fi (802.11 b/g/n) |
| Wide Area Network | 3G GSM, 3G CDMA |

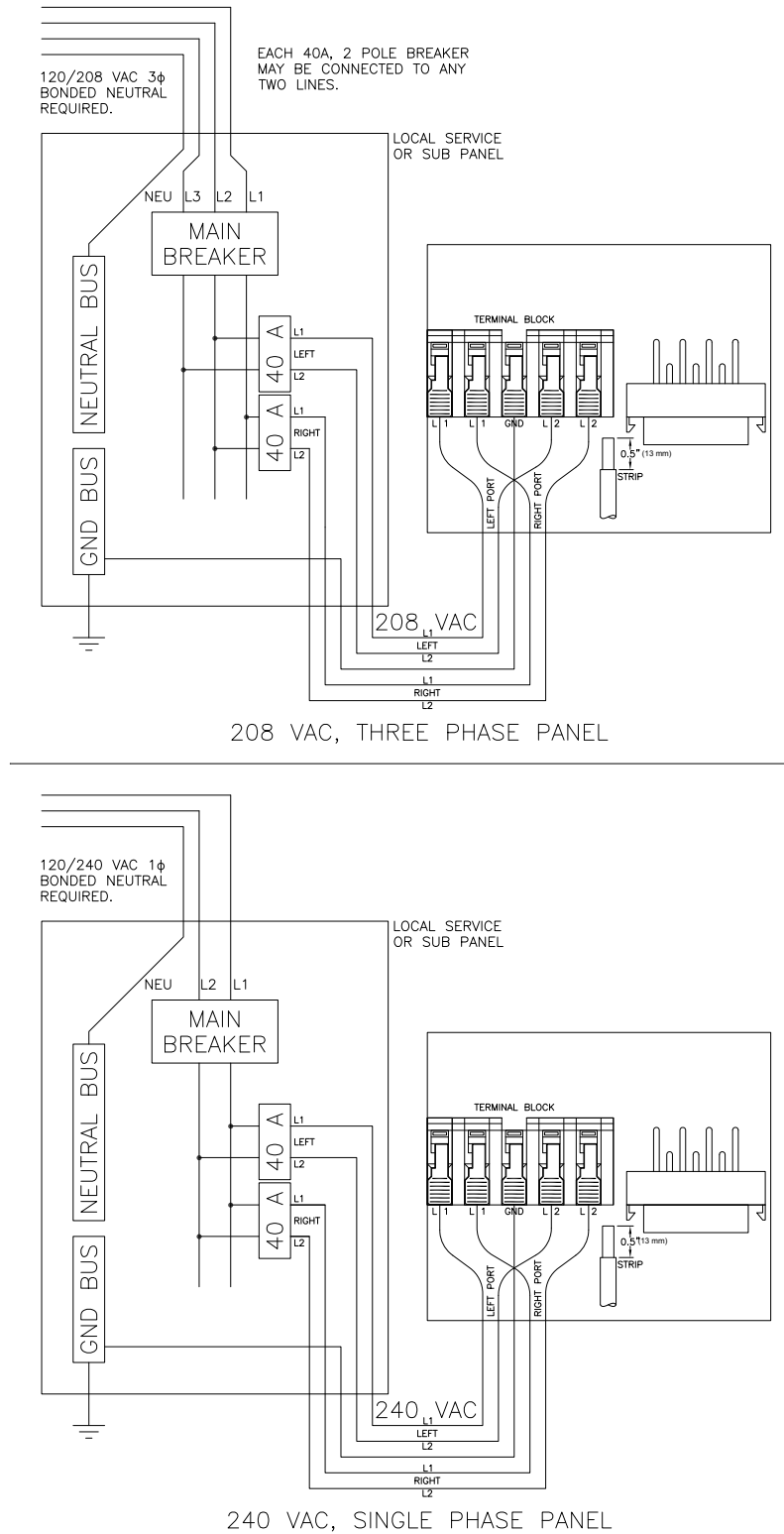
Safety and Operational Ratings

| | |
|---|---|
| Enclosure Rating | Type 3R per UL 50E |
| Safety Compliance | UL listed for USA and cUL certified for Canada; complies with UL 2594, UL 2231-1, UL 2231-2, and NEC Article 625 |
| Surge Protection | 6kV @ 3000A. In geographic areas subject to frequent thunder storms, supplemental surge protection at the service panel is recommended. |
| EMC Compliance | FCC Part 15 Class A |
| Operating Temperature | -22°F to 122°F (-30°C to +50°C) |
| Storage Temperature | -40°F to 122°F (-40°C to +50°C) |
| Operating Humidity | up to 85% @ +50°C (122°F) non-condensing |
| Non-Operating Humidity | up to 95% @ +50°C (122°F) non-condensing |
| Terminal Block Temperature Rating | 221°F (105°C) |
| Maximum Stations per 802.11 Radio Group | 10. Each station must be located within 150 feet "line of sight" of a gateway station. |

Dual Circuit Wiring Diagram

The following illustration describes the wiring for installing a CT4000 on a dual circuit. Wiring for a single circuit installation is described on the next page. Grounding requirements are described on page 1-6.

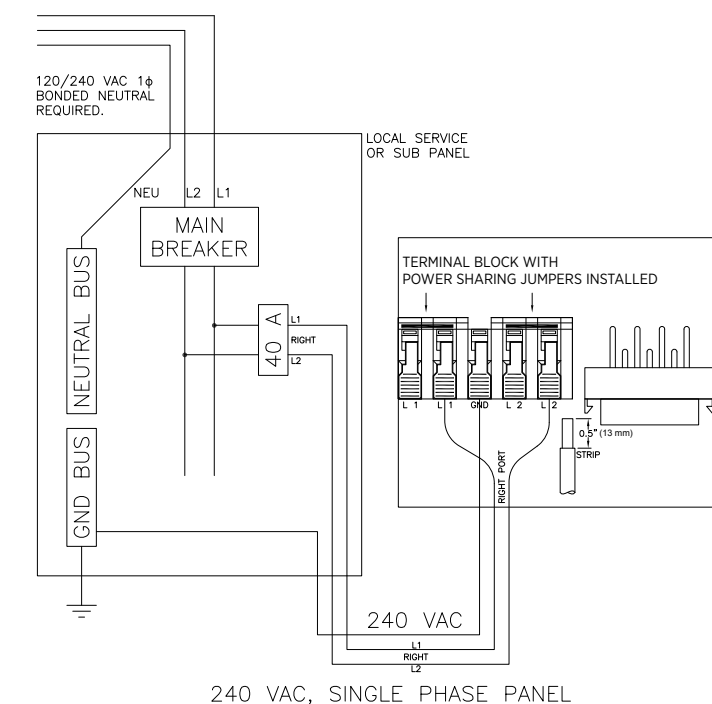
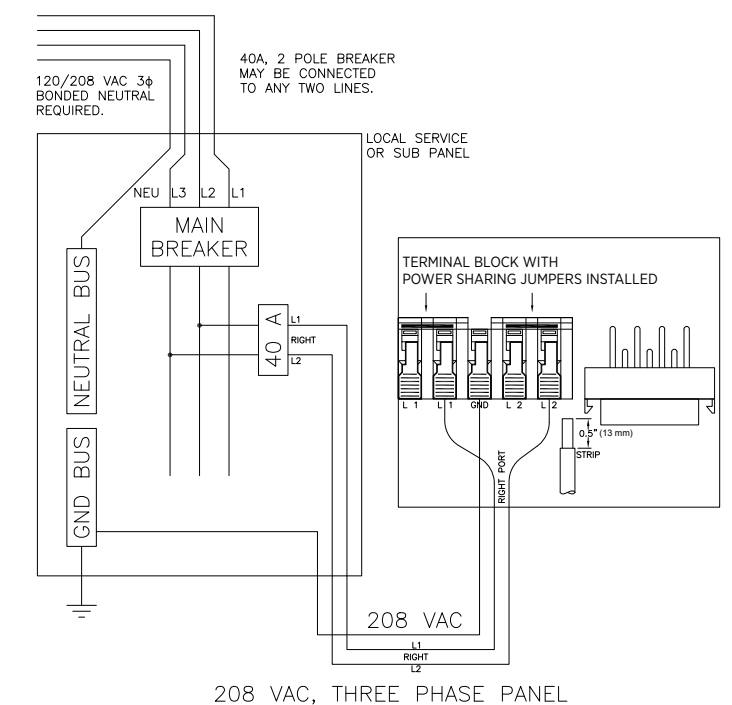
NOTE: Requires two dedicated circuits, each with its own two pole 40 A breaker. See Appendix B for lower power operation options.



Single Port or Shared Power Wiring Diagram

The following illustration describes the wiring for installing a dual port CT4000 on a shared single circuit. For this installation, you will need the power sharing kit to allow both ports to share a two pole 40A circuit breaker. Wiring connections are provided in Appendix B. Grounding requirements are described on page 1-6. See Appendix B for lower power operation options.

Wiring for a dual circuit installation, see the previous page.



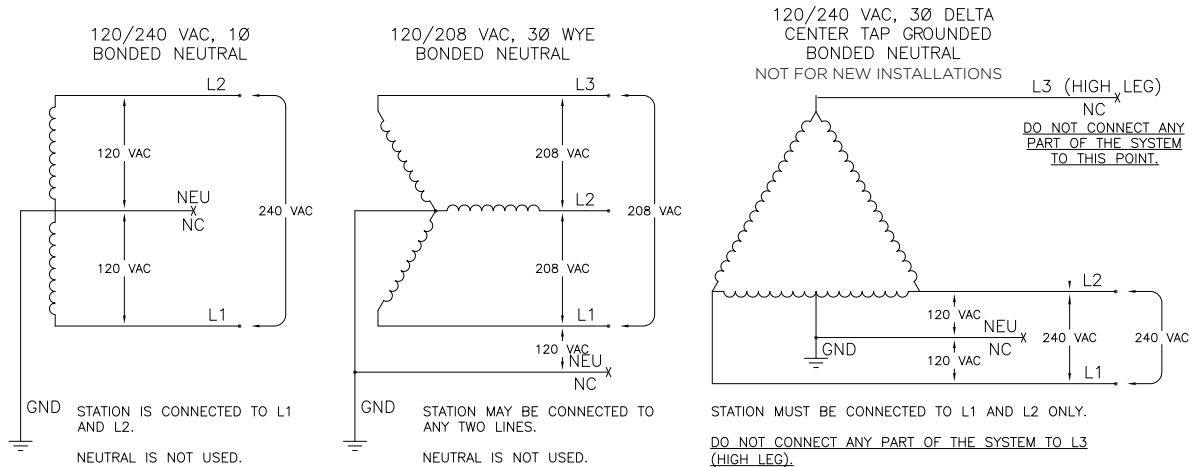
Grounding Requirements

The voltage of either line, relative to ground, must not fall below 80 volts or a Floating Line Connection error occurs (see page 5-3). Because the voltage of either line relative to ground must not be allowed to fluctuate, use only center-grounded systems. Neutral is not used to power the station but must be properly connected to ground, at the panel or transformer, to provide the necessary voltage reference relative to ground.

Connect to these systems

In a wye system, connect the station to ANY two lines, as shown below.

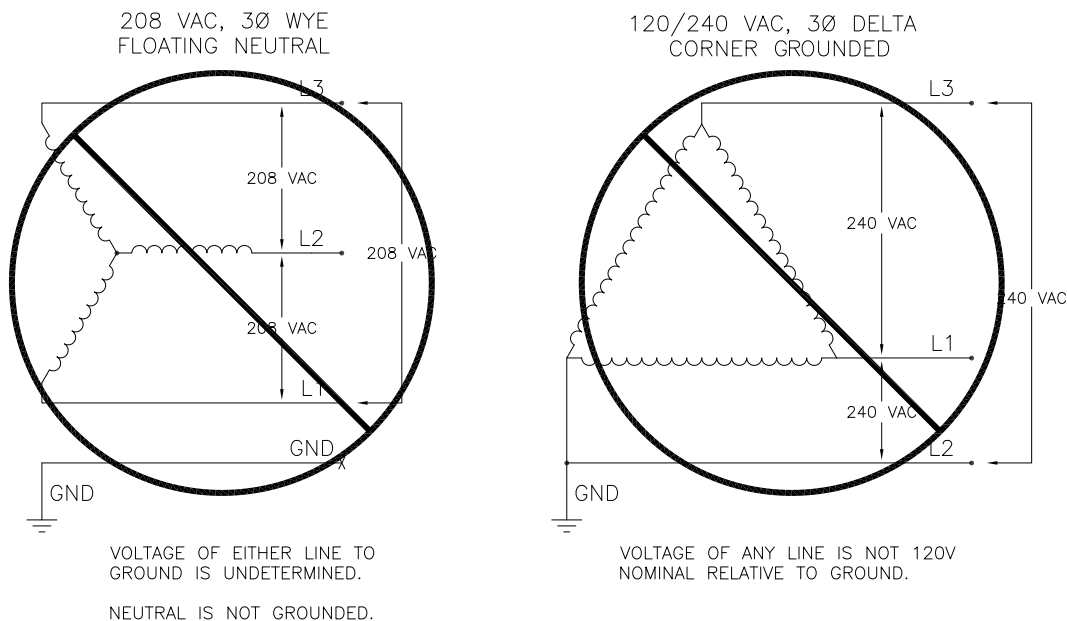
In a delta system, connect the station to a center-tapped secondary only, where the center tap is bonded and the station is connected to L1 and L3. This allows voltages to remain constant regardless of other loads that may be using the lines.

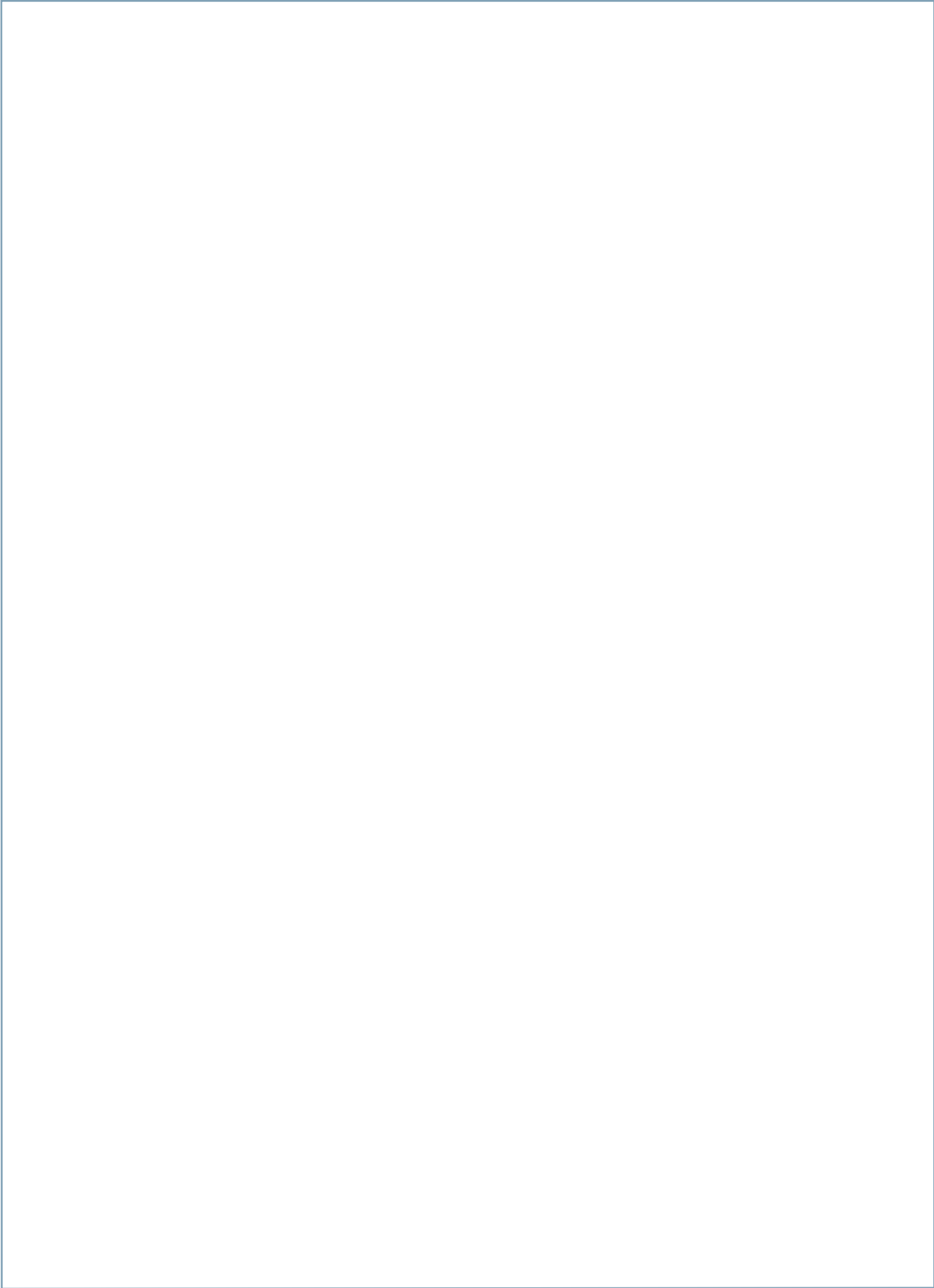


Do not connect to these systems

Do not connect ChargePoint stations to the following types of power sources:

- 120/208 VAC 3 phase wye, ungrounded
- 120/240 VAC 3 phase delta, corner-grounded
- Any system where the center point of the AC power source is not grounded





Installing a Bollard Mount

2

Before You Start

Before installing a bollard mount, prepare the installation site as described in Appendix A. After preparing the installation site, you need the following:

- Ratchet and 3/8" (10 mm) socket*
- 1/2" drive torque wrench and 15/16" (24 mm) 6-point deep socket, for 5/8 (11 /16 mm) nut**
- Adjustable wrench
- Bubble level
- #2 Phillips screwdriver
- Wire stripper
- Voltage tester

**For use with assembled SAE hardware.*

***For use with CT4000 Bollard to Concrete Mount Kit (35-001013-01).*

Overview of Steps

Installing the bollard mount involves a few simple steps, summarized below and detailed in the remainder of this chapter:

1. Check Boxes for Correct Contents (page 2-2)
2. Prepare Pole/Base Plate for Mounting (page 2-3)
3. Mount Pole/Base Plate (page 2-4)
4. Install Main Body (page 2-5)
5. Prepare Retractor for Mounting (page 2-6)
6. Install Retractor (page 2-7)
7. Connect Wiring (page 2-8)
8. Check Voltages (page 2-9)

When you have completed these steps, you will be ready to install the head and top assemblies as described in Chapter 4.

Step 1: Check Boxes for Correct Contents

The bollard mount ships in two boxes as described below.

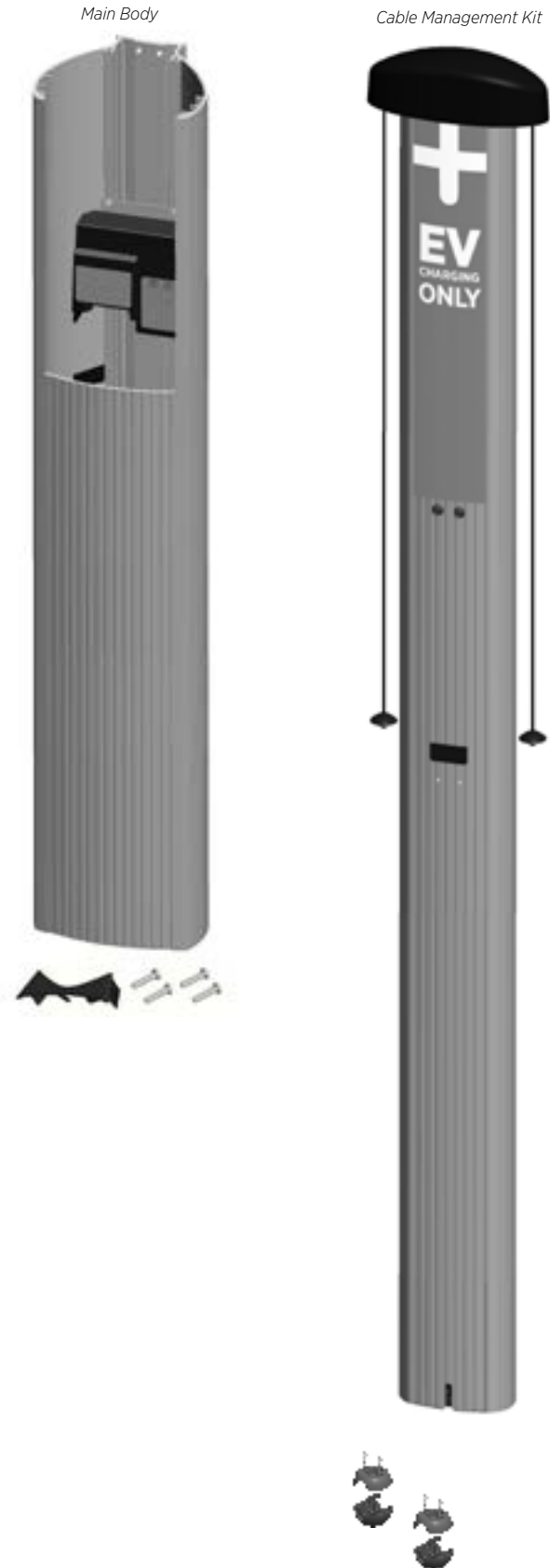
Main Body

- Main body, pre-assembled with mounting pole/base plate, rubber bumper, and brackets (1)
- Adapter plastic cap (1)
- ¼"-20 x 1 ¼" screws (4)

Cable Management Kit

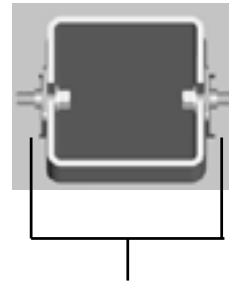
- Retractor assembly with pre-installed "EV CHARGING ONLY" sign (1)
- Cable clamps (2 sets)**

***The type of cable clamps included will vary (see page 4-11).*



Step 2: Prepare Pole/Base Plate for Mounting

- Use a 3/8" socket wrench to loosen (but not remove) the two screws holding the pole inside the main body.
- Remove the pole/base plate assembly from the main body by pulling it out from the bottom of the main body. Keep the rubber spacer in place over the pole.
- Remove and discard the cardboard shipping spacer.



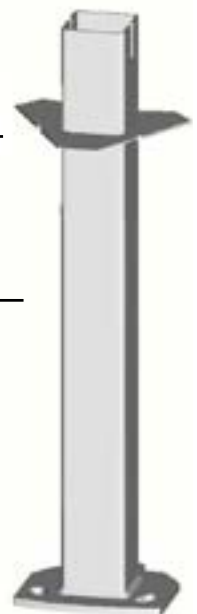
Loosen the 2 screws
(don't remove)



Rubber
spacer

Pole

Base
plate

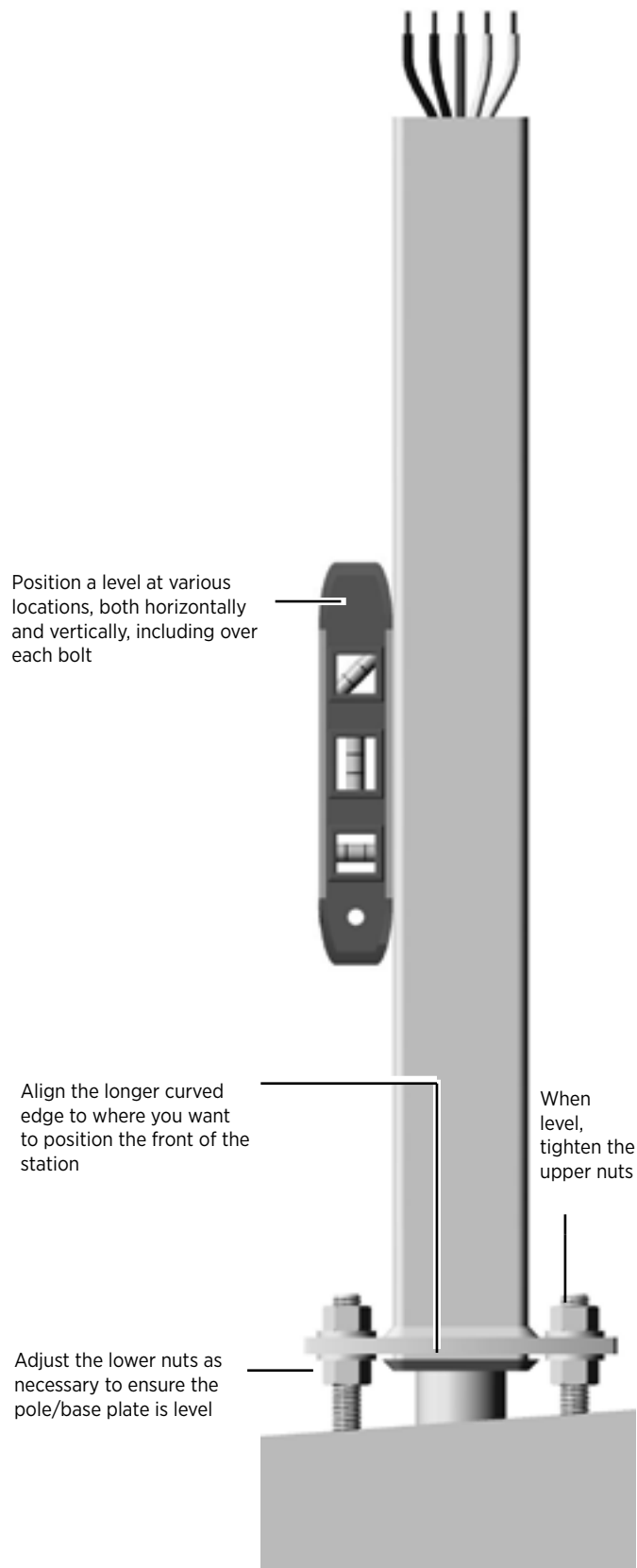


Step 3: Mount Pole/Base Plate

Prepare the installation site as described in Appendix A, then mount the pole/base plate assembly as follows:

- Pull wires through conduit.
- Place the pole/base plate assembly over the conduit, ensuring the long curved edge of the base plate is located where you want the front of the charging station located.
- Adjust the lower nuts as necessary to ensure the mounting pole is level.
- When level, tighten the nuts on top of the base plate to at least 1416 in-lbs (160 Nm).

⚠ IMPORTANT: Ensure the pole/base plate is level by adjusting the nuts underneath the base plate. Verify accuracy after each adjustment by positioning the level at various locations on the pole, above each bolt.



Step 4: Install Main Body

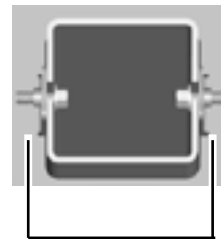
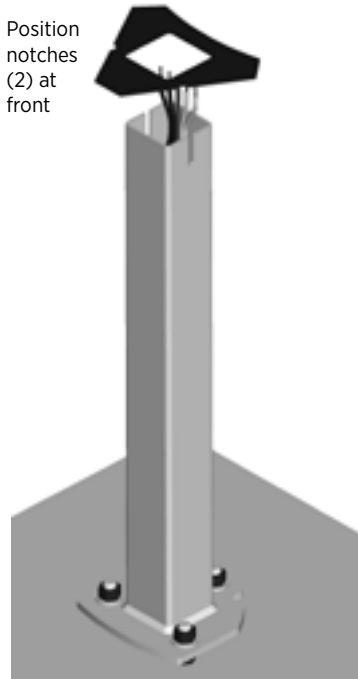
To install the main body:

- Align the notches on the rubber spacer with the front mounting nuts, then slide it all the way down the pole until it is flush with the base plate. This prevents any rocking motion between the main body and the base plate.
- Slide the body over the mounting pole.
- Re-tighten the screws you loosened in Step 2 to approximately 80 in-lbs (9 Nm) using a 3/8" (10 mm) socket wrench.

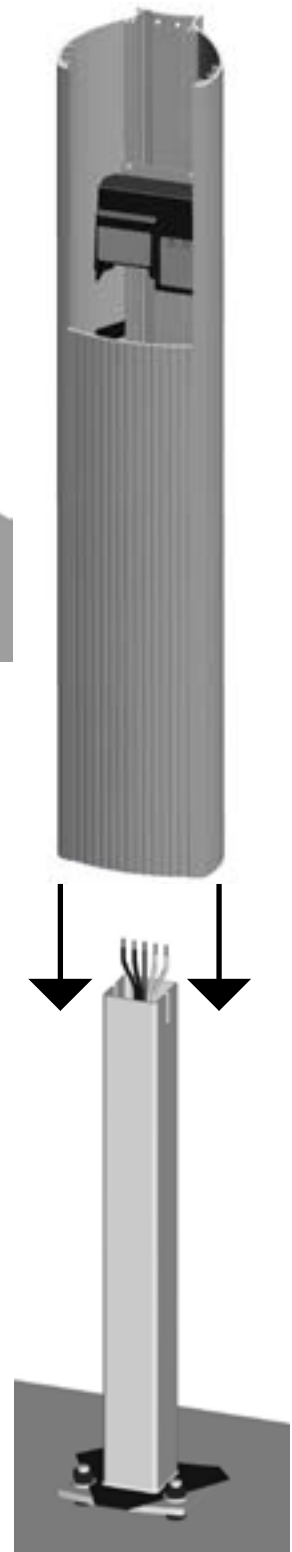
! IMPORTANT: Ensure the body is firmly aligned to the bottom surface and that no movement (rocking) can take place, even when significant pressure is applied.

! IMPORTANT: The bollard is designed to shed moisture between its bottom surface and the concrete pad. It is very important to maintain this moisture egress feature so that there is no unwanted moisture build up. Therefore, do not seal the bollard to the concrete pad with caulking, silicone or other sealing material.

Position
notches
(2) at
front



Re-tighten the 2 screws



Step 5: Prepare Retractor for Mounting

To prepare the retractor for mounting:

- Position the retractor packaging so that the bottom of the retractor is near the base of the bollard.

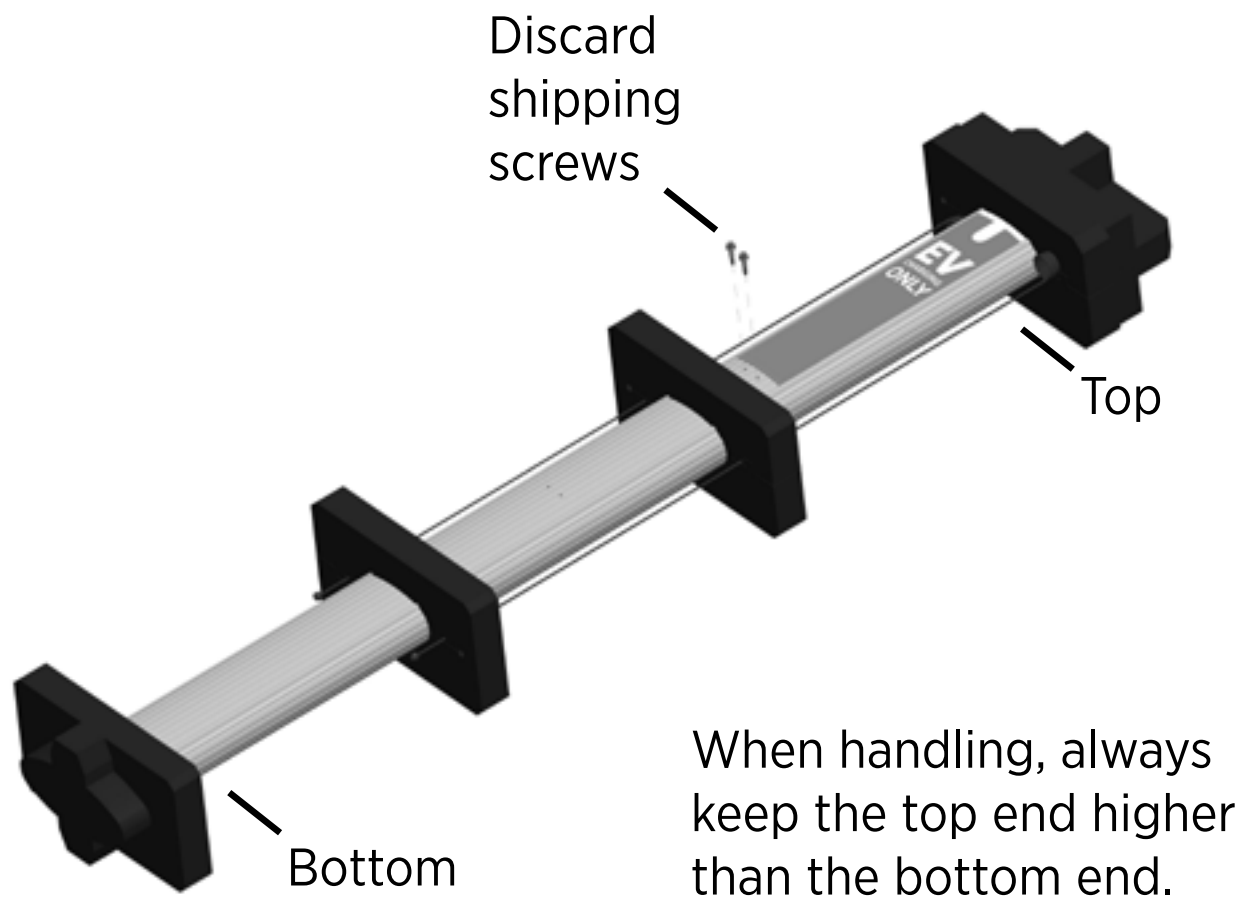


IMPORTANT: Do not unwrap the ropes.

- **Remove and discard the two 3/8" drive shipping screws from the front face of the retractor.**

NOTE: When you remove the shipping screws, the retractor's counterweights are free to move in either direction. Therefore, **do not tilt or carry the retractor assembly with the top end lower than the bottom end.**

- Remove the foam packaging from the retractor.
- OPTIONAL: If necessary, remove or replace the EV PARKING sign. See Appendix C.



Step 6: Install Retractor

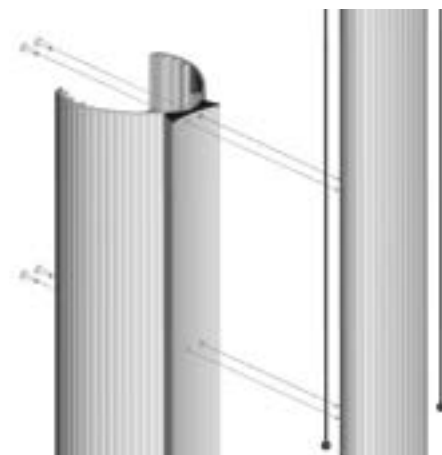
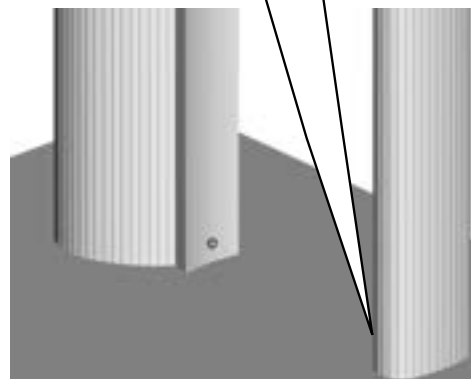
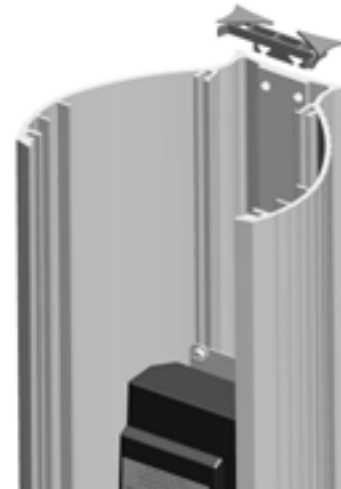
To install the retractor:

- Insert the black cap into the space at the top of the main body, between the main body and the retractor, as shown.
- With a Phillips screwdriver and at least one of the four ¼" - 20 x 1 ¼" screws in hand, position the retractor against the back of the main body. Place the slot at the bottom of the retractor over the knob at the bottom of the main body, as shown.



IMPORTANT: Hold the retractor in place until you've secured it with at least one screw.

- From inside the main body, insert the four ¼" - 20 x 1 ¼" screws through the main body and the retractor, and tighten to 60 in-lbs (7 Nm).



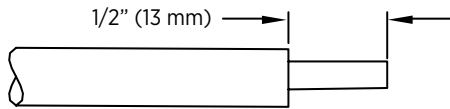
Step 7: Connect Wiring



IMPORTANT: To power a dual-port station using a single 40A circuit, use the Power Share option provided in the Power Management Kit. Instead of following the instructions below, see Appendix B to properly install Power Share jumpers and relabel the station. After the station powers up, as described in Chapter 4, the on-screen Installation Wizard steps you through the process of configuring the station.

If you are not installing a power sharing kit, connect the wiring as follows:

- Strip wires ½" (13 mm).



- Push the black tab on the terminal block to release the terminal block cover, then slide the cover up until it locks into the raised position:



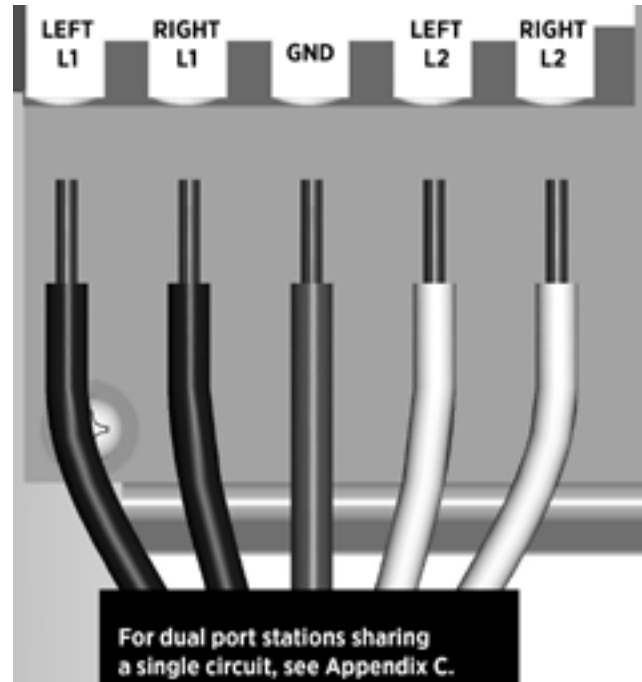
- Lift the corresponding white lever on the terminal block, insert the ground wire into the center connector, then push the lever down until it clicks into its fully closed position.
- Lift the corresponding white levers, insert the 240 VAC L1 and L2 wires, then push the levers down until they click into their fully closed position.



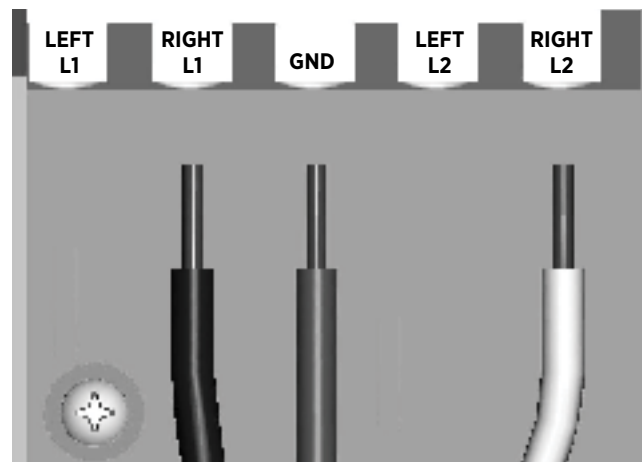
WARNINGS:

- Use copper conductors only.
- Do NOT provide GFCI protection at panel. The CT4000 has built-in GFCI protection.
- In areas with frequent thunder storms, add surge protection at the service panel for all circuits.
- Use new circuit breakers only. Used breakers can damage equipment and introduce the potential for an electrical fire.**
- Ensure all power and ground connections, especially those at the breaker and buss bar, are clean and tight. Remove all oxide from all conductors and terminals before connecting wiring.**

For dual port stations:



For single port stations, use the connectors indicated for "RIGHT" side only.



Step 8: Check Voltages

- Turn power ON.
- Using a solenoid type voltage tester, check that the voltages at the charging station's terminal block are as follows:

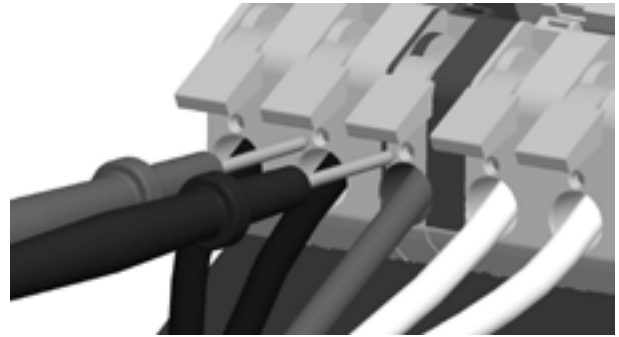
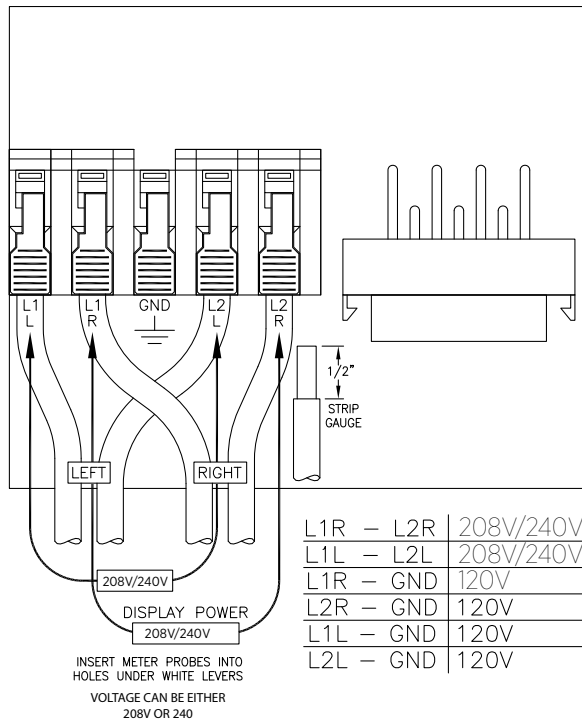
| Measure Between | Volts |
|-----------------|---------|
| L1 and L2 | 208/240 |
| GND and L1 | 120 |
| GND and L2 | 120 |

If the voltages are not as expected, ensure that the wiring has been properly connected as describing on the previous page. For detailed wiring diagrams and grounding requirements, see pages 1-4 to 1-6.

Before continuing, resolve any wiring issues and ensure that voltages are as expected.

- Turn power OFF.

CT4000 Input Voltage Measurements



OPTIONAL: Apply custom signs to the front of the bollard and/or the back of the retractor. See Appendix C.

You have now finished installing the bollard mount and are ready to install the head assembly and top cap. See Chapter 4.



Installing a Wall Mount

3

Before You Start

You need the following:

- Drill and Tap for appropriate wall attachment hardware
- Attachment hardware, such as 3/8" x 3" (M10 x 75 mm) lag bolts (coach screws) if mounting to a wood wall
- Ratchet and 9/16" (15 mm) deep socket
- #2 Phillips screwdriver
- Tape measure
- Bubble level
- Marker
- Wire stripper
- Voltage tester

Overview of Steps

Installing the wall mount involves a few simple steps, summarized below and detailed in the remainder of this chapter:

1. Check Boxes for Correct Contents (page 3-2)
2. Drill Holes in Wall (page 3-3)
3. Mount Rear Brackets to Wall (page 3-4)
4. Prepare Retractor for Mounting (page 3-5)
5. Mount Retractor (page 3-6)
6. Install Conduit (page 3-7)
7. Install Main Body (page 3-8)
8. Connect Wiring (page 3-9)
9. Check Voltages (page 3-10)

When you have completed these steps, you will be ready to install the head and top cap as described in Chapter 4.

Step 1: Check Boxes for Correct Contents

The wall mount ships in two boxes as described below.

Main Body and Mounting Kit

- Main body, pre-assembled (1)
 - Mounting brackets with pre-installed 1/4-20 screws and 3/8-16x3/4 flange bolts (2 sets)
- NOTE: The packing box for the brackets serves as a template for drilling mounting holes. **Do not discard packaging until you've completed Step 2.**

- Slot cover (2)*

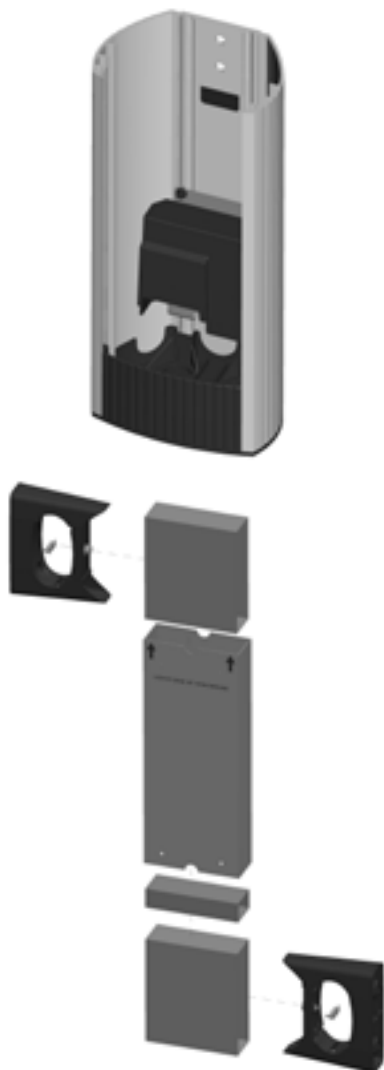
*One extra slot cover is included.

Cable Management Kit

- Retractor assembly with pre-installed "EV CHARGING ONLY" sign (1)
- Cable clamps (2 sets)**

**The type of cable clamps included will vary (see page 4-11).

Main Body and Mounting Kit



Cable Management Kit

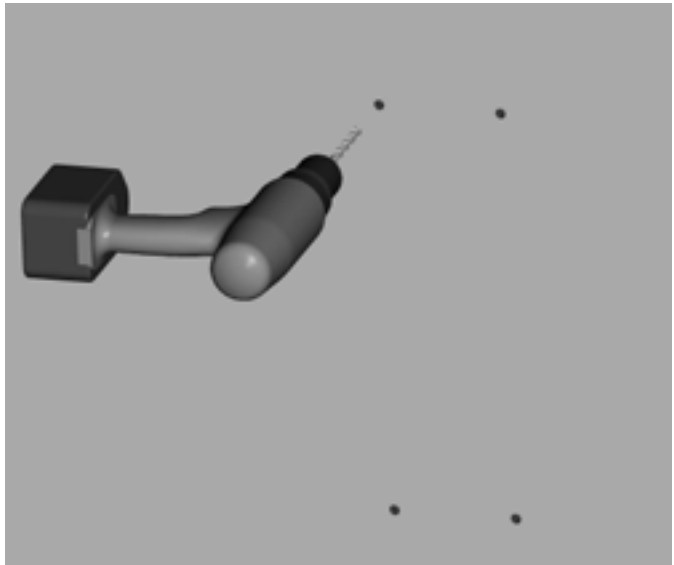


Step 2: Drill Holes in Wall

- The packing box for the brackets is used as a template for drilling the wall holes. Tear the packing box along the perforation to allow it to lay flat.
- Place the template against the wall. As described on the package insert, align the top where indicated, 49" above the floor or ground. Ensure that the template is level and the side of the packaging insert is plumb. Mark the four mounting holes.
- Drill four holes in the wall at the marked locations.

NOTE:

- If mounting to a hollow wall, bridge at least two studs using a 1-5/8" channel strut. For wood studs, use 3/8" lag bolts that are long enough to penetrate at least 2 1/2" into the stud. Then mount the supplied brackets to the channel strut using 3/8-16 x 1" long bolts, 3/8 ID x 13/16" OD washers, and 3/8-16 channel strut nuts.
- If mounting to a masonry wall, use 3/8" expanding masonry fasteners.
- If mounting to a wood wall, use 3/8" x 3" lag bolts.



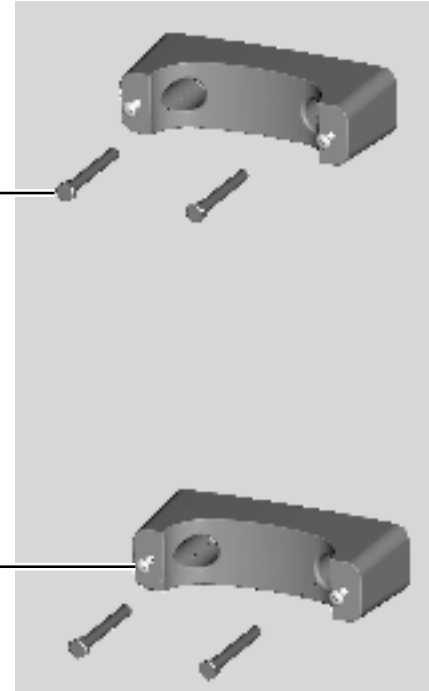
Step 3: Mount Rear Brackets to Wall

Separate the pre-assembled front and rear brackets by loosening (but not removing) the pre-installed screws. Leave about 3/4" (19 mm) protruding.

Mount each rear bracket to the wall using screws appropriate for the type of wall material.

Mount brackets using screws appropriate for type of wall material (not supplied)


Do not remove screws—leave about 3/4" (19 mm) protruding



Step 4: Prepare Retractor for Mounting

To prepare the retractor for mounting:

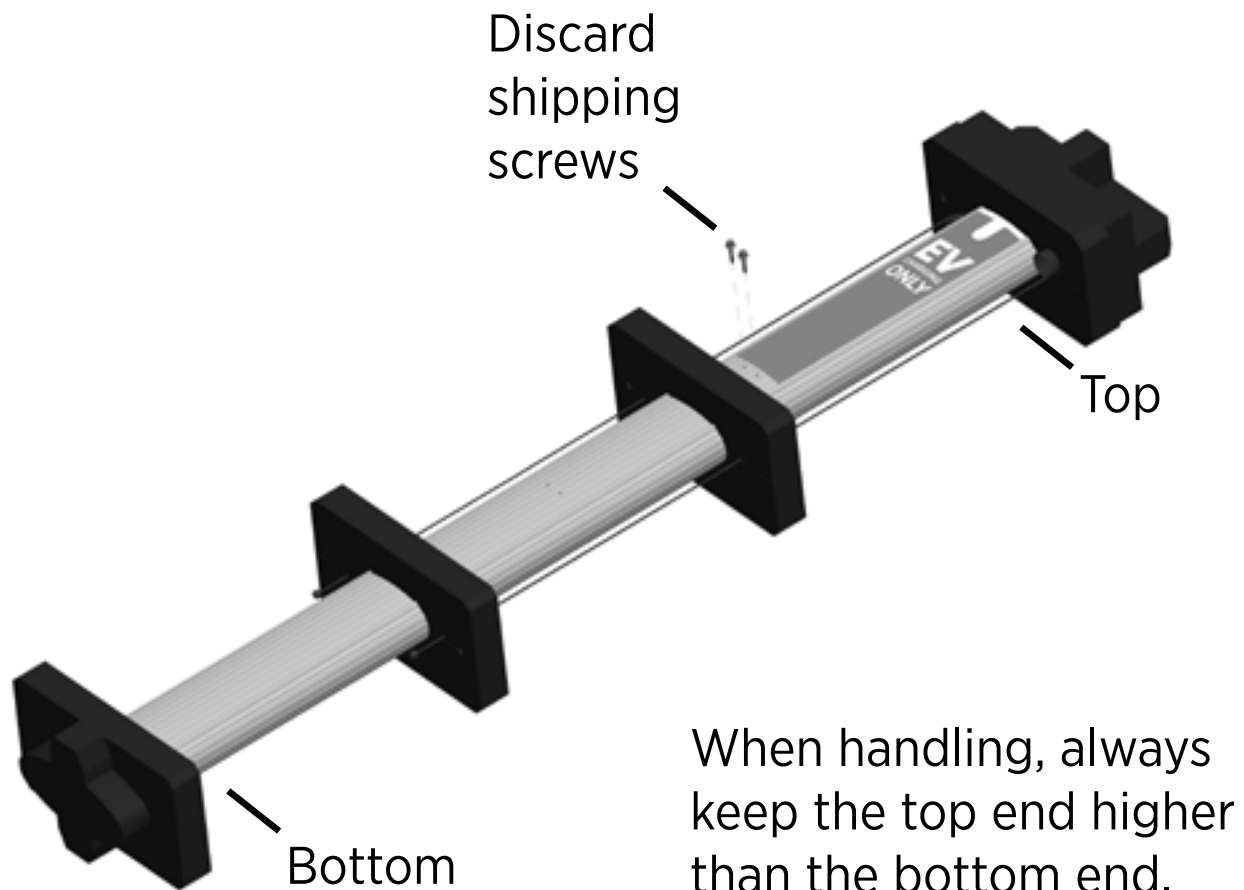
- Position the retractor packaging so that the bottom of the retractor is near the bottom of the wall.

 **IMPORTANT:** Do not unwrap the ropes.

- Remove and discard the two 3/8" (10 mm) drive shipping screws from the front face of the retractor.**

NOTE: When you remove the shipping screws, the retractor's counterweights are free to move in either direction. Therefore, **do not tilt or carry the retractor assembly with the top end lower than the bottom end.**

- Remove the foam packaging from the retractor.
- OPTIONAL: If necessary, remove or replace the EV PARKING sign. See Appendix C.



Step 5: Mount Retractor

To mount the retractor assembly:

- Place the two front brackets where you can easily reach them.
- Tilt the retractor up against the rear brackets, with the front of the retractor facing towards you, as shown (mount holes visible).

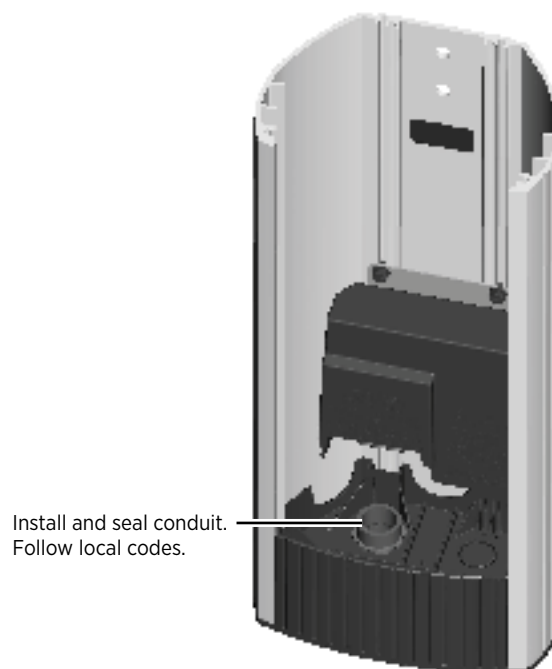
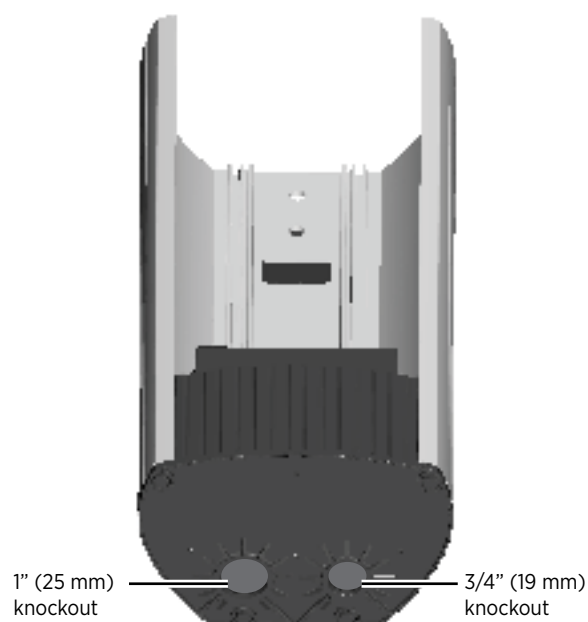
NOTE: The bottom of the retractor should rest on the ground.

- Place the top front bracket over the two corresponding screws protruding from the top rear bracket. You'll need to steady the retractor with one hand, while using the other hand to position the bracket.
- Repeat for the bottom bracket.
- Tighten all four screws to 60 in-lbs (7 Nm) using the Phillips screwdriver.
- Insert the slot cover, bottom first, into the slot at the bottom of the retractor.



Step 6: Install Conduit

As shown, the base of the main body has two conduit knockouts: 1" and 3/4" (25 mm and 19 mm). Using a flat screwdriver, remove the knockout for the appropriate conduit size.

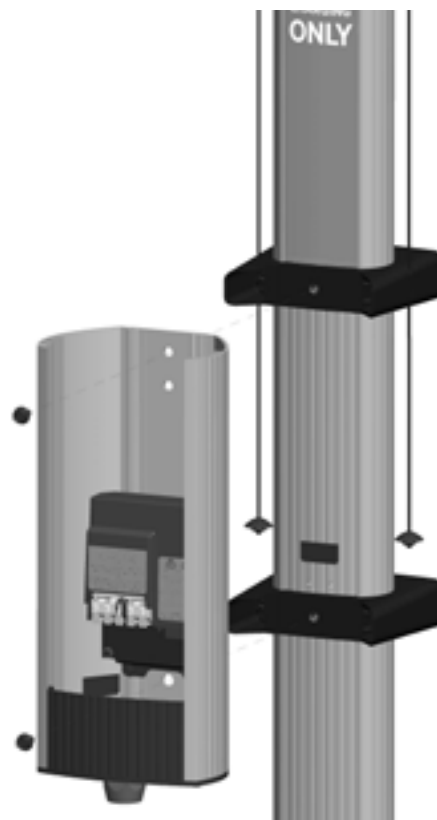


Step 7: Install Main Body

- Expose the pre-drilled hole located below the terminal block. To do so, push the tab on the terminal block to release the cover plate, then slide the cover plate upwards until it stays in position:



- Remove the pre-installed flange bolts from the front brackets.
- Position the main body so that the top hole aligns with the top retractor bracket.
- Re-insert a 3/8 - 16 x 3/4" flange bolt into the top hole and finger tighten.
- Re-insert the other flange bolt into the lower mounting hole.
- Tighten both flange bolts to 50 in-lbs (117 Nm).
- Connect the conduit and run wiring through the conduit and into the main body of the station.

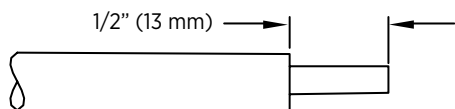


Step 8: Connect Wiring

! IMPORTANT: To power a dual-port station using a single 40A circuit, use the Power Share option provided in the Power Management Kit. Instead of following the instructions below, see Appendix B to properly install Power Share jumpers and relabel the station. After the station powers up, as described in Chapter 4, the on-screen Installation Wizard steps you through the process of configuring the station.

If you are not installing a power sharing kit, connect the wiring as follows:

- Strip wires ½" (13 mm).



- Push the black tab on the terminal block to release the terminal block cover, then slide the cover up until it locks into the raised position:

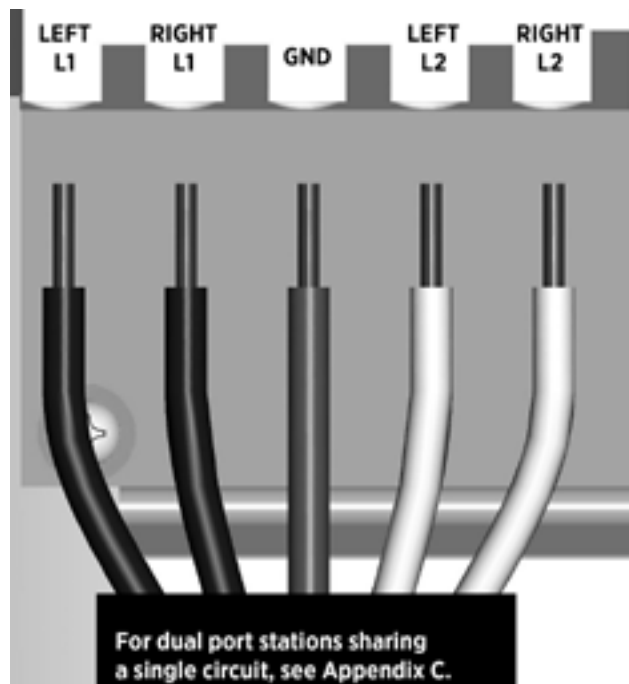


- Lift the corresponding white lever on the terminal block, insert the ground wire into the center connector, then push the lever down until it clicks into its fully closed position.
- Lift the corresponding white levers, insert the 240 VAC L1 and L2 wires, then push the levers down until they click into their fully closed position.

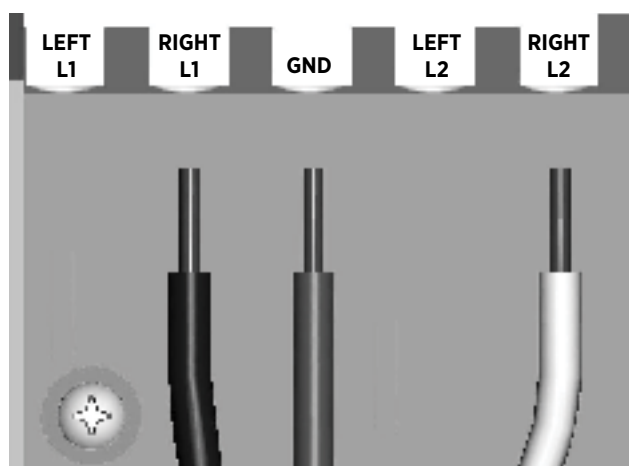
! WARNINGS:

- Use copper conductors only.
- Do NOT provide GFCI protection at panel. The CT4000 has built-in GFCI protection.
- In areas with frequent thunder storms, add surge protection at the service panel for all circuits.
- Use new circuit breakers only. Used breakers can damage equipment and introduce the potential for an electrical fire.**
- Ensure all power and ground connections, especially those at the breaker and buss bar, are clean and tight. Remove all oxide from all conductors and terminals before connecting wiring.**

For dual port stations:



For single port stations, use the connectors indicated for "RIGHT" side only.



Step 9: Check Voltages

- Turn power ON.
- Using a solenoid type voltage tester, check that the voltages at the charging station's terminal block are as follows:

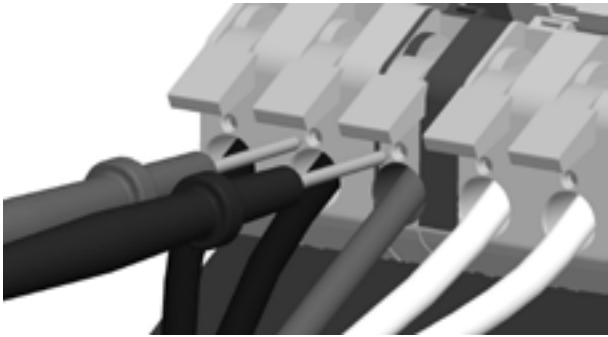
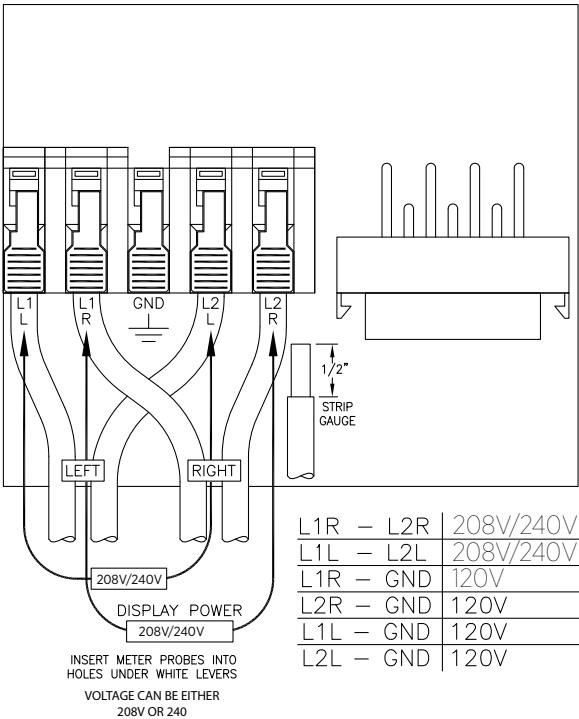
| Measure Between | Volts |
|-----------------|---------|
| L1 and L2 | 208/240 |
| GND and L1 | 120 |
| GND and L2 | 120 |

If the voltages are not as expected, ensure that the wiring has been properly connected as describing on the previous page. For detailed wiring diagrams and grounding requirements, see pages 1-4 to 1-6.

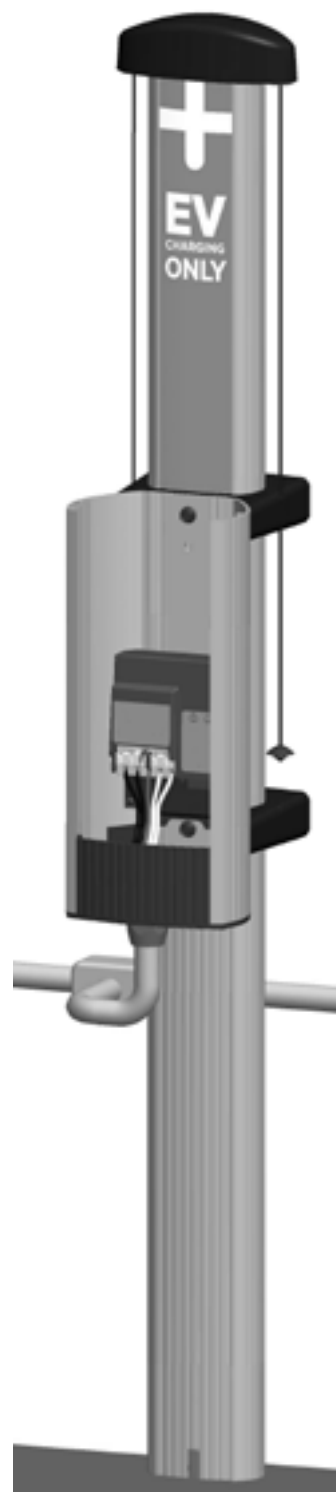
Before continuing, resolve any wiring issues and ensure that voltages are as expected.

- Turn power OFF.

CT4000 Input Voltage Measurements



You have now finished installing the wall mount and are ready to install the head assembly and top cap. See Chapter 4.



Installing the Head and Top Cap

4

Before You Start

Before installing the head and top cap, you must complete the installation of the main body and its cable management system as described in a previous chapter. You need the following:

- Smart phone with camera and internet connection
- ChargePoint login (provided during ChargePoint Installer Certification training)
- Wire stripper
- #2 Phillips screwdriver

Overview of Steps

Installing the head and top cap involves a few simple steps, summarized below and detailed in the remainder of this chapter:

1. Check Boxes for Correct Contents (page 4-2)
2. Prepare Head Assembly for Mounting (page 4-4)
3. Slide Head Assembly into Body (page 4-7)
4. Connect Head Assembly (page 4-8)
5. Use the Wizard to Complete the Installation (Page 4-9)
6. Secure Head Assembly (page 4-11)
7. Prepare the Station for Activation on ChargePoint (page 4-13)

When you have completed these steps, installation is complete.

Step 1: Check Boxes for Correct Contents

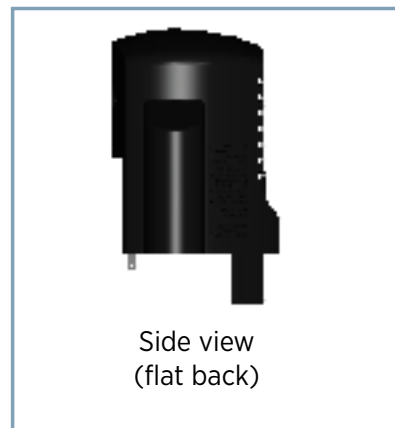
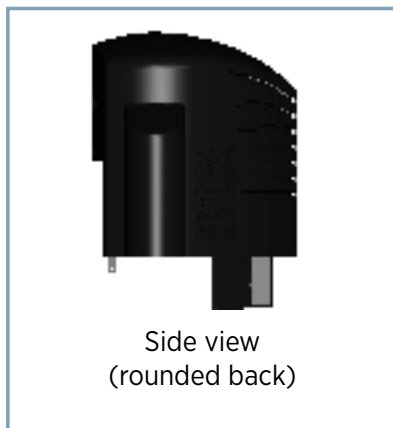
Top cap

The station's top cap ships in a box containing:

- Top cap (1)
- Phillips screws (2) - in some cases, the top cap does not require screws and instead has integrated snaps that allow you to snap it onto the head assembly (see page 4-5)
- CT4000 Installation Guide (this document)

Pay attention to the top cap's attachment type. Some top caps are attached using screws, whereas others have integrated snaps. Instructions are provided for each type.

If installing both bollard and wall mount stations, also pay attention to the top cap's shape. As illustrated below, the back of the top cap is rounded for bollard stations, and flat for wall mount stations.



Step 1 cont'd: Check Boxes for Correct Contents

Head assembly

The station's head assembly ships in a box containing:

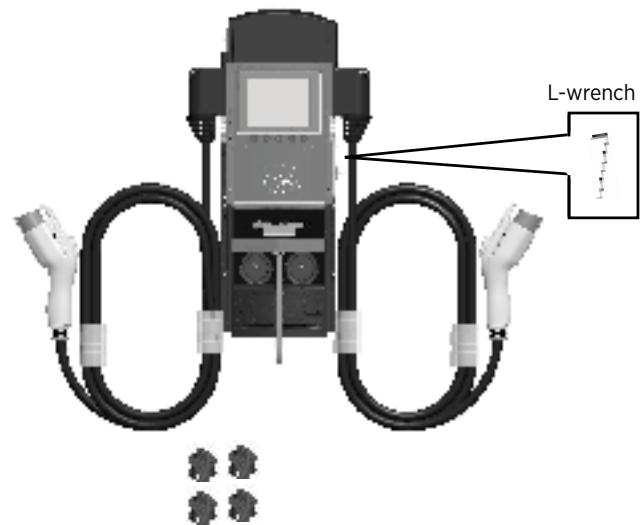
- Head assembly
- Rubber plugs (4) - two of these are spares.
- L-wrench (attached with a security tag on the side of the head assembly)
- Spare activation label (a duplicate label is attached to the head assembly)

! IMPORTANT: Keep the spare activation label for future reference. It contains critical information that is needed to document the radio groups when preparing the station for activation on ChargePoint (see page 4-15).

For gateway stations, a Network Enablement Kit is also included:

- SIM card
- Installation instructions

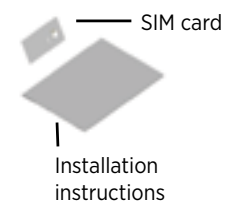
! IMPORTANT: Locate and retain the envelope containing the Network Enablement Kit, **located under the head assembly in the shipping box**. It contains critical components that allow the gateway station to communicate on the ChargePoint network (see installation instructions on page 4-4).



An activation label is attached to the head assembly. This duplicate label is provided to simplify the step of documenting the radio groups. It includes important information needed to activate the station on ChargePoint.

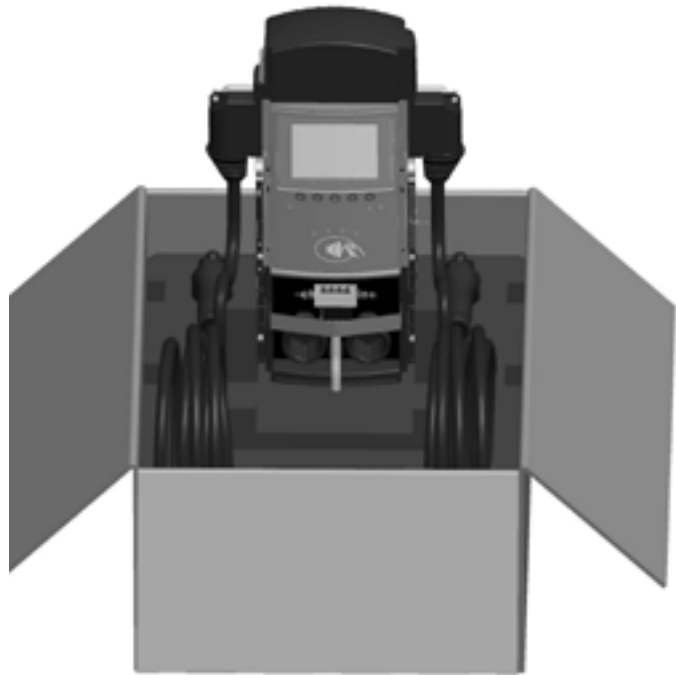
GATEWAY STATIONS ONLY:

The shipping box also includes an envelope containing the Network Enablement Kit.



Step 2: Prepare Head Assembly for Mounting

- To prepare the head assembly for mounting, open the box and stand the head upright on its foam packaging, as shown.



- If you are installing a gateway station, install the Network Enablement Kit:
 - a) Remove the SIM card from its carrier by pushing it firmly.
 - a) Lift the rubber flap located on the left hand side of the head assembly, as shown.
 - b) Insert the notched edge of the SIM card into the slot, with the notch facing upward. Slide it into the slot and push it FULLY into the slot until it “clicks” into place. Refer to the orientation instructions printed on the side of the head assembly.

TIP! To push the SIM card into the slot, use a corner of the SIM card’s carrier, as shown.



Remove the SIM card

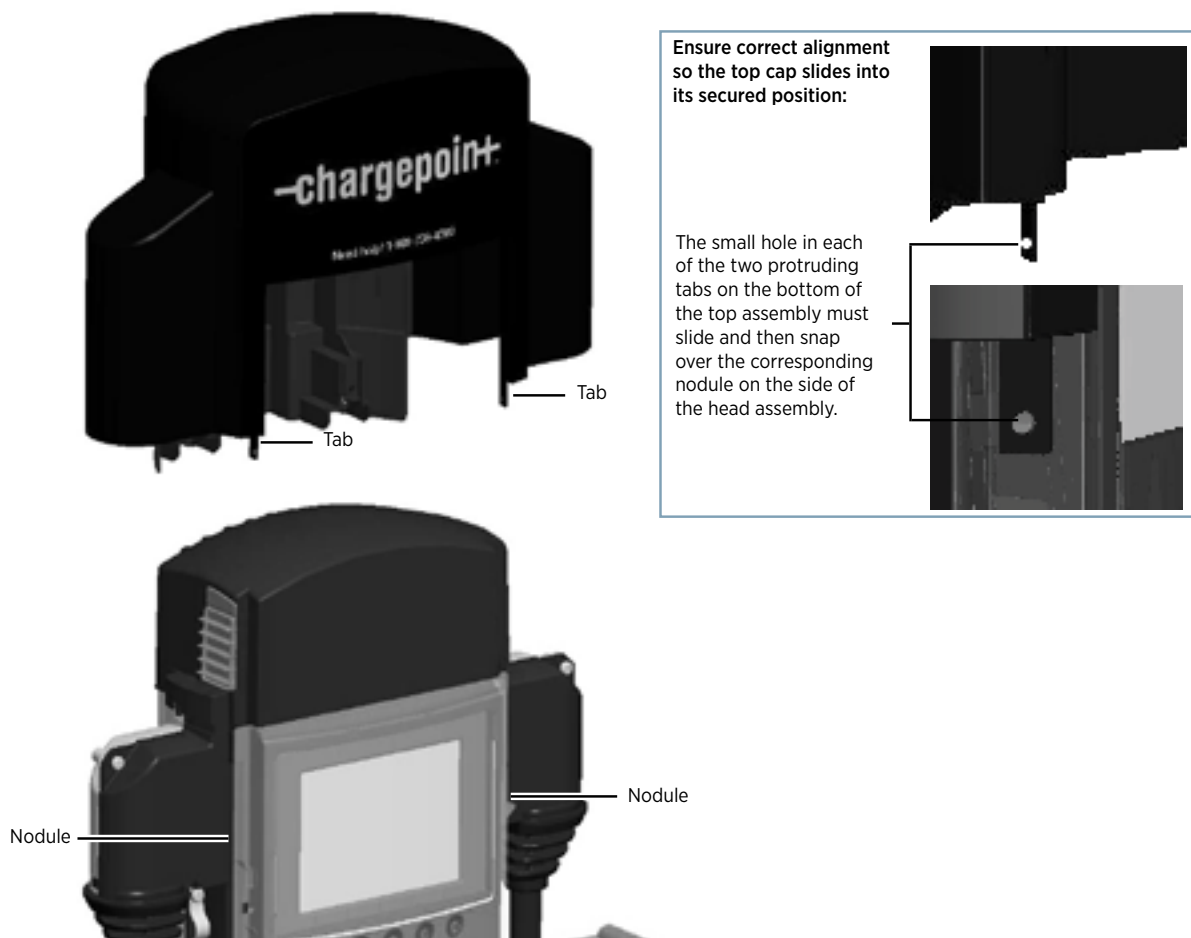


Step 2 cont'd: Prepare Head Assembly for Mounting

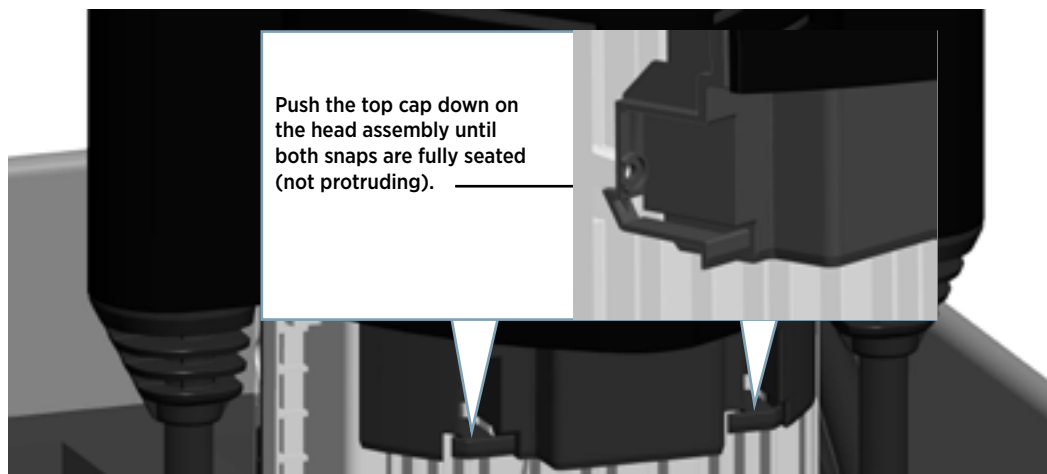
- Install the top cap. There are two types of top caps:
 - SNAP TYPE: The back of the top cap has levered snaps (follow instructions below)
 - SCREW TYPE: The back of the top cap has deep bosses for screws (follow instructions on the next page)

TO INSTALL A SNAP TYPE TOP CAP (to install a screw type top cap, see the next page)

- Place the top cap over the head assembly as shown, ensuring correct alignment.
- Push the top cap down onto the head assembly to secure it in place. Ensure that the front tabs are aligned over the nodules and the rear snaps are fully seated.

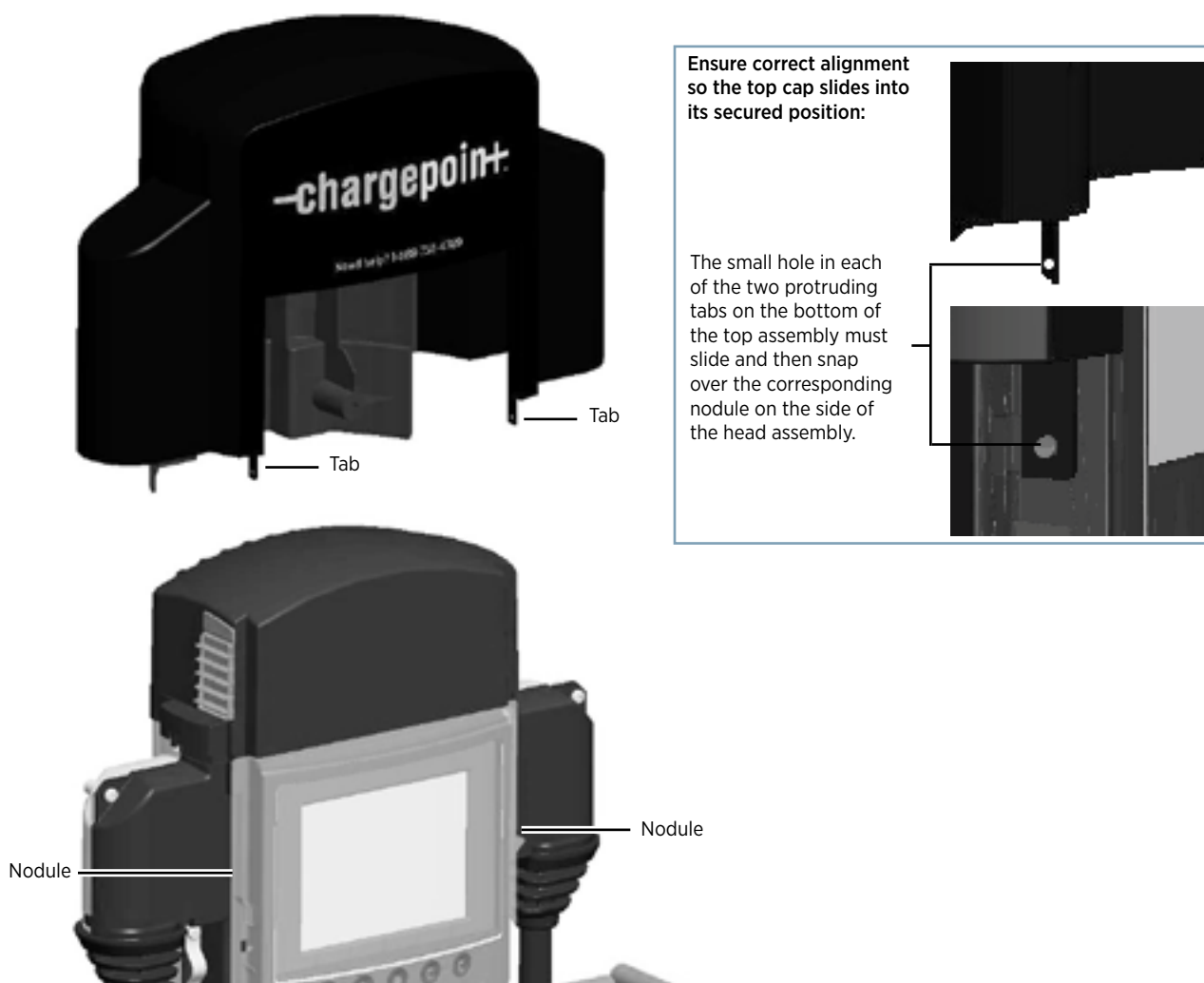


- Push the snaps located at the back of the top cap to secure the top cap to the head assembly. Ensure that both snaps are fully engaged.

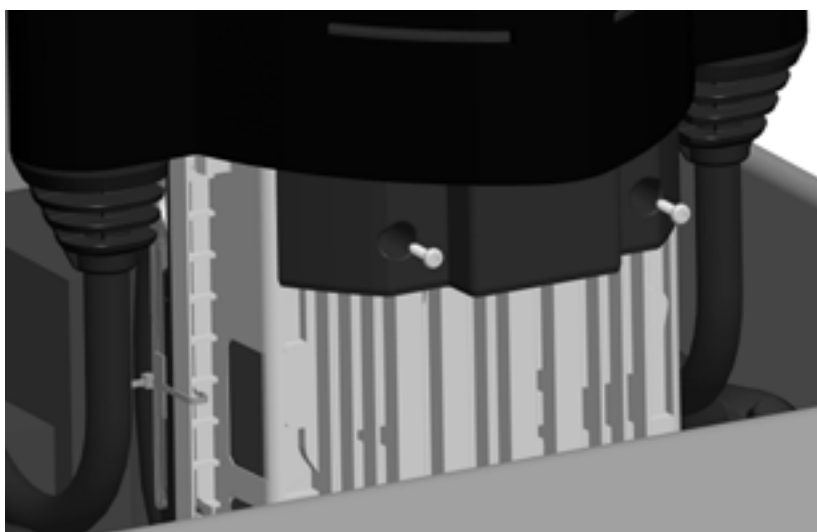


TO INSTALL A SCREW TYPE TOP CAP (to install a snap type top cap, see the previous page)

- a) Place the top cap over the head assembly as shown, ensuring correct alignment.




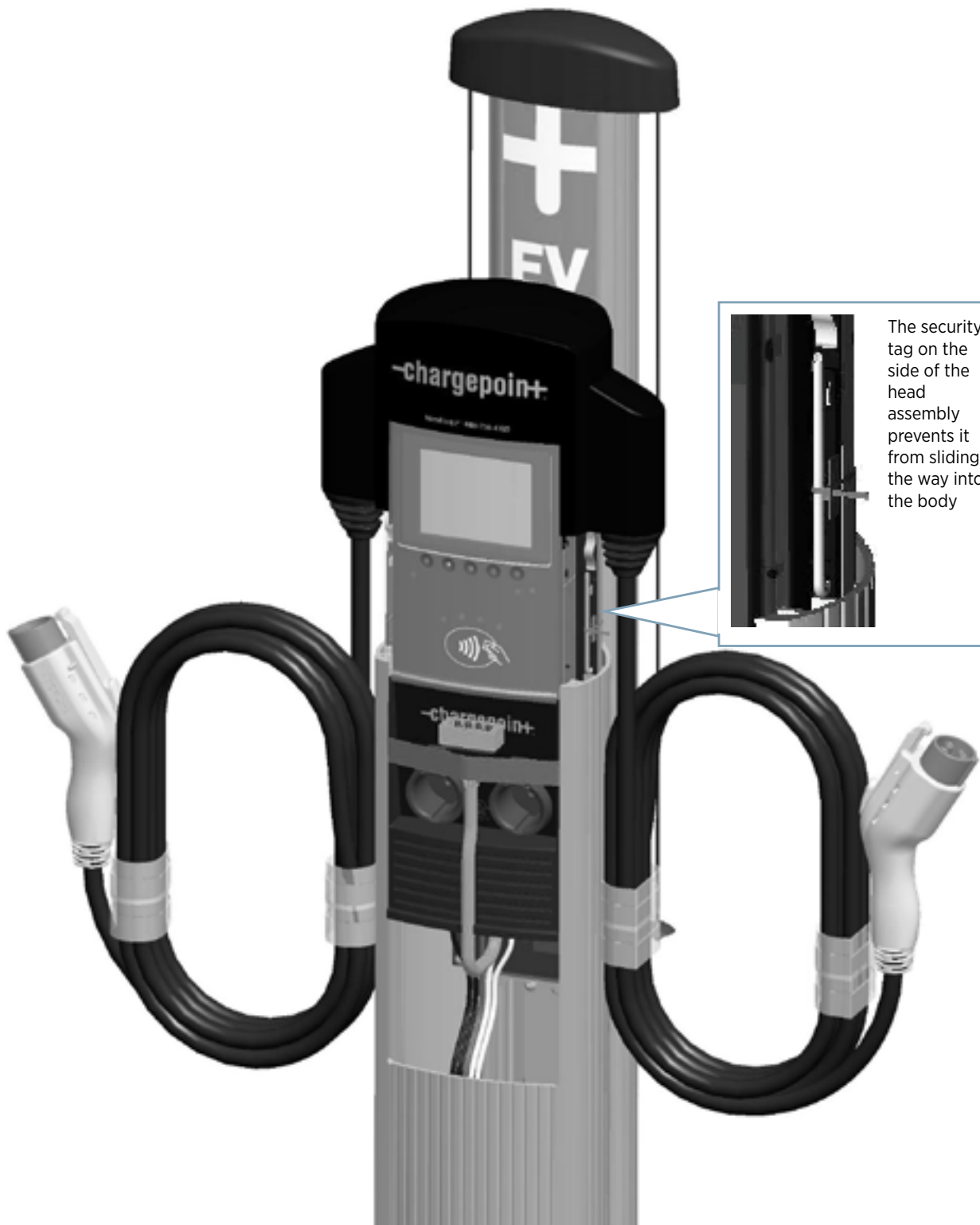
- b) Using a Phillips screwdriver, secure the top cap to the head assembly by inserting the two supplied screws into the back of the top cap and tightening to 20 in-lbs (2.3 Nm).



Step 3: Slide Head Assembly Into Body

Slide the head assembly into the main body until it is stopped by the head assembly's security tag.

 **IMPORTANT:** Do not insert the charging connectors into the holsters until after you've powered up the station. Doing so causes the holsters to permanently lock.



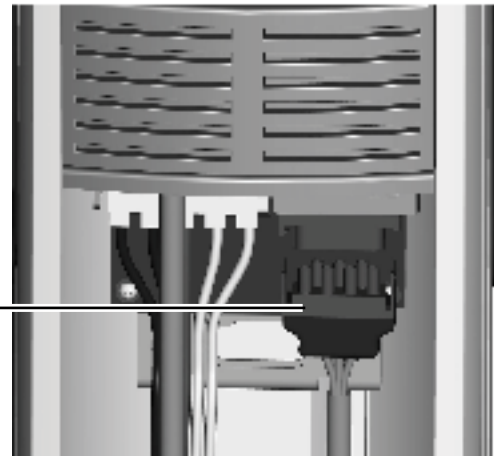
Step 4: Connect Head Assembly

⚠ IMPORTANT: If configuring a dual station to operate from only one circuit, or to operate at a current capacity lower than 30A per circuit, see Appendix B for information on Power Management.

Pull to remove the yellow strap from the blue connector.

Connect the blue connector to the blue receptacle by the terminal block, ensuring it “clicks” into place and is fully seated.

The blue connector “clicks” into place



Push the cover down over the terminal block.

Push the cover down over the terminal block



Step 5: Use the Wizard to Complete the Installation

Power up the station to run the onscreen Installation Wizard, which helps you verify operation of the station and perform some basic setup tasks.

NOTE: If the station does not power up, check that the head assembly's blue rectangular connector is properly seated onto the terminal block.

To complete the tasks in this Wizard, you must have completed ChargePoint Installer Certification training and received your ChargePoint installer login. You will also need a smart phone with a camera, internet connectivity, and one of the recommended QR Code scanning apps defined in the training.

If you have not completed the ChargePoint Installer Certification training, please STOP and contact ChargePoint to sign up for training now.

The CT4000 Installation Wizard includes these tasks:

- Set language
- Enable Power Sharing (see Appendix B)
- Configure Power Select (see Appendix B)
- Apply the appropriate rating label (see Appendix B)
- Check for faults
- Test locking holsters
- Install cable clamps (see Appendix D)
- Pinpoint the station on a map
- Test network connectivity

The following images are an example of steps you will follow using the wizard:



Step 3: Circuit Installation

Are the Power Sharing jumpers installed?

Jumpers (2)



Yes No Back

Step 3: Circuit Installation

What is the breaker rating in amps?

40A 30A 20A Back

Step 3: Circuit Installation

Apply the following Electrical Rating label to the terminal block cover.



Continue Back

Step 8: Pinpoint

What is Pinpointing?

Pinpointing lets ChargePoint know that you've installed a particular station and where that station is installed so Drivers can find it.

To Pinpoint a station:

1. Scan the following QR code using third-party QR code scanner app or go to <https://cp.chargepoint.com>
2. Log into your Installer account
3. Pinpoint station and write down Pin Code
4. Continue to next screen



Continue Back

Step 4: Station Faults

All of following faults must be addressed to continue. Please select a fault to see more info.

If you need further assistance, call ChargePoint Installer Support at 1-877-850-4562.

Error #202-Earth Fault

Down Up Select Back

Step 10: Completed Physical Installation

You have now finished physical installation of CT4000 charging station.

Continue

The CT4000 Installation Wizard also includes a procedure for replacing a broken head assembly, which includes these tasks:

- Set language
- Configure the station for Power Share/Power Select (see Appendix B)
- Check for faults
- Test locking holsters
- Install cable clamps
- Transfer configuration from old station to new head

When using the Installation Wizard to replace a station, it is ready to use when the process is complete. The station owner does not need to activate the new station.

NOTE - ELECTRIC RATING LABELS

If you are using either Power Sharing to share one circuit for two ports, or Power Select to limit the maximum output power of the station, the wizard instructs you to apply the appropriate Electrical Rating label. The wizard describes which Electrical Rating label you must attach to the station.

NOTE - POWER MANAGEMENT KIT

If you are using Power Sharing to allow both ports on a dual port station to share a single 40A circuit, the wizard instructs you to install the jumpers that are provided in the optional Power Management Kit (ordered separately). For more information on Power Sharing, see Appendix B.

NOTE - CABLE CLAMPS

The wizard describes how to install the cable clamps, which are included in the shipping box with the Cable Management Kit. For more information, see Appendix D.

STARTING A CHARGING SESSION

A ChargePoint card is attached to the front page of this Installation Guide. Use this card to authorize a charging session. Make sure that both plug holsters unlock and that the station displays instructions on how to plug into the vehicle.

NOTE: The ChargePoint card supplied on the front cover can authorize up to ten charging sessions.

If you have performed the above steps, and the station operates as described and no errors exist, continue with the installation. If any of the above conditions are not met, resolve the error before continuing by referring to Chapter 5, Troubleshooting.

Step 6: Secure Head Assembly

Remove the L-wrench by rotating it to the right until the security tag breaks. Lift the head assembly slightly and remove the L-wrench.



IMPORTANT: If applicable, ensure the snaps on the top cap are fully engaged before lowering the head assembly. If they are not fully engaged, the head assembly will not be properly seated. See page 4-5.

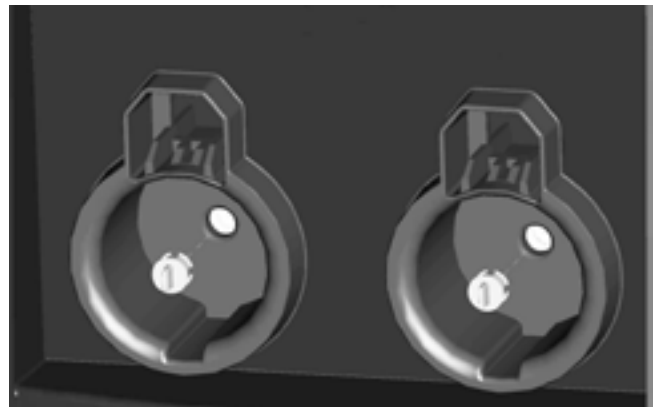
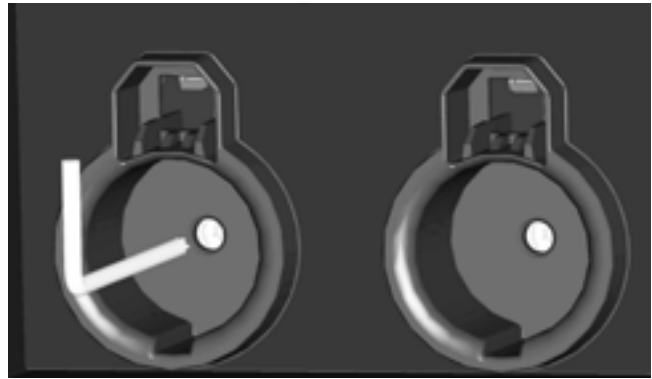
Lower the head assembly. Ensure the head assembly is fully seated and that no gap exists between the bottom of the head assembly and the main body. The head assembly fits tightly and may require extra downward force to ensure it is fully seated.

Using the L-wrench, tighten the two security set screws, located inside the holsters, to approximately 25 to 30 in-lbs (2.8 to 3.4 Nm).

Cover the screws using the two rubber plugs.

Insert the charging plugs into their corresponding holsters.

You have now finished the physical installation of the CT4000 charging station and are ready to prepare the station for activation on ChargePoint.



Step 7: Prepare the Station for Activation on ChargePoint

Before leaving the installation site, you must prepare the station for activation. To do so, you will need activation labels for all gateway and non-gateway stations in this radio group. An activation label is included in the shipping box with each head assembly (see page 4-2).

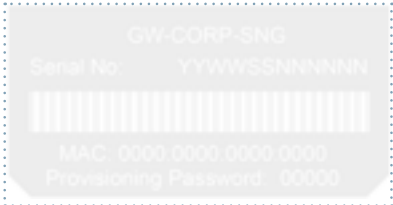
Preparing the station for activation on ChargePoint involves filling in the double-sided form on pages 4-15 and 4-16, detaching this sheet from this document, and providing it to the person responsible for activating the station on ChargePoint. After doing so, the installation of the CT4000 charging station is complete.

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Document the Radio Groups

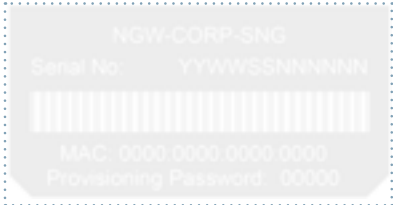
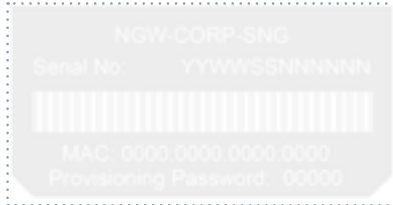
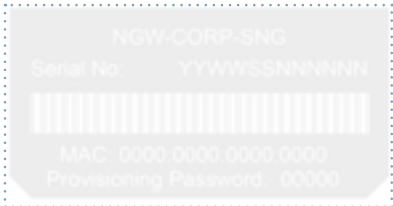

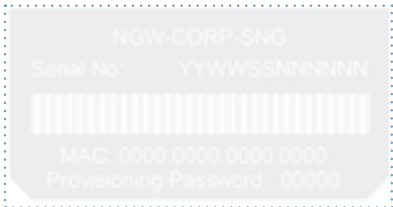
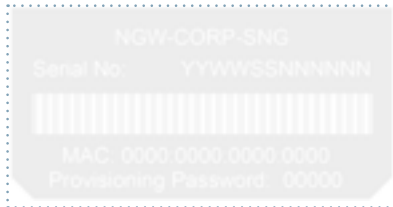
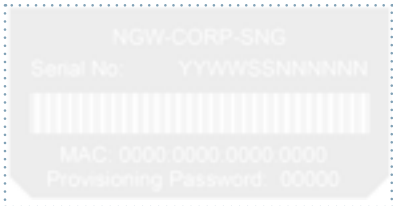
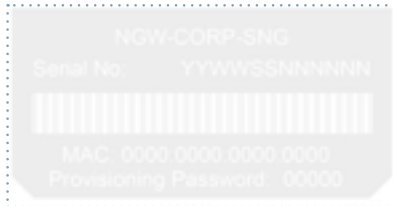
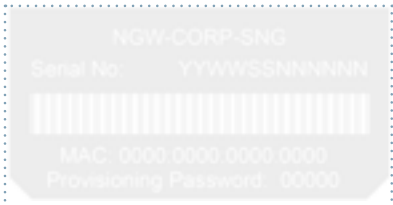
For each radio group, attach spare activation labels below to document how stations are organized. After completing the next step on the reverse side, tear out this page and give it to the person responsible for activating the station. If installing multiple radio groups, use one page for each radio group (this page is included in all CT4000 Installation Guides).

| | |
|---------------|--|
| Customer Name | |
| Site Address | |

| | |
|---------|---|
| Gateway |  |
|---------|---|

NOTE:
Gateways begin
with "GW-"
Non-gateways
begin with "NGW-"



| | | | |
|-------------|---|---|---|
| Non-gateway |  | Non-gateway |  |
| Non-gateway |  | Non-gateway |  |
| Non-gateway |  | Non-gateway |  |
| Non-gateway |  | Non-gateway |  |
| Non-gateway |  | <p>NOTE: A radio group consists of one gateway station and up to nine non-gateways.</p> | |

After completing both sides, cut or tear along dotted line and give it to the person responsible for activating the station.



Post-Installation Checklist

Before leaving the installation site, complete this checklist for each radio group. Then tear out this page and give it to the person responsible for activating the station. If installing multiple radio groups, use one page for each radio group (this page is included in all CT4000 Installation Guides).

- | | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Check each box below to confirm that the task has been completed for all stations within the radio group. |
| <input type="checkbox"/> | All mounting hardware is tightly secured and all stations are level and rock solid. |
| <input type="checkbox"/> | The two security screws inside the holster plugs on all head assemblies are tightened and the rubber plugs are in place. |
| <input type="checkbox"/> | Cable retractors: <ul style="list-style-type: none"> • Cable clamp halves are assembled and screwed together with no gaps. • All charging cables operate smoothly through full extension and retraction. |
| <input type="checkbox"/> | Voltages at all power plates have been verified with a solenoid type voltmeter (such as a Wiggy): <ul style="list-style-type: none"> • Line-to-Line measures 208/240VAC. • Line-to-Earth measures 120VAC. |
| <input type="checkbox"/> | If Power Share Jumpers are installed: <ul style="list-style-type: none"> • All jumpers are fully inserted. Look for 1/8" (3 mm) depth. • Power Share mode has been configured, using the on-screen Installation Wizard, for all power-shared stations and the station's display indicates that power sharing is in effect. • The supplied Electrical Rating label has been applied above the terminal block and on the top cap as described in Appendix B. |
| <input type="checkbox"/> | If Power Select is applied: <ul style="list-style-type: none"> • Power Select has been configured using the on-screen Installation Wizard. • The supplied Electrical Rating label has been applied above the terminal block and on the top cap as described in Appendix B. |
| <input type="checkbox"/> | All steps of the Installation Wizard have been completed and that the station is currently showing the animation screen (illustrated on page 5-1), which describes how to use the station. |
| <input type="checkbox"/> | The radio group has been documented for activation by attaching the spare activation labels to the previous page. |

After completing both sides, cut or tear along dotted line and give it to the person responsible for activating the station.



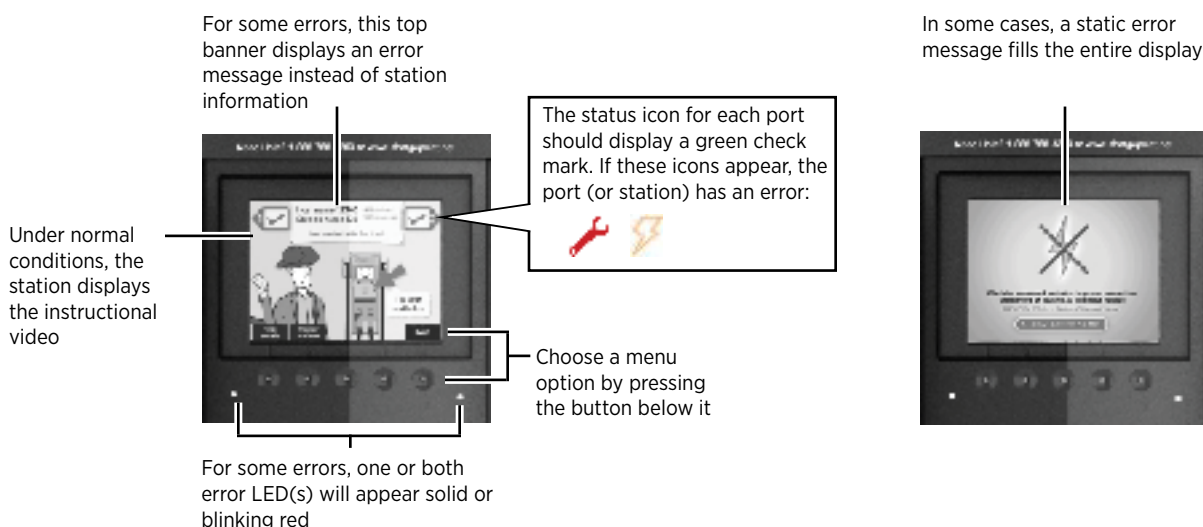
Troubleshooting

5

Check the Station's Display

When the station is powered on and the Installation Wizard has been completed, you should see:

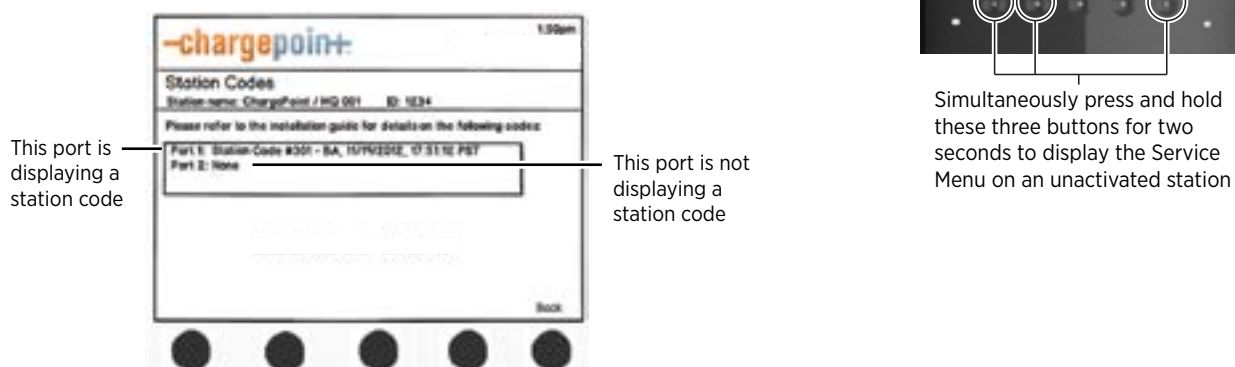
- The instructional video, and no error messages.
- The status icon for each port displaying a green check mark.
- both error LEDs are extinguished (for some errors, one or both error LEDs are solid or blinking red).



Display Station Codes








To check the station for errors anytime after initial power up, follow these steps to display station codes.



1. Display the station's Service Menu:
 - if the station is not activated on ChargePoint, simultaneously press and hold the two leftmost buttons and the rightmost button for two seconds
 - if the station is activated on ChargePoint, scan your ChargePoint Service card
2. Press the station button immediately below the "HELP" menu option.
3. Press the station button immediately below the "DOWN" menu option to highlight "Station Codes".
4. Press SELECT.












If you see a station code, you must resolve or report the error before leaving the installation site. Station codes are described on the following pages.

Description of Station Codes

| Code | Symptom | Possible cause(s) | Recommended Action(s) |
|--|--|--|---|
| In most cases, a driver can resolve the following station codes that begin with the digit "1": | | | |
| 101- Over Current Detection |  <i>n</i> = the number of the applicable port | During charging, the vehicle attempted to draw more power than allowed. The station stops delivering power to the vehicle. | Can indicate faulty wiring in the vehicle. End the session by inserting the station's plug back into its holster, then restart the session. If the error persists, call ChargePoint Customer Support at 1-877-850-4562. |
| 102- Ventilation Requested |  <i>n</i> = the number of the applicable port | Vehicle requires ventilated charging which is not supported by the station. The station stops delivering power to the vehicle. | Driver will be unable to use the station to charge their type of vehicle. Call the vehicle manufacturer. |
| 103- Soft Ground Fault |  <i>n</i> = the number of the applicable port | During charging, the station detected a ground fault. The station stops delivering power to the vehicle, but continues to retry every 30 seconds. | End the session by inserting the station's plug back into its holster, then restart the session. If the error persists, call ChargePoint Customer Support at 1-877-850-4562. |
| 104- Immediate Ground Fault |  <i>n</i> = the number of the applicable port | On initial plug-in, the station detected a ground fault. The station stops delivering power to the vehicle. | End the charging session by inserting the station's plug back into its holster, then restart the session. If the error persists, call ChargePoint Customer Support at 1-877-850-4562. |
| In most cases, an electrician can resolve the following station codes that begin with the digit "2": | | | |
| 201-SIM |  | SIM Not Detected - The SIM is either not installed or is incorrectly installed and the station can not communicate with the ChargePoint network. | Disconnect power and install (or re-install) the SIM card as described on page 5-4. If the error persists, call ChargePoint Customer Support at 1-877-850-4562. |
| 202-EF |  | Earth Fault - The station has detected a poor ground connection and the station is not operational. | Disconnect power and check that the station is properly grounded as described on page 1-7. After ensuring the station is properly grounded, reconnect power. If the error persists, try unplugging the head assembly and plugging it back in. If the error continues to persist, call ChargePoint Customer Support at 1-877-850-4562. |
| 203-SNP | The banner between the port icons displays "STATION NOT ACTIVATED ON CHARGEPOINT - GRACE SESSIONS REMAINING (N)." When all grace sessions have been used:  | Station not activated - The station can be used to charge for the specified number of remaining grace sessions. When all grace sessions have been used, the station is not operational. | Arrange for the station to be activated on ChargePoint by completing the steps in Chapter 4. |
| 204-NGNP | Before activation: The banner between the port icons displays "NO GATEWAY WITHIN RANGE." After activation: All you will see is the code listed on Help > Station Codes. | Non-Gateway Not Paired - The station is set up to communicate with a gateway station that is either not within range, or is not powered on. | Verify that the gateway station is powered on and located within 150 feet line of sight (no obstructions). If the error persists after these requirements are met, call ChargePoint Customer Support at 1-877-850-4562. |

| Code | Symptom | Possible cause(s) | Recommended Action(s) |
|---------|---|---|---|
| 205-UNS | <p>Before activation: The banner between the port icons displays "NETWORK SIGNAL NOT DETECTED."</p> <p>After activation: All you will see is the code listed on Help > Station Codes.</p> | <p>Unknown Network Signal - The gateway station is unable to establish a network connection on AT&T/Verizon (US) or Rogers (Canada).</p> | <p>Ensure the station is receiving an adequate signal strength from the cellular network. To do so, display the Service menu*, then:</p> <ul style="list-style-type: none"> Check the network signal for each type of modem by choosing: Basic mode > Display last measured RSSI. The strength of the signal should be A, B, or C. If the network signal is Grade D, or if a better network signal is available on the other type of modem, change modems by choosing: Basic mode > Change modem technology (CDMA or GSM). <p>If the signal strength is either weak (D) or not available for both CDMA and GSM, arrange for cellular repeaters to be installed near the installation site.</p> <p>If the error persists when the station shows a strong network signal, call ChargePoint Customer Support at 1-877-850-4562.</p> <p>*To display the station's Service Menu, scan your ChargePoint Service card (if the station is activated) or, if the station is not activated, press the three station buttons as described on page B-3.</p> |
| 206-FLC | <p>Before activation:</p>  <p>After activation: You will see the code listed on Help > Station Codes and the port status icons will show:</p>  <p>n = the number of the applicable port or</p> | <p>Floating Line Connection - The voltage of an AC input line has fallen below 80 volts AC relative to ground. Even if the line to line voltage measures nominally 208 or 240 volts, the voltage of each line must be greater than 80 volts when measured to ground.</p> <p>The two most common causes of a Power Line Fault are:</p> <ul style="list-style-type: none"> A poor connection in the wiring supplying power and the ground connection to the station. There could be a poor connection between the buss bar and circuit breaker, the breaker to the branch circuit feeding the station, or at any splice along the branch circuit. The station is connected to an incompatible improperly grounded power source. All power and ground connections must be clean and tight and carry the full rated current of the station. Do not connect the station to an ungrounded (floating neutral) system, a corner grounded Delta system, or the high (or "stinger" leg) of a center grounded Delta system. | <p>Correct any faulty connections.</p> <p>Verify that the station is connected to a system with its neutral properly grounded according to NEC Article 250.</p> <p>Verify the station is connected to one of the system types described in Chapter 1.</p> <p>If the error persists, call ChargePoint Customer Support at 1-877-850-4562.</p> |

| Code | Symptom | Possible cause(s) | Recommended Action(s) |
|---|---|--|---|
| ChargePoint Support may need to resolve the following station codes that begin with the digit “3”: | | | |
| 301-BA |   | Breakaway Fault - The cable has been removed from the station or is damaged. The station is not operational. | Call ChargePoint Customer Support at 1-877-850-4562 to arrange to have the station replaced. |
| 302-GST |  n = the number of the applicable port or   | GFCI Self Test Failed - The station detected a ground fault during power up and is not operational. | End the session by inserting the station's plug back into its holster, then restart the session. If the error persists, call ChargePoint Customer Support at 1-877-850-4562. |
| 303-RSC |  n = the number of the applicable port or   | Relay Stuck Closed - When attempting to end a charging session, the relay stays closed. Although the driver can return the station's plug to its holster, the station doesn't end the session. Therefore, a new session can not be started. | Call ChargePoint Customer Support at 1-877-850-4562 to arrange to have the station replaced or repaired. |
| 305-LCO |   | Pilot Unreachable - The station is out of service. | Disconnect and reconnect power. If the error persists, call ChargePoint Customer Support at 1-877-850-4562 to arrange to have the station replaced or repaired. |
| 306-BF |   | Boot Fault - The station is out of service. | Disconnect and reconnect power. If the error persists, call ChargePoint Customer Support at 1-877-850-4562 to arrange to have the station replaced or repaired. |
| 307-HE |   | Hardware Error - The station is out of service. | Disconnect and reconnect power. If the error persists, call ChargePoint Customer Support at 1-877-850-4562 to arrange to have the station replaced or repaired. |

Charging Cable Doesn't Move Freely

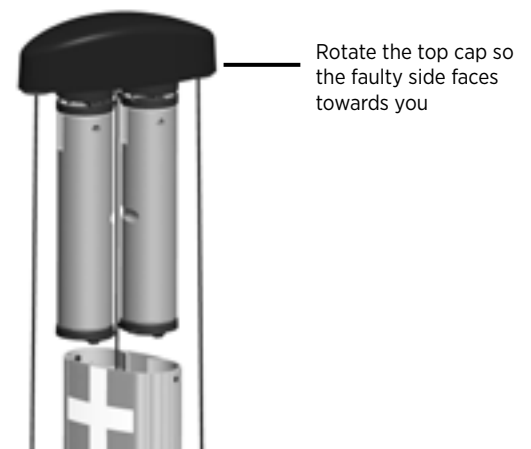
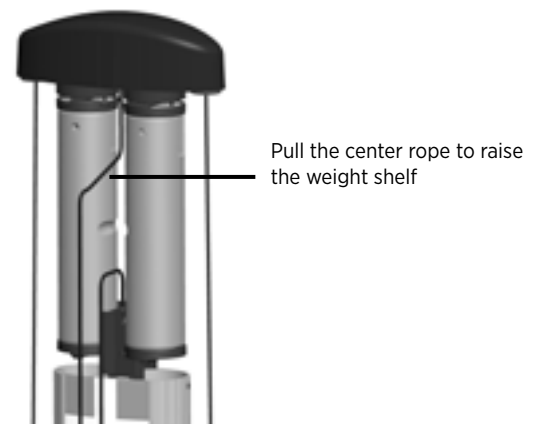
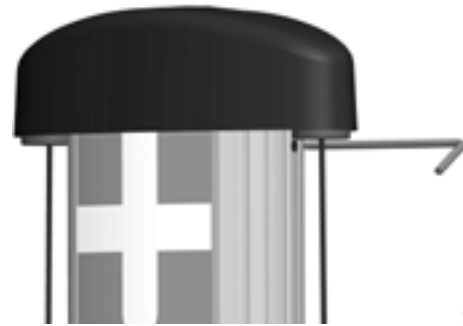
If the charging cable does not extend or retract fully and smoothly, it is likely that its rope has come off the pulley and you must re-position it.

You will need:

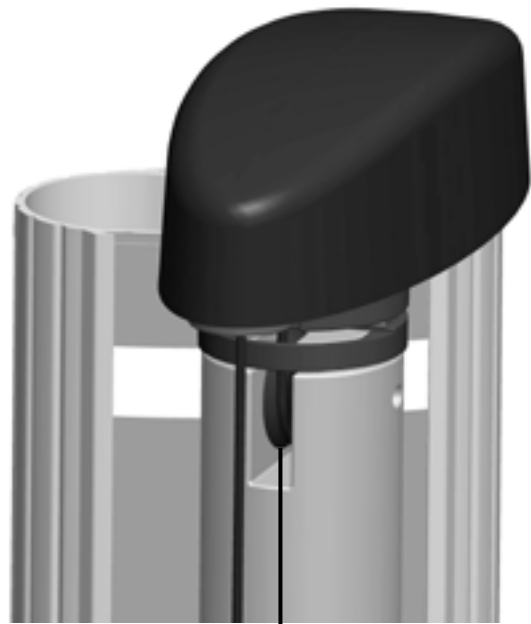
T25 L-wrench

Follow these steps:

1. Using the T25 L-wrench, loosen the set screws on each side of the retractor below the top cap.
2. Each rope is attached to a weight that sits on a shelf. Pull the weight shelf up by pulling the rope located in the middle of the top cap.
3. Rotate the top cap so the weight controlling the rope that doesn't move freely is facing towards you.



4. Inspect the rope to ensure it is properly aligned onto the pulley.
5. Carefully lower the weight back into the retractor.
6. Rotate the top cap back into position and re-tighten the set screws to about 10 in-lbs.



Ensure the rope is properly aligned onto the pulley

A

Casting into New Concrete

Before casting into new concrete, review the site for suitability to install a CT4000. The CT4000's Clean Cord Technology requires space behind the power stub-up for the Cord Management Kit (CMK). To ensure adequate space, refer to the illustrations below and to the CT4000 Installation Template (75-001094-01) included in this installation kit.

IMPORTANT:

- Always check local codes to ensure compliance. You may need to adjust these instructions to comply with codes that apply at your installation location.
- The concrete block must measure at least 24" on all sides.
- The bolt threads must extend 3" above the concrete.
- The conduit must be at least 1 1/2" in diameter and extend 12" to 24" above the concrete.
- Refer to the CT4000 Installation Guide for detailed installation instructions.

Kit Components Needed

You will need the entire contents of the CT4000 Concrete Mount Kit.

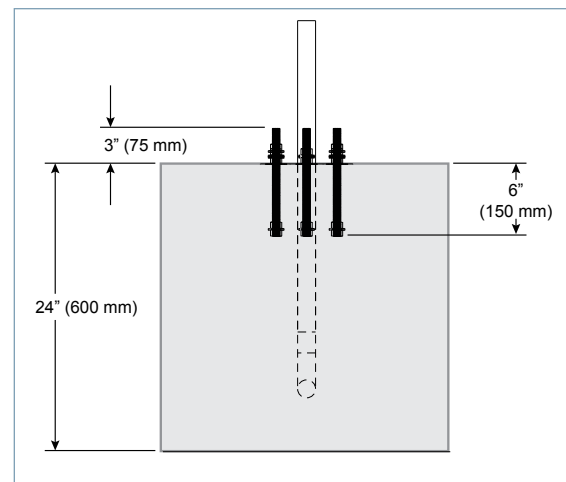
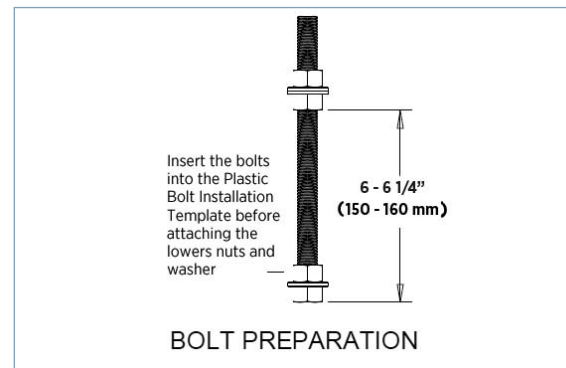
Follow These Steps

1. Install two nuts, with two washers captured between them, onto each of the three bolts, as illustrated. Lock them together so the lower end of the upper nut is located 6 - 6 1/4" from the bottom of the bolt. This sets the length of the exposed threads.
2. Insert the three bolts through the Plastic Bolt Installation Template. This ensures the relative position of the bolts and that the flange of the pole fits over the bolts.
3. On the bottom of each bolt, install a nut, a washer, and a nut. Lock the two nuts together so that the lower nut aligns to the bottom of the bolt.
4. Immediately after pouring the concrete, push the bolts into the concrete 6" deep, as illustrated. Ensure correct alignment and that the top 3" of the bolts remain exposed. Rotate the bolts as you insert them to draw concrete into the threads.

NOTE:

- It is important to rotate the bolts as you insert them. This allows the concrete to fully coat the threads of the bolts, reducing the amount of trapped air.
 - The Plastic Bolt Installation Template template can be left in place.
5. When the concrete is fully set, remove the upper nuts and one washer to install the bollard's mounting post.

You are now ready to install the CT4000's bollard mount. Refer to the CT4000 Installation Guide.



Installing on Existing Concrete

If installing on existing concrete, perform the following tasks:

- Review the site for suitability to install a CT4000. The CT4000's Clean Cord Technology requires space behind the power stub-up for the Cord Management Kit (CMK). To ensure adequate space, reference the CT4000 Installation Template (75-001094-01) included in this installation kit.
- Review the dimensions of the existing concrete slab. To safely mount a CT4000 charging station, the concrete must be at least 6" thick. At this thickness, all of the CT4000's mounting bolts must be positioned at least 15" from the front edge, at least 12" from the side edges, and at least 6" from the rear edge of the concrete slab.
- If an existing charging station is already in place at the installation site, turn off all power to the station and disassemble according to the original manufacturer's instructions. Cut away any existing bolts or non-power conduit stub-up to ground level. You may need to plug cut-away conduits at the slab end, and disconnect wiring at the other end.



IMPORTANT: Always check local codes to ensure compliance. You may need to adjust these instructions to comply with codes that apply at your installation location.

Kit Components Needed

The CT4000 Concrete Mount Kit contains 12 Heavy Galvanized Hex Nuts and 9 Galvanized Washers. You will need only 6 of each.

Tools Required

Electric drill or Hammer drill (½" chuck may be required depending on drill bits used) (1)

Consumables Required

These consumables can be ordered online directly from McMaster (McMaster Product #s are included in the table below). Delete any items you already have, and change quantities to accommodate the number of stations you are installing.

NOTE: The consumption rate of these products will vary depending on conditions at the installation site.

| Quantity | McMaster Product # | Description | Purpose |
|----------|--------------------|---|---|
| 1* | 7505A55 | Epoxy Adhesive for Concrete, 9.3 Ounce Cartridge (includes two mixing nozzles) | Filling drilled holes. |
| 1* | 7505A56 | Mixing Nozzles for 9.3 Ounce Epoxy Adhesive for Concrete | Filling drilled holes. NOTE: You may need extra mixing nozzles to accommodate delays of over three minutes when applying epoxy. |
| 1 | 7622T23 | Ratchet Rod Caulk Gun with Half-Barrel Frame for 10-13 Ounce Cartridge, 6:1 Thrust | Filling drilled holes. NOTE: Any standard caulk gun will work. |
| 1 | 7437K35 | Electrical Cleaning and Maintenance Aerosol, Any Angle Spray Duster, 8 Ounce Net Weight | Cleaning drilled holes. |
| 1 | 2960A22 | Slow Spiral Round-Shank Masonry Drill Bit, ¾" diameter, ½" Shank, 10" Drill Depth, 12" Length Overall | Drilling ¾" holes in concrete. NOTE: The holes must be at least 6" deep. |
| 1 | 28655A25 | Drill Bit for Concrete Embedded Rebar, Round, ¾" bit size, ½" Shank diameter, 12" Length Overall | Drilling ¾" hole through rebar. |
| 1 | 7221T13 | Nylon Loop-Handle Brush, ¾" Brush Diameter, 3" Length Brush, 8 ½" Length Overall | Cleaning drilled holes. |
| 1 | 9753K47 | Push-on Round Cap, fits ⅝" - 1 1/16" OD, ½" Inside Height, Packs of 100 | Keeping the epoxy inside the drilled holes in situations where the slab is only 6" deep. |

* Quantity based on installation of one charging station.

Follow These Steps

1. Install two nuts with two washers captured between them. Lock them together so the lower end of the nut is located 6" from the bottom of the bolt. This sets the length of the exposed threads.
2. Use the Plastic Concrete Bolt Installation Template to mark the hole locations.
3. Remove the template and drill three $\frac{3}{4}$ " diameter holes 6" deep into the concrete. When locating the template, consider the charging station's total footprint. For reference, a template for the CT4000 charging station with CMK is included in this kit.

NOTE:

- It is important that the bolts are parallel after installation. Therefore, ensure the drill holes are plumb by using a bubble level to check the angle of the drill after drilling 1 to 1 $\frac{1}{2}$ ".
 - If installing over existing buried conduit, position the center of the template around the conduit stub-up.
 - You may need two drill bits - one for the concrete (with the pilot) and another for the rebar (without the pilot). Always start the hole using the standard drill bit, then switch to the rebar drill bit only if drilling through rebar.
4. Remove all dust from inside the drilled holes using compressed air, or a vacuum and/or a brush.
 5. If the concrete slab is only 6" deep, insert a plug (McMaster Product #9753K56) in each hole to keep the epoxy in place until it hardens. Place the plug over the long end of a bolt and then use the bolt to push the plug to the bottom of the hole.
 6. Fill each hole with epoxy to about 2 $\frac{1}{2}$ " to 3" below the top. Continue immediately to the next step because the epoxy sets within about eight minutes.

NOTE: Inserting the threaded bolts displaces the epoxy, causing it to fill the holes to grade level. If the epoxy is below grade level, you can add more after the next step.

7. Place the Plastic Concrete Bolt Installation Template over the holes. This ensures the relative position of the bolts and that the flange of the pole fits over the bolts.
8. Insert the bolts through the template, into the holes. Rotate the bolts as you insert them to draw epoxy into the threads.

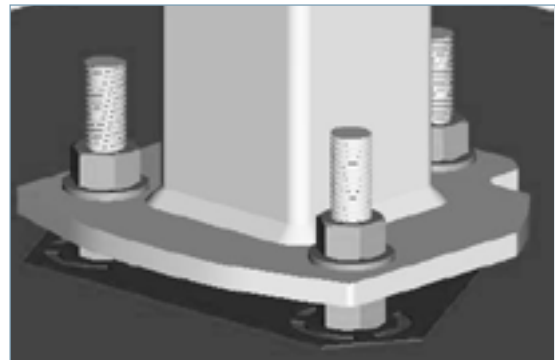
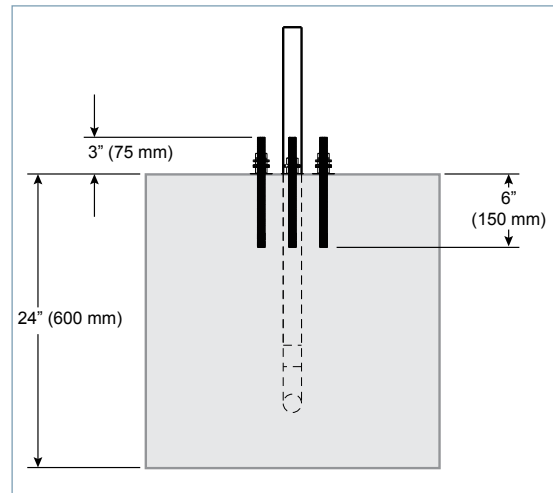
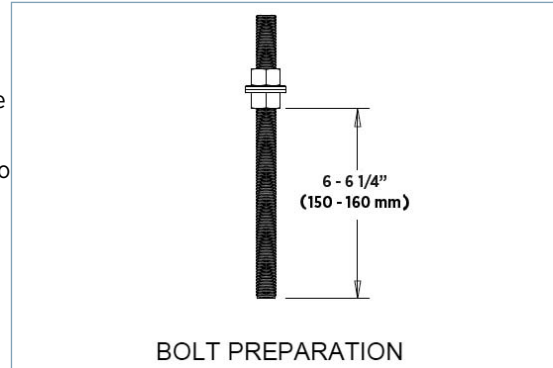
IMPORTANT: The epoxy is very thick. Therefore, it is important to rotate the bolts as you insert them. This allows the epoxy to fully coat the threads of the bolts, reducing the amount of trapped air.

NOTE: The installation template can be left in place.

9. If needed, top up the holes with epoxy to grade level.
10. Allow the epoxy to cure for at least 15 minutes* before removing the top nuts and washers.
11. Allow the epoxy to cure for 45 minutes* before applying torque to the nuts.

**Epoxy cure times assume you are using epoxy ordered from McMaster (Product # 7505A55). If using a different type of epoxy, you may need to adjust these times. Refer to the cure times provided with the epoxy.*

You are now ready to install the CT4000's bollard mount (see Chapter 2).



CT4000 Power Management Instructions

B

As shipped, a CT4000 charging station provides up to 30A of output power to each charging port. The Power Management Kit (ordered separately) provides two features that you can use to adjust the station's output power:

- Power Share allows both ports on a dual-port station to share a single circuit. In a default configuration, a dual-port CT4000 requires two 40A circuits. With Power Share, both ports can share one circuit.
- Power Select allows the station to operate at a lower current. When the total current capacity is less than the standard 30A per circuit, you can use Power Select to configure the station to operate at a lower current.

Before you start


Before using the Power Management Kit:

- Refer to the site design to determine the charging station's power requirements.
- Install the charging station's main body as described in Chapter 2 (Bollard Mount) or 3 (Wall Mount). If you are configuring Power Share, do not connect the wiring—you will first need to install the jumpers as described on page B-2.

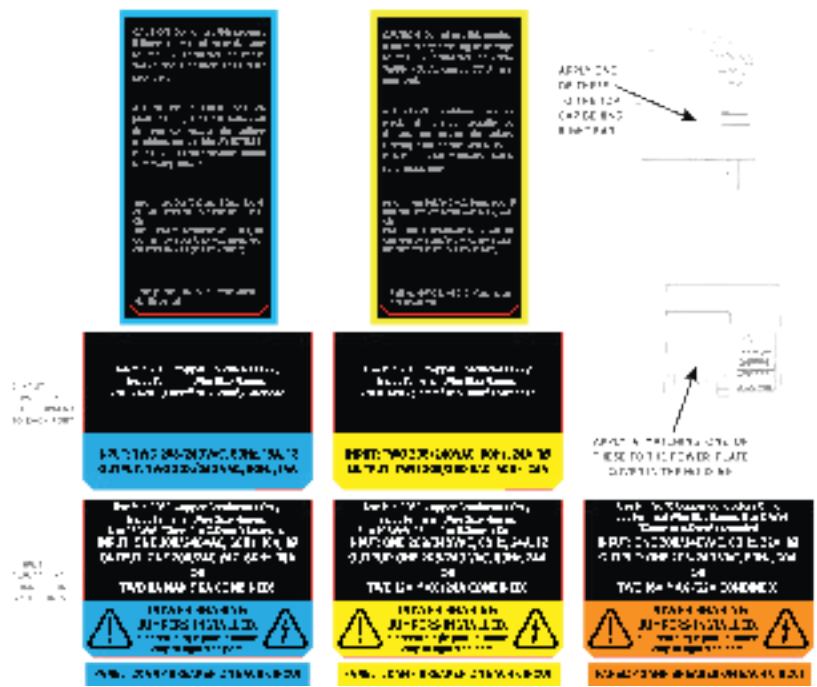
⚠ IMPORTANT: To configure Power Select, the station must be running software version 4.1.3 or later. To verify software version, power up the station and display the station's Service Menu as described on page B-3. Press the station button immediately below the "HELP" menu option, then press the station button immediately below the "DOWN" menu option to highlight "About", then press "SELECT". If a previous version of software is installed, call ChargePoint Customer Support at 1-877-850-4562 so they can upgrade the station's software.

Kit Contents

Jumpers (2)
(Required for Power Share)



Electrical Rating labels
(Whenever you change the station's default power configuration, you must apply a new label to the terminal block cover)



Power Share - Overview of Steps

1. Install jumpers and connect the wiring
2. Apply the Electrical Rating label
3. Complete the station installation (for new installations)
4. Enable Power Share

Power Share - Step by Step Instructions

Step 1: Install jumpers and connect wiring

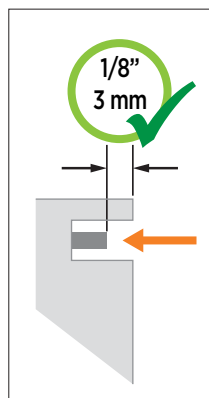
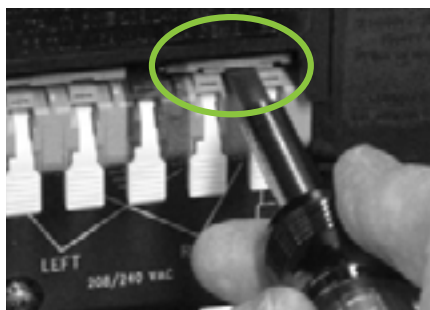
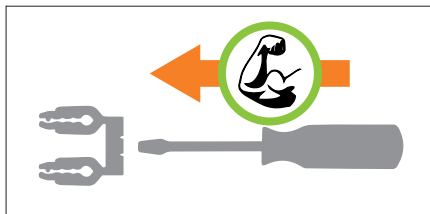


WARNING: Disconnect power before you begin.

Push the black tab on the terminal block to release the terminal block cover, then slide the cover up until it locks into the raised position:

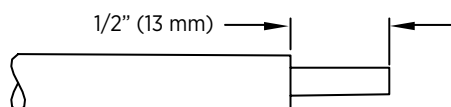


Insert the jumpers into the slots located near the upper edge of the terminal block. Using a large flat blade screwdriver, push firmly on each jumper until you feel it lock into place.



IMPORTANT: Ensure both jumpers are fully seated. The jumpers should recede 1/8" (3 mm) below the outer surface of the terminal block, as shown. If they are flush, they are not fully inserted.

Strip wires 1/2" (13 mm).



Lift the white lever on the terminal block that corresponds with the ground connection (center), insert the ground wire, then push the lever down until it clicks into its fully closed position.

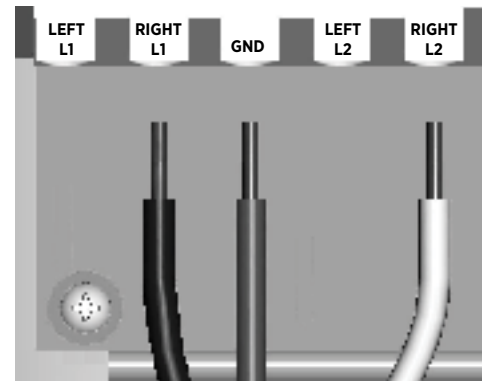
Lift the white levers on the terminal block that corresponds with the RIGHT port's L and N connections. Insert the L and N wires fully into the terminal block, then push the levers down until they click into their fully closed positions.

NOTE: The connections for the left port are not used. Power for the left port is carried through the jumpers.



WARNINGS:

- Use copper conductors only.
- Do NOT provide GFCI protection at the panel—the CT4000 has built-in GFCI protection.
- Use breakers rated at 40A (or lower, if you are configuring the station to operate at a lower current capacity as described on the following page).
- In areas with frequent thunder storms, add surge protection at the service panel for all circuits.
- **Use new circuit breakers only. Used breakers can damage equipment and cause a fire risk.**
- **Ensure all power and ground connections, especially those at the breaker, are clean and tight. Remove all oxide from all conductors and terminals before connecting wiring.**



Step 2: Apply the Electrical Rating labels

Described on page B-5.

Step 3: Complete the station installation

Install the head assembly and top cap as described in the CT4000 Installation Guide.

Step 4: Enable Power Share

Power up the station. If the Installation Wizard displays, follow the onscreen instructions to enable Power Sharing. If the Installation Wizard does not display, configure Power Sharing using the Service Menu as described below.

Display the station's Service Menu:

- if the station is not activated on ChargePoint, simultaneously press and hold the two leftmost buttons and the rightmost button for two seconds.
- if the station is activated on ChargePoint, scan your ChargePoint Service card.

Select **Basic mode**.

Scroll down to select **Power Sharing Configuration**.

Select **Enable**.

Select **Exit** to leave the Service Menu.

Confirm that the station's display indicates that power sharing has been configured.



If the Installation Wizard does not display upon power up, simultaneously press and hold these three buttons for two seconds to display the Service Menu on an unactivated station



Power Select - Overview of Steps

1. Configure Power Select
2. Apply the Electrical Rating label

Power Select - Step by Step Instructions

Step 1: Configure Power Select

Power up the station. If the station displays the Installation Wizard, follow the onscreen instructions to enable Power Select. If the station does not display the Installation Wizard, configure Power Select using the Service Menu as described below.

Display the station's Service Menu:

- if the station is not activated on ChargePoint, simultaneously press and hold the two leftmost buttons and the rightmost button for two seconds.
- if the station is activated on ChargePoint, scan your ChargePoint Service card.

Scroll down to select **Circuit Breaker Configuration**.

Choose the breaker size that matches what is installed for the station.

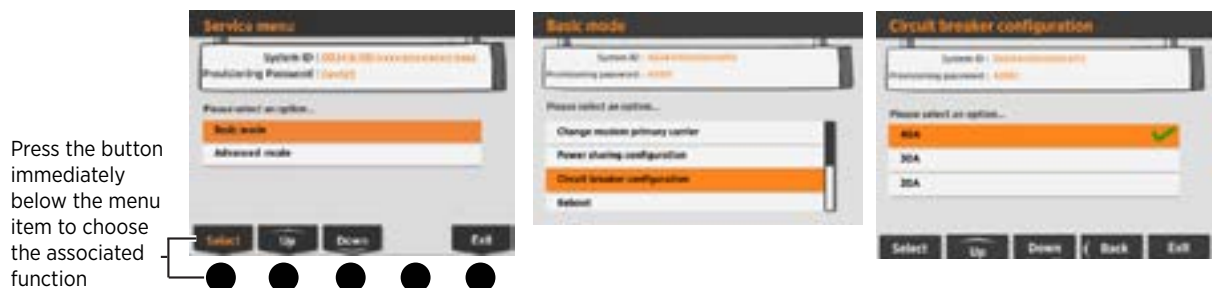
Select **Exit** to leave the Service Menu.

NOTE: If you make an error when using the Installation Wizard, your ChargePoint Network Manager can change the station's settings by logging into ChargePoint, selecting the station from the Manage Stations page, selecting the Configuration tab, and then clicking Edit to modify the station's Power Sharing and Power Select settings.

If the station must be reconfigured using the Installation Wizard, contact ChargePoint Customer Support at 1-877-850-4562 to have the station reset to its factory default configuration.



If the Installation Wizard does not display upon power up, simultaneously press and hold these three buttons for two seconds to display the Service Menu on an unactivated station










Step 2: Apply the Electrical Rating label

See next page.

Apply the Electrical Rating Label

Step 1: Choose the appropriate label

| For 16A Circuits | For 24A Circuits | For Shared 30A Circuits |
|---|--|---|
|  |  | |
|  |  | |
|  |  |  |

If both ports are sharing a single circuit (and you have therefore installed the jumpers), you must use the power sharing label from the bottom row

Step 2: Apply a label to the terminal block cover

Apply a label to the left side of the terminal block cover, just above the terminal block.

NOTE: Leave the terminal block cover in the raised position to facilitate connection of the head assembly.

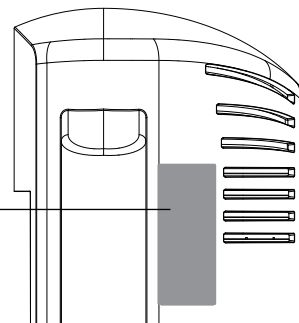
Electrical Rating Label on Terminal Block Cover



Step 3: Apply a label to the top cap

Apply the corresponding label to the right side of the Top Cap, behind the cable exit.

Electrical Rating Label on Top Cap



Installing and Replacing Signs



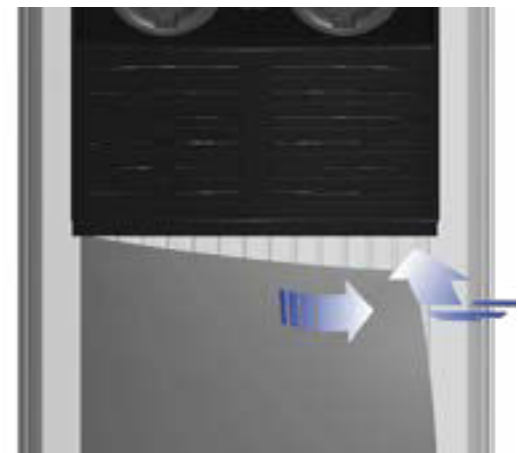
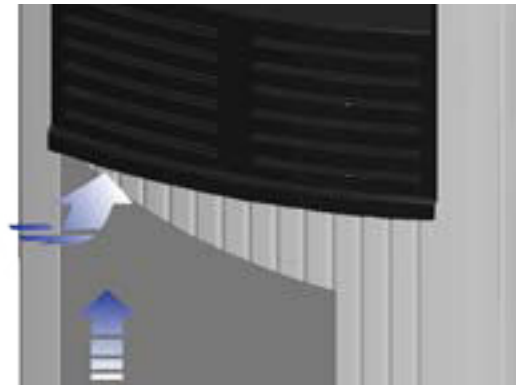
Follow these steps in this section to install signs onto the charging station. To ensure a proper fit, signs must follow the specification provided by ChargePoint. An example of the sign specification (not to scale) is provided below. Detailed sign specifications are available at www.chargepoint.com/support-guides/. To ensure a proper fit, a replacement sign must be a maximum of 1 mm thick, 102 mm wide and 514 mm high.

Installing a Front Sign on a Bollard



It is easier to install the sign before installing the head assembly, but it can be installed with the head assembly already in place. Follow these steps to install the sign with the head assembly in place. If the head assembly is not installed, the installation steps are the same, with the exception of inserting the top edge of the sign under the bottom lip of the head assembly.

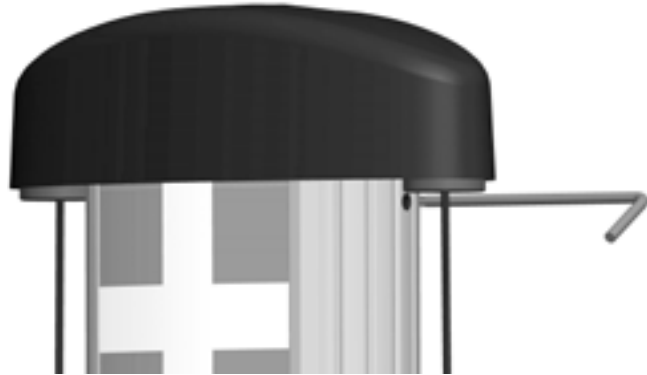
- Remove the tape from the adhesive strip on the back of the sign.
- With the adhesive strip facing toward the bollard, insert the top left corner of the sign under the groove on the top left corner of the bollard, sliding the sign upwards as far as possible to position the top of the sign under the bottom lip of the head assembly.
- Starting with the top left corner and working from top to bottom, use a thumb or finger to slide the left side of the sign under the bollard's leftmost groove.
- When the left side of the sign is fully inserted, bow the top of the sign outward slightly to insert the top right corner of the sign under the groove on the top right corner of the bollard, ensuring the top of sign remains positioned under the bottom lip of the head assembly.
- Starting with the top right corner and working from top to bottom, use your thumb or finger to slide the right side of the sign under the bollard's rightmost groove.
- When the sign is fully inserted into the bollard's left and right grooves, and under the bottom lip of the head assembly, run your hand down the center of the sign while applying enough pressure to make sure the sign's adhesive strip contacts the bollard.



Installing a Top Sign on the Retractor

To remove a sign after the station has been installed:

1. Use the L-wrench to loosen the set screw on each side of the top cap, as shown.
2. Pull the top assembly up and move it towards the back of the retractor.
3. Slide the existing sign out of the grooves.



To install the new sign:

1. Slide the replacement sign into the grooves by bending it slightly.
2. Slide the sign all the way down, ensuring its bottom edge is located behind the plastic cap on the retractor's extrusion, as shown.
3. Re-install the top assembly. Remember to tighten the set screws.

Bend the sign slightly to insert it into the grooves



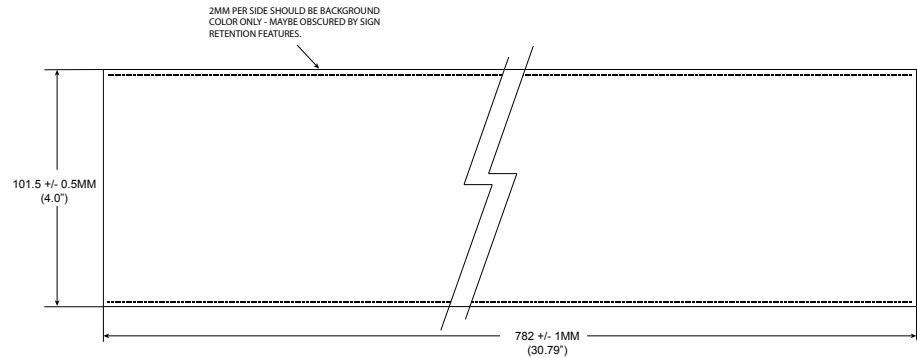
Slide the bottom edge of the sign until it is positioned behind the plastic cap



Installing a Bottom Sign on the Wall Mount Retractor

To ensure a proper fit, the bottom sign must have these minimum characteristics:

- Material - Vinyl with a maximum thickness of .03"
- Dimensions - Exactly 4.00" (102 mm) wide and up to 30.75" (782 mm) high



A detailed sign specification is available at www.chargepoint.com.au/support/technical-documents/. Example (not to scale):

The method used to install a bottom sign is the same with or without the main body installed:

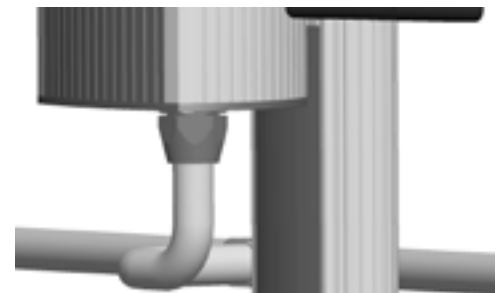
1. Insert one of the long edges into the retractor's grooves along the side portion of the retractor.
2. Bend the sign slightly to insert the other long edge.
3. Slide the sign all the way down until the bottom edge is against the bottom surface on which the station is installed.

Installing a Rear Sign on a Retractor

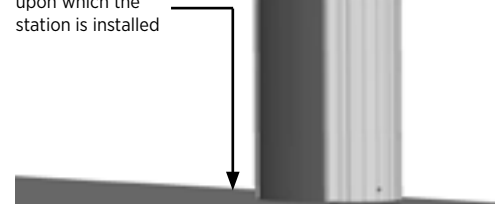
Installing a sign on the rear side of a retractor is the same as the instructions provided above for installing a bottom sign on a wall mount retractor.

Custom and Optional Signs

Detailed sign specifications for custom and optional signs are available at www.chargepoint.com/support-guides.php



Slide the sign all the way down until the bottom of the sign is flush with the surface upon which the station is installed



Installing Cable Clamps

D

! IMPORTANT: Do not unwrap the ropes until they are securely attached to the charging cable.

There are two types of cable clamps available for the CT4000. The correct clamps are included in the shipping box with the cable management kit (see page 2-2 or 3-2). The type of clamp that is used depends on whether the end of the nylon rope in the cable management kit is equipped with a circular disc or a round bead:

If equipped with a circular disc, the cable clamps are spherical type



If equipped with a round bead, cable clamps are bracket type



NOTE: In some cases, you may need to remove an existing pre-installed portion of a cable clamp from the charging cables before you can install the type of clamp that is supplied in the cable management kit. When doing so, you must install the new clamp at the exact same location as the removed clamp.

! IMPORTANT: After installing the cable clamps, unwrap the rope and check that the charging cable extends and retracts fully and smoothly. If it doesn't, see page 6-4.

To install spherical clamps:

- Uncoil charging cable by gently extending it all the way out and away from the station. Rotate the plug as needed to remove any twist or kinks.
- Position the charging cable near the base of the station and locate the tape on the cable that marks the location where you must install the clamp.
- Insert a rubber shim into the bottom portion of each clamp. Ensure the top portion of the cable clamp is oriented correctly on the top side of the charge cable. Tighten screws to 20 in-lbs (2.3 Nm).

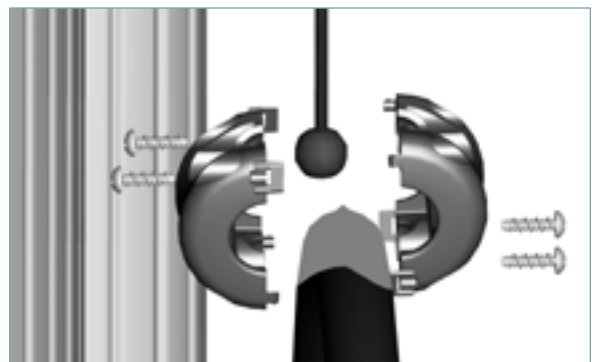


- Align the knot bearing on each rope to its corresponding mating feature on the cable clamp. Turn the knot bearing clockwise approximately 1/4 turn. You may need to push down while turning the knot bearing.



To install bracket clamps:

- Uncoil charging cable by gently extending it all the way out and away from the station. Rotate the plug as needed to remove any twist or kinks.
- Position the charging cable near the base of the station and locate the tape on the cable that marks the location where you must install the clamp.
- Locate the bead at the end of the retractor rope.
- Hold the charging cable with the marked tape positioned under the retractor top. Ensure the charging cable does not touch the ground when fully retracted.
- Insert the bead inside the clamp, then snap the opposite side of the clamp into place.
- Secure the two sides of the clamp together by inserting the rubber shim and the four screws, then tightening the screws securely using a Phillips screwdriver.



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This Limited Product Warranty applies to you, a customer who has purchased CHARGEPOINT's Charging Stations and/or related products ("Products") from CHARGEPOINT, INC., or one of its authorized distributors and not for resale.

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TWO-, THREE-, FOUR- OR FIVE-YEAR EXTENDED WARRANTY (Additional Charge Applies): Subject to the exclusions from warranty coverage set forth below, if you have purchased an extended warranty, and if the Product becomes defective in breach of the Limited Warranty above at any time during the extended warranty period after the date of the initial installation of the Product, CHARGEPOINT will, upon written notice of the defect received during the extended warranty period, either repair, provide replacement parts for the defective parts of the Product or replace the Product, at ChargePoint's election, if it proves to be defective; provided, that CHARGEPOINT will not be responsible for the cost of any labor associated with the repair or replacement of any defective Product.

CHARGEPOINT's Options: You acknowledge that replacement products provided by CHARGEPOINT under each of the Limited Warranty and the Extended Warranty may be re-manufactured or reconditioned Products or, if the exact Product is no longer manufactured by CHARGEPOINT, a Product with substantially similar functionality ("Replacement Products"). Any Replacement Products so furnished will be warranted for the remainder of the original Warranty Period or ninety (90) days from the date of delivery of such Replacement Product, whichever is greater. Should CHARGEPOINT be unable to repair or replace the Product, CHARGEPOINT will refund the purchase price of the Product.

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IMPORTANT: The Limited Warranty and, if purchased, the Extended Warranty on your Product shall not apply to defects, or service repairs, resulting from any of the following:

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- Vandalism.
- Abuse, damage or otherwise being subjected to problems caused by negligence (including but not limited to physical damage from being struck by a vehicle) or misapplication, or use of the Products other than as specified in the applicable CHARGEPOINT documentation.
- Installation or relocation of the Products unless performed by CHARGEPOINT or by a ChargePoint authorized installer or service provider.
- Improper site preparation or maintenance.
- Damage as a result of accidents, extreme power surge, extreme electromagnetic field, acts of nature or other causes beyond the control of CHARGEPOINT.
- Use of the Product with software, interfacing, parts or supplies not supplied by CHARGEPOINT.

You are responsible for the proper installation and maintenance of the Product. Any service or repairs beyond the scope of the Limited Warranty or the Extended Warranty above are subject to CHARGEPOINT's then prevailing current labor rates and other applicable charges.

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To obtain warranty service you must: (a) obtain a return materials authorization number ("RMA#") from CHARGEPOINT by contacting 1-877-370-3802 (or for customers outside the U.S., contact 408-370-3802) and ask for Customer Service, and (b) deliver the Product, in accordance with the instructions provided by CHARGEPOINT, along with proof of purchase in the form of a copy of the bill of sale including the Product's serial number, contact information, RMA# and detailed description of the

defect, in either its original package or packaging providing the Product with a degree of protection equivalent to that of the original packaging, to CHARGEPOINT at the address below. You agree to obtain adequate insurance to cover loss or damage to the Product during shipment.

If you obtain an RMA# and return the defective Product as described above, CHARGEPOINT will pay the cost of returning the Product to CHARGEPOINT. Otherwise, you agree to bear such cost, and prior to receipt by CHARGEPOINT, you assume risk of any loss or damage to the Product. CHARGEPOINT is responsible for the cost of return shipment to you if the CHARGEPOINT Product is found to be defective.

Returned products which are found by CHARGEPOINT to be not defective, returned out-of-warranty or otherwise ineligible for warranty service will be repaired or replaced at CHARGEPOINT's standard charges and shipped back to you at your expense.

At CHARGEPOINT's sole option, CHARGEPOINT may perform repair service on the Product at your facility, and you agree to provide CHARGEPOINT with all reasonable access to such facility and the Product, as required. On-site repair service is not available outside the United States.

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This Limited Product Warranty shall be governed by and construed in accordance with the laws of the State of California, U.S.A., exclusive of its conflict of laws principles. The U.N. Convention on Contracts for the International Sale of Goods shall not apply.

This Limited Product Warranty is the entire and exclusive agreement between you and CHARGEPOINT with respect to its subject matter, and any modification or waiver of any provision of this statement is not effective unless expressly set forth in writing by an authorized representative of CHARGEPOINT.

The Limited Product Warranty is not transferable by you to anyone else.

All inquiries or claims made under this Limited Product Warranty must be sent to CHARGEPOINT's address as follows:

ChargePoint, Inc.
1692 Dell Avenue
Campbell, California 95008-6901
Tel: 408-370-3802
Fax: 408-370-3847
Email: service@chargepoint.com



1692 Dell Ave.
Campbell, CA 95008-6901 USA
US toll free: +1-877-370-3802
www.chargepoint.com