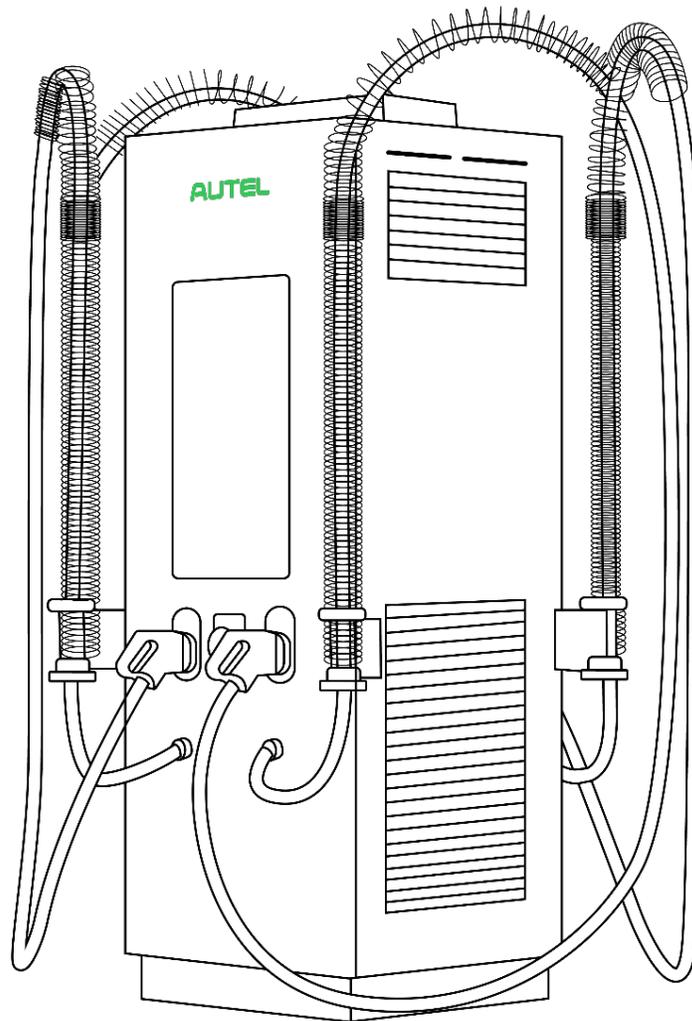




**MaxiCharger**

**DH240 & DH480**

**Spare Part Replacement  
Commissioning Guide**



**Technical Service Department**

<b>Date</b>	<b>Version</b>	<b>Writer</b>	<b>Description</b>
<b>2024-12-26</b>	<b>1.0</b>	<b>Victoria Jiang</b>	<b>Initiate document.</b>

# 1. Safety and Usage Instructions

## ***DANGER, WARNING, CAUTION, and NOTICE*** statements



### **DANGER**

*DANGER* indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

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### **WARNING**

*WARNING* indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

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### **NOTICE**

*NOTICE* provides helpful information such as additional explanations, tips, and comments.

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## Purpose and intended audience

This manual applies to the MaxiCharger DH240 and DH480 produced by Autel, Intelligent Technology Corp., Ltd. 2004-2024. (Autel). The DH240 and DH480 are intended exclusively for charging electric vehicles and when installed correctly, can be used by untrained individuals. Follow this manual to commission and operate the charging station correctly.

Installation, commissioning and maintenance of this charging station can be performed only by a qualified electrician who has the following capabilities:

- Expertise on general and specific rules regarding safety and incident prevention.
- Comprehensive knowledge of applicable electrical regulations.
- Ability to identify risks and avoid potential hazards.
- Familiarity to the installation and operation instructions described in this document.

## Improper use

Using the charging station is safe as long as it is used as intended. Any other use or changes to the charging station are considered improper use and therefore not allowed. The operator, owner or qualified technician is responsible for any personal injury or product damage arising from improper use.

## Disclaimer

This document is subjected to rigorous technical review before release. It is revised at regular intervals, and any modifications and amendments are included in the subsequent chapters. Although Autel has made its best efforts to keep the document as precise and up-to-date as possible, Autel does not assume any liability for defects and damage which results from the use of the information contained herein.



### NOTICE

This manual is subject to updates and changes. The latest version is available for download on Autel official website. Errors and omissions excepted.

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Any modifications to the product assembled by Autel may affect the product performance, such as the user experience, appearance, quality and lifespan. These custom modifications (customization) include but are not limited to the placement of stickers and SIM cards or the usage of different colors. Autel is not liable for any damage to, or caused by the customized product if the damage is caused by this applied customization.

## Safety warnings

The safety messages herein cover situations of which Autel is aware. Autel cannot know, evaluate or advise you as to all of the possible hazards. You must ensure your personal safety before performing any service procedure.

### General warnings

- Read and follow all warnings and instructions before commissioning the charging station.
- Do not attempt to operate or repair the charging station unless you have electrician qualifications. Only a qualified electrician is allowed to operate, service, repair, and commission the charging station.
- Perform a risk assessment before performing any electrical work. The assessment includes: electrical hazard identification, job analysis, risk control measures.

### Power and installation

- Switch off the input power before installing the charging station. Keep the power off until it is fully installed and secure.
- Do not commission or open the charging station in wet environments (such as rain or heavy fog).
- Install and commission the charging station according to local regulations. Local regulations may vary based on different countries or regions.
- Complete the following steps before you perform O&M operations on electrical systems: inspection and testing procedures, preventive maintenance, and troubleshooting.

### Fire and explosion hazards

- Do not use explosive or readily flammable substances near the charging station.
- (Optional) Install a fire alarm system to detect fires at an early stage.
- Refer to the vehicle user manual to check if the vehicle releases hazardous or explosive gas during charging.

## Handling and usage

- Do not operate the charging station if the charging cable is frayed, broken, damaged, or cannot work properly.
- Do not use the charging station if the cabinet or the connector is frayed, broken, or otherwise damaged, or cannot work properly.
- Place the charging cable where it cannot not be stepped on, tripped over, driven over, or otherwise subjected to excessive force or damage. Ensure that the charging cable is correctly stowed when not in use and that the connector does not touch the ground.
- Do not insert fingers into the charging port.
- Do not leave objects inside the charging port.
- Keep the connector away from heat sources, dirt, and water.
- Keep the charging station away from direct water flow.
- Do not operate the charging station with wet hands.
- Do not put the connector into any liquid.

## Compatibility and compliance

- Use this charging station to charge only compatible electric vehicles. Refer to the technical specifications in this manual and the vehicle manual to check if the vehicle is compatible.
- Use the charging station only under the conditions specified in this manual.
- Do not use adaptors, conversion adapters, or cord extension sets.
- Ensure that the charging cable is not damaged or tangled prior to use.
- Use of the charging station may affect or impair the operation of any medical or implantable electronic devices, such as an implantable cardiac pacemaker or an implantable cardioverter defibrillator. Check with your electronic device manufacturer concerning the effects that charging may have on such electronic devices before using the charging station.

## Emergency procedures

- Disconnect the power supply of the charging station immediately in the event of danger or accident.
- Respond to the emergency by performing operations including but not limited to: emergency power shutdown and first aid and resuscitation measures.

## Personal protection

- Wear PPE (Personal Protective Equipment) such as protective suit, eye protection, mask protection, cut-resistant gloves, and non-slip safety shoes before commissioning the charging station.

- Complete relevant training courses before you engage in electrical work. The training content includes: basic knowledge of electrical safety, practical operation skills, response procedures in emergency situations.

## **Disposal instructions**

Handling waste incorrectly can have a negative impact on the environment and human health due to potentially toxic substances. Discarding the charging station correctly can facilitate the reuse and recycling of materials and contribute to environmental protection.

- Follow local regulations when you dispose parts, packaging materials, or charging stations.
- Discard electrical and electronic equipment separately in compliance with the WEEE-2012/19/EU Directive on waste of electrical and electronic equipment.
- Do not mix the dispose of the charging station with that of household waste.

## 2. Commissioning Guide and Checklist

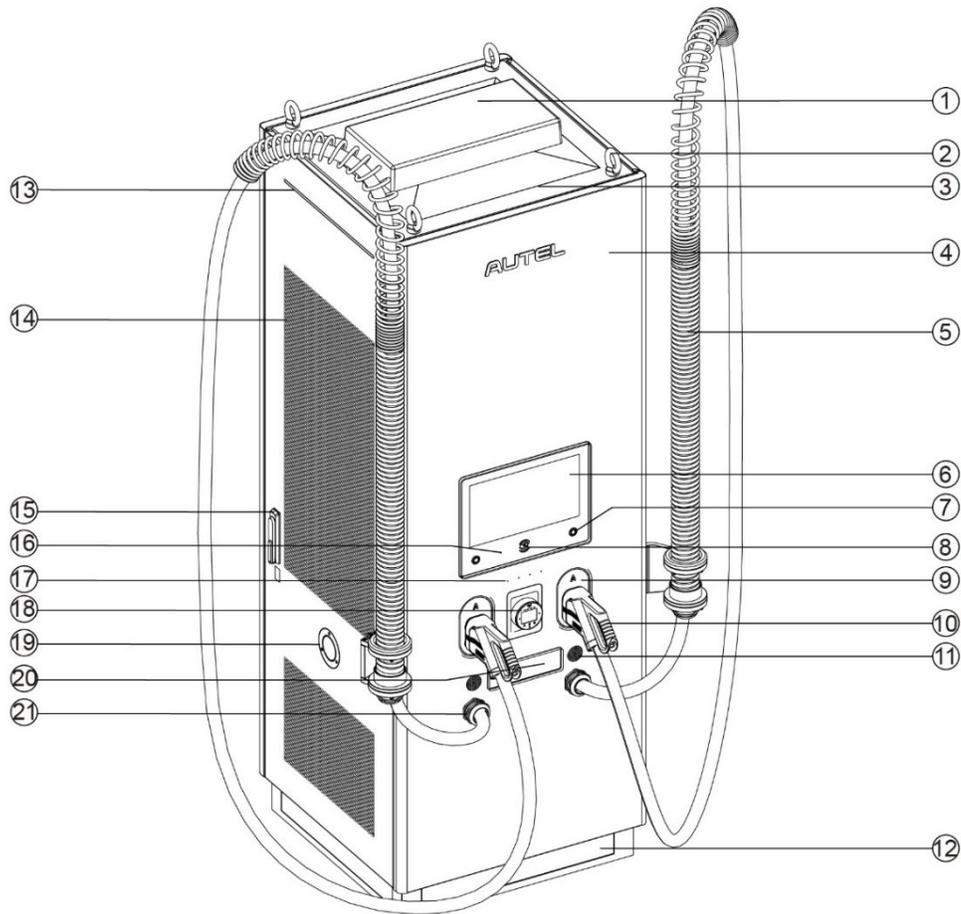
### Overview

This manual describes the spare parts commissioning of the DH240 and DH480. You can follow this manual to check whether the spare parts are installed correctly and the charging station can work properly.

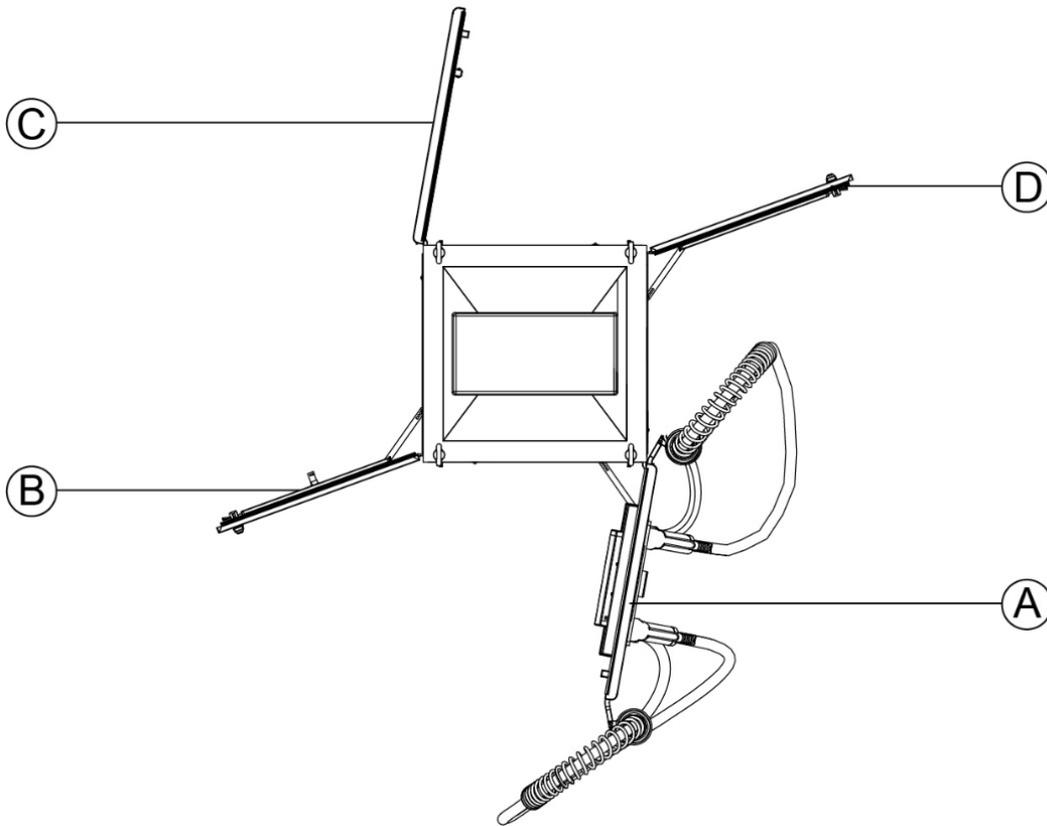
### Preparation

1. Ensure that a qualified electrician is on site to provide technical support.
2. Prepare the following tools for commissioning:
  - Plier
  - Cable Ties
  - Slotted Screwdriver
  - Phillips Screwdriver
  - Open-end Wrench
  - 7mm, 10mm, 16mm, 19mm socket wrench
3. Contact the customer to confirm that the charging station is ready for commissioning.
4. Confirm that the spare parts are already installed.
5. Confirm that no extreme weather condition is expected to occur during commissioning, such as rainstorm, thunderstorm, or strong wind.

# Appearance



- |                             |                                  |
|-----------------------------|----------------------------------|
| <b>1.</b> Antenna           | <b>12.</b> Base                  |
| <b>2.</b> Eye bolt          | <b>13.</b> LED indicator         |
| <b>3.</b> Main cabinet      | <b>14.</b> Vent                  |
| <b>4.</b> Front door        | <b>15.</b> Door lock             |
| <b>5.</b> CMS               | <b>16.</b> Light sensor          |
| <b>6.</b> Touchscreen       | <b>17.</b> Microphone            |
| <b>7.</b> Operation button  | <b>18.</b> POS system            |
| <b>8.</b> RFID reader       | <b>19.</b> Emergency stop button |
| <b>9.</b> Connector socket  | <b>20.</b> Meter                 |
| <b>10.</b> Connector handle | <b>21.</b> Cable fastener        |
| <b>11.</b> Speaker          |                                  |



A: The front door, where the main screen is installed.

B: The door on the left of the front door. Door B is where the emergency button is installed.

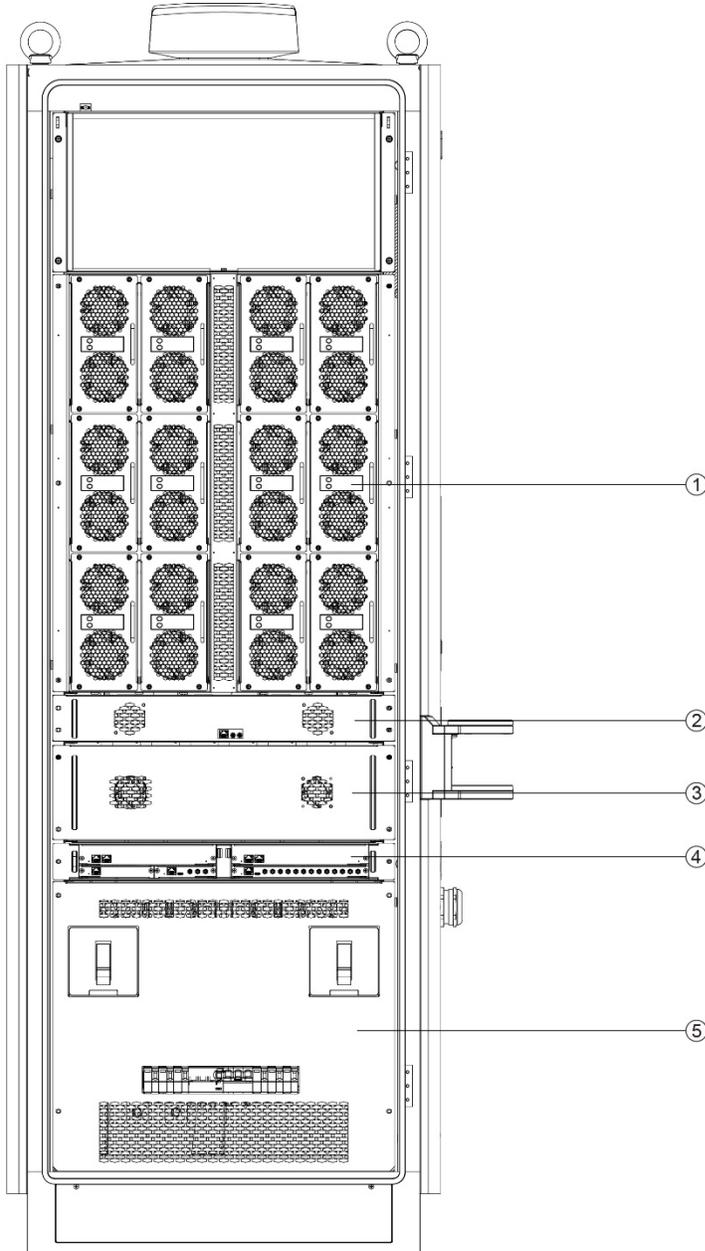
C: The back door, which is opposite of the front door.

D: The door on the right side of the front door.

**Open the doors in the following order: door B, D, and then A, and C.**

**Close the doors in the following order: door A, C, and then B and D.**

*Note: You cannot close door B or D when the door A or C is opened.*



1. Power module
2. Matrix module
3. DC output module
4. Control module
5. AC input module

# Commissioning checklists

Complete the following table before you start commissioning.

Autel DH240/DH480 Spare Part Replacement Commissioning Record			
Charging station SN		Date	
Charger model		Company	
Site owner		Operator (ID)	
Site address		Charging standard (CCS/CHAdeMO)	
Rated power			
Fault description			
Faulty part name			
Number of faulty parts			
Pictures of the faulty parts			

Perform the following operations before you start commissioning:

1. Clear the water or snow on the top of the cabinet to prevent the water or snow from falling into the cabinet after opening the door.
2. Check whether you need to open door A or C for commissioning.  
Do not open door A or C unless it is required for your commissioning operations.

If you need to open door A or C to perform commissioning operations, **open door B and door C first**. After commissioning, make sure that all doors are closed and all screws on the doors are securely tightened.

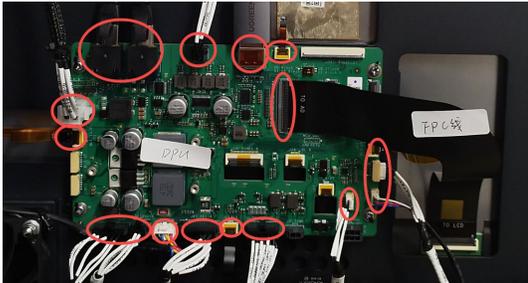


## WARNING

The following procedure introduces you to a potentially hazardous situation which, if not avoided, could result in death or serious injury.

## General checklist

**Power off the charger** before performing the following operations.

Check item	Example	Check result
<p>Installation:</p> <ol style="list-style-type: none"><li>1. Check whether the replaced parts are correctly installed.</li><li>2. Gently shake on the replaced parts to check whether they are securely installed.</li></ol> <p>The SPD and MCB are used as examples.</p>		
<p>Cables and wires:</p> <ol style="list-style-type: none"><li>1. Check whether all cables, terminals, and clips on the replaced parts are securely connected.</li><li>2. Gently shake on the reinstalled structural components to check whether they are secure.</li></ol> <p>The DPU is used as an example.</p>		
<p>Screws and fasteners:</p> <p>Check whether all screws reinstalled during the spare part replacement are tightened and none are missing.</p> <p>The meter is used as an example.</p>		

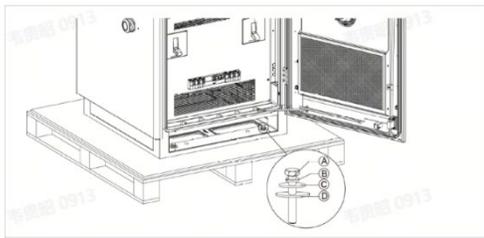


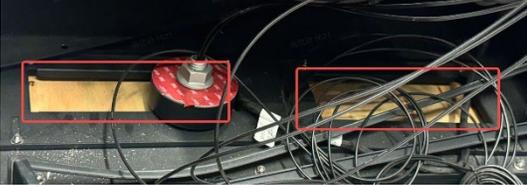
## WARNING

The following procedure introduces you to a potentially hazardous situation which, if not avoided, could result in death or serious injury.

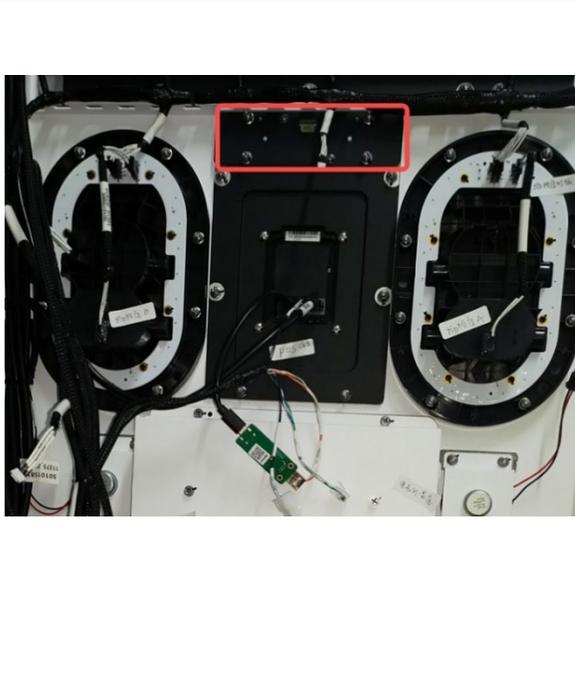
## IP/IK level checklist

Power off the charger before performing the following operations.

Check item	Example	Check result
<p>Door A/C:</p> <ol style="list-style-type: none"><li>1. Open the doors in the following order: door B, D, and then door A and C.</li><li>2. Check whether the following parts inside the door A and C are securely installed: POS, meter panel, speaker, microphone, connector sockets, and cable fastener.</li><li>3. Close the doors in the following order: door A, C, and then B and D.</li></ol> <p><i>Note: You cannot close door B or D when the door A or C is opened.</i></p>		
<p>Cabinet fastening screws:</p> <p>Check the four fastening screws at the bottom of the cabinet:</p> <ol style="list-style-type: none"><li>1. The screws are intact, no damage or deformation exist.</li><li>2. The screws are securely fastened.</li></ol>		

<p>Cabinet inlet and outlet opening: Check the inlet and outlet openings at the bottom of the cabinet:</p> <ol style="list-style-type: none"> <li>1. The inlet and outlet openings are sealed with fireproof mortar.</li> <li>2. The fireproof mortar is intact and undamaged.</li> <li>3. No gaps exist between the fireproof mortar and the wiring harness, or the fireproof mortar and the bottom of the cabinet.</li> </ol>		
<p>Antenna and antenna cover: Check the antenna on the top of the cabinet:</p> <ol style="list-style-type: none"> <li>1. The antenna and antenna cover are securely installed.</li> <li>2. The antenna cover is intact, no damage or deformation exist.</li> <li>3. The screws on the antenna cover are securely fastened.</li> <li>4. No gaps exist between the cabinet and the antenna cover.</li> </ol>		
<p>Cabinet base cover: Check the four base covers on the front, back, left, and right sides of the cabinet:</p> <ol style="list-style-type: none"> <li>1. The base covers are intact, no damage or deformation exist.</li> <li>2. The screws on the base covers are securely fastened.</li> <li>3. No gaps exist between the cabinet and the base cover.</li> </ol>		

<p>Screen:</p> <ol style="list-style-type: none"> <li>1. The screen is securely installed on door A/C.</li> <li>2. The screen is intact, no damage or deformation exist.</li> <li>3. The sealing strip on the screen is intact, and no damage or deformation exist.</li> <li>4. The screws on the screen are securely fastened.</li> <li>5. No gaps exist between the cabinet and the screen.</li> </ol>		
<p>POS:</p> <ol style="list-style-type: none"> <li>1. The POS system is securely installed.</li> <li>2. The POS system is intact, no damage or deformation exist.</li> <li>3. The sealing strip on the POS is intact, and no damage or deformation exist.</li> <li>4. The screws on the POS are securely fastened.</li> <li>5. No gaps exist between the POS and the cabinet.</li> </ol>		
<p>Connector sockets:</p> <ol style="list-style-type: none"> <li>1. The connector sockets are securely installed.</li> <li>2. The connector sockets are intact, no damage or deformation exist.</li> <li>3. The sealing strips on the connector sockets are intact, and no damage or deformation exist.</li> <li>4. The screws on the connector sockets are securely fastened.</li> <li>5. No gaps exist between the connector sockets and the cabinet.</li> </ol>		

<p>Speaker:</p> <ol style="list-style-type: none"> <li>1. The speaker is securely installed.</li> <li>2. The speaker is intact, no damage or deformation exist.</li> <li>3. The sealing strips on the speaker is intact, and no damage or deformation exist.</li> <li>4. The speaker is secured tightly on the cabinet.</li> <li>5. No gaps exist between the speaker and the cabinet.</li> </ol>		
<p>Microphone:</p> <ol style="list-style-type: none"> <li>1. The microphone is securely installed.</li> <li>2. The microphone is intact, no damage or deformation exist.</li> <li>3. The sealing strips on the microphone is intact, and no damage or deformation exist.</li> <li>4. The microphone is secured tightly on the cabinet.</li> <li>5. No gaps exist between the microphone and the cabinet.</li> </ol>		

**Air filter:**

Check the four air filters on the doors B and C.

1. The air filters are securely installed.
2. The air filters are intact, no damage or deformation exist.
3. The air filters are installed all the way inside the vent.
4. The handles on the air filters are displayed outside.
5. The screws that fasten the air filters are securely tightened.



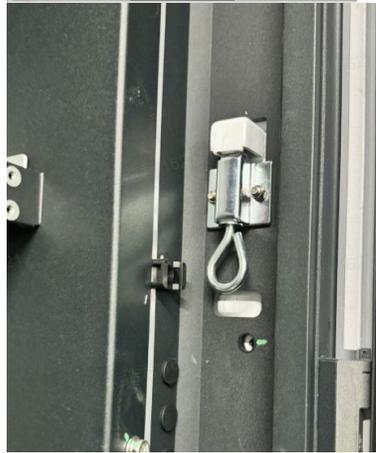
**Emergency stop button:**

1. The emergency stop button is securely installed on door B.
2. The emergency stop button is intact, no damage or deformation exist.
3. The screws on the emergency stop button are securely fastened.
4. The plastic cover of the emergency stop button is securely installed and no damage or deformation exist.



Door A:

1. The door is intact, no damage or deformation exist.
2. The sealing strips on the door is intact, and no damage or deformation exist.
3. The clutch inside the cabinet securely locks the door.
4. The five screws that secures the door A are securely tightened.
5. The two screws that fasten each charging cable are securely tightened.
6. No gaps exist between the door A and the cabinet.



Door C:

1. The door is intact, no damage or deformation exist.
2. The sealing strips on the door is intact, and no damage or deformation exist.
3. (Optional, only for 2 screens version) The latch inside the cabinet securely locks the door.
4. (Optional, only for 2 screens version) The five screws that secures the door C are securely tightened.
5. (Optional) The two screws that fasten each charging cable are securely tightened.
6. No gaps exist between the door C and the cabinet.



Door B:

1. The door is intact, no damage or deformation exist.
2. The sealing strips on the door is intact, and no damage or deformation exist.
3. The door lock securely locks the door.
4. No gaps exist between the door B and the cabinet.



Door D:

1. The door is intact, no damage or deformation exist.
2. The sealing strips on the door is intact, and no damage or deformation exist.
3. The door lock securely locks the door.
4. No gaps exist between the door D and the cabinet.



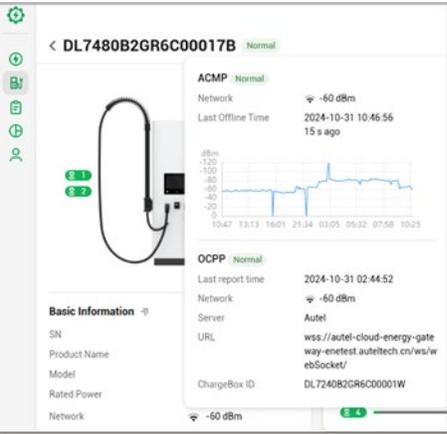


## NOTICE

Make sure that the software of your charging station is updated to the latest version before performing the following operations.

## Function checklist

Close all the doors and power on the charger before performing the following operations.

Check item	Check result																					
<p>1. Signal test: Check SIM card signal: Coverage Strength Level <math>\leq 4</math>. The signal standards are shown in the following table.</p> <table border="1" data-bbox="215 821 738 1094"> <thead> <tr> <th>RSRP(dBm)</th> <th>Coverage Strength Level</th> <th>Note</th> </tr> </thead> <tbody> <tr> <td><math>rx &lt; -105</math></td> <td>Coverage Strength Level 6</td> <td>Poor coverage. Service is almost impossible to initiate.</td> </tr> <tr> <td><math>-105 &lt; rx &lt; -95</math></td> <td>Coverage Strength Level 5</td> <td>Fair coverage. Outdoor voice service can be initiated, but with low call success rate and high call drop rate. Indoor service is almost impossible to initiate.</td> </tr> <tr> <td><math>-95 &lt; rx &lt; -85</math></td> <td>Coverage Strength Level 4</td> <td>Moderate coverage. Various services can be initiated outdoors but the speed of data services is low. Indoor call success rate is low and call drop rate is high.</td> </tr> <tr> <td><math>-85 &lt; rx &lt; -75</math></td> <td>Coverage Strength Level 3</td> <td>Good coverage. Various services can be initiated outdoors and the speed of data services is medium. Indoor service can be initiated, but the speed of data services is low.</td> </tr> <tr> <td><math>-75 &lt; rx &lt; -65</math></td> <td>Coverage Strength Level 2</td> <td>Strong coverage. Various services can be initiated outdoors and the speed of data services is high. Indoor service can be initiated and the speed of data services is medium.</td> </tr> <tr> <td><math>rx &gt; -65</math></td> <td>Coverage Strength Level 1</td> <td>Excellent coverage.</td> </tr> </tbody> </table> <p>Wi-Fi signal is commonly measured by using the Received Signal Strength Indicator (RSSI). It is recommended to use Wi-Fi with a signal strength greater than -70 dBm.  RSSI <math>\geq -50</math> dBm: Excellent signal strength  -50 dBm <math>&gt;</math> RSSI <math>\geq -60</math> dBm: Good signal strength  -60 dBm <math>&gt;</math> RSSI <math>\geq -70</math> dBm: Fair signal strength  RSSI <math>&lt; -70</math> dBm: Poor signal strength</p> <p>Example:</p> 	RSRP(dBm)	Coverage Strength Level	Note	$rx < -105$	Coverage Strength Level 6	Poor coverage. Service is almost impossible to initiate.	$-105 < rx < -95$	Coverage Strength Level 5	Fair coverage. Outdoor voice service can be initiated, but with low call success rate and high call drop rate. Indoor service is almost impossible to initiate.	$-95 < rx < -85$	Coverage Strength Level 4	Moderate coverage. Various services can be initiated outdoors but the speed of data services is low. Indoor call success rate is low and call drop rate is high.	$-85 < rx < -75$	Coverage Strength Level 3	Good coverage. Various services can be initiated outdoors and the speed of data services is medium. Indoor service can be initiated, but the speed of data services is low.	$-75 < rx < -65$	Coverage Strength Level 2	Strong coverage. Various services can be initiated outdoors and the speed of data services is high. Indoor service can be initiated and the speed of data services is medium.	$rx > -65$	Coverage Strength Level 1	Excellent coverage.	
RSRP(dBm)	Coverage Strength Level	Note																				
$rx < -105$	Coverage Strength Level 6	Poor coverage. Service is almost impossible to initiate.																				
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$-75 < rx < -65$	Coverage Strength Level 2	Strong coverage. Various services can be initiated outdoors and the speed of data services is high. Indoor service can be initiated and the speed of data services is medium.																				
$rx > -65$	Coverage Strength Level 1	Excellent coverage.																				

2. Network connection test:

- Internet is connected.
- The APN: Username, Password, MCC, MNC (optional) are correct.

Example:



3. Payment test:

- (Optional) Test the credit card payment.
- Test the RFID card payment.
- Test the scanning QR code payment.

Example:

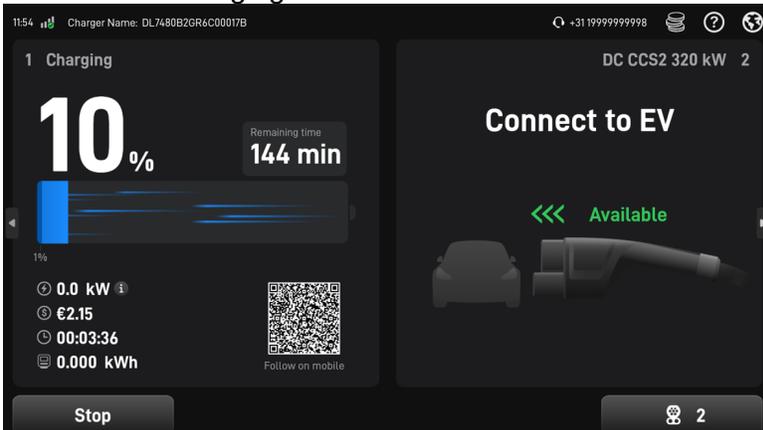


4. Charging session test:

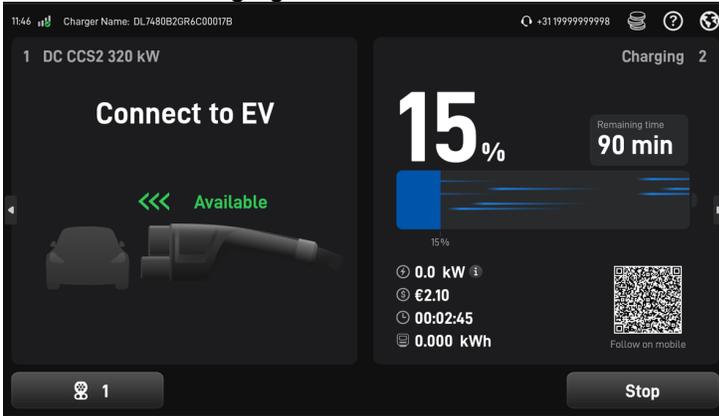
- Connector A charge test.
- Connector B charge test.
- Connector C charge test. (Optional, only for 4 connectors version)
- Connector D charge test. (Optional, only for 4 connectors version)
- Charging test of connectors A and B charging at the same time.
- Charging test of connectors C and D charging at the same time. (Optional, only for 4 connectors version)

Example:

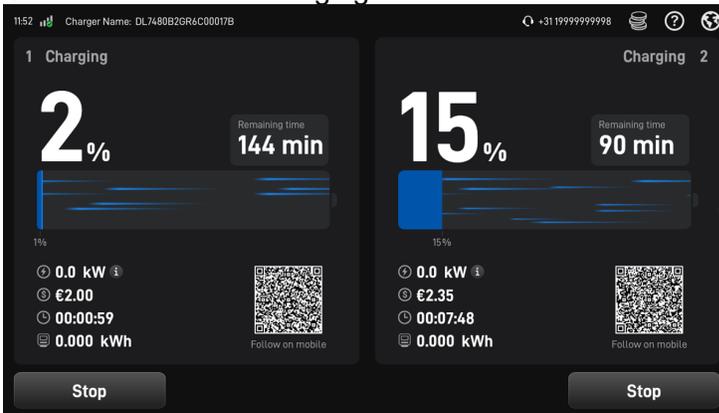
Connector A charging test



### Connector B charging test



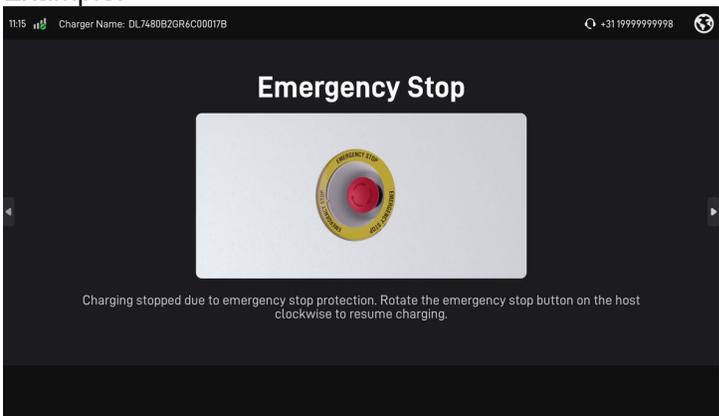
### Connector A and B charging test



### 5. Emergency stop button test:

Press the emergency stop button to test the function (Optional). Then recover it.

Example:



## What to do next

Perform corresponding tests and verifications on previously faulty parts to confirm that the faults have been resolved after the replacement.

**AUTEL**

[www.autelenergy.com](http://www.autelenergy.com)