C&I Sigen Inverter & Sigen Battery Energy Storage Maintenance Guide



Version: 04

Release date: 2026-02-04

Copyright Notice

Copyright© 2026 Sigenergy Technology Co., Ltd. All Rights Reserved.

Description in this document may contain predictive statements regarding financial and operating results, product portfolio, new technology, configurations and features of product. Several factors could cause difference between actual results and those expressed or implied in the predictive statements. Therefore, description in this document is provided for reference purpose only and constitutes neither an offer nor an acceptance. Sigenergy Technology Co., Ltd. may change the information at any time without notice.

SIGENERGY and other Sigenergy trademarks are owned by Sigenergy Technology Co., Ltd.
All trademarks and registered trademarks in this document belong to their owners.

Website | LinkedIn | YouTube

www.sigenergy.com

Contents

Revision History **5**
Overview **7**
Chapter 1 Safety Precautions **8**
Chapter 2 Tool preparation **9**
Chapter 3 Label Description **10**
Chapter 4 List of Serviceable Components and Quick Guide **11**
Chapter 5 System power off **13**
5.1 Parameter setting before power-off 13
5.2 Power-Off Procedure 13
Chapter 6 Replacement or Capacity Expansion Operations **16**
6.1 Component Handling 16
6.1.1 Inverter cooling fan replacement 16
6.1.2 SigenStack BC cooling fan replacement 21
6.1.3 SigenStack BAT cooling fan replacement 23
6.1.4 SigenStack BMU Replacement 25
6.2 Parts Handling 28
6.2.1 Handling Steps Overview 28
6.2.2 SigenStack BC Handling 29
6.2.3 SigenStack Cover Handling 31
6.2.4 SigenStack BAT Handling 31
6.2.5 SigenStack Base Handling 34
Chapter 7 System power on **40**
7.1 Power-On Procedure 40
7.2 Parameter setting after power-on 41
7.2.1 SigenStack BC Replacement and SigenStack BAT Replacement 41
7.2.2 SigenStack BAT Capacity Expansion 41
7.2.3 Other Scenarios 42
Chapter 8 Routine Maintenance **43**
8.1 System Maintenance 43
8.2 Test terminal check 44

8.2.1 Test terminal overview 45
8.2.2 Test terminal connection 46
Chapter 9 DC switch reset and switch-on operations **47**
Chapter 10 Appendix **49**
10.1 Alarm reference 49

Revision History

Version	Date	Description
04	2026.02.04	Newly Added Chapter 4 List of Serviceable Components and Quick Guide Newly Added 5.1 Parameter setting before power-off Newly Added 6.1.4 SigenStack BMU Replacement Newly Added 6.2.1 Handling Steps Overview Newly Added 6.2.2 SigenStack BC Handling Newly Added 6.2.3 SigenStack Cover Handling Newly Added 6.2.4 SigenStack BAT Cooling Fan Replacement 6.2.5 SigenStack Base Replacement Newly Added 7.2 Parameter setting after power-on Newly Added Chapter 8 Routine Maintenance Updated 8.2 Test terminal check Updated Chapter 9 DC switch reset and switch-on operations
03	2026.01.19	Updated 2.1 System power off Updated 2.2 Inverter cooling fan replacement Newly Added 2.3 BC cooling fan replacement Newly Added 2.4 Pack cooling fan replacement Updated 2.5 System power on Updated 3.2 DC switch reset and switch-on operations

Version	Date	Description
02	2025.01.22	Updated 3.1 Test terminal check Updated 3.2 DC switch reset and switch-on operations
01	2024.12.27	First official release.

Overview

Introduction

This document mainly introduces the maintenance of the C&I Sigen Inverter & Sigen Battery Energy Storage Series devices.

Readers

This document is suitable for professionals.

Sign Definition

The following signs may be used in the document to indicate security precautions or key information. Before installation, operation, and maintenance of the equipment, familiarize yourself with signs and their definitions.

Signs	Definition
Danger	Danger. Failure to comply will result in death or serious personal injury.
Warning	Warning. Failure to comply will result in serious personal injury or property damage.
Caution	Caution. Failure to comply will result in property damage.
Tips	Important or key information, and supplementary operation tips.

Chapter 1 Safety Precautions

Basic Information

Before installation, operation, and maintenance of the equipment, familiarize yourself with this document.

The "Danger ", "Warning", "Caution" items described in this manual are only supplementary to all precautions.

Danger

Do not perform operations on the equipment with power on. Before operation, please make sure all power supplies to the equipment have been disconnected, including but not limited to the grid side, inverter and diesel generator power switches.

Caution

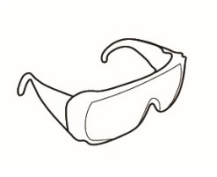
- Trained or experienced electrical personnel are required to operate the equipment.
- Operators should be familiar with national/regional laws, regulations and standards, the structure and working principle of relevant systems.
- Please read carefully the operating requirements and precautions in this document and "*Important Notice*" before operating. Failure to do so may result in damage to the equipment that is not covered by the warranty.
- According to the packing list, check whether the components are complete and in good appearance. If any abnormality occurs, contact your sales agent in time.
- Check personal protective equipment and installation tools to ensure that they are complete; If not, please make them up.
- Please read the label instructions on the equipment carefully before operation.

Chapter 2 Tool preparation

Protective equipment



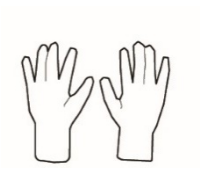
Safety hat



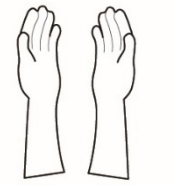
Safety glasses



Dust mask



Protective gloves



Insulating gloves

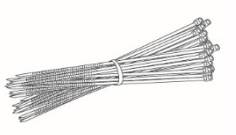


Insulating shoes

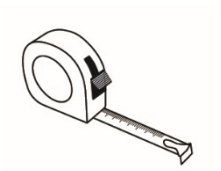
Installation tool



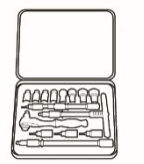
Scissors



Cable tie



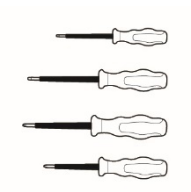
Tape measure



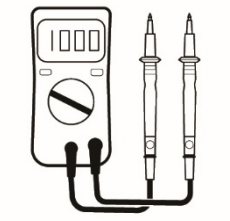
Insulation sleeve set



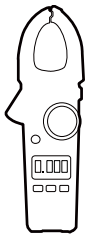
Torque socket wrench



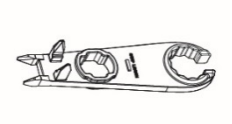
Insulation screwdriver set (head diameter ≤ 4 mm)



Multimeter



Clamp meter



Open-end wrench

Chapter 3 Label Description

Symbols	Definition
	Danger! High Voltage High voltage exists inside the equipment when powered on. Do not open the casing when the equipment is running. Any maintenance or servicing operations must be performed by trained and skilled electrical engineers.
	Warning! Life at risk. The equipment has potential hazards after running. Take proper protection when operating the equipment.
	After the equipment is powered off, the discharge of internal components is delayed. Please wait for the corresponding time until the equipment is fully discharged according to the label time.
	Warning! Risk of burns. The surface of the heat dissipation area is hot when the equipment is running. Do not touch it to avoid burns.
	Please refer to the instructions to operate the equipment.
	Earthing mark

Chapter 4 List of Serviceable Components and Quick Guide

Item	Description
Inverter Cooling Fan Replacement	1. System power off 2. Inverter cooling fan replacement 3. System power on
SigenStack BC Cooling Fan Replacement	1. System power off 2. SigenStack BC cooling fan replacement 3. System power on
SigenStack BAT Cooling Fan Replacement	1. System power off 2. SigenStack BAT cooling fan replacement 3. System power on
SigenStack BMU Replacement	1. System power off 2. SigenStack BMU Replacement 3. System power on
SigenStack BC Handling	1. System power off 2. SigenStack BC Handling 3. System power on 4. Parameter setting after power-on
SigenStack Cover Handling	1. System power off 2. SigenStack Cover Handling

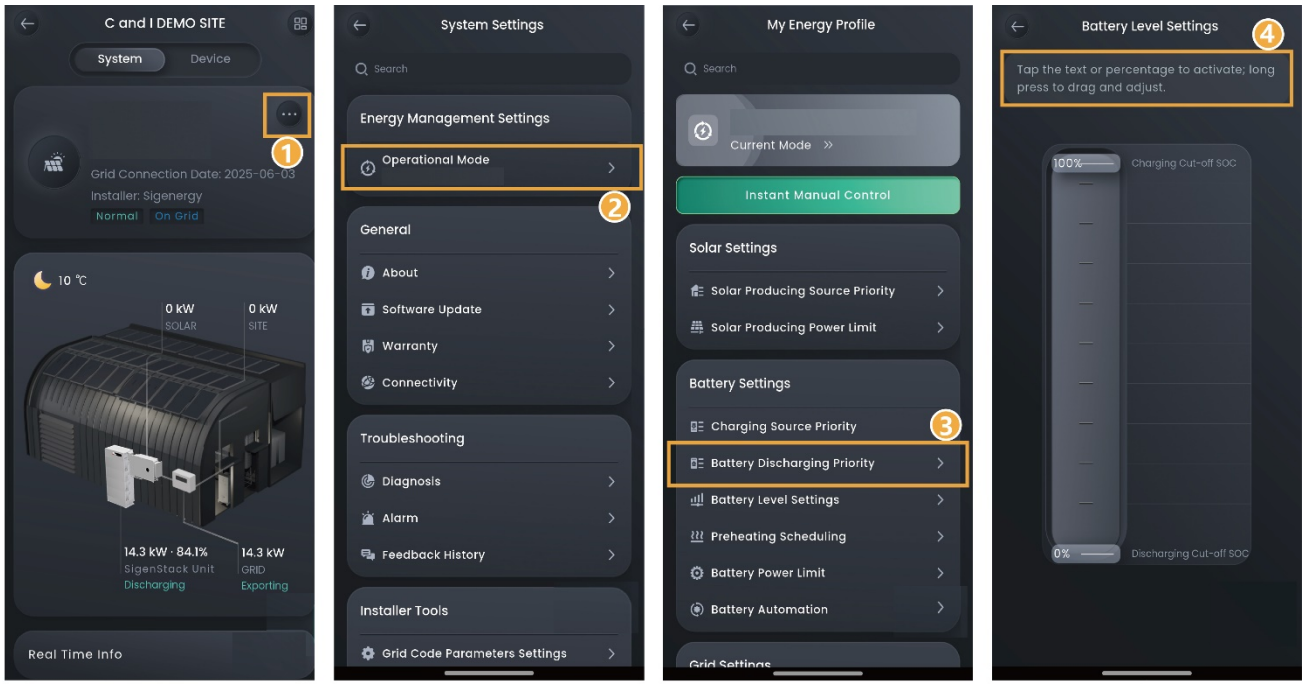
Item	Description
	3. System power on
SigenStack BAT Handling	1. Parameter setting before power-off 2. System power off 3. SigenStack BC Replacement and SigenStack BAT Replacement 4. System power on 5. Parameter setting after power-on
SigenStack Base Handling	1. System power off 2. SigenStack Base Handling 3. System power on

Chapter 5 System power off

5.1 Parameter setting before power-off

For SigenStack BAT replacement or capacity expansion, set the power station target SOC to 40%. For other scenarios, ignore this chapter.

- If the current SOC is above 40%, set the discharge cut-off SOC to 40%.
- If the current SOC is below 40%, set the charge cut-off SOC to 40%. Use the EMS for power scheduling until the SOC of all battery units reaches 40%.



MSA1CM00111

5.2 Power-Off Procedure

Danger

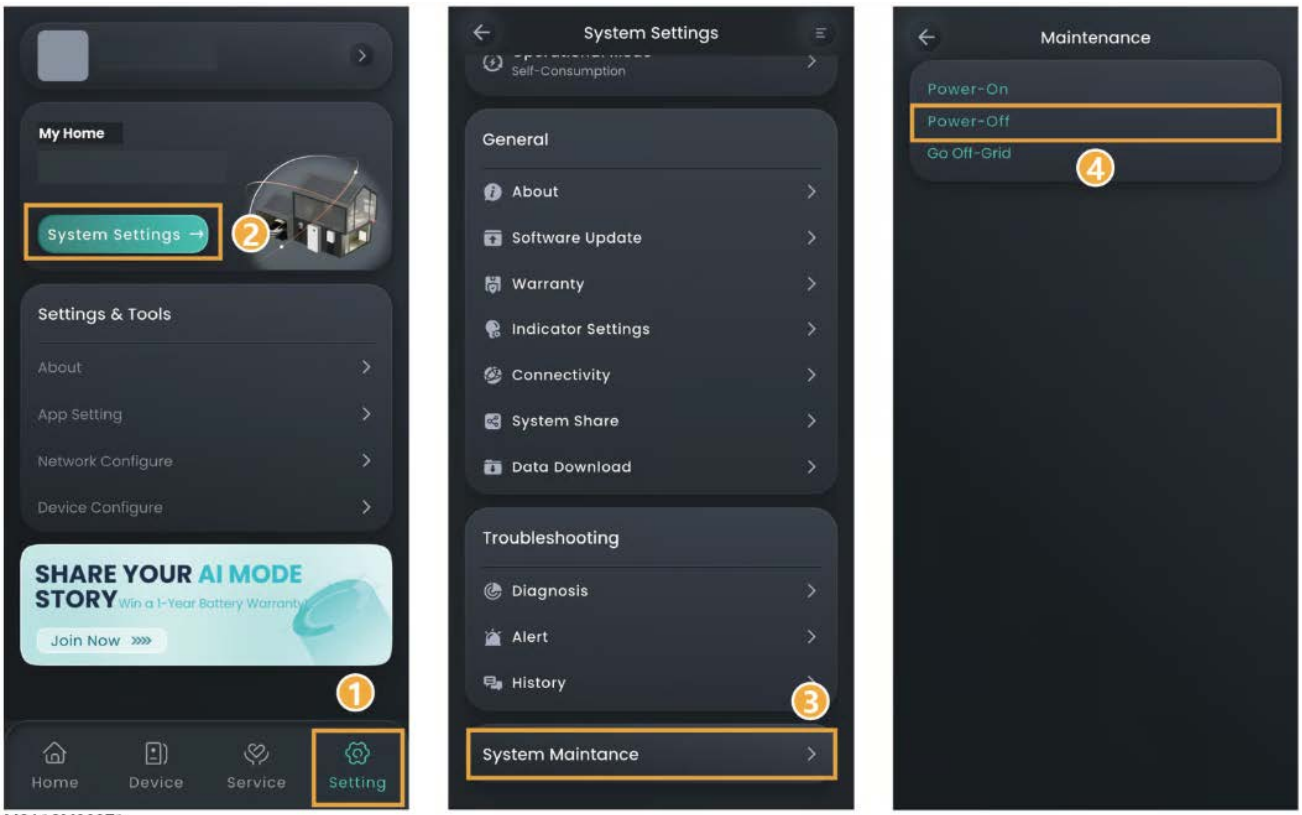
High Voltage, Danger:

- When operating the device, please wear protective gear such as insulating gloves, insulating shoes, and a safety helmet. Do not wear conductive ornaments such as metal bracelets, rings, or necklaces.
- When troubleshooting or replacing the inverter or external strings, to avoid the risk

of personal injury and device damage, even if the DC switch is turned off, use a clamp meter set to the DC position to measure the string current before disconnecting the PV terminals. Confirm that there is no current before quickly disconnecting or connecting the terminals to complete the operation.

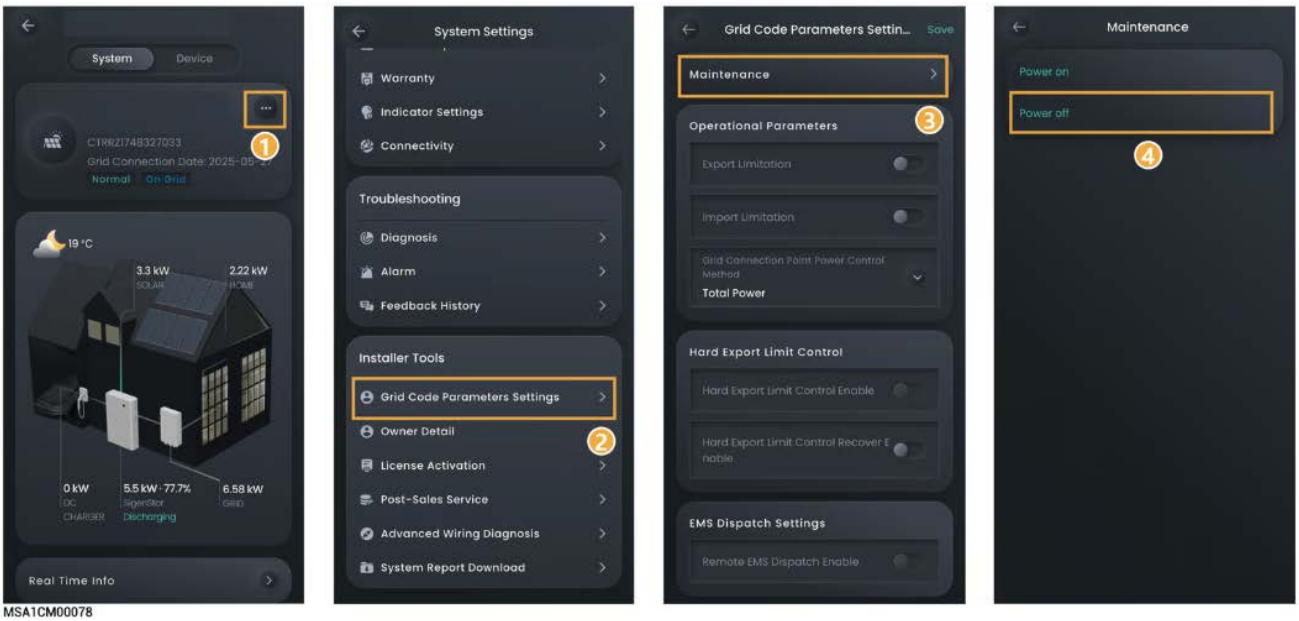
1. Send a shutdown command via the App.

Owner account



MSA1CM00071

Installer account



MSA1CM00078

2. Disconnect the switch connected to the device in the backup power distribution unit.

3. Use a clamp meter set to the DC position to measure the DC current of each input string of the inverter.

- If the current is ≤ 0.01 A, proceed to the next step.
- If the current is > 0.01 A, wait until the PV string current drops below 0.01 A, then proceed to the next step.

4. Open the maintenance compartment door and use a multimeter to measure the voltage of the AC terminal block to ground to ensure that the AC side of the inverter is powered off.

5. Rotate all “DC SWITCH” knobs on the inverter to the “OFF” position.

6. After the LED indicators on the inverter and BC/BC-BST are all off, refer to the delay label on the device and wait for the specified time before setting the isolation switch of the BC/BC-BST to the OFF position.

Warning

After powering off, residual current and heat remain in the device. Operating immediately after powering off may cause electric shocks and burns.

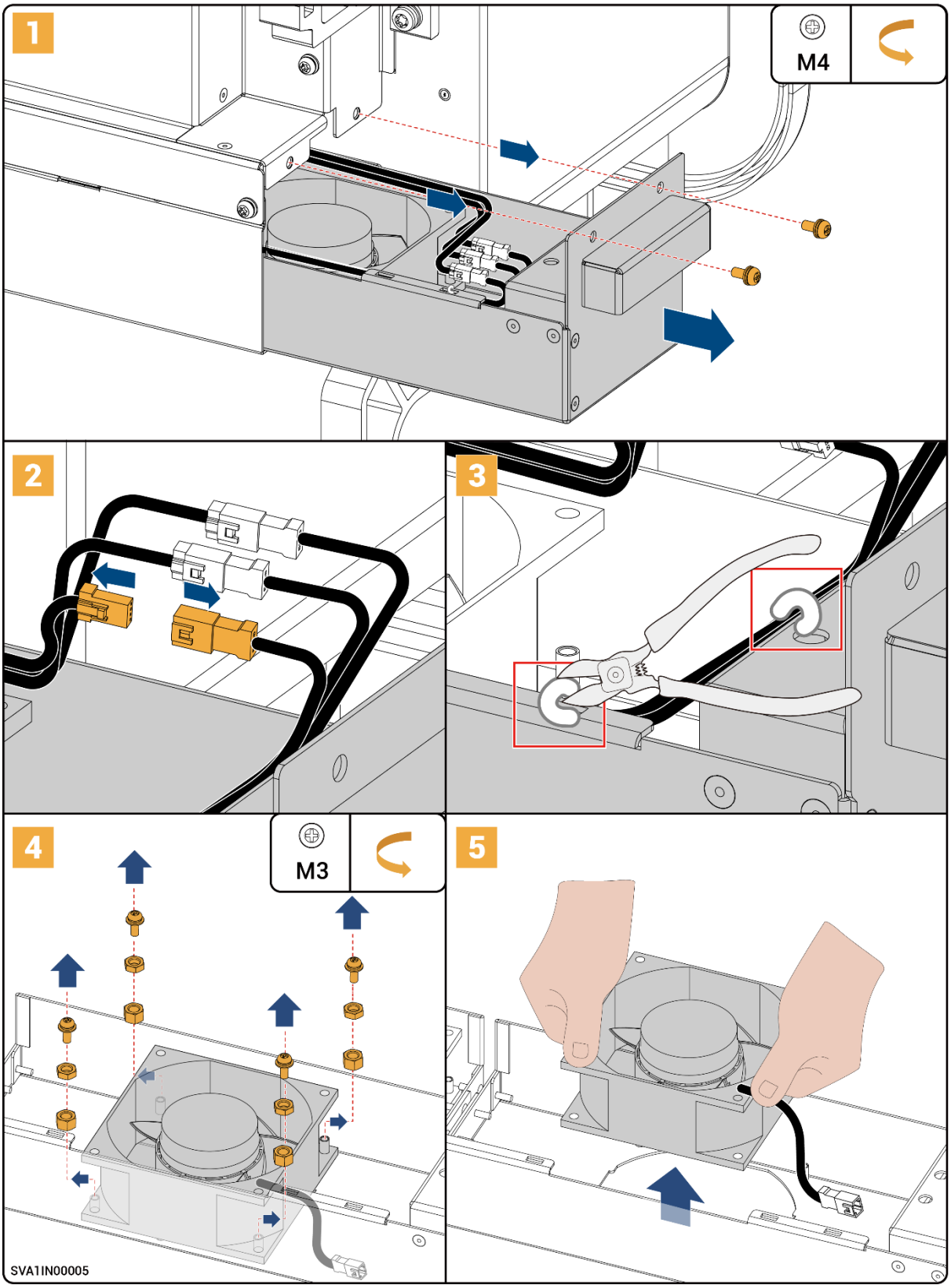
Chapter 6 Replacement or Capacity Expansion Operations

6.1 Component Handling

6.1.1 Inverter cooling fan replacement

> **Tips**
>
> The compatible cooling fans vary by inverter model; please refer to the actual components during on-site installation.

6.1.1.1 Inverter cooling fan removal

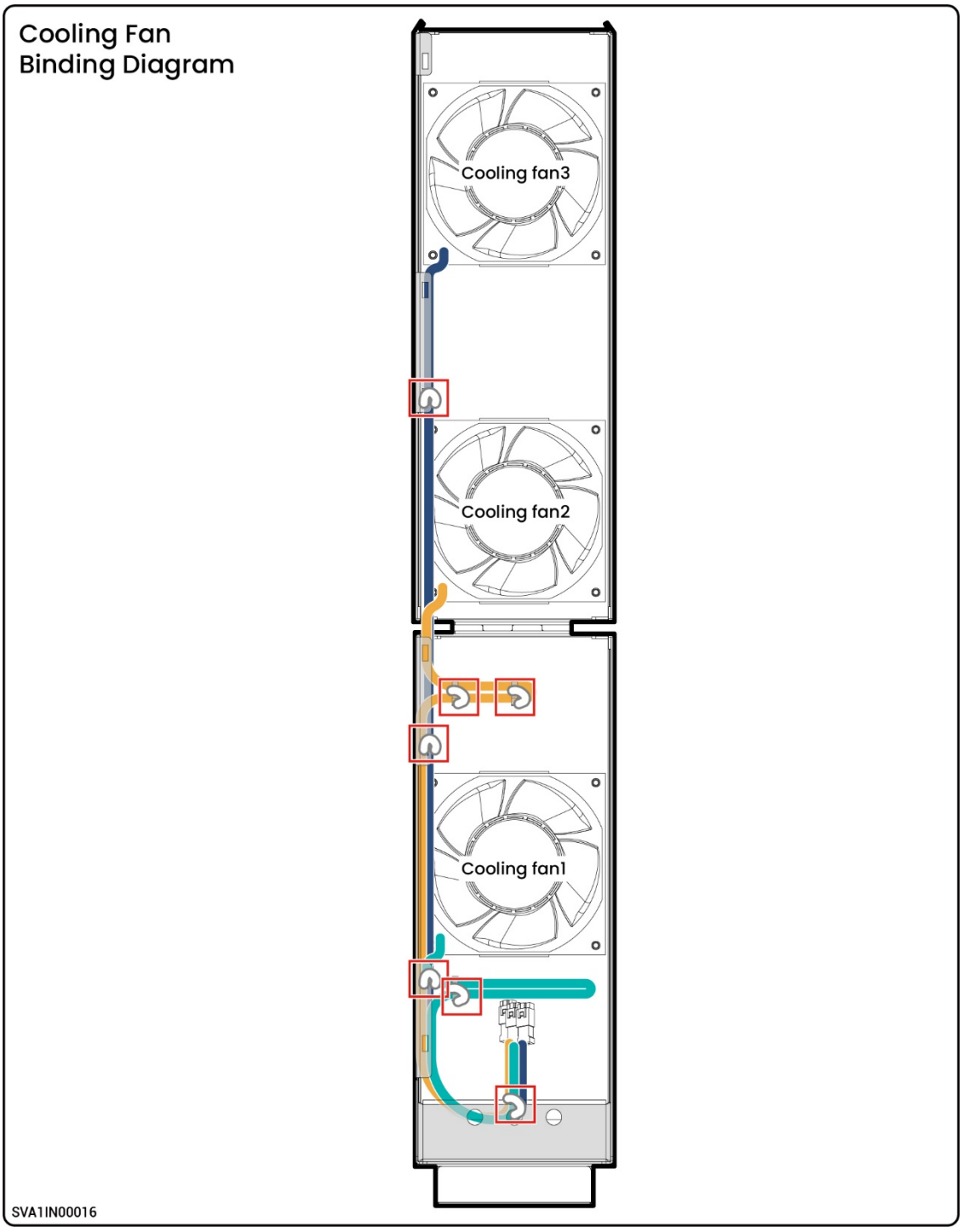


6.1.1.2 Inverter cooling fan installation

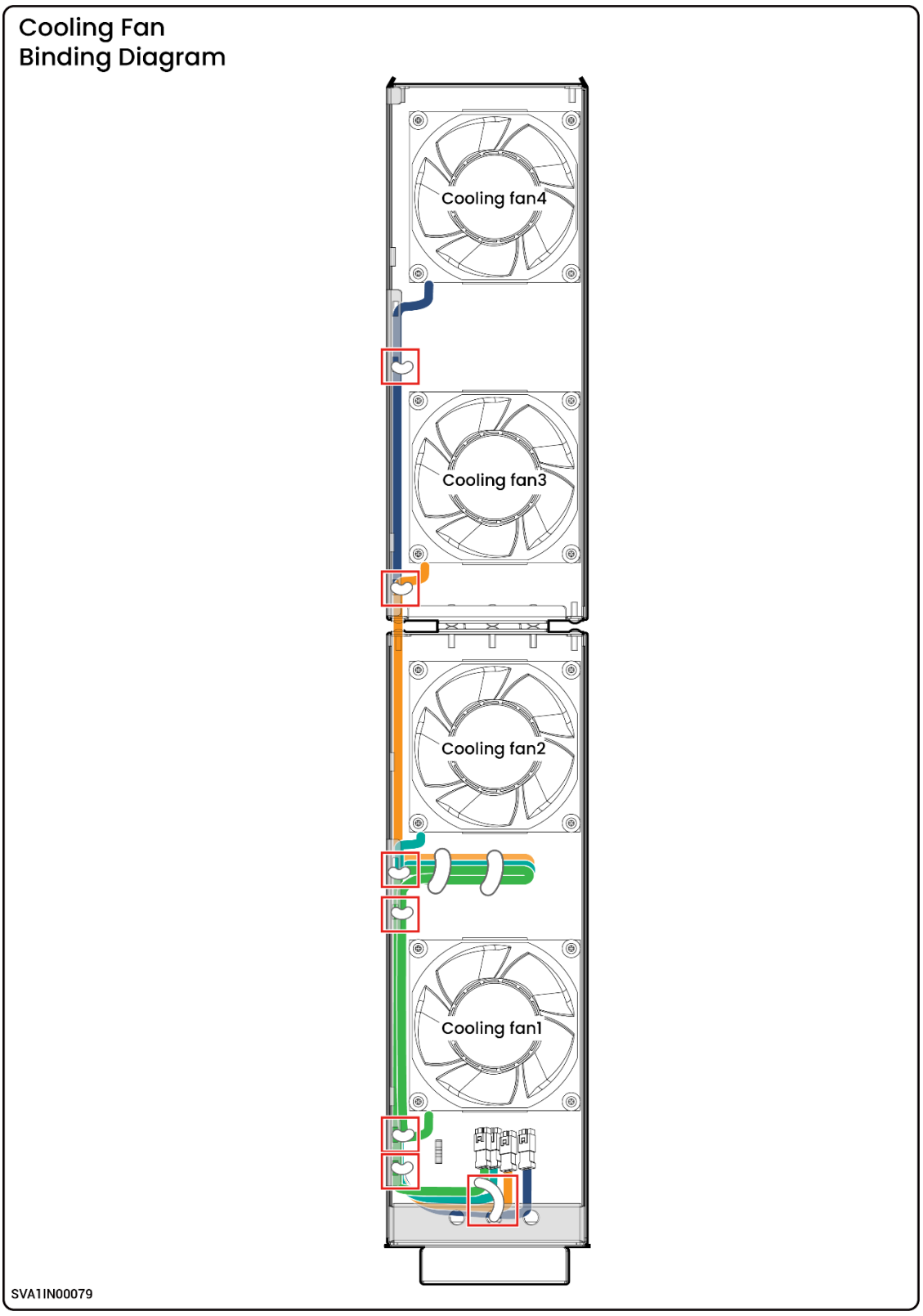
Tips

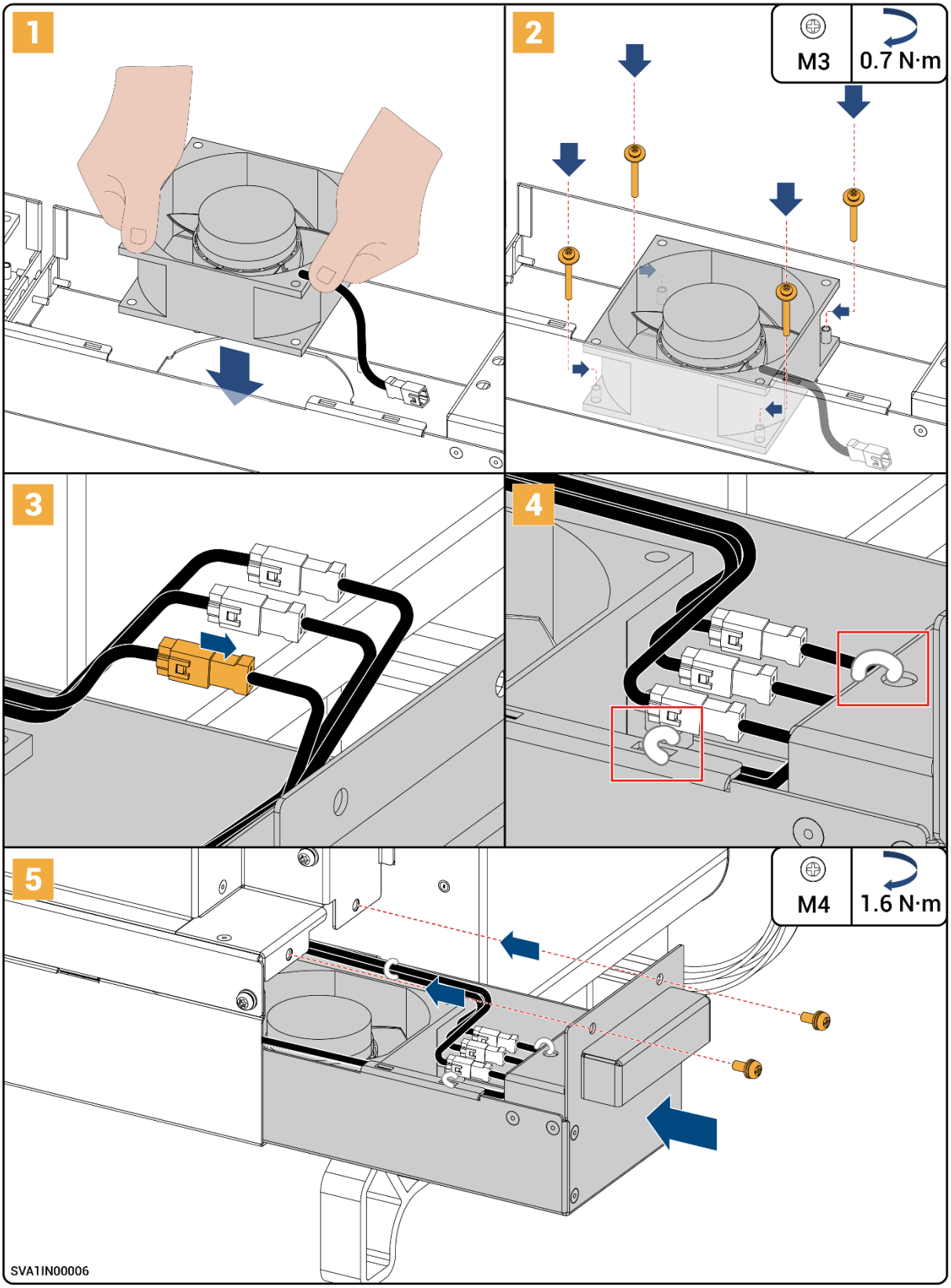
The cooling fan cable must not be placed on top of the fan and must be secured at the tie points as shown in the illustration.

Type A:



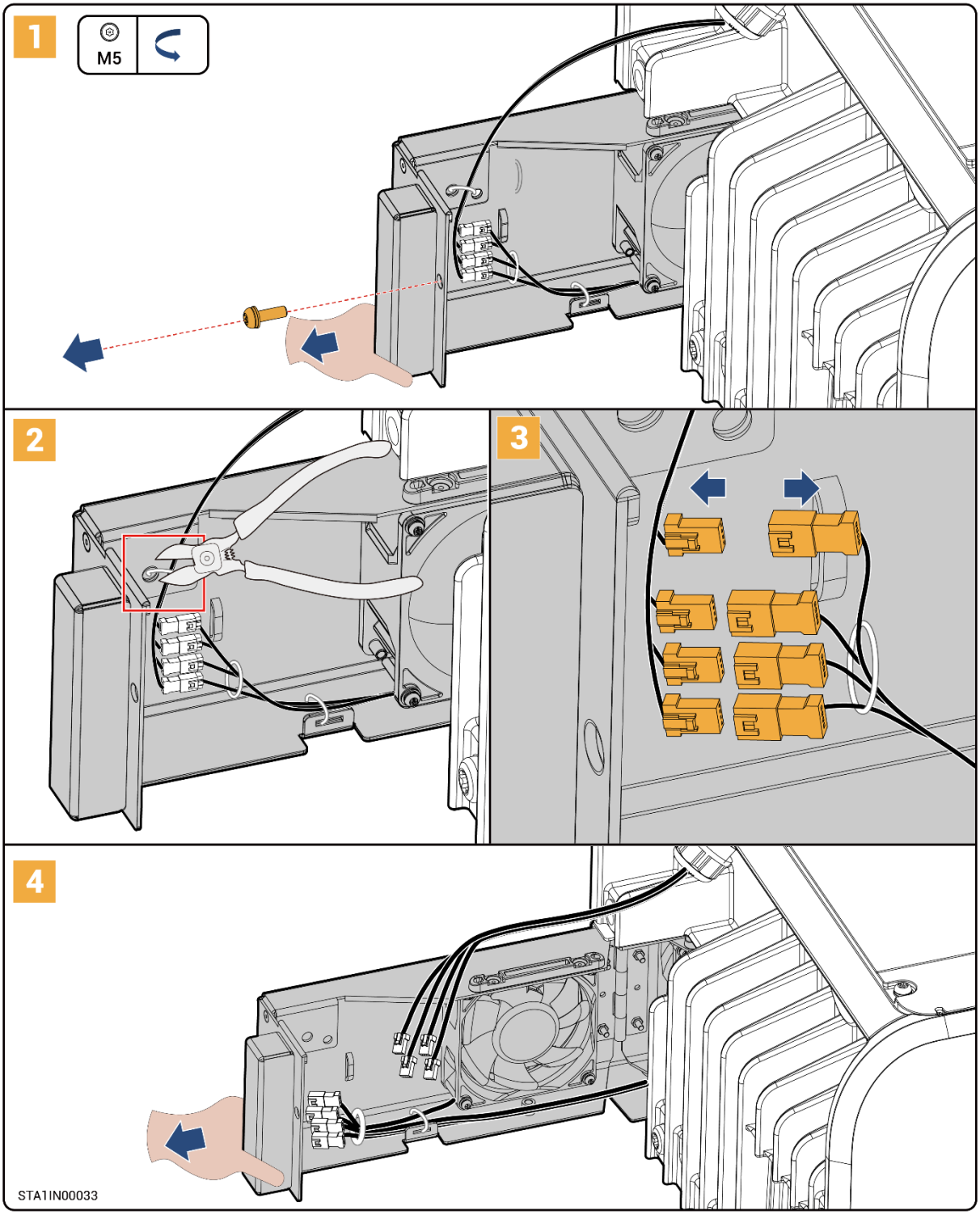
Type B:


Cooling Fan
Binding Diagram
Cooling fan4
Cooling fan3
Cooling fan2
Cooling fan1
SVA1IN00079

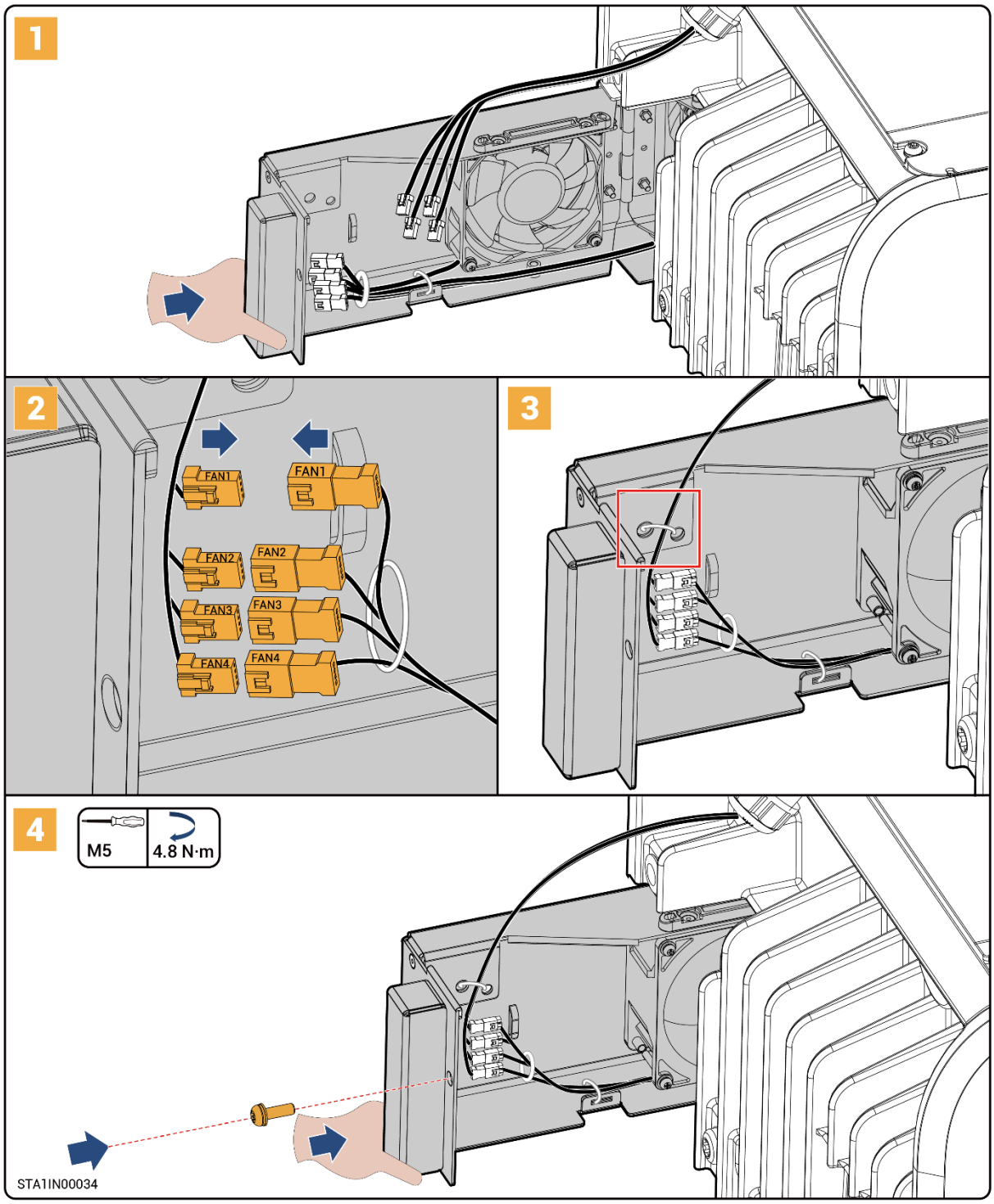

1
2
M3
0.7 N·m
3
4
5
M4
1.6 N·m
SVA1IN00006

6.1.2 SigenStack BC cooling fan replacement

6.1.2.1 SigenStack BC cooling fan removal

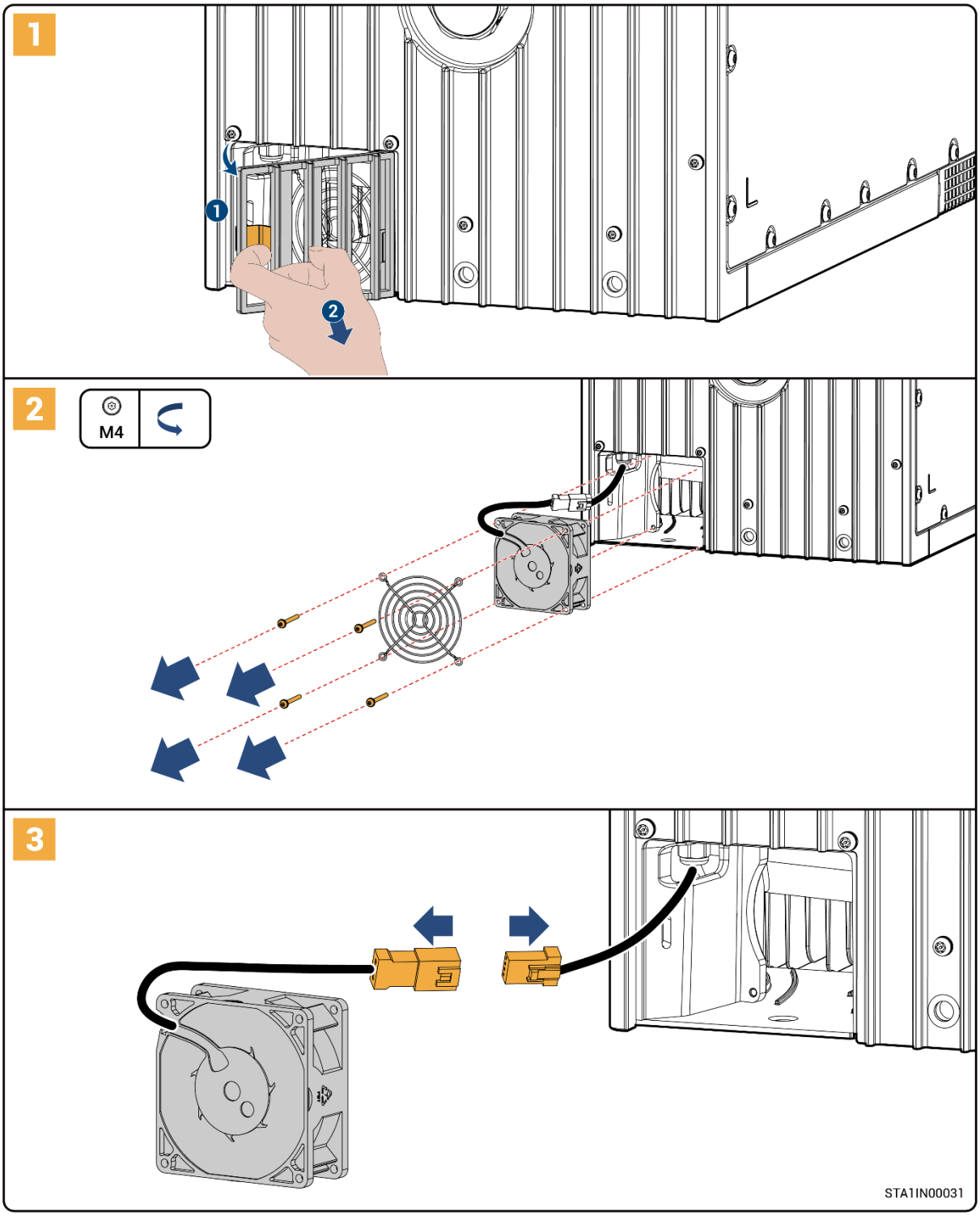


6.1.2.2 SigenStack BC cooling fan installation

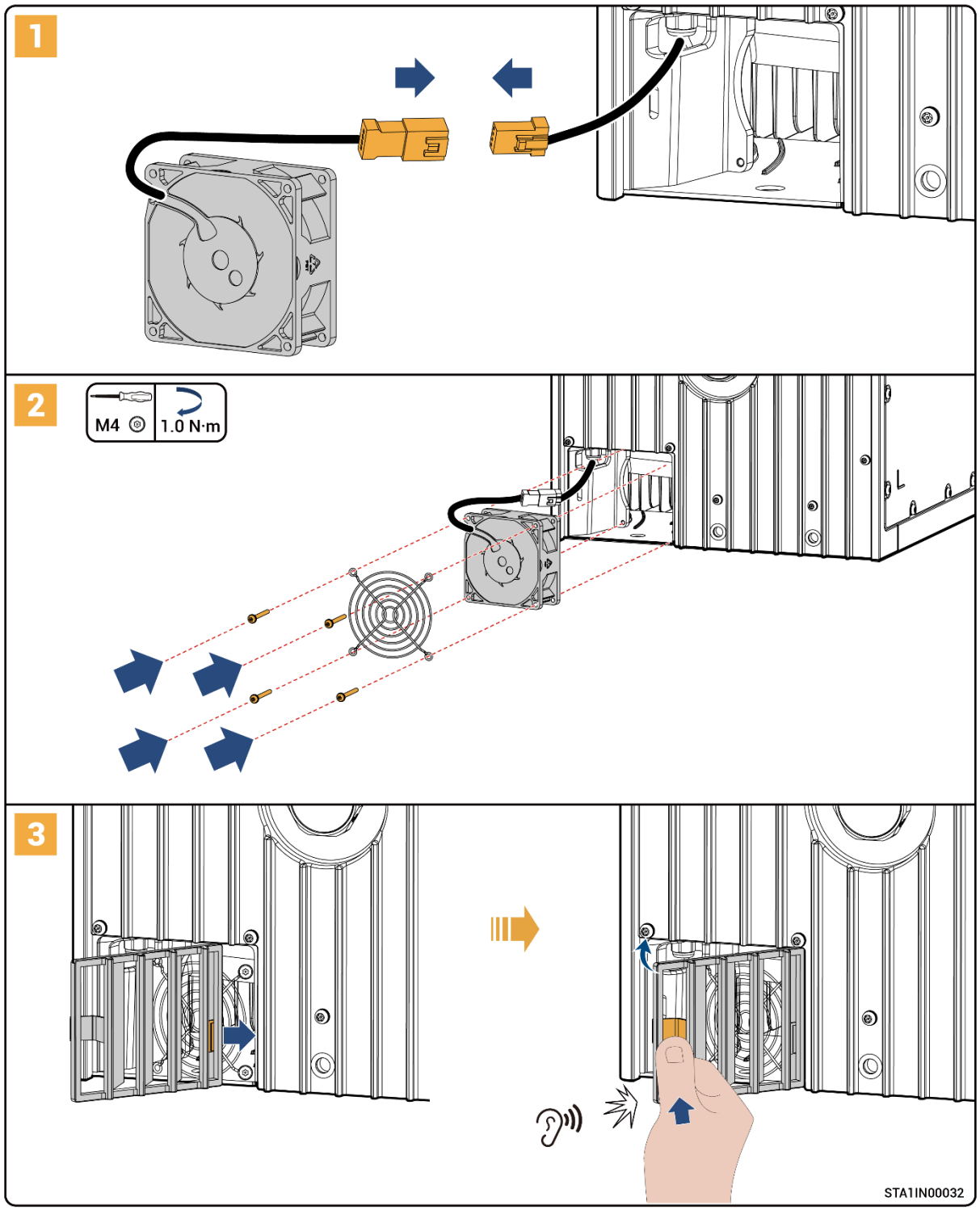


6.1.3 SigenStack BAT cooling fan replacement

6.1.3.1 SigenStack BAT cooling fan removal



6.1.3.2 SigenStack BAT cooling fan installation



6.1.4 SigenStack BMU Replacement

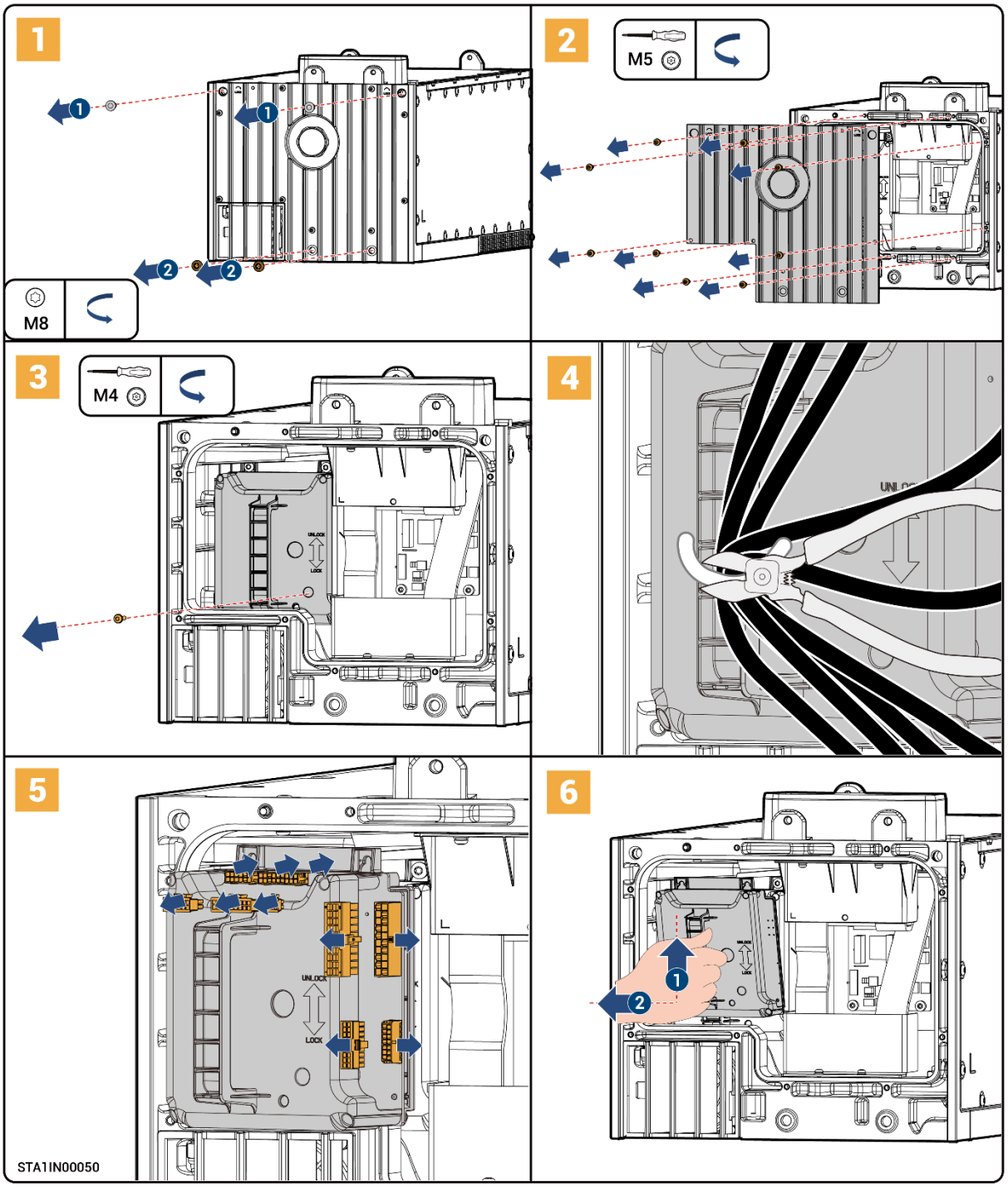
Danger

Wear insulating gloves before operation.

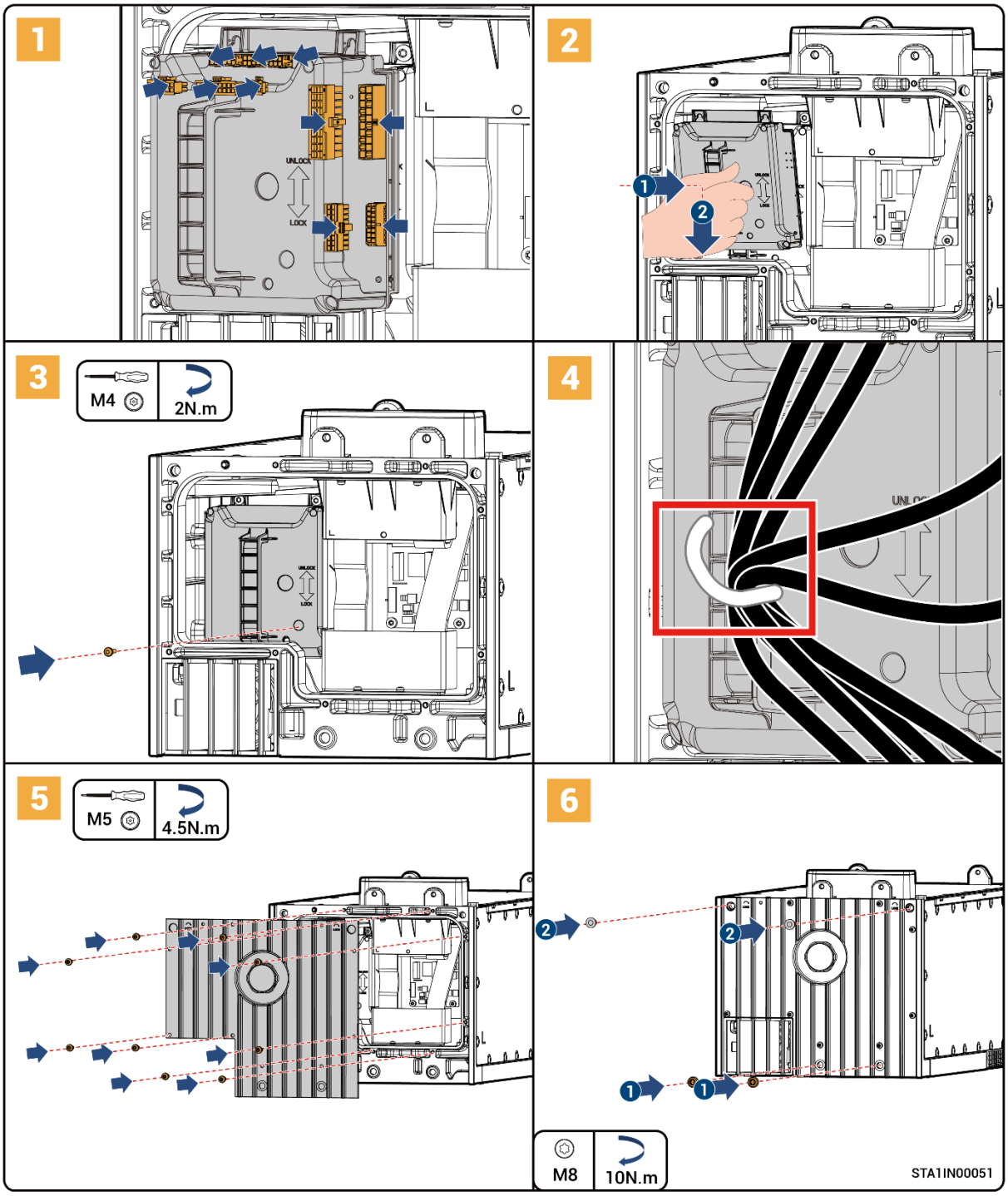
6.1.4.1 SigenStack BMU Removal

Tips

Remove the SigenStack BAT fastener (if any) before removing the SigenStack BMU.



6.1.4.2 SigenStack BMU Installation



Tips

Secure the SigenStack BAT fastener (if any) after installing the SigenStack BMU.

6.2 Parts Handling

Tips

indicates loosening screws to remove a part; indicates tightening screws to secure a part. The following instructions use part removal as an example.

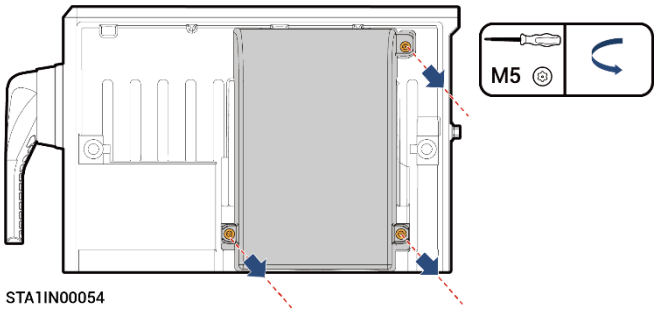
During onsite installation, follow the actual conditions.

6.2.1 Handling Steps Overview

Component Operation Item		Steps
SigenStack BC Replacement		6.2.2 SigenStack BC Handling
SigenStack BAT replacement and capacity expansion	Main Stack	1. 6.2.2 SigenStack BC Handling 2. 6.2.4 SigenStack BAT Handling
	Sub Stack	1. 6.2.3 SigenStack Cover Handling 2. 6.2.4 SigenStack BAT Handling
SigenStack Base Replacement	Main Stack	1. 6.2.2 SigenStack BC Handling 2. 6.2.4 SigenStack BAT Handling 3. 6.2.5 SigenStack Base Handling
	Sub Stack	1. 6.2.3 SigenStack Cover Handling 2. 6.2.4 SigenStack BAT Handling 3. 6.2.5 SigenStack Base Handling

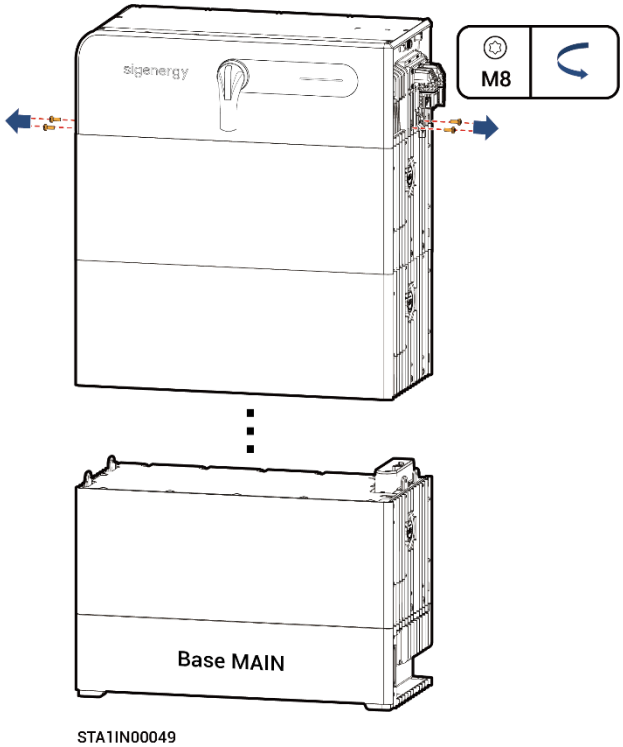
6.2.2 SigenStack BC Handling

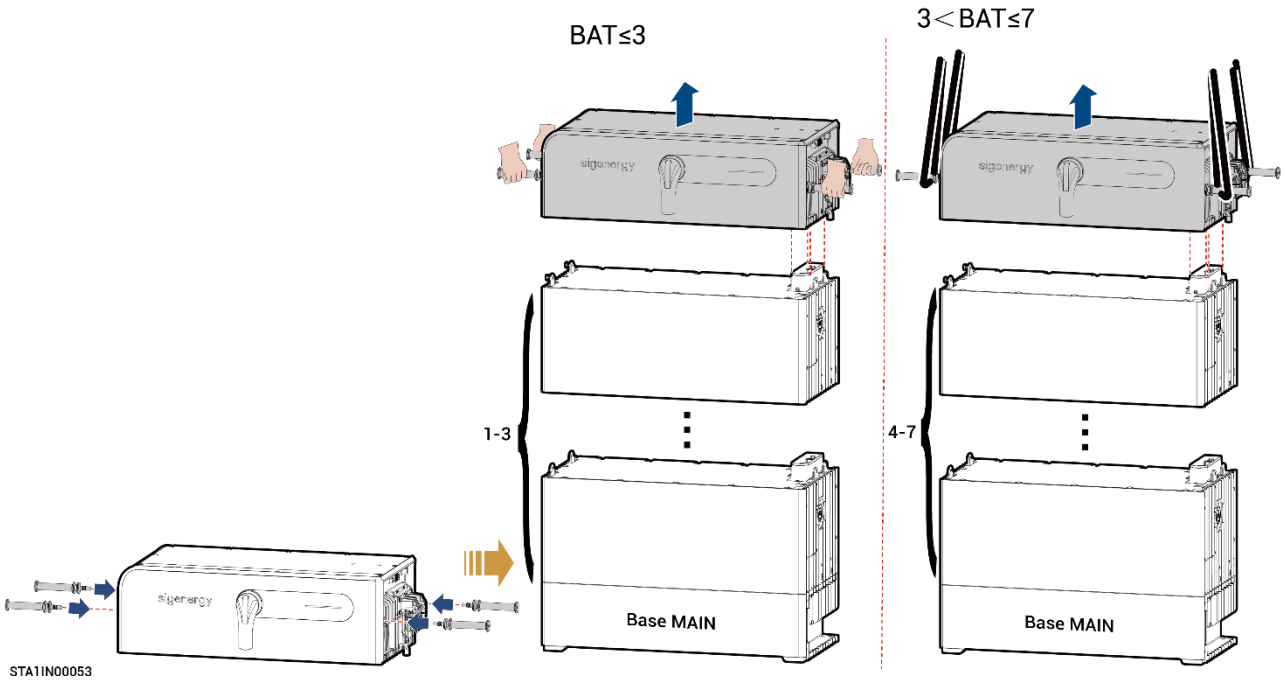
1. Remove the BC-BST/BC protective cover.



2. (Optional) If replacing with a new SigenStack BC, disconnect the BC-BST/BC signal cables and BC-BST/BC DC cables according to the cable labels. Otherwise, no action is required.

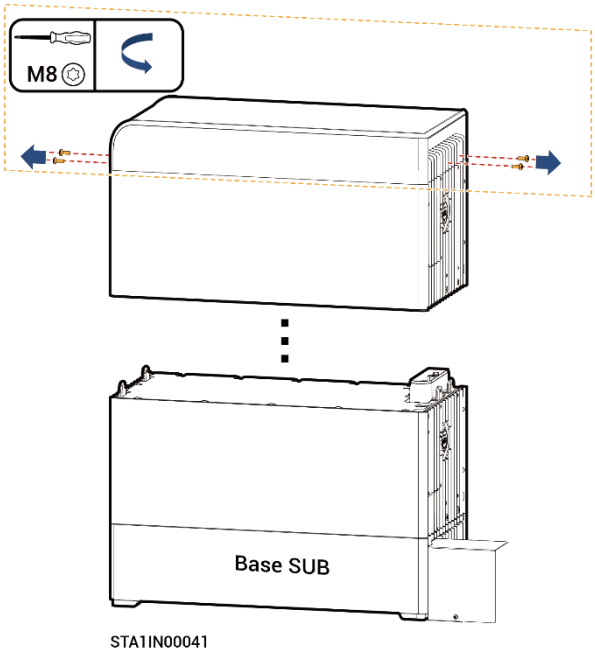
3. Remove the cascade screws.





To install the SigenStack BC, follow the reverse steps or refer to the "SigenStack Energy Storage System Installation Guide" for installation.

6.2.3 SigenStack Cover Handling



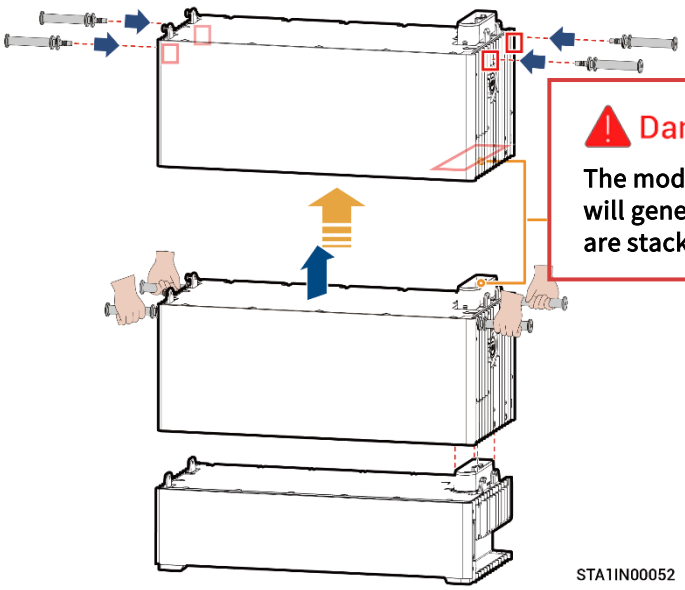
To install the SigenStack Cover, follow the reverse steps or refer to the "SigenStack Energy Storage System Installation Guide" for installation.

6.2.4 SigenStack BAT Handling

Tips

Remove the cascade screws and fasteners (if any) before removing the SigenStack BAT.

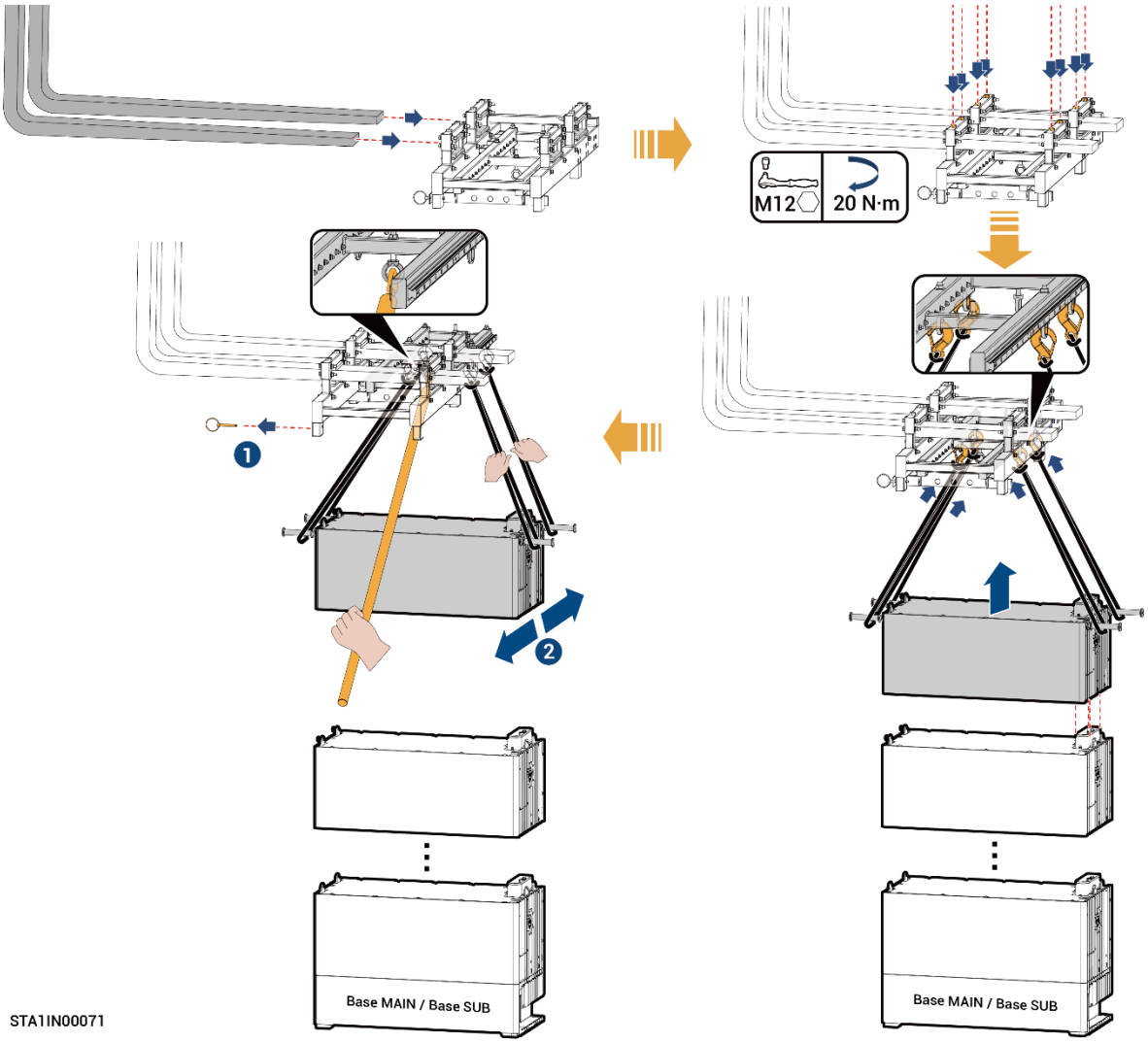
- BAT≤3



Danger

The module blind mate connector of the battery pack will generate high voltage after multiple battery packs are stacked. Do not touch it.

- 3＜BAT≤7



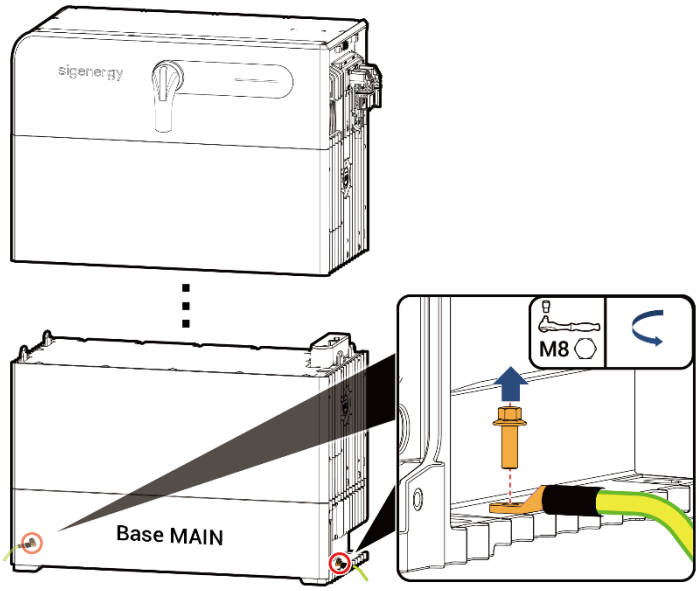
To install the SigenStack BAT, follow the reverse steps or refer to the "SigenStack Energy Storage System Installation Guide" for installation.

6.2.5 SigenStack Base Handling

Tips

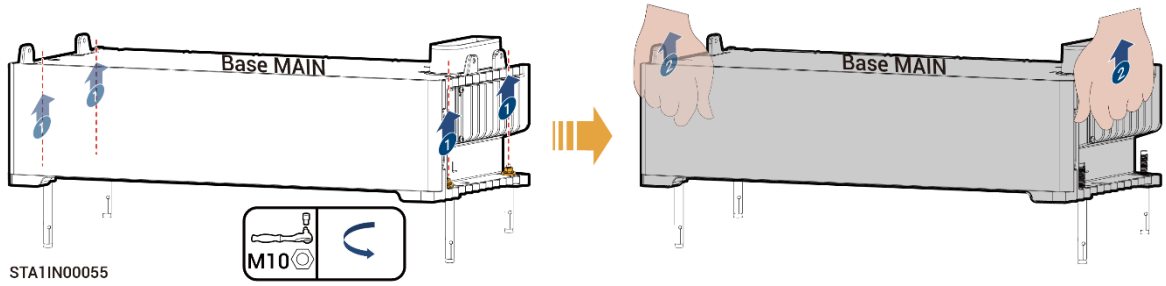
Disconnect the grounding cable(s) from Base MAIN before removing the SigenStack Base.

Base MAIN may have either one or two grounding points. If your device has two grounding points, disconnect both grounding cables.



STA1IN00064

6.2.5.1 Main Stack

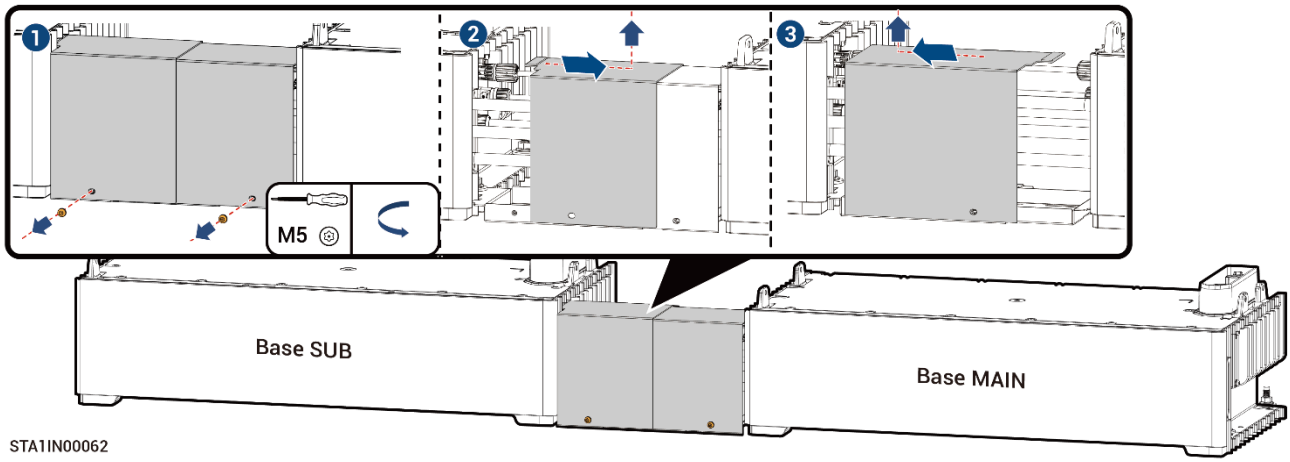


STA1IN00055

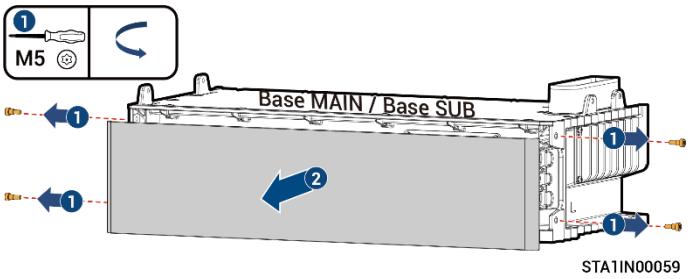
6.2.5.2 Sub Stack

Appearance 1:

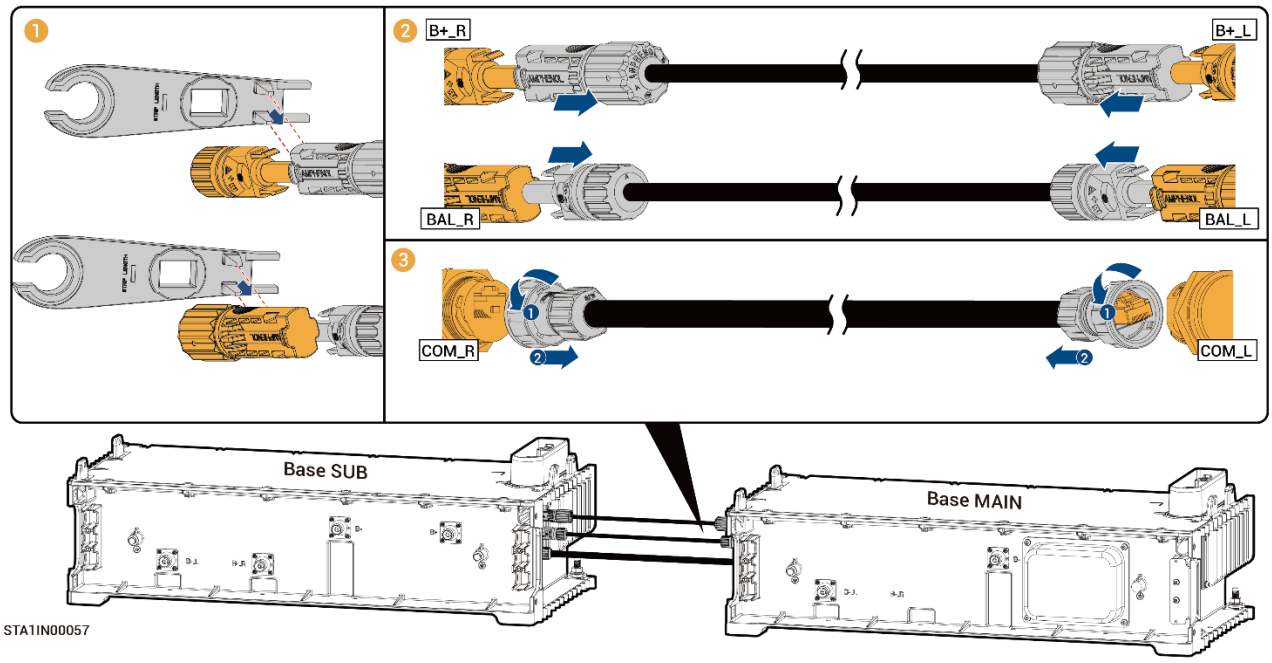
1. Remove the wire protective box.



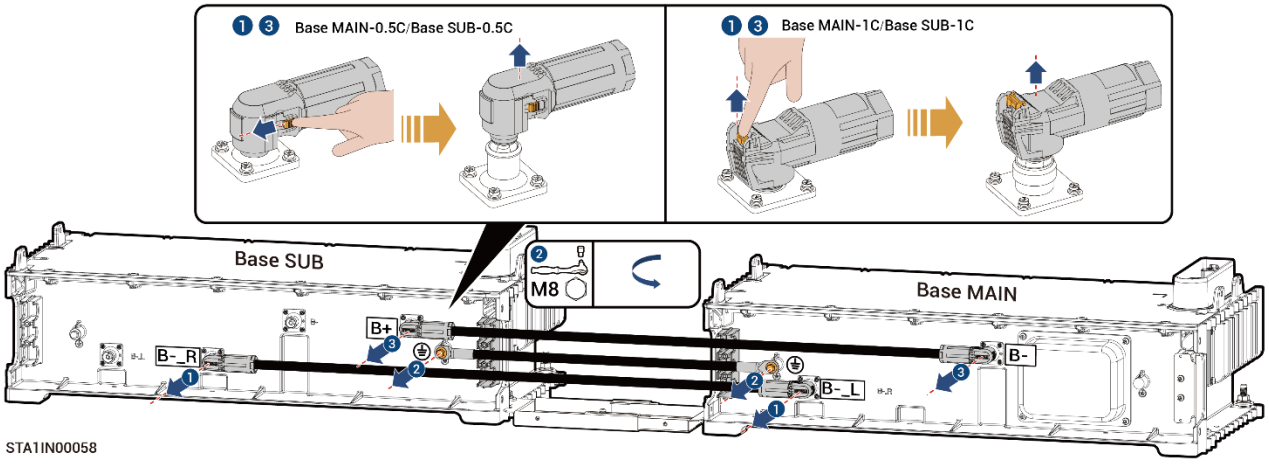
2. Remove the front panel.



3. Disconnect the cables.

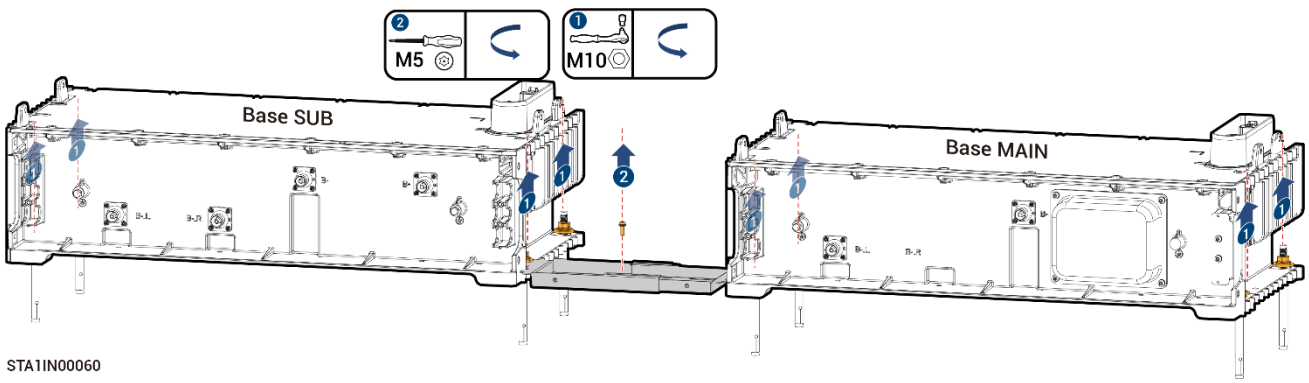


STA1IN00057



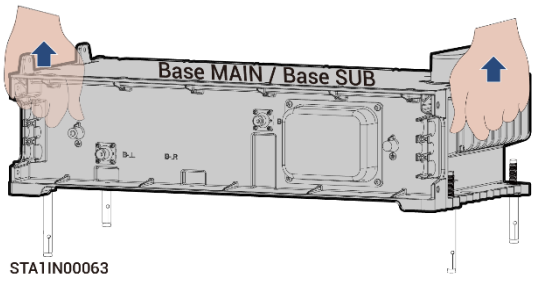
STA1IN00058

4. Remove the bottom plate of the wire protective box.



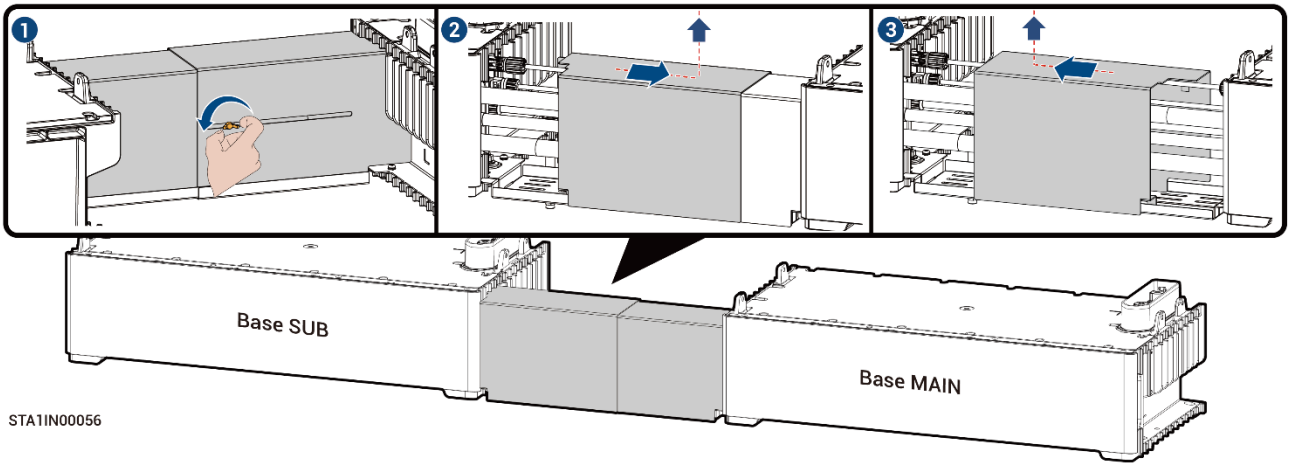
STA1IN00060

5. Remove the SigenStack Base.

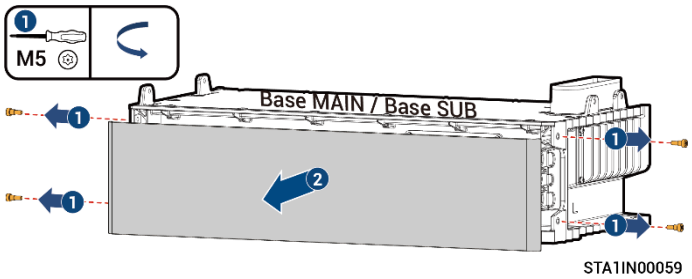


Appearance 2:

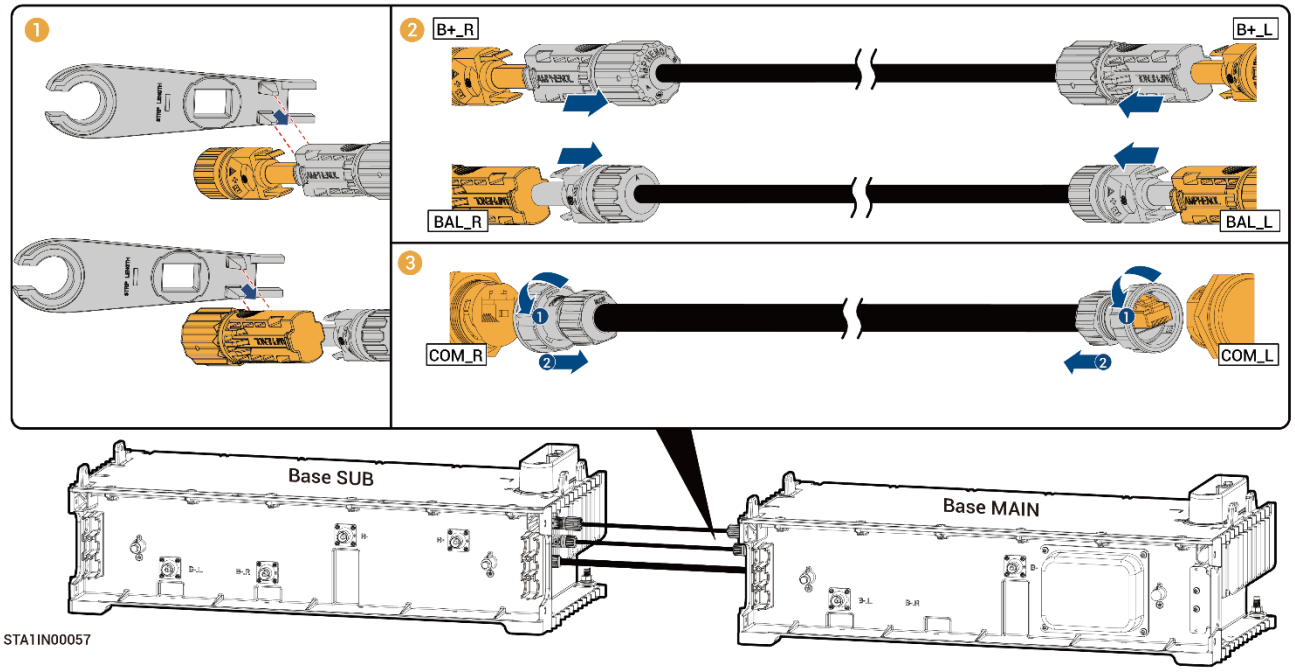
1. Remove the wire protective box.



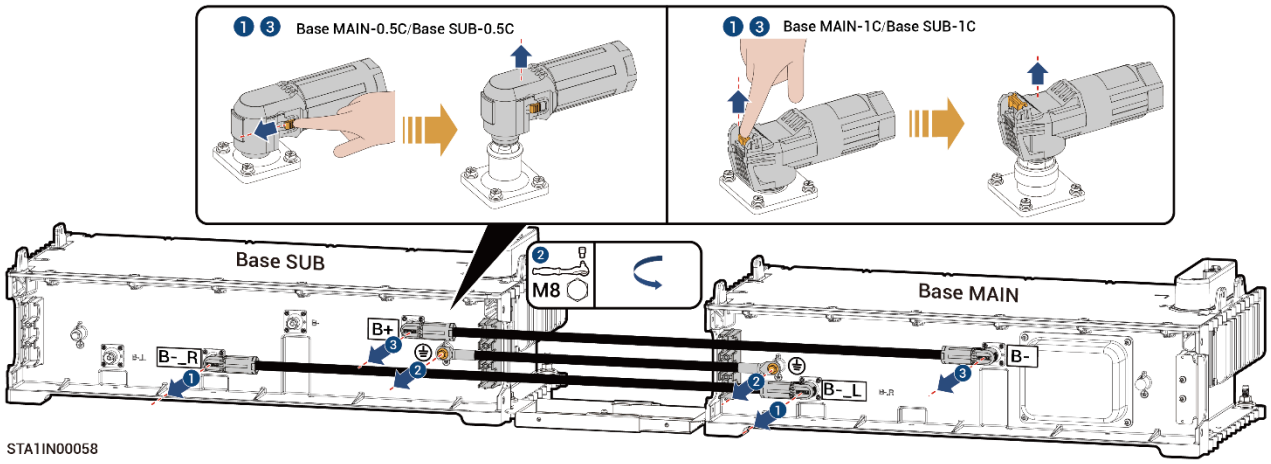
2. Remove the front panel.



3. Disconnect the cables.

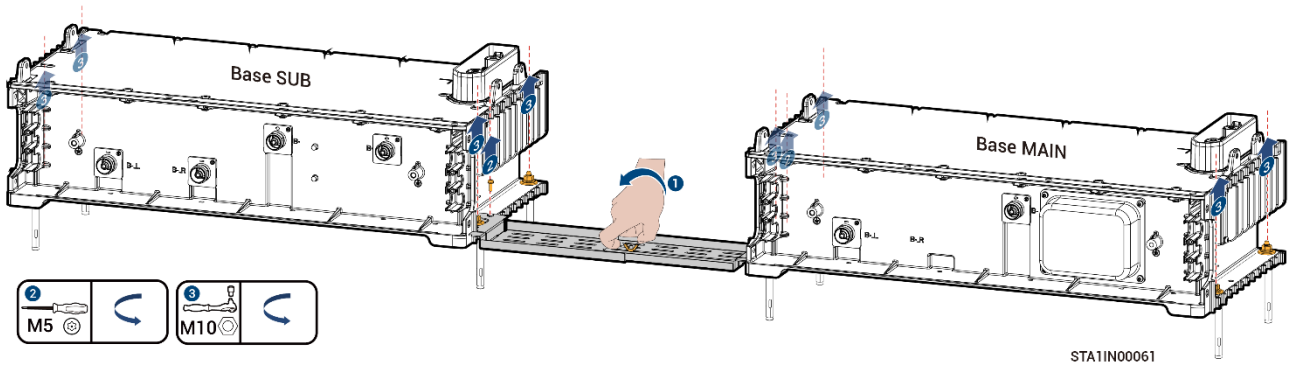


STA1IN00057



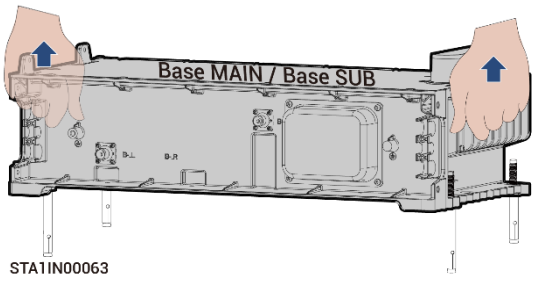
STA1IN00058

4. Remove the bottom plate of the wire protective box.



STA1IN00061

5. Remove the SigenStack Base.



To install the SigenStack Base, follow the reverse steps or refer to the "SigenStack Energy Storage System Installation Guide" for installation.

Chapter 7 System power on

7.1 Power-On Procedure

1. Set the isolation switch of the BC/BC-BST to the ON position.

2. Close the switch connected to the device in the backup power distribution unit.

3. Rotate all “DC SWITCH” knobs on the inverter to the “ON” position.

4. Observe the status of the LED indicators on the inverter and BC/BC-BST.

5. (Optional) Check on the App whether the number of battery packs corresponding to all units is consistent with the actual installation. Inspect for faults; proceed to the next step if everything is normal.

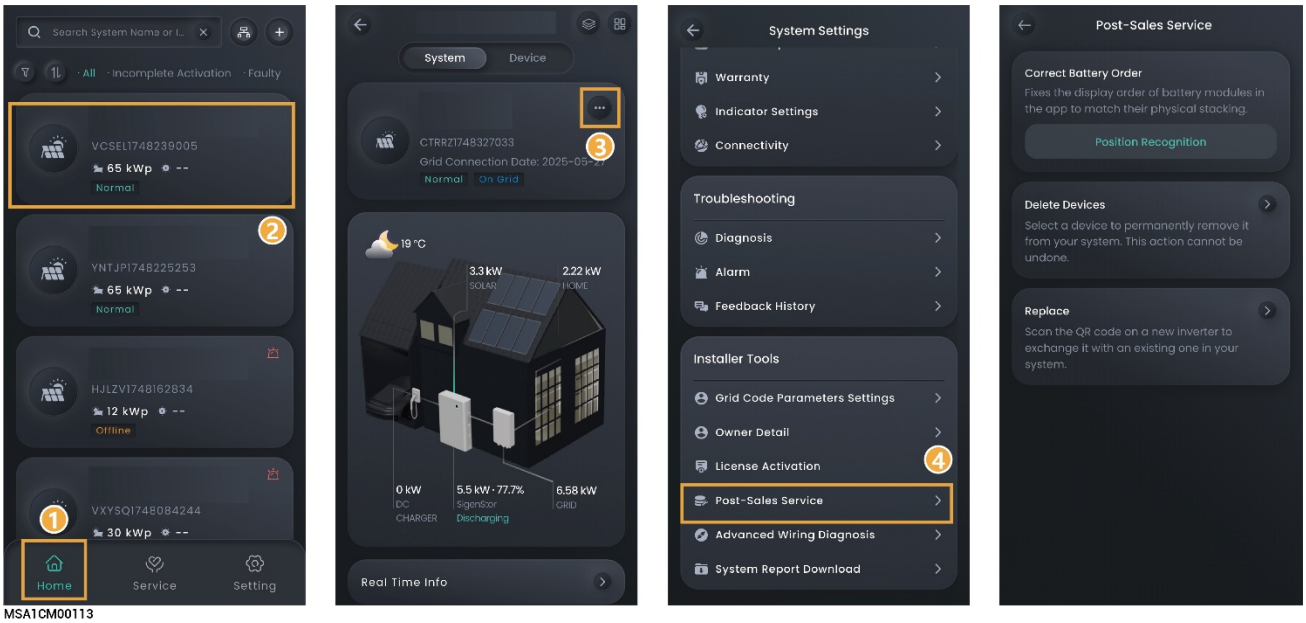
6. Send a startup command via the App. (Refer to Step 1 described under “Power-Off Procedure” for the operation procedure).

7.2 Parameter setting after power-on

7.2.1 SigenStack BC Replacement and SigenStack BAT Replacement

Tips

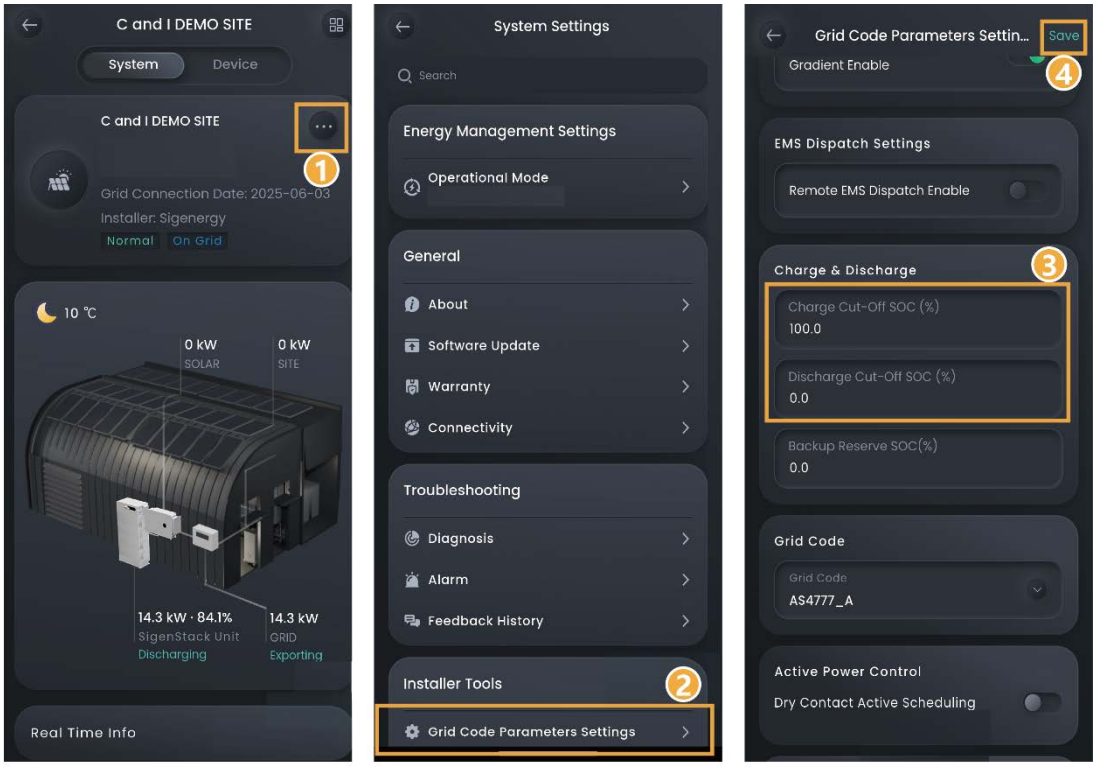
The operation methods on the App are the same for different devices, with different displays on the interface. This section introduces the operation method with an interface.



MSA1CM00113

7.2.2 SigenStack BAT Capacity Expansion

Restore the power station operating SOC range.



MSA1CM00112

7.2.3 Other Scenarios

For other components or parts, ignore this chapter.

Chapter 8 Routine Maintenance

To ensure long-term optimal operation of the device, it is recommended to perform routine maintenance as described in this chapter.

8.1 System Maintenance

Inspection Items	Inspection Method	Power Off or Not	Maintenance Interval
System cleaning	Check the deviceregularly forshielding and dirt. Ifso, clean it up. Donot use tools thatmay cause electricshock or insulationdamage, such aswire brushes andduring the cleaningprocess.	Yes	Once every 3months
System operatingstate	● Check whetherthe equipmentappearance isdamaged ordeformed. ● Check for noisewhen theequipment isoperating. ● Check whetherthe equipmentparameters arecorrectly setwhen theequipment isoperating.	No	Once every 6months
Electricalconnection	● Check whethercable terminalsare tightlyconnected. ● Check whethercable sheath isdamaged. ● Check whetherscratches existon the surfacewhere thecable contactsthe metal.	Yes	Check once every 6months aftercreating newsystems and onceevery 6

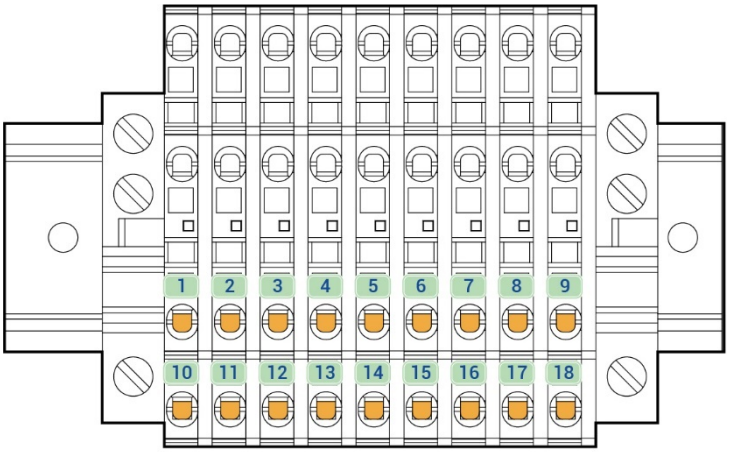
Inspection Items	Inspection Method	Power Off or Not	Maintenance Interval
	● Check whetherscratches existon the surfacewhere thecable contactsthe metal.		to 12months thereafter.
Grounding reliability	Check whether theground cable isproperly andreliably connected.	No	Check once every 6months aftercreating newsystems and onceevery 6 to 12months thereafter.
Test terminal check	Measure the earth resistance of the PV strings.	Yes	Once every 12 months.

8.2 (Optional) Test terminal check

Tips

The test terminal check function is only supported in certain regions, such as Japan.

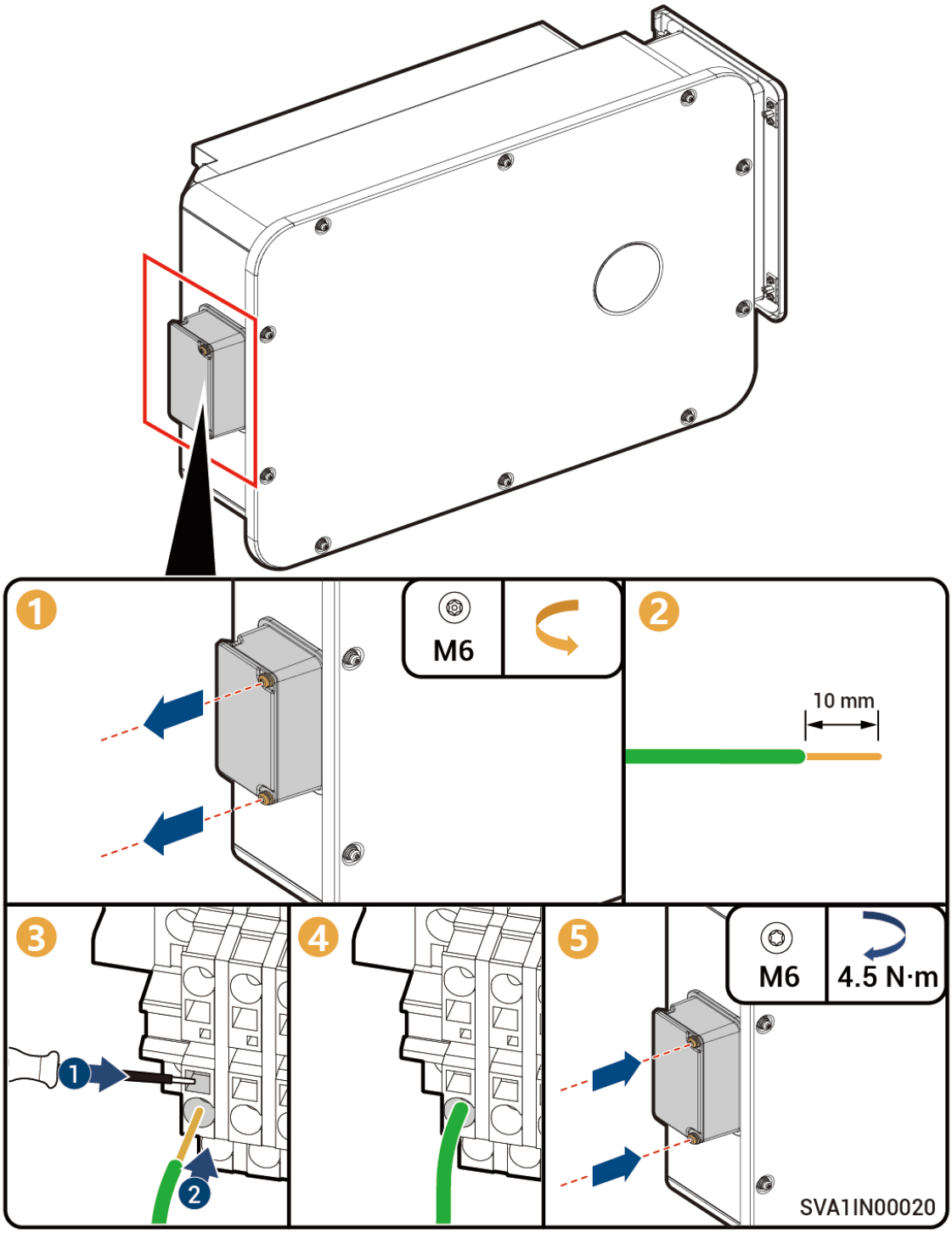
8.2.1 Test terminal overview



SVA1OV00016

No.	Marking
1, 10	PV1/2-, PV1/2+
2, 11	PV3/4-, PV3/4+
3, 12	PV5/6-, PV5/6+
4, 13	PV7/8-, PV7/8+
5, 14	PV9/10-, PV9/10+
6, 15	PV11/12-, PV11/12+
7, 16	PV13/14-, PV13/14+
8, 17	PV15/16-, PV15/16+
9, 18	BUS-, BUS+

8.2.2 Test terminal connection



Chapter 9 DC switch reset and switch-on operations

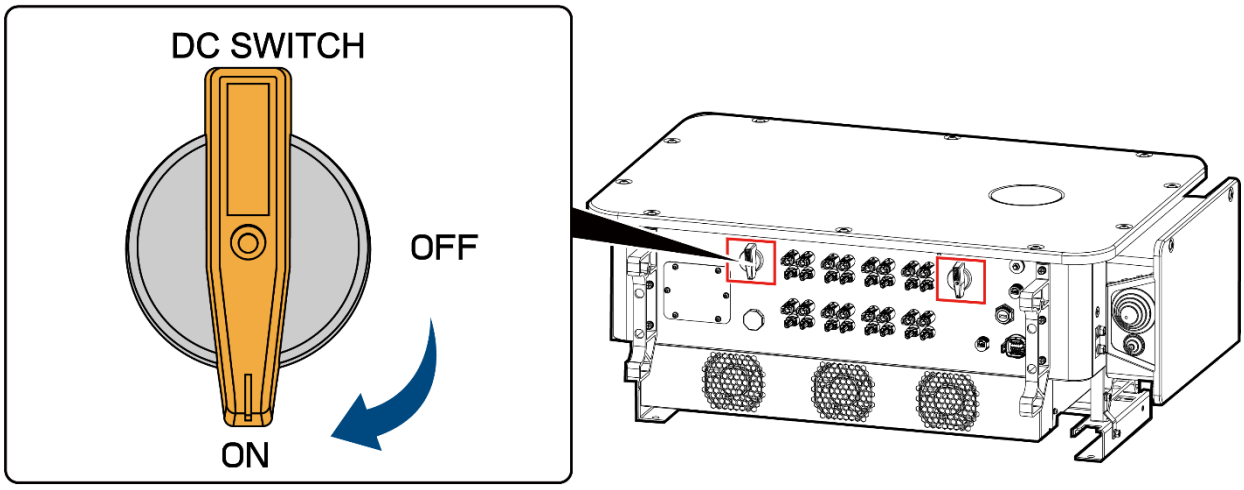
When a fault occurs inside the device, the DC switch will automatically trip. If the fault is not resolved before you reset and switch on, it may result in a fault escalation. Therefore, fault troubleshooting must be completed before operation.

- In the following situations, do not turn on the DC switch on your own. Please contact Sigenergy for further advice:

Status of the Two DC Switches	AC Switch Status	Inverter Indicator Status	Operational Recommendations
Both are in the "OFF" position	No tripping occurred	DC and AC indicators are solid red	Do not turn on the DC switch on your own
	No tripping occurred	Indicators are off	Do not turn on the DC switch on your own
	Tripping occurred	-	Check that there is no phase-to-phase short circuit or phase-to-ground short circuit on the AC side of the inverter before turing on the AC switch.
	Tripping occurred	-	If a phase-to-phase short circuit or phase-to-ground short circuit is present on the AC side of the inverter, do not turn on the AC switch.

- If the mySigen app indicates an inverter alarm and the DC switch is in the "OFF" position, the inverter's DC switch is in an automatic disconnection state.Troubleshooting can be performed based on the alarm handling recommendations in the Alarm List.The

switch-on operation of the DC switch can be performed only after the fault has been resolved, following the operational method illustrated below.



SVA1IN00019

Chapter 10 Appendix

10.1 Alarm reference

For specific details regarding alarm references, please refer to the Alarm List.