



Installation Manual



Basic Charger-32A Revision 4.0

IMPORTANT SAFETY INSTRUCTIONS

This document contains instructions and warnings that must be followed when installing and using the Electric Vehicle Supply Equipment (EVSE). Before installing or using the EVSE, read this entire document as well as WARNING and CAUTION markings in this document.

Safety Instructions

The symbols used have the following meaning:



WARNING: RISK OF PERSONAL INJURY



WARNING: RISK OF ELECTRIC SHOCK



WARNING: RISK OF FIRE



CAUTION: RISK OF DAMAGE TO THE EQUIPMENT

- The charge point must be installed only by licensed electricians.
- Make sure that the materials used and the installation procedures follow local building codes and safety standards.
- The information provided in this manual in no way exempts the user of responsibility to follow all applicable codes or safety standards.
- This document provides instructions for the charge point and should not be used for any other product. Before installation or use of this product, review this manual carefully and consult with a licensed contractor, licensed electrician, or trained installation expert to make sure of compliance with local building codes and safety standards.

Repair and Maintenance Clause

- Only licensed electricians can repair or maintain the charge point. It is forbidden for general users to repair or maintain it.
- Turn off input power before repair or maintenance the charge point.

Federal Communication Commission Interference Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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 in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with greater than 20cm between the radiator & your body.

Industry Canada statement:

This device complies with ISED's license-exempt RSSs. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Radiation Exposure Statement:

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with greater than 20cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à plus de 20 cm entre le radiateur et votre corps.



WARNING: RISK OF ELECTRIC SHOCK

Basic precautions should always be followed when using electrical products, including the following:

- Read all the instructions before using this product.
- This device should be supervised when used around children.
- Do not put fingers into the EV connector.
- Do not use this product if the flexible power cord or EV cable is frayed, has broken insulation, or any other signs of damage.
- Do not use this product if the enclosure or the EV connector is broken, cracked, open, or shows any other indication of damage.
- To avoid a risk of fire or electric shock, do not use this unit with an extension cord.



WARNING: RISK OF ELECTRIC SHOCK

Improper connection of the equipment grounding conductor can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded.

Do not modify the plug provided with the product – if it will not fit the outlet, have a proper outlet installed by a qualified electrician.



WARNING: RISK OF ELECTRIC SHOCK

Do not remove the cover or attempt to open the enclosure. No user serviceable parts inside. Refer all servicing to qualified service personnel.



WARNING: RISK OF ELECTRIC SHOCK

- Do not touch live electrical parts.
- Incorrect connections may cause electric shock.
- Do not Disconnect Under Load.



WARNING: This equipment is intended only for charging vehicles that do not require ventilation during charging. Please refer to your vehicle's owner's manual to determine ventilation requirements.



WARNING: Do not use extender cables to increase the length of the charging cable. Maximum length is limited to 25 feet by the National Fire Protection Agency.



WARNING: Do not drag the charge point by input power cord.



CAUTION: Do not expose to liquid, vapor or rain.



CAUTION: If this unit is installed outdoors, the outlet must be rated for outdoor installation. The outlet must be installed properly to maintain the proper NEMA rating of the enclosure.

- Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
- Do not touch the terminals or other current-carrying parts.
- Take care not to drill into any pipes or power lines beneath the surface during mounting holes preparation. Use power line / metal detector.
- Do not trample or drive over the product's cables.
- Do not put any foreign objects into the enclosure.
- Do not start the engine when the charging connector is still connected.



CAUTION: Do not use this product if there is any damage to the unit. Send the unit back to the manufacturer in the event the unit is not operational.

SAVE THESE INSTRUCTIONS

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1 Introduction

This user manual applies to “32A Level 2 AC Charger for Plug-in Electric Vehicles (PEVs) and Battery Electric Vehicles (BEVs)”.

The Level 2 Electric Vehicle Supply Equipment (EVSE) with 32A capabilities will be used in North America. It can provide a shorter charging time than the traditional 16A EVSE.

!!! Any unauthorized modifications will void the manufacturer’s warranty. !!!

1.1 Product View

Different models of Charger:

Basic Charger-32A (BC3)



Figure 1-1 Front view

Box Contents

See the table below for differences in the box content of three models.

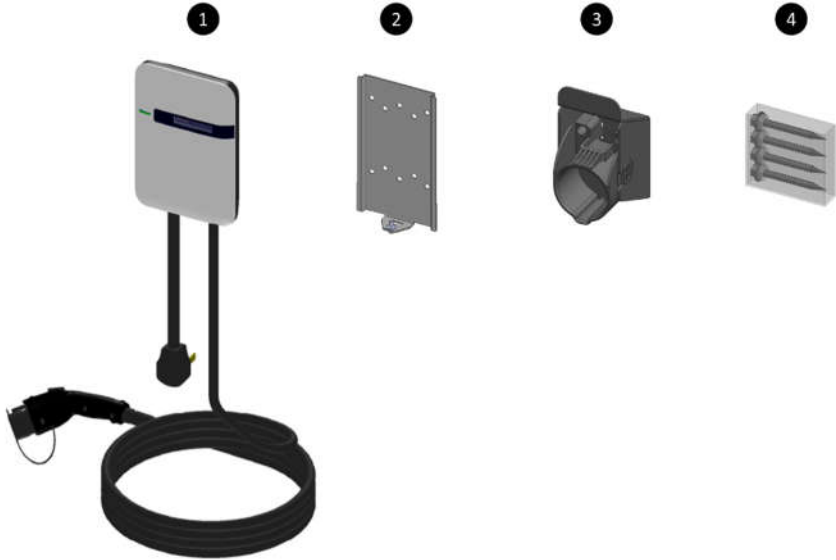


Figure 1-2 Box contents

Table 1-1 Accessories in the box

Item	Description	QTY	Remark
1	Basic Charger-32A (BC3)	1	<input checked="" type="checkbox"/> Charging Plug <input checked="" type="checkbox"/> Input Power Cord <input type="checkbox"/> OLED Display <input type="checkbox"/> RFID Icon
	Smart Charger-32A (SC3)		<input checked="" type="checkbox"/> Charging Plug <input checked="" type="checkbox"/> Input Power Cord <input checked="" type="checkbox"/> OLED Display <input type="checkbox"/> RFID Icon
	Intelligent Charger-32A (IC3)		<input checked="" type="checkbox"/> Charging Plug <input type="checkbox"/> Input Power Cord <input checked="" type="checkbox"/> OLED Display <input checked="" type="checkbox"/> RFID Icon
2	Mounting Bracket	1	Attached to the back of the charge point
3	Holster ASSY	1	With Hook x1, Holster x1 & M4xL15 tapping screw x2
4	Screw Bag	1	With #12xL50 tapping screw x4

2 Installation

2.1 Before Installation

2.1.1 Safety check

- Check for transport damages.
- Before connecting the product to the power supply, check that the power supply voltage and current rating corresponds with the power supply details shown on the product rating label.



CAUTION: Disconnect the power supply before installing or repairing the charge point. Failure to do so may result in physical injury or damage to the power supply system and the charge point.



CAUTION: Avoid touching or pressing the OLED screen all times, as this may result in damage to the OLED screen.



DANGER: RISK OF SUFFOCATION

Keep any packing materials away from children – these materials are a potential source of danger, e.g. suffocation.

The charge point must be installed only by a licensed electrician in accordance with the provisions of the local electrical industry construction and should comply with national electrical codes and standards.

Before installing the charge point, make sure you have read all of these instructions in this manual and fully understand its contents.

Appropriate protection is required when connecting to a main switchboard. The tools and parts used as outlined in the section “Tools & parts required for installation”.

2.1.2 Grounding Instructions

The charge point must be implemented equipment grounding through a permanent wiring system or an equipment grounding conductor. Use a wire with a dedicated grounding wire and a ring terminal and connected to the equipment ground terminal block for grounding.

2.2 Tools & Parts Required for Installation

Table 2-1 Tools & parts required for installation

Tool	QTY	Model	Size	Supplier	Remark
Mounting Bracket	1	All	194x109x9 mm	Model Accessories	Secure the charge point
Holster ASSY	1	All	58x58x70 mm	Model Accessories	Hold EV charging plug
Screw	4	All	Tapping: #12	Model Accessories	Secure Mounting Bracket & Hook
			Mechanical: M6	Commercially Available	
Wire, Copper	3	IC3	8 AWG	Commercially Available	UL1015 (recommended)
Heat Shrink Tube	3	IC3	For 8 AWG wire	Commercially Available	
Terminal	3	IC3	For 8 AWG wire	Commercially Available	Connect input wires to the terminal block
Conduit	1	IC3	1 inch	Commercially Available	
Torx Screwdriver	1	All	T20	Commercially Available	
Philips Screwdriver	1	All	PH3	Commercially Available	
Hexagon Socket	1	All	5/16	Commercially Available	Tighten #12 Tapping screws
Torque Wrench	1	All	35 kgf-cm min	Commercially Available	

2.3 SIM Card Installation (for IC3 only)

1. Disassemble top cover

1-1 Loosen the screws (x5) on the base cover.

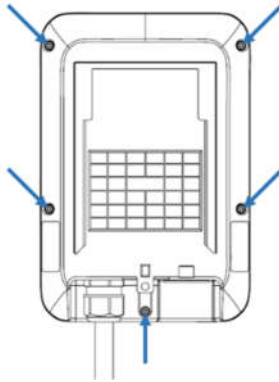


Figure 2-1 Position of five screws on Base Cover

2. Find SIM card socket



Figure 2-2 Position of SIM card socket

3. Insert SIM card

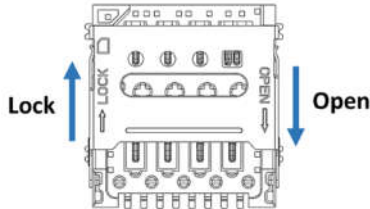


Figure 2-3 SIM card socket and cover Open/Lock direction

- 3-1. Push down the cover to open SIM card socket.
- 3-2. Prepare the SIM card. (Use micro-SIM, 15mm x 12mm.)
- 3-3. Insert the SIM card.
- 3-4. Close the SIM card socket and push the cover toward lock direction to lock the cover.
- 3-5. Reassemble the top cover. Please refer to the following torque. SIM card installation is completed.

Screw	Torque	
M4	16 kgf.cm	13.88 lb-in

2.4 Install the Charge Point

1. Secure the main body mounting bracket to the wall with appropriate screw.



DANGER: Disconnect power at the circuit breaker before installation.



CAUTION: Before mounting determine the suitable mounting location. The unit must be fixed to a wooden or masonry/concrete wall using hardware that is appropriate for the surface. Do not install on drywalls, wall boards or thin plywoods. The fixing point must be capable of supporting the weight of the unit.

Follow applicable accessibility requirements for the mounting position. The unit shall be stored or located at a sufficient height.

For indoor use: The unit shall be mounted at a sufficient height from the floor between 18 inches (450 mm) and 4 feet (1.2m).

For outdoor use, it is not lower than 24 inches (600 mm) and not higher than 4 feet (1.2m).

The mounting bracket has ten screw holes. If only two screws be used to secure the mounting bracket, the screws should pass through the middle two screw holes of the mounting bracket. The other screw holes are reserved for the user.

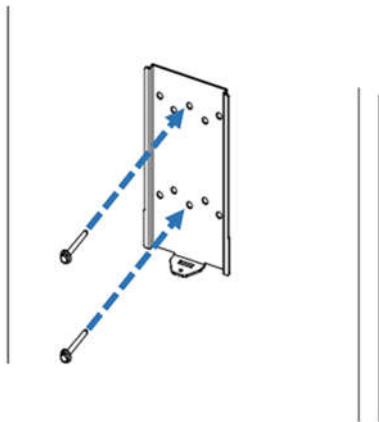


Figure 2-4 Secure mounting bracket

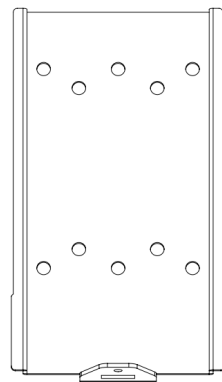


Figure 2-5 Screw holes of mounting bracket

Screw suggestion:

- A. For masonry walls, use M6 mechanical screws. (Commercially Available)

- B. For finished walls supported by wood studs, use 1/4" or M6 tapping screws.
(Commercially available)
- C. Please refer to the following torque. The actual torque is according to the wall material.

Screw	Torque	
M6	25 kgf.cm min	21.7 lb-in min
#12	25 kgf.cm min	21.7 lb-in min

2. Mount charge point onto mounting bracket and lock the screw.

2-1. Put the charge point on the mounting bracket.

2-2. Fix the charge point on mounting bracket by M4 screw and screw washer.

2-3. Please refer to the following torque.

Screw	Torque	
M4	16 kgf.cm	13.88 lb/in

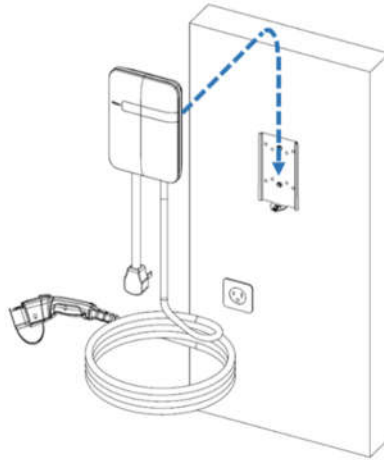


Figure 2-6 Charge point and mounting bracket

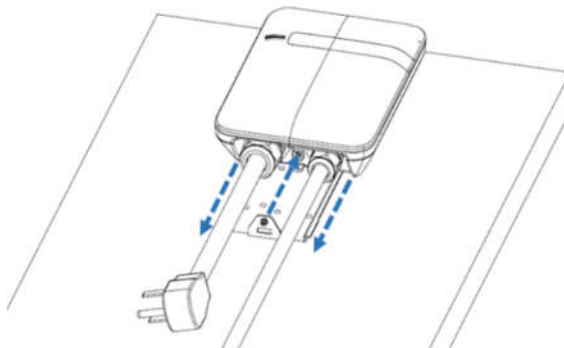


Figure 2-7 Tighten M4 screw

3. Plug in the power cord. (for BC3/SC3 ONLY)

The outlet should be located at 20-26 inch from the ground. Refer to the installation template to decide where to install the charge point.

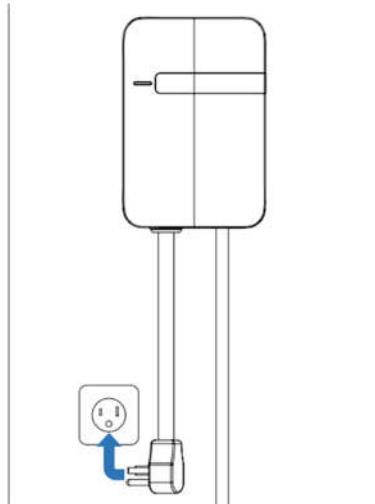


Figure 2-8 Plug in the power cord

2.5 Input cord connection (for IC3 only)

1. Choose the appropriate conduit in accordance with all applicable state, local and national electrical codes and standards.

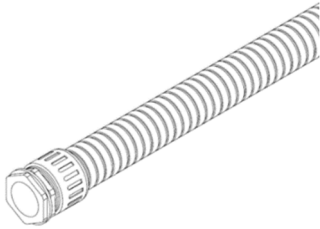


Figure 2-9 Conduit.

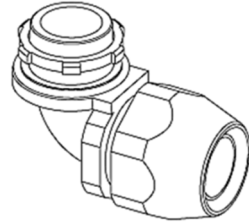


Figure 2-10 Right angle conduit

2. Clamp copper terminal to connect copper wire. The clamp point is covered by heat shrink tube for protecting.

2-1 Refer to following wire specification. Use conductor type other than RHH, RHW and RHW-2 with outer covering.

Model	Terminal	Conductor	Rating
Intelligent Charger-32A	L1, L2, G	8 AWG	90C copper wire



Figure 2-11 Copper terminal, heat shrink tube and copper wire.

3. Electrical wiring to the charge point.

3-1. Disassemble top cover.

- 3-2. Use Philips screwdriver to release terminal screws.
- 3-3. Fold the wire end to pass through the conduit and insert them into the input hole.
- 3-4. Fix the copper wire on the corresponding terminal block. The wiring instruction is printed in front of the terminal block (L1/L2/G).
- 3-5. Use the following torque to connect the wire terminal to the terminal block.

Screw	Torque	
M4	16 kgf.cm	13.88 lb-in

- 3-6. The recommended terminal specifications are as following.

Terminal	Dimension(mm)
W	≤ 9.5
d2	4-6.4

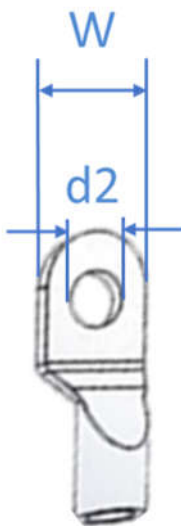


Figure 2-12 Input wiring

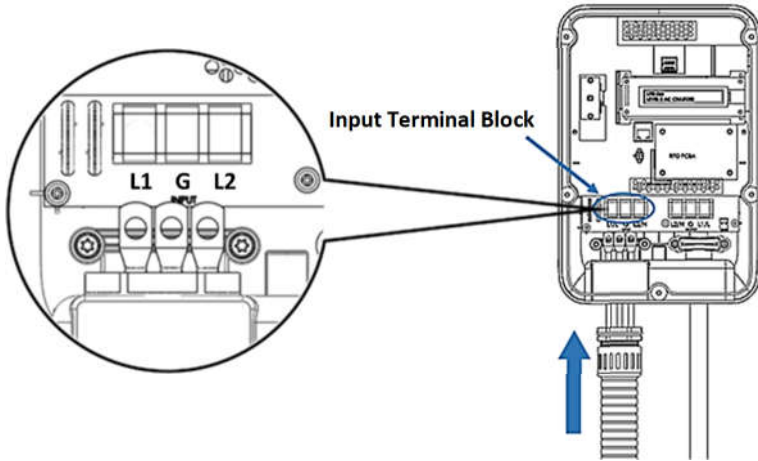


Figure 2-13 Input wiring



CAUTION: To reduce the risk of fire, connect only to a circuit provided with 40 amperes maximum branch circuit overcurrent protection in accordance with the National Electrical Code, ANSI/NFPA 70, and the Canadian Electrical Code, Part I, C22.1.



CAUTION: If this unit is installed outdoors, the outlet must be rated for outdoor installation. The outlet must be installed properly to maintain the proper NEMA rating of the enclosure.

Model	Current Rating
Intelligent Charger-32A	32 A

3-7. Secure the conduit on the enclosure. Please refer to the following torque.

Conduit	Torque	
1 "	35 kgf.cm	30.36 lb-in

3-8. Reassemble top cover. Please refer to the following torque.

Screw	Torque	
M4	16 kgf.cm	13.88 lb-in

2.6 Install the Holster

1. Separate the holster from hook.

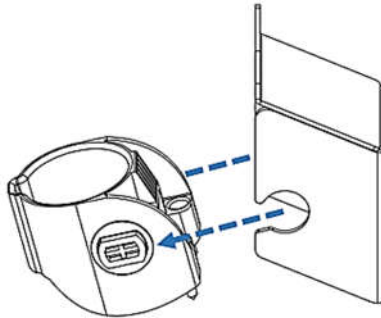


Figure 2-14 Separate the holster

2. Fasten the hook on the wall with appropriate screws.

2-1. For finished walls supported by wood studs, use #12 tapping screws (x2).

2-2. The recommend torque is 25 kgf.cm (21.7 lb-in).

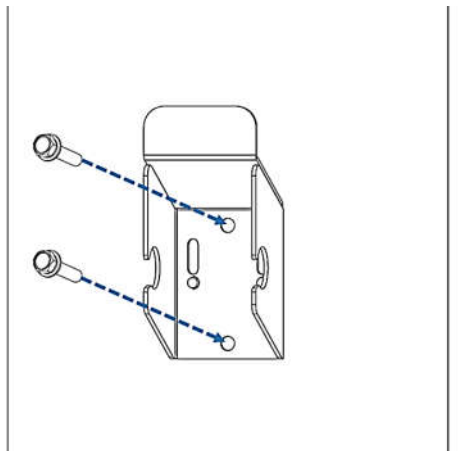


Figure 2-15 Secure the hook

3. Make the holster face up and combine with the hook.

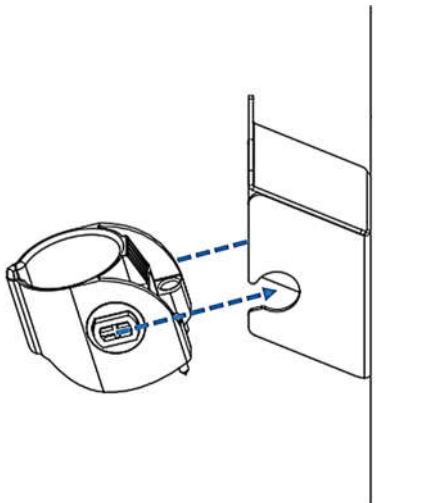


Figure 2-16 Secure the holster

4. Rotate the holster down totally.

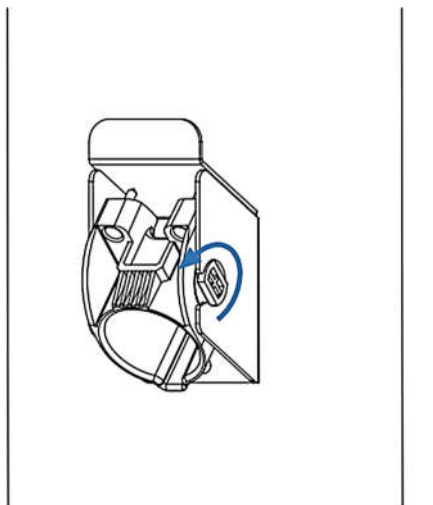


Figure 2-16 Rotate the holster

5. Keep the holster in this state and tighten screws completely.

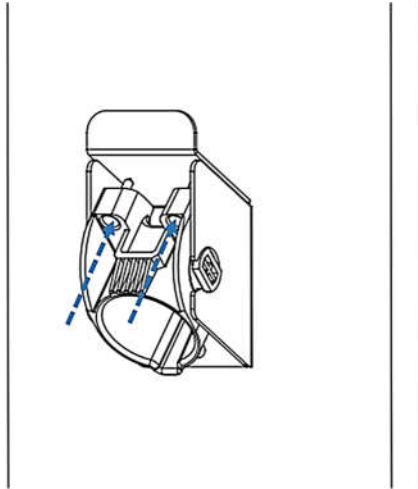


Figure 2-17 Lock screws

6. Place EV charging plug on the holster.

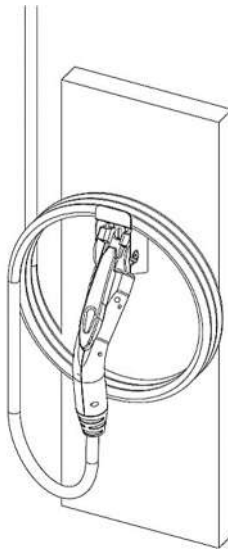


Figure 2-18 Place EV charging plug