Express Solo

One Platform, Infinite Possibilities

Installation Guide



IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

This manual contains important instructions for ChargePoint® products that shall be followed during installation, operation and maintenance of each product.

WARNING:

1. **Read and follow all warnings and instructions before servicing, installing, or operating the ChargePoint® product.** Install and operate only as instructed. Failure to do so may lead to death, injury, or property damage, and will void the Limited Warranty.
2. **ChargePoint recommends that installation, commissioning, and break-fix services be performed by a licensed electrician who is also a ChargePoint-certified technician.** These systems operate at high voltage, and without strict adherence to safety protocols, proper protective equipment, and ChargePoint technical guides, there is significant risk to people, equipment, and the environment. Please ensure full compliance with all applicable local and national buildings, electrical, and safety codes.
3. **Always ground the ChargePoint product.** A touch current of >3.5 mA AC RMS is possible in case of a fault condition of loss of electrical continuity of the earthing conductor. Failure to ground the product can lead to risk of electric shock. The product must be connected to a grounded, metal, permanent wiring system, or an equipment grounding conductor shall 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.



4. **Install the ChargePoint product using a ChargePoint-approved method.** Failure to install on a surface that can support the full weight of the product can result in death, personal injury, or property damage. Inspect the product for proper installation before use.
5. **The product is not suitable for use in Class 1 hazardous locations, such as near flammable, explosive, or combustible vapors or gases.**
6. **Supervise children near this device.**
7. **For charging stations equipped with EV connectors or charging rails, do not put fingers into the electric vehicle connector or connector adapter. Do not touch fingers to charging rails.**
8. **Do not use this product if any cable is frayed, has broken insulation, or shows any other signs of damage.**
9. **Do not use this product if the enclosure is damaged or if any internal parts (including wiring) are accessible. For products equipped with an EV connector, flexible output cable, vehicle inlet, or connector adapter, do not use the product if any of these components are broken, cracked, open, or shows any other signs of damage.**
10. **Wire and wire terminal information are provided in the ChargePoint product Site Design Guide and Installation Guide.**

11. **Torques for installation of wire terminals are provided in the ChargePoint product Installation Guide.**
12. **The ChargePoint product maximum operating temperature is 50 °C (122 °F).**
13. **For products equipped with an EV connector or connector adapter, do not use an adapter with any charger or EV that exceeds the adapter's rated voltage or current capacity. Some EV/EVSE combinations can operate at multiple voltages or allow short-duration current overloads during normal charging. Using an adapter in these situations could result in unsafe conditions such as fire, burns, or exposure of high voltage.**

IMPORTANT: Under no circumstances will compliance with the information in a ChargePoint guide such as this one relieve the user of the responsibility to comply with all applicable codes and safety standards. This document describes approved procedures. If it is not possible to perform the procedures as indicated, contact ChargePoint. ChargePoint is not responsible for any damages that may result from custom installations or procedures not described in this document or that fail to adhere to ChargePoint recommendations.

Warranty Implication

IMPORTANT: Please be advised that all installation, commissioning, and break-fix services must be performed by a ChargePoint-certified technician. Engaging non-certified personnel for these services will result in warranty implications, as doing so constitutes a breach of policy.

Support Services

https://www.chargepoint.com/legal/support-services

For more information about ChargePoint's training and certification program, visit https://www.chargepoint.com/partners/training-certification

Product Disposal

Applicable to NA - Do not dispose of as part of unsorted domestic waste. Inquire with local authorities regarding proper disposal. Product materials are recyclable as marked.

Applicable to EU - To comply with Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE), devices marked with this symbol may not be disposed of as part of unsorted domestic waste inside the European Union. Enquire with local authorities regarding proper disposal. Product materials are recyclable as marked.

Document Accuracy

The specifications and other information in this document were verified to be accurate and complete at the time of its publication. However, due to ongoing product improvement, this information is subject to change at any time without prior notice. For the latest information, see our documentation online at ChargePoint Product Reference Documentation.

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Symbols

This guide and product use the following symbols:



DANGER: Risk of electric shock



WARNING: Risk of personal harm or death



CAUTION: Risk of equipment or property damage



IMPORTANT: Critical detail that must be followed to achieve intended results



NOTE: Important contextual details or procedural clarifications



REINSTALL NOTE: Essential instructions to follow when reinstalling a part or component



Read the manual for instructions



Ground/protective earth

Illustrations Used in This Document

The illustrations used in this document are for demonstration purposes only and may not be an exact representation of the product. However, unless otherwise specified, the underlying instructions are accurate for the product.

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Revision History

This page provides a summary of revisions made, listing the month and year of each update along with a brief description of the changes made.

Month & Year	Description
October, 2026	In the Prepare for Installation chapter: • Added an IMPORTANT note stating that conduits must not have bell ends. • Added cross-references to the wire specification appendices for North America and Europe. • Updated the quantity of lifting straps from two to four in the *Express Solo Package* section. In the Mount Express Solo chapter: • Added steps and updated illustrations for securing jig alignment plates with anchor bolt nuts before wire pulling and removing them afterward. • Added an IMPORTANT note and illustration specifying that auxiliary wires must not be pulled before cabinet mounting. • Moved the *Connect Charging Cables to Cable Management System* section before *Open Doors and Remove Safety Covers*, changed the procedure from optional to mandatory, and added a holstering step. • Updated the *Lift Assembly* section to show four lifting straps when using a forklift to lift Express Solo. • Added and updated CAUTION statements to prevent cables from being pinched or crushed during cabinet lowering. Appendices: • Added Appendix: Wire Specifications (North America) and Appendix: Wire Specifications (Europe).
July 2026	The following updates were made: • Updated Required Tools and Materials section to specify a minimum crane lifting capacity of 1450 kg (3197 lb). • Retitled Install Covers and Close Station chapter and added supporting illustrations for installing safety covers and closing the cabinet. • In Pull and Test AC Input, DC BUS, and External DC Output Wires, added requirement for minimum wire pull height above grade.
May 2026	The following updates were made: • Replace all references to "HV" and "LV" with specific name of interface or wire. • Replace "DC BUS (EXT A)" with "DC BUS (intake side)". • Replace "DC BUS (EXT C) with "DC BUS (exhaust side)". • Revised Mount Express Solo chapter. • Revised Connect 48 V DC Wires. • Revised Connect Ethernet Cables. • Revised Connect Door Interlock Sensor and Soft Shutdown Switch Wires. • Revised Connect Safety Hub Wires.

Month & Year	Description
	• Revised Close Up Express Solo.
October 2025	Update HV DC nomenclature, wire specifications, and Ethernet shield grounding requirement.
August 2025	Early access draft - initial release.

Introduction 1

This section defines the purpose of this guide and provides an introduction to the ChargePoint® Express Solo.

About This Guide

This guide provides instructions for installing the Express Solo. It covers preparation requirements, mounting and anchoring procedures, electrical and communication connections, commissioning steps, and verification tasks needed to place the station into service.

This guide is intended for licensed electricians, installation contractors, and construction professionals responsible for installing Express Solo equipment in accordance with local codes and ChargePoint requirements.

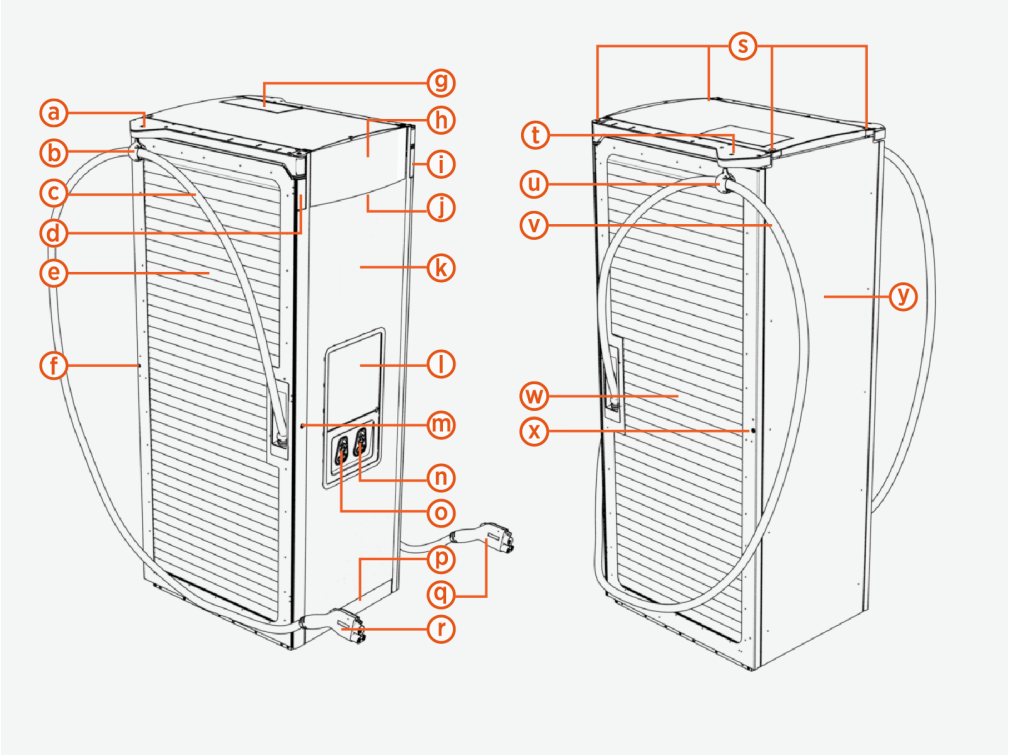
Express Solo Overview

Express Solo is a product within the Express DC fast charging platform. Express Solo operates as both a standalone charging station and a power cabinet. It accepts AC input power, converts it to DC, and delivers power to two integrated charging cables. It can also simultaneously supply power to downstream EVSEs such as external Power Link charging dispensers.

For information on Power Link charging dispensers and other modular EVSEs in the ChargePoint Express platform, refer to the Express platform documents at ChargePoint Product Reference Documentation.

Exterior Parts

The following shows an exterior view of the Express Solo.



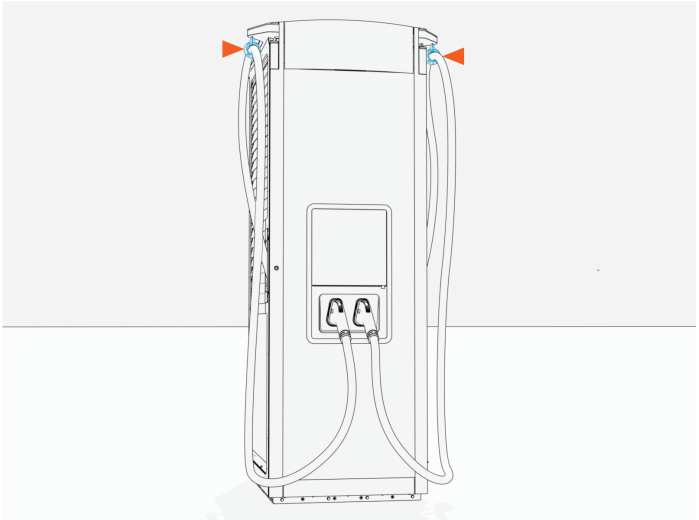
Ref	Part	Ref	Part
(a)	Cable management system, left	(n)	Holster, right
(b)	Tetherball, left	(o)	Holster, left
(c)	Charging cable, left	(p)	Bottom plate
(d)	Status LED, left	(q)	Charging connector, right
(e)	Exhaust (left) door with airflow vents	(r)	Charging connector, left
(f)	Exhaust door lock	(s)	Lifting points
(g)	Smart Antenna	(t)	Cable management system, right side
(h)	Logo plate (customizable)	(u)	Tetherball, right
(i)	Status LED, right	(v)	Charging cable, right
(j)	Area downlight (front – illumination side)	(w)	Intake (right) door with airflow vents
(k)	Display door (with customizable vinyl)	(x)	Intake door lock
(l)	Display/CCOM assembly (display side) (*)	(y)	Rear panel
(m)	Display door lock		

NOTE: (*) CCOM = Control and Communication Module

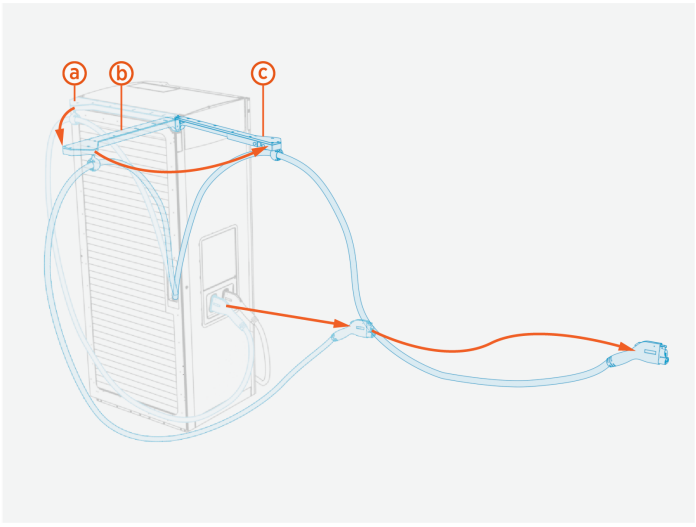
Cable Management System

Express Solo is available with several cable management options:

- **Fixed Tether Point** – Charging cables are suspended from fixed points on left and right sides of the charging station.



- **Swingarm Cable Management Kit (CMK)** – Moveable arms on left and right sides of the cabinet swing suspended charging cables out and forward for charging and retract cables to rest position between charges.

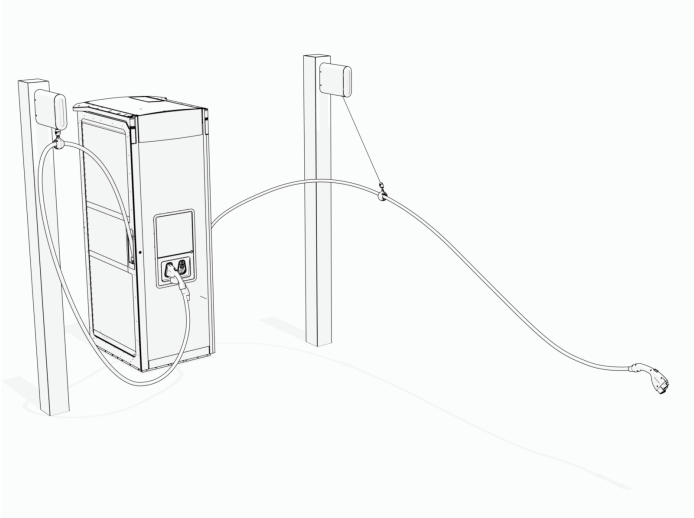


(a) CMK retracted position

(b) CMK half open (maximum side extended) position

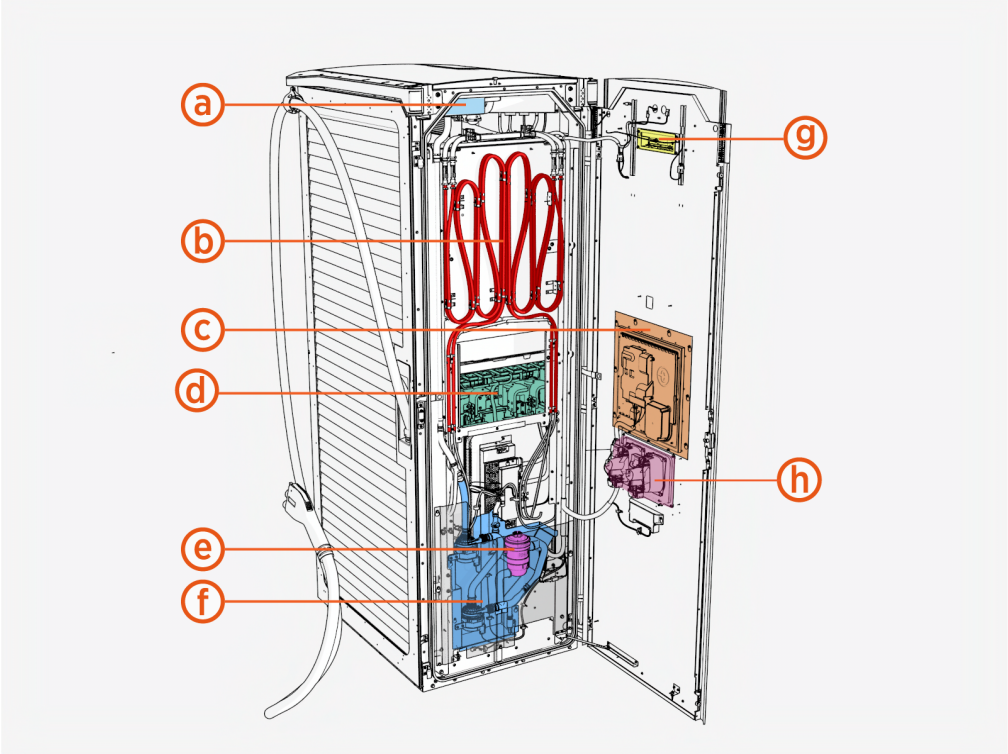
(c) CMK fully open (maximum front extended) position

- **Overhead CMK** – An extendable/retractable tetherball suspends charging cables on poles (or other vertical structure) positioned to the left and right of the station.



Interior Parts

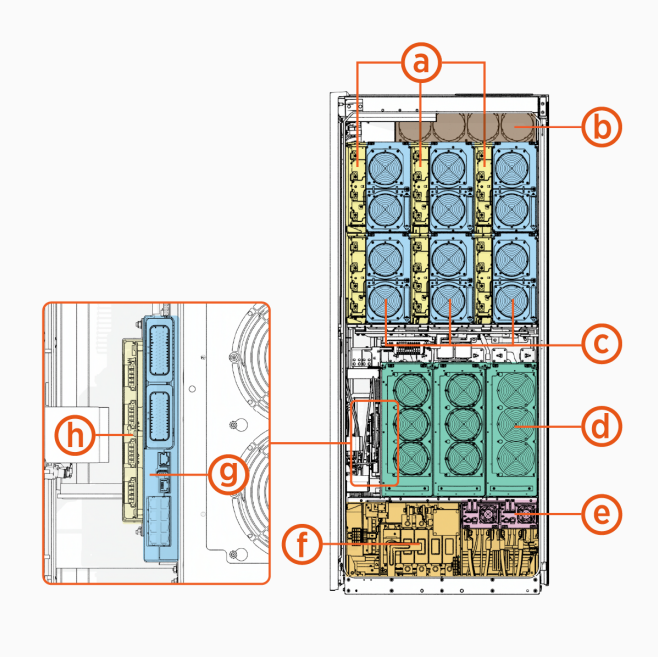
The following shows a front interior view of the Express Solo.



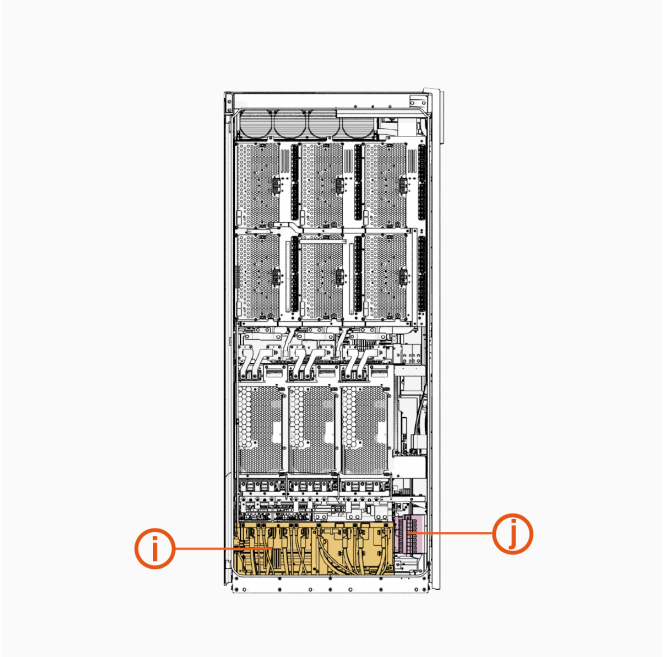
Ref	Part
(a)	Coolant reservoir
(b)	Liquid cooling system

Ref	Part
(c)	Display/CCOM Assembly (CCOM side)
(d)	Neutron modules
(e)	Ion filter
(f)	Coolant circulation pump for liquid cool charging (LCC) loop
(g)	Area downlight (rear housing)
(h)	Holsters

The following shows side interior views of the Express Solo:



Intake (Right) Side



Exhaust (Left) Side

Ref	Part	Ref	Part
(a)	Contactor matrix	(f)	Wire terminals and bus bars, intake side
(b)	Liquid cooled charging (LCC) cable fans	(g)	Power Management Controller (PMC)
(c)	DC power modules	(h)	Safety Hub Board (SHB)
(d)	AC power modules	(i)	Wire terminals and bus bars, exhaust side
(e)	Aux power supply (AUX PS) modules	(j)	48 V DC fuse block

System Description

The Express Solo intakes 3-phase AC grid power and performs power conversion with two types of modules:

- **AC Power Module** – The AC power module converts AC input power to DC output power. Up to three modules can be installed into each Express Solo to scale total power capacity.

- **DC Power Module** – The DC power module is an isolated, bidirectional DC/DC converter that conditions power for delivery to downstream EVs.

The Express Solo has two separate DC power distribution buses, each with its own set of interfaces:

- **DC Grid Bus and DC BUS** – 480 V AC and 400 V AC Express Solo models feature a non-isolated bus called DC Grid that operates at up to 950 V (depending on region and application). These Express Solos are equipped with an interface to its DC Grid Bus, called DC BUS. Two Express Solos may be paired (configured for power sharing) by interconnecting their DC BUSes. 600 V AC Express Solo models do not support DC Grid.
- **DC Output Bus and External DC Outputs** – The DC Output Bus is an isolated DC bus (100–1000 V) that delivers regulated output power to connected EVs. Power flow from the DC Output Bus is routed through the Contactor Matrix, which outputs power across the two integrated charging cables (charging points (CPs)) and to two discrete external DC outputs designated EXT B and EXT D. Each external DC output can supply power to a single input power path of a Power Link charging dispenser.

The Express Solo is equipped with an Auxiliary Power Supply (APS) system:

- **Auxiliary Power Supply (AUX PS) Modules** – Each cabinet includes AUX PS modules that generate 48 V DC power for internal electronics and sub-assemblies within the unit.
- **48 V DC Output** – Express Solo provides two 48 V DC outputs for supplying power to connected Power Link charging dispensers.

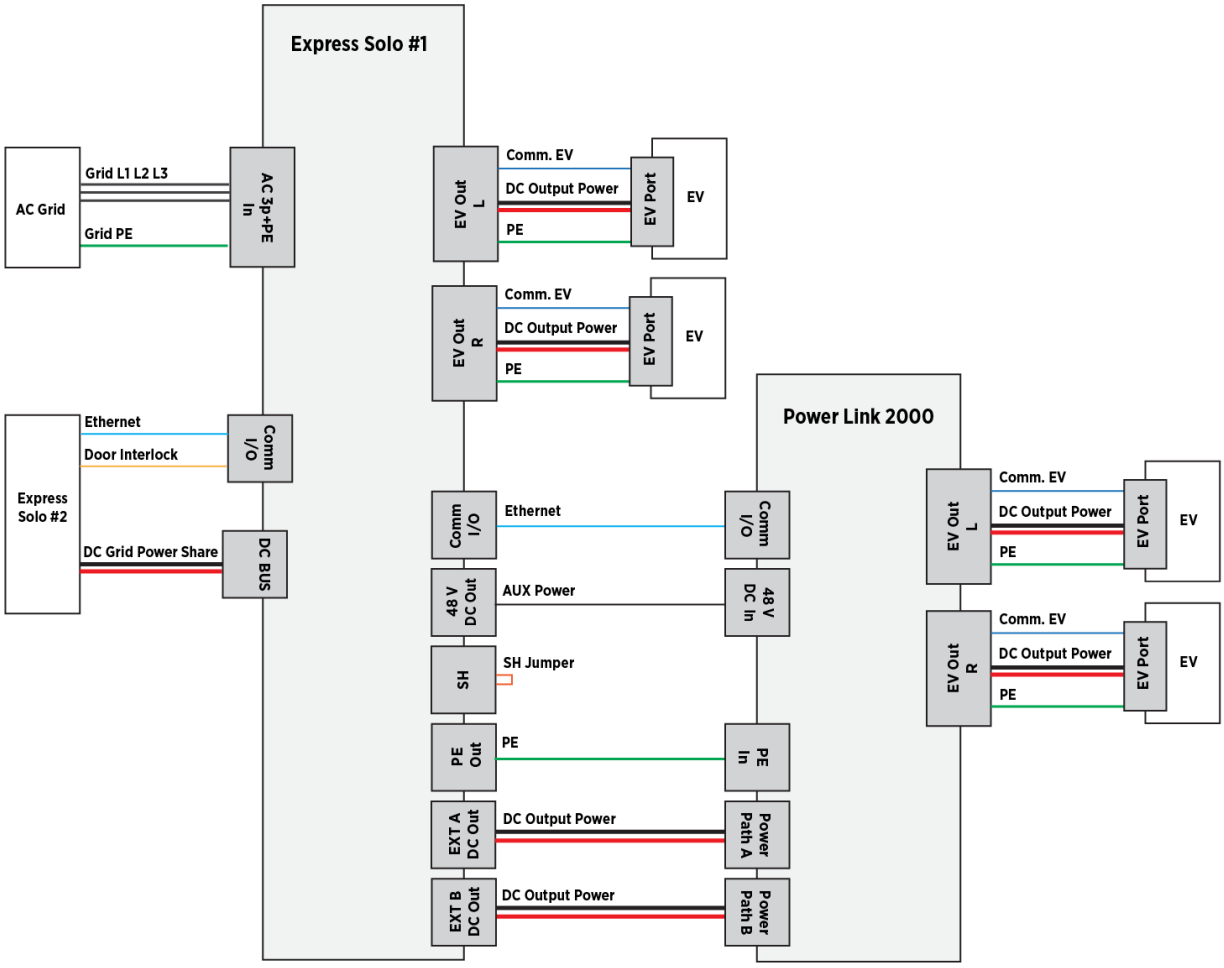
The Express Solo features an integrated system that facilitates safe and reliable communication and control:

- **Control and Communications Module (CCOM)** – This module manages the UX hardware and display. It communicates over Ethernet with external system components and manages charge sessions, user authentication, access control.
- **Power Management Controller (PMC)** – The PMC controls power flow within the system and serves as the primary interface to ChargePoint Cloud Services. It communicates with the power converters and the contactor matrix to manage the delivery of power to the EV. The PMC supports Ethernet ports for communication with various components like the CCOM, external charging dispensers, and paired Express Solo cabinets to ensure seamless operation. In the event of a fault, the PMC can instruct the power converters to stop power delivery and open the contactors to isolate the power source.
- **Neutrons** – The Neutron module serves as the insulation monitoring device and meter for the charging cables. It detects isolation faults and uses a switch to signal the Safety Hub Board (SHB).
- **Contactor Matrix** – The contactor matrix receives commands from the PMC to open or close the contactors as needed.
- **Safety Hub Board (SHB)** – In addition to processing fault reports from the Neutron, the SHB supports four dispenser ports for performing continuous electrical isolation monitoring of connected Power Link charging dispensers. Any faults detected are reported to the PMC.
- **Door Interlock Sensor** – Express Solo is equipped with a shunt trip relay that de-energizes the cabinet when doors are open. The PMC reads the door sensor status and shuts down power conversion if one of the doors is open. A safety panel sensor triggers the shunt trip if AC input voltage is present. This ensures the station powers down when the cabinet door is open.

System Interfaces and Sample Architecture

The following provides a high-level overview of the electrical interfaces of an Express Solo. The diagram also illustrates the interconnections required for an example architecture featuring:

- Two paired Express Solos
- An Express Solo that provides DC output power to the input power paths (A and B) of a Power Link 2000. The Power Link 2000 is equipped with two charging cables (L and R). Note that Power Link 2000 does not require Safety Hub (SH) monitoring.



IMPORTANT: Express Solo can be configured in many different system architectures, only one of which is shown above. The actual architecture for each site will vary depending on the number of stations, the charging capacity required at each charging station, charging requirements, and other criteria. If you are a site designer, contact a ChargePoint representative for the ChargePoint-approved wiring architecture for your specific project. Systems configured with non-approved wiring between Express Solo and connected EVSEs may not function as expected. If you are an installer, see the site plan for the architecture specific to the site installation project.

Product Guides

A full suite of guides is available for Express Solo, as summarized below.

Document	Content	Primary Audiences
Datasheet	Full station specifications	Site designer, installer, and station owner
Site Design Guide	Civil, mechanical, and electrical guidelines to scope and construct the site	Site designer, responsible engineer, contractors, installers
Construction Signoff Form	Checklists used by contractors to ensure the site is correctly completed and ready for product installation	Site construction contractor
Installation Guide	Anchoring, wiring, and powering on	Installer
Operation and Maintenance Guide	Operation and preventive maintenance information	Station owner, facility manager, and technician
Service Guide	Component replacement procedures, including optional components	Service technician
Declaration of Conformity	Statement of conformity with directives	Purchasers and public

Access ChargePoint documents at ChargePoint Product Reference Documentation.

Questions

For assistance, go to chargepoint.com/support and contact technical support using the appropriate region-specific number.

Prepare for Installation 2

Follow all instructions provided in this chapter to prepare for installation.

General Instructions and Notes

WARNING: Do not install or service the charging station in inclement weather. If you work in snow, rain, or wind, you must use a weather-proof shelter that covers all boxes and components.

CAUTION: Warranty Limitation

- If the charging station is not installed, commissioned, or serviced by a ChargePoint certified technician using a ChargePoint-approved method, it is *excluded* from all ChargePoint and other warranties and ChargePoint is not responsible.
- You must be a licensed electrician and complete training at https://www.chargepoint.com/partners/training-certification to become ChargePoint certified and to access ChargePoint's web-based installer tools or ChargePoint Installer app.

CAUTION: Use low torque settings when working with power tools during installation or servicing. Over-torquing can damage the equipment.

CAUTION: While installing fasteners inside a product enclosure, make sure not to drop the fasteners inside conduit openings. You may use conduit caps or covers to temporarily cover the conduit openings.

IMPORTANT: Ensure that the installation complies with all applicable codes and ordinances.

Check Site Readiness

Complete this checklist before you install Express Solo.

Express Solo Site Readiness Checklist		
1.	The concrete mount surface is smooth and level.	☐
2.	The concrete pad or concrete surface meets the mounting specifications given in the *Express Solo Site Design Guide* and/or is inspected and approved by a structural engineer for the product dimensions and weight (as given in the *Express Solo Site Design Guide*).	☐
3.	Wires and conduits meet the requirements given in the site drawings.	☐
4.	The electrical equipment is installed and labeled in accordance with the applicable national electrical code — such as NFPA70, the Canadian Electrical Code (CSA No 22.1), IEC 60364, or BS7671, depending on the installation region — and all applicable requirements of the serving electric utility company and the authority having jurisdiction.	☐
5.	The installation site meets the drainage, ventilation guidelines, and clearances given in the *Express Solo Site Design Guide*.	☐
6.	Sufficient space is available to use a forklift or other lifting equipment, unpack, remove packing materials, and allow two people to freely move throughout the site.	☐
7.	The anchor bolts, conduits, and concrete pad meet the requirements listed below: • The anchor bolts are installed, extend 127 mm (5 in) above the concrete pad, and are vertically plumb. • The conduits or armored cables are laid per the conduit layout given in the *Express Solo Site Design Guide*. • In regions that use conduits, the conduits do not have bell ends, are vertically plumb, and stub-up to a height of 13-25 mm (0.5-1 in) above the concrete pad. **IMPORTANT:** Conduits height must not exceed 25 mm (1 inch) and must not have bell ends. Failure to meet these specifications will reduce tolerances and available space for wire bend inside Express Solo. • The concrete pad is fully cured and smooth.	☐

Check Electrical Readiness

Refer to the *Express Solo Datasheet* and *Express Solo Site Design Guide* at ChargePoint Product Reference Documentation for electrical input and output specifications.

Required Tools and Materials

Installing Express Solo requires at least two people. Additionally, the installer must bring the following tools and resources. These are not provided by ChargePoint.

CAUTION: Comply with these guidelines to prevent component damage.

- Use tools suitable to torque metric fasteners. All fasteners used on Express Solo are in metric sizes.
- Use the given torque values to tighten the fasteners.
- Ensure that the tools such as torque tool, multimeter, and Ethernet tester are calibrated.



Construction crane
- For standard installation
- Rated for 1450 kg (3197 lb)



Forklift with anti-slip forks
- For low clearance installation
- Rated for ≥ TBD kg (TBD lb)
- Fork specifications:
  - Width = TBD mm (TBD in)
  - Thickness ≤ TBD mm (TBD in)



Stepladder



Industrial vacuum cleaner



Wire brush (to remove any residue on anchor bolts)



Safety glasses



Hard hat



Cut-resistant gloves



Cable puller or fish tape



Measuring tape or other tool to measure linear dimensions



Level



Lockout/Tagout equipment



Multimeter (meter and probes rated for 1000 V)



Ethernet tester such as a Klein Tools VDV526-052 VDV LAN Scout Jr. Tester or similar



Conduit cutter (refer to site plans for conduit sizes)



Box cutter



Wire cutters



Wire strippers


Lug crimping tool and die


Torque wrench


Shallow socket set (8 mm, 10 mm, 13 mm, 17 mm) and 30 mm deep socket


Hex wrench set


T25 Security screwdriver


Phillips head screwdriver set


Permanent marker


Dielectric grease


Cable ties

Cling film (plastic wrap)


- ChargePoint installer login credentials


- ChargePointInstaller app


Ethernet (RJ45) connector crimping tool


Torque screwdriver


Socket extender


Torx screwdriver (T20, T30)


Flathead screwdriver set, including 2 mm, 3.5 mm and 5 mm tip for terminal blocks


Torque paint pen


Anti-oxidant joint compound (to make gastight joint between wire and lug) and wire pulling lubricant


Duct seal compound


Paper towel roll


Smartphone with:
- Internet connectivity
- QR code scanner (usually built into the camera app)

Wires and Terminations

Gather all wires and wire terminations required for the installation project. Refer to the site plan for wires and terminations required specifically for the installation project.

Wires and terminations must also comply with the general specifications given below:

- For North America, refer to Appendix: Wire Specifications (North America).
- For Europe, refer to Appendix: Wire Specifications (Europe).

Packaging

Use the following information to transport product packages to the installation site and unpack Express Solo.

General Instructions and Notes

WARNING: The crate is heavy and can cause injury or death if dropped. Do not stand or walk beneath the crate while it is being lifted. Take precautions against the crate tipping or sliding.



CAUTION: Always transport and store components in their original packaging. Use appropriate lifting equipment (forklift or crane, lifting straps, and any corresponding attachments and accessories). Ensure the load rating of all lifting equipment is adequate for the weight of the crated components.

CAUTION: Keep components in original packaging, free of moisture, and protected from damage until you install or service them at the site. Store all shipments of components in a dry covered location and protect from moisture.

CAUTION: To protect the charging cables from damage, keep them wrapped throughout the installation process.

IMPORTANT: Leave components in the shipping crate until needed. When removing, protect them from damage (such as scratches) by placing them flat on a blanket or tarp, face up. Do not stand up cover panels, as they may be knocked or blown over. Cover charging connectors to prevent damage or ingress.

IMPORTANT: Keep components out of direct sunlight in a cool area until you install them.

Package Dimensions and Weights

Package	Dimensions (L x W x H)	Max. Weight
Express Solo (Product assembly on shipping pallet)	1.12 x 1.32 x 2.5 m (44.1 x 51.8 x 98.4 in)	1450 kg (3197 lb)
Cable Landing Jig	TBD	TBD
Overhead CMK	0.45 x 0.40 x 0.18 m (17.50 x 15.88 x 7 in)	12 kg (25 lbs)

Express Solo Package

After uncrating Express Solo, check for the following components:

NOTE: For any missing component, contact ChargePoint.



(a) Express Solo assembly

(b) Charging cables (Up to x2, depending on configuration)

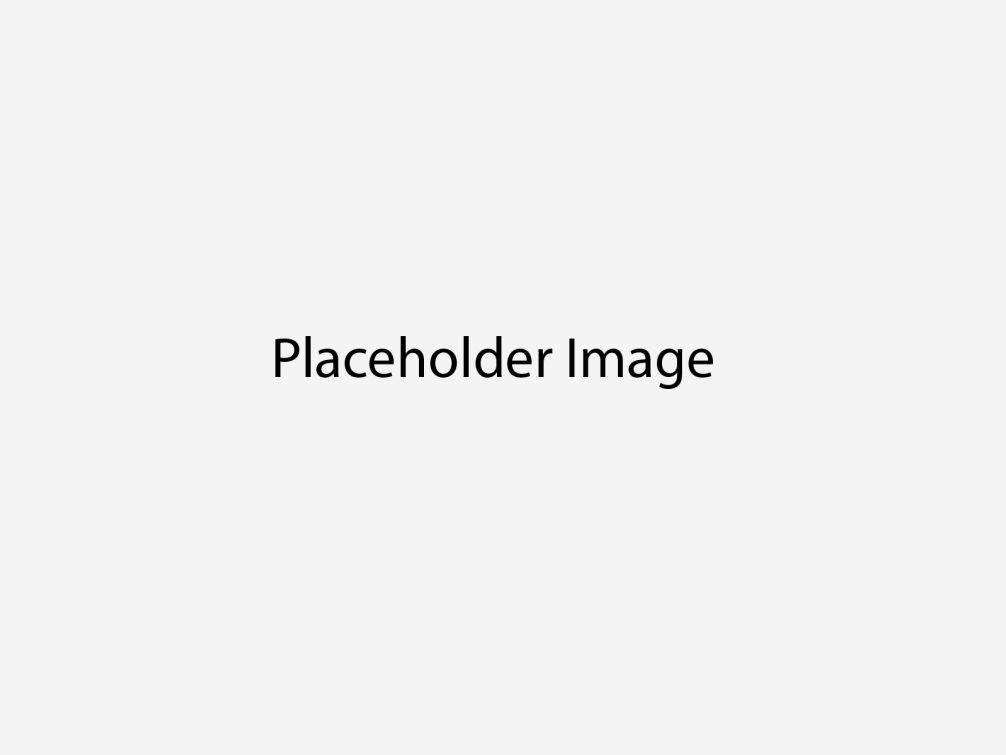
(c) Hardware box with:

i. Eye bolts (x4) - Enables lifting of the assembly
ii. Lifting straps (x4) - Enables lifting of the assembly
iii. Keys (x2) - Opens the front, intake (left) and exhaust (right) doors
iv. M20 anchor nuts (x4) - Secures the assembly to foundation
v. M10 nuts (xTBD) - Secures AC input, external DC output, and DC BUS wires to bus bars
vi. Door lock plugs (x3) - To plug the door locks at completion of installation

Cable Landing Jig Package

Unpack the Express Solo Cable Landing Jig package and check for the following components:

NOTE: For any missing component, contact ChargePoint.



(a) AC cable jig components

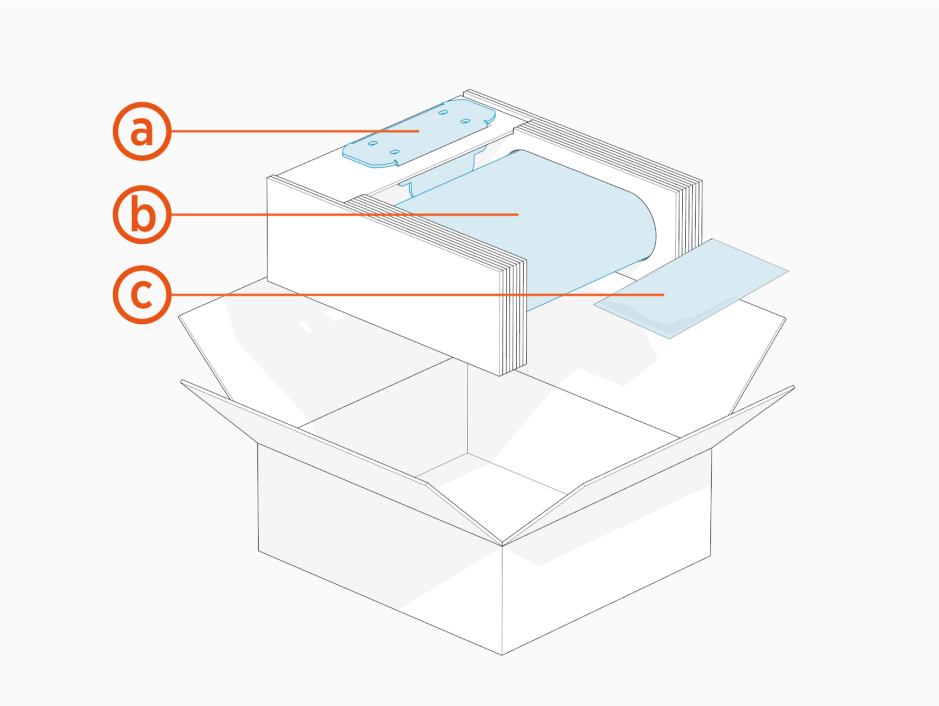
(b) DC cable jig components

(c) Jig alignment plate

Overhead CMK Package (Option)

Check the overhead CMK package for the following components:

NOTE: For any missing component, contact ChargePoint.



(a) Mounting bracket

(b) Overhead CMK

(c) Hardware kit with M8 hex nuts (x4) and M6 Torx screws (x4)

Disconnect Power

To disconnect power, complete the following steps:

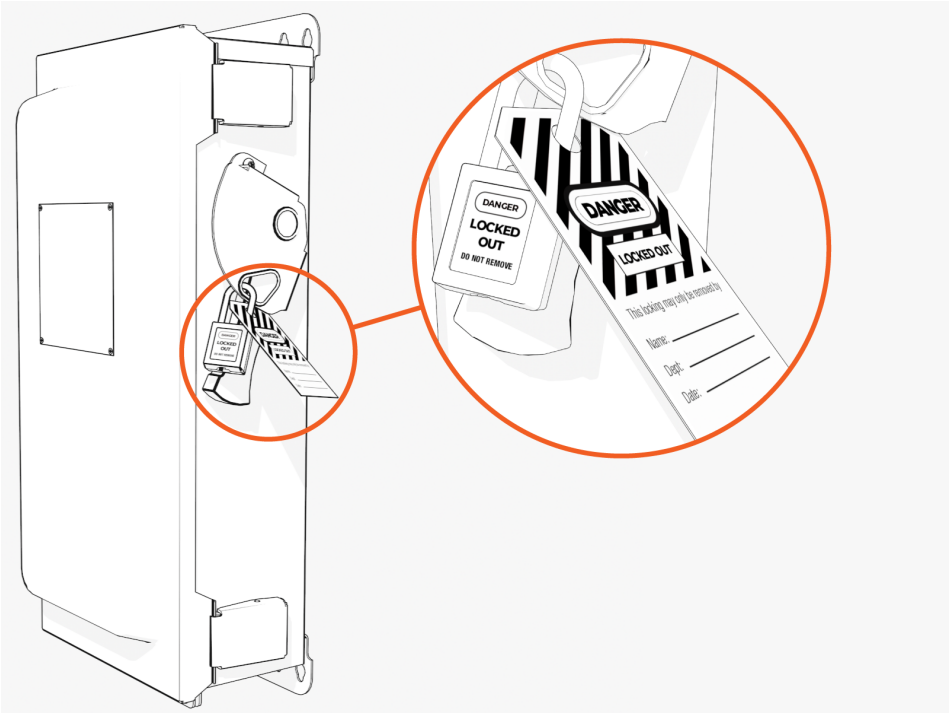
DANGER: RISK OF SHOCK

- Before any procedure, disconnect the power.
- Follow local code and site lockout/tagout procedure to de-energize the station.
- Wait for energy to dissipate (approximately five minutes).
- Keep power off until all covers and panels are reinstalled and the work is complete.

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN SERIOUS INJURY, LOSS OF LIFE, OR PROPERTY DAMAGE.

1. Disconnect power at the site electrical panel.

NOTE: Follow standard practice and local code to de-energize the applicable circuit and lock out/tag out the disconnect before proceeding.



2. Use a multimeter to test that the unit is de-energized.

IMPORTANT: Do not reconnect the power after completing physical installation. An authorized commissioning partner will commission, power on, pinpoint, and configure Express Solo after physical installation.

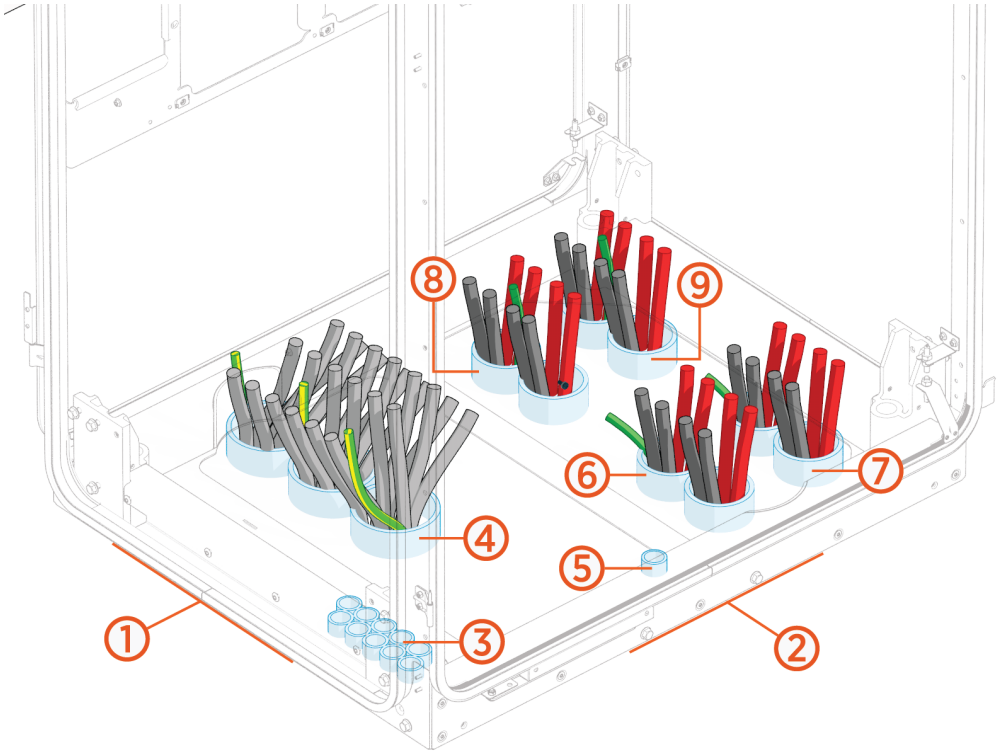
Mount Express Solo 3

Follow all instructions provided in this section to mount the Express Solo.

Wire Entry Overview

Below is a sample depiction of Express Solo wire entry via conduit stub-ups. In regions that do not use conduits and/or use armored cables, the cables shall be laid out in a similar pattern.

NOTE: The size and quantity of conduits and wires shown below are for illustrative purposes only. The actual quantity and size of conduits and wires for your specific site may vary and shall depend on site specific requirements.



(1) Cabinet front side

(2) Cabinet intake (right) side

(3) 48 V DC, Ethernet, Safety Hub, and door interlock

(4) AC input

(5) Shunt trip

(6) DC BUS (intake side)

(7) EXT B

(8) DC BUS (exhaust side)

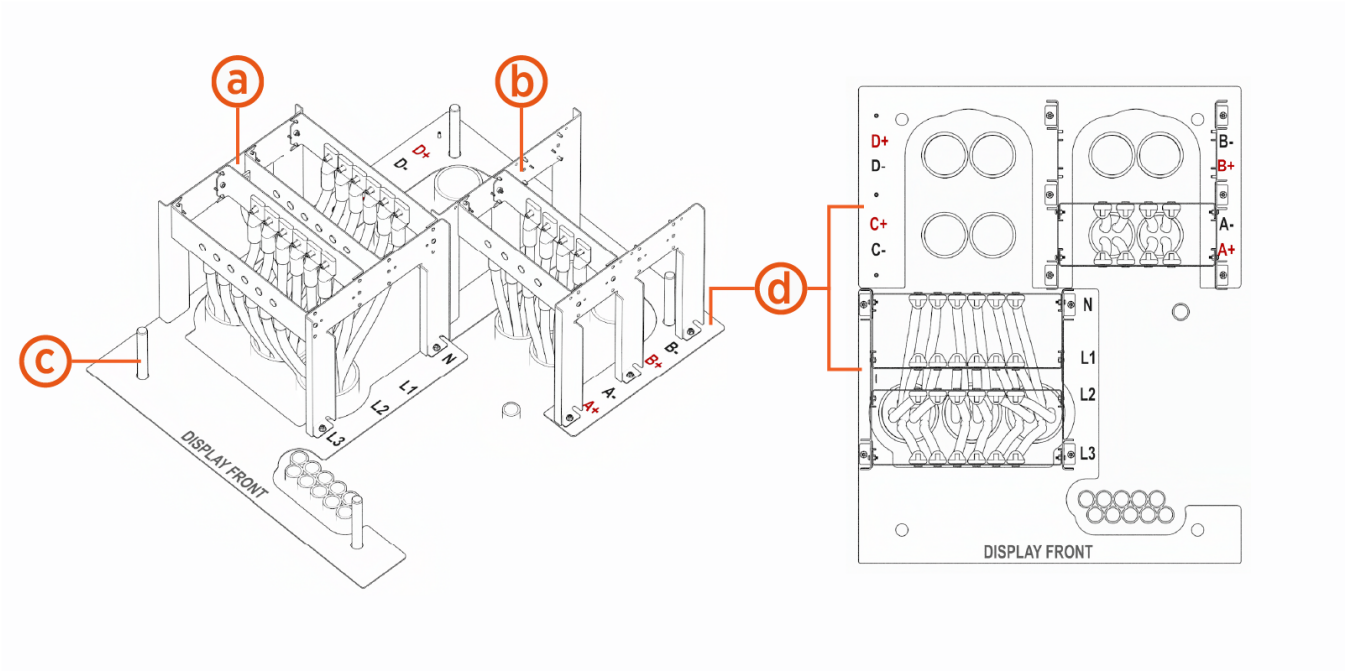
(9) EXT D

To view wire landing locations within the cabinet, see Wire Terminal and Bus Bar Locations.

Cable Jigs Overview

The AC input, external DC output, and DC BUS cables must be pulled through conduit and prepared for connection using two cable jigs. The cable jigs replicate the positions of the bus bars within the Express Solo cabinet and allows the cables to be prepared (cut to correct length and positioned correctly) before the station is positioned and secured to the concrete pad.

NOTE: The size and quantity of conduits and wires shown below are for illustrative purposes only. The actual quantity and size of conduits and wires for your specific site may vary and shall depend on site specific requirements. Use the diagram solely to review usage of the cable jigs.



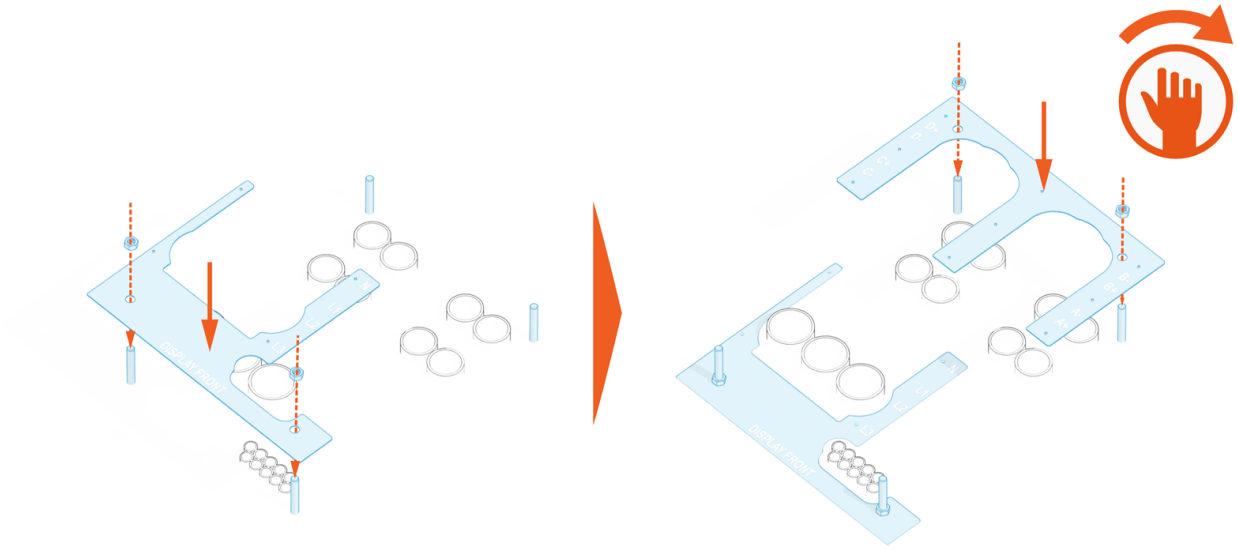
Ref	Part	Function or Definition
(a)	DC cable landing jig	Positions the following external DC output and DC BUS cables for landing on bus bars: • DC BUS (intake side), marked A on jig alignment plate • EXT B • DC BUS (exhaust side), marked C on jig alignment plate • EXT D
(b)	AC input cable landing jig	Positions AC input cables for landing on bus bars
(c)	Anchor bolt	Concrete-embedded anchor bolts (x4)
(d)	Jig alignment plate	Two-part plate that installs over the anchor bolts and serves as a base for the cable jigs

Pull and Test AC Input, DC BUS, and External DC Output Wires

Follow the procedure below to pull and test AC input wires, DC BUS, and external DC output wires.

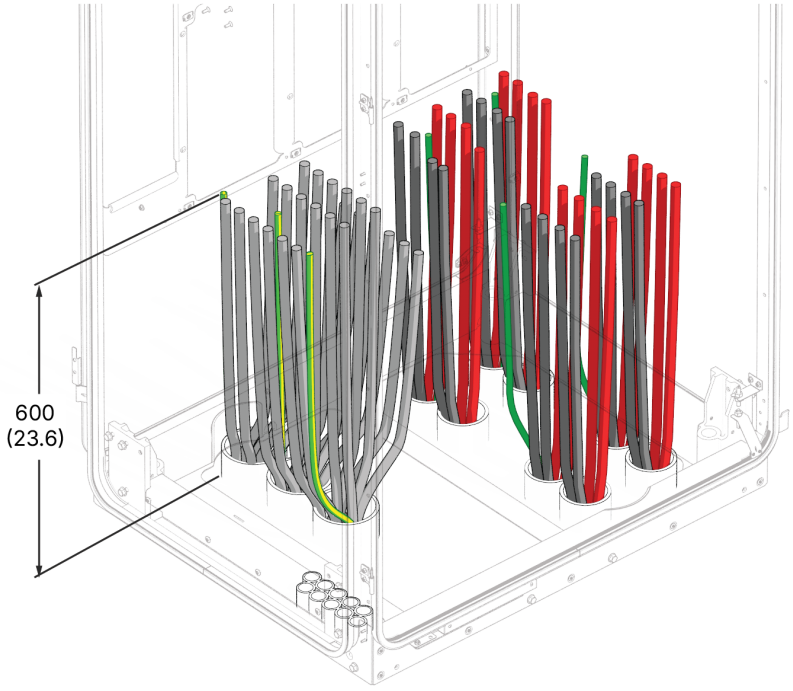
1. Install the jig alignment plates over the anchor bolts and conduit stub-ups. Then install nuts onto the anchor bolts to secure the jig alignment plate to the ground. Hand-tighten each nut.

> **NOTE:** The jig alignment plates install in two parts.



2. Express Solo supports multiple conduit options. Study the line diagram carefully to understand which wires should be pulled through each conduit.

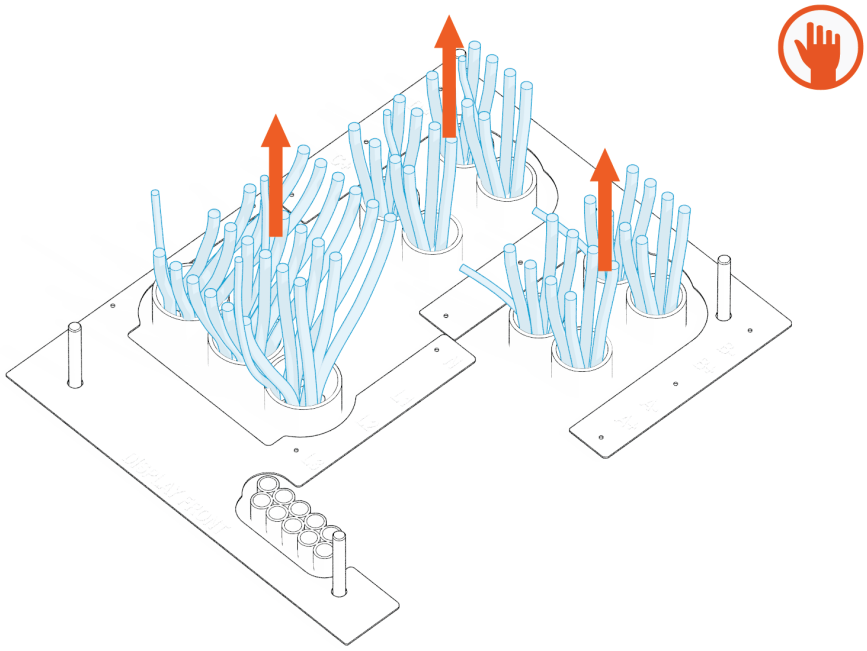
3. Prepare wires for conduit pull. Label each wire at both ends. Plan wire lengths so that, after pulling, there is sufficient wire length to land on all lug landing positions on the cable jig. Alternatively, plan for wires to extend a minimum of 600 mm (23.6 in) above the finished mounting surface.



IMPORTANT: Do not pull auxiliary wires (low power wires) at this point in the installation. Auxiliary wires include 48 V DC, Ethernet, soft shutdown switch, safety hub, and door interlock wires. These wires are pulled later in the procedure, after the cabinet is mounted. Pulling auxiliary wires before cabinet mount can result in wire damage during the mounting process.



4. Pull the AC input, DC BUS, and External DC output wires through conduit. If necessary, apply a non-conductive wire pulling lubricant.

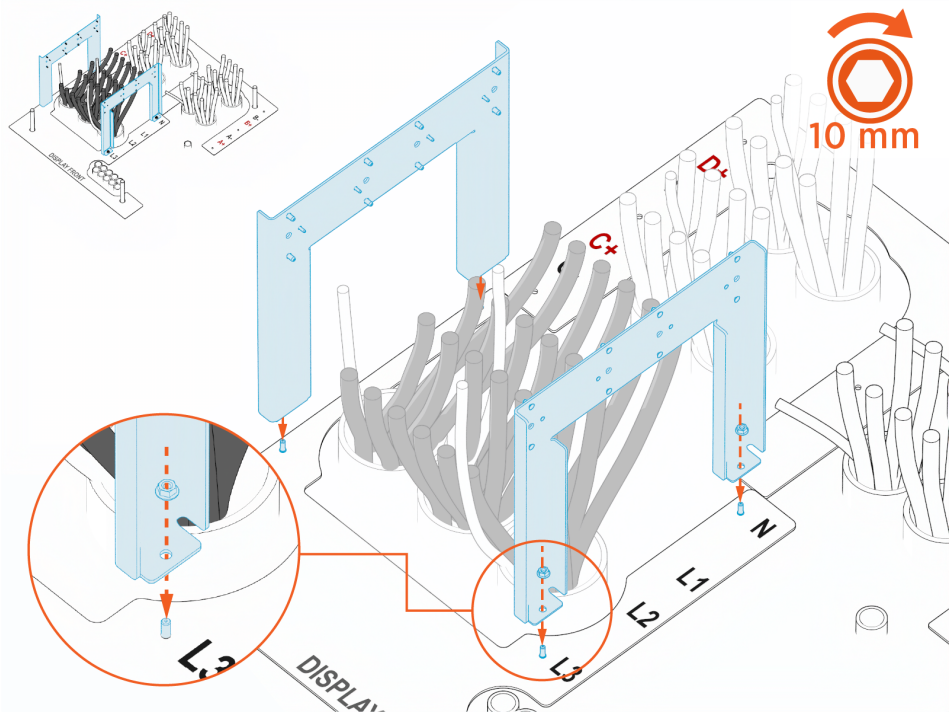


5. Wipe off any remains of wire pulling lubricant (if applied).
6. Perform insulation resistance test on the pulled wires. Refer to the *High Voltage Wire Insulation Resistance Test Field Guide*.

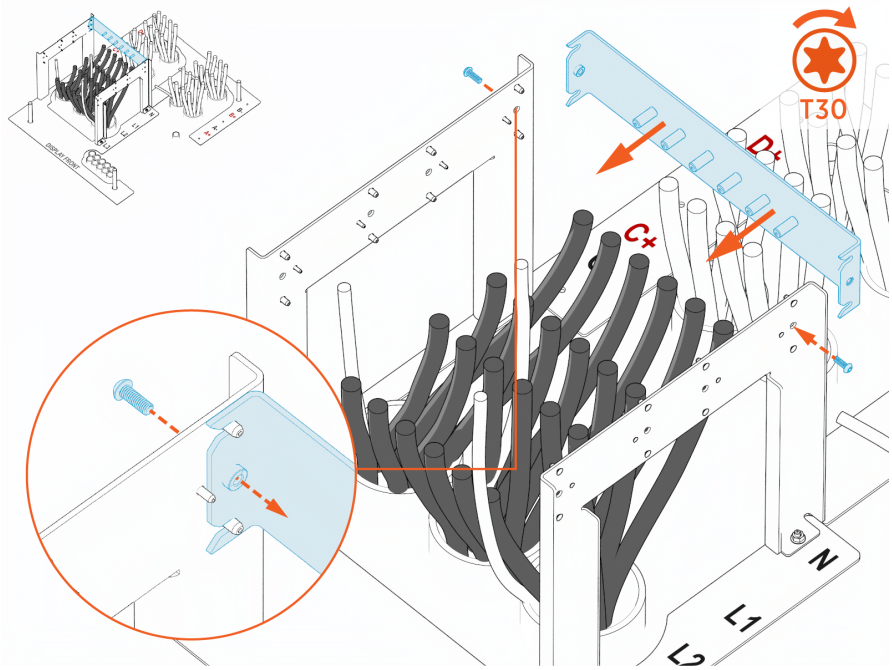
Prepare AC Input and Neutral Wires

Follow steps below to prepare AC input and neutral wires using the AC input cable landing jig.

1. Secure each side frames (x2) to the jig alignment plate using provided M6 hex nuts (x2 for each frame). Torque to **5.6 Nm (50 in-lb)**.

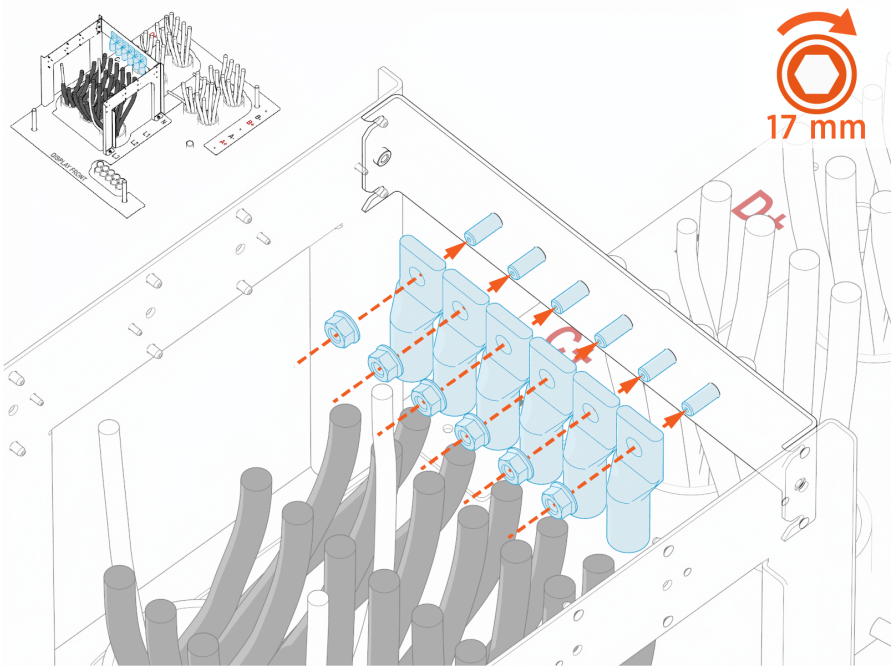


2. If neutral is required, take the following steps to prepare the neutral wires:
    a. Attach the stud landing bar to the side frame in the neutral (N) position. Secure the bar with provided M6 bolts (x2).

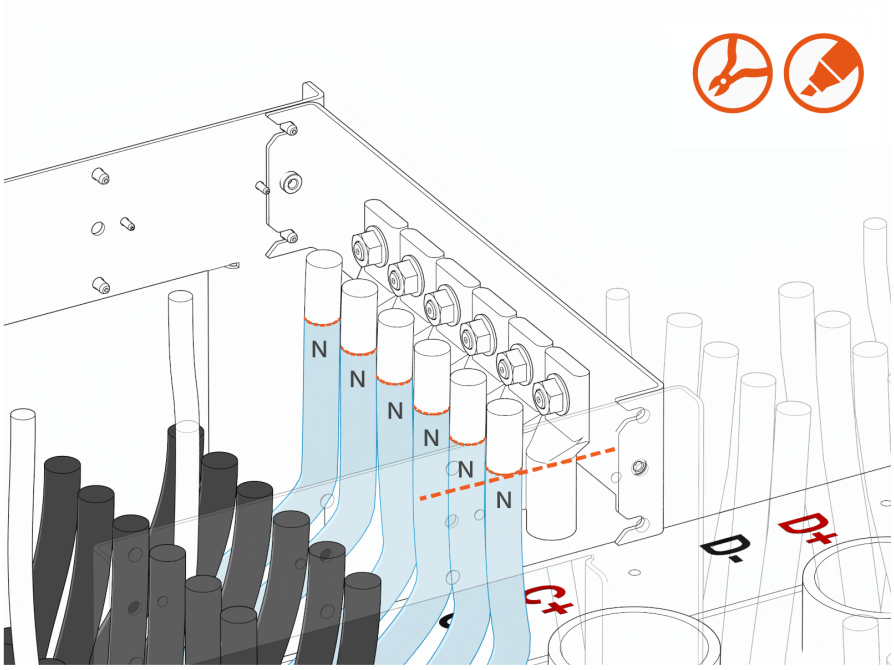


b. Install the wire lugs on the stud landing bar. Secure each lug with provided M10 hex nut. Hand tighten.

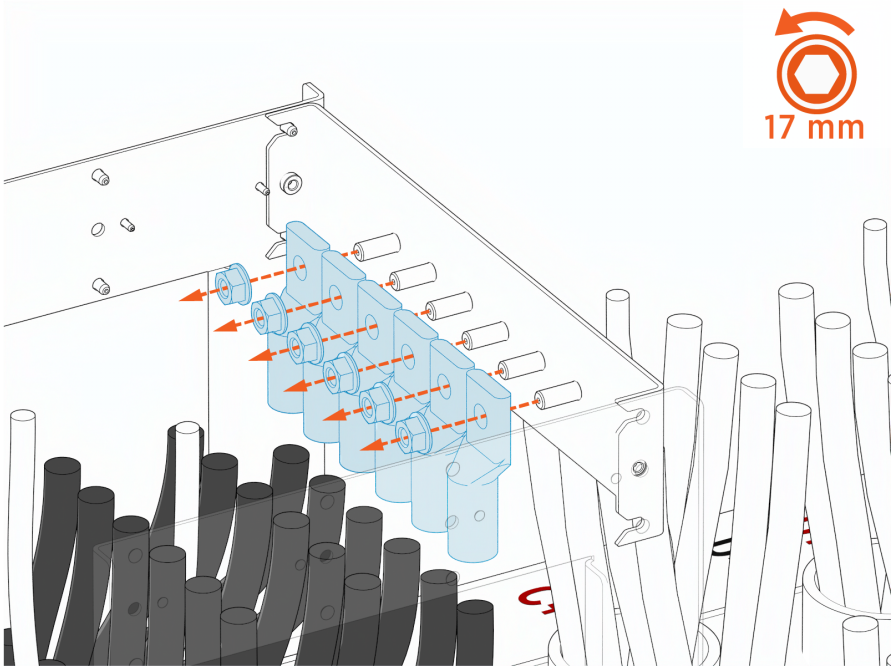
> **IMPORTANT:** Ensure all wire lugs are installed vertically on the landings studs, with no tilt or skew.



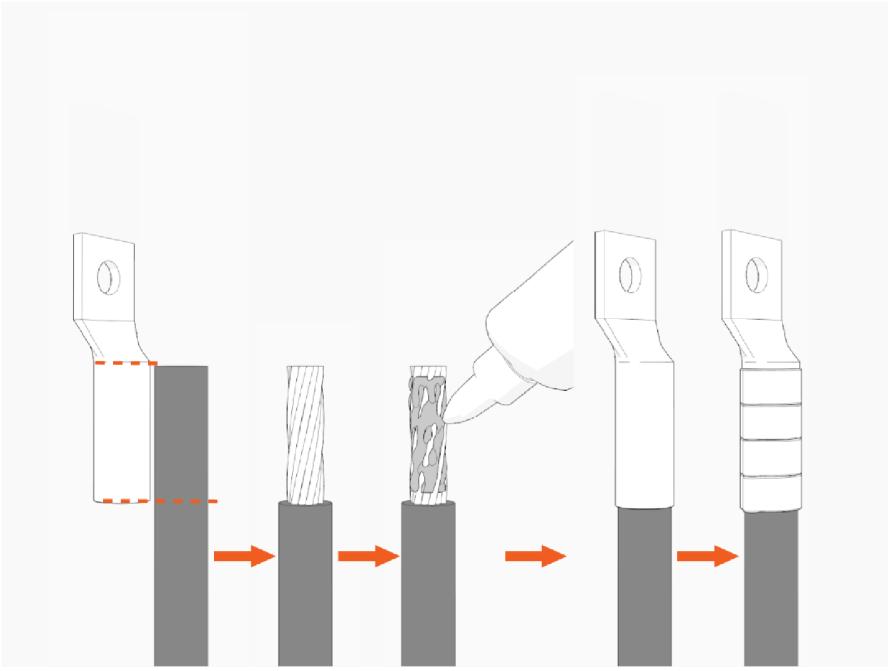
c. Position the neutral wires next to the lugs. Mark and cut the wires to length.



d. Remove the lugs from the stud landing bar.

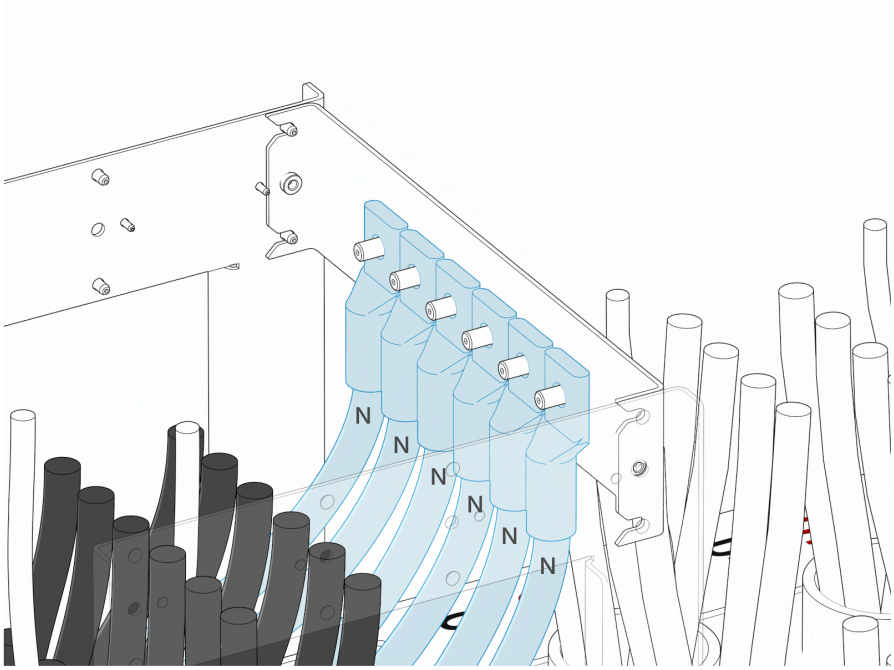


e. Terminate each wire with a lug:

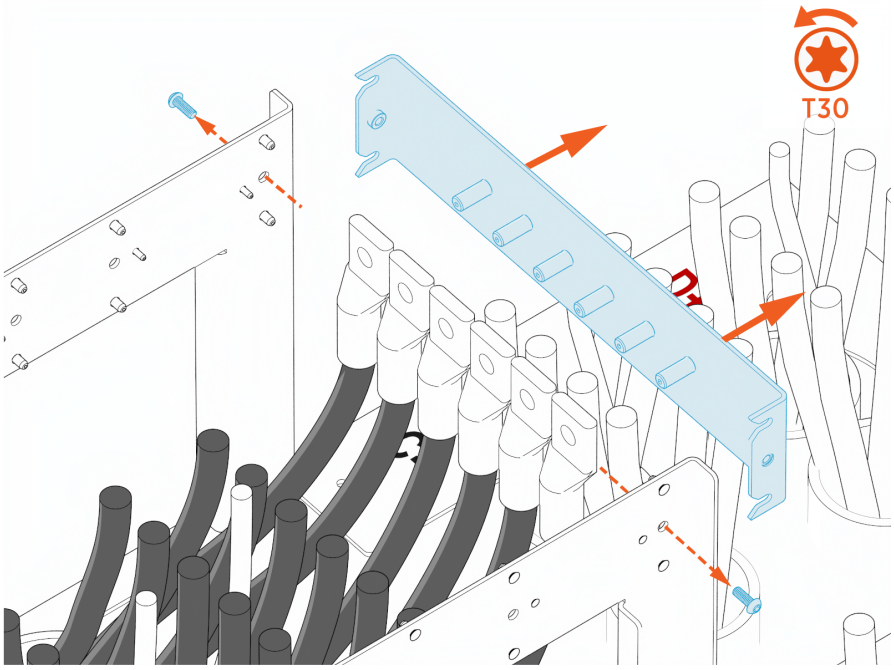


- Mark the lug's barrel height on the cable.
- Strip the wire jacket. Use a suitable wire stripper, such as a Klein tool.
- If recommended by the wire manufacturer or local code, apply an anti-oxidant joint compound to the bare cable to make a gastight joint with the lug.
- Insert the stripped wire end into the lug barrel and crimp it. Use a suitable lug crimping tool and/or die recommended by the lug manufacturer.

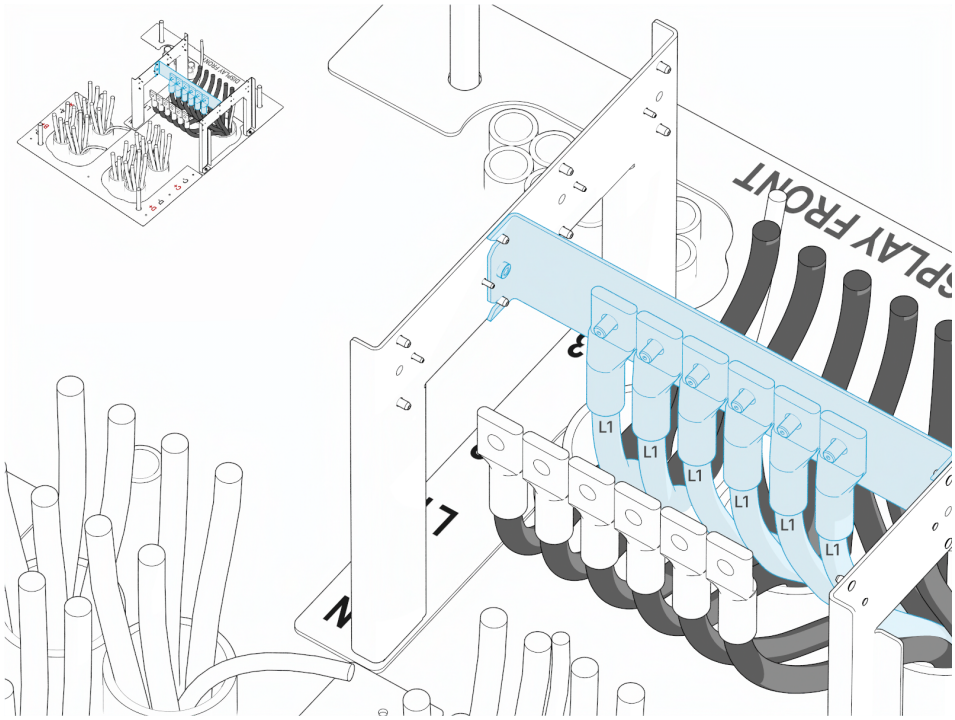
f. Stage the terminated wires on the stud landing bar.



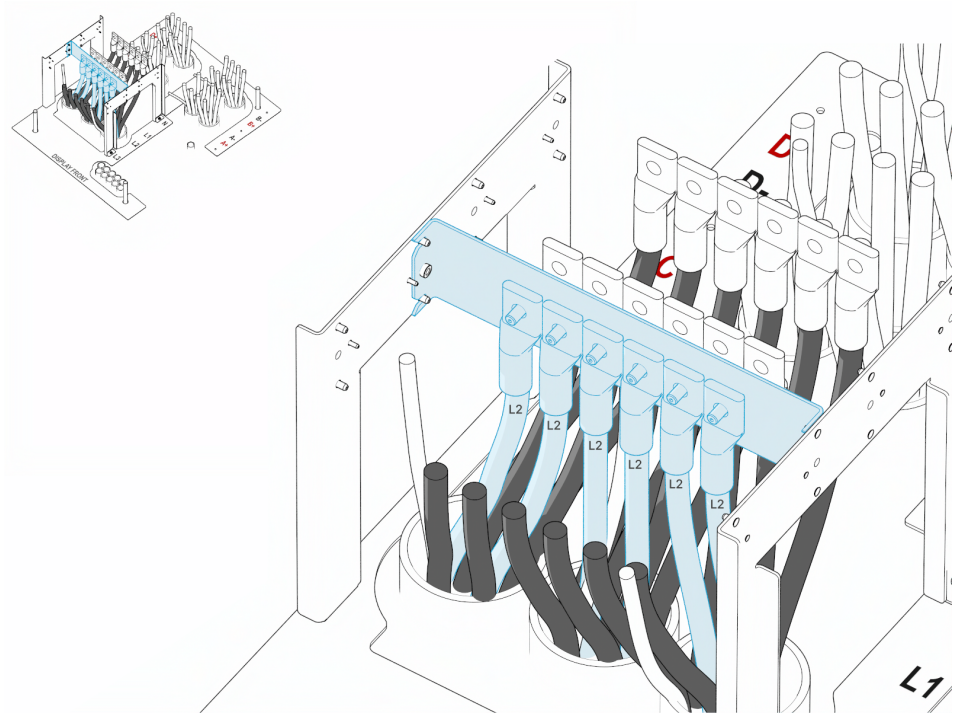
g. Unfasten stud landing bar and slide the bar out to the side.



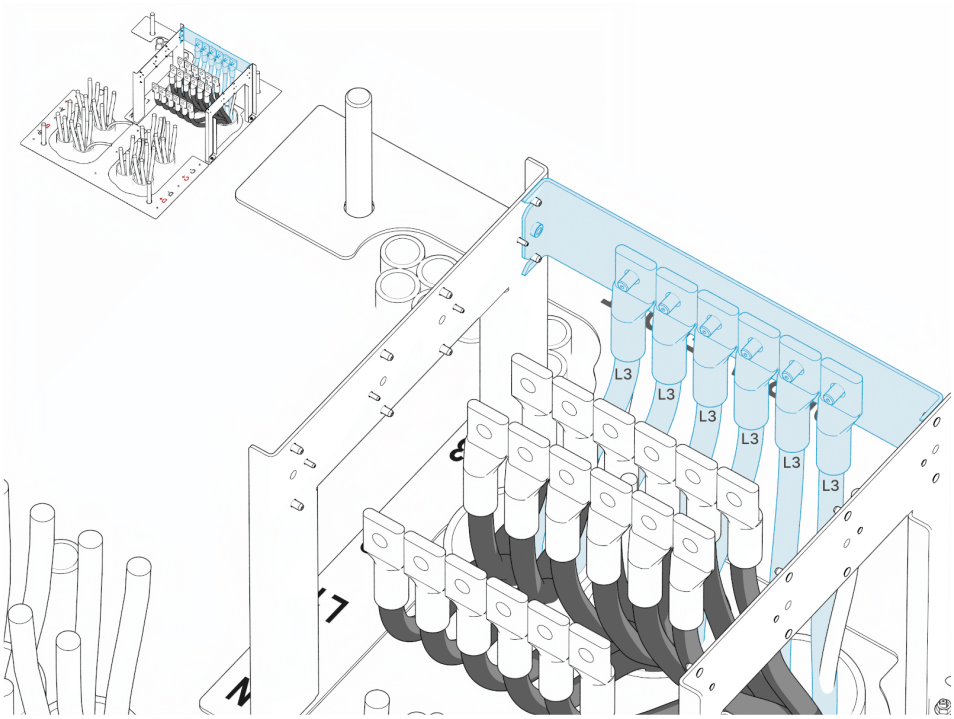
3. Repeat to stage the L1 wires.



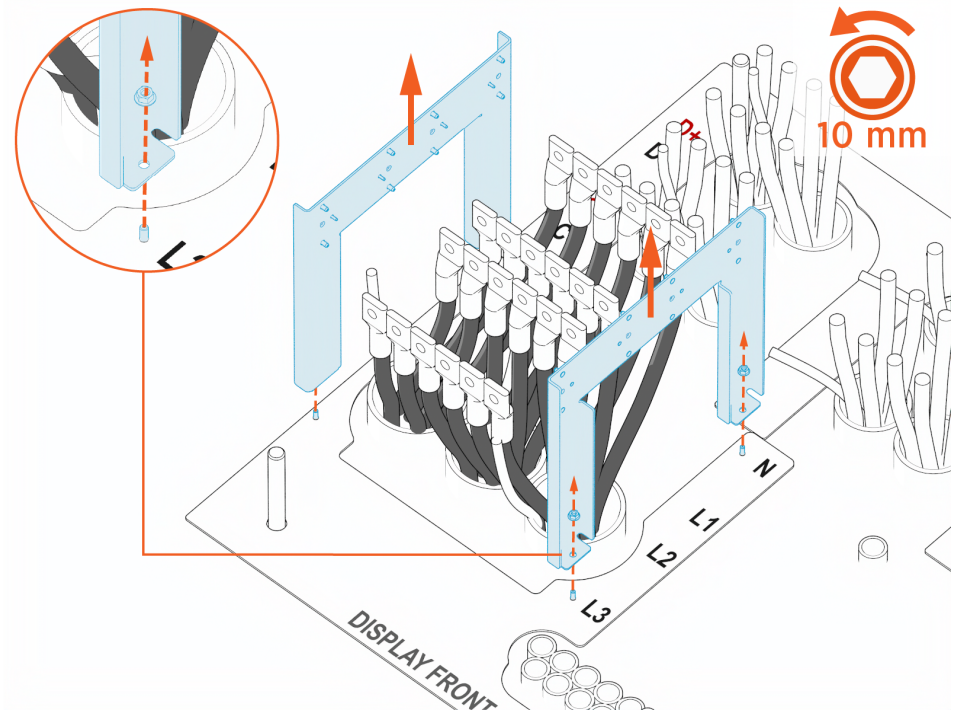
4. Repeat to stage the L2 wires.



5. Repeat to stage the L3 wires.



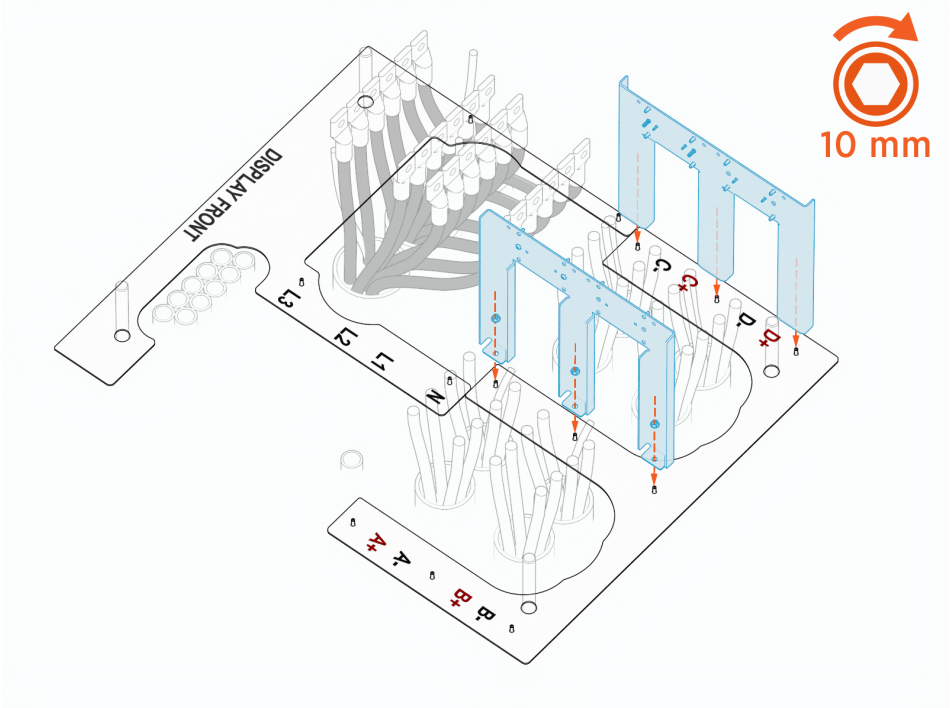
6. Unfasten and remove the side frames from the jig alignment plate.



Prepare External DC Output and DC BUS Wires

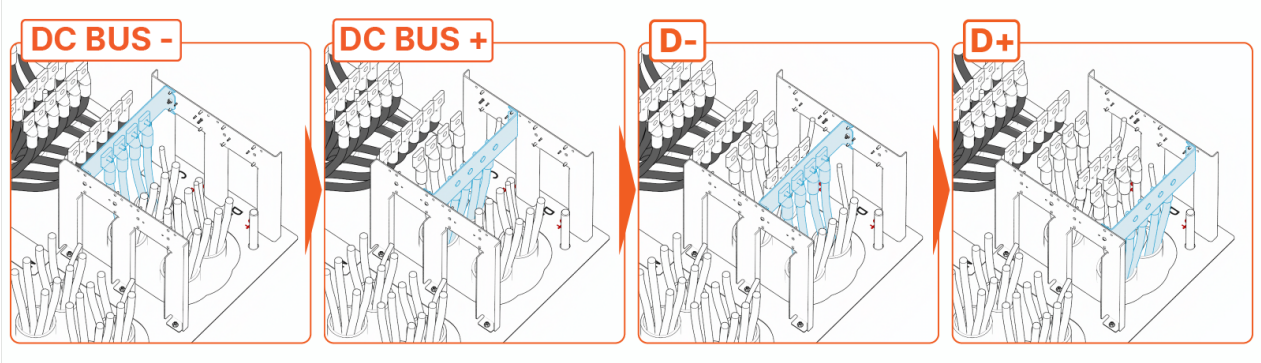
If external DC output and DC BUS wires are required, follow steps below to prepare the wires using the DC cable landing jig.

1. Install the side frames (x2) around the exhaust-side DC wire conduits. Secure them to the jig alignment plate using provided M6 hex nuts (x3 for each frame). Torque to **5.6 Nm (50 in-lb)**.

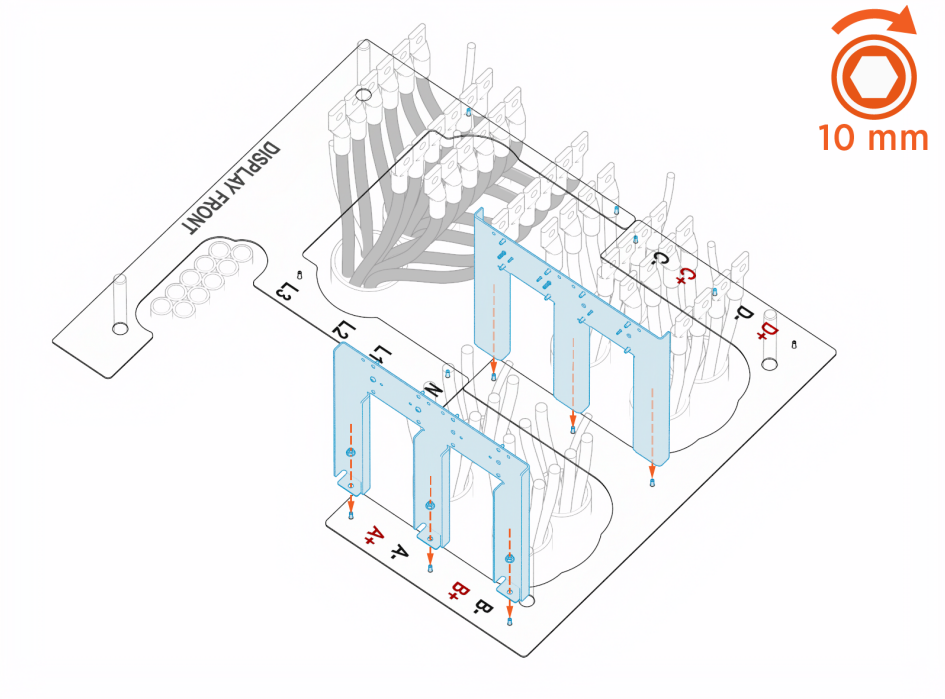


2. Using the same procedure described for the AC cable jig, cut, terminate, and stage the exhaust-side DC BUS negative (DC BUS -), DC BUS positive (DC BUS +), EXT D negative (D-), and EXT D positive (D+) wires, working one row at a time. Remove the cable jig when done.

> **NOTE:** DC BUS (exhaust side) wires are staged at the locations marked 'C' on the jig alignment plate

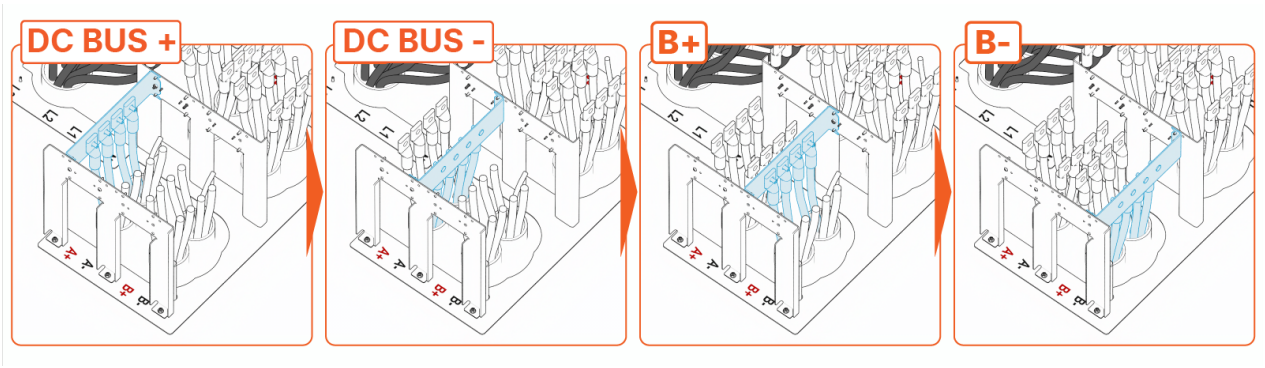


3. Install the side frames (x2) around the intake-side external DC output conduits. Secure them to the jig alignment plate using provided M6 hex nuts (x3 for each frame). Torque to **5.6 Nm (50 in-lb)**.

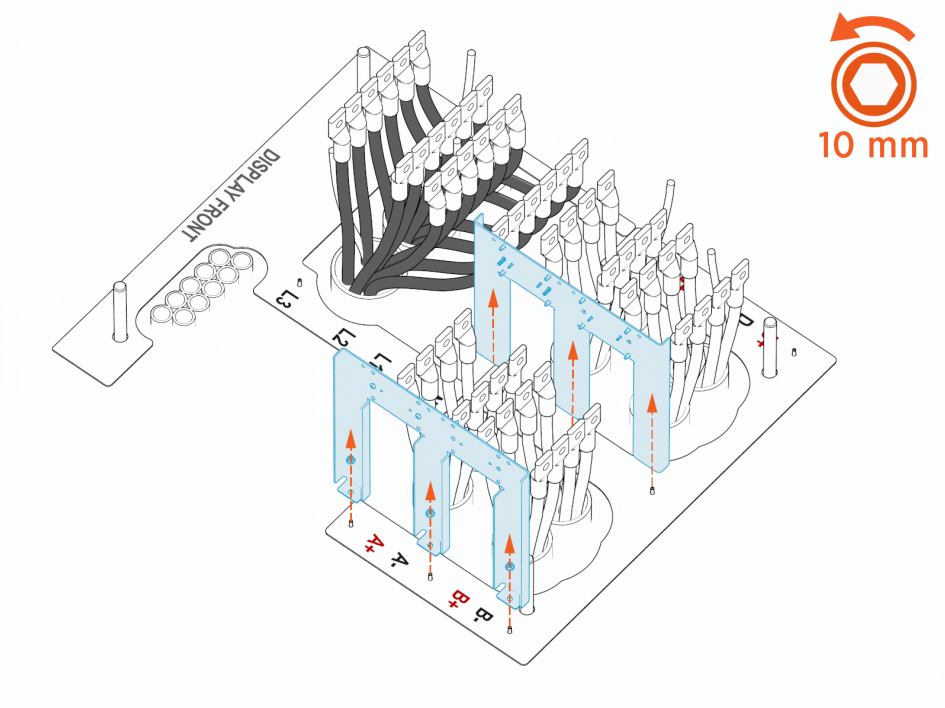


4. Working one row at a time, use the stud landing bar to prepare the intake-side DC BUS positive (DC BUS +), DC BUS negative (DC BUS -), EXT B positive (B+), and EXT B negative (B-) wires.

> **NOTE:** DC BUS (intake side) wires are staged at the location marked 'A' on the jig alignment plate

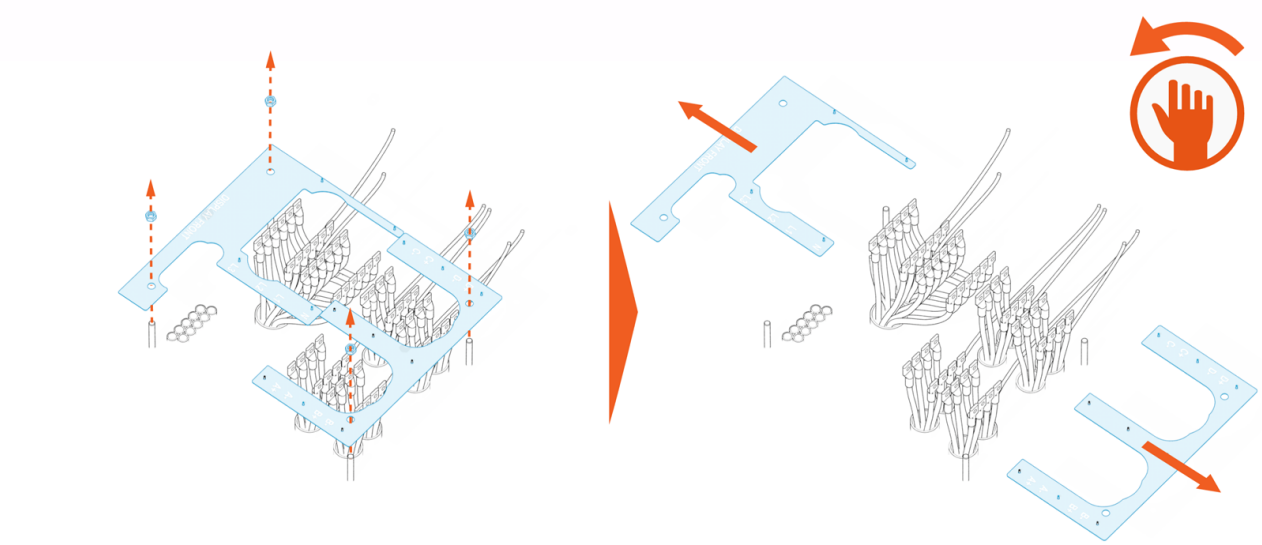


5. Remove the DC cable jig.

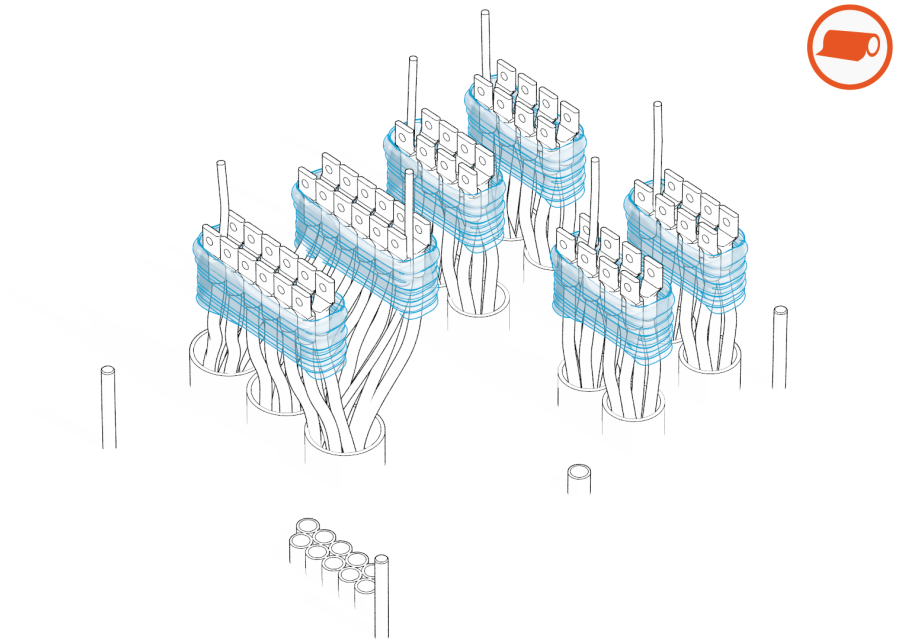


Finalize Wire Preparation

1. Remove the nuts securing the jig alignment plates to the anchor bolts, and then remove the jig alignment plates. First lift each jig alignment plate off the anchor bolts and then pull the plate away from the plate split line.



2. Use cling film to carefully bundle the wires as shown below. The un-terminated ground/PE wires may be gathered within the wire bundles.



Connect Charging Cables to Cable Management System

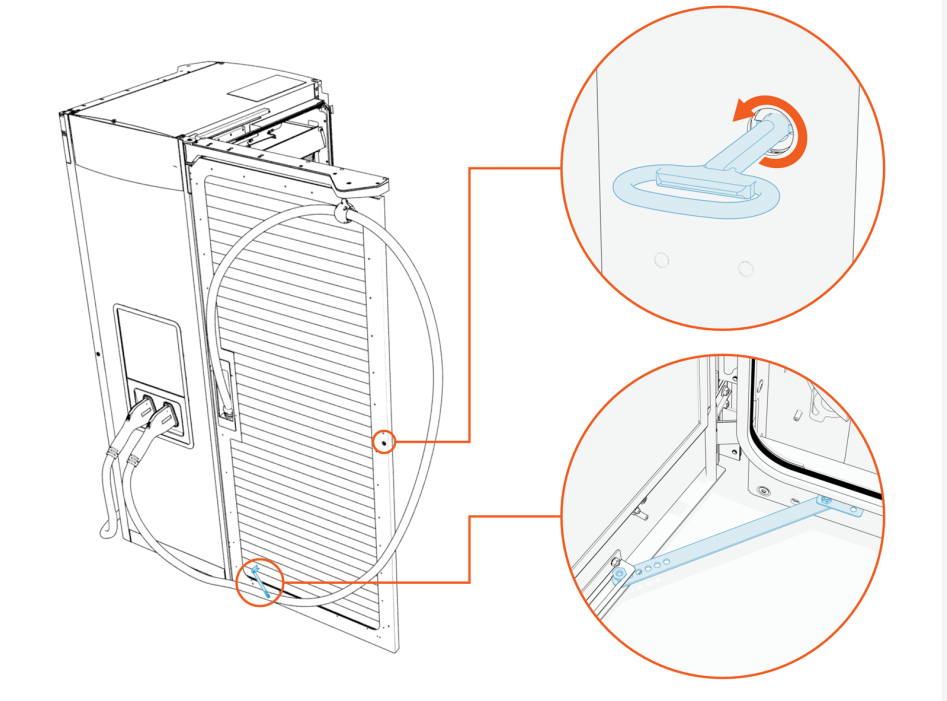
If Express Solo is configured with a swingarm CMK or fixed tether points for charging cables, connect the charging cables to the cable management system. Follow steps below to connect charging cables.

1. Install the charging cable tetherballs. See Install Charging Cable Tetherballs.
2. Suspend the charging cables. See Suspend Charging Cables.
3. Holster the charging cable connectors by inserting each connector into its corresponding holster.

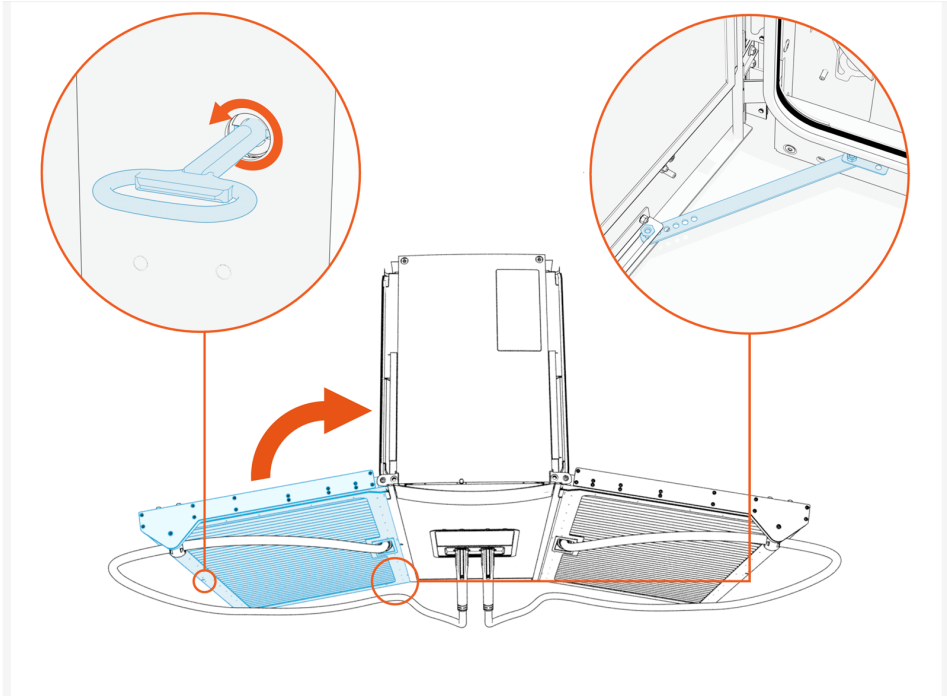
Open Doors and Remove Safety Covers

Follow steps below to open the intake and exhaust doors and remove bus bar safety covers.

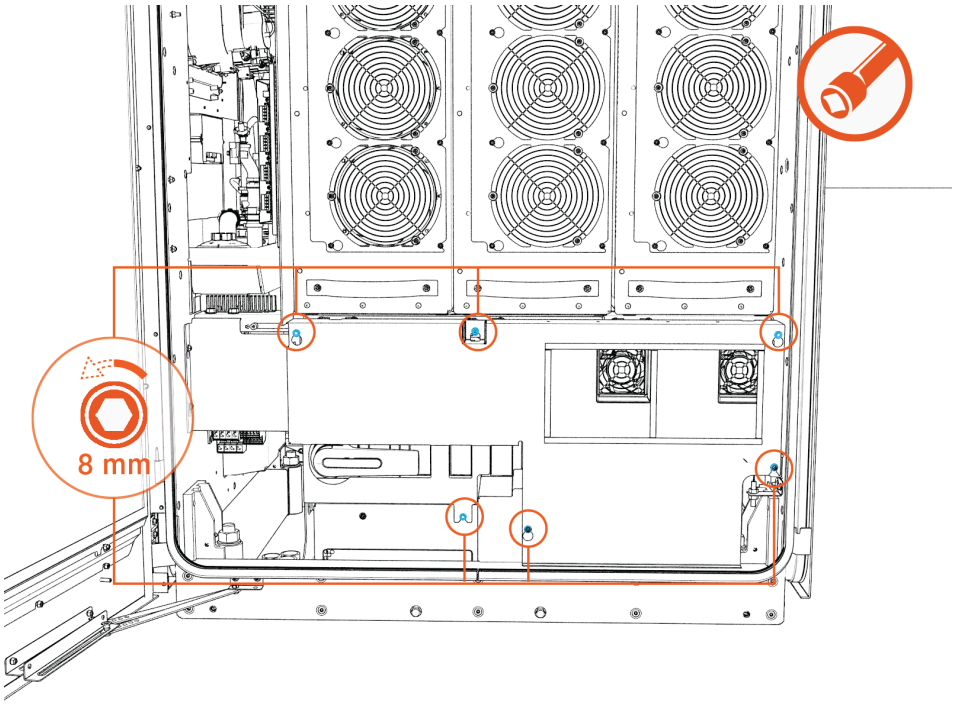
1. Use the door key to unlock the intake (right side) door. Swing the exhaust door open until the door stopper holds the door in open position.



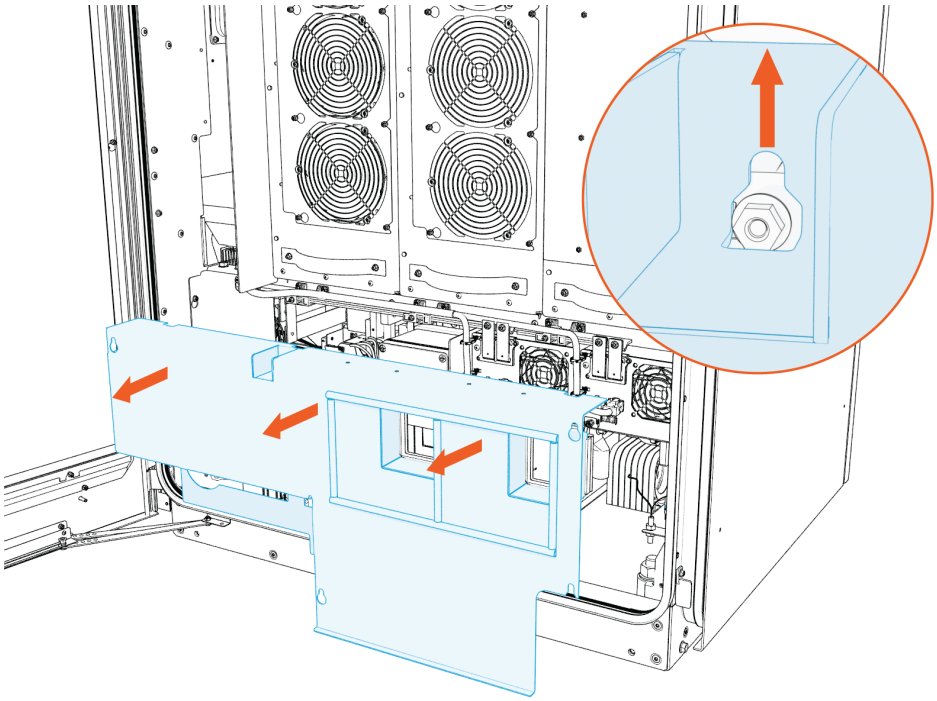
2. Open the exhaust (left side) door in the same manner. Make sure the door stopper holds the door in open position.



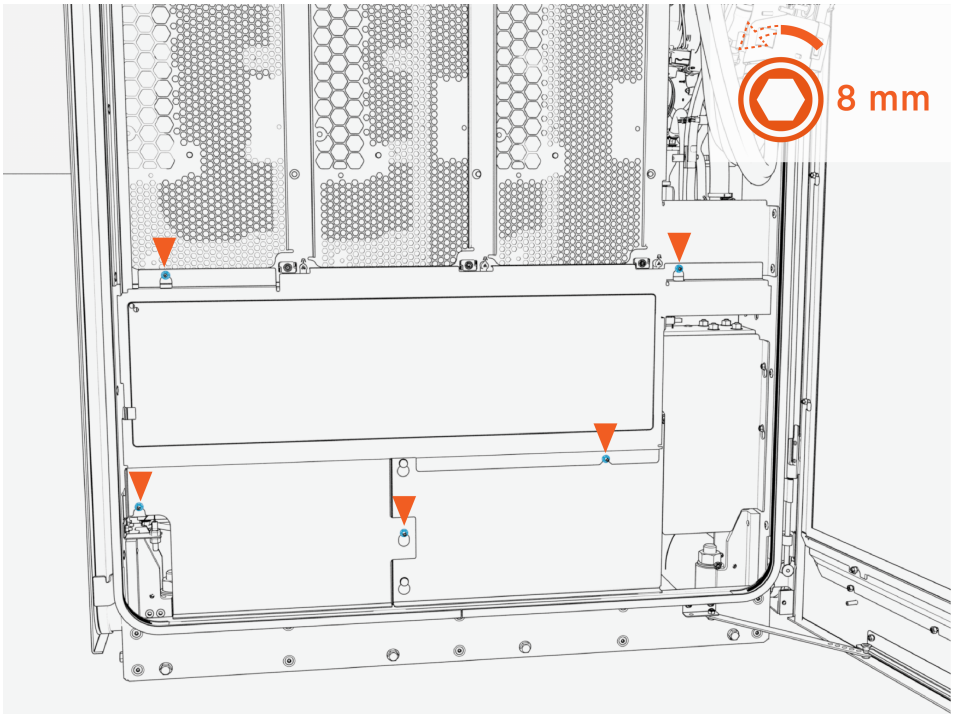
3. On the intake (right) side of the cabinet, loosen (do not remove) the nuts (x6) that secure the DC bus bars safety cover. Use socket extender as needed.



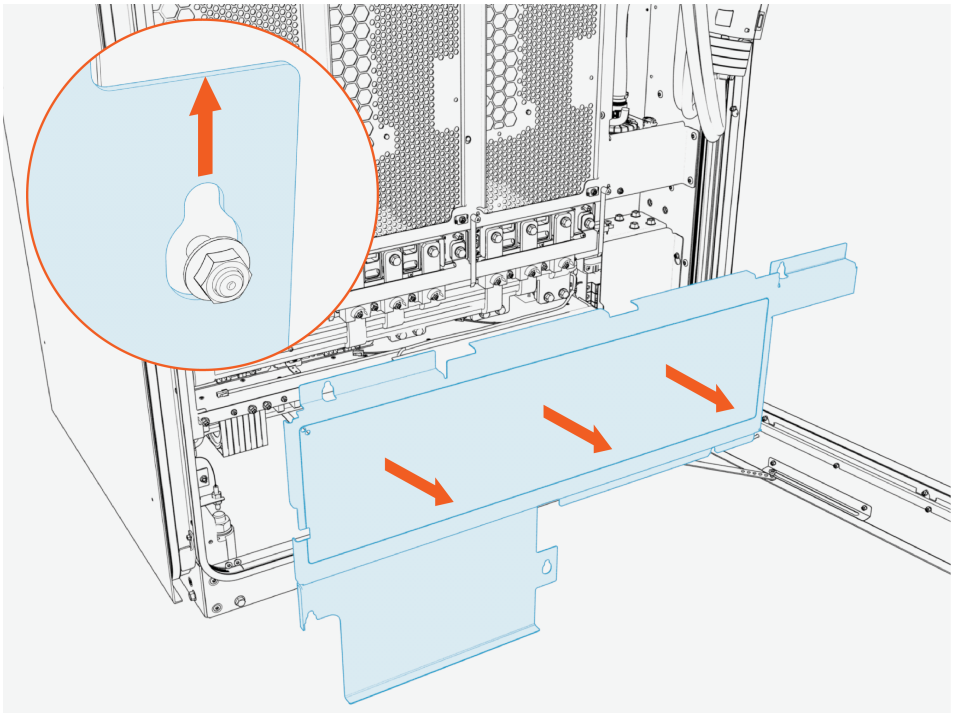
4. Slide the cover upward to release the keyholes. Then pull outward to remove the safety cover.



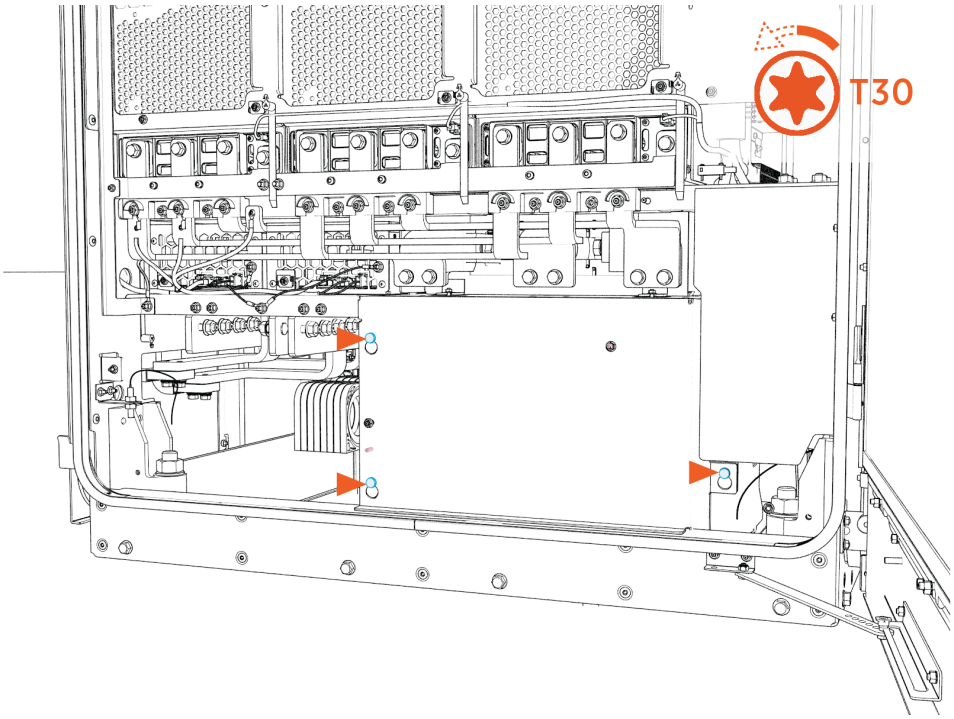
5. On the exhaust (left) side of the cabinet, loosen (do not remove) the nuts (x5) that secure the DC bus bar safety cover.



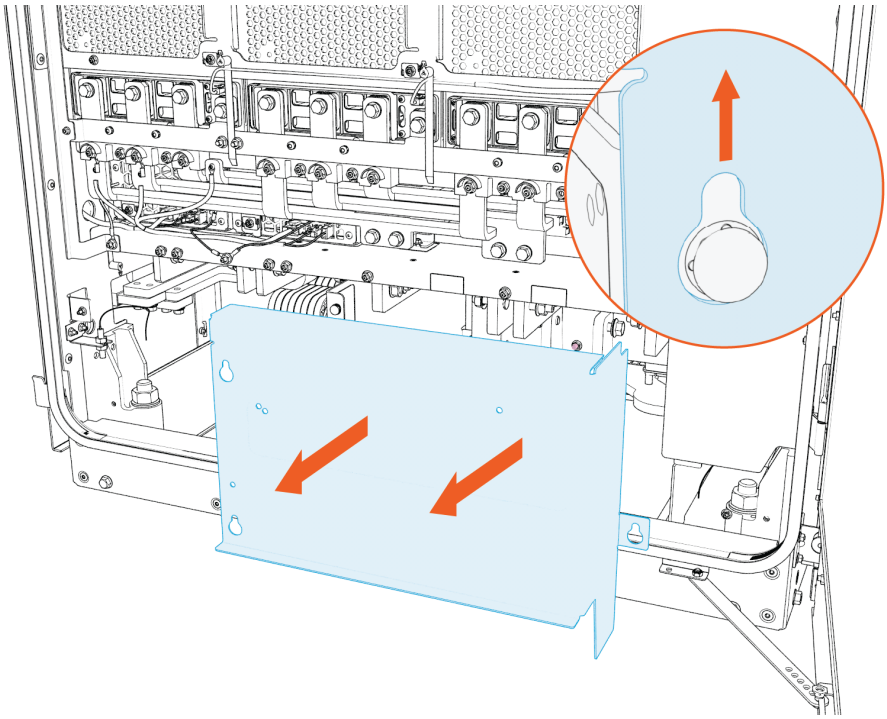
6. Slide the cover upward to release the keyholes. Then pull outward to remove the safety cover.



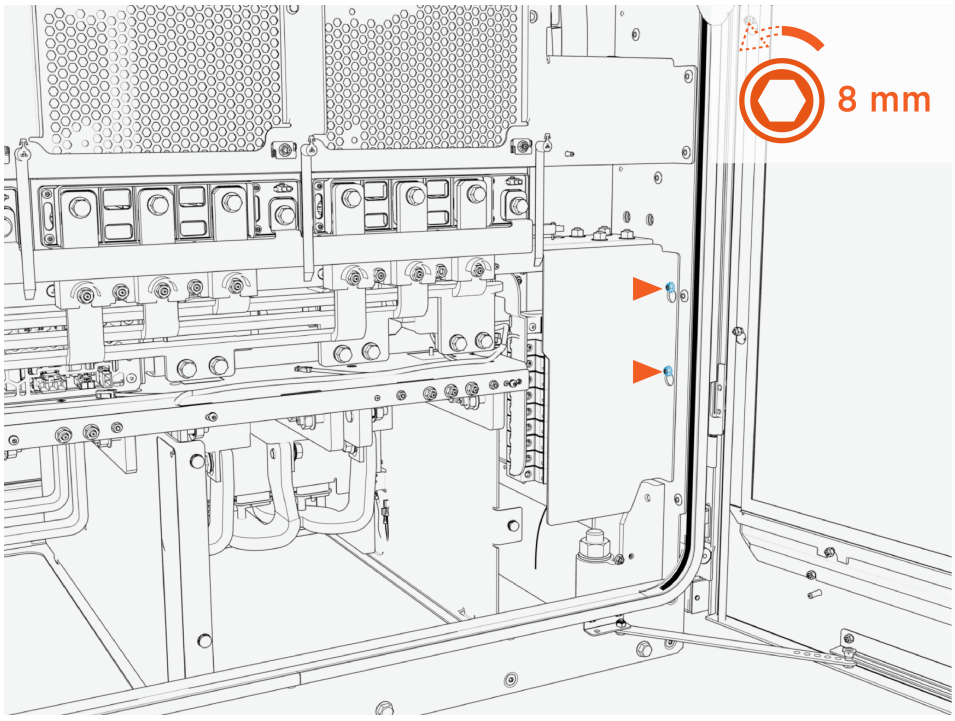
7. On the exhaust (left) side of the cabinet, loosen (do not remove) the nuts (x3) that secure the AC bus bars safety cover.



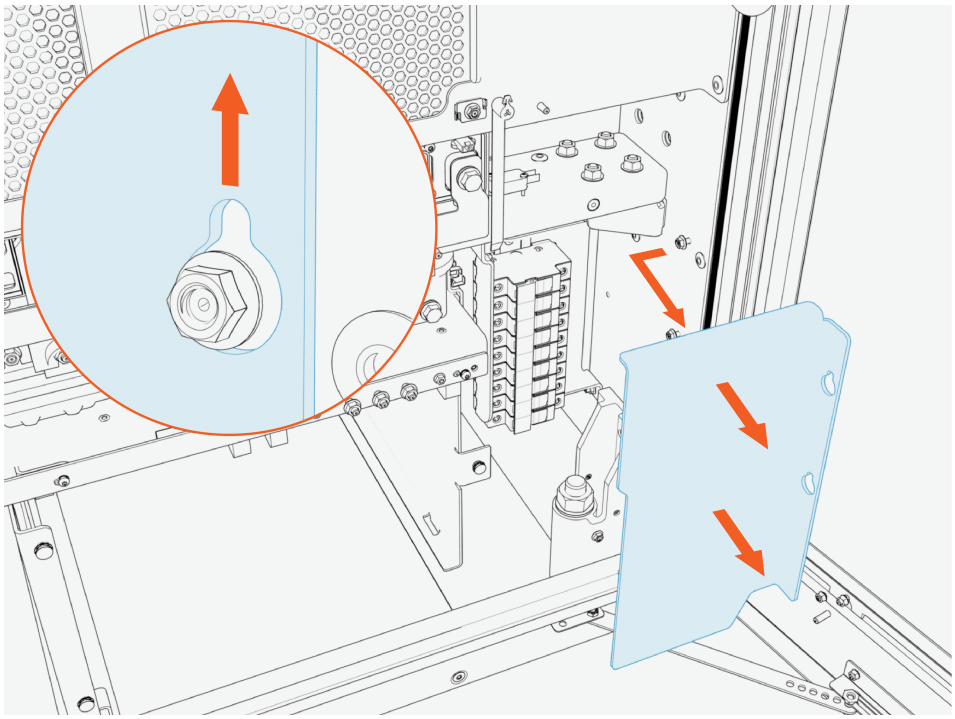
8. Slide the cover upward to release the keyholes. Then pull outward to remove the safety cover.



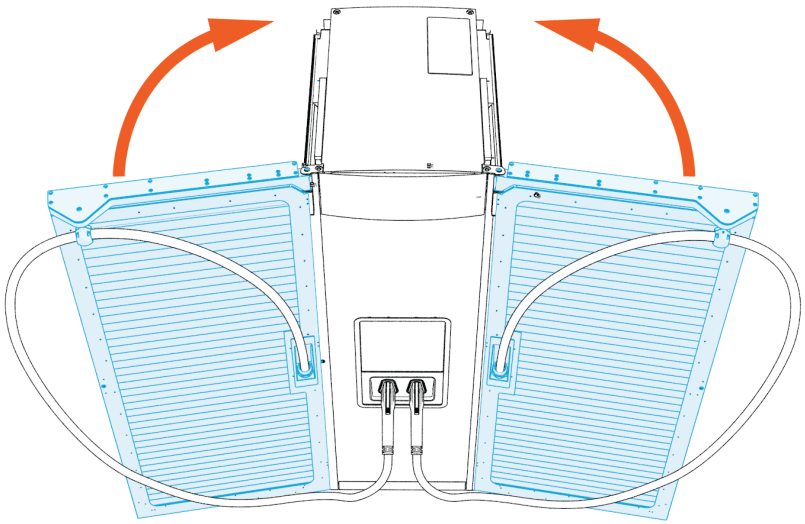
9. On the exhaust (left) side of the cabinet, loosen (do not remove) the nuts (x2) that secure the fuse block safety cover.



10. Slide the cover up to release the keyholes. Then pull outward to remove the safety cover.



11. Disengage the door stays and close (do not lock) the intake and exhaust doors.



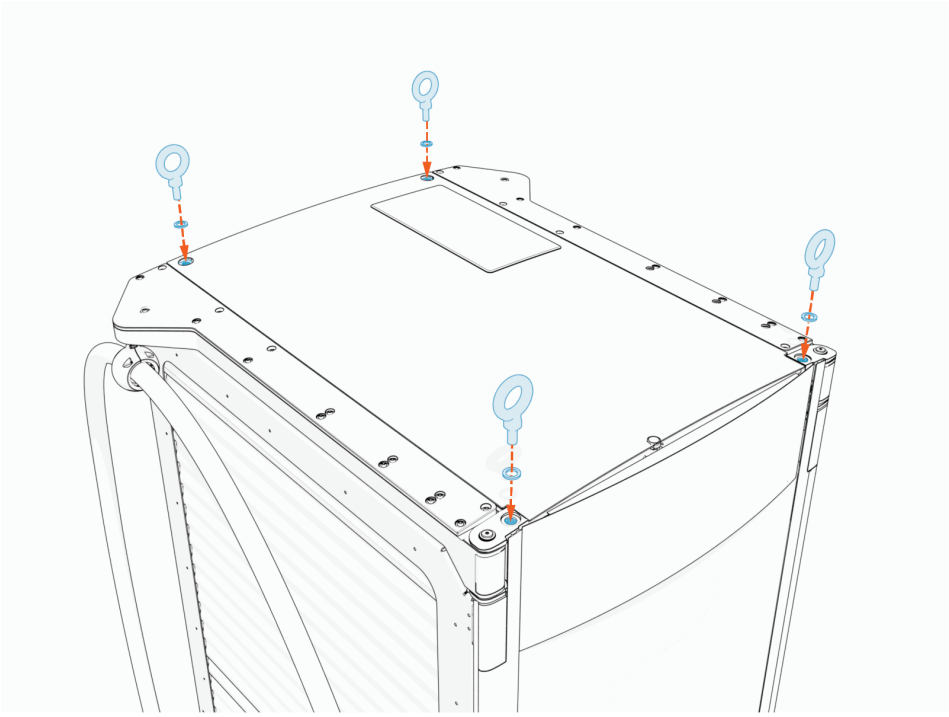
Lift Assembly

To install Express Solo, the assembly must be lifted from the shipping pallet. There two methods for lifting Express Solo:

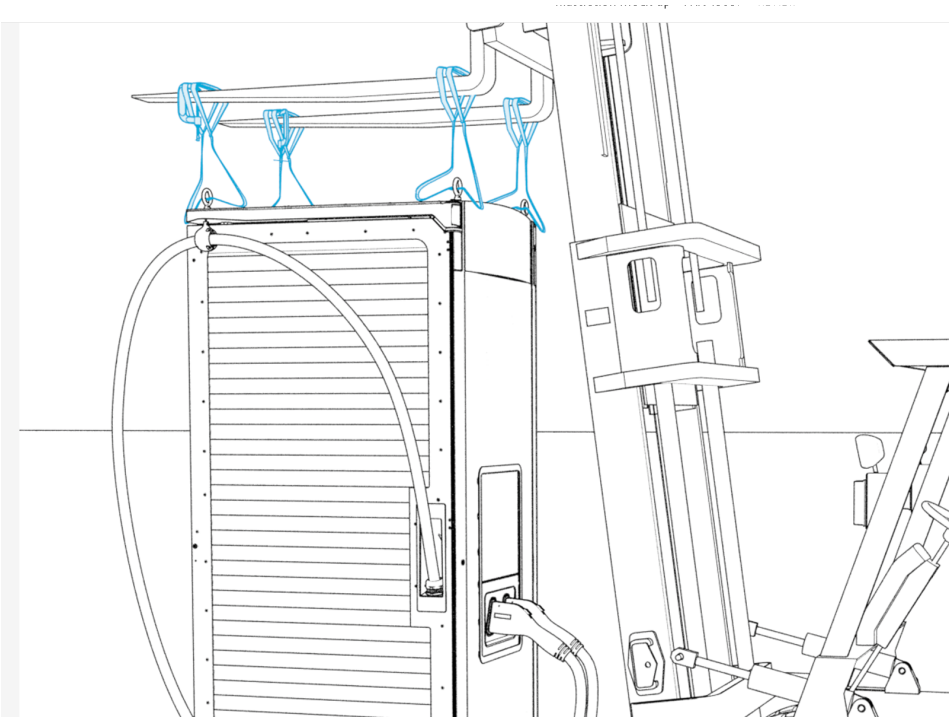
- Standard Eye Bolt Lift: Lift the Express Solo assembly using eye bolts installed at the top of the assembly. This is the most common lift method.
- Forklift Bracket Lift: If installing Express Solo at a site with low clearance, the assembly may be lifted using forklift brackets installed at the sides of the assembly.

Follow instructions here to lift Express Solo using the standard method. If installing at a low-clearance site, see Appendix: Low Clearance Forklift Bracket Lift.

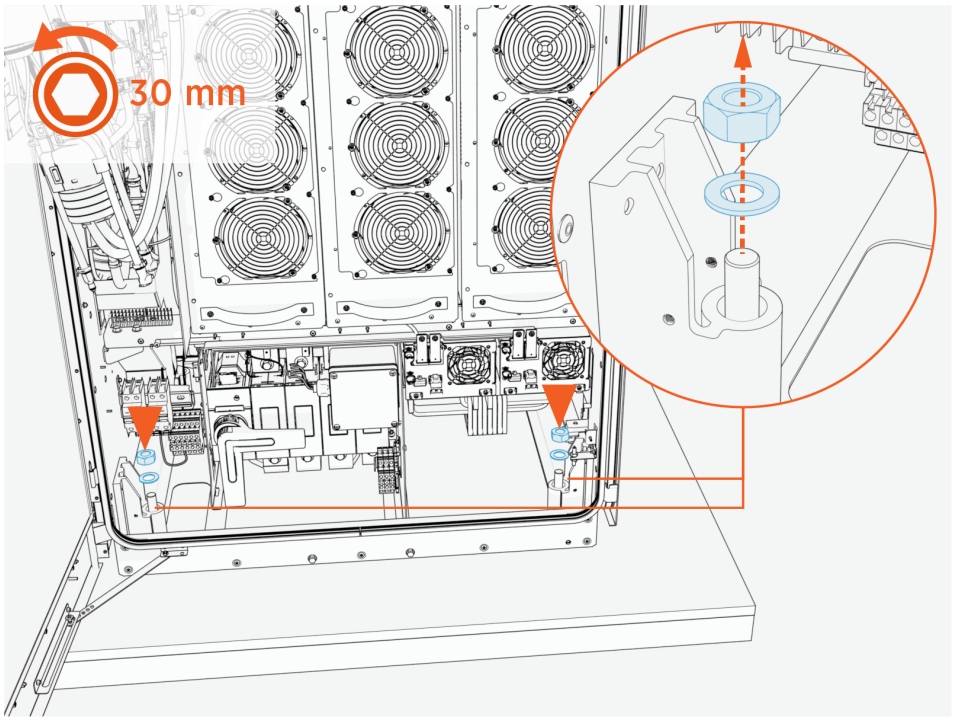
1. Install eye bolts with rubber washers (x4 each). Torque to **2 Nm (18 in-lb)** minimum.



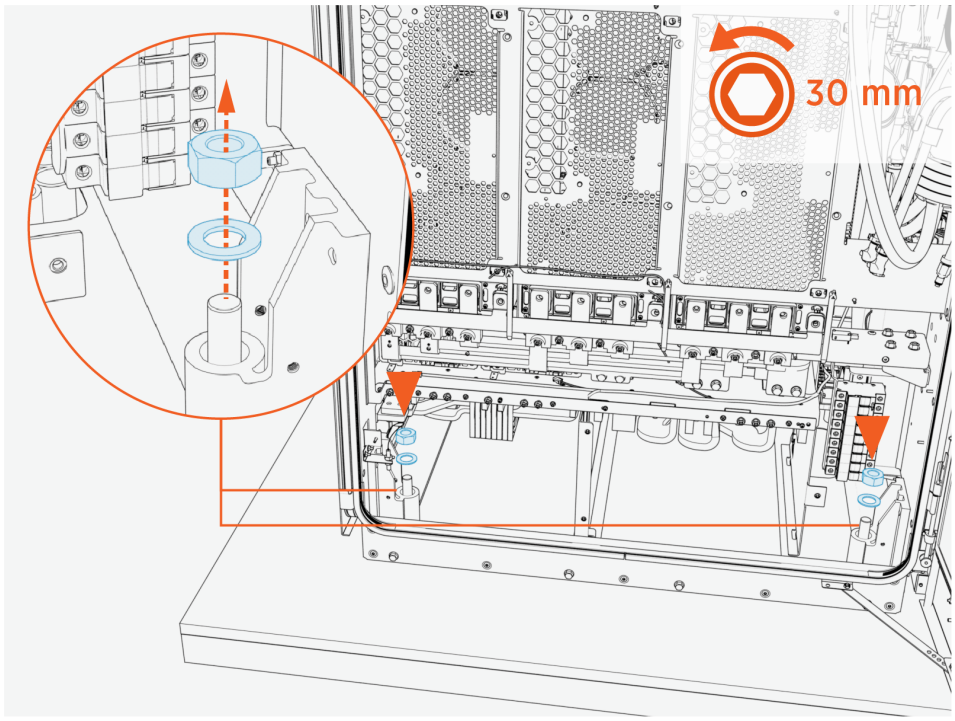
2. Thread lifting straps (x4) through eye bolts and install strap loops to hoisting equipment. Keep the straps slightly slack. Install a clamp on the end of the forklift tines to ensure lifting straps do not slip off tines.



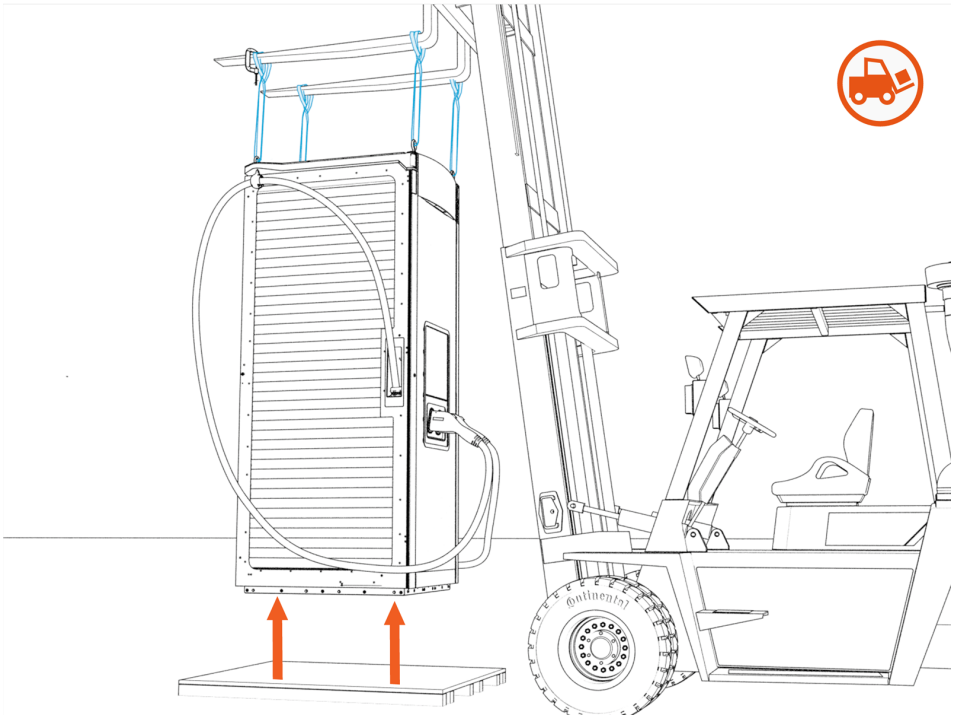
3. Open the intake door and locate two pallet bolts, one at each corner of the enclosure. Remove washer and nut from each pallet bolt.



4. Open the exhaust door and locate two pallet bolts, one at each corner of the enclosure. Remove washer and nut from each pallet bolt.



5. Close (but do not lock) the intake and exhaust doors and lift the assembly from the pallet.

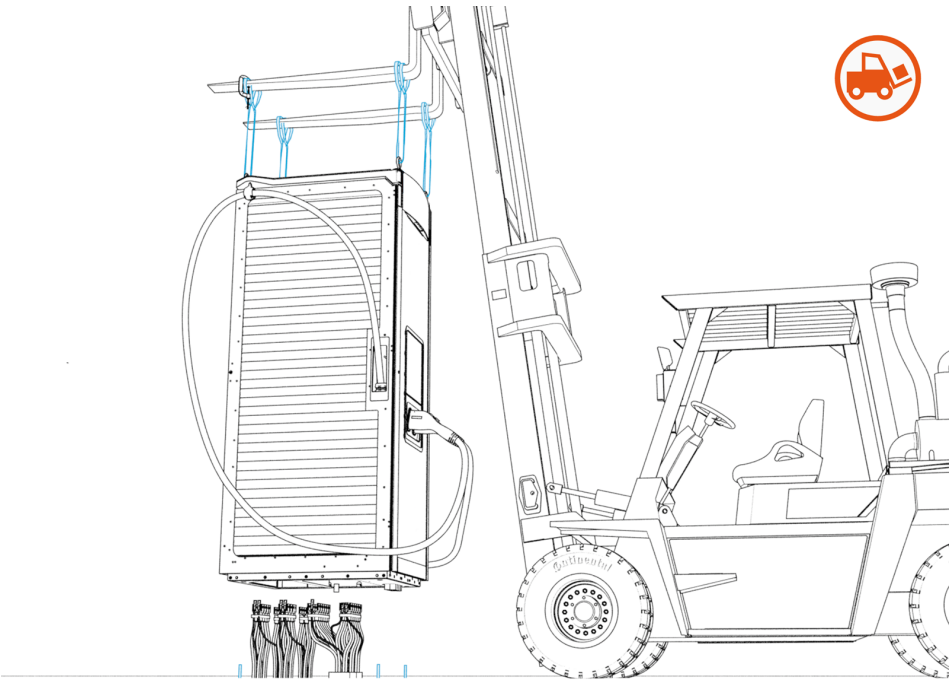


Mount Assembly

Follow steps below to mount the Express Solo assembly. Illustrations depict the mounting procedure when using a forklift and lifting straps to mount the assembly. But the same concept at each step also applies when mounting the enclosure by forklift brackets.

1. Position the assembly over the anchor bolts and prepared cables.

NOTE: Open the intake and exhaust doors when the assembly is near to the ground, to prepare for alignment of the assembly to the anchor bolts. Make sure the door stays are engaged, holding the doors open.

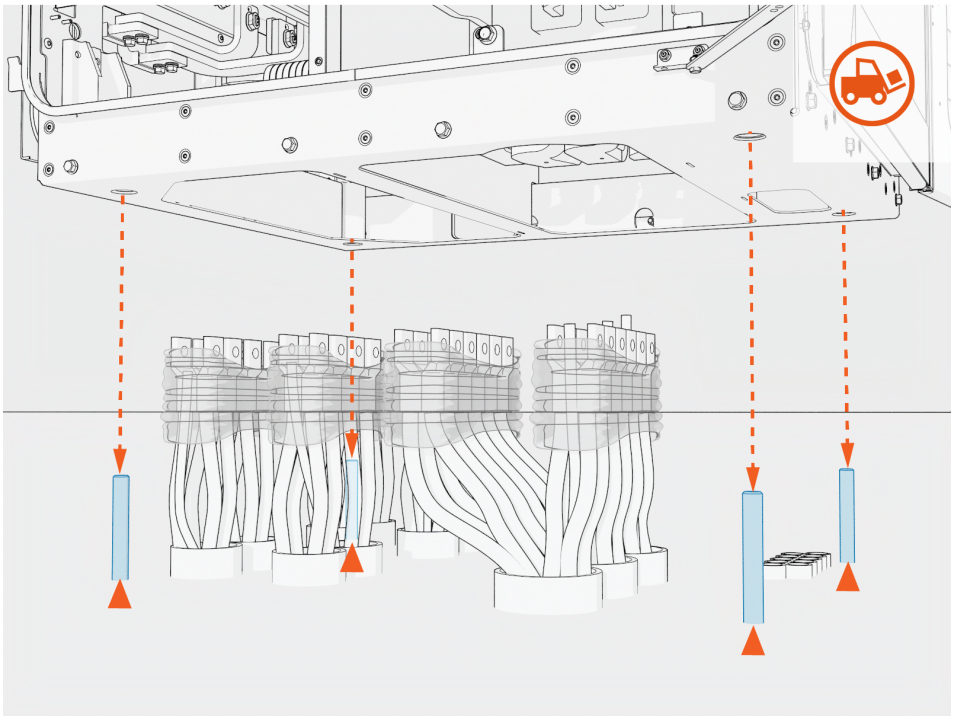


2. Carefully align and lower the assembly over the anchor bolts (x4) and completely onto the ground.

CAUTION: Carefully manage the charging cables to prevent damage during lowering of the cabinet.

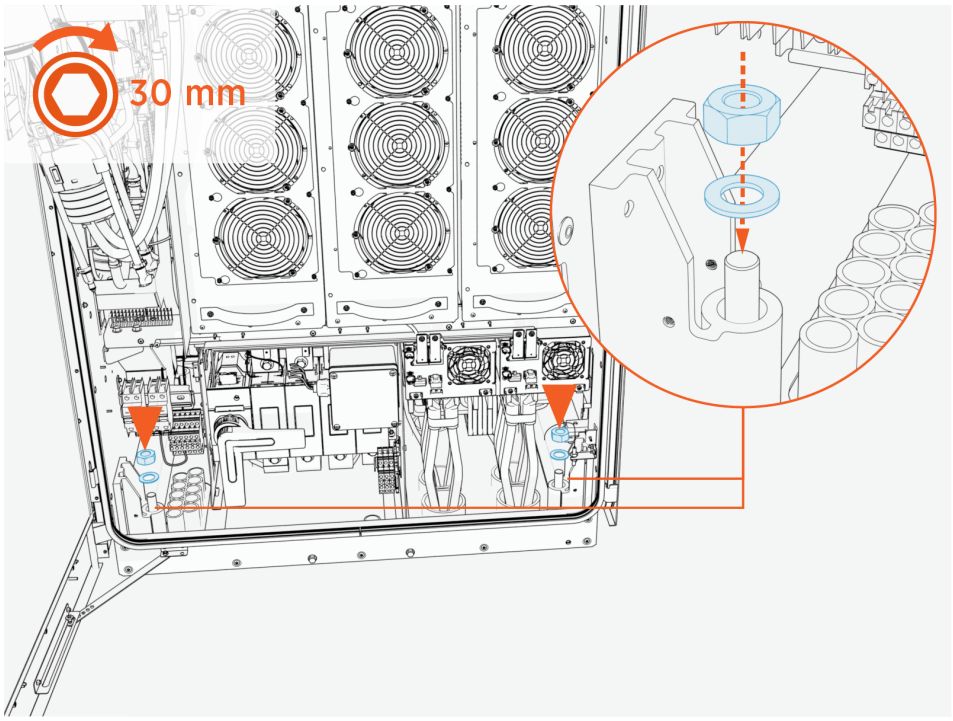
CAUTION: Make sure the AC input, external DC output, and DC BUS cables are not disturbed or damaged as the assembly is lowered. The cables ends must align to the AC and DC bus bars within the assembly. Ensure cables are not pinched or crushed as the assembly is lowered.

WARNING: Risk of pinching or crushing of body parts. Keep all body parts clear when lowering the assembly to the ground.

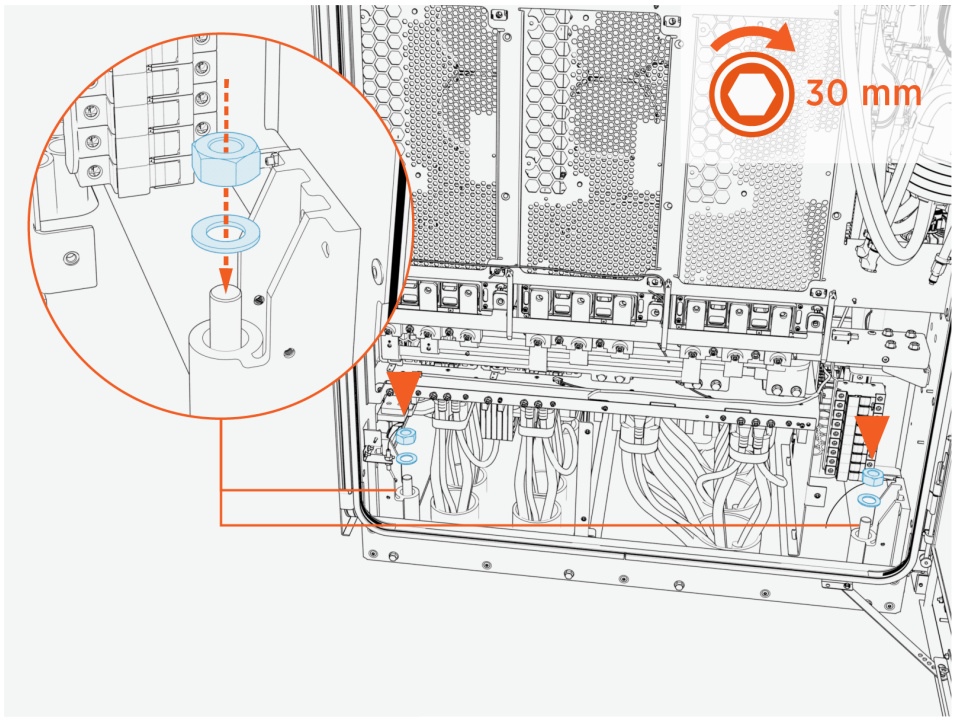


3. Check that the assembly is level and plumb.

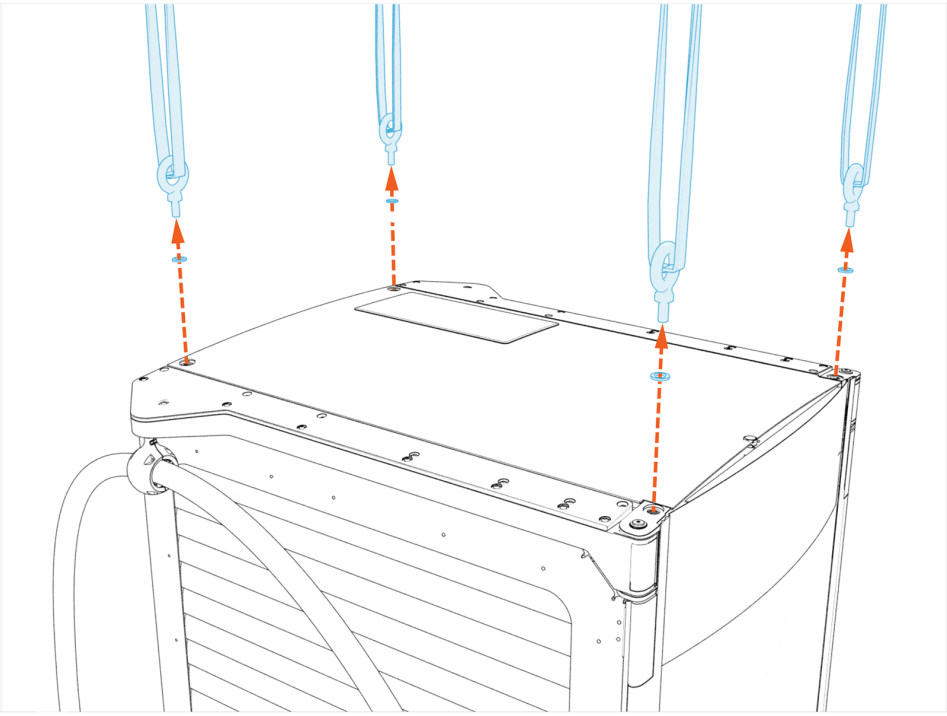
4. On the intake side of the enclosure, install an M20 washer and nut onto each anchor bolt. Torque to **136 Nm (100 ft-lb)**.



5. On the exhaust side of the enclosure, install an M20 washer and nut onto each anchor bolt. Torque to **136 Nm (100 ft-lb)** .



6. If the assembly was lifted using eye bolts, remove lifting straps, eye bolts, and eye bolt washers.



7. If the assembly was lifted using forklift brackets, remove the forklift brackets by reversing steps used to install the forklift brackets.

Connect Wires 4

Follow all instructions provided in this section to connect wires.

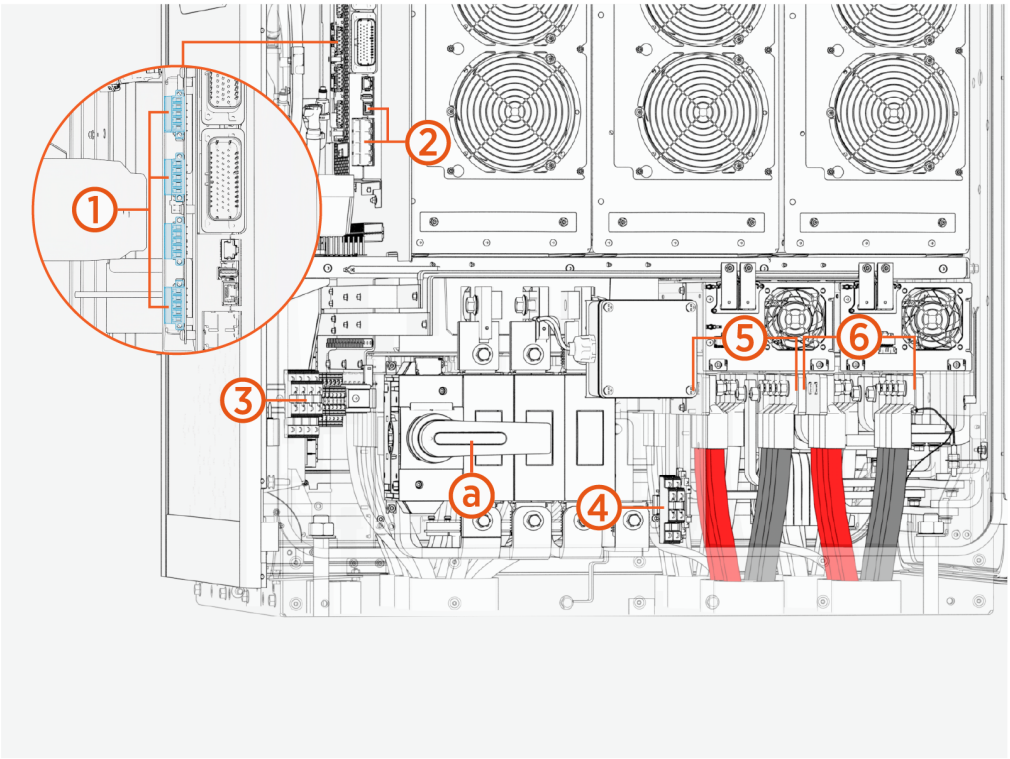
NOTE: This section contains images depicting wires and conduits. The size and quantity of conduits and wires shown are for illustrative purposes only. The actual quantity and size of conduits and wires for your specific site may vary and shall depend on site specific requirements.

Wire Terminal and Bus Bar Locations

Familiarize yourself with the wire terminal and bus bar locations illustrated below.

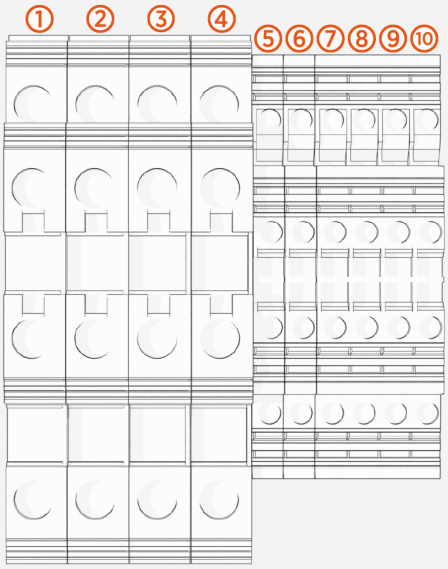
Intake Side

The following illustration identifies the wire ports, terminals, and bus bars accessible from the intake side (right side) of Express Solo. (Safety shields are hidden from view.) The AC input disconnect switch is also identified. Depending on the unit configuration, the AC disconnect switch may or may not be present.



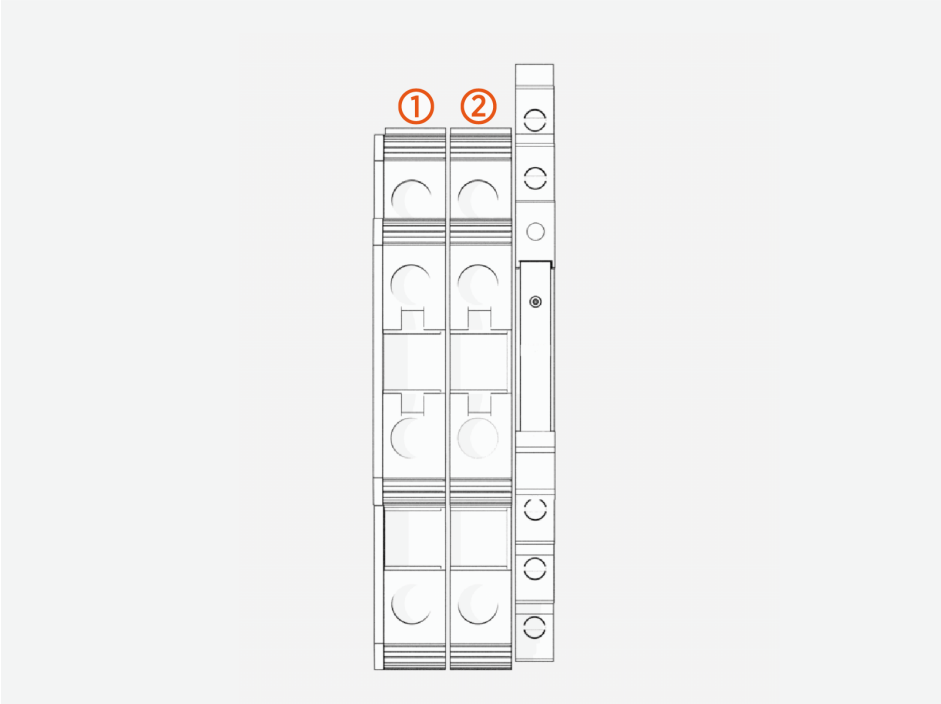
Ref	Part
(1)	Safety Hub ports
(2)	Ethernet ports
(3)	DC terminal block for 48 V DC, soft shutdown switch, door interlock sensor wires
(4)	Shunt trip terminals
(5)	DC BUS (intake side) bus bars
(6)	EXT B bus bars
(a)	AC input disconnect switch (presence of this switch depends on unit configuration)

The DC wire terminal block allocations are given below:



Ref	Allocation
(1)	48 V DC positive (+) to Power Link #1
(2)	48 V DC negative (-) to Power Link #1
(3)	48 V DC positive (+) to Power Link #2
(4)	48 V DC negative (-) to Power Link #2
(5)	Soft shutdown switch
(6)	Door interlock sensor
(7)	Not used for Express Solo
(8)	Not used for Express Solo
(9)	Not used for Express Solo
(10)	Not used for Express Solo

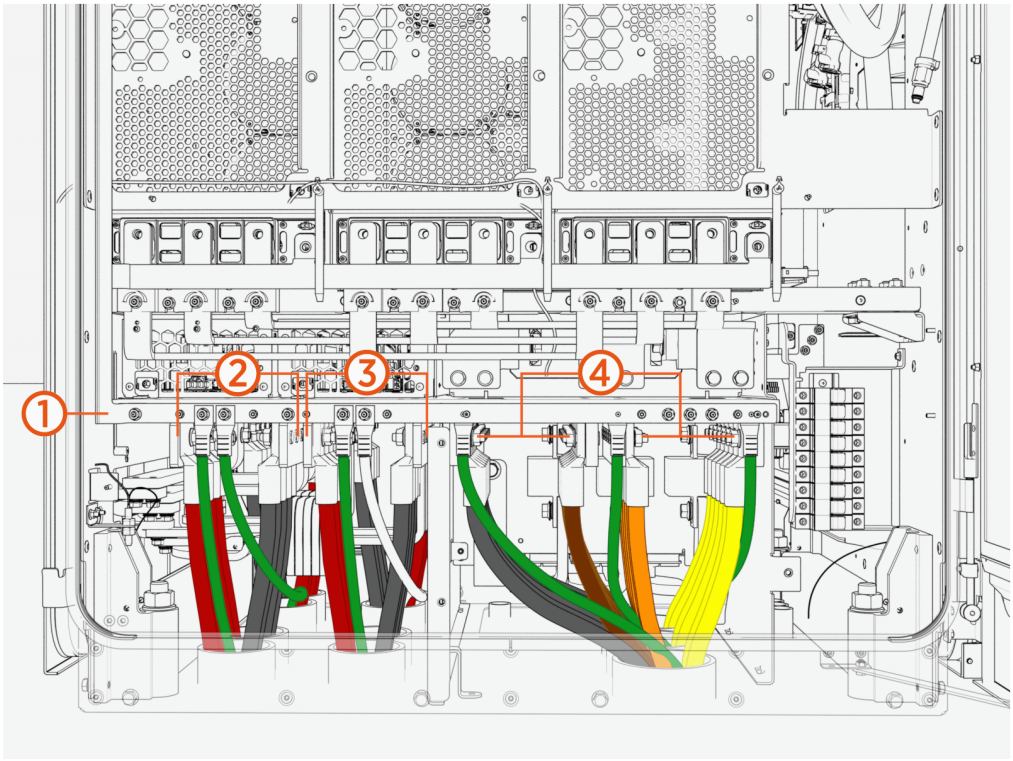
The shunt trip terminal allocations are given below:



Ref	Allocation
(1)	Shunt 1
(2)	Shunt 2

Exhaust side

The following identifies the wire terminals and bus bars accessible from the exhaust side (left side) of Express Solo. (Safety shields are hidden from view.)



Ref	Part
(1)	Ground/PE bar (with wire landing studs)
(2)	EXT D bus bars
(3)	DC BUS (exhaust side) bus bars C
(4)	AC input (L1, L2, L3) and neutral bus bars

Unwrap Wires

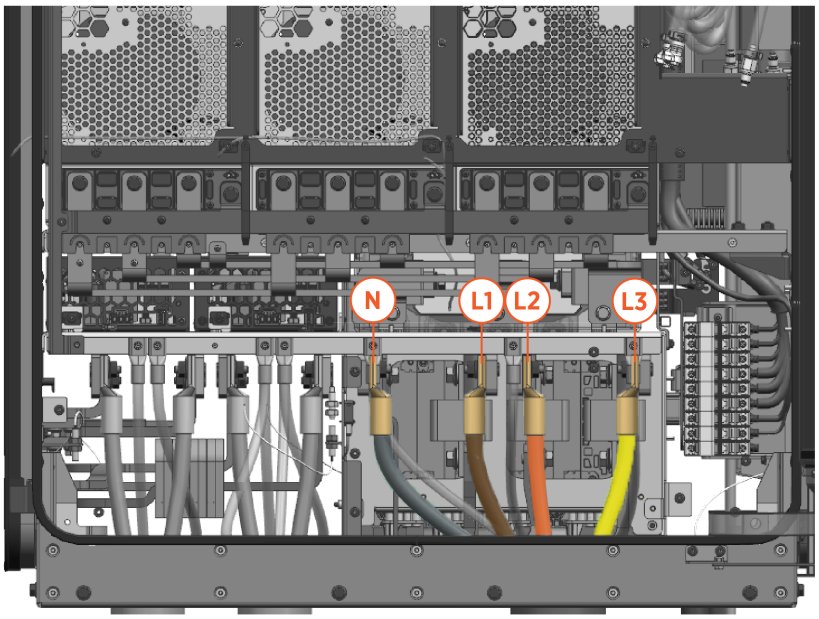
Carefully remove cling film from the wires.

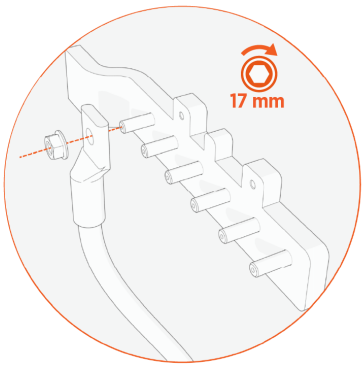
> **CAUTION:** Use caution if using a sharp tool to cut the cling film. Do not damage the wires when removing the cling film.

Connect AC Input Wires

Follow steps below to connect the AC input wires.

1. Use the wire landings diagram to locate the AC input wire bus bars. The bus bars are accessible on the exhaust side (left side) of Express Solo.
2. Install each AC input wire onto a wire landing stud with provided M10 nut. If recommended by the wire manufacturer or local code, apply dielectric grease to the back of the lug. Start at the inner-most landing and work your way out. Torque nut to **19 Nm (14 ft-lb)**.





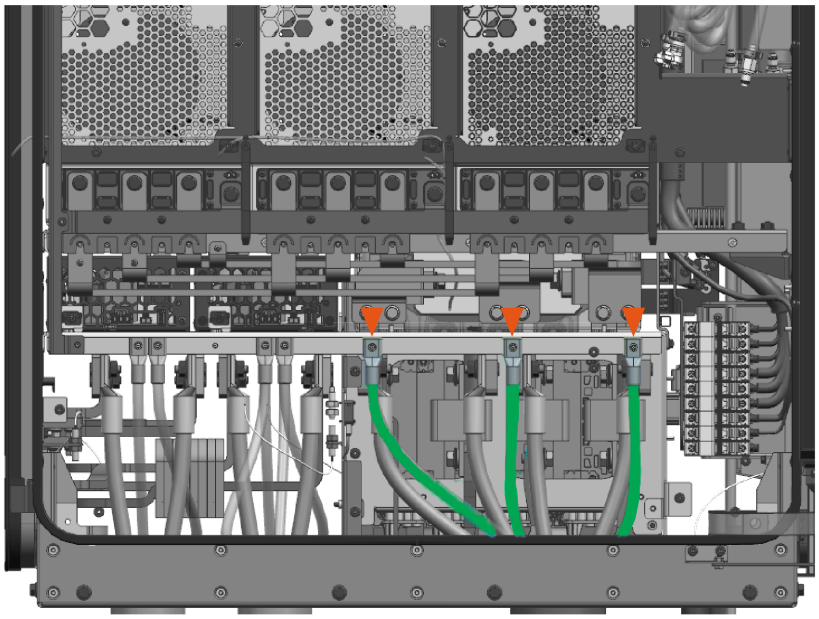
3. Apply torque marks to all torqued connections.

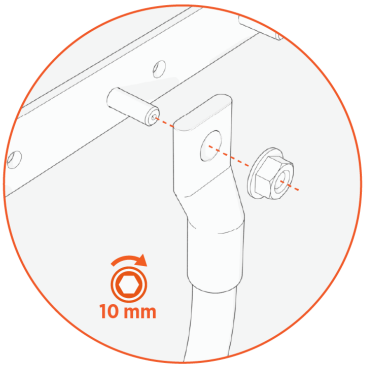
Connect AC Protective Earth (PE) Wires

Follow steps below to connect the AC input PE wires.

1. Use the wire landings diagram to locate the PE landing studs. The studs are accessible on the exhaust side (left side) of Express Solo.
2. Temporarily install the AC input PE wire lugs onto the ground bar using provided M6 nuts. Use a 10 mm socket to hand-tighten.
3. Measure and cut the PE wires to length.
4. Remove the lugs from the ground bar.

5. Terminate each PE wire with a lug:
    a. Mark the lug's barrel height on the cable.
    b. Strip the wire jacket. Use a suitable wire stripper, such as a Klein tool.
    c. If recommended by the wire manufacturer or local code, apply an anti-oxidant joint compound to the bare cable to make a gastight joint with the lug.
    d. Insert the stripped wire end into the lug barrel and crimp it. Use a suitable lug crimping tool and/or die recommended by the lug manufacturer.
6. Install each PE wire onto a wire landing stud with provided M6 nut. Torque nut to **5.6 Nm (50 in-lb)**.





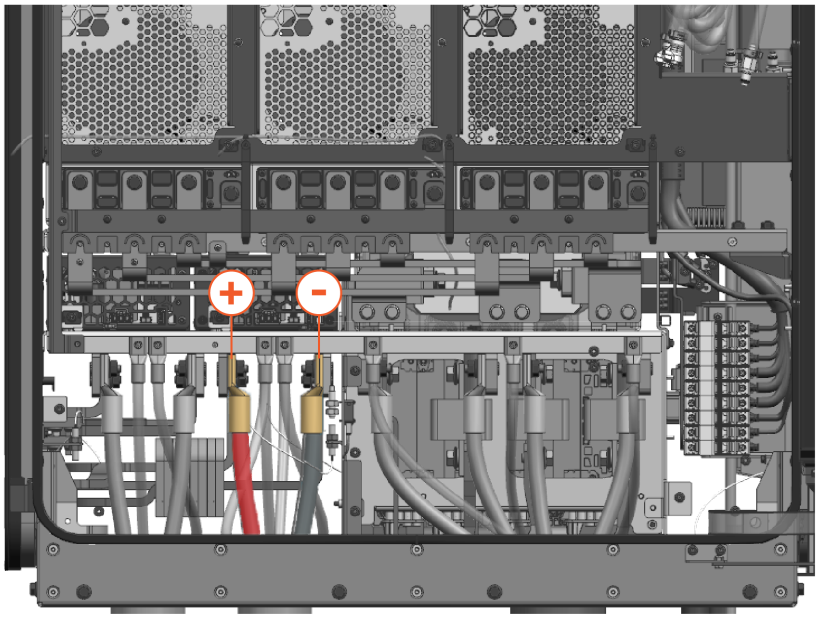
Connect DC BUS Wires

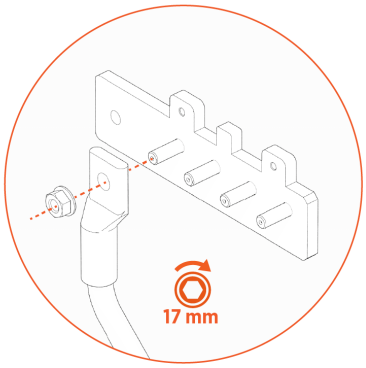
Follow steps below to connect the DC BUS wires.

1. Use the wire landings diagram to locate the DC BUS wire bus bars. The bus bars are accessible on both the intake side (right side) and exhaust side (left side) of Express Solo.

2. Install each DC BUS wire onto a wire landing stud with provided M10 nut. If recommended by the wire manufacturer or local code, apply delectric grease to the back of the lug. Start at the inner-most landing and work your way out. Torque nut to **19 Nm (14 ft-lb)**.

   The illustration below depicts DC BUS wire installation on the exhaust side.





3. Apply torque marks to all torqued connections.

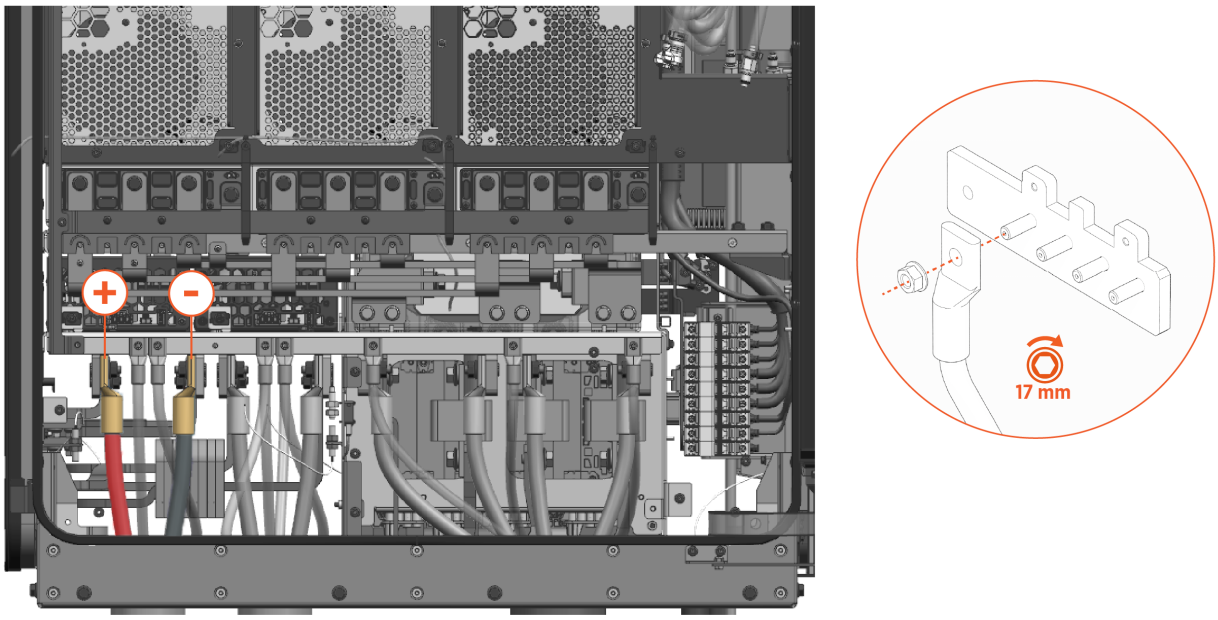
Connect External DC Output Wires

Follow steps below to connect the external DC output (EXT B and EXT D) wires.

1. Use the wire landings diagram to locate the EXT B and EXT D wire bus bars. The bus bars are accessible on both the intake side (right side) and exhaust side (left side) of Express Solo.

2. Install each DC wire onto a wire landing stud with provided M10 nut. If recommended by the wire manufacturer or local code, apply delectric grease to the back of the lug. Start at the inner-most landing and work your way out. Torque nut to **19 Nm (14 ft-lb)**.

   The illustration below depicts EXT D wire installation on the exhaust side.



3. Apply torque marks to all torqued connections.

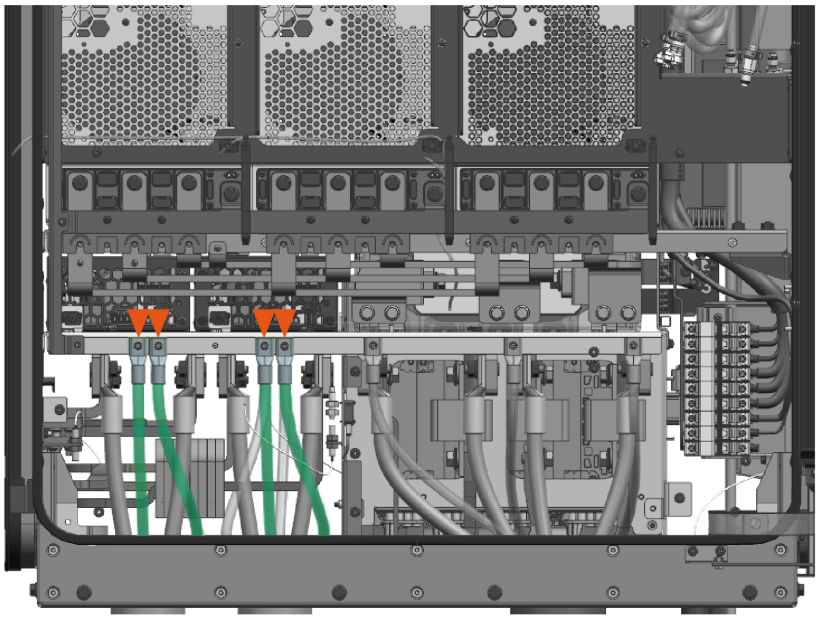
Connect External DC Output and DC BUS Grounding Wires

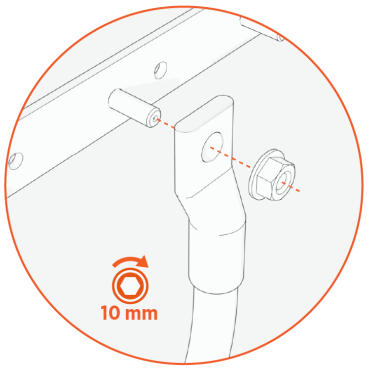
NOTE: In this guide, "ground" refers to Protective Earth (PE).

Follow steps below to connect the external DC output and DC BUS grounding wires.

1. Use the wire landings diagram to locate wire landing studs on the ground bar. The bar is accessible on the exhaust side (left side) of Express Solo.

2. Using same method used to install the AC input PE wires, install each grounding wire onto a wire landing stud with provided M6 nut. Torque nut to **5.6 Nm (50 in-lb)**.





Pull Remaining Wires

Pull remaining wires into the Express Solo enclosure. Depending on the site-specific system architecture, this may include one or more of the following:

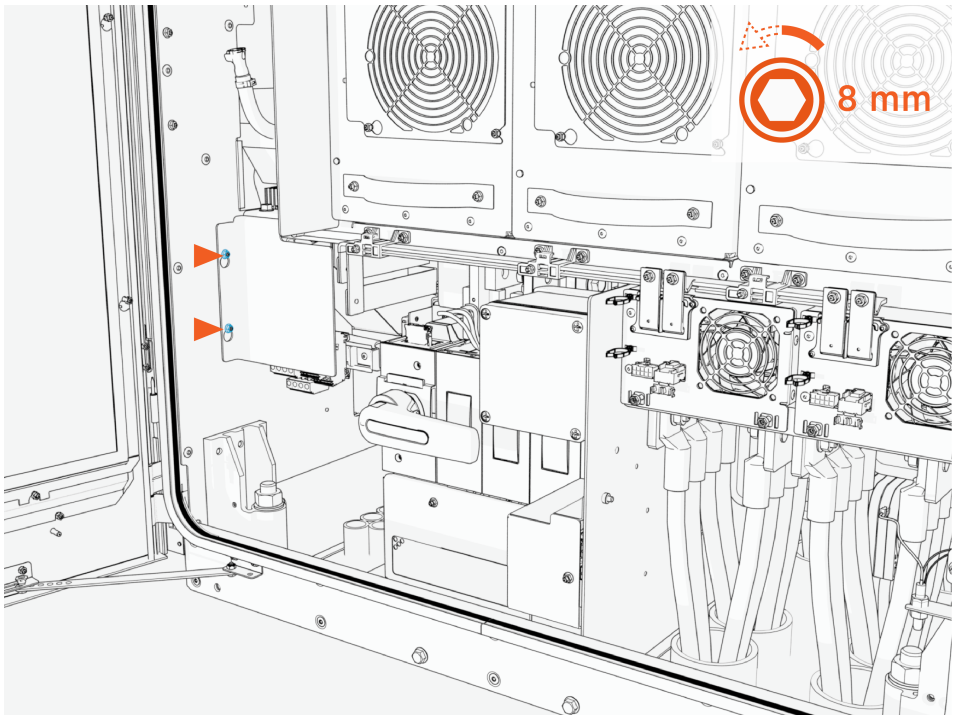
- 48 V DC wires
- Ethernet cables
- Door interlock sensor wires
- Safety Hub wires
- Soft shutdown switch wires
- Shunt trip wires

To pull the wires:

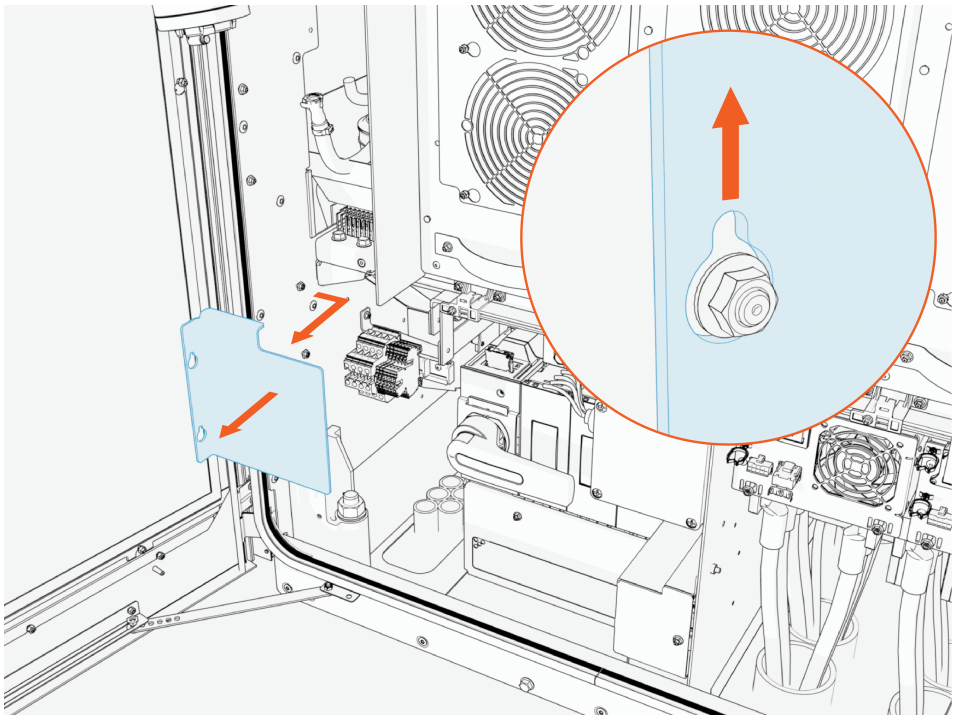
1. Study the line diagram carefully to understand which wires should be pulled through each conduit.
2. Label all wires at both ends.
3. Pull the wires through conduit.

Connect 48 V DC Wires

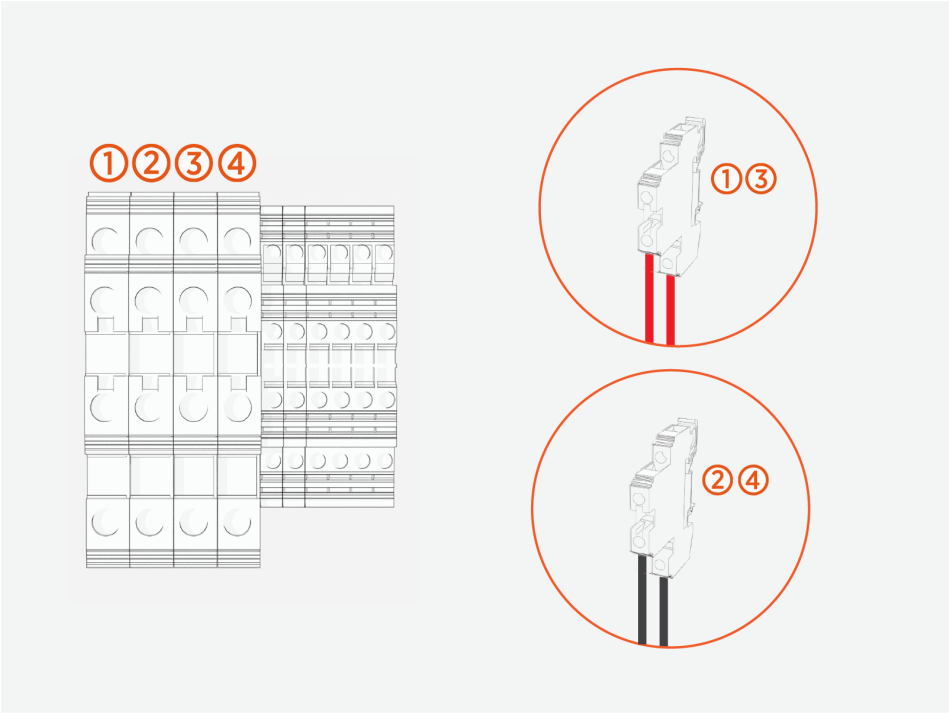
1. On the intake (right) side of the cabinet, loosen (do not remove) nuts (x2) that secure the DC terminals cover.



2. Slide the cover up to release the keyholes. Then pull outward to remove the safety cover.



3. Use the wire landings diagram to locate the 48 V DC terminals within the cabinet. The terminals are accessible on the intake side (right side) of Express Solo.



(1) Positive (+) 48 V DC to Power Link #1

(2) Negative (-) 48 V DC to Power Link #1

(3) Positive (+) 48 V DC to Power Link #2

(4) Negative (-) 48 V DC to Power Link #2

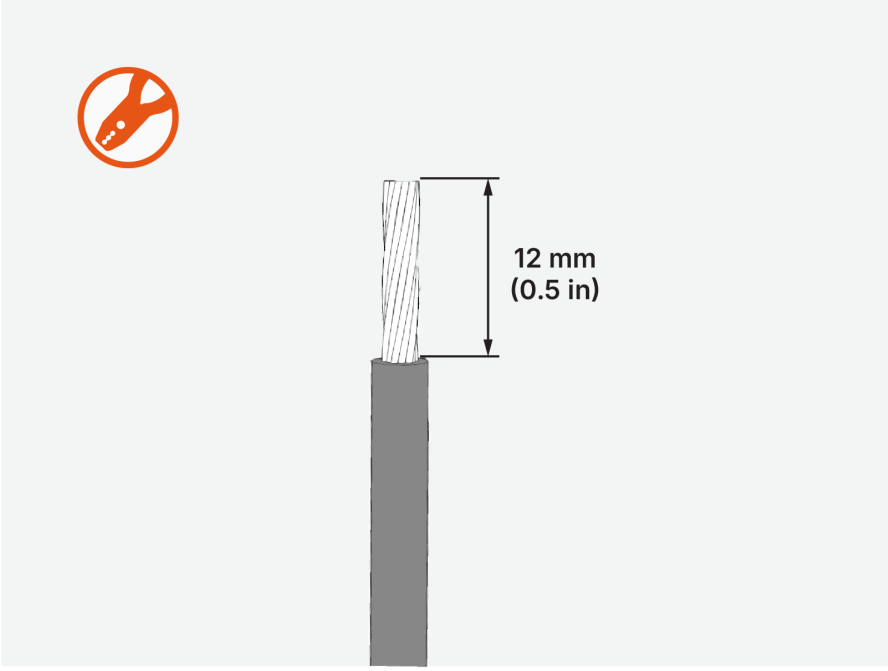
Each 2-level terminal is equipped with:

- Upper-level wire insertion point with corresponding set screw
- Lower-level wire insertion point with corresponding set screw

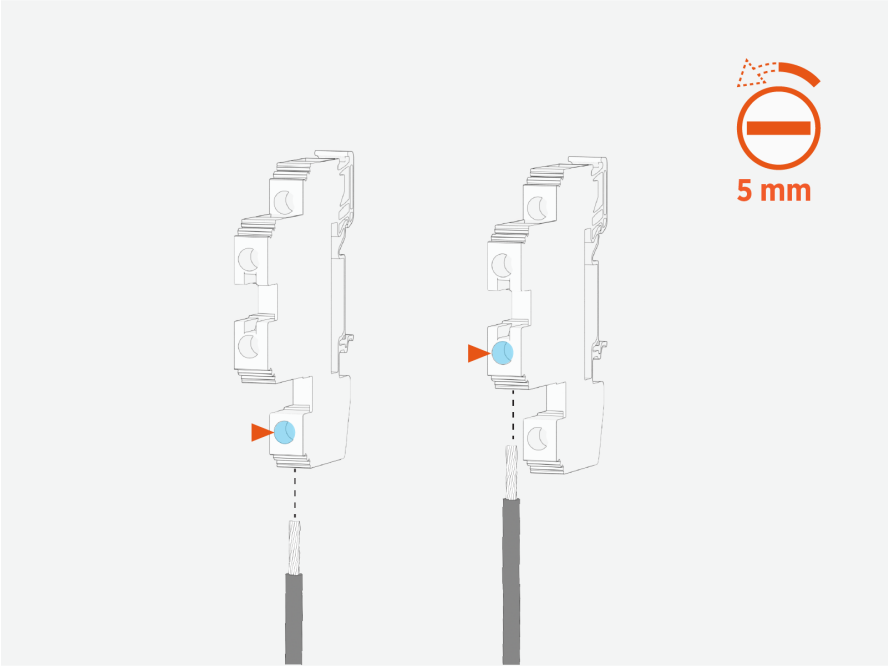
Within a single terminal, the two levels are interchangeable.

4. Route the 48 V DC wires through the wireway clamps up to the 48 V DC terminals. If necessary use cable ties to secure the wires.

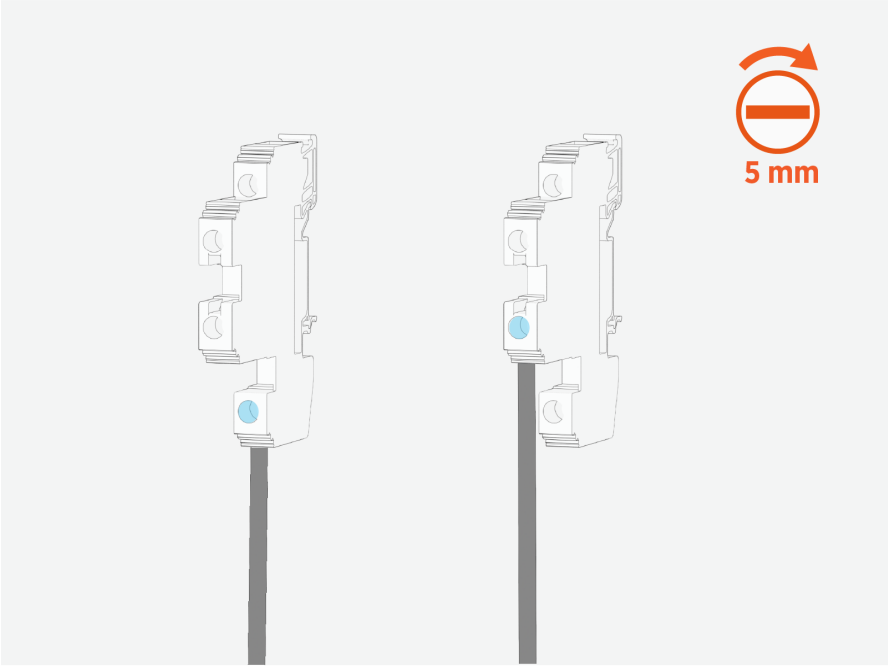
5. Install the wires at each terminal with the following steps:
    a. Cut the wire (or wires) to length for landing at the terminal.
    b. Strip the wire jacket. If using a wire ferrule, install the ferrule after stripping the conductor.



    c. On the terminal, loosen the set screw for each level where a wire will be inserted.



d. Insert the wire (or wires) into the terminal. Torque the set screws (x2) to **2 Nm (18 in-lb)**.

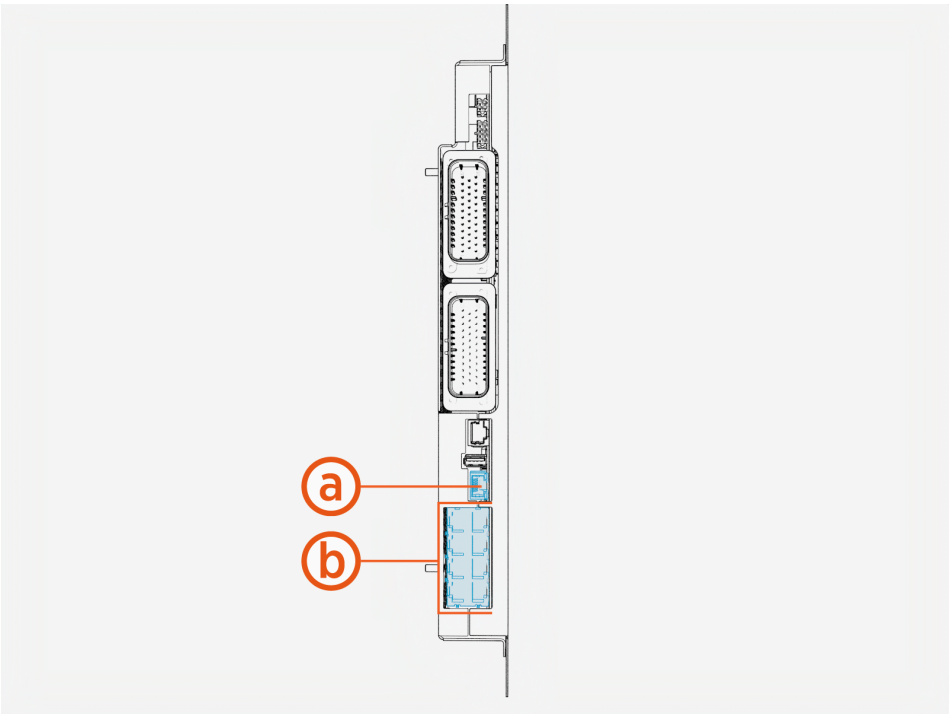


e. Push-pull to test that all wires (+ and -) are firmly secured.

Connect Ethernet Cables

Follow steps below to connect the Ethernet cables.

1. Use the wire landings diagram to locate and identify the Ethernet ports on the Power Management Controller (PMC) within the cabinet. The PMC is accessible from the intake side (right side) of Express Solo.



   (a) Hardwire Ethernet port.

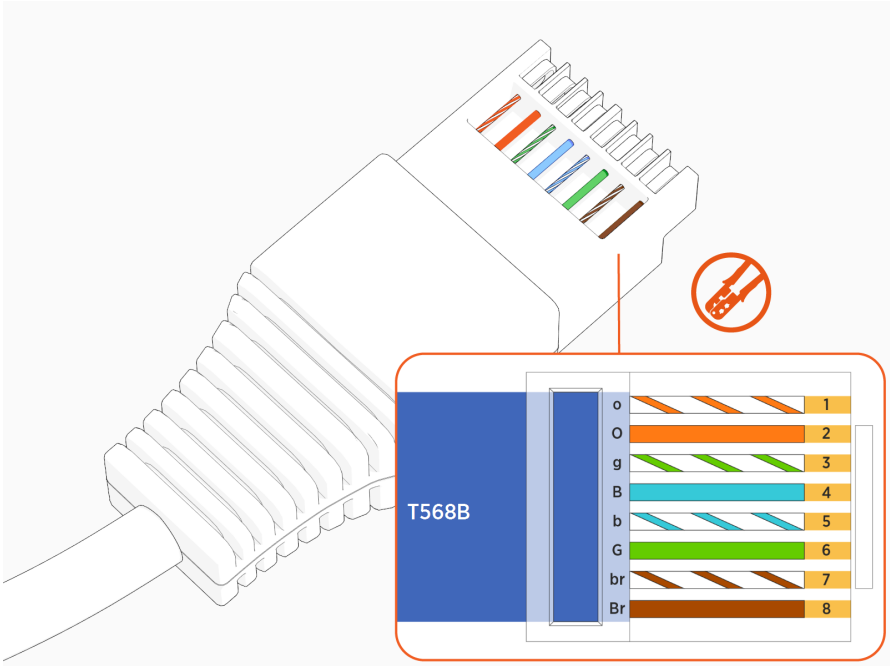
   (b) Ethernet ports for connection to Power Link or another Express Solo. There are eight ports and all ports are equivalent.

2. Route the Ethernet cables through the wireway clamps up to the PMC.

3. Install each Ethernet cable with the following steps:
    a. Trim Ethernet (Cat6 STP) cable to length, allowing for a service loop.
    b. Field crimp a shielded RJ45 connector onto the Ethernet cable. Use straight-through T568B pattern.

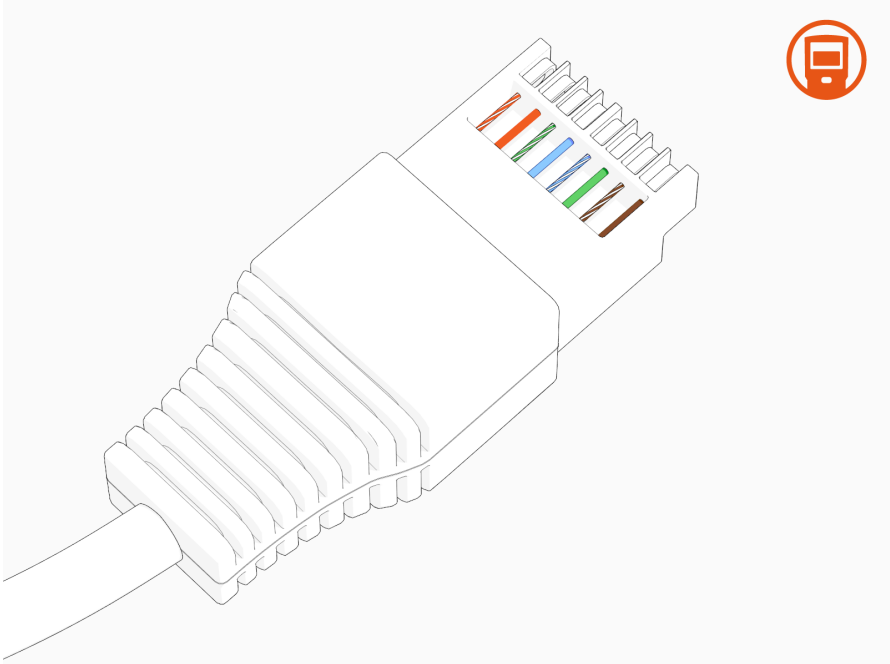
IMPORTANT:

- If the Ethernet cable connects from the Express Solo to a Power Link, ground the cable shield at the Express Solo end (and not at the Power Link end).
- If the Ethernet cable connects between two Express Solos, ground the cable shield at only one Express Solo. That Express Solo is designated as the main unit within the cluster.



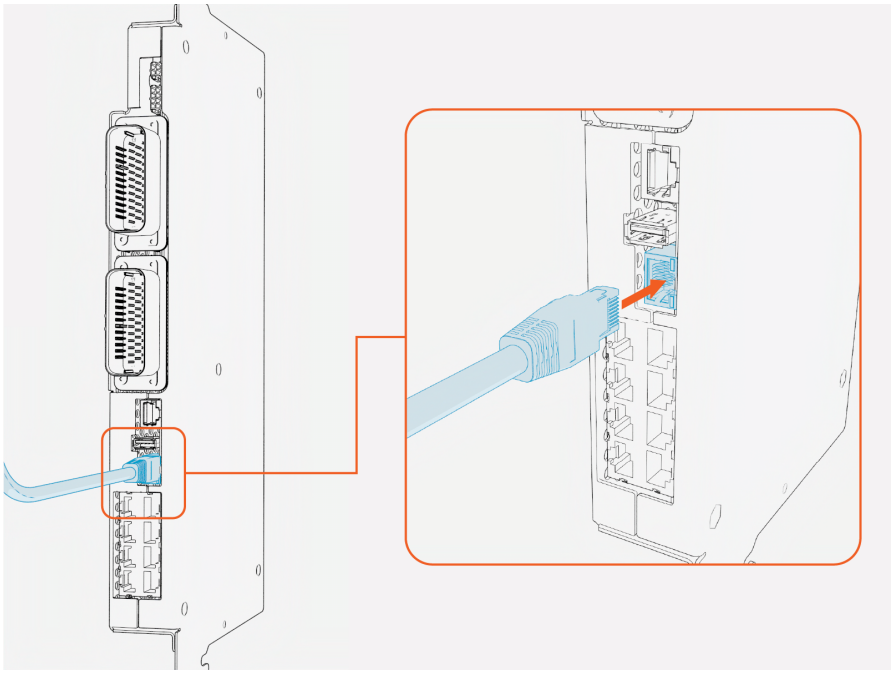
c. Test the Ethernet cable for functionality.

IMPORTANT: If using a Paige OSP Shielded GameChanger cable for a wire run length greater than 100 m (328 ft), follow the test procedure specified by Paige. See Paige GameChanger Resources.

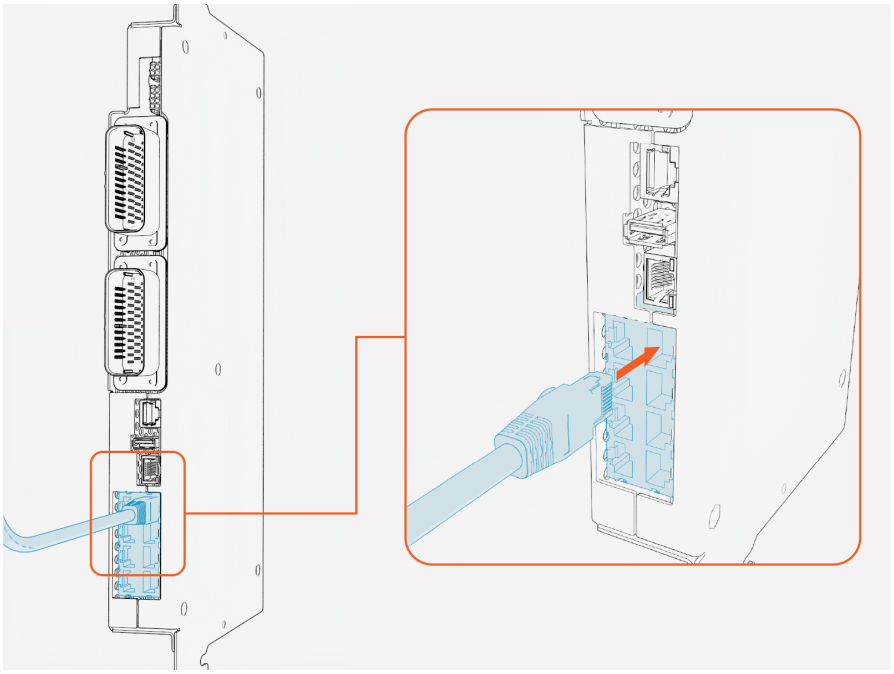


d. Insert the Ethernet cable into the appropriate Ethernet port. To establish a secure connection, the RJ45 connector latch must click into the switch.

Inserting hardwire Ethernet cable:



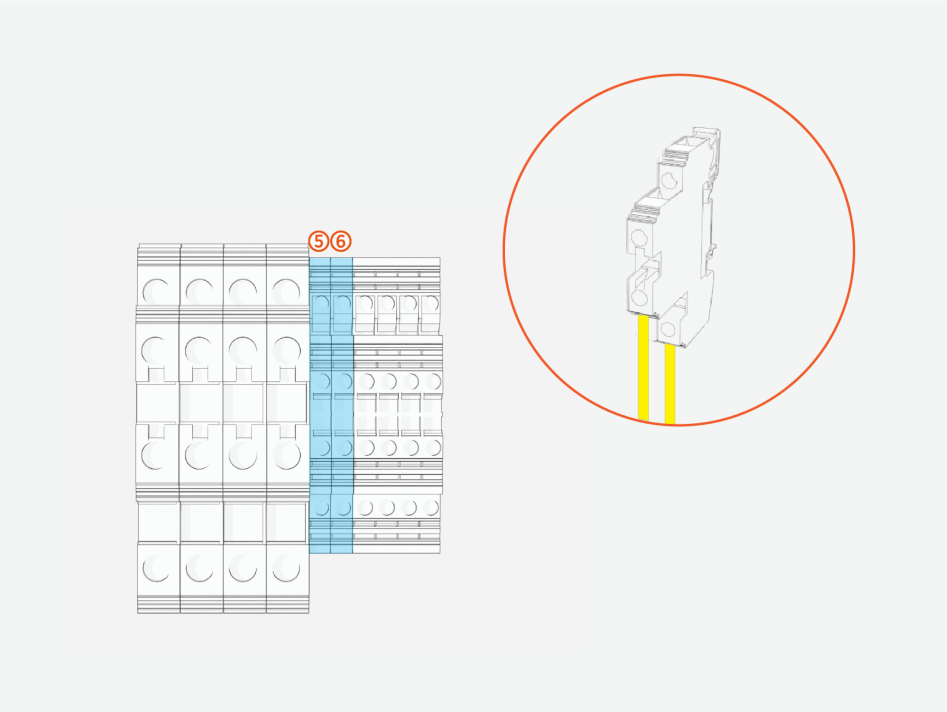
Inserting Ethernet cable that connects to a Power Link or another Express Solo:



Connect Door Interlock Sensor and Soft Shutdown Switch Wires

Follow steps below to connect the door interlock sensor and soft shutdown switch wires, as needed.

1. Use the wire landings diagram to locate the door interlock sensor terminal and soft shutdown switch terminals within the cabinet. The terminals are accessible on the intake side (right side) of Express Solo. The procedure for installing wires at each terminal is the same.



(5) Soft shutdown switch terminal

(6) Door interlock sensor terminal

Each 2-level terminal has:

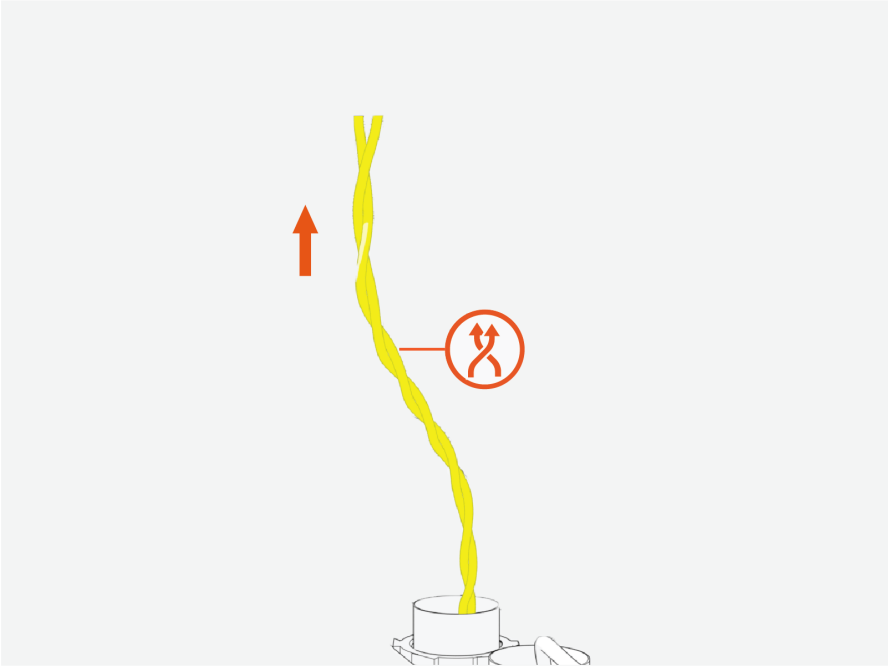
- Upper-level wire insertion point with corresponding set screw
- Lower-level wire insertion point with corresponding set screw

The soft shutdown switch wires are non-polarized and interchangeable. Either wire can be installed into either level on the soft shutdown switch terminal.

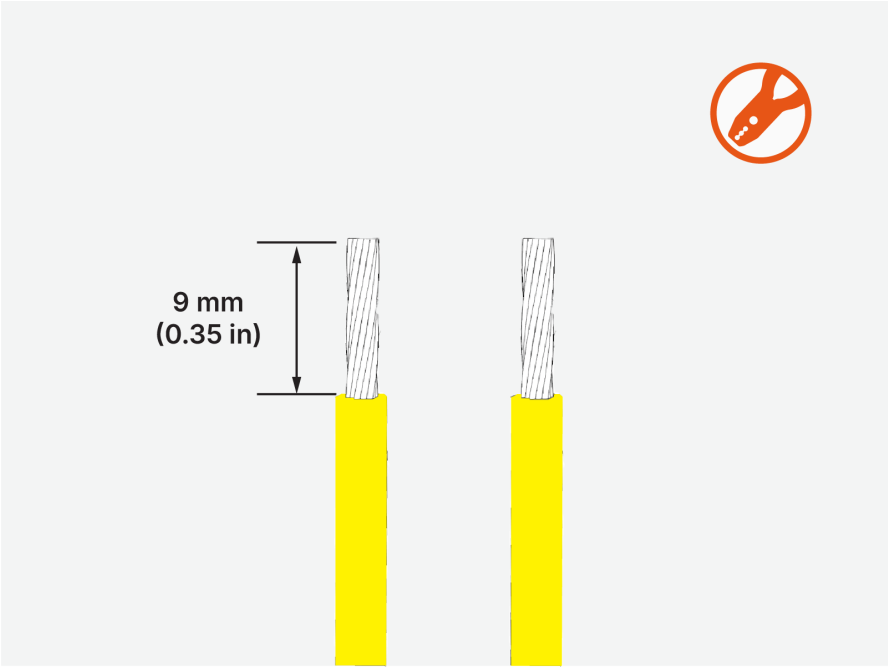
The door interlock sensor wires are non-polarized and interchangeable. Either wire can be installed into either level on the door interlock sensor terminal.

IMPORTANT: Do not confuse the soft shutdown switch terminal **(5)** with the door interlock sensor terminal **(6)**. These terminals are *not* interchangeable.

2. Follow procedures below to connect a wire pair at its designated terminal:
    a. Twist the wires together, using a minimum of five twists per foot.

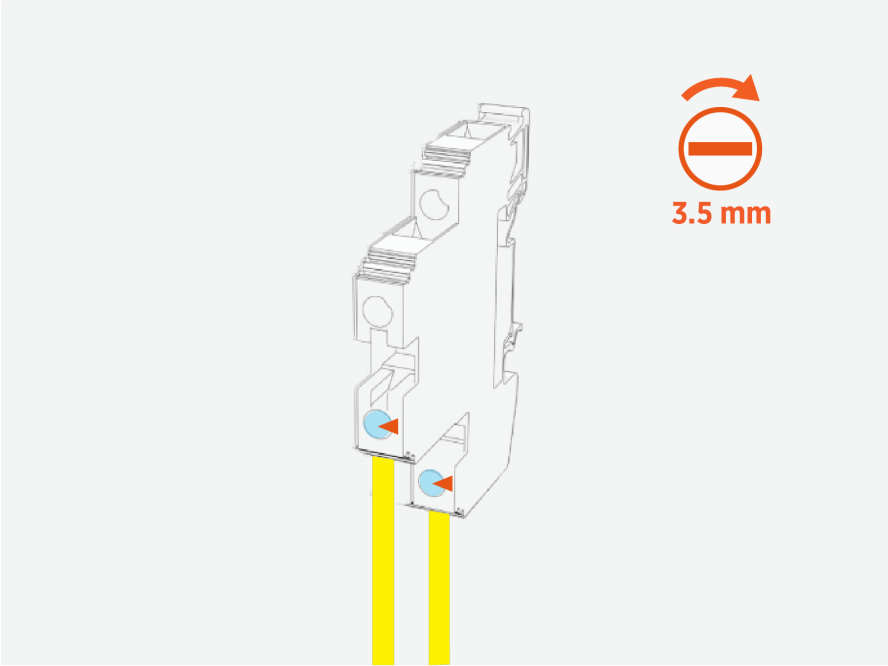


    b. Route the twisted wire pair through the wireway clamps up to the terminal. If necessary use cable ties.
    c. Cut the wires to length for landing at the terminals.
    d. Strip the wire jackets. If using wire ferrules, install the ferrules after stripping the conductors.



e. At the wire terminal, loosen the wire set screws (x2). Use a 3.5 mm flathead screwdriver.

f. Insert the wires into the terminal. Torque the set screws (x2) to **0.6 Nm (5.3 in-lb)**.



g. Push-pull to test that both wires (+ and -) are secured.

Connect Safety Hub Wires

Safety Hub wiring provides electrical-isolation monitoring between the Express Solo and each connected Power Link.

Depending on the Power Link model used in the installation, the Safety Hub connection at the Express Solo will require either:

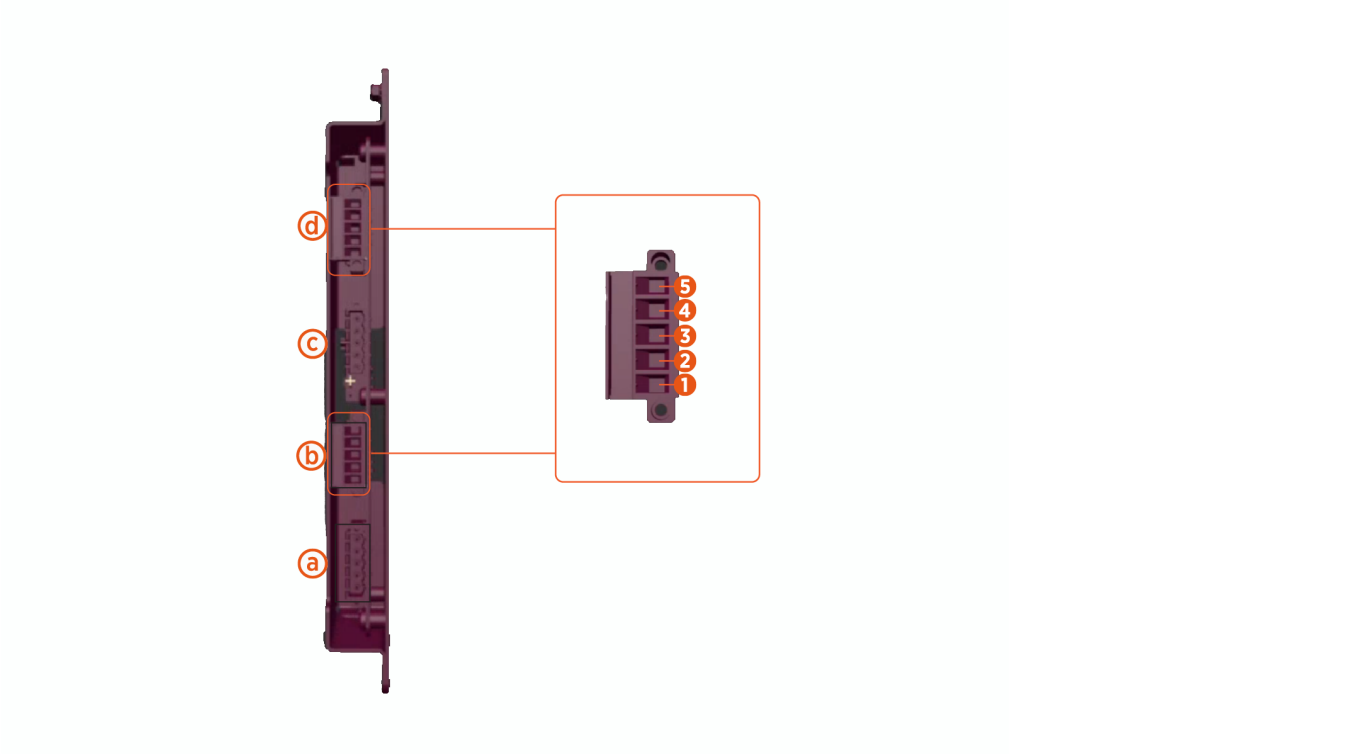
- A twisted-pair field-wire connection, or
- A jumper installed on the Safety Hub Board

Refer to the site design guide and installation guide of the Power Link model specific to your project to determine whether the Power Link requires a Safety Hub twisted-pair connection or a jumper installation. Then proceed through the applicable sections below to install the required wiring.

Identify Safety Hub Board Location, Terminals, and Pin Ports

Refer to Wire Terminal and Bus Bar Locations to locate the Safety Hub board within the Express Solo cabinet.

The Safety Hub Board is equipped with four terminals denoted A, B, C, and D. The terminal allocations are given below. Terminals B and D are equipped with a 5-pin terminal plug. The pin ports on each plug are numbered 1–5.



Ref	Allocation
(a)	Terminal A – Not used
(b)	Terminal B – Corresponds to the Power Link connected at EXT B output
(c)	Terminal C – Not used
(d)	Terminal D – Corresponds to the Power Link connected at EXT D output

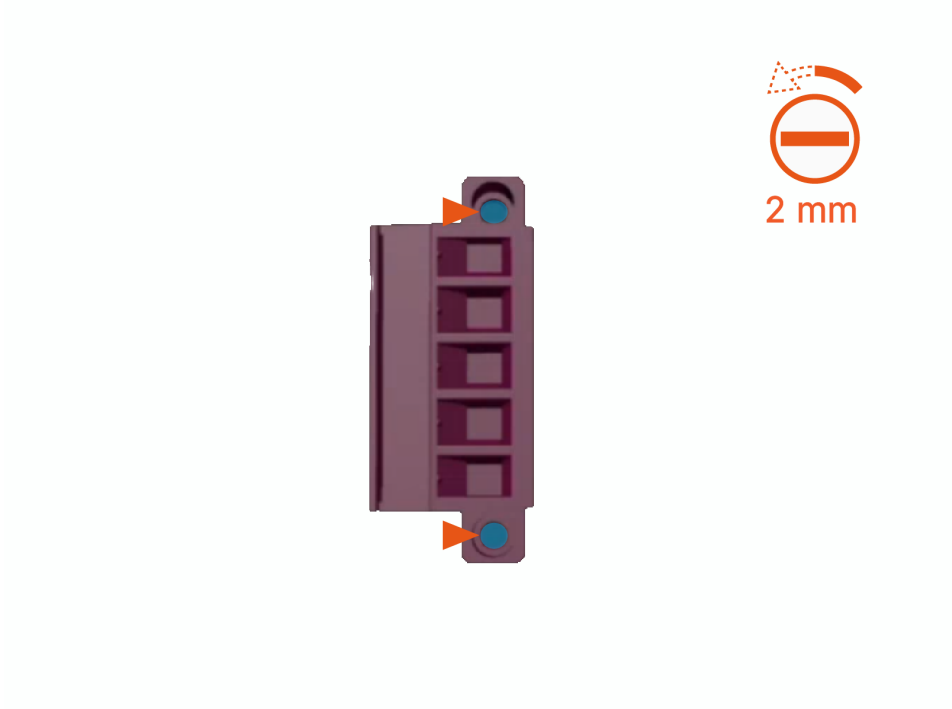
Install Jumper Wire

If the Express Solo connects to a Power Link model that requires jumper wire installation at the Safety Hub Board, follow steps below to install a jumper wire at the appropriate terminals of the Safety Hub Board.

NOTE: The jumper wire is provided with the Power Link.

1. Identify the terminal on the Safety Hub Board. Refer to Identify Safety Hub Board Location, Terminals, and Pin Ports.

2. Fully loosen the captive screws (x2) on the terminal block plug.

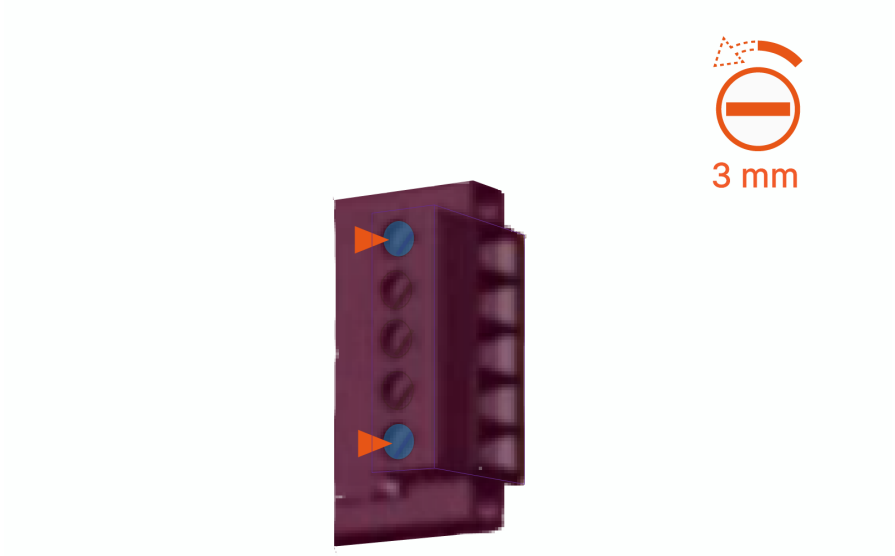


3. Remove terminal block plug from the Safety Hub Board.

4. Install a jumper cable into the plug, using the following steps:
    a. Locate the jumper wire (supplied with the Power Link).



    b. Loosen the set screws for pin ports #1 and #5.



c. Insert the jumper wire ends into pin ports #1 and #5. Then tighten the set screws to **0.5 Nm (4.4 in-lb)**. Push-pull to confirm the jumper is secure.



5. Reinstall the terminal block plug at the Safety Hub Board. Use a 2 mm flathead screwdriver and tighten the captive screws (x2) to **0.3 Nm (2.7 in-lb)**.

Connect Shunt Trip Wires

TBD

Set Up Charging Cables 5

Follow all instructions provided in this chapter to set up the charging cables.

Install Overhead CMK (if applicable)

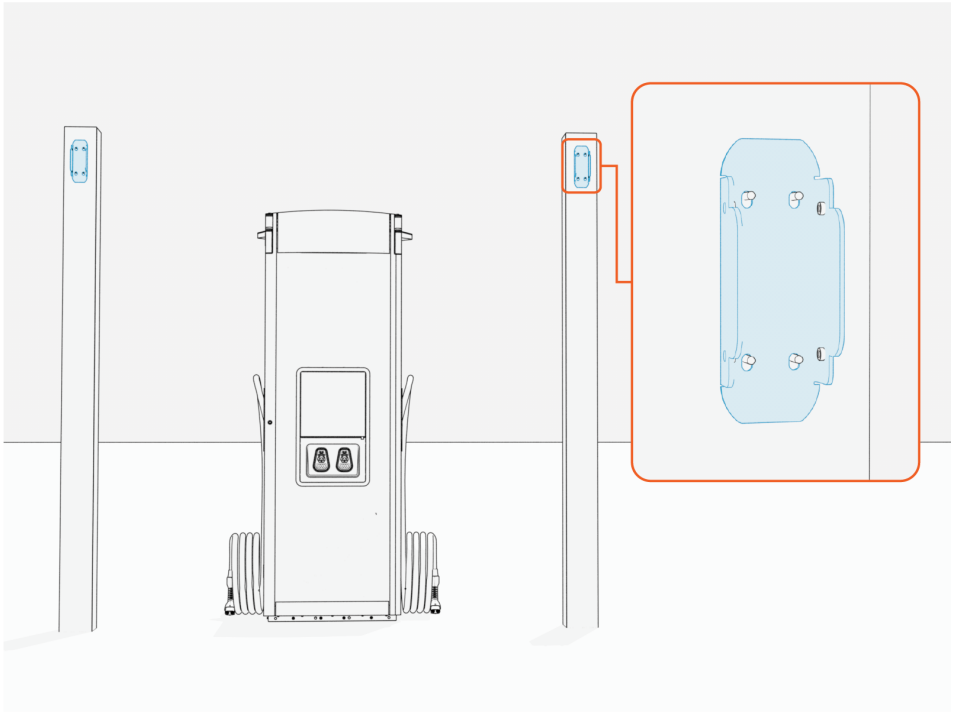
If the site plan calls for the Express Solo to be configured with an overhead CMK, follow procedures in this section to install the CMK.

IMPORTANT: The site must be equipped with poles for mounting the overhead CMK next to each of the Express Solo charging cables. The poles must meet the design specifications given in the *Express Solo Site Design Guide*.

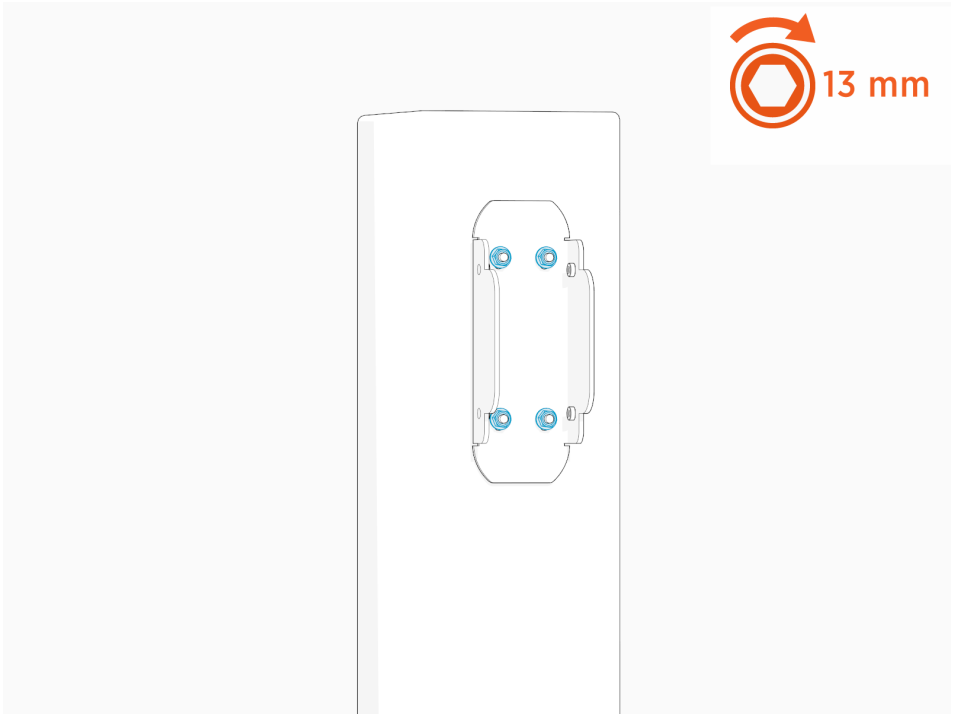
Install Overhead CMK

Follow steps below to install the overhead CMKs.

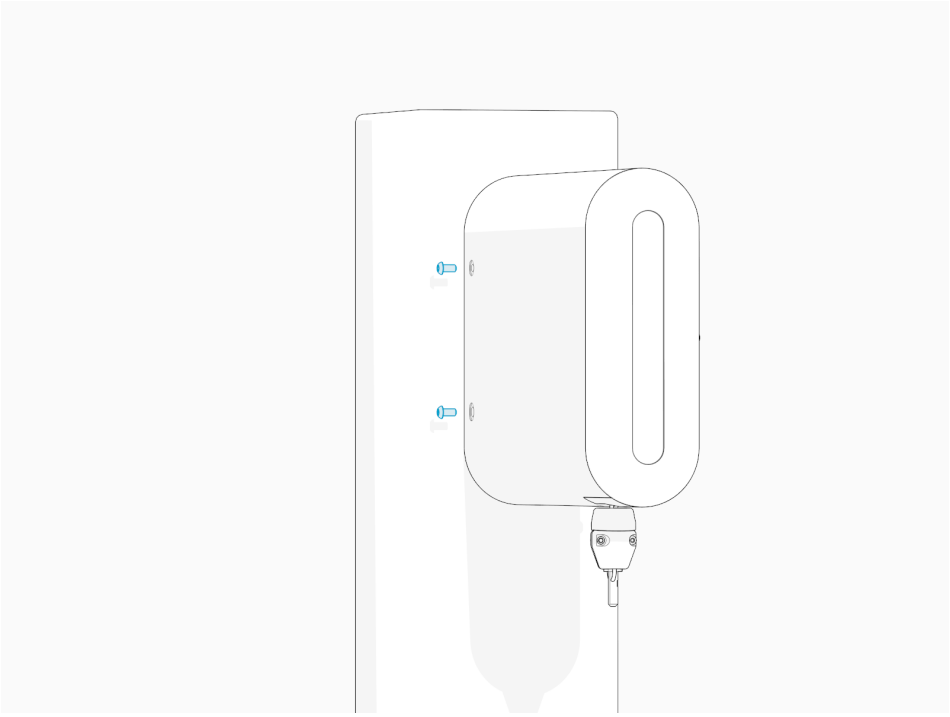
1. Find the M8 hex nuts (x4) and M6 Torx screws (x4) shipped in the overhead CMK package.
2. Install the bracket onto the pole.



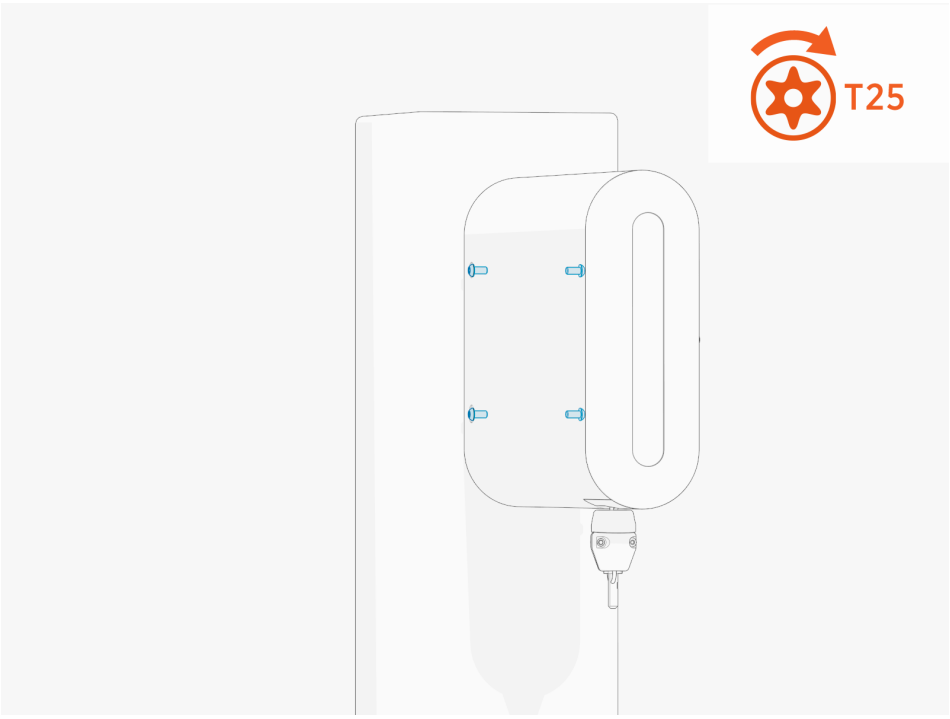
3. Install and torque the M8 hex nuts (x4) to **12.2 Nm (108 in-lb)** to secure the bracket.



4. Align the overhead CMK onto the bracket and install the M6 Torx screws (x4), two on the left side and two on the right side.



5. Torque the screws to **3.4 Nm (30 in-lb)**.

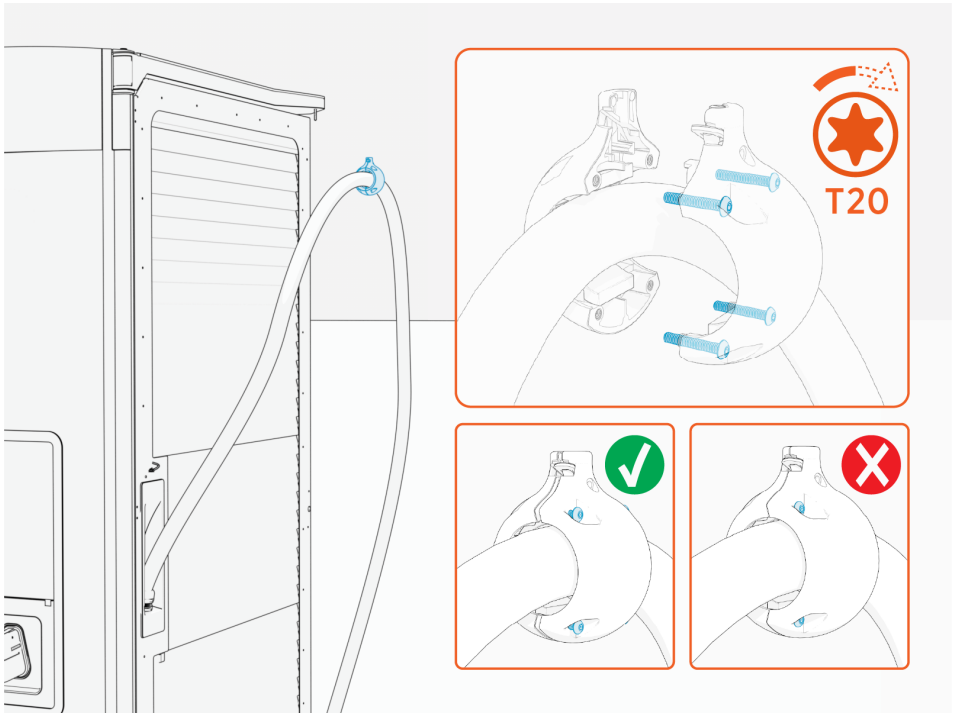


Install Charging Cable Tetherballs

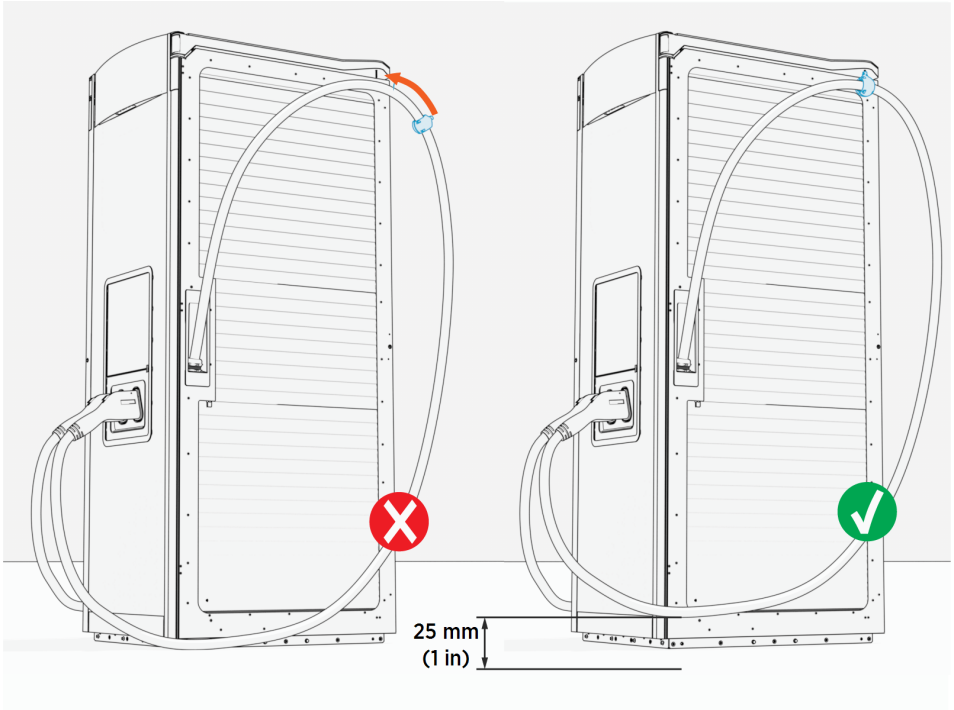
Standard length (5.8 m or 19 ft) charging cables come with a tetherball preinstalled onto the cable. For non-LCC medium length (7.6 m or 25 ft) charging cables, a tetherball is not preinstalled onto the cable and you must follow steps below to install tetherballs onto each charging cable (if not already done).

Illustrations given below are based on the swingarm CMK, but the concept at each step applies to all cable management options.

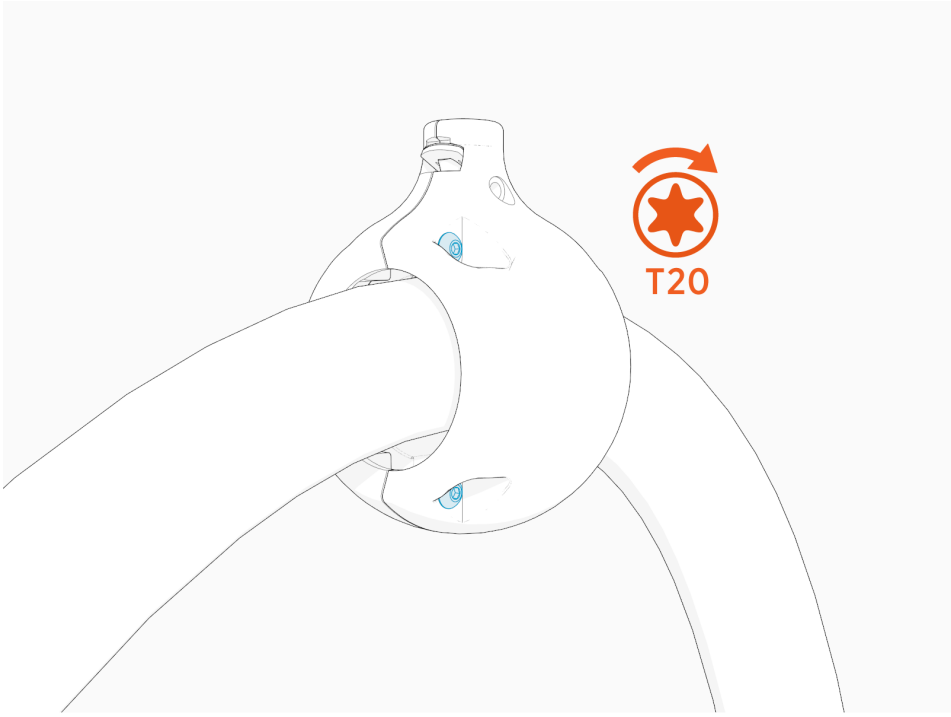
1. Loosely install the tetherball onto the cable.



2. If necessary, slide the tetherball to a position on the cable such that the lowest point of the cable remains 25 mm (1 in) off the ground when the cable is in its stored position.



3. Torque the screws (x4) to **2.8 Nm (25 in-lb)**.

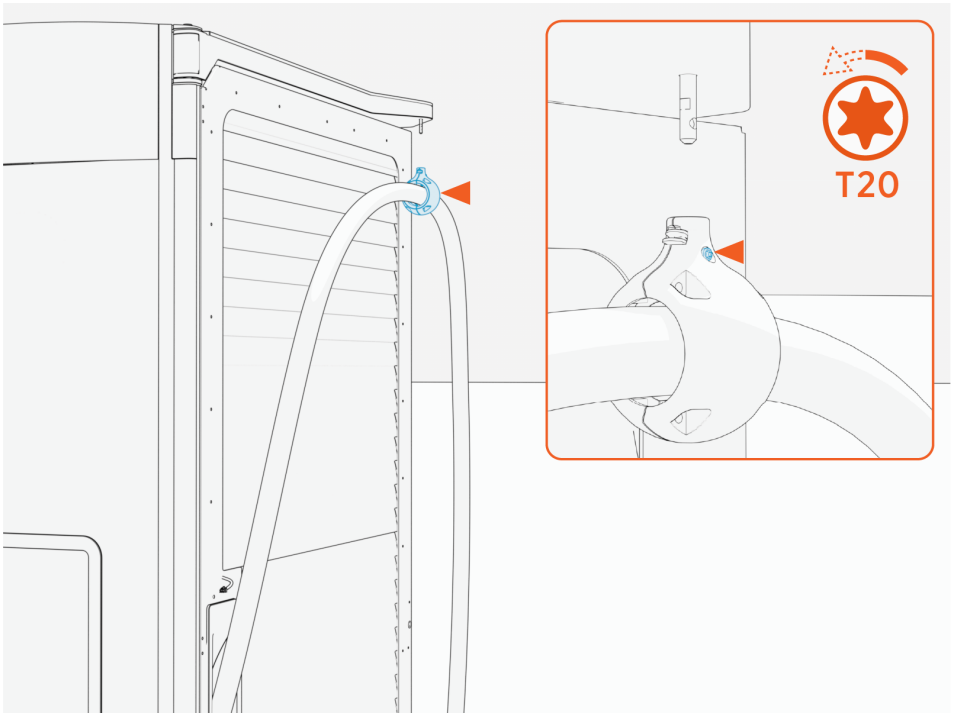


Suspend Charging Cables

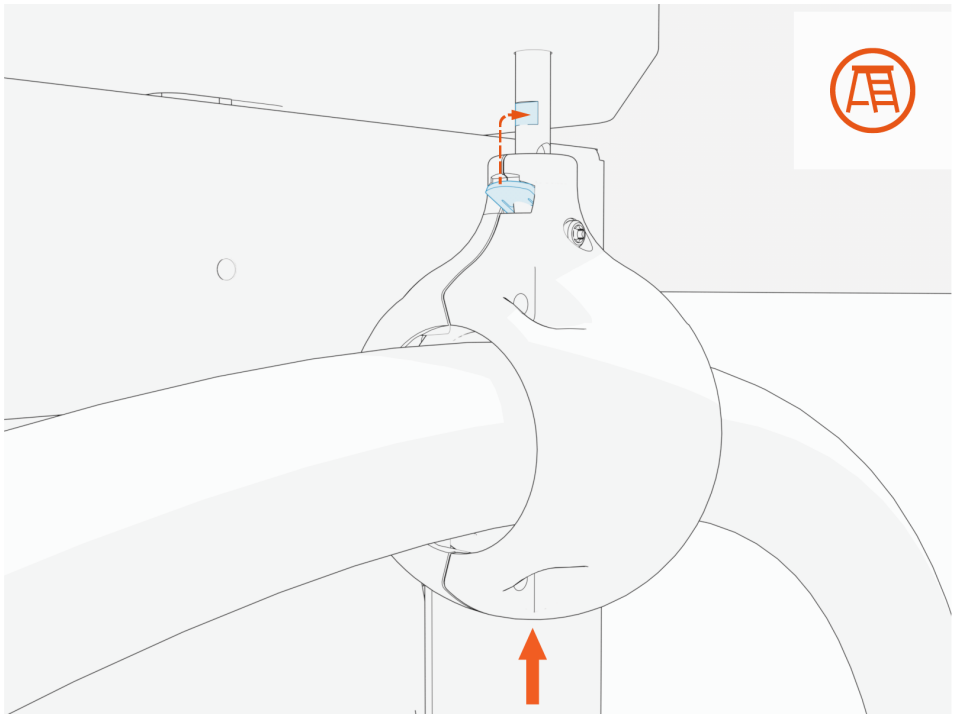
The procedure for suspending charging cables is the same, whether Express Solo is configured with fixed tether point, swingarm CMK, or overhead CMK. The charging cable tetherball must be affixed to a tetherball anchor pin on the cable management system.

Follow steps below to suspend the charging cables (if not already done). Illustrations given below are based on the swingarm CMK, but the concept at each step applies to all cable management options.

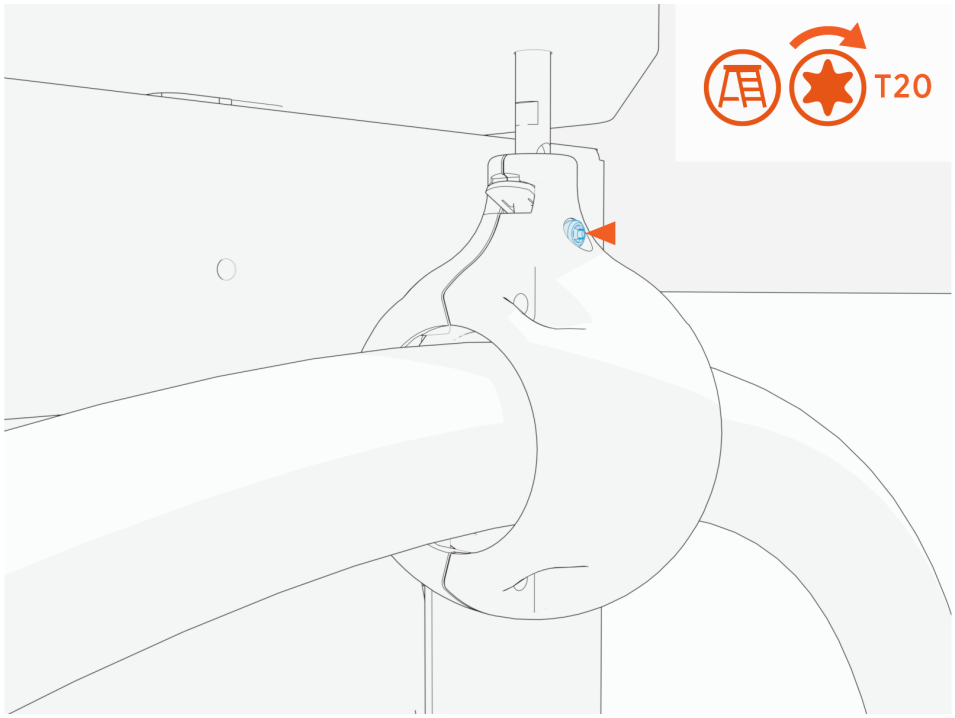
1. If it is not already loose, loosen (do not remove) the tetherball set screw.



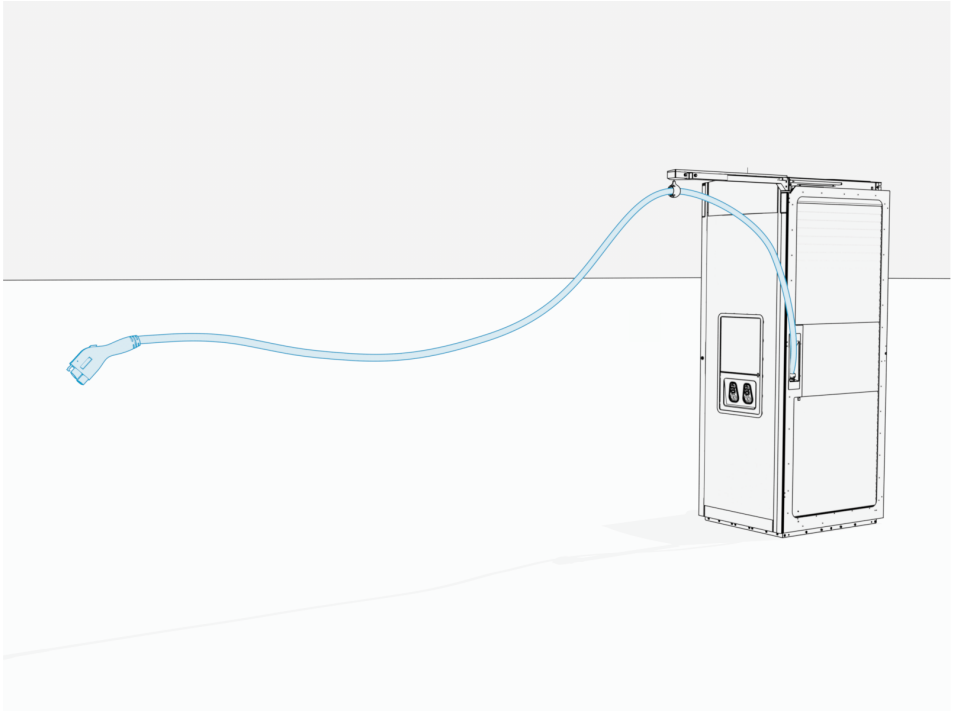
2. Align the tetherball spring tab with the flat notch on the anchor pin. While aligned, gently push the tetherball onto the anchor pin.



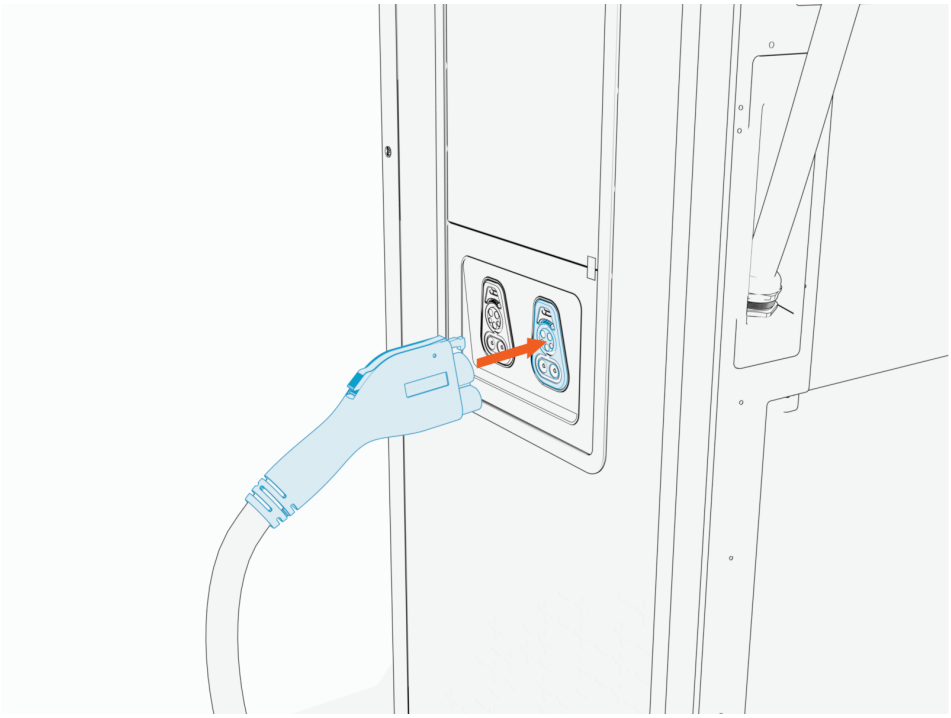
3. Torque the set screw to **2.8 Nm (25 in-lb)**.



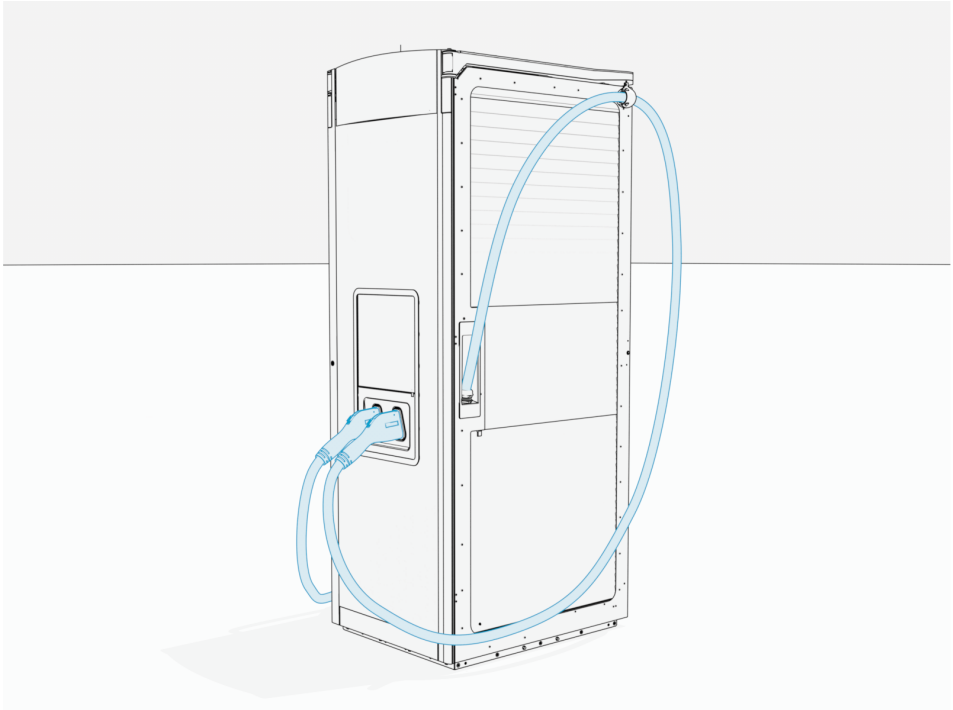
4. Tug on the cable to check that it is securely attached and the swingarm is functioning. If you find limited motion or retraction, contact ChargePoint.



5. Insert the charging cable connector into the corresponding holster.



6. Repeat the steps above to suspend the other charging cable.



Install Covers and Close Station 6

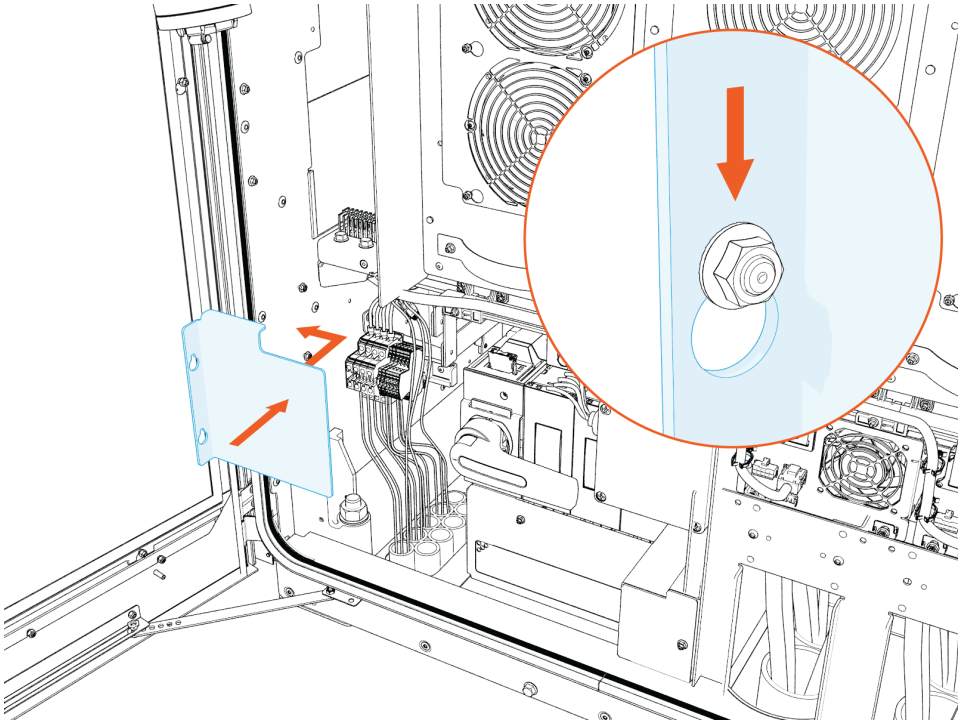
Follow all instructions provided in this chapter to install safety covers and close the station.

Reinstall Safety Shields

Follow procedures below to reinstall all safety shields.

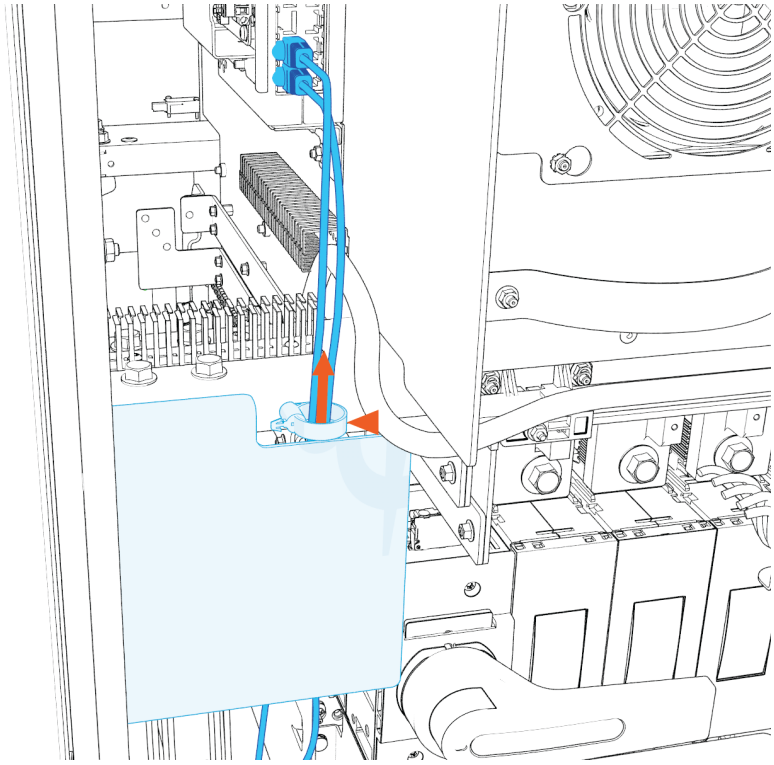
DC Terminals Safety Cover (Intake Side)

1. Seat the cover back into its original place. Slide the cover downward so the keyholes lock behind the retaining nuts.

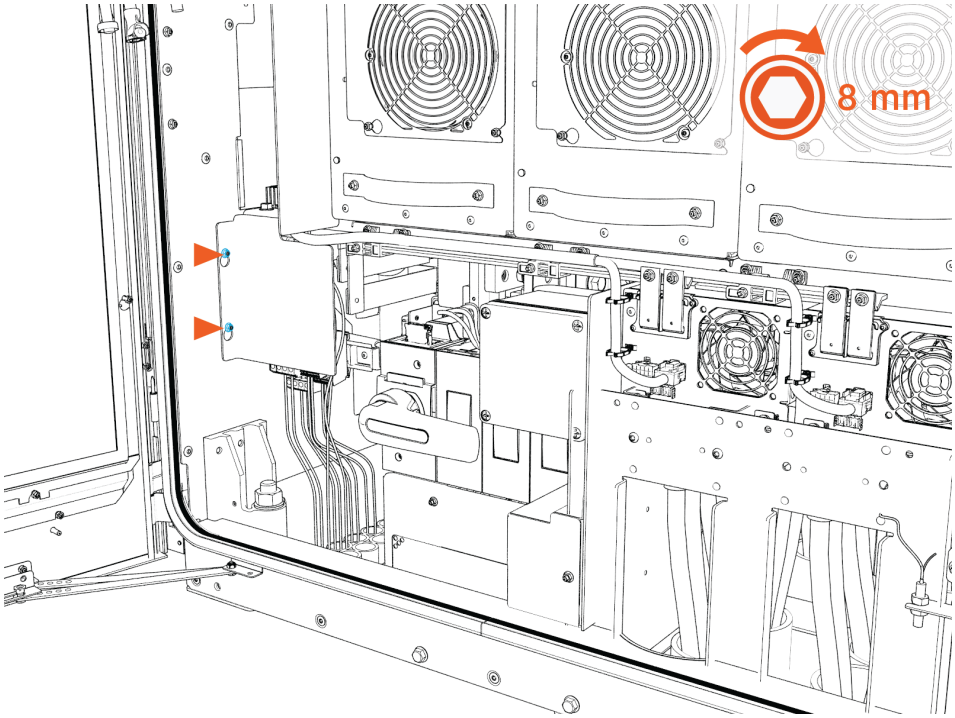


NOTE: Route the Ethernet cables behind the cover and up through the cutout located in the upper right corner of the cover. See the image below for details. Ensure cables are routed through the cable clip. Make sure the cables are not pinched or

excessively bent as they pass through the cutout.

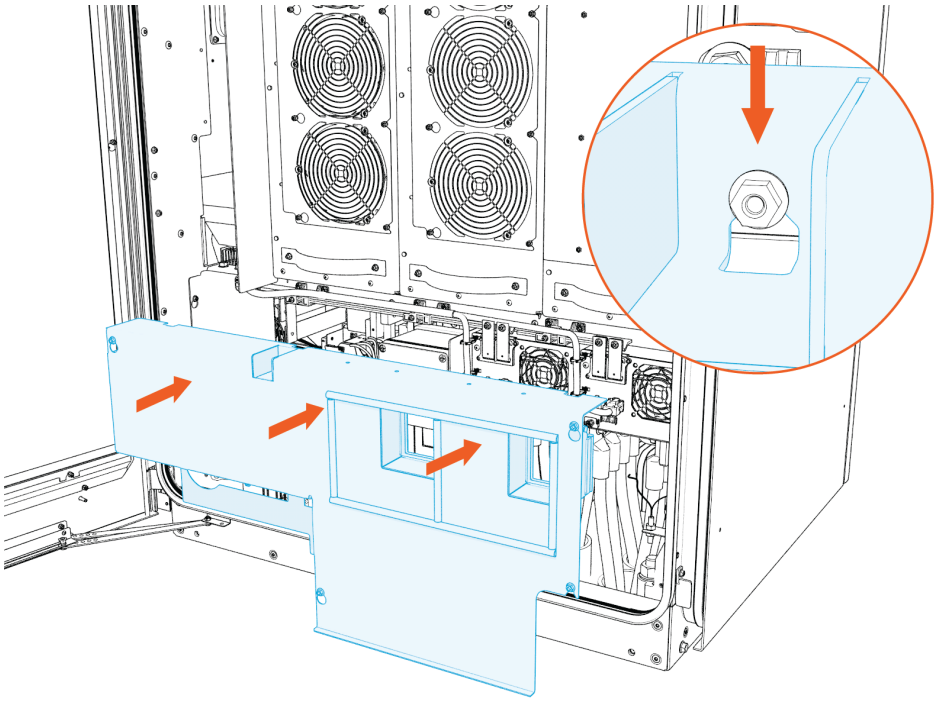


2. Tighten the nuts (x2) to **4.5 Nm (40 in-lb)**.

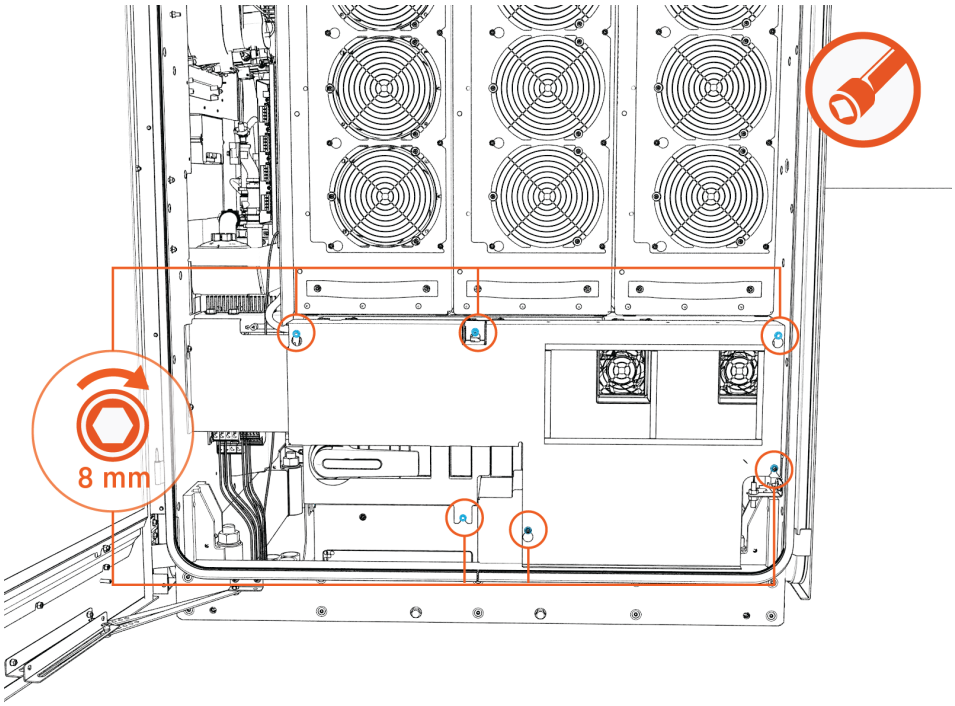


DC Bus Bars Safety Cover (Intake Side)

1. Seat the cover back into its original place. Slide the cover downward so the keyholes lock behind the retaining nuts.



2. Tighten the nuts (x6) to **4.5 Nm (40 in-lb)**. Use socket extender as needed.

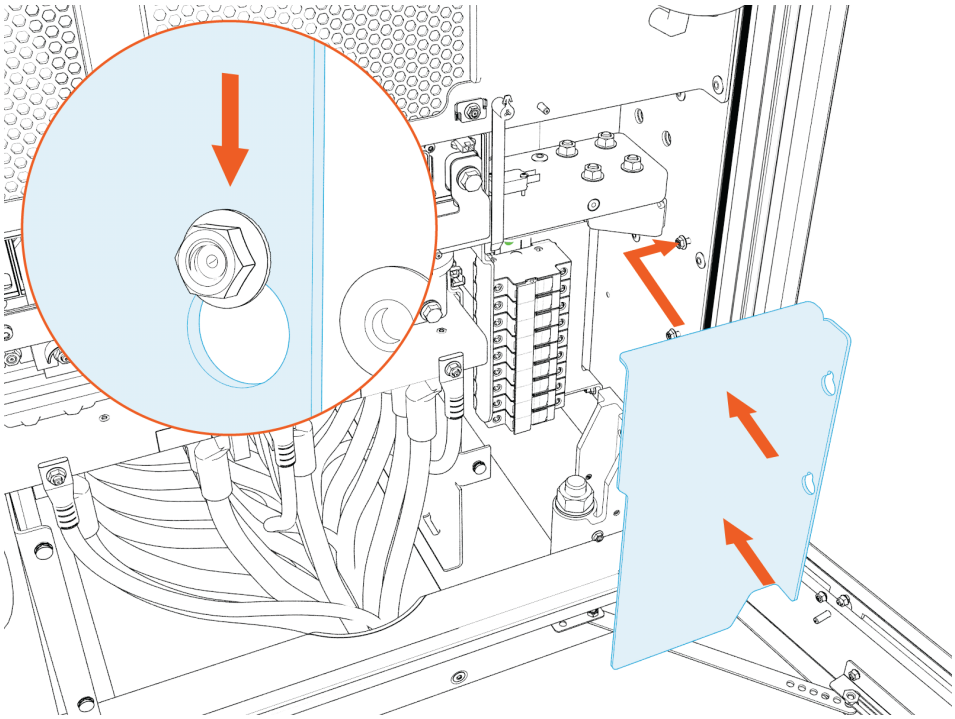


Shunt Trip Terminals Safety Cover (Intake Side)

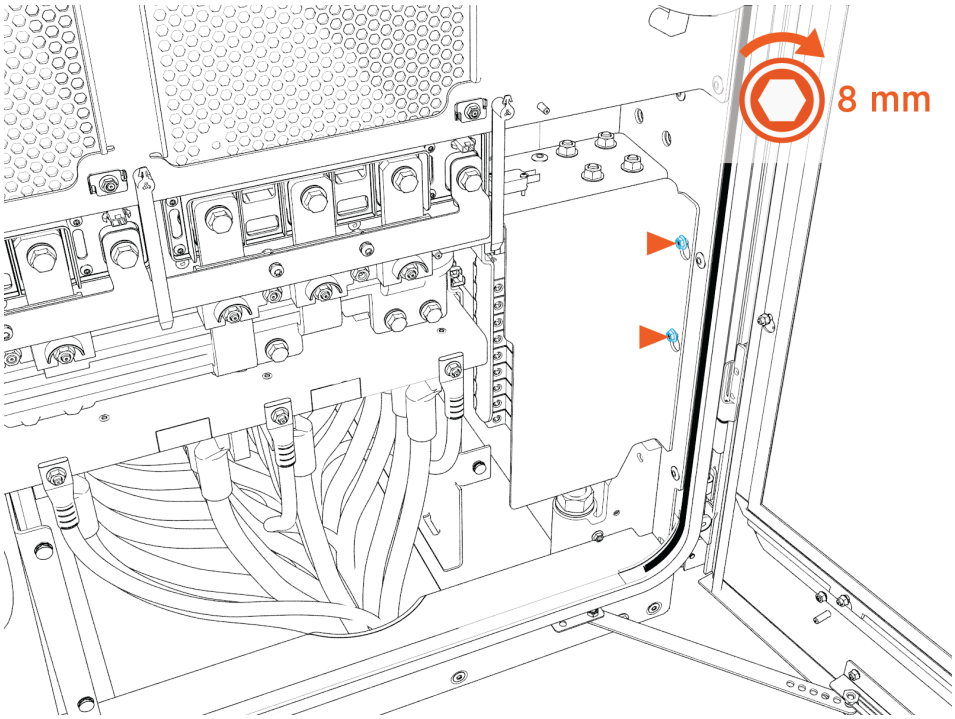
TBD: Instructions shall be provided in a future release.

DC Fuse Block Safety Cover (Exhaust Side)

1. Seat the cover back into its original place. Slide the cover downward so the keyholes lock behind the retaining nuts.

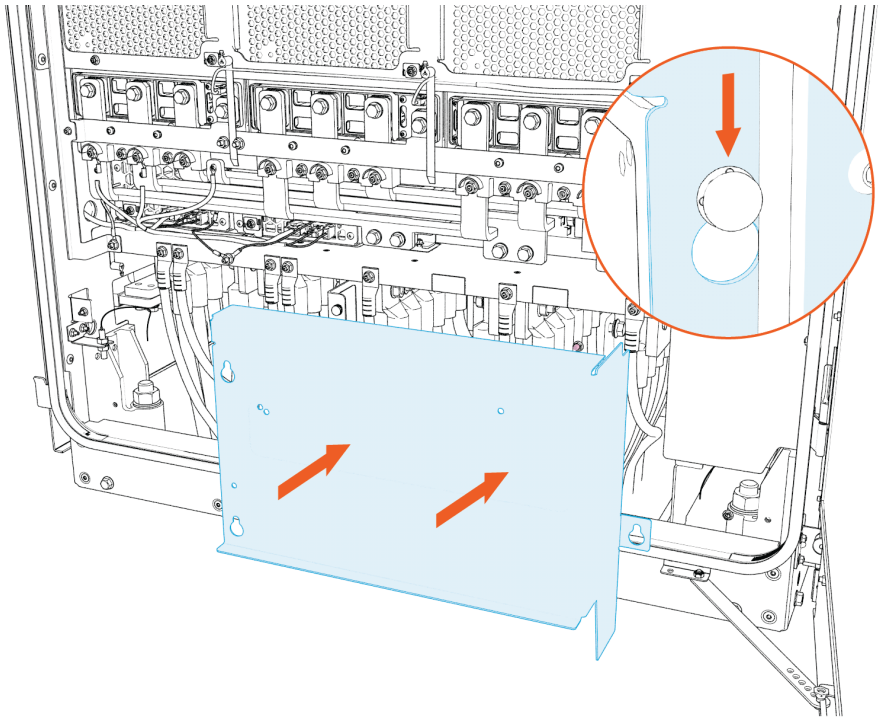


2. Tighten the nuts (x2) to **2.8 Nm (25 in-lb)** .

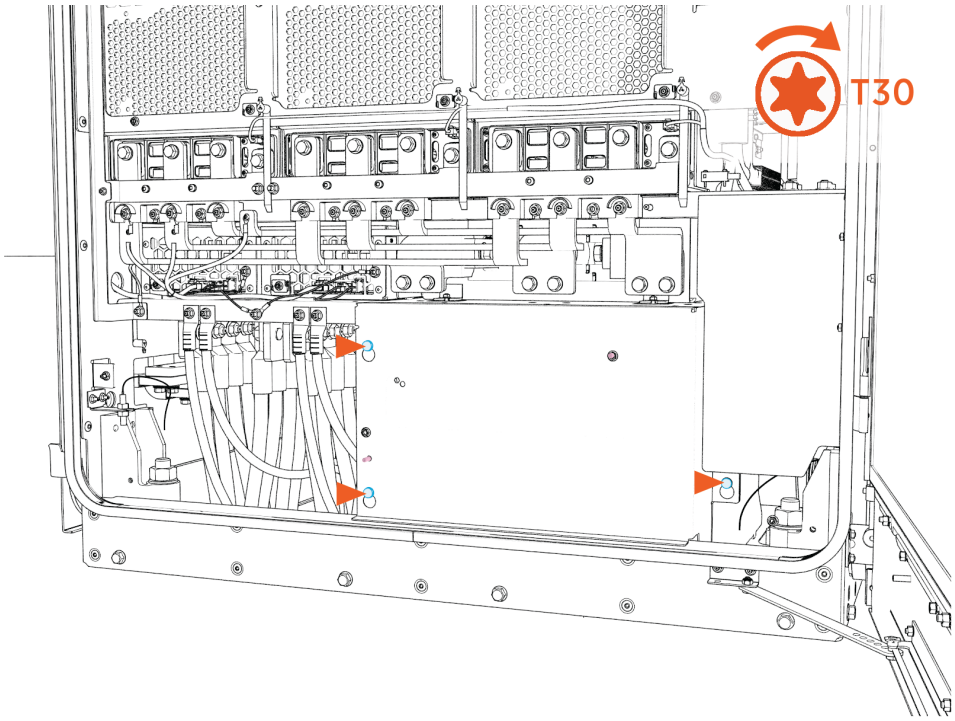


AC Bus Bars Safety Cover (Exhaust Side)

1. Seat the cover back into its original place. Slide the cover downward so the keyholes lock behind the retaining screws.

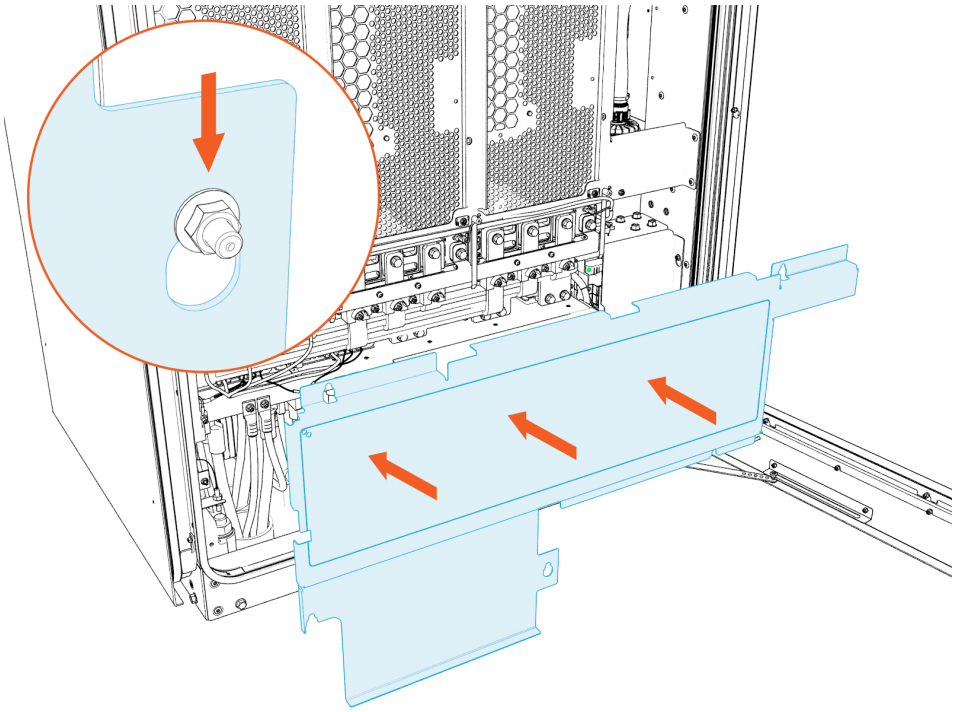


2. Tighten the screws (x3) to **5.6 Nm (50 in-lb)**.

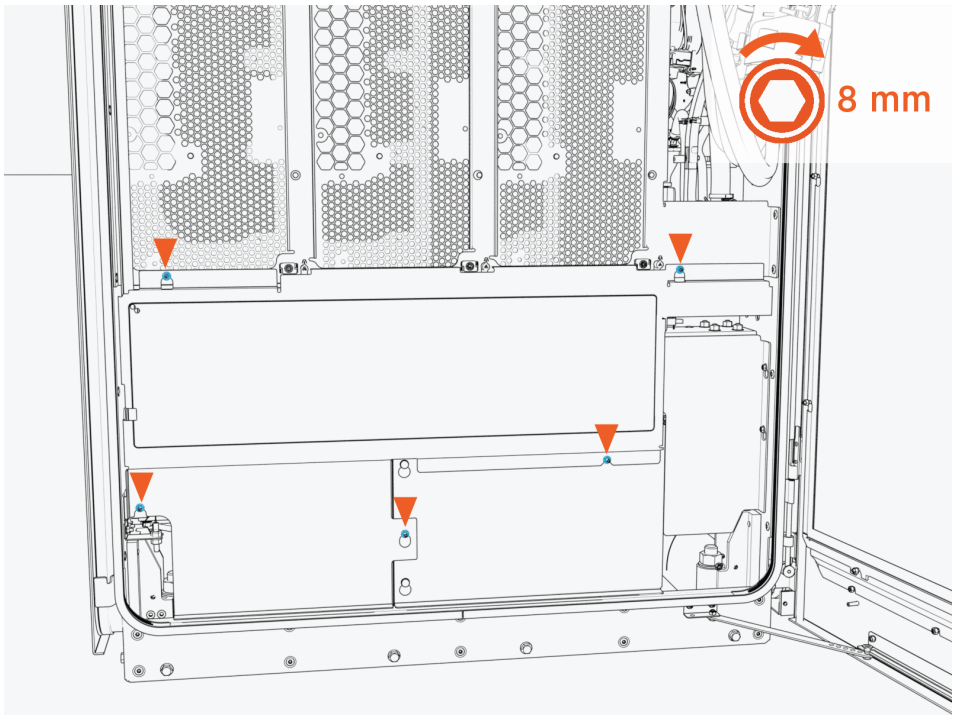


DC Bus Bars Safety Cover (Exhaust Side)

1. Seat the cover back into its original place. Slide the cover downward so the keyholes lock behind the retaining nuts.

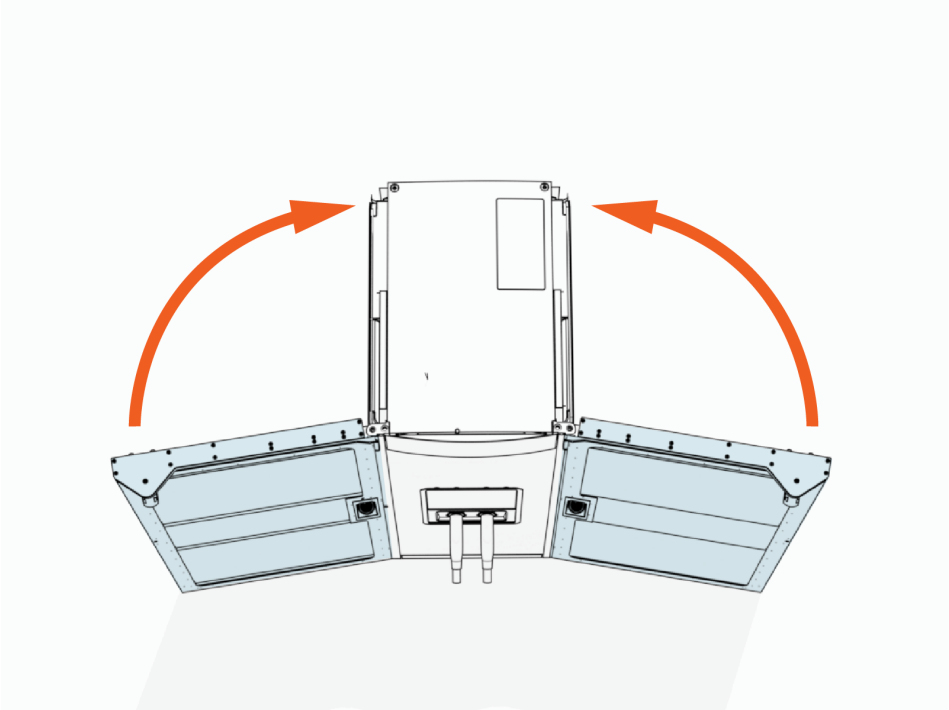


2. Tighten the nuts (x5) to **4.5 Nm (40 in-lb)**.

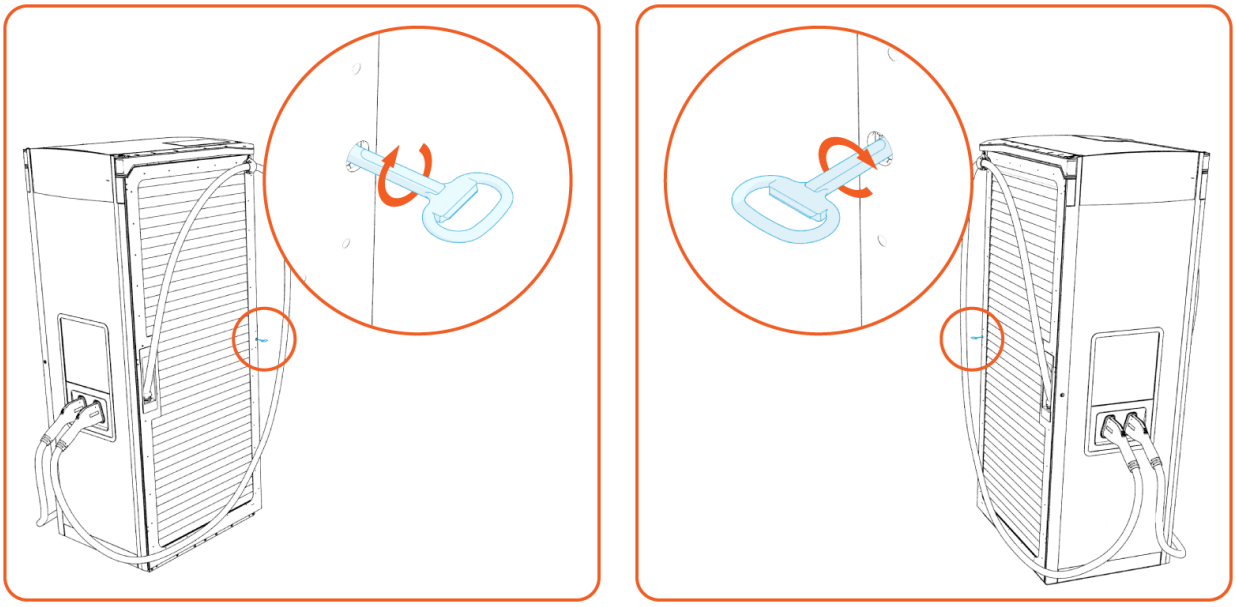


Close Up Express Solo

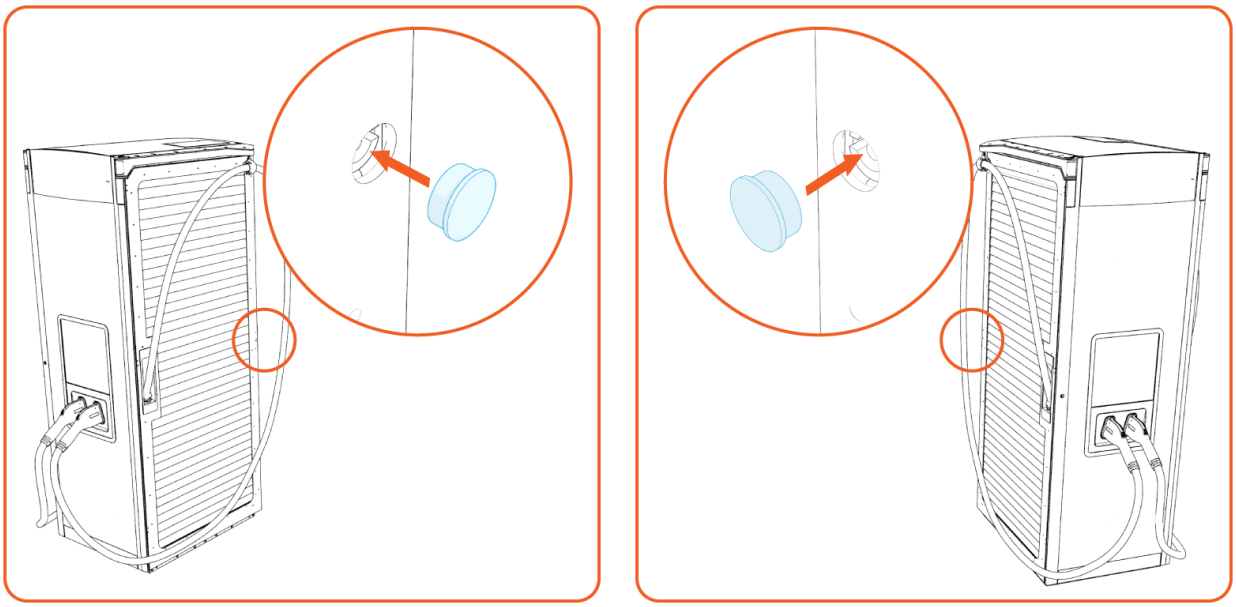
1. Disengage the door stoppers and close the cabinet doors.



2. Lock the cabinet doors.



3. Plug the locks on the side doors.



Complete Installation Checklist 7

To adhere to ChargePoint best practices, complete the installation checklist before leaving the installation site.

NOTE: The *Express Solo Installation Checklist Guide* is currently under development. The link will be made available once the document is published in Product Reference Documents.

Provide the completed checklist and any spare parts (activation labels, and so on) to the person responsible for activating the stations. This completes the installation of the Express Solo charging station.

Appendix: Wire Specifications (North America) A

IMPORTANT: The requirements and specifications in this section reflect what is supported by Express Solo. When Express Solo is connected to another ChargePoint product, such as a Power Link charging dispenser or battery, conductor characteristics may be further constrained by the connected product. Refer to the site design guide for each connected product and follow the most stringent requirements.

The following table summarizes the conductor requirements for each circuit.

Circuit / Application	Min. Conductor Voltage Rating	Number of Poles	Insulation Type	Conductor Material / Min. Temperature Rating
AC Input	600 V AC	3 + PE	Must be THHN/THHW/THW-2/THWN-2, based on the installation environment (e.g., dry, damp or wet conditions)	Must be copper or aluminum, rated for 90°C (194°F)
DC BUS	1000 V	2 + PE	Must be XHHW / XHHW-2, based on the installation environment (e.g., dry, damp or wet conditions)	Must be copper or aluminum, rated for 90°C (194°F)
External DC Output	1000 V	2 + PE		
48 V DC Output	300 V	2	Select type to be suitable for the installation environment (e.g., dry, damp or wet conditions)	Copper wire only
Shunt Trip	Same voltage rating as AC input conductors (due to routing proximity to power conductors)	Twisted pair		
Safety Hub and door interlock	300 V	Twisted pair		

IMPORTANT: Following are wire design specifications for Express Solo, including the maximum quantity and size that the wire terminals can accommodate. All sizing assumes a maximum ambient temperature of 50 °C (122 °F). Where the maximum wire size is listed, the actual wire quantity and size must be chosen based on site-specific wiring requirements and in accordance with the maximum allowed conduit filling rate per local code.

Wire	Max. Current	Quantity	Size
AC input (US)	200 kW unit: 258 A 400 kW unit: 515 A 600 kW unit: 769 A	Max. 18 wires (six per phase)	Max. 300 MCM
AC input (Canada)	225 kW unit: 232 A 450 kW unit: 463 A 625 kW unit: 641 A 675 kW unit: 691 A		
AC ground	-	Max. 3 wires (1 per AC conduit)	Refer to local code for size
DC BUS - intake side	750 A	Max. 8 wires (four per pole)	Max. 300 MCM (*)
DC BUS- exhaust side	750 A	Max. 8 wires (four per pole)	Max. 300 MCM (*)
External DC output - EXT B	250-600 A, depending on Power Link model and configuration	Max. 8 wires (four per pole)	Max. 300 MCM (*)
External DC output - EXT D	250-600 A, depending on Power Link model and configuration	Max. 8 wires (four per pole)	Max. 300 MCM (*)
DC grounding	-	Max. 2 wires per interface (1 per interface conduit)	Refer to local code for size
48 V DC output	32 A	Max. 4 wires per connected Power Link (2 wire pairs; each pair has one wire per pole) (**)	6 AWG
Ethernet	-	Max. 3 cables 1 per Power Link 1 for hardwire Ethernet (if needed)	Outdoor-rated Cat6 STP or Paige OSP Shielded GameChanger (***)
Door interlock sensor	-	2 wires	16 AWG
Safety Hub	-	2 wires per connected Power Link (****)	14 AWG
Soft shutdown switch	-	2 wires	14 AWG
Shunt trip	6A	2 wires	14 AWG

NOTE: (*) If Aluminum AA8000 conductors are used, max. 400 MCM can be accommodated. (**) The required number of 48 V DC wire pairs depends on the distance between Express Solo and Power Link. See *Wire Run Lengths* section in the *Site Design Guide*. (***) The required Ethernet cable type depends upon the cable run length. See *Ethernet Cable Type and Configuration* section in the *Site Design Guide*. (****) Safety Hub is not required for all models of Power Link. Refer to the installation guide of the Power Link model specific to your project to determine if Safety Hub twisted wire connection is required.

Plan for lugs and terminations using the following information:

- Use copper lugs for copper conductors and aluminum lugs for aluminum conductors. The lugs must be nickel-, tin-, or silver-plated compression lugs (not mechanical lugs). Nickel-plated lugs installed with dielectric grease are recommended.
- When using aluminum lugs, ChargePoint recommends applying an appropriate antioxidant compound to aluminum conductors when terminating into tin-, nickel-, or silver-plated lugs, where required by code or specified by the lug manufacturer.

Wire	Termination
AC input	Lug: Compression lug; short barrel and tongue with single hole sized for M12 (0.5 in) stud Max. tongue width: 36 mm (1.3 in).
AC PE/ground	Lug: Short barrel and tongue with single hole sized for M6 (0.25 in) stud
DC BUS	Lug: Compression lug; short barrel and tongue with single hole sized for M12 (0.5 in) stud. Max. tongue width: 36 mm (1.3 in).
External DC outputs	Lug: Compression lug; short barrel and tongue with single hole sized for M12 (0.5 in) stud. Max. tongue width: 36 mm (1.3 in).
DC grounding	Lug: Short barrel and tongue with single hole sized for M6 (0.25 in) stud.
48 V DC output	Stripped wire end or ferrule
Ethernet	RJ45 connector, shielded
Door interlock sensor	Stripped wire end or ferrule
Safety Hub	Stripped wire end
Soft shutdown switch	Stripped wire end or ferrule
Shunt trip	Stripped wire end or ferrule

Appendix: Wire Specifications (Europe) B

IMPORTANT: The requirements and specifications in this section reflect what is supported by Express Solo. When Express Solo is connected to another ChargePoint product, such as a Power Link charging dispenser or battery, conductor characteristics may be further constrained by the connected product. Refer to the site design guide for each connected product and follow the most stringent requirements.

The following table summarizes the conductor requirements for each circuit.

Circuit / Application	Min. Conductor Voltage Rating	Number of Poles	Insulation Type	Conductor Material / Min. Temperature Rating
AC Input	0.6/1 kV, or as required by applicable national and local electrical installation codes	3 + PE	Select type to be suitable for the installation environment (e.g., dry, damp or wet conditions)	Must be copper or aluminum, rated for 90°C (194°F)
DC BUS	1000 V	2 + PE	Select type to be suitable for the installation environment (e.g., dry, damp or wet conditions)	Must be copper or aluminum, rated for 90°C (194°F)
External DC Output	1000 V	2 + PE		
48 V DC Output	300 V	2	Select type to be suitable for the installation environment (e.g., dry, damp or wet conditions)	Copper wire only
Shunt Trip	Same voltage rating as AC input conductors (due to routing proximity to power conductors)	Twisted pair		
Safety Hub and door interlock	300 V	Twisted pair		

IMPORTANT: Following are wire design specifications for Express Solo, including the maximum quantity and size that the wire terminals can accommodate. All sizing assumes a maximum ambient temperature of 50 °C (122 °F). Where the maximum wire size is listed, the actual wire quantity and size must be chosen based on site-specific wiring requirements and in accordance with the maximum allowed conduit filling rate per local code.

Wire	Max. Current	Quantity	Size
AC input	350 kW unit: 542 A 500 kW unit: 789 A 525 kW unit: 800 A	Max. 18 wires (six per phase)	Max. 150 mm^2 (1-core unarmored). Alternates allowed if bend radius ≥ 200 mm (7.9 in) and lug width ≤ 36 mm (1.3 in).
AC protective earth (PE)	-	Max. 3 wires (1 per AC conduit)	Refer to local code for size
DC BUS - intake side	750 A	Max. 8 wires (four per pole)	Max. 150 mm^2 (1-core unarmored). Alternates allowed if bend radius ≥ 200 mm (7.9 in) and lug width ≤ 36 mm (1.3 in).
DC BUS - exhaust side	750 A	Max. 8 wires (four per pole)	
External DC output - EXT B	250-600 A, depending on Power Link model and configuration	Max. 8 wires (four per pole)	Max. 150 mm^2 (1-core unarmored). Alternates allowed if bend radius ≥ 200 mm (7.9 in) and lug width ≤ 36 mm (1.3 in).
External DC output - EXT D	250-600 A, depending on Power Link model and configuration	Max. 8 wires (four per pole)	
DC grounding	-	Max. 2 wires per interface (1 per interface conduit)	Refer to local code for size
48 V DC output	32 A	Max 4 wires per Power Link (2 wire pairs; each pair has one wire per pole) (*)	16 mm^2
Ethernet	-	Max. 3 cables 1 per Power Link 1 for hardwire Ethernet (if needed)	Outdoor-rated Cat6 STP or extended reach cable (**)
Door interlock sensor	-	2 wires	1.5 mm^2
Safety Hub	-	2 wires per Power Link (***)	2.5 mm^2
Soft shutdown switch	-	2 wires	2.5 mm^2
Shunt trip	6A	2 wires	2.5 mm^2

NOTE: (*) The required number of 48 V DC wire pairs depends on the distance between Express Solo and Power Link. See *Wire Run Lengths* section in the *Site Design Guide*. (**) The required Ethernet cable type depends upon the cable run length. See *Ethernet Cable Type and Configuration* section in the *Site Design Guide*. (***) Safety Hub is not required for all models of Power Link. Refer to the installation guide of the Power Link model specific to your project to determine if Safety Hub twisted wire connection is required.

Plan for lugs and terminations using the following information:

- Use lugs that are compatible with the selected conductor material and with the nickel-plated landing bus bars provided in Express Solo.
- When using aluminum lugs, ChargePoint recommends applying an appropriate antioxidant compound to aluminum conductors when terminating into tin-, nickel-, or silver-plated lugs, where required by code or specified by the lug manufacturer.

Wire	Termination
AC input	Lug: Compression lug; short barrel and tongue with single hole sized for M12 (0.5 in) stud Max. tongue width: 36 mm (1.3 in).
AC PE/ground	Lug: Short barrel and tongue with single hole sized for M6 (0.25 in) stud
DC BUS	Lug: Compression lug; short barrel and tongue with single hole sized for M12 (0.5 in) stud. Max. tongue width: 36 mm (1.3 in).
External DC outputs	Lug: Compression lug; short barrel and tongue with single hole sized for M12 (0.5 in) stud. Max. tongue width: 36 mm (1.3 in).
DC grounding	Lug: Short barrel and tongue with single hole sized for M6 (0.25 in) stud.
48 V DC output	Stripped wire end or ferrule
Ethernet	RJ45 connector, shielded
Door interlock sensor	Stripped wire end or ferrule
Safety Hub	Stripped wire end
Soft shutdown switch	Stripped wire end or ferrule
Shunt trip	Stripped wire end or ferrule

Appendix: Low Clearance Forklift Bracket Lift C

Forklift brackets may be installed on Express Solo to enable product installation at a location where the overhead clearance does not meet the minimum requirement.

TBD: Forklift bracket installation instructions shall be provided in future release.

Appendix: Set Up Express Solo D

To set up Express Solo, complete the following steps:

IMPORTANT: Do not power on Express Solo immediately after installation.

A certified Authorized Commissioning Partner (ACP) is required to commission the station before it is energized. The ACP will perform all necessary configuration and verification steps to ensure proper operation.

To schedule a commissioning appointment, contact ChargePoint. Be ready to provide the station serial number (SN).

Power On

NOTE: Express Solo must pass commissioning before power on, or warranty limitations apply.

1. Ensure all safety panels have been correctly installed, all doors are closed and locked, and all other parts have been correctly installed and the work is complete.
2. Turn on power at the same points that you turned it off.

NOTE: If the site has a remote shunt trip switch, ensure that the switch is in the operating position.

3. Wait for self-diagnostics to run. The system may take several minutes to initiate. You may see messages intermittently until the system fully boots up.

Self-Diagnostic	After Installation	After Service or Power Outage
Electrical safety checks	✓	✓
Lighting checks	✓	✓
Display panel checks	✓	✓
Component operation checks	✓	✓
Network connectivity checks	✓	✓
Installation Wizard (for the installer to complete configuration and pinpoint the station on maps)	✓	–

Set Up Express Solo

After you power on the charging station at the breaker panel, set up Express Solo. To do so, you need:

- ChargePoint installer login credentials.
- Activation label (QR code label including the MAC address and activation password).
- The exact location (to the parking space) where the Express Solo is installed.
- A smartphone with ChargePoint Installer app, Internet connectivity, and QR code scanner (usually built into the camera app).

  Scan the QR code to download the ChargePoint Installer app and sign up if necessary.

Region (Language)	QR Code	Region	QR Code
United States		France	
Canada (French)		Germany	
United Kingdom			

Follow the steps below to set up Express Solo:

1. Open the ChargePoint Installer app and log in.
2. Follow the onscreen prompts.



NOTE: To connect to Express Solo and complete setup, you need to scan the QR code provided on the Express Solo display or manually enter the MAC address and password of Express Solo.

FCC Compliance Statement

Refer to the ChargePoint product nameplate to determine if your product is Class A or Class B.

- **Class A 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. The antenna of this product, used under normal conditions, is at least 20 cm away from the body of the user. This device must not be co-located or operated with any other antenna or transmitter by the manufacturer, subject to the conditions of the FCC Grant.

- **Class B Statement:** This equipment has been tested and found to comply with the limits for a Class B 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 residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

  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. The antenna of this product, used under normal conditions, is at least 20 cm away from the body of the user. This device must not be co-located or operated with any other antenna or transmitter by the manufacturer, subject to the conditions of the FCC Grant.

ISED (formerly Industry Canada)

This device complies with the licence-exempt RSS standard(s) of Innovation, Science and Economic Development Canada (ISED). 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.

Cet appareil est conforme aux flux RSS exemptés de licence d'Innovation, Sciences et Développement économique Canada (ISDE). 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.

Radiation Exposure Statement: This equipment complies with the IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

Énoncé d'exposition aux rayonnements: Cet équipement est conforme aux limites d'exposition aux rayonnements ioniques RSS-102 Pour un environnement incontrôlé. Cet équipement doit être installé et utilisé avec un Distance minimale de 20 cm entre le radiateur et votre corps.

FCC/IC Compliance Labels

Visit chargepoint.com/labels.