

# ChargePoint Express 200 (CPE200) Charging Station



## **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.

### **IC Compliance Statement - Déclaration De Conformité à la IC**

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 this device.

Ce dispositif est conforme à la d'Industrie Canada (IC) exempts de licence RSS norme(s). Son fonctionnement est assujéti aux deux conditions suivantes: (1) Ce dispositif ne doit pas provoquer de brouillage préjudiciable, et (2) il doit accepter tout brouillage reçu, y compris le brouillage pouvant entraîner un mauvais 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 important instructions that must be followed when installing the CPE200.



## IMPORTANT:

- The CPE200 must be installed and serviced by ChargePoint-certified installers only. Contact ChargePoint to find out how to become a certified installer. If the CPE200 is installed by any person other than a ChargePoint-certified installer, the CPE200 is not covered under warranty and ChargePoint is not responsible for any malfunctions.
- Ensure that all connections comply with local codes and ordinances.
- Observe all local and national safety regulations.
- Observe local regulations regarding wiring different circuits in the same conduit. In general, all conductors occupying the same conduit must have an insulation rating equal to at least the maximum circuit voltage applied to any conductor within the conduit.
- The CPE200 must be connected to a circuit provided with appropriate branch circuit over-current protection in accordance with the National Electrical Code, ANSI/NFPA 70 or CEC for Canada.

## Before you begin

- **Take the online training course to become a ChargePoint Certified Installer and 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 described in this chapter.
- Verify that the installation site has a load capacity sufficient to support the CPE200.
- Ensure that adequate CDMA (Verizon or 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.
- Review the contents of this document to familiarize yourself with the installation steps.

## Grounding instructions

The CPE200 must be connected to a grounded, metal, permanent wiring system. An equipment-grounding conductor must be run with circuit conductors and connected to equipment-grounding terminal or lead on battery charger.

An insulated grounding conductor that is identical in size, insulation material and thickness to the grounded and ungrounded branch-circuit supply conductors except that it is green with or without one or more yellow stripes is to be installed as part of the branch circuit that supplies the unit or system. This grounding conductor is to be grounded to earth at the service equipment or, when supplied by a separately derived system, at the supply transformer.

## Specifications

### Electrical Input

Input Power	52kW @ 3 phase and 250W @ 1 phase
Input Voltage, Charging	480VAC 3 phase
Input Voltage, Control & Communication	120VAC 1 phase
Input Current	63A @ 480VAC, 2A @ 120VAC
Input Frequency	50/60Hz $\pm$ 5%
Standard Wiring	3 phase, 4-wire (L1,L2,L3, Ground) and 1 phase (L1, N, Ground)

### Electrical Output

Maximum Output Power	50kW (@400–500V)
Output Voltage	200–500VDC
Output Current	125A max

### Functional Interfaces

Connector Types	CHAdEMO, CCS1 (SAE J1772 DC Combo)
Cable Length	12.5' (3.8 meters)
LCD Display	2 line OLED display
Card Reader	ISO 15693, ISO 14443, NFC
Plug-in Detection	No selection of plug required. Auto-detects which plug is connected.

### Safety and Connectivity Features

Vehicle Safety Communications	CHAdEMO - JEVS G104 over CAN CCS1 -SAE J1772 over PLC
Plug-out Detection	Power terminated per JEVS G104 (CHAdEMO) and SAE J2931 (CCS1) specification
Power Measurement Accuracy	+/- 2% from 10% to full scale
Power Report/Store Interval	15 minutes, aligned to hour
Wide Area Network	3G GSM, 3G CDMA

## Safety and Operational Ratings




Enclosure Rating	Type 3R, IP 65
Safety Compliance	UL Listed for USA cUL certified for Canada: complies with UL 2202, UL 2231-1, UL 2231-2
Surge Protection	6kV @ 3,000A. In geographic areas subject to frequent thunderstorms, supplemental surge protection at the service panel is recommended.
EMC Compliance	FCC Part 15, Subpart B
Efficiency	>92%
Power Factor	>0.99
Cooling	Liquid Cooled
Operational Altitude	<6,000 feet (<1828 meters)
Operational Temperature	-31 °F to 122 °F (-35 °C to 50 °C)
Storage Temperature	-31 °F to 122 °F (-35 °C to 50 °C)
High Altitude Operating Temperature	6000–8000' (1800–2400 m): -31 °F to 104 °F (-35 °C to 40 °C). Output power derating may apply.
Operating Humidity	Up to 95% @ 122 °F (+50 °C) non-condensing
Terminal Block Specifications	
480V Terminal Block	Temperature Rating: 90 °C Tightening Torque: 31 in-lbs (3.5 Nm) Wire Size: 4-2 AWG (21–34 mm <sup>2</sup> )
120V Terminal Block	Temperature Rating: 90 °C Tightening Torque: 14 in-lbs (1.6 Nm) Wire Size: 14 –12 AWG (2.1–3.3 mm <sup>2</sup> )

## Dimensions and Weights

Dimensions	HxWxD: 79" x 30" x 13" (2,000mm x 750mm x 330mm)
Installation Footprint	WxD: 23" x 11" (580mm x 270mm)
Weight	364 lb (165 kg)
Shipping Weight	728 lb (330 kg)

**NOTE:** ChargePoint, Inc. reserves the right to alter product offerings and specifications at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document.

## Handle with care

-  Always transport and store the CPE200 in its original packaging in a horizontal position. Unpack and raise the CPE200 to its vertical position during the installation process only.
-  Use appropriate lifting equipment (forklift, pallet jack, lifting straps and engine hoist, crane, etc). Ensure all lifting equipment used is rated for shipping and product weights listed above.
-  **DANGER:** Allow the CPE200 to stand in its vertical position only when secured to lifting equipment with the lifting straps, or when the CPE200 has been bolted to its concrete pad.

### Note on electrical power

The CPE200 requires both 480 VAC, 3 phase (L1, L2, L3, G) and 120 VAC, single phase (L, N, G). The 120 VAC can be brought from a nearby 208/120V panel or, if allowed by the local AHJ, a low power transformer can be set at the installation site, eliminating the need for a second conduit run and second disconnect switch. In either case, both the 480 VAC and 120 VAC must be brought into the disconnect enclosure and run through the same 1-1/4" conduit that feeds the CPE200.

For details on using a transformer to supply 120 VAC to the CPE200, refer to Appendix B.



# Planning your installation

## 2

The CPE200 is fastened to a prepared concrete pad using four anchor bolts (not supplied). The pad must be level and flat and be a minimum of 2,500 PSI. The concrete pad must support the size and weight of the CPE200 and comply with all applicable codes. Consult an engineer if necessary. For details on preparing the concrete pad, see Appendix A.



**DANGER:** Do not install the CPE200 in a commercial car repair facility or within 20 feet (6 meters) of an outdoor fuel dispensing device due to risk of explosion.

### Charging cable proximity

When choosing the installation location, it is important to ensure the CPE200's charging plugs can easily reach cars' charging ports without effort or strain on either end. The CPE200 charging cables can reach up to 10.5 feet (3.2 meters).

Install the CPE200 at the end of a stall type parking space or island with pull through capability.

Do not install the CPE200 curbside on a roadway.

If installed at the end of a parking space, it can either be centered at the end of the parking space or positioned up to 12" to the left as you face the rear of the space.

## Conduit locations

The CPE200 accommodates service wiring through conduit installed either underground or above ground. Above ground conduit is to be used only in locations such as a parking garage where it is impossible to accommodate service wiring from underground.

### Underground conduit

These are the basic steps for using underground conduit with a CPE200. See Appendix A for detailed instructions.

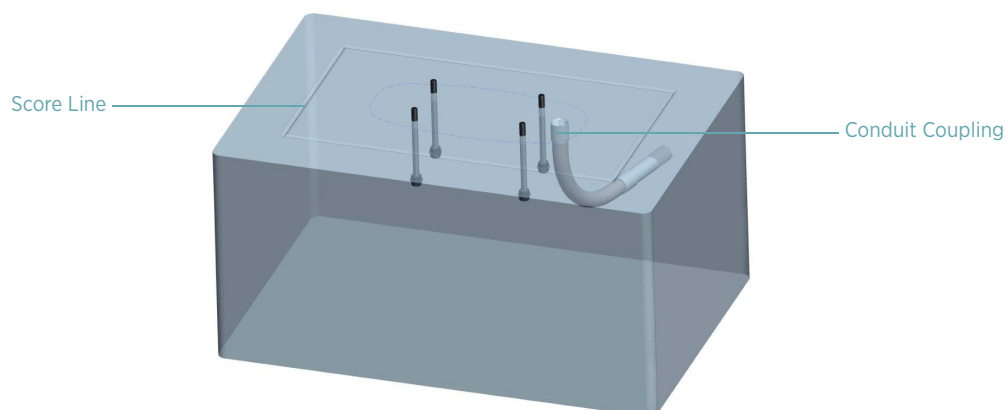
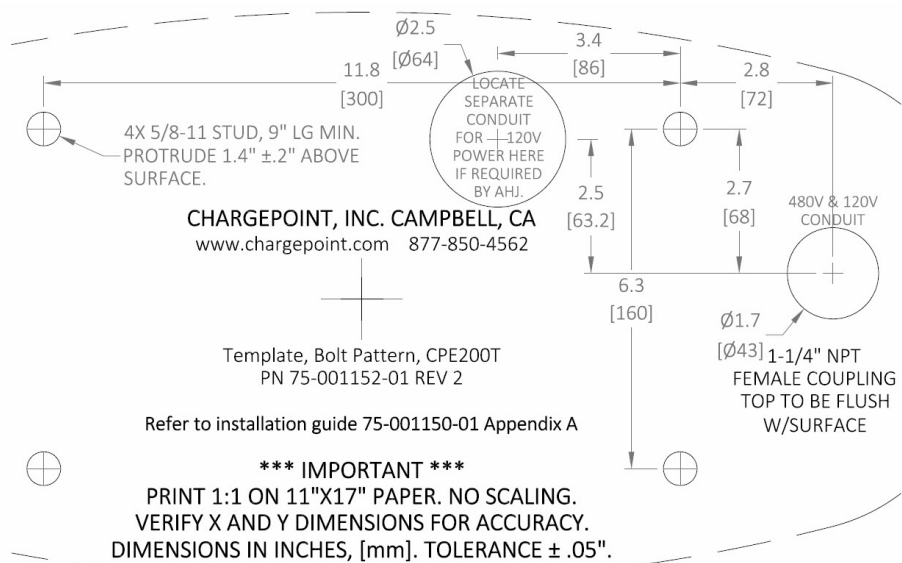
- 1 Fabricate a plywood template using template pattern 75-001152-01 stapled into the center of this guide. Be sure template is printed 1:1 by verifying measurements on pattern.

**NOTE:** For your convenience you can also purchase a prefabricated plywood template directly from ChargePoint (Part Number CPE200T-BT).

- 2 Locate mounting studs and conduit within .05" tolerance.
- 3 The 1-1/4" threaded female coupling must be flush with the surface of the pad and precisely located relative to the mounting studs.

Do not pull wiring at this time. It will be pulled after the conduit run is terminated into the unit.

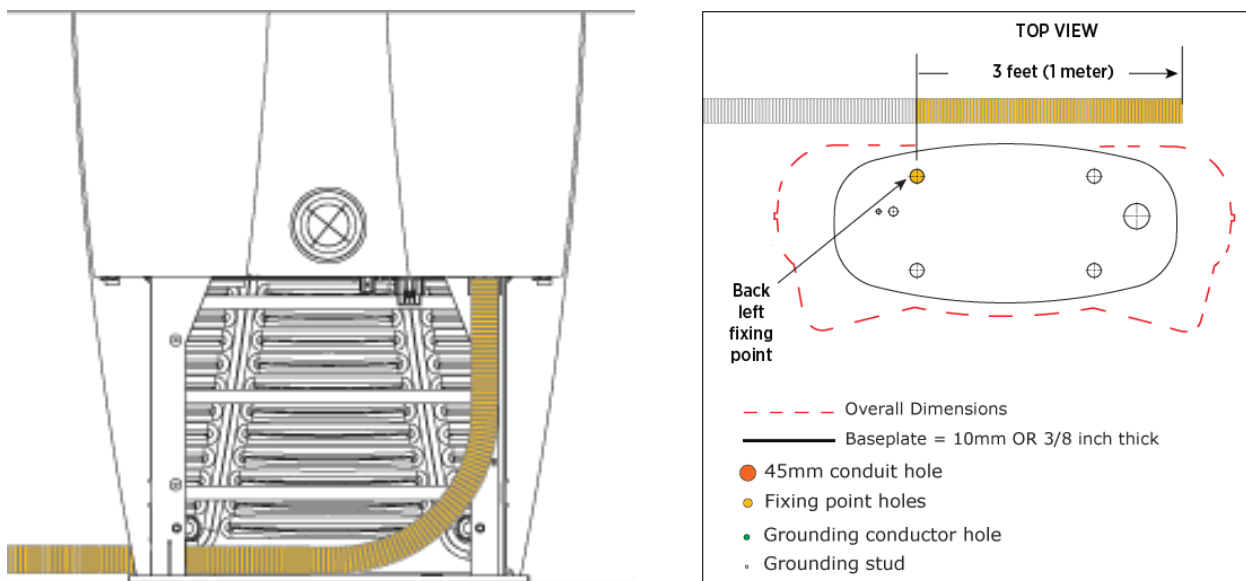
TEMPLATE GUIDE (NOT TO SCALE)



## Above ground conduit

Above ground conduit is recommended only in locations such as a parking garage where it may be impossible to accommodate service wiring from underground.

When service wiring is supplied above the ground or down a wall, it enters the CPE200 through a cutout on the left side of the back fan panel. Run at least three feet (one meter) of conduit and wiring from the back left fixing point.



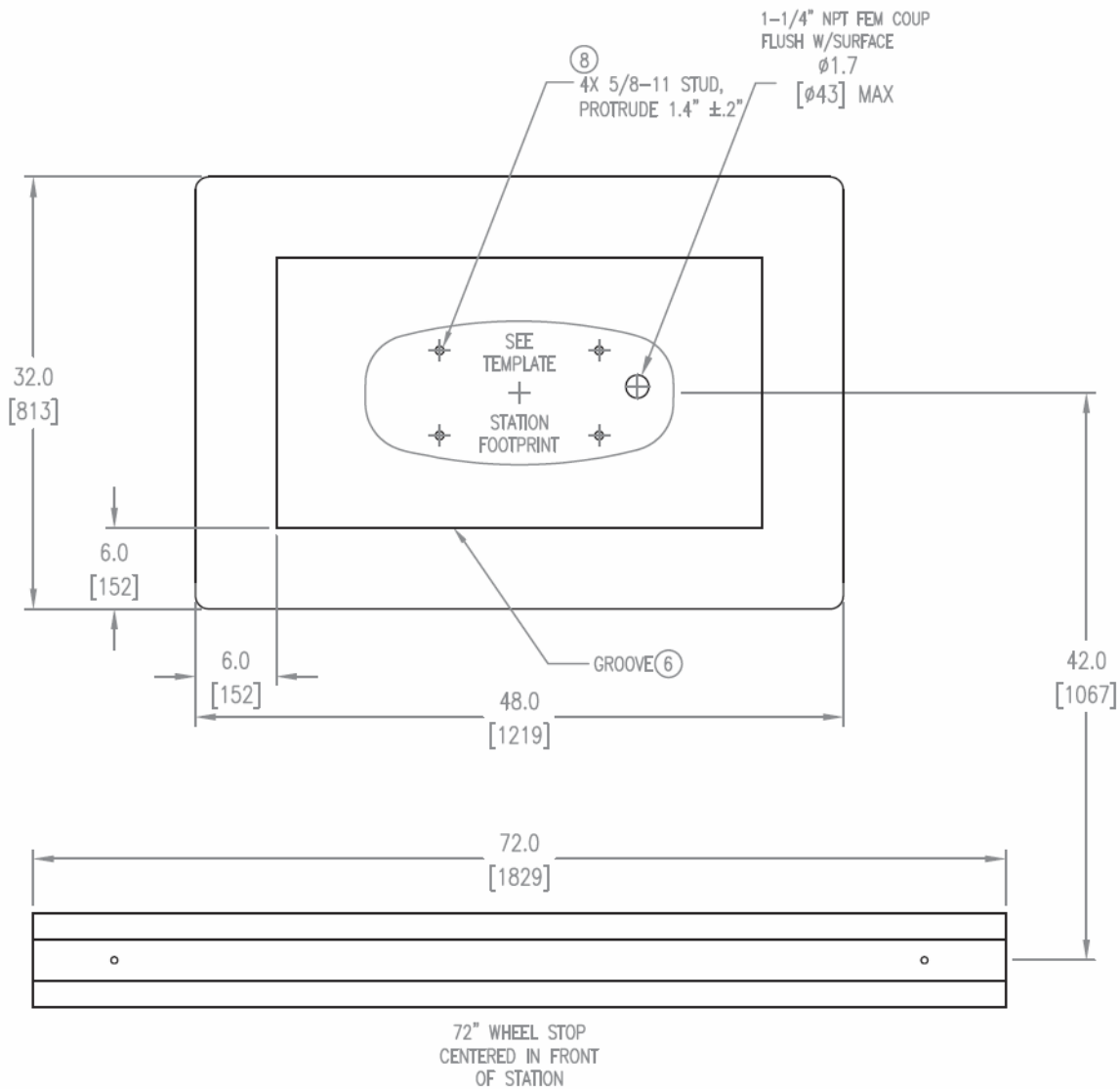
**NOTE:** Conduit and service wiring must be trimmed prior to installation.

## Stand alone charging station

When installing the CPE200 use the minimum distances shown below.

### NOTES:

- 1 CONCRETE PAD FOOTING TO BE 24" BELOW GRADE MINIMUM.
- 2 CONCRETE TO BE 3000 PSI MINIMUM.
- 3 TOP OF PAD TO BE 6" ABOVE ASPHALT.
- 4 REINFORCE AND DOWEL TO SURROUNDING CONCRETE WITH REBAR.
- 5 1" RADIUS ALL EXTERNAL EDGES.
- 6 SCORE LINE 6" IN FROM OUTER EDGE TO FORM FAUX CURB. (SEE ILLUSTRATION BELOW)
- 7 PAD DIMENSIONS SHOWN ARE MINIMUM REQUIRED. CAN BE LARGER. CONSULT AN ENGINEER AND LOCAL CODES TO ENSURE A COMPLIANT INSTALLATION.
- 8 MOUNTING HARDWARE REQUIRED (SEE ILLUSTRATION BELOW):
  - a BOLTS: 5/8-11 X 9" MIN. F1554 GRADE 55 HOT-DIPPED GALVANIZED THREADED BOLTS - 4 EA
  - b NUTS: 5/8-11 HEAVY GALVANIZED HEX NUTS (DH RATED) - 12 EA
  - c WASHERS: GALVANIZED WASHERS (ASTM F436) - 8 EA

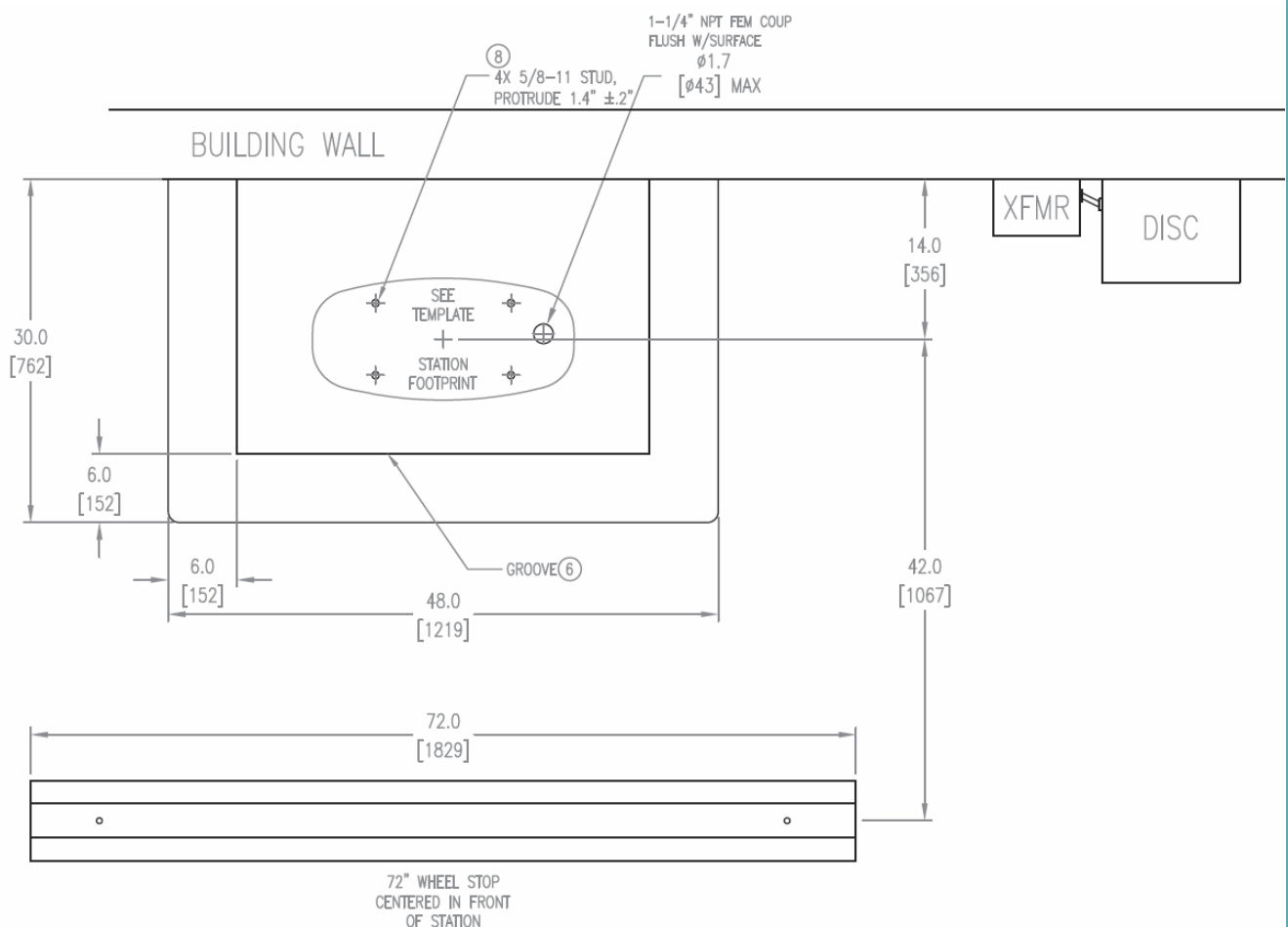


## Adjacent walls or obstacles

When installing the CPE200 with its back or side against or near a wall or other obstacle, use the minimum distances shown below.

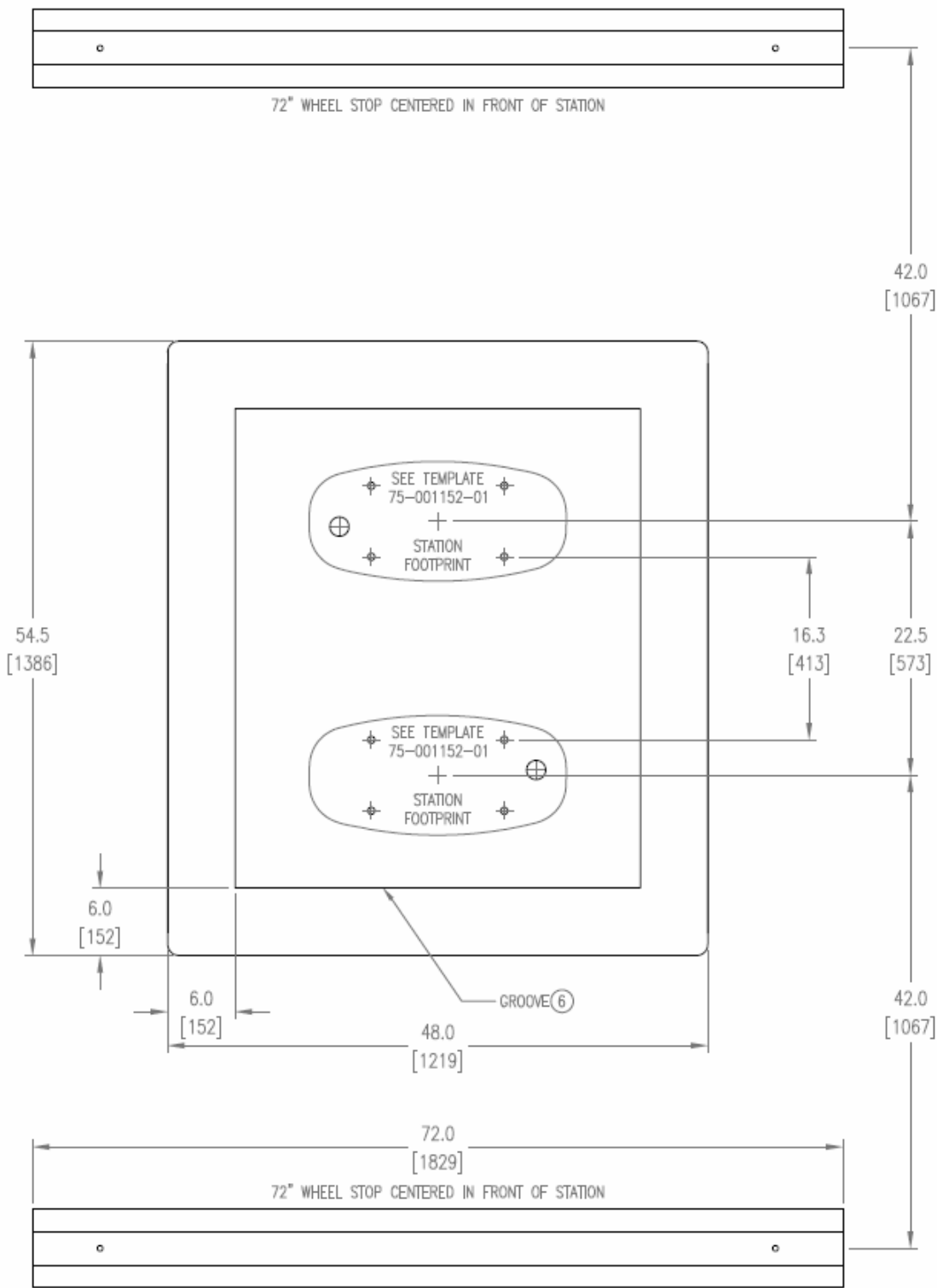
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  - b NUTS: 5/8-11 HEAVY GALVANIZED HEX NUTS (DH RATED) - 12 EA
  - c WASHERS: GALVANIZED WASHERS (ASTM F436) - 8 EA



Back-to-back charging stations

When installing two CPE200's back-to-back, ensure a minimum distance of 12 inches (300 mm) between them. To ensure this minimum distance, position the concrete pad using the dimensions shown below.



# Installing the CPE200

# 3

After the pad is prepared and surveyed by a qualified engineer as described in the previous section, you are ready to begin the installation process.



**Important:** The CPE200 has an IP65 and NEMA Type 3R electronics enclosure rating. However, because the enclosure must be opened during installation, the installation process must be performed during dry calm weather or under cover to prevent ingress of moisture or debris.



**Important:** Ensure the concrete pad is completely cured before mounting the CPE200.

## Tools included

- 5 mm tamper-resistant hex driver bit
- 2.5 mm hex “L” wrench
- Lifting straps

## Materials included

- Two Conduit fittings
- Conduit cut to 11” long
- Two sealing washers
- 1-1/4” rigid conduit nipple, 6”
- 1-1/4” rigid conduit female coupling
- Black ferrite ring
- Gray ferrite ring
- CPE200T baseplate template guide
- CPE200T installation guide
- Activation label (for pinpointing the station as described in Chapter 4)

## Tools you will need

- Lifting equipment sufficiently rated to lift a weight of 728lb / 330kg and dimensions of:  
37” (H) x 90” (W) x 21” (D) / 940mm (H) x 2,286 (W) x 533 (D)
- Power driver
- #2 Philips screwdriver
- 1/2” drive breaker bar
- 15/16” socket

- 1/2" drive torque wrench
- Adjustable pliers
- 1/4" flat blade screwdriver
- 1/8" flat blade screwdriver

## Materials you will need

- Four anchor bolts, 5/8-11 x 9" minimum - see Appendix A
- Concrete, minimum 3000 PSI - see Appendix A
- 1-1/4" conduit to concrete pad - see Appendix A
- Twelve galvanized nuts 5/8-11
- Eight heavy washers 5/8 ID
- Wire 4 AWG & 14 AWG
- Service disconnect switches as required

## Overview of Steps



**Important:** Before installing the CPE200, contact ChargePoint to make arrangements for system commissioning.

- 1 Unpacking the shipping crate (see page 3-3)
- 2 Positioning the CPE200 vertically (see page 3-4)
- 3 Removing the fan (see page 3-5)
- 4 Removing the shipping base plate (see page 3-7)
- 5 Securing the CPE200 to the prepared pad (see page 3-8)
- 6 Removing the front panel (see page 3-9)
- 7 Removing the service covers (see page 3-10)
- 8 Running the internal conduit and service wiring (see page 3-11)
- 9 Connecting the wiring (see page 3-13)
- 10 Preparing the CPE200 for operation (see page 3-14)
- 11 Verifying correct operation (see page 3-16)

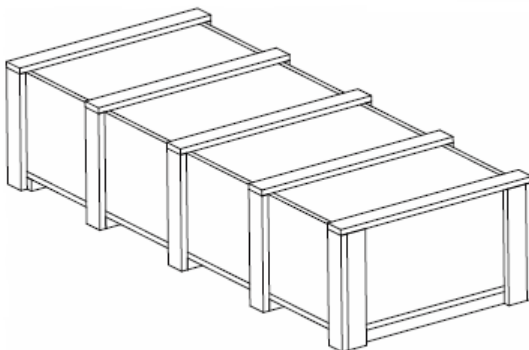
These steps are detailed in the remainder of this section.



## Step 1: Positioning and unpacking the shipping crate

- 1 Position the crate with the bottom of the CPE200 as close to the installation pad as possible.

The CPE200T is enclosed in a wooden crate with foam packing. Using appropriate lifting equipment (forklift, pallet jack, engine hoist, crane, etc) and be sure to loop the CPE200's lifting straps onto the lifting equipment. Always lift and transport the crate horizontally.



### CAUTIONS:

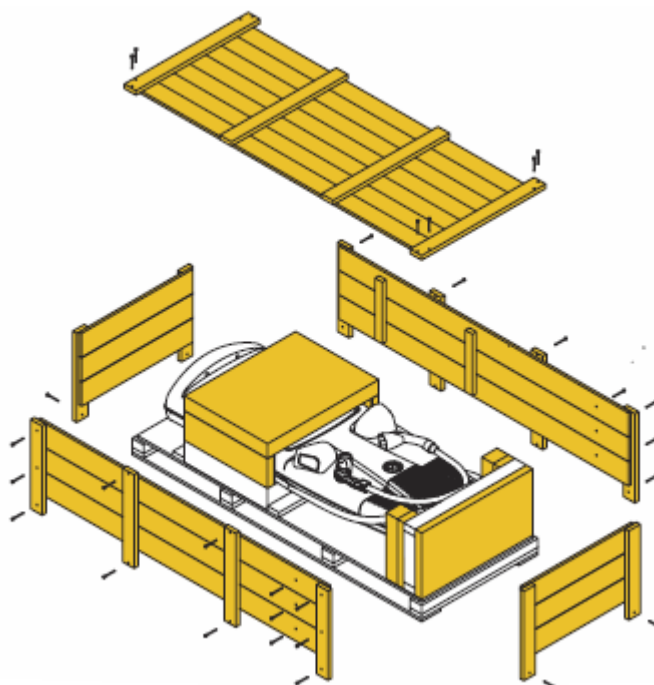
- **Transport the CPE200 in its horizontal position only.**
- Ensure the lifting equipment is appropriately rated for shipping weight (728lb / 330kg) and crate dimensions of (79" (H) x 30" (W) x 13" (D) / 2,006mm (H) x 762mm (W) x 330mm (D)).
- Check that the crate is in good condition and that the CPE200 is not damaged. If damage is evident, make a formal complaint to the transporter and notify ChargePoint at 1-877-850-4562.

- 2 Remove the packaging.

Unscrew all crate fasteners and remove all panels and loose packaging. Parts shown in orange are removed prior to positioning the vertical position.

### IMPORTANT:

Collect all screws and place in a plastic bag or tape together for proper disposal. Leave no screws in the parking area to reduce the risk of puncturing tires.



Please recycle or reuse packing materials.

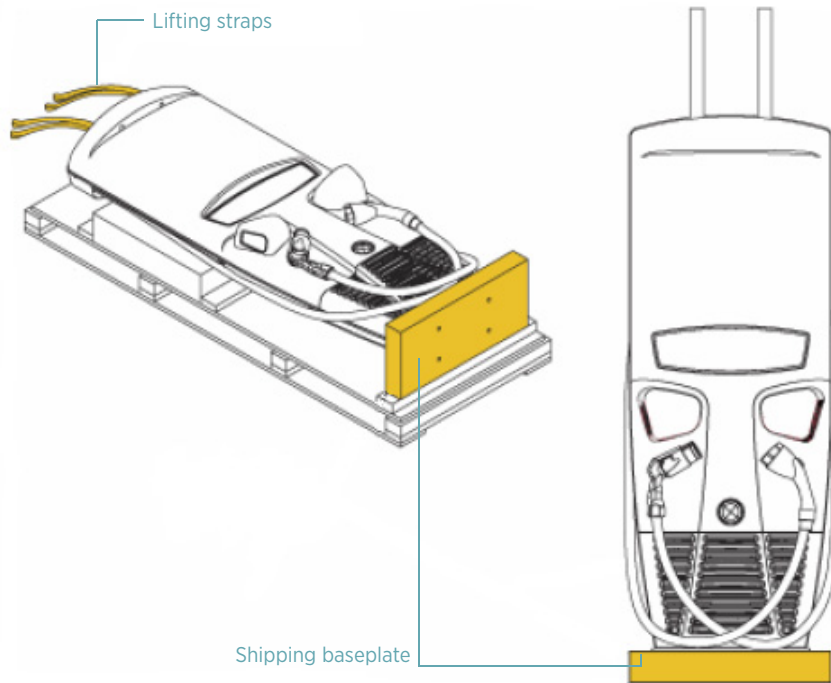
## Step 2: Positioning the CPE200 vertically

**⚠ DANGER:** Never stand the CPE200 vertically without having it attached to lifting equipment using the lifting straps. The CPE200 must remain attached to lifting equipment until the mounting bolts have been installed (as described on page 3-7).

- 1 Securely attach the lifting straps at the top of the CPE200 to the lifting apparatus and gently raise the CPE200 to a standing position on its shipping baseplate.

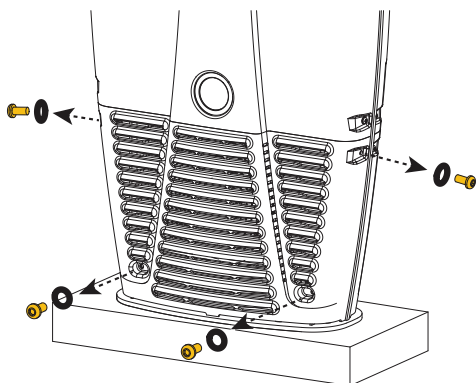
**NOTE:** The CPE200 is 6.85 ft (2,090 mm) high, including the shipping baseplate.

- 2 When the CPE200 is vertical, set it down but keep tension on the lifting straps.
- 3 Remove all remaining wrapping from the CPE200 with the exception of its two charging connectors. The wrapping will protect the plugs through the installation process.

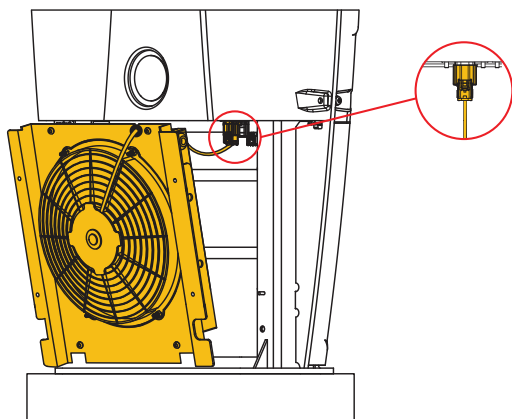


### Step 3: Removing the fan

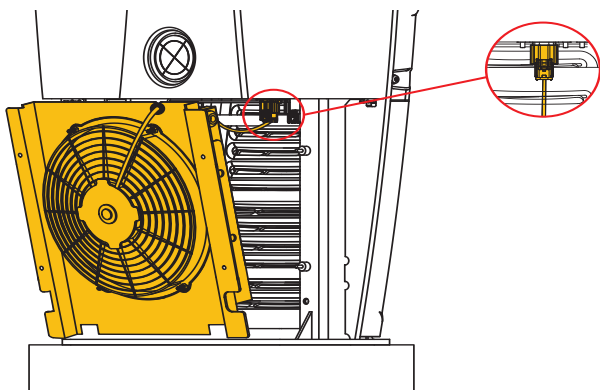
- 1 With the CPE200 in the vertical position, remove the front and rear fan covers by unfastening the two security screws and washers from each fan cover using the supplied 5 mm Pin Hex tool. Store the fasteners in safe place.



- 2 Release the front fan panel by moving it to the left and down. This exposes the fan and shipping base.



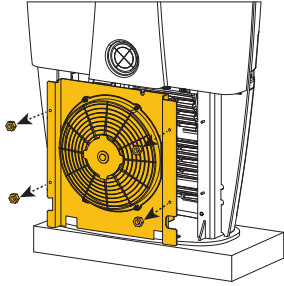
- 3 Remove the fan by unfastening its four nuts using an 8mm (5/16") nut driver. Slide the fan off the fasteners and place it on the base plate. Store the fasteners in safe place. Gently pull the fan about 2" forward taking care to avoid pulling on the fan wires or coolant hoses.





**IMPORTANT:** Do not pull on the power connector and cooling hoses.

- 4 Reach behind the fan and disconnect the fan's power connector by pressing on the release latch at the front of the connector and pulling down.



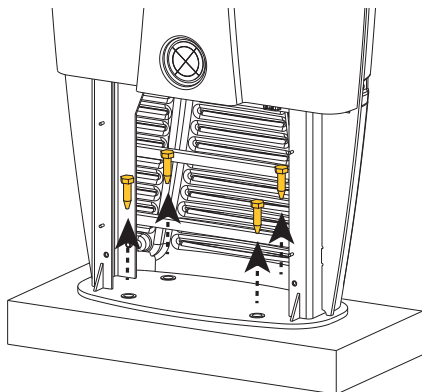
- 5 Release the two cooling hoses located behind the fan by pulling the quick release sleeve. A drop or two of coolant may come out when the connectors are uncoupled. This is normal.



**IMPORTANT:** Store the fan in a safe and clean place to prevent damage. Be careful not to allow dirt or other contaminants to come in contact with the coolant connectors or fan plug.

## Step 4: Removing the shipping baseplate

Unscrew the four bolts to remove the CPE200 from its shipping baseplate.

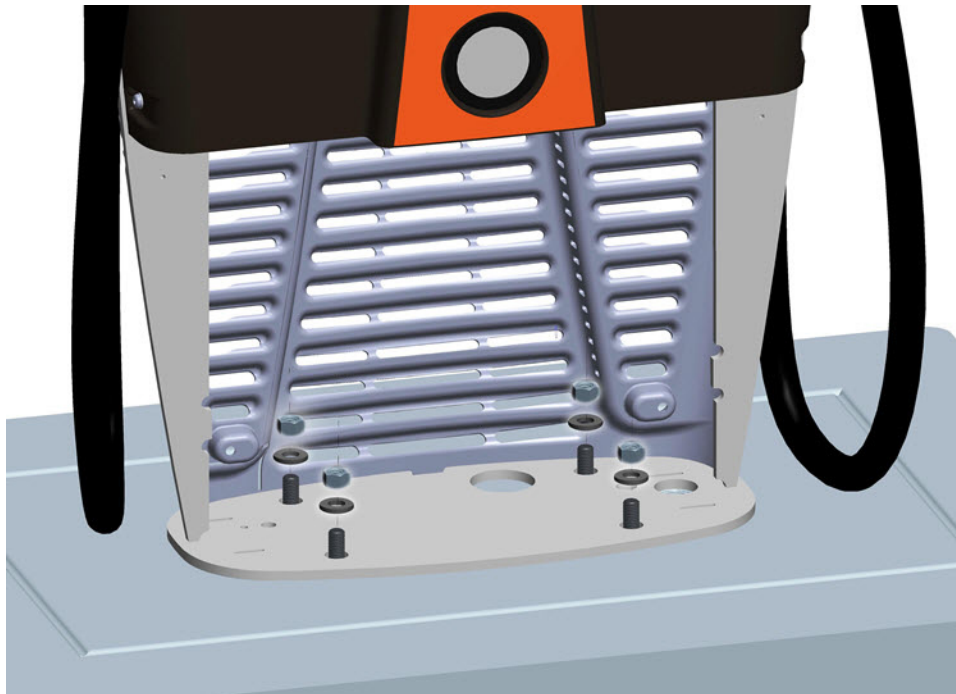


## Step 5: Securing the CPE200 to the prepared concrete pad

**NOTE:** The concrete pad **MUST** BE level and prepared as described in Appendix A. Ensure the concrete is completely dry before proceeding with this step.

Do not use spacers under the CPE200.

- 1 Lift the CPE200 and slowly lower it onto the prepared concrete pad.
- 2 Securely fasten the CPE200 to the bolts in the concrete pad using four washers and four 5/8" nuts (not supplied).
- 3 Tighten to 100 ft-lbs.

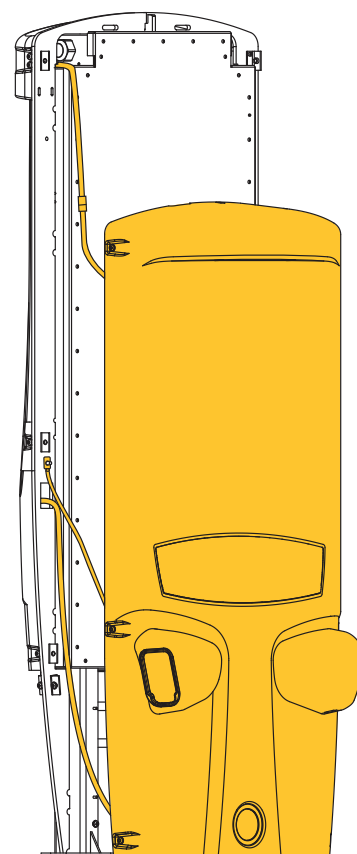
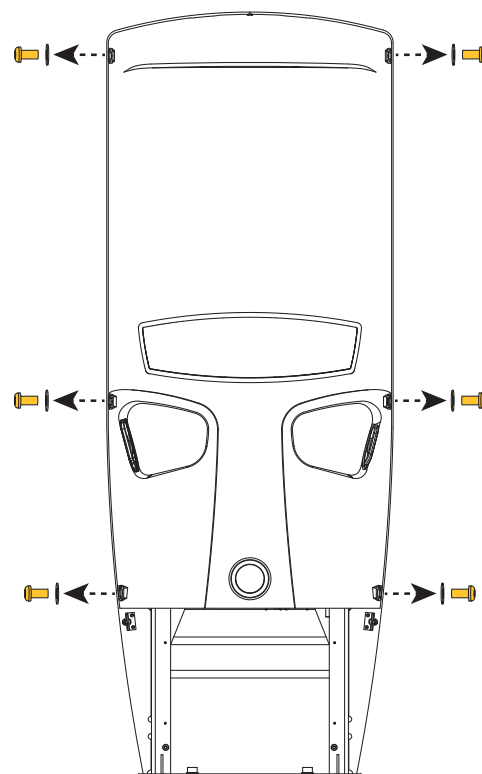


## Step 6: Removing the front panel

- 1 Using the 5 mm hex L key (supplied), remove the 6 security screws and washers on the front panel, starting with the bottom screws first.

The left side of the front panel is attached with three cables. It is not necessary to disconnect this wiring.

- 2 Lift the front panel upward to release it from the top hook, then gently lower to the ground and rest it against the CPE200.



## Step 7: Removing the service covers

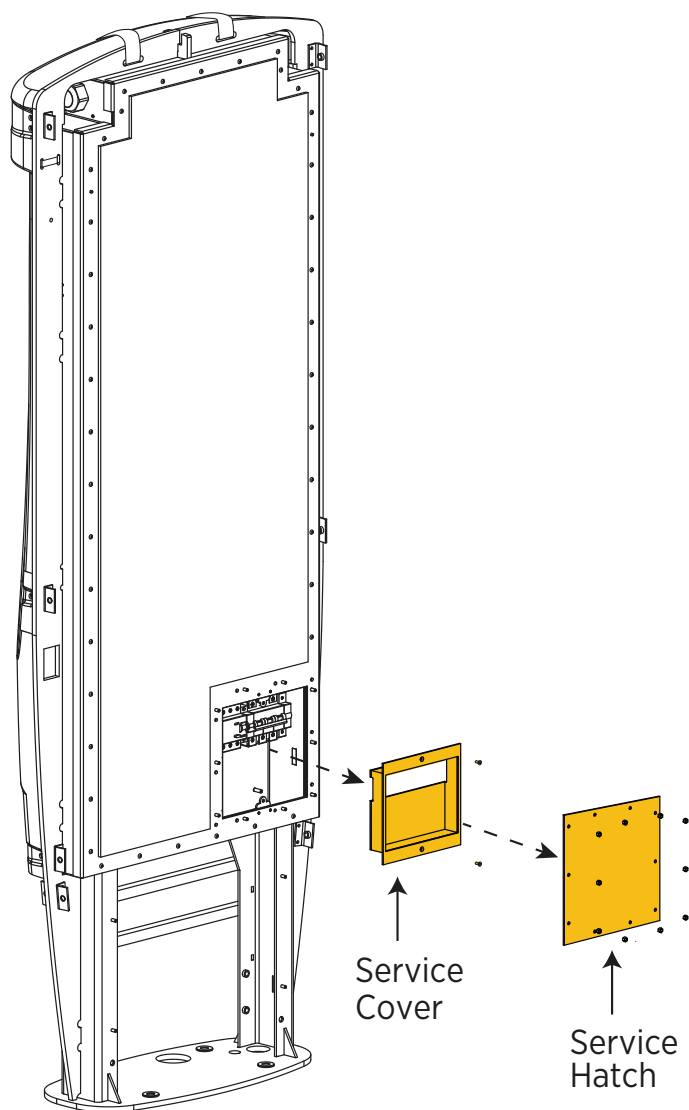
- 1 Using an 8 mm (5/16") nut driver, remove the ten service hatch nuts and remove the hatch to access the service cover.
- 2 Using the supplied 3mm hex tool, remove the two service cover screws and service cover.

**NOTE:** A wiring diagram is located on the inside of the Service Hatch.



**IMPORTANT:** Store the covers and fasteners in the plastic bag provided.

Take care to avoid damaging the cover gasket.



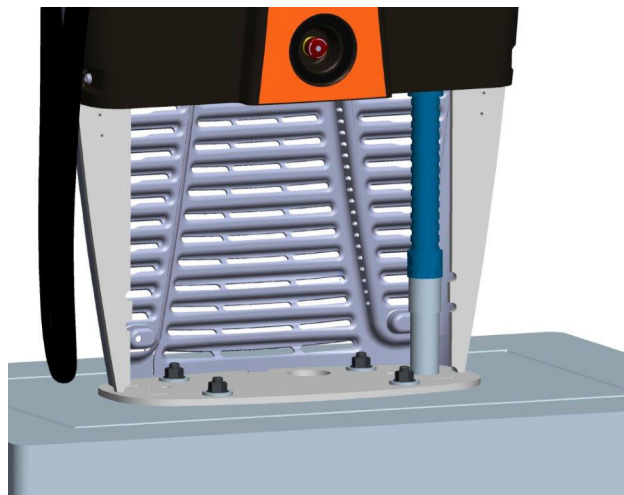
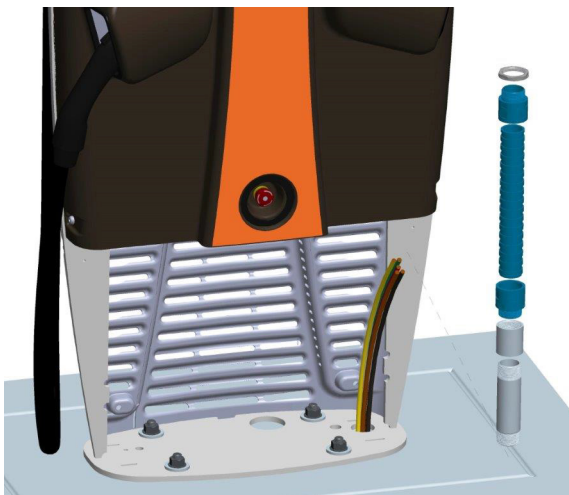


## Step 8: Running conduit and service wiring

### Running underground service wiring

**NOTE:** For above-ground service wiring instructions, see Running above-ground service wiring: on page 3-12.

- 1 Assemble the supplied 6" conduit nipple, coupling, and flex adapter using silicone sealant on all threaded connections.
- 2 Install the conduit nipple into the embedded coupling using sealant on the threads.
- 3 Pull the wires from the service disconnect into the service hatch.
- 4 Assemble the flexible conduit and remaining flex adapter and attach it to the hole in the service hatch.
- 5 Connect wires to the terminal block according to the diagram inside the service hatch.



### Running above-ground service wiring:

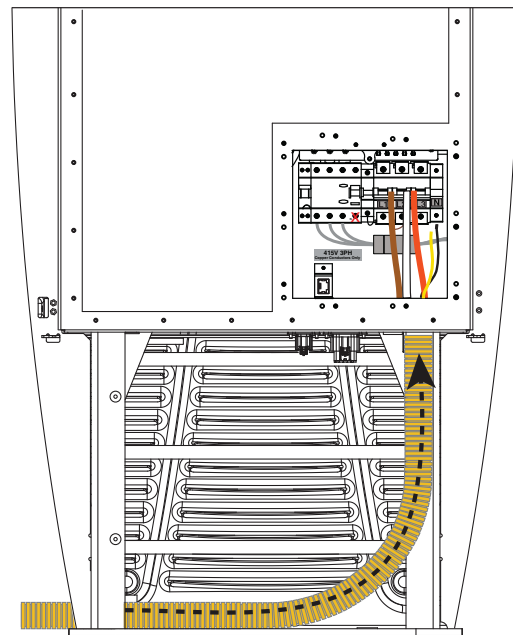
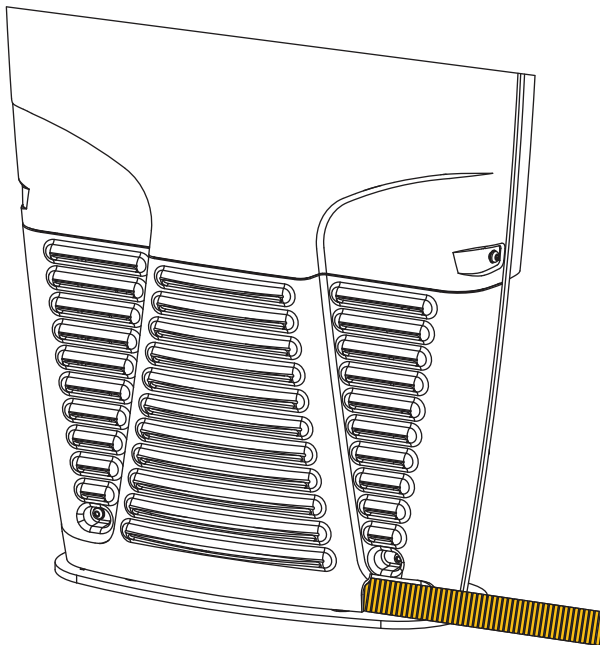
**NOTE:** Install above-ground service wiring only when it is impossible to run conduit underground, such as in a parking garage or similar structure.

- 1 Run the conduit into the cut out area in the back fan panel:

Run the 1-1/4" conduit along the inside of the back panel, bend up and feed the wire and conduit into the conduit fittings.

Run at least 12 inches (300 mm) of wiring into the interior.

- 2 Using cable ties, secure the conduit to the slots in the right hand side of the framework to ensure it does not interfere with the fan.
- 3 To prevent water and debris from entering, seal the conduit into the fitting using silicone sealant.



## Step 9: Connecting the wiring

**WARNING!** This step must be performed by a qualified electrician.

- 1 Pull the 480V and 120V wiring through the 1-1/4" conduit and into the service hatch.
- 2 Place the gray ferrite ring over all wires.
- 3 Connect the green ground wire to the ground terminal attached to the chassis.
- 4 Connect the 120V black, white, and green wires (L, N, E) into the small connection points, as illustrated. Torque to 14 in-lb.

Some models may have a push-in style terminal block here, in which case the torque specification does not apply.

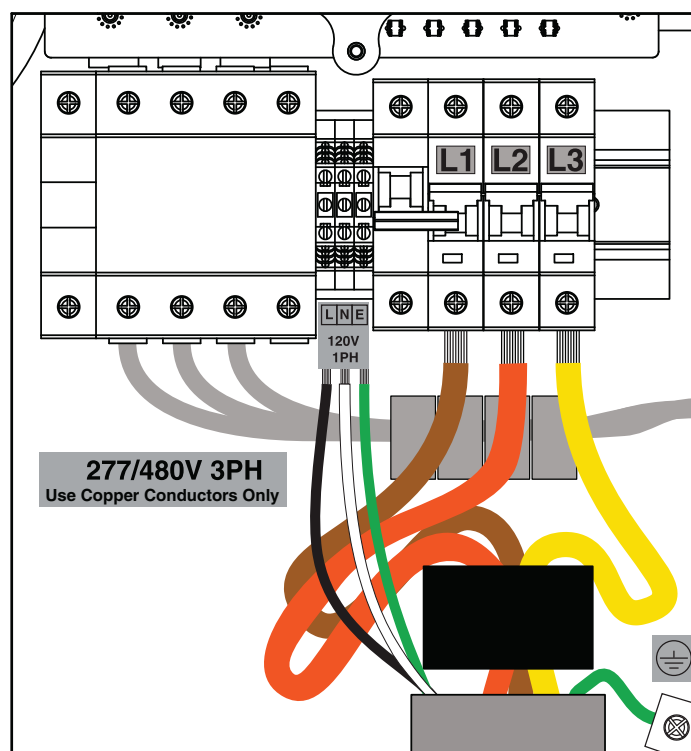
- 5 Run the large brown, orange and yellow (L1, L2, L3) wires through the black ferrite ring and up to their corresponding connection points.

Route the wires well to the rear of the service hatch opening so that they do not interfere with installation of the service cover.

Ensure that there is no stress on the wires as they enter the connection points. Torque to 31 in-lb. Strip the L1, L2, L3 to 5/8".

### **IMPORTANT!**

- Use 4-2 AWG 90°C copper wire for the 480V 3-phase wiring between the disconnect and the terminal block.
- Use 14 - 12 AWG 90°C copper wire for the 120V 1-phase wiring into the terminal block.
- A gasket is attached to the service hatch. Handle the hatch carefully to avoid damage and prevent accumulation of debris.
- Keep only a minimum length of wiring inside the terminal block area. All wires must be positioned behind the lower face of the circuit breaker, otherwise it will interfere when reattaching the service cover.



### WIRING DIAGRAM

Through grey ferrite ring only:

Small black = L  
 Small white = N  
 Small Green/Yellow = E  
 Main Green/Yellow to earth block

Through grey and black ferrite rings:

Brown = L1  
 Orange = L2  
 Yellow = L3

## Step 10: Preparing the CPE200 for operation

- 1 Remove the lifting straps by pulling them from the top of the CPE200. It is not necessary to remove the top cover.

- 2 Using the supplied 2.5 mm L-wrench, reattach the service cover.

Place the service cover over the switch gear and ensure it sits flush with the metal panel. If it doesn't sit flush, remove the panel and ensure the wiring is positioned behind the lower face of the switch gear.

- 3 Turn internal circuit breakers on. Be sure all internal circuit breakers are in the up position before attaching the hatch cover.

- 4 Reattach the service hatch over the service cover.



**IMPORTANT:** Ensure that the gasket has not been damaged or soiled.

DO NOT over-tighten. If using a power drill to fasten the nuts, ensure the torque setting is no greater than 8.75 lb-in (1.0 Nm). If using hand tools, tighten until you feel resistance.

- 5 Reattach the fan.

Holding the fan at an angle, rest it on the baseplate while reconnecting its power connector.

Reconnect the cooling hoses by pushing the two portions together. Ensure they are not pinched and not obstructing the fan.

Position the fan onto the fixing studs.

Using the 8mm (5/16") nut driver, fasten the fan to the studs.

- 6 Replace fan panels.

FOR ABOVE GROUND CONDUIT ONLY: The rear fan panel provides a conduit exit. Cut the three tabs on the lower right of the panel to open the conduit exit.

Slide the panel to the right and lift it into position.

Holding the panel in this position, use the 5mm pin hex tool to fasten the security screws.

DO NOT over-tighten.

Ensure the fan panel aligns with the front panel on both sides. Adjust if necessary.

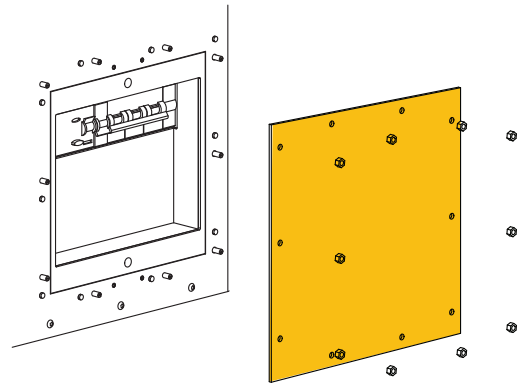
- 7 Reattach the front panel.

Gently place the front panel on the top hook ensuring the panel sits outside the fastening brackets and onto the top hook.

Secure into place using the nylon washers and security screws. Do not over tighten.

- 8 Unwrap the charging connectors and insert into the holsters.

- 9 Wipe all surfaces with a soft cloth dampened with warm water.



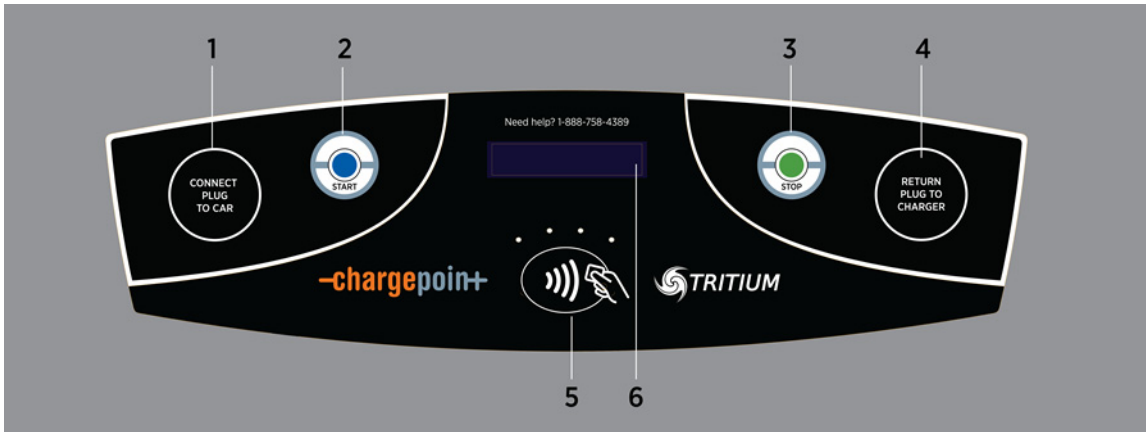
**Before applying power, verify:**

- 1** All electrical connections are clean and tight.
- 2** The electrical enclosures are clean and free of wire strands and metal shavings.
- 3** All cooling lines have been re-connected.
- 4** The cooling fan power connector has been re-connected.
- 5** The mounting hardware is tightened to 100 ft lbs.
- 6** Voltages into the disconnect switch have been verified by a qualified electrician (480VAC and 120VAC).
- 7** All covers have been replaced and all fasteners are properly tightened.

The CPE200 is now ready for operation.

## Step 11: Verifying correct operation

Switch on the power at the service breaker and verify that the interface panel on the front door is cycling through the icons. Each icon sequentially lights up. The startup process takes approximately 5 minutes and is complete when the icons stop flashing and the Connect Plug to Car icon (1) is illuminated.



- 1 Connect Plug to Car—Icon flashes when the unit is available for use.
- 2 Push **Start**.
- 3 Tap and activate ChargePoint card to start the session.
- 4 Push **Stop** to stop the charging session.
- 5 Return Plug to Charger—Icon flashes to indicate that the charging session is complete and the plug should be returned to the plug holder.
- 6 The 2-line display shows start and stop instructions, session information, and potential error information.

If the station does not power up as expected, confirm that the wiring has been properly connected. If the station has been properly wired yet does not power up as expected, contact ChargePoint at 1-877-850-4562.

# Preparing the Station for Activation on ChargePoint

## Before You Start

Before leaving the installation site, you must prepare the station for activation. You will need:

- The CPE200's MAC address and activation password. (You can find the activation sticker behind the plastic protection cover on the interface panel.)
- The exact location (to the parking space) where the CPE200 is physically installed.
- A smart phone with Internet access.
- Installer account information (user name and password) on ChargePoint. This was provided upon completion of training.

## Overview of Steps

- 1 Pinpoint the station (see page 4-2).
- 2 Complete the post-installation checklist (see page 4-4).  
and

Affix the label to the bottom of the Post-installation Checklist (see page 4-4).

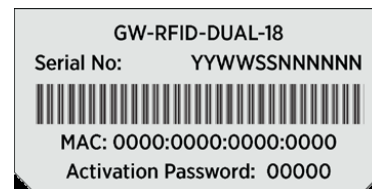
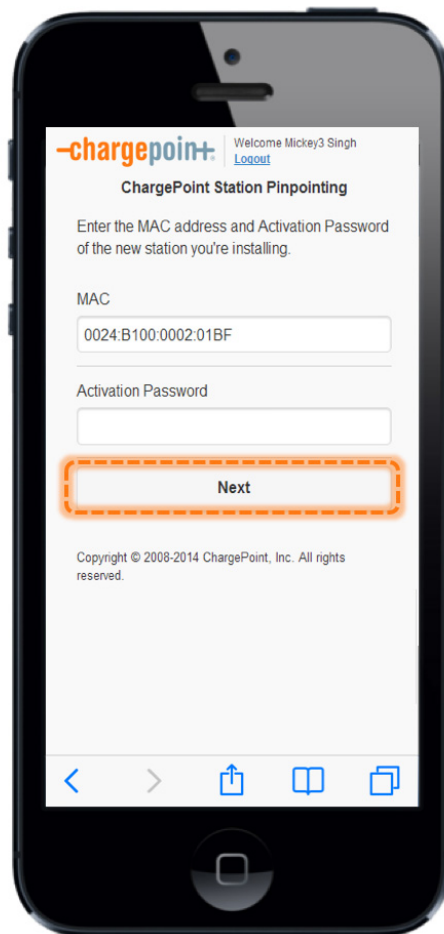
When you have completed these steps, **contact the person responsible for activating the stations on ChargePoint**. This will complete the installation of the CPE200 charging station.

## Pinpoint the Station

To activate the CPE200 and allow drivers to find the station on the ChargePoint map, you must “pinpoint” the station.

### Follow these steps

- 1 Using your smart phone, navigate to <http://m.chargepoint.com>.
- 2 Log in with your Installer credentials.
- 3 Enter the MAC address and activation password printed on the CPE200's activation label.



- 4 Confirm that you are installing a new CPE200 charging station.
- 5 When prompted, touch **OK** to share your GPS location data with the ChargePoint mobile site.
- 6 When prompted, touch **OK** to review the station's location on Google™ Maps.



- 7 Review the station address and zoom in to review the initial position of the station's pin on the map.



- 8 Using your finger, move the pin to the correct parking spot location (as illustrated).  
If necessary, manually adjust the address of the CPE200's location.
- 9 Take a picture of the station using your smart phone, then scroll down to **Upload a Station Picture** and choose the station picture.
- 10 Add helpful information for drivers, such as 'Upstairs in parking garage' or 'By west mall entrance'.
- 11 Touch **SUBMIT** to pinpoint the CPE200 on the ChargePoint map.

## Complete the Post-installation Checklist

Charge ID:

Before leaving the installation site, complete this checklist for the CPE200. Then tear out this page and give it to the person responsible for activating the station. Complete one for each station on site.

### Customer:

### Installer:

Name

Name

Address

Address

Contact

Contact

Phone

Phone

Email

Email

- ☐ All electrical connections are clean and torqued to specification.
- ☐ The conduit is installed properly. All joints are waterproof.
- ☐ The electrical enclosures are clean and free of wire strands and metal shavings.
- ☐ Input voltage measures 480V +/- 10%. L1 - L2 \_\_\_\_\_ V L2 - L3 \_\_\_\_\_ V L1 - L3 \_\_\_\_\_ V
- ☐ All covers have been replaced and all fasteners are properly tightened.
- ☐ The disconnect switch has a padlock to prevent unauthorized entry into the wiring area.  
No lock is permitted on the operating lever.
- ☐ Station shows cellular signal strength on the display of at least 2 bars. Signal strength \_\_\_\_\_
- ☐ Confirm the RFID reader is functional. Tap ChargePoint card provided and verify that RFID responds.
- ☐ No error messages on the station display
- ☐ MAC address appears on the display and matches the MAC address on the activation label.
- ☐ Parking area is clean and free of all crate fasteners, packaging, and debris.
- ☐ All steps of the mobile pinpointing process have been completed.
- ☐ The station display shows the "AVAILABLE - TAP CARD TO START" message.
- ☐ The spare Activation Label is attached below. The spare activation label is attached below.

Place Activation Label Here

# Maintaining the CPE200

# 5

The maintenance listed in this chapter can be performed by the station owners. All other servicing must be performed by ChargePoint's qualified service personnel.

## General exterior maintenance

Regular cleaning is recommended to avoid accumulation of debris/dust/dirt on or around the unit. Wipe surfaces with a soft cloth dampened with water, or use alcohol based cleaner for harder to remove marks.

Do not spray with high pressure cleaning hoses or use abrasive chemicals.

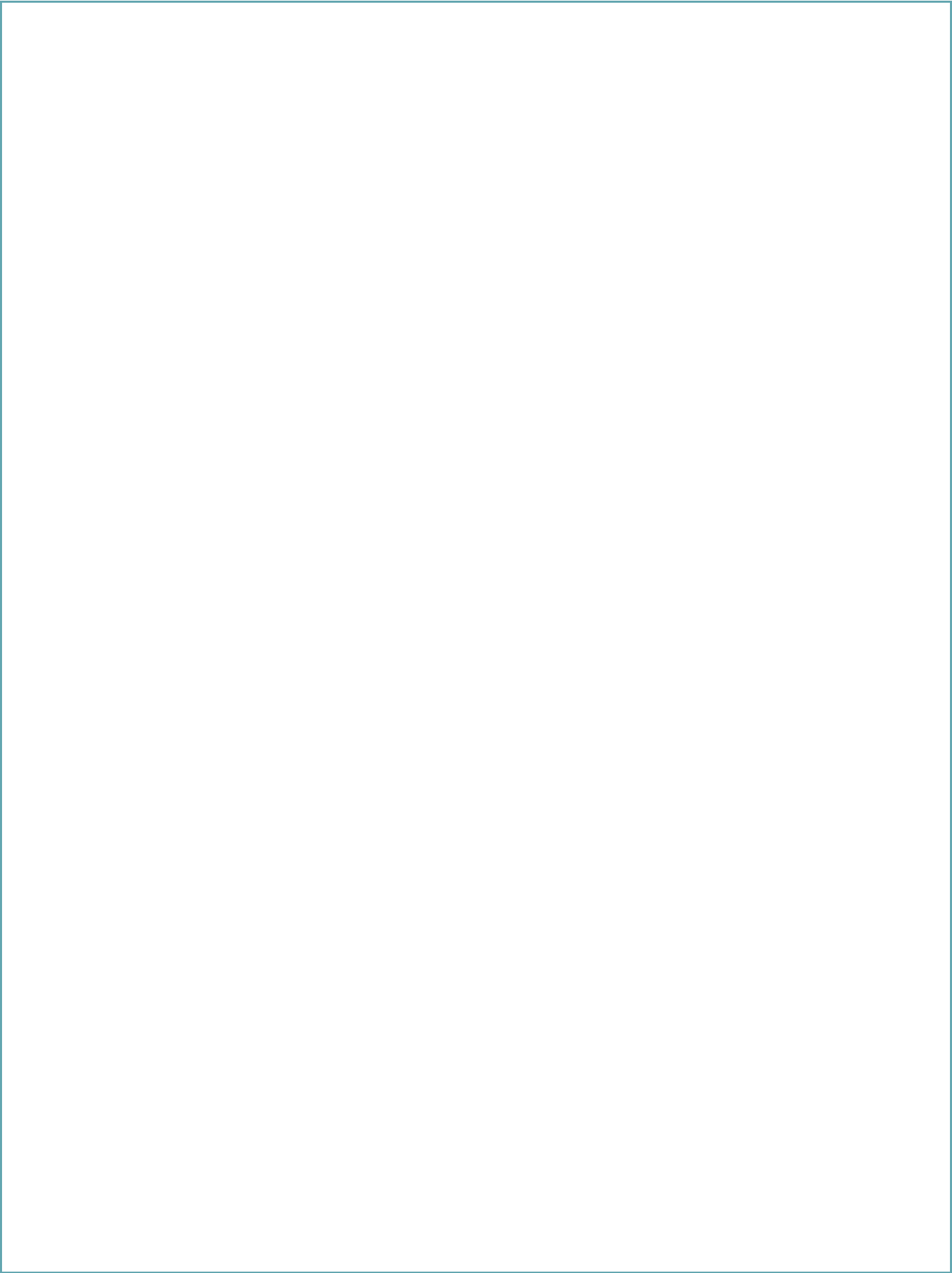
## Maintenance checklist

- 1 Wipe surfaces
- 2 Wipe metalwork
- 3 Wipe interface panel
- 4 Keep plug holders free of debris and use appropriate lubricant on the hinges of the plug plates if needed.
- 5 Check the charging plugs for accumulation of debris and inspect the contact pins for corrosion. If corrosion is present, contact ChargePoint.
- 6 Regularly check the fan. Remove any debris by hosing gently through the slots in the fan panel.

## Snowfall areas

Regularly remove any snow that accumulates in front of the fan panel.





# Preparing a concrete pad for the CPE200

# A

You can mount the CPE200 onto a newly poured concrete pad. If it is impossible to do so, it can be mounted to an existing concrete surface (in the case of a parking garage).

The items and tools required, and the installation steps vary depending on the type of installation. This appendix provides basic guidelines for both types of installations.

## Before you start



**IMPORTANT:** Always check local codes to ensure compliance. The guidelines described here are the minimum requirements. You may need to increase the dimensions of the concrete pad if required by local codes or soil conditions. Consult an engineer if necessary to ensure the installation complies with all applicable codes.

Review the site to ensure that it is suitable for a CPE200 installation. Confirm that there is adequate clearance and that the CPE200 can be properly positioned so that the cable can reach the charge ports of any EV parked in the space.

## You will need

**NOTE:** The materials listed here can be purchased from ChargePoint by ordering a CPE200 Concrete Mount Kit (CPE200T-CCM).

- Prefabricated plywood template available from ChargePoint (Part Number CPE200T-BT)

OR

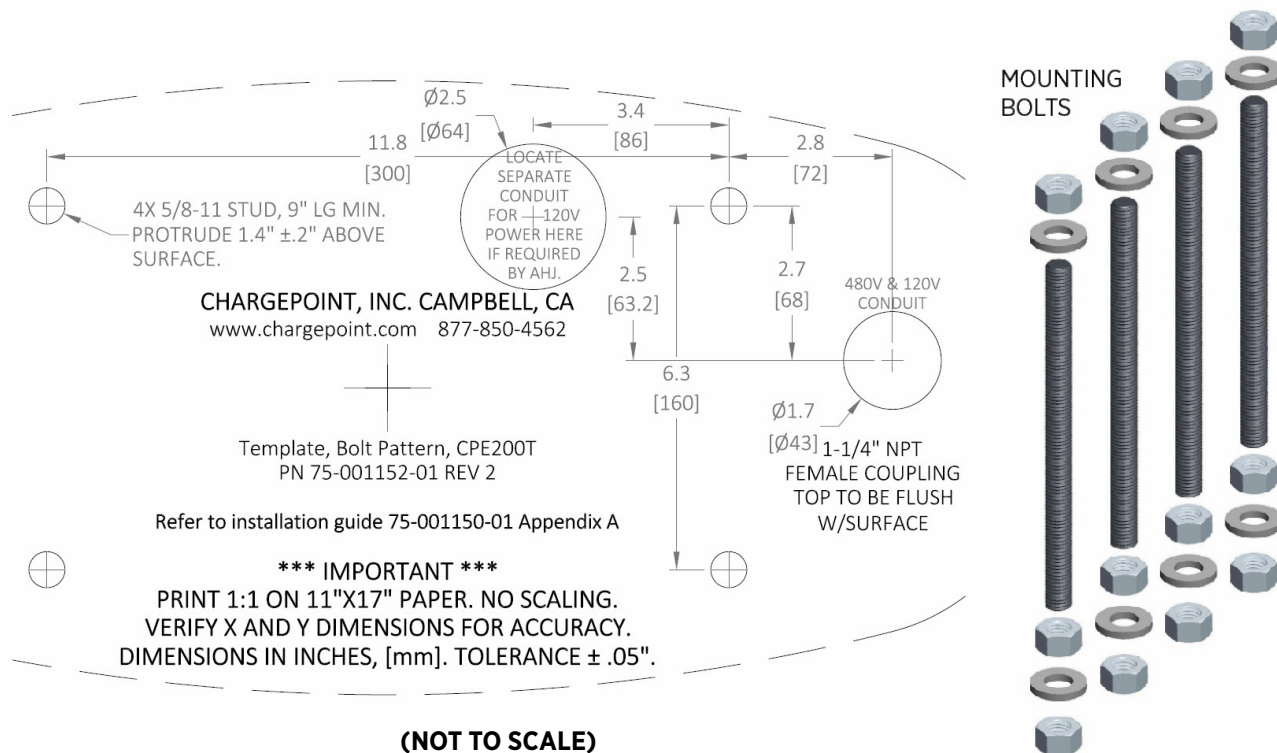
Bolt Installation Template (1)—Stapled into the center fold of this document or available for download from <http://www.chargepoint.com/support-guides/>

Ensure the PDF version is accurate by printing it at 100% scale on 11" x 17" paper, and then verifying at least one dimension.

- Plywood, ½" thick minimum, 12" x 18" minimum.
- Galvanized Washers (ASTM F436) (12).
- 5/8" - Heavy Galvanized Hex Nuts (DH Rated) (12).
- 5/8" - 11 x 9" F1554 Grade 55 hot-dipped galvanized headless bolts (4).
- Concrete, 3000 PSI minimum.
- 1-1/4" conduit as required, terminating in a threaded female coupling flush with the top surface of the concrete.

**NOTE:** If installing onto an existing concrete surface, you will need only upper 4 Hex Nuts and 4 Washers. You will need several consumables as described on page A-4.

## Bolt installation template (not to scale)



## Overview of steps

- 1 Mounting the stand to a new concrete pad (see page A-2).
- 2 Mounting the stand to an existing concrete surface (see page A-4).

## Mounting the station to a new concrete pad



**IMPORTANT:** Always check local codes to ensure compliance. The guidelines described here are the minimum requirements. You may need to increase the dimensions of the concrete pad if required by local codes or soil conditions.

- The concrete pad must be reinforced with rebar and must measure at least 48" wide x 32" long (front to back), and 24" deep (below grade). This is approximately 1 cubic yard of concrete. ChargePoint recommends that the top of the pad be 6" above grade.
- Use at least 3000 PSI concrete.
- The top surface of the pad must be perfectly flat and level. The CPE200 is bolted directly to the concrete pad. No spacers are to be used under the CPE200.
- The bolt threads must extend 1-3/8" above the concrete.
- The conduit must be 1-1/4" trade size. The top of the female threaded coupling must be flush with the top surface of the concrete.

## Follow these steps:

- 1 Trench and excavate as necessary.
- 2 Build concrete form.
- 3 Run 1-1/4" conduit from disconnect. Thread a nipple or short section of conduit into the coupling. This will determine the position of the plywood template and mounting bolts.
- 4 Add rebar as necessary. Dowel to adjacent concrete if applicable.
- 5 If you have not purchased a pre-fabricated plywood template from ChargePoint (Part Number CPE200T-BT), fabricate one using template guide 75-001152-01.

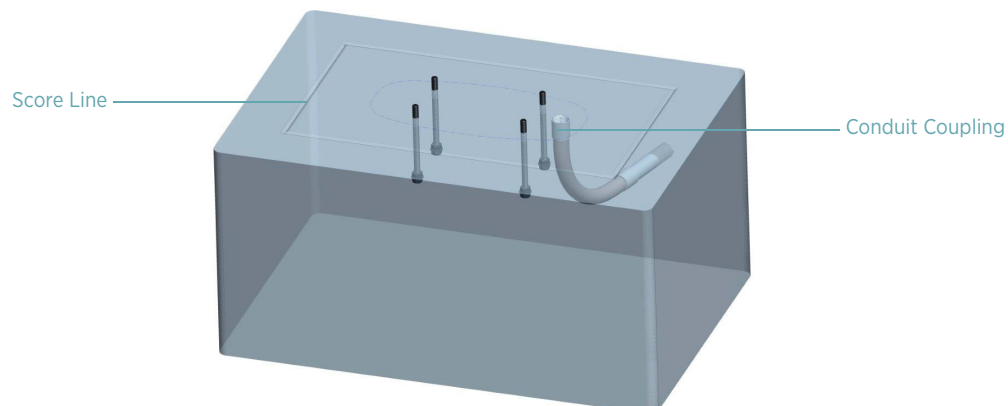
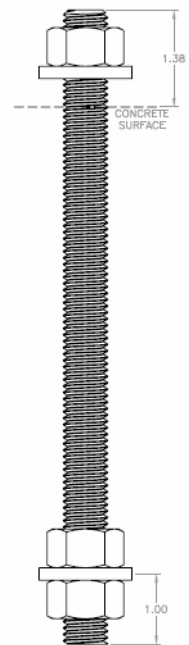
Download the guide from <https://www.chargepoint.com/support-guides/>  
Tolerance is +/- .05".

- 6 Install two nuts with one washer captured between them (as illustrated) onto each of the four bolts. Lock them together so the washer is 1" from the bottom of the bolt.
- 7 Insert the bolts through the template and thread the remaining nuts onto the top end of the bolts.

Position the nuts so the bolts will extend 1-3/8" above the concrete. If the studs protrude more than 1-5/8", it will be impossible to remove and replace the fan, an important step in the installation process. Take into the account the thickness and height of the plywood template. Cover the nuts and the exposed end of the bolts with tape to protect them from contamination and to hold them in position.

- 8 Immediately after pouring the concrete, rotate the bolts to draw the concrete into the threads. Make sure they are vertical. Ensure correct alignment and that the top 1-3/8" of the bolts remain exposed.
- 9 Form a faux curb with score line 6" in from edge.
- 10 When the concrete is firm, remove the upper nuts and template. Finish smoothing the top surface of the concrete pad.
- 11 Allow the concrete to cure for at least 48 hours to reach full strength.

You are now ready to install the CPE200. See page 3-1.



## Mounting to an existing concrete surface



**IMPORTANT!** When installing on existing concrete:

- Review the dimensions of the existing concrete slab. For you to safely mount a CPE200, the concrete must be at least 8" thick. At this thickness, all of the mounting bolts must be positioned at least 18" from the front and rear edges and at least 24" from the side edges.
- The top surface of the concrete must be perfectly flat and level. The CPE200 is bolted directly to the concrete pad. No spacers are to be used under the CPE200.
- If installing into any reinforced or pre-tensioned concrete, you must X-ray the area to ensure that you are not drilling through any rebar.
- Conduit will be brought into the rear of the CPE200 via the surface of the concrete pad.

### You will need

- Hammer drill with ½" chuck
- ¾" drill bit designed for drilling concrete
- These consumable materials (per charging station being installed):

Quantity	McMaster Product #	Description	Purpose
1	7505A55	Epoxy Adhesive for Concrete, 9.3 Ounce Cartridge	Fixing the anchor bolts into the drilled holes.
1	7505A56	Mixing Nozzles for 9.3 Ounce Epoxy Adhesive for Concrete	For use with epoxy. 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	For use with epoxy. Any standard caulk gun will work.
1	7437K35	Electrical Cleaning and Maintenance Aerosol, Any Angle Spray Duster, 8 Ounce Net Weight	Removing dust from drilled holes.
1	2960A22	Slow Spiral Round-Shank Masonry Drill Bit, 3/4" diameter, 1/2" Shank, 10" Drill Depth, 12" Length Overall	Drilling 3/4" holes in concrete.
1	7221T13	Nylon Loop-Handle Brush, 3/4" Brush Diameter, 3" Length Brush, 8 1/2" Length Overall	Setting the depth of the bolts.
1	9753K47	Push-on Round Cap, fits 5/8" - 11/16" OD, 1/2" Inside Height, Packs of 100	Removing dust from drilled holes.



### Follow these steps:

- 1 If you have not purchased a pre-fabricated plywood template from ChargePoint (Part Number CPE200T-BT), fabricate one using template guide 75-001152-01.

Download the guide from <https://www.chargepoint.com/support-guides/>

- 2 Make 5/8" diameter holes in the template at the bolt locations. Tolerance is +/- .05".
- 3 Use the template guide to mark the hole locations in the concrete.
- 4 Drill the four 3/4" diameter holes into the concrete. Depth should allow the bolts protrude 1-3/8" above the surface.
- 5 Remove all dust from the holes using a brush and compressed air or a vacuum. Insert the rod to confirm the correct depth.
- 6 Insert the bolts into the plywood template with nuts on top of the template.
- 7 Fill the four holes with epoxy to 3" below the top. Be mindful of the cure time to make sure you can insert and position the bolts before the epoxy sets up.
- 8 Insert the bolts into the holes. Ensure the bolts protrude 1-3/8" above the concrete.

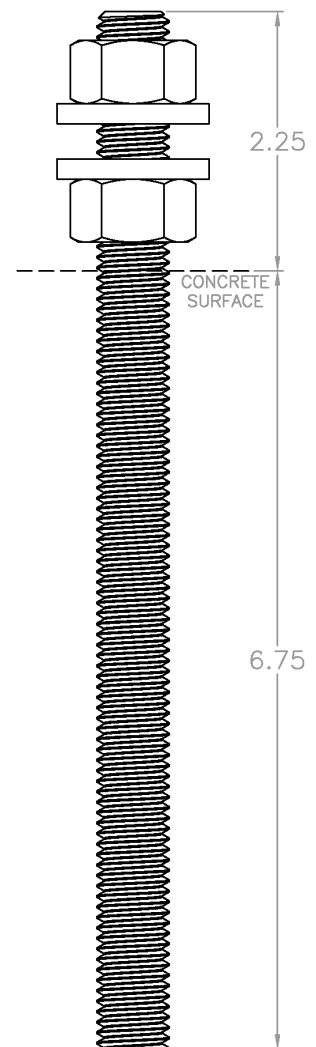
**NOTE:** Inserting the threaded bolts displaces the epoxy, causing it to fill the holes to grade level. If the epoxy is below grade level, you can add more after the next step.

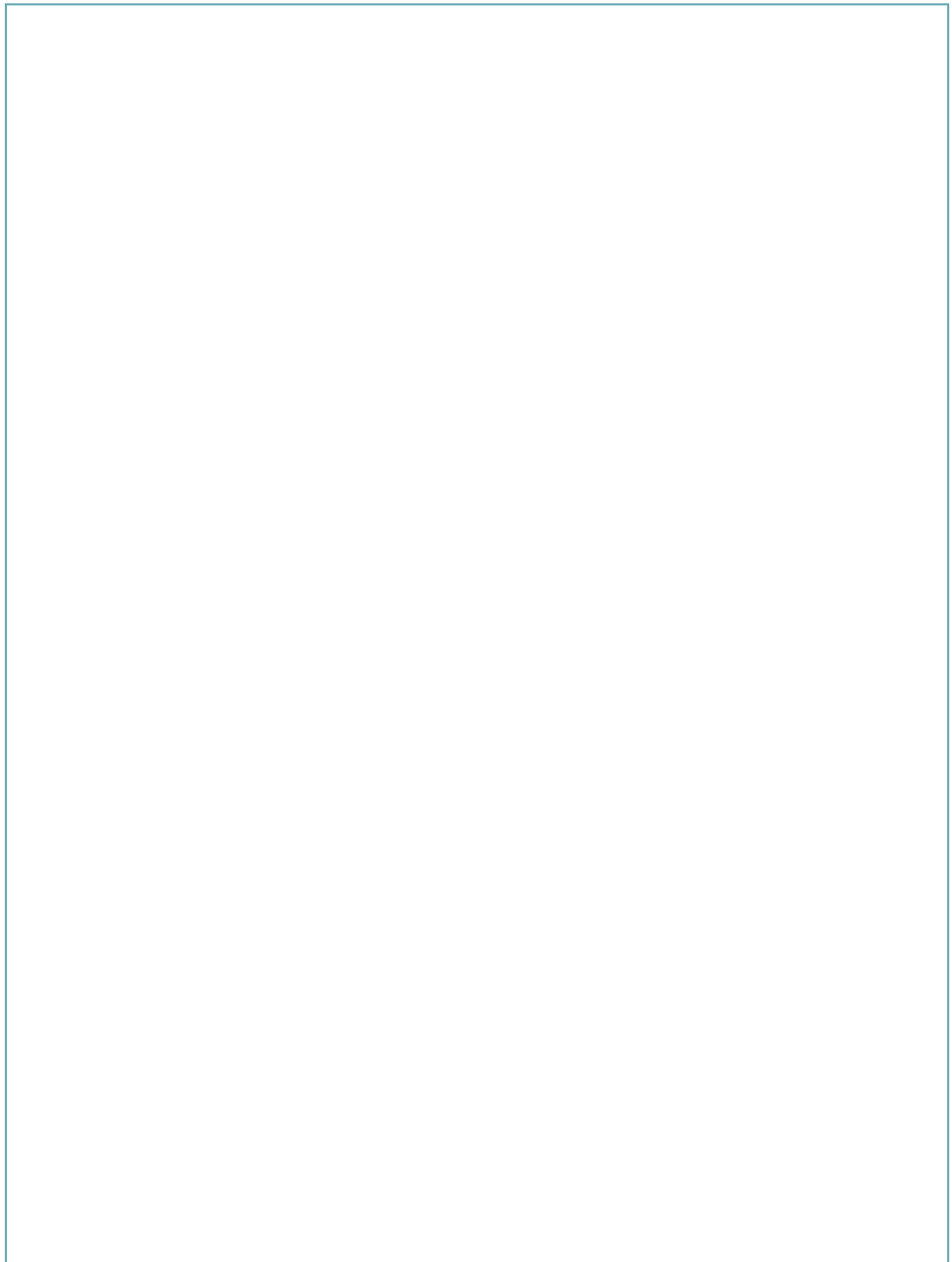
- 9 Loosen the nuts and rotate the bolts to ensure the epoxy penetrates the threads. Take care to avoid getting epoxy into the above-grade threads.
- 10 Tighten the nuts again to ensure the bolts are plumb.
- 11 Double check that the bolts protrude 1-3/8" above the concrete.

**NOTE:** If they protrude more than 1-5/8", it will be impossible to remove and replace the cooling fan, an important step in the installation process.

- 12 Allow the epoxy to cure completely before applying any load. Check the cure time on the manufacturer's data sheet.

You are now ready to install the CPE200. See page 3-1.





# Using a transformer to derive 120V

# B

## Wiring requirement

The CPE200 requires a separate 120V circuit for the communication and control circuitry. A small 480V to 120V step down transformer can be set near the disconnect switch, which will provide these advantages:

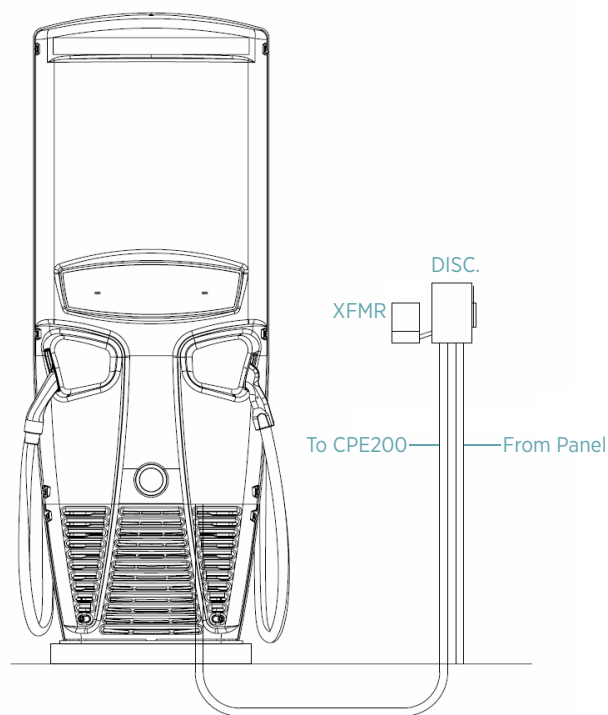
- 1 No separate conduit run is needed for the 120V power.
- 2 The 480V disconnect switch controls all power to the station, eliminating the need for a separate disconnect switch for the 120V circuit.

## General guidelines

- The transformer must be rated for use in the location into which it is installed. If outdoors, it must be weatherproof. Encapsulated transformers work well for this application.
- Minimum wattage rating is 500VA.
- Set the transformer as close to the disconnect switch as possible.
- Run a single conduit between the disconnect switch and the transformer through which the input and output wires will pass. Keep this conduit run as short as possible.
- The transformer must be fused on the primary side.
  - Use fuse holders and fuses rated for 600V or greater.
  - Locate the fuses inside the disconnect switch enclosure.
  - Carefully insulate the wire to fuse holder connections.
  - Size the fuses appropriately for the rating of the transformer.
- Route the 120V and 480V wires from the disconnect switch to the CPE200 through the same 1-1/4" conduit.

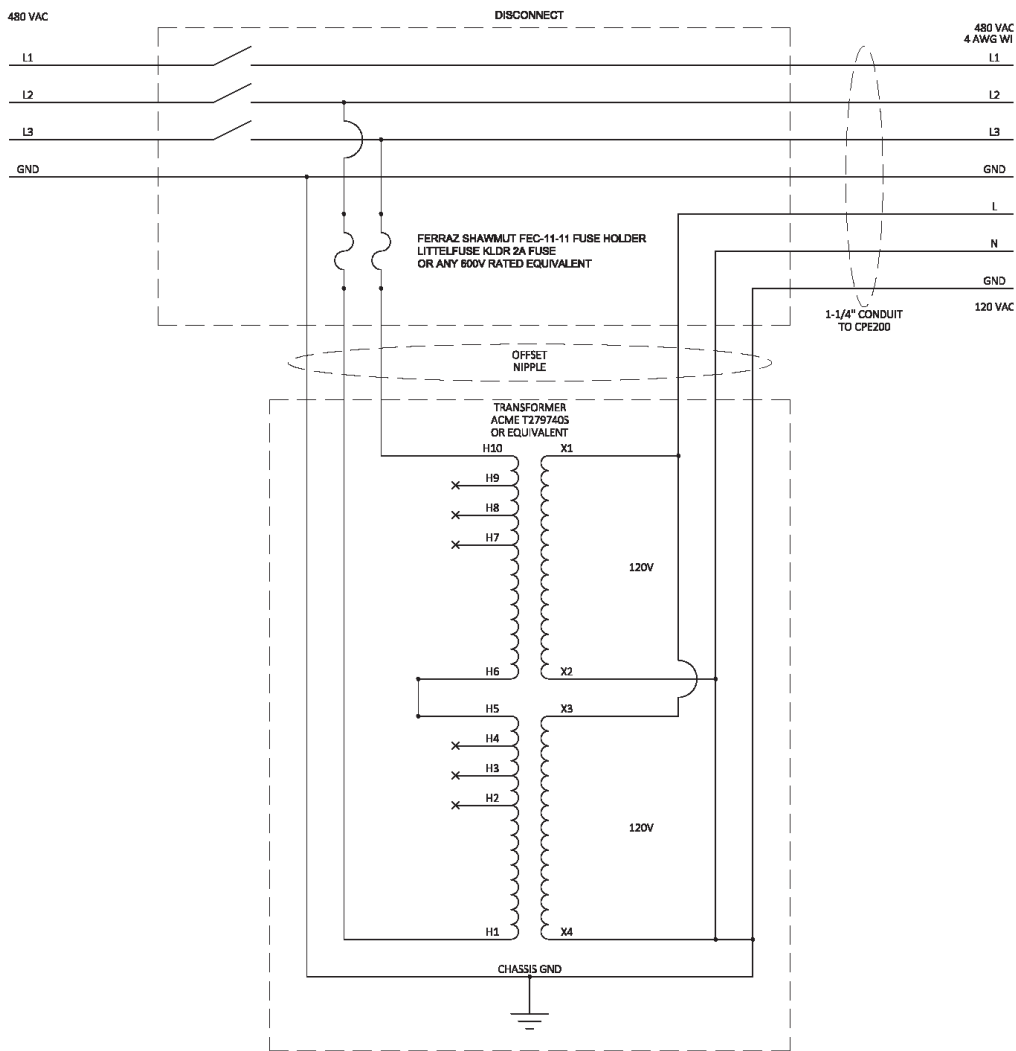
This is allowed by Section 300.3 (C)(1) of the 2014 NEC®.

“Conductors of ac and dc circuits, rated 600 volts, nominal, or less shall be permitted to occupy the same equipment wiring enclosure, cable, or raceway. All conductors shall have an insulation rating equal to at least the maximum circuit voltage applied to any conductor within the enclosure, cable, or raceway.”



Wiring diagram

WIRING DIAGRAM  
120 VOLT TRANSFORMER











ChargePoint, Inc.  
254 E. Hacienda Ave.  
Campbell, CA 95008-6617 USA  
US toll free: +1.877.370.3802  
Installer Support: +1.877.850.4562  
[www.chargepoint.com](http://www.chargepoint.com)