



Power Lite Rack
R100A Installation Manual
Ver 1.2



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www.uzenergy.com/

Warning: Read this entire document before installing or using R100A. Failure to do so or to follow any of the instructions or warnings in this document can result in electrical shock, serious injury, or death, or can damage R100A, potentially rendering it inoperable.

PRODUCT SPECIFICATIONS

All specifications and descriptions contained in this document are verified to be accurate at the time of printing. However, because continuous improvement is a goal at UZ ENERGY, we reserve the right to make product modifications at any time.

The images provided in this document are for demonstration purposes only. Depending on product version and market region, details may appear slightly different.

ERRORS OR OMISSIONS

To communicate any inaccuracies or omissions in this manual, send an email to wangyx@uzenergy.com



ELECTRONIC DEVICE: DO NOT THROW AWAY

Proper Disposal of batteries is required. Refer to your local codes for disposal requirements

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IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE IMPORTANT SAFETY INSTRUCTIONS

This manual contains important instructions for the R100A that must be followed during installation and maintenance of the system.

R100A installation and service require knowledge of high voltage electricity and should only be performed by UZ ENERGY Certified Installers. UZ ENERGY assumes no liability for injury or property damage due to repairs attempted by unqualified individuals or a failure to properly follow these instructions. These warning and cautions must be followed when using R100A.

Symbols Used

These symbols indicate important safety information in this guide or on the equipment:



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



CAUTION: indicates a hazardous situation which, if not avoided, could result in minor injury or damage to the equipment.

NOTE: indicate an important step or tip that leads to best results, but is not safety or damage related.



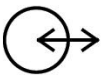
REFER TO OPERATING INSTRUCTIONS: indicates that user should refer to operating or installation instructions before proceeding.



RISK OF ELECTRIC SHOCK: indicates components that present risk of electrical shock.



CAUTION, RISK OF ELECTRIC SHOCK, ENERGY STORAGE TIMED DISCHARGE,
Discharge time is 5 minutes from de-energization.


















BIDIRECTIONAL TERMINIAL: indicates location of combined input/output connector on the equipment.



PROTECTIVE CONDUCTOR TERMINAL: indicates location of grounding connection on the equipment.







General Information






-  **WARNING:** Reading this entire document before installing or using R100A. Failure to do so or to follow any of the instructions or warnings in this document can result in electrical shock, serious injury, or death or can damage R100A, potentially rendering it inoperable.
-  **WARNING:** A battery can present a risk of electrical shock, fire, or explosion from vented gases. Observe proper precautions.
-  **WARNING:** R100A installation must be carried out only by UZ ENERGY Certified Installers who have been trained properly.
-  **WARNING:** R100A is heavy. Use of Lift equipment is recommended.
-  **WARNING:** Use R100A only as directed.
-  **WARNING:** Do not use R100A if it is defective, appears cracked, broken, or otherwise damaged, or fails to operate.
-  **WARNING:** Before beginning the wiring portion of the installation, ensure that R100A is switched off, and open any associated circuit breakers and disconnect switches (if applicable for the installation).
-  **WARNING:** Do not attempt to open, disassemble, repair, tamper with, or modify R100A. R100A and its components are not user serviceable. Batteries in R100A are replaceable. Contact the UZ ENERGY Certified Installer who installed the system for any repairs.
-  **WARNING:** To protect R100A and its components from damage when transporting, handle with care. Do not impact, Pull, drag, or step on R100A. Do not subject R100A to any strong force. To help Prevent damage, leave R100A in its shipping packaging until it is ready to be installed.
-  **WARNING:** Do not insert foreign objects into any part of R100A
-  **WARNING:** Do not expose R100A or its components to direct flame.
-  **WARNING:** Do not install R100A near heating equipment.
-  **WARNING:** Do not immerse R100A or its components in water or other fluids.
-  **CAUTION:** Do not use solvents to clean R100A, or expose R100A to flammable or harsh chemicals or vapors.
-  **CAUTION:** Do not use fluids, parts or accessories other than those specified in this manual including use of non-genuine UZ ENERGY parts or accessories, or parts or



accessories not purchased directly from UZ ENERGY or a UZ ENERGY-certified party.

-  **CAUTION:** Do not place R100A in a storage condition for more than one (1) month, or permit the electrical feed on the R100A to be served for more than one (1) month, without placing R100A into a storage condition in accordance with UZ ENERGY's storage specifications.
-  **CAUTION:** Do not paint any part of R100A, including any internal or external components such as the exterior shell or casing.
-  **CAUTION:** Do not connect R100A directly to photo voltaic (PV) solar wiring.
-  **CAUTION:** When installing R100A in a garage or near vehicles, keep it out of the driving path. If possible, install R100A on a side wall and/or above the height of vehicle bumpers.

Environmental Conditions

-  **WARNING:** Install R100A in a location that prevents damage from flooding.
-  **WARNING:** Operating or storing R100A in temperatures outside its specified range might cause damage to R100A.
-  **WARNING:** Do not expose R100A to ambient temperature above 40 °C or below -20 °C.
-  **CAUTION:** Ensure that no water sources are above or near R100A, including downspouts, sprinklers, or faucets.
-  **CAUTION:** Ensure that snow does not accumulate around R100A.



Revision History:

Date	Revision	Description	Owner
2022-06-09	V1.0	Initial Release	XQ Liu
2022-07-04	V1.1	New installation measurement	XQ Liu
2022-10-08	V1.2	1. Optimizing the Installation Procedure 2. Add Max. Parallel quantity	XQ Liu



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1. Specifications

R100A specifications

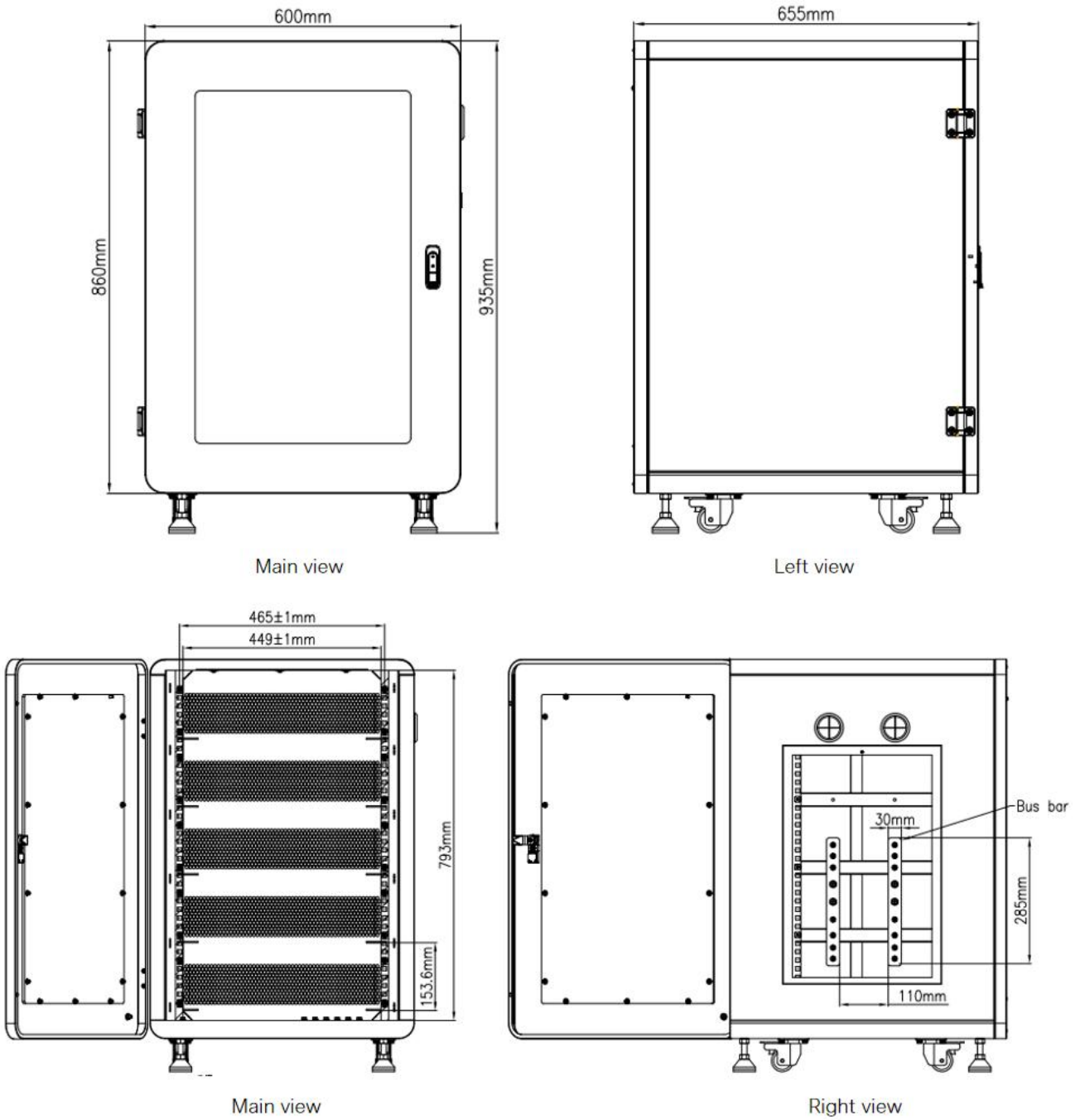


Figure 1.1

R100A:

NO.	Key Item	Specification	Remarks
1.1	Material	SGCC	
1.2	Surface	Spray white (RL9016)	
1.3	Weight	~62Kg	5Batteries in side



1.4	Dimension	WDH: 600*650*935mm	
1.5	IP Level	IP 20 (indoor use)	
1.6	Layer	5	Suitable for 3U 19 inch battery pack
1.7	Battery	L051100-A L051100-A1 L051100-B L051100-D	Option
1.8	Wifi	T300:L:9.8mm Model:V211025-R,IP65.	Option
1.9	Bus-bar	Max:250A	

2. Installation

2.1 Requirements for Installation Location

- ✧ A solid support surface must be available (e.g., concrete or masonry).
- ✧ The installation location must be inaccessible to children.
- ✧ The installation location must be suitable for the weight and dimensions of the R100A and battery system.
- ✧ The installation location must not be exposed to direct solar irradiation.
- ✧ Keep away from metal conductive dust.
- ✧ Keep away from water source, heat source and inflammable and explosive articles
- ✧ The installation location must not be close to the fire.
- ✧ The altitude of the installation location should be less than 3000m.
- ✧ The storage temperature should be between $-20^{\circ}\text{C} \sim +50^{\circ}\text{C}$.
- ✧ The operating temperature should be between $0^{\circ}\text{C} \sim +50^{\circ}\text{C}$.
- ✧ The ambient humidity should be between 20-80%.

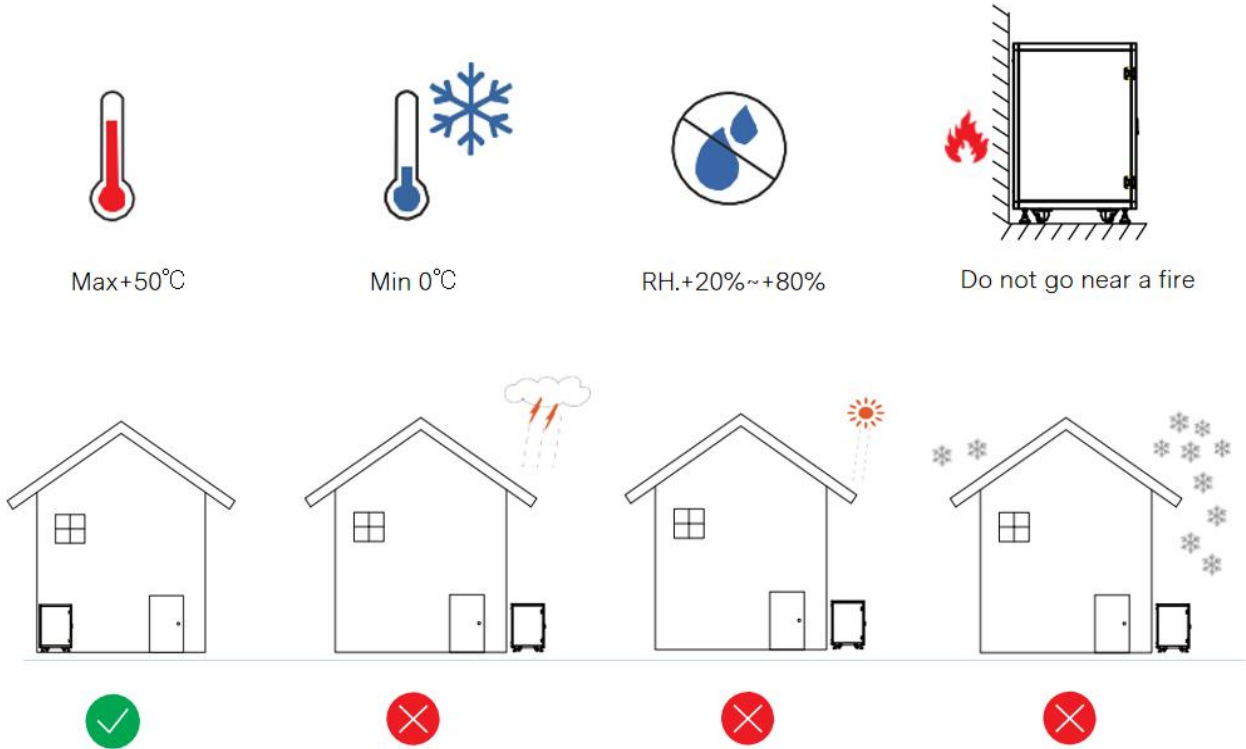


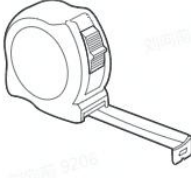


Figure 2.1

2.2 Tools

The tools in the following table could be needed during the installation

Torque screwdriver	Phillips-screwdriver bit	Hex-key bit
Phillips-head screwdriver	Torque wrench	Wrench

Cylinder screwdriver bit	Scissor	tie
		
level	Drill	Tape measure

Use properly insulated tools to prevent accidental electric shock or short circuits when installing the battery pack into the R100A .

Use adjustable tools and measuring instruments that are certified for precision and accuracy.

2.3 Safety Gear

Wear the following safety gear when dealing with the battery system. Installation personnel must meet the relevant requirements of international standards.

		
Insulated gloves	Safety goggles	Safety shoes

2.4 Dimensions and Space Requirements

R100A requires adequate clearance for installation. Do not mount any other objects within the clearance space (Figure 2.4.1), except those explicitly required by the installation (e.g. conduit, a junction box, or an electrical disconnect depending on local installation codes).

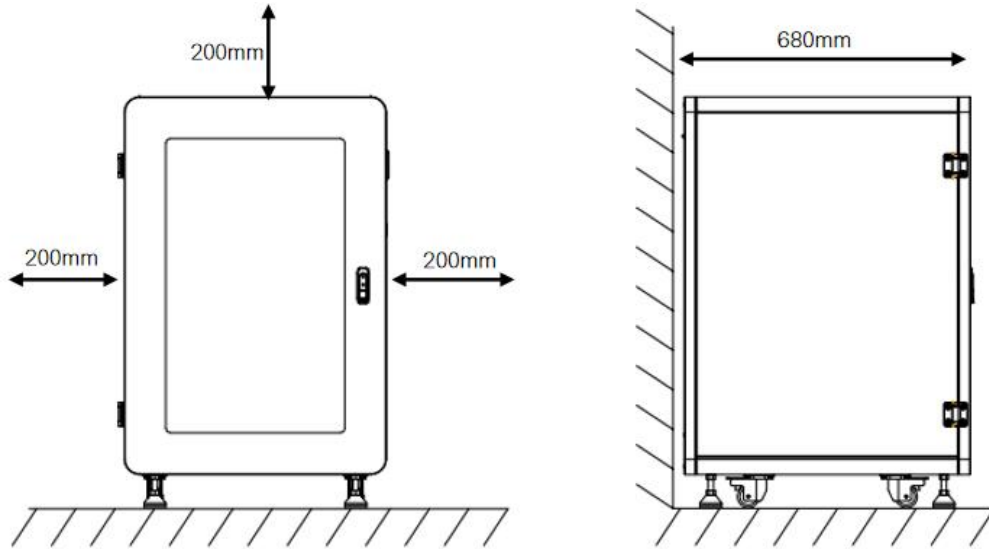


Figure 2.4.1

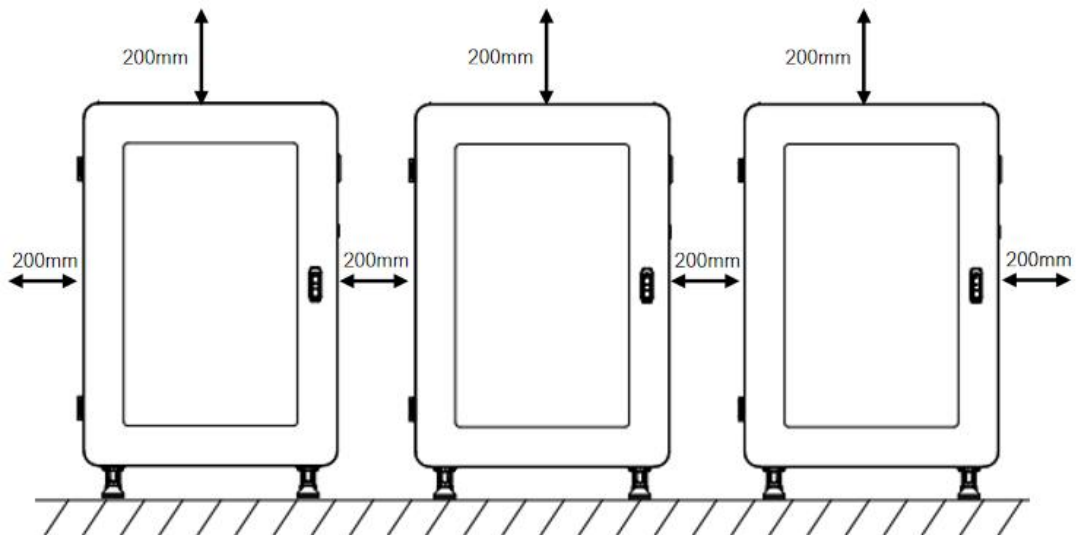


Figure 2.4.2.

Space Requirements	
Min. clearance from left side	200mm
Min. clearance from right side	200mm
Min. clearance above	200mm
Min. clearance between two sides in parallel	200mm
Min. clearance at the bottom	0 mm
Max. slope	+/- 2 degree side-to-side +/- 5 degree front-to-back

2.5 Scope of Delivery

Check the scope of delivery for completeness and any externally visible damage. Contact your distributor if the scope of delivery is incomplete or damaged.

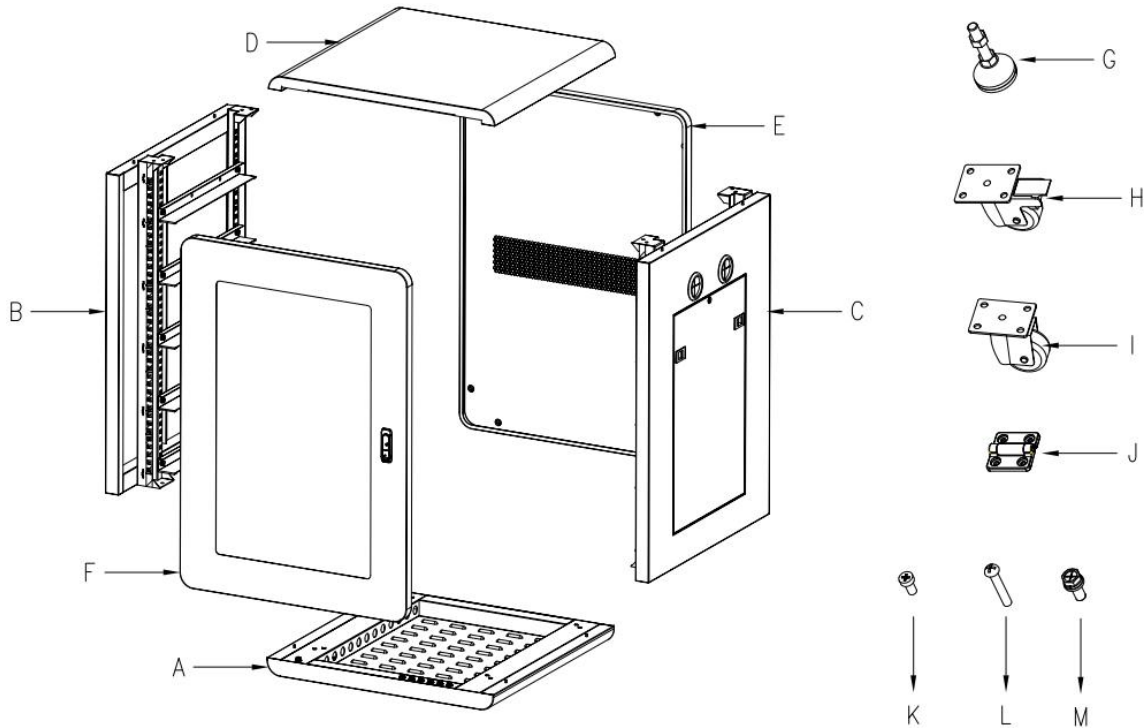


Figure 2.5.1

Bill of materials details:

NO	Part Name	Quantity
A	Rack chassis	1pcs
B	Rack left door	1pcs
C	Rack right door (Busbar in side)	1pcs
D	Rack cover	1pcs
E	Rack back door	1pcs
F	Rack front door	1pcs
G	Foot	4pcs
H	Castors (with brake pedals)	2pcs
I	Castors (without brake pedals)	2pcs
J	Hinge	2pcs
K	Screw(M5*10)	8pcs

L	Screw(M5*35)	8pcs
M	Screw(M6*16)	52pcs

2.6 Rack Installation Process

2.6.1 Assemble the rack chassis

Step 1 :Turn the part (A) over 180° to the ground and install the part (G) sequentially with a wrench.

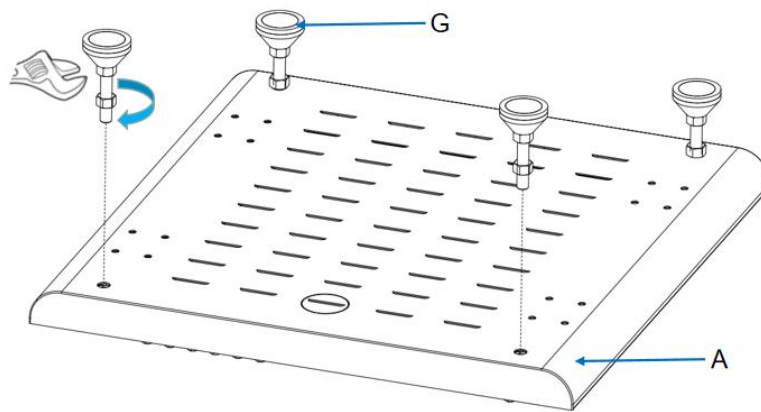


Figure 2.6.1

Step 2 :Mount the castors on the rack chassis

Note: There are two castors, pay attention to distinguish the position ;Castors with brakes are installed in the bottom housing circle position.

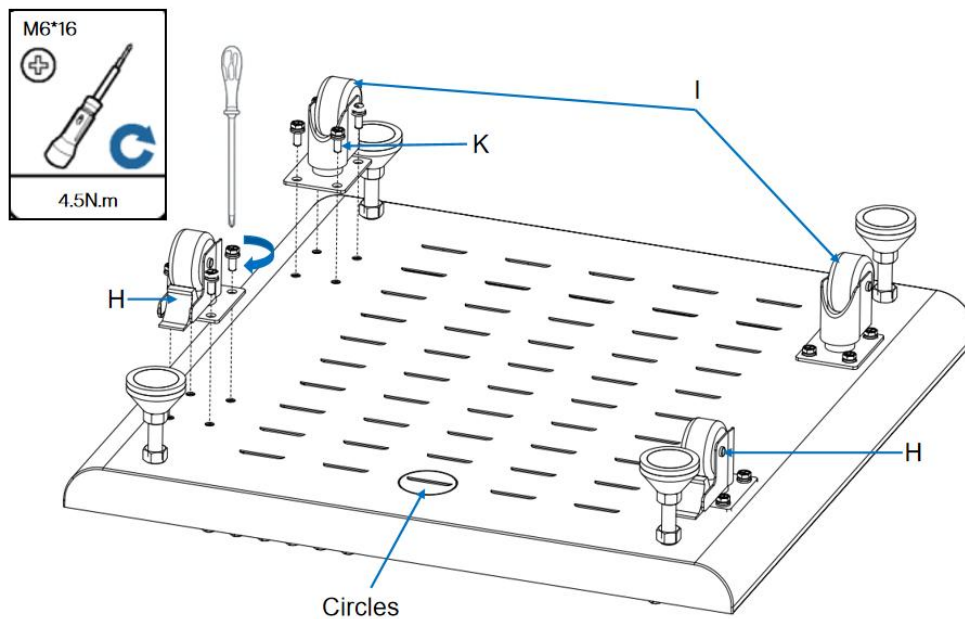


Figure 2.6.2

2.6.2 Assemble the rack left door

Step 1: Place rack left door the on rack chassis ; Align the screw holes.

Note : Pay attention to distinguish between the front and back positions of the cabinet; As shown in the figure below; The chassis of the rack has screws in the direction of the front of the rack.

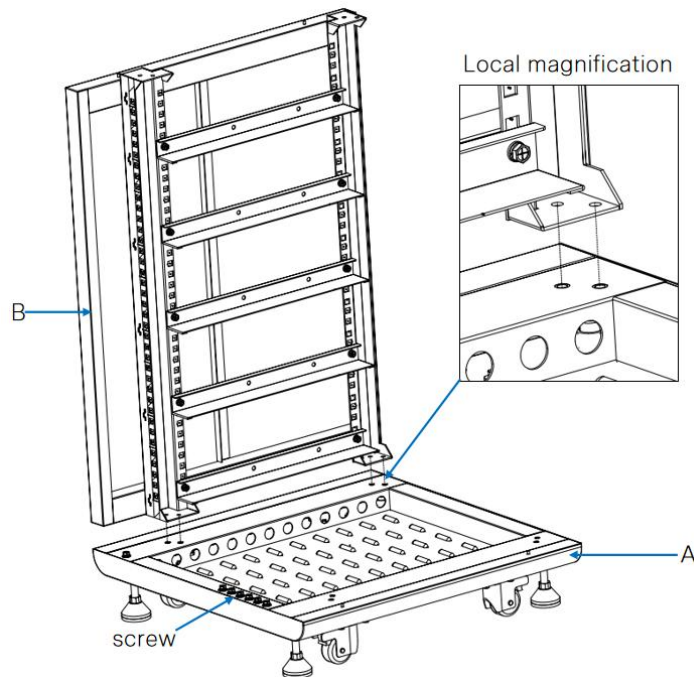


Figure 2.6.3

Step 2: Use the screws to secure the left door.

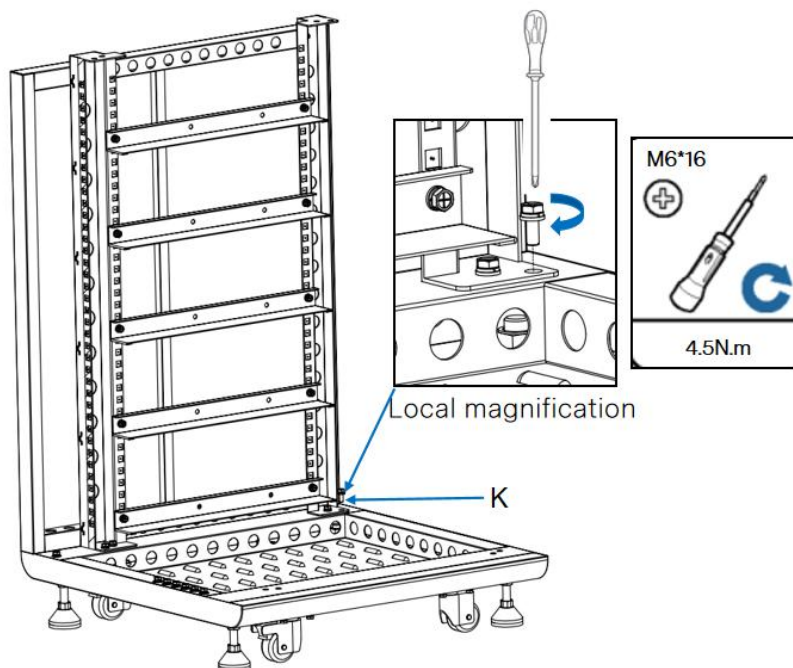


Figure 2.6.4

2.6.3 Assemble the rack right door

Step 1: Place rack right door the on rack chassis ; Align the screw holes.

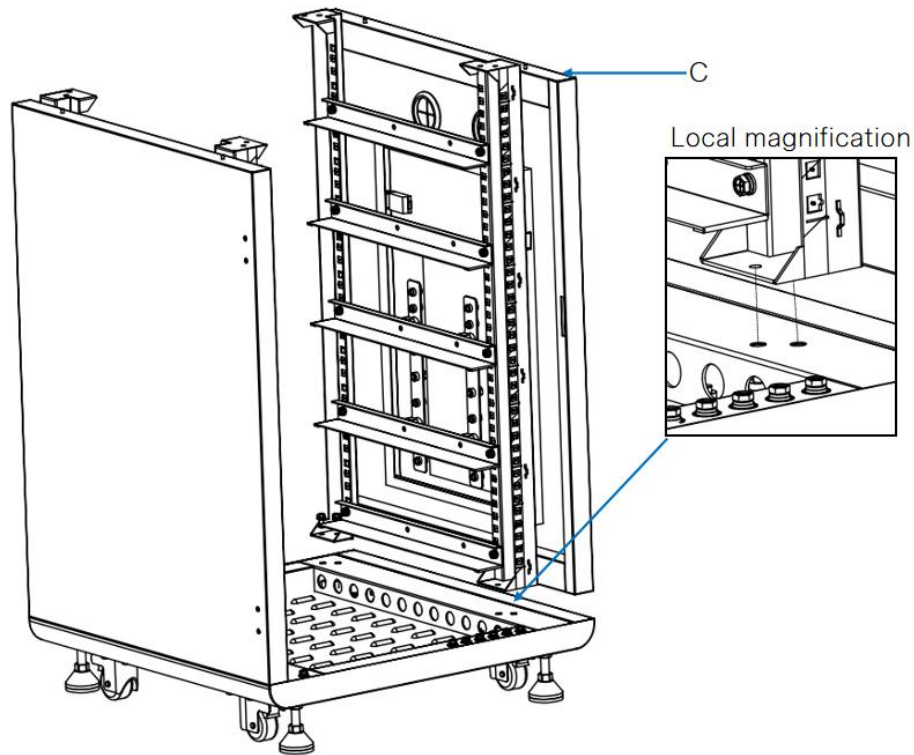


Figure 2.6.5

Step 2: Use the screws to secure the left door.

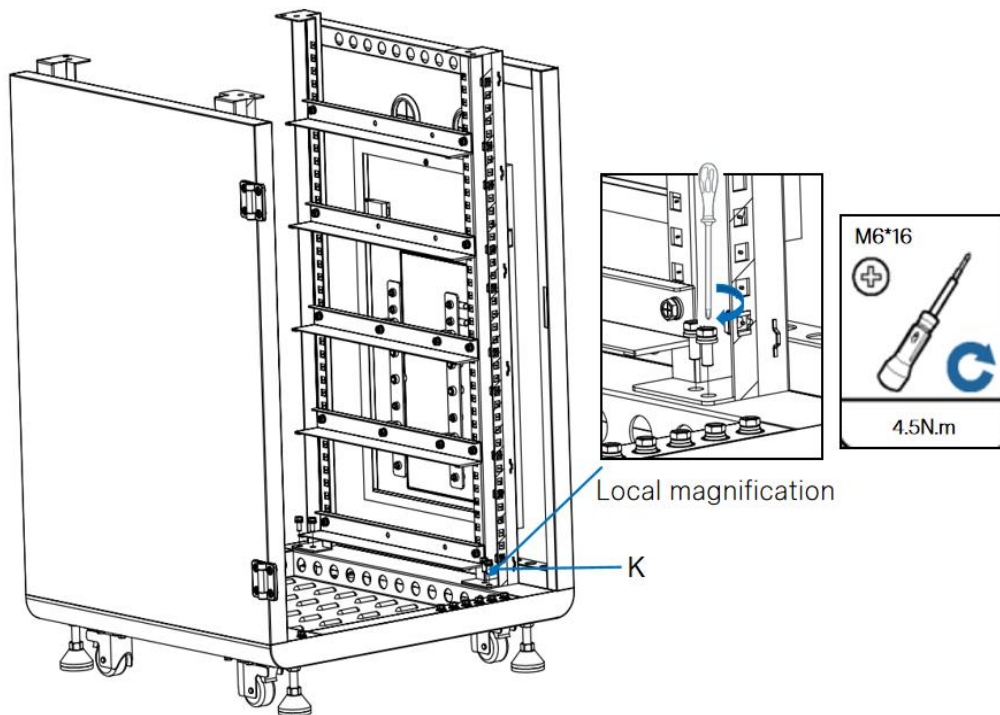


Figure 2.6.6

2.6.4 Assemble the rack cover

Step 1 :Assemble the rack cover according to the direction

Note : The screw hole on the front of the rack cover is far away from the edge, as shown below.

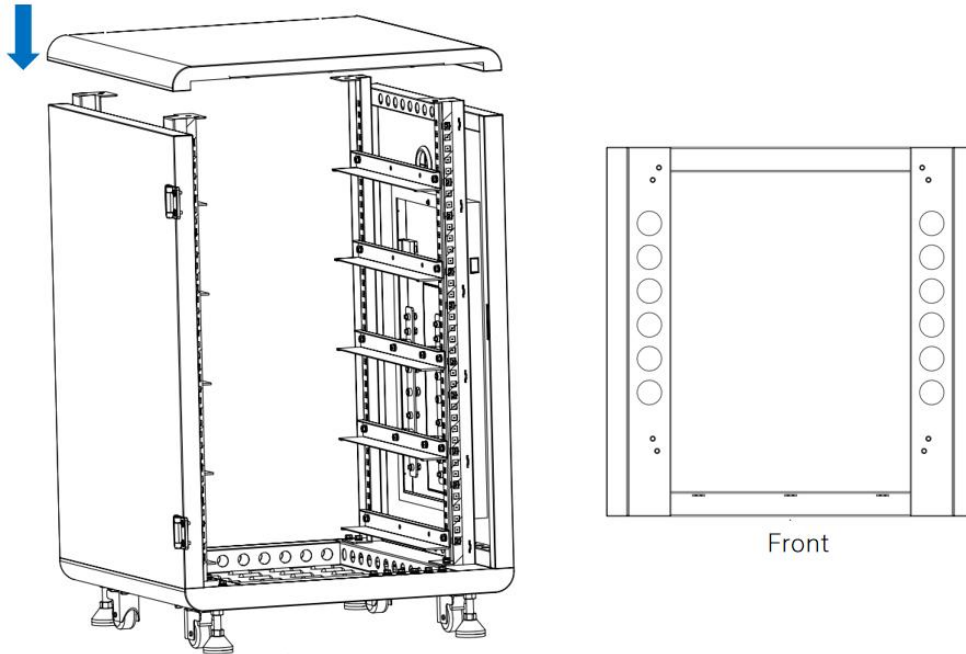


Figure 2.6.7

Step 2 :Use screws (M16*6) to secure the rack cover.

Note : (1) Check that the holes are aligned before you screw them. (2) Do not tighten the screws yet. Tighten the screws after installing all the screws.

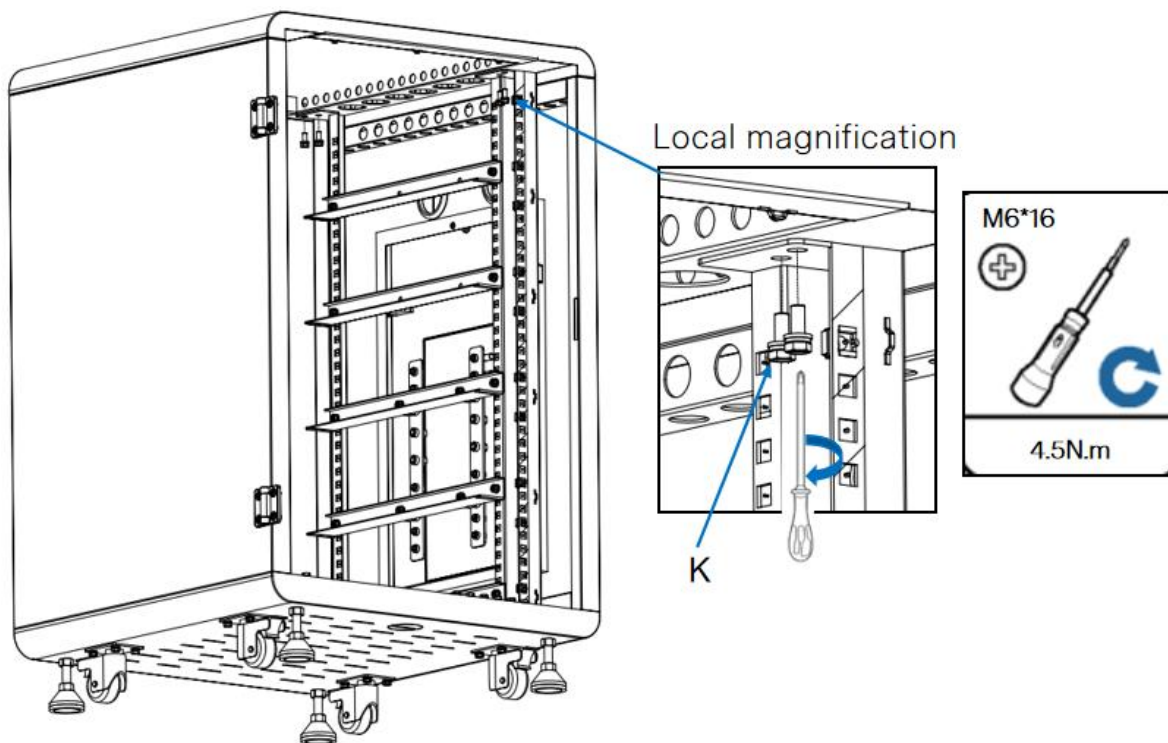


Figure 2.6.8

Step 3 :Dimension inspection

After the upper cover is installed, measure the internal distance between the two sides of the door (Shown below), which should be kept within the range of $449\pm 1\text{mm}$. If there is any deviation, please adjust steps 2.6.2, 2.6.3, 2.6.4 again

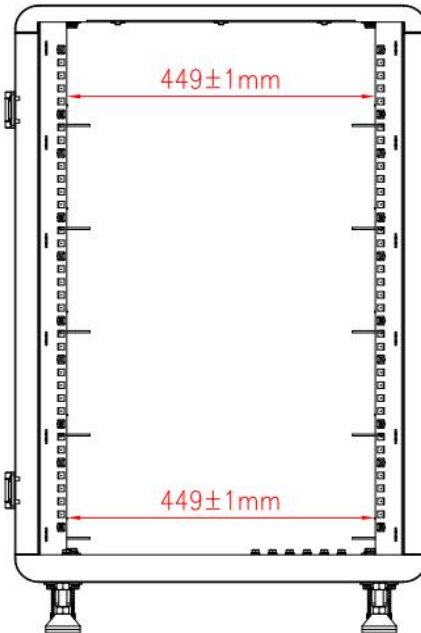


Figure 2.6.9

2.6.5 Assemble the rack back door

Align the rear doors of the rack, and secure them using M6 x 35mm screws

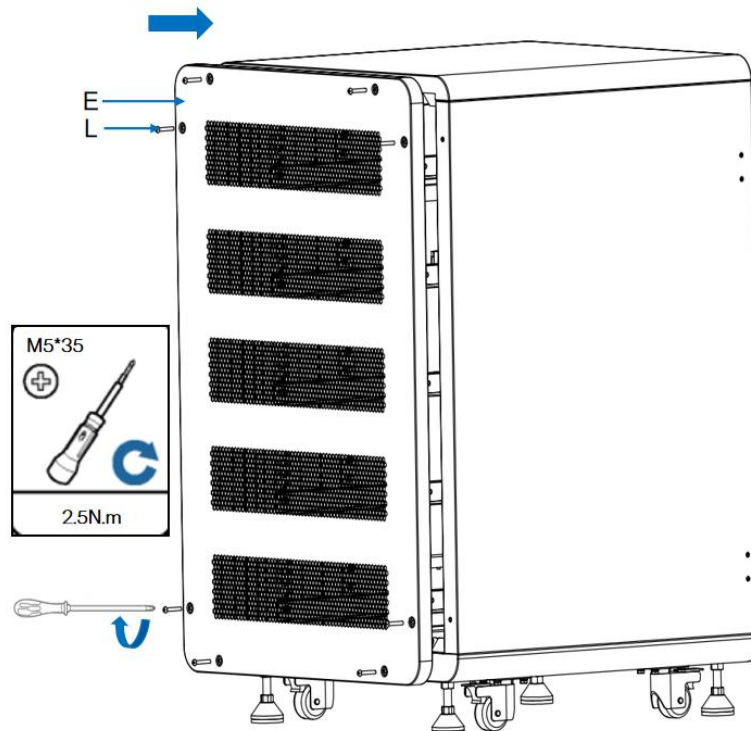


Figure 2.6.10

2.6.6 Assemble the rack front door

Step 1 :Assemble the hinges on the front door of the rack.

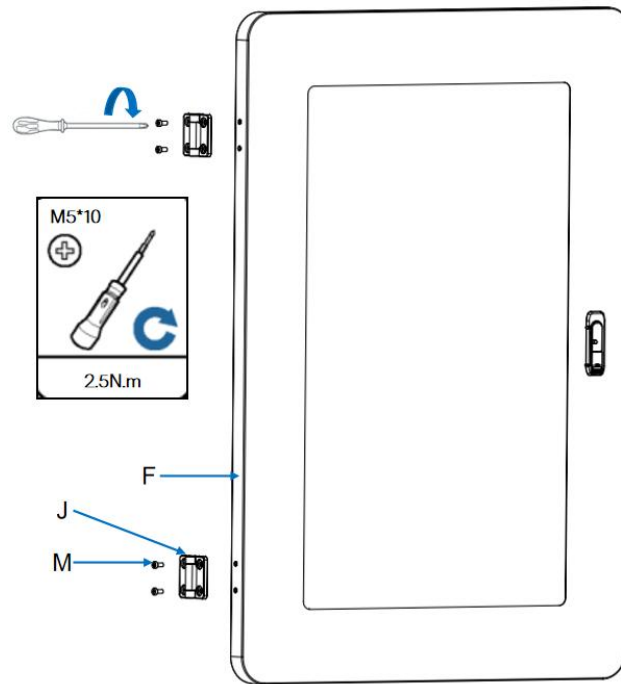


Figure 2.6.11

Step 2 :Assemble the front door with hinges on the rack.

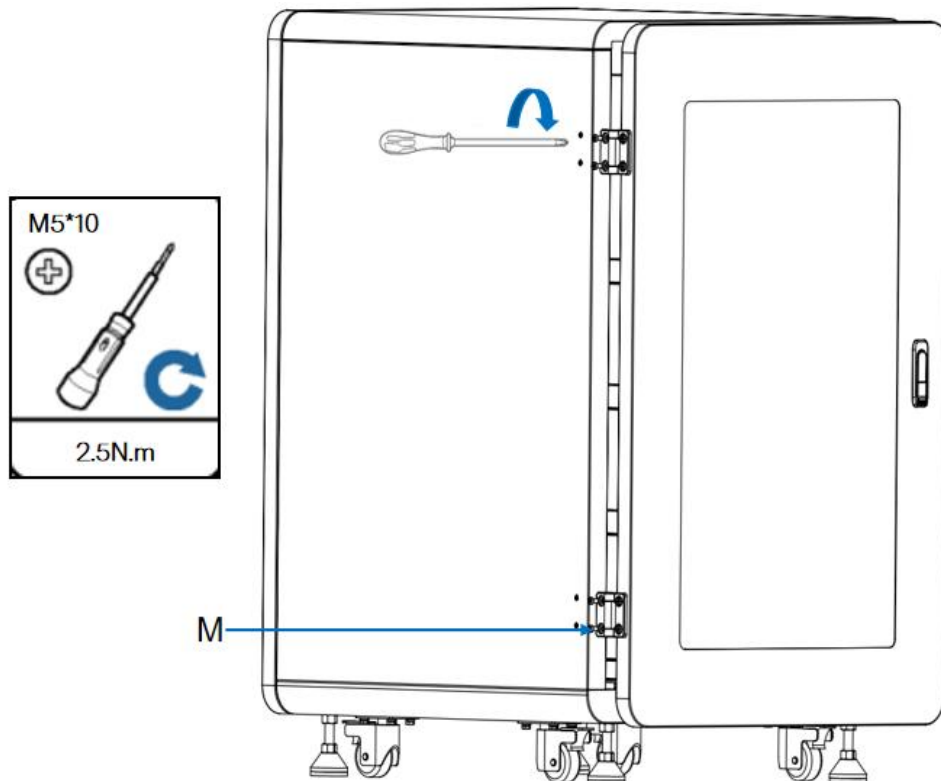


Figure 2.6.12

Step 3 :Assemble ground cables for the front door.

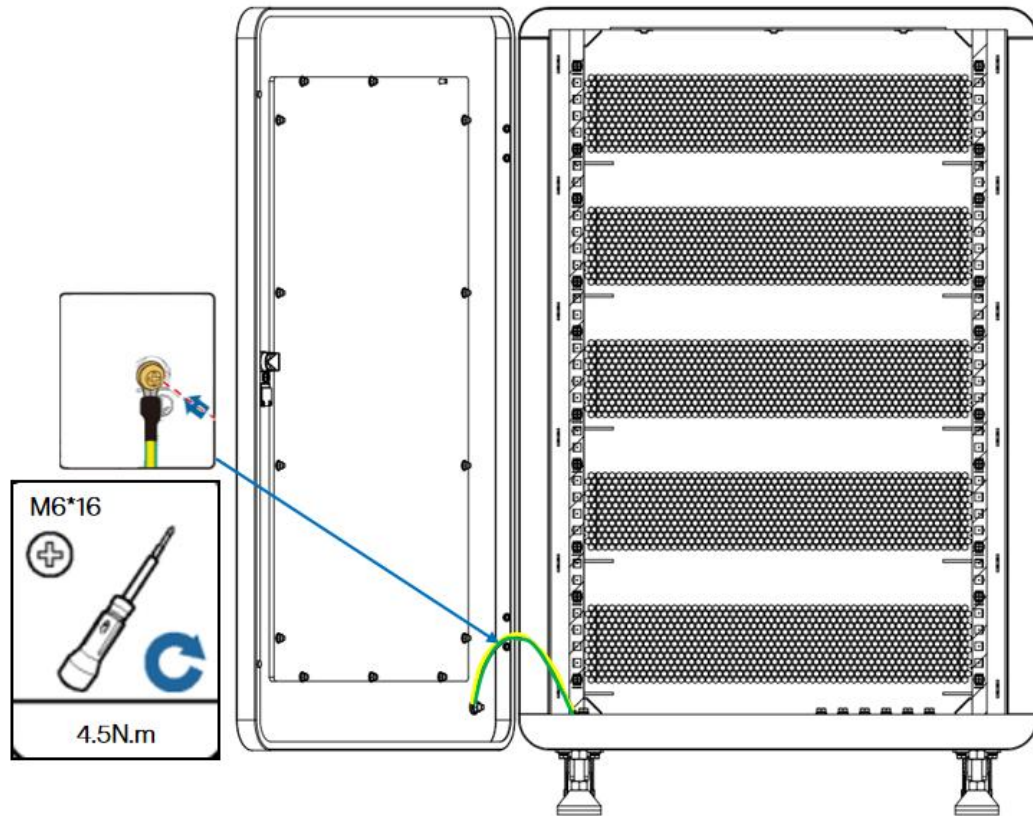

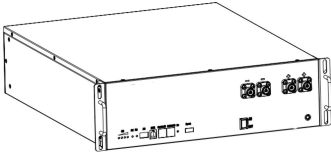
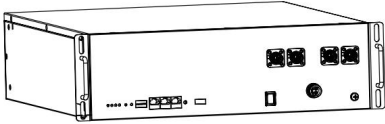
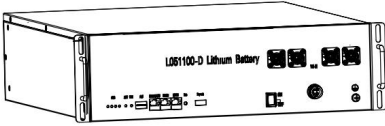
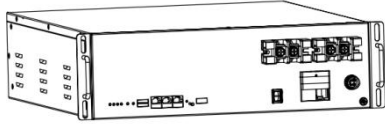




Figure 2.6.13

3. Low voltage application scenarios

3.1 Parts List

	Part Name	Graphic sketch	Quantity	Remarks
Rack	R100A		1pcs	
Pack	L051100-A		5pcs	The R100A can be configured with L051100-A, L051100-A1, and L051100-D
	L051100-A1			
	L051100-D			
	L051100-B		5pcs	Pack output wiring harness is different
Battery to Rack Busbar wiring harness (CA07)	DC cable		5pcs	Positive output DC cable; Length:1.5m
	DC cable			Negative output DC cable; Length 1.5m.



	Parallel Communication cable			Pack communication series line; length 0.3m
	Ground wire			Pack ground wire; length 1m
Rack to Inverter wire harness (CA11) -Optional, customers can make their own	DC Cable		1pcs	Positive output DC cable: Positive 4AWG,Red,600V,V W-1,Multi-Cores, Cable,Length:1.5m; Double SC35-8 terminal;
	DC Cable			Negative output DC cable: Negative 4AWG,Black,600V,V W-1,Multi-Cores, Cable,Length:1.5m; Double SC35-8 terminal;
	4H5L_Standard inverter Communication cable			Standard inverter Communication cable ,Length:1.5m __Black__CAT 5 (8P8C) ,Battery 1H5L;Inverter:4H5L;
	Ground wire			Ground wire_Yellow green wire UL3173 10WAG_Length:1m, double M6 OT Terminal
WiFi	V211025-R		5pcs	L051100-A1, L051100-B, L051100-D can be optional

3.2 Battery installation

Apply to UZ Energy Power Lite series battery pack.

Step 1: Load the batteries into the rack one by one (Has L051100 - A1, for example)

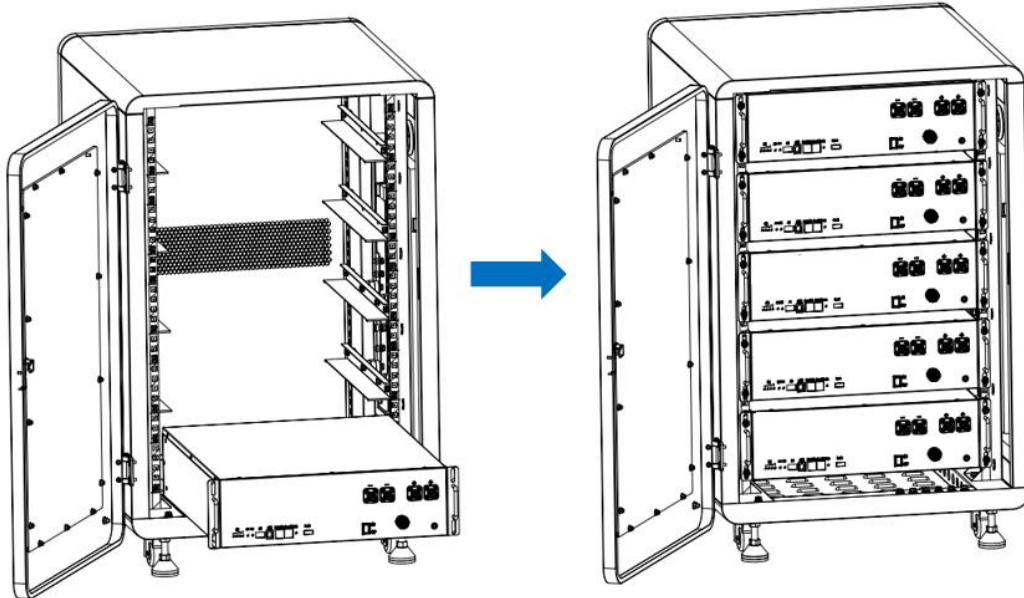


Figure 3.2.1

Step 2: Use screws to secure the battery pack.

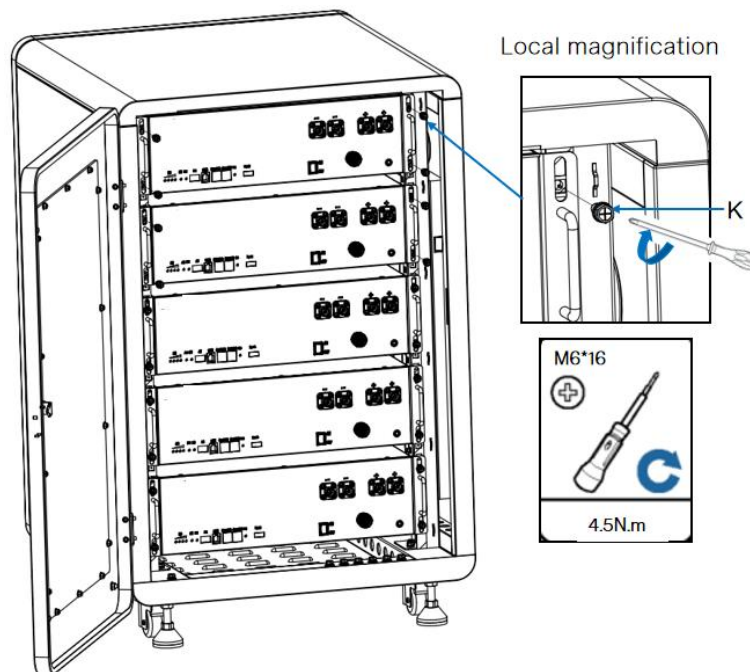


Figure 3.2.2

3.3 Rack internal harness

Before wiring, open the small door on the right for easy operation:

1. Remove the screw using a screwdriver

2. Press the card buckle and remove the side door

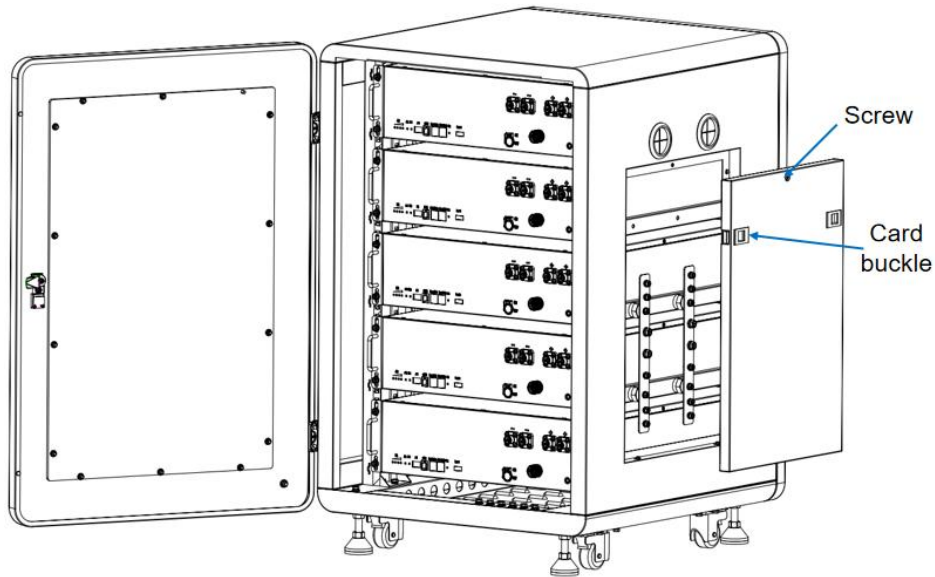


Figure 3.3.1

First, fix the positive OT terminal of the battery output harness to the positive bus with M6x14 bolts, and then fix the negative OT terminal of the battery output harness to the negative bus with M6x14 bolts. Then connect the quick connector of the output harness to the battery pack, pay attention to the positive and negative polarity of the battery and the output harness, and do not reverse the connection.

Finally, fix the OT terminal of the output line on the busbar with M8x16, and the other end passes through the outlet to lead out of the R100A.

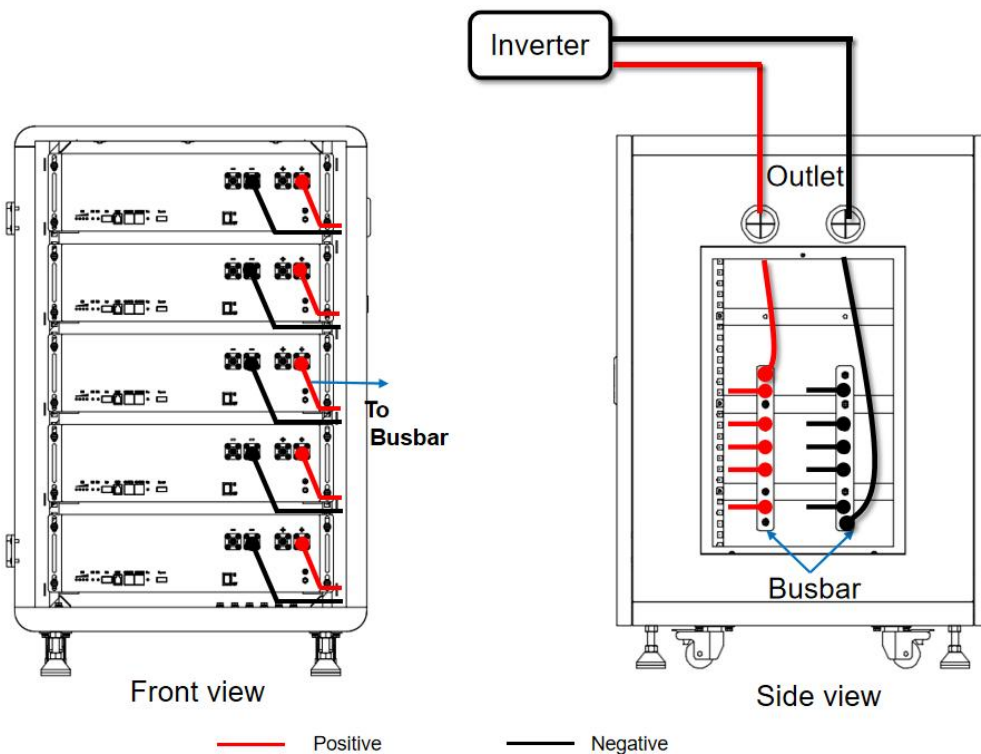


Figure 3.3.2

3.4 Connect communication wire

Pack (L051100-A) communication lines are connected in sequence as shown in the following figure.

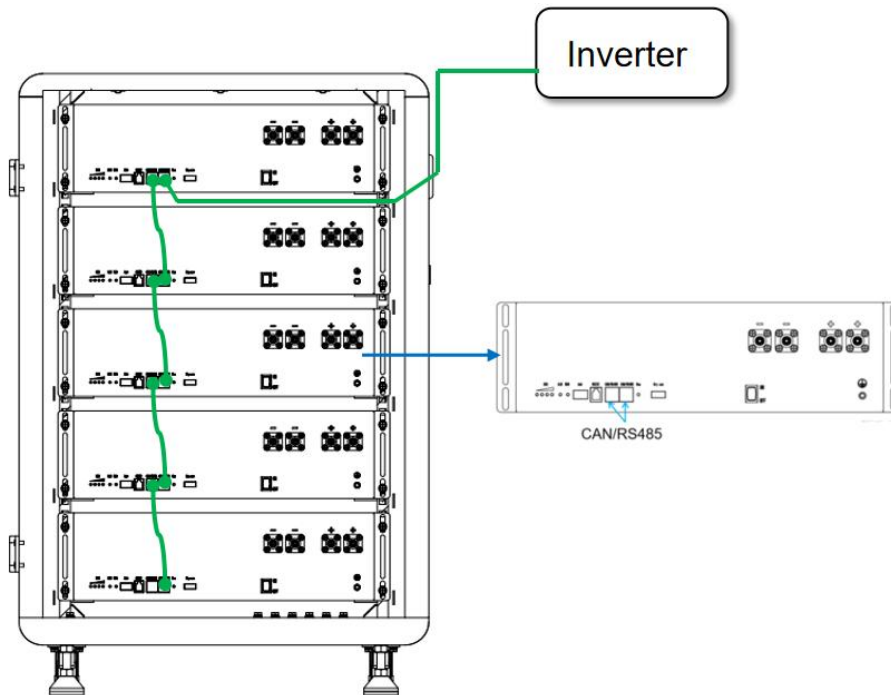


Figure 3.4.1

Pack (L051100-A1/L051100-B/L051100-D) communication lines are connected in sequence as shown in the following figure, Pack is connected to RS485, and CAN/RS485 is connected to inverter.

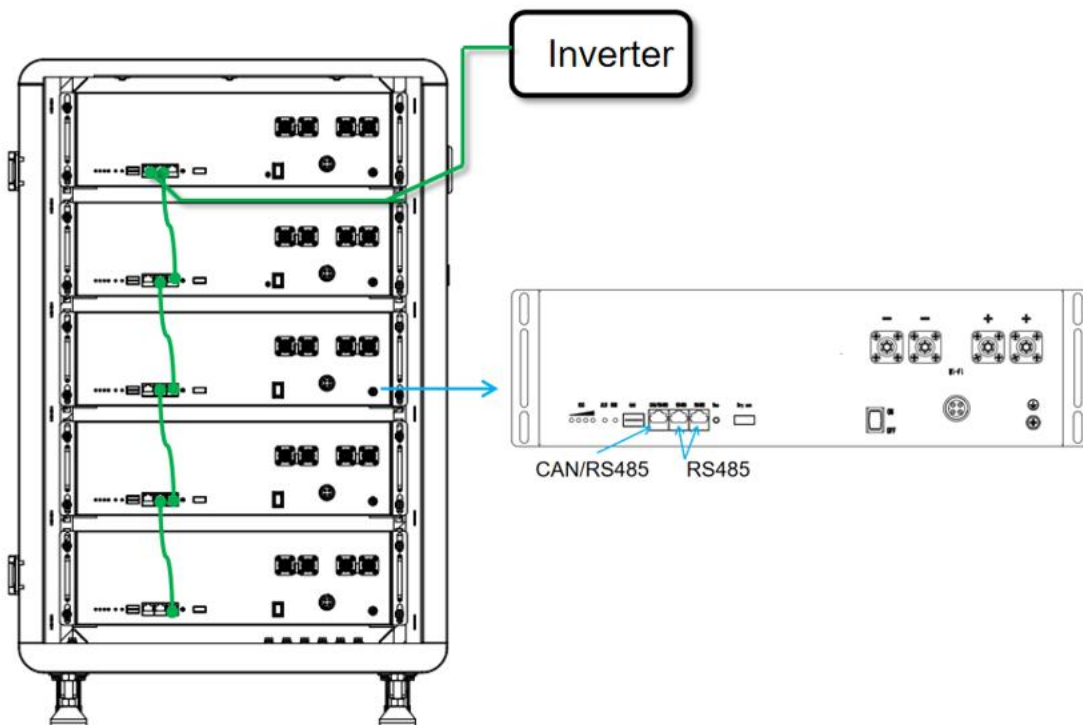


Figure 3.4.2

3.5 Connect ground wire

Grounding wire connection scheme:

Unscrew the ground mounting bolt on the battery box with a screwdriver (Figure 3.5.1), put the bolt on the ground wire OT terminal sleeve, and then use a screwdriver to fix it to the ground wire connector on the battery box. The OT terminal at the other end of the ground wire is fixed to the ground bolt on the chassis of the rack (Figure 3.5.2); Follow the steps above to connect the battery box ground wires in turn.

The ground lead line OT terminal is then attached to the bolt of the chassis of the rack, the other end is led out of the line outlet, and the ground wire is tied to the line fixing buckle on the right column with a cable

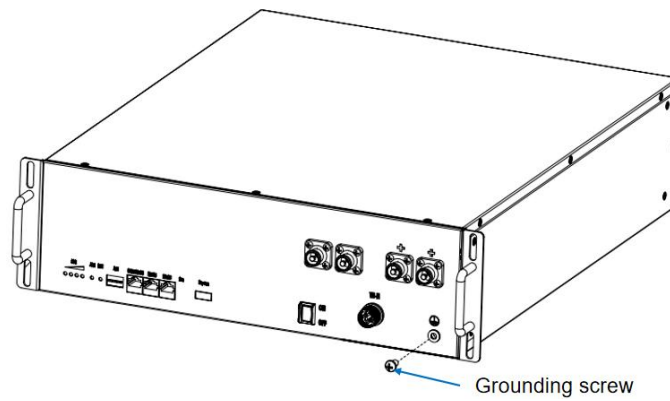


Figure 3.5.1

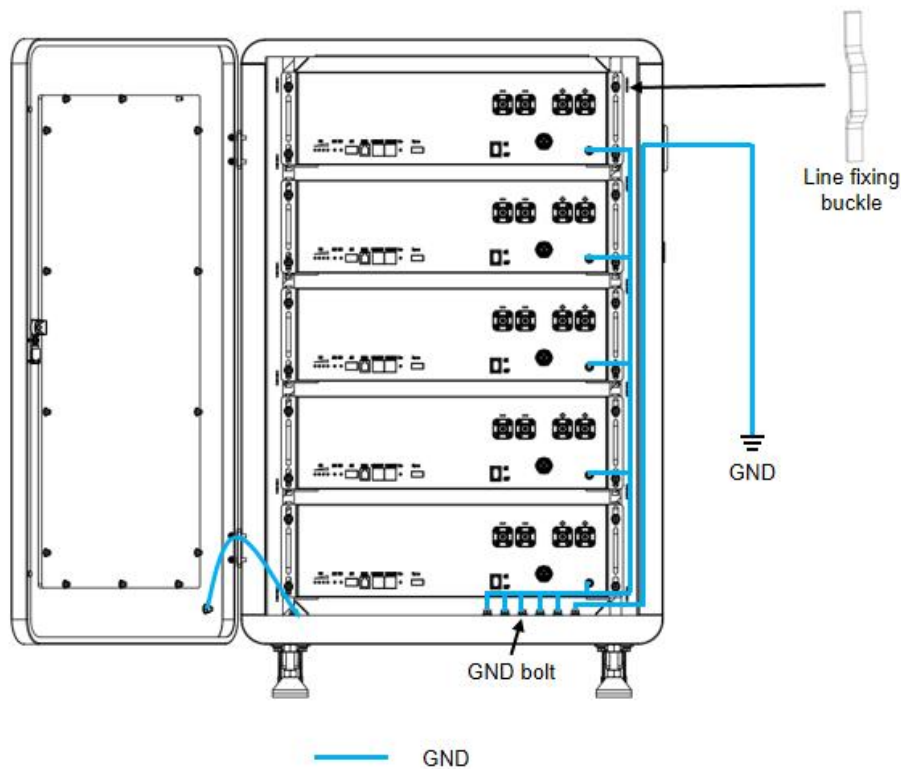


Figure 3.5.2

3.6 Close side door

Install the removable side door to the right side door of the rack by pressing the card buckle and secure with screws (K).

The following figure shows the status after installation.

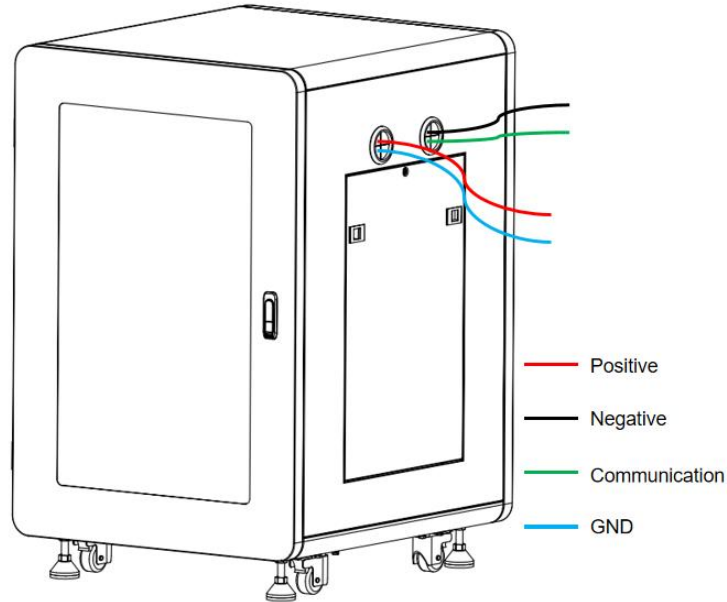


Figure 3.6.1

3.7 Multi-Units in Parallel

Additional installation materials that need to be for parallel connection of multiple units are as follows:

			
<p>Metal shield RJ45 plug, cat5 shield</p>	<p>power cable(4AWG, Through a current of 100A)</p>	<p>OT terminal (SC35-8)</p>	<p>Heat shrink tubing (18 mm in diameter)</p>

- Max 3 units R100A in Parallel for L051100-A Battery (Max. 75KWh)
- Max 6 units R100A in Parallel for L051100-A1 /-B /-D Battery (Max. 150KWh)

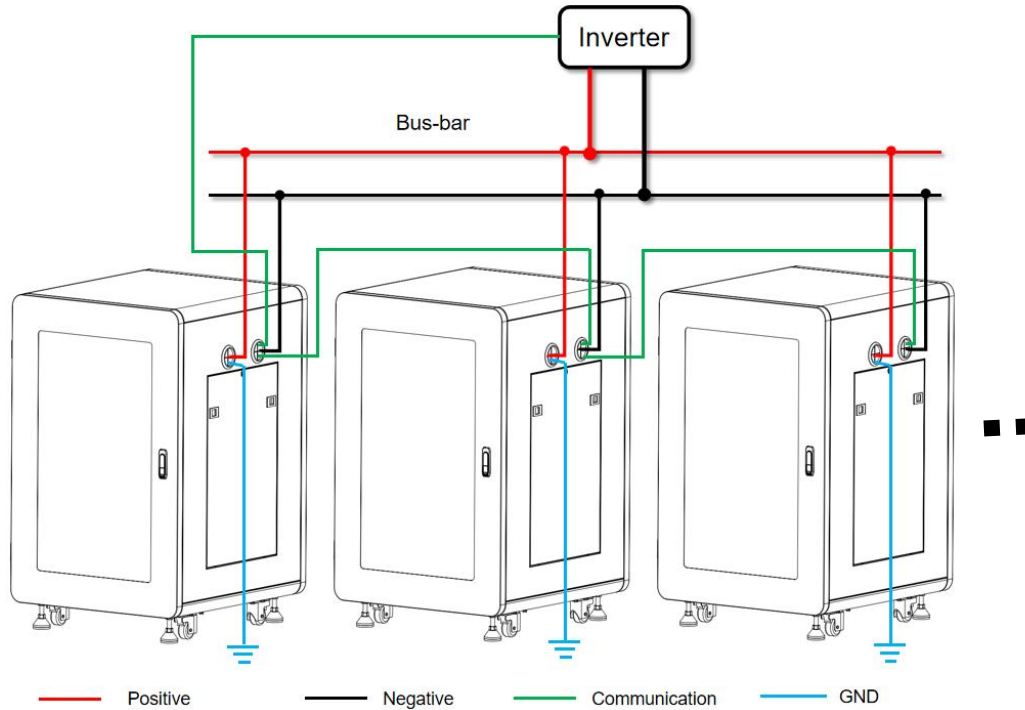


Figure 3.7.1

4. Commission the Battery System

4.1 Set up Master Pack and Slave Pack

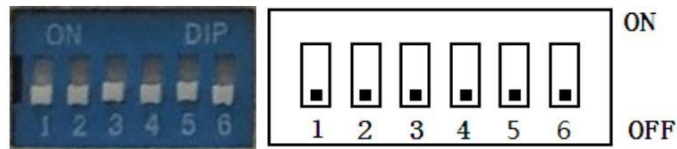


Figure 4.1.1

single rack:

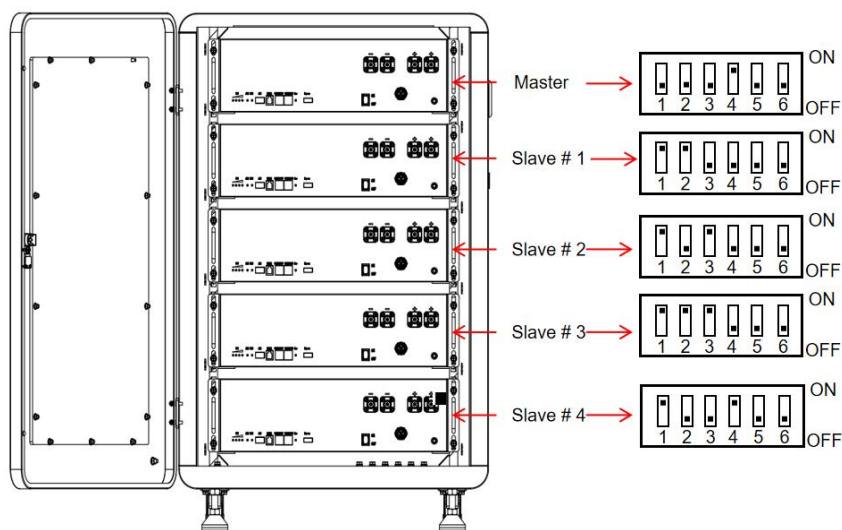


Figure 4.1.2

4.2 Two R100A racks are connected in parallel

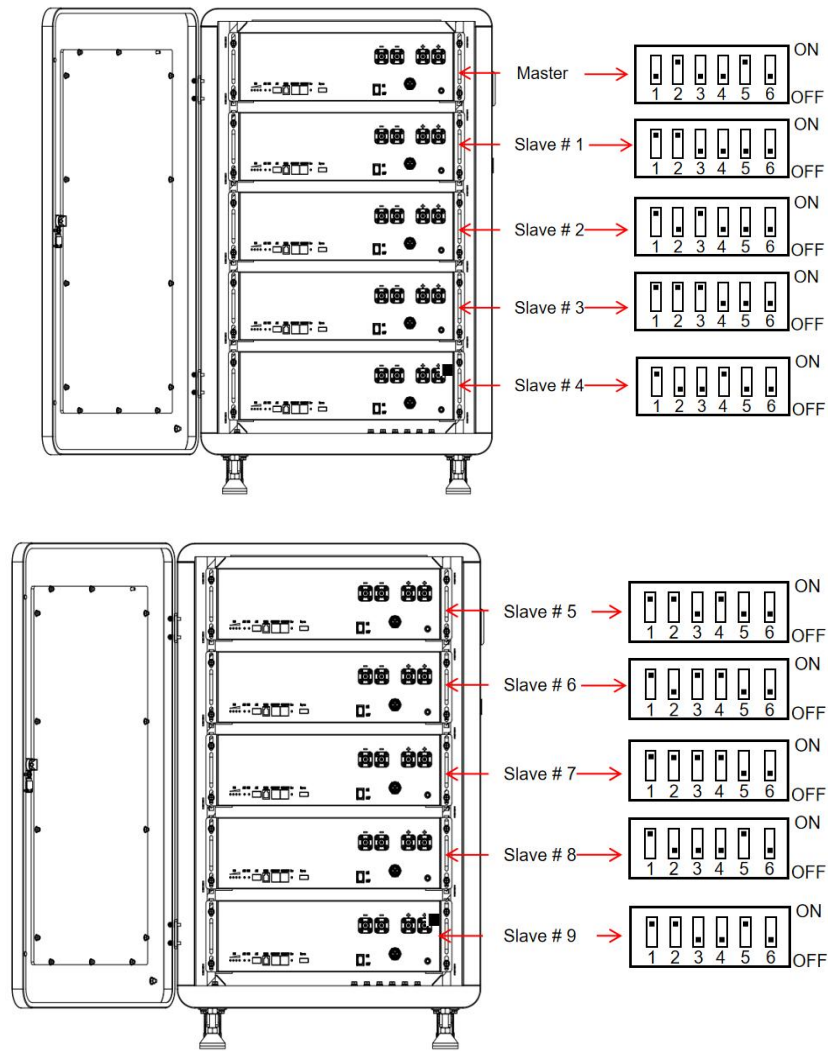
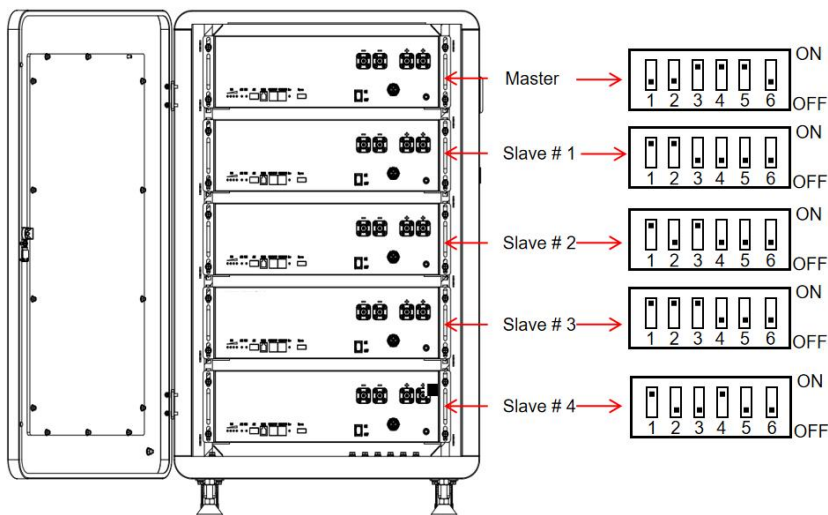


Figure 4.2.1

4.3 Three R100A racks are connected in parallel



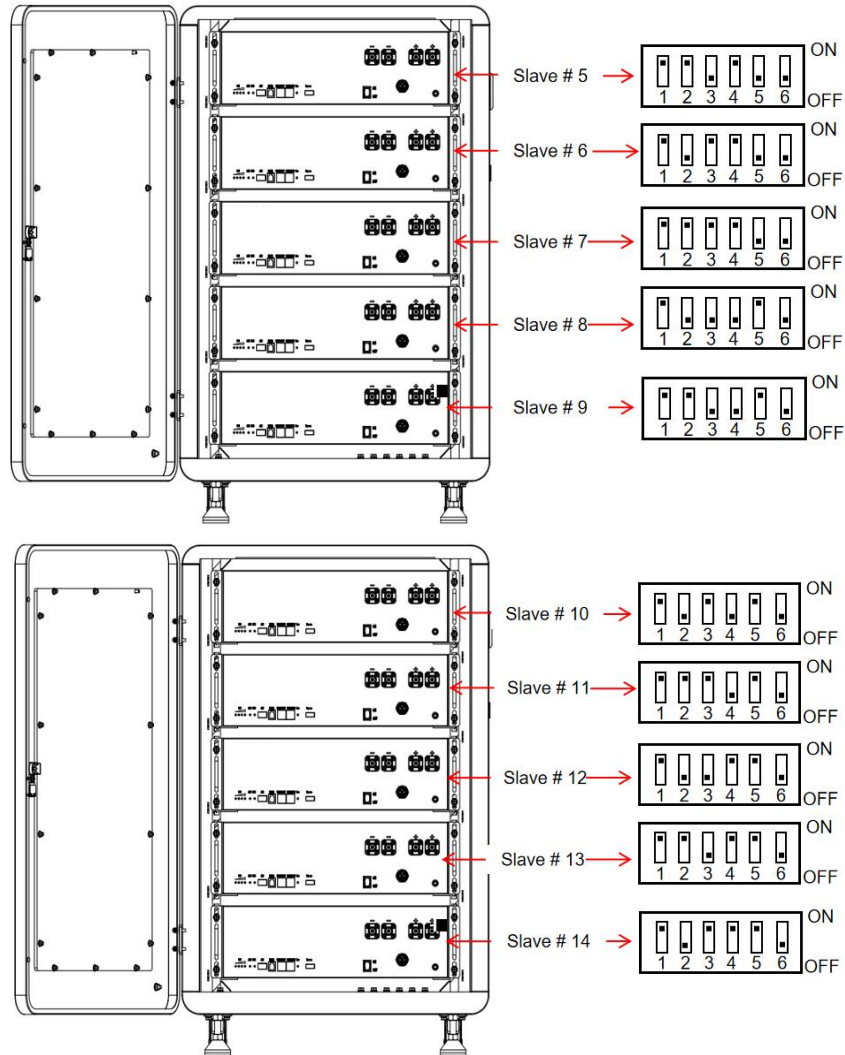


Figure 4.3.1

- For more Battery parallel DIP Settings, Please contact engineers;

4.4 Check

Items that need to be checked:

- ✧ Do not shake the rack after installation, do not dump due to vibration
- ✧ Battery cables are correctly connected
- ✧ Battery cables Are securely connected
- ✧ Reliable grounding
- ✧ Whether the dial switch is correct
- ✧ Ensure that there is no foreign matter (screws, tools) inside or on top of the rack.

After the inspection is completed press Power Switch button, green LED should be



twinkling and then turn into function mode.

5. Technical Support

Further support can be achieved via UZ ENERGY Service Team. Please contact the sales person when needed. The following information is useful to have ready when contacting UZ ENERGY:

- ✧ Owner Name
- ✧ R100A part number and serial number
- ✧ Brief description of the issue

6. Maintenance

R100A does not require pre-scheduled preventative maintenance. The only maintenance required by an owner is to keep the unit free and clear of debris, especially around the air intake and exhaust.

To clean R100A, use a soft, lint-free cloth. If needed, the cloth can be dampened with mild soap and water only. Do not use cleaning solvents to clean R100A, or expose R100A to flammable or harsh chemicals or vapors.

