



PVX-(107-241) Series Smart String ESS

Quick Installation Guide



EN: Operative manual

**APPLY HERE
THE COMMUNICATION
IDENTIFICATION LABEL**

In addition to what is explained in this quick installation guide, the safety and installation information provided in the product manual must be read and followed. The technical documentation for the product is available at the website.

The device must be used in the manner described in the manual. If this is not the case the safety devices guaranteed by the inverter might be ineffective.

Product Instructions, Safety & Other Essential Information

NOTE – The information in this document is subject to change without notice. Ensure that the device is installed, used, and operated according to the guidelines outlined in this document. Deviations from the guidelines may lead to device damage, property damage, personal injury, or even death. The device manufacturer and the importer are not liable for any resulting consequences.

Safety Information

- Store the device in a dry, ventilated, and clean environment. Keep the device away from corrosive organic solvents and gases.
- Please consult your doctor and the device manufacturer to determine if using your device may interfere with the operation of your medical device.
- Only qualified professionals are allowed to install, operate, and maintain the device.
- Ensure that power is off during installation.
- Use dedicated insulated tools and protective equipment during operations.
- Do not power on the device before it is installed or confirmed by professionals.
- Do not touch the power supply equipment directly or with conductors such as damp objects. Before touching any conductor surface or terminal, measure the voltage at the contact point to ensure that there is no risk of electric shock.
- Do not touch the device while it is operational because the enclosure becomes hot.
- Do not touch a running fan with your hands, components, screws, tools, or boards. Otherwise, personal injury or device damage may occur.
- Before installing, removing, or maintaining the device, turn off the switch on the device and its upstream and downstream switches. Attach "Do not switch on" labels near the upstream and downstream switches or circuit breakers as well as warning signs to prevent accidental connection. The device can be powered on only after these actions have been taken.
- Do not expose the device to flammable or explosive gas or smoke. Do not place the device near heat sources or fire sources. Do not perform any operation on the device in such environments. Install the device in an area far away from liquids.

Product Overview

PVX-(107-241) series integrates energy storage equipment and a battery management system. It stores electric energy and supplies the energy to local loads or the power grid when necessary.

Standard and frequency: 802.11b/g/n
2400–2483.5 MHz

Maximum transmit power: ≤ 20 dBm E.I.R.P

Installation and Operations

- When installing the device, reserve sufficient clearance around it to facilitate installation and heat dissipation.
- Prepare and install AC cables, DC cables, and communications cables for the device.
- For details, see the user manual of the corresponding product.

RF Exposure Information

The device complies with relevant RF exposure limits. It shall be installed and/or operated with a minimum distance as below from your body:

- Council Recommendation 1999/519/EC: 0.2 meter
- Directive 2013/35/EU: 0.2 meter

Cables and Shielding

EMC performance is dependent upon the use of correct cables of good quality for all external connections when installing this device. Ensure compliance with cable/connector specifications and associated installation instructions given elsewhere in the product manual.



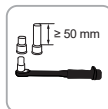
Disposal and Recycling Information

This symbol means that waste electrical and electronic equipment (EEE) and batteries, if any, shall be separately collected and disposed of, not as unsorted municipal waste. This will ensure that waste products are recycled and treated in a manner that conserves valuable materials and protects human health and environment. For more information concerning return, collection, roles in contributing to re-use, recycling and other forms of recovery, the potential effects, or/and related measures, please contact your local authorities, distributors, producer, and/or relevant service provider.

NOTE – Before installing the equipment, read the user manual carefully to get familiar with product information and safety precautions. The product warranty does not cover equipment damage caused by failure to follow the storage, transportation, installation, and usage guidelines specified in this document and the user manual. Scan the QR code on the cover of this document to view the user manual and safety precautions. The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied. In this document, "Plan" indicates that multiple solutions are provided, and you may select one of them.

Tool Introduction

The tools shown in the figures are for reference only. Prepare tools that are not listed here based on site requirements.



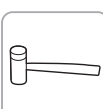
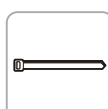
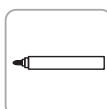
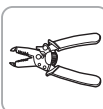
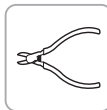
(M4/M6/M12)



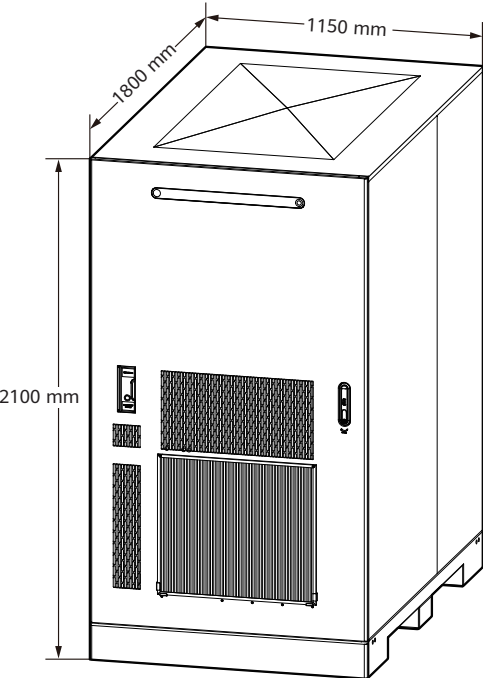
(M3/M4/M6/M8)



(M3/M6/M8/M12)



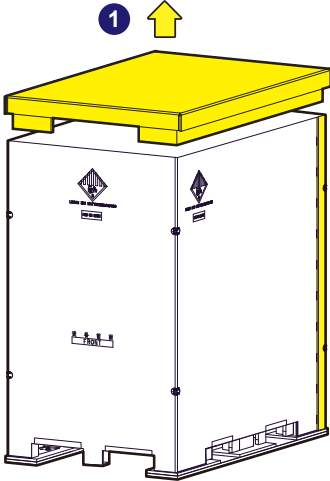
1. Product Appearance



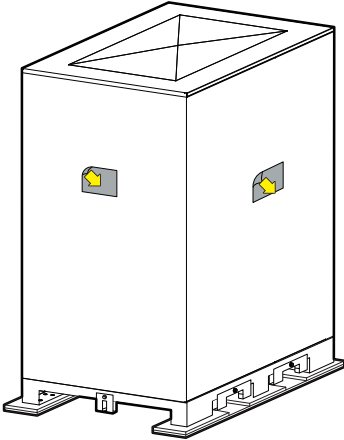
The installation and cable connection procedures for various models of ESSs are largely the same. The figures in this document are for reference only.

2. Installing the ESS

1

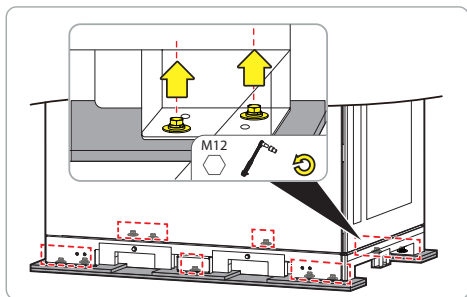


2



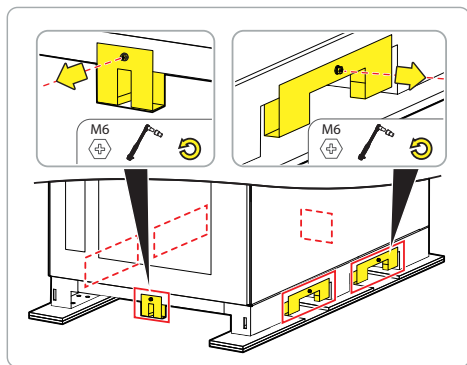
Properly keep the top cover of the outer packaging, as it will be used to facilitate locating the ESS.

2



Do not remove a pallet from the ESS hoisted in the air. Ensure that the ESS is placed on the ground before removing the pallet.

3

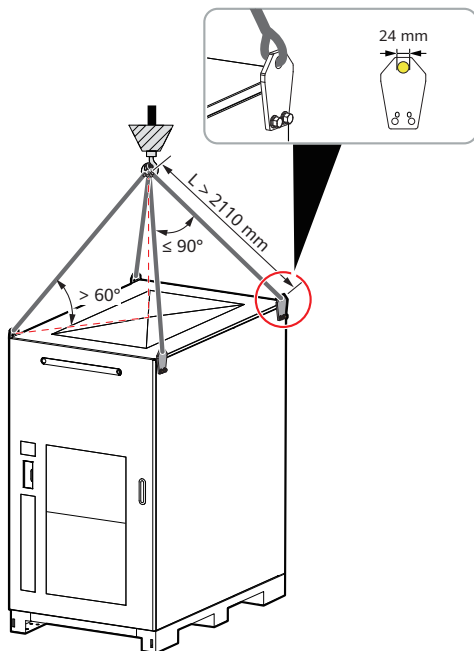


Remove all forklift positioning plates. (If a forklift is used to move the ESS, the positioning plates on the side from which the tynes are inserted must be removed after the ESS is secured.)

4

Plan 1

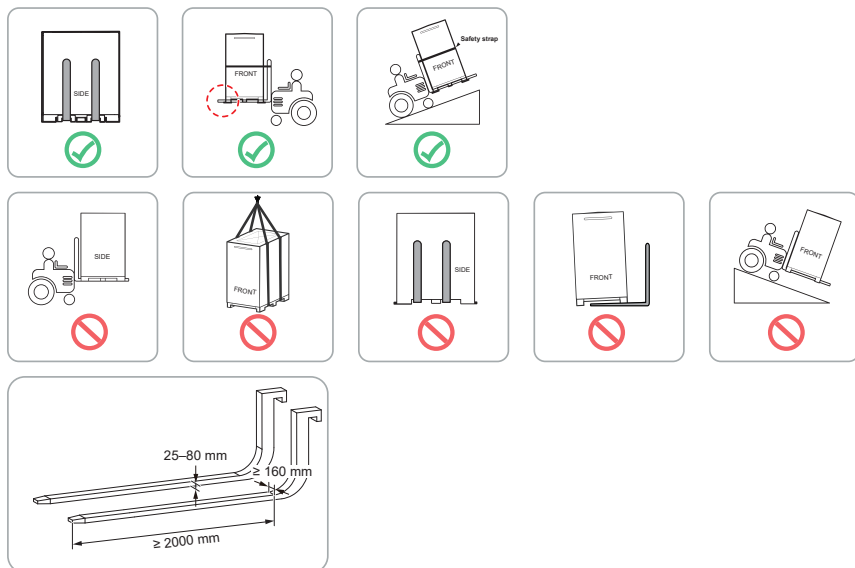
Hoisting and transporting with anchor brackets



Crane: hoisting capacity $\geq 3 \text{ t}$; operating radius $\geq 2 \text{ m}$. The lifting capacity of slings shall be greater than three times the maximum weight of the cabinet.

Plan 2

Transporting with a forklift

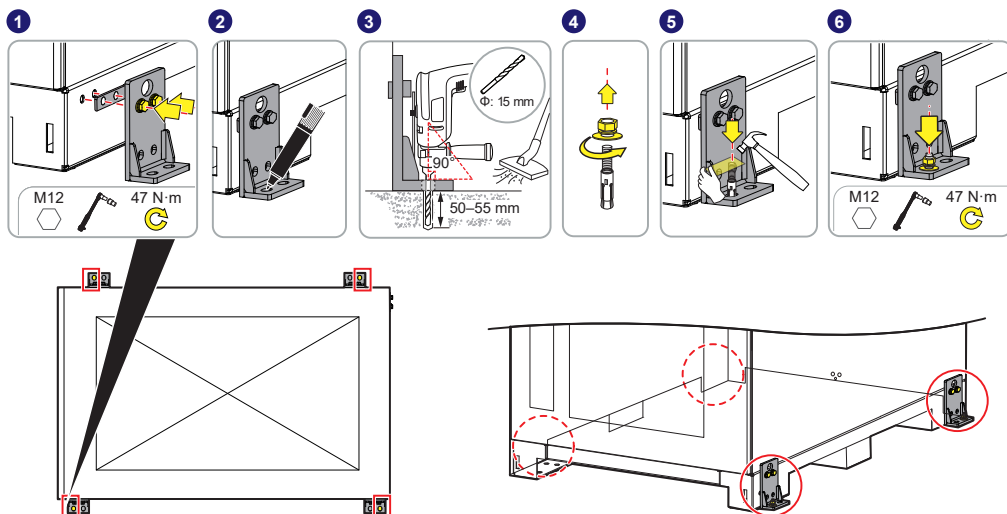


Forklift: load-bearing capacity ≥ 4 t

- If the ESS is not positioned stably, use a spacer to level the ESS before securing it.
- Ensure that anchor brackets are correctly installed and secured using screws to prevent the cabinet from falling down and being damaged in extreme conditions such as earthquakes.
- If the space at the rear of the ESS is insufficient for drilling holes on the ground, use Plan 2 to secure the ESS.

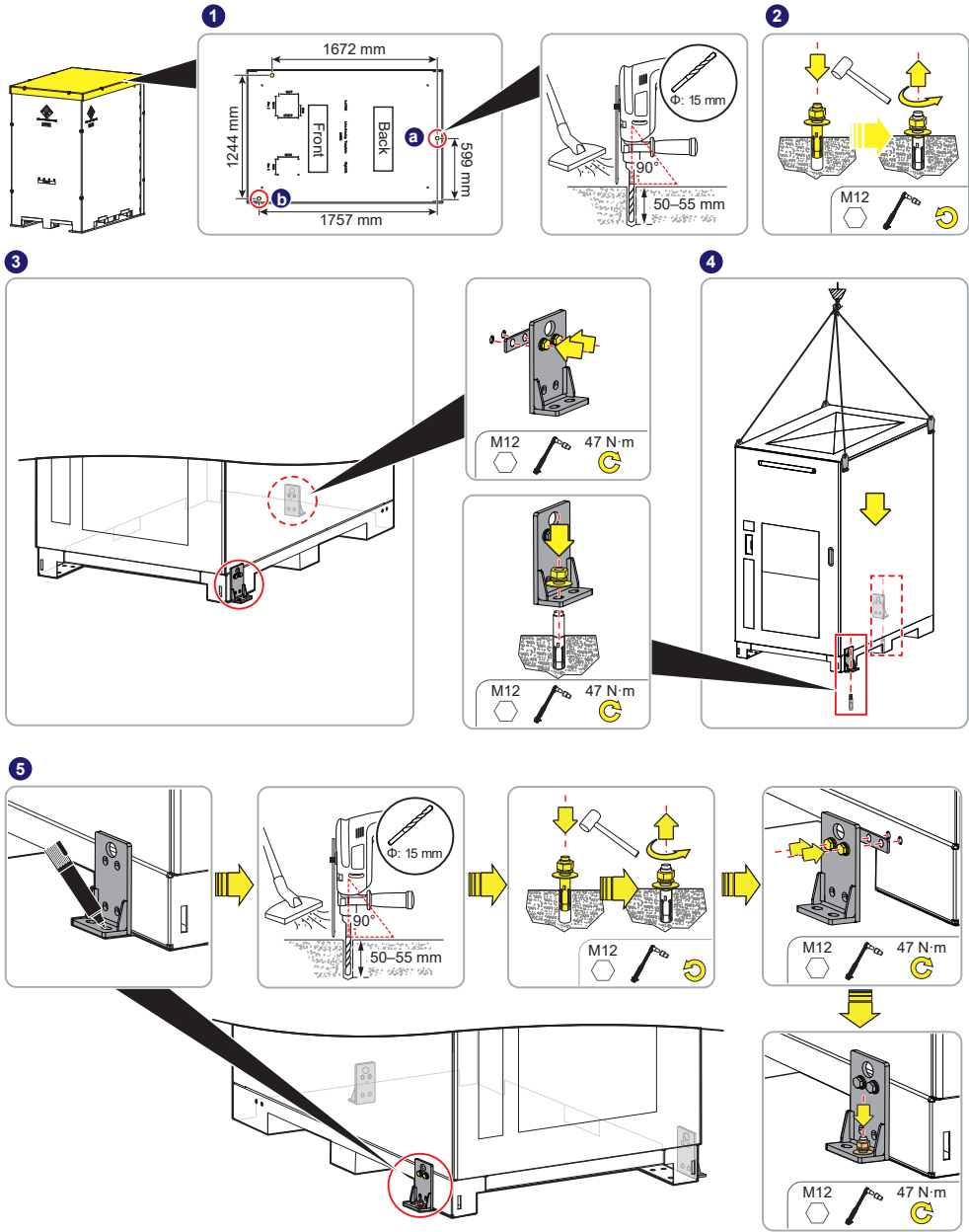
Plan 1

Securing the ESS using four anchor brackets



Plan 2

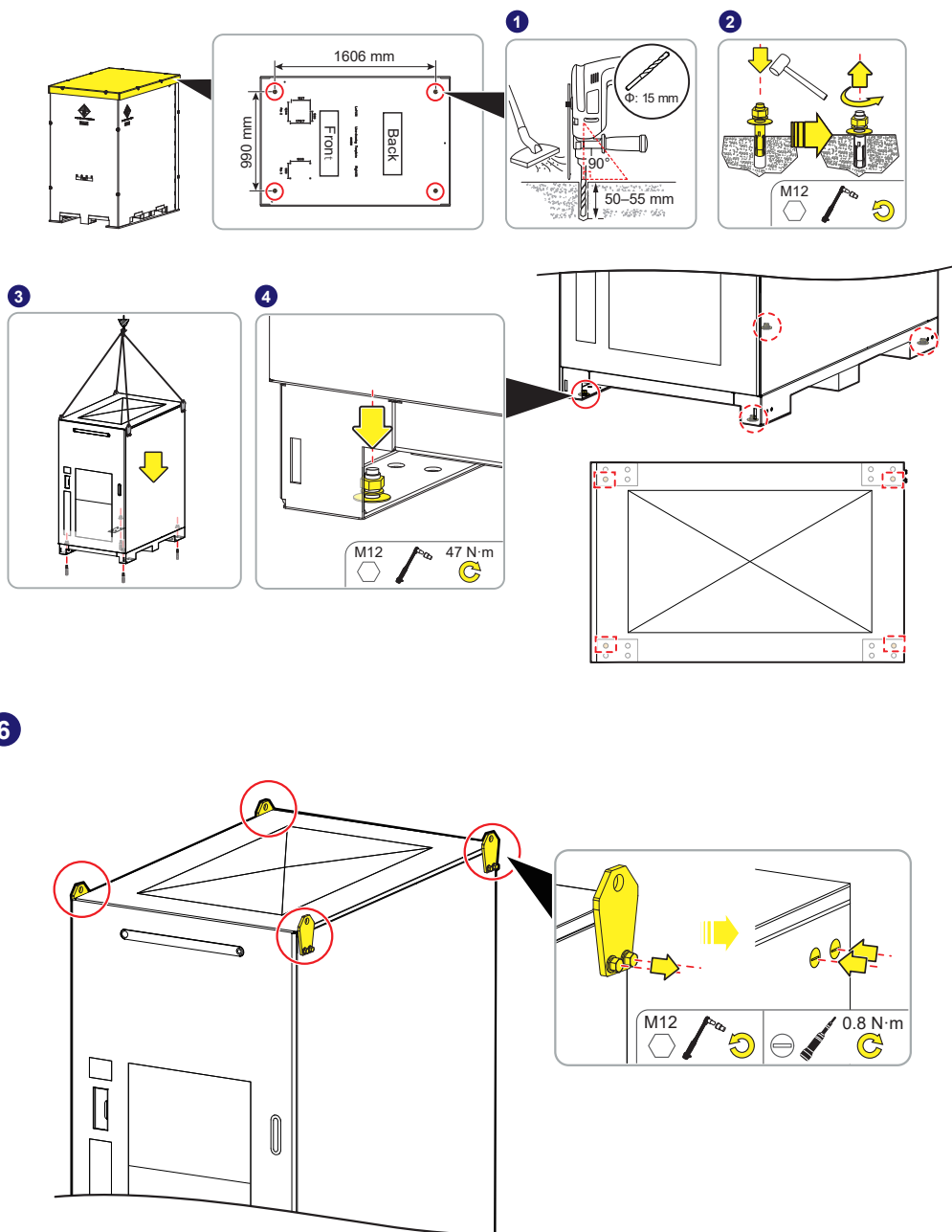
Securing the ESS using three anchor brackets



When hoisting an ESS whose rear and side will face other ESSs, use the hoisting brackets of those ESSs.

Plan 3

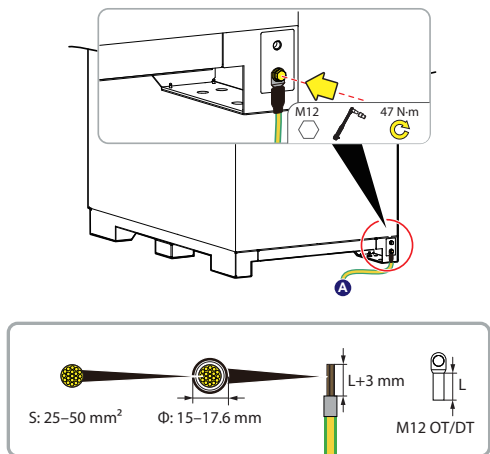
Securing the ESS using hidden bolts



3. Installing Ground Cables

Plan 1

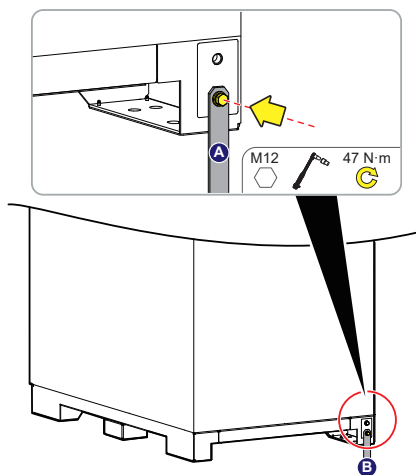
Single-core outdoor copper/copper-clad aluminum/
aluminum alloy cable (prepared by the customer)



A

Customer's ground grid

Plan 2



A

Hot-dip zinc-coated flat steel sheet (prepared by the customer)

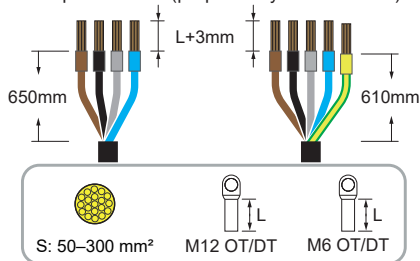
B

Customer's ground grid

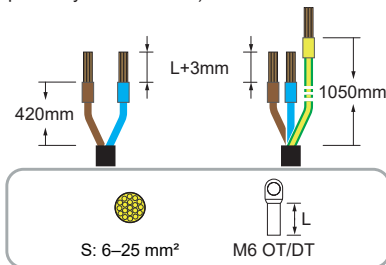
4. Installing Cables

The cable colors shown in all electrical connection diagrams in this document are for reference only. The cable size must comply with local cable standards. The factors that affect cable selection include the rated current, cable type, routing mode, ambient temperature, and maximum expected line loss.

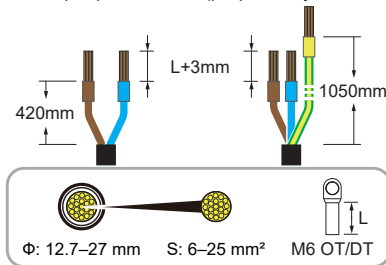
- PCS AC power cable (prepared by the customer)



- Power cable for the auxiliary power supply from the mains (prepared by the customer)



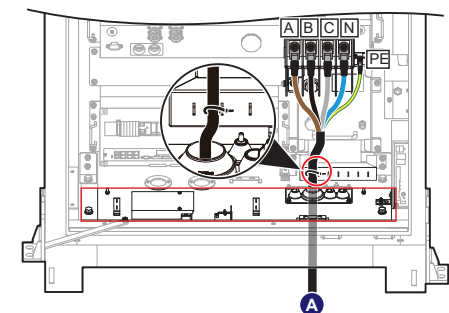
- UPS AC input power cable (prepared by the customer)



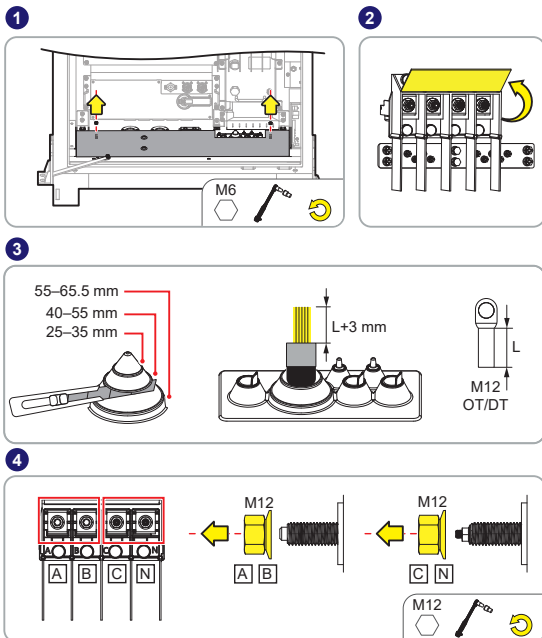
- Four-core or eight-core single-mode armored cable with a transmission wavelength of 1310 nm (prepared by the customer)



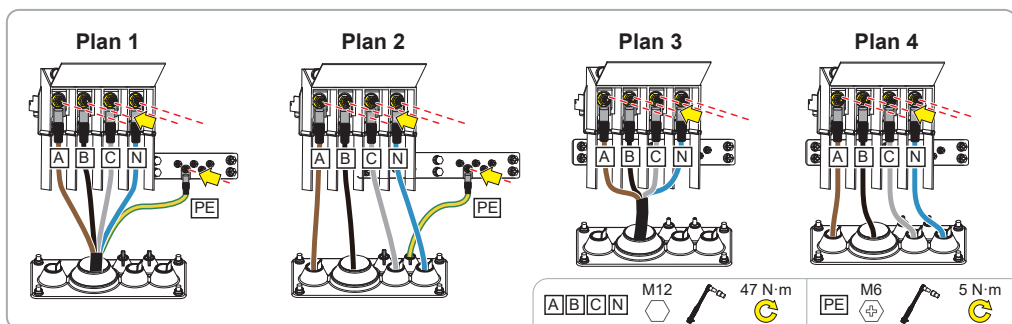
Installing PCS AC Power Cables



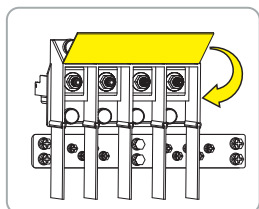
A
Power distribution cabinet



5



6

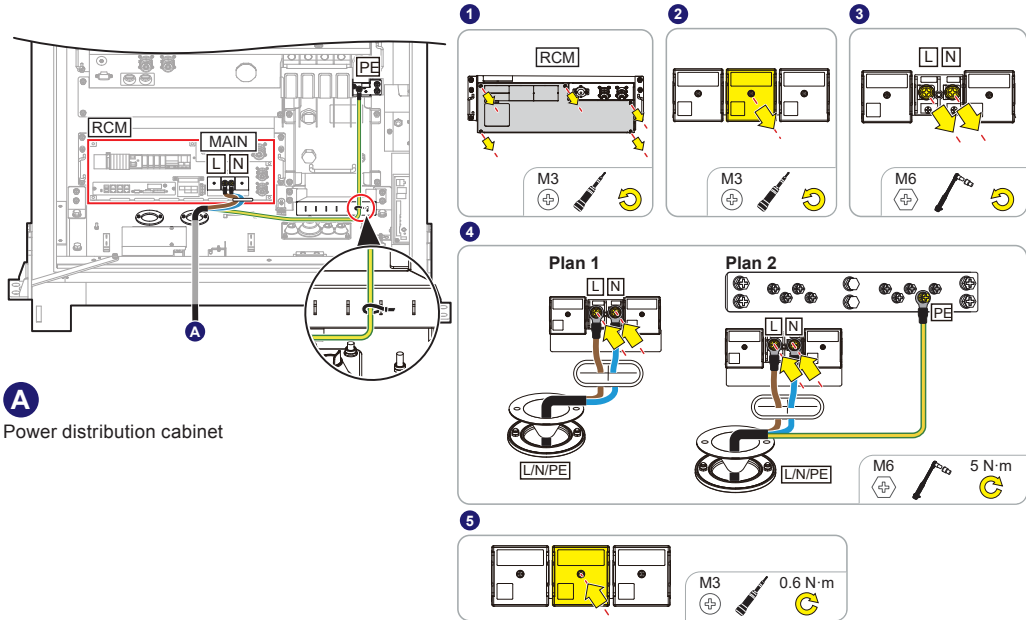


When using Plan 1 or Plan 2 for cable connection, install the PE cable first.

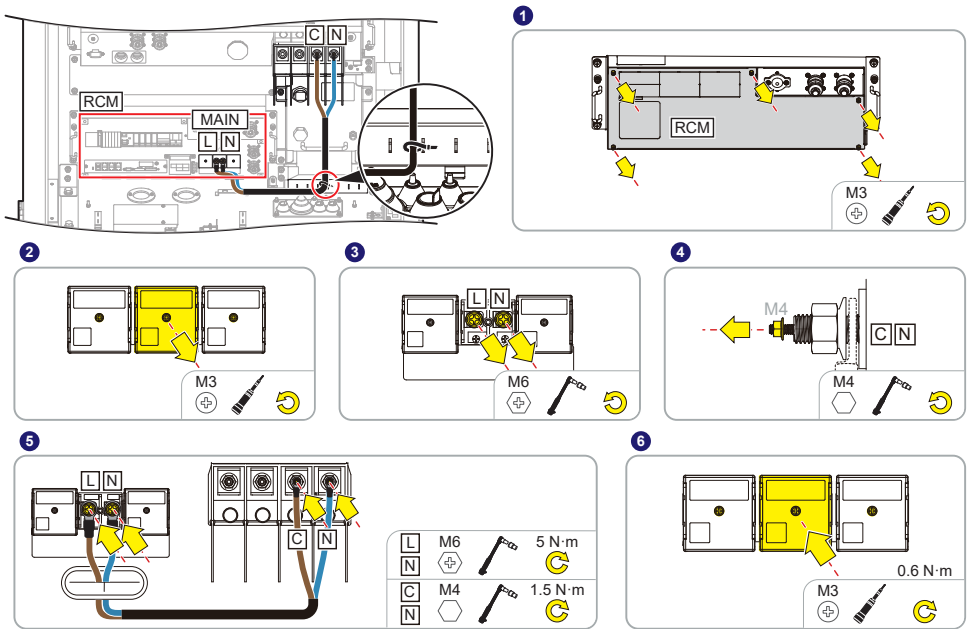
Installing Auxiliary Power Supply Cables

- There are two methods for installing auxiliary power supply cables. Plan 1 connects to the power supply outside the cabinet, and Plan 2 connects to the power supply through the PCS terminal inside the cabinet.
- The auxiliary power supply can be obtained through the PCS terminal only when the rated mains voltage is less than or equal to 415 V. Otherwise, the devices will be damaged. If the customer's general power distribution switch is turned off, the auxiliary power supply of the ESS will be disconnected.

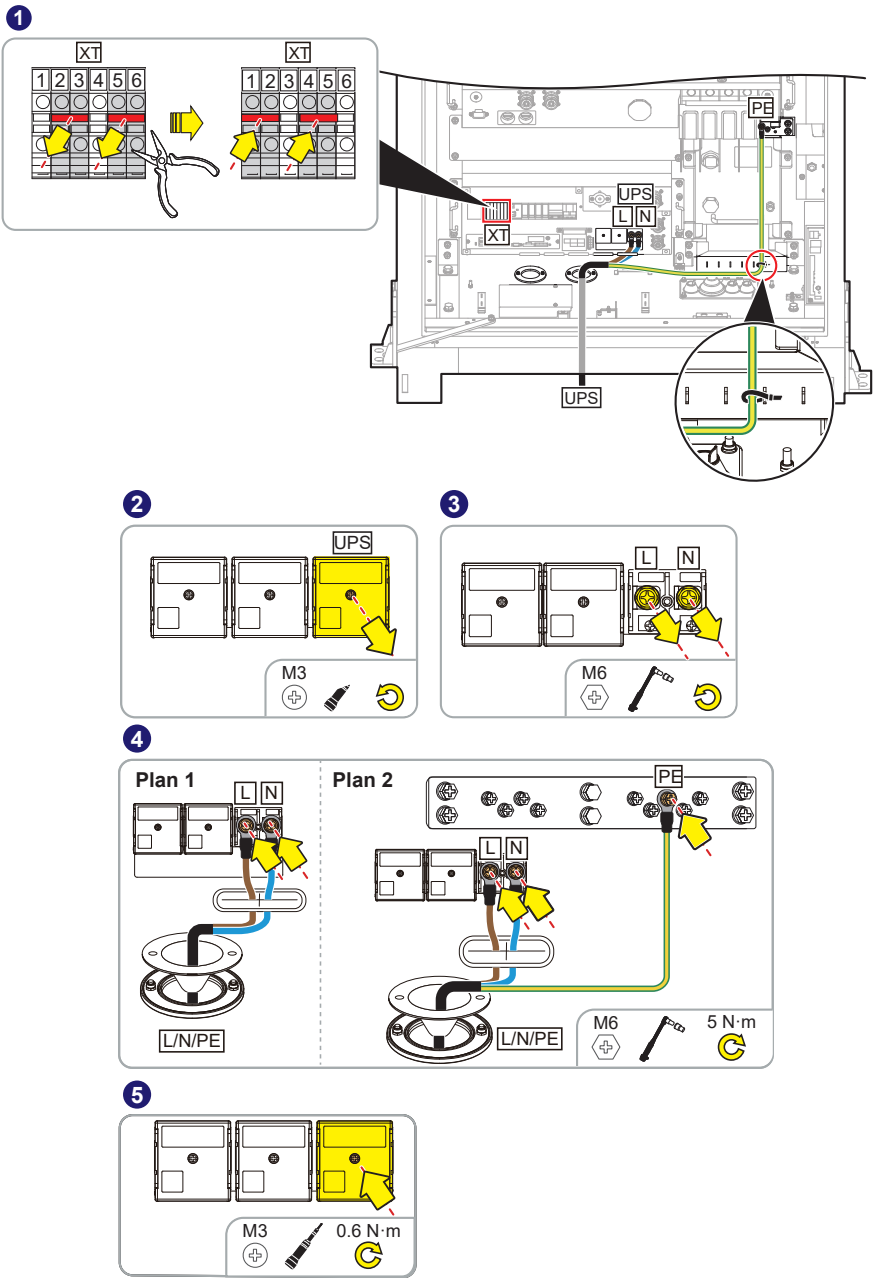
Plan 1



Plan 2

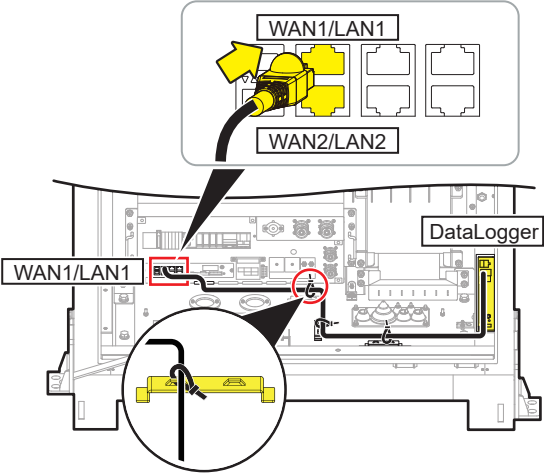
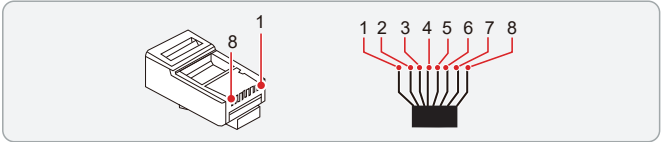


Installing UPS Cables (Microgrid Scenario)

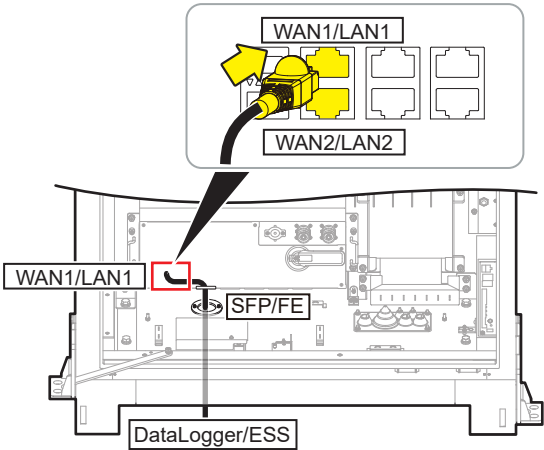


Installing FE Communications Cables

Plan 1



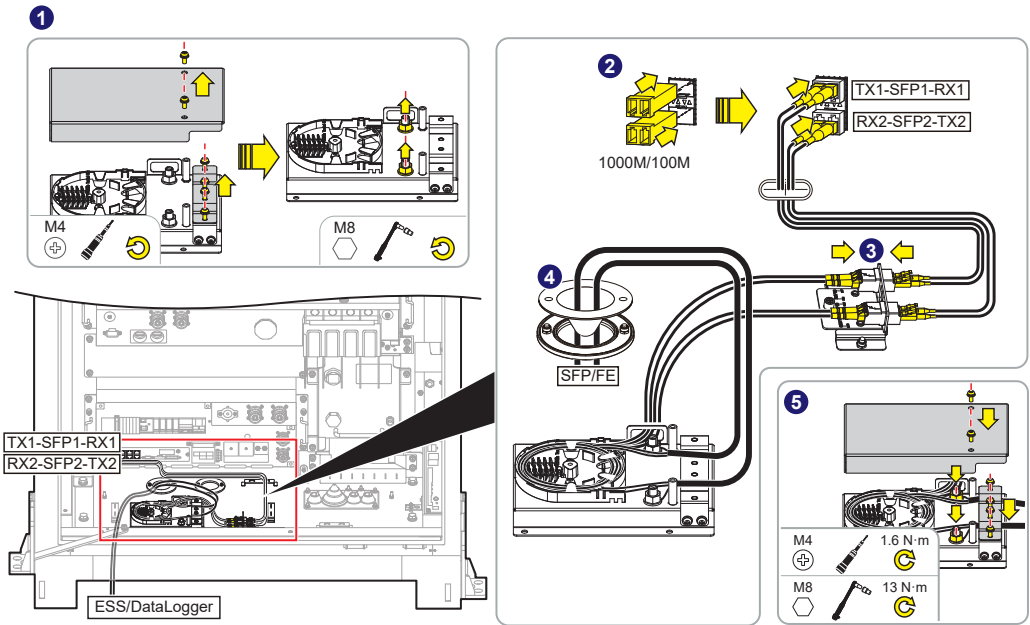
Direct connection between the ESS and the SmartLogger inside the cabinet.



Connection between the ESS and the SmartLogger outside the cabinet or between multiple ESSs.

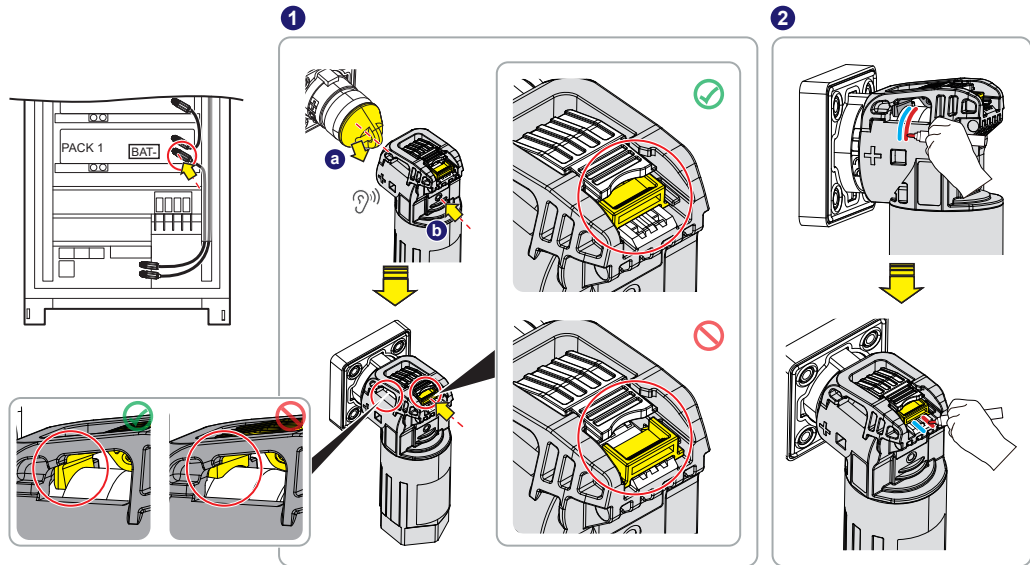
1	2	3	4	5	6	7	8
White-and-orange	Orange	White-and-green	Blue	White-and-blue	Green	White-and-brown	Brown

Plan 2
Optical fiber communication

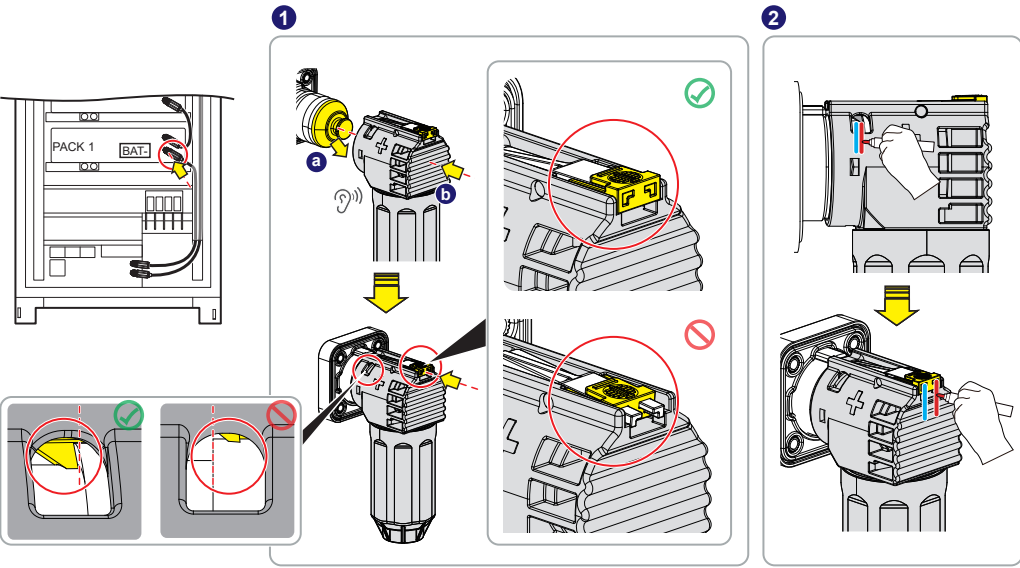


Installing Battery Pack Cables

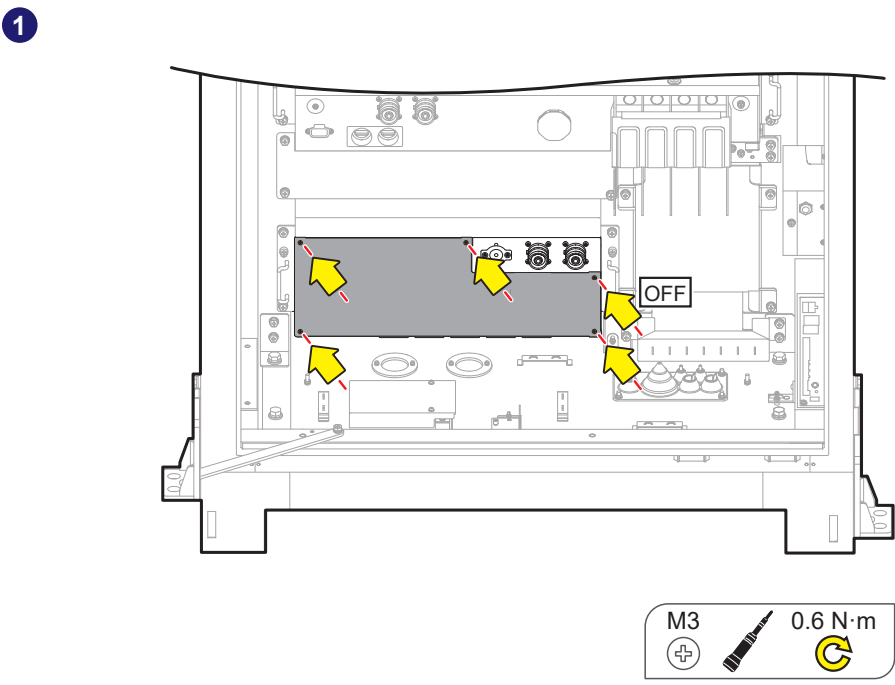
Plan 1



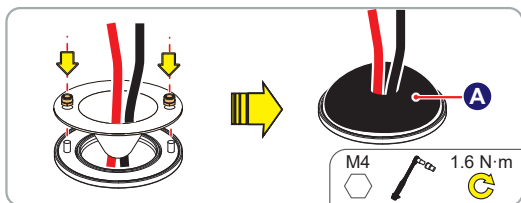
Plan 2



Follow-up Procedure



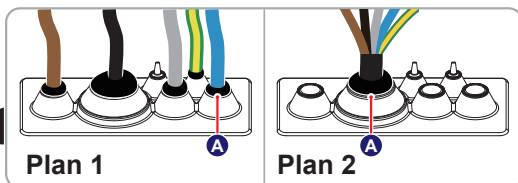
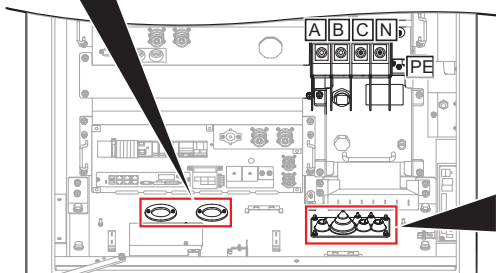
2



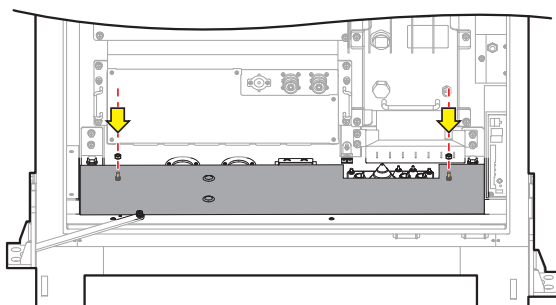
A

Sealing putty

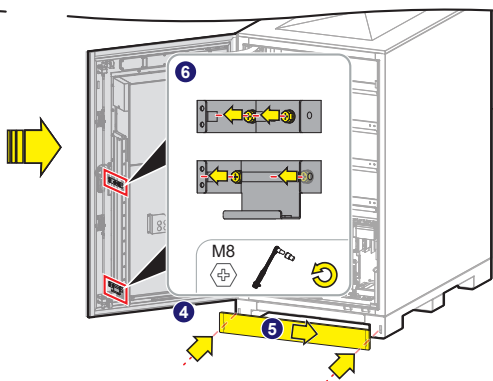
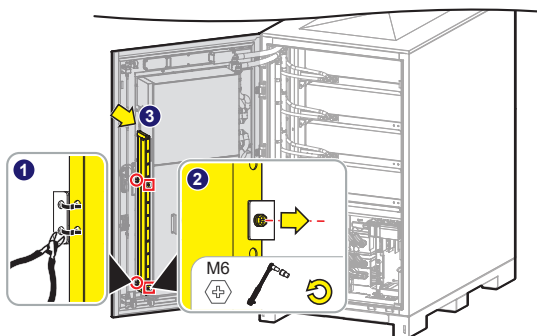
When sealing the cable holes, fill the gap between cables with the sealing putty. After sealing the cable holes, check the cable holes carefully to ensure that they are securely sealed with the sealing putty.



3



4



5. Check Before Power-On

Check Item		Acceptance Criteria
1	Equipment exterior	☐ The equipment is intact and free from rust and paint flake-off. If the paint flakes off, repair the damaged paint. ☐ The labels on the equipment are clear. Damaged labels must be replaced.
2	Cable exterior	☐ Cable sheathings are intact and not damaged. ☐ Cable hoses are intact.
3	Cable connection	☐ Cables are connected in the designed positions. ☐ Terminals are prepared as required and securely connected. ☐ Labels on both ends of each cable are clear and specific, and attached in the same direction.
4	Cable routing	☐ Electrical and extra low voltage (ELV) cables are routed separately. ☐ Cables are neat and tidy. ☐ Cable tie joints are evenly cut without burrs. ☐ Cables are placed properly with slack at bending points to avoid stress. ☐ Cables are routed neatly without twists or crossovers in the cabinet.
5	Switch	☐ The RCM disconnecter is OFF. (Optional. This item applies only when there is an RCM disconnecter.)
6	Bolt	☐ The torque of the installed nuts has been verified, and the nuts have been marked with a marker.



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