

5.3.3 Fixing the MV Station(optional)

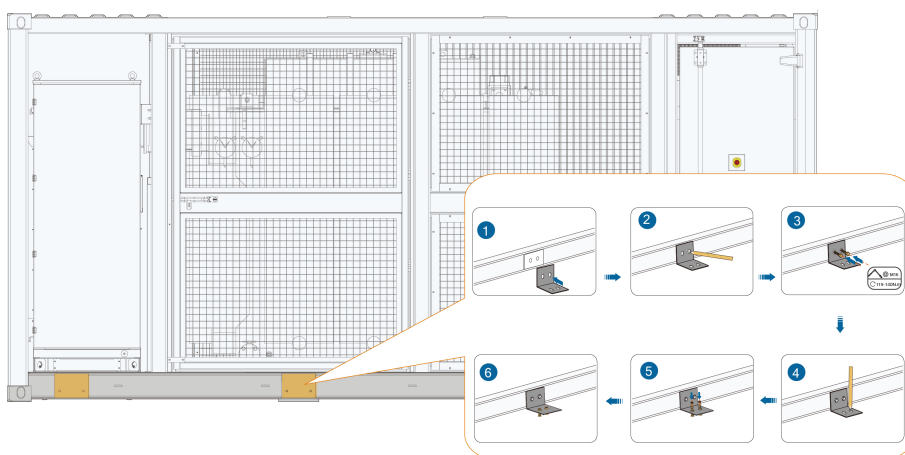
The position for installing L-shape angle steel is reserved at the bottom of the container.

Preparing Installation Tools

The following tools may be used in installing the L-shape angle steel:

No.	Name	Resource
1	Marker	Beyond the scope of delivery
2	φ22 percussion drill	Beyond the scope of delivery
3	Angle steel	In the scope of delivery
4	M16×150 expansion bolts	Beyond the scope of delivery
5	M16×50 screw	In the scope of delivery

Installation Method



Other Precautions

HINWEIS

A drainage system should be designed on the installation site to prevent the MV Station from being immersed in water during heavy rainfalls.

HINWEIS

Do not plant any trees near the MV Station installation site to prevent the damage of the MV Station caused by tree leaves or stems.

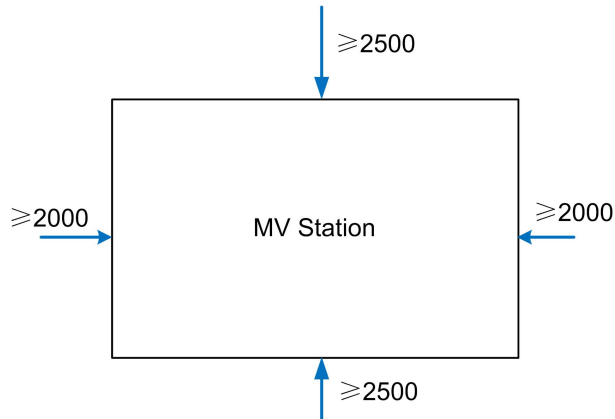
5.4 Installation Verification

- Bolts and nuts are tightened.
- The container is in good contact with and evenly supported by the bases underneath.

- All container doors can be smoothly opened and closed.

5.5 Clearance Requirement

On site, MV Station works together with the inverter. Required clearances around MV Station and the inverter are shown in the figure below (Unit in mm).



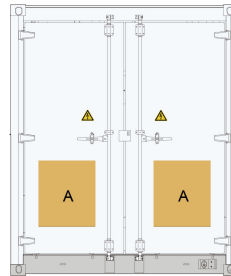
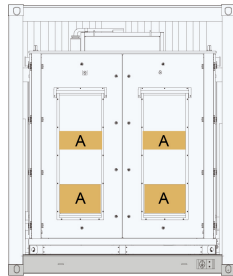
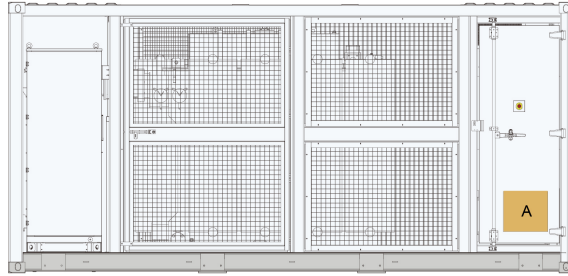
* The distance illustrated in this figure is the minimum values.

HINWEIS

Sufficient maintenance space should be reserved around the equipment.

5.6 Removing Rain cover and Sealing Tapes

The sealing tapes (shown as A in the following figure) and rain cover are attached to the enclosure of the MV Station to prevent moisture penetration during transportation. Before putting the MV Station into operation, remove the rain cover and sealing tapes of the MV Station.



6 Electrical Installation

6.1 Safety Instructions

6.1.1 Generals Rules

GEFAHR

High voltage! Electrical hazards!

- Do not touch the live components of the device.
- Make sure the MV Station are voltage-free before installation.
- Never put flammable materials in the vicinity of the MV Station.

GEFAHR

If a ground fault occurs in the PV system, some parts that were voltage-free before may contain lethal voltage. Accidental touch may cause serious damage. Make sure there is no system ground fault before operation and take proper protective measures.

WARNUNG

**Observe all the country-specific standards and regulations.
Connect the MV Station to public grid only after receiving authorization from the local network operator.**

WARNUNG

**Only professional electricians can perform the operations described in this chapter.
Observe all the instructions to connect the wires.**

WARNUNG

Disconnect all the switches before electrical connection.

⚠ WARNUNG

Sand and moisture penetration may affect the performance of electric devices inside the MV Station!

- **Do not perform electrical connection in sandy season or when the ambient relative humidity is above 95%.**
- **Perform electrical connection on fine weather days.**

⚠ WARNUNG

Improper torque used may cause a fire to the connection point!

Fix the bolts by strictly following the torque requirements in this manual during electrical connection.

⚠ WARNUNG

Too small bending radius or excessive intertwine may damage the fiber!

When selecting fiber as the communication cable, please follow the related requirements of the fiber manufacturer about the min. allowable bending radius.

⚠ WARNUNG

Only professional electricians can perform the electrical connection. Professional electricians should meet the related requirements listed in “2 Safety Instructions**” in this manual. Sungrow should hold no liability for any personal injury or property loss caused by ignorance of the safety instructions.**

⚠ WARNUNG

Ensure the electrical insulation is satisfied before laying the cables. Follow the EMC regulation and lay the power cable and communication cable in different layers. Provide support and protection to the cables to reduce the stress of the cables when necessary.

⚠ WARNUNG

Strictly follow all the instructions when connecting the cables.

HINWEIS

The installation and design of the MV Station must fulfill national and local standards and regulations.

Sungrow should hold no liability for the MV Station or system fault caused by ignorance of the description in this manual.



Select optical fibers as the external communication cable to lower the signal interference.

6.1.2 Five Safety Rules

During electrical connections and other operations on the inside device, observe the following Five Safety Rules:

- Disconnect all the external connections and disconnect the MV Station internal power supply
- Avoid any inadvertent re-connections.
- Verify that no voltage or current is present with appropriate testing devices.
- Ground and short-circuit whenever necessary.
- Cover possible live parts to avoid inadvertent touch.

6.2 Circuit Diagram

The circuit diagram is as follows.

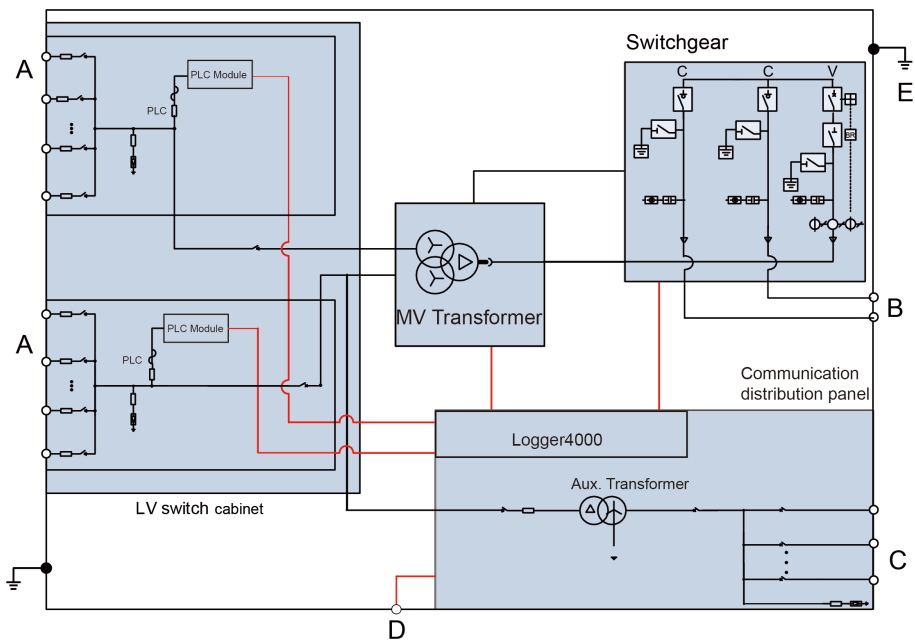


Tabelle 6-1 Items in figure

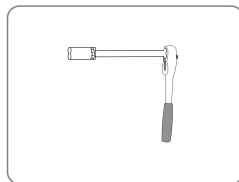
Item	Name	Recommended specifications
A	Connect to the inverter	Single splicing Max. 400 mm ² aluminum wire Double splicing Max. 185 mm ² aluminum wire
B	Connect to MV grid	Depends on the switchgear type. Specifically, refer to the corresponding manual.

Item	Name	Recommended specifications
C	Power distribution port	—
D	Communication port	—
E	Grounding point	—

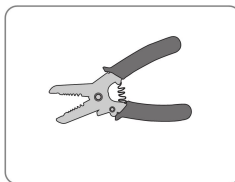
6.3 Preparation before Cable Connections

6.3.1 Installation Tools

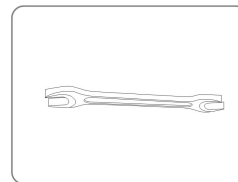
Installation tools include but are not limited to the following recommended ones, and other auxiliary tools or components can be used on site when necessary.



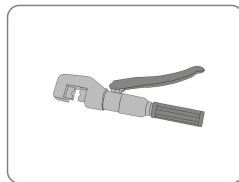
Torque wrench



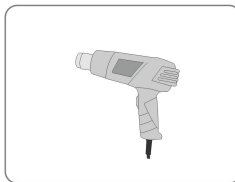
Wire stripper



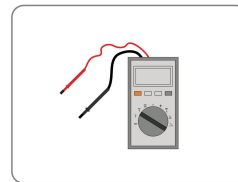
Allen wrench
for terminal fixing



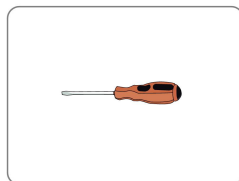
Terminal crimper



Heat blower



Megger and multimeter



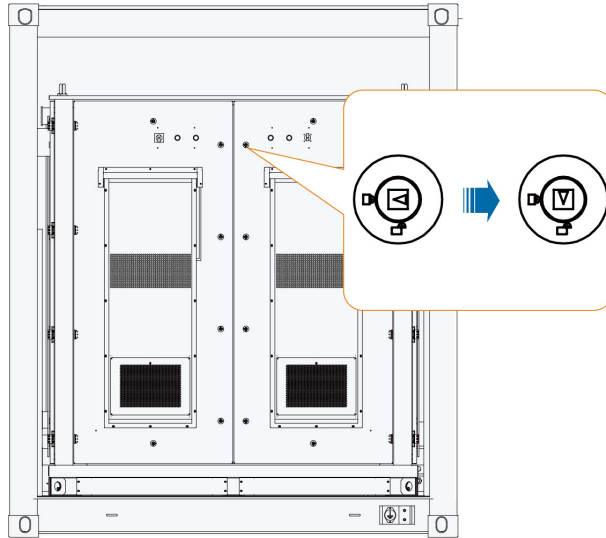
Screwdriver



Before operating the product, check and ensure that the tools to be used have undergone regular maintenance.

6.3.2 Opening the LV Cabinet Door

- 1 Insert the key.
- 2 Turn the key counterclockwise to unlock the door.



6.3.3 Checking the Cables

⚠ WARNING

Check to ensure the intactness and insulation of all cables before electrical connection. Poor insulation or damages in the cables may cause hazards. Replace them if necessary.

6.3.4 During Connection

⚠ WARNING

- Do not pull the cables hard during connection.
- Make sure there is enough wire bending space for all connection cables.
- Take proper methods to reduce the stress of cables.
- Check carefully to ensure the correctness and fastness of the connections.

6.4 Ground Connection

Generally, the ground connection includes equipotential connection of internal devices and external grounding.

Equipotential Connection of MV Station Internal Devices

All electrical devices inside the MV Station should be connected equipotentially through the total equipotential connection copper bar inside the MV Station, i.e. the grounding terminal of all the main electrical devices should connect to the total equipotential connection copper bar.

The connection of the internal main electrical devices to the grounding copper bar has been finished before delivery.

External Grounding

For ease of onsite cable connection, two grounding points are designed at the exterior of the MV Station.

The external grounding points of the MV Station can be grounded in the following two manners:

- Connect the grounding cable to the external grounding points with M10 bolts, where the recommended cable is of 50 mm² to 95 mm². After the wiring is completed, it needs to spray paint and anti-corrosion treatment.

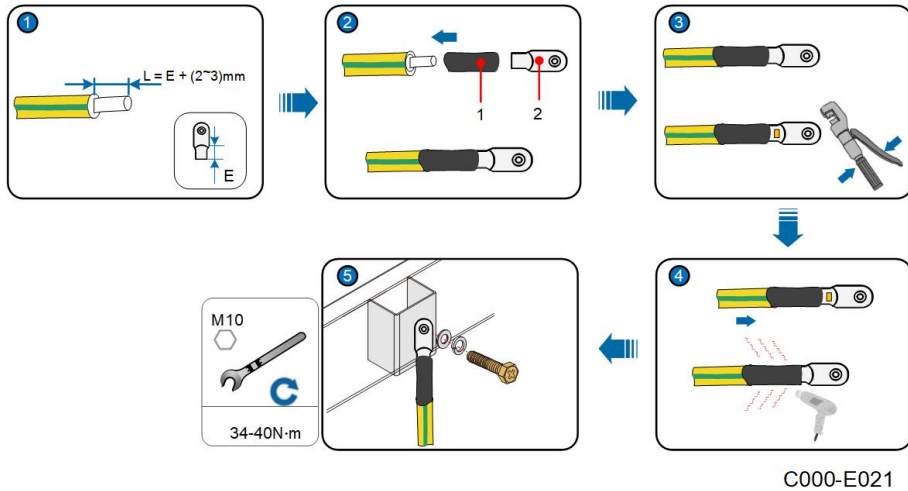


Abbildung 6-1 Grounding Cable

- Weld the grounding steel flat onto the external grounding point, after which anti-corrosion processing needs to be performed. After the wiring is completed, it needs to spray paint and anti-corrosion treatment on the welding area.

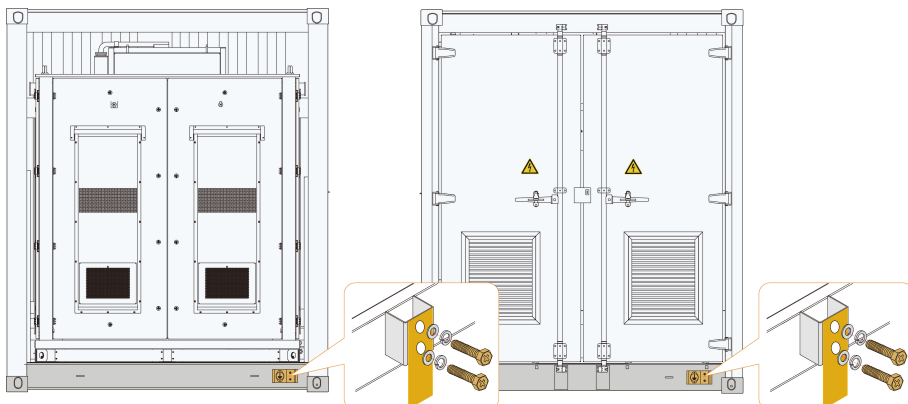


Abbildung 6-2 Grounding Flat Steel

It is recommended that two points of the MV Station should be connected to the ground system of the PV plant.