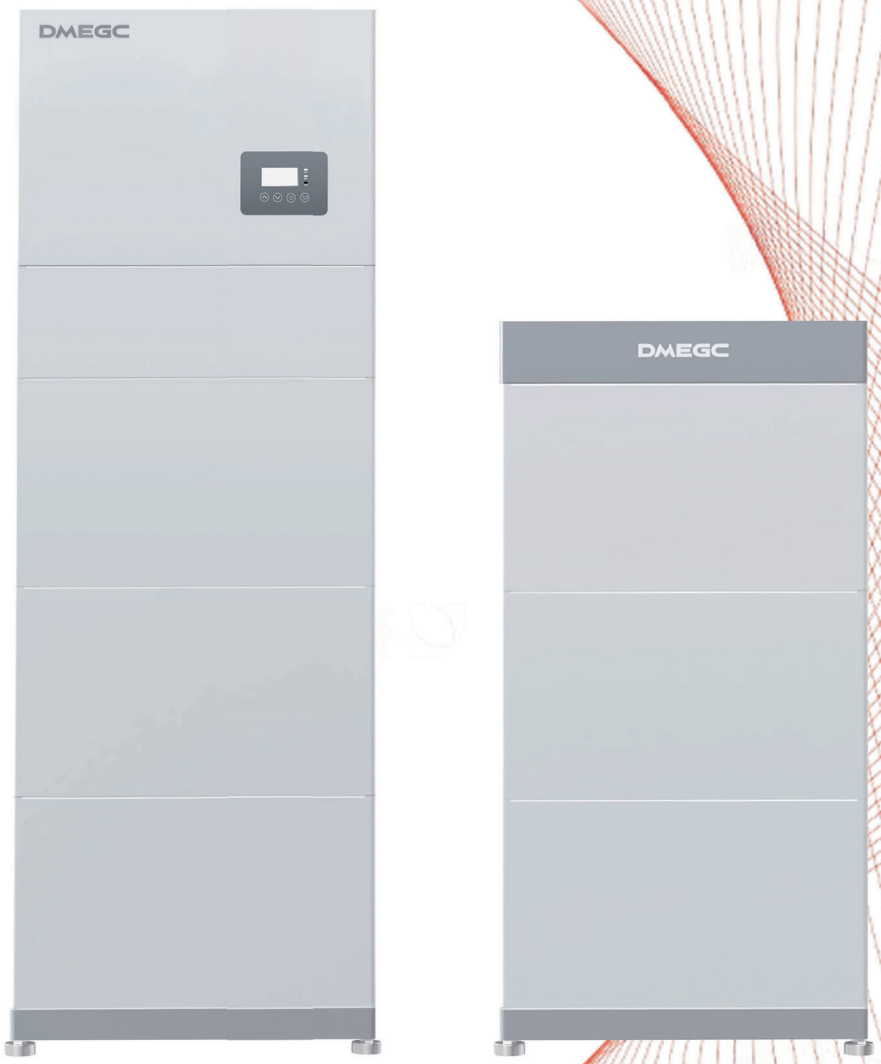
DMEGC



H02 Series Lithium-ion Battery

User Manual

www.dmegc-ess.com

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ABOUT THIS MANUAL

Scope of Validity

This manual is an integral part of H02 Series. It describes the installation, electrical connection, commissioning, maintenance and troubleshooting of the product. Please read it carefully before operation.

H02 components:

H02-MASTER	H02-SLAVE
Base	Series box

Note:

"H02 Series" (H02 for short) is the name of battery system. It includes master module, slave modules, base and series box.

" master module " is an electronic system that manages rechargeable batteries. It is installed on slave module (s). Its model name is H02-MASTER.

" slave module " is an electrical battery that can charge or discharge loads. It is installed under a master module. Its model name is H02-SLAVE.

"Base" is used to support the batteries. It is installed under the battery module (s).

"Series box" is used to connect the two towers through wiring. It is installed on the top battery module of the expansion battery tower.

Target Group

This manual is for qualified electricians. The tasks described in this manual may only be performed by qualified electricians.

Symbols

The symbols that may be found in this manual are defined as follows.

Symbol	Description
⚠ DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
⚠ WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
⚠ NOTICE	Provides tips for the optimal operation of the product.

Change History

Changes between document versions are cumulative. The latest version contains all updates made in previous versions.

Version	Date	Description
01	2024.12.27	First official release.

TABLE OF CONTENTS

01 SAFETY

1.1. Safety Instructions

For safety reasons, installers are responsible for familiarizing themselves with the contents of this manual and all warnings before performing installation.

1.1.1 General Safety Precautions

⚠ WARNING	Do not crush or impact the battery, and always dispose of it according to safety regulations.

Observe the following precautions:

Risks of explosion:

- Do not subject the battery module to heavy impacts;
- Do not crush or puncture the battery module;
- Do not dispose of the battery module in a fire;

Risks of fire:

- Do not expose the battery module to temperatures in excess of 140°F (60°C).
- Do not place the battery module near a heat source, such as a fireplace.
- Do not allow the battery connectors to touch conductive objects such as wires.

Risks of electric shock:

- Do not disassemble the battery module.
- Do not touch the battery module with wet hands.
- Do not expose the battery module to moisture or liquids.
- Keep the battery module away from children and animals.
- Risks of damage to the battery module:
- Do not subject the battery module to high pressures.
- Do not place any objects on top of the battery module.

H02 should only be installed for residential applications and not be for commercial applications.

⚠ CAUTION	Non-operational batteries should be discarded according to local regulations.

1.1.2 Explanation of Symbols

Table 1-1 Description of symbols

Symbol	Explanation
CE	CE marking The product complies with the requirements of the applicable CE guidelines.
TÜV SÜD	TUV certified.
	The battery system must be disposed of at a proper facility for environmentally-safe.

	Additional grounding point.
	Keep the battery system away from open flames or ignition sources.
	Caution, risk of electric shock.
	Caution, risk of danger.
	Observe the documentation.
	The device can not be disposed together with the household waste.

1.2. Response to Emergency Situations

1.2.1 Leaking Batteries

In case the leakage of electrolyte solution occurs, please avoid direct contact with the electrolyte solution and the gas that may be generated by it. Direct contact may lead to skin irritation or chemical burns. If the user comes into contact with the electrolyte solution, please do as follows:
Accidental inhalation of harmful substances: Evacuate from the contaminated area, and seek medical attention immediately.
Eye contact: Rinse eyes with flowing water for 15 minutes, and seek medical attention immediately.
Dermal contact: Wash the affected area thoroughly with soap and water, and seek medical attention immediately.
Ingestion: Induce vomiting, and seek medical attention immediately.

1.2.2 Fire

Please keep a Class ABC fire extinguisher or a water based extinguisher near the equipment.

⚠ WARNING	The battery module may catch fire when heated above 302°F.

If a fire breaks out where the battery module is installed, please do as follows:

1) Extinguish the fire before the battery module catches fire;
2) If the battery module catches fire, please do not try to put out the fire, and evacuate immediately.

⚠ WARNING	In case of catching fire, the battery module will produce noxious and poisonous gases, and please keep away the battery.

1.2.3 Wet Batteries and Damaged Batteries

Please keep a Class ABC fire extinguisher or a water based extinguisher near the equipment.

Do not touch the battery module after being wet from and soaked in the water.
Do not use the battery module if it is damaged. Otherwise, the loss to life and property will be caused.
Please pack the battery in its original packaging, and return it to DEMGC or the distributor.

⚠ CAUTION	Damaged batteries may leak electrolyte or produce flammable gas. If a user suspects that the battery is damaged, please immediately contact DMEGC for advice and information.

1.3 Qualified Installer

⚠ WARNING	All operations of H02 relating to electrical connection and installation must be carried out by qualified personnel.

A skilled worker is defined as a trained and qualified electrician or installer who has all of the following skills and experience:

- Knowledge of the functional principles and operation of grid-tied systems;
- Knowledge of the dangers and risks associated with installing and using electrical devices and acceptable mitigation methods;
- Knowledge of the installation of electrical devices;
- Knowledge of and adherence to this manual and all safety precautions and best practices.

2.1 Appearance

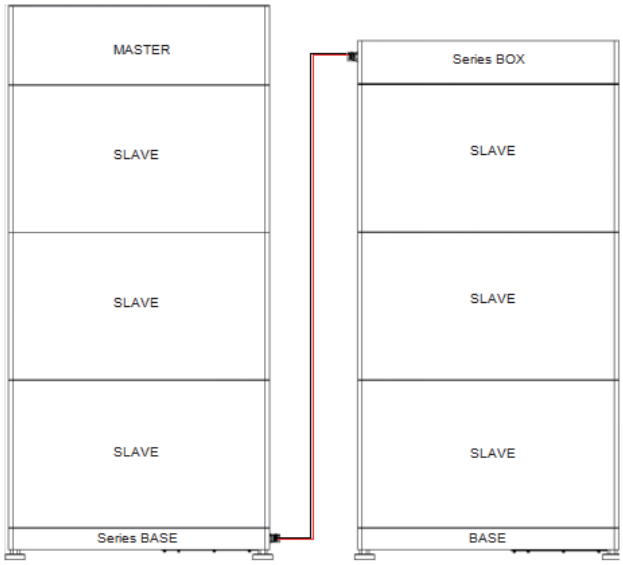


Figure 2-1 Appearance of Batter

A master is an electronic system that manages a rechargeable battery.
A slave is a type of electrical battery which can charge or discharge loads.
The whole system mainly comprises a master, a slave and a base.
The series box shall be only used for installation of more than 2 towers (including 2).

2.2 Dimensions and Weight

Table 2-1 Dimensions and Weight

	MASTER	SLAVE	BASE	Series Box
Length	590.00mm	590.00mm	590.00mm	590.00mm
Width	204.00mm	206.00mm	206.00mm	204.00mm
Height	181.00mm	333.00mm	78.00mm	99.00mm
Weight	9.00kg	52.00kg	5.00kg	5.00kg

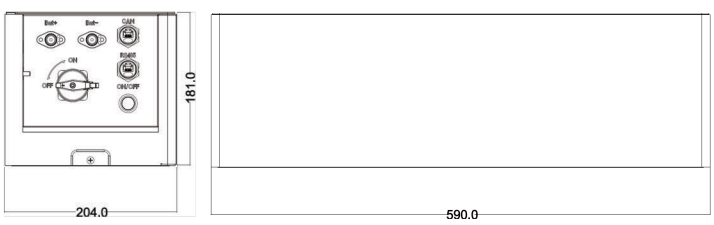


Figure 2-2 Dimension: MASTER

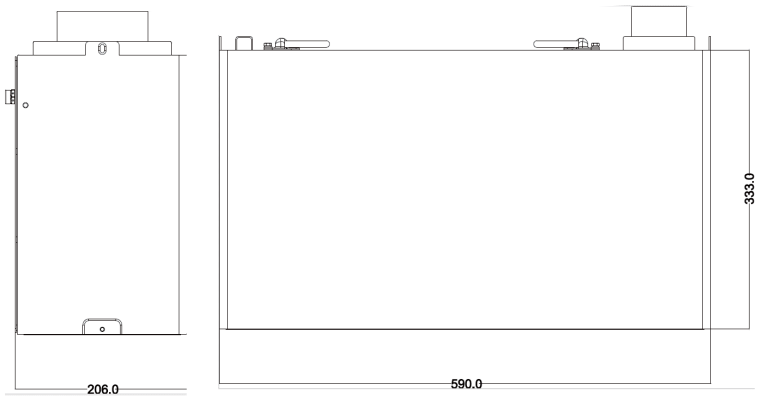


Figure 2-3 Dimension: SLAVE

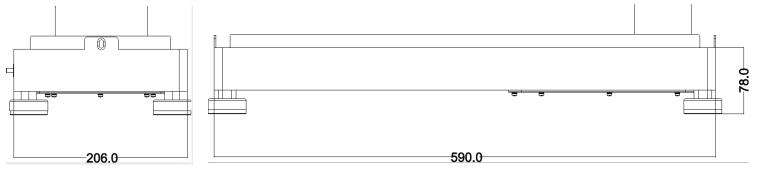


Figure 2-4 Dimension: BASE

Figure 2-5 Dimension: SERIES BOX

2.3 Control Panel

The power indicators show the current battery percentage. There are five indicators on the MASTER, one status light and four SoC power indicators.

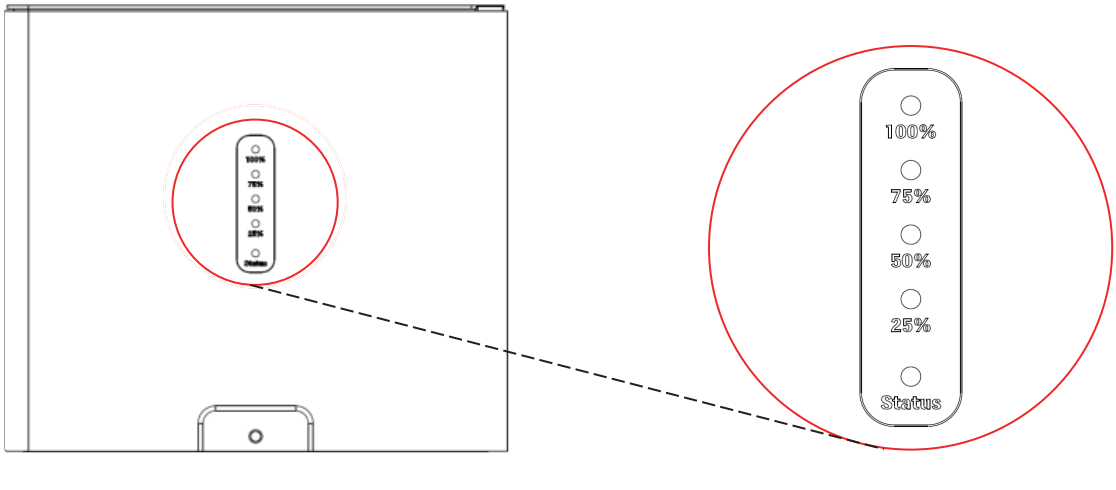


Figure 2-6 Control Panel of Battery

Status	Description
Startup	Press and hold the ON/OFF button for about 2 to 3 seconds to activate the system, at this point, all the lights will light on, and then the lights will flash from bottom to top, and then the lights will flash from top to bottom, with a period until standby.
Shutdown	After pressing and holding the ON/OFF button for more than 0.5 second, then all lights are off after releasing the button.
Standby	The status light flashes green for 1 second and turns off for 3 seconds. The SoC power indicators are off.
Charging	The SoC power indicators will flash from bottom to top three times, and then the state of SoC power indicators depends on the actual situation. For details, please refer to the following Table 2-3 Indicator information while charging, and then the status light comes on solid green light.
Discharging	The SoC power indicators will flash from top to bottom three times, and then the state of SoC power indicators depends on the actual situation. For details, please refer to the following Table 2-3 Indicator information while charging, and then the status light comes on solid green light.
Fault	In case of failure, the status light will remain on solid red light for 10 minutes, and then such red light will flash for 1 second and then turn off for 4 seconds.
Warning	In case of warning, the status light will flash yellow light for 1 second, and then turn off for 4 seconds.

Table 2-3 Indicator information while charging

SoC value	Status light	25%	50%	75%	100%
0% ≤ SoC < 25%	Green	Flash	Light off	Light off	Light off
SoC < 50%	Green	Flash	Flash	Light off	Light off
SoC < 75%	Green	Flash	Flash	Flash	Light off
SoC < 100%	Green	Flash	Flash	Flash	Flash
SoC ≥ 100%	Green	Light on	Light on	Light on	Light on

Table 2-4 Indicator information while discharging

SoC value	Status light	25%	50%	75%	100%
SoC ≥ 75%	Green	Flash	Flash	Flash	Flash
SoC ≥ 50%	Green	Flash	Flash	Flash	Light off
SoC ≥ 25%	Green	Flash	Flash	Light off	Light off
SoC ≥ 0%	Green	Flash	Light off	Light off	Light off

Status

The equipment can provide Black Start capacity, meaning that our energy storage inverter and battery can continue to run even if the power grid and photovoltaic module are out of service. The startup procedure for Black Start is as follows:

• Press and hold the ON/OFF button for about 2 to 3 seconds to startup the system, and then active Black Start automatically.

NOTICE In the case of the second stage, the MASTER button should be released at anytime in the process.

2.4 Ports

MASTER (H02-MASTER)

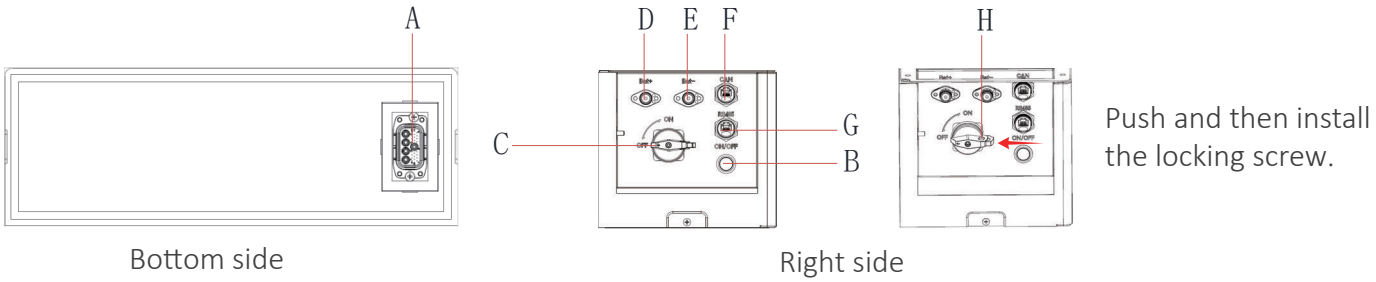


Figure 2-7 MASTER (H02-MASTER)

NOTICE This product is equipped with a self-locking power switch, which complies with AS/NZS 4777.2 safety regulation. The self-locking function prevents accidental restart and ensures safe operation.

Table 2-5 Description of ports

Position	Designation
A	The hot-plug interface is connected to the battery module.
B	ON/OFF BUTTON: Start system.
C	BAT SWITCH: A switch for battery's input and output.
D	Bat+: Connect BMS's Bat+ to the inverter's BAT+.
E	Bat-: Connect BMS's Bat- to the inverter's BAT-.
F	CAN: Connect the inverter to BMS's communication.
G	RS485: Only for internal maintenance use.
H	DC switch locking screw hole.

⚠ NOTICE

Battery Circuit Breaker is on the Inverter, for battery port, miniature circuit breaker (MCB) IEC 60947-2, trip curve C: – characteristic of short-circuit protective device (two-pole(three-pole for three phase), 63 A, Icc=6 kA fault current interrupting capacity at 500 V(750 V for three phase)/pole). A minimum required prospective short circuit current Icp, mr=0.9kA

SLAVE (H02-SLAVE)

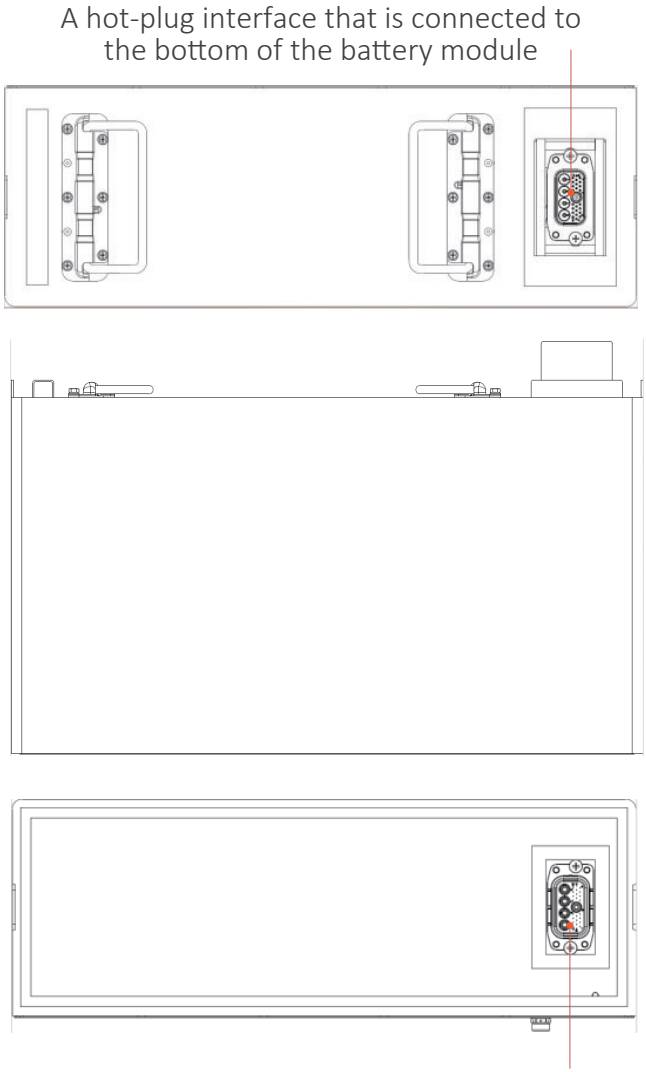


Figure 2-8 Details: SLAVE module (H02-SLAVE)

BASE

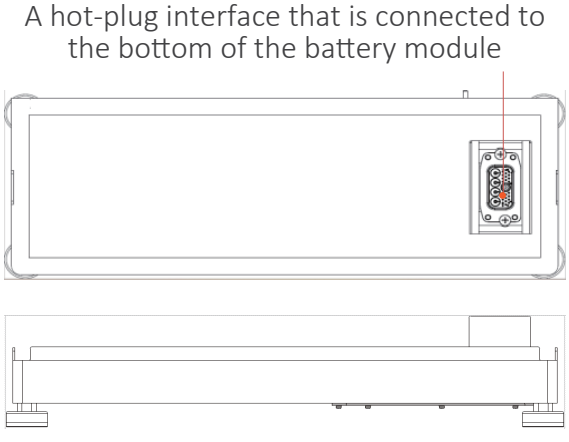


Figure 2-9 Details: Base

⚠ CAUTION	Base should be installed on the far right side for more than 2 towers (including 2).

Series BASE

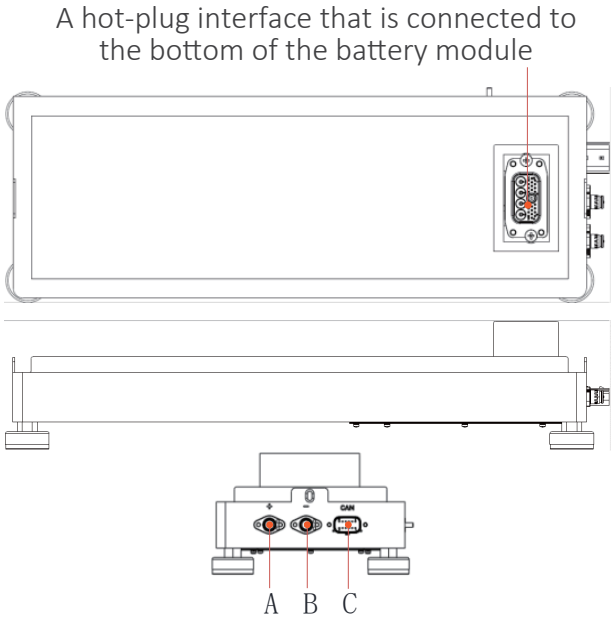


Figure 2-10 Details: Series Base

Table 2-6 Description of ports

Item	Designation
A	+: Connect to the + port of the Series Box of the next tower.
B	—: Connect to the — port of the Series Box of the next tower.
C	CAN: Connect to the CAN port of the Series Box of the next tower.

⚠ WARNING	Series Base should be installed at the bottom of the first tower for more than 2 towers (including 2). + port of Series base should connect + port of Series Box, — port of Series base should connect — port of Series Box. The device damage caused by incorrect cabling is not in the scope of warranty.

Series Box

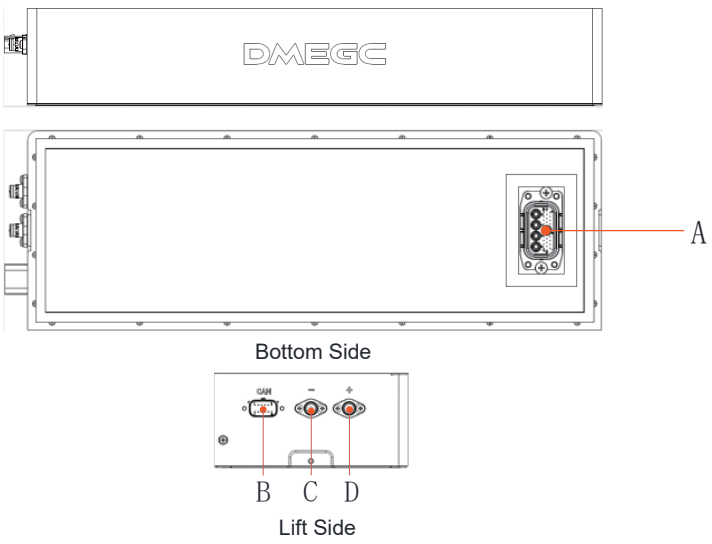


Figure 2-11 Details: Series Box

Table 2-7 Description of ports

Item	Designation
A	A hot-plug interface that is connected to the bottom of the battery module.
B	CAN: Connect to the CAN port of the Series Base of the previous tower.
C	—: Connect to the — port of the Series Base of the previous tower.
D	+: Connect to the + port of the Series Base of the previous tower.

03 TRANSPORTATION AND STORAGE

If H02 system is not put into use immediately, the transportation and storage requirements needs to be met:

Transportation

- Observe the caution signs on the packaging of the device before transportation.
- Pay attention to the weight of the device. Be cautious to avoid injury when carrying the device. Two installers are recommended.
- When carrying the equipment by hand, wear protective gloves to prevent injuries.
- When lifting up the device, hold the handle position and the bottom position of the device. Keep the device horizontal in case of falling down due to tilt.

Storage

- The device must be stored indoors.
- Do not remove the original packaging material and check the outer packaging material regularly.
- The storage temperature should be between -30℃ and +53℃. The humidity should be between 5% and 65%.
- Stack the device in accordance with the caution signs on the carton to prevent the device falling down and damage. Do not place it upside down.

04 PREPARATION BEFORE INSTALLATION

4.1 Selection of Installation Location

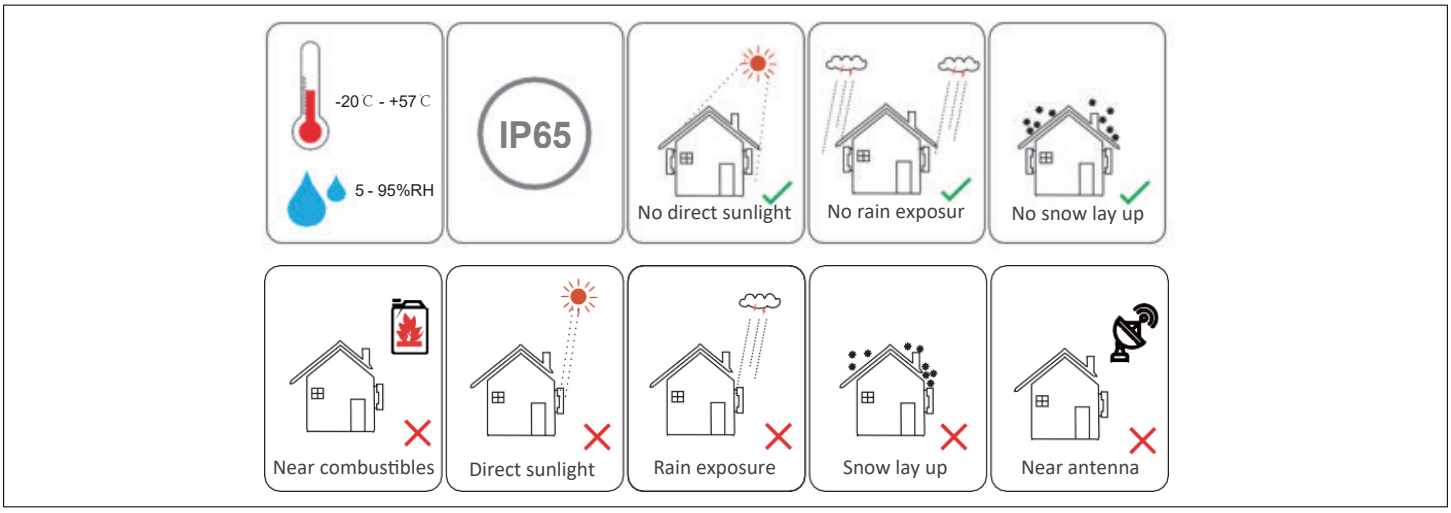
The installation location selected for the H02 system is quite critical in the aspect of the guarantee of machine safety, service life and performance.

- It has the IP65 ingress protection, which allows it to be installed outdoor.
- The installation position shall be convenient for wiring connection, operation and maintenance.

4.1.1 Environment Requirement

Make sure the installation site meets the following conditions:

- The building can stand up to earthquakes;
- The site shall be over 0.62 miles/997.79 m away from the sea, to avoid damage caused by salt water and humidity;
- The floor shall be flat;
- The temperature and humidity remain at a constant level;
- The installation site req uires less dust and dirt;
- There are no corrosive gases, including ammonia and acid vapor.
- The operating temperature: -20℃ to +57℃ ;
- The humidity shall be between 5-95%;
- Do not install the device in the areas where the altitude exceeds 3000 m;
- Install the device in a well-ventilated environment for heat dissipation;
- Do not install the device in areas with flammable, explosive and corrosive materials;
- Do not install the device in areas near combustibles and antenna
- You are recommended to install an awning over it. Direct sunlight, rain exposure and snow laying up is not allowed.



4.1.2 Installation Options

NOTICE

H02 system matches 2~12 battery modules (2-8 battery modules for single phase inverter). It is suitable for "option A/B/C/" in one tower and "option D/E/F/G" in two towers and "option H/I/J/K/L" in three to four towers.
Floor mounting is recommended.
Up to three battery modules in one tower is recommended. When the installation space is limited, four battery modules in one tower can be chosen.
The following installation options apply to the modes of floor mounting.

There are 12 installation options available, with details as follows:

One Tower

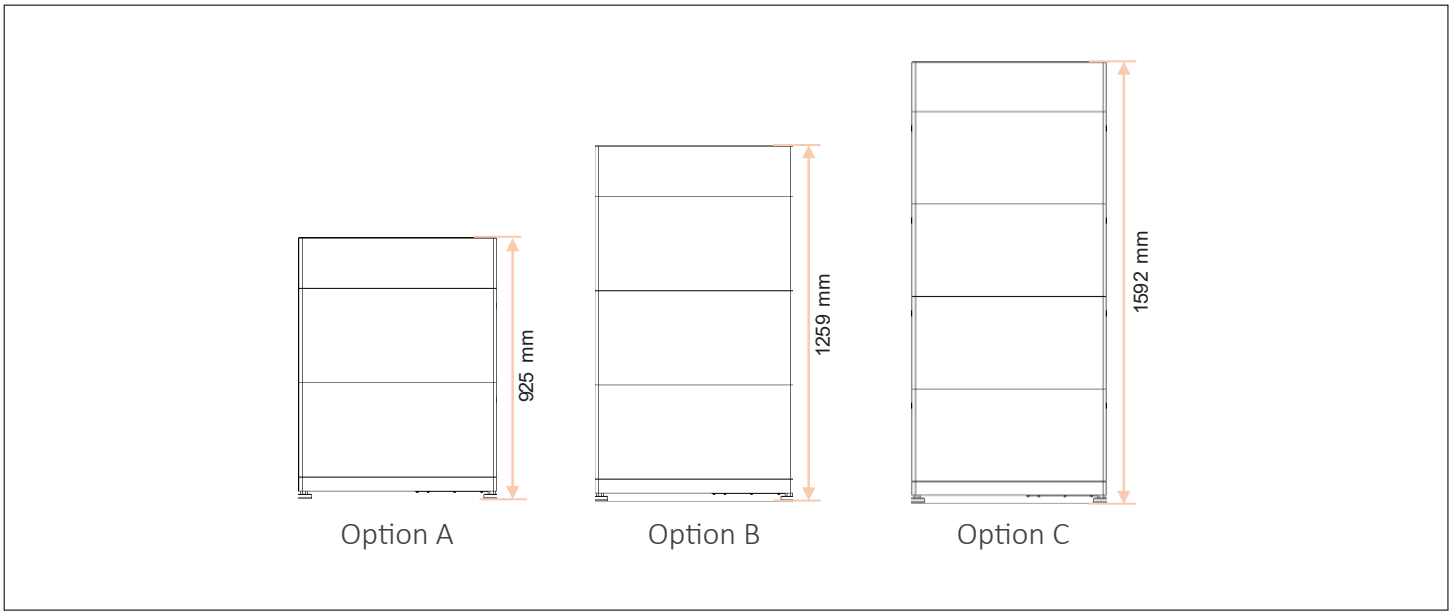


Figure 4-1 Installation option for one tower

Two Tower

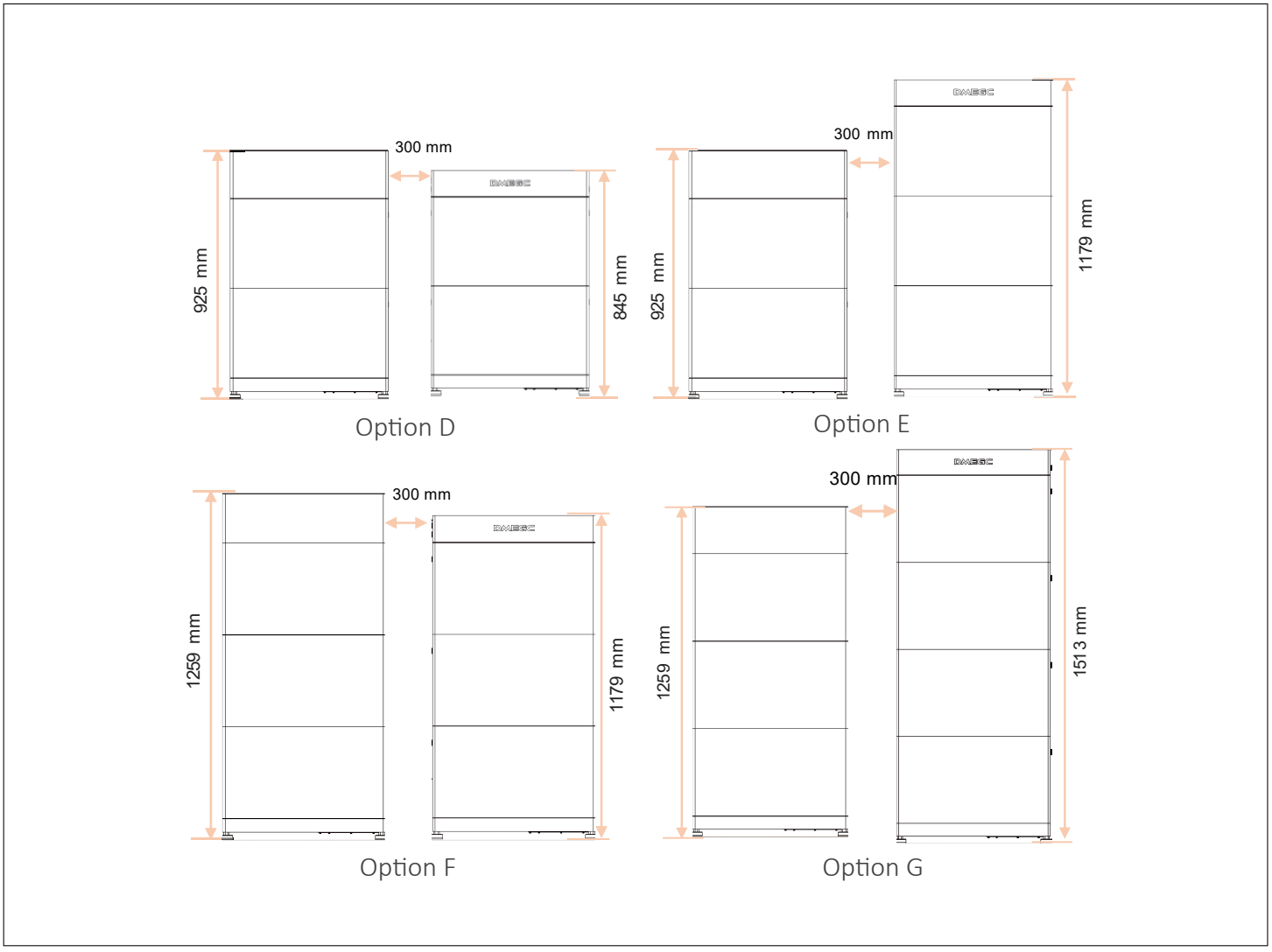


Figure 4-2 Installation option for two towers

Three to Four Towers

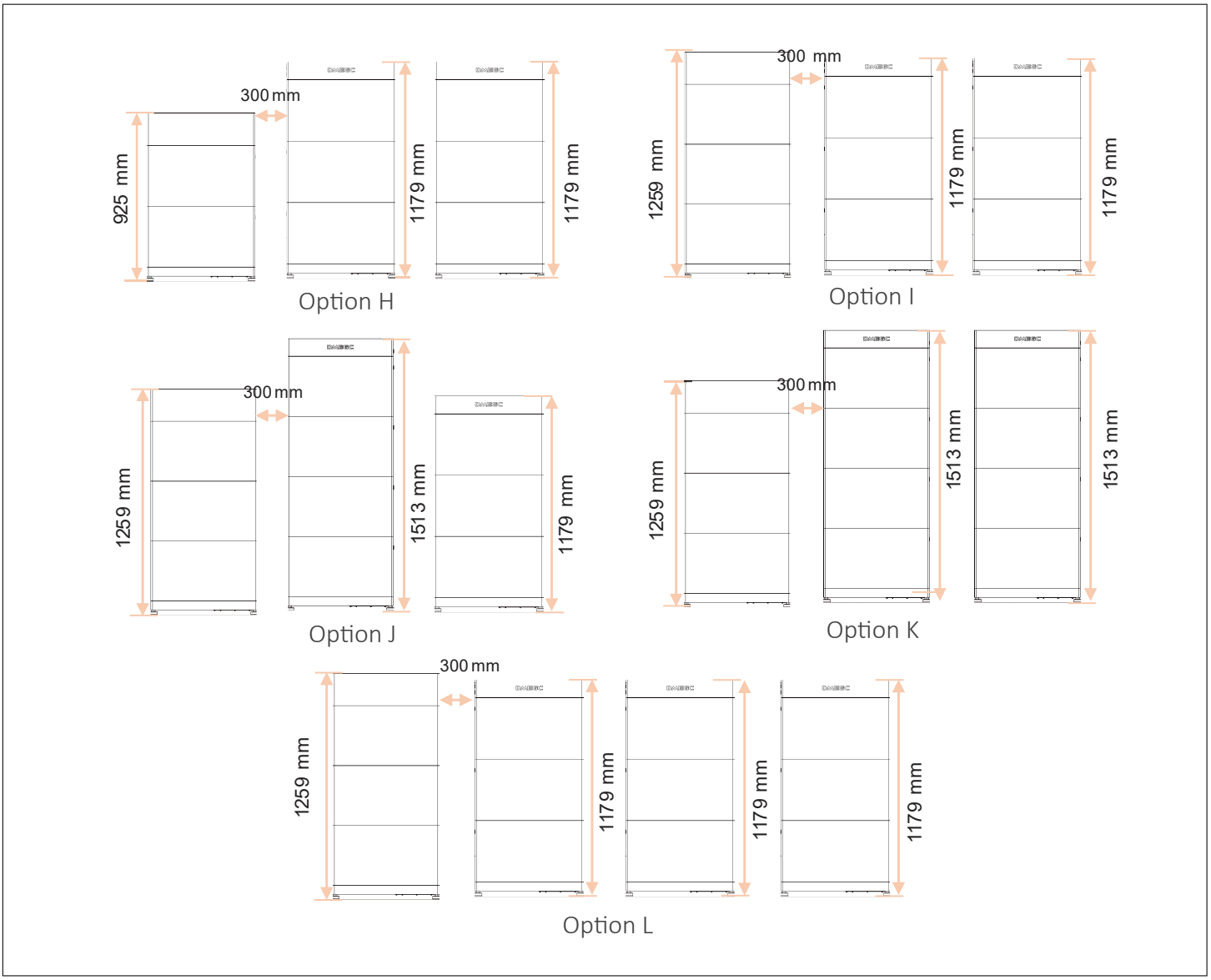


Figure 4-3 Installation option for three to four towers

Table 4-1 Components of different options

Option	A	B	C	D		E		F		G	
				Tower1	Tower2	Tower1	Tower2	Tower1	Tower2	Tower1	Tower2
Inverter	1	1	1	1		1		1		1	
Master	1	1	1	1		1		1		1	
Slave Module	2	3	4	2	2	2	3	3	3	3	4
Base	1	1	1		1		1		1		1
Series box							1		1		1
Series base				1		1		1		1	

Table 4-2 Components of different options

Option	H			I			J			K			L			
	Tower1	Tower2	Tower3	Tower1	Tower2	Tower3	Tower1	Tower2	Tower3	Tower1	Tower2	Tower3	Tower1	Tower2	Tower3	Tower4
Inverter	1			1			1			1			1			
Master	1			1			1			1			1			
Slave Module	2	3	3	3	3	3	3	4	3	3	4	4	3	3	3	3
Base			1			1			1			1				1
Series box		1	1		1	1		1	1		1	1		1	1	1
Series base	1	1		1	1		1	1		1	1		1	1	1	

Net weight and dimension of H02 system with inverter

Table 4-3 Net weight and dimension of one tower

Position	Option A	Option B	Option C
Net Weight (kg)	139	191	243
Dimension(mm)	590 × 1330× 204	590 x 1663 x 204	590 x 1996 x 204

Table 4-4 Net weight and dimension of two towers

	Option D		Option E	
	Left tower	Right tower	Left tower	Right tower
Net Weight (kg)	139	114	139	166
Dimension(mm)	590 × 1330× 204	590 × 845 × 204	590 × 1330 × 204	590 × 1179 × 204

	Option F		Option G	
	Left tower	Right tower	Left tower	Right tower
Net Weight (kg)	191	166	191	218
Dimension(mm)	590 × 1663× 204	590 × 1179 ×204	590 × 1663 × 204	590 × 1513 × 204

Table 4-5 Net weight and dimension of three to four towers

	Option H		
	Tower1	Tower2	Tower3
Net Weight (kg)	139	166	166
Dimension(mm)	590 × 1330× 204	590 × 1179 × 204	590 × 1330 × 204

	Option I		
	Tower1	Tower2	Tower3
Net Weight (kg)	191	166	166
Dimension(mm)	590 × 1663× 204	590 × 1179 × 204	590 × 1179 × 204

	Option J		
	Tower1	Tower2	Tower3
Net Weight (kg)	191	218	166
Dimension(mm)	590 × 1663× 204	590 × 1513 × 204	590 × 1179 × 204

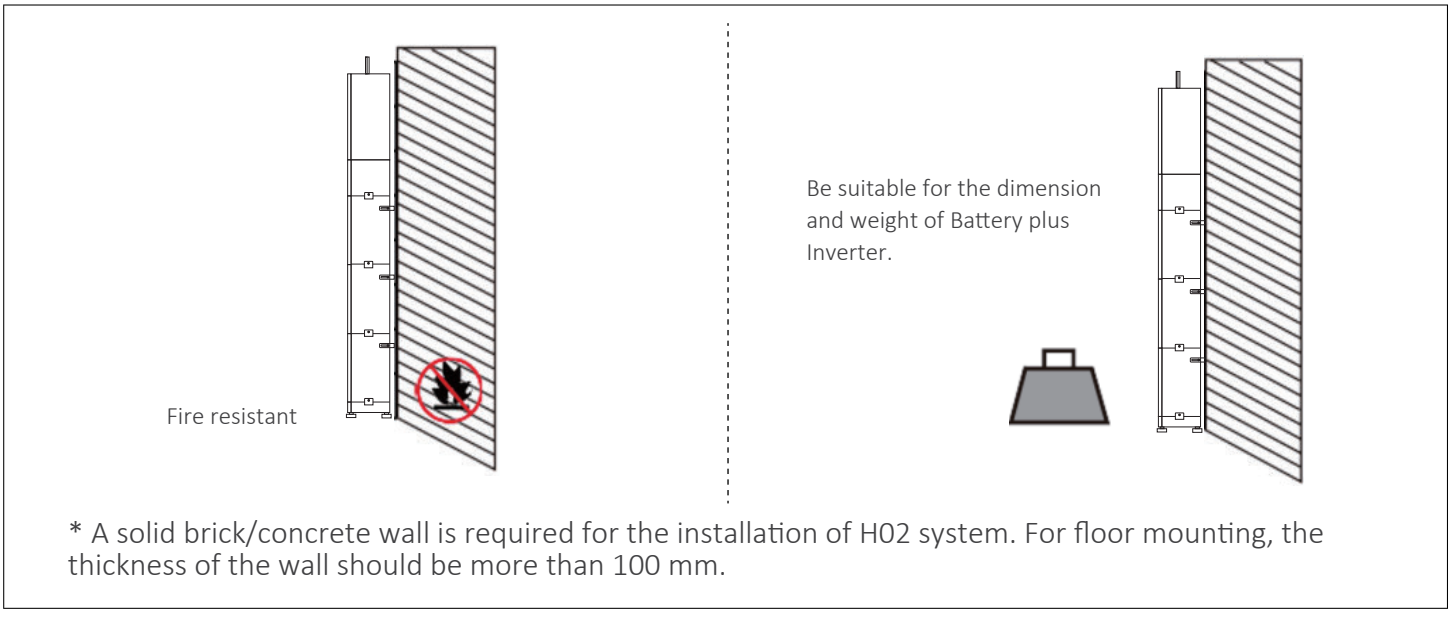
	Option K		
	Tower1	Tower2	Tower3
Net Weight (kg)	191	218	218
Dimension(mm)	590 × 1663× 204	590 × 1513 × 204	590 × 1513 × 204

	Option L			
	Tower1	Tower2	Tower3	Tower4
Net Weight (kg)	191	166	166	166
Dimension(mm)	590 × 1663× 204	590 × 1179 × 204	590 × 1179 × 204	590 × 1179 × 204

4.1.3 Installation Carrier Requirement

The mounting location must be suitable for the weight and dimension of the product and the support surface for installation must be made of a non-flammable material.

- Solid brick/concrete, or mounting surface with equivalent strength;
- Please ensure that the bearing capacity of the ground and the wall, respectively, that are used to install the H02 system must be over 927 kg, which is based on option B. If option C is chosen, the bearing capacity of the ground and the wall, respectively, must be over 1077 kg; (The maximum net weight of an inverter (27kg) is taken as an example.)
- The device must not be installed on the wood wall.



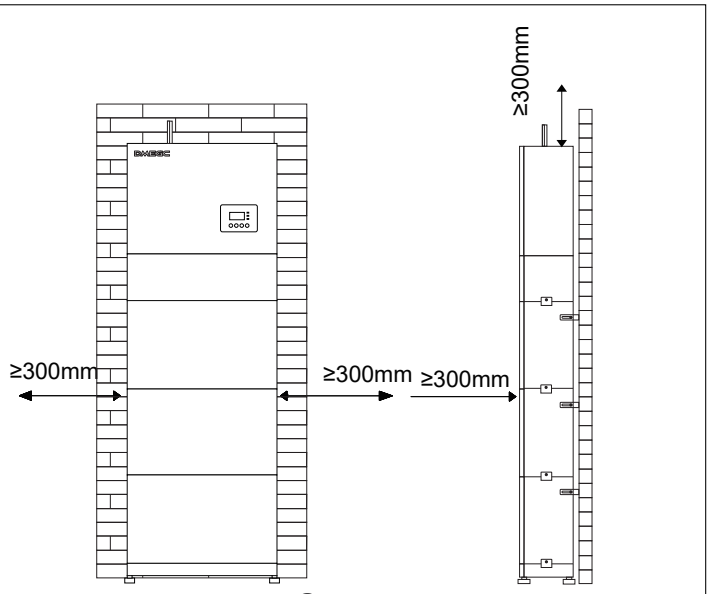
* A solid brick/concrete wall is required for the installation of H02 system. For floor mounting, the thickness of the wall should be more than 100 mm.

Figure 4-4 Installation carrier requirement

4.1.4 Clearance Requirement

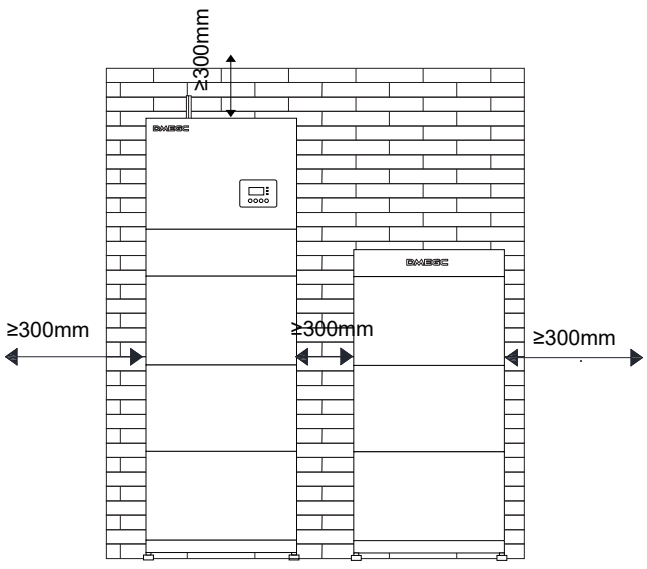
To guarantee proper heat dissipation and ease of disassembly, the minimum space around the H02 system must meet the standards indicated below.

For installations with two towers, make sure to leave a minimum space of 30 cm between each system and 30 cm from the ceiling. In areas with high ambient temperatures, increase the clearances between the towers and provide adequate fresh air ventilation if feasible.



One tower

The distance between H02 battery and the wall is 2



Two towers

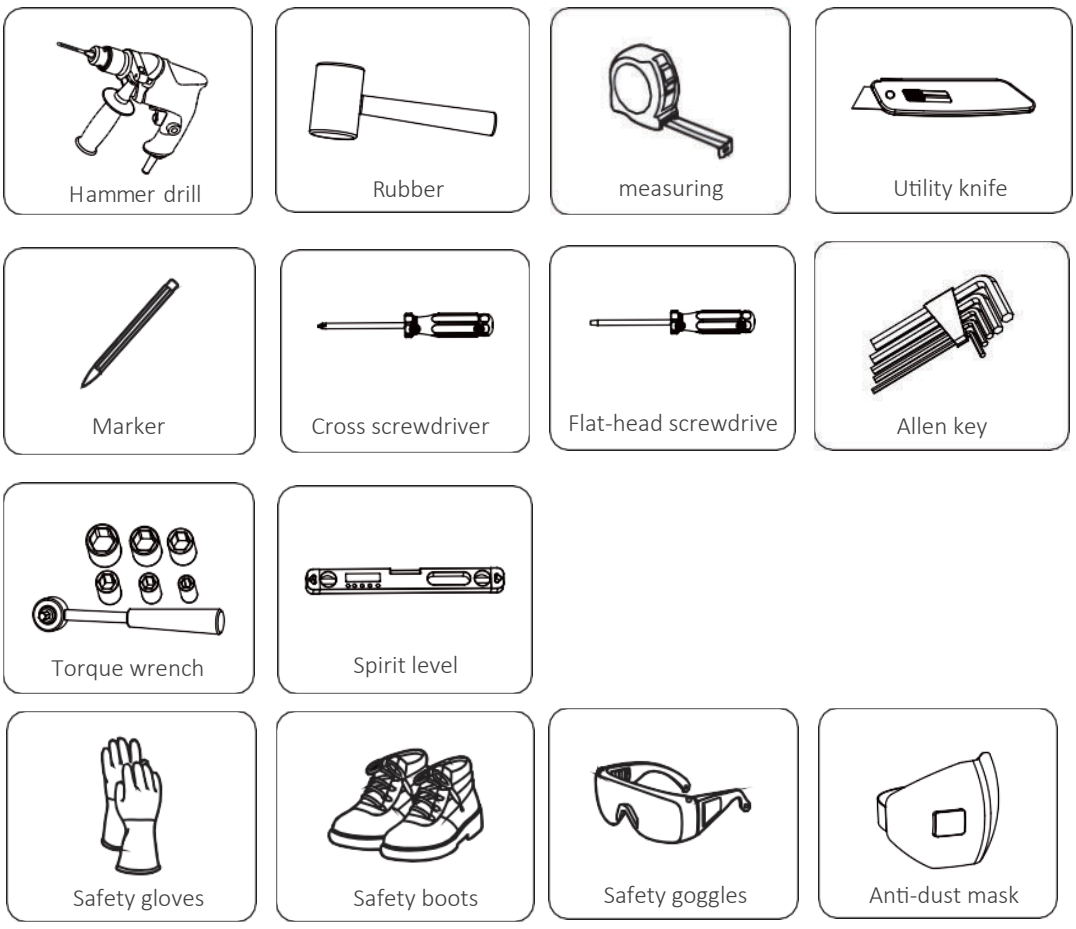
Figure 4-5 Clearance requirement

NOTICE

A cement floor is required for the installation of H02 system. For safety, it is suggested the base should be installed as low as possible.

4.2 Tools Requirement

Installation tools include but are not limited to the following recommended ones. If necessary, use other auxiliary tools on site.



4.3 Additionally Required Materials

Table 4-5 Additionally required wire

NO.	Required Material	Type	Diameter
1	Protective pipe	Corrugated pipe	External diameter: over 67.2 mm

05 UNPACKING AND INSPECTION

The number of cartons will be different due to different modes of mounting. Therefore, please check whether the number of cartons received are correct before unpacking. For details, please refer to the following table.

Table 5-1 Number of cartons

	One Tower	Two Tower
Floor Mounting	A master carton, and carton(s) of slaves	A master carton, a series box carton, and carton(s) of slaves

NOTICE As for the number of cartons of slaves, it depends on how many battery modules the users purchased.

5.1 Unpacking

- The H02 system undergoes 100% testing and inspection before shipping from the manufacturing facility. However, transport damage may still occur. Before unpacking the H02 system, please verify that the model and outer packing materials for damage, such as holes and cracks.

- Unpacking the master and slave module according to the following figures. The base is packing in the same carton with the master module. The series base is packing in the same carton with the series box.

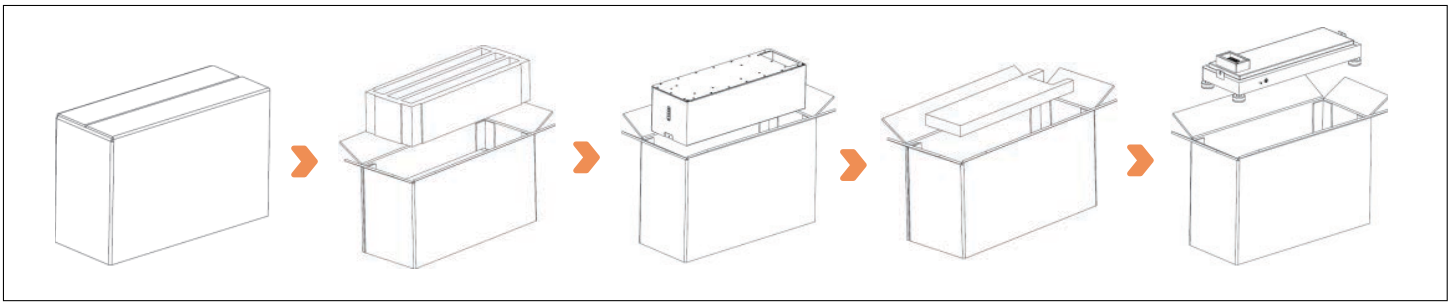


Figure 5-1 Unpacking the MASTER

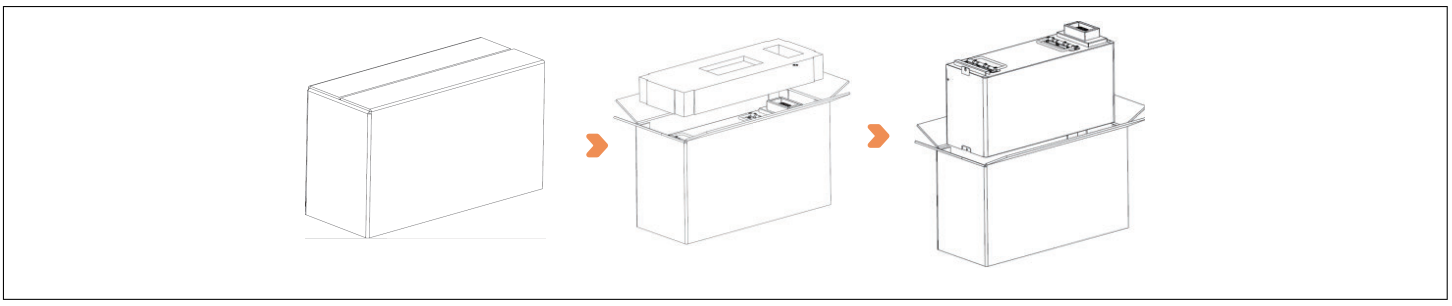


Figure 5-2 Unpacking the SLAVE

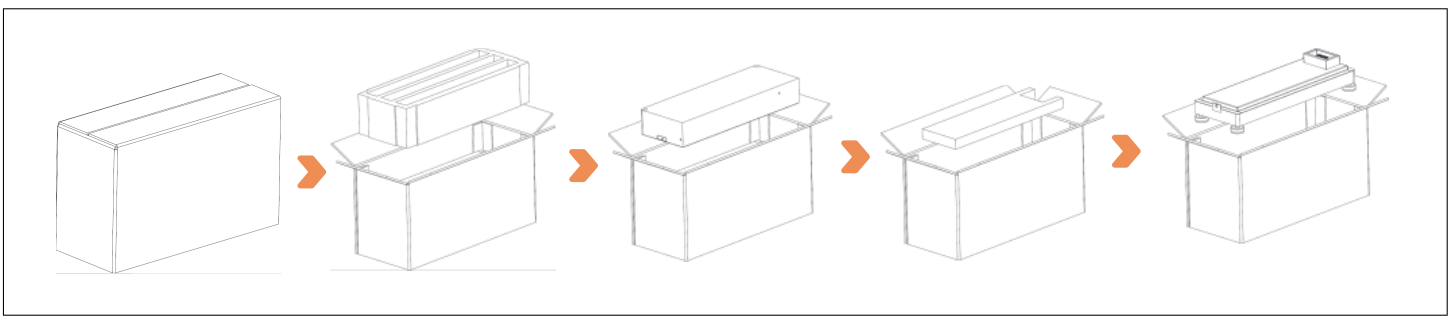


Figure 5-3 Unpacking the Series Box

• Be careful when dealing with all package materials which may be reused for storage and relocation of the H02 system in the future.

• After opening the package, check whether the appearance of the battery is damaged or lack of accessories. If any damage is found or any parts are missing, contact your dealer immediately.

5.2. Scope of Delivery

MASTER (H02-MASTER)

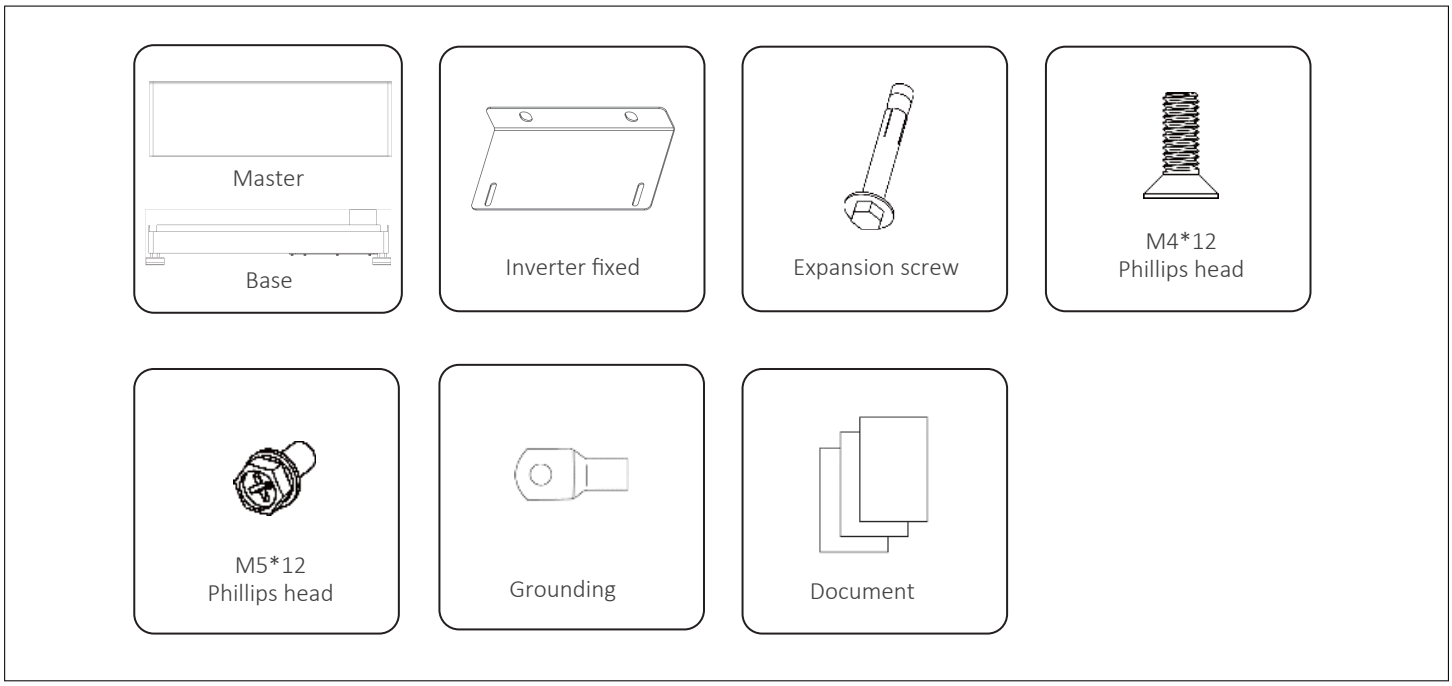


Table 5-2 Packing list of MASTER

Item	Quantity
MASTER	1 pcs
Base	1 pcs
Inverter fixed bracket	1 pcs
Expansion screw	2 pcs
M4×12 Phillips head screw	2 pcs
M5×12 Phillips head screw	2 pcs
Grounding terminal	1 pcs
Document	1 pcs

SLAVE Module (H02-SLAVE)

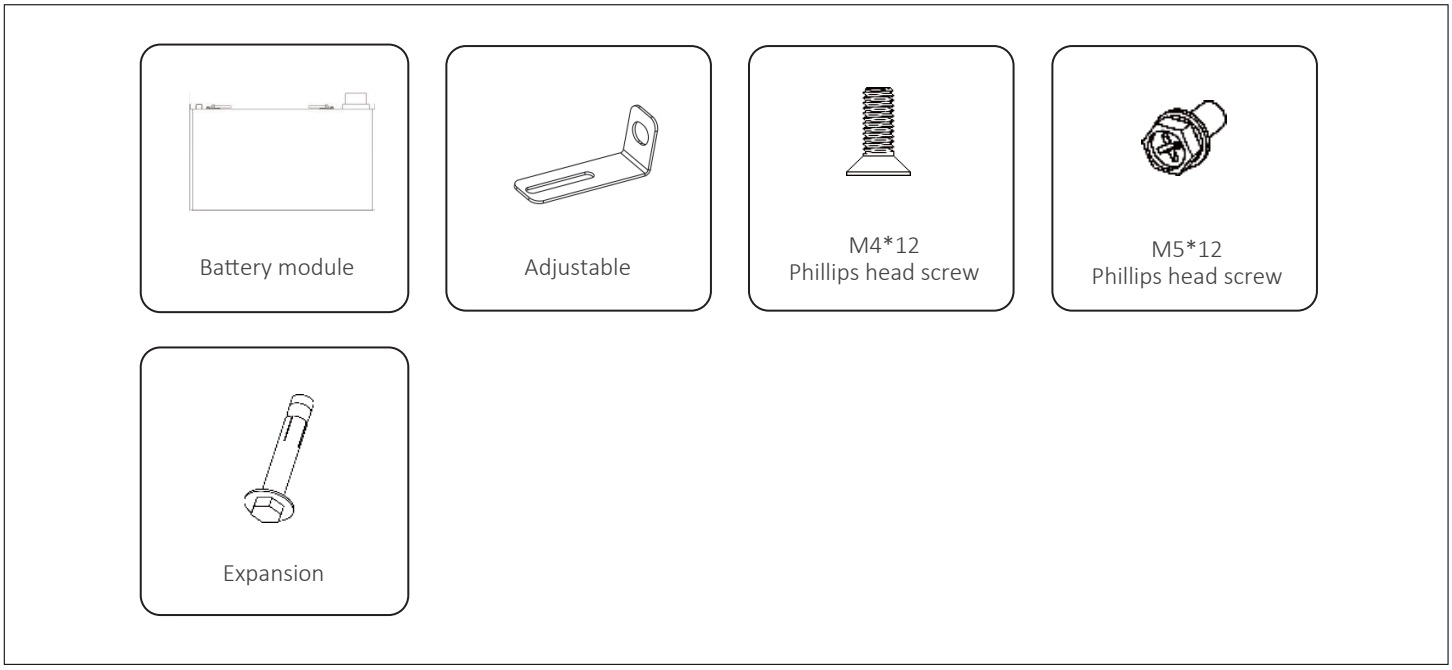


Table 5-3 Packing list of slave module

Item	Quantity
Battery module	1 pcs
Adjustable bracket	2 pcs
Expansion screw	2 pcs
M4×12 Phillips head screw	2 pcs
M5×12 Phillips head screw	2 pcs

Series Box (For ≥2 towers only)

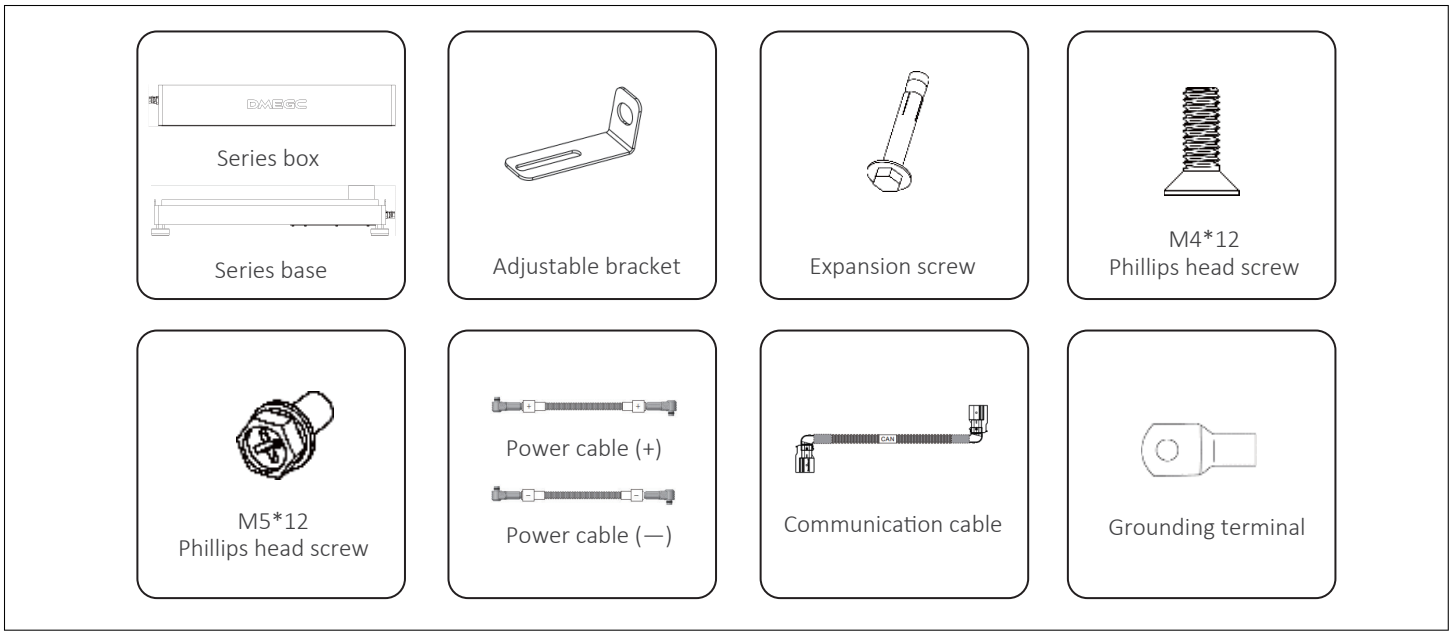
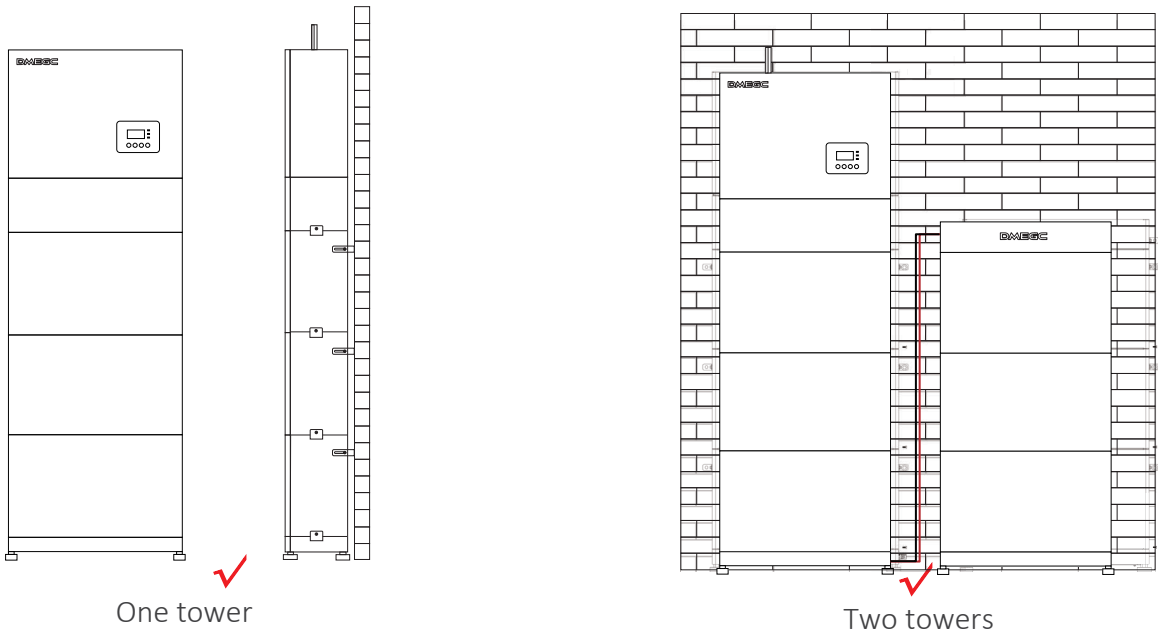


Table 5-2 Packing list of MASTER

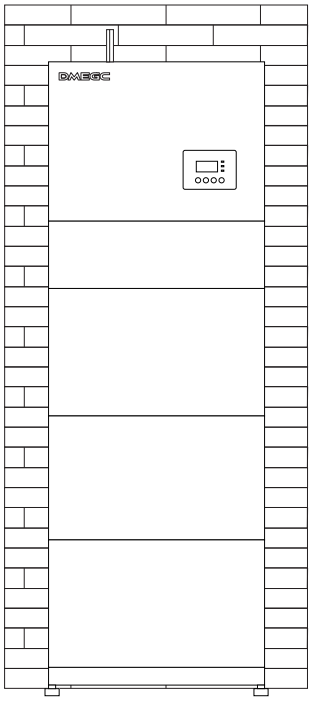
Item	Quantity
Series box	1 pcs
Series base	1 pcs
Adjustable bracket	2 pcs
Expansion screw	2 pcs
M4×12 Phillips head screw	2 pcs
M5×12 Phillips head screw	2 pcs
Power cable (+)	1 pcs
Power cable (-)	1 pcs
Communication cable	1 pcs
Grounding terminal	1 pcs



H02 system should be installed vertical to the ground.

Figure 6-1 Correct installation angle

H02 system can support floor mounting. The following is the installation mode. Option B (with three battery modules) is taken as an example.



Floor mounting

Figure 6-2 Installation modes

⚠ WARNING

Only the qualified personnel can perform the mechanical installation following the local standards and requirements.
Check the existing power cables or other piping in the wall to prevent electric shock or other damage.

⚠ CAUTION

Always be aware of the weight of the H02 system. Personal injuries may result if the battery is lifted improperly or dropped while being transported or mounted.
Use insulated tools and wear individual protective tools when installing the H02 system.

⚠ NOTICE

Please ensure that the bearing capacity of the ground and the wall, respectively, that are used to install the H02 series must be over 927 kg, which is based on option B. If option C is chosen, the bearing capacity of the ground and the wall, respectively, must be over 1077 kg; (The maximum net weight of an inverter (27kg) is taken as an example.)
The device must not be installed on the wood wall.
At least two persons are required to move the devices of H02 system.
Please reserve enough distance from the device to the ceiling (or the grounding) for capacity expansion.

6.1 Floor Mounting

One Tower for Floor Mounting

⚠ NOTICE

The mode of floor mounting is given priority for installation.
Take the installation procedure Option B (With 3 battery modules) as an example.

1.Prepare and install the base and battery modules

Step 1: Place a spirit level to check whether the base is even. If yes, refer to the Step 3; if no, refer to the Step 2. The side with "square corner" shall be against the wall, locate the base 20 mm away from the wall.

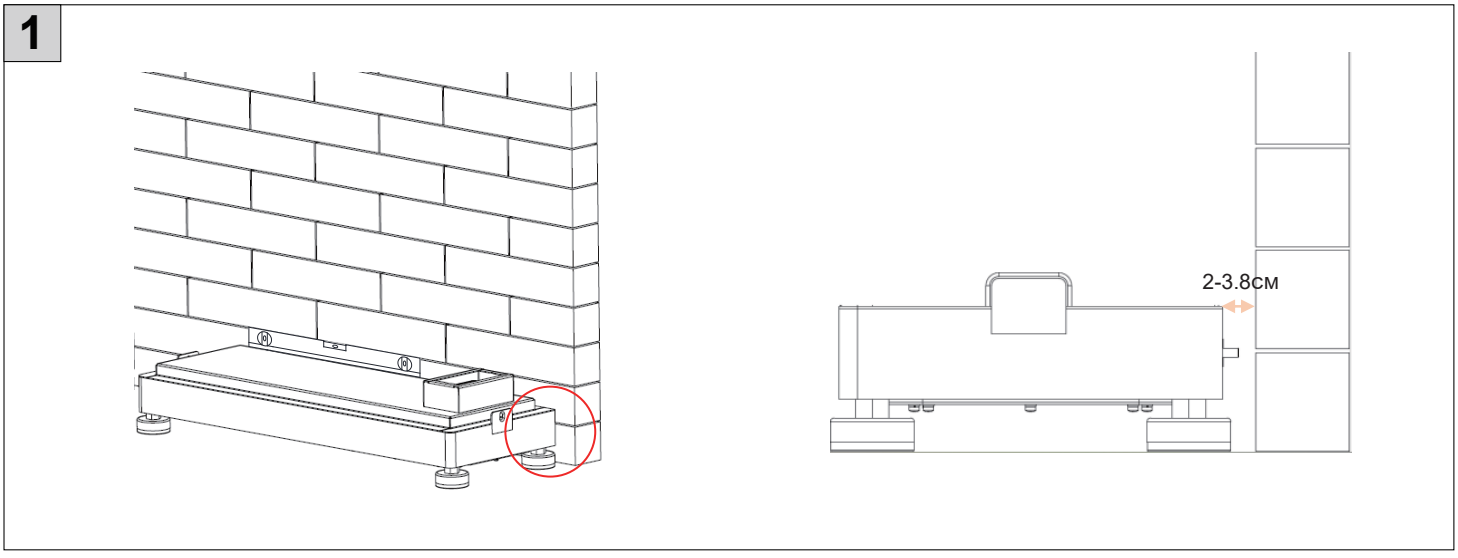


Figure 6-3 Determining whether the Base is level

Step 2: Rotate the adjustment screws clockwise to ensure that it is even.
Turn clockwise to lower the base, and turn anticlockwise to raise the base.

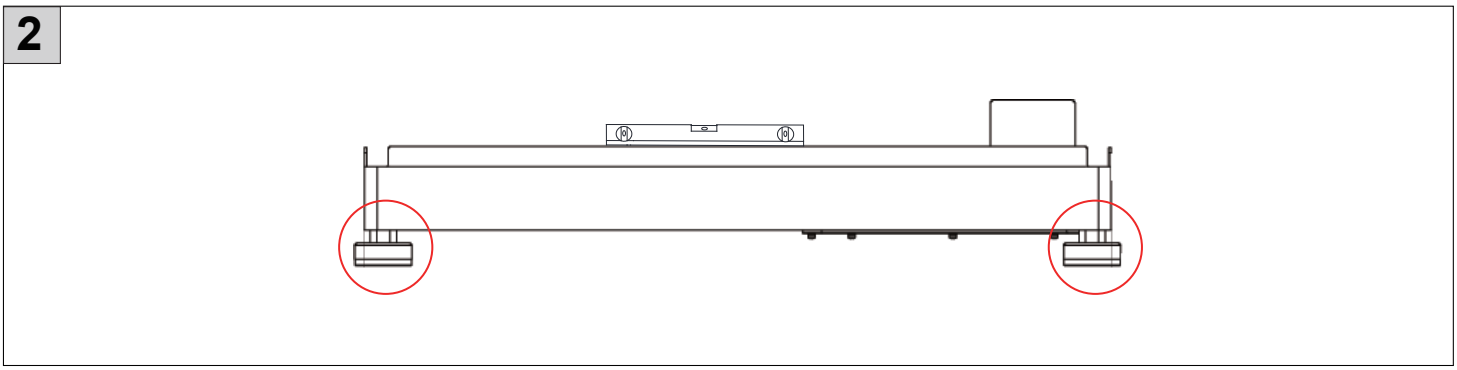


Figure 6-4 Rotating adjustment screws

⚠ NOTICE	Use a spirit level to measure both side of the base to ensure that the base is even. If not, please rotate the adjustment screws by a hand to ensure that the base is even.

Step 3: Place a slave module on the base.

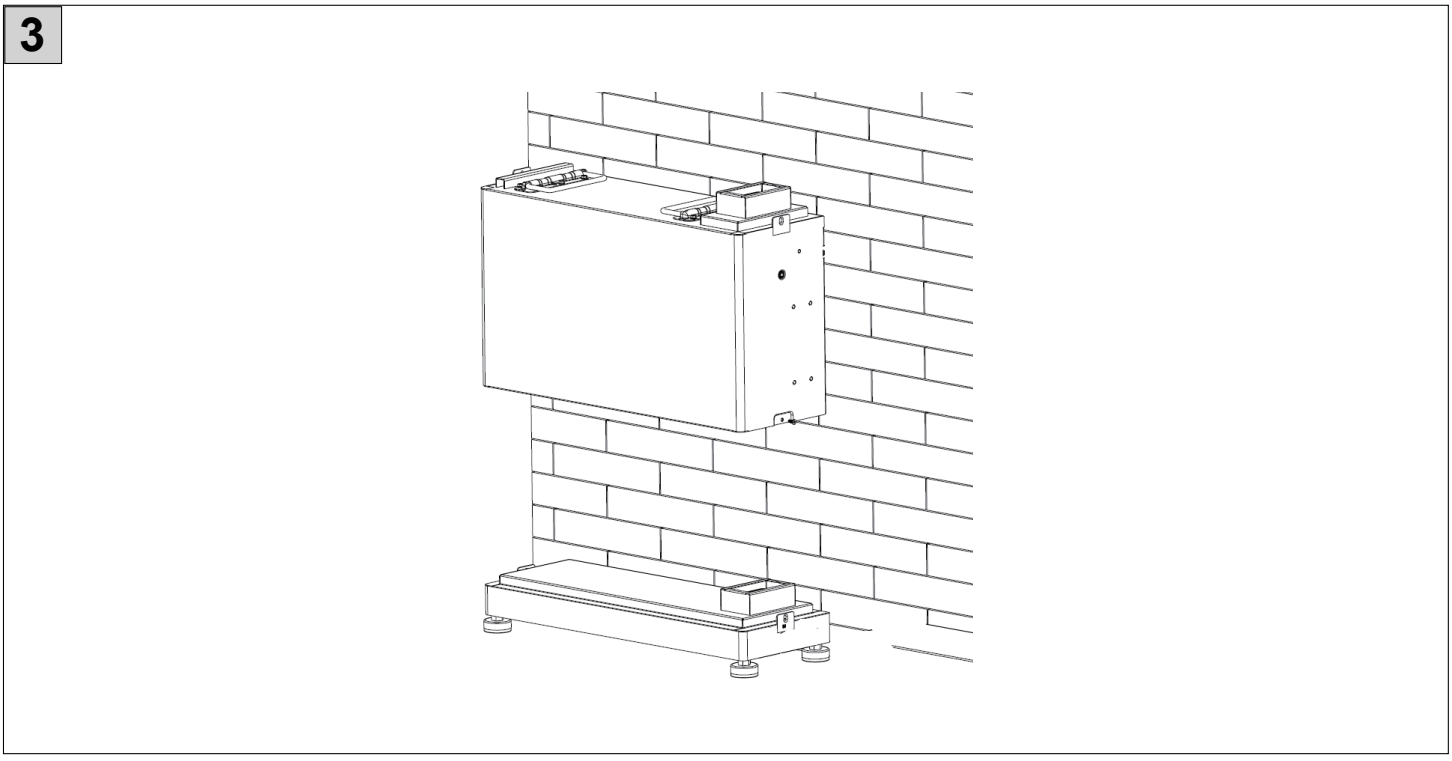


Figure 6-5 Placing the slave module

⚠ NOTICE	At least two persons are required to move the slave module. please ensure that the side with "square corner" shall be lean against the wall.

Step 4: Place the second and third slave modules, place the master module, and make sure that the corners and edges of the modules are aligned.

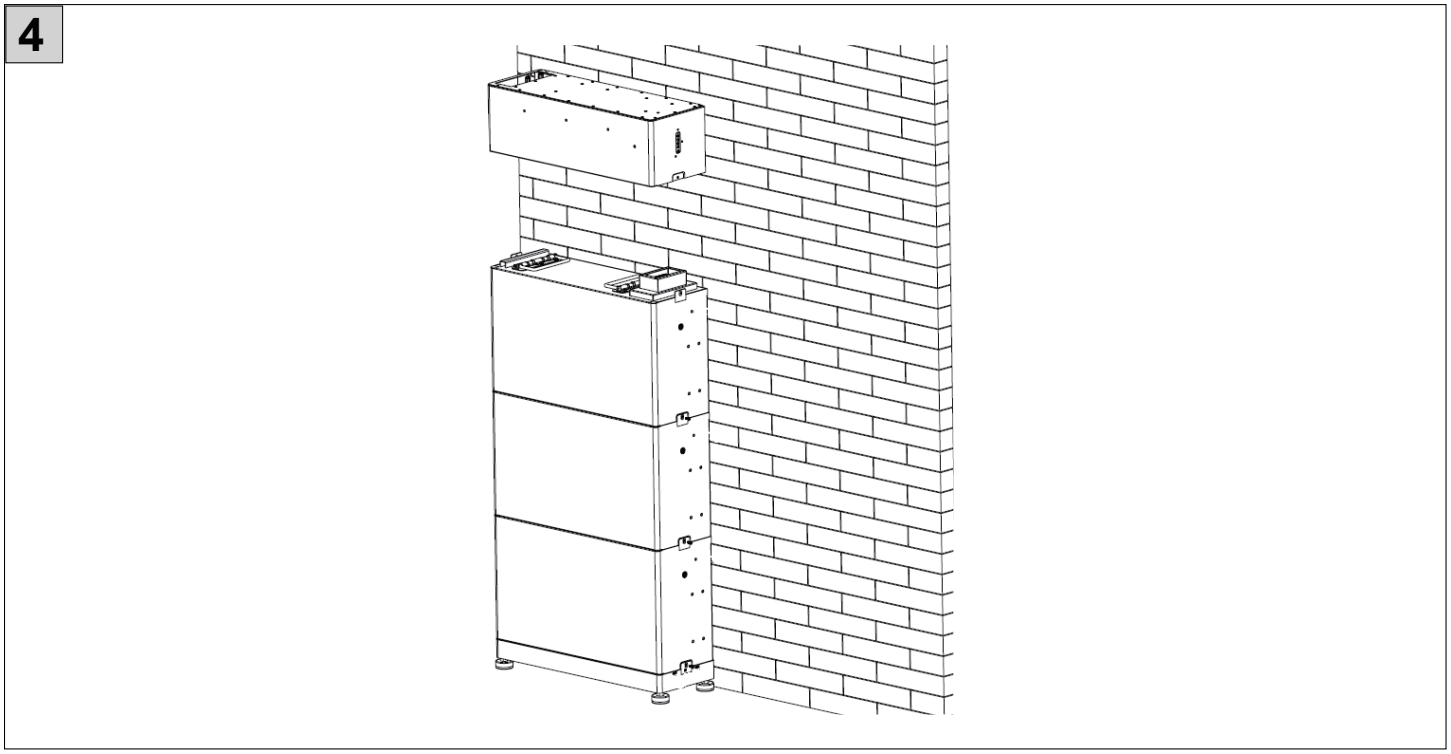


Figure 6-6 Placing slaves module

Step 5: Insert and tighten M4×12 screws on both sides(torque: 2.2-2.5 N·m).

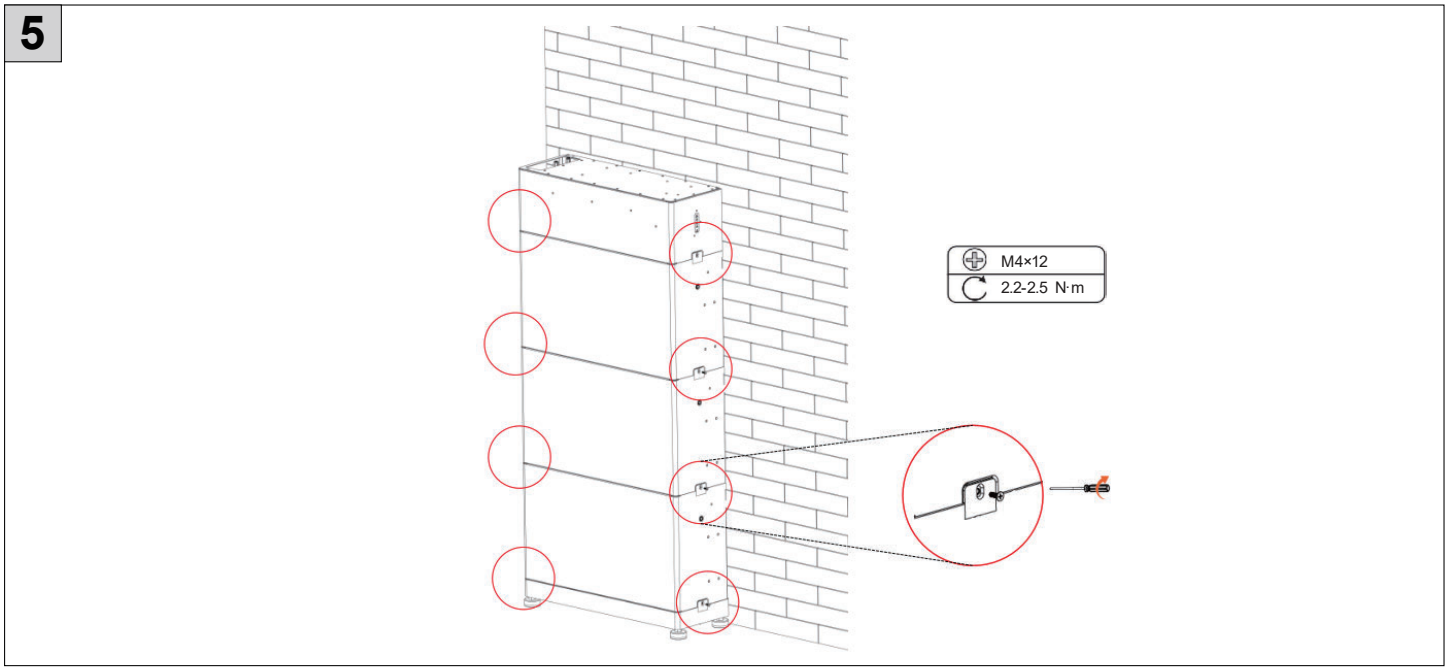


Figure 6-7 Tightening screws

NOTICE	Please make sure that the corners and edges of the base and slave module are aligned before tightening screws.

Step 6: Place the adjustable bracket on the wall, align the hole to the hole on the battery module; and mark the position of the mounting holes. Brackets on both sides of battery modules need to be installed.

6

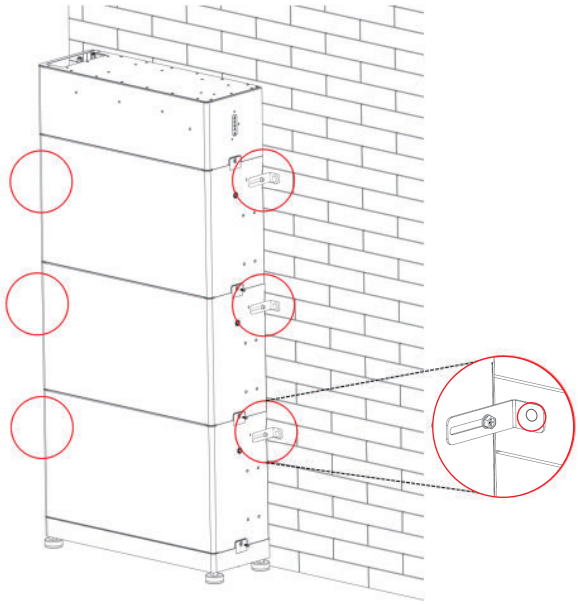


Figure 6-8 Marking the position of the mounting holes.

Step 7: Remove the bracket, and then drill two holes at a depth of more than 60 mm in the concrete wall by using a Drill (Ø10 mm).

7

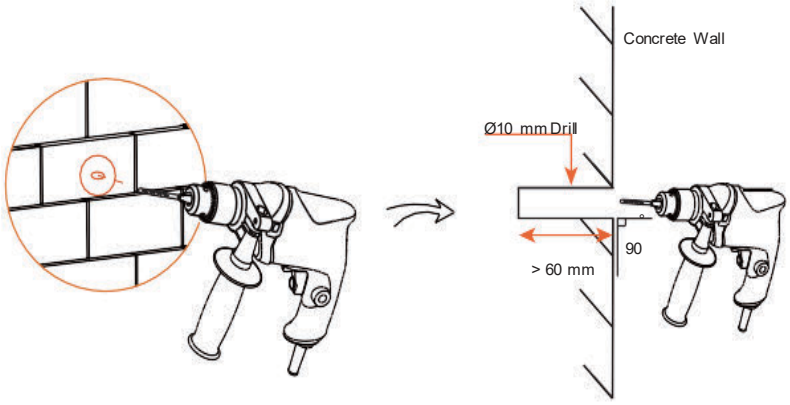


Figure 6-9 Drilling holes

⚠ NOTICE	An electric drill dust collector is recommended. When drilling holes, make sure the already installed part is covered to prevent dust from falling onto the device.

Step 8: Insert the expansion screws into two holes, tighten the screws to secure the bracket on the wall (torque: 7.5-8 N·m), and then tighten M5×12 screws on both sides (torque: 4.2-4.5 N·m).

8

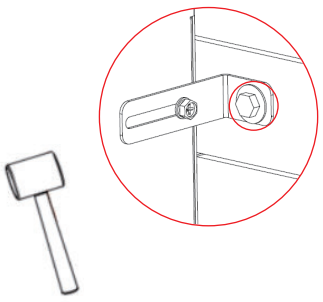


Figure 6-10 Inserting the expansion screw

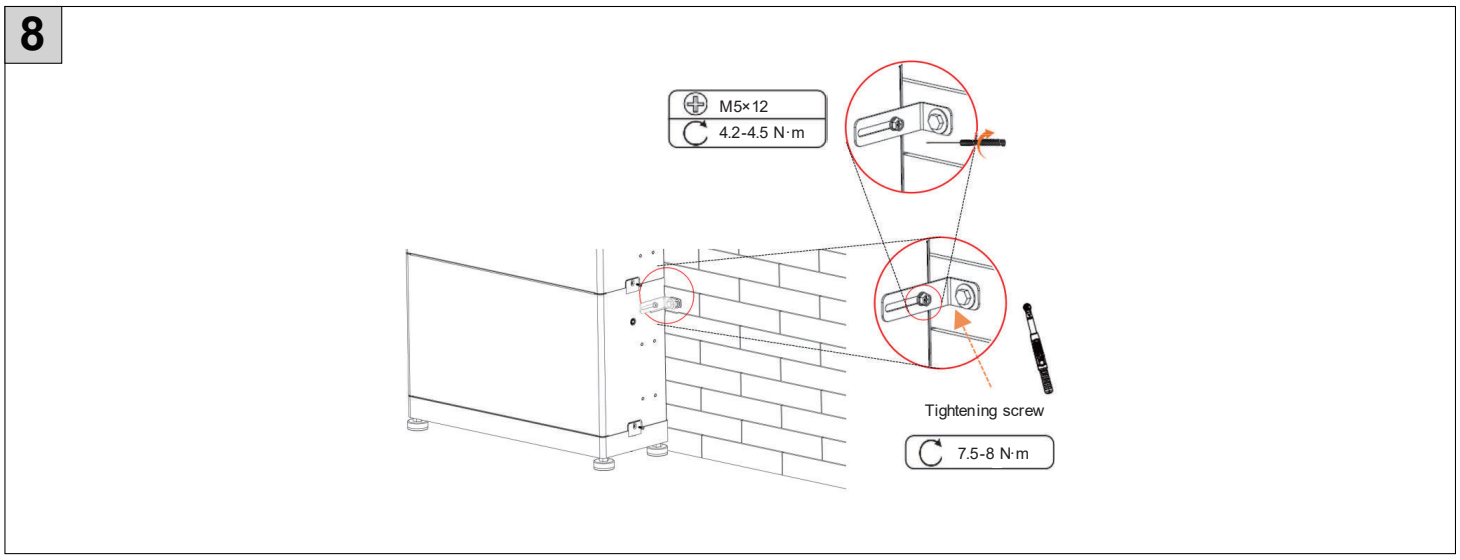


Figure 6-11 Securing the bracket

NOTICE

If the product is shifted before securing bracket, move it to its original location according to the mark previously drawn.

Step 9: Install the bracket of the top master module, place the bracket on the wall, align the hole to the hole on the master module; and mark the position of the mounting holes.

Remove the bracket, and then drill two holes at a depth of more than 60 mm in the concrete wall by using a Drill (Ø10 mm).

Insert the expansion screws into two holes, tighten the screws to secure the bracket on the wall (torque: 7.5-8 N·m), and then tighten M5×12 screws on the top of master module (torque: 4.2-4.5 N·m).

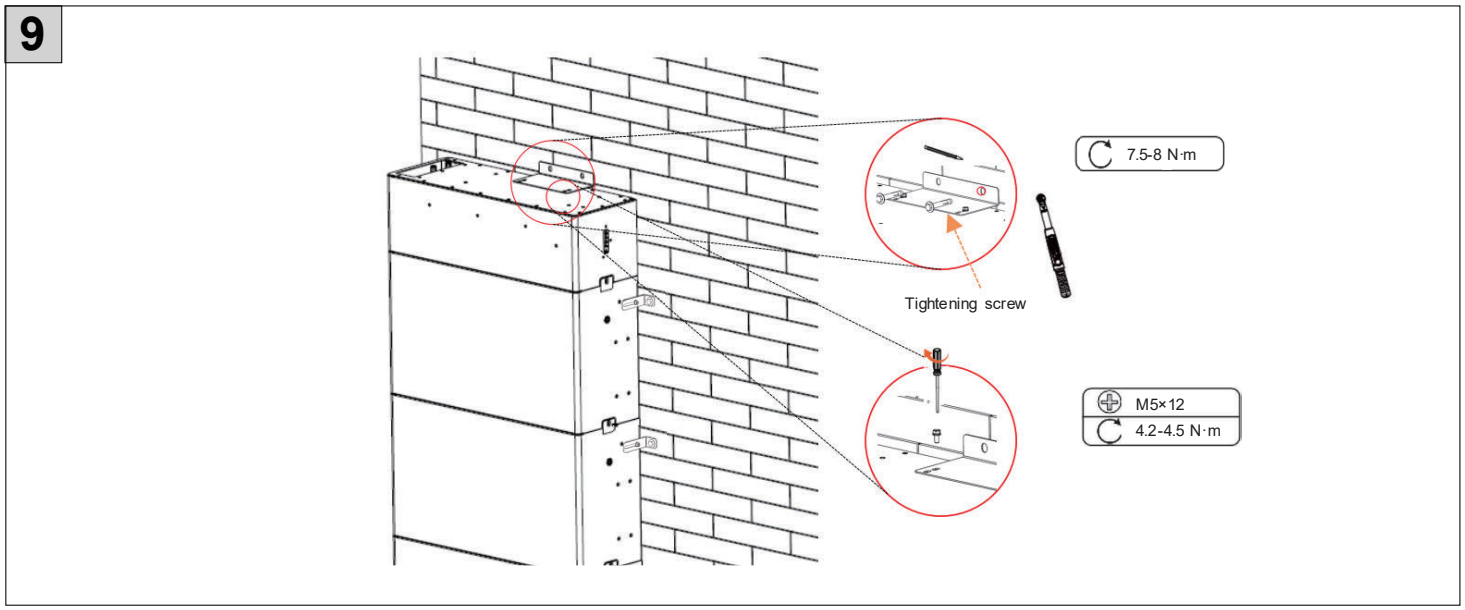


Figure 6-12 Installing the bracket of the top master module

Step 10: Install the inverter bracket on the top master module, there are two inverter brackets, the one written “L” is installed on the left side, the one written “R” is installed on the right side, and then tighten T20×150 screws on the top of master module (torque: 2.0 N·m).

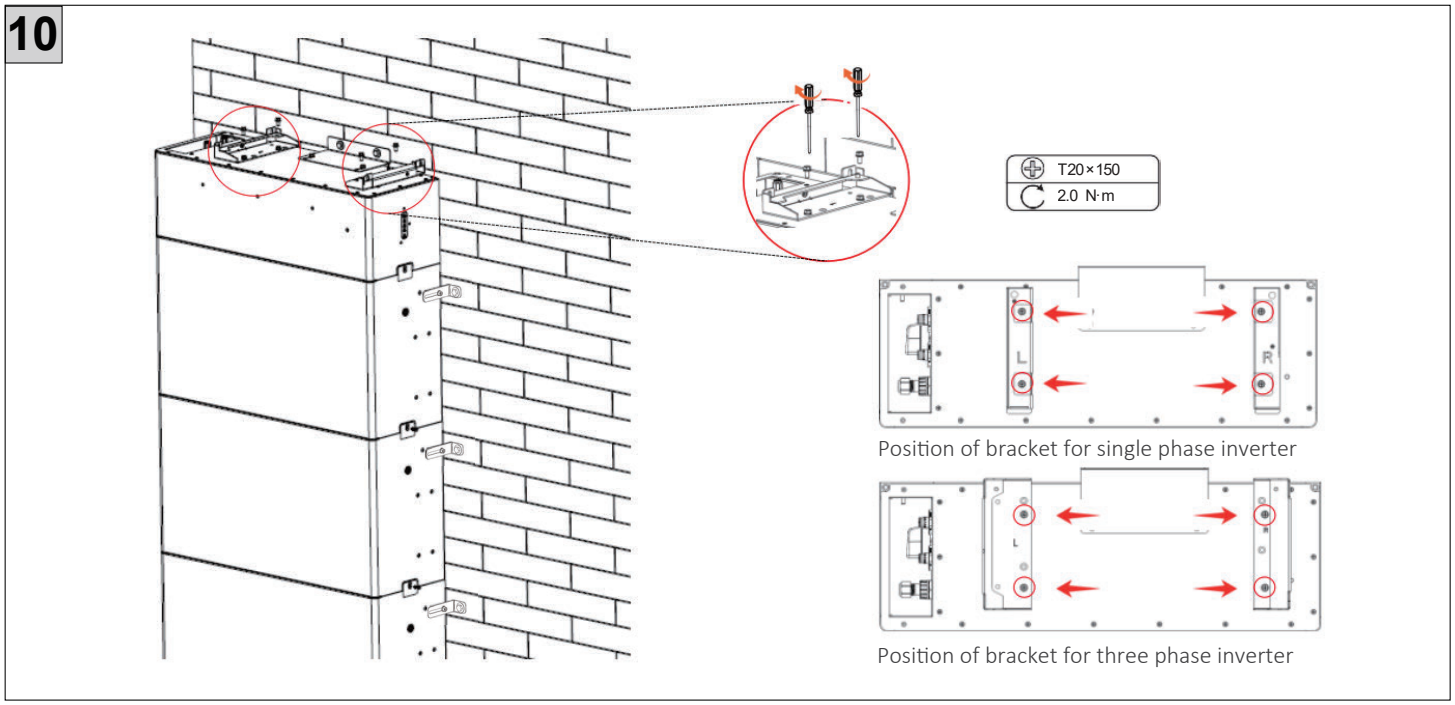


Figure 6-13 Installing the inverter brackets

Step 11: Install the inverter on the top of master module, place the inverter on the master module, align the hole to the hole of inverter brackets on the master module, and then tighten T20×150 screws on the top of master module (torque: 2.0 N·m).

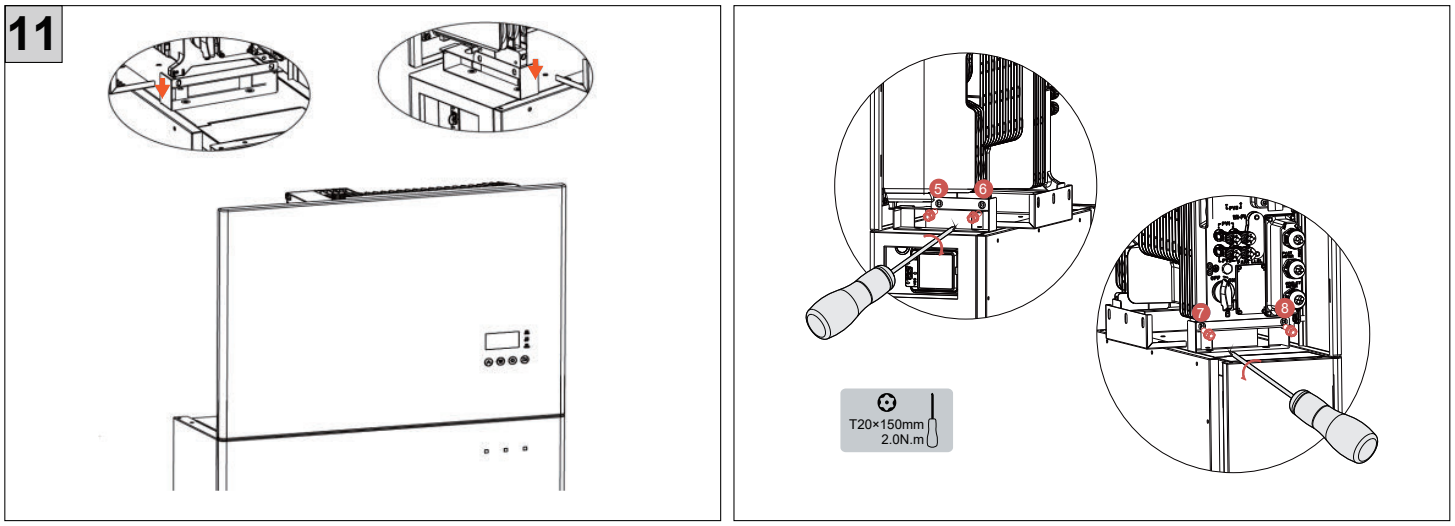


Figure 6-14 Installing the inverter

Two Tower for Floor Mounting

NOTICE	Take the installation procedure Option F (with 3+3 slave modules) as an example.

Step 1: As for the installation steps for the following figure, please refer to the installation procedure for 6.1.1 One Tower for Floor Mounting. The installation procedure for both left and right towers is the same.

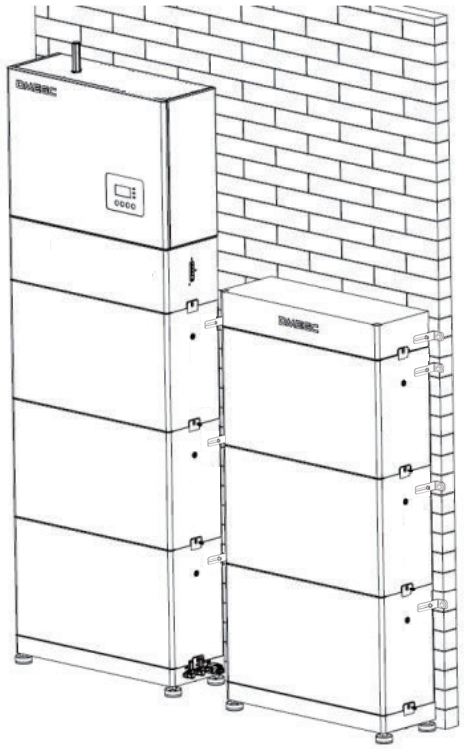


Figure 6-15 Installing two towers

⚠ WARNING

Series Base should be installed at the bottom of the first tower for more than 2 towers (including 2).
+ port of Series base should connect + port of Series Box, — port of Series base should connect — port of Series Box. The device damage caused by incorrect cabling is not in the scope of warranty.

6.2 Battery Capacity Expansion

The device is allowed to increase the number of slave modules to achieve capacity expansion. After the system is installed, if users need to add batteries for capacity expansion, perform this operation.

As for the battery capacity expansion, it may have to dismantle the inverter. In that case, please strictly follow the User Manual to remove or install the inverter.

⚠ NOTICE

Do not mix different types or makes of the battery module. It may cause leakage or rupture, resulting in personal injury or property damage.
Please confirm that there is enough space to increase the number of battery modules.
Please make sure that the ground and wall that are used to install the new battery modules can handle the additional weight.

7.1 Electrical connection between the inverter and battery

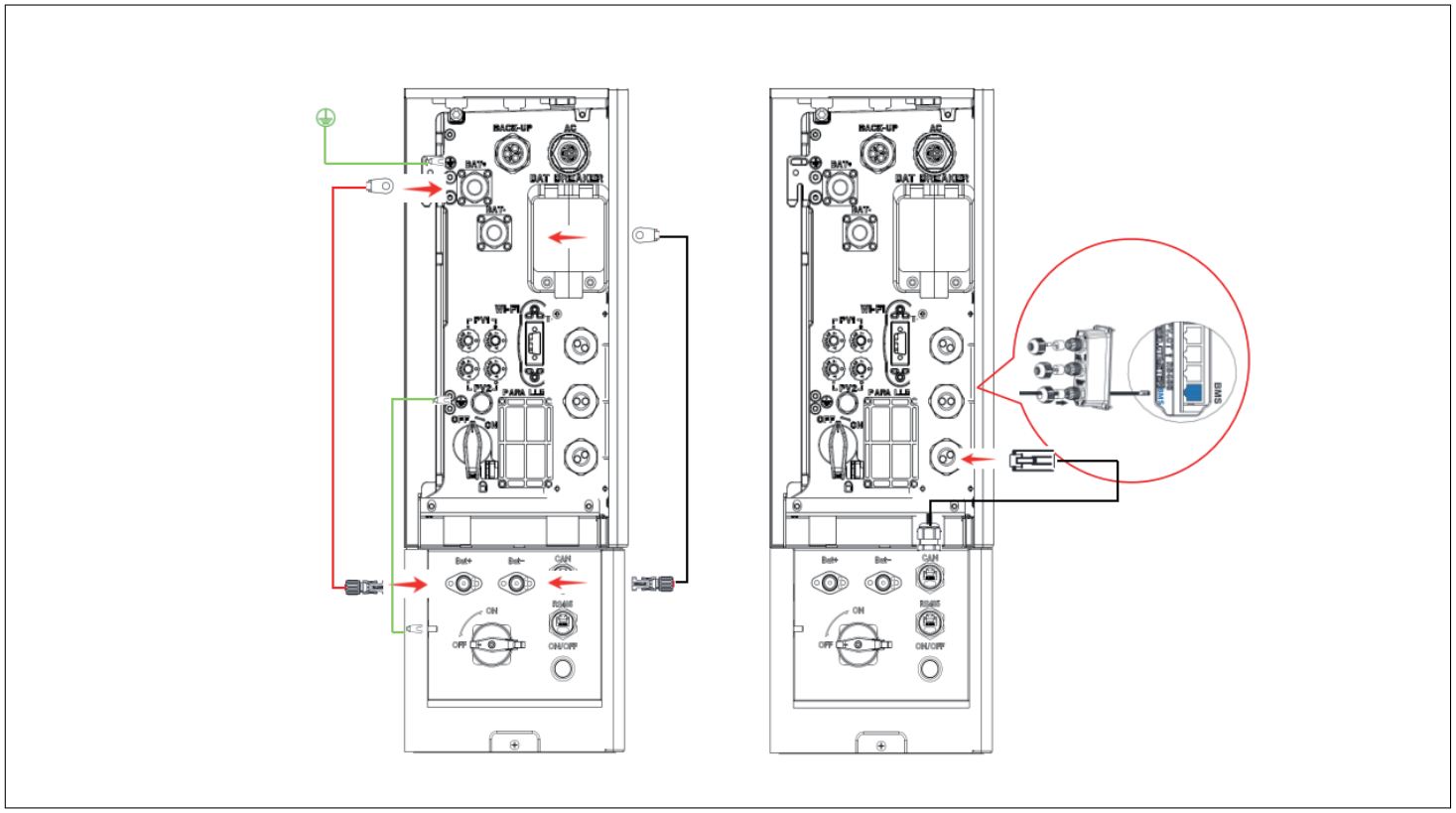


Figure 7-1 Connecting cables between inverter and battery

7.2 Electrical Connection on the battery (for more than one tower)

7.2.1 Details of Cables

Communication cable: There are two terminals at both ends. One connects to the CAN port of the series base, and the other connects to the CAN port of the series box.

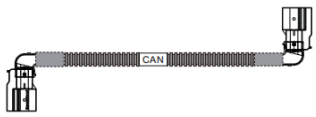


Figure 7-2 Communication cable

Power cable (+): There are two terminals with the same function at both ends. One connects to the "+" of the series base, and the other connects to the "+" of the series box.

Figure 7-3 Power cable (+)

Power cable (—): There are two terminals with the same function at both ends. One connects to the "—" of the series base, and the other connects to the "—" of the Series Box.

Figure 7-4 Power cable (—)

Grounding cable: There are two terminals at both ends. One connects the grounding port of the base, and the other connects to the ground.

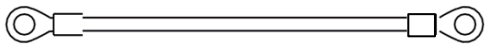


Figure 7-5 Grounding cable

NOTICE	The above-mentioned cables are delivered with the Accessories of Series Box, except grounding cable.

7.2.2 Wiring Procedure

WARNING	Only the qualified personnel can perform the wiring. Follow this manual to wire connection. The device damage caused by incorrect cabling is not in the scope of warranty.

CAUTION	Use insulated tools and wear individual protective tools when connecting cables.

NOTICE	In the case of one tower, the base does not need to conduct wiring. The wiring procedure for both floor mounting and wall mounting is the same. Take the wiring procedure of two towers in floor mounting as an example.

Steps: Connect + of the series base to + of the series box;
Connect — of the series base to — of the series box;
Connect CAN port of the series base to CAN port of the series box;
Connect the grounding port of the base to the ground.

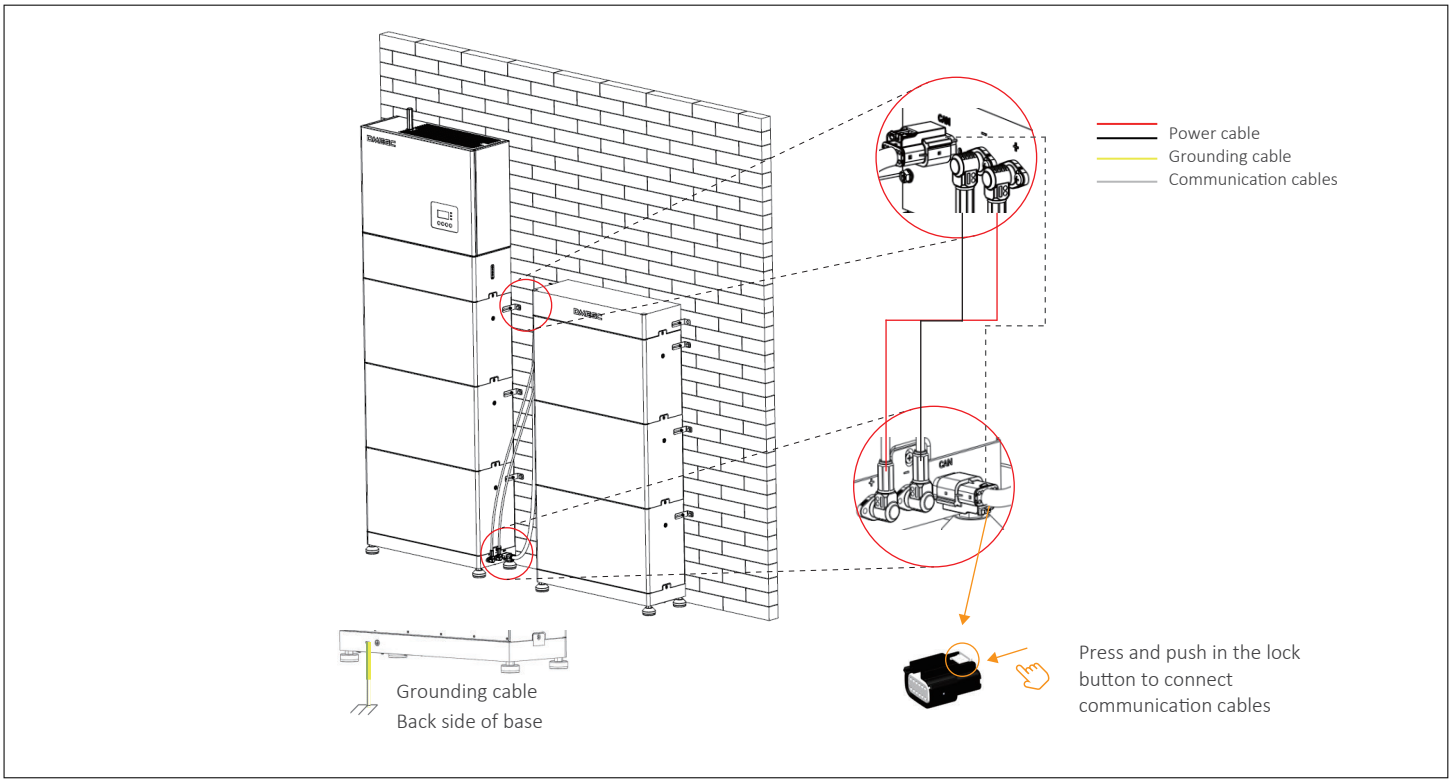


Figure 7-6 Connecting cables

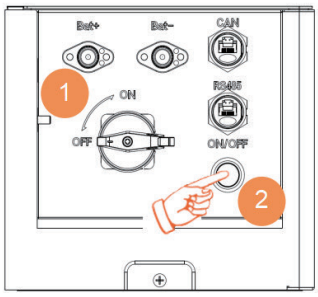
⚠ NOTICE	There are two terminals on both ends of the power cable; Both ends of the communication cable shall be closed by pushing in. Do not violently remove the cable when it is locked.

8.1 Checking before Power-on

a. Check the device installed correctly and securely;
b. Make sure the BAT button and BAT switch are OFF.
c. Make sure the battery is connected to the inverter correctly and securely ;
d. Make sure the communication cable is connected correctly and securely;

8.2 Powering on the System

Step 1: Switch the BAT switch to the "ON" position. Press and hold the BAT button for about 3 seconds, at the point, the status light flashes yellow light until finishing self test. Then the status light flashes green light. After successful communication to the inverter, the status light turns solid green light, and the SoC power indicators go solid green light.



Step 1. Rotate the battery switch
Step 2. Press and hold the battery button

Figure 8-1 Turning on the battery

NOTICE	The button is in OFF state by default. A system problem may be encountered while pressing the button frequently. The user may need to wait at least 10 seconds and then try again.

Step 2: When the battery turns on, the inverter will restart automatically. The inverter will go Waiting, Checking and Normal status in sequence.

8.3 Checking after Power-on

a. Check whether the battery has any abnormal noise.
b. Check whether the indicator lights report an error and whether the LCD screen displays the error message.

8.4 Power off

a. Turn off the battery switch and button on the battery.

WARNING	After the H02 system powers off, there will still be the remaining electricity and heat which may cause electric shocks and body burns. Please wear personal protective equipment (PPE) and begin servicing the inverter and the battery five minutes after power off.

09 TROUBLESHOOTING AND MAINTENANCE

Before troubleshooting and maintenance, make sure the H02 system is powered off. For how to power off, please refer to 7.4 Power off.

⚠ WARNING	After the H02 system powers off, there will still be the remaining electricity and heat which may cause electric shocks and body burns. Please wear personal protective equipment (PPE) and begin servicing the inverter and the battery five minutes after power off.

9.1 Troubleshooting

This section contains information and procedures for resolving possible problems with the rechargeable battery and provides the troubleshooting tips to identify and solve most problems that may occur. Please conform the state of the indicators to check the status of the H02, check the warning or fault information via the monitoring software on the inverter, and read the suggested solutions below when error occurs.

In case of the following circumstances, e.g. voltage or temperature exceeds the limit specified, a warning state will be triggered.
H02 BMS will periodically report its operating state to the inverter. Therefore, when a warning is reported, the inverter will stop working immediately.

Contact DMEGC Customer Service for further assistance. Please be prepared to describe the details of your system installation and provide the model and serial number of the rechargeable battery.

Error Code	Fault	Diagnosis and Solution
BMS_Lost2	External fault of BMS	Unable to establish communication with inverter. • Restart the BMS. • Contact the after-sales personnel of our company.
BMS_Internal_Err	Internal fault of BMS	Unable to establish communication among battery modules. • Restart the BMS. • Check whether the wire connections among battery modules are correct. • Contact the after-sales personnel of our company.
BMS_OverVoltage	BMS overvoltage	Overvoltage of a single battery module. • Contact the after-sales personnel of our company.
BMS_ ChargeOverCurrent	Overcurrent charging of BMS	Overcurrent charging of BMS. • Restart the BMS. • Contact the after-sales personnel of our company.
BMS_ DischargeOverCurrent	Discharge overcurrent of BMS	Discharge overcurrent of BMS. • Restart the BMS. • Contact the after-sales
BMS_TemHigh	High temperature of BMS	The temperature of the BMS is too high. • Cool down the BMS to normal temperature, and then restart it. • Contact the after-sales personnel of our company. personnel of our company.

Error Code	Fault	Diagnosis and Solution
BMS_CellImbalance	Cell imbalance of BMS	Inconsistency of battery module. • Restart the BMS. • Contact the after-sales personnel of our company.
BMS_Circuit_Fault	Circuit fault	Circuit fault of the BMS. • Restart the BMS. Contact the after-sales personnel of our company.
BMS_Insulation_Fault	Insulation fault	Insulation fault of the BMS. • Restart the BMS. • Contact the after-sales personnel of our company.
BMS_VoltSensor_Fault	Voltage sensor fault	Voltage sampling fault of the BMS. • Restart the BMS. • Contact the after-sales personnel of our company.
BMS_CurrSensor_Fault	Current sensor fault	Current sampling fault of the BMS. • Restart the BMS. • Contact the after-sales personnel of our company.
BMS_Relay_Fault	Relay fault	Relay contact adhesion fault of the BMS. • Restart the BMS. • Contact the after-sales personnel of our company.
BMS_CR_Unresponsive	Charging request not responded	Inverter does not respond the charging request. • Restart the BMS or the inverter. • Contact the after-sales personnel of our company.
BMS_536_Fault	536 fault of the BMS	BMS voltage sampling fault. • Restart the BMS. Contact the after-sales personnel of our company.
BMS_Selfchecking_ Fault	Self-test fault of the BMS	Self-test fault of the BMS. • Restart the BMS. • Contact the after-sales personnel of our company.
BMS_Temdiff_Fault	Temperature different fault	BMS temperature varies greatly. • Restart the BMS. • Contact the after-sales personnel of our company.
BMS_Break	Disconnection fault of the BMS	BMS sampling fault. • Restart the BMS. • Contact the after-sales personnel of our company.
BMS_Precharge_Fault	BMS precharge fault	External short circuit of the BMS. • Check the external connection and restart the BMS. • Contact the after-sales personnel of our company.

9.2 Maintenance

Regular maintenance is required for the H02 system. Pay attention to the following maintenance routines of inverter and battery for expressing the optimum device performance. More frequent maintenance service is needed in the worse work environment. Please make records of the maintenance.

⚠ WARNING	Only qualified person can perform the maintenance for the H02 system. Only use the spare parts and accessories approved by DMEGC for maintenance.

9.2.1 Maintenance routines

Table 9-1 Maintenance routines of Battery

Precautions
• If the ambient temperature for storage is between 30°C and 50°C (86°F to 122°F), please recharge the battery modules at least once every 6 months. • If the ambient temperature for storage is between -20°C and 30°C (-4°F to 86°F), please recharge the battery modules at least once every 12 months. • For the first installation, the interval among manufacture dates of battery modules shall not be exceed 3 months. • If a battery module is replaced or added for capacity expansion, each battery's SoC should be consistent. The max. SoC difference should be ±5%. • If users want to increase their battery system capacity, please ensure that the SoC of the existing system capacity is about 40%. The manufacture date of the new battery module shall not exceed 6 months. If the manufacture date of the new one exceeds 6 months, please charge it to around 40%.

10 DECOMMISSIONING

10.1 Disassembling the Battery

⚠ WARNING	Before dismantling the battery, make sure you have shut down the battery system. If the BAT cables will be reused after disconnecting, please reinstall and secure the buckles back onto these cables first before reconnecting them. For details, see step 1. The arrow direction on the buckle indicates the vertical direction of the groove.

Step 1: Press and hold the lock button on the terminals to unplug the short power cable in the case of one tower;
Or press and hold the lock button on the terminals to unplug power cables in the case of two towers.
Step 2: Press and push out the lock button on the terminals to unplug the communication cable in the case of two towers.

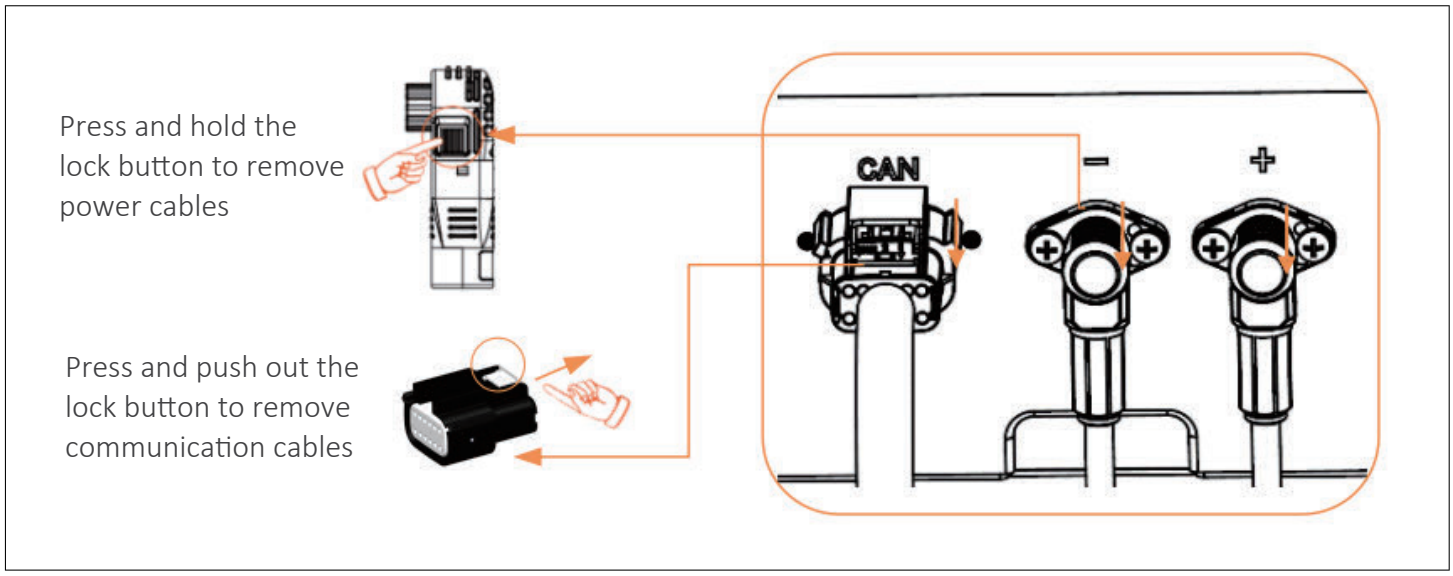


Figure 10-1 Unplugging cables

Step 3: Unscrew the screws to remove the grounding cable.

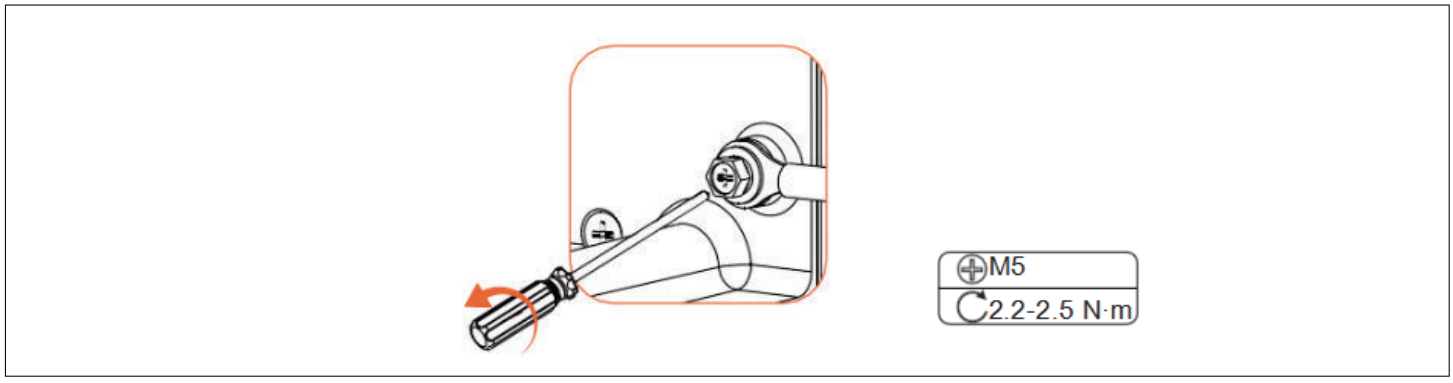


Figure 10-2 Removing grounding cable

⚠ NOTICE	The above steps for disconnecting cables apply to both the master, series base and series box.

10.2 Packing

• Pack the master and slave modules into the original packaging.
• If the original packaging is no longer available, use an equivalent carton or box that meets the following requirements:
» Suitable for the weight of product.
» Easy to carry.
» Be capable of being closed completely.

11 DISCLAIMER

H02 will service the warranty when it is installed and used as described in the Manual. Otherwise, it will not be covered by warranty.
In case there is any direct or indirect damage or defect caused by the following circumstances, H02 will not assume any warranty responsibility.

- Force majeure (flooding, lightning strike, overvoltage, fire, thunderstorm, flooding etc.);
- Improper or noncompliant use;
- Improper installation, commissioning, start up or operation (contrary to the guidance detailed in the installation manual supplied with each product);
- Inadequate ventilation and circulation resulting in minimized cooling and natural air flow;
- Installation in a corrosive environment;
- Damage during transportation;
- Unauthorized repair attempts;
- Failure to adequately maintain the equipment.
- External influence including unusual physical or electrical stress (power failure surges, inrush current, etc.);
- Use of an incompatible inverter or devices;
- Connect to other brands inverters without authority from our Company.

⚠ WARNING

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio TV technician for help.

Notice: The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equivalent.

12 TECHNICAL DATA

Configuration List

Model	Master	Slave Module	Nominal Energy (kWh)	Operating Voltage (Vdc)
H02-10	H02-MASTER × 1	H02-SLAVE × 2	10.24	91.2-115.2
H02-15	H02-MASTER × 1	H02-SLAVE × 3	15.36	136.8-172.8
H02-20	H02-MASTER × 1	H02-SLAVE × 4	20.48	182.4-230.4
H02-25	H02-MASTER × 1	H02-SLAVE × 5	25.6	228-288
H02-30	H02-MASTER × 1	H02-SLAVE × 6	30.72	273.6-345.6
H02-35	H02-MASTER × 1	H02-SLAVE × 7	35.84	319.2-403.2
H02-40	H02-MASTER × 1	H02-SLAVE × 8	40.96	364.8-460.8
H02-45	H02-MASTER × 1	H02-SLAVE × 9	46.08	410.4-518.4
H02-50	H02-MASTER × 1	H02-SLAVE × 10	51.2	456-576
H02-55	H02-MASTER × 1	H02-SLAVE × 11	56.32	501.6-633.6
H02-60	H02-MASTER × 1	H02-SLAVE × 12	61.44	547.2-691.2

Performance Parameter

Module	H02-10	H02-15	H02-20	H02-25	H02-30	H02-35
Nominal Voltage (Vdc)	102.4	153.6	204.8	256	307.2	358.4
Operating Voltage (Vdc)	91.2-115.2	136.8-172.8	182.4-230.4	228-288	273.6-345.6	319.2-403.2
Nominal Capacity (Ah)[1]	100	100	100	100	100	100
Nominal Energy (kWh)[1]	10.24	15.36	20.48	25.6	30.72	35.84
Usable Energy 95% DOD (kWh)[2]	9.72	14.59	19.46	23.42	29.18	34.05
Max. Charge/ Discharge Current (A)[3]	50	50	50	50	50	50
Recommend Charge/ Discharge Current (A)[4]	50	50	50	50	50	50
Standard Power (kW)	5.12	7.68	10.24	12.8	15.36	17.92
Battery Round-trip Efficiency (0.2C, 25°C)[5]	95%					
Expected Lifetime (25°C)	10 years					
Cycle Life 90% DOD (25°C)	6000 cycles					
Charge Temperature	0°C ~ 52°C (Off heating function)[3]/ -20°C ~ 52°C (In heating function)[3]					
Discharge Temperature	-20°C ~ 57°C (Off heating function)[3]/ -20°C ~ 57°C (In heating function)[3]					
Storage Temperature	0°C ~ 40°C					
Ingress Protection	IP65					
Protection Class	I					

Module	H02-40	H02-45	H02-50	H02-55	H02-60
Nominal Voltage (Vdc)	409.6	460.8	512	563.2	614.4
Operating Voltage (Vdc)	364.8-460.8	410.4-518.4	456-576	501.6-633.6	547.2-691.2
Nominal Capacity (Ah)[1]	100	100	100	100	100
Nominal Energy (kWh)[1]	40.96	46.08	51.2	56.32	61.44
Usable Energy 95% DOD (kWh)[2]	38.91	43.78	48.64	53.5	58.37
Max. Charge/ Discharge Current (A)[3]	50	50	50	50	50
Recommend Charge/ Discharge Current (A)[4]	50	50	50	50	50
Standard Power (kW)	20.48	23.04	25.6	28.16	30.72
Battery Round-trip Efficiency (0.2C, 25°C)[5]	95%				
Expected Lifetime (25°C)	10 years				
Cycle Life 90% DOD (25°C)	6000 cycles				
Charge Temperature	0°C ~ 52°C (Off heating function)[3]/ -20°C ~ 52°C (In heating function)[3]				
Discharge Temperature	-20°C ~ 57°C (Off heating function)[3]/ -20°C ~ 57°C (In heating function)[3]				
Storage Temperature	0°C ~ 40°C				
Ingress Protection	IP65				
Protection Class	I				

⚠ NOTICE

1.Test conditions: 25℃ .100 %, depth of discharge (DoD), 02.C charge &discharge.
2.System usable energy may vary with inverter different setting.
3.Discharge: In case of battery cell's temperature range of -20°C ~ 10°C and 45°C ~ 52°C, the discharge current will be reduced; Charge: In case of battery cell's temperature range of 0°C ~ 25°C and 45°C ~ 52°C, the charge current will be reduced. Product charge or discharge power depends on the actual temperature of the battery cell.
4.The battery can only be discharged and can not be charged when the battery cell's temperature range is between -20°C and 0°C.
5.Test conditions: 25℃ .100 %, depth of discharge (DoD), 02.C charge &discharge.

13 CONTACT US

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Address: Hengdian Industrial Zone, Dongyang, Zhejiang, China.
Email: pack-service@dmegc.com.cn
Postcode:322118

WARRANTY REGISTRATION FORM

FOR CUSTOMER (COMPULSORY)

Name	Country
Phone Number	Email
Address	
State	Zip Code
Product Serial Number	
Date of Commissioning	
Installation Company Name	
Installer Name	Electrician License No.

FOR INSTALLER

Module (If Any)

Module Brand	
Module Size(W)	
Number of String	Number of Panel Per String

Battery (If Any)

Battery Type	
Brand	
Product Serial Number	
Number of Battery Attached	
Date of Delivery	Signature

For more detailed warranty terms, please visit DMEGC official website: www.dmegc-ess.com to check it.

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